Results of Existing Analytical Model (Kaushika), Graphical Model and Current Proposed Model

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
40	40	1000	686.5692	0.027492	0.364129	0.336638	500	91.03234	462.2502	77.80542	0.337016	19.30962	57.47622	57.47622	61.63849	7%	51.64676	0.901406	51.11476	0.892121	722.934	650.9804	1.019223	686.6147	471.2619	302.7078	0.045499
40	50	1000	686.5692	0.034401	0.364129	0.329728	500	91.03234	452.762	74.64413	0.333936	19.13312	69.26076	69.26076	74.70207	8%	51.99975	0.907567	51.46775	0.898282	730.9975	643.1869	1.019279	686.673	465.3696	208.4613	0.103782
40	60	1000	686.5692	0.041326	0.364129	0.322803	500	91.03234	443.2539	71.54194	0.330842	18.95588	80.95778	80.95778	87.77183	8%	52.35425	0.913754	51.82225	0.904469	739.2242	635.2674	1.019339	686.748	459.5211	152.5748	0.17884
40	70	1000	686.5692	0.048265	0.364129	0.315865	500	91.03234	433.7258	68.49933	0.327736	18.77788	92.56903	92.56903	100.8489	9%	52.71024	0.919967	52.17824	0.910682	747.6196	627.2171	1.019402	686.84	453.7155	116.6994	0.27077
40	80	1000	686.5692	0.055218	0.364129	0.308911	500	91.03234	424.1781	65.51674	0.324616	18.59914	104.0963	104.0963	113.9342	9%	53.06773	0.926207	52.53573	0.916921	756.1892	619.0308	1.019468	686.9489	447.9519	92.28472	0.37967
40	90	1000	686.5692	0.062185	0.364129	0.301944	500	91.03234	414.6109	62.59464	0.321484	18.41965	115.5412	115.5412	127.0291	10%	53.4267	0.932472	52.8947	0.923187	764.9388	610.7031	1.019539	687.0748	442.2294	74.90773	0.505637
40	100	1000	686.5692	0.069167	0.364129	0.294962	500	91.03234	405.0243	59.73349	0.318338	18.23942	126.9054	126.9054	140.1344	10%	53.78715	0.938763	53.25515	0.929478	773.8743	602.2285	1.019613	687.218	436.5473	62.09255	0.648765
40	110	1000	686.5692	0.076162	0.364129	0.287967	500	91.03234	395.4185	56.93374	0.31518	18.05846	138.1908	138.1908	153.2515	11%	54.14907	0.94508	53.61707	0.935794	783.0022	593.6011	1.019692	687.3784	430.9046	52.36506	0.80915
40	120	1000	686.5692	0.083172	0.364129	0.280958	500	91.03234	385.7937	54.19585	0.312008	17.87677	149.399	149.399	166.3812	11%	54.51246	0.951422	53.98046	0.942137	792.3291	584.8148	1.019775	687.5561	425.3005	44.80277	0.986885
40	130	1000	686.5692	0.090195	0.364129	0.273935	500	91.03234	376.1501	51.52026	0.308825	17.69435	160.5315	160.5315	179.5248	12%	54.87731	0.95779	54.34531	0.948505	801.8618	575.863	1.019862	687.7513	419.7342	38.80425	1.182061
40	140	1000	686.5692	0.097231	0.364129	0.266898	500	91.03234	366.4879	48.90743	0.305628	17.5112	171.5902	171.5902	192.6833	12%	55.24361	0.964183	54.71161	0.954898	811.6076	566.7392	1.019953	687.964	414.2049	33.96371	1.394771
40	150	1000	686.5692	0.104281	0.364129	0.259848	500	91.03234	356.8072	46.3578	0.302419	17.32733	182.5766	182.5766	205.8579	13%	55.61134	0.970601	55.07934	0.961316	821.5741	557.4361	1.020049	688.1943	408.7117	29.99922	1.625102
40	160	1000	686.5692	0.111345	0.364129	0.252785	500	91.03234	347.1083	43.87181	0.299197	17.14274	193.4923	193.4923	219.0497	13%	55.98051	0.977044	55.44851	0.967759	831.7692	547.9465	1.02015	688.4423	403.2538	26.70992	1.873145
40	170	1000	686.5692	0.118421	0.364129	0.245708	500	91.03234	337.3913	41.4499	0.295963	16.95745	204.339	204.339	232.2598	14%	56.35111	0.983512	55.81911	0.974227	842.2013	538.2624	1.020256	688.7082	397.8305	23.94955	2.138986
40	180	1000	686.5692	0.125511	0.364129	0.238619	500	91.03234	327.6566	39.0925	0.292717	16.77144	215.1183	215.1183	245.4894	14%	56.72311	0.990005	56.19111	0.98072	852.8791	528.3759	1.020366	688.9919	392.4408	21.60952	2.422709
40	190	1000	686.5692	0.132613	0.364129	0.231517	500	91.03234	317.9043	36.80005	0.289458	16.58474	225.8318	225.8318	258.7395	15%	57.09652	0.996522	56.56452	0.987237	863.8118	518.2782	1.020482	689.2936	387.0841	19.60784	2.7244
40	200	1000	686.5692	0.139728	0.364129	0.224402	500	91.03234	308.1346	34.57296	0.286188	16.39734	236.4811	236.4811	272.0114	15%	57.47132	1.003064	56.93932	0.993779	875.009	507.9603	1.020603	689.6133	381.7595	17.88164	3.044141
40	210	1000	686.5692	0.146855	0.364129	0.217274	500	91.03234	298.3478	32.41166	0.282905	16.20925	247.0677	247.0677	285.3062	15%	57.84751	1.009629	57.31551	1.000344	886.4808	497.4129	1.02073	689.9512	376.4662	16.38205	3.382012
40	220	1000	686.5692	0.153995	0.364129	0.210135	500	91.03234	288.5441	30.31657	0.27961	16.02047	257.5932	257.5932	298.6249	16%	58.22506	1.016219	57.69306	1.006934	898.2379	486.6259	1.020862	690.3073	371.2034	15.07063	3.738092
40	230	1000	686.5692	0.161146	0.364129	0.202983	500	91.03234	278.7238	28.2881	0.276303	15.83101	268.0591	268.0591	311.969	16%	58.60397	1.022832	58.07197	1.013547	910.2916	475.5887	1.021	690.6817	365.9704	13.91678	4.112459
40	240	1000	686.5692	0.16831	0.364129	0.195819	500	91.03234	268.8871	26.32665	0.272985	15.64088	278.4671	278.4671	325.3394	17%	58.98423	1.029469	58.45223	1.020184	922.6536	464.2905	1.021145	691.0744	360.7664	12.89591	4.505187
40	40	1500	1029.854	0.018301	0.364129	0.345828	750	136.5485	712.3046	123.1674	0.341103	19.54378	62.43645	62.43645	66.34218	6%	51.17845	0.893232	50.64645	0.883947	1068.642	991.7758	1.019154	1029.844	718.7818	577.1732	-0.00943
40	50	1500	1029.854	0.022893	0.364129	0.341236	750	136.5485	702.8467	119.9183	0.339063	19.42687	74.35554	74.35554	79.3985	7%	51.41227	0.897313	50.88027	0.888028	1076.47	984.1626	1.019188	1029.878	712.8222	406.9638	0.023871
40	60	1500	1029.854	0.027492	0.364129	0.336638	750	136.5485	693.3753	116.7081	0.337016	19.30962	86.21432	86.21432	92.45773	7%	51.64676	0.901406	51.11476	0.892121	1084.401	976.4706	1.019223	1029.922	706.8928	302.7078	0.068249
40	70	1500	1029.854	0.032097	0.364129	0.332033	750	136.5485	683.8905	113.537	0.334964	19.19204	98.01358	98.01358	105.5204	8%	51.88192	0.90551	51.34992	0.896225	1092.438	968.6977	1.01926	1029.978	700.9932	234.2125	0.123744
40	80	1500	1029.854	0.036708	0.364129	0.327421	750	136.5485	674.3923	110.4052	0.332906	19.07412	109.7541	109.7541	118.5869	8%	52.11775	0.909626	51.58575	0.900341	1100.582	960.842	1.019299	1030.044	695.1229	186.7846	0.190399
40	90	1500	1029.854	0.041326	0.364129	0.322803	750	136.5485	664.8808	107.3129	0.330842	18.95588	121.4367	121.4367	131.6577	8%	52.35425	0.913754	51.82225	0.904469	1108.836	952.9011	1.019339	1030.122	689.2817	152.5748	0.26826
40	100	1500	1029.854	0.04595	0.364129	0.318179	750	136.5485	655.3561	104.2603	0.328773	18.83729	133.0621	133.0621	144.7335	9%	52.59141	0.917893	52.05941	0.908608	1117.203	944.8731	1.01938	1030.211	683.469	127.0791	0.357369
40	110	1500	1029.854	0.050581	0.364129	0.313548	750	136.5485	645.8182	101.2477	0.326697	18.71838	144.631	144.631	157.8145	9%	52.82924	0.922044	52.29724	0.912759	1125.685	936.7555	1.019423	1030.312	677.6845	107.5622	0.45777
40	120	1500	1029.854	0.055218	0.364129	0.308911	750	136.5485	636.2672	98.27511	0.324616	18.59914	156.1444	156.1444	170.9014	9%	53.06773	0.926207	52.53573	0.916921	1134.284	928.5462	1.019468	1030.423	671.9278	92.28472	0.569506
40	130	1500	1029.854	0.059861	0.364129	0.304268	750	136.5485	626.7032	95.34288	0.322529	18.47956	167.6028	167.6028	183.9945	10%	53.30688	0.930381	52.77488	0.921095	1143.003	920.2426	1.019515	1030.546	666.1986	80.09765	0.692619
40	140	1500	1029.854	0.064511	0.364129	0.299618	750	136.5485	617.1263	92.45119	0.320436	18.35966	179.0072	179.0072	197.0945	10%	53.54669	0.934566	53.01469	0.925281	1151.844	911.8423	1.019563	1030.681	660.4964	70.21689	0.827152
40	150	1500	1029.854	0.069167	0.364129	0.294962	750	136.5485	607.5365	89.60023	0.318338	18.23942	190.3582	190.3582	210.2017	10%	53.78715	0.938763	53.25515	0.929478	1160.812	903.3428	1.019613	1030.827	654.8209	62.09255	0.973148
40	160	1500	1029.854	0.073829	0.364129	0.2903	750	136.5485	597.9339	86.79021	0.316234	18.11887	201.6565	201.6565	223.3166	11%	54.02827	0.942971	53.49627	0.933686	1169.907	894.7414	1.019665	1030.984	649.1717	55.32965	1.130648
40	170	1500	1029.854	0.078497	0.364129	0.285632	750	136.5485	588.3185	84.02132	0.314124	17.99798	212.9031	212.9031	236.4399	11%	54.27004	0.947191	53.73804	0.937906	1179.133	886.0355	1.019719	1031.153	643.5485	49.63851	1.299694
40	180	1500	1029.854	0.083172	0.364129	0.280958	750	136.5485	578.6906	81.29377	0.312008	17.87677	224.0984	224.0984	249.5718	11%	54.51246	0.951422	53.98046	0.942137	1188.494	877.2221	1.019775	1031.334	637.9508	44.80277	1.480327
40	190	1500	1029.854	0.087852	0.364129	0.276277	750	136.5485	569.0501	78.60776	0.309887	17.75523	235.2435	235.2435	262.713	12%	54.75553	0.955664	54.22353	0.946379	1197.991	868.2986	1.019832	1031.526	632.3783	40.65813	1.672588
40	200	1500	1029.854	0.092539	0.364129	0.271591	750	136.5485	559.3971	75.96349	0.30776	17.63338	246.3388	246.3388	275.8639	12%	54.99925	0.959918	54.46725	0.950633	1207.63	859.2618	1.019892	1031.73	626.8306	37.07804	1.876518
40	210	1500	1029.854	0.097231	0.364129	0.266898	750	136.5485	549.7318	73.36115	0.305628	17.5112	257.3853	257.3853	289.025	12%	55.24361	0.964183	54.71161	0.954898	1217.411	850.1087	1.019953	1031.946	621.3074	33.96371	2.092156
40	220	1500	1029.854	0.10193	0.364129	0.262199	750	136.5485	540.0542	70.80094	0.30349	17.3887	268.3836	268.3836	302.1968	13%	55.4886	0.968459	54.9566	0.959174	1227.34	840.8362	1.020017	1032.173	615.8082	31.2371	2.319542
40	230	1500	1029.854	0.106634	0.364129	0.257495	750	136.5485	530.3643	68.28307	0.301346	17.26588	279.3344	279.3344	315.3798	13%	55.73424	0.972746	55.20224	0.963461	1237.42	831.441	1.020082	1032.413	610.3328	28.83592	2.558717
40	240	1500	1029.854	0.111345	0.364129	0.252785	750	136.5485	520.6624	65.80772	0.299197	17.14274	290.2385	290.2385	328.5746	13%	55.98051	0.977044	55.44851	0.967759	1247.654	821.9197	1.02015	1032.664	604.8808	26.70992	2.809718
40	40	2000	1373.138	0.013716	0.364129	0.350413	1000	182.0647	962.3319	168.6069	0.343138	19.66035	67.275	67.275	71.05108	6%	50.9453	0.889163	50.4133	0.879878	1414.554	1332.416	1.019122	1373.096	966.3625	883.7972	-0.04228
40	50	2000	1373.138	0.017154	0.364129	0.346975	1000	182.0647	952.8892	165.3143	0.341612	19.57295	79.26288	79.26288	84.10467	6%	51.1201	0.892214	50.5881	0.882929	1422.268	1324.889	1.019146	1373.117	960.3686	636.6787	-0.02138
40	60	2000	1373.138	0.020596	0.364129	0.343533	1000	182.0647	943.4364	162.0507	0.340084	19.48536	91.20478	91.20478	97.16001	7%	51.29527	0.895271	50.76327	0.885986	1430.058	1317.305	1.019171	1373.146	954.3976	480.8668	0.007782
40	70	2000	1373.138	0.024042	0.364129	0.340087	1000	182.0647	933.9734	158.8162	0.338552	19.39759	103.1011	103.1011	110.2173	7%	51.47083	0.898335	50.93883	0.88905	1437.924	1309.663	1.019197	1373.184	948.4494	376.2989	0.045234
40	80	2000	1373.138	0.027492	0.364129	0.336638	1000	182.0647	924.5004	155.6108	0.337016	19.30962	114.9524	114.9524	123.277	7%	51.64676	0.901406	51.11476	0.892121	1445.868	1301.961	1.019223	1373.229	942.5238	302.7078	0.090998
40	90	2000	1373.138	0.030945	0.364129	0.333185	1000	182.0647	915.0172	152.4348	0.335478	19.22147	126.7591	126.7591	136.3391	8%	51.82307	0.904483	51.29107	0.895198	1453.891	1294.198	1.019251	1373.284	936.6205	248.9441	0.1451
40	100	2000	1373.138	0.034401	0.364129	0.329728	1000	182.0647	905.524	149.2883	0.333936	19.13312	138.5215	138.5215	149.4041	8%	51.99975	0.907567	51.46775	0.898282	1461.995	1286.374	1.019279	1373.346	930.7392	208.4613	0.207565
40	110	2000	1373.138	0.037862	0.364129	0.326267	1000	182.0647	896.0209	146.1712	0.332391	19.04459	150.2402	150.2402	162.4722	8%	52.17681	0.910657	51.64481	0.901372	1470.18	1278.486	1.019308	1373.417	924.8799	177.2098	0.278417
40	120	2000	1373.138	0.041326	0.364129	0.322803	1000	182.0647	886.5077	143.0839	0.330842	18.95588	161.9156	161.9156	175.5437	8%	52.35425	0.913754	51.82225	0.904469	1478.448	1270.535	1.019339	1373.496	919.0422	152.5748	0.35768
40	130	2000	1373.138	0.044794	0.364129	0.319336	1000	182.0647	876.9846	140.0263	0.329291	18.86697	173.548	173.548	188.6187	9%	52.53206	0.916857	52.00006	0.907572	1486.801	1262.518	1.01937	1373.584	913.226	132.8069	0.44538
40	140	2000	1373.138	0.048265	0.364129	0.315865	1000	182.0647	867.4517	136.9987	0.327736	18.77788	185.1381	185.1381	201.6977	9%	52.71024	0.919967	52.17824	0.910682	1495.239	1254.434	1.019402	1373.68	907.431	116.6994	0.541541
40	150	2000	1373.138	0.05174	0.364129	0.31239	1000	182.0647	857.9089	134.001	0.326178	18.6886	196.6861	196.6861	214.7809	9%	52.8888	0.923084	52.3568	0.913799	1503.765	1246.283	1.019434	1373.785	901.657	103.3981	0.646186
40	160	2000	1373.138	0.055218	0.364129	0.308911	1000	182.0647	848.3563	131.0335	0.324616	18.59914	208.1925	208.1925	227.8685	9%	53.06773	0.926207	52.53573	0.916921	1512.378	1238.062	1.019468	1373.898	895.9037	92.28472	0.759341
40	170	2000	1373.138	0.0587	0.364129	0.305429	1000	182.0647	838.7939	128.0962	0.323051	18.50949	219.6578	219.6578	240.9608	10%	53.24703	0.929336	52.71503	0.920051	1521.082	1229.77	1.019503	1374.019	890.1711	82.90235	0.881029
40	180	2000	1373.138	0.062185	0.364129	0.301944	1000	182.0647	829.2218	125.1893	0.321484	18.41965	231.0823	231.0823	254.0582	10%	53.4267	0.932472	52.8947	0.923187	1529.878	1221.406	1.019539	1374.15	884.4588	74.90773	1.011274
40	190	2000	1373.138	0.065674	0.364129	0.298455	1000	182.0647	819.64	122.3128	0.319912	18.32963	242.4665	242.4665	267.1608	10%	53.60674	0.935614	53.07474	0.926329	1538.766	1212.969	1.019576	1374.289	878.7667	68.03876	1.1501
40	200	2000	1373.138	0.069167	0.364129	0.294962	1000	182.0647	810.0486	119.467	0.318338	18.23942	253.8109	253.8109	280.2689	10%	53.78715	0.938763	53.25515	0.929478	1547.749	1204.457	1.019613	1374.436	873.0946	62.09255	1.297531
40	210	2000	1373.138	0.072663	0.364129	0.291466	1000	182.0647	800.4476	116.6518	0.31676	18.14904	265.1158	265.1158	293.3829	11%	53.96793	0.941918	53.43593	0.932633	1556.828	1195.869	1.019652	1374.592	867.4421	56.91003	1.45359

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
40	220	2000	1373.138	0.076162	0.364129	0.287967	1000	182.0647	790.837	113.8675	0.31518	18.05846	276.3816	276.3816	306.5029	11%	54.14907	0.94508	53.61707	0.935794	1566.004	1187.202	1.019692	1374.757	861.8092	52.36506	1.618301
40	230	2000	1373.138	0.079665	0.364129	0.284464	1000	182.0647	781.217	111.1141	0.313596	17.96771	287.6089	287.6089	319.6293	11%	54.33059	0.948248	53.79859	0.938962	1575.281	1178.456	1.019733	1374.93	856.1956	48.35656	1.791686
40	240	2000	1373.138	0.083172	0.364129	0.280958	1000	182.0647	771.5875	108.3917	0.312008	17.87677	298.7979	298.7979	332.7624	11%	54.51246	0.951422	53.98046	0.942137	1584.658	1169.63	1.019775	1375.112	850.601	44.80277	1.97377
40	40	2500	1716.423	0.010968	0.364129	0.353161	1250	227.5808	1212.348	214.0772	0.344356	19.73013	72.0641	72.0641	75.76159	5%	50.80573	0.886727	50.27373	0.877442	1760.545	1672.996	1.019103	1716.357	1213.968	1203.489	-0.06634
40	50	2500	1716.423	0.013716	0.364129	0.350413	1250	227.5808	1202.915	210.7587	0.343138	19.66035	84.09375	84.09375	88.81384	6%	50.9453	0.889163	50.4133	0.879878	1768.192	1665.52	1.019122	1716.37	1207.953	883.7972	-0.05285
40	60	2500	1716.423	0.016466	0.364129	0.347663	1250	227.5808	1193.473	207.4632	0.341918	19.59045	96.08624	96.08624	101.8673	6%	51.08511	0.891603	50.55311	0.882318	1775.899	1657.999	1.019141	1716.39	1201.957	676.9516	-0.03278
40	70	2500	1716.423	0.019219	0.364129	0.34491	1250	227.5808	1184.023	204.1908	0.340696	19.52042	108.0419	108.0419	114.9221	6%	51.22516	0.894048	50.69316	0.884762	1783.666	1650.432	1.019161	1716.417	1195.979	535.4214	-0.0061
40	80	2500	1716.423	0.021974	0.364129	0.342155	1250	227.5808	1174.566	200.9418	0.339471	19.45028	119.961	119.961	127.9784	7%	51.36545	0.896496	50.83345	0.887211	1791.494	1642.819	1.019181	1716.45	1190.02	434.3103	0.027209
40	90	2500	1716.423	0.024732	0.364129	0.339398	1250	227.5808	1165.1	197.716	0.338245	19.38001	131.8437	131.8437	141.0364	7%	51.50598	0.898949	50.97398	0.889664	1799.383	1635.159	1.019202	1716.49	1184.078	359.5514	0.067151
40	100	2500	1716.423	0.027492	0.364129	0.336638	1250	227.5808	1155.625	194.5136	0.337016	19.30962	143.6905	143.6905	154.0962	7%	51.64676	0.901406	51.11476	0.892121	1807.335	1627.451	1.019223	1716.537	1178.155	302.7078	0.113748
40	110	2500	1716.423	0.030254	0.364129	0.333876	1250	227.5808	1146.143	191.3346	0.335786	19.23911	155.5016	155.5016	167.1581	7%	51.78778	0.903867	51.25578	0.894582	1815.35	1619.695	1.019245	1716.59	1172.249	258.47	0.167015
40	120	2500	1716.423	0.033018	0.364129	0.331111	1250	227.5808	1136.653	188.1792	0.334553	19.16848	167.2773	167.2773	180.2222	8%	51.92903	0.906333	51.39703	0.897047	1823.43	1611.889	1.019268	1716.65	1166.361	223.3604	0.226968
40	130	2500	1716.423	0.035785	0.364129	0.328344	1250	227.5808	1127.155	185.0474	0.333318	19.09773	179.0178	179.0178	193.2887	8%	52.07053	0.908802	51.53853	0.899517	1831.574	1604.033	1.019291	1716.717	1160.491	195.0238	0.293622
40	140	2500	1716.423	0.038554	0.364129	0.325575	1250	227.5808	1117.649	181.9392	0.332081	19.02686	190.7234	190.7234	206.3578	8%	52.21227	0.911276	51.68027	0.901991	1839.784	1596.127	1.019314	1716.79	1154.638	171.8193	0.366995
40	150	2500	1716.423	0.041326	0.364129	0.322803	1250	227.5808	1108.135	178.8549	0.330842	18.95588	202.3945	202.3945	219.4296	8%	52.35425	0.913754	51.82225	0.904469	1848.061	1588.169	1.019339	1716.87	1148.803	152.5748	0.4471
40	160	2500	1716.423	0.0441	0.364129	0.32003	1250	227.5808	1098.613	175.7943	0.329601	18.88477	214.0312	214.0312	232.5043	9%	52.49647	0.916236	51.96447	0.906951	1856.405	1580.158	1.019363	1716.957	1142.984	136.435	0.533955
40	170	2500	1716.423	0.046876	0.364129	0.317254	1250	227.5808	1089.083	172.7577	0.328358	18.81354	225.6339	225.6339	245.5821	9%	52.63892	0.918723	52.10692	0.909437	1864.817	1572.095	1.019389	1717.051	1137.183	122.7641	0.627574
40	180	2500	1716.423	0.049654	0.364129	0.314475	1250	227.5808	1079.545	169.745	0.327113	18.74219	237.2029	237.2029	258.6631	9%	52.78162	0.921213	52.24962	0.911928	1873.299	1563.977	1.019415	1717.151	1131.399	111.0811	0.727974
40	190	2500	1716.423	0.052435	0.364129	0.311694	1250	227.5808	1069.999	166.7563	0.325866	18.67072	248.7383	248.7383	271.7476	9%	52.92456	0.923708	52.39256	0.914423	1881.85	1555.805	1.019441	1717.258	1125.631	101.017	0.835169
40	200	2500	1716.423	0.055218	0.364129	0.308911	1250	227.5808	1060.445	163.7918	0.324616	18.59914	260.2406	260.2406	284.8356	9%	53.06773	0.926207	52.53573	0.916921	1890.473	1547.577	1.019468	1717.372	1119.88	92.28472	0.949176
40	210	2500	1716.423	0.058003	0.364129	0.306126	1250	227.5808	1050.884	160.8515	0.323365	18.52743	271.71	271.71	297.9275	10%	53.21114	0.92871	52.67914	0.919424	1899.168	1539.292	1.019496	1717.493	1114.145	84.65816	1.070009
40	220	2500	1716.423	0.060791	0.364129	0.303339	1250	227.5808	1041.315	157.9355	0.322111	18.45561	283.1467	283.1467	311.0233	10%	53.35479	0.931217	52.82279	0.921932	1907.935	1530.951	1.019524	1717.621	1108.427	77.95735	1.197684
40	230	2500	1716.423	0.063581	0.364129	0.300549	1250	227.5808	1031.738	155.0438	0.320855	18.38366	294.551	294.551	324.1232	10%	53.49867	0.933728	52.96667	0.924443	1916.777	1522.55	1.019553	1717.755	1102.724	72.03756	1.332217
40	240	2500	1716.423	0.066373	0.364129	0.297757	1250	227.5808	1022.153	152.1765	0.319598	18.3116	305.9232	305.9232	337.2274	10%	53.64279	0.936243	53.11079	0.926958	1925.693	1514.091	1.019583	1717.897	1097.038	66.78134	1.473621
40	40	3000	2059.708	0.009137	0.364129	0.354992	1500	273.097	1462.359	259.5629	0.345167	19.77659	76.82828	76.82828	80.47278	5%	50.71282	0.885106	50.18082	0.875821	2106.576	2013.547	1.019091	2059.622	1461.586	1524.756	-0.08601
40	50	3000	2059.708	0.011426	0.364129	0.352703	1500	273.097	1452.932	256.227	0.344153	19.71851	88.88596	88.88596	93.52427	5%	50.82898	0.887133	50.29698	0.877848	2114.179	2006.104	1.019107	2059.63	1455.557	1139.137	-0.07746
40	60	3000	2059.708	0.013716	0.364129	0.350413	1500	273.097	1443.498	252.9104	0.343138	19.66035	100.9125	100.9125	106.5766	6%	50.9453	0.889163	50.4133	0.879878	2121.831	1998.624	1.019122	2059.644	1449.544	883.7972	-0.06342
40	70	3000	2059.708	0.016008	0.364129	0.348121	1500	273.097	1434.057	249.613	0.342121	19.60211	112.9081	112.9081	119.6299	6%	51.06179	0.891196	50.52979	0.881911	2129.533	1991.107	1.019138	2059.664	1443.546	705.9802	-0.0439
40	80	3000	2059.708	0.018301	0.364129	0.345828	1500	273.097	1424.609	246.3349	0.341103	19.54378	124.8729	124.8729	132.6844	6%	51.17845	0.893232	50.64645	0.883947	2137.284	1983.552	1.019154	2059.689	1437.564	577.1732	-0.01887
40	90	3000	2059.708	0.020596	0.364129	0.343533	1500	273.097	1415.155	243.0761	0.340084	19.48536	136.8072	136.8072	145.74	7%	51.29527	0.895271	50.76327	0.885986	2145.086	1975.958	1.019171	2059.719	1431.596	480.8668	0.011673
40	100	3000	2059.708	0.022893	0.364129	0.341236	1500	273.097	1405.693	239.8367	0.339063	19.42687	148.7111	148.7111	158.797	7%	51.41227	0.897313	50.88027	0.888028	2152.94	1968.325	1.019188	2059.755	1425.644	406.9638	0.047741
40	110	3000	2059.708	0.025192	0.364129	0.338938	1500	273.097	1396.225	236.6167	0.33804	19.36829	160.5848	160.5848	171.8554	7%	51.52943	0.899358	50.99743	0.890073	2160.845	1960.653	1.019206	2059.797	1419.708	349.0064	0.089346
40	120	3000	2059.708	0.027492	0.364129	0.336638	1500	273.097	1386.751	233.4163	0.337016	19.30962	172.4286	172.4286	184.9155	7%	51.64676	0.901406	51.11476	0.892121	2168.802	1952.941	1.019223	2059.844	1413.786	302.7078	0.136497
40	130	3000	2059.708	0.029793	0.364129	0.334336	1500	273.097	1377.269	230.2354	0.335991	19.25087	184.2427	184.2427	197.9772	7%	51.76426	0.903457	51.23226	0.894172	2176.812	1945.189	1.019242	2059.897	1407.879	265.1319	0.189208
40	140	3000	2059.708	0.032097	0.364129	0.332033	1500	273.097	1367.781	227.0741	0.334964	19.19204	196.0272	196.0272	211.0407	8%	51.88192	0.90551	51.34992	0.896225	2184.875	1937.395	1.01926	2059.955	1401.986	234.2125	0.247487
40	150	3000	2059.708	0.034401	0.364129	0.329728	1500	273.097	1358.286	223.9324	0.333936	19.13312	207.7823	207.7823	224.1062	8%	51.99975	0.907567	51.46775	0.898282	2192.992	1929.561	1.019279	2060.019	1396.109	208.4613	0.311347
40	160	3000	2059.708	0.036708	0.364129	0.327421	1500	273.097	1348.785	220.8104	0.332906	19.07412	219.5082	219.5082	237.1737	8%	52.11775	0.909626	51.58575	0.900341	2201.164	1921.684	1.019299	2060.088	1390.246	186.7846	0.380799
40	170	3000	2059.708	0.039016	0.364129	0.325113	1500	273.097	1339.276	217.7082	0.331875	19.01504	231.2052	231.2052	250.2435	8%	52.23592	0.911689	51.70392	0.902404	2209.39	1913.765	1.019318	2060.163	1384.397	168.3633	0.455853
40	180	3000	2059.708	0.041326	0.364129	0.322803	1500	273.097	1329.762	214.6258	0.330842	18.95588	242.8733	242.8733	263.3155	8%	52.35425	0.913754	51.82225	0.904469	2217.673	1905.802	1.019339	2060.244	1378.563	152.5748	0.53652
40	190	3000	2059.708	0.043637	0.364129	0.320492	1500	273.097	1320.24	211.5633	0.329808	18.89663	254.5129	254.5129	276.3899	9%	52.47275	0.915822	51.94075	0.906537	2226.011	1897.796	1.019359	2060.33	1372.744	138.9386	0.622812
40	200	3000	2059.708	0.04595	0.364129	0.318179	1500	273.097	1310.712	208.5207	0.328773	18.83729	266.1241	266.1241	289.4669	9%	52.59141	0.917893	52.05941	0.908608	2234.406	1889.746	1.01938	2060.422	1366.938	127.0791	0.714738
40	210	3000	2059.708	0.048265	0.364129	0.315865	1500	273.097	1301.178	205.498	0.327736	18.77788	277.7071	277.7071	302.5466	9%	52.71024	0.919967	52.17824	0.910682	2242.859	1881.651	1.019402	2060.52	1361.146	116.6994	0.812311
40	220	3000	2059.708	0.050581	0.364129	0.313548	1500	273.097	1291.636	202.4953	0.326697	18.71838	289.2621	289.2621	315.629	9%	52.82924	0.922044	52.29724	0.912759	2251.37	1873.511	1.019423	2060.623	1355.369	107.5622	0.91554
40	230	3000	2059.708	0.052899	0.364129	0.311231	1500	273.097	1282.089	199.5127	0.325657	18.6588	300.7892	300.7892	328.7144	9%	52.9484	0.924124	52.4164	0.914839	2259.939	1865.325	1.019446	2060.732	1349.605	99.47592	1.024437
40	240	3000	2059.708	0.055218	0.364129	0.308911	1500	273.097	1272.534	196.5502	0.324616	18.59914	312.2888	312.2888	341.8027	9%	53.06773	0.926207	52.53573	0.916921	2268.568	1857.092	1.019468	2060.847	1343.856	92.28472	1.139011
40	40	3500	2402.992	0.00783	0.364129	0.356299	1750	318.6132	1712.367	305.0573	0.345745	19.80974	81.57813	81.57813	85.18431	4%	50.64653	0.883949	50.11453	0.874663	2452.629	2354.081	1.019083	2402.889	1709.211	1840.724	-0.10319
40	50	3500	2402.992	0.009791	0.364129	0.354338	1750	318.6132	1702.944	301.7091	0.344877	19.76	93.65594	93.65594	98.23531	5%	50.74599	0.885685	50.21399	0.876399	2460.2	2346.661	1.019096	2402.894	1703.172	1396.579	-0.09815
40	60	3500	2402.992	0.011753	0.364129	0.352376	1750	318.6132	1693.515	298.3774	0.344008	19.71021	105.7069	105.7069	111.287	5%	50.84558	0.887423	50.31358	0.878138	2467.814	2339.211	1.019109	2402.904	1697.147	1096.299	-0.08842
40	70	3500	2402.992	0.013716	0.364129	0.350413	1750	318.6132	1684.081	295.0621	0.343138	19.66035	117.7312	117.7312	124.3394	6%	50.9453	0.889163	50.4133	0.879878	2475.469	2331.728	1.019122	2402.918	1691.134	883.7972	-0.074
40	80	3500	2402.992	0.01568	0.364129	0.348449	1750	318.6132	1674.64	291.7633	0.342267	19.61043	129.729	129.729	137.3926	6%	51.04514	0.890906	50.51314	0.881621	2483.167	2324.214	1.019136	2402.937	1685.135	727.8834	-0.05486
40	90	3500	2402.992	0.017646	0.364129	0.346483	1750	318.6132	1665.194	288.4811	0.341394	19.56045	141.7004	141.7004	150.4468	6%	51.1451	0.89265	50.6131	0.883365	2490.908	2316.667	1.01915	2402.961	1679.15	610.0899	-0.03101
40	100	3500	2402.992	0.019613	0.364129	0.344517	1750	318.6132	1655.742	285.2154	0.340521	19.51041	153.6456	153.6456	163.502	6%	51.24518	0.894397	50.71318	0.885112	2498.692	2309.087	1.019164	2402.99	1673.177	518.9147	-0.00244
40	110	3500	2402.992	0.021581	0.364129	0.342549	1750	318.6132	1646.284	281.9663	0.339646	19.4603	165.5646	165.5646	176.5583	7%	51.34539	0.896146	50.81339	0.886861	2506.52	2301.473	1.019178	2403.023	1667.218	446.8903	0.030863
40	120	3500	2402.992	0.02355	0.364129	0.34058	1750	318.6132	1636.82	278.7338	0.338771	19.41014	177.4578	177.4578	189.6158	7%	51.44572	0.897897	50.91372	0.888612	2514.392	2293.827	1.019193	2403.061	1661.271	388.9968	0.068907
40	130	3500	2402.992	0.02552	0.364129	0.338609	1750	318.6132	1627.351	275.518	0.337894	19.35991	189.3251	189.3251	202.6746	7%	51.54618	0.899651	51.01418	0.890365	2522.308	2286.146	1.019208	2403.104	1655.337	341.7588	0.111699
40	140	3500	2402.992	0.027492	0.364129	0.336638	1750	318.6132	1617.876	272.319	0.337016	19.30962	201.1668	201.1668	215.7347	7%	51.64676	0.901406	51.11476	0.892121	2530.269	2278.431	1.019223	2403.151	1649.417	302.7078	0.159247
40	150	3500	2402.992	0.029464	0.364129	0.334665	1750	318.6132	1608.395	269.1367	0.336138	19.25927	212.9829	212.9829	228.7963	7%	51.74746	0.903164	51.21546	0.893878	2538.275	2270.682	1.019239	2403.204	1643.509	270.0515	0.21156
40	160	3500	2402.992	0.031438	0.364129	0.332691	1750	318.6132	1598.908	265.9712	0.335258	19.20886	224.7737	224.7737	241.8594	8%	51.84829	0.904923	51.31629	0.895638	2546.327	2262.897	1.019255	2403.261	1637.613	242.4628	0.268645
40	170	3500	2402.992	0.033413	0.364129	0.330716	1750	318.6132	1589.415	262.8225	0.334377	19.15838	236.5393	236.5393	254.9242	8%	51.94923	0.906685	51.41723	0.8974	2554.425	2255.077	1.019271	2403.323	1631.73	218.9422	0.330511
40	180	3500	2402.992	0.03539	0.364129	0.32874	1750	318.6132	1579.917	259.6907	0.333495	19.10785	248.2798	248.2798	267.9907	8%	52.0503	0.908449	51.5183	0.899164	2562.569	2247.222	1.019287	2403.389	1625.86	198.7254	0.397165
40	190	3500	2402.992	0.037367	0.364129	0.326762	1750	318.6132	1570.413	256.5758	0.332612	19.05725	259.9953	259.9953	281.059	8%	52.1515	0.910215	51.6195	0.90093	2570.76	2239.33	1.019304	2403.461	1620.002	181.2195	0.468616
40	200	3500	2402.992	0.039346	0.364129	0.324783	1750	318.6132	1560.904	253.4778	0.331728	19.00659	271.6861	271.6861	294.1292	8%	52.25281	0.911984	51.72081	0.902698	2578.999	2231.401	1.019321	2403.537	1614.157	165.9592	0.544872

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
40	210	3500	2402.992	0.041326	0.364129	0.322803	1750	318.6132	1551.389	250.3968	0.330842	18.95588	283.3522	283.3522	307.2014	8%	52.35425	0.913754	51.82225	0.904469	2587.285	2223.436	1.019339	2403.618	1608.324	152.5748	0.62594
40	220	3500	2402.992	0.043307	0.364129	0.320822	1750	318.6132	1541.868	247.3328	0.329956	18.9051	294.9939	294.9939	320.2757	9%	52.45581	0.915527	51.92381	0.906241	2595.619	2215.433	1.019356	2403.704	1602.503	140.77	0.71183
40	230	3500	2402.992	0.045289	0.364129	0.31884	1750	318.6132	1532.341	244.2859	0.329069	18.85425	306.6111	306.6111	333.3521	9%	52.55749	0.917301	52.02549	0.908016	2604.002	2207.393	1.019374	2403.795	1596.694	130.3048	0.802548
40	240	3500	2402.992	0.047273	0.364129	0.316857	1750	318.6132	1522.809	241.2561	0.32818	18.80335	318.2041	318.2041	346.4308	9%	52.6593	0.919078	52.1273	0.909793	2612.434	2199.314	1.019392	2403.89	1590.898	120.983	0.898102
40	40	4000	2746.277	0.006851	0.364129	0.357279	2000	364.1294	1962.373	350.5571	0.346179	19.83458	86.31899	86.31899	89.89604	4%	50.59684	0.883081	50.06484	0.873796	2798.695	2694.604	1.019076	2746.158	1956.841	2147.372	-0.1188
40	50	4000	2746.277	0.008566	0.364129	0.355564	2000	364.1294	1952.953	347.1998	0.34542	19.79109	98.41196	98.41196	102.9467	5%	50.68381	0.884599	50.15181	0.875314	2806.244	2687.202	1.019088	2746.16	1950.794	1652.054	-0.1164
40	60	4000	2746.277	0.010281	0.364129	0.353848	2000	364.1294	1943.529	343.8568	0.34466	19.74756	110.4814	110.4814	115.9979	5%	50.77088	0.886119	50.23888	0.876834	2813.828	2679.773	1.019099	2746.167	1944.759	1310.816	-0.10989
40	70	4000	2746.277	0.011998	0.364129	0.352131	2000	364.1294	1934.099	340.5281	0.343899	19.70398	122.5273	122.5273	129.0497	5%	50.85804	0.88764	50.32604	0.878355	2821.45	2672.317	1.01911	2746.178	1938.736	1065.747	-0.09929
40	80	4000	2746.277	0.013716	0.364129	0.350413	2000	364.1294	1924.664	337.2139	0.343138	19.66035	134.55	134.55	142.1022	6%	50.9453	0.889163	50.4133	0.879878	2829.108	2664.832	1.019122	2746.192	1932.725	883.7972	-0.08457
40	90	4000	2746.277	0.015435	0.364129	0.348695	2000	364.1294	1915.224	333.914	0.342376	19.61668	146.5494	146.5494	155.1553	6%	51.03265	0.890688	50.50065	0.881403	2836.803	2657.32	1.019134	2746.211	1926.725	744.9922	-0.06573
40	100	4000	2746.277	0.017154	0.364129	0.346975	2000	364.1294	1905.778	330.6287	0.341612	19.57295	158.5258	158.5258	168.2093	6%	51.1201	0.892214	50.5881	0.882929	2844.536	2649.779	1.019146	2746.234	1920.737	636.6787	-0.04276
40	110	4000	2746.277	0.018875	0.364129	0.345254	2000	364.1294	1896.328	327.3578	0.340849	19.52918	170.4791	170.4791	181.2642	6%	51.20764	0.893742	50.67564	0.884457	2852.307	2642.209	1.019159	2746.261	1914.76	550.5259	-0.01567
40	120	4000	2746.277	0.020596	0.364129	0.343533	2000	364.1294	1886.873	324.1014	0.340084	19.48536	182.4096	182.4096	194.32	7%	51.29527	0.895271	50.76327	0.885986	2860.115	2634.611	1.019171	2746.292	1908.795	480.8668	0.015564
40	130	4000	2746.277	0.022319	0.364129	0.34181	2000	364.1294	1877.412	320.8596	0.339318	19.4415	194.3173	194.3173	207.3768	7%	51.383	0.896803	50.851	0.887517	2867.962	2626.983	1.019184	2746.328	1902.841	423.7378	0.050941
40	140	4000	2746.277	0.024042	0.364129	0.340087	2000	364.1294	1867.947	317.6324	0.338552	19.39759	206.2023	206.2023	220.4347	7%	51.47083	0.898335	50.93883	0.88905	2875.848	2619.326	1.019197	2746.367	1896.899	376.2989	0.090468
40	150	4000	2746.277	0.025766	0.364129	0.338363	2000	364.1294	1858.476	314.4197	0.337785	19.35363	218.0648	218.0648	233.4937	7%	51.55875	0.89987	51.02675	0.890585	2883.772	2611.639	1.01921	2746.411	1890.968	336.4719	0.134151
40	160	4000	2746.277	0.027492	0.364129	0.336638	2000	364.1294	1849.001	311.2217	0.337016	19.30962	229.9049	229.9049	246.5539	7%	51.64676	0.901406	51.11476	0.892121	2891.736	2603.922	1.019223	2746.459	1885.048	302.7078	0.181997
40	170	4000	2746.277	0.029218	0.364129	0.334912	2000	364.1294	1839.52	308.0383	0.336248	19.26557	241.7226	241.7226	259.6154	7%	51.73487	0.902944	51.20287	0.893659	2899.739	2596.174	1.019237	2746.511	1879.139	273.8328	0.234011
40	180	4000	2746.277	0.030945	0.364129	0.333185	2000	364.1294	1830.034	304.8697	0.335478	19.22147	253.5181	253.5181	272.6783	8%	51.82307	0.904483	51.29107	0.895198	2907.783	2588.396	1.019251	2746.567	1873.241	248.9441	0.290201
40	190	4000	2746.277	0.032673	0.364129	0.331457	2000	364.1294	1820.544	301.7157	0.334707	19.17732	265.2916	265.2916	285.7425	8%	51.91136	0.906024	51.37936	0.896739	2915.866	2580.588	1.019265	2746.627	1867.354	227.3385	0.350572
40	200	4000	2746.277	0.034401	0.364129	0.329728	2000	364.1294	1811.048	298.5765	0.333936	19.13312	277.043	277.043	298.8083	8%	51.99975	0.907567	51.46775	0.898282	2923.99	2572.748	1.019279	2746.692	1861.478	208.4613	0.41513
40	210	4000	2746.277	0.036131	0.364129	0.327998	2000	364.1294	1801.547	295.4521	0.333164	19.08888	288.7726	288.7726	311.8755	8%	52.08824	0.909111	51.55624	0.899826	2932.155	2564.876	1.019294	2746.761	1855.614	191.8704	0.483882
40	220	4000	2746.277	0.037862	0.364129	0.326267	2000	364.1294	1792.042	292.3425	0.332391	19.04459	300.4804	300.4804	324.9444	8%	52.17681	0.910657	51.64481	0.901372	2940.36	2556.973	1.019308	2746.834	1849.76	177.2098	0.556833
40	230	4000	2746.277	0.039593	0.364129	0.324536	2000	364.1294	1782.531	289.2477	0.331617	19.00026	312.1665	312.1665	338.015	8%	52.26548	0.912205	51.73348	0.90292	2948.608	2549.037	1.019323	2746.911	1843.917	164.1902	0.633991
40	240	4000	2746.277	0.041326	0.364129	0.322803	2000	364.1294	1773.015	286.1678	0.330842	18.95588	323.8311	323.8311	351.0873	8%	52.35425	0.913754	51.82225	0.904469	2956.897	2541.07	1.019339	2746.992	1838.084	152.5748	0.71536
40	40	4500	3089.561	0.006089	0.364129	0.358041	2250	409.6455	2212.378	396.0606	0.346516	19.85389	91.05384	91.05384	94.60788	4%	50.55821	0.882407	50.02621	0.873122	3144.771	3035.121	1.019072	3089.428	2204.473	2442.466	-0.13337
40	50	4500	3089.561	0.007613	0.364129	0.356517	2250	409.6455	2202.96	392.6961	0.345842	19.81526	103.1586	103.1586	107.6583	4%	50.63548	0.883756	50.10348	0.874471	3152.301	3027.733	1.019081	3089.428	2198.421	1902.891	-0.13302
40	60	4500	3089.561	0.009137	0.364129	0.354992	2250	409.6455	2193.539	389.3443	0.345167	19.77659	115.2424	115.2424	120.7092	5%	50.71282	0.885106	50.18082	0.875821	3159.864	3020.32	1.019091	3089.432	2192.379	1524.756	-0.12902
40	70	4500	3089.561	0.010663	0.364129	0.353466	2250	409.6455	2184.113	386.0053	0.344491	19.73788	127.3053	127.3053	133.7605	5%	50.79024	0.886457	50.25824	0.877172	3167.459	3012.884	1.019101	3089.44	2186.347	1249.488	-0.12138
40	80	4500	3089.561	0.012189	0.364129	0.35194	2250	409.6455	2174.682	382.679	0.343815	19.69913	139.3474	139.3474	146.8124	5%	50.86773	0.887809	50.33573	0.878524	3175.086	3005.422	1.019112	3089.451	2180.326	1042.863	-0.11009
40	90	4500	3089.561	0.013716	0.364129	0.350413	2250	409.6455	2165.247	379.3656	0.343138	19.66035	151.3687	151.3687	159.8649	6%	50.9453	0.889163	50.4133	0.879878	3182.746	2997.936	1.019122	3089.466	2174.316	883.7972	-0.09514
40	100	4500	3089.561	0.015244	0.364129	0.348886	2250	409.6455	2155.807	376.065	0.34246	19.62153	163.3695	163.3695	172.9181	6%	51.02294	0.890518	50.49094	0.881233	3190.44	2990.425	1.019133	3089.485	2168.315	758.7231	-0.07653
40	110	4500	3089.561	0.016772	0.364129	0.347357	2250	409.6455	2146.363	372.7772	0.341782	19.58267	175.3496	175.3496	185.9719	6%	51.10065	0.891875	50.56865	0.88259	3198.166	2982.889	1.019143	3089.507	2162.325	658.5903	-0.05425
40	120	4500	3089.561	0.018301	0.364129	0.345828	2250	409.6455	2136.914	369.5023	0.341103	19.54378	187.3093	187.3093	199.0265	6%	51.17845	0.893232	50.64645	0.883947	3205.926	2975.327	1.019154	3089.533	2156.345	577.1732	-0.0283
40	130	4500	3089.561	0.019831	0.364129	0.344298	2250	409.6455	2127.46	366.2403	0.340424	19.50484	199.2487	199.2487	212.082	6%	51.25631	0.894591	50.72431	0.885306	3213.72	2967.74	1.019165	3089.563	2150.376	510.075	0.001318
40	140	4500	3089.561	0.021362	0.364129	0.342767	2250	409.6455	2118.002	362.9912	0.339744	19.46587	211.1678	211.1678	225.1383	7%	51.33425	0.895952	50.80225	0.886667	3221.548	2960.127	1.019177	3089.596	2144.416	454.1192	0.034622
40	150	4500	3089.561	0.022893	0.364129	0.341236	2250	409.6455	2108.54	359.755	0.339063	19.42687	223.0666	223.0666	238.1955	7%	51.41227	0.897313	50.88027	0.888028	3229.41	2952.488	1.019188	3089.633	2138.467	406.9638	0.071612
40	160	4500	3089.561	0.024425	0.364129	0.339704	2250	409.6455	2099.073	356.5318	0.338381	19.38782	234.9454	234.9454	251.2537	7%	51.49036	0.898676	50.95836	0.889391	3237.306	2944.822	1.0192	3089.674	2132.527	366.8522	0.112293
40	170	4500	3089.561	0.025958	0.364129	0.338171	2250	409.6455	2089.602	353.3216	0.337699	19.34874	246.8041	246.8041	264.3129	7%	51.56852	0.90004	51.03652	0.890755	3245.237	2937.13	1.019211	3089.718	2126.598	332.4452	0.156669
40	180	4500	3089.561	0.027492	0.364129	0.336638	2250	409.6455	2080.126	350.1244	0.337016	19.30962	258.643	258.643	277.3732	7%	51.64676	0.901406	51.11476	0.892121	3253.203	2929.412	1.019223	3089.766	2120.679	302.7078	0.204746
40	190	4500	3089.561	0.029026	0.364129	0.335103	2250	409.6455	2070.645	346.9402	0.336333	19.27046	270.462	270.462	290.4346	7%	51.72507	0.902773	51.19307	0.893488	3261.204	2921.666	1.019235	3089.818	2114.769	276.8297	0.256529
40	200	4500	3089.561	0.030561	0.364129	0.333568	2250	409.6455	2061.161	343.7691	0.335649	19.23127	282.2612	282.2612	303.4972	8%	51.80346	0.904141	51.27146	0.894856	3269.241	2913.893	1.019248	3089.873	2108.869	254.1691	0.312022
40	210	4500	3089.561	0.032097	0.364129	0.332033	2250	409.6455	2051.671	340.6111	0.334964	19.19204	294.0408	294.0408	316.5611	8%	51.88192	0.90551	51.34992	0.896225	3277.313	2906.093	1.01926	3089.933	2102.98	234.2125	0.371231
40	220	4500	3089.561	0.033633	0.364129	0.330496	2250	409.6455	2042.178	337.4661	0.334279	19.15277	305.8007	305.8007	329.6262	8%	51.96046	0.906881	51.42846	0.897596	3285.421	2898.265	1.019273	3089.996	2097.1	216.5449	0.43416
40	230	4500	3089.561	0.03517	0.364129	0.328959	2250	409.6455	2032.679	334.3343	0.333593	19.11347	317.5412	317.5412	342.6927	8%	52.03907	0.908253	51.50707	0.898968	3293.565	2890.41	1.019286	3090.062	2091.229	200.8282	0.500814
40	240	4500	3089.561	0.036708	0.364129	0.327421	2250	409.6455	2023.177	331.2157	0.332906	19.07412	329.2623	329.2623	355.7606	8%	52.11775	0.909626	51.58575	0.900341	3301.746	2882.526	1.019299	3090.133	2085.369	186.7846	0.571198
40	40	5000	3432.846	0.005479	0.364129	0.35865	2500	455.1617	2462.381	441.5666	0.346785	19.86934	95.78447	95.78447	99.3198	4%	50.52733	0.881868	49.99533	0.872583	3490.853	3375.633	1.019068	3432.699	2452.108	2724.895	-0.14721
40	50	5000	3432.846	0.006851	0.364129	0.357279	2500	455.1617	2452.966	438.1964	0.346179	19.83458	107.8987	107.8987	112.37	4%	50.59684	0.883081	50.06484	0.873796	3498.369	3368.255	1.019076	3432.698	2446.051	2147.372	-0.1485
40	60	5000	3432.846	0.008222	0.364129	0.355907	2500	455.1617	2443.547	434.8376	0.345572	19.7998	119.9941	119.9941	125.4207	5%	50.66641	0.884296	50.13441	0.875011	3505.914	3360.856	1.019085	3432.7	2440.003	1736.283	-0.14651
40	70	5000	3432.846	0.009595	0.364129	0.354534	2500	455.1617	2434.124	431.4903	0.344964	19.76498	132.0705	132.0705	138.4717	5%	50.73604	0.885511	50.20404	0.876226	3513.488	3353.435	1.019094	3432.705	2433.965	1433.271	-0.14123
40	80	5000	3432.846	0.010968	0.364129	0.353161	2500	455.1617	2424.697	428.1545	0.344356	19.73013	144.1282	144.1282	151.5232	5%	50.80573	0.886727	50.27373	0.877442	3521.091	3345.993	1.019103	3432.713	2427.936	1203.489	-0.13268
40	90	5000	3432.846	0.012342	0.364129	0.351788	2500	455.1617	2415.265	424.8301	0.343747	19.69526	156.1672	156.1672	164.5752	5%	50.87548	0.887945	50.34348	0.87866	3528.723	3338.528	1.019113	3432.725	2421.916	1025.087	-0.12084
40	100	5000	3432.846	0.013716	0.364129	0.350413	2500	455.1617	2405.83	421.5173	0.343138	19.66035	168.1875	168.1875	177.6277	6%	50.9453	0.889163	50.4133	0.879878	3536.385	3331.04	1.019122	3432.74	2415.906	883.7972	-0.10571
40	110	5000	3432.846	0.015091	0.364129	0.349038	2500	455.1617	2396.39	418.2161	0.342528	19.62541	180.1892	180.1892	190.6808	6%	51.01517	0.890383	50.48317	0.881098	3544.077	3323.531	1.019132	3432.759	2409.905	769.9851	-0.08728
40	120	5000	3432.846	0.016466	0.364129	0.347663	2500	455.1617	2386.946	414.9264	0.341918	19.59045	192.1725	192.1725	203.7346	6%	51.08511	0.891603	50.55311	0.882318	3551.798	3315.998	1.019141	3432.78	2403.914	676.9516	-0.06556
40	130	5000	3432.846	0.017843	0.364129	0.346287	2500	455.1617	2377.499	411.6482	0.341307	19.55545	204.1373	204.1373	216.789	6%	51.1551	0.892825	50.6231	0.88354	3559.55	3308.443	1.019151	3432.805	2397.931	599.9227	-0.04053
40	140	5000	3432.846	0.019219	0.364129	0.34491	2500	455.1617	2368.047	408.3817	0.340696	19.52042	216.0838	216.0838	229.8441	6%	51.22516	0.894048	50.69316	0.884762	3567.332	3300.865	1.019161	3432.834	2391.958	535.4214	-0.01219
40	150	5000	3432.846	0.020596	0.364129	0.343533	2500	455.1617	2358.591	405.1268	0.340084	19.48536	228.0119	228.0119	242.9	7%	51.29527	0.895271	50.76327	0.885986	3575.144	3293.263	1.019171	3432.865	2385.994	480.8668	0.019455
40	160	5000	3432.846	0.021974	0.364129	0.342155	2500	455.1617	2349.131	401.8835	0.339471	19.45028	239.9219	239.9219	255.9567	7%	51.36545	0.896496	50.83345	0.887211	3582.987	3285.638	1.019181	3432.9	2380.039	434.3103	0.054417
40	170	5000	3432.846	0.023353	0.364129	0.340777	2500	455.1617	2339.667	398.6519	0.338858	19.41516	251.8137	251.8137	269.0143	7%	51.43569	0.897722	50.90369	0.888437	3590.861	3277.99	1.019192	3432.939	2374.093	394.2586	0.092698
40	180	5000	3432.846	0.024732	0.364129	0.339398	2500	455.1617	2330.199	395.4319	0.338245	19.38001	263.6875	263.6875	282.0727	7%	51.50598	0.898949	50.97398	0.889664	3598.766	3270.318	1.019202	3432.98	2368.156	359.5514	0.134302
40	190	5000	3432.846	0.026111	0.364129	0.338018	2500	455.1617	2320.727	392.2237	0.337631	19.34483	275.5433	275.5433	295.1321	7%	51.57634	0.900177	51.04434	0.890892	3606.702	3262.622	1.019213	3433.025	2362.228	329.2763	0.179234

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
40	200	5000	3432.846	0.027492	0.364129	0.336638	2500	455.1617	2311.251	389.0271	0.337016	19.30962	287.3811	287.3811	308.1924	7%	51.64676	0.901406	51.11476	0.892121	3614.67	3254.902	1.019223	3433.074	2356.309	302.7078	0.227496
40	210	5000	3432.846	0.028872	0.364129	0.335257	2500	455.1617	2301.771	385.8423	0.336401	19.27438	299.2011	299.2011	321.2538	7%	51.71724	0.902636	51.18524	0.893351	3622.669	3247.158	1.019234	3433.125	2350.399	279.2632	0.279093
40	220	5000	3432.846	0.030254	0.364129	0.333876	2500	455.1617	2292.287	382.6692	0.335786	19.23911	311.0032	311.0032	334.3162	7%	51.78778	0.903867	51.25578	0.894582	3630.701	3239.389	1.019245	3433.18	2344.498	258.47	0.334029
40	230	5000	3432.846	0.031636	0.364129	0.332494	2500	455.1617	2282.798	379.5079	0.33517	19.20381	322.7877	322.7877	347.3798	8%	51.85837	0.905099	51.32637	0.895814	3638.764	3231.596	1.019256	3433.238	2338.606	239.9419	0.392309
40	240	5000	3432.846	0.033018	0.364129	0.331111	2500	455.1617	2273.306	376.3584	0.334553	19.16848	334.5545	334.5545	360.4445	8%	51.92903	0.906333	51.39703	0.897047	3646.859	3223.778	1.019268	3433.3	2332.723	223.3604	0.453935
40	40	5500	3776.131	0.004981	0.364129	0.359149	2750	500.6779	2712.384	487.0745	0.347006	19.88197	100.512	100.512	104.0318	4%	50.50207	0.881427	49.97007	0.872142	3836.94	3716.141	1.019065	3775.97	2699.744	2994.258	-0.16053
40	50	5500	3776.131	0.006227	0.364129	0.357902	2750	500.6779	2702.971	483.6996	0.346455	19.85038	112.6341	112.6341	117.0819	4%	50.56524	0.88253	50.03324	0.873245	3844.444	3708.772	1.019072	3775.967	2693.683	2384.437	-0.16315
40	60	5500	3776.131	0.007474	0.364129	0.356655	2750	500.6779	2693.554	480.3351	0.345903	19.81877	124.7388	124.7388	130.1323	4%	50.62845	0.883633	50.09645	0.874348	3851.975	3701.384	1.01908	3775.968	2687.631	1944.115	-0.1628
40	70	5500	3776.131	0.008721	0.364129	0.355408	2750	500.6779	2684.133	476.981	0.345351	19.78714	136.8265	136.8265	143.1831	5%	50.69172	0.884737	50.15972	0.875452	3859.531	3693.976	1.019089	3775.971	2681.587	1615.791	-0.15946
40	80	5500	3776.131	0.009969	0.364129	0.35416	2750	500.6779	2674.709	473.6373	0.344798	19.75548	148.8969	148.8969	156.2342	5%	50.75504	0.885843	50.22304	0.876557	3867.114	3686.549	1.019097	3775.977	2675.552	1364.438	-0.15315
40	90	5500	3776.131	0.011218	0.364129	0.352912	2750	500.6779	2665.28	470.3041	0.344245	19.7238	160.9504	160.9504	169.2858	5%	50.81841	0.886949	50.28641	0.877663	3874.724	3679.101	1.019105	3775.987	2669.525	1167.728	-0.14385
40	100	5500	3776.131	0.012467	0.364129	0.351663	2750	500.6779	2655.848	466.9813	0.343692	19.69209	172.9868	172.9868	182.3379	5%	50.88183	0.888055	50.34983	0.87877	3882.36	3671.633	1.019114	3775.999	2663.507	1010.88	-0.13156
40	110	5500	3776.131	0.013716	0.364129	0.350413	2750	500.6779	2646.413	463.6691	0.343138	19.66035	185.0062	185.0062	195.3905	6%	50.9453	0.889163	50.4133	0.879878	3890.023	3664.144	1.019122	3776.014	2657.497	883.7972	-0.11628
40	120	5500	3776.131	0.014966	0.364129	0.349163	2750	500.6779	2636.973	460.3673	0.342584	19.62859	197.0088	197.0088	208.4435	6%	51.00882	0.890272	50.47682	0.880987	3897.714	3656.636	1.019131	3776.033	2651.496	779.3885	-0.098
40	130	5500	3776.131	0.016216	0.364129	0.347913	2750	500.6779	2627.53	457.076	0.342029	19.59681	208.9946	208.9946	221.4972	6%	51.07239	0.891381	50.54039	0.882096	3905.431	3649.106	1.01914	3776.054	2645.503	692.5566	-0.07673
40	140	5500	3776.131	0.017467	0.364129	0.346662	2750	500.6779	2618.083	453.7952	0.341474	19.565	220.9636	220.9636	234.5515	6%	51.136	0.892492	50.604	0.883207	3913.176	3641.556	1.019148	3776.078	2639.518	619.5608	-0.05245
40	150	5500	3776.131	0.018719	0.364129	0.345411	2750	500.6779	2608.633	450.525	0.340918	19.53316	232.9159	232.9159	247.6064	6%	51.19967	0.893603	50.66767	0.884318	3920.948	3633.985	1.019157	3776.105	2633.542	557.6056	-0.02517
40	160	5500	3776.131	0.01997	0.364129	0.344159	2750	500.6779	2599.179	447.2653	0.340362	19.5013	244.8515	244.8515	260.662	6%	51.26339	0.894715	50.73139	0.88543	3928.748	3626.393	1.019166	3776.136	2627.574	504.568	0.005126
40	170	5500	3776.131	0.021223	0.364129	0.342907	2750	500.6779	2589.721	444.0162	0.339805	19.46942	256.7706	256.7706	273.7183	7%	51.32716	0.895828	50.79516	0.886543	3936.576	3618.78	1.019176	3776.169	2621.615	458.812	0.03843
40	180	5500	3776.131	0.022476	0.364129	0.341654	2750	500.6779	2580.259	440.7777	0.339249	19.43751	268.6731	268.6731	286.7753	7%	51.39098	0.896942	50.85898	0.887657	3944.432	3611.146	1.019185	3776.205	2615.663	419.0606	0.074749
40	190	5500	3776.131	0.023729	0.364129	0.340401	2750	500.6779	2570.794	437.5498	0.338691	19.40557	280.5592	280.5592	299.8331	7%	51.45485	0.898057	50.92285	0.888771	3952.315	3603.49	1.019194	3776.245	2609.72	384.3053	0.114087
40	200	5500	3776.131	0.024983	0.364129	0.339147	2750	500.6779	2561.325	434.3325	0.338133	19.37361	292.4289	292.4289	312.8918	7%	51.51877	0.899172	50.98677	0.889887	3960.227	3595.812	1.019204	3776.287	2603.786	353.7406	0.156447
40	210	5500	3776.131	0.026237	0.364129	0.337892	2750	500.6779	2551.852	431.1258	0.337575	19.34163	304.2822	304.2822	325.9513	7%	51.58274	0.900289	51.05074	0.891003	3968.168	3588.113	1.019214	3776.332	2597.859	326.7175	0.201832
40	220	5500	3776.131	0.027492	0.364129	0.336638	2750	500.6779	2542.376	427.9298	0.337016	19.30962	316.1192	316.1192	339.0117	7%	51.64676	0.901406	51.11476	0.892121	3976.137	3580.392	1.019223	3776.381	2591.94	302.7078	0.250245
40	230	5500	3776.131	0.028747	0.364129	0.335382	2750	500.6779	2532.896	424.7445	0.336457	19.27759	327.94	327.94	352.073	7%	51.71083	0.902524	51.17883	0.893239	3984.135	3572.649	1.019233	3776.432	2586.03	281.2786	0.301691
40	240	5500	3776.131	0.030003	0.364129	0.334127	2750	500.6779	2523.412	421.5698	0.335898	19.24553	339.7446	339.7446	365.1353	7%	51.77495	0.903643	51.24295	0.894358	3992.162	3564.884	1.019243	3776.487	2580.128	262.0718	0.356172
40	40	6000	4119.415	0.004565	0.364129	0.359564	3000	546.194	2962.387	532.5838	0.347189	19.89249	105.2373	105.2373	108.7438	3%	50.48102	0.88106	49.94902	0.871775	4183.03	4056.646	1.019062	4119.242	2947.381	3250.598	-0.17345
40	50	6000	4119.415	0.005708	0.364129	0.358422	3000	546.194	2952.975	529.205	0.346684	19.86354	117.3658	117.3658	121.7938	4%	50.53891	0.88207	50.00691	0.872785	4190.525	4049.285	1.019069	4119.238	2941.317	2613.481	-0.17719
40	60	6000	4119.415	0.006851	0.364129	0.357279	3000	546.194	2943.559	525.8357	0.346179	19.83458	129.4785	129.4785	134.8441	4%	50.59684	0.883081	50.06484	0.873796	4198.043	4041.906	1.019076	4119.237	2935.261	2147.372	-0.1782
40	70	6000	4119.415	0.007994	0.364129	0.356136	3000	546.194	2934.141	522.4759	0.345673	19.8056	141.5754	141.5754	147.8946	4%	50.65481	0.884093	50.12281	0.874808	4205.585	4034.509	1.019084	4119.239	2929.212	1796.086	-0.17648
40	80	6000	4119.415	0.009137	0.364129	0.354992	3000	546.194	2924.718	519.1258	0.345167	19.77659	153.6566	153.6566	160.9456	5%	50.71282	0.885106	50.18082	0.875821	4213.152	4027.094	1.019091	4119.243	2923.172	1524.756	-0.17203
40	90	6000	4119.415	0.010281	0.364129	0.353848	3000	546.194	2915.293	515.7851	0.34466	19.74756	165.7221	165.7221	173.9968	5%	50.77088	0.886119	50.23888	0.876834	4220.743	4019.66	1.019099	4119.25	2917.139	1310.816	-0.16484
40	100	6000	4119.415	0.011426	0.364129	0.352703	3000	546.194	2905.864	512.4541	0.344153	19.71851	177.7719	177.7719	187.0485	5%	50.82898	0.887133	50.29698	0.877848	4228.358	4012.208	1.019107	4119.26	2911.114	1139.137	-0.15492
40	110	6000	4119.415	0.012571	0.364129	0.351559	3000	546.194	2896.431	509.1326	0.343646	19.68944	189.8062	189.8062	200.1006	5%	50.88712	0.888148	50.35512	0.878863	4235.998	4004.738	1.019114	4119.273	2905.097	999.2672	-0.14226
40	120	6000	4119.415	0.013716	0.364129	0.350413	3000	546.194	2886.996	505.8208	0.343138	19.66035	201.825	201.825	213.1532	6%	50.9453	0.889163	50.4133	0.879878	4243.662	3997.248	1.019122	4119.288	2899.088	883.7972	-0.12685
40	130	6000	4119.415	0.014862	0.364129	0.349268	3000	546.194	2877.556	502.5186	0.34263	19.63124	213.8283	213.8283	226.2063	6%	51.00352	0.890179	50.47152	0.880894	4251.351	3989.741	1.01913	4119.307	2893.086	787.358	-0.1087
40	140	6000	4119.415	0.016008	0.364129	0.348121	3000	546.194	2868.114	499.226	0.342121	19.60211	225.8161	225.8161	239.2599	6%	51.06179	0.891196	50.52979	0.881911	4259.065	3982.214	1.019138	4119.327	2887.092	705.9802	-0.0878
40	150	6000	4119.415	0.017154	0.364129	0.346975	3000	546.194	2858.668	495.943	0.341612	19.57295	237.7886	237.7886	252.314	6%	51.1201	0.892214	50.5881	0.882929	4266.804	3974.668	1.019146	4119.351	2881.106	636.6787	-0.06415
40	160	6000	4119.415	0.018301	0.364129	0.345828	3000	546.194	2849.218	492.6697	0.341103	19.54378	249.7458	249.7458	265.3687	6%	51.17845	0.893232	50.64645	0.883947	4274.568	3967.103	1.019154	4119.377	2875.127	577.1732	-0.03774
40	170	6000	4119.415	0.019449	0.364129	0.344681	3000	546.194	2839.765	489.4061	0.340594	19.51458	261.6877	261.6877	278.4241	6%	51.23684	0.894252	50.70484	0.884966	4282.358	3959.519	1.019163	4119.407	2869.156	525.6976	-0.00858
40	180	6000	4119.415	0.020596	0.364129	0.343533	3000	546.194	2830.309	486.1521	0.340084	19.48536	273.6143	273.6143	291.48	7%	51.29527	0.895271	50.76327	0.885986	4290.173	3951.916	1.019171	4119.439	2863.193	480.8668	0.023346
40	190	6000	4119.415	0.021745	0.364129	0.342385	3000	546.194	2820.85	482.9079	0.339573	19.45613	285.5258	285.5258	304.5367	7%	51.35375	0.896292	50.82175	0.887007	4298.013	3944.293	1.01918	4119.473	2857.237	441.5824	0.058032
40	200	6000	4119.415	0.022893	0.364129	0.341236	3000	546.194	2811.387	479.6734	0.339063	19.42687	297.4222	297.4222	317.594	7%	51.41227	0.897313	50.88027	0.888028	4305.88	3936.65	1.019188	4119.511	2851.289	406.9638	0.095483
40	210	6000	4119.415	0.024042	0.364129	0.340087	3000	546.194	2801.92	476.4485	0.338552	19.39759	309.3034	309.3034	330.652	7%	51.47083	0.898335	50.93883	0.88905	4313.772	3928.988	1.019197	4119.551	2845.348	376.2989	0.135702
40	220	6000	4119.415	0.025192	0.364129	0.338938	3000	546.194	2792.451	473.2335	0.33804	19.36829	321.1697	321.1697	343.7109	7%	51.52943	0.899358	50.99743	0.890073	4321.69	3921.306	1.019206	4119.594	2839.415	349.0064	0.178691
40	230	6000	4119.415	0.026341	0.364129	0.337788	3000	546.194	2782.978	470.0281	0.337529	19.33896	333.021	333.021	356.7705	7%	51.58807	0.900382	51.05607	0.891097	4329.634	3913.604	1.019214	4119.64	2833.49	324.6081	0.224455
40	240	6000	4119.415	0.027492	0.364129	0.336638	3000	546.194	2773.501	466.8325	0.337016	19.30962	344.8573	344.8573	369.8309	7%	51.64676	0.901406	51.11476	0.892121	4337.604	3905.882	1.019223	4119.688	2827.571	302.7078	0.272995
40	40	6500	4462.7	0.004214	0.364129	0.359915	3250	591.7102	3212.389	578.0941	0.347345	19.90139	109.9608	109.9608	113.4558	3%	50.46322	0.880749	49.93122	0.871464	4529.123	4397.15	1.01906	4462.514	3195.02	3494.228	-0.18607
40	50	6500	4462.7	0.005268	0.364129	0.358861	3250	591.7102	3202.978	574.712	0.346879	19.87468	122.0948	122.0948	126.5057	4%	50.51664	0.881682	49.98464	0.872397	4536.609	4389.795	1.019066	4462.509	3188.953	2834.214	-0.19075
40	60	6500	4462.7	0.006323	0.364129	0.357806	3250	591.7102	3193.564	571.3387	0.346412	19.84795	134.2141	134.2141	139.5559	4%	50.5701	0.882615	50.0381	0.87333	4544.118	4382.424	1.019073	4462.507	3182.893	2345.472	-0.19291
40	70	6500	4462.7	0.007378	0.364129	0.356751	3250	591.7102	3184.147	567.9742	0.345945	19.82121	146.3189	146.3189	152.6063	4%	50.62359	0.883548	50.09159	0.874263	4551.648	4375.036	1.01908	4462.507	3176.841	1973.448	-0.19255
40	80	6500	4462.7	0.008434	0.364129	0.355696	3250	591.7102	3174.727	564.6185	0.345478	19.79444	158.4092	158.4092	165.657	5%	50.67712	0.884483	50.14512	0.875197	4559.2	4367.631	1.019087	4462.51	3170.795	1683.705	-0.18968
40	90	6500	4462.7	0.009489	0.364129	0.35464	3250	591.7102	3165.304	561.2716	0.345011	19.76766	170.4849	170.4849	178.7081	5%	50.73068	0.885417	50.19868	0.876132	4566.775	4360.209	1.019094	4462.516	3164.758	1453.633	-0.18428
40	100	6500	4462.7	0.010546	0.364129	0.353584	3250	591.7102	3155.877	557.9335	0.344543	19.74086	182.5462	182.5462	191.7595	5%	50.78428	0.886353	50.25228	0.877068	4574.373	4352.771	1.019101	4462.523	3158.727	1267.889	-0.17636
40	110	6500	4462.7	0.011602	0.364129	0.352527	3250	591.7102	3146.447	554.6043	0.344075	19.71404	194.5931	194.5931	204.8112	5%	50.83792	0.887289	50.30592	0.878004	4581.993	4345.315	1.019108	4462.534	3152.703	1115.763	-0.16591
40	120	6500	4462.7	0.012659	0.364129	0.35147	3250	591.7102	3137.015	551.284	0.343607	19.68721	206.6256	206.6256	217.8634	5%	50.89159	0.888226	50.35959	0.878941	4589.635	4337.842	1.019115	4462.547	3146.687	989.5975	-0.15293
40	130	6500	4462.7	0.013716	0.364129	0.350413	3250	591.7102	3127.579	547.9725	0.343138	19.66035	218.6437	218.6437	230.916	6%	50.9453	0.889163	50.4133	0.879878	4597.3	4330.352	1.019122	4462.562	3140.678	883.7972	-0.13742
40	140	6500	4462.7	0.014774	0.364129	0.349356	3250	591.7102	3118.139	544.6699	0.342669	19.63348	230.6476	230.6476	243.969	6%	50.99904	0.890101	50.46704	0.880816	4604.989	4322.845	1.019129	4462.58	3134.676	794.1979	-0.11937
40	150	6500	4462.7	0.015832	0.364129	0.348298	3250	591.7102	3108.697	541.3762	0.3422	19.60659	242.6373	242.6373	257.0226	6%	51.05282	0.89104	50.52082	0.881755	4612.7	4315.321	1.019137	4462.601	3128.681	717.6484	-0.09879
40	160	6500	4462.7	0.01689	0.364129	0.34724	3250	591.7102	3099.252	538.0914	0.34173	19.57968	254.6127	254.6127	270.0766	6%	51.10664	0.891979	50.57464	0.882694	4620.434	4307.779	1.019144	4462.624	3122.694	651.7283	-0.07567
40	170	6500	4462.7	0.017948	0.364129	0.346181	3250	591.7102	3089.803	534.8155	0.34126	19.55276	266.574	266.574	283.1312	6%	51.16049	0.892919	50.62849	0.883634	4628.191	4300.219	1.019152	4462.65	3116.713	594.5538	-0.05
40	180	6500	4462.7	0.019007	0.364129	0.345122	3250	591.7102	3080.352	531.5485	0.34079	19.52581	278.5212	278.5212	296.1863	6%	51.21437	0.893859	50.68237	0.884574	4635.972	4292.642	1.019159	4462.678	3110.739	544.641	-0.0218

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
40	190	6500	4462.7	0.020067	0.364129	0.344063	3250	591.7102	3070.897	528.2905	0.340319	19.49885	290.4542	290.4542	309.242	6%	51.2683	0.894801	50.7363	0.885515	4643.776	4285.046	1.019167	4462.709	3104.773	500.808	0.008959
40	200	6500	4462.7	0.021126	0.364129	0.343003	3250	591.7102	3061.439	525.0414	0.339848	19.47187	302.3733	302.3733	322.2982	7%	51.32226	0.895742	50.79026	0.886457	4651.604	4277.433	1.019175	4462.742	3098.813	462.1041	0.042263
40	210	6500	4462.7	0.022186	0.364129	0.341943	3250	591.7102	3051.978	521.8012	0.339377	19.44487	314.2784	314.2784	335.3552	7%	51.37625	0.896685	50.84425	0.8874	4659.456	4269.802	1.019183	4462.778	3092.861	427.7576	0.078118
40	220	6500	4462.7	0.023247	0.364129	0.340883	3250	591.7102	3042.514	518.5701	0.338906	19.41786	326.1695	326.1695	348.4128	7%	51.43028	0.897628	50.89828	0.888343	4667.331	4262.153	1.019191	4462.816	3086.915	397.1367	0.116526
40	230	6500	4462.7	0.024307	0.364129	0.339822	3250	591.7102	3033.047	515.3479	0.338434	19.39083	338.0467	338.0467	361.471	7%	51.48435	0.898571	50.95235	0.889286	4675.23	4254.485	1.019199	4462.857	3080.977	369.7202	0.157491
40	240	6500	4462.7	0.025368	0.364129	0.338761	3250	591.7102	3023.576	512.1347	0.337962	19.36378	349.9101	349.9101	374.53	7%	51.53845	0.899516	51.00645	0.89023	4683.153	4246.8	1.019207	4462.901	3075.045	345.0752	0.201014
40	40	7000	4805.984	0.003913	0.364129	0.360217	3500	637.2264	3462.391	623.6053	0.347478	19.90902	114.6828	114.6828	118.1679	3%	50.44796	0.880483	49.91596	0.871198	4875.218	4737.652	1.019058	4805.786	3442.659	3725.625	-0.19844
40	50	7000	4805.984	0.004892	0.364129	0.359238	3500	637.2264	3452.981	620.2203	0.347045	19.88422	126.8216	126.8216	131.2177	3%	50.49756	0.881349	49.96556	0.872064	4882.697	4730.303	1.019064	4805.78	3436.589	3046.561	-0.20393
40	60	7000	4805.984	0.005871	0.364129	0.358258	3500	637.2264	3443.568	616.8436	0.346612	19.85941	138.9467	138.9467	144.2678	4%	50.54718	0.882215	50.01518	0.87293	4890.197	4722.938	1.01907	4805.777	3430.527	2538.048	-0.20708
40	70	7000	4805.984	0.006851	0.364129	0.357279	3500	637.2264	3434.153	613.475	0.346179	19.83458	151.0582	151.0582	157.3181	4%	50.59684	0.883081	50.06484	0.873796	4897.717	4715.557	1.019076	4805.777	3424.471	2147.372	-0.2079
40	80	7000	4805.984	0.00783	0.364129	0.356299	3500	637.2264	3424.734	610.1145	0.345745	19.80974	163.1563	163.1563	170.3686	4%	50.64653	0.883949	50.11453	0.874663	4905.257	4708.161	1.019083	4805.778	3418.422	1840.724	-0.20637
40	90	7000	4805.984	0.008811	0.364129	0.355319	3500	637.2264	3415.313	606.7623	0.345311	19.78488	175.2408	175.2408	183.4195	5%	50.69624	0.884816	50.16424	0.875531	4912.819	4700.75	1.019089	4805.782	3412.38	1595.606	-0.20251
40	100	7000	4805.984	0.009791	0.364129	0.354338	3500	637.2264	3405.888	603.4183	0.344877	19.76	187.3119	187.3119	196.4706	5%	50.74599	0.885685	50.21399	0.876399	4920.401	4693.323	1.019096	4805.788	3406.344	1396.579	-0.1963
40	110	7000	4805.984	0.010772	0.364129	0.353357	3500	637.2264	3396.461	600.0824	0.344443	19.73511	199.3696	199.3696	209.5221	5%	50.79577	0.886553	50.26377	0.877268	4928.004	4685.88	1.019102	4805.797	3400.315	1232.76	-0.18775
40	120	7000	4805.984	0.011753	0.364129	0.352376	3500	637.2264	3387.031	596.7548	0.344008	19.71021	211.4139	211.4139	222.5739	5%	50.84558	0.887423	50.31358	0.878138	4935.628	4678.422	1.019109	4805.808	3394.293	1096.299	-0.17684
40	130	7000	4805.984	0.012734	0.364129	0.351395	3500	637.2264	3377.598	593.4354	0.343573	19.68529	223.4448	223.4448	235.6262	5%	50.89542	0.888293	50.36342	0.879008	4943.273	4670.947	1.019115	4805.821	3388.278	981.4213	-0.16359
40	140	7000	4805.984	0.013716	0.364129	0.350413	3500	637.2264	3368.161	590.1243	0.343138	19.66035	235.4625	235.4625	248.6788	6%	50.9453	0.889163	50.4133	0.879878	4950.939	4663.457	1.019122	4805.836	3382.269	883.7972	-0.14799
40	150	7000	4805.984	0.014698	0.364129	0.349431	3500	637.2264	3358.722	586.8213	0.342702	19.6354	247.4669	247.4669	261.7318	6%	50.9952	0.890034	50.4632	0.880749	4958.626	4655.95	1.019129	4805.854	3376.267	800.1325	-0.13004
40	160	7000	4805.984	0.01568	0.364129	0.348449	3500	637.2264	3349.281	583.5267	0.342267	19.61043	259.458	259.458	274.7853	6%	51.04514	0.890906	50.51314	0.881621	4966.335	4648.427	1.019136	4805.875	3370.271	727.8834	-0.10972
40	170	7000	4805.984	0.016663	0.364129	0.347466	3500	637.2264	3339.836	580.2403	0.341831	19.58545	271.436	271.436	287.8392	6%	51.0951	0.891778	50.5631	0.882493	4974.065	4640.888	1.019143	4805.897	3364.282	665.0605	-0.08706
40	180	7000	4805.984	0.017646	0.364129	0.346483	3500	637.2264	3330.388	576.9621	0.341394	19.56045	283.4008	283.4008	300.8936	6%	51.1451	0.89265	50.6131	0.883365	4981.817	4633.333	1.01915	4805.922	3358.3	610.0899	-0.06203
40	190	7000	4805.984	0.018629	0.364129	0.3455	3500	637.2264	3320.937	573.6923	0.340958	19.53544	295.3525	295.3525	313.9486	6%	51.19512	0.893523	50.66312	0.884238	4989.59	4625.761	1.019157	4805.95	3352.324	561.7133	-0.03464
40	200	7000	4805.984	0.019613	0.364129	0.344517	3500	637.2264	3311.484	570.4307	0.340521	19.51041	307.2912	307.2912	327.004	6%	51.24518	0.894397	50.71318	0.885112	4997.385	4618.173	1.019164	4805.98	3346.354	518.9147	-0.00488
40	210	7000	4805.984	0.020596	0.364129	0.343533	3500	637.2264	3302.027	567.1775	0.340084	19.48536	319.2167	319.2167	340.06	7%	51.29527	0.895271	50.76327	0.885986	5005.202	4610.568	1.019171	4806.012	3340.392	480.8668	0.027238
40	220	7000	4805.984	0.021581	0.364129	0.342549	3500	637.2264	3292.568	563.9326	0.339646	19.4603	331.1293	331.1293	353.1166	7%	51.34539	0.896146	50.81339	0.886861	5013.04	4602.947	1.019178	4806.046	3334.435	446.8903	0.061726
40	230	7000	4805.984	0.022565	0.364129	0.341564	3500	637.2264	3283.106	560.6959	0.339209	19.43523	343.0289	343.0289	366.1738	7%	51.39554	0.897021	50.86354	0.887736	5020.901	4595.309	1.019186	4806.083	3328.486	416.423	0.098583
40	240	7000	4805.984	0.02355	0.364129	0.34058	3500	637.2264	3273.641	557.4676	0.338771	19.41014	354.9155	354.9155	379.2316	7%	51.44572	0.897897	50.91372	0.888612	5028.784	4587.654	1.019193	4806.122	3322.542	388.9968	0.137813
40	40	7500	5149.269	0.003652	0.364129	0.360478	3750	682.7425	3712.392	669.1171	0.347593	19.91563	119.4038	119.4038	122.88	3%	50.43474	0.880252	49.90274	0.870967	5221.315	5078.153	1.019056	5149.058	3690.298	3945.356	-0.21063
40	50	7500	5149.269	0.004565	0.364129	0.359564	3750	682.7425	3702.983	665.7297	0.347189	19.89249	131.5466	131.5466	135.9297	3%	50.48102	0.88106	49.94902	0.871775	5228.788	5070.808	1.019062	5149.052	3684.227	3250.598	-0.21681
40	60	7500	5149.269	0.005479	0.364129	0.35865	3750	682.7425	3693.572	662.35	0.346785	19.86934	143.6767	143.6767	148.9797	4%	50.52733	0.881868	49.99533	0.872583	5236.28	5063.449	1.019068	5149.048	3678.162	2724.895	-0.22082
40	70	7500	5149.269	0.006393	0.364129	0.357736	3750	682.7425	3684.157	658.9778	0.346381	19.84617	155.7941	155.7941	162.0299	4%	50.57366	0.882677	50.04166	0.873392	5243.791	5056.075	1.019074	5149.046	3672.103	2317.503	-0.22265
40	80	7500	5149.269	0.007308	0.364129	0.356822	3750	682.7425	3674.74	655.6133	0.345976	19.82299	167.8989	167.8989	175.0803	4%	50.62002	0.883486	50.08802	0.874201	5251.321	5048.687	1.019079	5149.047	3666.051	1995.385	-0.2223
40	90	7500	5149.269	0.008222	0.364129	0.355907	3750	682.7425	3665.321	652.2564	0.345572	19.7998	179.9911	179.9911	188.131	5%	50.66641	0.884296	50.13441	0.875011	5258.871	5041.284	1.019085	5149.049	3660.004	1736.283	-0.21976
40	100	7500	5149.269	0.009137	0.364129	0.354992	3750	682.7425	3655.898	648.9072	0.345167	19.77659	192.0707	192.0707	201.1819	5%	50.71282	0.885106	50.18082	0.875821	5266.44	5033.867	1.019091	5149.054	3653.965	1524.756	-0.21503
40	110	7500	5149.269	0.010053	0.364129	0.354077	3750	682.7425	3646.473	645.5656	0.344761	19.75337	204.1378	204.1378	214.2332	5%	50.75926	0.885916	50.22726	0.876631	5274.028	5026.435	1.019097	5149.061	3647.931	1349.82	-0.20812
40	120	7500	5149.269	0.010968	0.364129	0.353161	3750	682.7425	3637.045	642.2317	0.344356	19.73013	216.1923	216.1923	227.2848	5%	50.80573	0.886727	50.27373	0.877442	5281.636	5018.989	1.019103	5149.07	3641.904	1203.489	-0.19902
40	130	7500	5149.269	0.011884	0.364129	0.352246	3750	682.7425	3627.614	638.9054	0.34395	19.70689	228.2344	228.2344	240.3367	5%	50.85223	0.887539	50.32023	0.878254	5289.263	5011.528	1.01911	5149.081	3635.883	1079.842	-0.18773
40	140	7500	5149.269	0.0128	0.364129	0.35133	3750	682.7425	3618.181	635.5869	0.343544	19.68363	240.264	240.264	253.3889	5%	50.89875	0.888351	50.36675	0.879066	5296.911	5004.052	1.019116	5149.095	3629.868	974.4174	-0.17424
40	150	7500	5149.269	0.013716	0.364129	0.350413	3750	682.7425	3608.744	632.276	0.343138	19.66035	252.2812	252.2812	266.4415	6%	50.9453	0.889163	50.4133	0.879878	5304.577	4996.561	1.019122	5149.11	3623.859	883.7972	-0.15856
40	160	7500	5149.269	0.014633	0.364129	0.349497	3750	682.7425	3599.306	628.9728	0.342731	19.63706	264.2861	264.2861	279.4945	6%	50.99187	0.889976	50.45987	0.880691	5312.264	4989.055	1.019128	5149.128	3617.857	805.3302	-0.14069
40	170	7500	5149.269	0.015549	0.364129	0.34858	3750	682.7425	3589.864	625.6773	0.342325	19.61376	276.2786	276.2786	292.548	6%	51.03848	0.890789	50.50648	0.881504	5319.971	4981.533	1.019135	5149.148	3611.861	736.9333	-0.12061
40	180	7500	5149.269	0.016466	0.364129	0.347663	3750	682.7425	3580.42	622.3895	0.341918	19.59045	288.2587	288.2587	305.6781	6%	51.08511	0.891603	50.55311	0.882318	5327.697	4973.997	1.019141	5149.171	3605.871	676.9516	-0.09833
40	190	7500	5149.269	0.017384	0.364129	0.346746	3750	682.7425	3570.973	619.1095	0.341511	19.56712	300.2266	300.2266	318.6561	6%	51.13176	0.892418	50.59976	0.883132	5335.444	4966.446	1.019148	5149.195	3599.887	624.0569	-0.07386
40	200	7500	5149.269	0.018301	0.364129	0.345828	3750	682.7425	3561.523	615.8371	0.341103	19.54378	312.1822	312.1822	331.7109	6%	51.17845	0.893232	50.64645	0.883947	5343.211	4958.879	1.019154	5149.222	3593.909	577.1732	-0.04717
40	210	7500	5149.269	0.019219	0.364129	0.34491	3750	682.7425	3552.07	612.5725	0.340696	19.52042	324.1257	324.1257	344.7662	6%	51.22516	0.894048	50.69316	0.884762	5350.998	4951.297	1.019161	5149.251	3587.937	535.4214	-0.01829
40	220	7500	5149.269	0.020137	0.364129	0.343992	3750	682.7425	3542.615	609.3157	0.340288	19.49705	336.0569	336.0569	357.8219	6%	51.27189	0.894863	50.73989	0.885578	5358.805	4943.699	1.019168	5149.282	3581.972	498.0776	0.012807
40	230	7500	5149.269	0.021056	0.364129	0.343074	3750	682.7425	3533.157	606.0666	0.33988	19.47367	347.9759	347.9759	370.8782	7%	51.31866	0.89568	50.78666	0.886394	5366.633	4936.086	1.019174	5149.315	3576.012	464.5411	0.046111
40	240	7500	5149.269	0.021974	0.364129	0.342155	3750	682.7425	3523.697	602.8253	0.339471	19.45028	359.8829	359.8829	383.9351	7%	51.36545	0.896496	50.83345	0.887211	5374.481	4928.457	1.019181	5149.351	3570.059	434.3103	0.081626
40	40	8000	5492.554	0.003423	0.364129	0.360706	4000	728.2587	3962.394	714.6295	0.347694	19.92141	124.1239	124.1239	127.1921	3%	50.42318	0.88005	49.89118	0.870765	5567.413	5418.653	1.019055	5492.331	3937.938	4154.028	-0.22266
40	50	8000	5492.554	0.00428	0.364129	0.35985	4000	728.2587	3952.986	711.24	0.347316	19.89972	136.2702	136.2702	140.6418	3%	50.46656	0.880808	49.93456	0.871522	5574.88	5411.312	1.01906	5492.324	3931.865	3446.497	-0.22946
40	60	8000	5492.554	0.005137	0.364129	0.358993	4000	728.2587	3943.575	707.8576	0.346937	19.87802	148.4047	148.4047	153.6917	4%	50.50996	0.881565	49.97796	0.87228	5582.366	5403.958	1.019066	5492.319	3925.798	2905.927	-0.23421
40	70	8000	5492.554	0.005993	0.364129	0.358136	4000	728.2587	3934.162	704.4823	0.346558	19.85631	160.5273	160.5273	166.7418	4%	50.55339	0.882323	50.02139	0.873038	5589.869	5396.59	1.019071	5492.317	3919.736	2483.604	-0.23693
40	80	8000	5492.554	0.006851	0.364129	0.357279	4000	728.2587	3924.746	701.1142	0.346179	19.83458	172.638	172.638	179.7921	4%	50.59684	0.883081	50.06484	0.873796	5597.391	5389.208	1.019076	5492.316	3913.681	2147.372	-0.2376
40	90	8000	5492.554	0.007708	0.364129	0.356421	4000	728.2587	3915.328	697.7533	0.345799	19.81284	184.7368	184.7368	192.8426	4%	50.64031	0.88384	50.10831	0.874555	5604.93	5381.813	1.019082	5492.317	3907.632	1875.309	-0.23622
40	100	8000	5492.554	0.008566	0.364129	0.355564	4000	728.2587	3905.907	694.3995	0.34542	19.79109	196.8239	196.8239	205.8934	5%	50.68381	0.884599	50.15181	0.875314	5612.487	5374.405	1.019088	5492.321	3901.588	1652.054	-0.23279
40	110	8000	5492.554	0.009423	0.364129	0.354706	4000	728.2587	3896.483	691.0529	0.34504	19.76933	208.8992	208.8992	218.9445	5%	50.72733	0.885359	50.19533	0.876074	5620.063	5366.983	1.019093	5492.326	3895.55	1466.582	-0.22732
40	120	8000	5492.554	0.010281	0.364129	0.353848	4000	728.2587	3887.057	687.7135	0.34466	19.74756	220.9627	220.9627	231.9958	5%	50.77088	0.886119	50.23888	0.876834	5627.657	5359.547	1.019099	5492.334	3889.519	1310.816	-0.21979
40	130	8000	5492.554	0.01114	0.364129	0.35299	4000	728.2587	3877.629	684.3813	0.34428	19.72578	233.0146	233.0146	245.0474	5%	50.81445	0.886879	50.28245	0.877594	5635.269	5352.097	1.019105	5492.343	3883.493	1178.729	-0.21021
40	140	8000	5492.554	0.011998	0.364129	0.352131	4000	728.2587	3868.197	681.0562	0.343899	19.70398	245.0547	245.0547	258.0994	5%	50.85804	0.88764	50.32604	0.878355	5642.9	5344.634	1.01911	5492.355	3877.473	1065.747	-0.19857
40	150	8000	5492.554	0.012857	0.364129	0.351272	4000	728.2587	3858.764	677.7384	0.343519	19.68217	257.0832	257.0832	271.1517	5%	50.90166	0.888402	50.36966	0.879116	5650.548	5337.156	1.019116	5492.369	3871.458	968.3508	-0.18488
40	160	8000	5492.554	0.013716	0.364129	0.350413	4000	728.2587	3849.327	674.4277	0.343138	19.66035	269.1	269.1	284.2043	6%	50.9453	0.889163	50.4133	0.879878	5658.216	5329.665	1.019122	5492.384	3865.45	883.7972	-0.16913
40	170	8000	5492.554	0.014575	0.364129	0.349554	4000	728.2587	3839.889	671.1243	0.342757	19.63852	281.1052	281.1052	297.2573	6%	50.98896	0.889925	50.45696	0.88064	5665.902	5322.159	1.019128	5492.402	3859.447	809.9201	-0.15132

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
40	180	8000	5492.554	0.015435	0.364129	0.348695	4000	728.2587	3830.447	667.8281	0.342376	19.61668	293.0988	293.0988	310.3107	6%	51.03265	0.890688	50.50065	0.881403	5673.607	5314.639	1.019134	5492.422	3853.451	744.9922	-0.13146
40	190	8000	5492.554	0.016294	0.364129	0.347835	4000	728.2587	3821.003	664.5391	0.341994	19.59482	305.0809	305.0809	323.3645	6%	51.07636	0.891451	50.54436	0.882166	5681.33	5307.106	1.01914	5492.444	3847.46	687.6221	-0.10952
40	200	8000	5492.554	0.017154	0.364129	0.346975	4000	728.2587	3811.557	661.2573	0.341612	19.57295	317.0515	317.0515	336.4187	6%	51.1201	0.892214	50.5881	0.882929	5689.072	5299.557	1.019146	5492.468	3841.474	636.6787	-0.08553
40	210	8000	5492.554	0.018015	0.364129	0.346115	4000	728.2587	3802.108	657.9828	0.341231	19.55107	329.0106	329.0106	349.4733	6%	51.16385	0.892978	50.63185	0.883693	5696.833	5291.995	1.019152	5492.494	3835.495	591.2351	-0.05947
40	220	8000	5492.554	0.018875	0.364129	0.345254	4000	728.2587	3792.656	654.7156	0.340849	19.52918	340.9582	340.9582	362.5284	6%	51.20764	0.893742	50.67564	0.884457	5704.613	5284.418	1.019159	5492.522	3829.521	550.5259	-0.03134
40	230	8000	5492.554	0.019736	0.364129	0.344394	4000	728.2587	3783.202	651.4556	0.340466	19.50728	352.8944	352.8944	375.584	6%	51.25144	0.894506	50.71944	0.885221	5712.412	5276.827	1.019165	5492.552	3823.553	513.9141	-0.00114
40	240	8000	5492.554	0.020596	0.364129	0.343533	4000	728.2587	3773.746	648.2029	0.340084	19.48536	364.8191	364.8191	388.64	7%	51.29527	0.895271	50.76327	0.885986	5720.231	5269.221	1.019171	5492.585	3817.59	480.8668	0.031129
40	40	8500	5835.838	0.003222	0.364129	0.360907	4250	773.7749	4212.395	760.1423	0.347783	19.92651	128.8432	128.8432	132.3042	3%	50.41298	0.879872	49.88098	0.870587	5913.512	5759.152	1.019054	5835.604	4185.578	4352.263	-0.23456
40	50	8500	5835.838	0.004028	0.364129	0.360101	4250	773.7749	4202.987	756.7509	0.347427	19.9061	140.9927	140.9927	145.3538	3%	50.4538	0.880585	49.9218	0.8713	5920.975	5751.815	1.019059	5835.596	4179.504	3634.499	-0.2419
40	60	8500	5835.838	0.004834	0.364129	0.359295	4250	773.7749	4193.578	753.3662	0.347071	19.88568	153.131	153.131	158.4037	3%	50.49464	0.881298	49.96264	0.872013	5928.455	5744.464	1.019064	5835.591	4173.434	3081.141	-0.24731
40	70	8500	5835.838	0.005641	0.364129	0.358489	4250	773.7749	4184.165	749.9882	0.346714	19.86525	165.2581	165.2581	171.4537	4%	50.5355	0.882011	50.0035	0.872726	5935.951	5737.102	1.019069	5835.587	4167.371	2645.527	-0.25081
40	80	8500	5835.838	0.006447	0.364129	0.357682	4250	773.7749	4174.751	746.617	0.346357	19.84481	177.3741	177.3741	184.5039	4%	50.57639	0.882725	50.04439	0.873439	5943.465	5729.726	1.019074	5835.586	4161.313	2296.453	-0.25238
40	90	8500	5835.838	0.007254	0.364129	0.356875	4250	773.7749	4165.334	743.2525	0.346	19.82435	189.4788	189.4788	197.5543	4%	50.61729	0.883438	50.08529	0.874153	5950.995	5722.338	1.019079	5835.586	4155.261	2012.41	-0.25203
40	100	8500	5835.838	0.008061	0.364129	0.356068	4250	773.7749	4155.914	739.8947	0.345643	19.80389	201.5725	201.5725	210.605	4%	50.65822	0.884153	50.12622	0.874868	5958.542	5714.937	1.019084	5835.588	4149.214	1778.178	-0.24975
40	110	8500	5835.838	0.008868	0.364129	0.355261	4250	773.7749	4146.492	736.5437	0.345286	19.78342	213.6551	213.6551	223.6558	5%	50.69917	0.884867	50.16717	0.875582	5966.107	5707.524	1.01909	5835.593	4143.172	1582.747	-0.24554
40	120	8500	5835.838	0.009676	0.364129	0.354454	4250	773.7749	4137.068	733.1994	0.344928	19.76293	225.7266	225.7266	236.707	5%	50.74014	0.885582	50.20814	0.876297	5973.688	5700.097	1.019095	5835.599	4137.137	1417.988	-0.2394
40	130	8500	5835.838	0.010483	0.364129	0.353646	4250	773.7749	4127.641	729.8619	0.344571	19.74244	237.787	237.787	249.7584	5%	50.78113	0.886298	50.24913	0.877013	5981.287	5692.657	1.0191	5835.607	4131.107	1277.796	-0.23133
40	140	8500	5835.838	0.011291	0.364129	0.352838	4250	773.7749	4118.212	726.5311	0.344213	19.72193	249.8364	249.8364	262.8101	5%	50.82214	0.887014	50.29014	0.877729	5988.903	5685.205	1.019106	5835.617	4125.082	1157.514	-0.22132
40	150	8500	5835.838	0.012099	0.364129	0.35203	4250	773.7749	4108.781	723.2071	0.343855	19.70141	261.8748	261.8748	275.8621	5%	50.86317	0.88773	50.33117	0.878445	5996.536	5677.739	1.019111	5835.629	4119.063	1053.538	-0.20939
40	160	8500	5835.838	0.012908	0.364129	0.351222	4250	773.7749	4099.347	719.8899	0.343496	19.68089	273.9022	273.9022	288.9144	5%	50.90422	0.888446	50.37222	0.879161	6004.186	5670.261	1.019117	5835.643	4113.049	963.0452	-0.19551
40	170	8500	5835.838	0.013716	0.364129	0.350413	4250	773.7749	4089.91	716.5795	0.343138	19.66035	285.9187	285.9187	301.9671	6%	50.9453	0.889163	50.4133	0.879878	6011.854	5662.769	1.019122	5835.659	4107.041	883.7972	-0.1797
40	180	8500	5835.838	0.014525	0.364129	0.349605	4250	773.7749	4080.472	713.2758	0.342779	19.6398	297.9243	297.9243	315.0201	6%	50.98639	0.88988	50.45439	0.880595	6019.54	5655.264	1.019128	5835.676	4101.038	814.003	-0.16196
40	190	8500	5835.838	0.015334	0.364129	0.348796	4250	773.7749	4071.031	709.979	0.34242	19.61925	309.919	309.919	328.0734	6%	51.02751	0.890598	50.49551	0.881313	6027.243	5647.745	1.019133	5835.696	4095.041	752.2143	-0.14227
40	200	8500	5835.838	0.016143	0.364129	0.347987	4250	773.7749	4061.587	706.6889	0.342061	19.59868	321.9027	321.9027	341.1271	6%	51.06864	0.891316	50.53664	0.882031	6034.964	5640.213	1.019139	5835.718	4089.049	697.2499	-0.12064
40	210	8500	5835.838	0.016952	0.364129	0.347177	4250	773.7749	4052.141	703.4057	0.341702	19.5781	333.8757	333.8757	354.1813	6%	51.1098	0.892034	50.5778	0.882749	6042.702	5632.668	1.019145	5835.741	4083.062	648.1392	-0.09707
40	220	8500	5835.838	0.017762	0.364129	0.346368	4250	773.7749	4042.693	700.1293	0.341343	19.55751	345.8378	345.8378	367.2358	6%	51.15098	0.892753	50.61898	0.883468	6050.458	5625.11	1.01915	5835.767	4077.081	604.0779	-0.07155
40	230	8500	5835.838	0.018571	0.364129	0.345558	4250	773.7749	4033.242	696.8596	0.340983	19.53691	357.7891	357.7891	380.2907	6%	51.19218	0.893472	50.66018	0.884187	6058.232	5617.537	1.019156	5835.794	4071.105	564.3956	-0.04409
40	240	8500	5835.838	0.019381	0.364129	0.344748	4250	773.7749	4023.789	693.5969	0.340624	19.5163	369.7297	369.7297	393.3461	6%	51.2334	0.894192	50.7014	0.884906	6066.024	5609.952	1.019162	5835.824	4065.135	528.5296	-0.01469
40	40	9000	6179.123	0.003043	0.364129	0.361087	4500	819.291	4462.396	805.6555	0.347862	19.93105	133.5618	133.5618	137.0163	3%	50.40391	0.879714	49.87191	0.870429	6259.612	6099.65	1.019053	6178.876	4433.219	4540.673	-0.24635
40	50	9000	6179.123	0.003804	0.364129	0.360325	4500	819.291	4452.989	802.2624	0.347526	19.91177	145.7142	145.7142	150.0659	3%	50.44246	0.880387	49.91046	0.871102	6267.071	6092.316	1.019057	6178.869	4427.143	3814.884	-0.25417
40	60	9000	6179.123	0.004565	0.364129	0.359564	4500	819.291	4443.58	798.8757	0.347189	19.89249	157.8559	157.8559	163.1157	3%	50.48102	0.88106	49.94902	0.871775	6274.545	6084.97	1.019062	6178.863	4421.072	3250.598	-0.26018
40	70	9000	6179.123	0.005327	0.364129	0.358802	4500	819.291	4434.169	795.4953	0.346853	19.8732	169.9871	169.9871	176.1656	4%	50.51961	0.881734	49.98761	0.872448	6282.036	6077.612	1.019067	6178.858	4415.006	2803.194	-0.26437
40	80	9000	6179.123	0.006089	0.364129	0.358041	4500	819.291	4424.755	792.1212	0.346516	19.85389	182.1077	182.1077	189.2158	4%	50.55821	0.882407	50.02621	0.873122	6289.542	6070.241	1.019072	6178.856	4408.946	2442.466	-0.26674
40	90	9000	6179.123	0.006851	0.364129	0.357279	4500	819.291	4415.339	788.7535	0.346179	19.83458	194.2177	194.2177	202.2661	4%	50.59684	0.883081	50.06484	0.873796	6297.064	6062.859	1.019076	6178.856	4402.891	2147.372	-0.2673
40	100	9000	6179.123	0.007613	0.364129	0.356517	4500	819.291	4405.921	785.3922	0.345842	19.81526	206.3172	206.3172	215.3166	4%	50.63548	0.883756	50.10348	0.874471	6304.603	6055.465	1.019081	6178.857	4396.841	1902.891	-0.26603
40	110	9000	6179.123	0.008375	0.364129	0.355754	4500	819.291	4396.5	782.0372	0.345504	19.79593	218.4063	218.4063	228.3674	5%	50.67414	0.884431	50.14214	0.875145	6312.157	6048.059	1.019086	6178.86	4390.797	1698.067	-0.26295
40	120	9000	6179.123	0.009137	0.364129	0.354992	4500	819.291	4387.078	778.6886	0.345167	19.77659	230.4848	230.4848	241.4183	5%	50.71282	0.885106	50.18082	0.875821	6319.728	6040.641	1.019091	6178.865	4384.758	1524.756	-0.25804
40	130	9000	6179.123	0.0099	0.364129	0.354229	4500	819.291	4377.653	775.3464	0.344829	19.75724	242.5529	242.5529	254.4696	5%	50.75152	0.885781	50.21952	0.876496	6327.315	6033.21	1.019096	6178.872	4378.724	1376.803	-0.25131
40	140	9000	6179.123	0.010663	0.364129	0.353466	4500	819.291	4368.225	772.0106	0.344491	19.73788	254.6106	254.6106	267.521	5%	50.79024	0.886457	50.25824	0.877172	6334.918	6025.767	1.019101	6178.88	4372.695	1249.488	-0.24276
40	150	9000	6179.123	0.011426	0.364129	0.352703	4500	819.291	4358.796	768.6811	0.344153	19.71851	266.6579	266.6579	280.5728	5%	50.82898	0.887133	50.29698	0.877848	6342.537	6018.312	1.019107	6178.89	4366.671	1139.137	-0.23238
40	160	9000	6179.123	0.012189	0.364129	0.35194	4500	819.291	4349.364	765.3581	0.343815	19.69913	278.6948	278.6948	293.6248	5%	50.86773	0.887809	50.33573	0.878524	6350.172	6010.845	1.019112	6178.903	4360.653	1042.863	-0.22017
40	170	9000	6179.123	0.012953	0.364129	0.351177	4500	819.291	4339.93	762.0414	0.343476	19.67975	290.7213	290.7213	306.6772	5%	50.9065	0.888486	50.3745	0.879201	6357.824	6003.365	1.019117	6178.917	4354.639	958.3658	-0.20614
40	180	9000	6179.123	0.013716	0.364129	0.350413	4500	819.291	4330.493	758.7312	0.343138	19.66035	302.7375	302.7375	319.7298	6%	50.9453	0.889163	50.4133	0.879878	6365.493	5995.873	1.019122	6178.933	4348.631	883.7972	-0.19027
40	190	9000	6179.123	0.01448	0.364129	0.34965	4500	819.291	4321.055	755.4274	0.342799	19.64095	314.7433	314.7433	332.7828	6%	50.98411	0.889841	50.45211	0.880555	6373.178	5988.368	1.019127	6178.95	4342.628	817.6584	-0.17258
40	200	9000	6179.123	0.015244	0.364129	0.348886	4500	819.291	4311.614	752.1299	0.34246	19.62153	326.7389	326.7389	345.8361	6%	51.02294	0.890518	50.49094	0.881233	6380.879	5980.851	1.019133	6178.97	4336.631	758.7231	-0.15305
40	210	9000	6179.123	0.016008	0.364129	0.348121	4500	819.291	4302.171	748.8389	0.342121	19.60211	338.7242	338.7242	358.8898	6%	51.06179	0.891196	50.52979	0.881911	6388.598	5973.321	1.019138	6178.991	4330.638	705.9802	-0.1317
40	220	9000	6179.123	0.016772	0.364129	0.347357	4500	819.291	4292.725	745.5544	0.341782	19.58267	350.6993	350.6993	371.9439	6%	51.10065	0.891875	50.56865	0.88259	6396.333	5965.778	1.019143	6179.014	4324.65	658.5903	-0.1085
40	230	9000	6179.123	0.017537	0.364129	0.346593	4500	819.291	4283.277	742.2763	0.341443	19.56323	362.6641	362.6641	384.9983	6%	51.13954	0.892553	50.60754	0.883268	6404.084	5958.223	1.019149	6179.039	4318.668	615.8514	-0.08347
40	240	9000	6179.123	0.018301	0.364129	0.345828	4500	819.291	4273.827	739.0046	0.341103	19.54378	374.6187	374.6187	398.0531	6%	51.17845	0.893232	50.64645	0.883947	6411.853	5950.655	1.019154	6179.066	4312.691	577.1732	-0.05661
40	40	9500	6522.407	0.002883	0.364129	0.361247	4750	864.8072	4712.397	851.169	0.347933	19.9351	138.28	138.28	141.7284	2%	50.39579	0.879573	49.86379	0.870287	6605.713	6440.148	1.019052	6522.149	4680.86	4719.854	-0.25806
40	50	9500	6522.407	0.003604	0.364129	0.360526	4750	864.8072	4702.991	847.7744	0.347615	19.91685	150.4349	150.4349	154.778	3%	50.43231	0.88021	49.90031	0.870925	6613.168	6432.817	1.019056	6522.141	4674.783	3987.955	-0.2663
40	60	9500	6522.407	0.004325	0.364129	0.359804	4750	864.8072	4693.582	844.3858	0.347296	19.89858	162.5797	162.5797	167.8277	3%	50.46884	0.880847	49.93684	0.871562	6620.638	6425.474	1.01906	6522.135	4668.71	3414.403	-0.27284
40	70	9500	6522.407	0.005046	0.364129	0.359083	4750	864.8072	4684.172	841.0033	0.346977	19.8803	174.7144	174.7144	180.8776	4%	50.50539	0.881485	49.97339	0.8722	6628.123	6418.12	1.019065	6522.13	4662.643	2956.58	-0.27765
40	80	9500	6522.407	0.005768	0.364129	0.358361	4750	864.8072	4674.759	837.6267	0.346658	19.86202	186.8392	186.8392	193.9277	4%	50.54196	0.882124	50.00996	0.872838	6635.623	6410.754	1.01907	6522.127	4656.58	2585.302	-0.28074
40	90	9500	6522.407	0.00649	0.364129	0.35764	4750	864.8072	4665.344	834.2562	0.346338	19.84373	198.954	198.954	206.9779	4%	50.57854	0.882762	50.04654	0.873477	6643.138	6403.378	1.019074	6522.125	4650.523	2280.038	-0.28211
40	100	9500	6522.407	0.007212	0.364129	0.356918	4750	864.8072	4655.927	830.8917	0.346019	19.82543	211.0587	211.0587	220.0283	4%	50.61514	0.883401	50.08314	0.874116	6650.668	6395.989	1.019079	6522.126	4644.471	2026.005	-0.28175
40	110	9500	6522.407	0.007934	0.364129	0.356196	4750	864.8072	4646.508	827.5332	0.345699	19.80712	223.1536	223.1536	233.0789	4%	50.65176	0.88404	50.11976	0.874755	6658.214	6388.59	1.019083	6522.128	4638.423	1812.339	-0.27967
40	120	9500	6522.407	0.008656	0.364129	0.355474	4750	864.8072	4637.086	824.1807	0.34538	19.7888	235.2385	235.2385	246.1298	5%	50.68839	0.884679	50.15639	0.875394	6665.775	6381.179	1.019088	6522.132	4632.381	1630.912	-0.27587
40	130	9500	6522.407	0.009378	0.364129	0.354751	4750	864.8072	4627.663	820.8343	0.34506	19.77048	247.3134	247.3134	259.1808	5%	50.72504	0.885319	50.19304	0.876034	6673.351	6373.756	1.019093	6522.137	4626.343	1475.543	-0.27034
40	140	9500	6522.407	0.010101	0.364129	0.354029	4750	864.8072	4618.237	817.4939	0.34474	19.75215	259.3785	259.3785	272.2321	5%	50.76171	0.885959	50.22971	0.876674	6680.942	6366.322	1.019098	6522.144	4620.311	1341.464	-0.26308
40	150	9500	6522.407	0.010824	0.364129	0.353306	4750	864.8072	4608.809	814.1596	0.34442	19.7338	271.4337	271.4337	285.2837	5%	50.79839	0.886599	50.26639	0.877314	6688.549	6358.877	1.019103	6522.153	4614.283	1224.953	-0.2541
40	160	9500	6522.407	0.011546	0.364129	0.352583	4750	864.8072	4599.379	810.8313	0.3441	19.71545	283.4791	283.4791	298.3355	5%	50.83509	0.88724	50.30309	0.877955	6696.171	6351.419	1.019107	6522.164	4608.26	1123.066	-0.24338

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
40	170	9500	6522.407	0.012269	0.364129	0.35186	4750	864.8072	4589.947	807.5091	0.343779	19.69709	295.5146	295.5146	311.3876	5%	50.87181	0.887881	50.33981	0.878595	6703.809	6343.95	1.019112	6522.176	4602.243	1033.45	-0.23094
40	180	9500	6522.407	0.012993	0.364129	0.351137	4750	864.8072	4580.513	804.193	0.343459	19.67873	307.5403	307.5403	324.4399	5%	50.90855	0.888522	50.37655	0.879237	6711.462	6336.469	1.019117	6522.191	4596.23	954.2081	-0.21676
40	190	9500	6522.407	0.013716	0.364129	0.350413	4750	864.8072	4571.076	800.8829	0.343138	19.66035	319.5562	319.5562	337.4926	6%	50.9453	0.889163	50.4133	0.879878	6719.131	6328.977	1.019122	6522.207	4590.222	883.7972	-0.20085
40	200	9500	6522.407	0.01444	0.364129	0.34969	4750	864.8072	4561.638	797.5789	0.342817	19.64197	331.5624	331.5624	350.5456	6%	50.98207	0.889805	50.45007	0.88052	6726.816	6321.472	1.019127	6522.224	4584.219	820.9501	-0.1832
40	210	9500	6522.407	0.015163	0.364129	0.348966	4750	864.8072	4552.197	794.281	0.342496	19.62357	343.5588	343.5588	363.5989	6%	51.01885	0.890447	50.48685	0.881162	6734.516	6313.956	1.019132	6522.244	4578.221	764.6192	-0.16382
40	220	9500	6522.407	0.015887	0.364129	0.348242	4750	864.8072	4542.754	790.9892	0.342175	19.60517	355.5454	355.5454	376.6525	6%	51.05565	0.891089	50.52365	0.881804	6742.232	6306.428	1.019137	6522.265	4572.227	713.9324	-0.1427
40	230	9500	6522.407	0.016611	0.364129	0.347518	4750	864.8072	4533.309	787.7034	0.341854	19.58676	367.5223	367.5223	389.7065	6%	51.09247	0.891732	50.56047	0.882447	6749.964	6298.887	1.019142	6522.288	4566.239	668.1589	-0.11985
40	240	9500	6522.407	0.017335	0.364129	0.346794	4750	864.8072	4523.862	784.4238	0.341532	19.56835	379.4896	379.4896	402.7608	6%	51.12931	0.892375	50.59731	0.88309	6757.712	6291.335	1.019147	6522.312	4560.255	626.6824	-0.09525
40	40	10000	6865.692	0.002738	0.364129	0.361391	5000	910.3234	4962.398	896.6828	0.347997	19.93875	142.9977	142.9977	146.4405	2%	50.38849	0.879445	49.85649	0.87016	6951.814	6780.645	1.019051	6865.422	4928.501	4890.373	-0.26968
40	50	10000	6865.692	0.003423	0.364129	0.360706	5000	910.3234	4952.992	893.2868	0.347694	19.92141	155.1548	155.1548	159.4901	3%	50.42318	0.88005	49.89118	0.870765	6959.266	6773.316	1.019055	6865.414	4922.423	4154.028	-0.27832
40	60	10000	6865.692	0.004109	0.364129	0.360021	5000	910.3234	4943.584	889.8966	0.347391	19.90406	167.3024	167.3024	172.5398	3%	50.45788	0.880656	49.92588	0.871371	6966.732	6765.977	1.019059	6865.407	4916.349	3572.693	-0.28532
40	70	10000	6865.692	0.004794	0.364129	0.359336	5000	910.3234	4934.174	886.5121	0.347088	19.8867	179.4404	179.4404	185.5896	3%	50.4926	0.881262	49.9606	0.871977	6974.212	6758.626	1.019063	6865.401	4910.28	3105.699	-0.29069
40	80	10000	6865.692	0.005479	0.364129	0.35865	5000	910.3234	4924.762	883.1333	0.346785	19.86934	191.5689	191.5689	198.6396	4%	50.52733	0.881868	49.99533	0.872583	6981.706	6751.265	1.019068	6865.398	4904.216	2724.895	-0.29443
40	90	10000	6865.692	0.006165	0.364129	0.357965	5000	910.3234	4915.348	879.7602	0.346482	19.85196	203.6879	203.6879	211.6898	4%	50.56208	0.882475	50.03008	0.87319	6989.215	6743.893	1.019072	6865.395	4898.156	2410.29	-0.29653
40	100	10000	6865.692	0.006851	0.364129	0.357279	5000	910.3234	4905.932	876.3928	0.346179	19.83458	215.7975	215.7975	224.7401	4%	50.59684	0.883081	50.06484	0.873796	6996.738	6736.51	1.019076	6865.395	4892.101	2147.372	-0.29699
40	110	10000	6865.692	0.007536	0.364129	0.356593	5000	910.3234	4896.514	873.0312	0.345875	19.81719	227.8975	227.8975	237.7906	4%	50.63162	0.883688	50.09962	0.874403	7004.276	6729.117	1.019081	6865.396	4886.051	1925.399	-0.29582
40	120	10000	6865.692	0.008222	0.364129	0.355907	5000	910.3234	4887.094	869.6752	0.345572	19.7998	239.9881	239.9881	250.8413	5%	50.66641	0.884296	50.13441	0.875011	7011.828	6721.712	1.019085	6865.399	4880.006	1736.283	-0.29301
40	130	10000	6865.692	0.008909	0.364129	0.355221	5000	910.3234	4877.672	866.325	0.345268	19.78239	252.0693	252.0693	263.8922	5%	50.70122	0.884903	50.16922	0.875618	7019.394	6714.297	1.01909	6865.403	4873.965	1573.838	-0.28856
40	140	10000	6865.692	0.009595	0.364129	0.354534	5000	910.3234	4868.248	862.9806	0.344964	19.76498	264.1411	264.1411	276.9434	5%	50.73604	0.885511	50.20404	0.876226	7026.975	6706.871	1.019094	6865.41	4867.929	1433.271	-0.28247
40	150	10000	6865.692	0.010281	0.364129	0.353848	5000	910.3234	4858.821	859.6419	0.34466	19.74756	276.2034	276.2034	289.9947	5%	50.77088	0.886119	50.23888	0.876834	7034.571	6699.434	1.019099	6865.417	4861.898	1310.816	-0.27474
40	160	10000	6865.692	0.010968	0.364129	0.353161	5000	910.3234	4849.393	856.3089	0.344356	19.73013	288.2564	288.2564	303.0463	5%	50.80573	0.886727	50.27373	0.877442	7042.181	6691.985	1.019103	6865.427	4855.872	1203.489	-0.26536
40	170	10000	6865.692	0.011655	0.364129	0.352474	5000	910.3234	4839.963	852.9817	0.344052	19.7127	300.3001	300.3001	316.0982	5%	50.8406	0.887336	50.3086	0.878051	7049.806	6684.526	1.019108	6865.438	4849.85	1108.892	-0.25434
40	180	10000	6865.692	0.012342	0.364129	0.351788	5000	910.3234	4830.53	849.6603	0.343747	19.69526	312.3343	312.3343	329.1503	5%	50.87548	0.887945	50.34348	0.87866	7057.446	6677.055	1.019113	6865.45	4843.833	1025.087	-0.24168
40	190	10000	6865.692	0.013029	0.364129	0.3511	5000	910.3234	4821.096	846.3446	0.343443	19.67781	324.3593	324.3593	342.2027	6%	50.91038	0.888554	50.37838	0.879269	7065.101	6669.574	1.019117	6865.465	4837.82	950.4893	-0.22737
40	200	10000	6865.692	0.013716	0.364129	0.350413	5000	910.3234	4811.659	843.0346	0.343138	19.66035	336.375	336.375	355.2554	6%	50.9453	0.889163	50.4133	0.879878	7072.77	6662.081	1.019122	6865.481	4831.813	883.7972	-0.21142
40	210	10000	6865.692	0.014403	0.364129	0.349726	5000	910.3234	4802.221	839.7305	0.342833	19.64289	348.3814	348.3814	368.3083	6%	50.98023	0.889773	50.44823	0.880488	7080.454	6654.577	1.019127	6865.498	4825.809	823.9297	-0.19381
40	220	10000	6865.692	0.015091	0.364129	0.349038	5000	910.3234	4792.78	836.4321	0.342528	19.62541	360.3785	360.3785	381.3616	6%	51.01517	0.890383	50.48317	0.881098	7088.153	6647.061	1.019132	6865.517	4819.811	769.9851	-0.17456
40	230	10000	6865.692	0.015779	0.364129	0.348351	5000	910.3234	4783.337	833.1395	0.342223	19.60793	372.3663	372.3663	394.4152	6%	51.05013	0.890993	50.51813	0.881708	7095.867	6639.534	1.019136	6865.538	4813.817	721.2057	-0.15366
40	240	10000	6865.692	0.016466	0.364129	0.347663	5000	910.3234	4773.893	829.8527	0.341918	19.59045	384.345	384.345	407.4691	6%	51.08511	0.891603	50.55311	0.882318	7103.596	6631.996	1.019141	6865.561	4807.828	676.9516	-0.13111
45	40	1000	603.2837	0.030791	0.414399	0.383607	500	103.5997	462.8482	88.776	0.379647	21.75215	60.17272	60.17272	65.85059	9%	46.7617	0.816146	46.2297	0.80686	635.3328	571.9306	1.01877	603.337	469.9136	276.1854	0.0533
45	50	1000	603.2837	0.03854	0.414399	0.375858	500	103.5997	453.4985	85.2256	0.3763	21.56039	72.57975	72.57975	80.0059	10%	47.14522	0.822839	46.61322	0.813554	642.516	565.0084	1.018785	603.4016	463.7101	189.8319	0.117942
45	60	1000	603.2837	0.04631	0.414399	0.368089	500	103.5997	444.1243	81.73866	0.372935	21.36762	84.86613	84.86613	94.16924	11%	47.53076	0.829568	46.99876	0.820283	649.8424	557.983	1.018803	603.4849	457.5669	138.8453	0.201227
45	70	1000	603.2837	0.054099	0.414399	0.3603	500	103.5997	434.7258	78.31577	0.369553	21.17384	97.03448	97.03448	108.342	12%	47.91833	0.836333	47.38633	0.827047	657.3166	550.8501	1.018825	603.587	451.4828	106.2057	0.303291
45	80	1000	603.2837	0.061909	0.414399	0.35249	500	103.5997	425.3031	74.95757	0.366153	20.97904	109.0874	109.0874	122.5256	12%	48.30791	0.843132	47.77591	0.833847	664.9434	543.6054	1.018851	603.7079	445.4563	84.03325	0.424267
45	90	1000	603.2837	0.069738	0.414399	0.344661	500	103.5997	415.8563	71.66467	0.362736	20.78324	121.0273	121.0273	136.7216	13%	48.69951	0.849967	48.16751	0.840682	672.728	536.2443	1.018881	603.848	439.4863	68.27053	0.56429
45	100	1000	603.2837	0.077587	0.414399	0.336811	500	103.5997	406.3857	68.43769	0.359301	20.58644	132.8568	132.8568	150.9313	14%	49.09313	0.856837	48.56113	0.847552	680.6756	528.7619	1.018914	604.0072	433.5716	56.65422	0.723491
45	110	1000	603.2837	0.085456	0.414399	0.328943	500	103.5997	396.8914	65.27724	0.355849	20.38862	144.5784	144.5784	165.1561	14%	49.48875	0.863742	48.95675	0.854457	688.7918	521.1531	1.018952	604.1857	427.7108	47.84021	0.902003
45	120	1000	603.2837	0.093345	0.414399	0.321054	500	103.5997	387.3735	62.18393	0.352379	20.18981	156.1945	156.1945	179.3976	15%	49.88638	0.870682	49.35438	0.861396	697.0824	513.4127	1.018993	604.3836	421.9027	40.98911	1.099956
45	130	1000	603.2837	0.101252	0.414399	0.313146	500	103.5997	377.8322	59.15839	0.348891	19.99	167.7075	167.7075	193.6572	15%	50.286	0.877656	49.754	0.868371	705.5533	505.535	1.019038	604.6011	416.1462	35.55452	1.31748
45	140	1000	603.2837	0.109179	0.414399	0.305219	500	103.5997	368.2677	56.20123	0.345387	19.78919	179.1199	179.1199	207.9363	16%	50.68762	0.884666	50.15562	0.875381	714.211	497.5143	1.019088	604.8384	410.44	31.16824	1.554703
45	150	1000	603.2837	0.117125	0.414399	0.297273	500	103.5997	358.6803	53.31305	0.341864	19.58739	190.434	190.434	222.2364	17%	51.09122	0.89171	50.55922	0.882425	723.0621	489.3444	1.019142	605.0954	404.783	27.57472	1.811752
45	160	1000	603.2837	0.12509	0.414399	0.289308	500	103.5997	349.0701	50.49446	0.338325	19.3846	201.6521	201.6521	236.5241	17%	51.49679	0.898789	50.96479	0.889503	732.1136	481.0189	1.019201	605.3724	399.1739	24.59203	2.088752
45	170	1000	603.2837	0.133074	0.414399	0.281325	500	103.5997	339.4373	47.74607	0.334769	19.18083	212.7767	212.7767	250.9057	18%	51.90434	0.905902	51.37234	0.896616	741.3727	472.531	1.019264	605.6695	393.6117	22.08778	2.385827
45	180	1000	603.2837	0.141076	0.414399	0.273323	500	103.5997	329.7822	45.06848	0.331195	18.97608	223.8099	223.8099	265.2779	19%	52.31384	0.913049	51.78184	0.903764	750.8471	463.8737	1.019332	605.9868	388.0951	19.96372	2.7031
45	190	1000	603.2837	0.149097	0.414399	0.265302	500	103.5997	320.105	42.46228	0.327604	18.77035	234.754	234.754	279.677	19%	52.72529	0.92023	52.19329	0.910945	760.5449	455.0394	1.019404	606.3244	382.623	18.14571	3.040691
45	200	1000	603.2837	0.157135	0.414399	0.257264	500	103.5997	310.4059	39.92807	0.323997	18.56366	245.6114	245.6114	294.1046	20%	53.13869	0.927445	52.60669	0.91816	770.4745	446.0203	1.019482	606.6824	377.1943	16.57688	3.398719
45	210	1000	603.2837	0.165192	0.414399	0.249207	500	103.5997	300.6852	37.46645	0.320373	18.356	256.3843	256.3843	308.5623	20%	53.55401	0.934694	53.02201	0.925409	780.6447	436.8082	1.019565	607.061	371.8078	15.21308	3.7773
45	220	1000	603.2837	0.173266	0.414399	0.241133	500	103.5997	290.9431	35.07799	0.316731	18.14738	267.0748	267.0748	323.0516	21%	53.97125	0.941976	53.43925	0.932691	791.0649	427.3944	1.019653	607.4602	366.4626	14.01955	4.176549
45	230	1000	603.2837	0.181357	0.414399	0.233041	500	103.5997	281.18	32.76327	0.313074	17.9378	277.6853	277.6853	337.574	22%	54.39039	0.949291	53.85839	0.940006	801.7449	417.7696	1.019747	607.8802	361.1574	12.96864	4.596578
45	240	1000	603.2837	0.189466	0.414399	0.224932	500	103.5997	271.396	30.52287	0.3094	17.72729	288.2177	288.2177	352.1312	22%	54.81143	0.95664	54.27943	0.947355	812.695	407.9243	1.019846	608.3212	355.8911	12.03812	5.037498
45	40	1500	904.9255	0.020491	0.414399	0.393908	750	155.3995	712.9143	140.4112	0.384082	22.00626	65.1567	65.1567	70.48026	8%	46.25349	0.807276	45.72149	0.797991	938.9553	871.51	1.018755	904.9193	717.4216	529.9859	-0.00618
45	50	1500	904.9255	0.025637	0.414399	0.388762	750	155.3995	703.6015	136.7668	0.381868	21.87943	77.74958	77.74958	84.62619	9%	46.50714	0.811703	45.97514	0.802418	945.932	864.7352	1.018762	904.9562	711.1252	372.2086	0.030744
45	60	1500	904.9255	0.030791	0.414399	0.383607	750	155.3995	694.2723	133.164	0.379647	21.75215	90.25908	90.25908	98.77588	9%	46.7617	0.816146	46.2297	0.80686	952.9992	857.8959	1.01877	905.0054	704.8705	276.1854	0.079951
45	70	1500	904.9255	0.035955	0.414399	0.378444	750	155.3995	684.9266	129.6031	0.377417	21.62442	102.6864	102.6864	112.93	10%	47.01715	0.820604	46.48515	0.811319	960.1589	850.9906	1.018779	905.067	698.6568	213.3814	0.141495
45	80	1500	904.9255	0.041128	0.414399	0.373271	750	155.3995	675.5647	126.0843	0.37518	21.49625	115.0327	115.0327	127.0891	10%	47.27351	0.825078	46.74151	0.815793	967.413	844.0174	1.018791	905.1409	692.4836	170.0355	0.215439
45	90	1500	904.9255	0.04631	0.414399	0.368089	750	155.3995	666.1864	122.608	0.372935	21.36762	127.2992	127.2992	141.2539	11%	47.53076	0.829568	46.99876	0.820283	974.7636	836.9745	1.018803	905.2273	686.3504	138.8453	0.301841
45	100	1500	904.9255	0.0515	0.414399	0.362898	750	155.3995	656.792	119.1744	0.370683	21.23854	139.487	139.487	155.4249	11%	47.78891	0.834074	47.25691	0.824789	982.2127	829.8599	1.018818	905.3263	680.2565	115.6419	0.400762
45	110	1500	904.9255	0.0567	0.414399	0.357699	750	155.3995	647.3813	115.7837	0.368422	21.10902	151.5972	151.5972	169.6029	12%	48.04796	0.838595	47.51596	0.82931	989.7625	822.6718	1.018834	905.4378	674.2014	97.90392	0.512262
45	120	1500	904.9255	0.061909	0.414399	0.35249	750	155.3995	637.9546	112.4364	0.366153	20.97904	163.631	163.631	183.7885	12%	48.30791	0.843132	47.77591	0.833847	997.4152	815.4082	1.018851	905.5619	668.1845	84.03325	0.636401
45	130	1500	904.9255	0.067126	0.414399	0.347273	750	155.3995	628.5119	109.1325	0.363877	20.84862	175.5896	175.5896	197.9822	13%	48.56876	0.847685	48.03676	0.8384	1005.173	808.0669	1.018871	905.6987	662.2052	72.97685	0.773236
45	140	1500	904.9255	0.072352	0.414399	0.342046	750	155.3995	619.0532	105.8725	0.361593	20.71775	187.4739	187.4739	212.1848	13%	48.8305	0.852253	48.2985	0.842968	1013.038	800.6458	1.018891	905.8483	656.263	64.0178	0.922829
45	150	1500	904.9255	0.077587	0.414399	0.336811	750	155.3995	609.5786	102.6565	0.359301	20.58644	199.2852	199.2852	226.3969	14%	49.09313	0.856837	48.56113	0.847552	1021.013	793.1428	1.018914	906.0107	650.3574	56.65422	1.085236

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
45	160	1500	904.9255	0.082831	0.414399	0.331568	750	155.3995	600.0882	99.48493	0.357001	20.45467	211.0246	211.0246	240.6191	14%	49.35666	0.861436	48.82466	0.852151	1029.101	785.5556	1.018939	906.186	644.4877	50.52617	1.260518
45	170	1500	904.9255	0.088083	0.414399	0.326315	750	155.3995	590.582	96.35797	0.354694	20.32246	222.6931	222.6931	254.852	14%	49.62107	0.866051	49.08907	0.856766	1037.303	777.8818	1.018965	906.3742	638.6535	45.37003	1.448731
45	180	1500	904.9255	0.093345	0.414399	0.321054	750	155.3995	581.0602	93.2759	0.352379	20.18981	234.2918	234.2918	269.0964	15%	49.88638	0.870682	49.35438	0.861396	1045.624	770.119	1.018993	906.5754	632.8541	40.98911	1.649934
45	190	1500	904.9255	0.098614	0.414399	0.315784	750	155.3995	571.5228	90.23901	0.350056	20.05671	245.8218	245.8218	283.3528	15%	50.15257	0.875328	49.62057	0.866042	1054.064	762.2648	1.019023	906.7897	627.0891	37.23419	1.864185
45	200	1500	904.9255	0.103893	0.414399	0.310506	750	155.3995	561.9699	87.24757	0.347725	19.92317	257.2841	257.2841	297.622	16%	50.41965	0.879989	49.88765	0.870704	1062.627	754.3165	1.019054	907.017	621.3579	33.99043	2.091539
45	210	1500	904.9255	0.109179	0.414399	0.305219	750	155.3995	552.4016	84.30184	0.345387	19.78919	268.6799	268.6799	311.9045	16%	50.68762	0.884666	50.15562	0.875381	1071.317	746.2715	1.019088	907.2576	615.6601	31.16824	2.332055
45	220	1500	904.9255	0.114475	0.414399	0.299924	750	155.3995	542.818	81.40211	0.34304	19.65477	280.0101	280.0101	326.201	16%	50.95646	0.889358	50.42446	0.880073	1080.135	738.1271	1.019124	907.5113	609.9949	28.69691	2.585787
45	230	1500	904.9255	0.119778	0.414399	0.29462	750	155.3995	533.2191	78.54864	0.340687	19.51991	291.2759	291.2759	340.5121	17%	51.22619	0.894066	50.69419	0.88478	1089.085	729.8803	1.019161	907.7783	604.3621	26.52	2.852793
45	240	1500	904.9255	0.12509	0.414399	0.289308	750	155.3995	523.6051	75.74169	0.338325	19.3846	302.4782	302.4782	354.8386	17%	51.49679	0.898789	50.96479	0.889503	1098.17	721.5284	1.019201	908.0586	598.7609	24.59203	3.133128
45	40	2000	1206.567	0.015355	0.414399	0.399044	1000	207.1994	962.9474	192.1293	0.386287	22.13263	69.97236	69.97236	75.11662	7%	46.00074	0.802864	45.46874	0.793579	1242.756	1170.963	1.01875	1206.526	965.0138	816.9715	-0.04119
45	50	2000	1206.567	0.019206	0.414399	0.395193	1000	207.1994	953.6532	188.4384	0.384634	22.03789	82.66043	82.66043	89.25906	8%	46.19022	0.806171	45.65822	0.796886	1249.633	1164.258	1.018754	1206.549	958.6698	585.4162	-0.01801
45	60	2000	1206.567	0.023063	0.414399	0.391336	1000	207.1994	944.3466	184.7784	0.382976	21.9429	95.28485	95.28485	103.4037	9%	46.3802	0.809487	45.8482	0.800202	1256.577	1157.507	1.018758	1206.582	952.3576	440.5674	0.014333
45	70	2000	1206.567	0.026924	0.414399	0.387474	1000	207.1994	935.0276	181.1496	0.381313	21.84765	107.8463	107.8463	117.551	9%	46.5707	0.812812	46.0387	0.803527	1263.587	1150.709	1.018764	1206.623	946.0769	343.9137	0.055857
45	80	2000	1206.567	0.030791	0.414399	0.383607	1000	207.1994	925.6963	177.552	0.379647	21.75215	120.3454	120.3454	131.7012	9%	46.7617	0.816146	46.2297	0.80686	1270.666	1143.861	1.01877	1206.674	939.8273	276.1854	0.106601
45	90	2000	1206.567	0.034663	0.414399	0.379735	1000	207.1994	916.3528	173.9858	0.377975	21.6564	132.783	132.783	145.8547	10%	46.9532	0.819488	46.4212	0.810203	1277.814	1136.964	1.018777	1206.734	933.6085	226.8691	0.166599
45	100	2000	1206.567	0.03854	0.414399	0.375858	1000	207.1994	906.9969	170.4512	0.3763	21.56039	145.1595	145.1595	160.0118	10%	47.14522	0.822839	46.61322	0.813554	1285.032	1130.017	1.018785	1206.803	927.4203	189.8319	0.235884
45	110	2000	1206.567	0.042422	0.414399	0.371976	1000	207.1994	897.6289	166.9483	0.37462	21.46413	157.4757	157.4757	174.173	11%	47.33773	0.826199	46.80573	0.816914	1292.322	1123.018	1.018794	1206.882	921.2621	161.2994	0.314492
45	120	2000	1206.567	0.04631	0.414399	0.368089	1000	207.1994	888.2486	163.4773	0.372935	21.36762	169.7323	169.7323	188.3385	11%	47.53076	0.829568	46.99876	0.820283	1299.685	1115.966	1.018803	1206.97	915.1339	138.8453	0.402455
45	130	2000	1206.567	0.050202	0.414399	0.364197	1000	207.1994	878.8561	160.0383	0.371246	21.27085	181.9298	181.9298	202.5087	11%	47.72429	0.832946	47.19229	0.823661	1307.121	1108.86	1.018814	1207.067	909.0351	120.8516	0.499807
45	140	2000	1206.567	0.054099	0.414399	0.3603	1000	207.1994	869.4516	156.6315	0.369553	21.17384	194.069	194.069	216.684	12%	47.91833	0.836333	47.38633	0.827047	1314.633	1101.7	1.018825	1207.174	902.9655	106.2057	0.606582
45	150	2000	1206.567	0.058001	0.414399	0.356397	1000	207.1994	860.0349	153.2571	0.367855	21.07657	206.1504	206.1504	230.8648	12%	48.11287	0.839728	47.58087	0.830443	1322.221	1094.484	1.018838	1207.29	896.9248	94.12212	0.722813
45	160	2000	1206.567	0.061909	0.414399	0.35249	1000	207.1994	850.6062	149.9151	0.366153	20.97904	218.1747	218.1747	245.0513	12%	48.30791	0.843132	47.77591	0.833847	1329.887	1087.211	1.018851	1207.416	890.9126	84.03325	0.848534
45	170	2000	1206.567	0.065821	0.414399	0.348578	1000	207.1994	841.1654	146.6058	0.364447	20.88127	230.1426	230.1426	259.244	13%	48.50346	0.846545	47.97146	0.83726	1337.631	1079.879	1.018866	1207.551	884.9287	75.52071	0.983778
45	180	2000	1206.567	0.069738	0.414399	0.344661	1000	207.1994	831.7127	143.3293	0.362736	20.78324	242.0546	242.0546	273.4432	13%	48.69951	0.849967	48.16751	0.840682	1345.456	1072.489	1.018881	1207.696	878.9727	68.27053	1.128579
45	190	2000	1206.567	0.07366	0.414399	0.340739	1000	207.1994	822.248	140.0858	0.361021	20.68496	253.9114	253.9114	287.6492	13%	48.89607	0.853397	48.36407	0.844112	1353.362	1065.037	1.018897	1207.85	873.0443	62.04339	1.282969
45	200	2000	1206.567	0.077587	0.414399	0.336811	1000	207.1994	812.7714	136.8754	0.359301	20.58644	265.7137	265.7137	301.8625	14%	49.09313	0.856837	48.56113	0.847552	1361.351	1057.524	1.018914	1208.014	867.1432	56.65422	1.446982
45	210	2000	1206.567	0.081519	0.414399	0.332879	1000	207.1994	803.283	133.6982	0.357577	20.48765	277.4619	277.4619	316.0834	14%	49.29069	0.860285	48.75869	0.851	1369.425	1049.947	1.018932	1208.188	861.269	51.95809	1.62065
45	220	2000	1206.567	0.085456	0.414399	0.328943	1000	207.1994	793.7827	130.5545	0.355849	20.38862	289.1568	289.1568	330.3122	14%	49.48875	0.863742	48.95675	0.854457	1377.584	1042.306	1.018952	1208.371	855.4216	47.84021	1.804006
45	230	2000	1206.567	0.089398	0.414399	0.325001	1000	207.1994	784.2707	127.4443	0.354116	20.28934	300.799	300.799	344.5494	15%	49.68732	0.867207	49.15532	0.857922	1385.83	1034.599	1.018972	1208.564	849.6005	44.20865	1.997083
45	240	2000	1206.567	0.093345	0.414399	0.321054	1000	207.1994	774.7469	124.3679	0.352379	20.18981	312.389	312.389	358.7952	15%	49.88638	0.870682	49.35438	0.861396	1394.165	1026.825	1.018993	1208.767	843.8055	40.98911	2.199912
45	40	2500	1508.209	0.012277	0.414399	0.402122	1250	258.9992	1212.967	243.8803	0.387607	22.20824	74.71954	74.71954	79.75506	7%	45.84952	0.800225	45.31752	0.79094	1546.627	1470.367	1.018748	1508.143	1212.64	1119.468	-0.06647
45	50	2500	1508.209	0.015355	0.414399	0.399044	1250	258.9992	1203.684	240.1616	0.386287	22.13263	87.46545	87.46545	93.89578	7%	46.00074	0.802864	45.46874	0.793579	1553.445	1463.703	1.01875	1508.158	1206.267	816.9715	-0.05149
45	60	2500	1508.209	0.018435	0.414399	0.395963	1250	258.9992	1194.391	236.4676	0.384965	22.05686	100.1599	100.1599	108.038	8%	46.15228	0.805509	45.62028	0.796224	1560.316	1457.004	1.018753	1508.18	1199.92	623.0059	-0.02922
45	70	2500	1508.209	0.021519	0.414399	0.392879	1250	258.9992	1185.088	232.7984	0.38364	21.98093	112.8033	112.8033	122.182	8%	46.30415	0.80816	45.77215	0.798875	1567.239	1450.267	1.018757	1508.21	1193.598	491.1748	0.000371
45	80	2500	1508.209	0.024607	0.414399	0.389792	1250	258.9992	1175.776	229.1539	0.382311	21.90483	125.3962	125.3962	136.3279	9%	46.45634	0.810816	45.92434	0.801531	1574.216	1443.492	1.01876	1508.246	1187.302	397.4764	0.037298
45	90	2500	1508.209	0.027697	0.414399	0.386701	1250	258.9992	1166.453	225.5344	0.38098	21.82857	137.9389	137.9389	150.476	9%	46.60886	0.813478	46.07686	0.804193	1581.246	1436.679	1.018765	1508.291	1181.031	328.4783	0.081584
45	100	2500	1508.209	0.030791	0.414399	0.383607	1250	258.9992	1157.12	221.94	0.379647	21.75215	150.4318	150.4318	164.6265	9%	46.7617	0.816146	46.2297	0.80686	1588.332	1429.827	1.01877	1508.342	1174.784	276.1854	0.133251
45	110	2500	1508.209	0.033889	0.414399	0.38051	1250	258.9992	1147.778	218.3707	0.37831	21.67557	162.8754	162.8754	178.7796	10%	46.91486	0.818819	46.38286	0.809534	1595.473	1422.935	1.018775	1508.401	1168.562	235.5965	0.192321
45	120	2500	1508.209	0.036989	0.414399	0.37741	1250	258.9992	1138.426	214.8266	0.376971	21.59883	175.2702	175.2702	192.9356	10%	47.06835	0.821498	46.53635	0.812213	1602.67	1416.002	1.018782	1508.468	1162.365	203.4529	0.258817
45	130	2500	1508.209	0.040093	0.414399	0.374306	1250	258.9992	1129.064	211.3078	0.375628	21.52192	187.6165	187.6165	207.0947	10%	47.22216	0.824182	46.69016	0.814897	1609.924	1409.029	1.018788	1508.542	1156.192	177.5571	0.332758
45	140	2500	1508.209	0.0432	0.414399	0.371199	1250	258.9992	1119.692	207.8145	0.374283	21.44485	199.9147	199.9147	221.2571	11%	47.3763	0.826872	46.8443	0.817587	1617.236	1402.014	1.018796	1508.623	1150.043	156.3833	0.414168
45	150	2500	1508.209	0.04631	0.414399	0.368089	1250	258.9992	1110.311	204.3466	0.372935	21.36762	212.1653	212.1653	235.4231	11%	47.53076	0.829568	46.99876	0.820283	1624.606	1394.957	1.018803	1508.712	1143.917	138.8453	0.503068
45	160	2500	1508.209	0.049423	0.414399	0.364976	1250	258.9992	1100.919	200.9044	0.371585	21.29023	224.3687	224.3687	249.5928	11%	47.68554	0.83227	47.15354	0.822985	1632.035	1387.857	1.018812	1508.809	1137.816	124.1525	0.599479
45	170	2500	1508.209	0.05254	0.414399	0.361859	1250	258.9992	1091.519	197.488	0.370231	21.21267	236.5253	236.5253	263.7666	12%	47.84065	0.834977	47.30865	0.825692	1639.524	1380.714	1.018821	1508.913	1131.737	111.7184	0.703423
45	180	2500	1508.209	0.055659	0.414399	0.358739	1250	258.9992	1082.108	194.0973	0.368875	21.13496	248.6355	248.6355	277.9445	12%	47.99608	0.83769	47.46408	0.828405	1647.074	1373.526	1.01883	1509.024	1125.682	101.1006	0.814922
45	190	2500	1508.209	0.058782	0.414399	0.355616	1250	258.9992	1072.688	190.7326	0.367515	21.05708	260.6997	260.6997	292.127	12%	48.15184	0.840408	47.61984	0.831123	1654.685	1366.293	1.01884	1509.143	1119.65	91.95997	0.933996
45	200	2500	1508.209	0.061909	0.414399	0.35249	1250	258.9992	1063.258	187.3939	0.366153	20.97904	272.7184	272.7184	306.3141	12%	48.30791	0.843132	47.77591	0.833847	1662.359	1359.014	1.018851	1509.27	1113.641	84.03325	1.060668
45	210	2500	1508.209	0.065038	0.414399	0.349361	1250	258.9992	1053.818	184.0814	0.364789	20.90084	284.6919	284.6919	320.5062	13%	48.46431	0.845862	47.93231	0.836577	1670.095	1351.688	1.018863	1509.404	1107.654	77.11341	1.194958
45	220	2500	1508.209	0.068171	0.414399	0.346228	1250	258.9992	1044.369	180.795	0.363421	20.82248	296.6206	296.6206	334.7034	13%	48.62103	0.848597	48.08903	0.839312	1677.896	1344.315	1.018875	1509.546	1101.69	71.03584	1.336887
45	230	2500	1508.209	0.071306	0.414399	0.343092	1250	258.9992	1034.91	177.535	0.36205	20.74396	308.5049	308.5049	348.9059	13%	48.77808	0.851338	48.24608	0.842053	1685.761	1336.894	1.018887	1509.696	1095.748	65.66831	1.486478
45	240	2500	1508.209	0.074445	0.414399	0.339954	1250	258.9992	1025.442	174.3013	0.360677	20.66528	320.3453	320.3453	363.1141	13%	48.93544	0.854085	48.40344	0.844799	1693.692	1329.424	1.0189	1509.853	1089.827	60.90366	1.643751
45	40	3000	1809.851	0.010227	0.414399	0.404172	1500	310.7991	1462.981	295.6476	0.388485	22.25856	79.43215	79.43215	84.39436	6%	45.74889	0.798469	45.21689	0.789184	1850.532	1769.746	1.018747	1809.764	1460.284	1426.428	-0.0869
45	50	3000	1809.851	0.01279	0.414399	0.401609	1500	310.7991	1453.705	291.9105	0.387387	22.19565	92.21694	92.21694	98.5341	7%	45.8747	0.800665	45.3427	0.791379	1857.312	1763.11	1.018748	1809.774	1453.892	1058.33	-0.07737
45	60	3000	1809.851	0.015355	0.414399	0.399044	1500	310.7991	1444.421	288.194	0.386287	22.13263	104.9585	104.9585	112.6749	7%	46.00074	0.802864	45.46874	0.793579	1864.134	1756.444	1.01875	1809.789	1447.521	816.9715	-0.06179
45	70	3000	1809.851	0.017922	0.414399	0.396477	1500	310.7991	1435.129	284.4979	0.385185	22.0695	117.6573	117.6573	126.817	8%	46.127	0.805068	45.595	0.795783	1871.001	1749.748	1.018753	1809.811	1441.171	650.1372	-0.04012
45	80	3000	1809.851	0.020491	0.414399	0.393908	1500	310.7991	1425.829	280.8224	0.384082	22.00626	130.3134	130.3134	140.9605	8%	46.25349	0.807276	45.72149	0.797991	1877.911	1743.02	1.018755	1809.839	1434.843	529.9859	-0.01237
45	90	3000	1809.851	0.023063	0.414399	0.391336	1500	310.7991	1416.52	277.1677	0.382976	21.9429	142.9273	142.9273	155.1056	9%	46.3802	0.809487	45.8482	0.800202	1884.865	1736.261	1.018758	1809.872	1428.536	440.5674	0.021499
45	100	3000	1809.851	0.025637	0.414399	0.388762	1500	310.7991	1407.203	273.5336	0.381868	21.87943	155.4992	155.4992	169.2524	9%	46.50714	0.811703	45.97514	0.802418	1891.864	1729.47	1.018762	1809.912	1422.25	372.2086	0.061489
45	110	3000	1809.851	0.028213	0.414399	0.386186	1500	310.7991	1397.878	269.9204	0.380758	21.81585	168.0294	168.0294	183.401	9%	46.63431	0.813922	46.10231	0.804637	1898.908	1722.647	1.018766	1809.959	1415.985	318.7662	0.107618
45	120	3000	1809.851	0.030791	0.414399	0.383607	1500	310.7991	1388.545	266.328	0.379647	21.75215	180.5182	180.5182	197.5518	9%	46.7617	0.816146	46.2297	0.80686	1905.998	1715.792	1.01877	1810.011	1409.741	276.1854	0.159901
45	130	3000	1809.851	0.033372	0.414399	0.381027	1500	310.7991	1379.203	262.7566	0.378533	21.68834	192.9659	192.9659	211.7047	10%	46.88931	0.818373	46.35731	0.809088	1913.135	1708.903	1.018774	1810.069	1403.517	241.7026	0.218353
45	140	3000	1809.851	0.035955	0.414399	0.378444	1500	310.7991	1369.853	259.2061	0.377417	21.62442	205.3728	205.3728	225.8599	10%	47.01715	0.820604	46.48515	0.811319	1920.318	1701.981	1.018779	1810.134	1397.314	213.3814	0.28299

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
45	150	3000	1809.851	0.03854	0.414399	0.375858	1500	310.7991	1360.495	255.6768	0.3763	21.56039	217.7392	217.7392	240.0177	10%	47.14522	0.822839	46.61322	0.813554	1927.548	1695.025	1.018785	1810.205	1391.13	189.8319	0.353826
45	160	3000	1809.851	0.041128	0.414399	0.373271	1500	310.7991	1351.129	252.1686	0.37518	21.49625	230.0655	230.0655	254.1782	10%	47.27351	0.825078	46.74151	0.815793	1934.826	1688.035	1.018791	1810.282	1384.967	170.0355	0.430877
45	170	3000	1809.851	0.043718	0.414399	0.370681	1500	310.7991	1341.755	248.6817	0.374059	21.43199	242.3517	242.3517	268.3414	11%	47.40202	0.827321	46.87002	0.818036	1942.152	1681.01	1.018797	1810.365	1378.824	153.2323	0.514157
45	180	3000	1809.851	0.04631	0.414399	0.368089	1500	310.7991	1332.373	245.216	0.372935	21.36762	254.5984	254.5984	282.5077	11%	47.53076	0.829568	46.99876	0.820283	1949.527	1673.949	1.018803	1810.455	1372.701	138.8453	0.603682
45	190	3000	1809.851	0.048904	0.414399	0.365495	1500	310.7991	1322.982	241.7716	0.37181	21.30314	266.8057	266.8057	296.6771	11%	47.65972	0.831819	47.12772	0.822534	1956.951	1666.853	1.01881	1810.55	1366.597	126.4306	0.699466
45	200	3000	1809.851	0.0515	0.414399	0.362898	1500	310.7991	1313.584	238.3487	0.370683	21.23854	278.974	278.974	310.8498	11%	47.78891	0.834074	47.25691	0.824789	1964.425	1659.72	1.018818	1810.653	1360.513	115.6419	0.801525
45	210	3000	1809.851	0.054099	0.414399	0.3603	1500	310.7991	1304.177	234.9473	0.369553	21.17384	291.1034	291.1034	325.026	12%	47.91833	0.836333	47.38633	0.827047	1971.95	1652.55	1.018825	1810.761	1354.448	106.2057	0.909872
45	220	3000	1809.851	0.0567	0.414399	0.357699	1500	310.7991	1294.763	231.5675	0.368422	21.10902	303.1944	303.1944	339.2058	12%	48.04796	0.838595	47.51596	0.82931	1979.525	1645.344	1.018834	1810.876	1348.403	97.90392	1.024525
45	230	3000	1809.851	0.059303	0.414399	0.355096	1500	310.7991	1285.34	228.2092	0.367289	21.04409	315.2472	315.2472	353.3894	12%	48.17783	0.840862	47.64583	0.831577	1987.152	1638.099	1.018842	1810.996	1342.376	90.56075	1.145496
45	240	3000	1809.851	0.061909	0.414399	0.35249	1500	310.7991	1275.909	224.8727	0.366153	20.97904	327.2621	327.2621	367.5769	12%	48.30791	0.843132	47.77591	0.833847	1994.83	1630.816	1.018851	1811.124	1336.369	84.03325	1.272801
45	40	3500	2111.493	0.008764	0.414399	0.405635	1750	362.5989	1712.99	347.4242	0.389112	22.29445	84.1249	84.1249	89.0341	6%	45.67709	0.797216	45.14509	0.787931	2154.457	2069.112	1.018746	2111.388	1707.938	1730.96	-0.10456
45	50	3500	2111.493	0.010959	0.414399	0.40344	1750	362.5989	1703.72	343.6741	0.388172	22.2406	96.9376	96.9376	103.1732	6%	45.78481	0.799096	45.25281	0.789811	2161.209	2062.495	1.018747	2111.394	1701.531	1303.622	-0.09893
45	60	3500	2111.493	0.013156	0.414399	0.401243	1750	362.5989	1694.442	339.9414	0.38723	22.18666	109.7131	109.7131	117.3132	7%	45.89269	0.800979	45.36069	0.791693	2167.998	2055.853	1.018749	2111.405	1695.143	1017.698	-0.08811
45	70	3500	2111.493	0.015355	0.414399	0.399044	1750	362.5989	1685.158	336.2263	0.386287	22.13263	122.4516	122.4516	131.4541	7%	46.00074	0.802864	45.46874	0.793579	2174.824	2049.185	1.01875	2111.421	1688.774	816.9715	-0.07209
45	80	3500	2111.493	0.017555	0.414399	0.396844	1750	362.5989	1675.866	332.5288	0.385343	22.07853	135.1534	135.1534	145.5961	8%	46.10895	0.804753	45.57695	0.795468	2181.687	2042.49	1.018752	2111.442	1682.423	670.6287	-0.05086
45	90	3500	2111.493	0.019757	0.414399	0.394642	1750	362.5989	1666.568	328.8489	0.384397	22.02434	147.8186	147.8186	159.7393	8%	46.21733	0.806645	45.68533	0.797359	2188.587	2035.77	1.018755	2111.468	1676.091	560.6317	-0.02441
45	100	3500	2111.493	0.02196	0.414399	0.392438	1750	362.5989	1657.262	325.1867	0.38345	21.97007	160.4476	160.4476	173.8837	8%	46.32587	0.808539	45.79387	0.799254	2195.525	2029.022	1.018757	2111.5	1669.776	475.8497	0.007275
45	110	3500	2111.493	0.024166	0.414399	0.390233	1750	362.5989	1647.949	321.5423	0.382501	21.91571	173.0404	173.0404	188.0297	9%	46.43458	0.810436	45.90258	0.801151	2202.502	2022.247	1.01876	2111.537	1663.48	409.1109	0.044201
45	120	3500	2111.493	0.026372	0.414399	0.388026	1750	362.5989	1638.629	317.9156	0.381551	21.86127	185.5974	185.5974	202.1771	9%	46.54345	0.812336	46.01145	0.803051	2209.517	2015.445	1.018763	2111.579	1657.201	355.6252	0.086382
45	130	3500	2111.493	0.028581	0.414399	0.385818	1750	362.5989	1629.303	314.3069	0.3806	21.80675	198.1187	198.1187	216.3262	9%	46.65249	0.81424	46.12049	0.804954	2216.571	2008.615	1.018766	2111.627	1650.941	312.0939	0.133828
45	140	3500	2111.493	0.030791	0.414399	0.383607	1750	362.5989	1619.969	310.716	0.379647	21.75215	210.6045	210.6045	230.4771	9%	46.7617	0.816146	46.2297	0.80686	2223.665	2001.757	1.01877	2111.679	1644.698	276.1854	0.186551
45	150	3500	2111.493	0.033003	0.414399	0.381395	1750	362.5989	1610.628	307.1431	0.378692	21.69747	223.0552	223.0552	244.6298	10%	46.87107	0.818054	46.33907	0.808769	2230.798	1994.871	1.018774	2111.737	1638.472	246.2133	0.244562
45	160	3500	2111.493	0.035217	0.414399	0.379182	1750	362.5989	1601.28	303.5881	0.377736	21.6427	235.4708	235.4708	258.7845	10%	46.9806	0.819966	46.4486	0.810681	2237.971	1987.956	1.018778	2111.801	1632.265	220.9337	0.307872
45	170	3500	2111.493	0.037432	0.414399	0.376967	1750	362.5989	1591.925	300.0513	0.376779	21.58785	247.8517	247.8517	272.9414	10%	47.0903	0.821881	46.5583	0.812596	2245.184	1981.012	1.018783	2111.869	1626.074	199.4125	0.376493
45	180	3500	2111.493	0.039649	0.414399	0.37475	1750	362.5989	1582.563	296.5325	0.37582	21.53292	260.1979	260.1979	287.1005	10%	47.20017	0.823798	46.66817	0.814513	2252.438	1974.039	1.018787	2111.943	1619.901	180.9374	0.450434
45	190	3500	2111.493	0.041868	0.414399	0.372531	1750	362.5989	1573.194	293.0319	0.37486	21.4779	272.5099	272.5099	301.2619	11%	47.3102	0.825719	46.7782	0.816434	2259.733	1967.036	1.018792	2112.023	1613.745	164.9573	0.529708
45	200	3500	2111.493	0.044088	0.414399	0.370311	1750	362.5989	1563.818	289.5495	0.373898	21.4228	284.7876	284.7876	315.4258	11%	47.4204	0.827642	46.8884	0.818357	2267.07	1960.004	1.018798	2112.107	1607.606	151.0406	0.614324
45	210	3500	2111.493	0.04631	0.414399	0.368089	1750	362.5989	1554.435	286.0853	0.372935	21.36762	297.0315	297.0315	329.5923	11%	47.53076	0.829568	46.99876	0.820283	2274.448	1952.94	1.018803	2112.197	1601.484	138.8453	0.704295
45	220	3500	2111.493	0.048533	0.414399	0.365866	1750	362.5989	1545.045	282.6394	0.371971	21.31236	309.2416	309.2416	343.7615	11%	47.64129	0.831497	47.10929	0.822212	2281.869	1945.847	1.018809	2112.292	1595.379	128.0974	0.799632
45	230	3500	2111.493	0.050758	0.414399	0.36364	1750	362.5989	1535.648	279.2119	0.371005	21.25701	321.4182	321.4182	357.9335	11%	47.75198	0.833429	47.21998	0.824144	2289.332	1938.722	1.018816	2112.393	1589.291	118.5756	0.900344
45	240	3500	2111.493	0.052985	0.414399	0.361414	1750	362.5989	1526.245	275.8028	0.370037	21.20158	333.5615	333.5615	372.1084	12%	47.86284	0.835364	47.33084	0.826079	2296.839	1931.565	1.018822	2112.499	1583.219	110.0993	1.006444
45	40	4000	2413.135	0.007667	0.414399	0.406732	2000	414.3988	1962.997	399.2067	0.389581	22.32135	88.80517	88.80517	93.67408	5%	45.6233	0.796277	45.0913	0.786992	2458.393	2368.47	1.018746	2413.014	1955.597	2028.82	-0.12049
45	50	4000	2413.135	0.009587	0.414399	0.404812	2000	414.3988	1953.731	395.4467	0.388759	22.27427	101.6389	101.6389	107.8128	6%	45.71747	0.79792	45.18547	0.788635	2465.125	2361.867	1.018746	2413.017	1949.181	1548.817	-0.11778
45	60	4000	2413.135	0.011508	0.414399	0.402891	2000	414.3988	1944.459	391.702	0.387936	22.22712	114.44	114.44	121.9521	7%	45.81176	0.799566	45.27976	0.790281	2471.889	2355.243	1.018748	2413.024	1942.78	1221.7	-0.11052
45	70	4000	2413.135	0.013431	0.414399	0.400968	2000	414.3988	1935.18	387.9726	0.387112	22.17991	127.2085	127.2085	136.0923	7%	45.90619	0.801214	45.37419	0.791929	2478.685	2348.595	1.018749	2413.036	1936.396	988.7527	-0.09873
45	80	4000	2413.135	0.015355	0.414399	0.399044	2000	414.3988	1925.895	384.2586	0.386287	22.13263	139.9447	139.9447	150.2332	7%	46.00074	0.802864	45.46874	0.793579	2485.513	2341.926	1.01875	2413.052	1930.028	816.9715	-0.08238
45	90	4000	2413.135	0.01728	0.414399	0.397119	2000	414.3988	1916.604	380.56	0.385461	22.08529	152.6488	152.6488	164.3752	8%	46.09541	0.804517	45.56341	0.795232	2492.373	2335.233	1.018752	2413.073	1923.676	686.6466	-0.06148
45	100	4000	2413.135	0.019206	0.414399	0.395193	2000	414.3988	1907.306	376.8768	0.384634	22.03789	165.3209	165.3209	178.5181	8%	46.19022	0.806171	45.65822	0.796886	2499.267	2328.517	1.018754	2413.099	1917.34	585.4162	-0.03601
45	110	4000	2413.135	0.021134	0.414399	0.393265	2000	414.3988	1898.003	373.2091	0.383805	21.99043	177.9611	177.9611	192.6622	8%	46.28515	0.807828	45.75315	0.798543	2506.193	2321.778	1.018756	2413.129	1911.019	505.2075	-0.00597
45	120	4000	2413.135	0.023063	0.414399	0.391336	2000	414.3988	1888.693	369.5569	0.382976	21.9429	190.5697	190.5697	206.8074	9%	46.3802	0.809487	45.8482	0.800202	2513.153	2315.015	1.018758	2413.163	1904.715	440.5674	0.028665
45	130	4000	2413.135	0.024993	0.414399	0.389406	2000	414.3988	1879.377	365.9202	0.382145	21.89531	203.1468	203.1468	220.954	9%	46.47539	0.811149	45.94339	0.801863	2520.147	2308.228	1.018761	2413.203	1898.427	387.7038	0.067889
45	140	4000	2413.135	0.026924	0.414399	0.387474	2000	414.3988	1870.055	362.2992	0.381313	21.84765	215.6926	215.6926	235.102	9%	46.5707	0.812812	46.0387	0.803527	2527.174	2301.417	1.018764	2413.246	1892.154	343.9137	0.111713
45	150	4000	2413.135	0.028857	0.414399	0.385541	2000	414.3988	1860.727	358.6937	0.380481	21.79993	228.2072	228.2072	249.2514	9%	46.66613	0.814478	46.13413	0.805193	2534.235	2294.582	1.018767	2413.295	1885.896	307.2283	0.160148
45	160	4000	2413.135	0.030791	0.414399	0.383607	2000	414.3988	1851.393	355.104	0.379647	21.75215	240.6909	240.6909	263.4023	9%	46.7617	0.816146	46.2297	0.80686	2541.331	2287.723	1.01877	2413.348	1879.655	276.1854	0.213201
45	170	4000	2413.135	0.032727	0.414399	0.381672	2000	414.3988	1842.052	351.5299	0.378812	21.70431	253.1437	253.1437	277.555	10%	46.85739	0.817816	46.32539	0.808531	2548.462	2280.838	1.018773	2413.406	1873.428	249.6811	0.270882
45	180	4000	2413.135	0.034663	0.414399	0.379735	2000	414.3988	1832.706	347.9716	0.377975	21.6564	265.5659	265.5659	291.7093	10%	46.9532	0.819488	46.4212	0.810203	2555.627	2273.929	1.018777	2413.468	1867.217	226.8691	0.333197
45	190	4000	2413.135	0.036601	0.414399	0.377798	2000	414.3988	1823.353	344.4291	0.377138	21.60843	277.9576	277.9576	305.8655	10%	47.04915	0.821163	46.51715	0.811877	2562.828	2266.994	1.018781	2413.535	1861.021	207.0918	0.400157
45	200	4000	2413.135	0.03854	0.414399	0.375858	2000	414.3988	1813.994	340.9024	0.3763	21.56039	290.319	290.319	320.0236	10%	47.14522	0.822839	46.61322	0.813554	2570.064	2260.034	1.018785	2413.606	1854.841	189.8319	0.471769
45	210	4000	2413.135	0.040481	0.414399	0.373918	2000	414.3988	1804.629	337.3916	0.37546	21.51229	302.6502	302.6502	334.1837	10%	47.24141	0.824518	46.70941	0.815233	2577.336	2253.048	1.018789	2413.683	1848.675	174.6779	0.548041
45	220	4000	2413.135	0.042422	0.414399	0.371976	2000	414.3988	1795.258	333.8966	0.37462	21.46413	314.9514	314.9514	348.3459	11%	47.33773	0.826199	46.80573	0.816914	2584.644	2246.035	1.018794	2413.764	1842.524	161.2994	0.628983
45	230	4000	2413.135	0.044365	0.414399	0.370033	2000	414.3988	1785.88	330.4176	0.373778	21.41591	327.2228	327.2228	362.5103	11%	47.43418	0.827883	46.90218	0.818598	2591.989	2238.997	1.018798	2413.849	1836.389	149.4283	0.714603
45	240	4000	2413.135	0.04631	0.414399	0.368089	2000	414.3988	1776.497	326.9546	0.372935	21.36762	339.4645	339.4645	376.6769	11%	47.53076	0.829568	46.99876	0.820283	2599.37	2231.932	1.018803	2413.94	1830.268	138.8453	0.804909
45	40	4500	2714.776	0.006814	0.414399	0.407585	2250	466.1986	2213.003	450.9931	0.389946	22.34226	93.47711	93.47711	98.31421	5%	45.58149	0.795547	45.04949	0.786262	2762.338	2667.822	1.018745	2714.641	2203.261	2317.472	-0.13528
45	50	4500	2714.776	0.00852	0.414399	0.405879	2250	466.1986	2203.74	447.2254	0.389216	22.30043	106.3272	106.3272	112.4526	6%	45.66514	0.797007	45.13314	0.787722	2769.054	2661.23	1.018746	2714.642	2196.836	1791.167	-0.13483
45	60	4500	2714.776	0.010227	0.414399	0.404172	2250	466.1986	2194.471	443.4714	0.388485	22.25856	119.1482	119.1482	126.5915	6%	45.74889	0.798469	45.21689	0.789184	2775.798	2654.619	1.018747	2714.646	2190.426	1426.428	-0.13034
45	70	4500	2714.776	0.011935	0.414399	0.402463	2250	466.1986	2185.197	439.7309	0.387753	22.21663	131.9402	131.9402	140.7311	7%	45.83274	0.799932	45.30074	0.790647	2782.571	2647.988	1.018748	2714.655	2184.03	1163.243	-0.12183
45	80	4500	2714.776	0.013644	0.414399	0.400754	2250	466.1986	2175.917	436.0041	0.387021	22.17466	144.7034	144.7034	154.8714	7%	45.91669	0.801397	45.38469	0.792112	2789.372	2641.337	1.018749	2714.667	2177.648	967.0917	-0.10928
45	90	4500	2714.776	0.015355	0.414399	0.399044	2250	466.1986	2166.632	432.2909	0.386287	22.13263	157.4378	157.4378	169.0124	7%	46.00074	0.802864	45.46874	0.793579	2796.202	2634.666	1.01875	2714.684	2171.281	816.9715	-0.09268
45	100	4500	2714.776	0.017066	0.414399	0.397333	2250	466.1986	2157.341	428.5914	0.385553	22.09056	170.1437	170.1437	183.1543	8%	46.08489	0.804333	45.55289	0.795048	2803.061	2627.975	1.018752	2714.704	2164.928	699.5093	-0.07203
45	110	4500	2714.776	0.018778	0.414399	0.395621	2250	466.1986	2148.045	424.9057	0.384818	22.04843	182.821	182.821	197.297	8%	46.16914	0.805803	45.63714	0.796518	2809.948	2621.263	1.018753	2714.729	2158.589	605.8605	-0.04732
45	120	4500	2714.776	0.020491	0.414399	0.393908	2250	466.1986	2138.743	421.2337	0.384082	22.00626	195.4701	195.4701	211.4408	8%	46.25349	0.807276	45.72149	0.797991	2816.866	2614.53	1.018755	2714.758	2152.265	529.9859	-0.01855
45	130	4500	2714.776	0.022205	0.414399	0.392194	2250	466.1986	2129.436	417.5754	0.383345	21.96403	208.091	208.091	225.5856	8%	46.33794	0.80875	45.80594	0.799464	2823.813	2607.776	1.018757	2714.791	2145.955	467.6473	0.014296

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
45	140	4500	2714.776	0.02392	0.414399	0.390478	2250	466.1986	2120.123	413.931	0.382607	21.92175	220.6838	220.6838	239.7315	9%	46.42249	0.810225	45.89049	0.80094	2830.789	2601.002	1.01876	2714.828	2139.658	415.7996	0.051222
45	150	4500	2714.776	0.025637	0.414399	0.388762	2250	466.1986	2110.804	410.3004	0.381868	21.87943	233.2487	233.2487	253.8786	9%	46.50714	0.811703	45.97514	0.802418	2837.796	2594.205	1.018762	2714.869	2133.376	372.2086	0.092233
45	160	4500	2714.776	0.027354	0.414399	0.387045	2250	466.1986	2101.481	406.6837	0.381128	21.83705	245.7858	245.7858	268.0269	9%	46.59189	0.813182	46.05989	0.803897	2844.833	2587.388	1.018764	2714.914	2127.107	335.2056	0.137338
45	170	4500	2714.776	0.029072	0.414399	0.385327	2250	466.1986	2092.151	403.0809	0.380388	21.79463	258.2953	258.2953	282.1766	9%	46.67674	0.814663	46.14474	0.805378	2851.9	2580.549	1.018767	2714.963	2120.852	303.5233	0.186542
45	180	4500	2714.776	0.030791	0.414399	0.383607	2250	466.1986	2082.817	399.492	0.379647	21.75215	270.7773	270.7773	296.3276	9%	46.7617	0.816146	46.2297	0.80686	2858.998	2573.688	1.01877	2715.016	2114.611	276.1854	0.239852
45	190	4500	2714.776	0.032512	0.414399	0.381887	2250	466.1986	2073.477	395.9171	0.378904	21.70963	283.2318	283.2318	310.4802	10%	46.84675	0.81763	46.31475	0.808345	2866.126	2566.805	1.018773	2715.074	2108.384	252.43	0.297274
45	200	4500	2714.776	0.034233	0.414399	0.380166	2250	466.1986	2064.131	392.3561	0.378161	21.66705	295.6591	295.6591	324.6342	10%	46.9319	0.819116	46.3999	0.809831	2873.286	2559.9	1.018776	2715.135	2102.17	231.6555	0.358817
45	210	4500	2714.776	0.035955	0.414399	0.378444	2250	466.1986	2054.78	388.8092	0.377417	21.62442	308.0592	308.0592	338.7899	10%	47.01715	0.820604	46.48515	0.811319	2880.477	2552.972	1.018779	2715.201	2095.97	213.3814	0.424485
45	220	4500	2714.776	0.037678	0.414399	0.37672	2250	466.1986	2045.423	385.2764	0.376673	21.58175	320.4324	320.4324	352.9472	10%	47.1025	0.822094	46.5705	0.812809	2887.699	2546.022	1.018783	2715.271	2089.784	197.2206	0.494287
45	230	4500	2714.776	0.039403	0.414399	0.374996	2250	466.1986	2036.061	381.7576	0.375927	21.53902	332.7787	332.7787	367.1063	10%	47.18795	0.823585	46.65595	0.8143	2894.953	2539.048	1.018787	2715.345	2083.611	182.8581	0.568228
45	240	4500	2714.776	0.041128	0.414399	0.373271	2250	466.1986	2026.694	378.2529	0.37518	21.49625	345.0982	345.0982	381.2672	10%	47.27351	0.825078	46.74151	0.815793	2902.239	2532.052	1.018791	2715.423	2077.451	170.0355	0.646316
45	40	5000	3016.418	0.006132	0.414399	0.408267	2500	517.9984	2463.007	502.7821	0.390238	22.35897	98.14319	98.14319	102.9544	5%	45.54805	0.794964	45.01605	0.785678	3066.289	2967.17	1.018745	3016.269	2450.928	2595.492	-0.14927
45	50	5000	3016.418	0.007667	0.414399	0.406732	2500	517.9984	2453.747	499.0084	0.389581	22.32135	111.0065	111.0065	117.0926	5%	45.6233	0.796277	45.0913	0.786992	3072.992	2960.587	1.018746	3016.268	2444.497	2028.82	-0.15062
45	60	5000	3016.418	0.009203	0.414399	0.405196	2500	517.9984	2444.481	495.2469	0.388924	22.28369	123.8435	123.8435	131.2312	6%	45.69862	0.797591	45.16662	0.788306	3079.72	2953.987	1.018746	3016.27	2438.078	1630.023	-0.14835
45	70	5000	3016.418	0.01074	0.414399	0.403659	2500	517.9984	2435.21	491.4976	0.388266	22.24599	136.6543	136.6543	145.3704	6%	45.77403	0.798908	45.24203	0.789622	3086.475	2947.369	1.018747	3016.276	2431.673	1338.731	-0.14246
45	80	5000	3016.418	0.012277	0.414399	0.402122	2500	517.9984	2425.935	487.7605	0.387607	22.20824	149.4391	149.4391	159.5101	7%	45.84952	0.800225	45.31752	0.79094	3093.254	2940.733	1.018748	3016.285	2425.28	1119.468	-0.13294
45	90	5000	3016.418	0.013815	0.414399	0.400583	2500	517.9984	2416.654	484.0357	0.386947	22.17046	162.1979	162.1979	173.6505	7%	45.92509	0.801544	45.39309	0.792259	3100.06	2934.079	1.018749	3016.299	2418.901	950.2754	-0.11978
45	100	5000	3016.418	0.015355	0.414399	0.399044	2500	517.9984	2407.369	480.3233	0.386287	22.13263	174.9309	174.9309	187.7916	7%	46.00074	0.802864	45.46874	0.793579	3106.891	2927.407	1.01875	3016.315	2412.535	816.9715	-0.10298
45	110	5000	3016.418	0.016895	0.414399	0.397504	2500	517.9984	2398.078	476.6231	0.385626	22.09477	187.6382	187.6382	201.9334	8%	46.07647	0.804186	45.54447	0.794901	3113.748	2920.716	1.018752	3016.336	2406.181	710.0642	-0.08253
45	120	5000	3016.418	0.018435	0.414399	0.395963	2500	517.9984	2388.783	472.9353	0.384965	22.05686	200.3198	200.3198	216.076	8%	46.15228	0.805509	45.62028	0.796224	3120.632	2914.008	1.018753	3016.36	2399.84	623.0059	-0.05844
45	130	5000	3016.418	0.019977	0.414399	0.394422	2500	517.9984	2379.482	469.2598	0.384303	22.01891	212.9759	212.9759	230.2195	8%	46.22817	0.806834	45.69617	0.797549	3127.542	2907.28	1.018755	3016.388	2393.512	551.1615	-0.03068
45	140	5000	3016.418	0.021519	0.414399	0.392879	2500	517.9984	2370.177	465.5967	0.38364	21.98093	225.6067	225.6067	244.3639	8%	46.30415	0.80816	45.77215	0.798875	3134.478	2900.534	1.018757	3016.419	2387.197	491.1748	0.000742
45	150	5000	3016.418	0.023063	0.414399	0.391336	2500	517.9984	2360.866	461.9461	0.382976	21.9429	238.2121	238.2121	258.5093	9%	46.3802	0.809487	45.8482	0.800202	3141.441	2893.768	1.018758	3016.454	2380.894	440.5674	0.035832
45	160	5000	3016.418	0.024607	0.414399	0.389792	2500	517.9984	2351.551	458.3079	0.382311	21.90483	250.7924	250.7924	272.6557	9%	46.45634	0.810816	45.92434	0.801531	3148.431	2886.984	1.01876	3016.493	2374.604	397.4764	0.074595
45	170	5000	3016.418	0.026152	0.414399	0.388247	2500	517.9984	2342.231	454.6821	0.381646	21.86672	263.3475	263.3475	286.8033	9%	46.53256	0.812146	46.00056	0.802861	3155.449	2880.181	1.018763	3016.535	2368.326	360.4803	0.117039
45	180	5000	3016.418	0.027697	0.414399	0.386701	2500	517.9984	2332.906	451.0689	0.38098	21.82857	275.8777	275.8777	300.9519	9%	46.60886	0.813478	46.07686	0.804193	3162.493	2873.358	1.018765	3016.581	2362.061	328.4783	0.163167
45	190	5000	3016.418	0.029244	0.414399	0.385155	2500	517.9984	2323.576	447.4682	0.380314	21.79038	288.383	288.383	315.1018	9%	46.68524	0.814811	46.15324	0.805526	3169.565	2866.515	1.018767	3016.631	2355.808	300.608	0.212986
45	200	5000	3016.418	0.030791	0.414399	0.383607	2500	517.9984	2314.241	443.88	0.379647	21.75215	300.8636	300.8636	329.2529	9%	46.7617	0.816146	46.2297	0.80686	3176.664	2859.653	1.01877	3016.685	2349.568	276.1854	0.266502
45	210	5000	3016.418	0.03234	0.414399	0.382059	2500	517.9984	2304.901	440.3044	0.378979	21.71388	313.3195	313.3195	343.4054	10%	46.83824	0.817481	46.30624	0.808196	3183.791	2852.771	1.018773	3016.742	2343.34	254.6626	0.323719
45	220	5000	3016.418	0.033889	0.414399	0.38051	2500	517.9984	2295.556	436.7413	0.37831	21.67557	325.7509	325.7509	357.5592	10%	46.91486	0.818819	46.38286	0.809534	3190.946	2845.869	1.018775	3016.803	2337.125	235.5965	0.384643
45	230	5000	3016.418	0.035438	0.414399	0.37896	2500	517.9984	2286.206	433.1909	0.377641	21.63722	338.1578	338.1578	371.7145	10%	46.99156	0.820158	46.45956	0.810872	3198.129	2838.947	1.018778	3016.868	2330.921	218.6257	0.449279
45	240	5000	3016.418	0.036989	0.414399	0.37741	2500	517.9984	2276.852	429.6531	0.376971	21.59883	350.5404	350.5404	385.8712	10%	47.06835	0.821498	46.53635	0.812213	3205.34	2832.005	1.018782	3016.936	2324.73	203.4529	0.517633
45	40	5500	3318.06	0.005574	0.414399	0.408825	2750	569.7983	2713.011	554.5731	0.390476	22.37264	102.805	102.805	107.5947	5%	45.52071	0.794486	44.98871	0.785201	3370.243	3266.515	1.018745	3317.897	2698.597	2862.179	-0.16266
45	50	5500	3318.06	0.006969	0.414399	0.40743	2750	569.7983	2703.752	550.7944	0.38988	22.33846	115.6791	115.6791	121.7327	5%	45.58909	0.79568	45.05709	0.786395	3376.936	3259.94	1.018745	3317.895	2692.16	2260.559	-0.1655
45	60	5500	3318.06	0.008365	0.414399	0.406034	2750	569.7983	2694.489	547.0268	0.389282	22.30424	128.5292	128.5292	135.8711	6%	45.65753	0.796874	45.12553	0.787589	3383.652	3253.348	1.018746	3317.895	2685.735	1831.141	-0.16504
45	70	5500	3318.06	0.009762	0.414399	0.404637	2750	569.7983	2685.221	543.2703	0.388685	22.26998	141.3555	141.3555	150.0099	6%	45.72603	0.79807	45.19403	0.788785	3390.391	3246.741	1.018747	3317.899	2679.322	1513.91	-0.16129
45	80	5500	3318.06	0.011159	0.414399	0.40324	2750	569.7983	2675.949	539.5249	0.388086	22.2357	154.158	154.158	164.1493	6%	45.79461	0.799267	45.26261	0.789982	3397.153	3240.117	1.018747	3317.906	2672.921	1272.897	-0.15425
45	90	5500	3318.06	0.012557	0.414399	0.401842	2750	569.7983	2666.672	535.7906	0.387487	22.20137	166.9369	166.9369	178.2891	7%	45.86325	0.800465	45.33125	0.79118	3403.939	3233.477	1.018748	3317.916	2666.532	1085.478	-0.1439
45	100	5500	3318.06	0.013955	0.414399	0.400443	2750	569.7983	2657.391	532.0675	0.386887	22.16702	179.6922	179.6922	192.4296	7%	45.93196	0.801664	45.39996	0.792379	3410.747	3226.821	1.018749	3317.93	2660.154	936.8435	-0.13024
45	110	5500	3318.06	0.015355	0.414399	0.399044	2750	569.7983	2648.105	528.3556	0.386287	22.13263	192.424	192.424	206.5707	7%	46.00074	0.802864	45.46874	0.793579	3417.58	3220.148	1.01875	3317.947	2653.788	816.9715	-0.11328
45	120	5500	3318.06	0.016754	0.414399	0.397644	2750	569.7983	2638.815	524.6548	0.385687	22.09821	205.1324	205.1324	220.7125	8%	46.06958	0.804066	45.53758	0.794781	3424.436	3213.458	1.018752	3317.967	2647.434	718.8806	-0.093
45	130	5500	3318.06	0.018155	0.414399	0.396244	2750	569.7983	2629.52	520.9653	0.385085	22.06376	217.8176	217.8176	234.855	8%	46.13849	0.805269	45.60649	0.795983	3431.316	3206.752	1.018753	3317.991	2641.091	637.5872	-0.0694
45	140	5500	3318.06	0.019556	0.414399	0.394842	2750	569.7983	2620.221	517.2871	0.384483	22.02927	230.4795	230.4795	248.9983	8%	46.20747	0.806472	45.67547	0.797187	3438.22	3200.028	1.018754	3318.018	2634.76	569.4569	-0.04247
45	150	5500	3318.06	0.020958	0.414399	0.39344	2750	569.7983	2610.917	513.6201	0.383881	21.99474	243.1183	243.1183	263.1424	8%	46.27651	0.807677	45.74451	0.798392	3445.148	3193.288	1.018756	3318.048	2628.441	511.7881	-0.01222
45	160	5500	3318.06	0.022361	0.414399	0.392038	2750	569.7983	2601.609	509.9643	0.383278	21.96019	255.7341	255.7341	277.2874	8%	46.34562	0.808884	45.81362	0.799599	3452.1	3186.53	1.018758	3318.082	2622.133	462.5389	0.021369
45	170	5500	3318.06	0.023764	0.414399	0.390634	2750	569.7983	2592.296	506.3199	0.382674	21.9256	268.3269	268.3269	291.4333	9%	46.4148	0.810091	45.8828	0.800806	3459.077	3179.756	1.018759	3318.118	2615.837	420.1429	0.058295
45	180	5500	3318.06	0.025168	0.414399	0.38923	2750	569.7983	2582.979	502.6868	0.38207	21.89098	280.8969	280.8969	305.5802	9%	46.48405	0.8113	45.95205	0.802014	3466.078	3172.964	1.018761	3318.159	2609.552	383.3819	0.098563
45	190	5500	3318.06	0.026573	0.414399	0.387826	2750	569.7983	2573.657	499.065	0.381465	21.85632	293.4441	293.4441	319.7281	9%	46.55336	0.812509	46.02136	0.803224	3473.104	3166.154	1.018763	3318.202	2603.278	351.2972	0.142179
45	200	5500	3318.06	0.027979	0.414399	0.38642	2750	569.7983	2564.331	495.4546	0.380859	21.82163	305.9686	305.9686	333.877	9%	46.62274	0.81372	46.09074	0.804435	3480.154	3159.327	1.018765	3318.249	2597.016	323.1258	0.189146
45	210	5500	3318.06	0.029385	0.414399	0.385014	2750	569.7983	2555	491.8556	0.380253	21.78691	318.4705	318.4705	348.027	9%	46.69218	0.814932	46.16018	0.805647	3487.23	3152.481	1.018768	3318.3	2590.765	298.2544	0.239468
45	220	5500	3318.06	0.030791	0.414399	0.383607	2750	569.7983	2545.665	488.268	0.379647	21.75215	330.95	330.95	362.1782	9%	46.7617	0.816146	46.2297	0.80686	3494.33	3145.618	1.01877	3318.353	2584.525	276.1854	0.293152
45	230	5500	3318.06	0.032199	0.414399	0.3822	2750	569.7983	2536.325	484.6918	0.379039	21.71736	343.407	343.407	376.3306	10%	46.83128	0.81736	46.29928	0.808075	3501.456	3138.737	1.018772	3318.41	2578.296	256.5116	0.3502
45	240	5500	3318.06	0.033607	0.414399	0.380792	2750	569.7983	2526.981	481.127	0.378432	21.68254	355.8417	355.8417	390.4843	10%	46.90092	0.818576	46.36892	0.80929	3508.607	3131.838	1.018775	3318.471	2572.079	238.8975	0.410619
45	40	6000	3619.702	0.005109	0.414399	0.40929	3000	621.5981	2963.014	606.3656	0.390675	22.38403	107.4636	107.4636	112.2351	4%	45.49794	0.794089	44.96594	0.784804	3674.2	3565.858	1.018745	3619.526	2946.268	3117.307	-0.17563
45	50	6000	3619.702	0.006388	0.414399	0.408011	3000	621.5981	2953.757	602.5828	0.390128	22.35271	120.3467	120.3467	126.3729	5%	45.56059	0.795182	45.02859	0.785897	3680.885	3559.289	1.018745	3619.522	2939.827	2485.618	-0.17969
45	60	6000	3619.702	0.007667	0.414399	0.406732	3000	621.5981	2944.496	598.8101	0.389581	22.32135	133.2078	133.2078	140.5111	5%	45.6233	0.796277	45.0913	0.786992	3687.59	3552.705	1.018746	3619.521	2933.396	2028.82	-0.18074
45	70	6000	3619.702	0.008947	0.414399	0.405452	3000	621.5981	2935.231	595.0475	0.389033	22.28997	146.0469	146.0469	154.6497	6%	45.68606	0.797372	45.15406	0.788087	3694.317	3546.106	1.018746	3619.523	2926.977	1687.787	-0.17878
45	80	6000	3619.702	0.010227	0.414399	0.404172	3000	621.5981	2925.961	591.2952	0.388485	22.25856	158.8643	158.8643	168.7887	6%	45.74889	0.798469	45.21689	0.789184	3701.064	3539.492	1.018747	3619.528	2920.568	1426.428	-0.17379
45	90	6000	3619.702	0.011508	0.414399	0.402891	3000	621.5981	2916.688	587.553	0.387936	22.22712	171.6599	171.6599	182.9282	7%	45.81176	0.799566	45.27976	0.790281	3707.833	3532.864	1.018748	3619.536	2914.17	1221.7	-0.16578
45	100	6000	3619.702	0.01279	0.414399	0.401609	3000	621.5981	2907.41	583.8211	0.387387	22.19565	184.4339	184.4339	197.0682	7%	45.8747	0.800665	45.3427	0.791379	3714.624	3526.221	1.018748	3619.547	2907.783	1058.33	-0.15475
45	110	6000	3619.702	0.014072	0.414399	0.400327	3000	621.5981	2898.128	580.0994	0.386837	22.16416	197.1862	197.1862	211.2087	7%	45.93769	0.801764	45.40569	0.792479	3721.436	3519.562	1.018749	3619.561	2901.407	925.8685	-0.14068
45	120	6000	3619.702	0.015355	0.414399	0.399044	3000	621.5981	2888.842	576.3879	0.386287	22.13263	209.9171	209.9171	225.3499	7%	46.00074	0.802864	45.46874	0.793579	3728.269	3512.888	1.01875	3619.578	2895.041	816.9715	-0.12358

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
45	130	6000	3619.702	0.016638	0.414399	0.397761	3000	621.5981	2879.552	572.6867	0.385737	22.10108	222.6265	222.6265	239.4916	8%	46.06384	0.803966	45.53184	0.794681	3735.124	3506.199	1.018751	3619.599	2888.687	726.3548	-0.10343
45	140	6000	3619.702	0.017922	0.414399	0.396477	3000	621.5981	2870.258	568.9958	0.385185	22.0695	235.3145	235.3145	253.634	8%	46.127	0.805068	45.595	0.795783	3742.001	3499.495	1.018753	3619.622	2882.343	650.1372	-0.08025
45	150	6000	3619.702	0.019206	0.414399	0.395193	3000	621.5981	2860.96	565.3152	0.384634	22.03789	247.9813	247.9813	267.7772	8%	46.19022	0.806171	45.65822	0.796886	3748.9	3492.775	1.018754	3619.648	2876.009	585.4162	-0.05402
45	160	6000	3619.702	0.020491	0.414399	0.393908	3000	621.5981	2851.657	561.6449	0.384082	22.00626	260.6268	260.6268	281.921	8%	46.25349	0.807276	45.72149	0.797991	3755.821	3486.04	1.018755	3619.677	2869.687	529.9859	-0.02473
45	170	6000	3619.702	0.021777	0.414399	0.392622	3000	621.5981	2842.351	557.9849	0.383529	21.97459	273.2512	273.2512	296.0657	8%	46.31682	0.808381	45.78482	0.799096	3762.764	3479.289	1.018757	3619.71	2863.374	482.1457	0.007603
45	180	6000	3619.702	0.023063	0.414399	0.391336	3000	621.5981	2833.04	554.3353	0.382976	21.9429	285.8545	285.8545	310.2112	9%	46.3802	0.809487	45.8482	0.800202	3769.73	3472.522	1.018758	3619.745	2857.073	440.5674	0.042998
45	190	6000	3619.702	0.024349	0.414399	0.390049	3000	621.5981	2823.725	550.6961	0.382422	21.91118	298.4369	298.4369	324.3575	9%	46.44364	0.810595	45.91164	0.801309	3776.717	3465.739	1.01876	3619.783	2850.782	404.2011	0.081455
45	200	6000	3619.702	0.025637	0.414399	0.388762	3000	621.5981	2814.406	547.0672	0.381868	21.87943	310.9983	310.9983	338.5048	9%	46.50714	0.811703	45.97514	0.802418	3783.728	3458.941	1.018762	3619.825	2844.501	372.2086	0.122978
45	210	6000	3619.702	0.026924	0.414399	0.387474	3000	621.5981	2805.083	543.4487	0.381313	21.84765	323.5389	323.5389	352.6529	9%	46.5707	0.812812	46.0387	0.803527	3790.761	3452.126	1.018764	3619.87	2838.231	343.9137	0.16757
45	220	6000	3619.702	0.028213	0.414399	0.386186	3000	621.5981	2795.756	539.8407	0.380758	21.81585	336.0587	336.0587	366.8021	9%	46.63431	0.813922	46.10231	0.804637	3797.817	3445.295	1.018766	3619.917	2831.971	318.7662	0.215236
45	230	6000	3619.702	0.029502	0.414399	0.384897	3000	621.5981	2786.424	536.2431	0.380203	21.78401	348.5578	348.5578	380.9523	9%	46.69797	0.815033	46.16597	0.805748	3804.895	3438.448	1.018768	3619.968	2825.721	296.3144	0.265979
45	240	6000	3619.702	0.030791	0.414399	0.383607	3000	621.5981	2777.089	532.656	0.379647	21.75215	361.0363	361.0363	395.1035	9%	46.7617	0.816146	46.2297	0.80686	3811.997	3431.584	1.01877	3620.022	2819.482	276.1854	0.319802
45	40	6500	3921.344	0.004716	0.414399	0.409683	3250	673.398	3213.016	658.1593	0.390843	22.39367	112.1198	112.1198	116.8754	4%	45.47867	0.793753	44.94667	0.784467	3978.16	3865.2	1.018745	3921.156	3193.94	3360.952	-0.18825
45	50	6500	3921.344	0.005896	0.414399	0.408503	3250	673.398	3203.761	654.3729	0.390339	22.36476	125.0104	125.0104	131.0132	5%	45.53648	0.794762	45.00448	0.785476	3984.837	3858.635	1.018745	3921.15	3187.495	2703.548	-0.19336
45	60	6500	3921.344	0.007076	0.414399	0.407322	3250	673.398	3194.502	650.5959	0.389834	22.33583	137.8808	137.8808	145.1512	5%	45.59435	0.795771	45.06235	0.786486	3991.534	3852.058	1.018745	3921.148	3181.06	2222.384	-0.19568
45	70	6500	3921.344	0.008258	0.414399	0.406141	3250	673.398	3185.239	646.8283	0.389328	22.30687	150.7309	150.7309	159.2896	6%	45.65226	0.796782	45.12026	0.787497	3998.25	3845.466	1.018746	3921.149	3174.635	1859.61	-0.19523
45	80	6500	3921.344	0.009439	0.414399	0.40496	3250	673.398	3175.972	643.07	0.388823	22.27789	163.5609	163.5609	173.4284	6%	45.71022	0.797794	45.17822	0.788509	4004.985	3838.861	1.018746	3921.152	3168.22	1579.312	-0.19199
45	90	6500	3921.344	0.010621	0.414399	0.403777	3250	673.398	3166.701	639.3212	0.388316	22.24889	176.3707	176.3707	187.5676	6%	45.76823	0.798806	45.23623	0.789521	4011.74	3832.242	1.018747	3921.158	3161.815	1358.231	-0.18596
45	100	6500	3921.344	0.011804	0.414399	0.402595	3250	673.398	3157.426	635.5818	0.38781	22.21986	189.1605	189.1605	201.7072	7%	45.82628	0.79982	45.29428	0.790534	4018.515	3825.61	1.018748	3921.167	3155.42	1180.771	-0.17713
45	110	6500	3921.344	0.012987	0.414399	0.401412	3250	673.398	3148.148	631.8518	0.387303	22.19081	201.9303	201.9303	215.8473	7%	45.88439	0.800834	45.35239	0.791548	4025.309	3818.964	1.018748	3921.178	3149.035	1036.153	-0.16551
45	120	6500	3921.344	0.01417	0.414399	0.400228	3250	673.398	3138.865	628.1313	0.386795	22.16173	214.6802	214.6802	229.9879	7%	45.94254	0.801849	45.41054	0.792563	4032.124	3812.303	1.018749	3921.193	3142.66	916.7331	-0.1511
45	130	6500	3921.344	0.015355	0.414399	0.399044	3250	673.398	3129.579	624.4202	0.386287	22.13263	227.4102	227.4102	244.129	7%	46.00074	0.802864	45.46874	0.793579	4038.958	3805.629	1.01875	3921.21	3136.295	816.9715	-0.13388
45	140	6500	3921.344	0.016539	0.414399	0.39786	3250	673.398	3120.289	620.7186	0.385779	22.10351	240.1204	240.1204	258.2708	8%	46.05898	0.803881	45.52698	0.794596	4045.812	3798.941	1.018751	3921.23	3129.94	732.7715	-0.11385
45	150	6500	3921.344	0.017724	0.414399	0.396675	3250	673.398	3110.995	617.0265	0.38527	22.07436	252.8109	252.8109	272.4131	8%	46.11728	0.804898	45.58528	0.795613	4052.687	3792.238	1.018752	3921.253	3123.595	661.0512	-0.09102
45	160	6500	3921.344	0.01891	0.414399	0.395489	3250	673.398	3101.698	613.3439	0.384761	22.04519	265.4817	265.4817	286.5561	8%	46.17562	0.805917	45.64362	0.796631	4059.582	3785.521	1.018754	3921.278	3117.259	599.4561	-0.06537
45	170	6500	3921.344	0.020096	0.414399	0.394303	3250	673.398	3092.397	609.6709	0.384252	22.01599	278.133	278.133	300.6997	8%	46.23401	0.806936	45.70201	0.797651	4066.497	3778.79	1.018755	3921.307	3110.934	546.1623	-0.03691
45	180	6500	3921.344	0.021282	0.414399	0.393117	3250	673.398	3083.091	606.0073	0.383742	21.98677	290.7647	290.7647	314.8441	8%	46.29245	0.807956	45.76045	0.798671	4073.432	3772.045	1.018756	3921.338	3104.618	499.7392	-0.00563
45	190	6500	3921.344	0.022469	0.414399	0.39193	3250	673.398	3073.782	602.3533	0.383231	21.95753	303.3769	303.3769	328.9893	8%	46.35094	0.808977	45.81894	0.799691	4080.388	3765.284	1.018758	3921.372	3098.312	459.0518	0.028471
45	200	6500	3921.344	0.023656	0.414399	0.390742	3250	673.398	3064.47	598.7089	0.38272	21.92826	315.9697	315.9697	343.1352	9%	46.40948	0.809998	45.87748	0.800713	4087.365	3758.51	1.018759	3921.409	3092.015	423.1903	0.065397
45	210	6500	3921.344	0.024844	0.414399	0.389554	3250	673.398	3055.153	595.074	0.382209	21.89897	328.5432	328.5432	357.2819	9%	46.46806	0.811021	45.93606	0.801735	4094.362	3751.72	1.018761	3921.449	3085.728	391.4188	0.105151
45	220	6500	3921.344	0.026033	0.414399	0.388366	3250	673.398	3045.833	591.4488	0.381697	21.86965	341.0974	341.0974	371.4294	9%	46.52669	0.812044	45.99469	0.802759	4101.38	3744.916	1.018762	3921.492	3079.451	363.1364	0.147736
45	230	6500	3921.344	0.027222	0.414399	0.387177	3250	673.398	3036.508	587.8331	0.381185	21.84031	353.6324	353.6324	385.5779	9%	46.58537	0.813068	46.05337	0.803783	4108.419	3738.097	1.018764	3921.537	3073.184	337.849	0.193155
45	240	6500	3921.344	0.028411	0.414399	0.385988	3250	673.398	3027.18	584.2271	0.380673	21.81095	366.1482	366.1482	399.7272	9%	46.6441	0.814093	46.1121	0.804808	4115.479	3731.263	1.018766	3921.585	3066.926	315.1467	0.241412
45	40	7000	4222.986	0.004379	0.414399	0.41002	3500	725.1978	3463.019	709.9538	0.390987	22.40192	116.774	116.774	121.5159	4%	45.46216	0.793464	44.93016	0.784179	4282.122	4164.54	1.018745	4222.785	3441.613	3593.387	-0.20061
45	50	7000	4222.986	0.005474	0.414399	0.408924	3500	725.1978	3453.764	706.1644	0.390519	22.37508	129.6712	129.6712	135.6535	5%	45.51583	0.794401	44.98383	0.785116	4288.793	4157.98	1.018745	4222.779	3435.164	2914.131	-0.20661
45	60	7000	4222.986	0.00657	0.414399	0.407828	3500	725.1978	3444.507	702.3837	0.39005	22.34823	142.5495	142.5495	149.7914	5%	45.56954	0.795339	45.03754	0.786053	4295.482	4151.407	1.018745	4222.776	3428.725	2411.373	-0.21003
45	70	7000	4222.986	0.007667	0.414399	0.406732	3500	725.1978	3435.245	698.6118	0.389581	22.32135	155.409	155.409	163.9296	5%	45.6233	0.796277	45.0913	0.786992	4302.189	4144.822	1.018746	4222.775	3422.295	2028.82	-0.21087
45	80	7000	4222.986	0.008764	0.414399	0.405635	3500	725.1978	3425.98	694.8485	0.389112	22.29445	168.2498	168.2498	178.0682	6%	45.67709	0.797216	45.14509	0.787931	4308.914	4138.224	1.018746	4222.777	3415.875	1730.96	-0.20912
45	90	7000	4222.986	0.009861	0.414399	0.404537	3500	725.1978	3416.712	691.094	0.388642	22.26753	181.0718	181.0718	192.2071	6%	45.73093	0.798155	45.19893	0.78887	4315.657	4131.614	1.018747	4222.781	3409.464	1494.494	-0.20478
45	100	7000	4222.986	0.010959	0.414399	0.40344	3500	725.1978	3407.44	687.3482	0.388172	22.2406	193.8752	193.8752	206.3464	6%	45.78481	0.799096	45.25281	0.789811	4322.418	4124.991	1.018747	4222.788	3403.062	1303.622	-0.19785
45	110	7000	4222.986	0.012057	0.414399	0.402341	3500	725.1978	3398.164	683.6111	0.387701	22.21364	206.66	206.66	220.4862	7%	45.83873	0.800037	45.30673	0.790752	4329.198	4118.355	1.018748	4222.797	3396.67	1147.317	-0.18833
45	120	7000	4222.986	0.013156	0.414399	0.401243	3500	725.1978	3388.885	679.8828	0.38723	22.18666	219.4262	219.4262	234.6263	7%	45.89269	0.800979	45.36069	0.791693	4335.996	4111.706	1.018749	4222.809	3390.287	1017.698	-0.17621
45	130	7000	4222.986	0.014255	0.414399	0.400144	3500	725.1978	3379.602	676.1633	0.386759	22.15965	232.174	232.174	248.767	7%	45.94669	0.801921	45.41469	0.792636	4342.812	4105.044	1.018749	4222.824	3383.913	909.0109	-0.16149
45	140	7000	4222.986	0.015355	0.414399	0.399044	3500	725.1978	3370.316	672.4526	0.386287	22.13263	244.9033	244.9033	262.9082	7%	46.00074	0.802864	45.46874	0.793579	4349.647	4098.37	1.01875	4222.841	3377.548	816.9715	-0.14417
45	150	7000	4222.986	0.016454	0.414399	0.397944	3500	725.1978	3361.026	668.7506	0.385815	22.10559	257.6142	257.6142	277.0499	8%	46.05482	0.803808	45.52282	0.794523	4356.501	4091.682	1.018751	4222.861	3371.193	738.3402	-0.12425
45	160	7000	4222.986	0.017555	0.414399	0.396844	3500	725.1978	3351.733	665.0575	0.385343	22.07853	270.3068	270.3068	291.1922	8%	46.10895	0.804753	45.57695	0.795468	4363.373	4084.981	1.018752	4222.884	3364.847	670.6287	-0.10172
45	170	7000	4222.986	0.018656	0.414399	0.395743	3500	725.1978	3342.436	661.3732	0.38487	22.05144	282.9812	282.9812	305.335	8%	46.16312	0.805698	45.63112	0.796413	4370.264	4078.267	1.018753	4222.909	3358.509	611.9009	-0.07657
45	180	7000	4222.986	0.019757	0.414399	0.394642	3500	725.1978	3333.136	657.6978	0.384397	22.02434	295.6373	295.6373	319.4785	8%	46.21733	0.806645	45.68533	0.797359	4377.174	4071.539	1.018755	4222.937	3352.181	560.6317	-0.04881
45	190	7000	4222.986	0.020858	0.414399	0.39354	3500	725.1978	3323.832	654.0311	0.383924	21.99721	308.2753	308.2753	333.6227	8%	46.27158	0.807591	45.73958	0.798306	4384.103	4064.798	1.018756	4222.967	3345.862	515.6069	-0.01844
45	200	7000	4222.986	0.02196	0.414399	0.392438	3500	725.1978	3314.524	650.3734	0.38345	21.97007	320.8951	320.8951	347.7675	8%	46.32587	0.808539	45.79387	0.799254	4391.051	4058.044	1.018757	4223	3339.552	475.8497	0.01455
45	210	7000	4222.986	0.023063	0.414399	0.391336	3500	725.1978	3305.213	646.7245	0.382976	21.9429	333.497	333.497	361.913	9%	46.3802	0.809487	45.8482	0.800202	4398.018	4051.276	1.018758	4223.036	3333.252	440.5674	0.050164
45	220	7000	4222.986	0.024166	0.414399	0.390233	3500	725.1978	3295.899	643.0845	0.382501	21.91571	346.0808	346.0808	376.0593	9%	46.43458	0.810436	45.90258	0.801151	4405.004	4044.494	1.01876	4223.074	3326.96	409.1109	0.088402
45	230	7000	4222.986	0.025269	0.414399	0.38913	3500	725.1978	3286.58	639.4535	0.382026	21.8885	358.6467	358.6467	390.2064	9%	46.48899	0.811386	45.95699	0.802101	4412.01	4037.699	1.018761	4223.115	3320.677	380.9451	0.129268
45	240	7000	4222.986	0.026372	0.414399	0.388026	3500	725.1978	3277.259	635.8313	0.381551	21.86127	371.1947	371.1947	404.3542	9%	46.54345	0.812336	46.01145	0.803051	4419.035	4030.89	1.018763	4223.158	3314.403	355.6252	0.172764
45	40	7500	4524.627	0.004086	0.414399	0.410312	3750	776.9977	3713.021	761.749	0.391112	22.40907	121.4266	121.4266	126.1563	4%	45.44785	0.793215	44.91585	0.78393	4586.085	4463.879	1.018744	4524.415	3689.287	3815.001	-0.21276
45	50	7500	4524.627	0.005109	0.414399	0.40929	3750	776.9977	3703.767	757.957	0.390675	22.38403	134.3295	134.3295	140.2938	4%	45.49794	0.794089	44.96594	0.784804	4592.75	4457.323	1.018745	4524.408	3682.835	3117.307	-0.21953
45	60	7500	4524.627	0.006132	0.414399	0.408267	3750	776.9977	3694.511	754.1732	0.390238	22.35897	147.2148	147.2148	154.4317	5%	45.54805	0.794964	45.01605	0.785678	4599.433	4450.755	1.018745	4524.404	3676.393	2595.492	-0.2239
45	70	7500	4524.627	0.007155	0.414399	0.407244	3750	776.9977	3685.251	750.3974	0.3898	22.3339	160.0824	160.0824	168.5697	5%	45.59821	0.795839	45.06621	0.786554	4606.132	4444.175	1.018745	4524.402	3669.959	2195.003	-0.22585
45	80	7500	4524.627	0.008179	0.414399	0.40622	3750	776.9977	3675.988	746.6298	0.389362	22.3088	172.9326	172.9326	182.7081	6%	45.6484	0.796715	45.1164	0.78743	4612.848	4437.584	1.018746	4524.402	3663.534	1880.914	-0.2254
45	90	7500	4524.627	0.009203	0.414399	0.405196	3750	776.9977	3666.721	742.8703	0.388924	22.28369	185.7652	185.7652	196.8468	6%	45.69862	0.797591	45.16662	0.788306	4619.581	4430.981	1.018746	4524.405	3657.117	1630.023	-0.22253
45	100	7500	4524.627	0.010227	0.414399	0.404172	3750	776.9977	3657.452	739.119	0.388485	22.25856	198.5804	198.5804	210.9859	6%	45.74889	0.798469	45.21689	0.789184	4626.331	4424.366	1.018747	4524.41	3650.71	1426.428	-0.21724
45	110	7500	4524.627	0.011252	0.414399	0.403147	3750	776.9977	3648.178	735.3758	0.388046	22.23341	211.3782	211.3782	225.1253	7%	45.79918	0.799347	45.26718	0.790061	4633.097	4417.739	1.018747	4524.418	3644.311	1258.932	-0.20954

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
45	120	7500	4524.627	0.012277	0.414399	0.402122	3750	776.9977	3638.902	731.6408	0.387607	22.20824	224.1586	224.1586	239.2652	7%	45.84952	0.800225	45.31752	0.79094	4639.881	4411.1	1.018748	4524.428	3637.921	1119.468	-0.19941
45	130	7500	4524.627	0.013302	0.414399	0.401096	3750	776.9977	3629.622	727.914	0.387167	22.18306	236.9218	236.9218	253.4054	7%	45.89989	0.801104	45.36789	0.791819	4646.682	4404.449	1.018749	4524.441	3631.539	1002.104	-0.18686
45	140	7500	4524.627	0.014328	0.414399	0.40007	3750	776.9977	3620.339	724.1953	0.386727	22.15785	249.6677	249.6677	267.5461	7%	45.95029	0.801984	45.41829	0.792699	4653.501	4397.786	1.018749	4524.456	3625.166	902.3976	-0.17188
45	150	7500	4524.627	0.015355	0.414399	0.399044	3750	776.9977	3611.053	720.4849	0.386287	22.13263	262.3964	262.3964	281.6873	7%	46.00074	0.802864	45.46874	0.793579	4660.336	4391.11	1.01875	4524.473	3618.802	816.9715	-0.15447
45	160	7500	4524.627	0.016381	0.414399	0.398018	3750	776.9977	3601.763	716.7827	0.385847	22.10739	275.1079	275.1079	295.829	8%	46.05121	0.803745	45.51921	0.79446	4667.189	4384.423	1.018751	4524.493	3612.446	743.2183	-0.13463
45	170	7500	4524.627	0.017408	0.414399	0.396991	3750	776.9977	3592.47	713.0887	0.385406	22.08214	287.8023	287.8023	309.9712	8%	46.10173	0.804627	45.56973	0.795342	4674.06	4377.723	1.018752	4524.515	3606.099	679.1003	-0.11236
45	180	7500	4524.627	0.018435	0.414399	0.395963	3750	776.9977	3583.174	709.4029	0.384965	22.05686	300.4797	300.4797	324.114	8%	46.15228	0.805509	45.62028	0.796224	4680.948	4371.011	1.018753	4524.54	3599.76	623.0059	-0.08765
45	190	7500	4524.627	0.019463	0.414399	0.394936	3750	776.9977	3573.874	705.7254	0.384523	22.03157	313.1401	313.1401	338.2574	8%	46.20287	0.806392	45.67087	0.797107	4687.853	4364.287	1.018754	4524.567	3593.43	573.6476	-0.06051
45	200	7500	4524.627	0.020491	0.414399	0.393908	3750	776.9977	3564.571	702.0561	0.384082	22.00626	325.7835	325.7835	352.4013	8%	46.25349	0.807276	45.72149	0.797991	4694.776	4357.55	1.018755	4524.597	3587.108	529.9859	-0.03092
45	210	7500	4524.627	0.021519	0.414399	0.392879	3750	776.9977	3555.265	698.3951	0.38364	21.98093	338.41	338.41	366.5459	8%	46.30415	0.80816	45.77215	0.798875	4701.717	4350.8	1.018757	4524.629	3580.795	491.1748	0.001113
45	220	7500	4524.627	0.022548	0.414399	0.391851	3750	776.9977	3545.956	694.7424	0.383197	21.95558	351.0197	351.0197	380.6911	8%	46.35484	0.809045	45.82284	0.799759	4708.676	4344.038	1.018758	4524.663	3574.49	456.5198	0.035591
45	230	7500	4524.627	0.023577	0.414399	0.390821	3750	776.9977	3536.643	691.098	0.382754	21.93021	363.6125	363.6125	394.837	9%	46.40557	0.80993	45.87357	0.800645	4715.653	4337.264	1.018759	4524.7	3568.194	425.4465	0.072516
45	240	7500	4524.627	0.024607	0.414399	0.389792	3750	776.9977	3527.327	687.4618	0.382311	21.90483	376.1885	376.1885	408.9836	9%	46.45634	0.810816	45.92434	0.801531	4722.647	4330.476	1.01876	4524.739	3561.906	397.4764	0.111893
45	40	8000	4826.269	0.003831	0.414399	0.410568	4000	828.7975	3963.022	813.5448	0.391221	22.41533	126.078	126.078	130.7967	4%	45.43534	0.792996	44.90334	0.783711	4890.049	4763.218	1.018744	4826.045	3936.961	4026.255	-0.22474
45	50	8000	4826.269	0.004789	0.414399	0.409609	4000	828.7975	3953.77	809.7506	0.390812	22.39186	138.9859	138.9859	144.9342	4%	45.48228	0.793816	44.95028	0.78453	4896.71	4756.665	1.018745	4826.037	3930.507	3313.131	-0.23219
45	60	8000	4826.269	0.005748	0.414399	0.40865	4000	828.7975	3944.515	805.9639	0.390402	22.36837	151.8772	151.8772	159.0719	5%	45.52926	0.794635	44.99726	0.78535	4903.387	4750.101	1.018745	4826.032	3924.061	2774.564	-0.23738
45	70	8000	4826.269	0.006707	0.414399	0.407691	4000	828.7975	3935.256	802.1849	0.389992	22.34487	164.752	164.752	173.2099	5%	45.57626	0.795456	45.04426	0.786171	4910.079	4743.526	1.018745	4826.029	3917.624	2357.863	-0.24031
45	80	8000	4826.269	0.007667	0.414399	0.406732	4000	828.7975	3925.995	798.4134	0.389581	22.32135	177.6103	177.6103	187.3482	5%	45.6233	0.796277	45.0913	0.786992	4916.787	4736.94	1.018746	4826.028	3911.195	2028.82	-0.24099
45	90	8000	4826.269	0.008627	0.414399	0.405772	4000	828.7975	3916.73	794.6496	0.38917	22.29782	190.4523	190.4523	201.4867	6%	45.67037	0.797098	45.13837	0.787813	4923.511	4730.343	1.018746	4826.03	3904.774	1764.443	-0.2394
45	100	8000	4826.269	0.009587	0.414399	0.404812	4000	828.7975	3907.462	790.8935	0.388759	22.27427	203.2778	203.2778	215.6255	6%	45.71747	0.79792	45.18547	0.788635	4930.251	4723.735	1.018746	4826.034	3898.361	1548.817	-0.23555
45	110	8000	4826.269	0.010547	0.414399	0.403851	4000	828.7975	3898.191	787.1449	0.388348	22.2507	216.087	216.087	229.7647	6%	45.7646	0.798743	45.2326	0.789458	4937.006	4717.116	1.018747	4826.04	3891.957	1370.638	-0.22943
45	120	8000	4826.269	0.011508	0.414399	0.402891	4000	828.7975	3888.917	783.404	0.387936	22.22712	228.8799	228.8799	243.9043	7%	45.81176	0.799566	45.27976	0.790281	4943.778	4710.485	1.018748	4826.048	3885.56	1221.7	-0.22105
45	130	8000	4826.269	0.012469	0.414399	0.401929	4000	828.7975	3879.64	779.6708	0.387525	22.20352	241.6566	241.6566	258.0442	7%	45.85896	0.80039	45.32696	0.791105	4950.565	4703.844	1.018748	4826.059	3879.172	1095.93	-0.21039
45	140	8000	4826.269	0.013431	0.414399	0.400968	4000	828.7975	3870.36	775.9453	0.387112	22.17991	254.417	254.417	272.1845	7%	45.90619	0.801214	45.37419	0.791929	4957.369	4697.191	1.018749	4826.072	3872.791	988.7527	-0.19746
45	150	8000	4826.269	0.014392	0.414399	0.400006	4000	828.7975	3861.076	772.2274	0.3867	22.15628	267.1613	267.1613	286.3253	7%	45.95345	0.802039	45.42145	0.792754	4964.189	4690.527	1.01875	4826.087	3866.419	896.6706	-0.18225
45	160	8000	4826.269	0.015355	0.414399	0.399044	4000	828.7975	3851.79	768.5172	0.386287	22.13263	279.8894	279.8894	300.4665	7%	46.00074	0.802864	45.46874	0.793579	4971.025	4683.851	1.01875	4826.105	3860.055	816.9715	-0.16477
45	170	8000	4826.269	0.016317	0.414399	0.398082	4000	828.7975	3842.5	764.8147	0.385874	22.10897	292.6015	292.6015	314.6082	8%	46.04806	0.80369	45.51606	0.794405	4977.878	4677.164	1.018751	4826.124	3853.699	747.5269	-0.14501
45	180	8000	4826.269	0.01728	0.414399	0.397119	4000	828.7975	3833.207	761.12	0.385461	22.08529	305.2976	305.2976	328.7503	8%	46.09541	0.804517	45.56341	0.795232	4984.747	4670.466	1.018752	4826.146	3847.351	686.6466	-0.12296
45	190	8000	4826.269	0.018243	0.414399	0.396156	4000	828.7975	3823.912	757.4329	0.385048	22.0616	317.9776	317.9776	342.893	8%	46.1428	0.805344	45.6108	0.796059	4991.632	4663.755	1.018753	4826.171	3841.011	632.9755	-0.09864
45	200	8000	4826.269	0.019206	0.414399	0.395193	4000	828.7975	3814.613	753.7536	0.384634	22.03789	330.6417	330.6417	357.0362	8%	46.19022	0.806171	45.65822	0.796886	4998.533	4657.034	1.018754	4826.197	3834.679	585.4162	-0.07202
45	210	8000	4826.269	0.02017	0.414399	0.394229	4000	828.7975	3805.311	750.082	0.38422	22.01417	343.2899	343.2899	371.18	8%	46.23767	0.806999	45.70567	0.797714	5005.452	4650.3	1.018755	4826.226	3828.355	543.0727	-0.04312
45	220	8000	4826.269	0.021134	0.414399	0.393265	4000	828.7975	3796.006	746.4181	0.383805	21.99043	355.9222	355.9222	385.3244	8%	46.28515	0.807828	45.75315	0.798543	5012.386	4643.555	1.018756	4826.257	3822.039	505.2075	-0.01193
45	230	8000	4826.269	0.022098	0.414399	0.392301	4000	828.7975	3786.698	742.7621	0.383391	21.96667	368.5387	368.5387	399.4693	8%	46.33266	0.808657	45.80066	0.799372	5019.338	4636.798	1.018757	4826.291	3815.731	471.2093	0.021553
45	240	8000	4826.269	0.023063	0.414399	0.391336	4000	828.7975	3777.386	739.1137	0.382976	21.9429	381.1394	381.1394	413.6149	9%	46.3802	0.809487	45.8482	0.800202	5026.306	4630.029	1.018758	4826.327	3809.43	440.5674	0.05733
45	40	8500	5127.911	0.003605	0.414399	0.410793	4250	880.5974	4213.024	865.3411	0.391318	22.42085	130.7284	130.7284	135.4372	4%	45.4243	0.792804	44.8923	0.783518	5194.014	5062.556	1.018744	5127.675	4184.636	4227.642	-0.23657
45	50	8500	5127.911	0.004507	0.414399	0.409891	4250	880.5974	4203.772	861.5448	0.390932	22.39876	143.6406	143.6406	149.5746	4%	45.46847	0.793575	44.93647	0.784289	5200.671	5056.005	1.018745	5127.667	4178.18	3501.735	-0.24462
45	60	8500	5127.911	0.00541	0.414399	0.408989	4250	880.5974	4194.518	857.7557	0.390546	22.37666	156.5373	156.5373	163.7123	5%	45.51267	0.794346	44.98067	0.785061	5207.343	5049.445	1.018745	5127.661	4171.731	2948.508	-0.25054
45	70	8500	5127.911	0.006312	0.414399	0.408086	4250	880.5974	4185.261	853.9738	0.39016	22.35455	169.4184	169.4184	177.8501	5%	45.5569	0.795118	45.0249	0.785833	5214.029	5042.874	1.018745	5127.657	4165.291	2517.194	-0.25434
45	80	8500	5127.911	0.007215	0.414399	0.407183	4250	880.5974	4176	850.199	0.389774	22.33242	182.284	182.284	191.9883	5%	45.60116	0.79589	45.06916	0.786605	5220.73	5036.293	1.018745	5127.655	4158.858	2174.407	-0.25601
45	90	8500	5127.911	0.008119	0.414399	0.40628	4250	880.5974	4166.737	846.4314	0.389388	22.31028	195.1341	195.1341	206.1266	6%	45.64544	0.796663	45.11344	0.787378	5227.446	5029.701	1.018746	5127.656	4152.433	1897.455	-0.25556
45	100	8500	5127.911	0.009022	0.414399	0.405377	4250	880.5974	4157.471	842.6709	0.389001	22.28812	207.9688	207.9688	220.2653	6%	45.68976	0.797437	45.15776	0.788152	5234.177	5023.1	1.018746	5127.658	4146.016	1670.481	-0.25297
45	110	8500	5127.911	0.009926	0.414399	0.404473	4250	880.5974	4148.202	838.9177	0.388614	22.26595	220.7881	220.7881	234.4043	6%	45.7341	0.798211	45.2021	0.788925	5240.923	5016.487	1.018747	5127.663	4139.606	1482.131	-0.24825
45	120	8500	5127.911	0.01083	0.414399	0.403569	4250	880.5974	4138.93	835.1716	0.388227	22.24377	233.592	233.592	248.5436	6%	45.77847	0.798985	45.24647	0.7897	5247.683	5009.865	1.018747	5127.67	4133.204	1324.103	-0.2414
45	130	8500	5127.911	0.011734	0.414399	0.402664	4250	880.5974	4129.655	831.4327	0.38784	22.22157	246.3806	246.3806	262.6832	7%	45.82287	0.79976	45.29087	0.790475	5254.459	5003.231	1.018748	5127.679	4126.81	1190.213	-0.23241
45	140	8500	5127.911	0.012639	0.414399	0.40176	4250	880.5974	4120.378	827.7011	0.387452	22.19935	259.1539	259.1539	276.8232	7%	45.86729	0.800535	45.33529	0.79125	5261.25	4996.587	1.018748	5127.69	4120.423	1075.777	-0.22129
45	150	8500	5127.911	0.013544	0.414399	0.400855	4250	880.5974	4111.097	823.9767	0.387064	22.17713	271.912	271.912	290.9636	7%	45.91174	0.801311	45.37974	0.792026	5268.056	4989.933	1.018749	5127.703	4114.044	977.1947	-0.20802
45	160	8500	5127.911	0.014449	0.414399	0.39995	4250	880.5974	4101.813	820.2595	0.386676	22.15489	284.6549	284.6549	305.1044	7%	45.95623	0.802087	45.42423	0.792802	5274.878	4983.268	1.01875	5127.719	4107.673	891.6629	-0.19262
45	170	8500	5127.911	0.015355	0.414399	0.399044	4250	880.5974	4092.527	816.5495	0.386287	22.13263	297.3825	297.3825	319.2456	7%	46.00074	0.802864	45.46874	0.793579	5281.714	4976.592	1.01875	5127.736	4101.309	816.9715	-0.17507
45	180	8500	5127.911	0.01626	0.414399	0.398138	4250	880.5974	4083.237	812.8468	0.385899	22.11036	310.0951	310.0951	333.3873	8%	46.04527	0.803642	45.51327	0.794356	5288.566	4969.905	1.018751	5127.756	4094.952	751.36	-0.15537
45	190	8500	5127.911	0.017166	0.414399	0.397232	4250	880.5974	4073.945	809.1514	0.38551	22.08808	322.7925	322.7925	347.5294	8%	46.08984	0.804419	45.55784	0.795134	5295.434	4963.208	1.018752	5127.778	4088.604	693.4112	-0.13353
45	200	8500	5127.911	0.018073	0.414399	0.396326	4250	880.5974	4064.649	805.4632	0.385121	22.06578	335.4749	335.4749	361.672	8%	46.13443	0.805198	45.60243	0.795913	5302.316	4956.499	1.018753	5127.802	4082.263	641.9744	-0.10954
45	210	8500	5127.911	0.018979	0.414399	0.395419	4250	880.5974	4055.351	801.7823	0.384731	22.04347	348.1423	348.1423	375.8151	8%	46.17906	0.805977	45.64706	0.796691	5309.215	4949.78	1.018754	5127.828	4075.929	596.107	-0.0834
45	220	8500	5127.911	0.019886	0.414399	0.394512	4250	880.5974	4046.05	798.1086	0.384342	22.02115	360.7947	360.7947	389.9588	8%	46.22371	0.806756	45.69171	0.797471	5316.129	4943.05	1.018755	5127.856	4069.603	555.0314	-0.0551
45	230	8500	5127.911	0.020793	0.414399	0.393605	4250	880.5974	4036.746	794.4423	0.383952	21.99881	373.4321	373.4321	404.1029	8%	46.26838	0.807536	45.73638	0.79825	5323.058	4936.308	1.018756	5127.887	4063.284	518.101	-0.02465
45	240	8500	5127.911	0.021701	0.414399	0.392698	4250	880.5974	4027.439	790.7832	0.383561	21.97645	386.0547	386.0547	418.2476	8%	46.31309	0.808316	45.78109	0.799031	5330.003	4929.556	1.018757	5127.919	4056.973	484.775	0.007956
45	40	9000	5429.553	0.003405	0.414399	0.410994	4500	932.3972	4463.025	917.1378	0.391403	22.42576	135.3778	135.3778	140.0776	3%	45.41449	0.792632	44.88249	0.783347	5497.98	5361.893	1.018744	5429.305	4432.311	4419.67	-0.24829
45	50	9000	5429.553	0.004257	0.414399	0.410142	4500	932.3972	4453.774	913.3397	0.391039	22.4049	148.294	148.294	154.215	4%	45.4562	0.79336	44.9242	0.784075	5504.633	5355.345	1.018744	5429.296	4425.853	3683.306	-0.25687
45	60	9000	5429.553	0.005109	0.414399	0.40929	4500	932.3972	4444.521	909.5484	0.390675	22.38403	161.1954	161.1954	168.3526	4%	45.49794	0.794089	44.96594	0.784804	5511.3	5348.788	1.018745	5429.29	4419.402	3117.307	-0.26344
45	70	9000	5429.553	0.005961	0.414399	0.408437	4500	932.3972	4435.265	905.7639	0.390311	22.36315	174.0822	174.0822	182.4904	5%	45.5397	0.794818	45.0077	0.785533	5517.981	5342.221	1.018745	5429.285	4412.959	2672.862	-0.26801
45	80	9000	5429.553	0.006814	0.414399	0.407585	4500	932.3972	4426.006	901.9861	0.389946	22.34226	186.9542	186.9542	196.6284	5%	45.58149	0.795547	45.04949	0.786262	5524.676	5335.644	1.018745	5429.282	4406.523	2317.472	-0.27056
45	90	9000	5429.553	0.007667	0.414399	0.406732	4500	932.3972	4416.744	898.2151	0.389581	22.32135	199.8116	199.8116	210.7667	5%	45.6233	0.796277	45.0913	0.786992	5531.385	5329.057	1.018746	5429.282	4400.094	2028.82	-0.27111
45	100	9000	5429.553	0.00852	0.414399	0.405879	4500	932.3972	4407.479	894.4509	0.389216	22.30043	212.6545	212.6545	224.9052	6%	45.66514	0.797007	45.13314	0.787722	5538.108	5322.461	1.018746	5429.283	4393.673	1791.167	-0.26965

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
45	110	9000	5429.553	0.009374	0.414399	0.405025	4500	932.3972	4398.212	890.6934	0.388851	22.2795	225.4827	225.4827	239.044	6%	45.707	0.797738	45.175	0.788452	5544.845	5315.855	1.018746	5429.287	4387.259	1593.157	-0.26618
45	120	9000	5429.553	0.010227	0.414399	0.404172	4500	932.3972	4388.942	886.9428	0.388485	22.25856	238.2965	238.2965	253.1831	6%	45.74889	0.798469	45.21689	0.789184	5551.597	5309.239	1.018747	5429.292	4380.852	1426.428	-0.26069
45	130	9000	5429.553	0.011081	0.414399	0.403318	4500	932.3972	4379.669	883.1989	0.388119	22.2376	251.0957	251.0957	267.3225	6%	45.7908	0.7992	45.2588	0.789915	5558.362	5302.613	1.018747	5429.3	4374.452	1284.714	-0.25319
45	140	9000	5429.553	0.011935	0.414399	0.402463	4500	932.3972	4370.393	879.4619	0.387753	22.21663	263.8805	263.8805	281.4622	7%	45.83274	0.799932	45.30074	0.790647	5565.142	5295.977	1.018748	5429.309	4368.06	1163.243	-0.24366
45	150	9000	5429.553	0.01279	0.414399	0.401609	4500	932.3972	4361.115	875.7316	0.387387	22.19565	276.6508	276.6508	295.6023	7%	45.8747	0.800665	45.3427	0.791379	5571.936	5289.331	1.018748	5429.321	4361.675	1058.33	-0.23212
45	160	9000	5429.553	0.013644	0.414399	0.400754	4500	932.3972	4351.834	872.0082	0.387021	22.17466	289.4068	289.4068	309.7427	7%	45.91669	0.801397	45.38469	0.792112	5578.744	5282.675	1.018749	5429.334	4355.297	967.0917	-0.21856
45	170	9000	5429.553	0.014499	0.414399	0.399899	4500	932.3972	4342.55	868.2916	0.386654	22.15365	302.1484	302.1484	323.8836	7%	45.9587	0.802131	45.4267	0.792845	5585.566	5276.009	1.01875	5429.35	4348.926	887.247	-0.20298
45	180	9000	5429.553	0.015355	0.414399	0.399044	4500	932.3972	4333.263	864.5819	0.386287	22.13263	314.8756	314.8756	338.0248	7%	46.00074	0.802864	45.46874	0.793579	5592.403	5269.333	1.01875	5429.368	4342.562	816.9715	-0.18537
45	190	9000	5429.553	0.01621	0.414399	0.398189	4500	932.3972	4323.974	860.8789	0.38592	22.1116	327.5886	327.5886	352.1665	8%	46.0428	0.803598	45.5108	0.794313	5599.255	5262.646	1.018751	5429.387	4336.206	754.7923	-0.16573
45	200	9000	5429.553	0.017066	0.414399	0.397333	4500	932.3972	4314.682	857.1829	0.385553	22.09056	340.2873	340.2873	366.3085	8%	46.08489	0.804333	45.55289	0.795048	5606.121	5255.95	1.018752	5429.409	4329.856	699.5093	-0.14407
45	210	9000	5429.553	0.017922	0.414399	0.396477	4500	932.3972	4305.387	853.4937	0.385185	22.0695	352.9718	352.9718	380.4511	8%	46.127	0.805068	45.595	0.795783	5613.002	5249.243	1.018753	5429.433	4323.514	650.1372	-0.12037
45	220	9000	5429.553	0.018778	0.414399	0.395621	4500	932.3972	4296.089	849.8114	0.384818	22.04843	365.6421	365.6421	394.5941	8%	46.16914	0.805803	45.63714	0.796518	5619.897	5242.525	1.018753	5429.458	4317.179	605.8605	-0.09465
45	230	9000	5429.553	0.019634	0.414399	0.394764	4500	932.3972	4286.789	846.1359	0.38445	22.02735	378.2982	378.2982	408.7376	8%	46.2113	0.806539	45.6793	0.797254	5626.807	5235.798	1.018754	5429.486	4310.851	566	-0.06689
45	240	9000	5429.553	0.020491	0.414399	0.393908	4500	932.3972	4277.486	842.4673	0.384082	22.00626	390.9402	390.9402	422.8816	8%	46.25349	0.807276	45.72149	0.797991	5633.732	5229.06	1.018755	5429.516	4304.53	529.9859	-0.0371
45	40	9500	5731.195	0.003226	0.414399	0.411173	4750	984.197	4713.026	968.9348	0.39148	22.43015	140.0266	140.0266	144.7181	3%	45.40571	0.792479	44.87371	0.783194	5801.947	5661.23	1.018744	5730.935	4679.987	4602.843	-0.25991
45	50	9500	5731.195	0.004033	0.414399	0.410366	4750	984.197	4703.776	965.1351	0.391135	22.41039	152.9462	152.9462	158.8555	4%	45.44522	0.793169	44.91322	0.783884	5808.597	5654.684	1.018744	5730.926	4673.527	3858.065	-0.26896
45	60	9500	5731.195	0.00484	0.414399	0.409559	4750	984.197	4694.523	961.3419	0.39079	22.39062	165.8519	165.8519	172.993	4%	45.48475	0.793859	44.95275	0.784574	5815.26	5648.129	1.018745	5730.919	4667.074	3280.999	-0.27611
45	70	9500	5731.195	0.005647	0.414399	0.408751	4750	984.197	4685.268	957.5551	0.390445	22.37085	178.7437	178.7437	187.1307	5%	45.52431	0.794549	44.99231	0.785264	5821.936	5641.566	1.018745	5730.913	4660.628	2824.788	-0.28137
45	80	9500	5731.195	0.006455	0.414399	0.407944	4750	984.197	4676.01	953.7746	0.3901	22.35106	191.6215	191.6215	201.2686	5%	45.56389	0.79524	45.03189	0.785955	5828.626	5634.993	1.018745	5730.91	4654.189	2457.868	-0.28472
45	90	9500	5731.195	0.007263	0.414399	0.407136	4750	984.197	4666.75	950.0006	0.389754	22.33126	204.4855	204.4855	215.4068	5%	45.60349	0.795931	45.07149	0.786646	5835.328	5628.41	1.018745	5730.909	4647.757	2158.352	-0.28617
45	100	9500	5731.195	0.008071	0.414399	0.406328	4750	984.197	4657.487	946.2329	0.389408	22.31144	217.3356	217.3356	229.5452	6%	45.64311	0.796623	45.11111	0.787337	5842.044	5621.819	1.018746	5730.909	4641.332	1910.669	-0.28571
45	110	9500	5731.195	0.008879	0.414399	0.405519	4750	984.197	4648.221	942.4717	0.389062	22.29162	230.1719	230.1719	243.6838	6%	45.68276	0.797315	45.15076	0.788029	5848.773	5615.218	1.018746	5730.911	4634.914	1703.502	-0.28335
45	120	9500	5731.195	0.009688	0.414399	0.404711	4750	984.197	4638.952	938.717	0.388716	22.27179	242.9944	242.9944	257.8227	6%	45.72243	0.798007	45.19043	0.788722	5855.516	5608.608	1.018746	5730.916	4628.503	1528.462	-0.27908
45	130	9500	5731.195	0.010497	0.414399	0.403902	4750	984.197	4629.681	934.9686	0.38837	22.25194	255.8032	255.8032	271.9619	6%	45.76212	0.7987	45.23012	0.789414	5862.272	5601.989	1.018747	5730.922	4622.098	1379.225	-0.2729
45	140	9500	5731.195	0.011306	0.414399	0.403093	4750	984.197	4620.408	931.2268	0.388023	22.23208	268.5983	268.5983	286.1014	7%	45.80183	0.799393	45.26983	0.790108	5869.042	5595.36	1.018747	5730.93	4615.701	1250.952	-0.26481
45	150	9500	5731.195	0.012115	0.414399	0.402284	4750	984.197	4611.131	927.4913	0.387676	22.21222	281.3796	281.3796	300.2412	7%	45.84157	0.800086	45.30957	0.790801	5875.825	5588.722	1.018748	5730.94	4609.31	1139.887	-0.25481
45	160	9500	5731.195	0.012925	0.414399	0.401474	4750	984.197	4601.853	923.7623	0.387329	22.19234	294.1473	294.1473	314.3814	7%	45.88133	0.80078	45.34933	0.791495	5882.621	5582.074	1.018748	5730.952	4602.926	1043.08	-0.2429
45	170	9500	5731.195	0.013734	0.414399	0.400664	4750	984.197	4592.571	920.0398	0.386982	22.17245	306.9014	306.9014	328.5219	7%	45.92111	0.801475	45.38911	0.792189	5889.431	5575.417	1.018749	5730.966	4596.549	958.1854	-0.22907
45	180	9500	5731.195	0.014544	0.414399	0.399854	4750	984.197	4583.287	916.3238	0.386635	22.15254	319.6418	319.6418	342.6627	7%	45.96091	0.802169	45.42891	0.792884	5896.255	5568.75	1.01875	5730.982	4590.179	883.3239	-0.21333
45	190	9500	5731.195	0.015355	0.414399	0.399044	4750	984.197	4574	912.6142	0.386287	22.13263	332.3687	332.3687	356.804	7%	46.00074	0.802864	45.46874	0.793579	5903.093	5562.073	1.01875	5730.999	4583.816	816.9715	-0.19566
45	200	9500	5731.195	0.016165	0.414399	0.398234	4750	984.197	4564.711	908.9111	0.38594	22.11271	345.0821	345.0821	370.9456	7%	46.04058	0.80356	45.50858	0.794275	5909.944	5555.387	1.018751	5731.019	4577.459	757.8835	-0.17608
45	210	9500	5731.195	0.016976	0.414399	0.397423	4750	984.197	4555.419	905.2145	0.385592	22.09277	357.7819	357.7819	385.0876	8%	46.08046	0.804256	45.54846	0.794971	5916.809	5548.691	1.018752	5731.04	4571.109	705.0347	-0.15458
45	220	9500	5731.195	0.017786	0.414399	0.396612	4750	984.197	4546.124	901.5244	0.385243	22.07283	370.4683	370.4683	399.2301	8%	46.12035	0.804952	45.58835	0.795667	5923.687	5541.986	1.018752	5731.064	4564.766	657.5749	-0.13115
45	230	9500	5731.195	0.018598	0.414399	0.395801	4750	984.197	4536.827	897.8408	0.384895	22.05287	383.1412	383.1412	413.373	8%	46.16026	0.805649	45.62826	0.796363	5930.58	5535.27	1.018753	5731.089	4558.429	614.794	-0.1058
45	240	9500	5731.195	0.019409	0.414399	0.39499	4750	984.197	4527.528	894.1637	0.384547	22.0329	395.8006	395.8006	427.5164	8%	46.2002	0.806346	45.6682	0.79706	5937.486	5528.545	1.018754	5731.116	4552.1	576.0952	-0.07853
45	40	10000	6032.837	0.003064	0.414399	0.411334	5000	1035.997	4963.027	1020.732	0.391549	22.4341	144.6747	144.6747	149.3586	3%	45.39781	0.792341	44.86581	0.783056	6105.914	5960.566	1.018744	6032.565	4927.663	4777.654	-0.27144
45	50	10000	6032.837	0.003831	0.414399	0.410568	5000	1035.997	4953.778	1016.931	0.391221	22.41533	157.5975	157.5975	163.4959	4%	45.43534	0.792996	44.90334	0.783711	6112.561	5954.022	1.018744	6032.556	4921.201	4026.255	-0.28092
45	60	10000	6032.837	0.004598	0.414399	0.409801	5000	1035.997	4944.526	1013.136	0.390894	22.39655	170.507	170.507	177.6334	4%	45.47289	0.793652	44.94089	0.784367	6119.221	5947.47	1.018745	6032.548	4914.746	3439.659	-0.2886
45	70	10000	6032.837	0.005365	0.414399	0.409034	5000	1035.997	4935.271	1009.347	0.390566	22.37777	183.4033	183.4033	191.771	5%	45.51046	0.794307	44.97846	0.785022	6125.893	5940.909	1.018745	6032.542	4908.298	2972.936	-0.29447
45	80	10000	6032.837	0.006132	0.414399	0.408267	5000	1035.997	4926.015	1005.564	0.390238	22.35897	196.2864	196.2864	205.9089	5%	45.54805	0.794964	45.01605	0.785678	6132.577	5934.34	1.018745	6032.538	4901.857	2595.492	-0.29853
45	90	10000	6032.837	0.006899	0.414399	0.407499	5000	1035.997	4916.755	1001.787	0.389909	22.34017	209.1562	209.1562	220.0469	5%	45.58567	0.79562	45.05367	0.786335	6139.274	5927.762	1.018745	6032.536	4895.422	2285.906	-0.30079
45	100	10000	6032.837	0.007667	0.414399	0.406732	5000	1035.997	4907.493	998.0168	0.389581	22.32135	222.0129	222.0129	234.1852	5%	45.6233	0.796277	45.0913	0.786992	6145.984	5921.175	1.018746	6032.535	4888.994	2028.82	-0.30124
45	110	10000	6032.837	0.008435	0.414399	0.405964	5000	1035.997	4898.229	994.2522	0.389252	22.30252	234.8565	234.8565	248.3237	6%	45.66095	0.796934	45.12895	0.787649	6152.706	5914.579	1.018746	6032.537	4882.572	1812.988	-0.29988
45	120	10000	6032.837	0.009203	0.414399	0.405196	5000	1035.997	4888.962	990.4938	0.388924	22.28369	247.6869	247.6869	262.4624	6%	45.69862	0.797591	45.16662	0.788306	6159.441	5907.974	1.018746	6032.54	4876.157	1630.023	-0.2967
45	130	10000	6032.837	0.009971	0.414399	0.404428	5000	1035.997	4879.692	986.7414	0.388595	22.26484	260.5043	260.5043	276.6015	6%	45.73632	0.798249	45.20432	0.788964	6166.189	5901.361	1.018747	6032.545	4869.748	1473.568	-0.29172
45	140	10000	6032.837	0.01074	0.414399	0.403659	5000	1035.997	4870.421	982.9952	0.388266	22.24599	273.3086	273.3086	290.7408	6%	45.77403	0.798908	45.24203	0.789622	6172.949	5894.738	1.018747	6032.552	4863.346	1338.731	-0.28492
45	150	10000	6032.837	0.011508	0.414399	0.402891	5000	1035.997	4861.146	979.255	0.387936	22.22712	286.0999	286.0999	304.8803	7%	45.81176	0.799566	45.27976	0.790281	6179.722	5888.107	1.018748	6032.56	4856.95	1221.7	-0.27631
45	160	10000	6032.837	0.012277	0.414399	0.402122	5000	1035.997	4851.869	975.5211	0.387607	22.20824	298.8782	298.8782	319.0202	7%	45.84952	0.800225	45.31752	0.79094	6186.508	5881.466	1.018748	6032.571	4850.561	1119.468	-0.26588
45	170	10000	6032.837	0.013046	0.414399	0.401353	5000	1035.997	4842.59	971.7932	0.387277	22.18935	311.6435	311.6435	333.1604	7%	45.88729	0.800884	45.35529	0.791599	6193.307	5874.817	1.018749	6032.583	4844.178	1029.637	-0.25363
45	180	10000	6032.837	0.013815	0.414399	0.400583	5000	1035.997	4833.308	968.0715	0.386947	22.17046	324.3958	324.3958	347.301	7%	45.92509	0.801544	45.39309	0.792259	6200.119	5868.158	1.018749	6032.597	4837.802	950.2754	-0.23956
45	190	10000	6032.837	0.014585	0.414399	0.399814	5000	1035.997	4824.024	964.3559	0.386617	22.15155	337.1353	337.1353	361.4419	7%	45.9629	0.802204	45.4309	0.792919	6206.944	5861.491	1.01875	6032.613	4831.432	879.8156	-0.22367
45	200	10000	6032.837	0.015355	0.414399	0.399044	5000	1035.997	4814.737	960.6465	0.386287	22.13263	349.8618	349.8618	375.5831	7%	46.00074	0.802864	45.46874	0.793579	6213.782	5854.814	1.01875	6032.631	4825.069	816.9715	-0.20596
45	210	10000	6032.837	0.016124	0.414399	0.398274	5000	1035.997	4805.448	956.9433	0.385957	22.1137	362.5755	362.5755	389.7247	7%	46.03859	0.803525	45.50659	0.79424	6220.632	5848.128	1.018751	6032.65	4818.712	760.682	-0.18643
45	220	10000	6032.837	0.016895	0.414399	0.397504	5000	1035.997	4796.156	953.2462	0.385626	22.09477	375.2763	375.2763	403.8668	8%	46.07647	0.804186	45.54447	0.794901	6227.496	5841.433	1.018752	6032.672	4812.362	710.0642	-0.16507
45	230	10000	6032.837	0.017665	0.414399	0.396734	5000	1035.997	4786.862	949.5553	0.385296	22.07582	387.9644	387.9644	418.0092	8%	46.11436	0.804847	45.58236	0.795562	6234.373	5834.729	1.018752	6032.695	4806.018	664.3796	-0.14188
45	240	10000	6032.837	0.018435	0.414399	0.395963	5000	1035.997	4777.565	945.8705	0.384965	22.05686	400.6396	400.6396	432.152	8%	46.15228	0.805509	45.62028	0.796224	6241.263	5828.015	1.018753	6032.72	4799.68	623.0059	-0.11687
50	40	1000	535.881	0.034041	0.466521	0.432481	500	116.6304	463.5163	100.2309	0.422439	24.20397	63.9692	63.9692	71.65773	12%	41.85806	0.730561	41.32606	0.721276	564.5946	507.8137	1.018879	535.9386	468.0154	244.3758	0.05765
50	50	1000	535.881	0.042619	0.466521	0.423902	500	116.6304	454.3224	96.29418	0.418865	23.9992	77.17069	77.17069	87.2326	13%	42.2676	0.737709	41.7356	0.728424	571.0788	501.5874	1.018848	536.0087	461.4147	167.9172	0.12773
50	60	1000	535.881	0.051225	0.466521	0.415297	500	116.6304	445.0995	92.42424	0.415268	23.79313	90.20691	90.20691	102.8177	14%	42.67975	0.744902	42.14775	0.735617	577.69	495.2768	1.018821	536.0992	454.8965	122.8911	0.218241
50	70	1000	535.881	0.059857	0.466521	0.406665	500	116.6304	435.8476	88.6219	0.411649	23.58575	103.0818	103.0818	118.415	15%	43.09451	0.752141	42.56251	0.742856	584.4322	488.8783	1.018799	536.2104	448.4591	94.11012	0.329362
50	80	1000	535.881	0.068516	0.466521	0.398005	500	116.6304	426.5669	84.88794	0.408007	23.37706	115.7991	115.7991	134.0261	16%	43.51188	0.759426	42.97988	0.75014	591.3097	482.3881	1.01878	536.3423	442.1004	74.57435	0.46127
50	90	1000	535.881	0.077202	0.466521	0.389319	500	116.6304	417.2575	81.22316	0.404342	23.16707	128.3628	128.3628	149.6531	17%	43.93187	0.766756	43.39987	0.757471	598.3271	475.8021	1.018765	536.4951	435.8186	60.69066	0.614142

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
50	100	1000	535.881	0.085915	0.466521	0.380606	500	116.6304	407.9194	77.62834	0.400654	22.95576	140.7764	140.7764	165.2978	17%	44.35448	0.774132	43.82248	0.764846	605.4889	469.1163	1.018754	536.6692	429.6118	50.45917	0.788153
50	110	1000	535.881	0.094655	0.466521	0.371867	500	116.6304	398.5528	74.1043	0.396943	22.74315	153.0438	153.0438	180.9619	18%	44.7797	0.781553	44.2477	0.772268	612.8002	462.3261	1.018747	536.8645	423.4781	42.69417	0.98348
50	120	1000	535.881	0.10342	0.466521	0.363101	500	116.6304	389.1579	70.65182	0.393209	22.52922	165.1684	165.1684	196.6475	19%	45.20755	0.789021	44.67555	0.779735	620.266	455.4271	1.018744	537.0813	417.4158	36.65606	1.200297
50	130	1000	535.881	0.112213	0.466521	0.354309	500	116.6304	379.7348	67.2717	0.389453	22.31399	177.154	177.154	212.3564	20%	45.63802	0.796534	45.10602	0.787249	627.8918	448.4144	1.018746	537.3198	411.423	31.86385	1.438779
50	140	1000	535.881	0.121031	0.466521	0.345491	500	116.6304	370.2836	63.96475	0.385673	22.09745	189.0038	189.0038	228.0905	21%	46.0711	0.804092	45.5391	0.794807	635.683	441.2829	1.018752	537.5801	405.4981	27.9936	1.699099
50	150	1000	535.881	0.129875	0.466521	0.336646	500	116.6304	360.8046	60.73176	0.381871	21.8796	200.7215	200.7215	243.8517	21%	46.5068	0.811697	45.9748	0.802412	643.6457	434.0272	1.018762	537.8624	399.6392	24.8206	1.98143
50	160	1000	535.881	0.138745	0.466521	0.327776	500	116.6304	351.298	57.57354	0.378046	21.66044	212.3104	212.3104	259.6419	22%	46.94512	0.819347	46.41312	0.810062	651.786	426.6419	1.018777	538.1669	393.8448	22.1849	2.285941
50	170	1000	535.881	0.147641	0.466521	0.31888	500	116.6304	341.7638	54.49088	0.374198	21.43998	223.7738	223.7738	275.4631	23%	47.38604	0.827042	46.85404	0.817757	660.1104	419.1209	1.018796	538.4938	388.1131	19.97016	2.612804
50	180	1000	535.881	0.156562	0.466521	0.309959	500	116.6304	332.2024	51.48459	0.370328	21.21822	235.1151	235.1151	291.3173	24%	47.82956	0.834783	47.29756	0.825498	668.6256	411.4582	1.01882	538.8432	382.4424	18.09001	2.962184
50	190	1000	535.881	0.165509	0.466521	0.301013	500	116.6304	322.614	48.55545	0.366435	20.99516	246.3375	246.3375	307.2063	25%	48.27568	0.84257	47.74368	0.833284	677.3388	403.6471	1.018849	539.2152	376.8312	16.4793	3.33425
50	200	1000	535.881	0.17448	0.466521	0.292041	500	116.6304	312.9987	45.70426	0.362519	20.7708	257.4443	257.4443	323.1322	26%	48.72439	0.850401	48.19239	0.841116	686.2574	395.6807	1.018883	539.6102	371.2779	15.08806	3.729164
50	210	1000	535.881	0.183476	0.466521	0.283045	500	116.6304	303.3569	42.93182	0.358581	20.54516	268.4385	268.4385	339.0971	26%	49.17569	0.858278	48.64369	0.848993	695.3893	387.552	1.018922	540.0281	365.7807	13.87747	4.147089
50	220	1000	535.881	0.192497	0.466521	0.274024	500	116.6304	293.6887	40.23891	0.35462	20.31822	279.3234	279.3234	355.1028	27%	49.62955	0.866199	49.09755	0.856914	704.7427	379.2532	1.018966	540.4692	360.3383	12.81697	4.588186
50	230	1000	535.881	0.201542	0.466521	0.264979	500	116.6304	283.9945	37.62631	0.350637	20.09001	290.1021	290.1021	371.1515	28%	50.08598	0.874165	49.55398	0.86488	714.3265	370.7763	1.019015	540.9336	354.949	11.88224	5.052612
50	240	1000	535.881	0.210611	0.466521	0.25591	500	116.6304	274.2746	35.09481	0.346631	19.86052	300.7775	300.7775	387.2452	29%	50.54496	0.882176	50.01296	0.872891	724.1496	362.1128	1.01907	541.4215	349.6113	11.05374	5.540521
50	40	1500	803.8215	0.022645	0.466521	0.443876	750	174.9456	713.5943	158.3737	0.427169	24.47497	69.15478	69.15478	76.35602	10%	41.31606	0.721101	40.78406	0.711816	834.2092	773.9854	1.018925	803.815	715.4226	470.4767	-0.00647
50	50	1500	803.8215	0.028337	0.466521	0.438184	750	174.9456	704.4441	154.3382	0.424809	24.33976	82.61161	82.61161	91.9189	11%	41.58648	0.725821	41.05448	0.716536	840.5104	767.8792	1.018901	803.8548	708.6942	329.6859	0.033292
50	60	1500	803.8215	0.034041	0.466521	0.432481	750	174.9456	695.2745	150.3464	0.422439	24.20397	95.9538	95.9538	107.4866	12%	41.85806	0.730561	41.32606	0.721276	846.8918	761.7206	1.018879	803.908	702.0231	244.3758	0.086476
50	70	1500	803.8215	0.039757	0.466521	0.426765	750	174.9456	686.0855	146.3986	0.420059	24.0676	109.1831	109.1831	123.0599	13%	42.1308	0.735321	41.5988	0.726036	853.3553	755.508	1.018858	803.9747	695.4084	188.7432	0.153163
50	80	1500	803.8215	0.045485	0.466521	0.421037	750	174.9456	676.877	142.4951	0.417669	23.93065	122.3014	122.3014	138.6396	13%	42.4047	0.740102	41.8727	0.730816	859.9024	749.2401	1.018839	804.0549	688.8493	150.4249	0.233432
50	90	1500	803.8215	0.051225	0.466521	0.415297	750	174.9456	667.6493	138.6364	0.415268	23.79313	135.3104	135.3104	154.2266	14%	42.67975	0.744902	42.14775	0.735617	866.535	742.9152	1.018821	804.1489	682.3448	122.8911	0.327362
50	100	1500	803.8215	0.056976	0.466521	0.409545	750	174.9456	658.4022	134.8227	0.412858	23.65502	148.2118	148.2118	169.8216	15%	42.95596	0.749723	42.42396	0.740438	873.255	736.5317	1.018806	804.2565	675.8941	102.4277	0.435032
50	110	1500	803.8215	0.06274	0.466521	0.403781	750	174.9456	649.1359	131.0544	0.410437	23.51633	161.0073	161.0073	185.4256	15%	43.23334	0.754564	42.70134	0.745279	880.0642	730.0879	1.018792	804.378	669.4964	86.79434	0.55652
50	120	1500	803.8215	0.068516	0.466521	0.398005	750	174.9456	639.8504	127.3319	0.408007	23.37706	173.6987	173.6987	201.0392	16%	43.51188	0.759426	42.97988	0.75014	886.9646	723.5821	1.01878	804.5134	663.1507	74.57435	0.691906
50	130	1500	803.8215	0.074304	0.466521	0.392217	750	174.9456	630.5457	123.6555	0.405566	23.23721	186.2876	186.2876	216.6634	16%	43.79158	0.764307	43.25958	0.755022	893.9582	717.0125	1.018769	804.6628	656.8562	64.83576	0.841267
50	140	1500	803.8215	0.080104	0.466521	0.386418	750	174.9456	621.2219	120.0256	0.403115	23.09678	198.7757	198.7757	232.2989	17%	44.07245	0.769209	43.54045	0.759924	901.0471	710.3772	1.018761	804.8262	650.6121	56.94504	1.004682
50	150	1500	803.8215	0.085915	0.466521	0.380606	750	174.9456	611.8791	116.4425	0.400654	22.95576	211.1647	211.1647	247.9467	17%	44.35448	0.774132	43.82248	0.764846	908.2334	703.6744	1.018754	805.0037	644.4177	50.45917	1.182229
50	160	1500	803.8215	0.091739	0.466521	0.374783	750	174.9456	602.5172	112.9066	0.398182	22.81416	223.4561	223.4561	263.6074	18%	44.63767	0.779074	44.10567	0.769789	915.5193	696.902	1.018749	805.1955	638.272	45.06073	1.373987
50	170	1500	803.8215	0.097574	0.466521	0.368948	750	174.9456	593.1365	109.4182	0.395701	22.67199	235.6515	235.6515	279.282	19%	44.92203	0.784037	44.39003	0.774752	922.907	690.0582	1.018745	805.4015	632.1742	40.51744	1.580033
50	180	1500	803.8215	0.10342	0.466521	0.363101	750	174.9456	583.7368	105.9777	0.393209	22.52922	247.7527	247.7527	294.9713	19%	45.20755	0.789021	44.67555	0.779735	930.399	683.1407	1.018744	805.6219	626.1237	36.65606	1.800445
50	190	1500	803.8215	0.109279	0.466521	0.357243	750	174.9456	574.3184	102.5855	0.390707	22.38588	259.761	259.761	310.6761	20%	45.49424	0.794024	44.96224	0.784739	937.9976	676.1474	1.018745	805.8568	620.1195	33.34529	2.035301
50	200	1500	803.8215	0.115149	0.466521	0.351372	750	174.9456	564.8813	99.24182	0.388195	22.24196	271.6782	271.6782	326.3973	20%	45.78209	0.799048	45.25009	0.789763	945.7053	669.076	1.018747	806.1062	614.1609	30.48406	2.284676
50	210	1500	803.8215	0.121031	0.466521	0.345491	750	174.9456	555.4255	95.94713	0.385673	22.09745	283.5057	283.5057	342.1358	21%	46.0711	0.804092	45.5391	0.794807	953.5246	661.9243	1.018752	806.3701	608.2471	27.9936	2.548649
50	220	1500	803.8215	0.126924	0.466521	0.339597	750	174.9456	545.9511	92.70174	0.383141	21.95236	295.2451	295.2451	357.8923	21%	46.36128	0.809157	45.82928	0.799872	961.4581	654.6899	1.018758	806.6488	602.3774	25.81173	2.827295
50	230	1500	803.8215	0.132829	0.466521	0.333692	750	174.9456	536.4582	89.50602	0.380599	21.80669	306.8979	306.8979	373.6677	22%	46.65262	0.814242	46.12062	0.804957	969.5087	647.3702	1.018766	806.9422	596.551	23.88882	3.120691
50	240	1500	803.8215	0.138745	0.466521	0.327776	750	174.9456	526.947	86.36031	0.378046	21.66044	318.4656	318.4656	389.4629	22%	46.94512	0.819347	46.41312	0.810062	977.6791	639.9628	1.018777	807.2504	590.7672	22.1849	3.428912
50	40	2000	1071.762	0.016966	0.466521	0.449556	1000	233.2607	963.6333	216.6034	0.429519	24.60961	74.10863	74.10863	81.06282	9%	41.04679	0.716402	40.51479	0.707116	1103.982	1040.054	1.018951	1071.718	962.9457	728.3203	-0.04384
50	50	2000	1071.762	0.021224	0.466521	0.445297	1000	233.2607	954.5051	212.5192	0.427757	24.50868	87.69659	87.69659	96.62127	10%	41.24863	0.719924	40.71663	0.710639	1110.195	1034.005	1.018932	1071.743	956.1517	520.1093	-0.01909
50	60	2000	1071.762	0.02549	0.466521	0.441032	1000	233.2607	945.3622	208.4674	0.42599	24.40744	101.1969	101.1969	112.1826	11%	41.45113	0.723459	40.91913	0.714173	1116.466	1027.918	1.018913	1071.778	949.4016	390.5944	0.015653
50	70	2000	1071.762	0.029762	0.466521	0.43676	1000	233.2607	936.2047	204.4482	0.424217	24.30587	114.6104	114.6104	127.7471	11%	41.65427	0.727004	41.12227	0.717719	1122.798	1021.793	1.018895	1071.822	942.6948	304.517	0.060435
50	80	2000	1071.762	0.034041	0.466521	0.432481	1000	233.2607	927.0327	200.4618	0.422439	24.20397	127.9384	127.9384	143.3155	12%	41.85806	0.730561	41.32606	0.721276	1129.189	1015.627	1.018879	1071.877	936.0308	244.3758	0.115301
50	90	2000	1071.762	0.038327	0.466521	0.428195	1000	233.2607	917.846	196.5085	0.420655	24.10175	141.1817	141.1817	158.888	13%	42.06251	0.734129	41.53051	0.724844	1135.642	1009.422	1.018863	1071.942	929.4091	200.6796	0.180294
50	100	2000	1071.762	0.042619	0.466521	0.423902	1000	233.2607	908.6449	192.5884	0.418865	23.9992	154.3414	154.3414	174.4652	13%	42.2676	0.737709	41.7356	0.728424	1142.158	1003.175	1.018848	1072.017	922.8293	167.9172	0.255459
50	110	2000	1071.762	0.046918	0.466521	0.419603	1000	233.2607	899.4292	188.7016	0.41707	23.89632	167.4184	167.4184	190.0475	14%	42.47335	0.7413	41.94135	0.732015	1148.737	996.8857	1.018834	1072.103	916.2908	142.7097	0.340841
50	120	2000	1071.762	0.051225	0.466521	0.415297	1000	233.2607	890.199	184.8485	0.415268	23.79313	180.4138	180.4138	205.6355	14%	42.67975	0.744902	42.14775	0.735617	1155.38	990.5536	1.018821	1072.198	909.7931	122.8911	0.436483
50	130	2000	1071.762	0.055537	0.466521	0.410984	1000	233.2607	880.9544	181.0291	0.413462	23.6896	193.3285	193.3285	221.2294	14%	42.8868	0.748516	42.3548	0.739231	1162.089	984.1776	1.01881	1072.304	903.3357	107.0208	0.542429
50	140	2000	1071.762	0.059857	0.466521	0.406665	1000	233.2607	871.6953	177.2438	0.411649	23.58575	206.1635	206.1635	236.8299	15%	43.09451	0.752141	42.56251	0.742856	1168.864	977.7566	1.018799	1072.421	896.9182	94.11012	0.658725
50	150	2000	1071.762	0.064183	0.466521	0.402338	1000	233.2607	862.4218	173.4926	0.409831	23.48157	218.9198	218.9198	252.4374	15%	43.30287	0.755778	42.77087	0.746492	1175.708	971.2898	1.018789	1072.547	890.5401	83.46223	0.785414
50	160	2000	1071.762	0.068516	0.466521	0.398005	1000	233.2607	853.1338	169.7759	0.408007	23.37706	231.5982	231.5982	268.0523	16%	43.51188	0.759426	42.97988	0.75014	1182.619	964.7761	1.01878	1072.685	884.2009	74.57435	0.922541
50	170	2000	1071.762	0.072856	0.466521	0.393666	1000	233.2607	843.8315	166.0937	0.406177	23.27223	244.1998	244.1998	283.6751	16%	43.72155	0.763085	43.18955	0.7538	1189.601	958.2146	1.018772	1072.832	877.9001	67.07632	1.070149
50	180	2000	1071.762	0.077202	0.466521	0.389319	1000	233.2607	834.5149	162.4463	0.404342	23.16707	256.7255	256.7255	299.3063	17%	43.93187	0.766756	43.39987	0.757471	1196.654	951.6042	1.018765	1072.99	871.6372	60.69066	1.228283
50	190	2000	1071.762	0.081555	0.466521	0.384966	1000	233.2607	825.184	158.8339	0.4025	23.06158	269.1762	269.1762	314.9463	17%	44.14285	0.770438	43.61085	0.761153	1203.779	944.9439	1.018759	1073.159	865.4119	55.20604	1.396988
50	200	2000	1071.762	0.085915	0.466521	0.380606	1000	233.2607	815.8387	155.2567	0.400654	22.95576	281.5529	281.5529	330.5955	17%	44.35448	0.774132	43.82248	0.764846	1210.978	938.2325	1.018754	1073.338	859.2236	50.45917	1.576306
50	210	2000	1071.762	0.090282	0.466521	0.37624	1000	233.2607	806.4793	151.7148	0.398801	22.84962	293.8563	293.8563	346.2546	18%	44.56676	0.777837	44.03476	0.768552	1218.251	931.469	1.01875	1073.528	853.0718	46.32227	1.766282
50	220	2000	1071.762	0.094655	0.466521	0.371867	1000	233.2607	797.1056	148.2086	0.396943	22.74315	306.0876	306.0876	361.9239	18%	44.7797	0.781553	44.2477	0.772268	1225.6	924.6522	1.018747	1073.729	846.9562	42.69417	1.966959
50	230	2000	1071.762	0.099034	0.466521	0.367487	1000	233.2607	787.7178	144.7381	0.395079	22.63635	318.2475	318.2475	377.6039	19%	44.9933	0.785281	44.4613	0.775996	1233.027	917.7811	1.018745	1073.94	840.8763	39.49391	2.178382
50	240	2000	1071.762	0.10342	0.466521	0.363101	1000	233.2607	778.3158	141.3036	0.393209	22.52922	330.3369	330.3369	393.2951	19%	45.20755	0.789021	44.67555	0.779735	1240.532	910.8542	1.018744	1074.163	834.8316	36.65606	2.400594
50	40	2500	1339.702	0.013564	0.466521	0.452958	1250	291.5759	1213.657	274.8675	0.430924	24.69011	78.96802	78.96802	85.77225	9%	40.88578	0.713591	40.35378	0.704306	1373.817	1306.083	1.018967	1339.632	1210.516	1002.253	-0.07059
50	50	2500	1339.702	0.016966	0.466521	0.449556	1250	291.5759	1204.542	270.7543	0.429519	24.60961	92.63579	92.63579	101.2395	9%	41.04679	0.716402	40.51479	0.707116	1379.978	1300.068	1.018951	1339.648	1203.682	728.3203	-0.0548
50	60	2500	1339.702	0.020372	0.466521	0.446149	1250	291.5759	1195.415	266.6668	0.42811	24.52889	106.2326	106.2326	116.8867	10%	41.20821	0.719219	40.67621	0.709934	1386.185	1294.023	1.018935	1339.671	1196.884	553.815	-0.03105
50	70	2500	1339.702	0.023783	0.466521	0.442739	1250	291.5759	1186.276	262.6053	0.426698	24.44797	119.759	119.759	132.4471	11%	41.37005	0.722044	40.83805	0.712758	1392.438	1287.947	1.01892	1339.703	1190.12	435.7763	0.000691
50	80	2500	1339.702	0.027198	0.466521	0.439324	1250	291.5759	1177.126	258.5697	0.425282	24.36685	133.2158	133.2158	148.0099	11%	41.53231	0.724875	41.00031	0.71559	1398.74	1281.841	1.018906	1339.743	1183.392	352.1832	0.040448

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
50	90	2500	1339.702	0.030617	0.466521	0.435904	1250	291.5759	1167.964	254.5604	0.423862	24.28551	146.6036	146.6036	163.5756	12%	41.69498	0.727715	41.16298	0.718429	1405.089	1275.704	1.018892	1339.791	1176.698	290.7977	0.08825
50	100	2500	1339.702	0.034041	0.466521	0.432481	1250	291.5759	1158.791	250.5773	0.422439	24.20397	159.923	159.923	179.1443	12%	41.85806	0.730561	41.32606	0.721276	1411.486	1269.534	1.018879	1339.847	1170.039	244.3758	0.144126
50	110	2500	1339.702	0.037469	0.466521	0.429053	1250	291.5759	1149.606	246.6206	0.421012	24.12222	173.1747	173.1747	194.7164	12%	42.02157	0.733415	41.48957	0.72413	1417.933	1263.333	1.018866	1339.911	1163.413	208.4064	0.208104
50	120	2500	1339.702	0.040901	0.466521	0.42562	1250	291.5759	1140.409	242.6905	0.419582	24.04026	186.3594	186.3594	210.2922	13%	42.18549	0.736276	41.65349	0.72699	1424.43	1257.098	1.018854	1339.983	1156.82	179.9607	0.280212
50	130	2500	1339.702	0.044338	0.466521	0.422183	1250	291.5759	1131.2	238.7871	0.418148	23.95809	199.4776	199.4776	225.8719	13%	42.34982	0.739144	41.81782	0.729859	1430.977	1250.83	1.018843	1340.063	1150.261	157.0695	0.360479
50	140	2500	1339.702	0.047779	0.466521	0.418742	1250	291.5759	1121.98	234.9104	0.41671	23.87571	212.53	212.53	241.4558	14%	42.51458	0.742019	41.98258	0.732734	1437.575	1244.528	1.018832	1340.151	1143.735	138.3692	0.448934
50	150	2500	1339.702	0.051225	0.466521	0.415297	1250	291.5759	1112.749	231.0606	0.415268	23.79313	225.5173	225.5173	257.0443	14%	42.67975	0.744902	42.14775	0.735617	1444.225	1238.192	1.018821	1340.248	1137.241	122.8911	0.545603
50	160	2500	1339.702	0.054674	0.466521	0.411847	1250	291.5759	1103.506	227.2379	0.413823	23.71033	238.44	238.44	272.6377	14%	42.84534	0.747792	42.31334	0.738507	1450.927	1231.82	1.018812	1340.353	1130.78	109.9314	0.650517
50	170	2500	1339.702	0.058128	0.466521	0.408393	1250	291.5759	1094.251	223.4423	0.412375	23.62733	251.2988	251.2988	288.2362	15%	43.01135	0.75069	42.47935	0.741404	1457.683	1225.413	1.018803	1340.466	1124.351	98.96901	0.763702
50	180	2500	1339.702	0.061587	0.466521	0.404935	1250	291.5759	1084.984	219.674	0.410922	23.54411	264.0943	264.0943	303.8401	15%	43.17777	0.753594	42.64577	0.744309	1464.492	1218.969	1.018794	1340.588	1117.953	89.61114	0.885189
50	190	2500	1339.702	0.065049	0.466521	0.401472	1250	291.5759	1075.707	215.9332	0.409466	23.46069	276.8271	276.8271	319.4497	15%	43.34462	0.756506	42.81262	0.747221	1471.355	1212.489	1.018787	1340.717	1111.586	81.5573	1.015004
50	200	2500	1339.702	0.068516	0.466521	0.398005	1250	291.5759	1066.417	212.2198	0.408007	23.37706	289.4978	289.4978	335.0654	16%	43.51188	0.759426	42.97988	0.75014	1478.274	1205.97	1.01878	1340.856	1105.251	74.57435	1.153176
50	210	2500	1339.702	0.071987	0.466521	0.394534	1250	291.5759	1057.116	208.5342	0.406543	23.29322	302.107	302.107	350.6873	16%	43.67956	0.762352	43.14756	0.753067	1485.249	1199.413	1.018773	1341.002	1098.946	68.47915	1.299734
50	220	2500	1339.702	0.075463	0.466521	0.391059	1250	291.5759	1047.804	204.8763	0.405076	23.20917	314.6554	314.6554	366.3159	16%	43.84766	0.765286	43.31566	0.756001	1492.28	1192.818	1.018767	1341.157	1092.672	63.1262	1.454705
50	230	2500	1339.702	0.078943	0.466521	0.387579	1250	291.5759	1038.48	201.2464	0.403606	23.12491	327.1435	327.1435	381.9515	17%	44.01618	0.768227	43.48418	0.758942	1499.369	1186.183	1.018762	1341.321	1086.428	58.39875	1.618118
50	240	2500	1339.702	0.082427	0.466521	0.384095	1250	291.5759	1029.145	197.6446	0.402132	23.04044	339.5718	339.5718	397.5942	17%	44.18512	0.771176	43.65312	0.761891	1506.516	1179.507	1.018758	1341.492	1080.214	54.20218	1.790001
50	40	3000	1607.643	0.011298	0.466521	0.455223	1500	349.8911	1463.672	333.1487	0.431858	24.74367	83.77969	83.77969	90.48278	8%	40.77867	0.711722	40.24667	0.702437	1643.682	1572.093	1.018979	1607.551	1458.11	1282.227	-0.09205
50	50	3000	1607.643	0.014131	0.466521	0.452391	1500	349.8911	1454.566	329.0162	0.43069	24.67671	97.50113	97.50113	106.0378	9%	40.91258	0.714059	40.38058	0.704774	1649.809	1566.099	1.018965	1607.561	1451.249	946.7236	-0.08221
50	60	3000	1607.643	0.016966	0.466521	0.449556	1500	349.8911	1445.45	324.9051	0.429519	24.60961	111.1629	111.1629	121.5942	9%	41.04679	0.716402	40.51479	0.707116	1655.973	1560.081	1.018951	1607.577	1444.419	728.3203	-0.06576
50	70	3000	1607.643	0.019804	0.466521	0.446717	1500	349.8911	1436.324	320.8155	0.428345	24.54236	124.7656	124.7656	137.1522	10%	41.18128	0.718749	40.64928	0.709464	1662.176	1554.039	1.018938	1607.6	1437.617	578.1663	-0.04267
50	80	3000	1607.643	0.022645	0.466521	0.443876	1500	349.8911	1427.189	316.7475	0.427169	24.47497	138.3096	138.3096	152.712	10%	41.31606	0.721101	40.78406	0.711816	1668.418	1547.971	1.018925	1607.63	1430.845	470.4767	-0.01293
50	90	3000	1607.643	0.02549	0.466521	0.441032	1500	349.8911	1418.043	312.7011	0.42599	24.40744	151.7953	151.7953	168.2738	11%	41.45113	0.723459	40.91913	0.714173	1674.7	1541.878	1.018913	1607.666	1424.102	390.5944	0.023479
50	100	3000	1607.643	0.028337	0.466521	0.438184	1500	349.8911	1408.888	308.6764	0.424809	24.33976	165.2232	165.2232	183.8378	11%	41.58648	0.725821	41.05448	0.716536	1681.021	1535.758	1.018901	1607.71	1417.388	329.6859	0.066584
50	110	3000	1607.643	0.031187	0.466521	0.435334	1500	349.8911	1399.723	304.6736	0.423625	24.27194	178.5938	178.5938	199.4042	12%	41.72213	0.728189	41.19013	0.718903	1687.382	1529.613	1.01889	1607.759	1410.703	282.1692	0.116402
50	120	3000	1607.643	0.034041	0.466521	0.432481	1500	349.8911	1390.549	300.6928	0.422439	24.20397	191.9076	191.9076	214.9732	12%	41.85806	0.730561	41.32606	0.721276	1693.784	1523.441	1.018879	1607.816	1404.046	244.3758	0.172951
50	130	3000	1607.643	0.036897	0.466521	0.429624	1500	349.8911	1381.365	296.7339	0.42125	24.13586	205.1649	205.1649	230.545	12%	41.99429	0.732939	41.46229	0.723653	1700.226	1517.242	1.018868	1607.879	1397.418	213.8141	0.236253
50	140	3000	1607.643	0.039757	0.466521	0.426765	1500	349.8911	1372.171	292.7971	0.420059	24.0676	218.3663	218.3663	246.1198	13%	42.1308	0.735321	41.5988	0.726036	1706.711	1511.016	1.018858	1607.949	1390.817	188.7432	0.306325
50	150	3000	1607.643	0.042619	0.466521	0.423902	1500	349.8911	1362.967	288.8825	0.418865	23.9992	231.5121	231.5121	261.6978	13%	42.2676	0.737709	41.7356	0.728424	1713.236	1504.762	1.018848	1608.026	1384.244	167.9172	0.383189
50	160	3000	1607.643	0.045485	0.466521	0.421037	1500	349.8911	1353.754	284.9902	0.417669	23.93065	244.6028	244.6028	277.2792	13%	42.4047	0.740102	41.8727	0.730816	1719.805	1498.48	1.018839	1608.11	1377.699	150.4249	0.466864
50	170	3000	1607.643	0.048353	0.466521	0.418168	1500	349.8911	1344.531	281.1202	0.41647	23.86196	257.6389	257.6389	292.8643	14%	42.54208	0.742499	42.01008	0.733214	1726.416	1492.17	1.01883	1608.2	1371.181	135.5875	0.557369
50	180	3000	1607.643	0.051225	0.466521	0.415297	1500	349.8911	1335.299	277.2727	0.415268	23.79313	270.6207	270.6207	308.4532	14%	42.67975	0.744902	42.14775	0.735617	1733.07	1485.83	1.018821	1608.298	1364.69	122.8911	0.654724
50	190	3000	1607.643	0.054099	0.466521	0.412423	1500	349.8911	1326.056	273.4477	0.414064	23.72414	283.5488	283.5488	324.0461	14%	42.81771	0.74731	42.28571	0.738025	1739.768	1479.462	1.018813	1608.402	1358.226	111.9404	0.758949
50	200	3000	1607.643	0.056976	0.466521	0.409545	1500	349.8911	1316.804	269.6454	0.412858	23.65502	296.4235	296.4235	339.6433	15%	42.95596	0.749723	42.42396	0.740438	1746.51	1473.063	1.018806	1608.513	1351.788	102.4277	0.870064
50	210	3000	1607.643	0.059857	0.466521	0.406665	1500	349.8911	1307.543	265.8657	0.411649	23.58575	309.2453	309.2453	355.2449	15%	43.09451	0.752141	42.56251	0.742856	1753.297	1466.635	1.018799	1608.631	1345.377	94.11012	0.988087
50	220	3000	1607.643	0.06274	0.466521	0.403781	1500	349.8911	1298.272	262.1088	0.410437	23.51633	322.0146	322.0146	370.8512	15%	43.23334	0.754564	42.70134	0.745279	1760.128	1460.176	1.018792	1608.756	1338.993	86.79434	1.11304
50	230	3000	1607.643	0.065627	0.466521	0.400895	1500	349.8911	1288.991	258.3748	0.409223	23.44677	334.7318	334.7318	386.4623	15%	43.37246	0.756992	42.84046	0.747707	1767.006	1453.686	1.018785	1608.888	1332.634	80.3246	1.244942
50	240	3000	1607.643	0.068516	0.466521	0.398005	1500	349.8911	1279.701	254.6638	0.408007	23.37706	347.3974	347.3974	402.0784	16%	43.51188	0.759426	42.97988	0.75014	1773.929	1447.164	1.01878	1609.027	1326.301	74.57435	1.383811
50	40	3500	1875.583	0.009681	0.466521	0.45684	1750	408.2063	1713.684	391.4397	0.432525	24.78186	88.56391	88.56391	95.19385	7%	40.70227	0.710389	40.17027	0.701104	1913.565	1838.091	1.018987	1875.473	1705.718	1561.79	-0.1105
50	50	3500	1875.583	0.012107	0.466521	0.454414	1750	408.2063	1704.584	387.2935	0.431525	24.72455	102.3239	102.3239	110.7481	8%	40.8169	0.712389	40.2849	0.703104	1919.667	1832.113	1.018975	1875.479	1698.838	1169.989	-0.1049
50	60	3500	1875.583	0.014535	0.466521	0.451986	1750	408.2063	1695.475	383.1656	0.430523	24.66713	116.0325	116.0325	126.3034	9%	40.93174	0.714394	40.39974	0.705108	1925.801	1826.115	1.018963	1875.49	1691.984	909.8641	-0.09365
50	70	3500	1875.583	0.016966	0.466521	0.449556	1750	408.2063	1686.358	379.056	0.429519	24.60961	129.6901	129.6901	141.8599	9%	41.04679	0.716402	40.51479	0.707116	1931.969	1820.095	1.018951	1875.507	1685.155	728.3203	-0.07672
50	80	3500	1875.583	0.019398	0.466521	0.447123	1750	408.2063	1677.233	374.9648	0.428513	24.55198	143.297	143.297	157.4178	10%	41.16205	0.718413	40.63005	0.709128	1938.169	1814.054	1.01894	1875.529	1678.352	596.571	-0.05411
50	90	3500	1875.583	0.021833	0.466521	0.444688	1750	408.2063	1668.1	370.8921	0.427505	24.49424	156.8535	156.8535	172.9772	10%	41.27752	0.720429	40.74552	0.711143	1944.403	1807.992	1.018929	1875.558	1671.573	497.9066	-0.0258
50	100	3500	1875.583	0.02427	0.466521	0.442251	1750	408.2063	1658.958	366.838	0.426496	24.4364	170.3599	170.3599	188.5383	11%	41.3932	0.722448	40.8612	0.713163	1950.67	1801.907	1.018918	1875.592	1664.82	422.0863	0.008231
50	110	3500	1875.583	0.02671	0.466521	0.439812	1750	408.2063	1649.808	362.8025	0.425484	24.37845	183.8167	183.8167	204.1011	11%	41.5091	0.72447	40.9771	0.715185	1956.971	1795.801	1.018908	1875.631	1658.092	362.5486	0.047987
50	120	3500	1875.583	0.029151	0.466521	0.43737	1750	408.2063	1640.649	358.7857	0.424471	24.3204	197.2241	197.2241	219.6659	11%	41.62521	0.726497	41.09321	0.717212	1963.306	1789.673	1.018898	1875.677	1651.388	314.9315	0.093487
50	130	3500	1875.583	0.031595	0.466521	0.434927	1750	408.2063	1631.482	354.7875	0.423456	24.26223	210.5825	210.5825	235.2329	12%	41.74153	0.728527	41.20953	0.719242	1969.676	1783.522	1.018888	1875.728	1644.709	276.2432	0.144746
50	140	3500	1875.583	0.034041	0.466521	0.432481	1750	408.2063	1622.307	350.8082	0.422439	24.20397	223.8922	223.8922	250.802	12%	41.85806	0.730561	41.32606	0.721276	1976.081	1777.348	1.018879	1875.785	1638.054	244.3758	0.201777
50	150	3500	1875.583	0.036489	0.466521	0.430032	1750	408.2063	1613.124	346.8478	0.42142	24.1456	237.1535	237.1535	266.3736	12%	41.97481	0.732599	41.44281	0.723313	1982.521	1771.151	1.01887	1875.848	1631.423	217.8095	0.264595
50	160	3500	1875.583	0.038939	0.466521	0.427582	1750	408.2063	1603.932	342.9063	0.420399	24.08712	250.3668	250.3668	281.9478	13%	42.09177	0.73464	41.55977	0.725355	1988.996	1764.931	1.018861	1875.917	1624.817	195.4261	0.333215
50	170	3500	1875.583	0.041392	0.466521	0.425129	1750	408.2063	1594.732	338.9837	0.419377	24.02853	263.5324	263.5324	297.5246	13%	42.20894	0.736685	41.67694	0.7274	1995.507	1758.687	1.018852	1875.991	1618.234	176.3876	0.40765
50	180	3500	1875.583	0.043847	0.466521	0.422675	1750	408.2063	1585.523	335.0803	0.418353	23.96984	276.6506	276.6506	313.1043	13%	42.32632	0.738734	41.79432	0.729449	2002.054	1752.419	1.018844	1876.071	1611.675	160.0563	0.487917
50	190	3500	1875.583	0.046304	0.466521	0.420218	1750	408.2063	1576.307	331.1959	0.417326	23.91104	289.7218	289.7218	328.687	13%	42.44392	0.740786	41.91192	0.731501	2008.637	1746.127	1.018836	1876.158	1605.139	145.9398	0.574028
50	200	3500	1875.583	0.048763	0.466521	0.417758	1750	408.2063	1567.082	327.3308	0.416298	23.85214	302.7462	302.7462	344.2729	14%	42.56173	0.742842	42.02973	0.733557	2015.258	1739.81	1.018829	1876.249	1598.627	133.653	0.665999
50	210	3500	1875.583	0.051225	0.466521	0.415297	1750	408.2063	1557.848	323.4848	0.415268	23.79313	315.7242	315.7242	359.8621	14%	42.67975	0.744902	42.14775	0.735617	2021.915	1733.469	1.018821	1876.347	1592.138	122.8911	0.763844
50	220	3500	1875.583	0.053688	0.466521	0.412833	1750	408.2063	1548.607	319.6582	0.414237	23.73401	328.6561	328.6561	375.4547	14%	42.79799	0.746966	42.26599	0.737681	2028.61	1727.102	1.018815	1876.451	1585.672	113.4104	0.867578
50	230	3500	1875.583	0.056154	0.466521	0.410367	1750	408.2063	1539.357	315.851	0.413203	23.67478	341.5422	341.5422	391.0509	14%	42.91643	0.749033	42.38443	0.739748	2035.342	1720.71	1.018808	1876.561	1579.229	105.0141	0.977214
50	240	3500	1875.583	0.058622	0.466521	0.407899	1750	408.2063	1530.099	312.0632	0.412167	23.61545	354.3828	354.3828	406.6509	15%	43.0351	0.751104	42.5031	0.741819	2042.113	1714.293	1.018802	1876.676	1572.809	97.54181	1.092768
50	40	4000	2143.524	0.008469	0.466521	0.458052	2000	466.5215	1963.692	449.7368	0.433025	24.81048	93.33088	93.33088	99.90523	7%	40.64504	0.70939	40.11304	0.700105	2183.458	2104.083	1.018993	2143.397	1953.335	1836.831	-0.12706
50	50	4000	2143.524	0.010591	0.466521	0.455931	2000	466.5215	1954.597	445.5803	0.43215	24.76038	107.1199	107.1199	115.459	8%	40.74523	0.711138	40.21323	0.701853	2189.542	2098.116	1.018982	2143.399	1946.44	1394.374	-0.12464
50	60	4000	2143.524	0.012714	0.466521	0.453807	2000	466.5215	1945.494	441.4398	0.431274	24.71021	120.8639	120.8639	131.0135	8%	40.84559	0.71289	40.31359	0.703605	2195.654	2092.132	1.018972	2143.407	1939.568	1095.285	-0.11728
50	70	4000	2143.524	0.014839	0.466521	0.451682	2000	466.5215	1936.384	437.3153	0.430397	24.65995	134.5629	134.5629	146.569	9%	40.94611	0.714644	40.41411	0.705359	2201.795	2086.129	1.018961	2143.419	1932.719	883.628	-0.10496

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
50	80	4000	2143.524	0.016966	0.466521	0.449556	2000	466.5215	1927.267	433.2068	0.429519	24.60961	148.2173	148.2173	162.1256	9%	41.04679	0.716402	40.51479	0.707116	2207.964	2080.108	1.018951	2143.436	1925.891	728.3203	-0.08768
50	90	4000	2143.524	0.019094	0.466521	0.447427	2000	466.5215	1918.142	429.1145	0.428639	24.55919	161.8273	161.8273	177.6834	10%	41.14763	0.718162	40.61563	0.708876	2214.163	2074.069	1.018941	2143.459	1919.086	610.9653	-0.06542
50	100	4000	2143.524	0.021224	0.466521	0.445297	2000	466.5215	1909.01	425.0384	0.427757	24.50868	175.3932	175.3932	193.2425	10%	41.24863	0.719924	40.71663	0.710639	2220.39	2068.011	1.018932	2143.486	1912.303	520.1093	-0.03818
50	110	4000	2143.524	0.023356	0.466521	0.443165	2000	466.5215	1899.871	420.9784	0.426874	24.4581	188.9152	188.9152	208.8031	11%	41.3498	0.72169	40.8178	0.712405	2226.647	2061.933	1.018922	2143.518	1905.542	448.3178	-0.00594
50	120	4000	2143.524	0.02549	0.466521	0.441032	2000	466.5215	1890.724	416.9348	0.42599	24.40744	202.3937	202.3937	224.3651	11%	41.45113	0.723459	40.91913	0.714173	2232.933	2055.837	1.018913	2143.555	1898.803	390.5944	0.031305
50	130	4000	2143.524	0.027625	0.466521	0.438897	2000	466.5215	1881.571	412.9074	0.425104	24.35669	215.8288	215.8288	239.9288	11%	41.55262	0.72523	41.02062	0.715945	2239.249	2049.721	1.018904	2143.598	1892.086	343.4797	0.073573
50	140	4000	2143.524	0.029762	0.466521	0.43676	2000	466.5215	1872.409	408.8964	0.424217	24.30587	229.2209	229.2209	255.4943	11%	41.65427	0.727004	41.12227	0.717719	2245.595	2043.585	1.018895	2143.645	1885.39	304.517	0.12087
50	150	4000	2143.524	0.031901	0.466521	0.434621	2000	466.5215	1863.241	404.9018	0.423329	24.25496	242.5701	242.5701	271.0616	12%	41.75609	0.728781	41.22409	0.719496	2251.971	2037.43	1.018887	2143.697	1878.715	271.9226	0.17321
50	160	4000	2143.524	0.034041	0.466521	0.432481	2000	466.5215	1854.065	400.9237	0.422439	24.20397	255.8768	255.8768	286.6309	12%	41.85806	0.730561	41.32606	0.721276	2258.378	2031.255	1.018879	2143.755	1872.062	244.3758	0.230602
50	170	4000	2143.524	0.036183	0.466521	0.430339	2000	466.5215	1844.882	396.9621	0.421548	24.1529	269.1411	269.1411	302.2023	12%	41.9602	0.732344	41.4282	0.723059	2264.816	2025.059	1.018871	2143.817	1865.429	220.8817	0.293058
50	180	4000	2143.524	0.038327	0.466521	0.428195	2000	466.5215	1835.692	393.017	0.420655	24.10175	282.3634	282.3634	317.776	13%	42.06251	0.734129	41.53051	0.724844	2271.284	2018.843	1.018863	2143.885	1858.818	200.6796	0.360589
50	190	4000	2143.524	0.040472	0.466521	0.426049	2000	466.5215	1826.495	389.0885	0.419761	24.05051	295.5439	295.5439	333.352	13%	42.16497	0.735918	41.63297	0.726632	2277.784	2012.607	1.018855	2143.957	1852.228	183.1792	0.433205
50	200	4000	2143.524	0.042619	0.466521	0.423902	2000	466.5215	1817.29	385.1767	0.418865	23.9992	308.6828	308.6828	348.9304	13%	42.2676	0.737709	41.7356	0.728424	2284.315	2006.35	1.018848	2144.035	1845.659	167.9172	0.510919
50	210	4000	2143.524	0.044768	0.466521	0.421754	2000	466.5215	1808.078	381.2816	0.417968	23.9478	321.7804	321.7804	364.5114	13%	42.37039	0.739503	41.83839	0.730218	2290.878	2000.071	1.018841	2144.118	1839.11	154.5258	0.593741
50	220	4000	2143.524	0.046918	0.466521	0.419603	2000	466.5215	1798.858	377.4032	0.41707	23.89632	334.8369	334.8369	380.0951	14%	42.47335	0.7413	41.94135	0.732015	2297.473	1993.771	1.018834	2144.206	1832.582	142.7097	0.681681
50	230	4000	2143.524	0.049071	0.466521	0.417451	2000	466.5215	1789.632	373.5417	0.41617	23.84477	347.8525	347.8525	395.6816	14%	42.57647	0.7431	42.04447	0.733814	2304.1	1987.45	1.018828	2144.299	1826.074	132.2299	0.774753
50	240	4000	2143.524	0.051225	0.466521	0.415297	2000	466.5215	1780.398	369.697	0.415268	23.79313	360.8276	360.8276	411.2709	14%	42.67975	0.744902	42.14775	0.735617	2310.76	1981.107	1.018821	2144.397	1819.586	122.8911	0.872965
50	40	4500	2411.464	0.007527	0.466521	0.458995	2250	524.8367	2213.698	508.0379	0.433413	24.83272	98.08632	98.08632	104.6168	7%	40.60056	0.708613	40.06856	0.699328	2453.358	2370.07	1.018998	2411.322	2200.957	2104.787	-0.14238
50	50	4500	2411.464	0.009412	0.466521	0.45711	2250	524.8367	2204.607	503.8734	0.432636	24.78823	111.8981	111.8981	120.1701	7%	40.68955	0.710167	40.15755	0.700881	2459.428	2364.112	1.018988	2411.322	2194.051	1617.26	-0.14242
50	60	4500	2411.464	0.011298	0.466521	0.455223	2250	524.8367	2195.509	499.7231	0.431858	24.74367	125.6695	125.6695	135.7242	8%	40.77867	0.711722	40.24667	0.702437	2465.523	2358.139	1.018979	2411.326	2187.165	1282.227	-0.13808
50	70	4500	2411.464	0.013186	0.466521	0.453335	2250	524.8367	2186.404	495.587	0.43108	24.69904	139.4009	139.4009	151.279	9%	40.86791	0.71328	40.33591	0.703994	2471.643	2352.15	1.018969	2411.335	2180.3	1042.062	-0.12934
50	80	4500	2411.464	0.015075	0.466521	0.451446	2250	524.8367	2177.293	491.4652	0.4303	24.65436	153.0925	153.0925	166.8347	9%	40.95729	0.714839	40.42529	0.705554	2477.789	2346.144	1.01896	2411.348	2173.454	864.0068	-0.1162
50	90	4500	2411.464	0.016966	0.466521	0.449556	2250	524.8367	2168.175	487.3577	0.429519	24.60961	166.7444	166.7444	182.3914	9%	41.04679	0.716402	40.51479	0.707116	2483.96	2340.122	1.018951	2411.366	2166.628	728.3203	-0.09864
50	100	4500	2411.464	0.018858	0.466521	0.447664	2250	524.8367	2159.051	483.2645	0.428737	24.56479	180.3569	180.3569	197.9491	10%	41.13642	0.717966	40.60442	0.708681	2490.156	2334.083	1.018942	2411.388	2159.822	622.529	-0.07666
50	110	4500	2411.464	0.020751	0.466521	0.445771	2250	524.8367	2149.92	479.1856	0.427953	24.51991	193.9301	193.9301	213.5079	10%	41.22617	0.719532	40.69417	0.710247	2496.379	2328.028	1.018934	2411.414	2153.035	538.4365	-0.05025
50	120	4500	2411.464	0.022645	0.466521	0.443876	2250	524.8367	2140.783	475.1212	0.427169	24.47497	207.4643	207.4643	229.0681	10%	41.31606	0.721101	40.78406	0.711816	2502.628	2321.956	1.018925	2411.445	2146.268	470.4767	-0.0194
50	130	4500	2411.464	0.024541	0.466521	0.44198	2250	524.8367	2131.639	471.0712	0.426383	24.42996	220.9597	220.9597	244.6295	11%	41.40607	0.722672	40.87407	0.713387	2508.902	2315.867	1.018917	2411.48	2139.52	414.7618	0.015898
50	140	4500	2411.464	0.026438	0.466521	0.440083	2250	524.8367	2122.489	467.0357	0.425597	24.38489	234.4165	234.4165	260.1923	11%	41.49621	0.724246	40.96421	0.71496	2515.203	2309.761	1.018909	2411.52	2132.792	368.5095	0.055654
50	150	4500	2411.464	0.028337	0.466521	0.438184	2250	524.8367	2113.332	463.0147	0.424809	24.33976	247.8348	247.8348	275.7567	11%	41.58648	0.725821	41.05448	0.716536	2521.531	2303.638	1.018901	2411.564	2126.083	329.6859	0.099876
50	160	4500	2411.464	0.030237	0.466521	0.436285	2250	524.8367	2104.169	459.0082	0.42402	24.29456	261.215	261.215	291.3227	12%	41.67688	0.727399	41.14488	0.718114	2527.886	2297.497	1.018894	2411.613	2119.393	296.7761	0.148573
50	170	4500	2411.464	0.032138	0.466521	0.434383	2250	524.8367	2095	455.0164	0.42323	24.2493	274.5571	274.5571	306.8903	12%	41.76741	0.728979	41.23541	0.719694	2534.267	2291.338	1.018886	2411.666	2112.721	268.6332	0.201754
50	180	4500	2411.464	0.034041	0.466521	0.432481	2250	524.8367	2085.823	451.0392	0.422439	24.20397	287.8614	287.8614	322.4598	12%	41.85806	0.730561	41.32606	0.721276	2540.676	2285.162	1.018879	2411.724	2106.069	244.3758	0.259427
50	190	4500	2411.464	0.035945	0.466521	0.430577	2250	524.8367	2076.641	447.0766	0.421647	24.15858	301.1281	301.1281	338.0311	12%	41.94885	0.732145	41.41685	0.72286	2547.111	2278.967	1.018872	2411.786	2099.436	223.3174	0.321601
50	200	4500	2411.464	0.03785	0.466521	0.428671	2250	524.8367	2067.452	443.1288	0.420853	24.11312	314.3573	314.3573	353.6044	12%	42.03976	0.733732	41.50776	0.724447	2553.575	2272.755	1.018865	2411.853	2092.821	204.9169	0.388285
50	210	4500	2411.464	0.039757	0.466521	0.426765	2250	524.8367	2058.256	439.1957	0.420059	24.0676	327.5494	327.5494	369.1797	13%	42.1308	0.735321	41.5988	0.726036	2560.066	2266.524	1.018858	2411.924	2086.225	188.7432	0.459488
50	220	4500	2411.464	0.041665	0.466521	0.424857	2250	524.8367	2049.054	435.2774	0.419263	24.02202	340.7044	340.7044	384.7571	13%	42.22197	0.736912	41.68997	0.727627	2566.585	2260.275	1.018851	2412	2079.648	174.4494	0.535218
50	230	4500	2411.464	0.043574	0.466521	0.422948	2250	524.8367	2039.846	431.3739	0.418467	23.97637	353.8226	353.8226	400.3368	13%	42.31327	0.738506	41.78127	0.729221	2573.132	2254.007	1.018845	2412.08	2073.089	161.7535	0.615484
50	240	4500	2411.464	0.045485	0.466521	0.421037	2250	524.8367	2030.631	427.4853	0.417669	23.93065	366.9042	366.9042	415.9189	13%	42.4047	0.740102	41.8727	0.730816	2579.707	2247.72	1.018839	2412.165	2066.548	150.4249	0.700295
50	40	5000	2679.405	0.006773	0.466521	0.459748	2500	583.1519	2463.704	566.3418	0.433723	24.8505	102.8337	102.8337	109.3285	6%	40.565	0.707993	40.033	0.698708	2723.263	2636.054	1.019002	2679.248	2448.583	2364.119	-0.15681
50	50	5000	2679.405	0.008469	0.466521	0.458052	2500	583.1519	2454.615	562.171	0.433025	24.81048	116.6636	116.6636	124.8815	7%	40.64504	0.70939	40.11304	0.700105	2729.322	2630.104	1.018993	2679.246	2441.668	1836.831	-0.15883
50	60	5000	2679.405	0.010166	0.466521	0.456355	2500	583.1519	2445.52	558.0129	0.432325	24.77041	130.4572	130.4572	140.4352	8%	40.72518	0.710788	40.19318	0.701503	2735.403	2624.139	1.018984	2679.248	2434.771	1468.94	-0.1569
50	70	5000	2679.405	0.011865	0.466521	0.454657	2500	583.1519	2436.42	553.8676	0.431625	24.73029	144.2146	144.2146	155.9895	8%	40.80543	0.712189	40.27343	0.702904	2741.507	2618.16	1.018976	2679.254	2427.893	1202.047	-0.15102
50	80	5000	2679.405	0.013564	0.466521	0.452958	2500	583.1519	2427.314	549.735	0.430924	24.69011	157.936	157.936	171.5445	9%	40.88578	0.713591	40.35378	0.704306	2747.634	2612.167	1.018967	2679.264	2421.032	1002.253	-0.14118
50	90	5000	2679.405	0.015264	0.466521	0.451257	2500	583.1519	2418.201	545.6154	0.430222	24.64989	171.6216	171.6216	187.1003	9%	40.96623	0.714996	40.43423	0.70571	2753.783	2606.158	1.018959	2679.278	2414.189	848.7815	-0.12738
50	100	5000	2679.405	0.016966	0.466521	0.449556	2500	583.1519	2409.083	541.5085	0.429519	24.60961	185.2716	185.2716	202.6571	9%	41.04679	0.716402	40.51479	0.707116	2759.955	2600.136	1.018951	2679.295	2407.364	728.3203	-0.1096
50	110	5000	2679.405	0.018668	0.466521	0.447853	2500	583.1519	2399.959	537.4146	0.428815	24.56928	198.886	198.886	218.2147	10%	41.12745	0.717809	40.59545	0.708524	2766.151	2594.098	1.018943	2679.317	2400.557	632.0211	-0.08784
50	120	5000	2679.405	0.020372	0.466521	0.446149	2500	583.1519	2390.83	533.3336	0.42811	24.52889	212.4651	212.4651	233.7734	10%	41.20821	0.719219	40.67621	0.709934	2772.369	2588.045	1.018935	2679.343	2393.767	553.815	-0.0621
50	130	5000	2679.405	0.022077	0.466521	0.444445	2500	583.1519	2381.694	529.2656	0.427404	24.48846	226.0091	226.0091	249.3332	10%	41.28908	0.72063	40.75708	0.711345	2778.611	2581.977	1.018928	2679.373	2386.995	489.4274	-0.03236
50	140	5000	2679.405	0.023783	0.466521	0.442739	2500	583.1519	2372.553	525.2105	0.426698	24.44797	239.518	239.518	264.8942	11%	41.37005	0.722044	40.83805	0.712758	2784.877	2575.894	1.01892	2679.406	2380.241	435.7763	0.001382
50	150	5000	2679.405	0.02549	0.466521	0.441032	2500	583.1519	2363.405	521.1685	0.42599	24.40744	252.9921	252.9921	280.4564	11%	41.45113	0.723459	40.91913	0.714173	2791.166	2569.796	1.018913	2679.444	2373.504	390.5944	0.039131
50	160	5000	2679.405	0.027198	0.466521	0.439324	2500	583.1519	2354.252	517.1395	0.425282	24.36685	266.4316	266.4316	296.0199	11%	41.53231	0.724875	41.00031	0.71559	2797.479	2563.682	1.018906	2679.486	2366.784	352.1832	0.080896
50	170	5000	2679.405	0.028907	0.466521	0.437615	2500	583.1519	2345.093	513.1236	0.424572	24.32621	279.8365	279.8365	311.5848	11%	41.61359	0.726294	41.08159	0.717009	2803.816	2557.552	1.018899	2679.532	2360.082	319.2502	0.126684
50	180	5000	2679.405	0.030617	0.466521	0.435904	2500	583.1519	2335.929	509.1208	0.423862	24.28551	293.2071	293.2071	327.1512	12%	41.69498	0.727715	41.16298	0.718429	2810.177	2551.407	1.018892	2679.581	2353.396	290.7977	0.176501
50	190	5000	2679.405	0.032328	0.466521	0.434193	2500	583.1519	2326.758	505.1311	0.423151	24.24477	306.5436	306.5436	342.7191	12%	41.77647	0.729137	41.24447	0.719852	2816.563	2545.246	1.018885	2679.635	2346.728	266.0453	0.230355
50	200	5000	2679.405	0.034041	0.466521	0.432481	2500	583.1519	2317.582	501.1546	0.422439	24.20397	319.846	319.846	358.2886	12%	41.85806	0.730561	41.32606	0.721276	2822.973	2539.069	1.018879	2679.693	2340.077	244.3758	0.288252
50	210	5000	2679.405	0.035754	0.466521	0.430767	2500	583.1519	2308.399	497.1913	0.421726	24.16312	333.1145	333.1145	373.8598	12%	41.93976	0.731987	41.40776	0.722702	2829.407	2532.875	1.018872	2679.755	2333.443	225.2957	0.350201
50	220	5000	2679.405	0.037469	0.466521	0.429053	2500	583.1519	2299.211	493.2413	0.421012	24.12222	346.3494	346.3494	389.4328	12%	42.02157	0.733415	41.48957	0.72413	2835.866	2526.665	1.018866	2679.821	2326.825	208.4064	0.416208
50	230	5000	2679.405	0.039185	0.466521	0.427337	2500	583.1519	2290.017	489.3045	0.420297	24.08126	359.5508	359.5508	405.0076	13%	42.10347	0.734844	41.57147	0.725559	2842.351	2520.439	1.01886	2679.891	2320.225	193.3836	0.48628
50	240	5000	2679.405	0.040901	0.466521	0.42562	2500	583.1519	2280.818	485.381	0.419582	24.04026	372.7187	372.7187	420.5843	13%	42.18549	0.736276	41.65349	0.72699	2848.86	2514.196	1.018854	2679.965	2313.641	179.9607	0.560425
50	40	5500	2947.345	0.006157	0.466521	0.460365	2750	641.467	2713.708	624.6478	0.433977	24.86504	107.5751	107.5751	114.0403	6%	40.53592	0.707485	40.00392	0.6982	2993.172	2902.035	1.019005	2947.175	2696.212	2613.977	-0.17062
50	50	5500	2947.345	0.007698	0.466521	0.458823	2750	641.467	2704.622	620.4717	0.433342	24.82868	121.42	121.42	129.5931	7%	40.60864	0.708755	40.07664	0.699469	2999.222	2896.091	1.018997	2947.171	2689.29	2051.848	-0.17424
50	60	5500	2947.345	0.009241	0.466521	0.457281	2750	641.467	2695.53	616.3073	0.432707	24.79227	135.2317	135.2317	145.1464	7%	40.68145	0.710025	40.14945	0.70074	3005.292	2890.134	1.018989	2947.171	2682.384	1654.125	-0.17429

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
50	70	5500	2947.345	0.010784	0.466521	0.455738	2750	641.467	2686.433	612.1544	0.432071	24.75583	149.0105	149.0105	160.7003	8%	40.75435	0.711298	40.22235	0.702012	3011.382	2884.163	1.018981	2947.175	2675.495	1362.36	-0.17074
50	80	5500	2947.345	0.012328	0.466521	0.454194	2750	641.467	2677.331	608.0132	0.431434	24.71933	162.7564	162.7564	176.2548	8%	40.82733	0.712571	40.29533	0.703286	3017.493	2878.18	1.018973	2947.182	2668.622	1141.955	-0.16361
50	90	5500	2947.345	0.013873	0.466521	0.452648	2750	641.467	2668.223	603.8836	0.430796	24.6828	176.4697	176.4697	191.8101	9%	40.9004	0.713847	40.3684	0.704561	3023.625	2872.183	1.018966	2947.193	2661.765	971.371	-0.15287
50	100	5500	2947.345	0.015419	0.466521	0.451103	2750	641.467	2659.11	599.7656	0.430158	24.64623	190.1504	190.1504	207.366	9%	40.97355	0.715123	40.44155	0.705838	3029.778	2866.173	1.018958	2947.207	2654.925	836.625	-0.13852
50	110	5500	2947.345	0.016966	0.466521	0.449556	2750	641.467	2649.992	595.6594	0.429519	24.60961	203.7987	203.7987	222.9228	9%	41.04679	0.716402	40.51479	0.707116	3035.951	2860.149	1.018951	2947.225	2648.101	728.3203	-0.12056
50	120	5500	2947.345	0.018514	0.466521	0.448008	2750	641.467	2640.868	591.5649	0.428879	24.57294	217.4148	217.4148	238.4804	10%	41.12011	0.717681	40.58811	0.708396	3042.145	2854.112	1.018944	2947.247	2641.293	639.9518	-0.09898
50	130	5500	2947.345	0.020062	0.466521	0.446459	2750	641.467	2631.739	587.4821	0.428238	24.53624	230.9987	230.9987	254.0389	10%	41.19352	0.718963	40.66152	0.709677	3048.361	2848.061	1.018937	2947.272	2634.501	566.8999	-0.07378
50	140	5500	2947.345	0.021612	0.466521	0.44491	2750	641.467	2622.605	583.4111	0.427597	24.49949	244.5506	244.5506	269.5985	10%	41.26701	0.720245	40.73501	0.71096	3054.597	2841.997	1.01893	2947.301	2627.725	505.8105	-0.04495
50	150	5500	2947.345	0.023162	0.466521	0.443359	2750	641.467	2613.465	579.3519	0.426955	24.4627	258.0707	258.0707	285.159	10%	41.34059	0.721529	40.80859	0.712244	3060.855	2835.919	1.018923	2947.333	2620.965	454.201	-0.01249
50	160	5500	2947.345	0.024714	0.466521	0.441808	2750	641.467	2604.32	575.3046	0.426312	24.42587	271.559	271.559	300.7207	11%	41.41426	0.722815	40.88226	0.71353	3067.135	2829.827	1.018916	2947.369	2614.22	410.2012	0.023623
50	170	5500	2947.345	0.026266	0.466521	0.440256	2750	641.467	2595.17	571.269	0.425668	24.38899	285.0158	285.0158	316.2836	11%	41.48801	0.724102	40.95601	0.714817	3073.436	2823.721	1.01891	2947.409	2607.492	372.381	0.063379
50	180	5500	2947.345	0.027819	0.466521	0.438702	2750	641.467	2586.015	567.2454	0.425024	24.35207	298.4411	298.4411	331.8477	11%	41.56185	0.725391	41.02985	0.716106	3079.759	2817.6	1.018903	2947.452	2600.779	339.6316	0.106788
50	190	5500	2947.345	0.029373	0.466521	0.437148	2750	641.467	2576.854	563.2336	0.424379	24.31511	311.8351	311.8351	347.413	11%	41.63578	0.726681	41.10378	0.717396	3086.104	2811.466	1.018897	2947.499	2594.082	311.0823	0.153857
50	200	5500	2947.345	0.030928	0.466521	0.435593	2750	641.467	2567.688	559.2338	0.423733	24.27811	325.1979	325.1979	362.9798	12%	41.70979	0.727973	41.17779	0.718688	3092.47	2805.317	1.018891	2947.55	2587.401	286.042	0.204591
50	210	5500	2947.345	0.032484	0.466521	0.434037	2750	641.467	2558.517	555.246	0.423086	24.24106	338.5297	338.5297	378.5479	12%	41.78388	0.729266	41.25188	0.719981	3098.859	2799.153	1.018885	2947.604	2580.735	263.9562	0.258996
50	220	5500	2947.345	0.034041	0.466521	0.432481	2750	641.467	2549.34	551.2701	0.422439	24.20397	351.8306	351.8306	394.1175	12%	41.85806	0.730561	41.32606	0.721276	3105.27	2792.975	1.018879	2947.663	2574.085	244.3758	0.317078
50	230	5500	2947.345	0.035599	0.466521	0.430923	2750	641.467	2540.158	547.3062	0.421791	24.16683	365.1007	365.1007	409.6886	12%	41.93233	0.731857	41.40033	0.722572	3111.703	2786.783	1.018873	2947.724	2567.45	226.9343	0.378842
50	240	5500	2947.345	0.037157	0.466521	0.429364	2750	641.467	2530.971	543.3543	0.421142	24.12966	378.3401	378.3401	425.2614	12%	42.00669	0.733155	41.47469	0.72387	3118.159	2780.575	1.018867	2947.79	2560.83	211.3297	0.444295
50	40	6000	3215.286	0.005643	0.466521	0.460878	3000	699.7822	2963.712	682.9553	0.434188	24.87715	112.3121	112.3121	118.7521	6%	40.5117	0.707062	39.9797	0.697777	3263.084	3168.015	1.019008	3215.102	2943.844	2853.969	-0.18394
50	50	6000	3215.286	0.007056	0.466521	0.459466	3000	699.7822	2954.627	678.7749	0.433607	24.84383	126.1694	126.1694	134.3047	6%	40.57833	0.708225	40.04633	0.69894	3269.126	3162.076	1.019	3215.097	2936.915	2261.488	-0.18891
50	60	6000	3215.286	0.008469	0.466521	0.458052	3000	699.7822	2945.538	674.6051	0.433025	24.81048	139.9963	139.9963	149.8578	7%	40.64504	0.70939	40.11304	0.700105	3275.187	3156.124	1.018993	3215.095	2930.002	1836.831	-0.1906
50	70	6000	3215.286	0.009883	0.466521	0.456638	3000	699.7822	2936.444	670.446	0.432442	24.77709	153.7929	153.7929	165.4114	8%	40.71182	0.710555	40.17982	0.70127	3281.266	3150.161	1.018986	3215.097	2923.104	1522.053	-0.189
50	80	6000	3215.286	0.011298	0.466521	0.455223	3000	699.7822	2927.345	666.2975	0.431858	24.74367	167.5594	167.5594	180.9656	8%	40.77867	0.711722	40.24667	0.702437	3287.364	3144.186	1.018979	3215.102	2916.22	1282.227	-0.18411
50	90	6000	3215.286	0.012714	0.466521	0.453807	3000	699.7822	2918.241	662.1596	0.431274	24.71021	181.2958	181.2958	196.5203	8%	40.84559	0.71289	40.31359	0.703605	3293.481	3138.198	1.018972	3215.11	2909.352	1095.285	-0.17592
50	100	6000	3215.286	0.014131	0.466521	0.452391	3000	699.7822	2909.132	658.0325	0.43069	24.67671	195.0023	195.0023	212.0756	9%	40.91258	0.714059	40.38058	0.704774	3299.617	3132.199	1.018965	3215.122	2902.499	946.7236	-0.16443
50	110	6000	3215.286	0.015548	0.466521	0.450974	3000	699.7822	2900.019	653.916	0.430105	24.64318	208.6789	208.6789	227.6317	9%	40.97965	0.71523	40.44765	0.705945	3305.772	3126.187	1.018958	3215.136	2895.661	826.6951	-0.14963
50	120	6000	3215.286	0.016966	0.466521	0.449556	3000	699.7822	2890.9	649.8102	0.429519	24.60961	222.3259	222.3259	243.1885	9%	41.04679	0.716402	40.51479	0.707116	3311.946	3120.163	1.018951	3215.154	2888.837	728.3203	-0.13152
50	130	6000	3215.286	0.018385	0.466521	0.448137	3000	699.7822	2881.777	645.7152	0.428932	24.576	235.9433	235.9433	258.7461	10%	41.114	0.717575	40.582	0.708289	3318.14	3114.126	1.018945	3215.176	2882.028	646.6768	-0.1101
50	140	6000	3215.286	0.019804	0.466521	0.446717	3000	699.7822	2872.648	641.631	0.428345	24.54236	249.5312	249.5312	274.3045	10%	41.18128	0.718749	40.64928	0.709464	3324.353	3108.077	1.018938	3215.201	2875.234	578.1663	-0.08535
50	150	6000	3215.286	0.021224	0.466521	0.445297	3000	699.7822	2863.515	637.5576	0.427757	24.50868	263.0898	263.0898	289.8638	10%	41.24863	0.719924	40.71663	0.710639	3330.585	3102.016	1.018932	3215.229	2868.455	520.1093	-0.05727
50	160	6000	3215.286	0.022645	0.466521	0.443876	3000	699.7822	2854.377	633.4949	0.427169	24.47497	276.6191	276.6191	305.4241	10%	41.31606	0.721101	40.78406	0.711816	3336.837	3095.942	1.018925	3215.26	2861.69	470.4767	-0.02587
50	170	6000	3215.286	0.024067	0.466521	0.442454	3000	699.7822	2845.234	629.4431	0.42658	24.44122	290.1193	290.1193	320.9853	11%	41.38356	0.722279	40.85156	0.712994	3343.108	3089.855	1.018919	3215.295	2854.94	427.7097	0.008874
50	180	6000	3215.286	0.02549	0.466521	0.441032	3000	699.7822	2836.087	625.4022	0.42599	24.40744	303.5906	303.5906	336.5477	11%	41.45113	0.723459	40.91913	0.714173	3349.399	3083.755	1.018913	3215.333	2848.205	390.5944	0.046958
50	190	6000	3215.286	0.026913	0.466521	0.439608	3000	699.7822	2826.934	621.3721	0.4254	24.37362	317.0329	317.0329	352.1111	11%	41.51877	0.724639	40.98677	0.715354	3355.71	3077.642	1.018907	3215.374	2841.484	358.1738	0.088387
50	200	6000	3215.286	0.028337	0.466521	0.438184	3000	699.7822	2817.776	617.3529	0.424809	24.33976	330.4464	330.4464	367.6756	11%	41.58648	0.725821	41.05448	0.716536	3362.042	3071.517	1.018901	3215.419	2834.777	329.6859	0.133168
50	210	6000	3215.286	0.029762	0.466521	0.43676	3000	699.7822	2808.614	613.3446	0.424217	24.30587	343.8313	343.8313	383.2414	11%	41.65427	0.727004	41.12227	0.717719	3368.393	3065.378	1.018895	3215.467	2828.084	304.517	0.181306
50	220	6000	3215.286	0.031187	0.466521	0.435334	3000	699.7822	2799.447	609.3473	0.423625	24.27194	357.1877	357.1877	398.8084	12%	41.72213	0.728189	41.19013	0.718903	3374.764	3059.226	1.01889	3215.519	2821.406	282.1692	0.232804
50	230	6000	3215.286	0.032614	0.466521	0.433908	3000	699.7822	2790.275	605.3609	0.423032	24.23797	370.5156	370.5156	414.3767	12%	41.79006	0.729374	41.25806	0.720089	3381.155	3053.061	1.018884	3215.574	2814.742	262.2343	0.287668
50	240	6000	3215.286	0.034041	0.466521	0.432481	3000	699.7822	2781.098	601.3855	0.422439	24.20397	383.8152	383.8152	429.9464	12%	41.85806	0.730561	41.32606	0.721276	3387.567	3046.882	1.018879	3215.632	2808.092	244.3758	0.345903
50	40	6500	3483.226	0.005209	0.466521	0.461313	3250	758.0974	3213.715	741.264	0.434367	24.8874	117.0457	117.0457	123.464	5%	40.49121	0.706705	39.95921	0.69742	3532.997	3433.994	1.01901	3483.03	3191.477	3084.009	-0.1969
50	50	6500	3483.226	0.006512	0.466521	0.460009	3250	758.0974	3204.632	737.0799	0.43383	24.85665	130.9136	130.9136	139.0165	6%	40.55269	0.707778	40.02069	0.698493	3539.033	3428.058	1.019003	3483.023	3184.543	2465.229	-0.203
50	60	6500	3483.226	0.007817	0.466521	0.458705	3250	758.0974	3195.545	732.9057	0.433293	24.82588	144.7533	144.7533	154.5694	7%	40.61424	0.708852	40.08224	0.699567	3545.086	3422.112	1.018996	3483.02	3177.623	2016.367	-0.20608
50	70	6500	3483.226	0.009122	0.466521	0.4574	3250	758.0974	3186.453	728.7412	0.432756	24.79507	158.5651	158.5651	170.1227	7%	40.67585	0.709928	40.14385	0.700642	3551.156	3416.155	1.01899	3483.02	3170.717	1680.396	-0.20612
50	80	6500	3483.226	0.010428	0.466521	0.456094	3250	758.0974	3177.357	724.5866	0.432218	24.76424	172.3489	172.3489	185.6765	8%	40.73752	0.711004	40.20552	0.701719	3557.243	3410.186	1.018983	3483.023	3163.826	1422.361	-0.20313
50	90	6500	3483.226	0.011734	0.466521	0.454788	3250	758.0974	3168.256	720.4418	0.431679	24.73337	186.1049	186.1049	201.2309	8%	40.79925	0.712081	40.26725	0.702796	3563.348	3404.207	1.018976	3483.029	3156.948	1219.863	-0.1971
50	100	6500	3483.226	0.013041	0.466521	0.453481	3250	758.0974	3159.151	716.3068	0.43114	24.70248	199.8333	199.8333	216.7857	8%	40.86104	0.71316	40.32904	0.703875	3569.47	3398.216	1.01897	3483.038	3150.083	1058.013	-0.18802
50	110	6500	3483.226	0.014349	0.466521	0.452173	3250	758.0974	3150.041	712.1817	0.4306	24.67155	213.534	213.534	232.3412	9%	40.9229	0.714239	40.3909	0.704954	3575.61	3392.214	1.018964	3483.051	3143.233	926.6008	-0.1759
50	120	6500	3483.226	0.015657	0.466521	0.450865	3250	758.0974	3140.927	708.0664	0.43006	24.64059	227.2072	227.2072	247.8974	9%	40.98481	0.71532	40.45281	0.706035	3581.767	3386.201	1.018957	3483.066	3136.396	818.4317	-0.16072
50	130	6500	3483.226	0.016966	0.466521	0.449556	3250	758.0974	3131.808	703.9611	0.429519	24.60961	240.853	240.853	263.4542	9%	41.04679	0.716402	40.51479	0.707116	3587.942	3380.176	1.018951	3483.084	3129.573	728.3203	-0.14248
50	140	6500	3483.226	0.018275	0.466521	0.448246	3250	758.0974	3122.685	699.8657	0.428977	24.57859	254.4716	254.4716	279.0117	10%	41.10882	0.717484	40.57682	0.708199	3594.135	3374.14	1.018945	3483.105	3122.764	652.4514	-0.12118
50	150	6500	3483.226	0.019586	0.466521	0.446936	3250	758.0974	3113.557	695.7802	0.428435	24.54754	268.0629	268.0629	294.5701	10%	41.17092	0.718568	40.63892	0.709283	3600.345	3368.093	1.018939	3483.13	3115.969	587.9675	-0.09682
50	160	6500	3483.226	0.020897	0.466521	0.445625	3250	758.0974	3104.425	691.7047	0.427893	24.51646	281.6271	281.6271	310.1292	10%	41.23308	0.719653	40.70108	0.710368	3606.574	3362.034	1.018933	3483.157	3109.186	532.6941	-0.06939
50	170	6500	3483.226	0.022208	0.466521	0.444313	3250	758.0974	3095.289	687.6391	0.42735	24.48535	295.1643	295.1643	325.6892	10%	41.2953	0.720739	40.7633	0.711454	3612.82	3355.963	1.018927	3483.188	3102.418	484.9524	-0.03888
50	180	6500	3483.226	0.02352	0.466521	0.443001	3250	758.0974	3086.147	683.5836	0.426806	24.45421	308.6746	308.6746	341.2501	11%	41.35759	0.721826	40.82559	0.712541	3619.085	3349.88	1.018922	3483.221	3095.663	443.4299	-0.00529
50	190	6500	3483.226	0.024833	0.466521	0.441688	3250	758.0974	3077.002	679.538	0.426262	24.42303	322.1581	322.1581	356.812	11%	41.41993	0.722914	40.88793	0.713629	3625.368	3343.786	1.018916	3483.258	3088.921	407.0884	0.031379
50	200	6500	3483.226	0.026147	0.466521	0.440375	3250	758.0974	3067.851	675.5025	0.425718	24.39183	335.6148	335.6148	372.3748	11%	41.48234	0.724003	40.95034	0.714718	3631.669	3337.68	1.01891	3483.298	3082.193	375.0977	0.071135
50	210	6500	3483.226	0.027461	0.466521	0.439061	3250	758.0974	3058.697	671.477	0.425173	24.3606	349.045	349.045	387.9387	11%	41.5448	0.725094	41.0128	0.715808	3637.988	3331.562	1.018905	3483.34	3075.478	346.7879	0.113982
50	220	6500	3483.226	0.028775	0.466521	0.437746	3250	758.0974	3049.538	667.4616	0.424627	24.32933	362.4486	362.4486	403.5037	11%	41.60733	0.726185	41.07533	0.7169	3644.326	3325.432	1.018899	3483.386	3068.776	321.6132	0.159924
50	230	6500	3483.226	0.030091	0.466521	0.436431	3250	758.0974	3040.374	663.4563	0.424081	24.29804	375.8258	375.8258	419.0968	12%	41.66992	0.727277	41.13792	0.717992	3650.683	3319.289	1.018894	3483.435	3062.087	299.1256	0.208966
50	240	6500	3483.226	0.031407	0.466521	0.435115	3250	758.0974	3031.206	659.4611	0.423534	24.26671	389.1766	389.1766	434.637	12%	41.73257	0.728371	41.20057	0.719086	3657.058	3313.135	1.018889	3483.488	3055.412	278.9544	0.261111
50	40	7000	3751.167	0.004836	0.466521	0.461685	3500	816.4126	3463.717	799.5736	0.43452	24.89617	121.7766	121.7766	128.1759	5%	40.47365	0.706398	39.94165	0.697113	3802.913	3699.972	1.019012	3750.957	3439.112	3304.214	-0.20956
50	50	7000	3751.167	0.006047	0.466521	0.460475	3500	816.4126	3454.636	795.3864	0.434022	24.86764	135.6535	135.6535	143.7283	6%	40.53073	0.707395	39.99873	0.69811	3808.943	3694.039	1.019006	3750.95	3432.173	2662.771	-0.21664

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
50	60	7000	3751.167	0.007258	0.466521	0.459264	3500	816.4126	3445.551	791.2083	0.433524	24.83907	149.5043	149.5043	159.281	7%	40.58786	0.708392	40.05586	0.699107	3814.989	3688.097	1.018999	3750.946	3425.248	2192.243	-0.22091
50	70	7000	3751.167	0.008469	0.466521	0.458052	3500	816.4126	3436.461	787.0393	0.433025	24.81048	163.329	163.329	174.8342	7%	40.64504	0.70939	40.11304	0.700105	3821.051	3682.145	1.018993	3750.945	3418.335	1836.831	-0.22236
50	80	7000	3751.167	0.009681	0.466521	0.45684	3500	816.4126	3427.367	782.8794	0.432525	24.78186	177.1278	177.1278	190.3877	7%	40.70227	0.710389	40.17027	0.701104	3827.129	3676.182	1.018987	3750.946	3411.436	1561.79	-0.221
50	90	7000	3751.167	0.010894	0.466521	0.455627	3500	816.4126	3418.269	778.7286	0.432025	24.75322	190.9007	190.9007	205.9417	8%	40.75956	0.711389	40.22756	0.702103	3833.223	3670.21	1.018981	3750.95	3404.55	1344.562	-0.21681
50	100	7000	3751.167	0.012107	0.466521	0.454414	3500	816.4126	3409.167	774.587	0.431525	24.72455	204.6478	204.6478	221.4962	8%	40.8169	0.712389	40.2849	0.703104	3839.333	3664.227	1.018975	3750.957	3397.676	1169.989	-0.2098
50	110	7000	3751.167	0.013321	0.466521	0.4532	3500	816.4126	3400.061	770.4545	0.431024	24.69585	218.3693	218.3693	237.0512	9%	40.87429	0.713391	40.34229	0.704106	3845.46	3658.233	1.018969	3750.967	3390.815	1027.574	-0.19996
50	120	7000	3751.167	0.014535	0.466521	0.451986	3500	816.4126	3390.95	766.3311	0.430523	24.66713	232.0651	232.0651	252.6068	9%	40.93174	0.714394	40.39974	0.705108	3851.603	3652.229	1.018963	3750.98	3383.967	909.8641	-0.18729
50	130	7000	3751.167	0.01575	0.466521	0.450771	3500	816.4126	3381.836	762.2169	0.430021	24.63838	245.7354	245.7354	268.163	9%	40.98924	0.715397	40.45724	0.706112	3857.762	3646.215	1.018957	3750.995	3377.132	811.4482	-0.17179
50	140	7000	3751.167	0.016966	0.466521	0.449556	3500	816.4126	3372.717	758.1119	0.429519	24.60961	259.3802	259.3802	283.7199	9%	41.04679	0.716402	40.51479	0.707116	3863.937	3640.19	1.018951	3751.014	3370.31	728.3203	-0.15344
50	150	7000	3751.167	0.018182	0.466521	0.44834	3500	816.4126	3363.594	754.0162	0.429016	24.5808	272.9997	272.9997	299.2774	10%	41.10439	0.717407	40.57239	0.708122	3870.13	3634.154	1.018945	3751.035	3363.5	657.4637	-0.13225
50	160	7000	3751.167	0.019398	0.466521	0.447123	3500	816.4126	3354.466	749.9296	0.428513	24.55198	286.5939	286.5939	314.8356	10%	41.16205	0.718413	40.63005	0.709128	3876.338	3628.108	1.01894	3751.059	3356.703	596.571	-0.10822
50	170	7000	3751.167	0.020616	0.466521	0.445906	3500	816.4126	3345.335	745.8523	0.428009	24.52312	300.163	300.163	330.3946	10%	41.21976	0.71942	40.68776	0.710135	3882.563	3622.051	1.018934	3751.086	3349.919	543.8534	-0.08133
50	180	7000	3751.167	0.021833	0.466521	0.444688	3500	816.4126	3336.199	741.7843	0.427505	24.49424	313.7069	313.7069	345.9544	10%	41.27752	0.720429	40.74552	0.711143	3888.806	3615.983	1.018929	3751.115	3343.147	497.9066	-0.05159
50	190	7000	3751.167	0.023052	0.466521	0.44347	3500	816.4126	3327.06	737.7255	0.427001	24.46533	327.2258	327.2258	361.5151	10%	41.33534	0.721438	40.80334	0.712153	3895.064	3609.904	1.018924	3751.148	3336.387	457.6157	-0.019
50	200	7000	3751.167	0.02427	0.466521	0.442251	3500	816.4126	3317.916	733.676	0.426496	24.4364	340.7198	340.7198	377.0765	11%	41.3932	0.722448	40.8612	0.713163	3901.34	3603.815	1.018918	3751.183	3329.64	422.0863	0.016462
50	210	7000	3751.167	0.02549	0.466521	0.441032	3500	816.4126	3308.768	729.6359	0.42599	24.40744	354.189	354.189	392.6389	11%	41.45113	0.723459	40.91913	0.714173	3907.633	3597.714	1.018913	3751.222	3322.906	390.5944	0.054784
50	220	7000	3751.167	0.02671	0.466521	0.439812	3500	816.4126	3299.615	725.605	0.425484	24.37845	367.6334	367.6334	408.2023	11%	41.5091	0.72447	40.9771	0.715185	3913.942	3591.602	1.018908	3751.263	3316.183	362.5486	0.095975
50	230	7000	3751.167	0.02793	0.466521	0.438591	3500	816.4126	3290.459	721.5835	0.424978	24.34944	381.0531	381.0531	423.7666	11%	41.56713	0.725483	41.03513	0.716198	3920.269	3585.48	1.018903	3751.307	3309.473	337.4622	0.140037
50	240	7000	3751.167	0.029151	0.466521	0.43737	3500	816.4126	3281.298	717.5713	0.424471	24.3204	394.4482	394.4482	439.3319	11%	41.62521	0.726497	41.09321	0.717212	3926.613	3579.346	1.018898	3751.354	3302.776	314.9315	0.186975
50	40	7500	4019.107	0.004514	0.466521	0.462008	3750	874.7278	3713.719	857.884	0.434653	24.90378	126.5054	126.5054	132.8878	5%	40.45844	0.706133	39.92644	0.696848	4072.829	3965.948	1.019014	4018.885	3686.747	3514.83	-0.222
50	50	7500	4019.107	0.005643	0.466521	0.460878	3750	874.7278	3704.639	853.6941	0.434188	24.87715	140.3902	140.3902	148.4401	6%	40.5117	0.707062	39.9797	0.697777	4078.855	3960.019	1.019008	4018.878	3679.805	2853.969	-0.22992
50	60	7500	4019.107	0.006773	0.466521	0.459748	3750	874.7278	3695.556	849.5127	0.433723	24.8505	154.2505	154.2505	163.9927	6%	40.565	0.707993	40.033	0.698708	4084.895	3954.081	1.019002	4018.872	3672.875	2364.119	-0.23522
50	70	7500	4019.107	0.007904	0.466521	0.458618	3750	874.7278	3686.468	845.3397	0.433258	24.82383	168.0865	168.0865	179.5457	7%	40.61835	0.708924	40.08635	0.699639	4090.95	3948.133	1.018996	4018.87	3665.957	1990.934	-0.2379
50	80	7500	4019.107	0.009035	0.466521	0.457487	3750	874.7278	3677.376	841.1753	0.432792	24.79713	181.8982	181.8982	195.099	7%	40.67174	0.709856	40.13974	0.700571	4097.02	3942.175	1.01899	4018.87	3659.051	1700.065	-0.23794
50	90	7500	4019.107	0.010166	0.466521	0.456355	3750	874.7278	3668.281	837.0193	0.432325	24.77041	195.6858	195.6858	210.6528	8%	40.72518	0.710788	40.19318	0.701503	4103.105	3936.208	1.018984	4018.872	3652.157	1468.94	-0.23535
50	100	7500	4019.107	0.011298	0.466521	0.455223	3750	874.7278	3659.181	832.8719	0.431858	24.74367	209.4492	209.4492	226.2069	8%	40.77867	0.711722	40.24667	0.702437	4109.205	3930.232	1.018979	4018.877	3645.275	1282.227	-0.23013
50	110	7500	4019.107	0.012431	0.466521	0.454091	3750	874.7278	3650.078	828.7329	0.431391	24.7169	223.1886	223.1886	241.7616	8%	40.8322	0.712656	40.3002	0.703371	4115.32	3924.246	1.018973	4018.885	3638.406	1129.22	-0.22227
50	120	7500	4019.107	0.013564	0.466521	0.452958	3750	874.7278	3640.97	824.6026	0.430924	24.69011	236.9041	236.9041	257.3168	9%	40.88578	0.713591	40.35378	0.704306	4121.451	3918.25	1.018967	4018.896	3631.548	1002.253	-0.21178
50	130	7500	4019.107	0.014697	0.466521	0.451824	3750	874.7278	3631.859	820.4807	0.430456	24.6633	250.5956	250.5956	272.8725	9%	40.9394	0.714527	40.4074	0.705242	4127.596	3912.244	1.018962	4018.909	3624.702	895.7268	-0.19863
50	140	7500	4019.107	0.015831	0.466521	0.45069	3750	874.7278	3622.744	816.3675	0.429987	24.63646	264.2634	264.2634	288.4287	9%	40.99307	0.715464	40.46107	0.706179	4133.757	3906.229	1.018957	4018.925	3617.868	805.4686	-0.18284
50	150	7500	4019.107	0.016966	0.466521	0.449556	3750	874.7278	3613.625	812.2628	0.429519	24.60961	277.9074	277.9074	303.9856	9%	41.04679	0.716402	40.51479	0.707116	4139.933	3900.203	1.018951	4018.943	3611.046	728.3203	-0.1644
50	160	7500	4019.107	0.018101	0.466521	0.448421	3750	874.7278	3604.502	808.1667	0.42905	24.58273	291.5277	291.5277	319.5431	10%	41.10055	0.71734	40.56855	0.708055	4146.125	3894.168	1.018946	4018.964	3604.236	661.8551	-0.14331
50	170	7500	4019.107	0.019236	0.466521	0.447285	3750	874.7278	3595.375	804.0793	0.42858	24.55582	305.1244	305.1244	335.1013	10%	41.15436	0.718279	40.62236	0.708994	4152.332	3888.123	1.018941	4018.988	3597.438	604.183	-0.11956
50	180	7500	4019.107	0.020372	0.466521	0.446149	3750	874.7278	3586.245	800.0004	0.42811	24.52889	318.6977	318.6977	350.6601	10%	41.20821	0.719219	40.67621	0.709934	4158.554	3882.068	1.018935	4019.014	3590.651	553.815	-0.09315
50	190	7500	4019.107	0.021509	0.466521	0.445013	3750	874.7278	3577.11	795.9302	0.42764	24.50194	332.2475	332.2475	366.2197	10%	41.26211	0.72016	40.73011	0.710875	4164.792	3876.002	1.01893	4019.043	3583.876	509.5645	-0.06407
50	200	7500	4019.107	0.022645	0.466521	0.443876	3750	874.7278	3567.972	791.8686	0.427169	24.47497	345.7739	345.7739	381.7801	10%	41.31606	0.721101	40.78406	0.711816	4171.046	3869.927	1.018925	4019.075	3577.113	470.4767	-0.03233
50	210	7500	4019.107	0.023783	0.466521	0.442739	3750	874.7278	3558.829	787.8158	0.426698	24.44797	359.277	359.277	397.3413	11%	41.37005	0.722044	40.83805	0.712758	4177.315	3863.841	1.01892	4019.11	3570.361	435.7763	0.002073
50	220	7500	4019.107	0.024921	0.466521	0.441601	3750	874.7278	3549.683	783.7715	0.426226	24.42096	372.7569	372.7569	412.9032	11%	41.42409	0.722987	40.89209	0.713702	4183.601	3857.746	1.018916	4019.147	3563.622	404.8285	0.039154
50	230	7500	4019.107	0.026059	0.466521	0.440463	3750	874.7278	3540.533	779.736	0.425754	24.39391	386.2137	386.2137	428.4661	11%	41.47817	0.723931	40.94617	0.714646	4189.902	3851.639	1.018911	4019.186	3556.893	377.1093	0.07891
50	240	7500	4019.107	0.027198	0.466521	0.439324	3750	874.7278	3531.379	775.7092	0.425282	24.36685	399.6474	399.6474	444.0298	11%	41.53231	0.724875	41.00031	0.71559	4196.219	3845.523	1.018906	4019.229	3550.176	352.1832	0.121344
50	40	8000	4287.048	0.004231	0.466521	0.46229	4000	933.043	3963.721	916.1949	0.434769	24.91043	131.2324	131.2324	137.5998	5%	40.44513	0.705901	39.91313	0.696616	4342.747	4231.924	1.019015	4286.814	3934.384	3716.188	-0.23425
50	50	8000	4287.048	0.00529	0.466521	0.461231	4000	933.043	3954.642	912.0027	0.434333	24.88548	145.1241	145.1241	153.152	6%	40.49505	0.706772	39.96305	0.697487	4348.768	4225.998	1.01901	4286.805	3927.438	3038.793	-0.24291
50	60	8000	4287.048	0.006349	0.466521	0.460172	4000	933.043	3945.56	907.8184	0.433898	24.8605	158.9928	158.9928	168.7045	6%	40.54501	0.707644	40.01301	0.698359	4354.803	4220.063	1.019004	4286.799	3920.504	2531.775	-0.24911
50	70	8000	4287.048	0.007409	0.466521	0.459112	4000	933.043	3936.474	903.642	0.433461	24.8355	172.8387	172.8387	184.2573	7%	40.595	0.708516	40.063	0.699231	4360.852	4214.119	1.018998	4286.795	3913.581	2142.388	-0.25285
50	80	8000	4287.048	0.008469	0.466521	0.458052	4000	933.043	3927.384	899.4735	0.433025	24.81048	186.6618	186.6618	199.8105	7%	40.64504	0.70939	40.11304	0.700105	4366.915	4208.166	1.018993	4286.794	3906.669	1836.831	-0.25413
50	90	8000	4287.048	0.00953	0.466521	0.456992	4000	933.043	3918.29	895.313	0.432588	24.78544	200.4622	200.4622	215.364	7%	40.69512	0.710264	40.16312	0.700979	4372.992	4202.204	1.018988	4286.795	3899.769	1592.631	-0.25294
50	100	8000	4287.048	0.010591	0.466521	0.455931	4000	933.043	3909.193	891.1605	0.43215	24.76038	214.2399	214.2399	230.9179	8%	40.74523	0.711138	40.21323	0.701853	4379.084	4196.233	1.018982	4286.799	3892.88	1394.374	-0.24929
50	110	8000	4287.048	0.011652	0.466521	0.454869	4000	933.043	3900.092	887.016	0.431713	24.7353	227.9951	227.9951	246.4722	8%	40.79539	0.712014	40.26339	0.702729	4385.189	4190.253	1.018977	4286.805	3886.002	1231.201	-0.24316
50	120	8000	4287.048	0.012714	0.466521	0.453807	4000	933.043	3890.988	882.8795	0.431274	24.71021	241.7277	241.7277	262.027	8%	40.84559	0.71289	40.31359	0.703605	4391.308	4184.264	1.018972	4286.813	3879.136	1095.285	-0.23456
50	130	8000	4287.048	0.013776	0.466521	0.452745	4000	933.043	3881.88	878.751	0.430836	24.68509	255.4379	255.4379	277.5823	9%	40.89583	0.713767	40.36383	0.704482	4397.442	4178.266	1.018966	4286.825	3872.281	980.865	-0.22348
50	140	8000	4287.048	0.014839	0.466521	0.451682	4000	933.043	3872.768	874.6305	0.430397	24.65995	269.1257	269.1257	293.1381	9%	40.94611	0.714644	40.41411	0.705359	4403.59	4172.259	1.018961	4286.838	3865.437	883.628	-0.20992
50	150	8000	4287.048	0.015902	0.466521	0.450619	4000	933.043	3863.653	870.5181	0.429958	24.63479	282.7913	282.7913	308.6944	9%	40.99643	0.715523	40.46443	0.706237	4409.752	4166.243	1.018956	4286.854	3858.604	800.2912	-0.19389
50	160	8000	4287.048	0.016966	0.466521	0.449556	4000	933.043	3854.533	866.4137	0.429519	24.60961	296.4345	296.4345	324.2513	9%	41.04679	0.716402	40.51479	0.707116	4415.929	4160.217	1.018951	4286.873	3851.783	728.3203	-0.17536
50	170	8000	4287.048	0.01803	0.466521	0.448492	4000	933.043	3845.411	862.3173	0.429079	24.58441	310.0556	310.0556	339.8088	10%	41.09719	0.717281	40.56519	0.707996	4422.12	4154.182	1.018946	4286.894	3844.972	665.7342	-0.15435
50	180	8000	4287.048	0.019094	0.466521	0.447427	4000	933.043	3836.284	858.229	0.428639	24.55919	323.6545	323.6545	355.3669	10%	41.14763	0.718162	40.61563	0.708876	4428.325	4148.138	1.018941	4286.917	3838.173	610.9653	-0.13085
50	190	8000	4287.048	0.020159	0.466521	0.446362	4000	933.043	3827.154	854.1488	0.428198	24.53394	337.2314	337.2314	370.9256	10%	41.19811	0.719043	40.66611	0.709758	4434.545	4142.084	1.018936	4286.943	3831.384	562.7608	-0.10486
50	200	8000	4287.048	0.021224	0.466521	0.445297	4000	933.043	3818.02	850.0767	0.427757	24.50868	350.7864	350.7864	386.4851	10%	41.24863	0.719924	40.71663	0.710639	4440.78	4136.021	1.018932	4286.972	3824.607	520.1093	-0.07636
50	210	8000	4287.048	0.02229	0.466521	0.444231	4000	933.043	3808.883	846.0128	0.427316	24.4834	364.3193	364.3193	402.0452	10%	41.29919	0.720807	40.76719	0.711522	4447.029	4129.949	1.018927	4287.003	3817.84	482.187	-0.04538
50	220	8000	4287.048	0.023356	0.466521	0.443165	4000	933.043	3799.742	841.9569	0.426874	24.4581	377.8305	377.8305	417.6061	11%	41.3498	0.72169	40.8178	0.712405	4453.293	4123.866	1.018922	4287.036	3811.085	448.3178	-0.01189
50	230	8000	4287.048	0.024423	0.466521	0.442099	4000	933.043	3790.597	837.9091	0.426432	24.43278	391.3198	391.3198	433.1678	11%	41.40044	0.722574	40.86844	0.713289	4459.572	4117.775	1.018918	4287.072	3804.34	417.9423	0.024109
50	240	8000	4287.048	0.02549	0.466521	0.441032	4000	933.043	3781.449	833.8695	0.42599	24.40744	404.7874	404.7874	448.7302	11%	41.45113	0.723459	40.91913	0.714173	4465.866	4111.673	1.018913	4287.111	3797.606	390.5944	0.06261
50	40	8500	4554.988	0.003982	0.466521	0.462539	4250	991.3582	4213.723	974.5064	0.434872	24.9163	135.958	135.958	142.3117	5%	40.4334	0.705696	39.9014	0.696411	4612.665	4497.9	1.019017	4554.742	4182.021	3908.665	-0.24635

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
50	50	8500	4554.988	0.004979	0.466521	0.461543	4250	991.3582	4204.645	970.3121	0.434462	24.89282	149.8557	149.8557	157.8639	5%	40.48036	0.706516	39.94836	0.69723	4618.683	4491.976	1.019011	4554.733	4175.072	3217.298	-0.25566
50	60	8500	4554.988	0.005975	0.466521	0.460546	4250	991.3582	4195.564	966.1252	0.434051	24.86932	163.7318	163.7318	173.4163	6%	40.52737	0.707336	39.99537	0.698051	4624.714	4486.043	1.019006	4554.726	4168.134	2695.08	-0.26265
50	70	8500	4554.988	0.006973	0.466521	0.459549	4250	991.3582	4186.479	961.9457	0.433641	24.84579	177.5864	177.5864	188.969	6%	40.57441	0.708157	40.04241	0.698872	4630.757	4480.103	1.019001	4554.721	4161.207	2290.964	-0.26734
50	80	8500	4554.988	0.00797	0.466521	0.458551	4250	991.3582	4177.391	957.7738	0.43323	24.82226	191.4196	191.4196	204.522	7%	40.62149	0.708979	40.08949	0.699694	4636.814	4474.154	1.018996	4554.719	4154.29	1971.81	-0.2697
50	90	8500	4554.988	0.008968	0.466521	0.457553	4250	991.3582	4168.299	953.6093	0.432819	24.7987	205.2313	205.2313	220.0753	7%	40.6686	0.709801	40.1366	0.700516	4642.884	4468.196	1.01899	4554.719	4147.384	1715.341	-0.26975
50	100	8500	4554.988	0.009967	0.466521	0.456555	4250	991.3582	4159.204	949.4524	0.432408	24.77513	219.0217	219.0217	235.629	8%	40.71575	0.710624	40.18375	0.701339	4648.968	4462.23	1.018985	4554.721	4140.489	1506.134	-0.26747
50	110	8500	4554.988	0.010965	0.466521	0.455556	4250	991.3582	4150.105	945.3029	0.431996	24.75153	232.7908	232.7908	251.1831	8%	40.76293	0.711447	40.23093	0.702162	4655.064	4456.256	1.01898	4554.726	4133.605	1333.233	-0.26287
50	120	8500	4554.988	0.011965	0.466521	0.454557	4250	991.3582	4141.003	941.161	0.431584	24.72792	246.5387	246.5387	266.7376	8%	40.81015	0.712271	40.27815	0.702986	4661.174	4450.273	1.018975	4554.733	4126.731	1188.687	-0.25594
50	130	8500	4554.988	0.012964	0.466521	0.453557	4250	991.3582	4131.898	937.0266	0.431171	24.7043	260.2654	260.2654	282.2925	8%	40.85741	0.713096	40.32541	0.703811	4667.297	4444.282	1.01897	4554.742	4119.867	1066.608	-0.24669
50	140	8500	4554.988	0.013964	0.466521	0.452558	4250	991.3582	4122.789	932.8997	0.430759	24.68065	273.971	273.971	297.8479	9%	40.9047	0.713922	40.3727	0.704637	4673.434	4438.282	1.018965	4554.753	4113.015	962.562	-0.2351
50	150	8500	4554.988	0.014964	0.466521	0.451557	4250	991.3582	4113.677	928.7804	0.430346	24.65699	287.6555	287.6555	313.4037	9%	40.95202	0.714748	40.42002	0.705463	4679.584	4432.274	1.018961	4554.767	4106.172	873.1572	-0.22118
50	160	8500	4554.988	0.015965	0.466521	0.450557	4250	991.3582	4104.561	924.6687	0.429932	24.63331	301.3191	301.3191	328.9601	9%	40.99939	0.715574	40.46739	0.706289	4685.747	4426.256	1.018956	4554.784	4099.34	795.7646	-0.20492
50	170	8500	4554.988	0.016966	0.466521	0.449556	4250	991.3582	4095.442	920.5645	0.429519	24.60961	314.9617	314.9617	344.517	9%	41.04679	0.716402	40.51479	0.707116	4691.924	4420.231	1.018951	4554.802	4092.519	728.3203	-0.18632
50	180	8500	4554.988	0.017967	0.466521	0.448554	4250	991.3582	4086.319	916.4679	0.429105	24.58589	328.5834	328.5834	360.0745	10%	41.09422	0.717229	40.56222	0.707944	4698.115	4414.196	1.018946	4554.823	4085.708	669.1856	-0.16538
50	190	8500	4554.988	0.018969	0.466521	0.447552	4250	991.3582	4077.193	912.3789	0.42869	24.56215	342.1843	342.1843	375.6325	10%	41.14169	0.718058	40.60969	0.708773	4704.319	4408.152	1.018942	4554.846	4078.908	617.0462	-0.1421
50	200	8500	4554.988	0.019971	0.466521	0.44655	4250	991.3582	4068.063	908.2976	0.428276	24.5384	355.7644	355.7644	391.1912	10%	41.1892	0.718887	40.6572	0.709602	4710.537	4402.1	1.018937	4554.872	4072.118	570.8379	-0.11648
50	210	8500	4554.988	0.020974	0.466521	0.445548	4250	991.3582	4058.93	904.2238	0.427861	24.51463	369.3239	369.3239	406.7505	10%	41.23674	0.719717	40.70474	0.710432	4716.769	4396.039	1.018933	4554.9	4065.338	529.6916	-0.0885
50	220	8500	4554.988	0.021977	0.466521	0.444545	4250	991.3582	4049.794	900.1577	0.427446	24.49084	382.8627	382.8627	422.3104	10%	41.28432	0.720547	40.75232	0.711262	4723.014	4389.969	1.018928	4554.93	4058.569	492.8921	-0.05817
50	230	8500	4554.988	0.02298	0.466521	0.443542	4250	991.3582	4040.654	896.0992	0.42703	24.46703	396.3809	396.3809	437.8711	10%	41.33193	0.721378	40.79993	0.712093	4729.273	4383.89	1.018924	4554.963	4051.81	459.8461	-0.02549
50	240	8500	4554.988	0.023984	0.466521	0.442538	4250	991.3582	4031.511	892.0483	0.426614	24.44321	409.8785	409.8785	453.4324	11%	41.37958	0.72221	40.84758	0.712925	4735.547	4377.802	1.01892	4554.998	4045.061	430.0585	0.009546
50	40	9000	4822.929	0.003761	0.466521	0.462761	4500	1049.673	4463.725	1032.818	0.434963	24.92152	140.6824	140.6824	147.0237	5%	40.42296	0.705514	39.89096	0.696229	4882.584	4763.875	1.019018	4822.671	4429.659	4092.661	-0.25832
50	50	9000	4822.929	0.004702	0.466521	0.46182	4500	1049.673	4454.648	1028.622	0.434576	24.89934	154.5855	154.5855	162.5758	5%	40.46731	0.706288	39.93531	0.697003	4888.599	4757.953	1.019013	4822.661	4422.707	3389.594	-0.26821
50	60	9000	4822.929	0.005643	0.466521	0.460878	4500	1049.673	4445.567	1024.433	0.434188	24.87715	168.4682	168.4682	178.1281	6%	40.5117	0.707062	39.9797	0.697777	4894.626	4752.023	1.019008	4822.653	4415.766	2853.969	-0.27591
50	70	9000	4822.929	0.006585	0.466521	0.459937	4500	1049.673	4436.484	1020.251	0.433801	24.85494	182.3306	182.3306	193.6807	6%	40.55611	0.707838	40.02411	0.698553	4900.665	4746.085	1.019003	4822.648	4408.835	2436.498	-0.28143
50	80	9000	4822.929	0.007527	0.466521	0.458995	4500	1049.673	4427.397	1016.076	0.433413	24.83272	196.1726	196.1726	209.2336	7%	40.60056	0.708613	40.06856	0.699328	4906.716	4740.14	1.018998	4822.644	4401.914	2104.787	-0.28476
50	90	9000	4822.929	0.008469	0.466521	0.458052	4500	1049.673	4418.307	1011.908	0.433025	24.81048	209.9945	209.9945	224.7868	7%	40.64504	0.70939	40.11304	0.700105	4912.78	4734.186	1.018993	4822.643	4395.003	1836.831	-0.2859
50	100	9000	4822.929	0.009412	0.466521	0.45711	4500	1049.673	4409.214	1007.747	0.432636	24.78823	223.7961	223.7961	240.3403	7%	40.68955	0.710167	40.15755	0.700881	4918.856	4728.225	1.018988	4822.644	4388.102	1617.26	-0.28485
50	110	9000	4822.929	0.010355	0.466521	0.456166	4500	1049.673	4400.117	1003.593	0.432247	24.76595	237.5776	237.5776	255.8941	8%	40.73409	0.710944	40.20209	0.701659	4924.945	4722.256	1.018983	4822.647	4381.211	1435.073	-0.2816
50	120	9000	4822.929	0.011298	0.466521	0.455223	4500	1049.673	4391.017	999.4462	0.431858	24.74367	251.3391	251.3391	271.4483	8%	40.77867	0.711722	40.24667	0.702437	4931.046	4716.278	1.018979	4822.653	4374.33	1282.227	-0.27616
50	130	9000	4822.929	0.012242	0.466521	0.454279	4500	1049.673	4381.914	995.3066	0.431469	24.72136	265.0805	265.0805	287.003	8%	40.82327	0.712501	40.29127	0.703215	4937.16	4710.293	1.018974	4822.66	4367.46	1152.735	-0.26852
50	140	9000	4822.929	0.013186	0.466521	0.453335	4500	1049.673	4372.808	991.1741	0.43108	24.69904	278.8019	278.8019	302.558	9%	40.86791	0.71328	40.33591	0.703994	4943.287	4704.299	1.018969	4822.67	4360.599	1042.062	-0.25868
50	150	9000	4822.929	0.014131	0.466521	0.452391	4500	1049.673	4363.698	987.0487	0.43069	24.67671	292.5034	292.5034	318.1134	9%	40.91258	0.714059	40.38058	0.704774	4949.426	4698.298	1.018965	4822.682	4353.748	946.7236	-0.24664
50	160	9000	4822.929	0.015075	0.466521	0.451446	4500	1049.673	4354.585	982.9304	0.4303	24.65436	306.185	306.185	333.6694	9%	40.95729	0.714839	40.42529	0.705554	4955.578	4692.288	1.01896	4822.697	4346.907	864.0068	-0.2324
50	170	9000	4822.929	0.01602	0.466521	0.450501	4500	1049.673	4345.469	978.8193	0.429909	24.63199	319.8468	319.8468	349.2258	9%	41.00202	0.71562	40.47002	0.706335	4961.742	4686.27	1.018956	4822.713	4340.077	791.7735	-0.21594
50	180	9000	4822.929	0.016966	0.466521	0.449556	4500	1049.673	4336.35	974.7154	0.429519	24.60961	333.4888	333.4888	364.7827	9%	41.04679	0.716402	40.51479	0.707116	4967.92	4680.244	1.018951	4822.732	4333.256	728.3203	-0.19728
50	190	9000	4822.929	0.017912	0.466521	0.44861	4500	1049.673	4327.227	970.6186	0.429128	24.58721	347.1111	347.1111	380.3402	10%	41.09159	0.717183	40.55959	0.707898	4974.11	4674.21	1.018947	4822.753	4326.444	672.2765	-0.17641
50	200	9000	4822.929	0.018858	0.466521	0.447664	4500	1049.673	4318.102	966.5289	0.428737	24.56479	360.7138	360.7138	395.8982	10%	41.13642	0.717966	40.60442	0.708681	4980.313	4668.167	1.018942	4822.776	4319.643	622.529	-0.15332
50	210	9000	4822.929	0.019804	0.466521	0.446717	4500	1049.673	4308.973	962.4465	0.428345	24.54236	374.2968	374.2968	411.4567	10%	41.18128	0.718749	40.64928	0.709464	4986.529	4662.116	1.018938	4822.801	4312.852	578.1663	-0.12802
50	220	9000	4822.929	0.020751	0.466521	0.445771	4500	1049.673	4299.84	958.3713	0.427953	24.51991	387.8602	387.8602	427.0159	10%	41.22617	0.719532	40.69417	0.710247	4992.758	4656.057	1.018934	4822.828	4306.07	538.4365	-0.1005
50	230	9000	4822.929	0.021698	0.466521	0.444824	4500	1049.673	4290.705	954.3032	0.427561	24.49745	401.4042	401.4042	442.5757	10%	41.2711	0.720317	40.7391	0.711031	4999	4649.989	1.01893	4822.858	4299.298	502.7143	-0.07076
50	240	9000	4822.929	0.022645	0.466521	0.443876	4500	1049.673	4281.566	950.2424	0.427169	24.47497	414.9287	414.9287	458.1361	10%	41.31606	0.721101	40.78406	0.711816	5005.255	4643.912	1.018925	4822.89	4292.536	470.4767	-0.0388
50	40	9500	5090.869	0.003563	0.466521	0.462959	4750	1107.989	4713.726	1091.131	0.435044	24.92619	145.4057	145.4057	151.7357	4%	40.41363	0.705351	39.88163	0.696066	5152.504	5029.85	1.019019	5090.599	4677.297	4268.588	-0.27018
50	50	9500	5090.869	0.004454	0.466521	0.462067	4750	1107.989	4704.65	1086.933	0.434677	24.90518	159.3137	159.3137	167.2877	5%	40.45564	0.706084	39.92364	0.696799	5158.516	5023.93	1.019014	5090.589	4670.343	3555.831	-0.28058
50	60	9500	5090.869	0.005346	0.466521	0.461176	4750	1107.989	4695.57	1082.741	0.434311	24.88416	173.2023	173.2023	182.84	6%	40.49768	0.706818	39.96568	0.697533	5164.539	5018.002	1.019009	5090.581	4663.399	3008.43	-0.28892
50	70	9500	5090.869	0.006238	0.466521	0.460284	4750	1107.989	4686.488	1078.557	0.433943	24.86313	187.0716	187.0716	198.3925	6%	40.53975	0.707552	40.00775	0.698267	5170.574	5012.067	1.019005	5090.574	4656.464	2578.882	-0.29518
50	80	9500	5090.869	0.00713	0.466521	0.459391	4750	1107.989	4677.402	1074.379	0.433576	24.84208	200.9217	200.9217	213.9453	6%	40.58184	0.708287	40.04984	0.699002	5176.62	5006.124	1.019	5090.57	4649.539	2235.597	-0.29938
50	90	9500	5090.869	0.008023	0.466521	0.458499	4750	1107.989	4668.314	1070.208	0.433208	24.82102	214.7526	214.7526	229.4983	7%	40.62397	0.709022	40.09197	0.699737	5182.679	5000.174	1.018995	5090.568	4642.624	1956.908	-0.3015
50	100	9500	5090.869	0.008916	0.466521	0.457606	4750	1107.989	4659.222	1066.043	0.432841	24.79994	228.5643	228.5643	245.0516	7%	40.66612	0.709758	40.13412	0.700473	5188.749	4994.217	1.018991	5090.568	4635.718	1727.549	-0.30154
50	110	9500	5090.869	0.009809	0.466521	0.456712	4750	1107.989	4650.127	1061.886	0.432473	24.77885	242.357	242.357	260.6053	8%	40.7083	0.710494	40.1763	0.701209	5194.83	4988.252	1.018986	5090.57	4628.822	1536.513	-0.29951
50	120	9500	5090.869	0.010703	0.466521	0.455819	4750	1107.989	4641.03	1057.735	0.432104	24.75774	256.1305	256.1305	276.1593	8%	40.75051	0.711231	40.21851	0.701945	5200.924	4982.28	1.018982	5090.574	4621.935	1375.702	-0.2954
50	130	9500	5090.869	0.011596	0.466521	0.454925	4750	1107.989	4631.929	1053.59	0.431736	24.73663	269.8851	269.8851	291.7136	8%	40.79275	0.711968	40.26075	0.702683	5207.03	4976.299	1.018977	5090.58	4615.057	1239.052	-0.28921
50	140	9500	5090.869	0.012491	0.466521	0.454031	4750	1107.989	4622.825	1049.453	0.431367	24.71549	283.6207	283.6207	307.2684	8%	40.83502	0.712706	40.30302	0.70342	5213.147	4970.312	1.018973	5090.589	4608.19	1121.944	-0.28093
50	150	9500	5090.869	0.013385	0.466521	0.453137	4750	1107.989	4613.718	1045.322	0.430998	24.69434	297.3374	297.3374	322.8235	9%	40.87731	0.713444	40.34531	0.704159	5219.277	4964.316	1.018968	5090.599	4601.331	1020.817	-0.27057
50	160	9500	5090.869	0.01428	0.466521	0.452242	4750	1107.989	4604.607	1041.198	0.430628	24.67318	311.0352	311.0352	338.379	9%	40.91964	0.714182	40.38764	0.704897	5225.418	4958.313	1.018964	5090.611	4594.482	932.8848	-0.25812
50	170	9500	5090.869	0.015175	0.466521	0.451347	4750	1107.989	4595.494	1037.081	0.430259	24.652	324.7142	324.7142	353.935	9%	40.96199	0.714922	40.42999	0.705636	5231.572	4952.303	1.01896	5090.626	4587.643	855.9424	-0.24359
50	180	9500	5090.869	0.01607	0.466521	0.450451	4750	1107.989	4586.378	1032.97	0.429889	24.63081	338.3745	338.3745	369.4915	9%	41.00438	0.715661	40.47238	0.706376	5237.737	4946.284	1.018955	5090.643	4580.813	788.2283	-0.22696
50	190	9500	5090.869	0.016966	0.466521	0.449556	4750	1107.989	4577.258	1028.866	0.429519	24.60961	352.016	352.016	385.0484	9%	41.04679	0.716402	40.51479	0.707116	5243.915	4940.258	1.018951	5090.661	4573.992	728.3203	-0.20824
50	200	9500	5090.869	0.017862	0.466521	0.44866	4750	1107.989	4568.136	1024.769	0.429148	24.58839	365.6388	365.6388	400.6058	10%	41.08923	0.717142	40.55723	0.707857	5250.105	4934.223	1.018947	5090.682	4567.181	675.0604	-0.18743
50	210	9500	5090.869	0.018758	0.466521	0.447763	4750	1107.989	4559.01	1020.679	0.428778	24.56715	379.243	379.243	416.1638	10%	41.1317	0.717884	40.5997	0.708598	5256.307	4928.181	1.018943	5090.705	4560.379	627.4976	-0.16452
50	220	9500	5090.869	0.019655	0.466521	0.446867	4750	1107.989	4549.882	1016.596	0.428407	24.5459	392.8286	392.8286	431.7223	10%	41.17419	0.718625	40.64219	0.70934	5262.521	4922.132	1.018939	5090.73	4553.586	584.8453	-0.13951
50	230	9500	5090.869	0.020552	0.466521	0.44597	4750	1107.989	4540.75	1012.519	0.428036	24.52464	406.3957	406.3957	447.2814	10%	41.21672	0.719367	40.68472	0.710082	5268.748	4916.074	1.018935	5090.757	4546.802	546.4483	-0.1124
50	240	9500	5090.869	0.021449	0.466521	0.445073	4750	1107.989	4531.615	1008.449	0.427664	24.50336	419.9442	419.9442	462.841	10%	41.25927	0.72011	40.72727	0.710825	5274.987	4910.008	1.018931	5090.786	4540.028	511.7573	-0.08318

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
50	40	10000	5358.81	0.003384	0.466521	0.463137	5000	1166.304	4963.727	1149.443	0.435117	24.93038	150.1282	150.1282	156.4477	4%	40.40523	0.705204	39.87323	0.695919	5422.424	5295.824	1.01902	5358.528	4924.936	4436.857	-0.28195
50	50	10000	5358.81	0.004231	0.466521	0.46229	5000	1166.304	4954.652	1145.244	0.434769	24.91043	164.0405	164.0405	171.9997	5%	40.44513	0.705901	39.91313	0.696616	5428.433	5289.906	1.019015	5358.517	4917.98	3716.188	-0.29282
50	60	10000	5358.81	0.005078	0.466521	0.461443	5000	1166.304	4945.573	1141.051	0.434421	24.89047	177.9345	177.9345	187.5519	5%	40.48506	0.706598	39.95306	0.697312	5434.453	5283.98	1.019011	5358.508	4911.033	3158.493	-0.30172
50	70	10000	5358.81	0.005926	0.466521	0.460596	5000	1166.304	4936.492	1136.864	0.434072	24.87049	191.81	191.81	203.1043	6%	40.52502	0.707295	39.99302	0.69801	5440.484	5278.047	1.019006	5358.501	4904.095	2718.049	-0.30866
50	80	10000	5358.81	0.006773	0.466521	0.459748	5000	1166.304	4927.407	1132.684	0.433723	24.8505	205.6673	205.6673	218.657	6%	40.565	0.707993	40.033	0.698708	5446.527	5272.108	1.019002	5358.496	4897.166	2364.119	-0.31363
50	90	10000	5358.81	0.007621	0.466521	0.4589	5000	1166.304	4918.32	1128.51	0.433374	24.8305	219.5064	219.5064	234.2099	7%	40.60501	0.708691	40.07301	0.699406	5452.58	5266.161	1.018997	5358.493	4890.247	2075.419	-0.31663
50	100	10000	5358.81	0.008469	0.466521	0.458052	5000	1166.304	4909.23	1124.342	0.433025	24.81048	233.3272	233.3272	249.7631	7%	40.64504	0.70939	40.11304	0.700105	5458.644	5260.207	1.018993	5358.492	4883.336	1836.831	-0.31766
50	110	10000	5358.81	0.009318	0.466521	0.457204	5000	1166.304	4900.137	1120.181	0.432675	24.79045	247.1299	247.1299	265.3166	7%	40.6851	0.710089	40.1531	0.700804	5464.72	5254.246	1.018989	5358.493	4876.435	1637.38	-0.31672
50	120	10000	5358.81	0.010166	0.466521	0.456355	5000	1166.304	4891.041	1116.026	0.432325	24.77041	260.9144	260.9144	280.8704	8%	40.72518	0.710788	40.19318	0.701503	5470.807	5248.278	1.018984	5358.496	4869.543	1468.94	-0.31381
50	130	10000	5358.81	0.011015	0.466521	0.455506	5000	1166.304	4881.942	1111.877	0.431975	24.75035	274.6808	274.6808	296.4245	8%	40.76529	0.711489	40.23329	0.702203	5476.905	5242.303	1.01898	5358.501	4862.66	1325.389	-0.30891
50	140	10000	5358.81	0.011865	0.466521	0.454657	5000	1166.304	4872.84	1107.735	0.431625	24.73029	288.4292	288.4292	311.979	8%	40.80543	0.712189	40.27343	0.702904	5483.014	5236.32	1.018976	5358.508	4855.785	1202.047	-0.30205
50	150	10000	5358.81	0.012714	0.466521	0.453807	5000	1166.304	4863.735	1103.599	0.431274	24.71021	302.1596	302.1596	327.5338	8%	40.84559	0.71289	40.31359	0.703605	5489.135	5230.33	1.018972	5358.517	4848.92	1095.285	-0.2932
50	160	10000	5358.81	0.013564	0.466521	0.452958	5000	1166.304	4854.627	1099.47	0.430924	24.69011	315.8721	315.8721	343.089	9%	40.88578	0.713591	40.35378	0.704306	5495.267	5224.333	1.018967	5358.528	4842.064	1002.253	-0.28237
50	170	10000	5358.81	0.014414	0.466521	0.452108	5000	1166.304	4845.516	1095.347	0.430573	24.67	329.5666	329.5666	358.6446	9%	40.92599	0.714293	40.39399	0.705008	5501.411	5218.329	1.018963	5358.54	4835.217	920.6903	-0.26956
50	180	10000	5358.81	0.015264	0.466521	0.451257	5000	1166.304	4836.403	1091.231	0.430222	24.64989	343.2433	343.2433	374.2007	9%	40.96623	0.714996	40.43423	0.70571	5507.566	5212.317	1.018959	5358.555	4828.378	848.7815	-0.25476
50	190	10000	5358.81	0.016115	0.466521	0.450407	5000	1166.304	4827.286	1087.121	0.42987	24.62975	356.9021	356.9021	389.7572	9%	41.0065	0.715698	40.4745	0.706413	5513.733	5206.298	1.018955	5358.572	4821.549	785.0581	-0.23797
50	200	10000	5358.81	0.016966	0.466521	0.449556	5000	1166.304	4818.167	1083.017	0.429519	24.60961	370.5431	370.5431	405.3141	9%	41.04679	0.716402	40.51479	0.707116	5519.911	5200.271	1.018951	5358.591	4814.728	728.3203	-0.2192
50	210	10000	5358.81	0.017817	0.466521	0.448705	5000	1166.304	4809.044	1078.92	0.429167	24.58945	384.1664	384.1664	420.8715	10%	41.0871	0.717105	40.5551	0.70782	5526.1	5194.237	1.018947	5358.612	4807.917	677.5809	-0.19844
50	220	10000	5358.81	0.018668	0.466521	0.447853	5000	1166.304	4799.919	1074.829	0.428815	24.56928	397.772	397.772	436.4295	10%	41.12745	0.717809	40.59545	0.708524	5532.301	5188.196	1.018943	5358.634	4801.114	632.0211	-0.17569
50	230	10000	5358.81	0.01952	0.466521	0.447001	5000	1166.304	4790.791	1070.745	0.428462	24.54909	411.3599	411.3599	451.9879	10%	41.16782	0.718514	40.63582	0.709229	5538.514	5182.147	1.018939	5358.659	4794.32	590.9572	-0.15094
50	240	10000	5358.81	0.020372	0.466521	0.446149	5000	1166.304	4781.66	1066.667	0.42811	24.52889	424.9302	424.9302	467.5468	10%	41.20821	0.719219	40.67621	0.709934	5544.739	5176.09	1.018935	5358.686	4787.535	553.815	-0.1242
55	40	1000	480.0191	0.037234	0.520813	0.483579	500	130.2032	464.2544	112.2518	0.465403	26.66561	69.2013	69.2013	79.62336	15%	36.93478	0.644633	36.40278	0.635348	506.0885	454.5644	1.019574	480.0768	465.3993	208.8197	0.057681
55	50	1000	480.0191	0.046629	0.520813	0.474183	500	130.2032	455.2339	107.9321	0.461644	26.45025	83.43085	83.43085	97.08097	16%	37.3655	0.652151	36.8335	0.642866	512.0052	448.906	1.019487	480.1512	458.2846	143.6636	0.132077
55	60	1000	480.0191	0.05606	0.520813	0.464752	500	130.2032	446.1799	103.6815	0.457857	26.23327	97.43316	97.43316	114.6123	18%	37.79947	0.659725	37.26747	0.65044	518.0354	443.1793	1.019406	480.2477	451.2834	105.3383	0.22861
55	70	1000	480.0191	0.065526	0.520813	0.455286	500	130.2032	437.0923	99.50107	0.454042	26.01467	111.2143	111.2143	132.0377	19%	38.23667	0.667356	37.70467	0.658071	524.1828	437.3813	1.019328	480.3666	444.3928	80.84975	0.347507
55	80	1000	480.0191	0.075027	0.520813	0.445786	500	130.2032	427.9711	95.39166	0.450198	25.79443	124.7802	124.7802	149.5416	20%	38.67713	0.675043	38.14513	0.665758	530.4511	431.5086	1.019256	480.5081	437.6099	64.22563	0.48899
55	90	1000	480.0191	0.084563	0.520813	0.43625	500	130.2032	418.8165	91.3543	0.446326	25.57257	138.1368	138.1368	167.0657	21%	39.12086	0.682788	38.58886	0.673503	536.8445	425.5578	1.019188	480.6724	430.9316	52.40606	0.653284
55	100	1000	480.0191	0.094133	0.520813	0.426679	500	130.2032	409.6284	87.38996	0.442425	25.34906	151.2895	151.2895	184.6123	22%	39.56787	0.69059	39.03587	0.681304	543.3671	419.5253	1.019125	480.8597	424.3552	43.69002	0.840615
55	110	1000	480.0191	0.103739	0.520813	0.417074	500	130.2032	400.4069	83.49965	0.438495	25.12391	164.2441	164.2441	202.1839	23%	40.01817	0.698449	39.48617	0.689164	550.0233	413.4074	1.019066	481.0703	417.8779	37.06981	1.051209
55	120	1000	480.0191	0.113379	0.520813	0.407434	500	130.2032	391.1522	79.68434	0.434537	24.89711	177.0059	177.0059	219.7828	24%	40.47178	0.706366	39.93978	0.697081	556.8177	407.2	1.019012	481.3044	411.497	31.91717	1.285291
55	130	1000	480.0191	0.123053	0.520813	0.397759	500	130.2032	381.8642	75.94505	0.430549	24.66866	189.5803	189.5803	237.4116	25%	40.92869	0.71434	40.39669	0.705055	563.7551	400.8989	1.018963	481.5622	405.2099	27.82362	1.543087
55	140	1000	480.0191	0.132762	0.520813	0.38805	500	130.2032	372.5432	72.28278	0.426533	24.43854	201.9724	201.9724	255.0726	26%	41.38891	0.722373	40.85691	0.713088	570.8405	394.4998	1.018919	481.8439	399.0138	24.5141	1.824823
55	150	1000	480.0191	0.142506	0.520813	0.378307	500	130.2032	363.1892	68.69853	0.422488	24.20677	214.1873	214.1873	272.7684	27%	41.85246	0.730463	41.32046	0.721178	578.0792	387.9979	1.018879	482.1498	392.9063	21.79779	2.130724
55	160	1000	480.0191	0.152283	0.520813	0.36853	500	130.2032	353.8025	65.19333	0.418414	23.97333	226.2301	226.2301	290.5014	28%	42.31934	0.738612	41.78734	0.729327	585.4767	381.3886	1.018845	482.4801	386.8849	19.53886	2.461014
55	170	1000	480.0191	0.162095	0.520813	0.358718	500	130.2032	344.383	61.76819	0.41431	23.73823	238.1056	238.1056	308.2741	29%	42.78954	0.746818	42.25754	0.737533	593.0388	374.6664	1.018815	482.835	380.9472	17.63846	2.815917
55	180	1000	480.0191	0.17194	0.520813	0.348873	500	130.2032	334.931	58.42412	0.410178	23.50146	249.8187	249.8187	326.0891	31%	43.26309	0.755083	42.73109	0.745798	600.7715	367.8262	1.01879	483.2148	375.0907	16.02324	3.195655
55	190	1000	480.0191	0.181819	0.520813	0.338994	500	130.2032	325.4467	55.16216	0.406016	23.26302	261.3739	261.3739	343.9488	32%	43.73997	0.763406	43.20797	0.754121	608.6812	360.8621	1.018771	483.6195	369.313	14.63779	3.600451
55	200	1000	480.0191	0.191732	0.520813	0.329081	500	130.2032	315.9303	51.98332	0.401826	23.02291	272.7761	272.7761	361.856	33%	44.22018	0.771788	43.68818	0.762503	616.7747	353.7682	1.018757	484.0496	363.612	13.43964	4.030523
55	210	1000	480.0191	0.201677	0.520813	0.319135	500	130.2032	306.382	48.88863	0.397606	22.78113	284.0296	284.0296	379.8131	34%	44.70373	0.780227	44.17173	0.770942	625.0589	346.5381	1.018748	484.5052	357.9852	12.39575	4.486089
55	220	1000	480.0191	0.211656	0.520813	0.309156	500	130.2032	296.8019	45.87911	0.393357	22.53769	295.139	295.139	397.8228	35%	45.19062	0.788725	44.65862	0.77944	633.5411	339.1651	1.018744	484.9865	352.4305	11.48013	4.967367
55	230	1000	480.0191	0.221668	0.520813	0.299145	500	130.2032	287.1905	42.95577	0.389079	22.29259	306.1087	306.1087	415.8877	36%	45.68083	0.797281	45.14883	0.787996	642.2293	331.6421	1.018746	485.4937	346.9457	10.67207	5.474569
55	240	1000	480.0191	0.231712	0.520813	0.289101	500	130.2032	277.5478	40.11966	0.384772	22.04582	316.9429	316.9429	434.0107	37%	46.17437	0.805895	45.64237	0.79661	651.1316	323.9617	1.018754	486.027	341.5285	9.954922	6.007907
55	40	1500	720.0286	0.02476	0.520813	0.496052	750	195.3047	714.344	177.1761	0.470371	26.95027	74.79643	74.79643	84.54418	13%	36.36547	0.634697	35.83347	0.625412	747.555	693.0118	1.019696	720.0175	712.6018	402.1802	-0.01119
55	50	1500	720.0286	0.030989	0.520813	0.489824	750	195.3047	705.374	172.7544	0.467893	26.8083	89.37843	89.37843	101.9866	14%	36.64941	0.639653	36.11741	0.630368	753.308	687.4503	1.019634	720.0591	705.3108	281.6548	0.030411
55	60	1500	720.0286	0.037234	0.520813	0.483579	750	195.3047	696.3815	168.3778	0.465403	26.66561	103.802	103.802	119.435	15%	36.93478	0.644633	36.40278	0.635348	759.1328	681.8466	1.019574	720.1152	698.099	208.8197	0.086522
55	70	1500	720.0286	0.043494	0.520813	0.477319	750	195.3047	687.3667	164.0466	0.4629	26.52221	118.0698	118.0698	136.8906	16%	37.22157	0.649639	36.68957	0.640354	765.0309	676.1993	1.019516	720.1859	690.9651	161.4004	0.157244
55	80	1500	720.0286	0.049769	0.520813	0.471043	750	195.3047	678.3295	159.7613	0.460385	26.3781	132.1848	132.1848	154.3544	17%	37.5098	0.654669	36.9778	0.645384	771.0038	670.5072	1.01946	720.2713	683.9076	128.7713	0.242675
55	90	1500	720.0286	0.05606	0.520813	0.464752	750	195.3047	669.2698	155.5223	0.457857	26.23327	146.1497	146.1497	171.8275	18%	37.79947	0.659725	37.26747	0.65044	777.0531	664.769	1.019406	720.3716	676.9251	105.3383	0.342916
55	100	1500	720.0286	0.062367	0.520813	0.458446	750	195.3047	660.1878	151.3301	0.455316	26.08771	159.9672	159.9672	189.3108	18%	38.09057	0.664806	37.55857	0.655521	783.1806	658.9831	1.019354	720.4867	670.0164	87.92668	0.458064
55	110	1500	720.0286	0.068689	0.520813	0.452123	750	195.3047	651.0834	147.185	0.452763	25.94144	173.6399	173.6399	206.8054	19%	38.38313	0.669912	37.85113	0.660627	789.3879	653.1483	1.019304	720.6169	663.1801	74.62488	0.58822
55	120	1500	720.0286	0.075027	0.520813	0.445786	750	195.3047	641.9567	143.0875	0.450198	25.79443	187.1704	187.1704	224.3124	20%	38.67713	0.675043	38.14513	0.665758	795.6767	647.2629	1.019256	720.7621	656.4148	64.22563	0.733484
55	130	1500	720.0286	0.08138	0.520813	0.439432	750	195.3047	632.8076	139.038	0.447619	25.64671	200.5613	200.5613	241.8329	21%	38.97259	0.6802	38.44059	0.670915	802.0488	641.3254	1.01921	720.9226	649.7194	55.93562	0.893956
55	140	1500	720.0286	0.087749	0.520813	0.433063	750	195.3047	623.6362	135.037	0.445028	25.49825	213.8151	213.8151	259.3679	21%	39.2695	0.685382	38.7375	0.676097	808.5062	635.3344	1.019166	721.0984	643.0925	49.21595	1.069735
55	150	1500	720.0286	0.094133	0.520813	0.426679	750	195.3047	614.4426	131.0849	0.442425	25.34906	226.9343	226.9343	276.9184	22%	39.56787	0.69059	39.03587	0.681304	815.0506	629.288	1.019125	721.2896	636.5328	43.69002	1.260923
55	160	1500	720.0286	0.100533	0.520813	0.42028	750	195.3047	605.2267	127.1822	0.439808	25.19915	239.9214	239.9214	294.4856	23%	39.86771	0.695823	39.33571	0.686538	821.6842	623.1847	1.019085	721.4963	630.0393	39.08809	1.467618
55	170	1500	720.0286	0.106948	0.520813	0.413864	750	195.3047	595.9885	123.3292	0.437179	25.0485	252.7788	252.7788	312.0705	23%	40.16901	0.701081	39.63701	0.691796	828.4088	617.0226	1.019048	721.7186	623.6106	35.21285	1.689923
55	180	1500	720.0286	0.113379	0.520813	0.407434	750	195.3047	586.7283	119.5265	0.434537	24.89711	265.5089	265.5089	329.6742	24%	40.47178	0.706366	39.93978	0.697081	835.2265	610.8	1.019012	721.9566	617.2455	31.91717	1.927936
55	190	1500	720.0286	0.119825	0.520813	0.400988	750	195.3047	577.4458	115.7745	0.431882	24.74499	278.114	278.114	347.2978	25%	40.77601	0.711676	40.24401	0.702391	842.1396	604.5149	1.018979	722.2104	610.943	29.08953	2.181759
55	200	1500	720.0286	0.126286	0.520813	0.394527	750	195.3047	568.1414	112.0735	0.429214	24.59214	290.5965	290.5965	364.9424	26%	41.08173	0.717011	40.54973	0.707726	849.1503	598.1655	1.018948	722.4801	604.7018	26.64414	2.451492
55	210	1500	720.0286	0.132762	0.520813	0.38805	750	195.3047	558.8148	108.4242	0.426533	24.43854	302.9586	302.9586	382.609	26%	41.38891	0.722373	40.85691	0.713088	856.2608	591.7497	1.018919	722.7659	598.5207	24.5141	2.737235
55	220	1500	720.0286	0.139254	0.520813	0.381559	750	195.3047	549.4663	104.8268	0.423839	24.28421	315.2026	315.2026	400.2987	27%	41.69757	0.72776	41.16557	0.718475	863.4734	585.2654	1.018892	723.0677	592.3987	22.64659	3.039087
55	230	1500	720.0286	0.145761	0.520813	0.375052	750	195.3047	540.0959	101.2819	0.421133	24.12914	327.3307	327.3307	418.0127	28%	42.00772	0.733173	41.47572	0.723888	870.7907	578.7105	1.018867	723.3858	586.3346	20.9995	3.357149

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
55	240	1500	720.0286	0.152283	0.520813	0.36853	750	195.3047	530.7037	97.79	0.418414	23.97333	339.3452	339.3452	435.7521	28%	42.31934	0.738612	41.78734	0.729327	878.2151	572.0828	1.018845	723.7202	580.3274	19.53886	3.691521
55	40	2000	960.0382	0.018547	0.520813	0.502266	1000	260.4063	964.3888	242.1898	0.472836	27.09153	80.0708	80.0708	89.47579	12%	36.08295	0.629766	35.55095	0.620481	989.1631	931.3763	1.01976	959.987	959.9646	623.8953	-0.05116
55	50	2000	960.0382	0.023205	0.520813	0.497607	1000	260.4063	955.444	237.7179	0.470988	26.98565	94.83445	94.83445	106.9125	13%	36.29471	0.633462	35.76271	0.624177	994.8371	925.8609	1.019712	960.0124	952.5828	444.762	-0.02577
55	60	2000	960.0382	0.027873	0.520813	0.49294	1000	260.4063	946.4824	233.2795	0.469133	26.87937	109.4766	109.4766	124.3529	14%	36.50726	0.637172	35.97526	0.627887	1000.564	920.315	1.019665	960.0486	945.2617	333.7473	0.010406
55	70	2000	960.0382	0.032549	0.520813	0.488264	1000	260.4063	937.504	228.8747	0.467272	26.77269	123.9987	123.9987	141.7974	14%	36.72062	0.640896	36.18862	0.631611	1006.343	914.7379	1.019619	960.0956	938.0006	260.151	0.057433
55	80	2000	960.0382	0.037234	0.520813	0.483579	1000	260.4063	928.5087	224.5037	0.465403	26.66561	138.4026	138.4026	159.2467	15%	36.93478	0.644633	36.40278	0.635348	1012.177	909.1288	1.019574	960.1536	930.7987	208.8197	0.115363
55	90	2000	960.0382	0.041927	0.520813	0.478885	1000	260.4063	919.4967	220.1668	0.463527	26.55813	152.6897	152.6897	176.7014	16%	37.14974	0.648385	36.61774	0.6391	1018.066	903.4871	1.01953	960.2224	923.6551	171.5696	0.184251
55	100	2000	960.0382	0.046629	0.520813	0.474183	1000	260.4063	910.4679	215.8643	0.461644	26.45025	166.8617	166.8617	194.1619	16%	37.3655	0.652151	36.8335	0.642866	1024.01	897.812	1.019487	960.3023	916.5691	143.6636	0.264153
55	110	2000	960.0382	0.051341	0.520813	0.469472	1000	260.4063	901.4222	211.5963	0.459754	26.34196	180.9201	180.9201	211.629	17%	37.58208	0.655931	37.05008	0.646646	1030.012	892.1028	1.019446	960.3933	909.54	122.2043	0.355124
55	120	2000	960.0382	0.05606	0.520813	0.464752	1000	260.4063	892.3598	207.3631	0.457857	26.23327	194.8663	194.8663	229.1033	18%	37.79947	0.659725	37.26747	0.65044	1036.071	886.3586	1.019406	960.4954	902.5668	105.3383	0.457221
55	130	2000	960.0382	0.060789	0.520813	0.460024	1000	260.4063	883.2806	203.165	0.455953	26.12417	208.702	208.702	246.5852	18%	38.01766	0.663533	37.48566	0.654248	1042.188	880.5788	1.019366	960.6087	895.649	91.83468	0.570499
55	140	2000	960.0382	0.065526	0.520813	0.455286	1000	260.4063	874.1845	199.0021	0.454042	26.01467	222.4286	222.4286	264.0754	19%	38.23667	0.667356	37.70467	0.658071	1048.366	874.7625	1.019328	960.7332	888.7857	80.84975	0.695013
55	150	2000	960.0382	0.070272	0.520813	0.45054	1000	260.4063	865.0718	194.8748	0.452123	25.90475	236.0476	236.0476	281.5746	19%	38.45649	0.671192	37.92449	0.661907	1054.603	868.9089	1.019292	960.869	881.9762	71.78947	0.830822
55	160	2000	960.0382	0.075027	0.520813	0.445786	1000	260.4063	855.9422	190.7833	0.450198	25.79443	249.5605	249.5605	299.0832	20%	38.67713	0.675043	38.14513	0.665758	1060.902	863.0172	1.019256	961.0162	875.2198	64.22563	0.977979
55	170	2000	960.0382	0.079791	0.520813	0.441022	1000	260.4063	846.7959	186.7278	0.448265	25.68371	262.9686	262.9686	316.6019	20%	38.89859	0.678908	38.36659	0.669623	1067.264	857.0863	1.019221	961.1747	868.5157	57.84317	1.136542
55	180	2000	960.0382	0.084563	0.520813	0.43625	1000	260.4063	837.6329	182.7086	0.446326	25.57257	276.2735	276.2735	334.1313	21%	39.12086	0.682788	38.58886	0.673503	1073.689	851.1156	1.019188	961.3448	861.8632	52.40606	1.306568
55	190	2000	960.0382	0.089344	0.520813	0.431469	1000	260.4063	828.4532	178.7259	0.444379	25.46102	289.4765	289.4765	351.672	21%	39.34396	0.686682	38.81196	0.677396	1080.179	845.104	1.019156	961.5263	855.2617	47.7346	1.488112
55	200	2000	960.0382	0.094133	0.520813	0.426679	1000	260.4063	819.2567	174.7799	0.442425	25.34906	302.5791	302.5791	369.2245	22%	39.56787	0.69059	39.03587	0.681304	1086.734	839.0507	1.019125	961.7194	848.7105	43.69002	1.68123
55	210	2000	960.0382	0.098932	0.520813	0.421881	1000	260.4063	810.0436	170.871	0.440463	25.23669	315.5825	315.5825	386.7896	23%	39.79261	0.694512	39.26061	0.685227	1093.356	832.9546	1.019095	961.9242	842.2087	40.16374	1.88598
55	220	2000	960.0382	0.103739	0.520813	0.417074	1000	260.4063	800.8138	166.9993	0.438495	25.12391	328.4882	328.4882	404.3677	23%	40.01817	0.698449	39.48617	0.689164	1100.047	826.8148	1.019066	962.1406	835.7559	37.06981	2.102418
55	230	2000	960.0382	0.108554	0.520813	0.412258	1000	260.4063	791.5674	163.1651	0.436519	25.01072	341.2976	341.2976	421.9595	24%	40.24456	0.7024	39.71256	0.693115	1106.806	820.6302	1.019039	962.3688	829.3512	34.33947	2.330599
55	240	2000	960.0382	0.113379	0.520813	0.407434	1000	260.4063	782.3043	159.3687	0.434537	24.89711	354.0119	354.0119	439.5656	24%	40.47178	0.706366	39.93978	0.697081	1113.635	814.3999	1.019012	962.6088	822.9941	31.91717	2.570582
55	40	2500	1200.048	0.014826	0.520813	0.505986	1250	325.5079	1214.416	307.2389	0.47431	27.17594	85.21406	85.21406	94.41071	11%	35.91412	0.62682	35.38212	0.617534	1230.826	1169.709	1.0198	1199.968	1207.393	860.7113	-0.07967
55	50	2500	1200.048	0.018547	0.520813	0.502266	1250	325.5079	1205.486	302.7372	0.472836	27.09153	100.0885	100.0885	111.8447	12%	36.08295	0.629766	35.55095	0.620481	1236.454	1164.22	1.01976	1199.984	1199.956	623.8953	-0.06395
55	60	2500	1200.048	0.022273	0.520813	0.49854	1250	325.5079	1196.543	298.2621	0.471359	27.00685	114.8644	114.8644	129.2812	13%	36.25229	0.632722	35.72029	0.623437	1242.123	1158.708	1.019721	1200.008	1192.568	473.7065	-0.03964
55	70	2500	1200.048	0.026005	0.520813	0.494808	1250	325.5079	1187.586	293.8136	0.469876	26.92193	129.5427	129.5427	146.7204	13%	36.42214	0.635686	35.89014	0.626401	1247.833	1153.171	1.019683	1200.041	1185.229	372.4378	-0.00671
55	80	2500	1200.048	0.029742	0.520813	0.491071	1250	325.5079	1178.616	289.3919	0.46839	26.83675	144.1247	144.1247	164.1627	14%	36.59251	0.63866	36.06051	0.629375	1253.586	1147.61	1.019646	1200.083	1177.938	300.887	0.03489
55	90	2500	1200.048	0.033485	0.520813	0.487328	1250	325.5079	1169.633	284.9972	0.466898	26.75131	158.6112	158.6112	181.6086	14%	36.76338	0.641642	36.23138	0.632357	1259.382	1142.023	1.019609	1200.133	1170.694	248.4349	0.085181
55	100	2500	1200.048	0.037234	0.520813	0.483579	1250	325.5079	1160.636	280.6296	0.465403	26.66561	173.0033	173.0033	199.0584	15%	36.93478	0.644633	36.40278	0.635348	1265.221	1136.411	1.019574	1200.192	1163.498	208.8197	0.144204
55	110	2500	1200.048	0.040988	0.520813	0.479825	1250	325.5079	1151.626	276.2893	0.463903	26.57966	187.302	187.302	216.5125	16%	37.10668	0.647634	36.57468	0.638349	1271.105	1130.773	1.019539	1200.26	1156.349	178.1539	0.211993
55	120	2500	1200.048	0.044747	0.520813	0.476065	1250	325.5079	1142.602	271.9764	0.462398	26.49345	201.5083	201.5083	233.9712	16%	37.2791	0.650643	36.7471	0.641358	1277.032	1125.108	1.019504	1200.336	1149.246	153.9197	0.288584
55	130	2500	1200.048	0.048513	0.520813	0.4723	1250	325.5079	1133.565	267.6911	0.460889	26.40698	215.6232	215.6232	251.435	17%	37.45204	0.653661	36.92004	0.644376	1283.005	1119.416	1.019471	1200.422	1142.188	134.4277	0.374013
55	140	2500	1200.048	0.052284	0.520813	0.468529	1250	325.5079	1124.514	263.4336	0.459375	26.32025	229.6478	229.6478	268.9041	17%	37.62549	0.656689	37.09349	0.647404	1289.024	1113.696	1.019438	1200.516	1135.176	118.5101	0.468315
55	150	2500	1200.048	0.05606	0.520813	0.464752	1250	325.5079	1115.45	259.2039	0.457857	26.23327	243.5829	243.5829	286.3791	18%	37.79947	0.659725	37.26747	0.65044	1295.089	1107.948	1.019406	1200.619	1128.209	105.3383	0.571526
55	160	2500	1200.048	0.059843	0.520813	0.46097	1250	325.5079	1106.372	255.0022	0.456334	26.14602	257.4296	257.4296	303.8602	18%	37.97396	0.662771	37.44196	0.653485	1301.2	1102.172	1.019374	1200.731	1121.285	94.31119	0.683682
55	170	2500	1200.048	0.06363	0.520813	0.457182	1250	325.5079	1097.281	250.8288	0.454807	26.05852	271.1887	271.1887	321.3479	18%	38.14897	0.665825	37.61697	0.65654	1307.359	1096.367	1.019343	1200.853	1114.406	84.98393	0.804819
55	180	2500	1200.048	0.067424	0.520813	0.453389	1250	325.5079	1088.177	246.6837	0.453275	25.97075	284.8613	284.8613	338.8425	19%	38.3245	0.668889	37.7925	0.659604	1313.567	1090.532	1.019314	1200.983	1107.569	77.0217	0.934973
55	190	2500	1200.048	0.071223	0.520813	0.44959	1250	325.5079	1079.059	242.5671	0.451739	25.88272	298.4483	298.4483	356.3444	19%	38.50055	0.671961	37.96855	0.662676	1319.823	1084.667	1.019284	1201.122	1100.776	70.16844	1.074179
55	200	2500	1200.048	0.075027	0.520813	0.445786	1250	325.5079	1069.928	238.4792	0.450198	25.79443	311.9506	311.9506	373.854	20%	38.67713	0.675043	38.14513	0.665758	1326.128	1078.771	1.019256	1201.27	1094.025	64.22563	1.222474
55	210	2500	1200.048	0.078837	0.520813	0.441975	1250	325.5079	1060.783	234.42	0.448652	25.70589	325.3691	325.3691	391.3717	20%	38.85423	0.678134	38.32223	0.668849	1332.483	1072.845	1.019228	1201.428	1087.315	59.03741	1.379893
55	220	2500	1200.048	0.082653	0.520813	0.43816	1250	325.5079	1051.625	230.3899	0.447102	25.61707	338.7048	338.7048	408.8978	21%	39.03185	0.681234	38.49985	0.671949	1338.889	1066.886	1.019201	1201.594	1080.648	54.48001	1.546473
55	230	2500	1200.048	0.086474	0.520813	0.434338	1250	325.5079	1042.454	226.3889	0.445548	25.528	351.9586	351.9586	426.4327	21%	39.21	0.684344	38.678	0.675058	1345.346	1060.895	1.019175	1201.77	1074.021	50.45415	1.72225
55	240	2500	1200.048	0.090301	0.520813	0.430512	1250	325.5079	1033.269	222.4172	0.443988	25.43866	365.1313	365.1313	443.9769	22%	39.38867	0.687462	38.85667	0.678177	1351.856	1054.871	1.019149	1201.955	1067.434	46.87938	1.907259
55	40	3000	1440.057	0.012349	0.520813	0.508464	1500	390.6095	1464.434	372.3056	0.475289	27.23208	90.29098	90.29098	99.34702	10%	35.80184	0.62486	35.26984	0.615575	1472.517	1408.026	1.019826	1439.955	1454.855	1103.961	-0.10248
55	50	3000	1440.057	0.015446	0.520813	0.505367	1500	390.6095	1455.514	367.7841	0.474064	27.16189	105.24	105.24	116.7795	11%	35.94222	0.62731	35.41022	0.618025	1478.114	1402.555	1.019793	1439.964	1447.38	812.6071	-0.09318
55	60	3000	1440.057	0.018547	0.520813	0.502266	1500	390.6095	1446.583	363.2847	0.472836	27.09153	120.1062	120.1062	134.2137	12%	36.08295	0.629766	35.55095	0.620481	1483.745	1397.064	1.01976	1439.981	1439.947	623.8953	-0.07674
55	70	3000	1440.057	0.021652	0.520813	0.499161	1500	390.6095	1437.641	358.8073	0.471605	27.02098	134.8902	134.8902	151.6499	12%	36.22403	0.632229	35.69203	0.622943	1489.41	1391.554	1.019728	1440.004	1432.555	494.6312	-0.05315
55	80	3000	1440.057	0.02476	0.520813	0.496052	1500	390.6095	1428.688	354.3521	0.470371	26.95027	149.5929	149.5929	169.0884	13%	36.36547	0.634697	35.83347	0.625412	1495.11	1386.024	1.019696	1440.035	1425.204	402.1802	-0.02237
55	90	3000	1440.057	0.027873	0.520813	0.49294	1500	390.6095	1419.724	349.9192	0.469133	26.87937	164.2148	164.2148	186.5293	14%	36.50726	0.637172	35.97526	0.627887	1500.845	1380.473	1.019665	1440.073	1417.893	333.7473	0.015608
55	100	3000	1440.057	0.030989	0.520813	0.489824	1500	390.6095	1410.748	345.5088	0.467893	26.8083	178.7569	178.7569	203.9731	14%	36.64941	0.639653	36.11741	0.630368	1506.616	1374.901	1.019634	1440.118	1410.622	281.6548	0.060823
55	110	3000	1440.057	0.034109	0.520813	0.486703	1500	390.6095	1401.761	341.1208	0.466649	26.73704	193.2196	193.2196	221.4199	15%	36.79191	0.64214	36.25991	0.632855	1512.423	1369.308	1.019603	1440.171	1403.39	241.0682	0.113293
55	120	3000	1440.057	0.037234	0.520813	0.483579	1500	390.6095	1392.763	336.7555	0.465403	26.66561	207.6039	207.6039	238.8701	15%	36.93478	0.644633	36.40278	0.635348	1518.266	1363.693	1.019574	1440.23	1396.198	208.8197	0.173044
55	130	3000	1440.057	0.040362	0.520813	0.480451	1500	390.6095	1383.754	332.4129	0.464153	26.594	221.9103	221.9103	256.3238	16%	37.07799	0.647133	36.54599	0.637848	1524.145	1358.057	1.019544	1440.297	1389.045	182.7626	0.240101
55	140	3000	1440.057	0.043494	0.520813	0.477319	1500	390.6095	1374.733	328.0932	0.4629	26.52221	236.1397	236.1397	273.7813	16%	37.22157	0.649639	36.68957	0.640354	1530.062	1352.399	1.019516	1440.372	1381.93	161.4004	0.314488
55	150	3000	1440.057	0.046629	0.520813	0.474183	1500	390.6095	1365.702	323.7964	0.461644	26.45025	250.2926	250.2926	291.2429	16%	37.3655	0.652151	36.8335	0.642866	1536.016	1346.718	1.019487	1440.454	1374.854	143.6636	0.39623
55	160	3000	1440.057	0.049769	0.520813	0.471043	1500	390.6095	1356.659	319.5226	0.460385	26.3781	264.3697	264.3697	308.7089	17%	37.5098	0.654669	36.9778	0.645384	1542.008	1341.014	1.01946	1440.543	1367.815	128.7713	0.485351
55	170	3000	1440.057	0.052913	0.520813	0.4679	1500	390.6095	1347.605	315.272	0.459122	26.30577	278.3718	278.3718	326.1794	17%	37.65445	0.657194	37.12245	0.647909	1548.038	1335.288	1.019432	1440.639	1360.814	116.1427	0.581876
55	180	3000	1440.057	0.05606	0.520813	0.464752	1500	390.6095	1338.54	311.0446	0.457857	26.23327	292.2995	292.2995	343.6549	18%	37.79947	0.659725	37.26747	0.65044	1554.106	1329.538	1.019406	1440.743	1353.85	105.3383	0.685831
55	190	3000	1440.057	0.059212	0.520813	0.461601	1500	390.6095	1329.463	306.8407	0.456588	26.16058	306.1535	306.1535	361.1355	18%	37.94484	0.662262	37.41284	0.652977	1560.214	1323.764	1.019379	1440.855	1346.923	96.02055	0.79724
55	200	3000	1440.057	0.062367	0.520813	0.458446	1500	390.6095	1320.376	302.6601	0.455316	26.08771	319.9344	319.9344	378.6215	18%	38.09057	0.664806	37.55857	0.655521	1566.361	1317.966	1.019354	1440.973	1340.033	87.92668	0.916128
55	210	3000	1440.057	0.065526	0.520813	0.455286	1500	390.6095	1311.277	298.5032	0.454042	26.01467	333.6429	333.6429	396.1132	19%	38.23667	0.667356	37.70467	0.658071	1572.548	1312.144	1.019328	1441.1	1333.179	80.84975	1.04252
55	220	3000	1440.057	0.068689	0.520813	0.452123	1500	390.6095	1302.167	294.37	0.452763	25.94144	347.2797	347.2797	413.6108	19%	38.38313	0.669912	37.85113	0.660627	1578.776	1306.297	1.019304	1441.234	1326.36	74.62488	1.176441

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
55	230	3000	1440.057	0.071856	0.520813	0.448956	1500	390.6095	1293.046	290.2605	0.451482	25.86803	360.8454	360.8454	431.1146	19%	38.52995	0.672474	37.99795	0.663189	1585.044	1300.424	1.01928	1441.375	1319.577	69.11941	1.317915
55	240	3000	1440.057	0.075027	0.520813	0.445786	1500	390.6095	1283.913	286.175	0.450198	25.79443	374.3407	374.3407	448.6248	20%	38.67713	0.675043	38.14513	0.665758	1591.353	1294.526	1.019256	1441.524	1312.83	64.22563	1.466969
55	40	3500	1680.067	0.010581	0.520813	0.510232	1750	455.711	1714.446	437.3824	0.475988	27.27211	95.32971	95.32971	104.284	9%	35.72179	0.623463	35.18979	0.614178	1714.223	1646.334	1.019846	1679.945	1702.335	1347.968	-0.12203
55	50	3500	1680.067	0.013233	0.520813	0.507579	1750	455.711	1705.534	432.8468	0.47494	27.21204	110.3324	110.3324	121.7155	10%	35.84192	0.625559	35.30992	0.616274	1719.798	1640.875	1.019817	1679.95	1694.834	1006.306	-0.11731
55	60	3500	1680.067	0.015889	0.520813	0.504924	1750	455.711	1696.612	428.33	0.473889	27.15185	125.2636	125.2636	139.1483	11%	35.9623	0.627661	35.4303	0.618375	1725.402	1635.4	1.019788	1679.96	1687.368	780.7036	-0.10648
55	70	3500	1680.067	0.018547	0.520813	0.502266	1750	455.711	1687.68	423.8321	0.472836	27.09153	140.1239	140.1239	156.5826	12%	36.08295	0.629766	35.55095	0.620481	1731.035	1629.909	1.01976	1679.977	1679.938	623.8953	-0.08953
55	80	3500	1680.067	0.021208	0.520813	0.499605	1750	455.711	1678.739	419.3531	0.471781	27.03107	154.9138	154.9138	174.0187	12%	36.20386	0.631876	35.67186	0.622591	1736.698	1624.4	1.019732	1680	1672.543	510.4534	-0.06645
55	90	3500	1680.067	0.023872	0.520813	0.496941	1750	455.711	1669.788	414.8932	0.470724	26.97049	169.6338	169.6338	191.4566	13%	36.32502	0.633991	35.79302	0.624706	1742.391	1618.873	1.019705	1680.03	1665.183	425.7076	-0.03722
55	100	3500	1680.067	0.026538	0.520813	0.494274	1750	455.711	1660.828	410.4524	0.469664	26.90978	184.2845	184.2845	208.8967	13%	36.44645	0.636111	35.91445	0.626825	1748.114	1613.33	1.019678	1680.065	1657.858	360.7104	-0.00181
55	110	3500	1680.067	0.029208	0.520813	0.491605	1750	455.711	1651.858	406.0307	0.468602	26.84893	198.8664	198.8664	226.339	14%	36.56814	0.638234	36.03614	0.628949	1753.866	1607.768	1.019651	1680.107	1650.567	309.7515	0.039782
55	120	3500	1680.067	0.03188	0.520813	0.488932	1750	455.711	1642.878	401.6282	0.467538	26.78796	213.38	213.38	243.7839	14%	36.69009	0.640363	36.15809	0.631078	1759.65	1602.189	1.019625	1680.154	1643.31	269.0473	0.087585
55	130	3500	1680.067	0.034555	0.520813	0.486257	1750	455.711	1633.889	397.2451	0.466472	26.72685	227.8259	227.8259	261.2314	15%	36.8123	0.642496	36.2803	0.633211	1765.464	1596.591	1.019599	1680.208	1636.087	236.0098	0.141613
55	140	3500	1680.067	0.037234	0.520813	0.483579	1750	455.711	1624.89	392.8815	0.465403	26.66561	242.2046	242.2046	278.6817	15%	36.93478	0.644633	36.40278	0.635348	1771.31	1590.975	1.019574	1680.269	1628.898	208.8197	0.201885
55	150	3500	1680.067	0.039915	0.520813	0.480898	1750	455.711	1615.882	388.5372	0.464332	26.60424	256.5165	256.5165	296.1352	15%	37.05751	0.646776	36.52551	0.63749	1777.187	1585.341	1.019549	1680.335	1621.742	186.1682	0.268419
55	160	3500	1680.067	0.042598	0.520813	0.478214	1750	455.711	1606.864	384.2126	0.463258	26.54274	270.7623	270.7623	313.5919	16%	37.18051	0.648922	36.64851	0.639637	1783.095	1579.687	1.019524	1680.408	1614.619	167.0936	0.341233
55	170	3500	1680.067	0.045285	0.520813	0.475528	1750	455.711	1597.836	379.9076	0.462183	26.48111	284.9424	284.9424	331.052	16%	37.30377	0.651074	36.77177	0.641789	1789.036	1574.015	1.019499	1680.487	1607.529	150.8766	0.420344
55	180	3500	1680.067	0.047975	0.520813	0.472838	1750	455.711	1588.799	375.6223	0.461105	26.41935	299.0573	299.0573	348.5157	17%	37.4273	0.65323	36.8953	0.643944	1795.009	1568.322	1.019475	1680.573	1600.471	136.9706	0.505772
55	190	3500	1680.067	0.050667	0.520813	0.470146	1750	455.711	1579.752	371.3567	0.460024	26.35745	313.1076	313.1076	365.9833	17%	37.55109	0.65539	37.01909	0.646105	1801.014	1562.611	1.019452	1680.664	1593.446	124.9536	0.597535
55	200	3500	1680.067	0.053362	0.520813	0.46745	1750	455.711	1570.696	367.1111	0.458942	26.29543	327.0937	327.0937	383.4549	17%	37.67515	0.657555	37.14315	0.64827	1807.053	1556.879	1.019428	1680.762	1586.453	114.4964	0.69565
55	210	3500	1680.067	0.05606	0.520813	0.464752	1750	455.711	1561.63	362.8854	0.457857	26.23327	341.0161	341.0161	400.9307	18%	37.79947	0.659725	37.26747	0.65044	1813.124	1551.128	1.019406	1680.867	1579.492	105.3383	0.800137
55	220	3500	1680.067	0.058761	0.520813	0.462051	1750	455.711	1552.554	358.6798	0.45677	26.17098	354.8753	354.8753	418.4109	18%	37.92405	0.6619	37.39205	0.652614	1819.229	1545.356	1.019383	1680.978	1572.562	97.27128	0.911012
55	230	3500	1680.067	0.061465	0.520813	0.459347	1750	455.711	1543.469	354.4942	0.45568	26.10855	368.6718	368.6718	435.8958	18%	38.0489	0.664079	37.5169	0.654793	1825.368	1539.563	1.019361	1681.095	1565.664	90.12728	1.028295
55	240	3500	1680.067	0.064172	0.520813	0.456641	1750	455.711	1534.374	350.3288	0.454588	26.04599	382.4061	382.4061	453.3854	19%	38.17401	0.666262	37.64201	0.656977	1831.54	1533.749	1.019339	1681.219	1558.797	83.7696	1.152004
55	40	4000	1920.076	0.009256	0.520813	0.511557	2000	520.8126	1964.456	502.4653	0.476511	27.30209	100.3444	100.3444	109.2214	9%	35.66182	0.622416	35.12982	0.613131	1955.939	1884.636	1.01986	1919.937	1949.828	1589.035	-0.13956
55	50	4000	1920.076	0.011575	0.520813	0.509237	2000	520.8126	1955.549	497.9192	0.475595	27.2496	115.3876	115.3876	126.6522	10%	35.76681	0.624249	35.23481	0.614963	1961.497	1879.187	1.019835	1919.938	1942.306	1201.716	-0.13826
55	60	4000	1920.076	0.013897	0.520813	0.506916	2000	520.8126	1946.634	493.3895	0.474677	27.19701	130.3679	130.3679	144.0841	11%	35.87199	0.626084	35.33999	0.616799	1967.082	1873.724	1.019809	1919.945	1934.816	941.41	-0.13162
55	70	4000	1920.076	0.016221	0.520813	0.504592	2000	520.8126	1937.71	488.8763	0.473758	27.14432	145.2857	145.2857	161.5171	11%	35.97737	0.627924	35.44537	0.618638	1972.691	1868.246	1.019785	1919.957	1927.357	758.0084	-0.11965
55	80	4000	1920.076	0.018547	0.520813	0.502266	2000	520.8126	1928.778	484.3796	0.472836	27.09153	160.1416	160.1416	178.9516	12%	36.08295	0.629766	35.55095	0.620481	1978.326	1862.753	1.01976	1919.974	1919.929	623.8953	-0.10232
55	90	4000	1920.076	0.020875	0.520813	0.499938	2000	520.8126	1919.837	479.8994	0.471913	27.03864	174.9358	174.9358	196.3875	12%	36.18873	0.631612	35.65673	0.622327	1983.987	1857.245	1.019736	1919.997	1912.532	522.8323	-0.07963
55	100	4000	1920.076	0.023205	0.520813	0.497607	2000	520.8126	1910.888	475.4359	0.470988	26.98565	189.6689	189.6689	213.8251	13%	36.29471	0.633462	35.76271	0.624177	1989.674	1851.722	1.019712	1920.025	1905.166	444.762	-0.05155
55	110	4000	1920.076	0.025538	0.520813	0.495275	2000	520.8126	1901.931	470.9891	0.470062	26.93256	204.3412	204.3412	231.2645	13%	36.40088	0.635315	35.86888	0.62603	1995.387	1846.184	1.019688	1920.058	1897.829	383.1847	-0.01807
55	120	4000	1920.076	0.027873	0.520813	0.49294	2000	520.8126	1892.965	466.559	0.469133	26.87937	218.9531	218.9531	248.7058	14%	36.50726	0.637172	35.97526	0.627887	2001.127	1840.63	1.019665	1920.097	1890.523	333.7473	0.020811
55	130	4000	1920.076	0.03021	0.520813	0.490603	2000	520.8126	1883.991	462.1457	0.468203	26.82608	233.5051	233.5051	266.1492	14%	36.61384	0.639032	36.08184	0.629747	2006.893	1835.061	1.019641	1920.142	1883.247	293.4454	0.06512
55	140	4000	1920.076	0.032549	0.520813	0.488264	2000	520.8126	1875.008	457.7493	0.467272	26.77269	247.9975	247.9975	283.5948	14%	36.72062	0.640896	36.18862	0.631611	2012.686	1829.476	1.019619	1920.191	1876.001	260.151	0.114866
55	150	4000	1920.076	0.03489	0.520813	0.485923	2000	520.8126	1866.017	453.3699	0.466338	26.7192	262.4307	262.4307	301.0429	15%	36.8276	0.642763	36.2956	0.633478	2018.507	1823.875	1.019596	1920.246	1868.785	232.3222	0.170063
55	160	4000	1920.076	0.037234	0.520813	0.483579	2000	520.8126	1857.017	449.0074	0.465403	26.66561	276.8052	276.8052	318.4934	15%	36.93478	0.644633	36.40278	0.635348	2024.354	1818.258	1.019574	1920.307	1861.597	208.8197	0.230726
55	170	4000	1920.076	0.039579	0.520813	0.481233	2000	520.8126	1848.01	444.6619	0.464466	26.61192	291.1213	291.1213	335.9467	15%	37.04216	0.646508	36.51016	0.637222	2030.229	1812.624	1.019552	1920.373	1854.439	188.7869	0.296868
55	180	4000	1920.076	0.041927	0.520813	0.478885	2000	520.8126	1838.993	440.3336	0.463527	26.55813	305.3795	305.3795	353.4027	16%	37.14974	0.648385	36.61774	0.6391	2036.132	1806.974	1.01953	1920.445	1847.31	171.5696	0.368502
55	190	4000	1920.076	0.044277	0.520813	0.476535	2000	520.8126	1829.969	436.0224	0.462586	26.50424	319.58	319.58	370.8617	16%	37.25752	0.650266	36.72552	0.640981	2042.062	1801.307	1.019508	1920.522	1840.21	156.6609	0.445644
55	200	4000	1920.076	0.046629	0.520813	0.474183	2000	520.8126	1820.936	431.7285	0.461644	26.45025	333.7234	333.7234	388.3239	16%	37.3655	0.652151	36.8335	0.642866	2048.021	1795.624	1.019487	1920.605	1833.138	143.6636	0.528306
55	210	4000	1920.076	0.048984	0.520813	0.471829	2000	520.8126	1811.894	427.4519	0.4607	26.39615	347.81	347.81	405.7893	17%	37.47369	0.654039	36.94169	0.644754	2054.008	1789.923	1.019466	1920.693	1826.095	132.2623	0.616503
55	220	4000	1920.076	0.051341	0.520813	0.469472	2000	520.8126	1802.844	423.1925	0.459754	26.34196	361.8401	361.8401	423.2581	17%	37.58208	0.655931	37.05008	0.646646	2060.024	1784.206	1.019446	1920.787	1819.08	122.2043	0.710249
55	230	4000	1920.076	0.053699	0.520813	0.467113	2000	520.8126	1793.786	418.9506	0.458806	26.28766	375.8142	375.8142	440.7305	17%	37.69067	0.657826	37.15867	0.648541	2066.068	1778.47	1.019426	1920.886	1812.093	113.2853	0.809557
55	240	4000	1920.076	0.05606	0.520813	0.464752	2000	520.8126	1784.72	414.7262	0.457857	26.23327	389.7326	389.7326	458.2065	18%	37.79947	0.659725	37.26747	0.65044	2072.142	1772.717	1.019406	1920.991	1805.134	105.3383	0.914442
55	40	4500	2160.086	0.008226	0.520813	0.512587	2250	585.9142	2214.463	567.5525	0.476918	27.32539	105.3431	105.3431	114.159	8%	35.61523	0.621603	35.08323	0.612318	2197.66	2122.935	1.019871	2159.93	2197.328	1824.79	-0.15574
55	50	4500	2160.086	0.010286	0.520813	0.510526	2250	585.9142	2205.561	562.9982	0.476104	27.27877	120.4178	120.4178	131.5893	9%	35.70846	0.62323	35.17646	0.613945	2203.207	2117.493	1.019849	2159.929	2189.791	1396.508	-0.15709
55	60	4500	2160.086	0.012349	0.520813	0.508464	2250	585.9142	2196.65	558.4584	0.475289	27.23208	135.4365	135.4365	149.0205	10%	35.80184	0.62486	35.26984	0.615575	2208.775	2112.039	1.019826	2159.932	2182.282	1103.961	-0.15372
55	70	4500	2160.086	0.014413	0.520813	0.506399	2250	585.9142	2187.733	553.9333	0.474473	27.18531	150.3994	150.3994	166.4527	11%	35.89539	0.626493	35.36339	0.617208	2214.367	2106.571	1.019804	2159.94	2174.8	895.2265	-0.1456
55	80	4500	2160.086	0.016479	0.520813	0.504334	2250	585.9142	2178.807	549.4228	0.473655	27.13845	165.3069	165.3069	183.886	11%	35.98909	0.628128	35.45709	0.618843	2219.98	2101.09	1.019782	2159.953	2167.347	741.0426	-0.13274
55	90	4500	2160.086	0.018547	0.520813	0.502266	2250	585.9142	2169.875	544.927	0.472836	27.09153	180.1593	180.1593	201.3205	12%	36.08295	0.629766	35.55095	0.620481	2225.617	2095.597	1.01976	2159.971	2159.92	623.8953	-0.11511
55	100	4500	2160.086	0.020616	0.520813	0.500196	2250	585.9142	2160.935	540.4459	0.472016	27.04452	194.9569	194.9569	218.7564	12%	36.17696	0.631407	35.64496	0.622122	2231.277	2090.09	1.019738	2159.993	2152.522	532.7796	-0.09272
55	110	4500	2160.086	0.022687	0.520813	0.498125	2250	585.9142	2151.987	535.9796	0.471194	26.99743	209.7002	209.7002	236.1937	13%	36.27114	0.633051	35.73914	0.623766	2236.959	2084.569	1.019717	2160.02	2145.15	460.4977	-0.06554
55	120	4500	2160.086	0.02476	0.520813	0.496052	2250	585.9142	2143.032	531.5282	0.470371	26.95027	224.3893	224.3893	253.6325	13%	36.36547	0.634697	35.83347	0.625412	2242.665	2079.035	1.019696	2160.052	2137.805	402.1802	-0.03356
55	130	4500	2160.086	0.026835	0.520813	0.493978	2250	585.9142	2134.069	527.0916	0.469546	26.90302	239.0247	239.0247	271.0731	13%	36.45996	0.636346	35.92796	0.627061	2248.394	2073.488	1.019675	2160.089	2130.488	354.4375	0.003218
55	140	4500	2160.086	0.028911	0.520813	0.491902	2250	585.9142	2125.099	522.6699	0.46872	26.8557	253.6065	253.6065	288.5154	14%	36.5546	0.637998	36.0226	0.628713	2254.147	2067.926	1.019654	2160.131	2123.197	314.8503	0.044813
55	150	4500	2160.086	0.030989	0.520813	0.489824	2250	585.9142	2116.122	518.2632	0.467893	26.8083	268.1353	268.1353	305.9597	14%	36.64941	0.639653	36.11741	0.630368	2259.924	2062.351	1.019634	2160.177	2115.932	281.6548	0.091234
55	160	4500	2160.086	0.033069	0.520813	0.487744	2250	585.9142	2107.137	513.8715	0.467064	26.76081	282.6112	282.6112	323.406	14%	36.74437	0.64131	36.21237	0.632025	2265.725	2056.761	1.019613	2160.228	2108.694	253.5399	0.142493
55	170	4500	2160.086	0.03515	0.520813	0.485662	2250	585.9142	2098.145	509.4948	0.466234	26.71325	297.0346	297.0346	340.8544	15%	36.83949	0.64297	36.30749	0.633685	2271.549	2051.158	1.019593	2160.285	2101.483	229.5149	0.1986
55	180	4500	2160.086	0.037234	0.520813	0.483579	2250	585.9142	2089.145	505.1333	0.465403	26.66561	311.4059	311.4059	358.3051	15%	36.93478	0.644633	36.40278	0.635348	2277.398	2045.54	1.019574	2160.346	2094.297	208.8197	0.259567
55	190	4500	2160.086	0.039319	0.520813	0.481494	2250	585.9142	2080.137	500.7869	0.46457	26.61789	325.7252	325.7252	375.7582	15%	37.03021	0.646299	36.49821	0.637014	2283.272	2039.907	1.019554	2160.411	2087.137	190.8632	0.325403
55	200	4500	2160.086	0.041405	0.520813	0.479407	2250	585.9142	2071.122	496.4557	0.463736	26.57009	339.993	339.993	393.2138	16%	37.12581	0.647968	36.59381	0.638683	2289.17	2034.26	1.019535	2160.482	2080.004	175.1802	0.396122
55	210	4500	2160.086	0.043494	0.520813	0.477319	2250	585.9142	2062.1	492.1398	0.4629	26.52221	354.2095	354.2095	410.6719	16%	37.22157	0.649639	36.68957	0.640354	2295.093	2028.598	1.019516	2160.558	2072.895	161.4004	0.471732

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
55	220	4500	2160.086	0.045584	0.520813	0.475229	2250	585.9142	2053.07	487.8391	0.462063	26.47426	368.3751	368.3751	428.1328	16%	37.31749	0.651313	36.78549	0.642028	2301.04	2022.921	1.019497	2160.638	2065.812	149.226	0.552245
55	230	4500	2160.086	0.047676	0.520813	0.473137	2250	585.9142	2044.033	483.5538	0.461225	26.42622	382.49	382.49	445.5966	16%	37.41356	0.65299	36.88156	0.643705	2307.013	2017.229	1.019478	2160.724	2058.755	138.4156	0.637673
55	240	4500	2160.086	0.049769	0.520813	0.471043	2250	585.9142	2034.988	479.2839	0.460385	26.3781	396.5545	396.5545	463.0633	17%	37.5098	0.654669	36.9778	0.645384	2313.011	2011.522	1.01946	2160.814	2051.723	128.7713	0.728026
55	40	5000	2400.095	0.007402	0.520813	0.513411	2500	651.0158	2464.469	632.6425	0.477243	27.34401	110.3305	110.3305	119.0968	8%	35.57798	0.620953	35.04598	0.611668	2439.387	2361.231	1.019881	2399.925	2444.835	2053.757	-0.17097
55	50	5000	2400.095	0.009256	0.520813	0.511557	2500	651.0158	2455.57	628.0817	0.476511	27.30209	125.4305	125.4305	136.5267	9%	35.66182	0.622416	35.12982	0.613131	2444.923	2355.795	1.01986	2399.921	2437.285	1589.035	-0.17445
55	60	5000	2400.095	0.011111	0.520813	0.509701	2500	651.0158	2446.664	623.5339	0.475779	27.2601	140.48	140.48	153.9574	10%	35.74579	0.623882	35.21379	0.614597	2450.48	2350.348	1.01984	2399.922	2429.76	1266.809	-0.17368
55	70	5000	2400.095	0.012968	0.520813	0.507845	2500	651.0158	2437.751	618.9993	0.475045	27.21805	155.4791	155.4791	171.389	10%	35.82989	0.62535	35.29789	0.616064	2456.056	2344.888	1.01982	2399.927	2422.26	1034.18	-0.16865
55	80	5000	2400.095	0.014826	0.520813	0.505986	2500	651.0158	2428.831	614.4778	0.47431	27.17594	170.4281	170.4281	188.8214	11%	35.91412	0.62682	35.38212	0.617534	2461.653	2339.418	1.0198	2399.936	2414.786	860.7113	-0.15935
55	90	5000	2400.095	0.016686	0.520813	0.504127	2500	651.0158	2419.905	609.9695	0.473574	27.13377	185.3273	185.3273	206.2549	11%	35.99847	0.628292	35.46647	0.619007	2467.27	2333.935	1.01978	2399.95	2407.336	727.8822	-0.14577
55	100	5000	2400.095	0.018547	0.520813	0.502266	2500	651.0158	2410.972	605.4744	0.472836	27.09153	200.177	200.177	223.6895	12%	36.08295	0.629766	35.55095	0.620481	2472.908	2328.441	1.01976	2399.968	2399.912	623.8953	-0.1279
55	110	5000	2400.095	0.020409	0.520813	0.500403	2500	651.0158	2402.032	600.9926	0.472098	27.04922	214.9774	214.9774	241.1252	12%	36.16756	0.631243	35.63556	0.621958	2478.566	2322.934	1.019741	2399.99	2392.511	540.9467	-0.10575
55	120	5000	2400.095	0.022273	0.520813	0.49854	2500	651.0158	2393.086	596.5241	0.471359	27.00685	229.7287	229.7287	258.5623	13%	36.25229	0.632722	35.72029	0.623437	2484.245	2317.416	1.019721	2400.016	2385.136	473.7065	-0.07928
55	130	5000	2400.095	0.024138	0.520813	0.496675	2500	651.0158	2384.133	592.0689	0.470618	26.96442	244.4314	244.4314	276.0008	13%	36.33715	0.634203	35.80515	0.624918	2489.945	2311.886	1.019702	2400.047	2377.784	418.4332	-0.04851
55	140	5000	2400.095	0.026005	0.520813	0.494808	2500	651.0158	2375.173	587.6271	0.469876	26.92193	259.0855	259.0855	293.4407	13%	36.42214	0.635686	35.89014	0.626401	2495.667	2306.343	1.019683	2400.082	2370.457	372.4378	-0.01341
55	150	5000	2400.095	0.027873	0.520813	0.49294	2500	651.0158	2366.206	583.1987	0.469133	26.87937	273.6914	273.6914	310.8822	14%	36.50726	0.637172	35.97526	0.627887	2501.409	2300.788	1.019665	2400.121	2363.154	333.7473	0.026014
55	160	5000	2400.095	0.029742	0.520813	0.491071	2500	651.0158	2357.233	578.7838	0.46839	26.83675	288.2493	288.2493	328.3254	14%	36.59251	0.63866	36.06051	0.629375	2507.172	2295.22	1.019646	2400.165	2355.875	300.887	0.069779
55	170	5000	2400.095	0.031613	0.520813	0.4892	2500	651.0158	2348.252	574.3823	0.467645	26.79406	302.7596	302.7596	345.7704	14%	36.67788	0.64015	36.14588	0.630865	2512.958	2289.64	1.019628	2400.213	2348.62	272.7372	0.117892
55	180	5000	2400.095	0.033485	0.520813	0.487328	2500	651.0158	2339.266	569.9944	0.466898	26.75131	317.2223	317.2223	363.2172	14%	36.76338	0.641642	36.23138	0.632357	2518.764	2284.047	1.019609	2400.266	2341.389	248.4349	0.170362
55	190	5000	2400.095	0.035359	0.520813	0.485454	2500	651.0158	2330.272	565.62	0.466151	26.70849	331.6379	331.6379	380.666	15%	36.84902	0.643137	36.31702	0.633851	2524.592	2278.441	1.019591	2400.323	2334.181	227.3064	0.227198
55	200	5000	2400.095	0.037234	0.520813	0.483579	2500	651.0158	2321.272	561.2592	0.465403	26.66561	346.0065	346.0065	398.1168	15%	36.93478	0.644633	36.40278	0.635348	2530.443	2272.822	1.019574	2400.384	2326.997	208.8197	0.288407
55	210	5000	2400.095	0.03911	0.520813	0.481703	2500	651.0158	2312.265	556.9121	0.464653	26.62267	360.3284	360.3284	415.5697	15%	37.02066	0.646132	36.48866	0.636847	2536.315	2267.19	1.019556	2400.449	2319.836	192.5497	0.354
55	220	5000	2400.095	0.040988	0.520813	0.479825	2500	651.0158	2303.251	552.5786	0.463903	26.57966	374.6039	374.6039	433.0249	16%	37.10668	0.647634	36.57468	0.638349	2542.209	2261.545	1.019539	2400.519	2312.698	178.1539	0.423985
55	230	5000	2400.095	0.042867	0.520813	0.477946	2500	651.0158	2294.231	548.2589	0.463151	26.53659	388.8332	388.8332	450.4824	16%	37.19283	0.649137	36.66083	0.639852	2548.126	2255.887	1.019521	2400.594	2305.583	165.3535	0.498372
55	240	5000	2400.095	0.044747	0.520813	0.476065	2500	651.0158	2285.204	543.9528	0.462398	26.49345	403.0166	403.0166	467.9424	16%	37.2791	0.650643	36.7471	0.641358	2554.065	2250.215	1.019504	2400.673	2298.492	153.9197	0.577168
55	40	5500	2640.105	0.006728	0.520813	0.514085	2750	716.1173	2714.474	697.7346	0.477509	27.35924	115.3096	115.3096	124.0346	8%	35.54752	0.620421	35.01552	0.611136	2681.116	2599.526	1.019888	2639.92	2692.345	2275.068	-0.18552
55	50	5500	2640.105	0.008413	0.520813	0.5124	2750	716.1173	2705.578	693.1685	0.476844	27.32115	130.4305	130.4305	141.4643	8%	35.62369	0.621751	35.09169	0.612466	2686.645	2594.094	1.019869	2639.914	2684.785	1778.145	-0.19073
55	60	5500	2640.105	0.010099	0.520813	0.510714	2750	716.1173	2696.675	688.6142	0.476178	27.28301	145.5052	145.5052	158.8946	9%	35.69997	0.623082	35.16797	0.613797	2692.191	2588.653	1.019851	2639.913	2677.247	1428.79	-0.19209
55	70	5500	2640.105	0.011786	0.520813	0.509026	2750	716.1173	2687.766	684.0718	0.475512	27.24482	160.534	160.534	176.3257	10%	35.77636	0.624415	35.24436	0.61513	2697.756	2583.2	1.019832	2639.915	2669.733	1173.792	-0.18958
55	80	5500	2640.105	0.013475	0.520813	0.507338	2750	716.1173	2678.851	679.5413	0.474844	27.20658	175.5172	175.5172	193.7575	10%	35.85285	0.62575	35.32085	0.616465	2703.338	2577.737	1.019814	2639.922	2662.241	981.9428	-0.18319
55	90	5500	2640.105	0.015164	0.520813	0.505648	2750	716.1173	2669.93	675.0229	0.474176	27.16828	190.4548	190.4548	211.1902	11%	35.92944	0.627087	35.39744	0.617802	2708.94	2572.264	1.019796	2639.932	2654.773	833.9526	-0.17292
55	100	5500	2640.105	0.016855	0.520813	0.503958	2750	716.1173	2661.003	670.5164	0.473507	27.12993	205.3473	205.3473	228.6238	11%	36.00614	0.628426	35.47414	0.619141	2714.56	2566.78	1.019778	2639.946	2647.326	717.3771	-0.15875
55	110	5500	2640.105	0.018547	0.520813	0.502266	2750	716.1173	2652.069	666.0219	0.472836	27.09153	220.1947	220.1947	246.0584	12%	36.08295	0.629766	35.55095	0.620481	2720.199	2561.285	1.01976	2639.964	2639.903	623.8953	-0.1407
55	120	5500	2640.105	0.02024	0.520813	0.500573	2750	716.1173	2643.13	661.5395	0.472165	27.05307	234.9973	234.9973	263.4941	12%	36.15986	0.631109	35.62786	0.621823	2725.856	2555.779	1.019742	2639.986	2632.501	547.7717	-0.11873
55	130	5500	2640.105	0.021934	0.520813	0.498879	2750	716.1173	2634.184	657.0691	0.471493	27.01456	249.7553	249.7553	280.931	12%	36.23688	0.632453	35.70488	0.623168	2731.532	2550.262	1.019725	2640.012	2625.122	484.9487	-0.09286
55	140	5500	2640.105	0.023629	0.520813	0.497183	2750	716.1173	2625.232	652.6109	0.47082	26.976	264.469	264.469	298.3692	13%	36.314	0.633799	35.782	0.624514	2737.228	2544.735	1.019707	2640.042	2617.765	432.4897	-0.06306
55	150	5500	2640.105	0.025326	0.520813	0.495487	2750	716.1173	2616.275	648.1649	0.470146	26.93739	279.1385	279.1385	315.8086	13%	36.39122	0.635147	35.85922	0.625862	2742.942	2539.196	1.01969	2640.076	2610.431	388.227	-0.02934
55	160	5500	2640.105	0.027023	0.520813	0.493789	2750	716.1173	2607.311	643.731	0.469471	26.89872	293.7641	293.7641	333.2495	13%	36.46856	0.636496	35.93656	0.627211	2748.676	2533.646	1.019673	2640.113	2603.118	350.5321	0.008311
55	170	5500	2640.105	0.028722	0.520813	0.49209	2750	716.1173	2598.341	639.3093	0.468795	26.86	308.346	308.346	350.6918	14%	36.54599	0.637848	36.01399	0.628563	2754.429	2528.084	1.019656	2640.155	2595.827	318.1623	0.049906
55	180	5500	2640.105	0.030422	0.520813	0.49039	2750	716.1173	2589.365	634.8999	0.468119	26.82123	322.8844	322.8844	368.1357	14%	36.62354	0.639201	36.09154	0.629916	2760.201	2522.511	1.019639	2640.2	2588.558	290.1558	0.095449
55	190	5500	2640.105	0.032123	0.520813	0.488689	2750	716.1173	2580.382	630.5027	0.467441	26.78241	337.3795	337.3795	385.5813	14%	36.70119	0.640557	36.16919	0.631271	2765.993	2516.927	1.019623	2640.25	2581.31	265.759	0.144947
55	200	5500	2640.105	0.033826	0.520813	0.486987	2750	716.1173	2571.394	626.1178	0.466763	26.74353	351.8315	351.8315	403.0285	15%	36.77894	0.641914	36.24694	0.632629	2771.804	2511.331	1.019606	2640.303	2574.084	244.3745	0.198408
55	210	5500	2640.105	0.035529	0.520813	0.485284	2750	716.1173	2562.4	621.7453	0.466083	26.7046	366.2407	366.2407	420.4776	15%	36.85681	0.643273	36.32481	0.633987	2777.636	2505.724	1.01959	2640.361	2566.88	225.5237	0.255839
55	220	5500	2640.105	0.037234	0.520813	0.483579	2750	716.1173	2553.399	617.3851	0.465403	26.66561	380.6072	380.6072	437.9285	15%	36.93478	0.644633	36.40278	0.635348	2783.487	2500.104	1.019574	2640.422	2559.696	208.8197	0.317248
55	230	5500	2640.105	0.038939	0.520813	0.481873	2750	716.1173	2544.392	613.0374	0.464721	26.62657	394.9312	394.9312	455.3813	15%	37.01285	0.645996	36.48085	0.636711	2789.358	2494.473	1.019558	2640.488	2552.534	193.9467	0.382642
55	240	5500	2640.105	0.040646	0.520813	0.480166	2750	716.1173	2535.38	608.702	0.464039	26.58748	409.213	409.213	472.8362	16%	37.09103	0.647361	36.55903	0.638075	2795.249	2488.83	1.019542	2640.557	2545.393	180.6452	0.452027
55	40	6000	2880.115	0.006167	0.520813	0.514646	3000	781.2189	2964.478	762.8283	0.47773	27.37192	120.2826	120.2826	128.9726	7%	35.52215	0.619978	34.99015	0.610693	2922.848	2837.819	1.019894	2879.915	2939.859	2488.267	-0.19955
55	50	6000	2880.115	0.007711	0.520813	0.513102	3000	781.2189	2955.584	758.2577	0.477121	27.33703	135.4208	135.4208	146.402	8%	35.59194	0.621197	35.05994	0.611911	2928.37	2832.391	1.019877	2879.908	2932.29	1963.052	-0.20621
55	60	6000	2880.115	0.009256	0.520813	0.511557	3000	781.2189	2946.684	753.698	0.476511	27.30209	150.5166	150.5166	163.8321	9%	35.66182	0.622416	35.12982	0.613131	2933.908	2826.954	1.01986	2879.905	2924.742	1589.035	-0.20934
55	70	6000	2880.115	0.010802	0.520813	0.510011	3000	781.2189	2937.778	749.1492	0.475901	27.26711	165.5703	165.5703	181.2627	9%	35.73179	0.623637	35.19979	0.614352	2939.463	2821.508	1.019843	2879.906	2917.215	1313.22	-0.20892
55	80	6000	2880.115	0.012349	0.520813	0.508464	3000	781.2189	2928.867	744.6113	0.475289	27.23208	180.582	180.582	198.694	10%	35.80184	0.62486	35.26984	0.615575	2945.034	2816.051	1.019826	2879.91	2909.709	1103.961	-0.20496
55	90	6000	2880.115	0.013897	0.520813	0.506916	3000	781.2189	2919.95	740.0843	0.474677	27.19701	195.5518	195.5518	216.1261	11%	35.87199	0.626084	35.33999	0.616799	2950.622	2810.585	1.019809	2879.917	2902.224	941.41	-0.19744
55	100	6000	2880.115	0.015446	0.520813	0.505367	3000	781.2189	2911.028	735.5683	0.474064	27.16189	210.48	210.48	233.559	11%	35.94222	0.62731	35.41022	0.618025	2956.228	2805.11	1.019793	2879.928	2894.76	812.6071	-0.18636
55	110	6000	2880.115	0.016996	0.520813	0.503817	3000	781.2189	2902.1	731.0633	0.473451	27.12673	225.3668	225.3668	250.9927	11%	36.01254	0.628537	35.48054	0.619252	2961.85	2799.624	1.019776	2879.943	2887.317	708.798	-0.17171
55	120	6000	2880.115	0.018547	0.520813	0.502266	3000	781.2189	2893.166	726.5693	0.472836	27.09153	240.2124	240.2124	268.4274	12%	36.08295	0.629766	35.55095	0.620481	2967.489	2794.129	1.01976	2879.961	2879.894	623.8953	-0.15349
55	130	6000	2880.115	0.020099	0.520813	0.500714	3000	781.2189	2884.227	722.0864	0.472221	27.05628	255.0169	255.0169	285.863	12%	36.15345	0.630997	35.62145	0.621712	2973.146	2788.624	1.019744	2879.983	2872.492	553.56	-0.13169
55	140	6000	2880.115	0.021652	0.520813	0.499161	3000	781.2189	2875.282	717.6146	0.471605	27.02098	269.7805	269.7805	303.2998	12%	36.22403	0.632229	35.69203	0.622943	2978.82	2783.108	1.019728	2880.008	2865.11	494.6312	-0.1063
55	150	6000	2880.115	0.023205	0.520813	0.497607	3000	781.2189	2866.332	713.1538	0.470988	26.98565	284.5034	284.5034	320.7376	13%	36.29471	0.633462	35.76271	0.624177	2984.511	2777.583	1.019712	2880.037	2857.748	444.762	-0.07732
55	160	6000	2880.115	0.02476	0.520813	0.496052	3000	781.2189	2857.376	708.7042	0.470371	26.95027	299.1857	299.1857	338.1767	13%	36.36547	0.634697	35.83347	0.625412	2990.22	2772.047	1.019696	2880.07	2850.407	402.1802	-0.04475
55	170	6000	2880.115	0.026316	0.520813	0.494497	3000	781.2189	2848.414	704.2658	0.469753	26.91484	313.8278	313.8278	355.617	13%	36.43632	0.635934	35.90432	0.626649	2995.947	2766.501	1.01968	2880.106	2843.086	365.5272	-0.00857
55	180	6000	2880.115	0.027873	0.520813	0.49294	3000	781.2189	2839.447	699.8385	0.469133	26.87937	328.4297	328.4297	373.0587	14%	36.50726	0.637172	35.97526	0.627887	3001.691	2760.945	1.019665	2880.146	2835.785	333.7473	0.031217
55	190	6000	2880.115	0.02943	0.520813	0.491382	3000	781.2189	2830.474	695.4224	0.468514	26.84385	342.9916	342.9916	390.5017	14%	36.57829	0.638412	36.04629	0.629126	3007.452	2755.378	1.019649	2880.189	2828.504	306.01	0.07462
55	200	6000	2880.115	0.030989	0.520813	0.489824	3000	781.2189	2821.496	691.0176	0.467893	26.8083	357.5137	357.5137	407.9462	14%	36.64941	0.639653	36.11741	0.630368	3013.232	2749.801	1.019634	2880.236	2821.243	281.6548	0.121645

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
55	210	6000	2880.115	0.032549	0.520813	0.488264	3000	781.2189	2812.512	686.624	0.467272	26.77269	371.9962	371.9962	425.3923	14%	36.72062	0.640896	36.18862	0.631611	3019.03	2744.214	1.019619	2880.287	2814.002	260.151	0.172299
55	220	6000	2880.115	0.034109	0.520813	0.486703	3000	781.2189	2803.522	682.2417	0.466649	26.73704	386.4393	386.4393	442.8399	15%	36.79191	0.64214	36.25991	0.632855	3024.845	2738.615	1.019603	2880.341	2806.78	241.0682	0.226586
55	230	6000	2880.115	0.035671	0.520813	0.485142	3000	781.2189	2794.527	677.8707	0.466026	26.70135	400.8431	400.8431	460.2892	15%	36.8633	0.643386	36.3313	0.634101	3030.679	2733.006	1.019588	2880.399	2799.578	224.0545	0.284514
55	240	6000	2880.115	0.037234	0.520813	0.483579	3000	781.2189	2785.526	673.5111	0.465403	26.66561	415.2078	415.2078	477.7401	15%	36.93478	0.644633	36.40278	0.635348	3036.531	2727.386	1.019574	2880.461	2792.396	208.8197	0.346089
55	40	6500	3120.124	0.005692	0.520813	0.515121	3250	846.3205	3214.482	827.9233	0.477917	27.38265	125.2508	125.2508	133.9106	7%	35.50069	0.619604	34.96869	0.610319	3164.582	3076.111	1.0199	3119.911	3187.375	2693.182	-0.21319
55	50	6500	3120.124	0.007117	0.520813	0.513696	3250	846.3205	3205.589	823.3489	0.477356	27.35046	140.4037	140.4037	151.3399	8%	35.56509	0.620728	35.03309	0.611443	3170.098	3070.687	1.019884	3119.903	3179.798	2143.233	-0.22108
55	60	6500	3120.124	0.008543	0.520813	0.51227	3250	846.3205	3196.692	818.7846	0.476793	27.31822	155.5175	155.5175	168.7697	9%	35.62956	0.621853	35.09756	0.612568	3175.629	3065.254	1.019868	3119.898	3172.241	1746.901	-0.2257
55	70	6500	3120.124	0.009969	0.520813	0.510843	3250	846.3205	3187.789	814.2303	0.47623	27.28595	170.5922	170.5922	186.2	9%	35.6941	0.62298	35.1621	0.613694	3181.175	3059.812	1.019852	3119.897	3164.704	1451.805	-0.22705
55	80	6500	3120.124	0.011397	0.520813	0.509416	3250	846.3205	3178.881	809.6861	0.475666	27.25364	185.6281	185.6281	203.6309	10%	35.75872	0.624107	35.22672	0.614822	3186.737	3054.361	1.019837	3119.899	3157.186	1226.138	-0.22514
55	90	6500	3120.124	0.012825	0.520813	0.507987	3250	846.3205	3169.968	805.1519	0.475101	27.22129	200.6252	200.6252	221.0625	10%	35.82342	0.625237	35.29142	0.615951	3192.314	3048.901	1.019821	3119.904	3149.687	1049.677	-0.21994
55	100	6500	3120.124	0.014254	0.520813	0.506558	3250	846.3205	3161.05	800.6279	0.474536	27.18891	215.5839	215.5839	238.4947	11%	35.88819	0.626367	35.35619	0.617082	3197.907	3043.433	1.019806	3119.913	3142.208	909.0636	-0.21146
55	110	6500	3120.124	0.015684	0.520813	0.505128	3250	846.3205	3152.126	796.114	0.47397	27.15648	230.5041	230.5041	255.9278	11%	35.95303	0.627499	35.42103	0.618214	3203.516	3037.955	1.01979	3119.924	3134.748	795.1872	-0.1997
55	120	6500	3120.124	0.017115	0.520813	0.503697	3250	846.3205	3143.197	791.6103	0.473404	27.12402	245.3861	245.3861	273.3616	11%	36.01795	0.628632	35.48595	0.619347	3209.14	3032.469	1.019775	3119.939	3127.307	701.66	-0.18463
55	130	6500	3120.124	0.018547	0.520813	0.502266	3250	846.3205	3134.264	787.1168	0.472836	27.09153	260.2301	260.2301	290.7963	12%	36.08295	0.629766	35.55095	0.620481	3214.78	3026.973	1.01976	3119.958	3119.885	623.8953	-0.16628
55	140	6500	3120.124	0.019979	0.520813	0.500833	3250	846.3205	3125.325	782.6334	0.472268	27.05899	275.0361	275.0361	308.2319	12%	36.14802	0.630902	35.61602	0.621617	3220.436	3021.468	1.019745	3119.98	3112.482	558.5309	-0.14461
55	150	6500	3120.124	0.021413	0.520813	0.4994	3250	846.3205	3116.38	778.1603	0.4717	27.02642	289.8044	289.8044	325.6686	12%	36.21317	0.632039	35.68117	0.622754	3226.108	3015.954	1.01973	3120.004	3105.098	503.0564	-0.11964
55	160	6500	3120.124	0.022847	0.520813	0.497966	3250	846.3205	3107.431	773.6974	0.471131	26.99381	304.5352	304.5352	343.1062	13%	36.27839	0.633177	35.74639	0.623892	3231.796	3010.43	1.019715	3120.033	3097.732	455.5666	-0.09136
55	170	6500	3120.124	0.024282	0.520813	0.496531	3250	846.3205	3098.477	769.2448	0.470561	26.96116	319.2284	319.2284	360.5449	13%	36.34369	0.634317	35.81169	0.625032	3237.5	3004.897	1.019701	3120.064	3090.386	414.5946	-0.05975
55	180	6500	3120.124	0.025717	0.520813	0.495095	3250	846.3205	3089.517	764.8025	0.46999	26.92847	333.8844	333.8844	377.9848	13%	36.40906	0.635458	35.87706	0.626173	3243.22	2999.355	1.019686	3120.099	3083.058	378.9958	-0.02482
55	190	6500	3120.124	0.027154	0.520813	0.493659	3250	846.3205	3080.552	760.3705	0.469419	26.89575	348.5033	348.5033	395.4259	13%	36.47451	0.6366	35.94251	0.627315	3248.957	2993.803	1.019672	3120.138	3075.748	347.8668	0.013438
55	200	6500	3120.124	0.028591	0.520813	0.492221	3250	846.3205	3071.582	755.9488	0.468848	26.86298	363.0851	363.0851	412.8682	14%	36.54003	0.637744	36.00803	0.628459	3254.71	2988.242	1.019657	3120.179	3068.457	320.4865	0.055033
55	210	6500	3120.124	0.03003	0.520813	0.490783	3250	846.3205	3062.607	751.5375	0.468275	26.83018	377.6302	377.6302	430.3119	14%	36.60563	0.638889	36.07363	0.629604	3260.479	2982.671	1.019643	3120.224	3061.185	296.2738	0.099968
55	220	6500	3120.124	0.031469	0.520813	0.489344	3250	846.3205	3053.627	747.1365	0.467702	26.79734	392.1386	392.1386	447.7569	14%	36.67131	0.640035	36.13931	0.63075	3266.265	2977.09	1.019629	3120.272	3053.931	274.7562	0.148248
55	230	6500	3120.124	0.032909	0.520813	0.487904	3250	846.3205	3044.641	742.746	0.467128	26.76447	406.6105	406.6105	465.2034	14%	36.73706	0.641183	36.20506	0.631898	3272.068	2971.499	1.019615	3120.324	3046.695	255.5463	0.199879
55	240	6500	3120.124	0.03435	0.520813	0.486463	3250	846.3205	3035.65	738.3659	0.466554	26.73155	421.046	421.046	482.6513	15%	36.80289	0.642332	36.27089	0.633046	3277.887	2965.899	1.019601	3120.379	3039.477	238.324	0.254866
55	40	7000	3360.134	0.005285	0.520813	0.515528	3500	911.4221	3464.485	893.0191	0.478078	27.39185	130.2153	130.2153	138.8486	7%	35.48231	0.619283	34.95031	0.609998	3406.318	3314.402	1.019904	3359.907	3434.892	2889.83	-0.22652
55	50	7000	3360.134	0.006608	0.520813	0.514205	3500	911.4221	3455.594	888.4416	0.477556	27.36196	145.3808	145.3808	156.2778	7%	35.54208	0.620326	35.01008	0.611041	3411.828	3308.981	1.01989	3359.898	3427.31	2318.365	-0.23545
55	60	7000	3360.134	0.007931	0.520813	0.512881	3500	911.4221	3446.698	883.8733	0.477034	27.33204	160.5099	160.5099	173.7074	8%	35.60192	0.621371	35.06992	0.612086	3417.353	3303.551	1.019875	3359.892	3419.745	1901.92	-0.24136
55	70	7000	3360.134	0.009256	0.520813	0.511557	3500	911.4221	3437.798	879.3143	0.476511	27.30209	175.6028	175.6028	191.1374	9%	35.66182	0.622416	35.12982	0.613131	3422.892	3298.113	1.01986	3359.889	3412.199	1589.035	-0.24423
55	80	7000	3360.134	0.010581	0.520813	0.510232	3500	911.4221	3428.893	874.7647	0.475988	27.27211	190.6594	190.6594	208.568	9%	35.72179	0.623463	35.18979	0.614178	3428.446	3292.667	1.019846	3359.89	3404.67	1347.968	-0.24407
55	90	7000	3360.134	0.011907	0.520813	0.508906	3500	911.4221	3419.983	870.2245	0.475464	27.24209	205.6801	205.6801	225.9992	10%	35.78182	0.624511	35.24982	0.615225	3434.014	3287.213	1.019831	3359.893	3397.16	1158.275	-0.24086
55	100	7000	3360.134	0.013233	0.520813	0.507579	3500	911.4221	3411.068	865.6936	0.47494	27.21204	220.6648	220.6648	243.431	10%	35.84192	0.625559	35.30992	0.616274	3439.596	3281.751	1.019817	3359.899	3389.668	1006.306	-0.23461
55	110	7000	3360.134	0.014561	0.520813	0.506252	3500	911.4221	3402.148	861.1721	0.474415	27.18196	235.6138	235.6138	260.8634	11%	35.90208	0.626609	35.37008	0.617324	3445.193	3276.28	1.019802	3359.908	3382.193	882.6621	-0.22531
55	120	7000	3360.134	0.015889	0.520813	0.504924	3500	911.4221	3393.224	856.66	0.473889	27.15185	250.5272	250.5272	278.2966	11%	35.9623	0.627661	35.4303	0.618375	3450.804	3270.801	1.019788	3359.921	3374.736	780.7036	-0.21296
55	130	7000	3360.134	0.017217	0.520813	0.503595	3500	911.4221	3384.295	852.1574	0.473363	27.1217	265.4052	265.4052	295.7305	11%	36.02259	0.628713	35.49059	0.619428	3456.43	3265.313	1.019774	3359.936	3367.297	695.6284	-0.19754
55	140	7000	3360.134	0.018547	0.520813	0.502266	3500	911.4221	3375.361	847.6642	0.472836	27.09153	280.2478	280.2478	313.1653	12%	36.08295	0.629766	35.55095	0.620481	3462.071	3259.817	1.01976	3359.955	3359.876	623.8953	-0.17907
55	150	7000	3360.134	0.019877	0.520813	0.500936	3500	911.4221	3366.422	843.1805	0.472309	27.06132	295.0552	295.0552	330.6009	12%	36.14337	0.630821	35.61137	0.621536	3467.726	3254.312	1.019746	3359.976	3352.472	562.846	-0.15752
55	160	7000	3360.134	0.021208	0.520813	0.499605	3500	911.4221	3357.478	838.7063	0.471781	27.03107	309.8275	309.8275	348.0374	12%	36.20386	0.631876	35.67186	0.622591	3473.397	3248.799	1.019732	3360.001	3345.086	510.4534	-0.13291
55	170	7000	3360.134	0.022539	0.520813	0.498273	3500	911.4221	3348.53	834.2416	0.471253	27.0008	324.5649	324.5649	365.4748	13%	36.26441	0.632933	35.73241	0.623648	3479.082	3243.277	1.019719	3360.028	3337.718	465.1498	-0.10521
55	180	7000	3360.134	0.023872	0.520813	0.496941	3500	911.4221	3339.577	829.7864	0.470724	26.97049	339.2676	339.2676	382.9133	13%	36.32502	0.633991	35.79302	0.624706	3484.782	3237.747	1.019705	3360.059	3330.366	425.7076	-0.07444
55	190	7000	3360.134	0.025205	0.520813	0.495608	3500	911.4221	3330.619	825.3408	0.470194	26.94015	353.9355	353.9355	400.3528	13%	36.3857	0.63505	35.8537	0.625765	3490.497	3232.208	1.019691	3360.093	3323.032	391.154	-0.04058
55	200	7000	3360.134	0.026538	0.520813	0.494274	3500	911.4221	3321.656	820.9047	0.469664	26.90978	368.5689	368.5689	417.7934	13%	36.44645	0.636111	35.91445	0.626825	3496.227	3226.66	1.019678	3360.13	3315.716	360.7104	-0.00363
55	210	7000	3360.134	0.027873	0.520813	0.49294	3500	911.4221	3312.688	816.4782	0.469133	26.87937	383.168	383.168	435.2351	14%	36.50726	0.637172	35.97526	0.627887	3501.972	3221.103	1.019665	3360.17	3308.416	333.7473	0.03642
55	220	7000	3360.134	0.029208	0.520813	0.491605	3500	911.4221	3303.716	812.0613	0.468602	26.84893	397.7327	397.7327	452.6781	14%	36.56814	0.638234	36.03614	0.628949	3507.733	3215.537	1.019651	3360.213	3301.134	309.7515	0.079564
55	230	7000	3360.134	0.030544	0.520813	0.490269	3500	911.4221	3294.739	807.6541	0.46807	26.81846	412.2634	412.2634	470.1223	14%	36.62908	0.639298	36.09708	0.630013	3513.509	3209.962	1.019638	3360.259	3293.868	288.3013	0.125813
55	240	7000	3360.134	0.03188	0.520813	0.488932	3500	911.4221	3285.757	803.2565	0.467538	26.78796	426.76	426.76	487.5677	14%	36.69009	0.640363	36.15809	0.631078	3519.3	3204.378	1.019625	3360.309	3286.62	269.0473	0.17517
55	40	7500	3600.143	0.004932	0.520813	0.51588	3750	976.5236	3714.487	958.1158	0.478217	27.39981	135.1767	135.1767	143.7867	6%	35.46638	0.619005	34.93438	0.60972	3648.054	3552.693	1.019908	3599.904	3682.412	3078.355	-0.2396
55	50	7500	3600.143	0.006167	0.520813	0.514646	3750	976.5236	3705.598	953.5354	0.47773	27.37192	150.3532	150.3532	161.2157	7%	35.52215	0.619978	34.99015	0.610693	3653.561	3547.274	1.019894	3599.894	3674.823	2488.267	-0.24944
55	60	7500	3600.143	0.007402	0.520813	0.513411	3750	976.5236	3696.704	948.9637	0.477243	27.34401	165.4957	165.4957	178.6451	8%	35.57798	0.620953	35.04598	0.611668	3659.08	3541.847	1.019881	3599.887	3667.252	2053.757	-0.25646
55	70	7500	3600.143	0.008638	0.520813	0.512175	3750	976.5236	3687.806	944.4007	0.476755	27.31607	180.6042	180.6042	196.075	9%	35.63386	0.621928	35.10186	0.612643	3664.613	3536.413	1.019867	3599.883	3659.698	1724.514	-0.26064
55	80	7500	3600.143	0.009874	0.520813	0.510938	3750	976.5236	3678.903	939.8464	0.476267	27.2881	195.679	195.679	213.5053	9%	35.6898	0.622904	35.1578	0.613619	3670.16	3530.971	1.019853	3599.881	3652.161	1469.042	-0.262
55	90	7500	3600.143	0.011111	0.520813	0.509701	3750	976.5236	3669.996	935.3009	0.475779	27.2601	210.72	210.72	230.9362	10%	35.74579	0.623882	35.21379	0.614597	3675.719	3525.521	1.01984	3599.883	3644.64	1266.809	-0.26052
55	100	7500	3600.143	0.012349	0.520813	0.508464	3750	976.5236	3661.084	930.7641	0.475289	27.23208	225.7275	225.7275	248.3675	10%	35.80184	0.62486	35.26984	0.615575	3681.292	3520.064	1.019826	3599.887	3637.136	1103.961	-0.2562
55	110	7500	3600.143	0.013587	0.520813	0.507225	3750	976.5236	3652.168	926.236	0.4748	27.20402	240.7015	240.7015	265.7995	10%	35.85795	0.625839	35.32595	0.616554	3686.879	3514.599	1.019813	3599.894	3629.649	970.8788	-0.24903
55	120	7500	3600.143	0.014826	0.520813	0.505986	3750	976.5236	3643.247	921.7167	0.47431	27.17594	255.6422	255.6422	283.2321	11%	35.91412	0.62682	35.38212	0.617534	3692.479	3509.127	1.0198	3599.904	3622.179	860.7113	-0.23902
55	130	7500	3600.143	0.016066	0.520813	0.504747	3750	976.5236	3634.322	917.2062	0.473819	27.14783	270.5497	270.5497	300.6654	11%	35.97034	0.627801	35.43834	0.618516	3698.093	3503.646	1.019786	3599.917	3614.725	768.4729	-0.22616
55	140	7500	3600.143	0.017306	0.520813	0.503507	3750	976.5236	3625.392	912.7045	0.473328	27.11969	285.4241	285.4241	318.0994	11%	36.02661	0.628783	35.49461	0.619498	3703.72	3498.158	1.019773	3599.933	3607.288	690.4645	-0.21044
55	150	7500	3600.143	0.018547	0.520813	0.502266	3750	976.5236	3616.458	908.2117	0.472836	27.09153	300.2655	300.2655	335.5342	12%	36.08295	0.629766	35.55095	0.620481	3709.362	3492.661	1.01976	3599.951	3599.867	623.8953	-0.19186
55	160	7500	3600.143	0.019788	0.520813	0.501024	3750	976.5236	3607.519	903.7276	0.472344	27.06333	315.0741	315.0741	352.9534	12%	36.13934	0.63075	35.60734	0.621465	3715.017	3487.157	1.019747	3599.973	3592.463	566.627	-0.17042
55	170	7500	3600.143	0.02103	0.520813	0.499782	3750	976.5236	3598.576	899.2525	0.471852	27.03511	329.8499	329.8499	370.4062	12%	36.19579	0.631736	35.66379	0.622451	3720.685	3481.645	1.019734	3599.997	3585.075	516.9991	-0.14611
55	180	7500	3600.143	0.022273	0.520813	0.49854	3750	976.5236	3589.629	894.7862	0.471359	27.00685	344.5931	344.5931	387.8435	13%	36.25229	0.632722	35.72029	0.623437	3726.368	3476.124	1.019721	3600.024	3577.703	473.7065	-0.11893
55	190	7500	3600.143	0.023516	0.520813	0.497296	3750	976.5236	3580.677	890.3288	0.470865	26.97857	359.3038	359.3038	405.2817	13%	36.30885	0.633709	35.77685	0.624424	3732.065	3470.596	1.019709	3600.054	3570.348	435.7113	-0.08887

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
55	200	7500	3600.143	0.02476	0.520813	0.496052	3750	976.5236	3571.72	885.8803	0.470371	26.95027	373.9822	373.9822	422.7209	13%	36.36547	0.634697	35.83347	0.625412	3737.775	3465.059	1.019696	3600.087	3563.009	402.1802	-0.05594
55	210	7500	3600.143	0.026005	0.520813	0.494808	3750	976.5236	3562.759	881.4407	0.469876	26.92193	388.6282	388.6282	440.1611	13%	36.42214	0.635686	35.89014	0.626401	3743.5	3459.514	1.019683	3600.123	3555.686	372.4378	-0.02012
55	220	7500	3600.143	0.02725	0.520813	0.493563	3750	976.5236	3553.793	877.0101	0.469381	26.89356	403.2422	403.2422	457.6023	13%	36.47887	0.636676	35.94687	0.627391	3749.239	3453.961	1.019671	3600.162	3548.379	345.9319	0.018585
55	230	7500	3600.143	0.028496	0.520813	0.492317	3750	976.5236	3544.823	872.5884	0.468886	26.86517	417.824	417.824	475.0447	14%	36.53566	0.637668	36.00366	0.628382	3754.991	3448.4	1.019658	3600.203	3541.088	322.2075	0.06018
55	240	7500	3600.143	0.029742	0.520813	0.491071	3750	976.5236	3535.849	868.1757	0.46839	26.83675	432.374	432.374	492.4882	14%	36.59251	0.63866	36.06051	0.629375	3760.759	3442.83	1.019646	3600.248	3533.813	300.887	0.104669
55	40	8000	3840.153	0.004624	0.520813	0.516189	4000	1041.625	3964.49	1023.213	0.478338	27.40678	140.1357	140.1357	148.7247	6%	35.45245	0.618762	34.92045	0.609477	3889.792	3790.983	1.019912	3839.9	3929.932	3258.983	-0.25248
55	50	8000	3840.153	0.005781	0.520813	0.515032	4000	1041.625	3955.601	1018.63	0.477882	27.38064	155.3219	155.3219	166.1537	7%	35.50472	0.619674	34.97272	0.610389	3895.294	3785.566	1.019899	3839.89	3922.339	2652.863	-0.26311
55	60	8000	3840.153	0.006939	0.520813	0.513874	4000	1041.625	3946.709	1014.056	0.477426	27.35448	170.476	170.476	183.583	8%	35.55704	0.620587	35.02504	0.611302	3900.809	3780.142	1.019886	3839.882	3914.762	2202.183	-0.2711
55	70	8000	3840.153	0.008097	0.520813	0.512716	4000	1041.625	3937.813	1009.489	0.476969	27.3283	185.5983	185.5983	201.0127	8%	35.6094	0.621501	35.0774	0.612216	3906.337	3774.711	1.019873	3839.876	3907.201	1857.941	-0.27644
55	80	8000	3840.153	0.009256	0.520813	0.511557	4000	1041.625	3928.912	1004.931	0.476511	27.30209	200.6889	200.6889	218.4428	9%	35.66182	0.622416	35.12982	0.613131	3911.877	3769.272	1.01986	3839.874	3899.656	1589.035	-0.27912
55	90	8000	3840.153	0.010415	0.520813	0.510397	4000	1041.625	3920.007	1000.38	0.476053	27.27586	215.7478	215.7478	235.8733	9%	35.71429	0.623332	35.18229	0.614047	3917.43	3763.827	1.019847	3839.874	3892.126	1374.951	-0.27915
55	100	8000	3840.153	0.011575	0.520813	0.509237	4000	1041.625	3911.098	995.8385	0.475595	27.2496	230.7752	230.7752	253.3044	10%	35.76681	0.624249	35.23481	0.614963	3922.995	3758.374	1.019835	3839.876	3884.612	1201.716	-0.27651
55	110	8000	3840.153	0.012736	0.520813	0.508077	4000	1041.625	3902.185	991.3046	0.475136	27.22331	245.7711	245.7711	270.736	10%	35.81937	0.625166	35.28737	0.615881	3928.573	3752.914	1.019822	3839.882	3877.114	1059.542	-0.27121
55	120	8000	3840.153	0.013897	0.520813	0.506916	4000	1041.625	3893.267	986.7791	0.474677	27.19701	260.7358	260.7358	288.1681	11%	35.87199	0.626084	35.33999	0.616799	3934.163	3747.447	1.019809	3839.89	3869.632	941.41	-0.26325
55	130	8000	3840.153	0.015059	0.520813	0.505754	4000	1041.625	3884.345	982.2617	0.474218	27.17067	275.6692	275.6692	305.6009	11%	35.92465	0.627003	35.39265	0.617718	3939.766	3741.973	1.019797	3839.9	3862.165	842.1773	-0.25261
55	140	8000	3840.153	0.016221	0.520813	0.504592	4000	1041.625	3875.42	977.7526	0.473758	27.14432	290.5715	290.5715	323.0343	11%	35.97737	0.627924	35.44537	0.618638	3945.382	3736.491	1.019785	3839.913	3854.714	758.0084	-0.2393
55	150	8000	3840.153	0.017383	0.520813	0.503429	4000	1041.625	3866.489	973.2517	0.473297	27.11793	305.4428	305.4428	340.4684	11%	36.03013	0.628844	35.49813	0.619559	3951.011	3731.002	1.019772	3839.929	3847.279	685.9939	-0.22332
55	160	8000	3840.153	0.018547	0.520813	0.502266	4000	1041.625	3857.555	968.7591	0.472836	27.09153	320.2832	320.2832	357.9031	12%	36.08295	0.629766	35.55095	0.620481	3956.652	3725.505	1.01976	3839.948	3839.858	623.8953	-0.20465
55	170	8000	3840.153	0.019711	0.520813	0.501102	4000	1041.625	3848.617	964.2748	0.472375	27.06509	335.0928	335.0928	375.3387	12%	36.13581	0.630689	35.60381	0.621404	3962.307	3720.001	1.019748	3839.969	3832.454	569.9672	-0.1833
55	180	8000	3840.153	0.020875	0.520813	0.499938	4000	1041.625	3839.674	959.7988	0.471913	27.03864	349.8717	349.8717	392.775	12%	36.18873	0.631612	35.65673	0.622327	3967.974	3714.49	1.019736	3839.994	3825.064	522.8323	-0.15925
55	190	8000	3840.153	0.02204	0.520813	0.498773	4000	1041.625	3830.727	955.3311	0.471451	27.01215	364.62	364.62	410.2122	13%	36.24169	0.632537	35.70969	0.623252	3973.655	3708.97	1.019724	3840.02	3817.69	481.3922	-0.13252
55	200	8000	3840.153	0.023205	0.520813	0.497607	4000	1041.625	3821.776	950.8718	0.470988	26.98565	379.3378	379.3378	427.6502	13%	36.29471	0.633462	35.76271	0.624177	3979.348	3703.444	1.019712	3840.05	3810.331	444.762	-0.1031
55	210	8000	3840.153	0.024371	0.520813	0.496441	4000	1041.625	3812.821	946.4208	0.470525	26.95911	394.0252	394.0252	445.0891	13%	36.34777	0.634388	35.81577	0.625103	3985.055	3697.909	1.0197	3840.082	3802.987	412.2227	-0.07097
55	220	8000	3840.153	0.025538	0.520813	0.495275	4000	1041.625	3803.861	941.9781	0.470062	26.93256	408.6824	408.6824	462.5289	13%	36.40088	0.635315	35.86888	0.62603	3990.775	3692.367	1.019688	3840.117	3795.659	383.1847	-0.03615
55	230	8000	3840.153	0.026705	0.520813	0.494108	4000	1041.625	3794.897	937.5438	0.469598	26.90598	423.3094	423.3094	479.9698	13%	36.45405	0.636243	35.92205	0.626958	3996.508	3686.818	1.019676	3840.154	3788.345	357.1612	0.001383
55	240	8000	3840.153	0.027873	0.520813	0.49294	4000	1041.625	3785.93	933.118	0.469133	26.87937	437.9062	437.9062	497.4116	14%	36.50726	0.637172	35.97526	0.627887	4002.254	3681.26	1.019665	3840.194	3781.047	333.7473	0.041622
55	40	8500	4080.162	0.004351	0.520813	0.516461	4250	1106.727	4214.492	1088.311	0.478446	27.41292	145.0928	145.0928	153.6629	6%	35.44016	0.618547	34.90816	0.609262	4131.53	4029.273	1.019915	4079.897	4177.454	3431.993	-0.26519
55	50	8500	4080.162	0.00544	0.520813	0.515372	4250	1106.727	4205.605	1083.726	0.478017	27.38833	160.2873	160.2873	171.0917	7%	35.48934	0.619406	34.95734	0.610121	4137.029	4023.857	1.019903	4079.886	4169.856	2812.156	-0.27653
55	60	8500	4080.162	0.00653	0.520813	0.514283	4250	1106.727	4196.714	1079.149	0.477587	27.36372	175.4518	175.4518	188.5209	7%	35.53856	0.620265	35.00656	0.61098	4142.54	4018.436	1.01989	4079.877	4162.274	2347.049	-0.28537
55	70	8500	4080.162	0.00762	0.520813	0.513193	4250	1106.727	4187.819	1074.579	0.477157	27.33908	190.5863	190.5863	205.9504	8%	35.58783	0.621125	35.05583	0.61184	4148.063	4013.007	1.019878	4079.871	4154.707	1989.091	-0.29172
55	80	8500	4080.162	0.00871	0.520813	0.512102	4250	1106.727	4178.92	1070.017	0.476727	27.31443	205.6908	205.6908	223.3803	9%	35.63715	0.621986	35.10515	0.6127	4153.598	4007.572	1.019866	4079.867	4147.155	1707.686	-0.29557
55	90	8500	4080.162	0.009801	0.520813	0.511011	4250	1106.727	4170.017	1065.463	0.476296	27.28975	220.7656	220.7656	240.8107	9%	35.68651	0.622847	35.15451	0.613562	4159.144	4002.13	1.019854	4079.865	4139.617	1482.433	-0.29693
55	100	8500	4080.162	0.010893	0.520813	0.50992	4250	1106.727	4161.11	1060.916	0.475865	27.26505	235.8105	235.8105	258.2414	10%	35.73591	0.623709	35.20391	0.614424	4164.702	3996.681	1.019842	4079.867	4132.095	1299.306	-0.29578
55	110	8500	4080.162	0.011985	0.520813	0.508828	4250	1106.727	4152.2	1056.377	0.475433	27.24032	250.8259	250.8259	275.6727	10%	35.78535	0.624572	35.25335	0.615287	4170.272	3991.226	1.01983	4079.87	4124.587	1148.4	-0.29213
55	120	8500	4080.162	0.013077	0.520813	0.507735	4250	1106.727	4143.285	1051.846	0.475001	27.21558	265.8117	265.8117	293.1044	10%	35.83484	0.625436	35.30284	0.616151	4175.854	3985.764	1.019818	4079.876	4117.094	1022.562	-0.28597
55	130	8500	4080.162	0.01417	0.520813	0.506642	4250	1106.727	4134.366	1047.323	0.474569	27.19081	280.7681	280.7681	310.5368	11%	35.88438	0.626301	35.35238	0.617015	4181.448	3980.295	1.019807	4079.885	4109.616	916.5209	-0.2773
55	140	8500	4080.162	0.015264	0.520813	0.505549	4250	1106.727	4125.444	1042.807	0.474137	27.16602	295.6951	295.6951	327.9696	11%	35.93395	0.627166	35.40195	0.617881	4187.054	3974.819	1.019795	4079.896	4102.152	826.3226	-0.26611
55	150	8500	4080.162	0.016358	0.520813	0.504455	4250	1106.727	4116.517	1038.299	0.473704	27.14121	310.5928	310.5928	345.4031	11%	35.98357	0.628032	35.45157	0.618747	4192.671	3969.336	1.019783	4079.91	4094.704	748.9538	-0.25241
55	160	8500	4080.162	0.017452	0.520813	0.503361	4250	1106.727	4107.587	1033.799	0.47327	27.11638	325.4614	325.4614	362.8373	11%	36.03324	0.628899	35.50124	0.619614	4198.301	3963.846	1.019772	4079.926	4087.269	682.0856	-0.23619
55	170	8500	4080.162	0.018547	0.520813	0.502266	4250	1106.727	4098.652	1029.307	0.472836	27.09153	340.3009	340.3009	380.2721	12%	36.08295	0.629766	35.55095	0.620481	4203.943	3958.349	1.01976	4079.945	4079.85	623.8953	-0.21744
55	180	8500	4080.162	0.019642	0.520813	0.501171	4250	1106.727	4089.714	1024.822	0.472402	27.06665	355.1114	355.1114	397.7076	12%	36.1327	0.630635	35.6007	0.621349	4209.597	3952.845	1.019749	4079.966	4072.444	572.9394	-0.19616
55	190	8500	4080.162	0.020738	0.520813	0.500075	4250	1106.727	4080.772	1020.345	0.471968	27.04175	369.893	369.893	415.1439	12%	36.1825	0.631504	35.6505	0.622219	4215.264	3947.335	1.019737	4079.99	4065.054	528.0629	-0.17236
55	200	8500	4080.162	0.021834	0.520813	0.498978	4250	1106.727	4071.825	1015.876	0.471533	27.01683	384.6458	384.6458	432.5809	12%	36.23234	0.632374	35.70034	0.623089	4220.942	3941.817	1.019726	4080.016	4057.677	488.3328	-0.14603
55	210	8500	4080.162	0.022931	0.520813	0.497882	4250	1106.727	4062.875	1011.415	0.471097	26.99189	399.3699	399.3699	450.0187	13%	36.28223	0.633244	35.75023	0.623959	4226.633	3936.291	1.019715	4080.045	4050.315	452.9886	-0.11716
55	220	8500	4080.162	0.024028	0.520813	0.496784	4250	1106.727	4053.921	1006.962	0.470662	26.96692	414.0653	414.0653	467.4574	13%	36.33216	0.634116	35.80016	0.624831	4232.336	3930.759	1.019703	4080.077	4042.967	421.4054	-0.08575
55	230	8500	4080.162	0.025126	0.520813	0.495687	4250	1106.727	4044.963	1002.517	0.470225	26.94193	428.7323	428.7323	484.8969	13%	36.38213	0.634988	35.85013	0.625703	4238.052	3925.219	1.019692	4080.111	4035.634	393.066	-0.05179
55	240	8500	4080.162	0.026224	0.520813	0.494588	4250	1106.727	4036.001	998.0793	0.469789	26.91692	443.3708	443.3708	502.3374	13%	36.43215	0.635861	35.90015	0.626576	4243.78	3919.673	1.019681	4080.147	4028.315	367.5393	-0.0153
55	40	9000	4320.172	0.004109	0.520813	0.516703	4500	1171.828	4464.493	1153.409	0.478541	27.41838	150.0481	150.0481	158.601	6%	35.42923	0.618357	34.89723	0.609072	4373.269	4267.562	1.019918	4319.894	4424.976	3597.693	-0.27777
55	50	9000	4320.172	0.005138	0.520813	0.515675	4500	1171.828	4455.607	1148.822	0.478136	27.39516	165.2502	165.2502	176.0298	7%	35.47567	0.619167	34.94367	0.609882	4378.765	4262.148	1.019906	4319.882	4417.375	2966.204	-0.28972
55	60	9000	4320.172	0.006167	0.520813	0.514646	4500	1171.828	4446.718	1144.242	0.47773	27.37192	180.4239	180.4239	193.4588	7%	35.52215	0.619978	34.99015	0.610693	4384.273	4256.729	1.019894	4319.873	4409.788	2488.267	-0.29933
55	70	9000	4320.172	0.007196	0.520813	0.513617	4500	1171.828	4437.824	1139.67	0.477324	27.34867	195.5692	195.5692	210.8882	8%	35.56867	0.62079	35.03667	0.611505	4389.791	4251.302	1.019883	4319.865	4402.215	2117.796	-0.30658
55	80	9000	4320.172	0.008226	0.520813	0.512587	4500	1171.828	4428.927	1135.105	0.476918	27.32539	210.6862	210.6862	228.318	8%	35.61523	0.621603	35.08323	0.612318	4395.321	4245.87	1.019871	4319.86	4394.657	1824.79	-0.31147
55	90	9000	4320.172	0.009256	0.520813	0.511557	4500	1171.828	4420.026	1130.547	0.476511	27.30209	225.775	225.775	245.7481	9%	35.66182	0.622416	35.12982	0.613131	4400.862	4240.431	1.01986	4319.858	4387.113	1589.035	-0.31401
55	100	9000	4320.172	0.010286	0.520813	0.510526	4500	1171.828	4411.121	1125.996	0.476104	27.27877	240.8356	240.8356	263.1786	9%	35.70846	0.62323	35.17646	0.613945	4406.414	4234.986	1.019849	4319.858	4379.582	1396.508	-0.31418
55	110	9000	4320.172	0.011318	0.520813	0.509495	4500	1171.828	4402.213	1121.453	0.475697	27.25543	255.8683	255.8683	280.6096	10%	35.75513	0.624045	35.22313	0.61476	4411.977	4229.535	1.019837	4319.86	4372.066	1237.235	-0.31199
55	120	9000	4320.172	0.012349	0.520813	0.508464	4500	1171.828	4393.301	1116.917	0.475289	27.23208	270.8729	270.8729	298.041	10%	35.80184	0.62486	35.26984	0.615575	4417.551	4224.077	1.019826	4319.864	4364.564	1103.961	-0.30744
55	130	9000	4320.172	0.013381	0.520813	0.507432	4500	1171.828	4384.385	1112.388	0.474881	27.2087	285.8498	285.8498	315.473	10%	35.8486	0.625676	35.3166	0.616391	4423.136	4218.613	1.019815	4319.871	4357.075	991.3098	-0.30051
55	140	9000	4320.172	0.014413	0.520813	0.506399	4500	1171.828	4375.465	1107.867	0.474473	27.18531	300.7988	300.7988	332.9054	11%	35.89539	0.626493	35.36339	0.617208	4428.733	4213.142	1.019804	4319.881	4349.601	895.2265	-0.29121
55	150	9000	4320.172	0.015446	0.520813	0.505367	4500	1171.828	4366.542	1103.352	0.474064	27.16189	315.7201	315.7201	350.3384	11%	35.94222	0.62731	35.41022	0.618025	4434.341	4207.665	1.019793	4319.892	4342.14	812.6071	-0.27953
55	160	9000	4320.172	0.016479	0.520813	0.504334	4500	1171.828	4357.615	1098.846	0.473655	27.13845	330.6138	330.6138	367.772	11%	35.98909	0.628128	35.45709	0.618843	4439.961	4202.181	1.019782	4319.906	4334.693	741.0426	-0.26548
55	170	9000	4320.172	0.017513	0.520813	0.5033	4500	1171.828	4348.684	1094.346	0.473246	27.115	345.4799	345.4799	385.2062	11%	36.036	0.628947	35.504	0.619662	4445.592	4196.69	1.019771	4319.923	4327.26	678.64	-0.24905
55	180	9000	4320.172	0.018547	0.520813	0.502266	4500	1171.828	4339.75	1089.854	0.472836	27.09153	360.3186	360.3186	402.641	12%	36.08295	0.629766	35.55095	0.620481	4451.234	4191.193	1.01976	4319.942	4319.841	623.8953	-0.23023

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
55	190	9000	4320.172	0.019581	0.520813	0.501231	4500	1171.828	4330.811	1085.369	0.472426	27.06803	375.1299	375.1299	420.0765	12%	36.12994	0.630586	35.59794	0.621301	4456.888	4185.69	1.019749	4319.963	4312.435	575.6012	-0.20903
55	200	9000	4320.172	0.020616	0.520813	0.500196	4500	1171.828	4321.869	1080.892	0.472016	27.04452	389.9139	389.9139	437.5127	12%	36.17696	0.631407	35.64496	0.622122	4462.553	4180.179	1.019738	4319.986	4305.043	532.7796	-0.18543
55	210	9000	4320.172	0.021652	0.520813	0.499161	4500	1171.828	4312.924	1076.422	0.471605	27.02098	404.6707	404.6707	454.9497	12%	36.22403	0.632229	35.69203	0.622943	4468.23	4174.662	1.019728	4320.012	4297.665	494.6312	-0.15945
55	220	9000	4320.172	0.022687	0.520813	0.498125	4500	1171.828	4303.974	1071.959	0.471194	26.99743	419.4004	419.4004	472.3873	13%	36.27114	0.633051	35.73914	0.623766	4473.918	4169.139	1.019717	4320.041	4290.3	460.4977	-0.13107
55	230	9000	4320.172	0.023723	0.520813	0.497089	4500	1171.828	4295.021	1067.504	0.470783	26.97386	434.103	434.103	489.8258	13%	36.31828	0.633874	35.78628	0.624588	4479.618	4163.608	1.019706	4320.072	4282.949	429.8328	-0.1003
55	240	9000	4320.172	0.02476	0.520813	0.496052	4500	1171.828	4286.064	1063.056	0.470371	26.95027	448.7786	448.7786	507.2651	13%	36.36547	0.634697	35.83347	0.625412	4485.33	4158.071	1.019696	4320.105	4275.611	402.1802	-0.06712
55	40	9500	4560.181	0.003893	0.520813	0.51692	4750	1236.93	4714.495	1218.508	0.478626	27.42327	155.002	155.002	163.5391	6%	35.41946	0.618186	34.88746	0.608901	4615.008	4505.851	1.01992	4559.891	4672.499	3756.407	-0.29023
55	50	9500	4560.181	0.004867	0.520813	0.515945	4750	1236.93	4705.61	1213.919	0.478242	27.40128	170.2109	170.2109	180.9678	6%	35.46345	0.618954	34.93145	0.609669	4620.502	4500.439	1.019909	4559.879	4664.895	3115.104	-0.30274
55	60	9500	4560.181	0.005842	0.520813	0.514971	4750	1236.93	4696.721	1209.337	0.477858	27.37927	185.3928	185.3928	198.3968	7%	35.50747	0.619722	34.97547	0.610437	4626.006	4495.021	1.019898	4559.868	4657.304	2625.8	-0.31302
55	70	9500	4560.181	0.006817	0.520813	0.513996	4750	1236.93	4687.829	1204.762	0.477474	27.35724	200.5478	200.5478	215.8261	8%	35.55153	0.620491	35.01953	0.611206	4631.521	4489.597	1.019887	4559.86	4649.726	2243.941	-0.32108
55	80	9500	4560.181	0.007792	0.520813	0.513021	4750	1236.93	4678.933	1200.194	0.477089	27.33519	215.6759	215.6759	233.2557	8%	35.59562	0.621261	35.06362	0.611976	4637.046	4484.167	1.019876	4559.855	4642.162	1940.188	-0.32691
55	90	9500	4560.181	0.008768	0.520813	0.512045	4750	1236.93	4670.034	1195.633	0.476704	27.31313	230.7773	230.7773	250.6857	9%	35.63974	0.622031	35.10774	0.612746	4642.582	4478.731	1.019865	4559.851	4634.611	1694.575	-0.3305
55	100	9500	4560.181	0.009744	0.520813	0.511069	4750	1236.93	4661.131	1191.079	0.476319	27.29105	245.8521	245.8521	268.116	9%	35.68391	0.622802	35.15191	0.613517	4648.129	4473.289	1.019855	4559.85	4627.074	1493.137	-0.33185
55	110	9500	4560.181	0.010721	0.520813	0.510092	4750	1236.93	4652.225	1186.531	0.475933	27.26895	260.9002	260.9002	285.5467	9%	35.7281	0.623573	35.1961	0.614288	4653.685	4467.841	1.019844	4559.85	4619.55	1325.862	-0.33097
55	120	9500	4560.181	0.011697	0.520813	0.509115	4750	1236.93	4643.315	1181.991	0.475547	27.24683	275.9218	275.9218	302.9779	10%	35.77234	0.624345	35.24034	0.61506	4659.253	4462.387	1.019833	4559.854	4612.039	1185.428	-0.32784
55	130	9500	4560.181	0.012675	0.520813	0.508138	4750	1236.93	4634.401	1177.457	0.475161	27.2247	290.9169	290.9169	320.4095	10%	35.8166	0.625118	35.2846	0.615833	4664.831	4456.927	1.019823	4559.859	4604.542	1066.373	-0.32248
55	140	9500	4560.181	0.013652	0.520813	0.50716	4750	1236.93	4625.485	1172.931	0.474774	27.20255	305.8856	305.8856	337.8415	10%	35.86091	0.625891	35.32891	0.616606	4670.42	4451.461	1.019812	4559.867	4597.057	964.5595	-0.31486
55	150	9500	4560.181	0.014631	0.520813	0.506182	4750	1236.93	4616.564	1168.411	0.474387	27.18038	320.8281	320.8281	355.2741	11%	35.90524	0.626665	35.37324	0.61738	4676.019	4445.989	1.019802	4559.876	4589.586	876.8039	-0.305
55	160	9500	4560.181	0.015609	0.520813	0.505204	4750	1236.93	4607.64	1163.898	0.474	27.15819	335.7443	335.7443	372.7072	11%	35.94962	0.627439	35.41762	0.618154	4681.629	4440.51	1.019791	4559.889	4582.128	800.6264	-0.29289
55	170	9500	4560.181	0.016588	0.520813	0.504225	4750	1236.93	4598.712	1159.392	0.473612	27.13599	350.6343	350.6343	390.1409	11%	35.99403	0.628214	35.46203	0.618929	4687.25	4435.026	1.019781	4559.903	4574.683	734.0714	-0.27852
55	180	9500	4560.181	0.017567	0.520813	0.503245	4750	1236.93	4589.781	1154.893	0.473224	27.11377	365.4983	365.4983	407.5751	12%	36.03847	0.62899	35.50647	0.619705	4692.882	4429.535	1.01977	4559.92	4567.251	675.5795	-0.2619
55	190	9500	4560.181	0.018547	0.520813	0.502266	4750	1236.93	4580.847	1150.401	0.472836	27.09153	380.3363	380.3363	425.01	12%	36.08295	0.629766	35.55095	0.620481	4698.525	4424.037	1.01976	4559.938	4559.832	623.8953	-0.24302
55	200	9500	4560.181	0.019527	0.520813	0.501286	4750	1236.93	4571.909	1145.916	0.472448	27.06927	395.1483	395.1483	442.4455	12%	36.12746	0.630543	35.59546	0.621258	4704.178	4418.534	1.01975	4559.96	4552.426	577.9988	-0.22188
55	210	9500	4560.181	0.020507	0.520813	0.500305	4750	1236.93	4562.967	1141.439	0.472059	27.04699	409.9345	409.9345	459.8816	12%	36.17201	0.631321	35.64001	0.622036	4709.843	4413.024	1.01974	4559.983	4545.033	537.0545	-0.19848
55	220	9500	4560.181	0.021488	0.520813	0.499325	4750	1236.93	4554.022	1136.968	0.47167	27.0247	424.6948	424.6948	477.3184	12%	36.2166	0.632099	35.6846	0.622814	4715.518	4407.508	1.019729	4560.009	4537.653	500.3723	-0.17281
55	230	9500	4560.181	0.022469	0.520813	0.498343	4750	1236.93	4545.073	1132.504	0.471281	27.00239	439.4295	439.4295	494.756	13%	36.26122	0.632878	35.72922	0.623592	4721.204	4401.986	1.019719	4560.037	4530.285	467.3786	-0.14487
55	240	9500	4560.181	0.023451	0.520813	0.497362	4750	1236.93	4536.121	1128.047	0.470891	26.98006	454.1385	454.1385	512.1942	13%	36.30587	0.633657	35.77387	0.624372	4726.902	4396.457	1.019709	4560.067	4522.931	437.5932	-0.11466
55	40	10000	4800.191	0.003698	0.520813	0.517114	5000	1302.032	4964.496	1283.606	0.478703	27.42767	159.9547	159.9547	168.4773	5%	35.41067	0.618033	34.87867	0.608748	4856.748	4744.14	1.019922	4799.888	4920.023	3908.462	-0.30259
55	50	10000	4800.191	0.004624	0.520813	0.516189	5000	1302.032	4955.612	1279.016	0.478338	27.40678	175.1697	175.1697	185.9059	6%	35.45245	0.618762	34.92045	0.609477	4862.239	4738.729	1.019912	4799.875	4912.415	3258.983	-0.3156
55	60	10000	4800.191	0.005549	0.520813	0.515263	5000	1302.032	4946.724	1274.433	0.477974	27.38587	190.359	190.359	203.3348	7%	35.49426	0.619492	34.96226	0.610207	4867.741	4733.312	1.019901	4799.864	4904.821	2759.645	-0.3265
55	70	10000	4800.191	0.006475	0.520813	0.514337	5000	1302.032	4937.833	1269.856	0.477608	27.36495	205.5227	205.5227	220.764	7%	35.5361	0.620222	35.0041	0.610937	4873.252	4727.89	1.019891	4799.856	4897.239	2367.447	-0.33528
55	80	10000	4800.191	0.007402	0.520813	0.513411	5000	1302.032	4928.939	1265.285	0.477243	27.34401	220.6609	220.6609	238.1935	8%	35.57798	0.620953	35.04598	0.611668	4878.774	4722.463	1.019881	4799.849	4889.67	2053.757	-0.34194
55	90	10000	4800.191	0.008329	0.520813	0.512484	5000	1302.032	4920.041	1260.721	0.476877	27.32306	235.7737	235.7737	255.6233	8%	35.61988	0.621684	35.08788	0.612399	4884.305	4717.029	1.01987	4799.844	4882.113	1798.909	-0.34648
55	100	10000	4800.191	0.009256	0.520813	0.511557	5000	1302.032	4911.14	1256.163	0.476511	27.30209	250.8611	250.8611	273.0535	9%	35.66182	0.622416	35.12982	0.613131	4889.846	4711.59	1.01986	4799.842	4874.569	1589.035	-0.3489
55	110	10000	4800.191	0.010183	0.520813	0.510629	5000	1302.032	4902.235	1251.612	0.476145	27.2811	265.9232	265.9232	290.484	9%	35.70379	0.623149	35.17179	0.613864	4895.398	4706.146	1.01985	4799.842	4867.038	1414.125	-0.34919
55	120	10000	4800.191	0.011111	0.520813	0.509701	5000	1302.032	4893.328	1247.068	0.475779	27.2601	280.96	280.96	307.9149	10%	35.74579	0.623882	35.21379	0.614597	4900.959	4700.695	1.01984	4799.844	4859.52	1266.809	-0.34736
55	130	10000	4800.191	0.012039	0.520813	0.508773	5000	1302.032	4884.416	1242.53	0.475412	27.23909	295.9716	295.9716	325.3462	10%	35.78783	0.624615	35.25583	0.61533	4906.531	4695.239	1.01983	4799.848	4852.014	1141.563	-0.34339
55	140	10000	4800.191	0.012968	0.520813	0.507845	5000	1302.032	4875.502	1237.999	0.475045	27.21805	310.9582	310.9582	342.7779	10%	35.82989	0.62535	35.29789	0.616064	4912.112	4689.777	1.01982	4799.854	4844.521	1034.18	-0.33729
55	150	10000	4800.191	0.013897	0.520813	0.506916	5000	1302.032	4866.584	1233.474	0.474677	27.19701	325.9197	325.9197	360.2102	11%	35.87199	0.626084	35.33999	0.616799	4917.704	4684.309	1.019809	4799.862	4837.04	941.41	-0.32906
55	160	10000	4800.191	0.014826	0.520813	0.505986	5000	1302.032	4857.663	1228.956	0.47431	27.17594	340.8562	340.8562	377.6428	11%	35.91412	0.62682	35.38212	0.617534	4923.306	4678.835	1.0198	4799.872	4829.572	860.7113	-0.31869
55	170	10000	4800.191	0.015756	0.520813	0.505057	5000	1302.032	4848.738	1224.444	0.473942	27.15486	355.7679	355.7679	395.076	11%	35.95628	0.627555	35.42428	0.61827	4928.918	4673.356	1.01979	4799.885	4822.116	790.0718	-0.30619
55	180	10000	4800.191	0.016686	0.520813	0.504127	5000	1302.032	4839.81	1219.939	0.473574	27.13377	370.6546	370.6546	412.5098	11%	35.99847	0.628292	35.46647	0.619007	4934.54	4667.87	1.01978	4799.899	4814.673	727.8822	-0.29154
55	190	10000	4800.191	0.017616	0.520813	0.503197	5000	1302.032	4830.879	1215.441	0.473205	27.11265	385.5167	385.5167	429.9441	12%	36.04069	0.629029	35.50869	0.619744	4940.173	4662.379	1.01977	4799.916	4807.242	672.8429	-0.27475
55	200	10000	4800.191	0.018547	0.520813	0.502266	5000	1302.032	4821.944	1210.949	0.472836	27.09153	400.354	400.354	447.3789	12%	36.08295	0.629766	35.55095	0.620481	4945.816	4656.882	1.01976	4799.935	4799.823	623.8953	-0.25581
55	210	10000	4800.191	0.019478	0.520813	0.501335	5000	1302.032	4813.006	1206.464	0.472467	27.07038	415.1666	415.1666	464.8144	12%	36.12524	0.630504	35.59324	0.621219	4951.469	4651.378	1.01975	4799.956	4792.417	580.1698	-0.23473
55	220	10000	4800.191	0.020409	0.520813	0.500403	5000	1302.032	4804.064	1201.985	0.472098	27.04922	429.9547	429.9547	482.2505	12%	36.16756	0.631243	35.63556	0.621958	4957.132	4645.869	1.019741	4799.979	4785.023	540.9467	-0.21149
55	230	10000	4800.191	0.021341	0.520813	0.499472	5000	1302.032	4795.12	1197.513	0.471728	27.02805	444.7183	444.7183	499.6872	12%	36.20991	0.631982	35.67791	0.622697	4962.806	4640.354	1.019731	4800.005	4777.641	505.6266	-0.18611
55	240	10000	4800.191	0.022273	0.520813	0.49854	5000	1302.032	4786.171	1193.048	0.471359	27.00685	459.4575	459.4575	517.1246	13%	36.25229	0.632722	35.72029	0.623437	4968.491	4634.832	1.019721	4800.032	4770.271	473.7065	-0.15857
60	40	1000	432.802	0.040363	0.577631	0.537269	500	144.4078	465.0618	124.9316	0.508545	29.13748	76.45813	76.45813	90.73085	19%	31.99104	0.558349	31.45904	0.549064	456.7338	409.4647	1.020977	432.854	461.7709	171.0616	0.051945
60	50	1000	432.802	0.050563	0.577631	0.527069	500	144.4078	456.2327	120.233	0.504646	28.91406	92.04674	92.04674	110.761	20%	32.43787	0.566148	31.90587	0.556863	462.1813	404.2777	1.020816	432.9313	453.9766	118.0275	0.129252
60	60	1000	432.802	0.060807	0.577631	0.516825	500	144.4078	447.3656	115.6048	0.500713	28.68871	107.3185	107.3185	130.8078	22%	32.88857	0.574014	32.35657	0.564729	467.7309	399.0362	1.02066	433.0324	446.3408	86.82623	0.230331
60	70	1000	432.802	0.071094	0.577631	0.506537	500	144.4078	438.4603	111.0481	0.496745	28.46142	122.2832	122.2832	150.8743	23%	33.34317	0.581948	32.81117	0.572663	473.386	393.7375	1.020511	433.1575	438.8584	66.8754	0.35545
60	80	1000	432.802	0.081426	0.577631	0.496205	500	144.4078	429.517	106.5642	0.492744	28.23216	136.9504	136.9504	170.9636	25%	33.80169	0.589951	33.26969	0.580666	479.15	388.3789	1.020368	433.3069	431.5248	53.31793	0.504884
60	90	1000	432.802	0.091802	0.577631	0.485829	500	144.4078	420.5354	102.1541	0.488708	28.00092	151.3294	151.3294	191.0786	26%	34.26416	0.598022	33.73216	0.588737	485.0266	382.9575	1.020232	433.4809	424.3353	43.66702	0.678907
60	100	1000	432.802	0.102223	0.577631	0.475409	500	144.4078	411.5156	97.81904	0.484638	27.7677	165.429	165.429	211.2225	28%	34.7306	0.606163	34.1986	0.596878	491.0194	377.4701	1.020101	433.6798	417.2855	36.54068	0.877798
60	110	1000	432.802	0.112687	0.577631	0.464944	500	144.4078	402.4576	93.56017	0.480532	27.53248	179.258	179.258	231.3983	29%	35.20104	0.614374	34.66904	0.605089	497.1326	371.9134	1.019976	433.9039	410.371	31.12023	1.101835
60	120	1000	432.802	0.123196	0.577631	0.454436	500	144.4078	393.3614	89.37872	0.476392	27.29525	192.8248	192.8248	251.6093	30%	35.6755	0.622655	35.1435	0.61337	503.3702	366.2841	1.019857	434.1533	403.5876	26.89516	1.351301
60	130	1000	432.802	0.133748	0.577631	0.443883	500	144.4078	384.2269	85.27588	0.472216	27.056	206.1376	206.1376	271.8584	32%	36.15401	0.631006	35.62201	0.621721	509.7365	360.5786	1.019744	434.4285	396.9312	23.53344	1.626476
60	140	1000	432.802	0.144345	0.577631	0.433286	500	144.4078	375.0542	81.25288	0.468005	26.81471	219.2044	219.2044	292.1488	33%	36.63657	0.639429	36.10457	0.630144	516.236	354.793	1.019637	434.7297	390.3978	20.81141	1.927645
60	150	1000	432.802	0.154986	0.577631	0.422645	500	144.4078	365.8433	77.31095	0.463758	26.57139	232.0328	232.0328	312.4838	35%	37.12323	0.647923	36.59123	0.638637	522.8736	348.9233	1.019535	435.0571	383.9836	18.57382	2.255093
60	160	1000	432.802	0.165671	0.577631	0.41196	500	144.4078	356.5944	73.45133	0.459476	26.32601	244.6304	244.6304	332.8666	36%	37.61398	0.656488	37.08198	0.647203	529.6541	342.9653	1.01944	435.4111	377.6848	16.7101	2.609104
60	170	1000	432.802	0.1764	0.577631	0.401231	500	144.4078	347.3074	69.67527	0.455157	26.07857	257.0046	257.0046	353.3003	37%	38.10886	0.665125	37.57686	0.65584	536.5828	336.9145	1.01935	435.792	371.4977	15.13973	2.989965

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
60	180	1000	432.802	0.187173	0.577631	0.390458	500	144.4078	337.9824	65.98403	0.450802	25.82906	269.1625	269.1625	373.7883	39%	38.60787	0.673834	38.07587	0.664549	543.6651	330.7663	1.019267	436.2	365.4188	13.80292	3.39796
60	190	1000	432.802	0.197989	0.577631	0.379642	500	144.4078	328.6196	62.37888	0.446411	25.57748	281.111	281.111	394.3338	40%	39.11103	0.682616	38.57903	0.673331	550.9067	324.5156	1.019189	436.6354	359.4445	12.65448	3.833377
60	200	1000	432.802	0.208849	0.577631	0.368782	500	144.4078	319.219	58.86109	0.441984	25.32382	292.8569	292.8569	414.9402	42%	39.61836	0.691471	39.08636	0.682186	558.3138	318.1572	1.019118	437.0985	353.5715	11.65974	4.2965
60	210	1000	432.802	0.219753	0.577631	0.357878	500	144.4078	309.7809	55.43194	0.43752	25.06807	304.4069	304.4069	435.6109	43%	40.12986	0.700398	39.59786	0.691113	565.8925	311.6856	1.019052	437.5896	347.7965	10.79173	4.787613
60	220	1000	432.802	0.2307	0.577631	0.346932	500	144.4078	300.3054	52.09273	0.43302	24.81023	315.7675	315.7675	456.3493	45%	40.64555	0.709399	40.11355	0.700113	573.6496	305.0948	1.018993	438.109	342.1163	10.02918	5.306999
60	230	1000	432.802	0.241689	0.577631	0.335942	500	144.4078	290.7927	48.84473	0.428483	24.55029	326.9448	326.9448	477.1588	46%	41.16543	0.718472	40.63343	0.709187	581.5921	298.3787	1.01894	438.657	336.5276	9.355158	5.854941
60	240	1000	432.802	0.252722	0.577631	0.324909	500	144.4078	281.243	45.68925	0.42391	24.28825	337.9452	337.9452	498.0429	47%	41.68951	0.727619	41.15751	0.718334	589.7273	291.5306	1.018892	439.2337	331.0274	8.756035	6.431718
60	40	1500	649.203	0.026831	0.577631	0.5508	750	216.6117	715.1626	196.9559	0.513692	29.43238	82.74423	82.74423	96.06698	16%	31.40124	0.548055	30.86924	0.53877	674.436	624.4506	1.021202	649.1811	708.6279	328.6299	-0.02193
60	50	1500	649.203	0.033587	0.577631	0.544044	750	216.6117	706.3903	192.1538	0.511126	29.28535	98.82704	98.82704	116.0778	17%	31.69529	0.553187	31.16329	0.543902	679.7361	619.3406	1.021088	649.2233	700.5865	230.3727	0.020219
60	60	1500	649.203	0.040363	0.577631	0.537269	750	216.6117	697.5928	187.3973	0.508545	29.13748	114.6872	114.6872	136.0963	19%	31.99104	0.558349	31.45904	0.549064	685.1008	614.1971	1.020977	649.281	692.6564	171.0616	0.077917
60	70	1500	649.203	0.047158	0.577631	0.530473	750	216.6117	688.77	182.6871	0.505949	28.98875	130.3294	130.3294	156.1239	20%	32.2885	0.563541	31.7565	0.554256	690.5314	609.019	1.020869	649.3543	684.8353	132.464	0.151283
60	80	1500	649.203	0.053972	0.577631	0.523659	750	216.6117	679.9218	178.0235	0.503338	28.83916	145.7581	145.7581	176.1619	21%	32.58768	0.568762	32.05568	0.559477	696.0295	603.8051	1.020763	649.4435	677.121	105.9052	0.240436
60	90	1500	649.203	0.060807	0.577631	0.516825	750	216.6117	671.0483	173.4072	0.500713	28.68871	160.9777	160.9777	196.2117	22%	32.88857	0.574014	32.35657	0.564729	701.5964	598.5543	1.02066	649.5485	669.5111	86.82623	0.345496
60	100	1500	649.203	0.06766	0.577631	0.509971	750	216.6117	662.1495	168.8385	0.498072	28.5374	175.9927	175.9927	216.2747	23%	33.1912	0.579296	32.6592	0.570011	707.2335	593.2654	1.02056	649.6696	662.0036	72.64289	0.466583
60	110	1500	649.203	0.074534	0.577631	0.503098	750	216.6117	653.2252	164.318	0.495415	28.38521	190.8073	190.8073	236.3521	24%	33.49557	0.584608	32.96357	0.575323	712.9426	587.9372	1.020463	649.8069	654.5963	61.80058	0.603819
60	120	1500	649.203	0.081426	0.577631	0.496205	750	216.6117	644.2754	159.8463	0.492744	28.23216	205.4256	205.4256	256.4454	25%	33.80169	0.589951	33.26969	0.580666	718.725	582.5684	1.020368	649.9604	647.2872	53.31793	0.757326
60	130	1500	649.203	0.088339	0.577631	0.489292	750	216.6117	635.3002	155.4238	0.490057	28.07822	219.8518	219.8518	276.5558	26%	34.10956	0.595324	33.57756	0.586039	724.5825	577.1577	1.020277	650.1303	640.0741	46.5503	0.927225
60	140	1500	649.203	0.095271	0.577631	0.48236	750	216.6117	626.2996	151.051	0.487355	27.9234	234.0898	234.0898	296.6848	27%	34.4192	0.600728	33.8872	0.591443	730.5166	571.7037	1.020187	650.3167	632.9551	41.05987	1.113641
60	150	1500	649.203	0.102223	0.577631	0.475409	750	216.6117	617.2734	146.7286	0.484638	27.7677	248.1435	248.1435	316.8337	28%	34.7306	0.606163	34.1986	0.596878	736.5292	566.2051	1.020101	650.5197	625.9282	36.54068	1.316697
60	160	1500	649.203	0.109194	0.577631	0.468437	750	216.6117	608.2218	142.4569	0.481905	27.61111	262.0169	262.0169	337.004	29%	35.04378	0.611629	34.51178	0.602344	742.6219	560.6603	1.020017	650.7396	618.9916	32.77359	1.536517
60	170	1500	649.203	0.116185	0.577631	0.461446	750	216.6117	599.1447	138.2365	0.479156	27.45363	275.7135	275.7135	357.1969	30%	35.35875	0.617127	34.82675	0.607841	748.7967	555.0679	1.019935	650.9763	612.1432	29.59827	1.773227
60	180	1500	649.203	0.123196	0.577631	0.454436	750	216.6117	590.0421	134.0681	0.476392	27.29525	289.2373	289.2373	377.4139	30%	35.6755	0.622655	35.1435	0.61337	755.0553	549.4262	1.019857	651.23	605.3814	26.89516	2.026951
60	190	1500	649.203	0.130226	0.577631	0.447405	750	216.6117	580.9139	129.952	0.473612	27.13597	302.5916	302.5916	397.6563	31%	35.99405	0.628215	35.46205	0.61893	761.3997	543.7337	1.019781	651.5009	598.7042	24.57359	2.297815
60	200	1500	649.203	0.137276	0.577631	0.440356	750	216.6117	571.7604	125.8889	0.470816	26.9758	315.7802	315.7802	417.9257	32%	36.31441	0.633806	35.78241	0.624521	767.832	537.9887	1.019707	651.789	592.1099	22.56382	2.585945
60	210	1500	649.203	0.144345	0.577631	0.433286	750	216.6117	562.5813	121.8793	0.468005	26.81471	328.8066	328.8066	438.2233	33%	36.63657	0.639429	36.10457	0.630144	774.3541	532.1895	1.019637	652.0945	585.5967	20.81141	2.891468
60	220	1500	649.203	0.151434	0.577631	0.426197	750	216.6117	553.3768	117.9238	0.465178	26.65272	341.674	341.674	458.5505	34%	36.96056	0.645083	36.42856	0.635798	780.9682	526.3342	1.019568	652.4176	579.163	19.27341	3.214509
60	230	1500	649.203	0.158543	0.577631	0.419088	750	216.6117	544.1469	114.0228	0.462335	26.48982	354.3859	354.3859	478.9089	35%	37.28636	0.65077	36.75436	0.641485	787.6764	520.421	1.019503	652.7582	572.807	17.91553	3.555196
60	240	1500	649.203	0.165671	0.577631	0.41196	750	216.6117	534.8915	110.177	0.459476	26.32601	366.9457	366.9457	499.2999	36%	37.61398	0.656488	37.08198	0.647203	794.4811	514.448	1.01944	653.1167	566.5272	16.7101	3.913656
60	40	2000	865.6041	0.020094	0.577631	0.557537	1000	288.8157	965.2128	269.071	0.516243	29.57856	88.57871	88.57871	101.4168	14%	31.10888	0.542952	30.57688	0.533667	892.2656	839.3707	1.021319	865.5392	955.7106	509.8017	-0.06486
60	50	2000	865.6041	0.025145	0.577631	0.552486	1000	288.8157	956.4689	264.218	0.514331	29.469	104.9176	104.9176	121.4205	16%	31.32799	0.546777	30.79599	0.537491	897.4946	834.2973	1.021231	865.564	947.5412	363.382	-0.04007
60	60	2000	865.6041	0.030207	0.577631	0.547425	1000	288.8157	947.7061	259.3989	0.512411	29.35897	121.085	121.085	141.4286	17%	31.54806	0.550617	31.01606	0.541332	902.7707	829.1996	1.021145	865.6003	939.4575	272.8219	-0.00372
60	70	2000	865.6041	0.035279	0.577631	0.542352	1000	288.8157	938.9244	254.6138	0.510482	29.24846	137.0837	137.0837	161.4421	18%	31.76907	0.554475	31.23707	0.54519	908.0948	824.0772	1.02106	865.6483	931.4582	212.8572	0.044242
60	80	2000	865.6041	0.040363	0.577631	0.537269	1000	288.8157	930.1237	249.8631	0.508545	29.13748	152.9163	152.9163	181.4617	19%	31.99104	0.558349	31.45904	0.549064	913.4677	818.9295	1.020977	865.708	923.5419	171.0616	0.103889
60	90	2000	865.6041	0.045457	0.577631	0.532174	1000	288.8157	921.304	245.1471	0.506599	29.02601	168.5853	168.5853	201.4881	20%	32.21398	0.56224	31.68198	0.552955	918.89	813.7558	1.020895	865.7793	915.7073	140.7409	0.175288
60	100	2000	865.6041	0.050563	0.577631	0.527069	1000	288.8157	912.4654	240.4659	0.504646	28.91406	184.0935	184.0935	221.522	20%	32.43787	0.566148	31.90587	0.556863	924.3626	808.5554	1.020816	865.8626	907.9533	118.0275	0.258505
60	110	2000	865.6041	0.055679	0.577631	0.521952	1000	288.8157	903.6078	235.82	0.502683	28.80163	199.4432	199.4432	241.5643	21%	32.66274	0.570072	32.13074	0.560787	929.8863	803.3279	1.020737	865.9577	900.2784	100.5591	0.353607
60	120	2000	865.6041	0.060807	0.577631	0.516825	1000	288.8157	894.7311	231.2096	0.500713	28.68871	214.637	214.637	261.6157	22%	32.88857	0.574014	32.35657	0.564729	935.4618	798.0724	1.02066	866.0647	892.6815	86.82623	0.460661
60	130	2000	865.6041	0.065945	0.577631	0.511686	1000	288.8157	885.8354	226.6349	0.498733	28.57531	229.6772	229.6772	281.6769	23%	33.11538	0.577972	32.58338	0.568687	941.0901	792.7884	1.020585	866.1838	885.1614	75.82704	0.579736
60	140	2000	865.6041	0.071094	0.577631	0.506537	1000	288.8157	876.9206	222.0963	0.496745	28.46142	244.5664	244.5664	301.7487	23%	33.34317	0.581948	32.81117	0.572663	946.772	787.4751	1.020511	866.315	877.7168	66.8754	0.7109
60	150	2000	865.6041	0.076255	0.577631	0.501376	1000	288.8157	867.9868	217.594	0.494749	28.34703	259.3068	259.3068	321.8318	24%	33.57194	0.585941	33.03994	0.576656	952.5083	782.1318	1.020439	866.4583	870.3466	59.48837	0.854221
60	160	2000	865.6041	0.081426	0.577631	0.496205	1000	288.8157	859.0339	213.1284	0.492744	28.23216	273.9008	273.9008	341.9271	25%	33.80169	0.589951	33.26969	0.580666	958.3	776.7579	1.020368	866.6138	863.0496	53.31793	1.009768
60	170	2000	865.6041	0.086609	0.577631	0.491022	1000	288.8157	850.0619	208.6997	0.49073	28.11679	288.3507	288.3507	362.0353	26%	34.03243	0.593978	33.50043	0.584693	964.148	771.3525	1.020299	866.7817	855.8246	48.10806	1.177609
60	180	2000	865.6041	0.091802	0.577631	0.485829	1000	288.8157	841.0708	204.3082	0.488708	28.00092	302.6588	302.6588	382.1572	26%	34.26416	0.598022	33.73216	0.588737	970.0531	765.915	1.020232	866.9619	848.6706	43.66702	1.357814
60	190	2000	865.6041	0.097007	0.577631	0.480624	1000	288.8157	832.0606	199.9542	0.486677	27.88456	316.8271	316.8271	402.2935	27%	34.49688	0.602084	33.96488	0.592799	976.0164	760.4444	1.020165	867.1545	841.5864	39.8488	1.550454
60	200	2000	865.6041	0.102223	0.577631	0.475409	1000	288.8157	823.0312	195.6381	0.484638	27.7677	330.858	330.858	422.445	28%	34.7306	0.606163	34.1986	0.596878	982.0389	754.9401	1.020101	867.3597	834.571	36.54068	1.755596
60	210	2000	865.6041	0.107449	0.577631	0.470182	1000	288.8157	813.9828	191.36	0.482589	27.65034	344.7536	344.7536	442.6125	28%	34.96532	0.61026	34.43332	0.600975	988.1215	749.4012	1.020037	867.5774	827.6232	33.65443	1.973312
60	220	2000	865.6041	0.112687	0.577631	0.464944	1000	288.8157	804.9152	187.1203	0.480532	27.53248	358.5161	358.5161	462.7967	29%	35.20104	0.614374	34.66904	0.605089	994.2652	743.8268	1.019976	867.8077	820.742	31.12023	2.203671
60	230	2000	865.6041	0.117936	0.577631	0.459695	1000	288.8157	795.8285	182.9194	0.478467	27.41412	372.1474	372.1474	482.9984	30%	35.43777	0.618506	34.90577	0.609221	1000.471	738.2162	1.019916	868.0508	813.9263	28.88219	2.446744
60	240	2000	865.6041	0.123196	0.577631	0.454436	1000	288.8157	786.7227	178.7574	0.476392	27.29525	385.6497	385.6497	503.2185	30%	35.6755	0.622655	35.1435	0.61337	1006.74	732.5683	1.019857	868.3067	807.1752	26.89516	2.702601
60	40	2500	1082.005	0.016061	0.577631	0.56157	1250	361.0196	1215.243	341.2219	0.517767	29.66586	94.22791	94.22791	106.7709	13%	30.93427	0.539905	30.40227	0.53062	1110.145	1054.265	1.02139	1081.91	1202.886	703.9161	-0.09552
60	50	2500	1082.005	0.020094	0.577631	0.557537	1250	361.0196	1206.516	336.3387	0.516243	29.57856	110.7234	110.7234	126.771	14%	31.10888	0.542952	30.57688	0.533667	1115.332	1049.213	1.021319	1081.924	1194.638	509.8017	-0.08107
60	60	2500	1082.005	0.024134	0.577631	0.553497	1250	361.0196	1197.774	331.4824	0.514714	29.49095	127.0795	127.0795	146.7742	15%	31.28409	0.54601	30.75209	0.536725	1120.556	1044.142	1.021248	1081.948	1186.46	387.016	-0.05743
60	70	2500	1082.005	0.028181	0.577631	0.549451	1250	361.0196	1189.017	326.6531	0.51318	29.40304	143.2981	143.2981	166.781	16%	31.45992	0.549079	30.92792	0.539794	1125.818	1039.052	1.021179	1081.981	1178.351	304.3683	-0.02456
60	80	2500	1082.005	0.032234	0.577631	0.545397	1250	361.0196	1180.245	321.8509	0.51164	29.31483	159.3807	159.3807	186.7917	17%	31.63635	0.552158	31.10435	0.542873	1131.118	1033.942	1.021111	1082.023	1170.31	246.0415	0.017582
60	90	2500	1082.005	0.036295	0.577631	0.541336	1250	361.0196	1171.457	317.0761	0.510095	29.22631	175.3293	175.3293	206.8069	18%	31.81339	0.555248	31.28139	0.545963	1136.457	1028.812	1.021043	1082.074	1162.335	203.3158	0.069043
60	100	2500	1082.005	0.040363	0.577631	0.537269	1250	361.0196	1162.655	312.3289	0.508545	29.13748	191.1453	191.1453	226.8271	19%	31.99104	0.558349	31.45904	0.549064	1141.835	1023.662	1.020977	1082.135	1154.427	171.0616	0.129862
60	110	2500	1082.005	0.044437	0.577631	0.533194	1250	361.0196	1153.837	307.6093	0.506989	29.04834	206.8306	206.8306	246.8528	19%	32.16931	0.56146	31.63731	0.552175	1147.252	1018.491	1.020912	1082.205	1146.585	146.1001	0.200081
60	120	2500	1082.005	0.048519	0.577631	0.529112	1250	361.0196	1145.004	302.9177	0.505428	28.9589	222.3867	222.3867	266.8844	20%	32.3482	0.564583	31.8162	0.555297	1152.709	1013.298	1.020847	1082.285	1138.807	126.3753	0.279745
60	130	2500	1082.005	0.052608	0.577631	0.525023	1250	361.0196	1136.156	298.2541	0.503862	28.86915	237.8153	237.8153	286.9224	21%	32.5277	0.567716	31.9957	0.55843	1158.207	1008.085	1.020784	1082.374	1131.092	110.5097	0.368895
60	140	2500	1082.005	0.056704	0.577631	0.520928	1250	361.0196	1127.292	293.6188	0.50229	28.77909	253.1179	253.1179	306.9673	21%	32.70783	0.570859	32.17583	0.561574	1163.746	1002.849	1.020722	1082.473	1123.441	97.55156	0.467574
60	150	2500	1082.005	0.060807	0.577631	0.516825	1250	361.0196	1118.414	289.012	0.500713	28.68871	268.2962	268.2962	327.0196	22%	32.88857	0.574014	32.35657	0.564729	1169.327	997.5905	1.02066	1082.581	1115.852	86.82623	0.575827
60	160	2500	1082.005	0.064916	0.577631	0.512715	1250	361.0196	1109.52	284.4337	0.49913	28.59803	283.3517	283.3517	347.0797	22%	33.06994	0.577179	32.53794	0.567894	1174.95	992.3094	1.0206	1082.699	1108.324	77.84459	0.693696

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
60	170	2500	1082.005	0.069033	0.577631	0.508598	1250	361.0196	1100.611	279.8842	0.497542	28.50703	298.2859	298.2859	367.1483	23%	33.25194	0.580356	32.71994	0.571071	1180.616	987.0049	1.020541	1082.826	1100.857	70.24486	0.821224
60	180	2500	1082.005	0.073157	0.577631	0.504474	1250	361.0196	1091.687	275.3638	0.495948	28.41572	313.1004	313.1004	387.2257	24%	33.43456	0.583543	32.90256	0.574258	1186.325	981.6768	1.020482	1082.964	1093.45	63.7548	0.958457
60	190	2500	1082.005	0.077288	0.577631	0.500343	1250	361.0196	1082.747	270.8725	0.494349	28.3241	327.7966	327.7966	407.3124	24%	33.61781	0.586741	33.08581	0.577456	1192.078	976.3244	1.020425	1083.111	1086.102	58.16626	1.105437
60	200	2500	1082.005	0.081426	0.577631	0.496205	1250	361.0196	1073.792	266.4105	0.492744	28.23216	342.3761	342.3761	427.4089	25%	33.80169	0.589951	33.26969	0.580666	1197.875	970.9474	1.020368	1083.267	1078.812	53.31793	1.262209
60	210	2500	1082.005	0.085572	0.577631	0.49206	1250	361.0196	1064.822	261.9781	0.491134	28.1399	356.8402	356.8402	447.5158	25%	33.9862	0.593171	33.4542	0.583886	1203.717	965.5452	1.020313	1083.434	1071.58	49.08315	1.428817
60	220	2500	1082.005	0.089724	0.577631	0.487908	1250	361.0196	1055.837	257.5754	0.489518	28.04733	371.1905	371.1905	467.6335	26%	34.17135	0.596403	33.63935	0.587117	1209.605	960.1174	1.020258	1083.61	1064.405	45.36138	1.605305
60	230	2500	1082.005	0.093883	0.577631	0.483748	1250	361.0196	1046.836	253.2026	0.487897	27.95444	385.4284	385.4284	487.7624	27%	34.35713	0.599645	33.82513	0.59036	1215.539	954.6634	1.020205	1083.797	1057.286	42.07194	1.791718
60	240	2500	1082.005	0.098049	0.577631	0.479582	1250	361.0196	1037.82	248.86	0.48627	27.86123	399.5553	399.5553	507.9032	27%	34.54354	0.602899	34.01154	0.593613	1221.52	949.1829	1.020152	1083.993	1050.222	39.1495	1.9881
60	40	3000	1298.406	0.013377	0.577631	0.564255	1500	433.2235	1465.263	413.3906	0.51878	29.7239	99.78317	99.78317	112.1267	12%	30.8182	0.537879	30.2862	0.528594	1328.049	1269.148	1.021438	1298.286	1450.108	903.9157	-0.12008
60	50	3000	1298.406	0.016733	0.577631	0.560898	1500	433.2235	1456.547	408.4874	0.517513	29.65133	116.3843	116.3843	132.1249	14%	30.96333	0.540412	30.43133	0.531127	1333.208	1264.11	1.021378	1298.294	1441.808	664.437	-0.1125
60	60	3000	1298.406	0.020094	0.577631	0.557537	1500	433.2235	1447.819	403.6065	0.516243	29.57856	132.8681	132.8681	152.1252	14%	31.10888	0.542952	30.57688	0.533667	1338.398	1259.056	1.021319	1298.309	1433.566	509.8017	-0.09729
60	70	3000	1298.406	0.02346	0.577631	0.554171	1500	433.2235	1439.078	398.7479	0.514969	29.50558	149.2357	149.2357	172.1282	15%	31.25485	0.5455	30.72285	0.536215	1343.62	1253.987	1.02126	1298.332	1425.382	404.1076	-0.07442
60	80	3000	1298.406	0.026831	0.577631	0.5508	1500	433.2235	1430.325	393.9118	0.513692	29.43238	165.4885	165.4885	192.134	16%	31.40124	0.548055	30.86924	0.53877	1348.872	1248.901	1.021202	1298.362	1417.256	328.6299	-0.04386
60	90	3000	1298.406	0.030207	0.577631	0.547425	1500	433.2235	1421.559	389.0983	0.512411	29.35897	181.6275	181.6275	212.143	17%	31.54806	0.550617	31.01606	0.541332	1354.156	1243.799	1.021145	1298.401	1409.186	272.8219	-0.00558
60	100	3000	1298.406	0.033587	0.577631	0.544044	1500	433.2235	1412.781	384.3075	0.511126	29.28535	197.6541	197.6541	232.1555	17%	31.69529	0.553187	31.16329	0.543902	1359.472	1238.681	1.021088	1298.447	1401.173	230.3727	0.040439
60	110	3000	1298.406	0.036972	0.577631	0.540659	1500	433.2235	1403.989	379.5396	0.509837	29.21152	213.5693	213.5693	252.1719	18%	31.84296	0.555764	31.31096	0.546479	1364.821	1233.546	1.021032	1298.5	1393.215	197.3171	0.094234
60	120	3000	1298.406	0.040363	0.577631	0.537269	1500	433.2235	1395.186	374.7947	0.508545	29.13748	229.3744	229.3744	272.1925	19%	31.99104	0.558349	31.45904	0.549064	1370.202	1228.394	1.020977	1298.562	1385.313	171.0616	0.155834
60	130	3000	1298.406	0.043758	0.577631	0.533873	1500	433.2235	1386.369	370.0728	0.507249	29.06322	245.0705	245.0705	292.2177	19%	32.13956	0.560941	31.60756	0.551656	1375.616	1223.225	1.020922	1298.631	1377.465	149.8513	0.225268
60	140	3000	1298.406	0.047158	0.577631	0.530473	1500	433.2235	1377.54	365.3742	0.505949	28.98875	260.6587	260.6587	312.2478	20%	32.2885	0.563541	31.7565	0.554256	1381.063	1218.038	1.020869	1298.709	1369.671	132.464	0.302566
60	150	3000	1298.406	0.050563	0.577631	0.527069	1500	433.2235	1368.698	360.6989	0.504646	28.91406	276.1402	276.1402	332.283	20%	32.43787	0.566148	31.90587	0.556863	1386.544	1212.833	1.020816	1298.794	1361.93	118.0275	0.387757
60	160	3000	1298.406	0.053972	0.577631	0.523659	1500	433.2235	1359.844	356.0471	0.503338	28.83916	291.5161	291.5161	352.3238	21%	32.58768	0.568762	32.05568	0.559477	1392.059	1207.61	1.020763	1298.887	1354.242	105.9052	0.480872
60	170	3000	1298.406	0.057387	0.577631	0.520244	1500	433.2235	1350.977	351.4189	0.502027	28.76405	306.7875	306.7875	372.3706	21%	32.73791	0.571384	32.20591	0.562099	1397.608	1202.369	1.020711	1298.988	1346.606	95.62407	0.58194
60	180	3000	1298.406	0.060807	0.577631	0.516825	1500	433.2235	1342.097	346.8144	0.500713	28.68871	321.9554	321.9554	392.4235	22%	32.88857	0.574014	32.35657	0.564729	1403.193	1197.109	1.02066	1299.097	1339.022	86.82623	0.690992
60	190	3000	1298.406	0.064231	0.577631	0.5134	1500	433.2235	1333.204	342.2337	0.499394	28.61316	337.0211	337.0211	412.483	22%	33.03967	0.576651	32.50767	0.567366	1408.812	1191.829	1.02061	1299.214	1331.489	79.23707	0.808057
60	200	3000	1298.406	0.06766	0.577631	0.509971	1500	433.2235	1324.299	337.677	0.498072	28.5374	351.9854	351.9854	432.5494	23%	33.1912	0.579296	32.6592	0.570011	1414.467	1186.531	1.02056	1299.339	1324.007	72.64289	0.933167
60	210	3000	1298.406	0.071094	0.577631	0.506537	1500	433.2235	1315.381	333.1444	0.496745	28.46142	366.8496	366.8496	452.623	23%	33.34317	0.581948	32.81117	0.572663	1420.158	1181.213	1.020511	1299.472	1316.575	66.8754	1.06635
60	220	3000	1298.406	0.074534	0.577631	0.503098	1500	433.2235	1306.45	328.6361	0.495415	28.38521	381.6146	381.6146	472.7042	24%	33.49557	0.584608	32.96357	0.575323	1425.885	1175.874	1.020463	1299.614	1309.193	61.80058	1.207638
60	230	3000	1298.406	0.077978	0.577631	0.499654	1500	433.2235	1297.507	324.1521	0.494082	28.30879	396.2815	396.2815	492.7933	24%	33.64841	0.587276	33.11641	0.57799	1431.649	1170.516	1.020415	1299.763	1301.859	57.3106	1.357062
60	240	3000	1298.406	0.081426	0.577631	0.496205	1500	433.2235	1288.551	319.6926	0.492744	28.23216	410.8513	410.8513	512.8907	25%	33.80169	0.589951	33.26969	0.580666	1437.45	1165.137	1.020368	1299.921	1294.574	53.31793	1.514651
60	40	3500	1514.807	0.011461	0.577631	0.56617	1750	505.4274	1715.277	485.5695	0.519502	29.76527	105.2842	105.2842	117.4833	12%	30.73546	0.536435	30.20346	0.52715	1545.967	1484.023	1.021473	1514.666	1697.358	1105.12	-0.14117
60	50	3500	1514.807	0.014335	0.577631	0.563296	1750	505.4274	1706.57	480.652	0.518418	29.70319	121.9615	121.9615	137.4803	13%	30.85962	0.538602	30.32762	0.529317	1551.107	1478.995	1.021421	1514.669	1689.019	823.5517	-0.13848
60	60	3500	1514.807	0.017213	0.577631	0.560418	1750	505.4274	1697.851	475.7536	0.517332	29.64095	138.5373	138.5373	157.4789	14%	30.9841	0.540775	30.4521	0.531489	1556.272	1473.953	1.021369	1514.678	1680.731	638.2672	-0.12926
60	70	3500	1514.807	0.020094	0.577631	0.557537	1750	505.4274	1689.122	470.8742	0.516243	29.57856	155.0127	155.0127	177.4795	14%	31.10888	0.542952	30.57688	0.533667	1561.465	1468.899	1.021319	1514.694	1672.494	509.8017	-0.1135
60	80	3500	1514.807	0.022979	0.577631	0.554652	1750	505.4274	1680.383	466.014	0.515152	29.51601	171.3886	171.3886	197.4822	15%	31.23397	0.545136	30.70197	0.53585	1566.684	1463.83	1.021268	1514.716	1664.306	417.0346	-0.09118
60	90	3500	1514.807	0.025867	0.577631	0.551764	1750	505.4274	1671.632	461.1731	0.514057	29.45331	187.6659	187.6659	217.4873	16%	31.35937	0.547324	30.82737	0.538039	1571.929	1458.748	1.021218	1514.745	1656.167	347.8287	-0.06227
60	100	3500	1514.807	0.028759	0.577631	0.548872	1750	505.4274	1662.87	456.3515	0.51296	29.39046	203.8454	203.8454	237.4951	17%	31.48508	0.549518	30.95308	0.540233	1577.202	1453.653	1.021169	1514.78	1648.077	294.8046	-0.02675
60	110	3500	1514.807	0.031655	0.577631	0.545977	1750	505.4274	1654.098	451.5494	0.511861	29.32745	219.928	219.928	257.5059	17%	31.61111	0.551718	31.07911	0.542433	1582.502	1448.543	1.02112	1514.822	1640.036	253.2648	0.015389
60	120	3500	1514.807	0.034554	0.577631	0.543077	1750	505.4274	1645.315	446.7667	0.510758	29.26428	235.9147	235.9147	277.5198	18%	31.73744	0.553923	31.20544	0.544638	1587.83	1443.418	1.021072	1514.871	1632.043	220.1031	0.064183
60	130	3500	1514.807	0.037457	0.577631	0.540175	1750	505.4274	1636.521	442.0037	0.509653	29.20096	251.8062	251.8062	297.537	18%	31.86409	0.556133	31.33209	0.546848	1593.185	1438.28	1.021024	1514.927	1624.097	193.1983	0.119648
60	140	3500	1514.807	0.040363	0.577631	0.537269	1750	505.4274	1627.716	437.2604	0.508545	29.13748	267.6035	267.6035	317.558	19%	31.99104	0.558349	31.45904	0.549064	1598.568	1433.127	1.020977	1514.989	1616.198	171.0616	0.181806
60	150	3500	1514.807	0.043273	0.577631	0.534359	1750	505.4274	1618.901	432.5369	0.507434	29.07384	283.3073	283.3073	337.5828	19%	32.11832	0.56057	31.58632	0.551285	1603.98	1427.959	1.02093	1515.058	1608.346	152.6232	0.25068
60	160	3500	1514.807	0.046186	0.577631	0.531445	1750	505.4274	1610.074	427.8333	0.506321	29.01005	298.9185	298.9185	357.6118	20%	32.2459	0.562797	31.7139	0.553512	1609.42	1422.775	1.020884	1515.133	1600.541	137.0978	0.326289
60	170	3500	1514.807	0.049103	0.577631	0.528528	1750	505.4274	1601.237	423.1497	0.505205	28.9461	314.438	314.438	377.6451	20%	32.3738	0.565029	31.8418	0.555744	1614.889	1417.577	1.020838	1515.216	1592.781	123.8985	0.408658
60	180	3500	1514.807	0.052023	0.577631	0.525608	1750	505.4274	1592.389	418.4861	0.504086	28.88199	329.8665	329.8665	397.6831	21%	32.50202	0.567267	31.97002	0.557982	1620.387	1412.363	1.020793	1515.305	1585.067	112.5796	0.497807
60	190	3500	1514.807	0.054948	0.577631	0.522684	1750	505.4274	1583.53	413.8427	0.502964	28.81772	345.205	345.205	417.726	21%	32.63056	0.569511	32.09856	0.560225	1625.914	1407.134	1.020748	1515.401	1577.398	102.7974	0.593758
60	200	3500	1514.807	0.057875	0.577631	0.519756	1750	505.4274	1574.66	409.2195	0.50184	28.7533	360.4541	360.4541	437.774	21%	32.75941	0.571759	32.22741	0.562474	1631.471	1401.888	1.020704	1515.504	1569.773	94.28361	0.696535
60	210	3500	1514.807	0.060807	0.577631	0.516825	1750	505.4274	1565.779	404.6167	0.500713	28.68871	375.6147	375.6147	457.8274	22%	32.88857	0.574014	32.35657	0.564729	1637.058	1396.627	1.02066	1515.613	1562.193	86.82623	0.806157
60	220	3500	1514.807	0.063742	0.577631	0.51389	1750	505.4274	1556.888	400.0344	0.499583	28.62397	390.6876	390.6876	477.8864	22%	33.01806	0.576274	32.48606	0.566989	1642.675	1391.349	1.020617	1515.73	1554.656	80.25588	0.922649
60	230	3500	1514.807	0.06668	0.577631	0.510951	1750	505.4274	1547.985	395.4726	0.49845	28.55907	405.6735	405.6735	497.9513	23%	33.14786	0.578539	32.61586	0.569254	1648.322	1386.054	1.020574	1515.853	1547.163	74.43595	1.046032
60	240	3500	1514.807	0.069622	0.577631	0.508009	1750	505.4274	1539.072	390.9314	0.497314	28.49401	420.5734	420.5734	518.0223	23%	33.27799	0.58081	32.74599	0.571525	1654	1380.743	1.020532	1515.983	1539.713	69.25523	1.176328
60	40	4000	1731.208	0.010025	0.577631	0.567606	2000	577.6313	1965.288	557.7546	0.520043	29.79626	110.7512	110.7512	122.8405	11%	30.67349	0.535353	30.14149	0.526068	1763.893	1698.894	1.021499	1731.048	1944.624	1304.436	-0.16009
60	50	4000	1731.208	0.012538	0.577631	0.565093	2000	577.6313	1956.587	552.8265	0.519096	29.74201	127.4859	127.4859	142.8366	12%	30.78198	0.537247	30.24998	0.527962	1769.018	1693.873	1.021453	1731.047	1936.257	984.455	-0.16105
60	60	4000	1731.208	0.015054	0.577631	0.562577	2000	577.6313	1947.876	547.915	0.518147	29.68764	144.1313	144.1313	162.834	13%	30.89071	0.539145	30.35871	0.529859	1774.166	1688.841	1.021408	1731.052	1927.934	770.1997	-0.15632
60	70	4000	1731.208	0.017573	0.577631	0.560058	2000	577.6313	1939.155	543.0201	0.517196	29.63316	160.6882	160.6882	182.833	14%	30.99968	0.541046	30.46768	0.531761	1779.337	1683.797	1.021363	1731.062	1919.656	619.6575	-0.14588
60	80	4000	1731.208	0.020094	0.577631	0.557537	2000	577.6313	1930.426	538.142	0.516243	29.57856	177.1574	177.1574	202.8337	14%	31.10888	0.542952	30.57688	0.533667	1784.531	1678.741	1.021319	1731.078	1911.421	509.8017	-0.12972
60	90	4000	1731.208	0.022618	0.577631	0.555013	2000	577.6313	1921.686	533.2806	0.515288	29.52384	193.5395	193.5395	222.8362	15%	31.21832	0.544862	30.68632	0.535577	1789.748	1673.674	1.021274	1731.1	1903.23	427.1504	-0.1078
60	100	4000	1731.208	0.025145	0.577631	0.552486	2000	577.6313	1912.938	528.436	0.514331	29.469	209.8352	209.8352	242.8409	16%	31.32799	0.546777	30.79599	0.537491	1794.989	1668.595	1.021231	1731.128	1895.082	363.382	-0.08013
60	110	4000	1731.208	0.027674	0.577631	0.549957	2000	577.6313	1904.18	523.6084	0.513372	29.41405	226.0451	226.0451	262.8479	16%	31.43791	0.548695	30.90591	0.53941	1800.253	1663.503	1.021187	1731.161	1886.977	313.1336	-0.04668
60	120	4000	1731.208	0.030207	0.577631	0.547425	2000	577.6313	1895.412	518.7977	0.512411	29.35897	242.17	242.17	282.8573	17%	31.54806	0.550617	31.01606	0.541332	1805.541	1658.399	1.021145	1731.201	1878.915	272.8219	-0.00744
60	130	4000	1731.208	0.032742	0.577631	0.54489	2000	577.6313	1886.635	514.0041	0.511447	29.30378	258.2106	258.2106	302.8694	17%	31.65844	0.552544	31.12644	0.543259	1810.853	1653.283	1.021102	1731.246	1870.895	239.9783	0.037608
60	140	4000	1731.208	0.035279	0.577631	0.542352	2000	577.6313	1877.849	509.2276	0.510482	29.24846	274.1674	274.1674	322.8843	18%	31.76907	0.554475	31.23707	0.54519	1816.19	1648.154	1.02106	1731.297	1862.916	212.8572	0.088483
60	150	4000	1731.208	0.03782	0.577631	0.539812	2000	577.6313	1869.053	504.4683	0.509515	29.19303	290.0412	290.0412	342.9022	18%	31.87994	0.55641	31.34794	0.547125	1821.55	1643.013	1.021018	1731.353	1854.979	190.1957	0.145202

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
60	160	4000	1731.208	0.040363	0.577631	0.537269	2000	577.6313	1860.247	499.7262	0.508545	29.13748	305.8325	305.8325	362.9234	19%	31.99104	0.558349	31.45904	0.549064	1826.935	1637.859	1.020977	1731.416	1847.084	171.0616	0.207779
60	170	4000	1731.208	0.042909	0.577631	0.534723	2000	577.6313	1851.432	495.0015	0.507573	29.0818	321.5422	321.5422	382.948	19%	32.10239	0.560292	31.57039	0.551007	1832.345	1632.692	1.020936	1731.484	1839.229	154.7548	0.276231
60	180	4000	1731.208	0.045457	0.577631	0.532174	2000	577.6313	1842.608	490.2941	0.506599	29.02601	337.1707	337.1707	402.9762	20%	32.21398	0.56224	31.68198	0.552955	1837.78	1627.512	1.020895	1731.559	1831.415	140.7409	0.350576
60	190	4000	1731.208	0.048009	0.577631	0.529623	2000	577.6313	1833.774	485.6042	0.505624	28.9701	352.7187	352.7187	423.0081	20%	32.3258	0.564192	31.7938	0.554907	1843.24	1622.318	1.020855	1731.639	1823.641	128.6065	0.43083
60	200	4000	1731.208	0.050563	0.577631	0.527069	2000	577.6313	1824.931	480.9319	0.504646	28.91406	368.187	368.187	443.044	20%	32.43787	0.566148	31.90587	0.556863	1848.725	1617.111	1.020816	1731.725	1815.907	118.0275	0.51701
60	210	4000	1731.208	0.05312	0.577631	0.524512	2000	577.6313	1816.078	476.2771	0.503665	28.85791	383.576	383.576	463.0841	21%	32.55019	0.568108	32.01819	0.558823	1854.236	1611.89	1.020776	1731.817	1808.212	108.747	0.609132
60	220	4000	1731.208	0.055679	0.577631	0.521952	2000	577.6313	1807.216	471.64	0.502683	28.80163	398.8864	398.8864	483.1286	21%	32.66274	0.570072	32.13074	0.560787	1859.773	1606.656	1.020737	1731.915	1800.557	100.5591	0.707214
60	230	4000	1731.208	0.058242	0.577631	0.51939	2000	577.6313	1798.344	467.0207	0.501699	28.74523	414.1188	414.1188	503.1776	22%	32.77553	0.572041	32.24353	0.562756	1865.335	1601.407	1.020699	1732.019	1792.941	93.2975	0.811271
60	240	4000	1731.208	0.060807	0.577631	0.516825	2000	577.6313	1789.462	462.4191	0.500713	28.68871	429.2739	429.2739	523.2313	22%	32.88857	0.574014	32.35657	0.564729	1870.924	1596.145	1.02066	1732.129	1785.363	86.82623	0.921323
60	40	4500	1947.609	0.008909	0.577631	0.568722	2250	649.8352	2215.296	629.9439	0.520463	29.82033	116.1954	116.1954	128.1979	10%	30.62534	0.534513	30.09334	0.525228	1981.825	1913.763	1.021519	1947.432	2191.902	1499.847	-0.17757
60	50	4500	1947.609	0.011142	0.577631	0.566489	2250	649.8352	2206.6	625.0076	0.519622	29.77216	132.9749	132.9749	148.1934	11%	30.72168	0.536194	30.18968	0.526909	1986.939	1908.747	1.021479	1947.428	2183.513	1145.211	-0.18137
60	60	4500	1947.609	0.013377	0.577631	0.564255	2250	649.8352	2197.895	620.086	0.51878	29.7239	149.6747	149.6747	168.19	12%	30.8182	0.537879	30.2862	0.528594	1992.073	1903.722	1.021438	1947.429	2175.163	903.9157	-0.18013
60	70	4500	1947.609	0.015614	0.577631	0.562018	2250	649.8352	2189.181	615.1791	0.517936	29.67555	166.2955	166.2955	188.1878	13%	30.91491	0.539567	30.38291	0.530282	1997.228	1898.686	1.021398	1947.435	2166.852	732.2576	-0.17381
60	80	4500	1947.609	0.017853	0.577631	0.559778	2250	649.8352	2180.459	610.287	0.51709	29.6271	182.8378	182.8378	208.1871	14%	31.0118	0.541258	30.4798	0.531973	2002.402	1893.64	1.021358	1947.447	2158.581	605.7496	-0.16242
60	90	4500	1947.609	0.020094	0.577631	0.557537	2250	649.8352	2171.729	605.4097	0.516243	29.57856	199.3021	199.3021	228.1879	14%	31.10888	0.542952	30.57688	0.533667	2007.598	1888.584	1.021319	1947.463	2150.349	509.8017	-0.14593
60	100	4500	1947.609	0.022338	0.577631	0.555294	2250	649.8352	2162.99	600.5474	0.515394	29.52993	215.689	215.689	248.1903	15%	31.20615	0.54465	30.67415	0.535365	2012.814	1883.517	1.021279	1947.485	2142.156	435.2804	-0.12434
60	110	4500	1947.609	0.024583	0.577631	0.553048	2250	649.8352	2154.243	595.7	0.514544	29.4812	231.999	231.999	268.1946	16%	31.3036	0.546351	30.7716	0.537066	2018.05	1878.44	1.02124	1947.512	2134	376.2295	-0.09763
60	120	4500	1947.609	0.026831	0.577631	0.5508	2250	649.8352	2145.488	590.8677	0.513692	29.43238	248.2327	248.2327	288.2009	16%	31.40124	0.548055	30.86924	0.53877	2023.308	1873.352	1.021202	1947.543	2125.884	328.6299	-0.06579
60	130	4500	1947.609	0.029081	0.577631	0.54855	2250	649.8352	2136.724	586.0504	0.512838	29.38346	264.3906	264.3906	308.2094	17%	31.49907	0.549762	30.96707	0.540477	2028.587	1868.253	1.021164	1947.58	2117.805	289.6897	-0.0288
60	140	4500	1947.609	0.031333	0.577631	0.546298	2250	649.8352	2127.952	581.2483	0.511983	29.33446	280.4732	280.4732	328.2201	17%	31.59709	0.551473	31.06509	0.542188	2033.887	1863.143	1.021126	1947.622	2109.763	257.42	0.013344
60	150	4500	1947.609	0.033587	0.577631	0.544044	2250	649.8352	2119.171	576.4613	0.511126	29.28535	296.4811	296.4811	348.2333	17%	31.69529	0.553187	31.16329	0.543902	2039.208	1858.022	1.021088	1947.67	2101.759	230.3727	0.060658
60	160	4500	1947.609	0.035843	0.577631	0.541788	2250	649.8352	2110.382	571.6895	0.510267	29.23616	312.4148	312.4148	368.249	18%	31.79369	0.554905	31.26169	0.545619	2044.551	1852.89	1.021051	1947.722	2093.793	207.4731	0.113155
60	170	4500	1947.609	0.038102	0.577631	0.539529	2250	649.8352	2101.584	566.9331	0.509407	29.18686	328.2748	328.2748	388.2675	18%	31.89227	0.556625	31.36027	0.54734	2049.916	1847.746	1.021014	1947.78	2085.863	187.91	0.170848
60	180	4500	1947.609	0.040363	0.577631	0.537269	2250	649.8352	2092.778	562.192	0.508545	29.13748	344.0616	344.0616	408.2888	19%	31.99104	0.558349	31.45904	0.549064	2055.302	1842.591	1.020977	1947.843	2077.969	171.0616	0.233751
60	190	4500	1947.609	0.042626	0.577631	0.535006	2250	649.8352	2083.964	557.4663	0.507681	29.088	359.7757	359.7757	428.3132	19%	32.09001	0.560076	31.55801	0.550791	2060.711	1837.425	1.020941	1947.911	2070.112	156.4448	0.301877
60	200	4500	1947.609	0.044891	0.577631	0.532741	2250	649.8352	2075.141	552.756	0.506816	29.03842	375.4177	375.4177	448.3408	19%	32.18916	0.561807	31.65716	0.552522	2066.141	1832.247	1.020904	1947.984	2062.291	143.6797	0.375238
60	210	4500	1947.609	0.047158	0.577631	0.530473	2250	649.8352	2066.31	548.0613	0.505949	28.98875	390.9881	390.9881	468.3717	20%	32.2885	0.563541	31.7565	0.554256	2071.594	1827.057	1.020869	1948.063	2054.506	132.464	0.453849
60	220	4500	1947.609	0.049427	0.577631	0.528204	2250	649.8352	2057.47	543.3821	0.505081	28.93898	406.4873	406.4873	488.406	20%	32.38804	0.565278	31.85604	0.555993	2077.07	1821.855	1.020833	1948.147	2046.756	122.555	0.537722
60	230	4500	1947.609	0.051699	0.577631	0.525933	2250	649.8352	2048.622	538.7185	0.50421	28.88912	421.9158	421.9158	508.444	21%	32.48776	0.567018	31.95576	0.557733	2082.568	1816.641	1.020798	1948.236	2039.042	113.7558	0.626871
60	240	4500	1947.609	0.053972	0.577631	0.523659	2250	649.8352	2039.765	534.0706	0.503338	28.83916	437.2742	437.2742	528.4858	21%	32.58768	0.568762	32.05568	0.559477	2088.088	1811.415	1.020763	1948.33	2031.363	105.9052	0.721308
60	40	5000	2164.01	0.008017	0.577631	0.569614	2500	722.0391	2465.303	702.1362	0.520799	29.83957	121.6236	121.6236	133.5555	10%	30.58686	0.533841	30.05486	0.524556	2199.761	2128.629	1.021536	2163.816	2439.188	1690.069	-0.19403
60	50	5000	2164.01	0.010025	0.577631	0.567606	2500	722.0391	2456.61	697.1933	0.520043	29.79626	138.4391	138.4391	153.5506	11%	30.67349	0.535353	30.14149	0.526068	2204.866	2123.618	1.021499	2163.81	2430.78	1304.436	-0.20011
60	60	5000	2164.01	0.012036	0.577631	0.565596	2500	722.0391	2447.91	692.2635	0.519286	29.75287	155.1826	155.1826	173.5466	12%	30.76026	0.536868	30.22826	0.527583	2209.989	2118.598	1.021462	2163.809	2422.409	1038.135	-0.20165
60	70	5000	2164.01	0.014048	0.577631	0.563584	2500	722.0391	2439.201	687.347	0.518527	29.7094	171.8547	171.8547	193.5436	13%	30.84719	0.538385	30.31519	0.5291	2215.13	2113.569	1.021426	2163.812	2414.073	846.4806	-0.19863
60	80	5000	2164.01	0.016061	0.577631	0.56157	2500	722.0391	2430.486	682.4438	0.517767	29.66586	188.4558	188.4558	213.5418	13%	30.93427	0.539905	30.40227	0.53062	2220.29	2108.531	1.02139	2163.819	2405.772	703.9161	-0.19104
60	90	5000	2164.01	0.018077	0.577631	0.559554	2500	722.0391	2421.763	677.554	0.517006	29.62225	204.9864	204.9864	233.5412	14%	31.0215	0.541427	30.4895	0.532142	2225.468	2103.483	1.021354	2163.831	2397.507	594.9632	-0.17889
60	100	5000	2164.01	0.020094	0.577631	0.557537	2500	722.0391	2413.032	672.6775	0.516243	29.57856	221.4468	221.4468	253.5421	14%	31.10888	0.542952	30.57688	0.533667	2230.664	2098.427	1.021319	2163.848	2389.277	509.8017	-0.16214
60	110	5000	2164.01	0.022113	0.577631	0.555518	2500	722.0391	2404.294	667.8144	0.515479	29.53479	237.8375	237.8375	273.5445	15%	31.19641	0.54448	30.66441	0.535195	2235.879	2093.36	1.021283	2163.869	2381.081	441.9563	-0.14081
60	120	5000	2164.01	0.024134	0.577631	0.553497	2500	722.0391	2395.548	662.9648	0.514714	29.49095	254.159	254.159	293.5485	15%	31.28409	0.54601	30.75209	0.536725	2241.113	2088.285	1.021248	2163.895	2372.92	387.016	-0.11487
60	130	5000	2164.01	0.026156	0.577631	0.551475	2500	722.0391	2386.795	658.1287	0.513948	29.44704	270.4117	270.4117	313.5543	16%	31.37193	0.547543	30.83993	0.538258	2246.365	2083.199	1.021213	2163.926	2364.794	341.892	-0.08431
60	140	5000	2164.01	0.028181	0.577631	0.549451	2500	722.0391	2378.034	653.3061	0.51318	29.40304	286.5961	286.5961	333.5619	16%	31.45992	0.549079	30.92792	0.539794	2251.636	2078.104	1.021179	2163.961	2356.702	304.3683	-0.04912
60	150	5000	2164.01	0.030207	0.577631	0.547425	2500	722.0391	2369.265	648.4972	0.512411	29.35897	302.7125	302.7125	353.5716	17%	31.54806	0.550617	31.01606	0.541332	2256.927	2072.999	1.021145	2164.001	2348.644	272.8219	-0.0093
60	160	5000	2164.01	0.032234	0.577631	0.545397	2500	722.0391	2360.489	643.7018	0.51164	29.31483	318.7615	318.7615	373.5834	17%	31.63635	0.552158	31.10435	0.542873	2262.236	2067.884	1.021111	2164.045	2340.619	246.0415	0.035165
60	170	5000	2164.01	0.034264	0.577631	0.543367	2500	722.0391	2351.706	638.9202	0.510868	29.2706	334.7433	334.7433	393.5975	18%	31.72479	0.553702	31.19279	0.544417	2267.565	2062.759	1.021077	2164.094	2332.628	223.1085	0.084291
60	180	5000	2164.01	0.036295	0.577631	0.541336	2500	722.0391	2342.914	634.1523	0.510095	29.22631	350.6585	350.6585	413.6139	18%	31.81339	0.555248	31.28139	0.545963	2272.914	2057.624	1.021043	2164.148	2324.671	203.3158	0.138086
60	190	5000	2164.01	0.038328	0.577631	0.539303	2500	722.0391	2334.116	629.3981	0.509321	29.18193	366.5075	366.5075	433.6328	18%	31.90214	0.556797	31.37014	0.547512	2278.282	2052.479	1.02101	2164.207	2316.746	186.112	0.19656
60	200	5000	2164.01	0.040363	0.577631	0.537269	2500	722.0391	2325.309	624.6578	0.508545	29.13748	382.2907	382.2907	453.6542	19%	31.99104	0.558349	31.45904	0.549064	2283.669	2047.324	1.020977	2164.27	2308.855	171.0616	0.259723
60	210	5000	2164.01	0.042399	0.577631	0.535232	2500	722.0391	2316.495	619.9313	0.507768	29.09295	398.0084	398.0084	473.6785	19%	32.0801	0.559903	31.5481	0.550618	2289.077	2042.158	1.020944	2164.338	2300.996	157.8176	0.327588
60	220	5000	2164.01	0.044437	0.577631	0.533194	2500	722.0391	2307.674	615.2187	0.506989	29.04834	413.6612	413.6612	493.7055	19%	32.16931	0.56146	31.63731	0.552175	2294.504	2036.982	1.020912	2164.41	2293.169	146.1001	0.400163
60	230	5000	2164.01	0.046477	0.577631	0.531154	2500	722.0391	2298.845	610.5201	0.506209	29.00366	429.2494	429.2494	513.7356	20%	32.25868	0.56302	31.72668	0.553735	2299.951	2031.795	1.020879	2164.488	2285.375	135.6815	0.47746
60	240	5000	2164.01	0.048519	0.577631	0.529112	2500	722.0391	2290.008	605.8354	0.505428	28.9589	444.7734	444.7734	533.7687	20%	32.3482	0.564583	31.8162	0.555297	2305.419	2026.597	1.020847	2164.57	2277.613	126.3753	0.559489
60	40	5500	2380.411	0.007287	0.577631	0.570344	2750	794.243	2715.309	774.3306	0.521073	29.8553	127.04	127.04	138.9133	9%	30.5554	0.533292	30.0234	0.524007	2417.7	2343.494	1.021549	2380.201	2686.48	1874.322	-0.20977
60	50	5500	2380.411	0.009112	0.577631	0.568519	2750	794.243	2706.619	769.3823	0.520387	29.81595	143.8851	143.8851	158.908	10%	30.63409	0.534666	30.10209	0.525381	2422.798	2338.486	1.021516	2380.193	2678.057	1461.147	-0.2177
60	60	5500	2380.411	0.010939	0.577631	0.566692	2750	794.243	2697.922	764.4459	0.519699	29.77654	160.6645	160.6645	178.9035	11%	30.71291	0.536041	30.18091	0.526756	2427.912	2333.471	1.021482	2380.19	2669.668	1171.886	-0.22151
60	70	5500	2380.411	0.012767	0.577631	0.564864	2750	794.243	2689.218	759.5216	0.51901	29.73707	177.3788	177.3788	198.8999	12%	30.79186	0.537419	30.25986	0.528134	2433.042	2328.447	1.021449	2380.19	2661.311	961.4395	-0.22118
60	80	5500	2380.411	0.014597	0.577631	0.563035	2750	794.243	2680.508	754.6093	0.51832	29.69754	194.0283	194.0283	218.8973	13%	30.87093	0.538799	30.33893	0.529514	2438.189	2323.416	1.021416	2380.194	2652.986	803.5176	-0.21671
60	90	5500	2380.411	0.016428	0.577631	0.561204	2750	794.243	2671.79	749.7092	0.517629	29.65794	210.6133	210.6133	238.8957	13%	30.95012	0.540181	30.41812	0.530896	2443.353	2318.375	1.021383	2380.203	2644.693	681.9522	-0.20809
60	100	5500	2380.411	0.01826	0.577631	0.559371	2750	794.243	2663.066	744.8211	0.516937	29.61828	227.1342	227.1342	258.8954	14%	31.02944	0.541566	30.49744	0.532281	2448.533	2313.327	1.021351	2380.216	2636.433	586.3545	-0.19531
60	110	5500	2380.411	0.020094	0.577631	0.557537	2750	794.243	2654.335	739.9452	0.516243	29.57856	243.5914	243.5914	278.8963	14%	31.10888	0.542952	30.57688	0.533667	2453.73	2308.269	1.021319	2380.233	2628.204	509.8017	-0.17836
60	120	5500	2380.411	0.02193	0.577631	0.555702	2750	794.243	2645.597	735.0815	0.515549	29.53878	259.9853	259.9853	298.8986	15%	31.18845	0.544341	30.65645	0.535056	2458.944	2303.204	1.021286	2380.254	2620.007	447.5357	-0.15723
60	130	5500	2380.411	0.023766	0.577631	0.553865	2750	794.243	2636.853	730.2301	0.514853	29.49893	276.3163	276.3163	318.9024	15%	31.26814	0.545732	30.73614	0.536447	2464.176	2298.129	1.021255	2380.279	2611.842	396.1982	-0.13192
60	140	5500	2380.411	0.025605	0.577631	0.552027	2750	794.243	2628.101	725.3909	0.514157	29.45902	292.5846	292.5846	338.9078	16%	31.34796	0.547125	30.81596	0.53784	2469.424	2293.046	1.021223	2380.309	2603.708	353.3642	-0.10241

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
60	150	5500	2380.411	0.027444	0.577631	0.550187	2750	794.243	2619.342	720.564	0.513459	29.41905	308.7906	308.7906	358.9148	16%	31.4279	0.54852	30.8959	0.539235	2474.689	2287.954	1.021191	2380.342	2595.605	317.2467	-0.0687
60	160	5500	2380.411	0.029285	0.577631	0.548346	2750	794.243	2610.577	715.7495	0.512761	29.37901	324.9348	324.9348	378.9237	17%	31.50797	0.549918	30.97597	0.540633	2479.972	2282.853	1.02116	2380.38	2587.533	286.5055	-0.03078
60	170	5500	2380.411	0.031128	0.577631	0.546503	2750	794.243	2601.805	710.9473	0.512061	29.33892	341.0174	341.0174	398.9344	17%	31.58817	0.551318	31.05617	0.542032	2485.272	2277.743	1.021129	2380.423	2579.491	260.1191	0.011366
60	180	5500	2380.411	0.032972	0.577631	0.544659	2750	794.243	2593.026	706.1576	0.51136	29.29875	357.0389	357.0389	418.9471	17%	31.66849	0.552719	31.13649	0.543434	2490.589	2272.624	1.021098	2380.469	2571.481	237.2982	0.057738
60	190	5500	2380.411	0.034818	0.577631	0.542814	2750	794.243	2584.24	701.3803	0.510658	29.25853	372.9995	372.9995	438.9619	18%	31.74894	0.554124	31.21694	0.544838	2495.924	2267.496	1.021068	2380.52	2563.5	217.4247	0.108349
60	200	5500	2380.411	0.036665	0.577631	0.540967	2750	794.243	2575.447	696.6155	0.509955	29.21824	388.8996	388.8996	458.9788	18%	31.82951	0.55553	31.29751	0.546245	2501.277	2262.359	1.021037	2380.574	2555.55	200.0094	0.163206
60	210	5500	2380.411	0.038513	0.577631	0.539118	2750	794.243	2566.647	691.8633	0.50925	29.17789	404.7396	404.7396	478.9981	18%	31.91022	0.556938	31.37822	0.547653	2506.648	2257.212	1.021007	2380.633	2547.63	184.6605	0.222319
60	220	5500	2380.411	0.040363	0.577631	0.537269	2750	794.243	2557.84	687.1235	0.508545	29.13748	420.5197	420.5197	499.0197	19%	31.99104	0.558349	31.45904	0.549064	2512.036	2252.056	1.020977	2380.697	2539.74	171.0616	0.285696
60	230	5500	2380.411	0.042214	0.577631	0.535417	2750	794.243	2549.027	682.3964	0.507838	29.097	436.2405	436.2405	519.0438	19%	32.072	0.559762	31.54	0.550477	2517.443	2246.891	1.020947	2380.765	2531.88	158.9547	0.353346
60	240	5500	2380.411	0.044067	0.577631	0.533565	2750	794.243	2540.206	677.6819	0.507131	29.05646	451.9021	451.9021	539.0704	19%	32.15308	0.561177	31.62108	0.551892	2522.867	2241.716	1.020918	2380.836	2524.049	148.1279	0.425278
60	40	6000	2596.812	0.006679	0.577631	0.570953	3000	866.447	2965.313	846.5266	0.521302	29.8684	132.4477	132.4477	144.2712	9%	30.52919	0.532835	29.99719	0.52355	2635.642	2558.357	1.021561	2596.587	2933.776	2052.172	-0.22496
60	50	6000	2596.812	0.008351	0.577631	0.56928	3000	866.447	2956.626	841.5738	0.520673	29.83236	149.3174	149.3174	164.2656	10%	30.60129	0.534093	30.06929	0.524808	2640.733	2553.353	1.02153	2596.578	2925.341	1614.662	-0.23443
60	60	6000	2596.812	0.010025	0.577631	0.567606	3000	866.447	2947.932	836.6319	0.520043	29.79626	166.1269	166.1269	184.2607	11%	30.67349	0.535353	30.14149	0.526068	2645.84	2548.341	1.021499	2596.572	2916.937	1304.436	-0.24013
60	70	6000	2596.812	0.0117	0.577631	0.565931	3000	866.447	2939.232	831.7011	0.519412	29.7601	182.8764	182.8764	204.2566	12%	30.74579	0.536615	30.21379	0.52733	2650.961	2543.322	1.021468	2596.57	2908.562	1076.433	-0.24205
60	80	6000	2596.812	0.013377	0.577631	0.564255	3000	866.447	2930.526	826.7813	0.51878	29.7239	199.5663	199.5663	224.2533	12%	30.8182	0.537879	30.2862	0.528594	2656.098	2538.296	1.021438	2596.572	2900.217	903.9157	-0.24017
60	90	6000	2596.812	0.015054	0.577631	0.562577	3000	866.447	2921.814	821.8725	0.518147	29.68764	216.197	216.197	244.251	13%	30.89071	0.539145	30.35871	0.529859	2661.25	2533.261	1.021408	2596.578	2891.902	770.1997	-0.23449
60	100	6000	2596.812	0.016733	0.577631	0.560898	3000	866.447	2913.095	816.9749	0.517513	29.65133	232.7686	232.7686	264.2497	14%	30.96333	0.540412	30.43133	0.531127	2666.417	2528.219	1.021378	2596.587	2883.616	664.437	-0.225
60	110	6000	2596.812	0.018413	0.577631	0.559218	3000	866.447	2904.37	812.0884	0.516879	29.61497	249.2815	249.2815	284.2495	14%	31.03605	0.541681	30.50405	0.532396	2671.599	2523.17	1.021348	2596.6	2875.359	579.325	-0.2117
60	120	6000	2596.812	0.020094	0.577631	0.557537	3000	866.447	2895.638	807.213	0.516243	29.57856	265.7361	265.7361	304.2505	14%	31.10888	0.542952	30.57688	0.533667	2676.797	2518.112	1.021319	2596.618	2867.132	509.8017	-0.19457
60	130	6000	2596.812	0.021777	0.577631	0.555855	3000	866.447	2886.901	802.3488	0.515607	29.54209	282.1326	282.1326	324.2527	15%	31.18181	0.544225	30.64981	0.53494	2682.01	2513.047	1.021289	2596.639	2858.934	452.2679	-0.17362
60	140	6000	2596.812	0.02346	0.577631	0.554171	3000	866.447	2878.157	797.4958	0.514969	29.50558	298.4714	298.4714	344.2563	15%	31.25485	0.5455	30.72285	0.536215	2687.239	2507.973	1.02126	2596.663	2850.764	404.1076	-0.14883
60	150	6000	2596.812	0.025145	0.577631	0.552486	3000	866.447	2869.407	792.6541	0.514331	29.469	314.7527	314.7527	364.2614	16%	31.32799	0.546777	30.79599	0.537491	2692.484	2502.892	1.021231	2596.692	2842.624	363.382	-0.1202
60	160	6000	2596.812	0.026831	0.577631	0.5508	3000	866.447	2860.65	787.8236	0.513692	29.43238	330.9769	330.9769	384.2679	16%	31.40124	0.548055	30.86924	0.53877	2697.744	2497.802	1.021202	2596.724	2834.512	328.6299	-0.08771
60	170	6000	2596.812	0.028518	0.577631	0.549113	3000	866.447	2851.887	783.0044	0.513052	29.3957	347.1443	347.1443	404.2761	16%	31.4746	0.549335	30.9426	0.54005	2703.02	2492.705	1.021173	2596.761	2826.428	298.7325	-0.05137
60	180	6000	2596.812	0.030207	0.577631	0.547425	3000	866.447	2843.118	778.1966	0.512411	29.35897	363.255	363.255	424.2859	17%	31.54806	0.550617	31.01606	0.541332	2708.312	2487.599	1.021145	2596.801	2818.372	272.8219	-0.01116
60	190	6000	2596.812	0.031896	0.577631	0.545735	3000	866.447	2834.343	773.4001	0.511769	29.32219	379.3096	379.3096	444.2976	17%	31.62162	0.551901	31.08962	0.542616	2713.62	2482.485	1.021116	2596.845	2810.345	250.2159	0.032916
60	200	6000	2596.812	0.033587	0.577631	0.544044	3000	866.447	2825.561	768.615	0.511126	29.28535	395.3082	395.3082	464.311	17%	31.69529	0.553187	31.16329	0.543902	2718.944	2477.363	1.021088	2596.893	2802.346	230.3727	0.080877
60	210	6000	2596.812	0.035279	0.577631	0.542352	3000	866.447	2816.773	763.8414	0.510482	29.24846	411.2511	411.2511	484.3264	18%	31.76907	0.554475	31.23707	0.54519	2724.285	2472.232	1.02106	2596.945	2794.374	212.8572	0.132725
60	220	6000	2596.812	0.036972	0.577631	0.540659	3000	866.447	2807.979	759.0792	0.509837	29.21152	427.1386	427.1386	504.3438	18%	31.84296	0.555764	31.31096	0.546479	2729.641	2467.093	1.021032	2597.001	2786.431	197.3171	0.188468
60	230	6000	2596.812	0.038667	0.577631	0.538964	3000	866.447	2799.178	754.3285	0.509192	29.17453	442.9711	442.9711	524.3634	18%	31.91695	0.557056	31.38495	0.547771	2735.014	2461.945	1.021004	2597.06	2778.514	183.4644	0.248113
60	240	6000	2596.812	0.040363	0.577631	0.537269	3000	866.447	2790.371	749.5893	0.508545	29.13748	458.7488	458.7488	544.3851	19%	31.99104	0.558349	31.45904	0.549064	2740.403	2456.788	1.020977	2597.124	2770.626	171.0616	0.311668
60	40	6500	2813.213	0.006164	0.577631	0.571467	3250	938.6509	3215.317	918.7238	0.521495	29.87948	137.8486	137.8486	149.6291	9%	30.50703	0.532448	29.97503	0.523163	2853.584	2773.22	1.02157	2812.973	3181.076	2223.424	-0.23972
60	50	6500	2813.213	0.007708	0.577631	0.569923	3250	938.6509	3206.632	913.7672	0.520915	29.84623	154.7392	154.7392	169.6233	10%	30.57355	0.533609	30.04155	0.524324	2858.671	2768.218	1.021542	2812.963	3172.63	1764.517	-0.2505
60	60	6500	2813.213	0.009253	0.577631	0.568379	3250	938.6509	3197.941	908.8207	0.520334	29.81292	171.5741	171.5741	189.6181	11%	30.64015	0.534772	30.10815	0.525486	2863.771	2763.21	1.021513	2812.955	3164.213	1435.235	-0.2578
60	70	6500	2813.213	0.010798	0.577631	0.566833	3250	938.6509	3189.244	903.8843	0.519752	29.77958	188.3536	188.3536	209.6136	11%	30.70685	0.535936	30.17485	0.52665	2868.885	2758.195	1.021485	2812.952	3155.823	1190.91	-0.26161
60	80	6500	2813.213	0.012345	0.577631	0.565286	3250	938.6509	3180.541	898.9582	0.519169	29.74619	205.0779	205.0779	229.6098	12%	30.77363	0.537101	30.24163	0.527816	2874.013	2753.172	1.021457	2812.951	3147.461	1004.591	-0.26192
60	90	6500	2813.213	0.013893	0.577631	0.563738	3250	938.6509	3171.833	894.0422	0.518585	29.71275	221.7472	221.7472	249.6069	13%	30.8405	0.538268	30.3085	0.528983	2879.155	2748.143	1.021429	2812.954	3139.126	859.2318	-0.25873
60	100	6500	2813.213	0.015442	0.577631	0.56219	3250	938.6509	3163.119	889.1364	0.518001	29.67927	238.3619	238.3619	269.6048	13%	30.90746	0.539437	30.37546	0.530152	2884.311	2743.107	1.021401	2812.961	3130.819	743.6232	-0.25202
60	110	6500	2813.213	0.016991	0.577631	0.56064	3250	938.6509	3154.399	884.2409	0.517416	29.64574	254.9223	254.9223	289.6037	14%	30.97451	0.540607	30.44251	0.531322	2889.481	2738.063	1.021373	2812.971	3122.539	650.1465	-0.2418
60	120	6500	2813.213	0.018542	0.577631	0.559089	3250	938.6509	3145.673	879.3557	0.51683	29.61217	271.4285	271.4285	309.6037	14%	31.04165	0.541779	30.50965	0.532494	2894.665	2733.013	1.021346	2812.985	3114.286	573.477	-0.22806
60	130	6500	2813.213	0.020094	0.577631	0.557537	3250	938.6509	3136.942	874.4807	0.516243	29.57856	287.8808	287.8808	329.6047	14%	31.10888	0.542952	30.57688	0.533667	2899.863	2727.955	1.021319	2813.002	3106.06	509.8017	-0.21079
60	140	6500	2813.213	0.021647	0.577631	0.555984	3250	938.6509	3128.204	869.6161	0.515656	29.5449	304.2796	304.2796	349.6069	15%	31.1762	0.544127	30.6442	0.534842	2905.076	2722.89	1.021291	2813.023	3097.86	456.3323	-0.18998
60	150	6500	2813.213	0.023201	0.577631	0.55443	3250	938.6509	3119.461	864.7618	0.515068	29.5112	320.625	320.625	369.6103	15%	31.24361	0.545304	30.71161	0.536019	2910.303	2717.817	1.021264	2813.048	3089.688	410.9907	-0.16564
60	160	6500	2813.213	0.024756	0.577631	0.552875	3250	938.6509	3110.712	859.9179	0.514479	29.47745	336.9173	336.9173	389.6151	16%	31.3111	0.546482	30.7791	0.537197	2915.545	2712.737	1.021237	2813.075	3081.541	372.2031	-0.13774
60	170	6500	2813.213	0.026312	0.577631	0.551319	3250	938.6509	3101.957	855.0844	0.513889	29.44365	353.1568	353.1568	409.6212	16%	31.37869	0.547661	30.84669	0.538376	2920.801	2707.65	1.021211	2813.107	3073.422	338.7595	-0.1063
60	180	6500	2813.213	0.027869	0.577631	0.549762	3250	938.6509	3093.197	850.2613	0.513298	29.40982	369.3438	369.3438	429.6288	16%	31.44637	0.548843	30.91437	0.539558	2926.071	2702.555	1.021184	2813.142	3065.328	309.717	-0.07129
60	190	6500	2813.213	0.029427	0.577631	0.548204	3250	938.6509	3084.43	845.4487	0.512707	29.37593	385.4785	385.4785	449.6379	17%	31.51414	0.550025	30.98214	0.54074	2931.357	2697.453	1.021158	2813.18	3057.261	284.3324	-0.03272
60	200	6500	2813.213	0.030986	0.577631	0.546645	3250	938.6509	3075.658	840.6465	0.512115	29.342	401.5611	401.5611	469.6487	17%	31.582	0.55121	31.05	0.541925	2936.657	2692.343	1.021131	2813.223	3049.219	262.0133	0.009424
60	210	6500	2813.213	0.032546	0.577631	0.545085	3250	938.6509	3066.88	835.8549	0.511522	29.30803	417.5919	417.5919	489.661	17%	31.64994	0.552396	31.11794	0.543111	2941.972	2687.225	1.021105	2813.268	3041.204	242.2828	0.055145
60	220	6500	2813.213	0.034108	0.577631	0.543524	3250	938.6509	3058.096	831.0738	0.510928	29.27401	433.5712	433.5712	509.6752	18%	31.71798	0.553583	31.18598	0.544298	2947.301	2682.1	1.021079	2813.318	3033.214	224.7532	0.104451
60	230	6500	2813.213	0.03567	0.577631	0.541961	3250	938.6509	3049.306	826.3032	0.510333	29.23994	449.4992	449.4992	529.6911	18%	31.78611	0.554772	31.25411	0.545487	2952.646	2676.967	1.021054	2813.371	3025.25	209.1071	0.157347
60	240	6500	2813.213	0.037233	0.577631	0.540398	3250	938.6509	3040.511	821.5432	0.509738	29.20583	465.3761	465.3761	549.7089	18%	31.85433	0.555963	31.32233	0.546678	2958.005	2671.826	1.021028	2813.427	3017.312	195.0826	0.213839
60	40	7000	3029.614	0.005723	0.577631	0.571908	3500	1010.855	3465.32	990.9219	0.521661	29.88898	143.2441	143.2441	154.987	8%	30.48804	0.532117	29.95604	0.522832	3071.529	2988.082	1.021578	3029.36	3428.378	2388.045	-0.25415
60	50	7000	3029.614	0.007157	0.577631	0.570475	3500	1010.855	3456.637	985.9621	0.521122	29.85811	160.1527	160.1527	174.9811	9%	30.54978	0.533194	30.01778	0.523909	3076.611	2983.083	1.021552	3029.348	3419.924	1910.414	-0.26606
60	60	7000	3029.614	0.00859	0.577631	0.569041	3500	1010.855	3447.948	981.0116	0.520583	29.8272	177.0095	177.0095	194.9757	10%	30.6116	0.534273	30.0796	0.524988	3081.705	2978.077	1.021525	3029.339	3411.495	1563.878	-0.27473
60	70	7000	3029.614	0.010025	0.577631	0.567606	3500	1010.855	3439.254	976.0706	0.520043	29.79626	193.8147	193.8147	214.9708	11%	30.67349	0.535353	30.14149	0.526068	3086.813	2973.065	1.021499	3029.334	3403.093	1304.436	-0.28016
60	80	7000	3029.614	0.011461	0.577631	0.56617	3500	1010.855	3430.555	971.1389	0.519502	29.76527	210.5685	210.5685	234.9667	12%	30.73546	0.536435	30.20346	0.52715	3091.933	2968.046	1.021473	3029.332	3394.716	1105.12	-0.28234
60	90	7000	3029.614	0.012898	0.577631	0.564734	3500	1010.855	3421.85	966.2168	0.518961	29.73425	227.2712	227.2712	254.9632	12%	30.7975	0.537518	30.2655	0.528233	3097.067	2963.021	1.021447	3029.333	3386.364	948.6531	-0.28127
60	100	7000	3029.614	0.014335	0.577631	0.563296	3500	1010.855	3413.14	961.3041	0.518418	29.70319	243.9229	243.9229	274.9605	13%	30.85962	0.538602	30.32762	0.529317	3102.213	2957.99	1.021421	3029.337	3378.039	823.5517	-0.27695
60	110	7000	3029.614	0.015774	0.577631	0.561858	3500	1010.855	3404.424	956.4009	0.517876	29.67209	260.524	260.524	294.9587	13%	30.92182	0.539688	30.38982	0.530402	3107.372	2952.952	1.021395	3029.345	3369.738	721.9392	-0.26937
60	120	7000	3029.614	0.017213	0.577631	0.560418	3500	1010.855	3395.703	951.5072	0.517332	29.64095	277.0746	277.0746	314.9578	14%	30.9841	0.540775	30.4521	0.531489	3112.545	2947.907	1.021369	3029.356	3361.463	638.2672	-0.25852
60	130	7000	3029.614	0.018653	0.577631	0.558978	3500	1010.855	3386.977	946.6231	0.516788	29.60978	293.5751	293.5751	334.9578	14%	31.04645	0.541863	30.51445	0.532578	3117.731	2942.855	1.021344	3029.37	3353.212	568.5358	-0.2444

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
60	140	7000	3029.614	0.020094	0.577631	0.557537	3500	1010.855	3378.245	941.7485	0.516243	29.57856	310.0255	310.0255	354.9589	14%	31.10888	0.542952	30.57688	0.533667	3122.93	2937.797	1.021319	3029.387	3344.987	509.8017	-0.227
60	150	7000	3029.614	0.021536	0.577631	0.556095	3500	1010.855	3369.508	936.8835	0.515698	29.54731	326.4261	326.4261	374.9611	15%	31.17139	0.544043	30.63939	0.534758	3128.142	2932.732	1.021293	3029.408	3336.787	459.8606	-0.20632
60	160	7000	3029.614	0.022979	0.577631	0.554652	3500	1010.855	3360.765	932.0281	0.515152	29.51601	342.7773	342.7773	394.9644	15%	31.23397	0.545136	30.70197	0.53585	3133.367	2927.661	1.021268	3029.432	3328.611	417.0346	-0.18236
60	170	7000	3029.614	0.024423	0.577631	0.553209	3500	1010.855	3352.017	927.1823	0.514605	29.48468	359.0791	359.0791	414.9689	16%	31.29663	0.546229	30.76463	0.536944	3138.606	2922.582	1.021243	3029.459	3320.46	380.0283	-0.1551
60	180	7000	3029.614	0.025867	0.577631	0.551764	3500	1010.855	3343.264	922.3462	0.514057	29.45331	375.3318	375.3318	434.9747	16%	31.35937	0.547324	30.82737	0.538039	3143.859	2917.497	1.021218	3029.49	3312.334	347.8287	-0.12454
60	190	7000	3029.614	0.027313	0.577631	0.550318	3500	1010.855	3334.505	917.5198	0.513509	29.42191	391.5356	391.5356	454.9818	16%	31.42219	0.548421	30.89019	0.539136	3149.125	2912.404	1.021194	3029.524	3304.232	319.6344	-0.09068
60	200	7000	3029.614	0.028759	0.577631	0.548872	3500	1010.855	3325.741	912.703	0.51296	29.39046	407.6908	407.6908	474.9903	17%	31.48508	0.549518	30.95308	0.540233	3154.404	2907.305	1.021169	3029.561	3296.155	294.8046	-0.05351
60	210	7000	3029.614	0.030207	0.577631	0.547425	3500	1010.855	3316.971	907.896	0.512411	29.35897	423.7975	423.7975	495.0003	17%	31.54806	0.550617	31.01606	0.541332	3159.698	2902.199	1.021145	3029.601	3288.101	272.8219	-0.01302
60	220	7000	3029.614	0.031655	0.577631	0.545977	3500	1010.855	3308.196	903.0987	0.511861	29.32745	439.8561	439.8561	515.0117	17%	31.61111	0.551718	31.07911	0.542433	3165.004	2897.085	1.02112	3029.645	3280.072	253.2648	0.030779
60	230	7000	3029.614	0.033104	0.577631	0.544527	3500	1010.855	3299.416	898.3112	0.51131	29.29588	455.8666	455.8666	535.0248	17%	31.67423	0.55282	31.14223	0.543535	3170.325	2891.965	1.021096	3029.692	3272.067	235.7873	0.077907
60	240	7000	3029.614	0.034554	0.577631	0.543077	3500	1010.855	3290.63	893.5335	0.510758	29.26428	471.8294	471.8294	555.0395	18%	31.73744	0.553923	31.20544	0.544638	3175.66	2886.837	1.021072	3029.743	3264.085	220.1031	0.128366
60	40	7500	3246.015	0.005341	0.577631	0.57229	3750	1083.059	3715.323	1063.121	0.521805	29.8972	148.6354	148.6354	160.345	8%	30.47159	0.53183	29.93959	0.522544	3289.474	3202.944	1.021585	3245.747	3675.682	2546.116	-0.26832
60	50	7500	3246.015	0.006679	0.577631	0.570953	3750	1083.059	3706.641	1058.158	0.521302	29.8684	165.5596	165.5596	180.3389	9%	30.52919	0.532835	29.99719	0.52355	3294.552	3197.947	1.021561	3245.734	3667.22	2052.172	-0.28119
60	60	7500	3246.015	0.008017	0.577631	0.569614	3750	1083.059	3697.955	1053.204	0.520799	29.83957	182.4354	182.4354	200.3333	10%	30.58686	0.533841	30.05486	0.524556	3299.642	3192.943	1.021536	3245.724	3658.782	1690.069	-0.29105
60	70	7500	3246.015	0.009356	0.577631	0.568276	3750	1083.059	3689.263	1048.259	0.520295	29.8107	199.2629	199.2629	220.3282	11%	30.6446	0.534849	30.1126	0.525564	3304.744	3187.934	1.021511	3245.717	3650.369	1416.673	-0.29788
60	80	7500	3246.015	0.010695	0.577631	0.566936	3750	1083.059	3680.566	1043.323	0.51979	29.7818	216.0423	216.0423	240.3237	11%	30.7024	0.535858	30.1704	0.526573	3309.858	3182.918	1.021487	3245.714	3641.979	1205.16	-0.30169
60	90	7500	3246.015	0.012036	0.577631	0.565596	3750	1083.059	3671.864	1038.395	0.519286	29.75287	232.7739	232.7739	260.3198	12%	30.76026	0.536868	30.22826	0.527583	3314.984	3177.897	1.021462	3245.713	3633.613	1038.135	-0.30247
60	100	7500	3246.015	0.013377	0.577631	0.564255	3750	1083.059	3663.158	1033.477	0.51878	29.7239	249.4579	249.4579	280.3167	12%	30.8182	0.537879	30.2862	0.528594	3320.122	3172.87	1.021438	3245.715	3625.271	903.9157	-0.30021
60	110	7500	3246.015	0.014719	0.577631	0.562913	3750	1083.059	3654.446	1028.567	0.518274	29.6949	266.0944	266.0944	300.3143	13%	30.8762	0.538891	30.3442	0.529606	3325.272	3167.836	1.021414	3245.72	3616.953	794.4214	-0.29491
60	120	7500	3246.015	0.016061	0.577631	0.56157	3750	1083.059	3645.729	1023.666	0.517767	29.66586	282.6837	282.6837	320.3126	13%	30.93427	0.539905	30.40227	0.53062	3330.435	3162.796	1.02139	3245.729	3608.658	703.9161	-0.28656
60	130	7500	3246.015	0.017405	0.577631	0.560226	3750	1083.059	3637.007	1018.774	0.51726	29.6368	299.226	299.226	340.3134	14%	30.99241	0.54092	30.46041	0.531634	3335.61	3157.75	1.021366	3245.74	3600.387	628.2376	-0.27517
60	140	7500	3246.015	0.018749	0.577631	0.558882	3750	1083.059	3628.28	1013.89	0.516752	29.6077	315.7214	315.7214	360.312	14%	31.05061	0.541935	30.51861	0.53265	3340.797	3152.698	1.021342	3245.755	3592.139	564.3058	-0.26072
60	150	7500	3246.015	0.020094	0.577631	0.557537	3750	1083.059	3619.548	1009.016	0.516243	29.57856	332.1702	332.1702	380.3131	14%	31.10888	0.542952	30.57688	0.533667	3345.996	3147.64	1.021319	3245.772	3583.915	509.8017	-0.24322
60	160	7500	3246.015	0.02144	0.577631	0.556191	3750	1083.059	3610.811	1004.151	0.515734	29.54939	348.5725	348.5725	400.3152	15%	31.16722	0.543971	30.63522	0.534685	3351.208	3142.575	1.021295	3245.793	3575.714	462.9524	-0.22265
60	170	7500	3246.015	0.022787	0.577631	0.554845	3750	1083.059	3602.069	999.2946	0.515224	29.52019	364.9285	364.9285	420.3184	15%	31.22562	0.54499	30.69362	0.535705	3356.432	3137.504	1.021272	3245.816	3567.536	422.3834	-0.19901
60	180	7500	3246.015	0.024134	0.577631	0.553497	3750	1083.059	3593.322	994.4472	0.514714	29.49095	381.2385	381.2385	440.3227	15%	31.28409	0.54601	30.75209	0.536725	3361.669	3132.427	1.021248	3245.843	3559.381	387.016	-0.1723
60	190	7500	3246.015	0.025482	0.577631	0.552149	3750	1083.059	3584.57	989.6088	0.514203	29.46168	397.5027	397.5027	460.3282	16%	31.34263	0.547032	30.81063	0.537747	3366.918	3127.343	1.021225	3245.873	3551.249	355.9938	-0.14251
60	200	7500	3246.015	0.026831	0.577631	0.5508	3750	1083.059	3575.813	984.7795	0.513692	29.43238	413.7212	413.7212	480.3349	16%	31.40124	0.548055	30.86924	0.53877	3372.18	3122.253	1.021202	3245.906	3543.139	328.6299	-0.10964
60	210	7500	3246.015	0.028181	0.577631	0.549451	3750	1083.059	3567.051	979.9592	0.51318	29.40304	429.8942	429.8942	500.3429	16%	31.45992	0.549079	30.92792	0.539794	3377.455	3117.156	1.021179	3245.942	3535.053	304.3683	-0.07369
60	220	7500	3246.015	0.029531	0.577631	0.5481	3750	1083.059	3558.283	975.148	0.512667	29.37367	446.0219	446.0219	520.3522	17%	31.51866	0.550104	30.98666	0.540819	3382.742	3112.053	1.021156	3245.981	3526.989	282.755	-0.03464
60	230	7500	3246.015	0.030882	0.577631	0.546749	3750	1083.059	3549.511	970.3458	0.512154	29.34427	462.1045	462.1045	540.363	17%	31.57747	0.551131	31.04547	0.541846	3388.042	3106.943	1.021133	3246.023	3518.948	263.416	0.007504
60	240	7500	3246.015	0.032234	0.577631	0.545397	3750	1083.059	3540.734	965.5527	0.51164	29.31483	478.1422	478.1422	560.3751	17%	31.63635	0.552158	31.10435	0.542873	3393.355	3101.826	1.021111	3246.068	3510.929	246.0415	0.052747
60	40	8000	3462.416	0.005007	0.577631	0.572624	4000	1155.263	3965.326	1135.32	0.52193	29.9044	154.0232	154.0232	165.7031	8%	30.4572	0.531578	29.9252	0.522293	3507.42	3417.805	1.021592	3462.134	3922.988	2697.788	-0.28228
60	50	8000	3462.416	0.006261	0.577631	0.571371	4000	1155.263	3956.645	1130.355	0.521459	29.87741	170.9611	170.9611	185.6969	9%	30.51119	0.532521	29.97919	0.523235	3512.495	3412.809	1.021568	3462.12	3914.519	2189.705	-0.296
60	60	8000	3462.416	0.007515	0.577631	0.570116	4000	1155.263	3947.96	1125.398	0.520988	29.85039	187.8535	187.8535	205.6911	9%	30.56523	0.533464	30.03323	0.524179	3517.581	3407.808	1.021545	3462.109	3906.073	1813.6	-0.30689
60	70	8000	3462.416	0.00877	0.577631	0.568861	4000	1155.263	3939.271	1120.45	0.520515	29.82334	204.7005	204.7005	225.6857	10%	30.61933	0.534408	30.08733	0.525123	3522.678	3402.801	1.021522	3462.101	3897.65	1527.362	-0.31495
60	80	8000	3462.416	0.010025	0.577631	0.567606	4000	1155.263	3930.576	1115.509	0.520043	29.79626	221.5025	221.5025	245.6809	11%	30.67349	0.535353	30.14149	0.526068	3527.786	3397.789	1.021499	3462.096	3889.249	1304.436	-0.32018
60	90	8000	3462.416	0.011282	0.577631	0.56635	4000	1155.263	3921.877	1110.577	0.51957	29.76915	238.2595	238.2595	265.6767	12%	30.72771	0.5363	30.19571	0.527014	3532.906	3392.77	1.021476	3462.094	3880.87	1127.404	-0.32256
60	100	8000	3462.416	0.012538	0.577631	0.565093	4000	1155.263	3913.173	1105.653	0.519096	29.74201	254.9717	254.9717	285.6731	12%	30.78198	0.537247	30.24998	0.527962	3538.037	3387.747	1.021453	3462.094	3872.514	984.455	-0.32211
60	110	8000	3462.416	0.013796	0.577631	0.563835	4000	1155.263	3904.465	1100.737	0.518622	29.71484	271.6394	271.6394	305.6702	13%	30.83632	0.538195	30.30432	0.52891	3543.179	3382.717	1.021431	3462.097	3864.18	867.3503	-0.3188
60	120	8000	3462.416	0.015054	0.577631	0.562577	4000	1155.263	3895.751	1095.83	0.518147	29.68764	288.2626	288.2626	325.668	13%	30.89071	0.539145	30.35871	0.529859	3548.333	3377.682	1.021408	3462.104	3855.869	770.1997	-0.31265
60	130	8000	3462.416	0.016313	0.577631	0.561318	4000	1155.263	3887.033	1090.931	0.517672	29.66042	304.8416	304.8416	345.6666	13%	30.94517	0.540095	30.41317	0.53081	3553.498	3372.641	1.021385	3462.113	3847.579	688.7023	-0.30364
60	140	8000	3462.416	0.017573	0.577631	0.560058	4000	1155.263	3878.311	1086.04	0.517196	29.63316	321.3765	321.3765	365.666	14%	30.99968	0.541046	30.46768	0.531761	3558.674	3367.594	1.021363	3462.124	3839.312	619.6575	-0.29177
60	150	8000	3462.416	0.018833	0.577631	0.558798	4000	1155.263	3869.583	1081.158	0.51672	29.60588	337.8675	337.8675	385.6662	14%	31.05425	0.541999	30.52225	0.532714	3563.863	3362.541	1.021341	3462.139	3831.066	560.6439	-0.27703
60	160	8000	3462.416	0.020094	0.577631	0.557537	4000	1155.263	3860.851	1076.284	0.516243	29.57856	354.3148	354.3148	405.6673	14%	31.10888	0.542952	30.57688	0.533667	3569.062	3357.483	1.021319	3462.157	3822.843	509.8017	-0.25943
60	170	8000	3462.416	0.021356	0.577631	0.556275	4000	1155.263	3852.114	1071.418	0.515766	29.55122	370.7186	370.7186	425.6694	15%	31.16357	0.543907	30.63157	0.534622	3574.274	3352.418	1.021296	3462.177	3814.641	465.6839	-0.23896
60	180	8000	3462.416	0.022618	0.577631	0.555013	4000	1155.263	3843.373	1066.561	0.515288	29.52384	387.079	387.079	445.6725	15%	31.21832	0.544862	30.68632	0.535577	3579.497	3347.348	1.021274	3462.201	3806.461	427.1504	-0.21561
60	190	8000	3462.416	0.023881	0.577631	0.55375	4000	1155.263	3834.627	1061.712	0.51481	29.49644	403.3962	403.3962	465.6766	15%	31.27313	0.545819	30.74113	0.536534	3584.732	3342.271	1.021253	3462.227	3798.302	393.2932	-0.18938
60	200	8000	3462.416	0.025145	0.577631	0.552486	4000	1155.263	3825.876	1056.872	0.514331	29.469	419.6703	419.6703	485.6818	16%	31.32799	0.546777	30.79599	0.537491	3589.978	3337.189	1.021231	3462.256	3790.165	363.382	-0.16026
60	210	8000	3462.416	0.026409	0.577631	0.551222	4000	1155.263	3817.12	1052.04	0.513852	29.44154	435.9016	435.9016	505.6882	16%	31.38292	0.547735	30.85092	0.53845	3595.237	3332.101	1.021209	3462.288	3782.049	336.824	-0.12826
60	220	8000	3462.416	0.027674	0.577631	0.549957	4000	1155.263	3808.359	1047.217	0.513372	29.41405	452.0902	452.0902	525.6957	16%	31.43791	0.548695	30.90591	0.53941	3600.507	3327.006	1.021187	3462.323	3773.955	313.1336	-0.09337
60	230	8000	3462.416	0.02894	0.577631	0.548691	4000	1155.263	3799.594	1042.402	0.512892	29.38652	468.2363	468.2363	545.7045	17%	31.49295	0.549656	30.96095	0.540371	3605.789	3321.905	1.021166	3462.361	3765.882	291.9105	-0.05558
60	240	8000	3462.416	0.030207	0.577631	0.547425	4000	1155.263	3790.824	1037.595	0.512411	29.35897	484.3401	484.3401	565.7146	17%	31.54806	0.550617	31.01606	0.541332	3611.083	3316.799	1.021145	3462.401	3757.83	272.8219	-0.01489
60	40	8500	3678.817	0.004712	0.577631	0.572919	4250	1227.467	4215.328	1207.521	0.522041	29.91075	159.4081	159.4081	171.0611	7%	30.44451	0.531357	29.91251	0.522072	3725.367	3632.666	1.021597	3678.521	4170.296	2843.263	-0.29605
60	50	8500	3678.817	0.005892	0.577631	0.571739	4250	1227.467	4206.649	1202.553	0.521598	29.88535	176.3581	176.3581	191.0548	8%	30.4953	0.532243	29.9633	0.522958	3730.438	3627.672	1.021575	3678.507	4161.821	2322.989	-0.31052
60	60	8500	3678.817	0.007072	0.577631	0.570559	4250	1227.467	4197.965	1197.594	0.521154	29.85993	193.2652	193.2652	211.0489	9%	30.54615	0.533131	30.01415	0.523846	3735.521	3622.672	1.021553	3678.495	4153.367	1934.331	-0.32233
60	70	8500	3678.817	0.008253	0.577631	0.569378	4250	1227.467	4189.277	1192.642	0.52071	29.83448	210.1295	210.1295	231.0434	10%	30.59704	0.534019	30.06504	0.524734	3740.614	3617.667	1.021531	3678.486	4144.935	1636.303	-0.33147
60	80	8500	3678.817	0.009434	0.577631	0.568197	4250	1227.467	4180.585	1187.698	0.520265	29.809	226.9514	226.9514	251.0383	11%	30.64799	0.534908	30.11599	0.525623	3745.717	3612.657	1.02151	3678.479	4136.524	1402.724	-0.33795
60	90	8500	3678.817	0.010616	0.577631	0.567015	4250	1227.467	4171.888	1182.761	0.51982	29.7835	243.7308	243.7308	271.0338	11%	30.69899	0.535799	30.16699	0.526513	3750.831	3607.642	1.021488	3678.476	4128.135	1216.233	-0.34176
60	100	8500	3678.817	0.011799	0.577631	0.565832	4250	1227.467	4163.187	1177.833	0.519375	29.75798	260.4681	260.4681	291.0299	12%	30.75005	0.53669	30.21805	0.527404	3755.956	3602.621	1.021467	3678.474	4119.766	1064.949	-0.34289
60	110	8500	3678.817	0.012982	0.577631	0.564649	4250	1227.467	4154.481	1172.912	0.518929	29.73242	277.1632	277.1632	311.0265	12%	30.80115	0.537582	30.26915	0.528296	3761.091	3597.595	1.021445	3678.476	4111.418	940.5169	-0.34135
60	120	8500	3678.817	0.014166	0.577631	0.563465	4250	1227.467	4145.771	1167.999	0.518482	29.70684	293.8165	293.8165	331.0238	13%	30.85231	0.538474	30.32031	0.529189	3766.237	3592.564	1.021424	3678.48	4103.092	836.923	-0.33712

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
60	130	8500	3678.817	0.01535	0.577631	0.562281	4250	1227.467	4137.057	1163.094	0.518035	29.68124	310.428	310.428	351.0218	13%	30.90352	0.539368	30.37152	0.530083	3771.394	3587.527	1.021403	3678.487	4094.786	749.7494	-0.33021
60	140	8500	3678.817	0.016535	0.577631	0.561096	4250	1227.467	4128.338	1158.197	0.517588	29.65561	326.9979	326.9979	371.0206	13%	30.95478	0.540263	30.42278	0.530978	3776.561	3582.485	1.021381	3678.497	4086.501	675.6908	-0.32061
60	150	8500	3678.817	0.017721	0.577631	0.55991	4250	1227.467	4119.615	1153.307	0.51714	29.62995	343.5263	343.5263	391.0201	14%	31.0061	0.541158	30.4741	0.531873	3781.74	3577.437	1.02136	3678.509	4078.237	612.2345	-0.30832
60	160	8500	3678.817	0.018907	0.577631	0.558724	4250	1227.467	4110.887	1148.425	0.516692	29.60427	360.0135	360.0135	411.0204	14%	31.05746	0.542055	30.52546	0.53277	3786.929	3572.384	1.021339	3678.524	4069.993	557.4428	-0.29333
60	170	8500	3678.817	0.020094	0.577631	0.557537	4250	1227.467	4102.154	1143.552	0.516243	29.57856	376.4595	376.4595	431.0215	14%	31.10888	0.542952	30.57688	0.533667	3792.129	3567.325	1.021319	3678.542	4061.77	509.8017	-0.27565
60	180	8500	3678.817	0.021282	0.577631	0.55635	4250	1227.467	4093.418	1138.686	0.515794	29.55282	392.8645	392.8645	451.0236	15%	31.16035	0.543851	30.62835	0.534566	3797.34	3562.261	1.021298	3678.562	4053.568	468.1146	-0.25526
60	190	8500	3678.817	0.02247	0.577631	0.555162	4250	1227.467	4084.677	1133.828	0.515344	29.52706	409.2288	409.2288	471.0266	15%	31.21187	0.54475	30.67987	0.535465	3802.562	3557.191	1.021277	3678.585	4045.386	431.4253	-0.23216
60	200	8500	3678.817	0.023658	0.577631	0.553973	4250	1227.467	4075.931	1128.978	0.514894	29.50128	425.5523	425.5523	491.0305	15%	31.26345	0.54565	30.73145	0.536365	3807.795	3552.116	1.021256	3678.611	4037.224	398.9624	-0.20635
60	210	8500	3678.817	0.024848	0.577631	0.552784	4250	1227.467	4067.181	1124.136	0.514444	29.47546	441.8353	441.8353	511.0355	16%	31.31508	0.546551	30.78308	0.537266	3813.039	3547.034	1.021236	3678.639	4029.082	370.0983	-0.17783
60	220	8500	3678.817	0.026037	0.577631	0.551594	4250	1227.467	4058.427	1119.302	0.513993	29.44962	458.0779	458.0779	531.0416	16%	31.36676	0.547453	30.83476	0.538168	3818.294	3541.948	1.021215	3678.671	4020.961	344.3175	-0.1466
60	230	8500	3678.817	0.027228	0.577631	0.550403	4250	1227.467	4049.668	1114.476	0.513541	29.42375	474.2803	474.2803	551.0487	16%	31.41849	0.548356	30.88649	0.539071	3823.561	3536.855	1.021195	3678.705	4012.86	321.1942	-0.11264
60	240	8500	3678.817	0.028419	0.577631	0.549212	4250	1227.467	4040.904	1109.657	0.513089	29.39786	490.4426	490.4426	571.0571	16%	31.47028	0.54926	30.93828	0.539975	3828.838	3531.757	1.021175	3678.741	4004.779	300.3734	-0.07596
60	40	9000	3895.218	0.00445	0.577631	0.573181	4500	1299.67	4465.33	1279.721	0.522139	29.91639	164.7907	164.7907	176.4192	7%	30.43323	0.53116	29.90123	0.521875	3943.314	3847.527	1.021602	3894.909	4417.605	2982.77	-0.30968
60	50	9000	3895.218	0.005564	0.577631	0.572067	4500	1299.67	4456.652	1274.752	0.521721	29.89241	181.7514	181.7514	196.4128	8%	30.48119	0.531997	29.94919	0.522712	3948.383	3842.534	1.021581	3894.893	4409.124	2452.052	-0.32481
60	60	9000	3895.218	0.006679	0.577631	0.570953	4500	1299.67	4447.97	1269.79	0.521302	29.8684	198.6715	198.6715	216.4067	9%	30.52919	0.532835	29.99719	0.52355	3953.462	3837.536	1.021561	3894.881	4400.664	2052.172	-0.33743
60	70	9000	3895.218	0.007794	0.577631	0.569838	4500	1299.67	4439.283	1264.835	0.520883	29.84438	215.5513	215.5513	236.4011	10%	30.57724	0.533674	30.04524	0.524388	3958.551	3832.533	1.02154	3894.871	4392.224	1743.346	-0.34754
60	80	9000	3895.218	0.008909	0.577631	0.568722	4500	1299.67	4430.593	1259.888	0.520463	29.82033	232.3909	232.3909	256.3958	10%	30.62534	0.534513	30.09334	0.525228	3963.65	3827.525	1.021519	3894.863	4383.805	1499.847	-0.35513
60	90	9000	3895.218	0.010025	0.577631	0.567606	4500	1299.67	4421.898	1254.948	0.520043	29.79626	249.1903	249.1903	276.3701	11%	30.67349	0.535353	30.14149	0.526068	3968.759	3822.512	1.021499	3894.858	4375.405	1304.436	-0.3602
60	100	9000	3895.218	0.011142	0.577631	0.566489	4500	1299.67	4413.199	1250.015	0.519622	29.77216	265.9498	265.9498	296.3868	11%	30.72168	0.536194	30.18968	0.526909	3973.878	3817.494	1.021479	3894.856	4367.025	1145.211	-0.36274
60	110	9000	3895.218	0.012259	0.577631	0.565372	4500	1299.67	4404.496	1245.09	0.519201	29.74804	282.6695	282.6695	316.3831	12%	30.76992	0.537036	30.23792	0.527751	3979.007	3812.471	1.021458	3894.856	4358.665	1013.741	-0.36276
60	120	9000	3895.218	0.013377	0.577631	0.564255	4500	1299.67	4395.789	1240.172	0.51878	29.7239	299.3495	299.3495	336.38	12%	30.8182	0.537879	30.2862	0.528594	3984.147	3807.444	1.021438	3894.858	4350.325	903.9157	-0.36025
60	130	9000	3895.218	0.014495	0.577631	0.563136	4500	1299.67	4387.078	1235.261	0.518358	29.69974	315.99	315.99	356.3775	13%	30.86653	0.538723	30.33453	0.529437	3989.296	3802.41	1.021418	3894.863	4342.005	811.2196	-0.3552
60	140	9000	3895.218	0.015614	0.577631	0.562018	4500	1299.67	4378.362	1230.358	0.517936	29.67555	332.5911	332.5911	376.3757	13%	30.91491	0.539567	30.38291	0.530282	3994.455	3797.372	1.021398	3894.871	4333.704	732.2576	-0.34762
60	150	9000	3895.218	0.016733	0.577631	0.560898	4500	1299.67	4369.642	1225.462	0.517513	29.65133	349.1529	349.1529	396.3746	14%	30.96333	0.540412	30.43133	0.531127	3999.625	3792.329	1.021378	3894.881	4325.424	664.437	-0.3375
60	160	9000	3895.218	0.017853	0.577631	0.559778	4500	1299.67	4360.918	1220.574	0.51709	29.6271	365.6756	365.6756	416.3742	14%	31.0118	0.541258	30.4798	0.531973	4004.805	3787.281	1.021358	3894.893	4317.162	605.7496	-0.32483
60	170	9000	3895.218	0.018973	0.577631	0.558658	4500	1299.67	4352.19	1215.693	0.516667	29.60284	382.1593	382.1593	436.3745	14%	31.06032	0.542105	30.52832	0.53282	4009.995	3782.227	1.021338	3894.909	4308.92	554.6208	-0.30962
60	180	9000	3895.218	0.020094	0.577631	0.557537	4500	1299.67	4343.458	1210.819	0.516243	29.57856	398.6042	398.6042	456.3757	14%	31.10888	0.542952	30.57688	0.533667	4015.195	3777.168	1.021319	3894.926	4300.698	509.8017	-0.29186
60	190	9000	3895.218	0.021216	0.577631	0.556416	4500	1299.67	4334.721	1205.953	0.515819	29.55426	415.0104	415.0104	476.3778	15%	31.15749	0.543801	30.62549	0.534516	4020.406	3772.104	1.021299	3894.947	4292.495	470.2915	-0.27155
60	200	9000	3895.218	0.022338	0.577631	0.555294	4500	1299.67	4325.98	1201.095	0.515394	29.52993	431.378	431.378	496.3807	15%	31.20615	0.54465	30.67415	0.535365	4025.627	3767.034	1.021279	3894.97	4284.311	435.2804	-0.24868
60	210	9000	3895.218	0.02346	0.577631	0.554171	4500	1299.67	4317.235	1196.244	0.514969	29.50558	447.7071	447.7071	516.3845	15%	31.25485	0.5455	30.72285	0.536215	4030.859	3761.96	1.02126	3894.995	4276.146	404.1076	-0.22325
60	220	9000	3895.218	0.024583	0.577631	0.553048	4500	1299.67	4308.486	1191.4	0.514544	29.4812	463.998	463.998	536.3893	16%	31.3036	0.546351	30.7716	0.537066	4036.101	3756.88	1.02124	3895.023	4268.001	376.2295	-0.19525
60	230	9000	3895.218	0.025707	0.577631	0.551925	4500	1299.67	4299.733	1186.564	0.514118	29.4568	480.2507	480.2507	556.3951	16%	31.3524	0.547203	30.8204	0.537917	4041.353	3751.794	1.021221	3895.054	4259.875	351.1955	-0.1647
60	240	9000	3895.218	0.026831	0.577631	0.5508	4500	1299.67	4290.975	1181.735	0.513692	29.43238	496.4654	496.4654	576.4019	16%	31.40124	0.548055	30.86924	0.53877	4046.616	3746.703	1.021202	3895.087	4251.767	328.6299	-0.13157
60	40	9500	4111.619	0.004216	0.577631	0.573415	4750	1371.874	4715.332	1351.922	0.522228	29.92143	170.1712	170.1712	181.7773	7%	30.42314	0.530984	29.89114	0.521699	4161.262	4062.387	1.021606	4111.296	4664.914	3116.558	-0.32318
60	50	9500	4111.619	0.005271	0.577631	0.57236	4750	1371.874	4706.655	1346.951	0.521831	29.89872	187.1415	187.1415	201.7708	8%	30.46856	0.531777	29.93656	0.522492	4166.329	4057.395	1.021587	4111.28	4656.429	2576.956	-0.33891
60	60	9500	4111.619	0.006327	0.577631	0.571305	4750	1371.874	4697.974	1341.987	0.521434	29.87599	204.0734	204.0734	221.7646	9%	30.51403	0.53257	29.98203	0.523285	4171.405	4052.399	1.021567	4111.267	4647.963	2167.078	-0.35226
60	70	9500	4111.619	0.007383	0.577631	0.570248	4750	1371.874	4689.289	1337.03	0.521037	29.85323	220.967	220.967	241.7588	9%	30.55954	0.533365	30.02754	0.524079	4176.491	4047.398	1.021548	4111.256	4639.517	1848.385	-0.36323
60	80	9500	4111.619	0.00844	0.577631	0.569192	4750	1371.874	4680.6	1332.08	0.52064	29.83046	237.8224	237.8224	261.7534	10%	30.60509	0.53416	30.07309	0.524874	4181.586	4042.392	1.021528	4111.247	4631.089	1595.665	-0.37181
60	90	9500	4111.619	0.009497	0.577631	0.568135	4750	1371.874	4671.907	1327.136	0.520242	29.80766	254.6398	254.6398	281.7484	11%	30.65068	0.534955	30.11868	0.52567	4186.69	4037.381	1.021509	4111.241	4622.68	1391.858	-0.37801
60	100	9500	4111.619	0.010554	0.577631	0.567077	4750	1371.874	4663.21	1322.2	0.519844	29.78485	271.4192	271.4192	301.7439	11%	30.69631	0.535752	30.16431	0.526467	4191.804	4032.366	1.021489	4111.237	4614.29	1225.084	-0.38182
60	110	9500	4111.619	0.011612	0.577631	0.566019	4750	1371.874	4654.51	1317.271	0.519445	29.76201	288.1609	288.1609	321.7399	12%	30.74198	0.536549	30.20998	0.527264	4196.928	4027.346	1.02147	4111.236	4605.92	1086.869	-0.38323
60	120	9500	4111.619	0.012671	0.577631	0.56496	4750	1371.874	4645.805	1312.348	0.519046	29.73915	304.8649	304.8649	341.7365	12%	30.7877	0.537347	30.2557	0.528062	4202.061	4022.321	1.021451	4111.237	4597.568	971.0295	-0.38225
60	130	9500	4111.619	0.01373	0.577631	0.563901	4750	1371.874	4637.096	1307.433	0.518647	29.71627	321.5314	321.5314	361.7336	13%	30.83346	0.538145	30.30146	0.52886	4207.203	4017.291	1.021432	4111.24	4589.234	872.9725	-0.37887
60	140	9500	4111.619	0.014789	0.577631	0.562842	4750	1371.874	4628.384	1302.524	0.518247	29.69337	338.1604	338.1604	381.7313	13%	30.87926	0.538945	30.34726	0.52966	4212.355	4012.257	1.021413	4111.246	4580.92	789.2266	-0.37309
60	150	9500	4111.619	0.015849	0.577631	0.561782	4750	1371.874	4619.667	1297.623	0.517847	29.67045	354.7522	354.7522	401.7296	13%	30.9251	0.539745	30.3931	0.53046	4217.517	4007.217	1.021394	4111.254	4572.624	717.1287	-0.36491
60	160	9500	4111.619	0.01691	0.577631	0.560721	4750	1371.874	4610.946	1292.728	0.517447	29.64751	371.3068	371.3068	421.7286	14%	30.97098	0.540546	30.43898	0.53126	4222.689	4002.173	1.021375	4111.265	4564.347	654.6082	-0.35432
60	170	9500	4111.619	0.017971	0.577631	0.559661	4750	1371.874	4602.222	1287.841	0.517046	29.62455	387.8243	387.8243	441.7283	14%	31.0169	0.541347	30.4849	0.532062	4227.87	3997.124	1.021356	4111.278	4556.088	600.0357	-0.34132
60	180	9500	4111.619	0.019032	0.577631	0.558599	4750	1371.874	4593.493	1282.961	0.516645	29.60156	404.305	404.305	461.7287	14%	31.06287	0.542149	30.53087	0.532864	4233.061	3992.07	1.021337	4111.293	4547.847	552.1143	-0.3259
60	190	9500	4111.619	0.020094	0.577631	0.557537	4750	1371.874	4584.761	1278.087	0.516243	29.57856	420.7489	420.7489	481.7299	14%	31.10888	0.542952	30.57688	0.533667	4238.262	3987.011	1.021319	4111.311	4539.626	509.8017	-0.30807
60	200	9500	4111.619	0.021157	0.577631	0.556475	4750	1371.874	4576.024	1273.221	0.515841	29.55554	437.1561	437.1561	501.7319	15%	31.15493	0.543756	30.62293	0.534471	4243.472	3981.947	1.0213	4111.331	4531.422	472.2524	-0.28783
60	210	9500	4111.619	0.022219	0.577631	0.555412	4750	1371.874	4567.284	1268.362	0.515439	29.53249	453.5267	453.5267	521.7348	15%	31.20102	0.544561	30.66902	0.535275	4248.692	3976.878	1.021281	4111.354	4523.237	438.7746	-0.26516
60	220	9500	4111.619	0.023283	0.577631	0.554348	4750	1371.874	4558.54	1263.51	0.515037	29.50942	469.8609	469.8609	541.7385	15%	31.24716	0.545366	30.71516	0.536081	4253.923	3971.804	1.021263	4111.379	4515.07	408.7978	-0.24007
60	230	9500	4111.619	0.024347	0.577631	0.553285	4750	1371.874	4549.791	1258.665	0.514634	29.48633	486.1588	486.1588	561.7431	16%	31.29333	0.546172	30.76133	0.536887	4259.163	3966.725	1.021245	4111.407	4506.921	381.8483	-0.21255
60	240	9500	4111.619	0.025411	0.577631	0.55222	4750	1371.874	4541.039	1253.827	0.51423	29.46322	502.4206	502.4206	581.7487	16%	31.33955	0.546978	30.80755	0.537693	4264.413	3961.64	1.021226	4111.437	4498.79	357.5299	-0.1826
60	40	10000	4328.02	0.004005	0.577631	0.573626	5000	1444.078	4965.333	1424.123	0.522307	29.92597	175.55	175.55	187.1354	7%	30.41406	0.530825	29.88206	0.52154	4379.21	4277.247	1.02161	4327.684	4912.225	3244.878	-0.33658
60	50	10000	4328.02	0.005007	0.577631	0.572624	5000	1444.078	4956.657	1419.151	0.52193	29.9044	192.529	192.529	207.1289	8%	30.4572	0.531578	29.9252	0.522293	4384.275	4272.257	1.021592	4327.667	4903.736	2697.788	-0.35284
60	60	10000	4328.02	0.00601	0.577631	0.571621	5000	1444.078	4947.977	1414.185	0.521553	29.88281	209.4714	209.4714	227.1226	8%	30.50038	0.532332	29.96838	0.523047	4389.348	4267.261	1.021573	4327.653	4895.264	2279.032	-0.36685
60	70	10000	4328.02	0.007013	0.577631	0.570618	5000	1444.078	4939.294	1409.225	0.521176	29.8612	226.3774	226.3774	247.1166	9%	30.5436	0.533086	30.0116	0.523801	4394.431	4262.262	1.021554	4327.642	4886.811	1951.344	-0.37859
60	80	10000	4328.02	0.008017	0.577631	0.569614	5000	1444.078	4930.606	1404.272	0.520799	29.83957	243.2471	243.2471	267.1151	10%	30.58686	0.533841	30.05486	0.524556	4399.523	4257.257	1.021536	4327.632	4878.376	1690.069	-0.38807
60	90	10000	4328.02	0.009021	0.577631	0.56861	5000	1444.078	4921.915	1399.326	0.520421	29.81792	260.0807	260.0807	287.1059	10%	30.63016	0.534597	30.09816	0.525312	4404.623	4252.249	1.021517	4327.625	4869.96	1478.372	-0.39528
60	100	10000	4328.02	0.010025	0.577631	0.567606	5000	1444.078	4913.22	1394.387	0.520043	29.79626	276.8781	276.8781	307.1012	11%	30.67349	0.535353	30.14149	0.526068	4409.733	4247.236	1.021499	4327.62	4861.561	1304.436	-0.40022
60	110	10000	4328.02	0.01103	0.577631	0.566601	5000	1444.078	4904.522	1389.453	0.519664	29.77457	293.6396	293.6396	327.0969	11%	30.71686	0.53611	30.18486	0.526825	4414.851	4242.218	1.021481	4327.617	4853.18	1159.767	-0.40289

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
60	120	10000	4328.02	0.012036	0.577631	0.565596	5000	1444.078	4895.819	1384.527	0.519286	29.75287	310.3653	310.3653	347.0931	12%	30.76026	0.536868	30.22826	0.527583	4419.979	4237.196	1.021462	4327.617	4844.817	1038.135	-0.40329
60	130	10000	4328.02	0.013041	0.577631	0.56459	5000	1444.078	4887.113	1379.607	0.518906	29.73115	327.0552	327.0552	367.0899	12%	30.80371	0.537626	30.27171	0.528341	4425.115	4232.169	1.021444	4327.619	4836.472	934.8845	-0.40141
60	140	10000	4328.02	0.014048	0.577631	0.563584	5000	1444.078	4878.403	1374.694	0.518527	29.7094	343.7095	343.7095	387.0872	13%	30.84719	0.538385	30.31519	0.5291	4430.261	4227.138	1.021426	4327.623	4828.145	846.4806	-0.39725
60	150	10000	4328.02	0.015054	0.577631	0.562577	5000	1444.078	4869.689	1369.788	0.518147	29.68764	360.3283	360.3283	407.085	13%	30.89071	0.539145	30.35871	0.529859	4435.416	4222.102	1.021408	4327.629	4819.836	770.1997	-0.39081
60	160	10000	4328.02	0.016061	0.577631	0.56157	5000	1444.078	4860.972	1364.888	0.517767	29.66586	376.9116	376.9116	427.0835	13%	30.93427	0.539905	30.40227	0.53062	4440.58	4217.062	1.02139	4327.638	4811.544	703.9161	-0.38209
60	170	10000	4328.02	0.017069	0.577631	0.560562	5000	1444.078	4852.25	1359.994	0.517387	29.64407	393.4598	393.4598	447.0826	14%	30.97787	0.540666	30.44587	0.531381	4445.753	4212.017	1.021372	4327.649	4803.27	645.9507	-0.37107
60	180	10000	4328.02	0.018077	0.577631	0.559554	5000	1444.078	4843.525	1355.108	0.517006	29.62225	409.9727	409.9727	467.0824	14%	31.0215	0.541427	30.4895	0.532142	4450.935	4206.967	1.021354	4327.663	4795.014	594.9632	-0.35777
60	190	10000	4328.02	0.019085	0.577631	0.558546	5000	1444.078	4834.797	1350.228	0.516625	29.60041	426.4506	426.4506	487.0829	14%	31.06517	0.54219	30.53317	0.532904	4456.127	4201.912	1.021336	4327.678	4786.775	549.8732	-0.34218
60	200	10000	4328.02	0.020094	0.577631	0.557537	5000	1444.078	4826.064	1345.355	0.516243	29.57856	442.8935	442.8935	507.0841	14%	31.10888	0.542952	30.57688	0.533667	4461.328	4196.853	1.021319	4327.696	4778.553	509.8017	-0.32429
60	210	10000	4328.02	0.021103	0.577631	0.556528	5000	1444.078	4817.328	1340.489	0.515862	29.55669	459.3016	459.3016	527.0861	15%	31.15263	0.543716	30.62063	0.534431	4466.538	4191.789	1.021301	4327.716	4770.349	474.028	-0.3041
60	220	10000	4328.02	0.022113	0.577631	0.555518	5000	1444.078	4808.588	1335.629	0.515479	29.53479	475.675	475.675	547.0889	15%	31.19641	0.54448	30.66441	0.535195	4471.758	4186.721	1.021283	4327.739	4762.162	441.9563	-0.28162
60	230	10000	4328.02	0.023123	0.577631	0.554508	5000	1444.078	4799.844	1330.776	0.515097	29.51288	492.0138	492.0138	567.0925	15%	31.24023	0.545245	30.70823	0.53596	4476.987	4181.647	1.021266	4327.763	4753.993	413.0907	-0.25683
60	240	10000	4328.02	0.024134	0.577631	0.553497	5000	1444.078	4791.096	1325.93	0.514714	29.49095	508.318	508.318	587.097	15%	31.28409	0.54601	30.75209	0.536725	4482.225	4176.569	1.021248	4327.791	4745.841	387.016	-0.22973
65	40	1000	392.2238	0.043421	0.637391	0.59397	500	159.3478	465.9382	138.3766	0.55187	31.6198	86.8022	86.8022	106.7843	23%	27.0264	0.4717	26.4944	0.462415	414.4008	370.628	1.023365	392.2617	456.5989	132.7207	0.037902
65	50	1000	392.2238	0.05441	0.637391	0.582981	500	159.3478	457.3184	133.3041	0.547876	31.39097	104.2436	104.2436	130.4859	25%	27.48405	0.479687	26.95205	0.470402	419.4545	365.8376	1.023092	392.34	447.8782	92.02396	0.116289
65	60	1000	392.2238	0.065452	0.637391	0.571939	500	159.3478	448.6564	128.3021	0.543843	31.1599	121.231	121.231	154.2089	27%	27.9462	0.487753	27.4142	0.478468	424.6006	361.0046	1.022828	392.4438	439.3845	68.04133	0.220033
65	70	1000	392.2238	0.076548	0.637391	0.560843	500	159.3478	439.9521	123.3721	0.53977	30.92655	137.7811	137.7811	177.9574	29%	28.41289	0.495899	27.88089	0.486613	429.8422	356.1269	1.022575	392.5732	431.1094	52.67694	0.349447
65	80	1000	392.2238	0.087698	0.637391	0.549693	500	159.3478	431.2053	118.5153	0.535658	30.69092	153.9103	153.9103	201.7352	31%	28.88416	0.504124	28.35216	0.494839	435.1824	351.2021	1.02233	392.7286	423.0449	42.2148	0.50485
65	90	1000	392.2238	0.098903	0.637391	0.538488	500	159.3478	422.4159	113.733	0.531505	30.45297	169.634	169.634	225.5464	33%	29.36007	0.51243	28.82807	0.503145	440.6244	346.2277	1.022094	392.9103	415.183	34.75156	0.686564
65	100	1000	392.2238	0.110162	0.637391	0.527229	500	159.3478	413.5837	109.0267	0.527311	30.21268	184.9671	184.9671	249.3949	35%	29.84064	0.520817	29.30864	0.511532	446.1716	341.201	1.021867	393.1187	407.5165	29.22881	0.89492
65	110	1000	392.2238	0.121476	0.637391	0.515915	500	159.3478	404.7085	104.3976	0.523076	29.97004	199.9239	199.9239	273.2848	37%	30.32592	0.529287	29.79392	0.520002	451.8277	336.1193	1.021649	393.354	400.038	25.01903	1.130248
65	120	1000	392.2238	0.132845	0.637391	0.504546	500	159.3478	395.7902	99.84727	0.518799	29.72502	214.5183	214.5183	297.2201	39%	30.81596	0.53784	30.28396	0.528555	457.5964	330.9797	1.021439	393.6166	392.7409	21.73059	1.392887
65	130	1000	392.2238	0.144269	0.637391	0.493123	500	159.3478	386.8287	95.37699	0.514481	29.47761	228.7633	228.7633	321.2049	40%	31.31079	0.546476	30.77879	0.537191	463.4816	325.7792	1.021238	393.9069	385.6184	19.10853	1.683177
65	140	1000	392.2238	0.155748	0.637391	0.481643	500	159.3478	377.824	90.98824	0.510121	29.22777	242.6717	242.6717	345.2432	42%	31.81046	0.555197	31.27846	0.545912	469.4873	320.5143	1.021044	394.2252	378.6641	16.98093	2.001462
65	150	1000	392.2238	0.167282	0.637391	0.470109	500	159.3478	368.776	86.68248	0.505718	28.9755	256.2559	256.2559	369.3393	44%	32.315	0.564003	31.783	0.554718	475.6179	315.1818	1.020859	394.5718	371.8721	15.22833	2.34809
65	160	1000	392.2238	0.178872	0.637391	0.45852	500	159.3478	359.6845	82.46118	0.501272	28.72078	269.5275	269.5275	393.4973	46%	32.82445	0.572895	32.29245	0.56361	481.8779	309.7779	1.020682	394.9472	365.2363	13.76556	2.723412
65	170	1000	392.2238	0.190517	0.637391	0.446874	500	159.3478	350.5496	78.32582	0.496783	28.46358	282.498	282.498	417.7213	48%	33.33885	0.581873	32.80685	0.572587	488.2719	304.2989	1.020513	395.3515	358.751	12.53053	3.12778
65	180	1000	392.2238	0.202217	0.637391	0.435174	500	159.3478	341.3711	74.27792	0.492251	28.20389	295.1783	295.1783	442.0158	50%	33.85823	0.590938	33.32623	0.581652	494.805	298.7406	1.020351	395.7853	352.4108	11.47707	3.561552
65	190	1000	392.2238	0.213973	0.637391	0.423418	500	159.3478	332.1493	70.319	0.487674	27.94169	307.5792	307.5792	466.3851	52%	34.38262	0.60009	33.85062	0.590805	501.4823	293.0988	1.020198	396.2488	346.2104	10.57027	4.025084
65	200	1000	392.2238	0.225784	0.637391	0.411607	500	159.3478	322.8839	66.45061	0.483054	27.67697	319.7108	319.7108	490.8334	54%	34.91207	0.609331	34.38007	0.600045	508.3092	287.3689	1.020052	396.7425	340.1446	9.7833	4.518734
65	210	1000	392.2238	0.237651	0.637391	0.39974	500	159.3478	313.5751	62.67428	0.47839	27.40971	331.5831	331.5831	515.3652	55%	35.44659	0.61866	34.91459	0.609375	515.2916	281.546	1.019913	397.2666	334.2084	9.09526	5.042865
65	220	1000	392.2238	0.249573	0.637391	0.387818	500	159.3478	304.223	58.99161	0.47368	27.13989	343.2058	343.2058	539.985	57%	35.98622	0.628078	35.45422	0.618793	522.4353	275.6252	1.019783	397.8216	328.3971	8.489668	5.597835
65	230	1000	392.2238	0.26155	0.637391	0.375841	500	159.3478	294.8276	55.40416	0.468927	26.86751	354.5881	354.5881	564.6973	59%	36.53098	0.637586	35.99898	0.628301	529.7469	269.6009	1.019659	398.4078	322.7059	7.953377	6.184007
65	240	1000	392.2238	0.273582	0.637391	0.363809	500	159.3478	285.389	51.91354	0.464128	26.59255	365.7392	365.7392	589.5068	61%	37.0809	0.647184	36.5489	0.637899	537.2329	263.4674	1.019544	399.0255	317.1304	7.475789	6.80174
65	40	1500	588.3356	0.028853	0.637391	0.608538	750	239.0217	716.049	217.8715	0.557134	31.92144	94.21492	94.21492	112.8134	20%	26.42311	0.46117	25.89111	0.451885	611.7021	565.429	1.023744	588.2941	702.8925	253.4797	-0.04155
65	50	1500	588.3356	0.036126	0.637391	0.601266	750	239.0217	707.4921	212.6954	0.554511	31.77111	112.3704	112.3704	136.49	21%	26.72377	0.466418	26.19177	0.457133	616.6224	560.6985	1.023552	588.335	693.8148	178.188	-0.00063
65	60	1500	588.3356	0.043421	0.637391	0.59397	750	239.0217	698.9073	207.5649	0.55187	31.6198	130.2033	130.2033	160.1765	23%	27.0264	0.4717	26.4944	0.462415	621.6012	555.9419	1.023365	588.3925	684.8984	132.7207	0.056853
65	70	1500	588.3356	0.050741	0.637391	0.58665	750	239.0217	690.2944	202.4807	0.549211	31.4675	147.7217	147.7217	183.8747	24%	27.33101	0.477016	26.79901	0.467731	626.6397	551.1585	1.023182	588.4667	676.1392	103.1084	0.131037
65	80	1500	588.3356	0.058085	0.637391	0.579307	750	239.0217	681.6536	197.4433	0.546536	31.3142	164.9335	164.9335	207.5865	26%	27.6376	0.482367	27.1056	0.473082	631.7392	546.3471	1.023003	588.5577	667.5332	82.71126	0.222057
65	90	1500	588.3356	0.065452	0.637391	0.571939	750	239.0217	672.9846	192.4532	0.543843	31.1599	181.8465	181.8465	231.3134	27%	27.9462	0.487753	27.4142	0.478468	636.901	541.507	1.022828	588.6657	659.0768	68.04133	0.33005
65	100	1500	588.3356	0.072843	0.637391	0.564548	750	239.0217	664.2874	187.5111	0.541132	31.00459	198.468	198.468	255.0572	29%	28.25682	0.493175	27.72482	0.483889	642.1264	536.6369	1.022658	588.7908	650.766	57.12178	0.455156
65	110	1500	588.3356	0.080259	0.637391	0.557133	750	239.0217	655.5619	182.6174	0.538404	30.84826	214.8053	214.8053	278.8918	30%	28.56947	0.498631	28.03747	0.489346	647.4167	531.736	1.022492	588.9331	642.5974	48.76325	0.597517
65	120	1500	588.3356	0.087698	0.637391	0.549693	750	239.0217	646.808	177.7729	0.535658	30.69092	230.8654	230.8654	302.6028	31%	28.88416	0.504124	28.35216	0.494839	652.7736	526.8032	1.02233	589.0929	634.5673	42.2148	0.757274
65	130	1500	588.3356	0.095162	0.637391	0.542229	750	239.0217	638.0257	172.9781	0.532893	30.53254	246.6553	246.6553	326.4081	32%	29.20091	0.509652	28.66891	0.500367	658.1983	521.8372	1.022172	589.2702	626.6724	36.98296	0.934573
65	140	1500	588.3356	0.10265	0.637391	0.534741	750	239.0217	629.2149	168.2336	0.530111	30.37313	262.1815	262.1815	350.2374	34%	29.51973	0.515217	28.98773	0.505931	663.6924	516.8371	1.022017	589.4652	618.9092	32.73244	1.129559
65	150	1500	588.3356	0.110162	0.637391	0.527229	750	239.0217	620.3755	163.54	0.527311	30.21268	277.4506	277.4506	374.0924	35%	29.84064	0.520817	29.30864	0.511532	669.2575	511.8015	1.021867	589.678	611.2747	29.22881	1.342379
65	160	1500	588.3356	0.117699	0.637391	0.519693	750	239.0217	611.5075	158.898	0.524492	30.05118	292.4689	292.4689	397.975	36%	30.16363	0.526455	29.63163	0.51717	674.8951	506.7293	1.021721	589.9088	603.7655	26.30408	1.573181
65	170	1500	588.3356	0.12526	0.637391	0.512132	750	239.0217	602.6107	154.3081	0.521655	29.88863	307.2425	307.2425	421.887	37%	30.48874	0.532129	29.95674	0.522844	680.6069	501.6191	1.021578	590.1577	596.3788	23.83526	1.822115
65	180	1500	588.3356	0.132845	0.637391	0.504546	750	239.0217	593.6853	149.7709	0.518799	29.72502	321.7774	321.7774	445.8302	39%	30.81596	0.53784	30.28396	0.528555	686.3946	496.4696	1.021439	590.425	589.1113	21.73059	2.08933
65	190	1500	588.3356	0.140455	0.637391	0.496937	750	239.0217	584.731	145.2871	0.515925	29.56034	336.0795	336.0795	469.8063	40%	31.14531	0.543588	30.61331	0.534303	692.26	491.2795	1.021304	590.7106	581.9603	19.92042	2.37498
65	200	1500	588.3356	0.148089	0.637391	0.489302	750	239.0217	575.748	140.8574	0.513032	29.3946	350.1543	350.1543	493.8173	41%	31.47681	0.549374	30.94481	0.540089	698.2048	486.0473	1.021172	591.0148	574.9228	18.35116	2.679216
65	210	1500	588.3356	0.155748	0.637391	0.481643	750	239.0217	566.736	136.4824	0.510121	29.22777	364.0076	364.0076	517.8648	42%	31.81046	0.555197	31.27846	0.545912	704.231	480.7715	1.021044	591.3378	567.9962	16.98093	3.002192
65	220	1500	588.3356	0.163431	0.637391	0.47396	750	239.0217	557.6952	132.1626	0.50719	29.05986	377.6447	377.6447	541.9509	44%	32.14627	0.561058	31.61427	0.551773	710.3403	475.4506	1.02092	591.6797	561.1777	15.77668	3.344064
65	230	1500	588.3356	0.171139	0.637391	0.466252	750	239.0217	548.6254	127.8989	0.504241	28.89087	391.0708	391.0708	566.0773	45%	32.48427	0.566957	31.95227	0.557672	716.5349	470.0829	1.020799	592.0406	554.4646	14.712	3.704987
65	240	1500	588.3356	0.178872	0.637391	0.45852	750	239.0217	539.5267	123.6918	0.501272	28.72078	404.2912	404.2912	590.2459	46%	32.82445	0.572895	32.29245	0.56361	722.8168	464.6669	1.020682	592.4207	547.8544	13.76556	4.085117
65	40	2000	784.4475	0.021605	0.637391	0.615786	1000	318.6956	966.1043	297.457	0.559741	32.0708	100.9712	100.9712	118.8601	18%	26.1244	0.455957	25.5924	0.446672	809.1188	760.179	1.023941	784.3594	949.5144	392.342	-0.08806
65	50	2000	784.4475	0.027039	0.637391	0.610352	1000	318.6956	957.5786	292.2301	0.557788	31.95887	119.4995	119.4995	142.5275	19%	26.34825	0.459864	25.81625	0.450579	813.9747	755.4768	1.023793	784.3819	940.2502	280.1093	-0.06562
65	60	2000	784.4475	0.032487	0.637391	0.604905	1000	318.6956	949.0321	287.037	0.555825	31.8464	137.778	137.778	166.2007	21%	26.5732	0.46379	26.0412	0.454505	818.8734	750.7559	1.023648	784.4166	931.111	210.7173	-0.03087
65	70	2000	784.4475	0.037947	0.637391	0.599444	1000	318.6956	940.4647	281.8779	0.553852	31.73338	155.8114	155.8114	189.8808	22%	26.79925	0.467735	26.26725	0.45845	823.8155	746.0157	1.023505	784.4637	922.0943	164.7637	0.016241
65	80	2000	784.4475	0.043421	0.637391	0.59397	1000	318.6956	931.8763	276.7532	0.55187	31.6198	173.6044	173.6044	213.5687	23%	27.0264	0.4717	26.4944	0.462415	828.8016	741.2559	1.023365	784.5233	913.1978	132.7207	0.075804
65	90	2000	784.4475	0.048909	0.637391	0.588482	1000	318.6956	923.267	271.6632	0.549878	31.50567	191.1615	191.1615	237.2653	24%	27.25467	0.475684	26.72267	0.466399	833.8326	736.4759	1.023227	784.5954	904.4192	109.4609	0.147891
65	100	2000	784.4475	0.05441	0.637391	0.582981	1000	318.6956	914.6367	266.6081	0.547876	31.39097	208.4873	208.4873	260.9717	25%	27.48405	0.479687	26.95205	0.470402	838.909	731.6751	1.023092	784.6801	895.7564	92.02396	0.232579

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
65	110	2000	784.4475	0.059924	0.637391	0.577467	1000	318.6956	905.9853	261.5884	0.545864	31.27572	225.586	225.586	284.6889	26%	27.71456	0.48371	27.18256	0.474425	844.0317	726.8531	1.022959	784.7775	887.207	78.60239	0.329945
65	120	2000	784.4475	0.065452	0.637391	0.571939	1000	318.6956	897.3128	256.6043	0.543843	31.1599	242.4619	242.4619	308.4178	27%	27.9462	0.487753	27.4142	0.478468	849.2013	722.0093	1.022828	784.8876	878.769	68.04133	0.440066
65	130	2000	784.4475	0.070993	0.637391	0.566398	1000	318.6956	888.6191	251.6561	0.541811	31.04351	259.1193	259.1193	332.1594	28%	28.17898	0.491816	27.64698	0.482531	854.4186	717.1431	1.0227	785.0105	870.4403	59.57449	0.563023
65	140	2000	784.4475	0.076548	0.637391	0.560843	1000	318.6956	879.9042	246.7442	0.53977	30.92655	275.5623	275.5623	355.9148	29%	28.41289	0.495899	27.88089	0.486613	859.6844	712.2539	1.022575	785.1464	862.2189	52.67694	0.698894
65	150	2000	784.4475	0.082116	0.637391	0.555275	1000	318.6956	871.1681	241.8689	0.537719	30.80902	291.7947	291.7947	379.6848	30%	28.64795	0.500001	28.11595	0.490716	864.9996	707.3411	1.022451	785.2953	854.1027	46.97916	0.847759
65	160	2000	784.4475	0.087698	0.637391	0.549693	1000	318.6956	862.4107	237.0306	0.535658	30.69092	307.8206	307.8206	403.4704	31%	28.88416	0.504124	28.35216	0.494839	870.3648	702.4042	1.02233	785.4572	846.0897	42.2148	1.009699
65	170	2000	784.4475	0.093294	0.637391	0.544098	1000	318.6956	853.6319	232.2295	0.533586	30.57223	323.6437	323.6437	427.2728	32%	29.12153	0.508267	28.58953	0.498981	875.7809	697.4425	1.022211	785.6323	838.1781	38.18788	1.184795
65	180	2000	784.4475	0.098903	0.637391	0.538488	1000	318.6956	844.8318	227.4661	0.531505	30.45297	339.2679	339.2679	451.0928	33%	29.36007	0.51243	28.82807	0.503145	881.2488	692.4553	1.022094	785.8206	830.366	34.75156	1.373129
65	190	2000	784.4475	0.104526	0.637391	0.532866	1000	318.6956	836.0103	222.7406	0.529413	30.33312	354.6969	354.6969	474.9315	34%	29.59976	0.516613	29.06776	0.507328	886.7693	687.4421	1.02198	786.0223	822.6516	31.794	1.574782
65	200	2000	784.4475	0.110162	0.637391	0.527229	1000	318.6956	827.1673	218.0534	0.527311	30.21268	369.9342	369.9342	498.7899	35%	29.84064	0.520817	29.30864	0.511532	892.3433	682.402	1.021867	786.2373	815.0329	29.22881	1.789839
65	210	2000	784.4475	0.115812	0.637391	0.521579	1000	318.6956	818.3029	213.4048	0.525198	30.09166	384.9833	384.9833	522.6689	36%	30.08269	0.525042	29.55069	0.515757	897.9717	677.3344	1.021757	786.4659	807.5083	26.98834	2.018382
65	220	2000	784.4475	0.121476	0.637391	0.515915	1000	318.6956	809.4169	208.7953	0.523076	29.97004	399.8479	399.8479	546.5697	37%	30.32592	0.529287	29.79392	0.520002	903.6555	672.2387	1.021649	786.708	800.0761	25.01903	2.260496
65	230	2000	784.4475	0.127154	0.637391	0.510238	1000	318.6956	800.5094	204.2251	0.520943	29.84783	414.5312	414.5312	570.4931	38%	30.57034	0.533553	30.03834	0.524268	909.3955	667.1139	1.021543	786.9638	792.7344	23.278	2.516265
65	240	2000	784.4475	0.132845	0.637391	0.504546	1000	318.6956	791.5804	199.6945	0.518799	29.72502	429.0365	429.0365	594.4402	39%	30.81596	0.53784	30.28396	0.528555	915.1928	661.9595	1.021439	787.2333	785.4817	21.73059	2.785774
65	40	2500	980.5594	0.017267	0.637391	0.620124	1250	398.3695	1216.137	377.0782	0.561297	32.15995	107.4567	107.4567	124.9122	16%	25.9461	0.452845	25.4141	0.44356	1006.58	954.9096	1.024061	980.4379	1196.272	541.2684	-0.12151
65	50	2500	980.5594	0.021605	0.637391	0.615786	1250	398.3695	1207.63	371.8212	0.559741	32.0708	126.214	126.214	148.5752	18%	26.1244	0.455957	25.5924	0.446672	1011.398	950.2238	1.023941	980.4493	1186.893	392.342	-0.11007
65	60	2500	980.5594	0.025951	0.637391	0.61144	1250	398.3695	1199.107	366.591	0.558179	31.9813	144.7675	144.7675	172.242	19%	26.30339	0.459081	25.77139	0.449796	1016.25	945.5234	1.023822	980.4705	1177.616	298.2207	-0.08886
65	70	2500	980.5594	0.030306	0.637391	0.607085	1250	398.3695	1190.566	361.3877	0.556611	31.89146	163.1204	163.1204	195.9133	20%	26.48309	0.462217	25.95109	0.452932	1021.136	940.8082	1.023705	980.5016	1168.44	234.8895	-0.05781
65	80	2500	980.5594	0.034669	0.637391	0.602722	1250	398.3695	1182.01	356.2116	0.555037	31.80126	181.2756	181.2756	219.5898	21%	26.66348	0.465366	26.13148	0.45608	1026.056	936.0777	1.02359	980.5425	1159.362	190.1959	-0.0169
65	90	2500	980.5594	0.039041	0.637391	0.59835	1250	398.3695	1173.436	351.0628	0.553456	31.71071	199.2364	199.2364	243.2721	22%	26.84459	0.468526	26.31259	0.459241	1031.011	931.3317	1.023477	980.5933	1150.382	157.4501	0.033945
65	100	2500	980.5594	0.043421	0.637391	0.59397	1250	398.3695	1164.845	345.9415	0.55187	31.6198	217.0055	217.0055	266.9608	23%	27.0264	0.4717	26.4944	0.462415	1036.002	926.5699	1.023365	980.6541	1141.497	132.7207	0.094755
65	110	2500	980.5594	0.04781	0.637391	0.589581	1250	398.3695	1156.238	340.848	0.550277	31.52854	234.5859	234.5859	290.6565	24%	27.20893	0.474885	26.67693	0.4656	1041.028	921.7919	1.023254	980.725	1132.707	113.5733	0.165585
65	120	2500	980.5594	0.052208	0.637391	0.585183	1250	398.3695	1147.614	335.7824	0.548678	31.43692	251.9806	251.9806	314.3599	25%	27.39217	0.478083	26.86017	0.468798	1046.091	916.9974	1.023146	980.8059	1124.01	98.43418	0.246483
65	130	2500	980.5594	0.056614	0.637391	0.580777	1250	398.3695	1138.973	330.745	0.547072	31.34494	269.1922	269.1922	338.0716	26%	27.57612	0.481294	27.04412	0.472009	1051.191	912.1861	1.023038	980.8969	1115.404	86.24921	0.337499
65	140	2500	980.5594	0.061029	0.637391	0.576363	1250	398.3695	1130.316	325.7359	0.545461	31.2526	286.2236	286.2236	361.7922	26%	27.7608	0.484517	27.2288	0.475232	1056.327	907.3576	1.022933	980.9981	1106.888	76.29028	0.438682
65	150	2500	980.5594	0.065452	0.637391	0.571939	1250	398.3695	1121.641	320.7553	0.543843	31.1599	303.0774	303.0774	385.5223	27%	27.9462	0.487753	27.4142	0.478468	1061.502	902.5116	1.022828	981.1095	1098.461	68.04133	0.550083
65	160	2500	980.5594	0.069884	0.637391	0.567507	1250	398.3695	1112.949	315.8035	0.542219	31.06683	319.7564	319.7564	409.2626	28%	28.13233	0.491002	27.60033	0.481717	1066.714	897.6476	1.022726	981.2311	1090.122	61.12817	0.671752
65	170	2500	980.5594	0.074324	0.637391	0.563067	1250	398.3695	1104.241	310.8807	0.540588	30.97341	336.2632	336.2632	433.0137	29%	28.31919	0.494263	27.78719	0.484978	1071.965	892.7654	1.022625	981.3631	1081.868	55.27405	0.803739
65	180	2500	980.5594	0.078774	0.637391	0.558618	1250	398.3695	1095.515	305.9871	0.538951	30.87961	352.6003	352.6003	456.7762	30%	28.50678	0.497537	27.97478	0.488252	1077.256	887.8645	1.022525	981.5055	1073.7	50.27066	0.946095
65	190	2500	980.5594	0.083232	0.637391	0.55416	1250	398.3695	1086.773	301.1229	0.537307	30.78545	368.7703	368.7703	480.5508	30%	28.6951	0.500824	28.1631	0.491539	1082.586	882.9446	1.022427	981.6583	1065.615	45.95874	1.098873
65	200	2500	980.5594	0.087698	0.637391	0.549693	1250	398.3695	1078.013	296.2882	0.535658	30.69092	384.7757	384.7757	504.3381	31%	28.88416	0.504124	28.35216	0.494839	1087.956	878.0053	1.02233	981.8215	1057.612	42.2148	1.262124
65	210	2500	980.5594	0.092174	0.637391	0.545218	1250	398.3695	1069.237	291.4834	0.534001	30.59602	400.6189	400.6189	528.1387	32%	29.07397	0.507436	28.54197	0.498151	1093.367	873.0461	1.022234	981.9953	1049.691	38.9419	1.435899
65	220	2500	980.5594	0.096658	0.637391	0.540734	1250	398.3695	1060.443	286.7087	0.532338	30.50074	416.3024	416.3024	551.9533	33%	29.26451	0.510762	28.73251	0.501477	1098.819	868.0666	1.022141	982.1796	1041.849	36.06303	1.620252
65	230	2500	980.5594	0.10115	0.637391	0.536241	1250	398.3695	1051.632	281.9641	0.530669	30.4051	431.8284	431.8284	575.7825	33%	29.4558	0.514101	28.9238	0.504816	1104.313	863.0665	1.022048	982.3746	1034.086	33.51641	1.815234
65	240	2500	980.5594	0.105652	0.637391	0.531739	1250	398.3695	1042.804	277.2501	0.528993	30.30908	447.1995	447.1995	599.627	34%	29.64784	0.517453	29.11584	0.508167	1109.85	858.0453	1.021957	982.5803	1026.4	31.25198	2.020899
65	40	3000	1176.671	0.01438	0.637391	0.623011	1500	478.0435	1466.159	456.7171	0.562331	32.21919	113.8045	113.8045	130.9666	15%	25.82763	0.450777	25.29563	0.441492	1204.064	1149.631	1.024142	1176.523	1443.098	694.9019	-0.14847
65	50	3000	1176.671	0.017989	0.637391	0.619402	1500	478.0435	1457.665	451.4402	0.561038	32.14511	132.7167	132.7167	154.627	17%	25.97577	0.453363	25.44377	0.444078	1208.857	1144.956	1.02404	1176.527	1433.642	510.9653	-0.14434
65	60	3000	1176.671	0.021605	0.637391	0.615786	1500	478.0435	1449.156	446.1855	0.559741	32.0708	151.4568	151.4568	178.2902	18%	26.1244	0.455957	25.5924	0.446672	1213.678	1140.269	1.023941	1176.539	1424.272	392.342	-0.13209
65	70	3000	1176.671	0.025226	0.637391	0.612165	1500	478.0435	1440.634	440.953	0.55844	31.99624	170.0272	170.0272	201.9567	19%	26.27351	0.458559	25.74151	0.449274	1218.527	1135.569	1.023842	1176.56	1414.986	311.3192	-0.11169
65	80	3000	1176.671	0.028853	0.637391	0.608538	1500	478.0435	1432.098	435.743	0.557134	31.92144	188.4298	188.4298	225.6268	20%	26.42311	0.46117	25.89111	0.451885	1223.404	1130.858	1.023744	1176.588	1405.785	253.4797	-0.08311
65	90	3000	1176.671	0.032487	0.637391	0.604905	1500	478.0435	1423.548	430.5555	0.555825	31.8464	206.667	206.667	249.3011	21%	26.5732	0.46379	26.0412	0.454505	1228.31	1126.134	1.023648	1176.625	1396.666	210.7173	-0.04631
65	100	3000	1176.671	0.036126	0.637391	0.601266	1500	478.0435	1414.984	425.3907	0.554511	31.77111	224.7408	224.7408	272.9799	21%	26.72377	0.466418	26.19177	0.457133	1233.245	1121.397	1.023552	1176.67	1387.63	178.188	-0.00126
65	110	3000	1176.671	0.039771	0.637391	0.597621	1500	478.0435	1406.406	420.2488	0.553192	31.69558	242.6533	242.6533	296.6637	22%	26.87484	0.469054	26.34284	0.459769	1238.209	1116.647	1.023458	1176.723	1378.673	152.8516	0.052063
65	120	3000	1176.671	0.043421	0.637391	0.59397	1500	478.0435	1397.815	415.1298	0.55187	31.6198	260.4066	260.4066	320.353	23%	27.0264	0.4717	26.4944	0.462415	1243.202	1111.884	1.023365	1176.785	1369.797	132.7207	0.113706
65	130	3000	1176.671	0.047078	0.637391	0.590313	1500	478.0435	1389.209	410.034	0.550543	31.54377	278.0026	278.0026	344.0481	24%	27.17846	0.474354	26.64646	0.465068	1248.226	1107.107	1.023273	1176.855	1360.999	116.4514	0.183699
65	140	3000	1176.671	0.050741	0.637391	0.58665	1500	478.0435	1380.589	404.9614	0.549211	31.4675	295.4434	295.4434	367.7495	24%	27.33101	0.477016	26.79901	0.467731	1253.279	1102.317	1.023182	1176.933	1352.278	103.1084	0.262075
65	150	3000	1176.671	0.05441	0.637391	0.582981	1500	478.0435	1371.955	399.9122	0.547876	31.39097	312.7309	312.7309	391.4576	25%	27.48405	0.479687	26.95205	0.470402	1258.364	1097.513	1.023092	1177.02	1343.635	92.02396	0.348868
65	160	3000	1176.671	0.058085	0.637391	0.579307	1500	478.0435	1363.307	394.8865	0.546536	31.3142	329.8671	329.8671	415.1729	26%	27.6376	0.482367	27.1056	0.473082	1263.478	1092.694	1.023003	1177.115	1335.066	82.71126	0.444114
65	170	3000	1176.671	0.061765	0.637391	0.575626	1500	478.0435	1354.645	389.8845	0.545192	31.23717	346.8538	346.8538	438.8958	27%	27.79165	0.485056	27.25965	0.475771	1268.624	1087.861	1.022915	1177.219	1326.573	74.80828	0.547846
65	180	3000	1176.671	0.065452	0.637391	0.571939	1500	478.0435	1345.969	384.9064	0.543843	31.1599	363.6929	363.6929	462.6267	27%	27.9462	0.487753	27.4142	0.478468	1273.802	1083.014	1.022828	1177.331	1318.154	68.04133	0.6601
65	190	3000	1176.671	0.069145	0.637391	0.568247	1500	478.0435	1337.279	379.9522	0.54249	31.08237	380.3864	380.3864	486.3661	28%	28.10126	0.49046	27.56926	0.481174	1279.011	1078.151	1.022743	1177.452	1309.807	62.20032	0.78091
65	200	3000	1176.671	0.072843	0.637391	0.564548	1500	478.0435	1328.575	375.0221	0.541132	31.00459	396.9359	396.9359	510.1145	29%	28.25682	0.493175	27.72482	0.483889	1284.253	1073.274	1.022658	1177.582	1301.532	57.12178	0.910312
65	210	3000	1176.671	0.076548	0.637391	0.560843	1500	478.0435	1319.856	370.1163	0.53977	30.92655	413.3434	413.3434	533.8721	29%	28.41289	0.495899	27.88089	0.486613	1289.527	1068.381	1.022575	1177.72	1293.328	52.67694	1.048341
65	220	3000	1176.671	0.080259	0.637391	0.557133	1500	478.0435	1311.124	365.2349	0.538404	30.84826	429.6105	429.6105	557.6396	30%	28.56947	0.498631	28.03747	0.489346	1294.833	1063.472	1.022492	1177.866	1285.195	48.76325	1.195033
65	230	3000	1176.671	0.083975	0.637391	0.553416	1500	478.0435	1302.377	360.378	0.537033	30.76972	445.7391	445.7391	581.4173	30%	28.72656	0.501373	28.19456	0.492088	1300.174	1058.547	1.02241	1178.022	1277.13	45.29821	1.350424
65	240	3000	1176.671	0.087698	0.637391	0.549693	1500	478.0435	1293.616	355.5459	0.535658	30.69092	461.7309	461.7309	605.2057	31%	28.88416	0.504124	28.35216	0.494839	1305.547	1053.606	1.02233	1178.186	1269.135	42.2148	1.514549
65	40	3500	1372.783	0.01232	0.637391	0.625071	1750	557.7174	1716.175	536.3661	0.563068	32.26141	120.0727	120.0727	137.0221	14%	25.74319	0.449303	25.21119	0.440018	1401.561	1344.346	1.0242	1372.611	1689.964	849.6645	-0.17173
65	50	3500	1372.783	0.015411	0.637391	0.621981	1750	557.7174	1707.689	531.075	0.561962	32.19805	139.0966	139.0966	160.6809	16%	25.8699	0.451515	25.3379	0.44223	1406.336	1339.679	1.024113	1372.61	1680.452	633.1446	-0.1728
65	60	3500	1372.783	0.018506	0.637391	0.618886	1750	557.7174	1699.192	525.8028	0.560853	32.13451	157.9717	157.9717	184.3418	17%	25.99697	0.453733	25.46497	0.444448	1411.135	1335.001	1.024026	1372.616	1671.014	490.8823	-0.16693
65	70	3500	1372.783	0.021605	0.637391	0.615786	1750	557.7174	1690.683	520.5497	0.559741	32.0708	176.6996	176.6996	208.0052	18%	26.1244	0.455957	25.5924	0.446672	1415.958	1330.313	1.023941	1372.629	1661.65	392.342	-0.1541
65	80	3500	1372.783	0.024708	0.637391	0.612683	1750	557.7174	1682.161	515.3156	0.558626	32.00691	195.282	195.282	231.6714	19%	26.25218	0.458187	25.72018	0.448902	1420.805	1325.615	1.023856	1372.649	1652.359	321.2267	-0.13429
65	90	3500	1372.783	0.027816	0.637391	0.609575	1750	557.7174	1673.628	510.1008	0.557508	31.94284	213.7204	213.7204	255.3408	19%	26.38032	0.460423	25.84832	0.451138	1425.676	1320.906	1.023772	1372.676	1643.14	268.191	-0.10746

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
65	100	3500	1372.783	0.030929	0.637391	0.606463	1750	557.7174	1665.083	504.9053	0.556386	31.87859	232.0164	232.0164	279.0135	20%	26.50882	0.462666	25.97682	0.453381	1430.571	1316.187	1.023689	1372.71	1633.992	227.5614	-0.0736
65	110	3500	1372.783	0.034045	0.637391	0.603346	1750	557.7174	1656.526	499.7291	0.555262	31.81416	250.1716	250.1716	302.69	21%	26.63767	0.464915	26.10567	0.45563	1435.492	1311.456	1.023607	1372.75	1624.914	195.7312	-0.03269
65	120	3500	1372.783	0.037166	0.637391	0.600225	1750	557.7174	1647.957	494.5725	0.554134	31.74956	268.1876	268.1876	326.3706	22%	26.76689	0.46717	26.23489	0.457885	1440.437	1306.715	1.023525	1372.798	1615.906	170.3173	0.015313
65	130	3500	1372.783	0.040292	0.637391	0.5971	1750	557.7174	1639.376	489.4355	0.553004	31.68477	286.0657	286.0657	350.0555	22%	26.89646	0.469432	26.36446	0.460147	1445.407	1301.962	1.023445	1372.854	1606.967	149.694	0.070419
65	140	3500	1372.783	0.043421	0.637391	0.59397	1750	557.7174	1630.784	484.3181	0.55187	31.6198	303.8077	303.8077	373.7452	23%	27.0264	0.4717	26.4944	0.462415	1450.403	1297.198	1.023365	1372.916	1598.096	132.7207	0.132657
65	150	3500	1372.783	0.046556	0.637391	0.590836	1750	557.7174	1622.179	479.2206	0.550733	31.55465	321.4148	321.4148	397.4398	24%	27.1567	0.473974	26.6247	0.464689	1455.424	1292.422	1.023286	1372.985	1589.293	118.578	0.202052
65	160	3500	1372.783	0.049694	0.637391	0.587697	1750	557.7174	1613.562	474.143	0.549592	31.48932	338.8887	338.8887	421.1398	24%	27.28737	0.476254	26.75537	0.466969	1460.471	1287.635	1.023208	1373.062	1580.556	106.665	0.278628
65	170	3500	1372.783	0.052837	0.637391	0.584555	1750	557.7174	1604.933	469.0855	0.548449	31.4238	356.2307	356.2307	444.8455	25%	27.4184	0.478541	26.8864	0.469256	1465.544	1282.836	1.02313	1373.146	1571.885	96.53246	0.362411
65	180	3500	1372.783	0.055984	0.637391	0.581407	1750	557.7174	1596.292	464.048	0.547302	31.3581	373.4423	373.4423	468.5571	25%	27.5498	0.480835	27.0178	0.47155	1470.644	1278.024	1.023054	1373.237	1563.279	87.83935	0.453426
65	190	3500	1372.783	0.059136	0.637391	0.578256	1750	557.7174	1587.639	459.0308	0.546152	31.29222	390.5248	390.5248	492.2751	26%	27.68156	0.483134	27.14956	0.473849	1475.77	1273.201	1.022978	1373.335	1554.738	80.32279	0.551698
65	200	3500	1372.783	0.062292	0.637391	0.5751	1750	557.7174	1578.974	454.0339	0.544999	31.22615	407.4797	407.4797	515.9997	27%	27.8137	0.485441	27.2817	0.476155	1480.923	1268.365	1.022903	1373.44	1546.26	73.77752	0.657253
65	210	3500	1372.783	0.065452	0.637391	0.571939	1750	557.7174	1570.297	449.0574	0.543843	31.1599	424.3084	424.3084	539.7312	27%	27.9462	0.487753	27.4142	0.478468	1486.102	1263.516	1.022828	1373.553	1537.846	68.04133	0.770116
65	220	3500	1372.783	0.068617	0.637391	0.568775	1750	557.7174	1561.608	444.1015	0.542683	31.09346	441.0122	441.0122	563.47	28%	28.07908	0.490072	27.54708	0.480787	1491.309	1258.655	1.022755	1373.673	1529.494	62.98468	0.890314
65	230	3500	1372.783	0.071786	0.637391	0.565605	1750	557.7174	1552.907	439.1663	0.54152	31.02684	457.5924	457.5924	587.2163	28%	28.21232	0.492398	27.68032	0.483113	1496.544	1253.781	1.022682	1373.801	1521.204	58.50305	1.017871
65	240	3500	1372.783	0.07496	0.637391	0.562432	1750	557.7174	1544.194	434.2518	0.540354	30.96003	474.0504	474.0504	610.9706	29%	28.34594	0.49473	27.81394	0.485445	1501.806	1248.893	1.02261	1373.936	1512.975	54.51137	1.152815
65	40	4000	1568.895	0.010776	0.637391	0.626615	2000	637.3913	1966.187	616.0213	0.56362	32.29302	126.2908	126.2908	143.0781	13%	25.67996	0.4482	25.14796	0.438915	1599.065	1539.058	1.024244	1568.702	1936.855	1003.175	-0.19269
65	50	4000	1568.895	0.013478	0.637391	0.623913	2000	637.3913	1957.708	610.7197	0.562653	32.23767	145.3991	145.3991	166.7359	15%	25.79067	0.450132	25.25867	0.440847	1603.827	1534.397	1.024167	1568.697	1927.3	756.8268	-0.19765
65	60	4000	1568.895	0.016184	0.637391	0.621207	2000	637.3913	1949.218	605.4345	0.561685	32.18218	164.3763	164.3763	190.3953	16%	25.90164	0.452069	25.36964	0.442784	1608.61	1529.726	1.024091	1568.698	1917.812	592.1632	-0.19656
65	70	4000	1568.895	0.018893	0.637391	0.618499	2000	637.3913	1940.719	600.1659	0.560714	32.12656	183.2237	183.2237	214.0567	17%	26.01288	0.45401	25.48088	0.444725	1613.413	1525.047	1.024015	1568.706	1908.388	476.603	-0.18938
65	80	4000	1568.895	0.021605	0.637391	0.615786	2000	637.3913	1932.209	594.9139	0.559741	32.0708	201.9424	201.9424	237.7203	18%	26.1244	0.455957	25.5924	0.446672	1618.238	1520.358	1.023941	1568.719	1899.029	392.342	-0.17612
65	90	4000	1568.895	0.02432	0.637391	0.613071	2000	637.3913	1923.688	589.6787	0.558766	32.01491	220.5338	220.5338	261.3863	19%	26.23619	0.457908	25.70419	0.448623	1623.083	1515.66	1.023866	1568.738	1889.733	328.98	-0.15674
65	100	4000	1568.895	0.027039	0.637391	0.610352	2000	637.3913	1915.157	584.4602	0.557788	31.95887	238.9991	238.9991	285.055	19%	26.34825	0.459864	25.81625	0.450579	1627.949	1510.954	1.023793	1568.764	1880.5	280.1093	-0.13123
65	110	4000	1568.895	0.029761	0.637391	0.60763	2000	637.3913	1906.616	579.2587	0.556807	31.90271	257.3394	257.3394	308.7266	20%	26.46059	0.461824	25.92859	0.452539	1632.837	1506.237	1.02372	1568.795	1871.33	241.6058	-0.09957
65	120	4000	1568.895	0.032487	0.637391	0.604905	2000	637.3913	1898.064	574.074	0.555825	31.8464	275.556	275.556	332.4014	21%	26.5732	0.46379	26.0412	0.454505	1637.747	1501.512	1.023648	1568.833	1862.222	210.7173	-0.06175
65	130	4000	1568.895	0.035215	0.637391	0.602176	2000	637.3913	1889.502	568.9064	0.554839	31.78996	293.6501	293.6501	356.0797	21%	26.68608	0.46576	26.15408	0.456475	1642.678	1496.776	1.023576	1568.877	1853.175	185.5494	-0.01773
65	140	4000	1568.895	0.037947	0.637391	0.599444	2000	637.3913	1880.929	563.7559	0.553852	31.73338	311.6228	311.6228	379.7616	22%	26.79925	0.467735	26.26725	0.45845	1647.631	1492.031	1.023505	1568.927	1844.189	164.7637	0.032483
65	150	4000	1568.895	0.040683	0.637391	0.596709	2000	637.3913	1872.346	558.6225	0.552862	31.67666	329.4753	329.4753	403.4474	22%	26.91268	0.469715	26.38068	0.46043	1652.606	1487.277	1.023435	1568.984	1835.262	147.3921	0.088924
65	160	4000	1568.895	0.043421	0.637391	0.59397	2000	637.3913	1863.753	553.5064	0.55187	31.6198	347.2088	347.2088	427.1373	23%	27.0264	0.4717	26.4944	0.462415	1657.603	1482.512	1.023365	1569.047	1826.396	132.7207	0.151609
65	170	4000	1568.895	0.046164	0.637391	0.591228	2000	637.3913	1855.149	548.4077	0.550875	31.5628	364.8243	364.8243	450.8317	24%	27.1404	0.473689	26.6084	0.464404	1662.623	1477.737	1.023296	1569.116	1817.588	120.2133	0.220555
65	180	4000	1568.895	0.048909	0.637391	0.588482	2000	637.3913	1846.534	543.3264	0.549878	31.50567	382.323	382.323	474.5306	24%	27.25467	0.475684	26.72267	0.466399	1667.665	1472.952	1.023227	1569.191	1808.838	109.4609	0.295782
65	190	4000	1568.895	0.051658	0.637391	0.585734	2000	637.3913	1837.909	538.2625	0.548878	31.44839	399.7061	399.7061	498.2345	25%	27.36922	0.477683	26.83722	0.468398	1672.73	1468.156	1.023159	1569.272	1800.147	100.1471	0.37731
65	200	4000	1568.895	0.05441	0.637391	0.582981	2000	637.3913	1829.273	533.2163	0.547876	31.39097	416.9745	416.9745	521.9435	25%	27.48405	0.479687	26.95205	0.470402	1677.818	1463.35	1.023092	1569.36	1791.513	92.02396	0.465158
65	210	4000	1568.895	0.057165	0.637391	0.580226	2000	637.3913	1820.627	528.1876	0.546871	31.33342	434.1295	434.1295	545.6579	26%	27.59917	0.481696	27.06717	0.472411	1682.929	1458.534	1.023025	1569.454	1782.935	84.89487	0.559344
65	220	4000	1568.895	0.059924	0.637391	0.577467	2000	637.3913	1811.971	523.1768	0.545864	31.27572	451.172	451.172	569.3778	26%	27.71456	0.48371	27.18256	0.474425	1688.063	1453.706	1.022959	1569.555	1774.414	78.60239	0.659889
65	230	4000	1568.895	0.062686	0.637391	0.574705	2000	637.3913	1803.303	518.1837	0.544855	31.21788	468.1031	468.1031	593.1037	27%	27.83024	0.485729	27.29824	0.476444	1693.221	1448.868	1.022893	1569.662	1765.948	73.01918	0.766812
65	240	4000	1568.895	0.065452	0.637391	0.571939	2000	637.3913	1794.626	513.2085	0.543843	31.1599	484.9239	484.9239	616.8356	27%	27.9462	0.487753	27.4142	0.478468	1698.403	1444.019	1.022828	1569.775	1757.538	68.04133	0.880133
65	40	4500	1765.007	0.009576	0.637391	0.627815	2250	717.0652	2216.196	695.6807	0.564048	32.31758	132.4752	132.4752	149.1346	13%	25.63085	0.447343	25.09885	0.438058	1796.574	1733.768	1.024278	1764.795	2183.762	1153.867	-0.21212
65	50	4500	1765.007	0.011977	0.637391	0.625415	2250	717.0652	2207.722	690.3709	0.56319	32.26844	151.6496	151.6496	172.7915	14%	25.72913	0.449058	25.19713	0.439773	1801.326	1729.111	1.02421	1764.787	2174.175	880.5268	-0.2201
65	60	4500	1765.007	0.01438	0.637391	0.623011	2250	717.0652	2199.239	685.0756	0.562331	32.21919	170.7068	170.7068	196.4499	15%	25.82763	0.450777	25.29563	0.441492	1806.096	1724.446	1.024142	1764.784	2164.647	694.9019	-0.22271
65	70	4500	1765.007	0.016786	0.637391	0.620606	2250	717.0652	2190.747	679.795	0.561469	32.16983	189.6478	189.6478	220.1098	16%	25.92634	0.4525	25.39434	0.443215	1810.885	1719.773	1.024074	1764.787	2155.176	563.0273	-0.21992
65	80	4500	1765.007	0.019194	0.637391	0.618197	2250	717.0652	2182.245	674.5292	0.560606	32.12037	208.4736	208.4736	243.7716	17%	26.02526	0.454226	25.49326	0.444941	1815.692	1715.092	1.024007	1764.795	2145.763	465.9323	-0.21174
65	90	4500	1765.007	0.021605	0.637391	0.615786	2250	717.0652	2173.735	669.2782	0.559741	32.0708	227.1852	227.1852	267.4353	18%	26.1244	0.455957	25.5924	0.446672	1820.517	1710.403	1.023941	1764.809	2136.407	392.342	-0.19813
65	100	4500	1765.007	0.024018	0.637391	0.613373	2250	717.0652	2165.215	664.042	0.558874	32.02112	245.7837	245.7837	291.1012	18%	26.22375	0.457691	25.69175	0.448406	1825.361	1705.706	1.023875	1764.828	2127.108	335.2116	-0.17909
65	110	4500	1765.007	0.026435	0.637391	0.610957	2250	717.0652	2156.686	658.8207	0.558005	31.97134	264.2699	264.2699	314.7694	19%	26.32332	0.459429	25.79132	0.450144	1830.224	1701	1.023809	1764.852	2117.865	289.9545	-0.15461
65	120	4500	1765.007	0.028853	0.637391	0.608538	2250	717.0652	2148.147	653.6145	0.557134	31.92144	282.6448	282.6448	338.4402	20%	26.42311	0.46117	25.89111	0.451885	1835.106	1696.287	1.023744	1764.882	2108.678	253.4797	-0.12466
65	130	4500	1765.007	0.031275	0.637391	0.606116	2250	717.0652	2139.599	648.4232	0.556262	31.87144	300.9093	300.9093	362.1138	20%	26.52311	0.462916	25.99111	0.453631	1840.007	1691.565	1.02368	1764.918	2099.545	223.6422	-0.08924
65	140	4500	1765.007	0.033699	0.637391	0.603692	2250	717.0652	2131.042	643.2471	0.555387	31.82133	319.0645	319.0645	385.7903	21%	26.62334	0.464665	26.09134	0.45538	1844.928	1686.834	1.023616	1764.959	2090.468	198.9152	-0.04832
65	150	4500	1765.007	0.036126	0.637391	0.601266	2250	717.0652	2122.476	638.0861	0.554511	31.77111	337.1112	337.1112	409.4699	21%	26.72377	0.466418	26.19177	0.457133	1849.867	1682.095	1.023552	1765.005	2081.444	178.188	-0.0019
65	160	4500	1765.007	0.038555	0.637391	0.598836	2250	717.0652	2113.901	632.9403	0.553632	31.72078	355.0504	355.0504	433.1528	22%	26.82443	0.468175	26.29243	0.458889	1854.826	1677.348	1.023489	1765.057	2072.475	160.6368	0.050048
65	170	4500	1765.007	0.040987	0.637391	0.596404	2250	717.0652	2105.316	627.8099	0.552752	31.67035	372.883	372.883	456.8393	23%	26.92531	0.469935	26.39331	0.46065	1859.805	1672.591	1.023427	1765.114	2063.558	145.6397	0.107528
65	180	4500	1765.007	0.043421	0.637391	0.59397	2250	717.0652	2096.722	622.6948	0.55187	31.6198	390.6099	390.6099	480.5295	23%	27.0264	0.4717	26.4944	0.462415	1864.804	1667.826	1.023365	1765.177	2054.695	132.7207	0.17056
65	190	4500	1765.007	0.045859	0.637391	0.591533	2250	717.0652	2088.118	617.595	0.550985	31.56914	408.2319	408.2319	504.2236	24%	27.12772	0.473468	26.59572	0.464183	1869.822	1663.051	1.023303	1765.246	2045.884	121.5097	0.239157
65	200	4500	1765.007	0.048299	0.637391	0.589093	2250	717.0652	2079.505	612.5108	0.550099	31.51837	425.75	425.75	527.9218	24%	27.22925	0.47524	26.69725	0.465955	1874.861	1658.268	1.023242	1765.32	2037.125	111.7161	0.313337
65	210	4500	1765.007	0.050741	0.637391	0.58665	2250	717.0652	2070.883	607.4421	0.549211	31.4675	443.1651	443.1651	551.6242	24%	27.33101	0.477016	26.79901	0.467731	1879.919	1653.475	1.023182	1765.4	2028.417	103.1084	0.393112
65	220	4500	1765.007	0.053186	0.637391	0.584205	2250	717.0652	2062.252	602.389	0.548322	31.41651	460.478	460.478	575.3312	25%	27.43298	0.478796	26.90098	0.469511	1884.998	1648.674	1.023122	1765.485	2019.761	95.50087	0.4785
65	230	4500	1765.007	0.055634	0.637391	0.581757	2250	717.0652	2053.611	597.3515	0.54743	31.36541	477.6895	477.6895	599.0428	25%	27.53518	0.48058	27.00318	0.471294	1890.098	1643.862	1.023062	1765.576	2011.155	88.7429	0.569514
65	240	4500	1765.007	0.058085	0.637391	0.579307	2250	717.0652	2044.961	592.3298	0.546536	31.3142	494.8006	494.8006	622.7594	26%	27.6376	0.482367	27.1056	0.473082	1895.218	1639.041	1.023003	1765.673	2002.6	82.71126	0.666171
65	40	5000	1961.119	0.008617	0.637391	0.628775	2500	796.7391	2466.203	775.3431	0.564391	32.3372	138.636	138.636	155.1913	12%	25.59159	0.446658	25.05959	0.437372	1994.087	1928.477	1.024306	1960.888	2430.682	1300.732	-0.23047
65	50	5000	1961.119	0.010776	0.637391	0.626615	2500	796.7391	2457.734	770.0266	0.56362	32.29302	157.8635	157.8635	178.8477	13%	25.67996	0.4482	25.14796	0.438915	1998.831	1923.823	1.024244	1960.878	2421.068	1003.175	-0.24086
65	60	5000	1961.119	0.012938	0.637391	0.624454	2500	796.7391	2449.256	764.7233	0.562847	32.24875	176.985	176.985	202.5052	14%	25.7685	0.449745	25.2365	0.44046	2003.591	1919.162	1.024182	1960.872	2411.508	798.1183	-0.24643
65	70	5000	1961.119	0.015101	0.637391	0.62229	2500	796.7391	2440.769	759.4332	0.562073	32.20439	196.0014	196.0014	226.1641	15%	25.85722	0.451294	25.32522	0.442008	2008.368	1914.494	1.024121	1960.872	2401.999	650.7614	-0.24715
65	80	5000	1961.119	0.017267	0.637391	0.620124	2500	796.7391	2432.275	754.1563	0.561297	32.15995	214.9135	214.9135	249.8245	16%	25.9461	0.452845	25.4141	0.44356	2013.161	1909.819	1.024061	1960.876	2392.543	541.2684	-0.24302

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
65	90	5000	1961.119	0.019435	0.637391	0.617956	2500	796.7391	2423.772	748.8927	0.56052	32.11542	233.7221	233.7221	273.4865	17%	26.03516	0.454399	25.50316	0.445114	2017.97	1905.137	1.024	1960.885	2383.139	457.6573	-0.23402
65	100	5000	1961.119	0.021605	0.637391	0.615786	2500	796.7391	2415.261	743.6424	0.559741	32.0708	252.428	252.428	297.1503	18%	26.1244	0.455957	25.5924	0.446672	2022.797	1900.448	1.023941	1960.899	2373.786	392.342	-0.22015
65	110	5000	1961.119	0.023777	0.637391	0.613614	2500	796.7391	2406.741	738.4055	0.558961	32.0261	271.0321	271.0321	320.8161	18%	26.21381	0.457517	25.68181	0.448232	2027.64	1895.751	1.023881	1960.917	2364.484	340.3287	-0.20138
65	120	5000	1961.119	0.025951	0.637391	0.61144	2500	796.7391	2398.213	733.182	0.558179	31.9813	289.5351	289.5351	344.484	19%	26.30339	0.459081	25.77139	0.449796	2032.5	1891.047	1.023822	1960.941	2355.232	298.2207	-0.17771
65	130	5000	1961.119	0.028127	0.637391	0.609264	2500	796.7391	2389.677	727.972	0.557396	31.93642	307.9377	307.9377	368.1541	20%	26.39315	0.460647	25.86115	0.451362	2037.377	1886.335	1.023764	1960.97	2346.031	263.6418	-0.14913
65	140	5000	1961.119	0.030306	0.637391	0.607085	2500	796.7391	2381.133	722.7755	0.556611	31.89146	326.2408	326.2408	391.8267	20%	26.48309	0.462217	25.95109	0.452932	2042.272	1881.616	1.023705	1961.003	2336.88	234.8895	-0.11563
65	150	5000	1961.119	0.032487	0.637391	0.604905	2500	796.7391	2372.58	717.5925	0.555825	31.8464	344.445	344.445	415.5018	21%	26.5732	0.46379	26.0412	0.454505	2047.183	1876.89	1.023648	1961.042	2327.777	210.7173	-0.07718
65	160	5000	1961.119	0.034669	0.637391	0.602722	2500	796.7391	2364.019	712.4232	0.555037	31.80126	362.5513	362.5513	439.1797	21%	26.66348	0.465366	26.13148	0.45608	2052.112	1872.155	1.02359	1961.085	2318.724	190.1959	-0.03379
65	170	5000	1961.119	0.036854	0.637391	0.600537	2500	796.7391	2355.45	707.2675	0.554247	31.75603	380.5603	380.5603	462.8604	22%	26.75395	0.466944	26.22195	0.457659	2057.059	1867.413	1.023533	1961.133	2309.72	172.6208	0.014562
65	180	5000	1961.119	0.039041	0.637391	0.59835	2500	796.7391	2346.872	702.1256	0.553456	31.71071	398.4727	398.4727	486.5443	22%	26.84459	0.468526	26.31259	0.459241	2062.023	1862.663	1.023477	1961.187	2300.764	157.4501	0.067889
65	190	5000	1961.119	0.04123	0.637391	0.596161	2500	796.7391	2338.285	696.9974	0.552664	31.6653	416.2894	416.2894	510.2313	23%	26.93541	0.470112	26.40341	0.460826	2067.005	1857.906	1.023421	1961.245	2291.855	144.2611	0.126201
65	200	5000	1961.119	0.043421	0.637391	0.59397	2500	796.7391	2329.691	691.8831	0.55187	31.6198	434.011	434.011	533.9216	23%	27.0264	0.4717	26.4944	0.462415	2072.004	1853.14	1.023365	1961.308	2282.995	132.7207	0.189511
65	210	5000	1961.119	0.045615	0.637391	0.591776	2500	796.7391	2321.088	686.7826	0.551074	31.57421	451.6382	451.6382	557.6155	23%	27.11757	0.473291	26.58557	0.464006	2077.021	1848.366	1.023309	1961.377	2274.181	122.5628	0.25783
65	220	5000	1961.119	0.04781	0.637391	0.589581	2500	796.7391	2312.476	681.696	0.550277	31.52854	469.1719	469.1719	581.3131	24%	27.20893	0.474885	26.67693	0.4656	2082.057	1843.584	1.023254	1961.45	2265.414	113.5733	0.331171
65	230	5000	1961.119	0.050008	0.637391	0.587383	2500	796.7391	2303.857	676.6234	0.549478	31.48277	486.6126	486.6126	605.0145	24%	27.30046	0.476483	26.76846	0.467198	2087.111	1838.794	1.0232	1961.528	2256.694	105.578	0.409546
65	240	5000	1961.119	0.052208	0.637391	0.585183	2500	796.7391	2295.228	671.5648	0.548678	31.43692	503.9611	503.9611	628.7198	25%	27.39217	0.478083	26.86017	0.468798	2092.182	1833.995	1.023146	1961.612	2248.019	98.43418	0.492967
65	40	5500	2157.231	0.007832	0.637391	0.629559	2750	876.413	2716.209	855.0075	0.564671	32.35325	144.7796	144.7796	161.2482	11%	25.5595	0.446097	25.0275	0.436812	2191.603	2123.184	1.024328	2156.983	2677.61	1443.148	-0.24804
65	50	5500	2157.231	0.009794	0.637391	0.627597	2750	876.413	2707.743	849.6857	0.56397	32.31311	164.0506	164.0506	184.9041	13%	25.63977	0.447498	25.10777	0.438213	2196.34	2118.533	1.024272	2156.97	2667.975	1124.009	-0.26041
65	60	5500	2157.231	0.011758	0.637391	0.625633	2750	876.413	2699.269	844.3759	0.563268	32.27291	183.2249	183.2249	208.5611	14%	25.72019	0.448902	25.18819	0.439617	2201.092	2113.876	1.024216	2156.962	2658.388	901.0651	-0.26839
65	70	5500	2157.231	0.013724	0.637391	0.623667	2750	876.413	2690.788	839.0779	0.562565	32.23263	202.3034	202.3034	232.2191	15%	25.80074	0.450308	25.26874	0.441023	2205.859	2109.212	1.02416	2156.959	2648.848	739.1273	-0.27198
65	80	5500	2157.231	0.015692	0.637391	0.6217	2750	876.413	2682.299	833.792	0.561861	32.19228	221.2865	221.2865	255.8785	16%	25.88144	0.451716	25.34944	0.442431	2210.641	2104.542	1.024105	2156.959	2639.357	617.7541	-0.27116
65	90	5500	2157.231	0.017661	0.637391	0.61973	2750	876.413	2673.802	828.5182	0.561156	32.15186	240.175	240.175	279.5392	16%	25.96228	0.453127	25.43028	0.443842	2215.437	2099.865	1.02405	2156.965	2629.913	524.4086	-0.26592
65	100	5500	2157.231	0.019632	0.637391	0.617759	2750	876.413	2665.298	823.2563	0.560449	32.11137	258.9696	258.9696	303.2015	17%	26.04327	0.454541	25.51127	0.445256	2220.249	2095.182	1.023995	2156.974	2620.515	451.0534	-0.25626
65	110	5500	2157.231	0.021605	0.637391	0.615786	2750	876.413	2656.787	818.0067	0.559741	32.0708	277.6709	277.6709	326.8653	18%	26.1244	0.455957	25.5924	0.446672	2225.077	2090.492	1.023941	2156.988	2611.165	392.342	-0.24216
65	120	5500	2157.231	0.023579	0.637391	0.613812	2750	876.413	2648.268	812.7691	0.559032	32.03016	296.2795	296.2795	350.531	18%	26.20567	0.457375	25.67367	0.44809	2229.919	2085.796	1.023887	2157.007	2601.86	344.6054	-0.22362
65	130	5500	2157.231	0.025556	0.637391	0.611836	2750	876.413	2639.741	807.5438	0.558321	31.98945	314.7962	314.7962	374.1986	19%	26.28709	0.458796	25.75509	0.449511	2234.777	2081.093	1.023833	2157.03	2592.602	305.2576	-0.20062
65	140	5500	2157.231	0.027534	0.637391	0.609858	2750	876.413	2631.207	802.3307	0.55761	31.94867	333.2216	333.2216	397.8682	19%	26.36866	0.46022	25.83666	0.450935	2239.65	2076.383	1.023779	2157.057	2583.389	272.4327	-0.17316
65	150	5500	2157.231	0.029514	0.637391	0.607878	2750	876.413	2622.665	797.1299	0.556896	31.90782	351.5562	351.5562	421.54	20%	26.45036	0.461646	25.91836	0.452361	2244.539	2071.667	1.023726	2157.089	2574.222	244.7574	-0.14122
65	160	5500	2157.231	0.031495	0.637391	0.605896	2750	876.413	2614.116	791.9414	0.556182	31.86689	369.8008	369.8008	445.2141	20%	26.53222	0.463075	26.00022	0.453789	2249.444	2066.943	1.023674	2157.126	2565.1	221.2023	-0.1048
65	170	5500	2157.231	0.033478	0.637391	0.603913	2750	876.413	2605.559	786.7652	0.555467	31.82589	387.956	387.956	468.8905	21%	26.61422	0.464506	26.08222	0.455221	2254.364	2062.213	1.023621	2157.167	2556.022	200.9835	-0.06388
65	180	5500	2157.231	0.035463	0.637391	0.601928	2750	876.413	2596.994	781.6015	0.55475	31.78482	406.0224	406.0224	492.5696	21%	26.69636	0.465939	26.16436	0.456654	2259.3	2057.475	1.023569	2157.212	2546.989	183.4955	-0.01846
65	190	5500	2157.231	0.03745	0.637391	0.599941	2750	876.413	2588.422	776.4502	0.554032	31.74367	424.0005	424.0005	516.2513	22%	26.77865	0.467376	26.24665	0.45809	2264.252	2052.731	1.023518	2157.262	2538	168.2645	0.031474
65	200	5500	2157.231	0.039439	0.637391	0.597952	2750	876.413	2579.842	771.3114	0.553312	31.70246	441.8911	441.8911	539.9358	22%	26.86109	0.468814	26.32909	0.459529	2269.22	2047.979	1.023466	2157.317	2529.054	154.9155	0.085932
65	210	5500	2157.231	0.041429	0.637391	0.595962	2750	876.413	2571.255	766.1851	0.552592	31.66116	459.6948	459.6948	563.6233	23%	26.94367	0.470256	26.41167	0.460971	2274.204	2043.22	1.023415	2157.376	2520.153	143.1483	0.144925
65	220	5500	2157.231	0.043421	0.637391	0.59397	2750	876.413	2562.66	761.0714	0.55187	31.6198	477.4121	477.4121	587.3138	23%	27.0264	0.4717	26.4944	0.462415	2279.204	2038.454	1.023365	2157.439	2511.294	132.7207	0.208462
65	230	5500	2157.231	0.045415	0.637391	0.591976	2750	876.413	2554.057	755.9702	0.551146	31.57836	495.0436	495.0436	611.0075	23%	27.10928	0.473146	26.57728	0.463861	2284.221	2033.68	1.023314	2157.507	2502.478	123.435	0.276553
65	240	5500	2157.231	0.047411	0.637391	0.58998	2750	876.413	2545.447	750.8818	0.550422	31.53685	512.59	512.59	634.7046	24%	27.1923	0.474595	26.6603	0.46531	2289.254	2028.899	1.023264	2157.58	2493.705	115.1291	0.349208
65	40	6000	2353.343	0.007178	0.637391	0.630213	3000	956.0869	2966.214	934.6735	0.564904	32.36661	150.9101	150.9101	167.3052	11%	25.53278	0.445631	25.00078	0.436346	2389.121	2317.891	1.024347	2353.077	2924.545	1580.759	-0.26503
65	50	6000	2353.343	0.008976	0.637391	0.628415	3000	956.0869	2957.751	929.3473	0.564262	32.32985	170.2176	170.2176	190.9607	12%	25.60631	0.446914	25.07431	0.437629	2393.852	2313.242	1.024295	2353.063	2914.891	1242.492	-0.27904
65	60	6000	2353.343	0.010776	0.637391	0.626615	3000	956.0869	2949.28	924.032	0.56362	32.29302	189.4361	189.4361	214.6172	13%	25.67996	0.4482	25.14796	0.438915	2398.597	2308.588	1.024244	2353.053	2905.282	1003.175	-0.28904
65	70	6000	2353.343	0.012577	0.637391	0.624814	3000	956.0869	2940.803	918.7276	0.562976	32.25613	208.5664	208.5664	238.2747	14%	25.75373	0.449487	25.22173	0.440202	2403.356	2303.927	1.024193	2353.048	2895.717	827.587	-0.29501
65	80	6000	2353.343	0.01438	0.637391	0.623011	3000	956.0869	2932.319	913.4342	0.562331	32.21919	227.609	227.609	261.9332	15%	25.82763	0.450777	25.29563	0.441492	2408.129	2299.261	1.024142	2353.046	2886.195	694.9019	-0.29694
65	90	6000	2353.343	0.016184	0.637391	0.621207	3000	956.0869	2923.828	908.1517	0.561685	32.18218	246.5645	246.5645	285.5929	16%	25.90164	0.452069	25.36964	0.442784	2412.915	2294.589	1.024091	2353.048	2876.718	592.1632	-0.29483
65	100	6000	2353.343	0.017989	0.637391	0.619402	3000	956.0869	2915.33	902.8804	0.561038	32.14511	265.4334	265.4334	309.254	17%	25.97577	0.453363	25.44377	0.444078	2417.715	2289.911	1.02404	2353.054	2867.283	510.9653	-0.28868
65	110	6000	2353.343	0.019796	0.637391	0.617595	3000	956.0869	2906.825	897.6201	0.56039	32.10799	284.2162	284.2162	332.9164	17%	26.05003	0.454659	25.51803	0.445374	2422.528	2285.227	1.02399	2353.064	2857.892	445.6611	-0.27846
65	120	6000	2353.343	0.021605	0.637391	0.615786	3000	956.0869	2898.313	892.3709	0.559741	32.0708	302.9137	302.9137	356.5804	18%	26.1244	0.455957	25.5924	0.446672	2427.356	2280.537	1.023941	2353.078	2848.543	392.342	-0.26418
65	130	6000	2353.343	0.023415	0.637391	0.613977	3000	956.0869	2889.794	887.1329	0.559091	32.03355	321.5262	321.5262	380.246	18%	26.1989	0.457257	25.6669	0.447972	2432.198	2275.841	1.023891	2353.097	2839.237	348.233	-0.24582
65	140	6000	2353.343	0.025226	0.637391	0.612165	3000	956.0869	2881.268	881.906	0.55844	31.99624	340.0543	340.0543	403.9133	19%	26.27351	0.458559	25.74151	0.449274	2437.054	2271.139	1.023842	2353.119	2829.973	311.3192	-0.22338
65	150	6000	2353.343	0.027039	0.637391	0.610352	3000	956.0869	2872.736	876.6904	0.557788	31.95887	358.4986	358.4986	427.5825	19%	26.34825	0.459864	25.81625	0.450579	2441.924	2266.43	1.023793	2353.146	2820.751	280.1093	-0.19685
65	160	6000	2353.343	0.028853	0.637391	0.608538	3000	956.0869	2864.196	871.486	0.557134	31.92144	376.8597	376.8597	451.2536	20%	26.42311	0.46117	25.89111	0.451885	2446.808	2261.716	1.023744	2353.176	2811.57	253.4797	-0.16621
65	170	6000	2353.343	0.030669	0.637391	0.606722	3000	956.0869	2855.65	866.2928	0.55648	31.88395	395.138	395.138	474.9268	20%	26.49809	0.462479	25.96609	0.453194	2451.707	2256.995	1.023696	2353.211	2802.431	230.5712	-0.13148
65	180	6000	2353.343	0.032487	0.637391	0.604905	3000	956.0869	2847.096	861.111	0.555825	31.8464	413.334	413.334	498.6022	21%	26.5732	0.46379	26.0412	0.454505	2456.62	2252.268	1.023648	2353.25	2793.333	210.7173	-0.09262
65	190	6000	2353.343	0.034305	0.637391	0.603086	3000	956.0869	2838.536	855.9406	0.555168	31.80879	431.4484	431.4484	522.2798	21%	26.64842	0.465103	26.11642	0.455818	2461.548	2247.534	1.0236	2353.293	2784.276	193.3948	-0.04964
65	200	6000	2353.343	0.036126	0.637391	0.601266	3000	956.0869	2829.968	850.7815	0.554511	31.77111	449.4817	449.4817	545.9598	21%	26.72377	0.466418	26.19177	0.457133	2466.49	2242.794	1.023552	2353.34	2775.259	178.188	-0.00253
65	210	6000	2353.343	0.037947	0.637391	0.599444	3000	956.0869	2821.394	845.6338	0.553852	31.73338	467.4342	467.4342	569.6424	22%	26.79925	0.467735	26.26725	0.45845	2471.446	2238.047	1.023505	2353.391	2766.283	164.7637	0.048724
65	220	6000	2353.343	0.039771	0.637391	0.597621	3000	956.0869	2812.813	840.4976	0.553192	31.69558	485.3067	485.3067	593.3275	22%	26.87484	0.469054	26.34284	0.459769	2476.418	2233.294	1.023458	2353.447	2757.347	152.8516	0.104126
65	230	6000	2353.343	0.041595	0.637391	0.595796	3000	956.0869	2804.224	835.3729	0.552531	31.65772	503.0995	503.0995	617.0153	23%	26.95056	0.470376	26.41856	0.461091	2481.404	2228.534	1.023411	2353.506	2748.45	142.2312	0.163687
65	240	6000	2353.343	0.043421	0.637391	0.59397	3000	956.0869	2795.629	830.2597	0.55187	31.6198	520.8132	520.8132	640.706	23%	27.0264	0.4717	26.4944	0.462415	2486.405	2223.768	1.023365	2353.57	2739.593	132.7207	0.227413
65	40	6500	2549.454	0.006625	0.637391	0.630766	3250	1035.761	3216.219	1014.341	0.565101	32.37791	157.0307	157.0307	176.6424	10%	25.51018	0.445237	24.97818	0.435951	2586.64	2512.597	1.024363	2549.173	3171.485	1713.395	-0.28157
65	50	6500	2549.454	0.008285	0.637391	0.629107	3250	1035.761	3207.757	1009.011	0.564509	32.34399	176.369	176.369	197.0175	12%	25.57801	0.446421	25.04601	0.437135	2591.367	2507.95	1.024315	2549.157	3161.815	1358.257	-0.29697
65	60	6500	2549.454	0.009945	0.637391	0.627446	3250	1035.761	3199.29	1003.691	0.563916	32.31002	195.6251	195.6251	220.6736	13%	25.64595	0.447606	25.11395	0.438321	2596.106	2503.298	1.024268	2549.146	3152.187	1104.021	-0.30867
65	70	6500	2549.454	0.011607	0.637391	0.625784	3250	1035.761	3190.816	998.381	0.563323	32.276	214.7995	214.7995	244.3306	14%	25.714	0.448794	25.182	0.439509	2600.858	2498.64	1.02422	2549.138	3142.6	915.7148	-0.31665

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
65	80	6500	2549.454	0.01327	0.637391	0.624121	3250	1035.761	3182.336	993.0812	0.562728	32.24193	233.8926	233.8926	267.9885	15%	25.78214	0.449983	25.25014	0.440698	2605.623	2493.978	1.024173	2549.133	3133.054	772.3137	-0.32092
65	90	6500	2549.454	0.014935	0.637391	0.622457	3250	1035.761	3173.849	987.7916	0.562132	32.20781	252.905	252.905	291.6474	15%	25.85039	0.451174	25.31839	0.441889	2610.4	2489.309	1.024126	2549.133	3123.548	660.5596	-0.32145
65	100	6500	2549.454	0.0166	0.637391	0.620791	3250	1035.761	3165.356	982.5122	0.561536	32.17363	271.8371	271.8371	315.3075	16%	25.91874	0.452367	25.38674	0.443082	2615.19	2484.636	1.024079	2549.136	3114.081	571.7542	-0.31825
65	110	6500	2549.454	0.018267	0.637391	0.619124	3250	1035.761	3156.857	977.2429	0.560938	32.13941	290.6894	290.6894	338.9688	17%	25.98719	0.453562	25.45519	0.444277	2619.992	2479.957	1.024033	2549.143	3104.655	499.9982	-0.31132
65	120	6500	2549.454	0.019935	0.637391	0.617456	3250	1035.761	3148.351	971.9839	0.56034	32.10513	309.4623	309.4623	362.6314	17%	26.05574	0.454758	25.52374	0.445473	2624.808	2475.272	1.023987	2549.154	3095.269	441.1752	-0.30063
65	130	6500	2549.454	0.021605	0.637391	0.615786	3250	1035.761	3139.839	966.7351	0.559741	32.0708	328.1565	328.1565	386.2954	18%	26.1244	0.455957	25.5924	0.446672	2629.636	2470.582	1.023941	2549.168	3085.922	392.342	-0.28619
65	140	6500	2549.454	0.023275	0.637391	0.614116	3250	1035.761	3131.32	961.4967	0.559141	32.03642	346.7722	346.7722	409.9609	18%	26.19316	0.457157	25.66116	0.447872	2634.477	2465.886	1.023895	2549.186	3076.614	351.3485	-0.26799
65	150	6500	2549.454	0.024947	0.637391	0.612444	3250	1035.761	3122.796	956.2685	0.55854	32.00199	365.3101	365.3101	433.6281	19%	26.26203	0.458359	25.73003	0.449074	2639.332	2461.185	1.023849	2549.208	3067.345	316.5946	-0.24602
65	160	6500	2549.454	0.026621	0.637391	0.610771	3250	1035.761	3114.264	951.0507	0.557938	31.9675	383.7705	383.7705	457.2969	19%	26.33099	0.459563	25.79899	0.450277	2644.199	2456.477	1.023804	2549.234	3058.115	286.869	-0.22028
65	170	6500	2549.454	0.028295	0.637391	0.609096	3250	1035.761	3105.727	945.8433	0.557335	31.93297	402.1539	402.1539	480.9675	20%	26.40006	0.460768	25.86806	0.451483	2649.079	2451.764	1.023759	2549.264	3048.923	261.2415	-0.19075
65	180	6500	2549.454	0.029971	0.637391	0.607421	3250	1035.761	3097.182	940.6462	0.556732	31.89838	420.4607	420.4607	504.6399	20%	26.46924	0.461975	25.93724	0.45269	2653.973	2447.046	1.023714	2549.297	3039.77	238.9878	-0.15743
65	190	6500	2549.454	0.031648	0.637391	0.605744	3250	1035.761	3088.632	935.4596	0.556127	31.86374	438.6915	438.6915	528.3144	20%	26.53852	0.463185	26.00652	0.453899	2658.88	2442.321	1.02367	2549.334	3030.654	219.5372	-0.12032
65	200	6500	2549.454	0.033326	0.637391	0.604066	3250	1035.761	3080.075	930.2835	0.555522	31.82905	456.8467	456.8467	551.9909	21%	26.6079	0.464396	26.0759	0.45511	2663.8	2437.591	1.023625	2549.375	3021.577	202.4351	-0.0794
65	210	6500	2549.454	0.035005	0.637391	0.602386	3250	1035.761	3071.512	925.1179	0.554915	31.7943	474.9267	474.9267	575.6695	21%	26.67739	0.465608	26.14539	0.456323	2668.734	2432.854	1.023581	2549.42	3012.537	187.3154	-0.03468
65	220	6500	2549.454	0.036686	0.637391	0.600705	3250	1035.761	3062.942	919.9627	0.554308	31.75951	492.9319	492.9319	599.3504	22%	26.74698	0.466823	26.21498	0.457538	2673.681	2428.112	1.023538	2549.468	3003.534	173.8813	0.013867
65	230	6500	2549.454	0.038368	0.637391	0.599023	3250	1035.761	3054.365	914.8181	0.5537	31.72466	510.8629	510.8629	623.0336	22%	26.81668	0.468039	26.28468	0.458754	2678.642	2423.364	1.023494	2549.521	2994.569	161.8893	0.066236
65	240	6500	2549.454	0.040051	0.637391	0.59734	3250	1035.761	3045.783	909.6841	0.553091	31.68976	528.72	528.72	646.7192	22%	26.88648	0.469258	26.35448	0.459972	2683.616	2418.609	1.023451	2549.577	2985.64	151.1386	0.122437
65	40	7000	2745.566	0.006151	0.637391	0.63124	3500	1115.435	3466.222	1094.009	0.56527	32.38759	163.1434	163.1434	179.4194	10%	25.49081	0.444899	24.95881	0.435613	2784.16	2707.302	1.024377	2745.269	3418.428	1841.014	-0.29775
65	50	7000	2745.566	0.007692	0.637391	0.629699	3500	1115.435	3457.763	1088.676	0.564721	32.35611	182.5083	182.5083	203.0744	11%	25.55377	0.445997	25.02177	0.436712	2788.883	2702.657	1.024333	2745.252	3408.746	1471.062	-0.31435
65	60	7000	2745.566	0.009233	0.637391	0.628158	3500	1115.435	3449.298	1083.352	0.56417	32.32459	201.7966	201.7966	226.7302	12%	25.61682	0.447098	25.08482	0.437813	2793.618	2698.007	1.024288	2745.239	3399.102	1203.285	-0.3275
65	70	7000	2745.566	0.010776	0.637391	0.626615	3500	1115.435	3440.827	1078.037	0.56362	32.29302	221.0088	221.0088	250.3868	13%	25.67996	0.4482	25.14796	0.438915	2798.364	2693.352	1.024244	2745.229	3389.496	1003.175	-0.33721
65	80	7000	2745.566	0.01232	0.637391	0.625071	3500	1115.435	3432.35	1072.732	0.563068	32.26141	240.1454	240.1454	274.0441	14%	25.74319	0.449303	25.21119	0.440018	2803.121	2688.692	1.0242	2745.223	3379.927	849.6645	-0.34347
65	90	7000	2745.566	0.013865	0.637391	0.623527	3500	1115.435	3423.868	1067.436	0.562515	32.22975	259.2067	259.2067	297.7024	15%	25.8065	0.450408	25.2745	0.441123	2807.891	2684.027	1.024156	2745.22	3370.397	729.2954	-0.34627
65	100	7000	2745.566	0.015411	0.637391	0.621981	3500	1115.435	3415.379	1062.15	0.561962	32.19805	278.1933	278.1933	321.3617	16%	25.8699	0.451515	25.3379	0.44223	2812.672	2679.357	1.024113	2745.221	3360.903	633.1446	-0.34561
65	110	7000	2745.566	0.016957	0.637391	0.620434	3500	1115.435	3406.884	1056.873	0.561408	32.1663	297.1053	297.1053	345.0221	16%	25.9334	0.452623	25.4014	0.443338	2817.465	2674.682	1.024069	2745.225	3351.447	555.105	-0.34147
65	120	7000	2745.566	0.018506	0.637391	0.618886	3500	1115.435	3398.384	1051.606	0.560853	32.13451	315.9434	315.9434	368.6836	17%	25.99697	0.453733	25.46497	0.444448	2822.27	2670.002	1.024026	2745.232	3342.028	490.8823	-0.33387
65	130	7000	2745.566	0.020055	0.637391	0.617337	3500	1115.435	3389.877	1046.348	0.560297	32.10268	334.7079	334.7079	392.3464	17%	26.06064	0.454844	25.52864	0.445559	2827.087	2665.317	1.023983	2745.243	3332.646	437.3852	-0.32278
65	140	7000	2745.566	0.021605	0.637391	0.615786	3500	1115.435	3381.365	1041.099	0.559741	32.0708	353.3993	353.3993	416.0104	18%	26.1244	0.455957	25.5924	0.446672	2831.916	2660.627	1.023941	2745.258	3323.3	392.342	-0.30821
65	150	7000	2745.566	0.023156	0.637391	0.614235	3500	1115.435	3372.847	1035.861	0.559184	32.03888	372.0178	372.0178	439.6759	18%	26.18825	0.457071	25.65625	0.447786	2836.756	2655.931	1.023898	2745.276	3313.991	354.0533	-0.29014
65	160	7000	2745.566	0.024708	0.637391	0.612683	3500	1115.435	3364.323	1030.631	0.558626	32.00691	390.564	390.564	463.3429	19%	26.25218	0.458187	25.72018	0.448902	2841.609	2651.23	1.023856	2745.298	3304.718	321.2267	-0.26858
65	170	7000	2745.566	0.026262	0.637391	0.611129	3500	1115.435	3355.792	1025.412	0.558067	31.9749	409.0382	409.0382	487.0114	19%	26.31621	0.459304	25.78421	0.450019	2846.474	2646.524	1.023814	2745.323	3295.481	292.8656	-0.24351
65	180	7000	2745.566	0.027816	0.637391	0.609575	3500	1115.435	3347.256	1020.202	0.557508	31.94284	427.4408	427.4408	510.6815	19%	26.38032	0.460423	25.84832	0.451138	2851.352	2641.812	1.023772	2745.351	3286.28	268.191	-0.21492
65	190	7000	2745.566	0.029372	0.637391	0.608019	3500	1115.435	3338.714	1015.001	0.556947	31.91074	445.7722	445.7722	534.3534	20%	26.44452	0.461544	25.91252	0.452259	2856.241	2637.096	1.02373	2745.383	3277.114	246.587	-0.18283
65	200	7000	2745.566	0.030929	0.637391	0.606463	3500	1115.435	3330.166	1009.811	0.556386	31.87859	464.0328	464.0328	558.027	20%	26.50882	0.462666	25.97682	0.453381	2861.143	2632.373	1.023689	2745.419	3267.984	227.5614	-0.14721
65	210	7000	2745.566	0.032487	0.637391	0.604905	3500	1115.435	3321.612	1004.63	0.555825	31.8464	482.2231	482.2231	581.7025	21%	26.5732	0.46379	26.0412	0.454505	2866.057	2627.646	1.023648	2745.458	3258.888	210.7173	-0.10806
65	220	7000	2745.566	0.034045	0.637391	0.603346	3500	1115.435	3313.052	999.4582	0.555262	31.81416	500.3433	500.3433	605.38	21%	26.63767	0.464915	26.10567	0.45563	2870.983	2622.912	1.023607	2745.501	3249.828	195.7312	-0.06537
65	230	7000	2745.566	0.035605	0.637391	0.601786	3500	1115.435	3304.486	994.2967	0.554699	31.78188	518.3938	518.3938	629.0595	21%	26.70223	0.466042	26.17023	0.456757	2875.922	2618.174	1.023566	2745.547	3240.803	182.3377	-0.01915
65	240	7000	2745.566	0.037166	0.637391	0.600225	3500	1115.435	3295.914	989.145	0.554134	31.74956	536.3751	536.3751	652.7411	22%	26.76689	0.46717	26.23489	0.457885	2880.874	2613.429	1.023525	2745.597	3231.812	170.3173	0.030626
65	40	7500	2941.678	0.005741	0.637391	0.631651	3750	1195.109	3716.225	1173.678	0.565417	32.39598	169.2498	169.2498	185.4765	10%	25.47404	0.444606	24.94204	0.435321	2981.681	2902.007	1.024389	2941.364	3665.375	1963.66	-0.31366
65	50	7500	2941.678	0.007178	0.637391	0.630213	3750	1195.109	3707.768	1168.342	0.564904	32.36661	188.6377	188.6377	209.1314	11%	25.53278	0.445631	25.00078	0.436346	2986.401	2897.364	1.024347	2941.347	3655.681	1580.759	-0.33128
65	60	7500	2941.678	0.008617	0.637391	0.628775	3750	1195.109	3699.305	1163.015	0.564391	32.3372	207.954	207.954	232.787	12%	25.59159	0.446658	25.05959	0.437372	2991.131	2892.715	1.024306	2941.332	3646.023	1300.732	-0.3457
65	70	7500	2941.678	0.010056	0.637391	0.627335	3750	1195.109	3690.837	1157.696	0.563877	32.30776	227.1992	227.1992	256.4431	13%	25.65049	0.447685	25.11849	0.4384	2995.872	2888.063	1.024264	2941.321	3636.4	1089.705	-0.3569
65	80	7500	2941.678	0.011496	0.637391	0.625895	3750	1195.109	3682.363	1152.386	0.563362	32.27827	246.3735	246.3735	280.1001	14%	25.70946	0.448715	25.17746	0.43943	3000.624	2883.405	1.024223	2941.313	3626.813	926.6899	-0.36489
65	90	7500	2941.678	0.012938	0.637391	0.624454	3750	1195.109	3673.883	1147.085	0.562847	32.24875	265.4774	265.4774	303.7578	14%	25.7685	0.449745	25.2365	0.44046	3005.387	2878.743	1.024182	2941.309	3617.261	798.1183	-0.36965
65	100	7500	2941.678	0.01438	0.637391	0.623011	3750	1195.109	3665.399	1141.793	0.562331	32.21919	284.5113	284.5113	327.4165	15%	25.82763	0.450777	25.29563	0.441492	3010.161	2874.076	1.024142	2941.307	3607.744	694.9019	-0.37118
65	110	7500	2941.678	0.015823	0.637391	0.621568	3750	1195.109	3656.908	1136.509	0.561814	32.18959	303.4754	303.4754	351.0761	16%	25.88683	0.45181	25.35483	0.442525	3014.945	2869.405	1.024101	2941.309	3598.262	610.7668	-0.36948
65	120	7500	2941.678	0.017267	0.637391	0.620124	3750	1195.109	3648.412	1131.234	0.561297	32.15995	322.3702	322.3702	374.7367	16%	25.9461	0.452845	25.4141	0.44356	3019.741	2864.729	1.024061	2941.314	3588.815	541.2684	-0.36453
65	130	7500	2941.678	0.018712	0.637391	0.618679	3750	1195.109	3639.911	1125.969	0.560779	32.13027	341.196	341.196	398.3985	17%	26.00546	0.453881	25.47346	0.444596	3024.548	2860.048	1.02402	2941.322	3579.402	483.1863	-0.35635
65	140	7500	2941.678	0.020158	0.637391	0.617233	3750	1195.109	3631.404	1120.712	0.56026	32.10055	359.9532	359.9532	422.0614	17%	26.06489	0.454918	25.53289	0.445633	3029.366	2855.362	1.02398	2941.333	3570.023	434.1407	-0.34491
65	150	7500	2941.678	0.021605	0.637391	0.615786	3750	1195.109	3622.891	1115.464	0.559741	32.0708	378.6421	378.6421	445.7255	18%	26.1244	0.455957	25.5924	0.446672	3034.195	2850.671	1.023941	2941.348	3560.679	392.342	-0.33022
65	160	7500	2941.678	0.023053	0.637391	0.614339	3750	1195.109	3614.373	1110.224	0.559221	32.04101	397.263	397.263	469.3909	18%	26.18399	0.456997	25.65199	0.447712	3039.036	2845.976	1.023901	2941.366	3551.368	356.4234	-0.31227
65	170	7500	2941.678	0.024501	0.637391	0.61289	3750	1195.109	3605.849	1104.994	0.5587	32.01117	415.8164	415.8164	493.0577	19%	26.24365	0.458038	25.71165	0.448753	3043.887	2841.276	1.023861	2941.387	3542.092	325.3264	-0.29106
65	180	7500	2941.678	0.025951	0.637391	0.61144	3750	1195.109	3597.32	1099.773	0.558179	31.9813	434.3026	434.3026	516.7259	19%	26.30339	0.459081	25.77139	0.449796	3048.75	2836.57	1.023822	2941.412	3532.849	298.2207	-0.26657
65	190	7500	2941.678	0.027402	0.637391	0.609989	3750	1195.109	3588.786	1094.561	0.557657	31.95139	452.7219	452.7219	540.3957	19%	26.36321	0.460125	25.83121	0.45084	3053.625	2831.86	1.023783	2941.439	3523.639	274.4477	-0.23881
65	200	7500	2941.678	0.028853	0.637391	0.608538	3750	1195.109	3580.245	1089.357	0.557134	31.92144	471.0746	471.0746	564.067	20%	26.42311	0.46117	25.89111	0.451885	3058.511	2827.145	1.023744	2941.47	3514.463	253.4797	-0.20777
65	210	7500	2941.678	0.030306	0.637391	0.607085	3750	1195.109	3571.699	1084.163	0.556611	31.89146	489.3611	489.3611	587.74	20%	26.48309	0.462217	25.95109	0.452932	3063.408	2822.424	1.023705	2941.505	3505.319	234.8895	-0.17344
65	220	7500	2941.678	0.031759	0.637391	0.605632	3750	1195.109	3563.148	1078.978	0.556087	31.86143	507.5818	507.5818	611.4147	20%	26.54314	0.463265	26.01114	0.45398	3068.316	2817.699	1.023667	2941.542	3496.209	218.3285	-0.13582
65	230	7500	2941.678	0.033214	0.637391	0.604177	3750	1195.109	3554.591	1073.802	0.555562	31.83136	525.737	525.737	635.0912	21%	26.60327	0.464315	26.07127	0.45503	3073.237	2812.969	1.023628	2941.583	3487.132	203.5099	-0.0949
65	240	7500	2941.678	0.034669	0.637391	0.602722	3750	1195.109	3546.029	1068.635	0.555037	31.80126	543.8269	543.8269	658.7695	21%	26.66348	0.465366	26.13148	0.45608	3078.169	2808.233	1.02359	2941.627	3478.087	190.1959	-0.05069
65	40	8000	3137.79	0.005381	0.637391	0.63201	4000	1274.783	3966.228	1253.348	0.565545	32.40332	175.351	175.351	191.5338	9%	25.45936	0.44435	24.92736	0.435065	3179.203	3096.712	1.0244	3137.461	3912.324	2081.437	-0.32934
65	50	8000	3137.79	0.006729	0.637391	0.630662	4000	1274.783	3957.772	1248.009	0.565064	32.37579	194.7591	194.7591	215.1885	10%	25.51441	0.44531	24.98241	0.436025	3183.92	3092.07	1.02436	3137.442	3902.62	1687.269	-0.34786
65	60	8000	3137.79	0.008077	0.637391	0.629314	4000	1274.783	3949.311	1242.679	0.564583	32.34824	214.1	214.1	238.8438	12%	25.56953	0.446272	25.03753	0.436987	3188.646	3087.423	1.024321	3137.427	3892.95	1396.197	-0.36338

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
65	70	8000	3137.79	0.009426	0.637391	0.627965	4000	1274.783	3940.845	1237.357	0.564102	32.32064	233.374	233.374	262.4997	12%	25.62471	0.447236	25.09271	0.43795	3193.383	3082.772	1.024283	3137.414	3883.313	1175.1	-0.37589
65	80	8000	3137.79	0.010776	0.637391	0.626615	4000	1274.783	3932.374	1232.043	0.56362	32.29302	252.5815	252.5815	286.1563	13%	25.67996	0.4482	25.14796	0.438915	3198.13	3078.117	1.024244	3137.405	3873.709	1003.175	-0.38538
65	90	8000	3137.79	0.012127	0.637391	0.625264	4000	1274.783	3923.897	1226.737	0.563137	32.26536	271.7228	271.7228	309.8136	14%	25.73528	0.449165	25.20328	0.43988	3202.887	3073.457	1.024205	3137.398	3864.139	866.8177	-0.39186
65	100	8000	3137.79	0.013478	0.637391	0.623913	4000	1274.783	3915.416	1221.439	0.562653	32.23767	290.7982	290.7982	333.4717	15%	25.79067	0.450132	25.25867	0.440847	3207.654	3068.793	1.024167	3137.395	3854.601	756.8268	-0.39531
65	110	8000	3137.79	0.014831	0.637391	0.622561	4000	1274.783	3906.929	1216.15	0.56217	32.20994	309.8081	309.8081	357.1307	15%	25.84612	0.4511	25.31412	0.441815	3212.432	3064.125	1.024129	3137.394	3845.096	666.7984	-0.39573
65	120	8000	3137.79	0.016184	0.637391	0.621207	4000	1274.783	3898.437	1210.869	0.561685	32.18218	328.7527	328.7527	380.7906	16%	25.90164	0.452069	25.36964	0.442784	3217.22	3059.452	1.024091	3137.397	3835.624	592.1632	-0.39311
65	130	8000	3137.79	0.017538	0.637391	0.619853	4000	1274.783	3889.94	1205.596	0.5612	32.15439	347.6323	347.6323	404.4514	16%	25.95723	0.453039	25.42523	0.443754	3222.018	3054.775	1.024053	3137.403	3826.184	529.5899	-0.38746
65	140	8000	3137.79	0.018893	0.637391	0.618499	4000	1274.783	3881.437	1200.332	0.560714	32.12656	366.4474	366.4474	428.1133	17%	26.01288	0.45401	25.48088	0.444725	3226.826	3050.093	1.024015	3137.411	3816.776	476.603	-0.37877
65	150	8000	3137.79	0.020248	0.637391	0.617143	4000	1274.783	3872.93	1195.076	0.560228	32.0987	385.1981	385.1981	451.7763	17%	26.06861	0.454983	25.53661	0.445698	3231.645	3045.407	1.023978	3137.423	3807.401	431.332	-0.36703
65	160	8000	3137.79	0.021605	0.637391	0.615786	4000	1274.783	3864.417	1189.828	0.559741	32.0708	403.8849	403.8849	475.4405	18%	26.1244	0.455957	25.5924	0.446672	3236.475	3040.716	1.023941	3137.438	3798.058	392.342	-0.35224
65	170	8000	3137.79	0.022962	0.637391	0.614429	4000	1274.783	3855.899	1184.588	0.559254	32.04287	422.508	422.508	499.1059	18%	26.18026	0.456932	25.64826	0.447647	3241.315	3036.021	1.023903	3137.456	3788.746	358.5174	-0.33439
65	180	8000	3137.79	0.02432	0.637391	0.613071	4000	1274.783	3847.376	1179.357	0.558766	32.01491	441.0677	441.0677	522.7726	19%	26.23619	0.457908	25.70419	0.448623	3246.166	3031.321	1.023866	3137.477	3779.466	328.98	-0.31348
65	190	8000	3137.79	0.025679	0.637391	0.611712	4000	1274.783	3838.848	1174.135	0.558277	31.98691	459.5643	459.5643	546.4406	19%	26.29219	0.458885	25.76019	0.4496	3251.027	3026.616	1.023829	3137.501	3770.218	303.0312	-0.28951
65	200	8000	3137.79	0.027039	0.637391	0.610352	4000	1274.783	3830.314	1168.92	0.557788	31.95887	477.9982	477.9982	570.11	19%	26.34825	0.459864	25.81625	0.450579	3255.899	3021.907	1.023793	3137.528	3761.001	280.1093	-0.26246
65	210	8000	3137.79	0.0284	0.637391	0.608992	4000	1274.783	3821.776	1163.715	0.557298	31.93081	496.3696	496.3696	593.7809	20%	26.40438	0.460843	25.87238	0.451558	3260.781	3017.193	1.023756	3137.558	3751.815	259.7584	-0.23234
65	220	8000	3137.79	0.029761	0.637391	0.60763	4000	1274.783	3813.232	1158.517	0.556807	31.90271	514.6788	514.6788	617.4533	20%	26.46059	0.461824	25.92859	0.452539	3265.675	3012.475	1.02372	3137.591	3742.661	241.6058	-0.19915
65	230	8000	3137.79	0.031123	0.637391	0.606268	4000	1274.783	3804.683	1153.328	0.556316	31.87457	532.9262	532.9262	641.1273	20%	26.51686	0.462806	25.98486	0.453521	3270.579	3007.752	1.023684	3137.627	3733.537	225.3439	-0.16286
65	240	8000	3137.79	0.032487	0.637391	0.604905	4000	1274.783	3796.128	1148.148	0.555825	31.8464	551.1121	551.1121	664.8029	21%	26.5732	0.46379	26.0412	0.454505	3275.494	3003.024	1.023648	3137.667	3724.444	210.7173	-0.12349
65	40	8500	3333.902	0.005065	0.637391	0.632327	4250	1354.456	4216.231	1333.018	0.565658	32.40979	181.448	181.448	197.591	9%	25.44642	0.444124	24.91442	0.434839	3376.726	3291.417	1.024409	3333.557	4159.276	2194.488	-0.34483
65	50	8500	3333.902	0.006333	0.637391	0.631059	4250	1354.456	4207.776	1327.677	0.565206	32.38389	200.874	200.874	221.2456	10%	25.49821	0.445028	24.96621	0.435743	3381.44	3286.775	1.024372	3333.538	4149.563	1790.567	-0.36415
65	60	8500	3333.902	0.007601	0.637391	0.62979	4250	1354.456	4199.317	1322.344	0.564753	32.35797	220.2365	220.2365	244.9007	11%	25.55007	0.445933	25.01807	0.436648	3386.163	3282.13	1.024335	3333.521	4139.882	1489.564	-0.38064
65	70	8500	3333.902	0.008871	0.637391	0.628521	4250	1354.456	4190.853	1317.019	0.5643	32.33201	239.5361	239.5361	268.5564	12%	25.60198	0.446839	25.06998	0.437554	3390.896	3277.481	1.024299	3333.508	4130.232	1259.204	-0.3943
65	80	8500	3333.902	0.010141	0.637391	0.627251	4250	1354.456	4182.384	1311.701	0.563846	32.30602	258.7729	258.7729	292.2127	13%	25.65395	0.447746	25.12195	0.438461	3395.638	3272.827	1.024262	3333.497	4120.614	1078.947	-0.40512
65	90	8500	3333.902	0.011412	0.637391	0.62598	4250	1354.456	4173.91	1306.391	0.563392	32.28001	277.9473	277.9473	315.8696	14%	25.70599	0.448654	25.17399	0.439369	3400.39	3268.17	1.024226	3333.489	4111.026	935.2185	-0.41311
65	100	8500	3333.902	0.012683	0.637391	0.624708	4250	1354.456	4165.431	1301.089	0.562938	32.25396	297.0594	297.0594	339.5273	14%	25.75808	0.449563	25.22608	0.440278	3405.152	3263.508	1.02419	3333.484	4101.47	818.7497	-0.41825
65	110	8500	3333.902	0.013956	0.637391	0.623436	4250	1354.456	4156.947	1295.795	0.562483	32.22789	316.1097	316.1097	363.1857	15%	25.81023	0.450473	25.27823	0.441188	3409.923	3258.843	1.024154	3333.481	4091.945	723.0396	-0.42054
65	120	8500	3333.902	0.015229	0.637391	0.622163	4250	1354.456	4148.459	1290.508	0.562027	32.20178	335.0984	335.0984	386.845	15%	25.86244	0.451385	25.33044	0.4421	3414.704	3254.173	1.024118	3333.482	4082.451	643.4178	-0.41998
65	130	8500	3333.902	0.016502	0.637391	0.620889	4250	1354.456	4139.965	1285.229	0.561571	32.17564	354.0258	354.0258	410.5051	16%	25.91471	0.452297	25.38271	0.443012	3419.494	3249.499	1.024082	3333.485	4072.987	576.4584	-0.41656
65	140	8500	3333.902	0.017777	0.637391	0.619614	4250	1354.456	4131.467	1279.958	0.561114	32.14948	372.8921	372.8921	434.1662	16%	25.96704	0.45321	25.43504	0.443925	3424.295	3244.821	1.024046	3333.492	4063.554	519.6027	-0.41028
65	150	8500	3333.902	0.019052	0.637391	0.618339	4250	1354.456	4122.964	1274.695	0.560657	32.12328	391.6977	391.6977	457.8282	17%	26.01944	0.454125	25.48744	0.44484	3429.105	3240.138	1.024011	3333.501	4054.151	470.9077	-0.40114
65	160	8500	3333.902	0.020328	0.637391	0.617063	4250	1354.456	4114.456	1269.44	0.560199	32.09706	410.4428	410.4428	481.4913	17%	26.07189	0.45504	25.53989	0.445755	3433.925	3235.452	1.023976	3333.513	4044.779	428.8768	-0.38913
65	170	8500	3333.902	0.021605	0.637391	0.615786	4250	1354.456	4105.943	1264.192	0.559741	32.0708	429.1277	429.1277	505.1555	18%	26.1244	0.455957	25.5924	0.446672	3438.755	3230.761	1.023941	3333.528	4035.436	392.342	-0.37425
65	180	8500	3333.902	0.022882	0.637391	0.614509	4250	1354.456	4097.425	1258.952	0.559282	32.04451	447.7526	447.7526	528.8209	18%	26.17697	0.456874	25.64497	0.447589	3443.594	3226.066	1.023906	3333.545	4026.124	360.3807	-0.35649
65	190	8500	3333.902	0.02416	0.637391	0.613231	4250	1354.456	4088.903	1253.721	0.558823	32.0182	466.3179	466.3179	552.4874	18%	26.22961	0.457793	25.69761	0.448508	3448.444	3221.366	1.023871	3333.566	4016.841	332.2566	-0.33585
65	200	8500	3333.902	0.025439	0.637391	0.611952	4250	1354.456	4080.375	1248.497	0.558363	31.99185	484.8238	484.8238	576.1552	19%	26.2823	0.458713	25.7503	0.449427	3453.304	3216.662	1.023836	3333.59	4007.588	307.376	-0.31233
65	210	8500	3333.902	0.026719	0.637391	0.610672	4250	1354.456	4071.843	1243.281	0.557903	31.96547	503.2706	503.2706	599.8244	19%	26.33505	0.459633	25.80305	0.450348	3458.173	3211.954	1.023801	3333.616	3998.365	285.256	-0.28592
65	220	8500	3333.902	0.027999	0.637391	0.609392	4250	1354.456	4063.306	1238.073	0.557442	31.93907	521.6585	521.6585	623.4948	20%	26.38787	0.460555	25.85587	0.45127	3463.053	3207.242	1.023767	3333.645	3989.171	265.5005	-0.25662
65	230	8500	3333.902	0.029281	0.637391	0.608111	4250	1354.456	4054.763	1232.873	0.55698	31.91263	539.9878	539.9878	647.1668	20%	26.44074	0.461478	25.90874	0.452193	3467.943	3202.525	1.023733	3333.677	3980.006	247.7821	-0.22442
65	240	8500	3333.902	0.030562	0.637391	0.606829	4250	1354.456	4046.216	1227.68	0.556518	31.88616	558.2588	558.2588	670.8401	20%	26.49368	0.462402	25.96168	0.453117	3472.843	3197.803	1.023699	3333.713	3970.871	231.8284	-0.18931
65	40	9000	3530.014	0.004783	0.637391	0.632608	4500	1434.13	4466.233	1412.688	0.565758	32.41554	187.5415	187.5415	203.6483	9%	25.43492	0.443923	24.90292	0.434638	3574.249	3486.121	1.024417	3529.654	4406.229	2302.98	-0.36016
65	50	9000	3530.014	0.00598	0.637391	0.631411	4500	1434.13	4457.779	1407.346	0.565331	32.39109	206.9833	206.9833	227.3028	10%	25.48382	0.444777	24.95182	0.435491	3578.961	3481.481	1.024382	3529.634	4396.508	1890.664	-0.38018
65	60	9000	3530.014	0.007178	0.637391	0.630213	4500	1434.13	4449.322	1402.01	0.564904	32.36661	226.3652	226.3652	250.9577	11%	25.53278	0.445631	25.00078	0.436346	3583.681	3476.836	1.024347	3529.616	4386.817	1580.759	-0.39754
65	70	9000	3530.014	0.008377	0.637391	0.629014	4500	1434.13	4440.859	1396.682	0.564476	32.34211	245.6875	245.6875	274.6132	12%	25.58179	0.446486	25.04979	0.437201	3588.41	3472.189	1.024313	3529.602	4377.156	1341.896	-0.41223
65	80	9000	3530.014	0.009576	0.637391	0.627815	4500	1434.13	4432.392	1391.361	0.564048	32.31758	264.9504	264.9504	298.2692	13%	25.63085	0.447343	25.09885	0.438058	3593.149	3467.537	1.024278	3529.59	4367.525	1153.867	-0.42423
65	90	9000	3530.014	0.010776	0.637391	0.626615	4500	1434.13	4423.921	1386.048	0.56362	32.29302	284.1542	284.1542	321.9258	13%	25.67996	0.4482	25.14796	0.438915	3597.896	3462.881	1.024244	3529.58	4357.923	1003.175	-0.43356
65	100	9000	3530.014	0.011977	0.637391	0.625415	4500	1434.13	4415.444	1380.742	0.56319	32.26844	303.2992	303.2992	345.5831	14%	25.72913	0.449058	25.19713	0.439773	3602.653	3458.222	1.02421	3529.574	4348.35	880.5268	-0.4402
65	110	9000	3530.014	0.013178	0.637391	0.624213	4500	1434.13	4406.964	1375.443	0.562761	32.24382	322.3855	322.3855	369.2411	15%	25.77835	0.449917	25.24635	0.440632	3607.418	3453.559	1.024176	3529.57	4338.807	779.3525	-0.44415
65	120	9000	3530.014	0.01438	0.637391	0.623011	4500	1434.13	4398.478	1370.151	0.562331	32.21919	341.4136	341.4136	392.8998	15%	25.82763	0.450777	25.29563	0.441492	3612.193	3448.892	1.024142	3529.568	4329.293	694.9019	-0.44541
65	130	9000	3530.014	0.015582	0.637391	0.621809	4500	1434.13	4389.988	1364.867	0.5619	32.19452	360.3835	360.3835	416.5593	16%	25.87695	0.451638	25.34495	0.442353	3616.977	3444.221	1.024108	3529.57	4319.808	623.6706	-0.44398
65	140	9000	3530.014	0.016786	0.637391	0.620606	4500	1434.13	4381.494	1359.59	0.561469	32.16983	379.2956	379.2956	440.2197	16%	25.92634	0.4525	25.39434	0.443215	3621.77	3439.546	1.024074	3529.574	4310.352	563.0273	-0.43985
65	150	9000	3530.014	0.017989	0.637391	0.619402	4500	1434.13	4372.995	1354.321	0.561038	32.14511	398.1501	398.1501	463.8809	17%	25.97577	0.453363	25.44377	0.444078	3626.572	3434.867	1.02404	3529.581	4300.925	510.9653	-0.43302
65	160	9000	3530.014	0.019194	0.637391	0.618197	4500	1434.13	4364.491	1349.058	0.560606	32.12037	416.9472	416.9472	487.5431	17%	26.02526	0.454226	25.49326	0.444941	3631.383	3430.184	1.024007	3529.59	4291.526	465.9323	-0.42348
65	170	9000	3530.014	0.020399	0.637391	0.616992	4500	1434.13	4355.982	1343.804	0.560174	32.0956	435.6873	435.6873	511.2063	17%	26.0748	0.455091	25.5428	0.445806	3636.204	3425.497	1.023974	3529.603	4282.156	426.7124	-0.41123
65	180	9000	3530.014	0.021605	0.637391	0.615786	4500	1434.13	4347.469	1338.556	0.559741	32.0708	454.3705	454.3705	534.8706	18%	26.1244	0.455957	25.5924	0.446672	3641.034	3420.806	1.023941	3529.618	4272.815	392.342	-0.39627
65	190	9000	3530.014	0.022811	0.637391	0.61458	4500	1434.13	4338.952	1333.316	0.559308	32.04597	472.9971	472.9971	558.5359	18%	26.17405	0.456823	25.64205	0.447538	3645.874	3416.111	1.023907	3529.635	4263.501	362.0496	-0.37859
65	200	9000	3530.014	0.024018	0.637391	0.613373	4500	1434.13	4330.429	1328.084	0.558874	32.02112	491.5673	491.5673	582.2023	18%	26.22375	0.457691	25.69175	0.448406	3650.723	3411.411	1.023875	3529.656	4254.216	335.2116	-0.35819
65	210	9000	3530.014	0.025226	0.637391	0.612165	4500	1434.13	4321.903	1322.859	0.55844	31.99624	510.0815	510.0815	605.87	19%	26.27351	0.458559	25.74151	0.449274	3655.581	3406.708	1.023842	3529.679	4244.959	311.3192	-0.33507
65	220	9000	3530.014	0.026435	0.637391	0.610957	4500	1434.13	4313.371	1317.641	0.558005	31.97134	528.5397	528.5397	629.5388	19%	26.32332	0.459429	25.79132	0.450144	3660.449	3402.001	1.023809	3529.705	4235.73	289.9545	-0.30922
65	230	9000	3530.014	0.027644	0.637391	0.609748	4500	1434.13	4304.835	1312.431	0.55757	31.9464	546.9423	546.9423	653.2309	19%	26.37319	0.460299	25.84119	0.451014	3665.326	3397.289	1.023777	3529.733	4226.529	270.7709	-0.28064
65	240	9000	3530.014	0.028853	0.637391	0.608538	4500	1434.13	4296.294	1307.229	0.557134	31.92144	565.2895	565.2895	676.8804	20%	26.42311	0.46117	25.89111	0.451885	3670.213	3392.574	1.023744	3529.764	4217.355	253.4797	-0.24932
65	40	9500	3726.126	0.004531	0.637391	0.63286	4750	1513.804	4716.235	1492.359	0.565848	32.42068	193.632	193.632	209.7056	8%	25.42463	0.443744	24.89263	0.434458	3771.773	3680.825	1.024424	3725.75	4653.184	2407.093	-0.37536
65	50	9500	3726.126	0.005665	0.637391	0.631726	4750	1513.804	4707.782	1487.015	0.565444	32.39753	213.088	213.088	233.36	10%	25.47095	0.444552	24.93895	0.435267	3776.482	3676.186	1.024391	3725.73	4643.456	1987.601	-0.39602

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
65	60	9500	3726.126	0.0068	0.637391	0.630591	4750	1513.804	4699.326	1481.677	0.565039	32.37434	232.4872	232.4872	257.0148	11%	25.51731	0.445361	24.98531	0.436076	3781.2	3671.542	1.024358	3725.712	4633.756	1669.741	-0.41415
65	70	9500	3726.126	0.007935	0.637391	0.629456	4750	1513.804	4690.865	1476.347	0.564634	32.35114	251.8299	251.8299	280.6701	11%	25.56372	0.446171	25.03172	0.436886	3785.926	3666.896	1.024325	3725.696	4624.085	1423.091	-0.42974
65	80	9500	3726.126	0.009071	0.637391	0.62832	4750	1513.804	4682.4	1471.023	0.564228	32.32791	271.1162	271.1162	304.3259	12%	25.61018	0.446982	25.07818	0.437697	3790.661	3662.246	1.024293	3725.683	4614.442	1227.824	-0.44281
65	90	9500	3726.126	0.010208	0.637391	0.627184	4750	1513.804	4673.93	1465.706	0.563823	32.30465	290.3464	290.3464	327.9822	13%	25.65669	0.447794	25.12469	0.438509	3795.404	3657.592	1.02426	3725.672	4604.827	1070.568	-0.45333
65	100	9500	3726.126	0.011345	0.637391	0.626047	4750	1513.804	4665.456	1460.397	0.563416	32.28138	309.5208	309.5208	351.6391	14%	25.70325	0.448606	25.17125	0.439321	3800.156	3652.934	1.024228	3725.664	4595.24	942.0363	-0.46132
65	110	9500	3726.126	0.012482	0.637391	0.624909	4750	1513.804	4656.978	1455.094	0.56301	32.25808	328.6395	328.6395	375.2967	14%	25.74985	0.44942	25.21785	0.440134	3804.917	3648.273	1.024195	3725.659	4585.68	835.6179	-0.46676
65	120	9500	3726.126	0.013621	0.637391	0.623771	4750	1513.804	4648.496	1449.798	0.562603	32.23475	347.7028	347.7028	398.955	15%	25.7965	0.450234	25.2645	0.440949	3809.686	3643.609	1.024163	3725.656	4576.149	746.5019	-0.46965
65	130	9500	3726.126	0.014759	0.637391	0.622632	4750	1513.804	4640.009	1444.508	0.562195	32.2114	366.7109	366.7109	422.614	15%	25.8432	0.451049	25.3112	0.441764	3814.464	3638.94	1.024131	3725.656	4566.645	671.1191	-0.46999
65	140	9500	3726.126	0.015899	0.637391	0.621492	4750	1513.804	4631.517	1439.226	0.561787	32.18803	385.6641	385.6641	446.2737	16%	25.88994	0.451865	25.35794	0.44258	3819.25	3634.268	1.024099	3725.658	4557.168	606.7767	-0.46777
65	150	9500	3726.126	0.017039	0.637391	0.620352	4750	1513.804	4623.022	1433.951	0.561379	32.16463	404.5625	404.5625	469.9343	16%	25.93674	0.452681	25.40474	0.443396	3824.045	3629.592	1.024067	3725.663	4547.719	551.4118	-0.463
65	160	9500	3726.126	0.01818	0.637391	0.619212	4750	1513.804	4614.522	1428.683	0.56097	32.14121	423.4064	423.4064	493.5957	17%	25.98358	0.453499	25.45158	0.444214	3828.849	3624.912	1.024035	3725.67	4538.297	503.4222	-0.45567
65	170	9500	3726.126	0.019321	0.637391	0.618071	4750	1513.804	4606.017	1423.422	0.560561	32.11776	442.196	442.196	517.2581	17%	26.03047	0.454317	25.49847	0.445032	3833.662	3620.229	1.024004	3725.68	4528.902	461.5487	-0.44578
65	180	9500	3726.126	0.020462	0.637391	0.616929	4750	1513.804	4597.509	1418.168	0.560151	32.09429	460.9316	460.9316	540.9213	17%	26.07741	0.455137	25.54541	0.445852	3838.484	3615.541	1.023972	3725.692	4519.534	424.79	-0.43331
65	190	9500	3726.126	0.021605	0.637391	0.615786	4750	1513.804	4588.995	1412.921	0.559741	32.0708	479.6133	479.6133	564.5856	18%	26.1244	0.455957	25.5924	0.446672	3843.314	3610.85	1.023941	3725.707	4510.193	392.342	-0.41828
65	200	9500	3726.126	0.022748	0.637391	0.614644	4750	1513.804	4580.478	1407.681	0.559331	32.04728	498.2414	498.2414	588.2509	18%	26.17144	0.456778	25.63944	0.447493	3848.153	3606.155	1.023909	3725.725	4500.879	363.5529	-0.40067
65	210	9500	3726.126	0.023891	0.637391	0.6135	4750	1513.804	4571.956	1402.447	0.55892	32.02374	516.8161	516.8161	611.9172	18%	26.21852	0.457599	25.68652	0.448314	3853.001	3601.457	1.023878	3725.745	4491.592	337.8899	-0.38049
65	220	9500	3726.126	0.025035	0.637391	0.612356	4750	1513.804	4563.43	1397.221	0.558508	32.00017	535.3376	535.3376	635.5847	19%	26.26565	0.458422	25.73365	0.449137	3857.858	3596.754	1.023847	3725.768	4482.331	314.9139	-0.35773
65	230	9500	3726.126	0.02618	0.637391	0.611211	4750	1513.804	4554.899	1392.003	0.558097	31.97658	553.8061	553.8061	659.2533	19%	26.31283	0.459246	25.78083	0.44996	3862.724	3592.047	1.023816	3725.793	4473.097	294.2604	-0.33238
65	240	9500	3726.126	0.027325	0.637391	0.610066	4750	1513.804	4546.364	1386.791	0.557685	31.95297	572.2218	572.2218	682.9232	19%	26.36006	0.46007	25.82806	0.450785	3867.599	3587.337	1.023785	3725.821	4463.889	275.6248	-0.30445
65	40	10000	3922.238	0.004304	0.637391	0.633087	5000	1593.478	4966.236	1572.03	0.565928	32.42531	199.72	199.72	215.7629	8%	25.41537	0.443582	24.88337	0.434297	3969.297	3875.529	1.024431	3921.847	4900.14	2507.016	-0.39044
65	50	10000	3922.238	0.005381	0.637391	0.63201	5000	1593.478	4957.785	1566.684	0.565545	32.40332	219.1888	219.1888	239.4172	9%	25.45936	0.44435	24.92736	0.435065	3974.004	3870.89	1.0244	3921.826	4890.406	2081.437	-0.41167
65	60	10000	3922.238	0.006459	0.637391	0.630932	5000	1593.478	4949.33	1561.345	0.56516	32.3813	238.6036	238.6036	263.0719	10%	25.5034	0.445118	24.9714	0.435833	3978.72	3866.248	1.024368	3921.807	4880.698	1756.491	-0.4305
65	70	10000	3922.238	0.007538	0.637391	0.629854	5000	1593.478	4940.87	1556.012	0.564776	32.35926	257.9646	257.9646	286.727	11%	25.54747	0.445888	25.01547	0.436602	3983.443	3861.603	1.024337	3921.791	4871.018	1502.726	-0.44692
65	80	10000	3922.238	0.008617	0.637391	0.628775	5000	1593.478	4932.407	1550.686	0.564391	32.3372	277.272	277.272	310.3826	12%	25.59159	0.446658	25.05959	0.437372	3988.175	3856.954	1.024306	3921.777	4861.364	1300.732	-0.46093
65	90	10000	3922.238	0.009696	0.637391	0.627695	5000	1593.478	4923.939	1545.366	0.564005	32.31512	296.526	296.526	334.0387	13%	25.63576	0.447428	25.10376	0.438143	3992.915	3852.302	1.024275	3921.765	4851.737	1137.298	-0.47254
65	100	10000	3922.238	0.010776	0.637391	0.626615	5000	1593.478	4915.467	1540.053	0.56362	32.29302	315.7269	315.7269	357.6954	13%	25.67996	0.4482	25.14796	0.438915	3997.662	3847.646	1.024244	3921.756	4842.137	1003.175	-0.48173
65	110	10000	3922.238	0.011857	0.637391	0.625535	5000	1593.478	4906.991	1534.747	0.563233	32.27089	334.8748	334.8748	381.3526	14%	25.72421	0.448972	25.19221	0.439687	4002.418	3842.987	1.024213	3921.749	4832.563	891.7335	-0.48851
65	120	10000	3922.238	0.012938	0.637391	0.624454	5000	1593.478	4898.511	1529.447	0.562847	32.24875	353.9699	353.9699	405.0105	14%	25.7685	0.449745	25.2365	0.44046	4007.183	3838.324	1.024182	3921.745	4823.015	798.1183	-0.49286
65	130	10000	3922.238	0.014019	0.637391	0.623372	5000	1593.478	4890.027	1524.153	0.56246	32.22658	373.0125	373.0125	428.669	15%	25.81284	0.450519	25.28084	0.441234	4011.955	3833.658	1.024152	3921.743	4813.494	718.7092	-0.4948
65	140	10000	3922.238	0.015101	0.637391	0.62229	5000	1593.478	4881.539	1518.866	0.562073	32.20439	392.0027	392.0027	452.3282	15%	25.85722	0.451294	25.32522	0.442008	4016.736	3828.988	1.024121	3921.743	4803.999	650.7614	-0.49431
65	150	10000	3922.238	0.016184	0.637391	0.621207	5000	1593.478	4873.046	1513.586	0.561685	32.18218	410.9408	410.9408	475.9882	16%	25.90164	0.452069	25.36964	0.442784	4021.524	3824.315	1.024091	3921.746	4794.53	592.1632	-0.49139
65	160	10000	3922.238	0.017267	0.637391	0.620124	5000	1593.478	4864.55	1508.313	0.561297	32.15995	429.827	429.827	499.649	16%	25.9461	0.452845	25.4141	0.44356	4026.322	3819.638	1.024061	3921.751	4785.087	541.2684	-0.48604
65	170	10000	3922.238	0.018351	0.637391	0.619041	5000	1593.478	4856.049	1503.046	0.560909	32.13769	448.6614	448.6614	523.3106	17%	25.99061	0.453622	25.45861	0.444337	4031.127	3814.958	1.02403	3921.759	4775.669	496.7784	-0.47826
65	180	10000	3922.238	0.019435	0.637391	0.617956	5000	1593.478	4847.544	1497.785	0.56052	32.11542	467.4442	467.4442	546.973	17%	26.03516	0.454399	25.50316	0.445114	4035.941	3810.274	1.024	3921.769	4766.278	457.6573	-0.46805
65	190	10000	3922.238	0.02052	0.637391	0.616872	5000	1593.478	4839.035	1492.532	0.560131	32.09312	486.1757	486.1757	570.6364	17%	26.07976	0.455178	25.54776	0.445893	4040.763	3805.586	1.02397	3921.782	4756.912	423.0712	-0.45539
65	200	10000	3922.238	0.021605	0.637391	0.615786	5000	1593.478	4830.521	1487.285	0.559741	32.0708	504.8561	504.8561	594.3006	18%	26.1244	0.455957	25.5924	0.446672	4045.594	3800.895	1.023941	3921.797	4747.572	392.342	-0.4403
65	210	10000	3922.238	0.022691	0.637391	0.614701	5000	1593.478	4822.004	1482.045	0.559351	32.04846	523.4855	523.4855	617.9659	18%	26.16908	0.456737	25.63708	0.447452	4050.433	3796.2	1.023911	3921.815	4738.257	364.9141	-0.42275
65	220	10000	3922.238	0.023777	0.637391	0.613614	5000	1593.478	4813.483	1476.811	0.558961	32.0261	542.0642	542.0642	641.6322	18%	26.21381	0.457517	25.68181	0.448232	4055.28	3791.502	1.023881	3921.835	4728.968	340.3287	-0.40276
65	230	10000	3922.238	0.024864	0.637391	0.612528	5000	1593.478	4804.957	1471.584	0.55857	32.00371	560.5923	560.5923	665.2995	19%	26.25858	0.458299	25.72658	0.449014	4060.136	3786.8	1.023852	3921.857	4719.704	318.204	-0.38032
65	240	10000	3922.238	0.025951	0.637391	0.61144	5000	1593.478	4796.427	1466.364	0.558179	31.9813	579.0701	579.0701	688.9679	19%	26.30339	0.459081	25.77139	0.449796	4065.001	3782.094	1.023822	3921.882	4710.465	298.2207	-0.35543
70	40	1000	356.8502	0.046402	0.700574	0.654172	500	175.1435	466.8825	152.7106	0.595378	34.11264	102.3043	102.3043	131.4208	28%	22.04071	0.384683	21.50871	0.375398	377.57	336.7026	1.027321	356.8609	448.8479	95.546	0.010687
70	50	1000	356.8502	0.058161	0.700574	0.642413	500	175.1435	458.4902	147.2699	0.591337	33.8811	122.3843	122.3843	160.7118	31%	22.50381	0.392766	21.97181	0.38348	382.2892	332.2496	1.026862	356.9378	438.8079	66.76498	0.087595
70	60	1000	356.8502	0.069985	0.700574	0.630589	500	175.1435	450.052	141.899	0.587251	33.64701	141.7826	141.7826	190.0313	34%	22.97198	0.400937	22.43998	0.391651	387.0924	327.7645	1.02642	357.0417	429.1087	49.74553	0.191482
70	70	1000	356.8502	0.081872	0.700574	0.618702	500	175.1435	441.5676	136.5993	0.583121	33.41035	160.531	160.531	219.3844	37%	23.44529	0.409198	22.91329	0.399912	391.9823	323.2455	1.025994	357.1729	419.7345	38.80451	0.322688
70	80	1000	356.8502	0.093825	0.700574	0.606749	500	175.1435	433.0368	131.3722	0.578945	33.17109	178.6594	178.6594	248.7765	39%	23.92382	0.417549	23.39182	0.408264	396.9617	318.6905	1.025585	357.3318	410.6703	31.32913	0.481563
70	90	1000	356.8502	0.105844	0.700574	0.59473	500	175.1435	424.4591	126.2193	0.574723	32.92919	196.1961	196.1961	278.2128	42%	24.40761	0.425993	23.87561	0.416708	402.0336	314.0976	1.025191	357.5187	401.902	25.97882	0.668465
70	100	1000	356.8502	0.117928	0.700574	0.582646	500	175.1435	415.8344	121.1421	0.570454	32.68463	213.1678	213.1678	307.6986	44%	24.89674	0.43453	24.36474	0.425245	407.2012	309.4645	1.024813	357.734	393.4161	22.0068	0.883763
70	110	1000	356.8502	0.130079	0.700574	0.570495	500	175.1435	407.1624	116.142	0.566139	32.43736	229.5999	229.5999	337.2394	47%	25.39128	0.443161	24.85928	0.433876	412.4677	304.7888	1.024448	357.9781	385.2001	18.96953	1.127833
70	120	1000	356.8502	0.142297	0.700574	0.558277	500	175.1435	398.4427	111.2208	0.561775	32.18736	245.5164	245.5164	366.8404	49%	25.89127	0.451888	25.35927	0.442603	417.8364	300.0683	1.024098	358.2513	377.2418	16.58972	1.401062
70	130	1000	356.8502	0.154581	0.700574	0.545993	500	175.1435	389.6752	106.3799	0.557364	31.9346	260.94	260.94	396.5071	52%	26.3968	0.460711	25.8648	0.451426	423.3109	295.3003	1.023761	358.5541	369.53	14.68651	1.703843
70	140	1000	356.8502	0.166933	0.700574	0.533641	500	175.1435	380.8595	101.6211	0.552904	31.67904	275.8925	275.8925	426.245	54%	26.90792	0.469632	26.37592	0.460347	428.8949	290.4819	1.023437	358.8868	362.0537	13.13772	2.036576
70	150	1000	356.8502	0.179353	0.700574	0.521221	500	175.1435	371.9956	96.94592	0.548394	31.42065	290.3944	290.3944	456.0597	57%	27.4247	0.478651	26.8927	0.469366	434.5924	285.6104	1.023127	359.2499	354.8028	11.85833	2.39967
70	160	1000	356.8502	0.191841	0.700574	0.508733	500	175.1435	363.083	92.35617	0.543834	31.1594	304.4652	304.4652	485.9566	60%	27.94719	0.48777	27.41519	0.478485	440.4074	280.6827	1.022828	359.6438	347.7674	10.7876	2.793541
70	170	1000	356.8502	0.204397	0.700574	0.496177	500	175.1435	354.1218	87.85354	0.539224	30.89527	318.1236	318.1236	515.9415	62%	28.47546	0.496991	27.94346	0.487705	446.3442	275.6954	1.022541	360.0688	340.9382	9.881169	3.21861
70	180	1000	356.8502	0.217022	0.700574	0.483552	500	175.1435	345.1116	83.43977	0.534563	30.62821	331.3874	331.3874	546.02	65%	29.00957	0.506313	28.47757	0.497027	452.4072	270.6452	1.022267	360.5255	334.3063	9.10601	3.675305
70	190	1000	356.8502	0.229715	0.700574	0.470859	500	175.1435	336.0523	79.11664	0.529851	30.35821	344.2735	344.2735	576.1979	67%	29.54958	0.515737	29.01758	0.506452	458.6013	265.5283	1.022003	361.0143	327.8632	8.437091	4.164057
70	200	1000	356.8502	0.242477	0.700574	0.458097	500	175.1435	326.9439	74.88596	0.525086	30.08523	356.7983	356.7983	606.4812	70%	30.09554	0.525266	29.56354	0.515981	464.9313	260.3408	1.021751	361.5355	321.6008	7.855149	4.685306
70	210	1000	356.8502	0.255309	0.700574	0.445265	500	175.1435	317.7861	70.74957	0.520269	29.80924	368.9772	368.9772	636.8756	73%	30.64751	0.5349	30.11551	0.525615	471.4026	255.0787	1.02151	362.0897	315.5114	7.345154	5.239495
70	220	1000	356.8502	0.268209	0.700574	0.432365	500	175.1435	308.5789	66.70933	0.5154	29.53023	380.8251	380.8251	667.3873	75%	31.20555	0.54464	30.67355	0.535354	478.0205	249.7375	1.02128	362.6773	309.5874	6.89523	5.827068
70	230	1000	356.8502	0.281179	0.700574	0.419395	500	175.1435	299.3223	62.76711	0.510476	29.24815	392.3563	392.3563	698.0223	78%	31.76971	0.554486	31.23771	0.545201	484.7908	244.3125	1.02106	363.2987	303.8218	6.495891	6.448477
70	240	1000	356.8502	0.294218	0.700574	0.406356	500	175.1435	290.0161	58.92483	0.505499	28.96298	403.5844	403.5844	728.7869	81%	32.34003	0.56444	31.80803	0.555155	491.7196	238.7988	1.02085	363.9544	298.2078	6.139475	7.104174
70	40	1500	535.2753	0.030823	0.700574	0.669751	750	262.7153	717.0024	240.1065	0.600698	34.41748	111.6181	111.6181	138.6023	24%	21.43104	0.374042	20.89904	0.364757	557.1059	513.8893	1.027962	535.1997	694.191	180.5982	-0.07569

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
70	50	1500	535.2753	0.038599	0.700574	0.661975	750	262.7153	708.6782	234.5638	0.598048	34.26561	132.7835	132.7835	167.8602	26%	21.73477	0.379343	21.20277	0.370058	561.7039	509.4813	1.027637	535.2367	683.6082	127.6128	-0.03864
70	60	1500	535.2753	0.046402	0.700574	0.654172	750	262.7153	700.3238	229.066	0.595378	34.11264	153.4564	153.4564	197.1313	28%	22.04071	0.384683	21.50871	0.375398	566.355	505.0539	1.027321	535.2914	673.2718	95.546	0.01603
70	70	1500	535.2753	0.054235	0.700574	0.646339	750	262.7153	691.9391	223.6137	0.592689	33.95856	173.6525	173.6525	226.4179	30%	22.34888	0.390062	21.81688	0.380776	571.0604	500.6061	1.027013	535.3638	663.1738	74.61406	0.088466
70	80	1500	535.2753	0.062095	0.700574	0.638479	750	262.7153	683.5238	218.2077	0.58998	33.80335	193.3868	193.3868	255.7223	32%	22.6593	0.395479	22.1273	0.386194	575.8212	496.1374	1.026712	535.4542	653.3066	60.16292	0.178814
70	90	1500	535.2753	0.069985	0.700574	0.630589	750	262.7153	675.078	212.8485	0.587251	33.64701	212.6739	212.6739	285.0469	34%	22.97198	0.400937	22.43998	0.391651	580.6386	491.6468	1.02642	535.5626	643.663	49.74553	0.287223
70	100	1500	535.2753	0.077903	0.700574	0.622671	750	262.7153	666.6013	207.5368	0.584503	33.48953	231.5278	231.5278	314.3939	36%	23.28695	0.406434	22.75495	0.397149	585.5137	487.1336	1.026134	535.6892	634.2361	41.9736	0.413844
70	110	1500	535.2753	0.085849	0.700574	0.614725	750	262.7153	658.0938	202.2732	0.581734	33.33089	249.9619	249.9619	343.7657	38%	23.60422	0.411971	23.07222	0.402686	590.448	482.5969	1.025856	535.8342	625.0191	36.01098	0.558832
70	120	1500	535.2753	0.093825	0.700574	0.606749	750	262.7153	649.5551	197.0583	0.578945	33.17109	267.9891	267.9891	373.1647	39%	23.92382	0.417549	23.39182	0.408264	595.4425	478.0358	1.025585	535.9977	616.0055	31.32913	0.722344
70	130	1500	535.2753	0.10183	0.700574	0.598744	750	262.7153	640.9853	191.8929	0.576135	33.01012	285.6219	285.6219	402.5932	41%	24.24576	0.423168	23.71376	0.413883	600.4988	473.4494	1.025321	536.1799	607.1891	27.58034	0.904541
70	140	1500	535.2753	0.109865	0.700574	0.590709	750	262.7153	632.3842	186.7776	0.573305	32.84797	302.8722	302.8722	432.0535	43%	24.57006	0.428828	24.03806	0.419543	605.6181	468.8367	1.025063	536.3809	598.5639	24.52809	1.105586
70	150	1500	535.2753	0.117928	0.700574	0.582646	750	262.7153	623.7516	181.7131	0.570454	32.68463	319.7517	319.7517	461.548	44%	24.89674	0.43453	24.36474	0.425245	610.8018	464.1967	1.024813	536.601	590.1242	22.0068	1.325644
70	160	1500	535.2753	0.126022	0.700574	0.574552	750	262.7153	615.0875	176.7	0.567583	32.52009	336.2715	336.2715	491.0791	46%	25.22583	0.440274	24.69383	0.430989	616.0515	459.5284	1.024568	536.8402	581.8643	19.89768	1.564884
70	170	1500	535.2753	0.134144	0.700574	0.56643	750	262.7153	606.3917	171.7391	0.56469	32.35433	352.4423	352.4423	520.6491	48%	25.55733	0.44606	25.02533	0.436774	621.3685	454.8307	1.02433	537.0988	573.7789	18.11367	1.823476
70	180	1500	535.2753	0.142297	0.700574	0.558277	750	262.7153	597.6641	166.8311	0.561775	32.18736	368.2746	368.2746	550.2606	49%	25.89127	0.451888	25.35927	0.442603	626.7545	450.1025	1.024098	537.3769	565.8627	16.58972	2.101593
70	190	1500	535.2753	0.150479	0.700574	0.550095	750	262.7153	588.9045	161.9767	0.55884	32.01916	383.7783	383.7783	579.9159	51%	26.22767	0.457759	25.69567	0.448474	632.2111	445.3426	1.023872	537.6748	558.1108	15.27642	2.399411
70	200	1500	535.2753	0.158691	0.700574	0.541883	750	262.7153	580.113	157.1766	0.555883	31.84972	398.9633	398.9633	609.6174	53%	26.56655	0.463674	26.03455	0.454389	637.7398	440.5498	1.023652	537.9925	550.5184	14.13568	2.717108
70	210	1500	535.2753	0.166933	0.700574	0.533641	750	262.7153	571.2893	152.4316	0.552904	31.67904	413.8388	413.8388	639.3676	54%	26.90792	0.469632	26.37592	0.460347	643.3424	435.7229	1.023437	538.3302	543.0806	13.13772	3.054864
70	220	1500	535.2753	0.175206	0.700574	0.525368	750	262.7153	562.4334	147.7423	0.549903	31.5071	428.4139	428.4139	669.1689	56%	27.25181	0.475634	26.71981	0.466349	649.0206	430.8605	1.023229	538.6882	535.7931	12.25901	3.41286
70	230	1500	535.2753	0.183508	0.700574	0.517066	750	262.7153	553.5452	143.1096	0.54688	31.33389	442.6974	442.6974	699.0238	58%	27.59822	0.48168	27.06622	0.472395	654.7762	425.9614	1.023026	539.0666	528.6513	11.48071	3.791281
70	240	1500	535.2753	0.191841	0.700574	0.508733	750	262.7153	544.6245	138.5343	0.543834	31.1594	456.6977	456.6977	728.9349	60%	27.94719	0.48777	27.41519	0.478485	660.6111	421.024	1.022828	539.4657	521.6511	10.7876	4.190312
70	40	2000	713.7005	0.023076	0.700574	0.677498	1000	350.287	967.062	327.5915	0.60333	34.56825	119.925	119.925	145.807	22%	21.1295	0.368779	20.5975	0.359494	736.7465	691.038	1.028295	713.5735	940.0375	278.1255	-0.12699
70	50	2000	713.7005	0.028884	0.700574	0.67169	1000	350.287	958.7716	321.9989	0.601358	34.45527	141.6638	141.6638	175.0528	24%	21.35545	0.372723	20.82345	0.363438	741.286	686.6511	1.028045	713.5908	929.1681	199.316	-0.10961
70	60	2000	713.7005	0.034707	0.700574	0.665867	1000	350.287	950.4587	316.4394	0.599375	34.34168	163.0178	163.0178	204.3063	25%	21.58263	0.376688	21.05063	0.367403	745.8644	682.2503	1.027799	713.6213	918.4911	150.5185	-0.07914
70	70	2000	713.7005	0.040547	0.700574	0.660027	1000	350.287	942.1232	310.9134	0.597382	34.22748	183.9964	183.9964	233.5688	27%	21.81105	0.380675	21.27905	0.371389	750.4822	677.8351	1.027558	713.6649	908.0018	118.1521	-0.03551
70	80	2000	713.7005	0.046402	0.700574	0.654172	1000	350.287	933.7651	305.4213	0.595378	34.11264	204.6085	204.6085	262.8417	28%	22.04071	0.384683	21.50871	0.375398	755.14	673.4051	1.027321	713.7218	897.6957	95.546	0.021373
70	90	2000	713.7005	0.052274	0.700574	0.6483	1000	350.287	925.3841	299.9633	0.593363	33.99719	224.8631	224.8631	292.1262	30%	22.27163	0.388713	21.73963	0.379428	759.8385	668.96	1.027089	713.792	887.5685	79.1086	0.091578
70	100	2000	713.7005	0.058161	0.700574	0.642413	1000	350.287	916.9804	294.5399	0.591337	33.8811	244.7686	244.7686	321.4236	31%	22.50381	0.392766	21.97181	0.38348	764.5784	664.4992	1.026862	713.8756	877.6157	66.76498	0.175189
70	110	2000	713.7005	0.064065	0.700574	0.636509	1000	350.287	908.5537	289.1513	0.589299	33.76437	264.3333	264.3333	350.7353	33%	22.73725	0.39684	22.20525	0.387555	769.3602	660.0224	1.026639	713.9727	867.8334	57.24748	0.27229
70	120	2000	713.7005	0.069985	0.700574	0.630589	1000	350.287	900.104	283.798	0.587251	33.64701	283.5652	283.5652	380.0625	34%	22.97198	0.400937	22.43998	0.391651	774.1847	655.5291	1.02642	714.0834	858.2174	49.74553	0.382964
70	130	2000	713.7005	0.07592	0.700574	0.624654	1000	350.287	891.6312	278.4803	0.585192	33.52901	302.4723	302.4723	409.4066	35%	23.20799	0.405056	22.67599	0.395771	779.0526	651.0188	1.026205	714.2078	848.7639	43.72087	0.507297
70	140	2000	713.7005	0.081872	0.700574	0.618702	1000	350.287	883.1352	273.1986	0.583121	33.41035	321.062	321.062	438.7688	37%	23.44529	0.409198	22.91329	0.399912	783.9645	646.491	1.025994	714.3458	839.469	38.80451	0.645377
70	150	2000	713.7005	0.087841	0.700574	0.612733	1000	350.287	874.616	267.9532	0.581038	33.29105	339.3418	339.3418	468.1505	38%	23.6839	0.413362	23.1519	0.404077	788.9212	641.9453	1.025788	714.4977	830.3291	34.73644	0.79729
70	160	2000	713.7005	0.093825	0.700574	0.606749	1000	350.287	866.0735	262.7445	0.578945	33.17109	357.3188	357.3188	497.5529	39%	23.92382	0.417549	23.39182	0.408264	793.9234	637.3811	1.025585	714.6636	821.3406	31.32913	0.963126
70	170	2000	713.7005	0.099826	0.700574	0.600748	1000	350.287	857.5076	257.5728	0.57684	33.05048	375	375	526.9775	41%	24.16505	0.42176	23.63305	0.412475	798.9718	632.7979	1.025386	714.8434	812.5	28.44445	1.142975
70	180	2000	713.7005	0.105844	0.700574	0.59473	1000	350.287	848.9183	252.4386	0.574723	32.92919	392.3921	392.3921	556.4256	42%	24.40761	0.425993	23.87561	0.416708	804.0673	628.1952	1.025191	715.0374	803.8039	25.97882	1.33693
70	190	2000	713.7005	0.111878	0.700574	0.588696	1000	350.287	840.3054	247.3423	0.572594	32.80725	409.5019	409.5019	585.8984	43%	24.6515	0.43025	24.1195	0.420965	809.2106	623.5724	1.025	715.2455	795.2491	23.85329	1.545082
70	200	2000	713.7005	0.117928	0.700574	0.582646	1000	350.287	831.6689	242.2841	0.570454	32.68463	426.3356	426.3356	615.3973	44%	24.89674	0.43453	24.36474	0.425245	814.4024	618.9289	1.024813	715.468	786.8322	22.0068	1.767526
70	210	2000	713.7005	0.123996	0.700574	0.576579	1000	350.287	823.0087	237.2646	0.568303	32.56134	442.8995	442.8995	644.9236	46%	25.14333	0.438834	24.61133	0.429549	819.6438	614.2642	1.024629	715.7048	778.5502	20.39152	2.004355
70	220	2000	713.7005	0.130079	0.700574	0.570495	1000	350.287	814.3248	232.284	0.566139	32.43736	459.1998	459.1998	674.4788	47%	25.39128	0.443161	24.85928	0.433876	824.9353	609.5777	1.024448	715.9561	770.4001	18.96953	2.255667
70	230	2000	713.7005	0.13618	0.700574	0.564394	1000	350.287	805.617	227.3429	0.563963	32.31271	475.2423	475.2423	704.064	48%	25.64059	0.447513	25.10859	0.438228	830.278	604.8687	1.024271	716.222	762.3789	17.71046	2.521557
70	240	2000	713.7005	0.142297	0.700574	0.558277	1000	350.287	796.8854	222.4415	0.561775	32.18736	491.0328	491.0328	733.6808	49%	25.89127	0.451888	25.35927	0.442603	835.6727	600.1366	1.024098	716.5026	754.4836	16.58972	2.802124
70	40	2500	892.1256	0.01844	0.700574	0.682134	1250	437.8588	1217.098	415.1116	0.6049	34.65819	127.8129	127.8129	153.0188	20%	20.94962	0.36564	20.41762	0.356355	916.4281	868.1722	1.028499	891.9612	1186.094	382.5872	-0.16441
70	50	2500	892.1256	0.023076	0.700574	0.677498	1250	437.8588	1208.827	409.4894	0.60333	34.56825	149.9062	149.9062	182.2587	22%	21.1295	0.368779	20.5975	0.359494	920.9332	863.7975	1.028295	891.9668	1175.047	278.1255	-0.15874
70	60	2500	892.1256	0.027721	0.700574	0.672853	1250	437.8588	1200.539	403.8934	0.601753	34.47792	171.6839	171.6839	211.5038	23%	21.31016	0.371932	20.77816	0.362647	925.4688	859.412	1.028094	891.9829	1164.158	212.0415	-0.14267
70	70	2500	892.1256	0.032376	0.700574	0.668198	1250	437.8588	1192.233	398.324	0.60017	34.38719	193.1522	193.1522	240.7548	25%	21.49161	0.375099	20.95961	0.365814	930.0355	855.0154	1.027896	892.0094	1153.424	167.5253	-0.11613
70	80	2500	892.1256	0.037041	0.700574	0.663533	1250	437.8588	1183.909	392.7812	0.598579	34.29608	214.3172	214.3172	270.0127	26%	21.67385	0.37828	21.14185	0.368995	934.6334	850.6075	1.027702	892.0465	1142.841	136.0711	-0.07909
70	90	2500	892.1256	0.041717	0.700574	0.658857	1250	437.8588	1175.567	387.2653	0.596982	34.20456	235.1848	235.1848	299.2782	27%	21.85688	0.381475	21.32488	0.372189	939.2632	846.1879	1.02751	892.0941	1132.408	112.9956	-0.03149
70	100	2500	892.1256	0.046402	0.700574	0.654172	1250	437.8588	1167.206	381.7766	0.595378	34.11264	255.7607	255.7607	328.5521	28%	22.04071	0.384683	21.50871	0.375398	943.925	841.7564	1.027321	892.1523	1122.12	95.546	0.026717
70	110	2500	892.1256	0.051098	0.700574	0.649476	1250	437.8588	1158.828	376.3152	0.593767	34.02033	276.0505	276.0505	357.8354	30%	22.22534	0.387905	21.69334	0.37862	948.6194	837.3128	1.027135	892.2212	1111.975	82.01685	0.095584
70	120	2500	892.1256	0.055804	0.700574	0.64477	1250	437.8588	1150.431	370.8814	0.592148	33.92761	296.0596	296.0596	387.1288	31%	22.41078	0.391142	21.87878	0.381857	953.3468	832.8568	1.026952	892.3007	1101.97	71.30526	0.175163
70	130	2500	892.1256	0.060521	0.700574	0.640053	1250	437.8588	1142.016	365.4753	0.590523	33.83448	315.7936	315.7936	416.4332	32%	22.59703	0.394393	22.06503	0.385107	958.1076	828.3881	1.026772	892.3911	1092.103	62.67198	0.265508
70	140	2500	892.1256	0.065248	0.700574	0.635326	1250	437.8588	1133.582	360.0973	0.588891	33.74095	335.2575	335.2575	445.7493	33%	22.7841	0.397657	22.2521	0.388372	962.9021	823.9063	1.026594	892.4922	1082.371	55.60617	0.36667
70	150	2500	892.1256	0.069985	0.700574	0.630589	1250	437.8588	1125.13	354.7475	0.587251	33.64701	354.4565	354.4565	475.0781	34%	22.97198	0.400937	22.43998	0.391651	967.7309	819.4113	1.02642	892.6043	1072.772	49.74553	0.478705
70	160	2500	892.1256	0.074732	0.700574	0.625842	1250	437.8588	1116.659	349.4263	0.585604	33.55266	373.3956	373.3956	504.4204	35%	23.16068	0.40423	22.62868	0.394945	972.5944	814.9028	1.026248	892.7272	1063.302	44.8272	0.601667
70	170	2500	892.1256	0.07949	0.700574	0.621084	1250	437.8588	1108.17	344.1337	0.58395	33.45789	392.0796	392.0796	533.777	36%	23.35022	0.407538	22.81822	0.398253	977.493	810.3803	1.026078	892.8612	1053.96	40.65663	0.735612
70	180	2500	892.1256	0.084258	0.700574	0.616316	1250	437.8588	1099.663	338.8701	0.582289	33.36271	410.5134	410.5134	563.1488	37%	23.54058	0.410861	23.00858	0.401575	982.4272	805.8436	1.025911	893.0062	1044.743	37.08731	0.880596
70	190	2500	892.1256	0.089036	0.700574	0.611538	1250	437.8588	1091.137	333.6356	0.580621	33.26711	428.7015	428.7015	592.5366	38%	23.73178	0.414198	23.19978	0.404912	987.3975	801.2924	1.025747	893.1622	1035.649	34.00714	1.036675
70	200	2500	892.1256	0.093825	0.700574	0.606749	1250	437.8588	1082.592	328.4306	0.578945	33.17109	446.6485	446.6485	621.9412	39%	23.92382	0.417549	23.39182	0.408264	992.4042	796.7263	1.025585	893.3295	1026.676	31.32913	1.203907
70	210	2500	892.1256	0.098625	0.700574	0.601949	1250	437.8588	1074.028	323.2552	0.577262	33.07465	464.3588	464.3588	651.3635	40%	24.1167	0.420916	23.5847	0.411631	997.448	792.1451	1.025426	893.5079	1017.821	28.98495	1.38235
70	220	2500	892.1256	0.103435	0.700574	0.597139	1250	437.8588	1065.446	318.1097	0.575571	32.97779	481.8369	481.8369	680.8043	41%	24.31043	0.424297	23.77843	0.415012	1002.529	787.5483	1.025269	893.6976	1009.082	26.9203	1.572062
70	230	2500	892.1256	0.108256	0.700574	0.592318	1250	437.8588	1056.845	312.9944	0.573873	32.8805	499.0869	499.0869	710.2646	42%	24.50501	0.427693	23.97301	0.418408	1007.649	782.9356	1.025114	893.8987	1000.457	25.09156	1.773102
70	240	2500	892.1256	0.113087	0.700574	0.587487	1250	437.8588	1048.225	307.9094	0.572167	32.78278	516.1131	516.1131	739.745	43%	24.70044	0.431104	24.16844	0.421819	1012.806	778.3067	1.024962	894.1111	991.9434	23.46336	1.985531

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
70	40	3000	1070.551	0.015356	0.700574	0.685218	1500	525.4305	1467.121	502.649	0.605942	34.71794	135.4868	135.4868	160.2336	18%	20.83013	0.363554	20.29813	0.354269	1096.13	1045.299	1.028637	1070.356	1432.257	490.2853	-0.19491
70	50	3000	1070.551	0.019212	0.700574	0.681362	1500	525.4305	1458.865	497.0073	0.604638	34.64323	157.8208	157.8208	189.4702	20%	20.97954	0.366162	20.44754	0.356877	1100.612	1040.933	1.028465	1070.354	1421.09	361.3384	-0.19702
70	60	3000	1070.551	0.023076	0.700574	0.677498	1500	525.4305	1450.593	491.3873	0.60333	34.56825	179.8874	179.8874	218.7105	22%	21.1295	0.368779	20.5975	0.359494	1105.12	1036.557	1.028295	1070.36	1410.056	278.1255	-0.19049
70	70	3000	1070.551	0.026946	0.700574	0.673628	1500	525.4305	1442.306	485.7891	0.602016	34.493	201.6911	201.6911	247.955	23%	21.28	0.371406	20.748	0.362121	1109.653	1032.172	1.028128	1070.375	1399.154	221.2427	-0.17529
70	80	3000	1070.551	0.030823	0.700574	0.669751	1500	525.4305	1434.005	480.213	0.600698	34.41748	223.2362	223.2362	277.2045	24%	21.43104	0.374042	20.89904	0.364757	1114.212	1027.779	1.027962	1070.399	1388.382	180.5982	-0.15137
70	90	3000	1070.551	0.034707	0.700574	0.665867	1500	525.4305	1425.688	474.6591	0.599375	34.34168	244.5267	244.5267	306.4594	25%	21.58263	0.376688	21.05063	0.367403	1118.797	1023.375	1.027799	1070.432	1377.737	150.5185	-0.11871
70	100	3000	1070.551	0.038599	0.700574	0.661975	1500	525.4305	1417.356	469.1275	0.598048	34.26561	265.567	265.567	335.7203	26%	21.73477	0.379343	21.20277	0.370058	1123.408	1018.963	1.027637	1070.473	1367.216	127.6128	-0.07728
70	110	3000	1070.551	0.042497	0.700574	0.658077	1500	525.4305	1409.01	463.6184	0.596715	34.18927	286.3611	286.3611	364.9878	27%	21.88746	0.382008	21.35546	0.372723	1128.045	1014.54	1.027478	1070.524	1356.819	109.7525	-0.02703
70	120	3000	1070.551	0.046402	0.700574	0.654172	1500	525.4305	1400.648	458.1319	0.595378	34.11264	306.9128	306.9128	394.2625	28%	22.04071	0.384683	21.50871	0.375398	1132.71	1010.108	1.027321	1070.583	1346.544	95.546	0.03206
70	130	3000	1070.551	0.050315	0.700574	0.650259	1500	525.4305	1392.27	452.6682	0.594036	34.03574	327.2261	327.2261	423.545	29%	22.19452	0.387367	21.66252	0.378082	1137.402	1005.665	1.027166	1070.651	1336.387	84.0517	0.100036
70	140	3000	1070.551	0.054235	0.700574	0.646339	1500	525.4305	1383.878	447.2275	0.592689	33.95856	347.3049	347.3049	452.8358	30%	22.34888	0.390062	21.81688	0.380776	1142.121	1001.212	1.027013	1070.728	1326.348	74.61406	0.176932
70	150	3000	1070.551	0.058161	0.700574	0.642413	1500	525.4305	1375.471	441.8098	0.591337	33.8811	367.1528	367.1528	482.1355	31%	22.50381	0.392766	21.97181	0.38348	1146.868	996.7488	1.026862	1070.813	1316.424	66.76498	0.262784
70	160	3000	1070.551	0.062095	0.700574	0.638479	1500	525.4305	1367.048	436.4154	0.58998	33.80335	386.7736	386.7736	511.4446	32%	22.6593	0.395479	22.1273	0.386194	1151.642	992.2747	1.026712	1070.908	1306.613	60.16292	0.357629
70	170	3000	1070.551	0.066036	0.700574	0.634538	1500	525.4305	1358.61	431.0445	0.588618	33.72532	406.1707	406.1707	540.7639	33%	22.81535	0.398203	22.28335	0.388918	1156.445	987.7897	1.026565	1071.012	1296.915	54.55383	0.461503
70	180	3000	1070.551	0.069985	0.700574	0.630589	1500	525.4305	1350.156	425.6971	0.587251	33.64701	425.3478	425.3478	570.0938	34%	22.97198	0.400937	22.43998	0.391651	1161.277	983.2936	1.02642	1071.125	1287.326	49.74553	0.574446
70	190	3000	1070.551	0.07394	0.700574	0.626634	1500	525.4305	1341.687	420.3734	0.585879	33.56841	444.3083	444.3083	599.4349	35%	23.12917	0.40368	22.59717	0.394395	1166.138	978.7862	1.026276	1071.247	1277.846	45.59042	0.696495
70	200	3000	1070.551	0.077903	0.700574	0.622671	1500	525.4305	1333.203	415.0736	0.584503	33.48953	463.0556	463.0556	628.7878	36%	23.28695	0.406434	22.75495	0.397149	1171.027	974.2672	1.026134	1071.378	1268.472	41.9736	0.827688
70	210	3000	1070.551	0.081872	0.700574	0.618702	1500	525.4305	1324.703	409.7979	0.583121	33.41035	481.593	481.593	658.1532	37%	23.44529	0.409198	22.91329	0.399912	1175.947	969.7365	1.025994	1071.519	1259.203	38.80451	0.968065
70	220	3000	1070.551	0.085849	0.700574	0.614725	1500	525.4305	1316.188	404.5464	0.581734	33.33089	499.9238	499.9238	687.5315	38%	23.60422	0.411971	23.07222	0.402686	1180.896	965.1938	1.025856	1071.668	1250.038	36.01098	1.117664
70	230	3000	1070.551	0.089834	0.700574	0.61074	1500	525.4305	1307.657	399.3193	0.580342	33.25114	518.0511	518.0511	716.9234	38%	23.76373	0.414755	23.23173	0.40547	1185.875	960.6389	1.02572	1071.827	1240.974	33.53492	1.276525
70	240	3000	1070.551	0.093825	0.700574	0.606749	1500	525.4305	1299.11	394.1167	0.578945	33.17109	535.9782	535.9782	746.3294	39%	23.92382	0.417549	23.39182	0.408264	1190.885	956.0716	1.025585	1071.995	1232.011	31.32913	1.444689
70	40	3500	1248.976	0.013155	0.700574	0.687419	1750	613.0023	1717.138	590.1964	0.606685	34.7605	143.0365	143.0365	167.4498	17%	20.74499	0.362068	20.21299	0.352783	1275.843	1222.422	1.028736	1248.754	1678.482	598.7459	-0.22148
70	50	3500	1248.976	0.016457	0.700574	0.684117	1750	613.0023	1708.891	584.5407	0.60557	34.69662	165.5447	165.5447	196.6843	19%	20.87276	0.364298	20.34076	0.355013	1280.309	1218.061	1.028588	1248.747	1667.228	446.998	-0.22913
70	60	3500	1248.976	0.019764	0.700574	0.68081	1750	613.0023	1700.631	578.9036	0.604452	34.63253	187.821	187.821	225.9216	20%	21.00093	0.366535	20.46893	0.35725	1284.797	1213.693	1.028441	1248.746	1656.09	347.2544	-0.22939
70	70	3500	1248.976	0.023076	0.700574	0.677498	1750	613.0023	1692.358	573.2851	0.60333	34.56825	209.8687	209.8687	255.1622	22%	21.1295	0.368779	20.5975	0.359494	1289.306	1209.317	1.028295	1248.754	1645.066	278.1255	-0.22224
70	80	3500	1248.976	0.026392	0.700574	0.674182	1750	613.0023	1684.073	567.6854	0.602204	34.50377	231.691	231.691	284.4065	23%	21.25846	0.37103	20.72646	0.361745	1293.838	1204.933	1.028151	1248.768	1634.155	228.2012	-0.20766
70	90	3500	1248.976	0.029715	0.700574	0.670859	1750	613.0023	1675.774	562.1046	0.601075	34.43909	253.291	253.291	313.6548	24%	21.38783	0.373288	20.85583	0.364003	1298.391	1200.541	1.028009	1248.79	1623.354	190.9398	-0.18561
70	100	3500	1248.976	0.033042	0.700574	0.667532	1750	613.0023	1667.463	556.5427	0.599943	34.3742	274.6719	274.6719	342.9077	25%	21.5176	0.375553	20.9856	0.366268	1302.967	1196.141	1.027868	1248.82	1612.664	162.3706	-0.15608
70	110	3500	1248.976	0.036374	0.700574	0.6642	1750	613.0023	1659.139	550.9999	0.598807	34.30912	295.8368	295.8368	372.1655	26%	21.64777	0.377825	21.11577	0.36854	1307.564	1191.733	1.027729	1248.857	1602.082	139.9689	-0.11904
70	120	3500	1248.976	0.039712	0.700574	0.660862	1750	613.0023	1650.802	545.4764	0.597668	34.24383	316.7887	316.7887	401.4287	27%	21.77834	0.380104	21.24634	0.370819	1312.185	1187.317	1.027592	1248.901	1591.606	122.0666	-0.07446
70	130	3500	1248.976	0.043055	0.700574	0.65752	1750	613.0023	1642.452	539.9721	0.596525	34.17834	337.5304	337.5304	430.6977	28%	21.90932	0.38239	21.37732	0.373105	1316.829	1182.892	1.027456	1248.953	1581.235	107.5252	-0.02232
70	140	3500	1248.976	0.046402	0.700574	0.654172	1750	613.0023	1634.089	534.4872	0.595378	34.11264	358.0649	358.0649	459.973	28%	22.04071	0.384683	21.50871	0.375398	1321.495	1178.459	1.027321	1249.013	1570.968	95.546	0.037403
70	150	3500	1248.976	0.049756	0.700574	0.650818	1750	613.0023	1625.713	529.0219	0.594228	34.04674	378.3951	378.3951	489.2548	29%	22.17251	0.386983	21.64051	0.377698	1326.185	1174.017	1.027188	1249.081	1560.802	85.55492	0.104744
70	160	3500	1248.976	0.053114	0.700574	0.64746	1750	613.0023	1617.324	523.5762	0.593074	33.98064	398.5238	398.5238	518.5438	30%	22.30472	0.389291	21.77272	0.380006	1330.898	1169.566	1.027056	1249.156	1550.738	77.13075	0.179725
70	170	3500	1248.976	0.056478	0.700574	0.644096	1750	613.0023	1608.922	518.1503	0.591917	33.91433	418.4537	418.4537	547.8402	31%	22.43734	0.391605	21.90534	0.38232	1335.635	1165.107	1.026926	1249.238	1540.773	69.95862	0.262373
70	180	3500	1248.976	0.059846	0.700574	0.640728	1750	613.0023	1600.506	512.7443	0.590756	33.84781	438.1876	438.1876	577.1446	32%	22.57038	0.393927	22.03838	0.384642	1340.396	1160.638	1.026797	1249.329	1530.906	63.79931	0.352716
70	190	3500	1248.976	0.063221	0.700574	0.637353	1750	613.0023	1592.078	507.3582	0.589591	33.78109	457.728	457.728	606.4573	32%	22.70383	0.396257	22.17183	0.386971	1345.18	1156.16	1.02667	1249.427	1521.136	58.46839	0.450781
70	200	3500	1248.976	0.0666	0.700574	0.633974	1750	613.0023	1583.637	501.9923	0.588423	33.71415	477.0777	477.0777	635.7787	33%	22.83769	0.398593	22.30569	0.389308	1349.99	1151.673	1.026544	1249.532	1511.461	53.82176	0.556596
70	210	3500	1248.976	0.069985	0.700574	0.630589	1750	613.0023	1575.182	496.6466	0.587251	33.64701	496.2391	496.2391	665.1094	34%	22.97198	0.400937	22.43998	0.391651	1354.823	1147.176	1.02642	1249.646	1501.88	49.74553	0.670187
70	220	3500	1248.976	0.073374	0.700574	0.6272	1750	613.0023	1566.714	491.3212	0.586076	33.57966	515.215	515.215	694.4497	35%	23.10668	0.403288	22.57468	0.394003	1359.682	1142.669	1.026296	1249.767	1492.393	46.14867	0.791584
70	230	3500	1248.976	0.07677	0.700574	0.623804	1750	613.0023	1558.233	486.0163	0.584896	33.5121	534.0076	534.0076	723.8001	36%	23.24181	0.405646	22.70981	0.396361	1364.565	1138.153	1.026175	1249.897	1482.996	42.95772	0.920814
70	240	3500	1248.976	0.08017	0.700574	0.620404	1750	613.0023	1549.739	480.7319	0.583714	33.44432	552.6196	552.6196	753.1609	36%	23.37736	0.408012	22.84536	0.398727	1369.474	1133.626	1.026054	1250.034	1473.69	40.11286	1.057906
70	40	4000	1427.401	0.011507	0.700574	0.689067	2000	700.574	1967.151	677.7499	0.607241	34.79237	150.5078	150.5078	174.6669	16%	20.68125	0.360956	20.14925	0.351671	1455.563	1399.543	1.028811	1427.155	1924.746	706.3206	-0.24559
70	50	4000	1427.401	0.014393	0.700574	0.686181	2000	700.574	1958.911	672.0838	0.606268	34.73657	173.1479	173.1479	203.9	18%	20.79286	0.362904	20.26086	0.353619	1460.018	1395.186	1.02868	1427.144	1913.426	533.6855	-0.25739
70	60	4000	1427.401	0.017283	0.700574	0.683291	2000	700.574	1950.66	666.4339	0.605291	34.68062	195.5833	195.5833	233.1353	19%	20.90477	0.364857	20.37277	0.355572	1464.491	1390.823	1.028551	1427.138	1902.208	418.2698	-0.26273
70	70	4000	1427.401	0.020177	0.700574	0.680397	2000	700.574	1942.397	660.8003	0.604312	34.62451	217.8165	217.8165	262.3732	20%	21.01698	0.366816	20.48498	0.35753	1468.982	1386.453	1.028422	1427.139	1891.092	337.2396	-0.2616
70	80	4000	1427.401	0.023076	0.700574	0.677498	2000	700.574	1934.124	655.183	0.60333	34.56825	239.8499	239.8499	291.6139	22%	21.1295	0.368779	20.5975	0.359494	1473.493	1382.076	1.028295	1427.147	1880.075	278.1255	-0.25399
70	90	4000	1427.401	0.025978	0.700574	0.674596	2000	700.574	1925.839	649.5821	0.602345	34.51184	261.6862	261.6862	320.858	23%	21.24232	0.370748	20.71032	0.361463	1478.023	1377.693	1.028169	1427.161	1869.157	233.6461	-0.23987
70	100	4000	1427.401	0.028884	0.700574	0.67169	2000	700.574	1917.543	643.9977	0.601358	34.45527	283.3276	283.3276	350.1055	24%	21.35545	0.372723	20.82345	0.363438	1482.572	1373.302	1.028045	1427.182	1858.336	199.316	-0.21923
70	110	4000	1427.401	0.031793	0.700574	0.668781	2000	700.574	1909.236	638.4299	0.600368	34.39856	304.7767	304.7767	379.3569	24%	21.46889	0.374703	20.93689	0.365418	1487.141	1368.905	1.027921	1427.209	1847.612	172.2489	-0.19204
70	120	4000	1427.401	0.034707	0.700574	0.665867	2000	700.574	1900.917	632.8788	0.599375	34.34168	326.0357	326.0357	408.6125	25%	21.58263	0.376688	21.05063	0.367403	1491.729	1364.501	1.027799	1427.243	1836.982	150.5185	-0.15829
70	130	4000	1427.401	0.037625	0.700574	0.662949	2000	700.574	1892.588	627.3444	0.59838	34.28466	347.1069	347.1069	437.8727	26%	21.69668	0.378679	21.16468	0.369393	1496.337	1360.089	1.027678	1427.283	1826.447	132.7986	-0.11795
70	140	4000	1427.401	0.040547	0.700574	0.660027	2000	700.574	1884.246	621.8268	0.597382	34.22748	367.9928	367.9928	467.1376	27%	21.81105	0.380675	21.27905	0.371389	1500.964	1355.67	1.027558	1427.33	1816.004	118.1521	-0.07101
70	150	4000	1427.401	0.043473	0.700574	0.657101	2000	700.574	1875.894	616.3262	0.596381	34.17014	388.6954	388.6954	496.4078	28%	21.92572	0.382676	21.39372	0.373391	1505.612	1351.244	1.027439	1427.383	1805.652	105.9013	-0.01745
70	160	4000	1427.401	0.046402	0.700574	0.654172	2000	700.574	1867.53	610.8425	0.595378	34.11264	409.2171	409.2171	525.6834	28%	22.04071	0.384683	21.50871	0.375398	1510.28	1346.81	1.027321	1427.444	1795.391	95.546	0.042746
70	170	4000	1427.401	0.049336	0.700574	0.651238	2000	700.574	1859.155	605.376	0.594372	34.05499	429.5599	429.5599	554.9648	29%	22.15601	0.386695	21.62401	0.37741	1514.968	1342.369	1.027205	1427.511	1785.22	86.71065	0.10961
70	180	4000	1427.401	0.052274	0.700574	0.6483	2000	700.574	1850.768	599.9266	0.593363	33.99719	449.7262	449.7262	584.2524	30%	22.27163	0.388713	21.73963	0.379428	1519.677	1337.92	1.027089	1427.584	1775.137	79.1086	0.183156
70	190	4000	1427.401	0.055216	0.700574	0.645358	2000	700.574	1842.37	594.4945	0.592351	33.93922	469.7179	469.7179	613.5464	31%	22.38756	0.390737	21.85556	0.381451	1524.407	1333.463	1.026975	1427.664	1765.141	72.518	0.263405
70	200	4000	1427.401	0.058161	0.700574	0.642413	2000	700.574	1833.961	589.0798	0.591337	33.8811	489.5371	489.5371	642.8473	31%	22.50381	0.392766	21.97181	0.38348	1529.157	1328.998	1.026862	1427.751	1755.231	66.76498	0.350379
70	210	4000	1427.401	0.061111	0.700574	0.639463	2000	700.574	1825.54	583.6825	0.590319	33.82281	509.186	509.186	672.1552	32%	22.62037	0.3948	22.08837	0.385515	1533.928	1324.526	1.02675	1427.845	1745.407	61.71164	0.444096
70	220	4000	1427.401	0.064065	0.700574	0.636509	2000	700.574	1817.107	578.3027	0.589299	33.76437	528.6665	528.6665	701.4706	33%	22.73725	0.39684	22.20525	0.387555	1538.72	1320.045	1.026639	1427.945	1735.667	57.24748	0.54458
70	230	4000	1427.401	0.067023	0.700574	0.633551	2000	700.574	1808.663	572.9405	0.588277	33.70577	547.9807	547.9807	730.7938	33%	22.85446	0.398885	22.32246	0.3896	1543.534	1315.556	1.026529	1428.053	1726.01	53.2831	0.65185

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
70	240	4000	1427.401	0.069985	0.700574	0.630589	2000	700.574	1800.208	567.5961	0.587251	33.64701	567.1305	567.1305	760.125	34%	22.97198	0.400937	22.43998	0.391651	1548.369	1311.058	1.02642	1428.167	1716.435	49.74553	0.765928
70	40	4500	1605.826	0.010225	0.700574	0.690349	2250	788.1458	2217.161	765.3074	0.607674	34.81713	157.9265	157.9265	181.8845	15%	20.63175	0.360092	20.09975	0.350807	1635.288	1576.662	1.02887	1605.558	2171.037	811.9229	-0.26807
70	50	4500	1605.826	0.012789	0.700574	0.687785	2250	788.1458	2208.926	759.6333	0.606809	34.76759	180.67	180.67	211.1165	17%	20.73082	0.361821	20.19882	0.352536	1639.733	1572.308	1.028753	1605.543	2159.665	620.3733	-0.28308
70	60	4500	1605.826	0.015356	0.700574	0.685218	2250	788.1458	2200.682	753.9736	0.605942	34.71794	203.2301	203.2301	240.3504	18%	20.83013	0.363554	20.29813	0.354269	1644.195	1567.949	1.028637	1605.534	2148.385	490.2853	-0.29237
70	70	4500	1605.826	0.017926	0.700574	0.682648	2250	788.1458	2192.428	748.3282	0.605074	34.66816	225.609	225.609	269.5864	19%	20.92968	0.365292	20.39768	0.356007	1648.673	1563.584	1.028522	1605.53	2137.195	397.8433	-0.29592
70	80	4500	1605.826	0.020499	0.700574	0.680075	2250	788.1458	2184.164	742.6973	0.604203	34.61827	247.8087	247.8087	298.8247	21%	21.02947	0.367033	20.49747	0.357748	1653.168	1559.213	1.028408	1605.532	2126.096	329.7553	-0.29371
70	90	4500	1605.826	0.023076	0.700574	0.677498	2250	788.1458	2175.889	737.0809	0.60333	34.56825	269.8312	269.8312	328.0657	22%	21.1295	0.368779	20.5975	0.359494	1657.68	1554.836	1.028295	1605.54	2115.084	278.1255	-0.28574
70	100	4500	1605.826	0.025655	0.700574	0.674919	2250	788.1458	2167.605	731.4791	0.602455	34.51811	291.6783	291.6783	357.3095	23%	21.22977	0.370529	20.69777	0.361244	1662.209	1550.453	1.028183	1605.554	2104.161	238.0219	-0.27198
70	110	4500	1605.826	0.028237	0.700574	0.672337	2250	788.1458	2159.311	725.892	0.601578	34.46786	313.352	313.352	386.5564	23%	21.33028	0.372284	20.79828	0.362999	1666.754	1546.063	1.028072	1605.574	2093.324	206.2339	-0.25242
70	120	4500	1605.826	0.030823	0.700574	0.669751	2250	788.1458	2151.007	720.3195	0.600698	34.41748	334.8542	334.8542	415.8068	24%	21.43104	0.374042	20.89904	0.364757	1671.318	1541.668	1.027962	1605.599	2082.573	180.5982	-0.22706
70	130	4500	1605.826	0.033412	0.700574	0.667162	2250	788.1458	2142.693	714.7619	0.599817	34.36698	356.1868	356.1868	445.0607	25%	21.53204	0.375805	21.00004	0.36652	1675.898	1537.266	1.027853	1605.63	2071.907	159.6134	-0.19586
70	140	4500	1605.826	0.036004	0.700574	0.66457	2250	788.1458	2134.369	709.2191	0.598933	34.31636	377.3517	377.3517	474.3185	26%	21.63328	0.377572	21.10128	0.368287	1680.496	1532.858	1.027745	1605.667	2061.324	142.2108	-0.15882
70	150	4500	1605.826	0.038599	0.700574	0.661975	2250	788.1458	2126.035	703.6913	0.598048	34.26561	398.3505	398.3505	503.5805	26%	21.73477	0.379343	21.20277	0.370058	1685.112	1528.444	1.027637	1605.71	2050.825	127.6128	-0.11592
70	160	4500	1605.826	0.041197	0.700574	0.659377	2250	788.1458	2117.69	698.1784	0.59716	34.21475	419.1852	419.1852	532.8469	27%	21.83651	0.381119	21.30451	0.371834	1689.745	1524.023	1.027531	1605.759	2040.407	115.2426	-0.06715
70	170	4500	1605.826	0.043798	0.700574	0.656776	2250	788.1458	2109.336	692.6806	0.59627	34.16376	439.8575	439.8575	562.1179	28%	21.93849	0.382899	21.40649	0.373614	1694.396	1519.596	1.027426	1605.814	2030.071	104.6649	-0.01248
70	180	4500	1605.826	0.046402	0.700574	0.654172	2250	788.1458	2100.971	687.1979	0.595378	34.11264	460.3692	460.3692	591.3938	28%	22.04071	0.384683	21.50871	0.375398	1699.065	1515.162	1.027321	1605.874	2019.815	95.546	0.04809
70	190	4500	1605.826	0.04901	0.700574	0.651564	2250	788.1458	2092.597	681.7304	0.594484	34.06141	480.7219	480.7219	620.6749	29%	22.14319	0.386472	21.61119	0.377186	1703.752	1510.721	1.027217	1605.941	2009.639	87.62684	0.114582
70	200	4500	1605.826	0.051621	0.700574	0.648953	2250	788.1458	2084.212	676.2781	0.593587	34.01005	500.9174	500.9174	649.9614	30%	22.24591	0.388264	21.71391	0.378979	1708.458	1506.273	1.027115	1606.013	1999.541	80.70357	0.187013
70	210	4500	1605.826	0.054235	0.700574	0.646339	2250	788.1458	2075.817	670.8412	0.592689	33.95856	520.9574	520.9574	679.2537	30%	22.34888	0.390062	21.81688	0.380776	1713.181	1501.818	1.027013	1606.091	1989.521	74.61406	0.265398
70	220	4500	1605.826	0.056852	0.700574	0.643722	2250	788.1458	2067.412	665.4197	0.591788	33.90695	540.8434	540.8434	708.5518	31%	22.4521	0.391863	21.9201	0.382578	1717.923	1497.357	1.026912	1606.176	1979.578	69.22802	0.349754
70	230	4500	1605.826	0.059472	0.700574	0.641102	2250	788.1458	2058.997	660.0137	0.590885	33.85521	560.5772	560.5772	737.8562	32%	22.55557	0.393669	22.02357	0.384384	1722.684	1492.888	1.026812	1606.266	1969.711	64.43979	0.440097
70	240	4500	1605.826	0.062095	0.700574	0.638479	2250	788.1458	2050.572	654.6232	0.58998	33.80335	580.1604	580.1604	767.167	32%	22.6593	0.395479	22.1273	0.386194	1727.464	1488.412	1.026712	1606.362	1959.92	60.16292	0.536443
70	40	5000	1784.251	0.0092	0.700574	0.691374	2500	875.7175	2467.169	852.8678	0.608019	34.83691	165.3082	165.3082	189.1023	14%	20.59218	0.359401	20.06018	0.350116	1815.016	1753.78	1.028917	1783.962	2417.346	914.8526	-0.28941
70	50	5000	1784.251	0.011507	0.700574	0.689067	2500	875.7175	2458.939	847.1873	0.607241	34.79237	188.1348	188.1348	218.3336	16%	20.68125	0.360956	20.14925	0.351671	1819.454	1749.429	1.028811	1783.944	2405.933	706.3206	-0.30699
70	60	5000	1784.251	0.013815	0.700574	0.686759	2500	875.7175	2450.7	841.5197	0.606463	34.74774	210.7955	210.7955	247.5665	17%	20.77051	0.362514	20.23851	0.353229	1823.906	1745.072	1.028707	1783.932	2394.602	562.623	-0.31943
70	70	5000	1784.251	0.016127	0.700574	0.684447	2500	875.7175	2442.452	835.8649	0.605682	34.70302	233.2919	233.2919	276.8011	19%	20.85997	0.364075	20.32797	0.35479	1828.374	1740.711	1.028602	1783.924	2383.354	459.3466	-0.32671
70	80	5000	1784.251	0.01844	0.700574	0.682134	2500	875.7175	2434.195	830.2232	0.6049	34.65819	255.6258	255.6258	306.0376	20%	20.94962	0.36564	20.41762	0.356355	1832.856	1736.344	1.028499	1783.922	2372.187	382.5872	-0.32882
70	90	5000	1784.251	0.020757	0.700574	0.679817	2500	875.7175	2425.93	824.5944	0.604116	34.61327	277.7988	277.7988	335.2763	21%	21.03946	0.367208	20.50746	0.357923	1837.354	1731.972	1.028397	1783.925	2361.101	323.951	-0.32575
70	100	5000	1784.251	0.023076	0.700574	0.677498	2500	875.7175	2417.655	818.9788	0.60333	34.56825	299.8124	299.8124	364.5174	22%	21.1295	0.368779	20.5975	0.359494	1841.866	1727.595	1.028295	1783.934	2350.094	278.1255	-0.31749
70	110	5000	1784.251	0.025397	0.700574	0.675177	2500	875.7175	2409.371	813.3762	0.602542	34.52313	321.6682	321.6682	393.7611	22%	21.21973	0.370354	20.68773	0.361069	1846.394	1723.212	1.028194	1783.947	2339.166	241.6149	-0.30402
70	120	5000	1784.251	0.027721	0.700574	0.672853	2500	875.7175	2401.079	807.7869	0.601753	34.47792	343.3678	343.3678	423.0075	23%	21.31016	0.371932	20.77816	0.362647	1850.938	1718.824	1.028094	1783.966	2328.316	212.0415	-0.28533
70	130	5000	1784.251	0.030047	0.700574	0.670527	2500	875.7175	2392.777	802.2108	0.600962	34.43261	364.9127	364.9127	452.257	24%	21.40079	0.373514	20.86879	0.364229	1855.496	1714.43	1.027995	1783.99	2317.544	187.7422	-0.26142
70	140	5000	1784.251	0.032376	0.700574	0.668198	2500	875.7175	2384.466	796.648	0.60017	34.38719	386.3045	386.3045	481.5096	25%	21.49161	0.375099	20.95961	0.365814	1860.071	1710.031	1.027896	1784.019	2306.848	167.5253	-0.23227
70	150	5000	1784.251	0.034707	0.700574	0.665867	2500	875.7175	2376.147	791.0985	0.599375	34.34168	407.5446	407.5446	510.7657	25%	21.58263	0.376688	21.05063	0.367403	1864.661	1705.626	1.027799	1784.053	2296.228	150.5185	-0.19786
70	160	5000	1784.251	0.037041	0.700574	0.663533	2500	875.7175	2367.818	785.5624	0.598579	34.29608	428.6345	428.6345	540.0253	26%	21.67385	0.37828	21.14185	0.368995	1869.267	1701.215	1.027702	1784.093	2285.683	136.0711	-0.15818
70	170	5000	1784.251	0.039378	0.700574	0.661196	2500	875.7175	2359.48	780.0398	0.597782	34.25037	449.5757	449.5757	569.2888	27%	21.76527	0.379876	21.23327	0.37059	1873.889	1696.798	1.027605	1784.138	2275.212	123.6899	-0.11323
70	180	5000	1784.251	0.041717	0.700574	0.658857	2500	875.7175	2351.134	774.5307	0.596982	34.20456	470.3696	470.3696	598.5563	27%	21.85688	0.381475	21.32488	0.372189	1878.526	1692.376	1.02751	1784.188	2264.815	112.9956	-0.06298
70	190	5000	1784.251	0.044058	0.700574	0.656516	2500	875.7175	2342.778	769.0351	0.596181	34.15865	491.0177	491.0177	627.8281	28%	21.9487	0.383077	21.4167	0.373792	1883.18	1687.947	1.027415	1784.244	2254.491	103.6921	-0.00743
70	200	5000	1784.251	0.046402	0.700574	0.654172	2500	875.7175	2334.413	763.5532	0.595378	34.11264	511.5213	511.5213	657.1042	28%	22.04071	0.384683	21.50871	0.375398	1887.85	1683.513	1.027321	1784.305	2244.239	95.546	0.053433
70	210	5000	1784.251	0.048749	0.700574	0.651825	2500	875.7175	2326.039	758.0849	0.594573	34.06654	531.8819	531.8819	686.3851	29%	22.13293	0.386292	21.60093	0.377007	1892.536	1679.072	1.027228	1784.371	2234.059	88.37095	0.119629
70	220	5000	1784.251	0.051098	0.700574	0.649476	2500	875.7175	2317.655	752.6304	0.593767	34.02033	552.1009	552.1009	715.6708	30%	22.22534	0.387905	21.69334	0.37862	1897.239	1674.626	1.027135	1784.442	2223.95	82.01685	0.191168
70	230	5000	1784.251	0.05345	0.700574	0.647124	2500	875.7175	2309.263	747.1896	0.592958	33.97402	572.1796	572.1796	744.9615	30%	22.31796	0.389522	21.78596	0.380237	1901.958	1670.173	1.027043	1784.519	2213.91	76.36165	0.268063
70	240	5000	1784.251	0.055804	0.700574	0.64477	2500	875.7175	2300.862	741.7627	0.592148	33.92761	592.1193	592.1193	774.2576	31%	22.41078	0.391142	21.87878	0.381857	1906.694	1665.714	1.026952	1784.601	2203.94	71.30526	0.350327
70	40	5500	1962.676	0.008362	0.700574	0.692212	2750	963.2893	2717.175	940.4303	0.608301	34.85308	172.6628	172.6628	196.3204	14%	20.55984	0.358837	20.02784	0.349552	1994.747	1930.897	1.028956	1962.366	2663.669	1014.677	-0.30992
70	50	5500	1962.676	0.010458	0.700574	0.690116	2750	963.2893	2708.949	934.7446	0.607595	34.81263	195.5577	195.5577	225.5511	15%	20.64074	0.360249	20.10874	0.350964	1999.179	1926.548	1.028859	1962.347	2652.221	790.9983	-0.3296
70	60	5500	1962.676	0.012556	0.700574	0.688018	2750	963.2893	2700.714	929.0705	0.606888	34.7721	218.3011	218.3011	254.7832	17%	20.7218	0.361664	20.1898	0.352379	2003.624	1922.194	1.028764	1962.332	2640.849	634.7658	-0.34461
70	70	5500	1962.676	0.014656	0.700574	0.685918	2750	963.2893	2692.472	923.4081	0.606179	34.73149	240.8944	240.8944	284.0167	18%	20.80302	0.363081	20.27102	0.353796	2008.082	1917.836	1.028669	1962.321	2629.553	521.2811	-0.35494
70	80	5500	1962.676	0.016757	0.700574	0.683817	2750	963.2893	2684.221	917.7575	0.605469	34.6908	263.339	263.339	313.2519	19%	20.8844	0.364502	20.3524	0.355216	2012.554	1913.473	1.028574	1962.316	2618.331	436.2095	-0.36058
70	90	5500	1962.676	0.018861	0.700574	0.681713	2750	963.2893	2675.962	912.1187	0.604757	34.65003	285.6361	285.6361	342.489	20%	20.96594	0.365925	20.43394	0.35664	2017.04	1909.105	1.028481	1962.315	2607.182	370.7653	-0.36151
70	100	5500	1962.676	0.020967	0.700574	0.679607	2750	963.2893	2667.695	906.4917	0.604044	34.60918	307.7873	307.7873	371.728	21%	21.04764	0.367351	20.51564	0.358065	2021.54	1904.732	1.028388	1962.319	2596.106	319.3185	-0.35773
70	110	5500	1962.676	0.023076	0.700574	0.677498	2750	963.2893	2659.42	900.8767	0.60333	34.56825	329.7936	329.7936	400.9692	22%	21.1295	0.368779	20.5975	0.359494	2026.053	1900.355	1.028295	1962.327	2585.103	278.1255	-0.34924
70	120	5500	1962.676	0.025186	0.700574	0.675388	2750	963.2893	2651.137	895.2735	0.602614	34.52724	351.6566	351.6566	430.2127	22%	21.21152	0.370211	20.67952	0.360926	2030.58	1895.972	1.028203	1962.34	2574.172	244.6177	-0.336
70	130	5500	1962.676	0.027298	0.700574	0.673276	2750	963.2893	2642.846	889.6824	0.601897	34.48615	373.3774	373.3774	459.4588	23%	21.29371	0.371645	20.76171	0.36236	2035.121	1891.585	1.028112	1962.358	2563.311	216.9848	-0.31803
70	140	5500	1962.676	0.029412	0.700574	0.671162	2750	963.2893	2634.546	884.1033	0.601178	34.44497	394.9573	394.9573	488.7075	24%	21.37605	0.373082	20.84405	0.363797	2039.677	1887.192	1.028022	1962.381	2552.521	193.9211	-0.29531
70	150	5500	1962.676	0.031529	0.700574	0.669045	2750	963.2893	2626.238	878.5362	0.600458	34.40372	416.3976	416.3976	517.9591	24%	21.45856	0.374523	20.92656	0.365237	2044.246	1882.794	1.027932	1962.408	2541.801	174.4652	-0.26782
70	160	5500	1962.676	0.033647	0.700574	0.666927	2750	963.2893	2617.923	872.9813	0.599737	34.36238	437.6996	437.6996	547.2137	25%	21.54123	0.375965	21.00923	0.36668	2048.83	1878.392	1.027843	1962.441	2531.15	157.8967	-0.23556
70	170	5500	1962.676	0.035768	0.700574	0.664806	2750	963.2893	2609.598	867.4385	0.599014	34.32097	458.8644	458.8644	576.4716	26%	21.62407	0.377411	21.09207	0.368126	2053.428	1873.984	1.027755	1962.478	2520.568	143.6669	-0.19852
70	180	5500	1962.676	0.037891	0.700574	0.662683	2750	963.2893	2601.266	861.9079	0.59829	34.27947	479.8933	479.8933	605.7328	26%	21.70707	0.37886	21.17507	0.369575	2058.04	1869.57	1.027667	1962.52	2510.053	131.3518	-0.15669
70	190	5500	1962.676	0.040015	0.700574	0.660559	2750	963.2893	2592.925	856.3896	0.597564	34.23788	500.7874	500.7874	634.9195	27%	21.79023	0.380311	21.25823	0.371026	2062.667	1865.152	1.027579	1962.566	2499.606	120.6198	-0.11005
70	200	5500	1962.676	0.042142	0.700574	0.658432	2750	963.2893	2584.576	850.8835	0.596837	34.19622	521.5481	521.5481	664.2659	27%	21.87356	0.381766	21.34156	0.37248	2067.308	1860.728	1.027493	1962.618	2489.226	111.2082	-0.05861
70	210	5500	1962.676	0.044271	0.700574	0.656303	2750	963.2893	2576.219	845.3898	0.596108	34.15447	542.1764	542.1764	693.5383	28%	21.95705	0.383223	21.42505	0.373938	2071.964	1856.299	1.027407	1962.674	2478.912	102.9068	-0.00233
70	220	5500	1962.676	0.046402	0.700574	0.654172	2750	963.2893	2567.854	839.9085	0.595378	34.11264	562.6735	562.6735	722.8147	28%	22.04071	0.384683	21.50871	0.375398	2076.635	1851.864	1.027321	1962.735	2468.663	95.546	0.058776

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
70	230	5500	1962.676	0.048536	0.700574	0.652038	2750	963.2893	2559.48	834.4396	0.594646	34.07073	583.0405	583.0405	752.0953	29%	22.12454	0.386146	21.59254	0.376861	2081.321	1847.424	1.027236	1962.801	2458.48	88.98727	0.12473
70	240	5500	1962.676	0.050671	0.700574	0.649903	2750	963.2893	2551.098	828.9832	0.593913	34.02874	603.2787	603.2787	781.3803	30%	22.20853	0.387612	21.67653	0.378327	2086.021	1842.978	1.027152	1962.872	2448.361	83.1169	0.195539
70	40	6000	2141.101	0.007664	0.700574	0.69291	3000	1050.861	2967.181	1027.994	0.608536	34.86654	179.997	179.997	203.5386	13%	20.53291	0.358367	20.00091	0.349082	2174.48	2108.013	1.028988	2140.772	2910.001	1111.148	-0.3298
70	50	6000	2141.101	0.009584	0.700574	0.69099	3000	1050.861	2958.957	1022.304	0.607889	34.82949	202.9491	202.9491	232.7689	15%	20.60701	0.35966	20.07501	0.350375	2178.906	2103.666	1.028899	2140.75	2898.525	874.034	-0.35124
70	60	6000	2141.101	0.011507	0.700574	0.689067	3000	1050.861	2950.726	1016.625	0.607241	34.79237	225.7617	225.7617	262.0004	16%	20.68125	0.360956	20.14925	0.351671	2183.345	2099.314	1.028811	2140.733	2887.119	706.3206	-0.36839
70	70	6000	2141.101	0.01343	0.700574	0.687144	3000	1050.861	2942.488	1010.956	0.606592	34.75519	248.4361	248.4361	291.2331	17%	20.75562	0.362254	20.22362	0.352969	2187.796	2094.959	1.028724	2140.72	2875.782	583.2744	-0.38126
70	80	6000	2141.101	0.015356	0.700574	0.685218	3000	1050.861	2934.243	1005.298	0.605942	34.71794	270.9735	270.9735	320.4672	18%	20.83013	0.363554	20.29813	0.354269	2192.26	2090.598	1.028637	2140.712	2864.513	490.2853	-0.38983
70	90	6000	2141.101	0.017283	0.700574	0.683291	3000	1050.861	2925.99	999.6509	0.605291	34.68062	293.3749	293.3749	349.7029	19%	20.90477	0.364857	20.37277	0.355572	2196.736	2086.234	1.028551	2140.707	2853.313	418.2698	-0.39409
70	100	6000	2141.101	0.019212	0.700574	0.681362	3000	1050.861	2917.729	994.0146	0.604638	34.64323	315.6416	315.6416	378.9403	20%	20.97954	0.366162	20.44754	0.356877	2201.224	2081.865	1.028465	2140.707	2842.179	361.3384	-0.39405
70	110	6000	2141.101	0.021143	0.700574	0.679431	3000	1050.861	2909.461	988.3891	0.603985	34.60577	337.7745	337.7745	408.1796	21%	21.05445	0.36747	20.52245	0.358184	2205.726	2077.492	1.02838	2140.712	2831.113	315.5359	-0.38968
70	120	6000	2141.101	0.023076	0.700574	0.677498	3000	1050.861	2901.186	982.7745	0.60333	34.56825	359.7749	359.7749	437.4209	22%	21.1295	0.368779	20.5975	0.359494	2210.24	2073.114	1.028295	2140.72	2820.113	278.1255	-0.38098
70	130	6000	2141.101	0.02501	0.700574	0.675564	3000	1050.861	2892.903	977.1709	0.602674	34.53066	381.6438	381.6438	466.6644	22%	21.20468	0.370091	20.67268	0.360806	2214.766	2068.732	1.028211	2140.733	2809.178	247.1645	-0.36795
70	140	6000	2141.101	0.026946	0.700574	0.673628	3000	1050.861	2884.613	971.5783	0.602016	34.493	403.3823	403.3823	495.9101	23%	21.28	0.371406	20.748	0.362121	2219.306	2064.345	1.028128	2140.751	2798.309	221.2427	-0.35057
70	150	6000	2141.101	0.028884	0.700574	0.67169	3000	1050.861	2876.315	965.9966	0.601358	34.45527	424.9914	424.9914	525.1583	24%	21.35545	0.372723	20.82345	0.363438	2223.858	2059.953	1.028045	2140.773	2787.504	199.316	-0.32884
70	160	6000	2141.101	0.030823	0.700574	0.669751	3000	1050.861	2868.009	960.426	0.600698	34.41748	446.4723	446.4723	554.409	24%	21.43104	0.374042	20.89904	0.364757	2228.423	2055.557	1.027962	2140.799	2776.764	180.5982	-0.30274
70	170	6000	2141.101	0.032764	0.700574	0.66781	3000	1050.861	2859.697	954.8666	0.600038	34.37962	467.826	467.826	583.6625	25%	21.50677	0.375364	20.97477	0.366079	2233.002	2051.156	1.02788	2140.829	2766.087	164.4878	-0.27227
70	180	6000	2141.101	0.034707	0.700574	0.665867	3000	1050.861	2851.376	949.3182	0.599375	34.34168	489.0535	489.0535	612.9188	25%	21.58263	0.376688	21.05063	0.367403	2237.593	2046.751	1.027799	2140.864	2755.473	150.5185	-0.23743
70	190	6000	2141.101	0.036652	0.700574	0.663922	3000	1050.861	2843.048	943.781	0.598712	34.30368	510.1558	510.1558	642.1782	26%	21.65863	0.378014	21.12663	0.368729	2242.198	2042.341	1.027718	2140.903	2744.922	138.3238	-0.19819
70	200	6000	2141.101	0.038599	0.700574	0.661975	3000	1050.861	2834.713	938.255	0.598048	34.26561	531.1341	531.1341	671.4407	26%	21.73477	0.379343	21.20277	0.370058	2246.816	2037.925	1.027637	2140.947	2734.433	127.6128	-0.15456
70	210	6000	2141.101	0.040547	0.700574	0.660027	3000	1050.861	2826.37	932.7402	0.597382	34.22748	551.9892	551.9892	700.7065	27%	21.81105	0.380675	21.27905	0.371389	2251.447	2033.505	1.027558	2140.995	2724.005	118.1521	-0.10652
70	220	6000	2141.101	0.042497	0.700574	0.658077	3000	1050.861	2818.019	927.2368	0.596715	34.18927	572.7221	572.7221	729.9757	27%	21.88746	0.382008	21.35546	0.372723	2256.091	2029.08	1.027478	2141.047	2713.639	109.7525	-0.05407
70	230	6000	2141.101	0.044449	0.700574	0.656125	3000	1050.861	2809.661	921.7446	0.596047	34.15099	593.3339	593.3339	759.2485	28%	21.96402	0.383344	21.43202	0.374059	2260.749	2024.65	1.027399	2141.104	2703.333	102.2596	0.00281
70	240	6000	2141.101	0.046402	0.700574	0.654172	3000	1050.861	2801.295	916.2638	0.595378	34.11264	613.8256	613.8256	788.5251	28%	22.04071	0.384683	21.50871	0.375398	2265.42	2020.215	1.027321	2141.165	2693.087	95.546	0.06412
70	40	6500	2319.526	0.007074	0.700574	0.6935	3250	1138.433	3217.185	1115.56	0.608735	34.87793	187.3155	187.3155	210.757	13%	20.51014	0.357969	19.97814	0.348684	2354.213	2285.129	1.029015	2319.177	3156.342	1204.146	-0.34921
70	50	6500	2319.526	0.008846	0.700574	0.691728	3250	1138.433	3208.964	1109.866	0.608138	34.84375	210.3161	210.3161	239.9869	14%	20.5785	0.359163	20.0465	0.349877	2358.636	2280.783	1.028933	2319.154	3144.842	955.1723	-0.37212
70	60	6500	2319.526	0.010619	0.700574	0.689955	3250	1138.433	3200.737	1104.182	0.607541	34.80951	233.1876	233.1876	269.2178	15%	20.64697	0.360358	20.11497	0.351072	2363.069	2276.434	1.028852	2319.135	3133.406	776.9909	-0.39109
70	70	6500	2319.526	0.012394	0.700574	0.68818	3250	1138.433	3192.502	1098.508	0.606942	34.77522	255.9309	255.9309	298.4499	17%	20.71556	0.361555	20.18356	0.35227	2367.514	2272.08	1.028771	2319.12	3122.035	645.0318	-0.4061
70	80	6500	2319.526	0.014171	0.700574	0.686403	3250	1138.433	3184.261	1092.844	0.606343	34.74087	278.5472	278.5472	327.6832	18%	20.78426	0.362754	20.25226	0.353469	2371.971	2267.722	1.02869	2319.109	3110.726	544.539	-0.41715
70	90	6500	2319.526	0.015949	0.700574	0.684625	3250	1138.433	3176.013	1087.189	0.605742	34.70646	301.0374	301.0374	356.9178	19%	20.85308	0.363955	20.32108	0.35467	2376.439	2263.361	1.02861	2319.102	3099.481	466.2145	-0.42423
70	100	6500	2319.526	0.017728	0.700574	0.682846	3250	1138.433	3167.758	1081.545	0.60514	34.67199	323.4024	323.4024	386.154	19%	20.92201	0.365158	20.39001	0.355873	2380.918	2258.995	1.028531	2319.099	3088.299	403.9617	-0.42734
70	110	6500	2319.526	0.019509	0.700574	0.681065	3250	1138.433	3159.496	1075.911	0.604538	34.63747	345.6432	345.6432	415.3918	20%	20.99106	0.366363	20.45906	0.357078	2385.409	2254.625	1.028452	2319.1	3077.178	353.6475	-0.42646
70	120	6500	2319.526	0.021292	0.700574	0.679282	3250	1138.433	3151.227	1070.287	0.603934	34.60289	367.7608	367.7608	444.6313	21%	21.06022	0.36757	20.52822	0.358285	2389.912	2250.252	1.028373	2319.105	3066.12	312.389	-0.4216
70	130	6500	2319.526	0.023076	0.700574	0.677498	3250	1138.433	3142.951	1064.672	0.60333	34.56825	389.7561	389.7561	473.8727	22%	21.1295	0.368779	20.5975	0.359494	2394.426	2245.874	1.028295	2319.114	3055.122	278.1255	-0.41273
70	140	6500	2319.526	0.024861	0.700574	0.675713	3250	1138.433	3134.669	1059.068	0.602724	34.53355	411.63	411.63	503.116	22%	21.19889	0.36999	20.66689	0.360705	2398.952	2241.491	1.028218	2319.127	3044.185	249.3518	-0.39987
70	150	6500	2319.526	0.026648	0.700574	0.673926	3250	1138.433	3126.379	1053.474	0.602118	34.4988	433.3835	433.3835	532.3615	23%	21.2684	0.371204	20.7364	0.361918	2403.49	2237.105	1.02814	2319.143	3033.308	224.9479	-0.38299
70	160	6500	2319.526	0.028436	0.700574	0.672138	3250	1138.433	3118.083	1047.891	0.60151	34.46399	455.0175	455.0175	561.6092	23%	21.33803	0.372419	20.80603	0.363134	2408.04	2232.715	1.028064	2319.164	3022.491	204.066	-0.36209
70	170	6500	2319.526	0.030226	0.700574	0.670348	3250	1138.433	3109.78	1042.317	0.600901	34.42912	476.5328	476.5328	590.8592	24%	21.40777	0.373636	20.87577	0.364351	2412.602	2228.32	1.027987	2319.189	3011.734	186.0549	-0.33717
70	180	6500	2319.526	0.032017	0.700574	0.668557	3250	1138.433	3101.469	1036.754	0.600292	34.39419	497.9304	497.9304	620.1117	25%	21.47763	0.374855	20.94563	0.36557	2417.176	2223.92	1.027912	2319.218	3001.035	170.4078	-0.30822
70	190	6500	2319.526	0.03381	0.700574	0.666764	3250	1138.433	3093.152	1031.201	0.599681	34.3592	519.2111	519.2111	649.3668	25%	21.5476	0.376077	21.0156	0.366791	2421.762	2219.517	1.027836	2319.251	2990.394	156.7252	-0.27523
70	200	6500	2319.526	0.035605	0.700574	0.664969	3250	1138.433	3084.828	1025.658	0.59907	34.32415	540.3759	540.3759	678.6246	26%	21.61769	0.3773	21.08569	0.368015	2426.36	2215.109	1.027761	2319.288	2979.812	144.6887	-0.23819
70	210	6500	2319.526	0.037401	0.700574	0.663173	3250	1138.433	3076.497	1020.125	0.598457	34.28905	561.4256	561.4256	707.8853	26%	21.6879	0.378525	21.1559	0.36924	2430.97	2210.697	1.027687	2319.329	2969.287	134.0424	-0.19709
70	220	6500	2319.526	0.039198	0.700574	0.661376	3250	1138.433	3068.159	1014.603	0.597843	34.25389	582.3611	582.3611	737.1489	27%	21.75823	0.379753	21.22623	0.370468	2435.592	2206.28	1.027613	2319.375	2958.819	124.5782	-0.15194
70	230	6500	2319.526	0.040997	0.700574	0.659577	3250	1138.433	3059.814	1009.092	0.597228	34.21866	603.1832	603.1832	766.4156	27%	21.82867	0.380982	21.29667	0.371697	2440.227	2201.858	1.027539	2319.424	2948.408	116.1257	-0.10271
70	240	6500	2319.526	0.042797	0.700574	0.657777	3250	1138.433	3051.462	1003.59	0.596613	34.18338	623.8928	623.8928	795.6856	28%	21.89923	0.382214	21.36723	0.372929	2444.874	2197.432	1.027466	2319.477	2938.054	108.5442	-0.04941
70	40	7000	2497.952	0.006568	0.700574	0.694006	3500	1226.005	3467.189	1203.126	0.608905	34.88769	194.6217	194.6217	217.9754	12%	20.49063	0.357629	19.95863	0.348344	2533.948	2462.245	1.029039	2497.583	3402.689	1293.641	-0.36824
70	50	7000	2497.952	0.008213	0.700574	0.692361	3500	1226.005	3458.97	1197.429	0.608351	34.85597	217.6639	217.6639	247.2051	14%	20.55407	0.358736	20.02207	0.349451	2538.367	2457.9	1.028963	2497.559	3391.168	1034.245	-0.39242
70	60	7000	2497.952	0.009859	0.700574	0.690715	3500	1226.005	3450.746	1191.741	0.607797	34.82419	240.586	240.586	276.4356	15%	20.61761	0.359845	20.08561	0.35056	2542.796	2453.552	1.028887	2497.539	3379.707	846.5557	-0.41294
70	70	7000	2497.952	0.011507	0.700574	0.689067	3500	1226.005	3442.514	1186.062	0.607241	34.79237	263.3887	263.3887	305.6671	16%	20.68125	0.360956	20.14925	0.351671	2547.236	2449.2	1.028811	2497.522	3368.306	706.3206	-0.42979
70	80	7000	2497.952	0.013155	0.700574	0.687419	3500	1226.005	3434.277	1180.393	0.606685	34.7605	286.0729	286.0729	334.8997	17%	20.74499	0.362068	20.21299	0.352783	2551.686	2444.845	1.028736	2497.509	3356.964	598.7459	-0.44296
70	90	7000	2497.952	0.014806	0.700574	0.685768	3500	1226.005	3426.033	1174.732	0.606128	34.72859	308.6395	308.6395	364.1335	18%	20.80883	0.363183	20.27683	0.353897	2556.147	2440.485	1.028662	2497.499	3345.68	514.3905	-0.45245
70	100	7000	2497.952	0.016457	0.700574	0.684117	3500	1226.005	3417.782	1169.081	0.60557	34.69662	331.0894	331.0894	393.3686	19%	20.87276	0.364298	20.34076	0.355013	2560.619	2436.123	1.028588	2497.493	3334.455	446.998	-0.45826
70	110	7000	2497.952	0.01811	0.700574	0.682464	3500	1226.005	3409.525	1163.44	0.605011	34.6646	353.4233	353.4233	422.6052	20%	20.9368	0.365416	20.4048	0.356131	2565.101	2431.756	1.028514	2497.491	3323.288	392.2887	-0.46037
70	120	7000	2497.952	0.019764	0.700574	0.68081	3500	1226.005	3401.262	1157.807	0.604452	34.63253	375.642	375.642	451.8433	20%	21.00093	0.366535	20.46893	0.35725	2569.594	2427.385	1.028441	2497.493	3312.179	347.2544	-0.45878
70	130	7000	2497.952	0.021419	0.700574	0.679155	3500	1226.005	3392.993	1152.184	0.603891	34.60042	397.7464	397.7464	481.083	21%	21.06517	0.367657	20.53317	0.358371	2574.098	2423.011	1.028368	2497.498	3301.127	309.7302	-0.45349
70	140	7000	2497.952	0.023076	0.700574	0.677498	3500	1226.005	3384.717	1146.57	0.60333	34.56825	419.7374	419.7374	510.3244	22%	21.1295	0.368779	20.5975	0.359494	2578.613	2418.633	1.028295	2497.507	3290.131	278.1255	-0.44448
70	150	7000	2497.952	0.024733	0.700574	0.675841	3500	1226.005	3376.435	1140.966	0.602768	34.53603	441.6156	441.6156	539.5677	22%	21.19393	0.369904	20.66193	0.360619	2583.139	2414.251	1.028223	2497.52	3279.192	251.2507	-0.43176
70	160	7000	2497.952	0.026392	0.700574	0.674182	3500	1226.005	3368.146	1135.371	0.602204	34.50377	463.3819	463.3819	568.8129	23%	21.25846	0.37103	20.72646	0.361745	2587.675	2409.865	1.028151	2497.536	3268.309	228.2012	-0.41531
70	170	7000	2497.952	0.028053	0.700574	0.672521	3500	1226.005	3359.851	1129.785	0.60164	34.47145	485.0371	485.0371	598.0602	23%	21.3231	0.372158	20.7911	0.362873	2592.223	2405.475	1.02808	2497.556	3257.481	208.2793	-0.39513
70	180	7000	2497.952	0.029715	0.700574	0.670859	3500	1226.005	3351.549	1124.209	0.601075	34.43909	506.582	506.582	627.3096	24%	21.38783	0.373288	20.85583	0.364003	2596.782	2401.082	1.028009	2497.58	3246.709	190.9398	-0.37122
70	190	7000	2497.952	0.031378	0.700574	0.669196	3500	1226.005	3343.241	1118.643	0.60051	34.40667	528.0174	528.0174	656.5613	24%	21.45266	0.37442	20.92066	0.365134	2601.352	2396.684	1.027939	2497.608	3235.991	175.7518	-0.34356
70	200	7000	2497.952	0.033042	0.700574	0.667532	3500	1226.005	3334.926	1113.085	0.599943	34.3742	549.3439	549.3439	685.8154	25%	21.5176	0.375553	20.9856	0.366268	2605.933	2392.282	1.027868	2497.639	3225.328	162.3706	-0.31216
70	210	7000	2497.952	0.034707	0.700574	0.665867	3500	1226.005	3326.606	1107.538	0.599375	34.34168	570.5624	570.5624	715.0719	25%	21.58263	0.376688	21.05063	0.367403	2610.525	2387.876	1.027799	2497.675	3214.719	150.5185	-0.277

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
70	220	7000	2497.952	0.036374	0.700574	0.6642	3500	1226.005	3318.278	1102	0.598807	34.30912	591.6737	591.6737	744.3311	26%	21.64777	0.377825	21.11577	0.36854	2615.129	2383.466	1.027729	2497.714	3204.163	139.9689	-0.23808
70	230	7000	2497.952	0.038042	0.700574	0.662532	3500	1226.005	3309.944	1096.471	0.598238	34.2765	612.6784	612.6784	773.5929	26%	21.713	0.378963	21.181	0.369678	2619.744	2379.052	1.02766	2497.756	3193.661	130.5362	-0.19539
70	240	7000	2497.952	0.039712	0.700574	0.660862	3500	1226.005	3301.604	1090.953	0.597668	34.24383	633.5773	633.5773	802.8575	27%	21.77834	0.380104	21.24634	0.370819	2624.37	2374.634	1.027592	2497.803	3183.211	122.0666	-0.14892
70	40	7500	2676.377	0.006129	0.700574	0.694445	3750	1313.576	3717.192	1290.693	0.609053	34.89614	201.9178	201.9178	225.1939	12%	20.47372	0.357334	19.94172	0.348049	2713.684	2639.36	1.029059	2675.99	3649.041	1379.663	-0.38697
70	50	7500	2676.377	0.007664	0.700574	0.69291	3750	1313.576	3708.976	1284.993	0.608536	34.86654	224.9963	224.9963	254.4233	13%	20.53291	0.358367	20.00091	0.349082	2718.099	2635.016	1.028988	2675.964	3637.502	1111.148	-0.41225
70	60	7500	2676.377	0.0092	0.700574	0.691374	3750	1313.576	3700.753	1279.302	0.608019	34.83691	247.9623	247.9623	283.6535	14%	20.59218	0.359401	20.06018	0.350116	2722.525	2630.67	1.028917	2675.943	3626.019	914.8526	-0.43412
70	70	7500	2676.377	0.010738	0.700574	0.689836	3750	1313.576	3692.525	1273.619	0.607501	34.80723	270.8166	270.8166	312.8845	16%	20.65154	0.360437	20.11954	0.351152	2726.96	2626.319	1.028847	2675.924	3614.592	766.9584	-0.45255
70	80	7500	2676.377	0.012276	0.700574	0.688298	3750	1313.576	3684.29	1267.945	0.606982	34.77751	293.56	293.56	342.1166	17%	20.71098	0.361475	20.17898	0.35219	2731.405	2621.966	1.028776	2675.909	3603.22	652.7227	-0.46757
70	90	7500	2676.377	0.013815	0.700574	0.686759	3750	1313.576	3676.05	1262.279	0.606463	34.74774	316.1932	316.1932	371.3497	17%	20.77051	0.362514	20.23851	0.353229	2735.86	2617.609	1.028707	2675.898	3591.903	562.623	-0.47914
70	100	7500	2676.377	0.015356	0.700574	0.685218	3750	1313.576	3667.803	1256.623	0.605942	34.71794	338.7169	338.7169	400.584	18%	20.83013	0.363554	20.29813	0.354269	2740.325	2613.248	1.028637	2675.889	3580.642	490.2853	-0.48728
70	110	7500	2676.377	0.016898	0.700574	0.683676	3750	1313.576	3659.551	1250.974	0.605421	34.68808	361.1318	361.1318	429.8195	19%	20.88983	0.364596	20.35783	0.355311	2744.799	2608.884	1.028568	2675.885	3569.434	431.3114	-0.49198
70	120	7500	2676.377	0.01844	0.700574	0.682134	3750	1313.576	3651.293	1245.335	0.6049	34.65819	383.4388	383.4388	459.0564	20%	20.94962	0.36564	20.41762	0.356355	2749.284	2604.517	1.028499	2675.883	3558.281	382.5872	-0.49323
70	130	7500	2676.377	0.019984	0.700574	0.68059	3750	1313.576	3643.029	1239.704	0.604377	34.62825	405.6384	405.6384	488.2948	20%	21.00949	0.366685	20.47749	0.3574	2753.779	2600.145	1.028431	2675.886	3547.181	341.8569	-0.49102
70	140	7500	2676.377	0.021529	0.700574	0.679045	3750	1313.576	3634.759	1234.082	0.603854	34.59827	427.7314	427.7314	517.5347	21%	21.06945	0.367731	20.53745	0.358446	2758.284	2595.771	1.028363	2675.891	3536.134	307.454	-0.48536
70	150	7500	2676.377	0.023076	0.700574	0.677498	3750	1313.576	3626.482	1228.468	0.60333	34.56825	449.7186	449.7186	546.7762	22%	21.1295	0.368779	20.5975	0.359494	2762.799	2591.393	1.028295	2675.9	3525.141	278.1255	-0.47623
70	160	7500	2676.377	0.024623	0.700574	0.675951	3750	1313.576	3618.2	1222.863	0.602805	34.53818	471.6006	471.6006	576.0194	22%	21.18963	0.369829	20.65763	0.360544	2767.325	2587.011	1.028228	2675.913	3514.2	252.9146	-0.46363
70	170	7500	2676.377	0.026171	0.700574	0.674403	3750	1313.576	3609.912	1217.267	0.602279	34.50807	493.3781	493.3781	605.2644	23%	21.24985	0.37088	20.71785	0.361595	2771.861	2582.625	1.028161	2675.929	3503.311	231.0803	-0.44756
70	180	7500	2676.377	0.027721	0.700574	0.672853	3750	1313.576	3601.618	1211.68	0.601753	34.47792	515.0517	515.0517	634.5113	23%	21.31016	0.371932	20.77816	0.362647	2776.406	2578.236	1.028094	2675.949	3492.474	212.0415	-0.428
70	190	7500	2676.377	0.029271	0.700574	0.671303	3750	1313.576	3593.318	1206.102	0.601226	34.44772	536.6223	536.6223	663.7602	24%	21.37056	0.372987	20.83856	0.363701	2780.963	2573.843	1.028028	2675.972	3481.689	195.3373	-0.40496
70	200	7500	2676.377	0.030823	0.700574	0.669751	3750	1313.576	3585.012	1200.533	0.600698	34.41748	558.0904	558.0904	693.0113	24%	21.43104	0.374042	20.89904	0.364757	2785.529	2569.447	1.027962	2675.998	3470.955	180.5982	-0.37843
70	210	7500	2676.377	0.032376	0.700574	0.668198	3750	1313.576	3576.7	1194.972	0.60017	34.38719	579.4567	579.4567	722.2644	25%	21.49161	0.375099	20.95961	0.365814	2790.106	2565.046	1.027896	2676.028	3460.272	167.5253	-0.3484
70	220	7500	2676.377	0.03393	0.700574	0.666644	3750	1313.576	3568.382	1189.42	0.59964	34.35687	600.722	600.722	751.5199	25%	21.55227	0.376158	21.02027	0.366873	2794.694	2560.642	1.027831	2676.062	3449.639	155.8747	-0.31487
70	230	7500	2676.377	0.035485	0.700574	0.665089	3750	1313.576	3560.057	1183.877	0.59911	34.32649	621.8867	621.8867	780.7777	26%	21.61302	0.377218	21.08102	0.367933	2799.292	2556.234	1.027766	2676.099	3439.057	145.4454	-0.27783
70	240	7500	2676.377	0.037041	0.700574	0.663533	3750	1313.576	3551.727	1178.344	0.598579	34.29608	642.9517	642.9517	810.038	26%	21.67385	0.37828	21.14185	0.368995	2803.9	2551.822	1.027702	2676.139	3428.524	136.0711	-0.23727
70	40	8000	2854.802	0.005746	0.700574	0.694828	4000	1401.148	3967.195	1378.26	0.609182	34.90353	209.2059	209.2059	232.4125	11%	20.45894	0.357076	19.92694	0.347791	2893.42	2816.475	1.029077	2854.396	3895.397	1462.285	-0.40546
70	50	8000	2854.802	0.007184	0.700574	0.69339	4000	1401.148	3958.98	1372.558	0.608697	34.8758	232.3162	232.3162	261.6416	13%	20.51441	0.358044	19.98241	0.348759	2897.833	2812.132	1.02901	2854.37	3883.842	1185.826	-0.4317
70	60	8000	2854.802	0.008624	0.700574	0.69195	4000	1401.148	3950.76	1366.864	0.608213	34.84803	255.3207	255.3207	290.8715	14%	20.56995	0.359013	20.03795	0.349728	2902.255	2807.787	1.028944	2854.347	3872.34	981.7655	-0.45474
70	70	8000	2854.802	0.010065	0.700574	0.690509	4000	1401.148	3942.534	1361.178	0.607727	34.82022	278.2203	278.2203	320.1022	15%	20.62556	0.359984	20.09356	0.350699	2906.686	2803.438	1.028877	2854.327	3860.89	826.8033	-0.47457
70	80	8000	2854.802	0.011507	0.700574	0.689067	4000	1401.148	3934.302	1355.5	0.607241	34.79237	301.0156	301.0156	349.3338	16%	20.68125	0.360956	20.14925	0.351671	2911.127	2799.086	1.028811	2854.311	3849.492	706.3206	-0.49119
70	90	8000	2854.802	0.012949	0.700574	0.687625	4000	1401.148	3926.065	1349.83	0.606755	34.76449	323.7073	323.7073	378.5663	17%	20.73702	0.361929	20.20502	0.352644	2915.576	2794.731	1.028746	2854.297	3838.146	610.7664	-0.50459
70	100	8000	2854.802	0.014393	0.700574	0.686181	4000	1401.148	3917.822	1344.168	0.606268	34.73657	346.2959	346.2959	407.7999	18%	20.79286	0.362904	20.26086	0.353619	2920.035	2790.372	1.02868	2854.287	3826.852	533.6855	-0.51477
70	110	8000	2854.802	0.015838	0.700574	0.684736	4000	1401.148	3909.574	1338.514	0.60578	34.70861	368.7821	368.7821	437.0346	19%	20.84878	0.36388	20.31678	0.354595	2924.503	2786.01	1.028615	2854.28	3815.609	470.5875	-0.52173
70	120	8000	2854.802	0.017283	0.700574	0.683291	4000	1401.148	3901.32	1332.868	0.605291	34.68062	391.1666	391.1666	466.2705	19%	20.90477	0.364857	20.37277	0.355572	2928.981	2781.645	1.028551	2854.276	3804.417	418.2698	-0.52546
70	130	8000	2854.802	0.01873	0.700574	0.681844	4000	1401.148	3893.06	1327.23	0.604802	34.65258	413.45	413.45	495.5078	20%	20.96084	0.365836	20.42884	0.35655	2933.468	2777.277	1.028486	2854.276	3793.275	374.3984	-0.52595
70	140	8000	2854.802	0.020177	0.700574	0.680397	4000	1401.148	3884.795	1321.601	0.604312	34.62451	435.6329	435.6329	524.7463	20%	21.01698	0.366816	20.48498	0.35753	2937.965	2772.905	1.028422	2854.279	3782.184	337.2396	-0.52321
70	150	8000	2854.802	0.021626	0.700574	0.678948	4000	1401.148	3876.524	1315.979	0.603821	34.5964	457.716	457.716	553.9863	21%	21.0732	0.367797	20.5412	0.358512	2942.471	2768.53	1.028359	2854.285	3771.142	305.4835	-0.51722
70	160	8000	2854.802	0.023076	0.700574	0.677498	4000	1401.148	3868.248	1310.366	0.60333	34.56825	479.6998	479.6998	583.2279	22%	21.1295	0.368779	20.5975	0.359494	2946.986	2764.152	1.028295	2854.294	3760.15	278.1255	-0.50798
70	170	8000	2854.802	0.024526	0.700574	0.676048	4000	1401.148	3859.966	1304.761	0.602838	34.54006	501.5851	501.5851	612.4711	22%	21.18587	0.369763	20.65387	0.360478	2951.511	2759.77	1.028232	2854.306	3749.207	254.3846	-0.49549
70	180	8000	2854.802	0.025978	0.700574	0.674596	4000	1401.148	3851.678	1299.164	0.602345	34.51184	523.3723	523.3723	641.7159	23%	21.24232	0.370748	20.71032	0.361463	2956.046	2755.385	1.028169	2854.322	3738.314	233.6461	-0.47974
70	190	8000	2854.802	0.02743	0.700574	0.673144	4000	1401.148	3843.385	1293.576	0.601852	34.48358	545.0622	545.0622	670.9625	23%	21.29885	0.371735	20.76685	0.36245	2960.59	2750.997	1.028107	2854.341	3727.469	215.4209	-0.46073
70	200	8000	2854.802	0.028884	0.700574	0.67169	4000	1401.148	3835.086	1287.995	0.601358	34.45527	566.6552	566.6552	700.211	24%	21.35545	0.372723	20.82345	0.363438	2965.144	2746.605	1.028045	2854.363	3716.672	199.316	-0.43845
70	210	8000	2854.802	0.030338	0.700574	0.670236	4000	1401.148	3826.782	1282.424	0.600863	34.42693	588.1521	588.1521	729.4614	24%	21.41213	0.373712	20.88013	0.364427	2969.708	2742.209	1.027983	2854.389	3705.924	185.0123	-0.4129
70	220	8000	2854.802	0.031793	0.700574	0.668781	4000	1401.148	3818.472	1276.86	0.600368	34.39856	609.5533	609.5533	758.7139	24%	21.46889	0.374703	20.93689	0.365418	2974.281	2737.81	1.027921	2854.418	3695.223	172.2489	-0.38407
70	230	8000	2854.802	0.03325	0.700574	0.667324	4000	1401.148	3810.156	1271.305	0.599872	34.37014	630.8595	630.8595	787.9684	25%	21.52572	0.375695	20.99372	0.36641	2978.865	2733.407	1.02786	2854.45	3684.57	160.8106	-0.35197
70	240	8000	2854.802	0.034707	0.700574	0.665867	4000	1401.148	3801.835	1265.758	0.599375	34.34168	652.0713	652.0713	817.2251	25%	21.58263	0.376688	21.05063	0.367403	2983.458	2729.001	1.027799	2854.485	3673.964	150.5185	-0.31657
70	40	8500	3033.227	0.005407	0.700574	0.695167	4250	1488.72	4217.198	1465.828	0.609295	34.91005	216.4873	216.4873	239.6311	11%	20.4459	0.356848	19.9139	0.347563	3073.157	2993.59	1.029093	3032.803	4141.756	1541.604	-0.42375
70	50	8500	3033.227	0.006761	0.700574	0.693813	4250	1488.72	4208.984	1460.124	0.60884	34.88396	239.6257	239.6257	268.8601	12%	20.49808	0.357759	19.96608	0.348474	3077.568	2989.248	1.02903	3032.776	4130.187	1258.262	-0.45084
70	60	8500	3033.227	0.008116	0.700574	0.692458	4250	1488.72	4200.766	1454.427	0.608384	34.85783	262.6643	262.6643	298.0897	13%	20.55033	0.358671	20.01833	0.349386	3081.987	2984.903	1.028967	3032.752	4118.668	1047.214	-0.47491
70	70	8500	3033.227	0.009471	0.700574	0.691103	4250	1488.72	4192.542	1448.738	0.607927	34.83167	285.604	285.604	327.3201	15%	20.60265	0.359584	20.07065	0.350299	3086.414	2980.556	1.028905	3032.731	4107.198	885.7461	-0.49597
70	80	8500	3033.227	0.010828	0.700574	0.689746	4250	1488.72	4184.312	1443.056	0.60747	34.80548	308.4452	308.4452	356.5513	16%	20.65504	0.360498	20.12304	0.351213	3090.851	2976.205	1.028842	3032.713	4095.777	759.4195	-0.514
70	90	8500	3033.227	0.012185	0.700574	0.688389	4250	1488.72	4176.078	1437.382	0.607013	34.77926	331.1886	331.1886	385.7833	16%	20.70749	0.361414	20.17549	0.352129	3095.296	2971.852	1.02878	3032.698	4084.406	658.6991	-0.52902
70	100	8500	3033.227	0.013544	0.700574	0.68703	4250	1488.72	4167.838	1431.716	0.606554	34.753	353.8347	353.8347	415.0163	17%	20.76	0.36233	20.228	0.353045	3099.749	2967.495	1.028719	3032.686	4073.083	577.0814	-0.541
70	110	8500	3033.227	0.014903	0.700574	0.685671	4250	1488.72	4159.593	1426.057	0.606095	34.72671	376.3841	376.3841	444.2503	18%	20.81259	0.363248	20.28059	0.353963	3104.212	2963.135	1.028657	3032.677	4061.808	510.0061	-0.54995
70	120	8500	3033.227	0.016263	0.700574	0.684311	4250	1488.72	4151.343	1420.406	0.605636	34.70038	398.8373	398.8373	473.4854	19%	20.86524	0.364167	20.33324	0.354882	3108.683	2958.772	1.028596	3032.671	4050.581	454.1991	-0.55586
70	130	8500	3033.227	0.017624	0.700574	0.682951	4250	1488.72	4143.088	1414.762	0.605176	34.67402	421.195	421.195	502.7216	19%	20.91795	0.365087	20.38595	0.355802	3113.163	2954.406	1.028536	3032.668	4039.403	407.2597	-0.55873
70	140	8500	3033.227	0.018985	0.700574	0.681589	4250	1488.72	4134.827	1409.126	0.604715	34.64763	443.4576	443.4576	531.9591	20%	20.97074	0.366008	20.43874	0.356723	3117.652	2950.037	1.028475	3032.668	4028.271	367.3953	-0.55856
70	150	8500	3033.227	0.020348	0.700574	0.680226	4250	1488.72	4126.561	1403.498	0.604254	34.6212	465.6258	465.6258	561.1979	21%	21.02359	0.366931	20.49159	0.357646	3122.15	2945.665	1.028415	3032.672	4017.187	333.245	-0.55534
70	160	8500	3033.227	0.021711	0.700574	0.678863	4250	1488.72	4118.29	1397.877	0.603792	34.59474	487.7001	487.7001	590.438	21%	21.07651	0.367855	20.54451	0.358569	3126.657	2941.29	1.028355	3032.678	4006.15	303.7611	-0.54906
70	170	8500	3033.227	0.023076	0.700574	0.677498	4250	1488.72	4110.013	1392.264	0.60333	34.56825	509.6811	509.6811	619.6796	22%	21.1295	0.368779	20.5975	0.359494	3131.173	2936.912	1.028295	3032.687	3995.159	278.1255	-0.53973
70	180	8500	3033.227	0.024441	0.700574	0.676133	4250	1488.72	4101.732	1386.659	0.602867	34.54172	531.5692	531.5692	648.9228	22%	21.18255	0.369705	20.65055	0.36042	3135.698	2932.53	1.028236	3032.7	3984.215	255.6926	-0.52733
70	190	8500	3033.227	0.025807	0.700574	0.674767	4250	1488.72	4093.445	1381.061	0.602403	34.51516	553.3651	553.3651	678.1675	23%	21.23568	0.370632	20.70368	0.361347	3140.231	2928.145	1.028177	3032.715	3973.317	235.9469	-0.51187
70	200	8500	3033.227	0.027174	0.700574	0.6734	4250	1488.72	4085.152	1375.471	0.601939	34.48857	575.0692	575.0692	707.4138	23%	21.28887	0.371561	20.75687	0.362276	3144.774	2923.757	1.028118	3032.734	3962.465	218.4729	-0.49334

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
70	210	8500	3033.227	0.028541	0.700574	0.672033	4250	1488.72	4076.855	1369.889	0.601474	34.46194	596.6821	596.6821	736.6619	23%	21.34213	0.37249	20.81013	0.363205	3149.326	2919.366	1.028059	3032.755	3951.659	202.9326	-0.47174
70	220	8500	3033.227	0.02991	0.700574	0.670664	4250	1488.72	4068.552	1364.315	0.601009	34.43527	618.2044	618.2044	765.9118	24%	21.39545	0.373421	20.86345	0.364136	3153.887	2914.971	1.028001	3032.78	3940.898	189.0487	-0.44705
70	230	8500	3033.227	0.03128	0.700574	0.669294	4250	1488.72	4060.243	1358.749	0.600543	34.40858	639.6365	639.6365	795.1636	24%	21.44885	0.374353	20.91685	0.365068	3158.458	2910.573	1.027943	3032.808	3930.182	176.5921	-0.41929
70	240	8500	3033.227	0.03265	0.700574	0.667924	4250	1488.72	4051.93	1353.19	0.600076	34.38185	660.979	660.979	824.4173	25%	21.50231	0.375286	20.97031	0.366001	3163.037	2906.172	1.027885	3032.839	3919.511	165.3722	-0.38843
70	40	9000	3211.652	0.005106	0.700574	0.695468	4500	1576.292	4467.2	1553.397	0.609396	34.91584	223.7632	223.7632	246.8497	10%	20.43431	0.356646	19.90231	0.347361	3252.895	3170.705	1.029107	3211.21	4388.118	1617.736	-0.44187
70	50	9000	3211.652	0.006385	0.700574	0.694189	4500	1576.292	4458.988	1547.691	0.608966	34.89121	246.9265	246.9265	276.0785	12%	20.48358	0.357506	19.95158	0.348221	3257.303	3166.364	1.029047	3211.182	4376.537	1328.463	-0.46971
70	60	9000	3211.652	0.007664	0.700574	0.69291	4500	1576.292	4450.771	1541.992	0.608536	34.86654	269.9956	269.9956	305.308	13%	20.53291	0.358367	20.00091	0.349082	3261.719	3162.02	1.028988	3211.157	4365.002	1111.148	-0.4947
70	70	9000	3211.652	0.008944	0.700574	0.69163	4500	1576.292	4442.549	1536.3	0.608105	34.84185	292.9709	292.9709	334.5381	14%	20.5823	0.359229	20.0503	0.349944	3266.144	3157.673	1.028929	3211.135	4353.515	943.7044	-0.51685
70	80	9000	3211.652	0.010225	0.700574	0.690349	4500	1576.292	4434.322	1530.615	0.607674	34.81713	315.8531	315.8531	363.7689	15%	20.63175	0.360092	20.09975	0.350807	3270.576	3153.324	1.02887	3211.116	4342.073	811.9229	-0.53615
70	90	9000	3211.652	0.011507	0.700574	0.689067	4500	1576.292	4426.09	1524.937	0.607241	34.79237	338.6426	338.6426	393.0005	16%	20.68125	0.360956	20.14925	0.351671	3275.017	3148.972	1.028811	3211.099	4330.679	706.3206	-0.55259
70	100	9000	3211.652	0.012789	0.700574	0.687785	4500	1576.292	4417.853	1519.267	0.606809	34.76759	361.3399	361.3399	422.233	17%	20.73082	0.361821	20.19882	0.352536	3279.466	3144.617	1.028753	3211.086	4319.33	620.3733	-0.56617
70	110	9000	3211.652	0.014072	0.700574	0.686502	4500	1576.292	4409.611	1513.603	0.606376	34.74278	383.9457	383.9457	451.4664	18%	20.78044	0.362687	20.24844	0.353402	3283.924	3140.259	1.028695	3211.075	4308.027	549.4719	-0.57689
70	120	9000	3211.652	0.015356	0.700574	0.685218	4500	1576.292	4401.364	1507.947	0.605942	34.71794	406.4603	406.4603	480.7008	18%	20.83013	0.363554	20.29813	0.354269	3288.39	3135.898	1.028637	3211.067	4296.77	490.2853	-0.58474
70	130	9000	3211.652	0.016641	0.700574	0.683933	4500	1576.292	4393.112	1502.298	0.605508	34.69306	428.8842	428.8842	509.9362	19%	20.87987	0.364423	20.34787	0.355137	3292.864	3131.534	1.028579	3211.062	4285.558	440.3569	-0.58973
70	140	9000	3211.652	0.017926	0.700574	0.682648	4500	1576.292	4384.856	1496.656	0.605074	34.66816	451.2181	451.2181	539.1728	19%	20.92968	0.365292	20.39768	0.356007	3297.346	3127.167	1.028522	3211.06	4274.391	397.8433	-0.59184
70	150	9000	3211.652	0.019212	0.700574	0.681362	4500	1576.292	4376.594	1491.022	0.604638	34.64323	473.4623	473.4623	568.4105	20%	20.97954	0.366162	20.44754	0.356877	3301.837	3122.798	1.028465	3211.061	4263.269	361.3384	-0.59107
70	160	9000	3211.652	0.020499	0.700574	0.680075	4500	1576.292	4368.327	1485.395	0.604203	34.61827	495.6175	495.6175	597.6495	21%	21.02947	0.367033	20.49747	0.357748	3306.336	3118.425	1.028408	3211.065	4252.191	329.7553	-0.58742
70	170	9000	3211.652	0.021787	0.700574	0.678787	4500	1576.292	4360.055	1479.775	0.603767	34.59327	517.684	517.684	626.8897	21%	21.07945	0.367906	20.54745	0.358621	3310.843	3114.05	1.028352	3211.071	4241.158	302.2425	-0.58089
70	180	9000	3211.652	0.023076	0.700574	0.677498	4500	1576.292	4351.779	1474.162	0.60333	34.56825	539.6623	539.6623	656.1314	22%	21.1295	0.368779	20.5975	0.359494	3315.359	3109.671	1.028295	3211.081	4230.169	278.1255	-0.57148
70	190	9000	3211.652	0.024365	0.700574	0.676209	4500	1576.292	4343.497	1468.556	0.602893	34.5432	561.553	561.553	685.3745	22%	21.1796	0.369654	20.6476	0.360369	3319.884	3105.29	1.028239	3211.093	4219.223	256.8641	-0.55917
70	200	9000	3211.652	0.025655	0.700574	0.674919	4500	1576.292	4335.211	1462.958	0.602455	34.51811	583.3566	583.3566	714.619	23%	21.22977	0.370529	20.69777	0.361244	3324.417	3100.905	1.028183	3211.108	4208.322	238.0219	-0.54396
70	210	9000	3211.652	0.026946	0.700574	0.673628	4500	1576.292	4326.919	1457.367	0.602016	34.493	605.0734	605.0734	743.8651	23%	21.28	0.371406	20.748	0.362121	3328.959	3096.517	1.028128	3211.126	4197.463	221.2427	-0.52586
70	220	9000	3211.652	0.028237	0.700574	0.672337	4500	1576.292	4318.622	1451.784	0.601578	34.46786	626.704	626.704	773.1129	23%	21.33028	0.372284	20.79828	0.362999	3333.509	3092.127	1.028072	3211.147	4186.648	206.2339	-0.50485
70	230	9000	3211.652	0.02953	0.700574	0.671044	4500	1576.292	4310.321	1446.208	0.601138	34.44268	648.2489	648.2489	802.3623	24%	21.38063	0.373162	20.84863	0.363877	3338.068	3087.733	1.028017	3211.171	4175.876	192.7531	-0.48094
70	240	9000	3211.652	0.030823	0.700574	0.669751	4500	1576.292	4302.014	1440.639	0.600698	34.41748	669.7085	669.7085	831.6135	24%	21.43104	0.374042	20.89904	0.364757	3342.635	3083.336	1.027962	3211.198	4165.146	180.5982	-0.45411
70	40	9500	3390.077	0.004837	0.700574	0.695737	4750	1663.863	4717.202	1640.965	0.609487	34.92103	231.0344	231.0344	254.0683	10%	20.42395	0.356465	19.89195	0.34718	3432.633	3347.819	1.02912	3389.617	4634.483	1690.807	-0.45985
70	50	9500	3390.077	0.006048	0.700574	0.694526	4750	1663.863	4708.991	1635.258	0.60908	34.89769	254.2201	254.2201	283.297	11%	20.47061	0.35728	19.93861	0.347994	3437.039	3343.479	1.029063	3389.589	4622.89	1396.457	-0.48836
70	60	9500	3390.077	0.00726	0.700574	0.693314	4750	1663.863	4700.776	1629.557	0.608672	34.87434	277.3163	277.3163	312.5263	13%	20.51733	0.358095	19.98533	0.34881	3441.453	3339.136	1.029007	3389.563	4611.342	1173.536	-0.51418
70	70	9500	3390.077	0.008473	0.700574	0.692102	4750	1663.863	4692.555	1623.862	0.608264	34.85095	300.3237	300.3237	341.7562	14%	20.5641	0.358911	20.0321	0.349626	3445.875	3334.79	1.028951	3389.54	4599.838	1000.617	-0.5373
70	80	9500	3390.077	0.009686	0.700574	0.690888	4750	1663.863	4684.33	1618.175	0.607855	34.82754	323.2426	323.2426	370.9867	15%	20.61092	0.359728	20.07892	0.350443	3450.304	3330.442	1.028895	3389.519	4588.379	863.754	-0.55772
70	90	9500	3390.077	0.010899	0.700574	0.689675	4750	1663.863	4676.1	1612.494	0.607446	34.8041	346.0735	346.0735	400.218	16%	20.65779	0.360547	20.12579	0.351261	3454.741	3326.091	1.028839	3389.502	4576.963	753.5474	-0.57544
70	100	9500	3390.077	0.012114	0.700574	0.68846	4750	1663.863	4667.866	1606.82	0.607037	34.78064	368.8168	368.8168	429.45	16%	20.70472	0.361366	20.17272	0.35208	3459.186	3321.737	1.028784	3389.487	4565.592	663.4768	-0.59045
70	110	9500	3390.077	0.013329	0.700574	0.687245	4750	1663.863	4659.627	1601.152	0.606627	34.75715	391.4731	391.4731	458.6829	17%	20.75171	0.362186	20.21971	0.3529	3463.639	3317.381	1.028729	3389.474	4554.263	588.9024	-0.60276
70	120	9500	3390.077	0.014545	0.700574	0.686029	4750	1663.863	4651.383	1595.492	0.606216	34.73363	414.0428	414.0428	487.9167	18%	20.79874	0.363007	20.26674	0.353721	3468.1	3313.022	1.028674	3389.465	4542.979	526.4495	-0.61234
70	130	9500	3390.077	0.015762	0.700574	0.684812	4750	1663.863	4643.134	1589.838	0.605805	34.71008	436.5264	436.5264	517.1514	18%	20.84583	0.363828	20.31383	0.354543	3472.568	3308.66	1.028619	3389.458	4531.737	473.6159	-0.61922
70	140	9500	3390.077	0.016979	0.700574	0.683595	4750	1663.863	4634.881	1584.191	0.605394	34.68651	458.9242	458.9242	546.3872	19%	20.89297	0.364651	20.36097	0.355366	3477.045	3304.295	1.028564	3389.454	4520.538	428.5143	-0.62337
70	150	9500	3390.077	0.018197	0.700574	0.682377	4750	1663.863	4626.623	1578.551	0.604982	34.66291	481.2368	481.2368	575.624	20%	20.94017	0.365475	20.40817	0.35619	3481.529	3299.928	1.02851	3389.452	4509.382	389.6993	-0.6248
70	160	9500	3390.077	0.019415	0.700574	0.681159	4750	1663.863	4618.361	1572.918	0.60457	34.63929	503.4646	503.4646	604.8619	20%	20.98742	0.3663	20.45542	0.357014	3486.021	3295.558	1.028456	3389.454	4498.268	356.0487	-0.6235
70	170	9500	3390.077	0.020635	0.700574	0.679939	4750	1663.863	4610.093	1567.292	0.604157	34.61564	525.608	525.608	634.1011	21%	21.03473	0.367125	20.50273	0.35784	3490.521	3291.185	1.028402	3389.458	4487.196	326.6805	-0.61948
70	180	9500	3390.077	0.021855	0.700574	0.678719	4750	1663.863	4601.821	1561.672	0.603744	34.59196	547.6675	547.6675	663.3415	21%	21.08209	0.367952	20.55009	0.358667	3495.03	3286.809	1.028349	3389.464	4476.166	300.8938	-0.61272
70	190	9500	3390.077	0.023076	0.700574	0.677498	4750	1663.863	4593.544	1556.06	0.60333	34.56825	569.6436	569.6436	692.5831	22%	21.1295	0.368779	20.5975	0.359494	3499.546	3282.431	1.028295	3389.474	4465.178	278.1255	-0.60322
70	200	9500	3390.077	0.024297	0.700574	0.676277	4750	1663.863	4585.263	1550.454	0.602916	34.54452	591.5366	591.5366	721.8262	22%	21.17697	0.369608	20.64497	0.360323	3504.07	3278.049	1.028242	3389.486	4454.232	257.9194	-0.59099
70	210	9500	3390.077	0.025519	0.700574	0.675055	4750	1663.863	4576.977	1544.855	0.602501	34.52076	613.347	613.347	751.0706	22%	21.22449	0.370437	20.69249	0.361152	3508.603	3273.665	1.028189	3389.501	4443.327	239.9025	-0.57601
70	220	9500	3390.077	0.026742	0.700574	0.673832	4750	1663.863	4568.686	1539.264	0.602086	34.49697	635.0752	635.0752	780.3165	23%	21.27206	0.371268	20.74006	0.361982	3513.143	3269.278	1.028136	3389.519	4432.462	223.7675	-0.55829
70	230	9500	3390.077	0.027965	0.700574	0.672609	4750	1663.863	4560.39	1533.679	0.60167	34.47315	656.7216	656.7216	809.564	23%	21.31969	0.372099	20.78769	0.362814	3517.692	3264.887	1.028084	3389.539	4421.639	209.2592	-0.53782
70	240	9500	3390.077	0.02919	0.700574	0.671384	4750	1663.863	4552.09	1528.101	0.601254	34.44931	678.2868	678.2868	838.813	24%	21.36738	0.372931	20.83538	0.363646	3522.249	3260.494	1.028031	3389.563	4410.857	196.1645	-0.5146
70	40	10000	3568.502	0.004595	0.700574	0.695979	5000	1751.435	4967.204	1728.535	0.609568	34.92569	238.3015	238.3015	261.287	10%	20.41462	0.356302	19.88262	0.347017	3612.371	3524.933	1.029131	3568.025	4880.849	1760.947	-0.47771
70	50	10000	3568.502	0.005746	0.700574	0.694828	5000	1751.435	4958.994	1722.825	0.609182	34.90353	261.5074	261.5074	290.5156	11%	20.45894	0.357076	19.92694	0.347791	3616.775	3520.594	1.029077	3567.995	4869.246	1462.285	-0.50683
70	60	10000	3568.502	0.006896	0.700574	0.693678	5000	1751.435	4950.78	1717.122	0.608794	34.88135	284.6282	284.6282	319.7447	12%	20.50331	0.35785	19.97131	0.348565	3621.187	3516.251	1.029024	3567.969	4857.686	1234.366	-0.53339
70	70	10000	3568.502	0.008048	0.700574	0.692526	5000	1751.435	4942.561	1711.426	0.608407	34.85914	307.6644	307.6644	348.9744	13%	20.54772	0.358625	20.01572	0.34934	3625.606	3511.907	1.02897	3567.945	4846.168	1056.441	-0.55739
70	80	10000	3568.502	0.0092	0.700574	0.691374	5000	1751.435	4934.337	1705.736	0.608019	34.83691	330.6164	330.6164	378.2046	14%	20.59218	0.359401	20.06018	0.350116	3630.033	3507.559	1.028917	3567.923	4834.692	914.8526	-0.57882
70	90	10000	3568.502	0.010353	0.700574	0.690221	5000	1751.435	4926.11	1700.052	0.60763	34.81465	353.4847	353.4847	407.4356	15%	20.63669	0.360178	20.10469	0.350893	3634.467	3503.21	1.028864	3567.905	4823.258	800.3111	-0.59769
70	100	10000	3568.502	0.011507	0.700574	0.689067	5000	1751.435	4917.877	1694.375	0.607241	34.79237	376.2695	376.2695	436.6673	16%	20.68125	0.360956	20.14925	0.351671	3638.908	3498.857	1.028811	3567.888	4811.865	706.3206	-0.61399
70	110	10000	3568.502	0.012661	0.700574	0.687913	5000	1751.435	4909.641	1688.704	0.606852	34.77007	398.9715	398.9715	465.8997	17%	20.72586	0.361734	20.19386	0.352449	3643.357	3494.502	1.028759	3567.875	4800.514	628.2265	-0.62771
70	120	10000	3568.502	0.013815	0.700574	0.686759	5000	1751.435	4901.4	1683.039	0.606463	34.74774	421.5909	421.5909	495.1329	17%	20.77051	0.362514	20.23851	0.353229	3647.813	3490.145	1.028707	3567.863	4789.205	562.623	-0.63886
70	130	10000	3568.502	0.014971	0.700574	0.685603	5000	1751.435	4893.154	1677.381	0.606072	34.72539	444.1282	444.1282	524.3671	18%	20.81522	0.363294	20.28322	0.354009	3652.277	3485.785	1.028654	3567.855	4777.936	506.9711	-0.64743
70	140	10000	3568.502	0.016127	0.700574	0.684447	5000	1751.435	4884.904	1671.73	0.605682	34.70302	466.5839	466.5839	553.6021	19%	20.85997	0.364075	20.32797	0.35479	3656.748	3481.422	1.028602	3567.849	4766.708	459.3466	-0.65342
70	150	10000	3568.502	0.017283	0.700574	0.683291	5000	1751.435	4876.65	1666.085	0.605291	34.68062	488.9582	488.9582	582.8382	19%	20.90477	0.364857	20.37277	0.355572	3661.226	3477.057	1.028551	3567.845	4755.521	418.2698	-0.65682
70	160	10000	3568.502	0.01844	0.700574	0.682134	5000	1751.435	4868.391	1660.446	0.6049	34.65819	511.2517	511.2517	612.0753	20%	20.94962	0.36564	20.41762	0.356355	3665.712	3472.689	1.028499	3567.845	4744.374	382.5872	-0.65764
70	170	10000	3568.502	0.019598	0.700574	0.680976	5000	1751.435	4860.127	1654.814	0.604508	34.63574	533.4647	533.4647	641.3134	20%	20.99452	0.366423	20.46252	0.357138	3670.206	3468.318	1.028448	3567.846	4733.268	351.3894	-0.65587
70	180	10000	3568.502	0.020757	0.700574	0.679817	5000	1751.435	4851.859	1649.189	0.604116	34.61327	555.5976	555.5976	670.5527	21%	21.03946	0.367208	20.50746	0.357923	3674.707	3463.945	1.028397	3567.851	4722.201	323.951	-0.6515
70	190	10000	3568.502	0.021916	0.700574	0.678658	5000	1751.435	4843.587	1643.57	0.603723	34.59077	577.6508	577.6508	699.7932	21%	21.08446	0.367993	20.55246	0.358708	3679.216	3459.569	1.028346	3567.858	4711.175	299.6879	-0.64454

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
70	200	10000	3568.502	0.023076	0.700574	0.677498	5000	1751.435	4835.31	1637.958	0.60333	34.56825	599.6248	599.6248	729.0349	22%	21.1295	0.368779	20.5975	0.359494	3683.733	3455.19	1.028295	3567.867	4700.188	278.1255	-0.63497
70	210	10000	3568.502	0.024236	0.700574	0.676338	5000	1751.435	4827.028	1632.352	0.602936	34.5457	621.5199	621.5199	758.2779	22%	21.17459	0.369566	20.64259	0.360281	3688.257	3450.809	1.028245	3567.879	4689.24	258.8749	-0.62281
70	220	10000	3568.502	0.025397	0.700574	0.675177	5000	1751.435	4818.743	1626.752	0.602542	34.52313	643.3364	643.3364	787.5222	22%	21.21973	0.370354	20.68773	0.361069	3692.789	3446.425	1.028194	3567.894	4678.332	241.6149	-0.60804
70	230	10000	3568.502	0.026558	0.700574	0.674016	5000	1751.435	4810.452	1621.16	0.602148	34.50054	665.0749	665.0749	816.7679	23%	21.26492	0.371143	20.73292	0.361858	3697.328	3442.038	1.028144	3567.912	4667.463	226.0783	-0.59066
70	240	10000	3568.502	0.027721	0.700574	0.672853	5000	1751.435	4802.157	1615.574	0.601753	34.47792	686.7356	686.7356	846.0151	23%	21.31016	0.371932	20.77816	0.362647	3701.875	3437.648	1.028094	3567.932	4656.632	212.0415	-0.57067
75	40	1000	325.6287	0.049299	0.767746	0.718447	500	191.9364	467.8939	168.0785	0.639068	36.6159	127.5512	127.5512	173.1543	36%	17.03419	0.297303	16.50219	0.288018	345.1281	306.6945	1.034188	325.5883	436.2244	61.46547	-0.0404
75	50	1000	325.6287	0.061808	0.767746	0.705938	500	191.9364	459.7472	162.2765	0.635026	36.38434	151.6291	151.6291	211.8656	40%	17.49733	0.305386	16.96533	0.296101	349.5601	302.5311	1.033364	325.6598	424.1854	43.49453	0.0311
75	60	1000	325.6287	0.074392	0.767746	0.693353	500	191.9364	451.5515	156.5423	0.630936	36.14998	174.6017	174.6017	250.6166	44%	17.96605	0.313567	17.43405	0.304282	354.0687	298.3447	1.032579	325.7602	412.6991	32.80219	0.131464
75	70	1000	325.6287	0.087053	0.767746	0.680693	500	191.9364	443.3062	150.8777	0.626796	35.91278	196.537	196.537	289.4146	47%	18.44044	0.321846	17.90844	0.312561	358.6563	294.1338	1.03183	325.8897	401.7315	25.88876	0.261011
75	80	1000	325.6287	0.09979	0.767746	0.667956	500	191.9364	435.0111	145.2841	0.622606	35.6727	217.4978	217.4978	328.2669	51%	18.9206	0.330227	18.3886	0.320942	363.3255	289.8969	1.031114	326.0488	391.2511	21.13929	0.420075
75	90	1000	325.6287	0.112604	0.767746	0.655141	500	191.9364	426.6655	139.7631	0.618365	35.4297	237.5421	237.5421	367.1808	55%	19.4066	0.338709	18.8746	0.329424	368.079	285.6321	1.030431	326.2377	381.229	17.72225	0.609013
75	100	1000	325.6287	0.125497	0.767746	0.642249	500	191.9364	418.2691	134.3164	0.614072	35.18373	256.7237	256.7237	406.1639	58%	19.89855	0.347295	19.36655	0.33801	372.9195	281.3378	1.029778	326.4569	371.6382	15.17288	0.828198
75	110	1000	325.6287	0.138468	0.767746	0.629277	500	191.9364	409.8215	128.9457	0.609726	34.93474	275.0924	275.0924	445.2236	62%	20.39652	0.355986	19.86452	0.346701	377.8502	277.012	1.029153	326.7067	362.4538	13.21426	1.07802
75	120	1000	325.6287	0.151519	0.767746	0.616227	500	191.9364	401.3221	123.6527	0.605327	34.6827	292.6945	292.6945	484.3674	65%	20.90061	0.364784	20.36861	0.355499	382.8739	272.6528	1.028556	326.9876	353.6528	11.67269	1.358888
75	130	1000	325.6287	0.16465	0.767746	0.603096	500	191.9364	392.7706	118.4391	0.600874	34.42755	309.573	309.573	523.603	69%	21.41091	0.373691	20.87891	0.364406	387.9941	268.258	1.027984	327.2999	345.2135	10.43455	1.671226
75	140	1000	325.6287	0.177861	0.767746	0.589884	500	191.9364	384.1665	113.3069	0.596366	34.16925	325.7681	325.7681	562.938	73%	21.92751	0.382707	21.39551	0.373422	393.214	263.8253	1.027437	327.6442	337.1159	9.422861	2.015472
75	150	1000	325.6287	0.191154	0.767746	0.576592	500	191.9364	375.5095	108.2578	0.591802	33.90775	341.3173	341.3173	602.3801	76%	22.45049	0.391835	21.91849	0.38255	398.5372	259.3524	1.026913	328.0208	329.3413	8.583873	2.39208
75	160	1000	325.6287	0.204529	0.767746	0.563217	500	191.9364	366.7991	103.2937	0.587181	33.64302	356.2556	356.2556	641.9373	80%	22.97996	0.401076	22.44796	0.391791	403.9675	254.8367	1.026412	328.4302	321.8722	7.8791	2.801516
75	170	1000	325.6287	0.217986	0.767746	0.54976	500	191.9364	358.035	98.41661	0.582504	33.375	370.6157	370.6157	681.6173	84%	23.516	0.410432	22.984	0.401146	409.5086	250.2755	1.025933	328.873	314.6921	7.280351	3.244259
75	180	1000	325.6287	0.231526	0.767746	0.536219	500	191.9364	349.2169	93.62845	0.577768	33.10365	384.4284	384.4284	721.4283	88%	24.0587	0.419904	23.5267	0.410618	415.1649	245.6658	1.025473	329.3495	307.7858	6.766577	3.720802
75	190	1000	325.6287	0.24515	0.767746	0.522596	500	191.9364	340.3443	88.93124	0.572973	32.82892	397.7226	397.7226	761.3784	91%	24.60816	0.429493	24.07616	0.420208	420.9404	241.0047	1.025034	329.8603	301.1387	6.321782	4.231648
75	200	1000	325.6287	0.258858	0.767746	0.508888	500	191.9364	331.417	84.32705	0.568118	32.55077	410.5253	410.5253	801.4757	95%	25.16446	0.439203	24.63246	0.429917	426.8398	236.2887	1.024613	330.406	294.7373	5.933626	4.777312
75	210	1000	325.6287	0.27265	0.767746	0.495096	500	191.9364	322.4346	79.81798	0.563203	32.26916	422.8622	422.8622	841.7287	99%	25.72768	0.449033	25.19568	0.439748	432.8678	231.5145	1.024211	330.987	288.5689	5.592452	5.358318
75	220	1000	325.6287	0.286527	0.767746	0.481218	500	191.9364	313.3969	75.40616	0.558227	31.98403	434.7573	434.7573	882.1457	103%	26.29793	0.458986	25.76593	0.4497	439.0294	226.6783	1.023826	331.6039	282.6213	5.290616	5.975199
75	230	1000	325.6287	0.30049	0.767746	0.467256	500	191.9364	304.3036	71.09379	0.553188	31.69536	446.2335	446.2335	922.7355	107%	26.87529	0.469062	26.34329	0.459777	445.3298	221.7762	1.023458	332.2572	276.8833	5.021989	6.6285
75	240	1000	325.6287	0.314538	0.767746	0.453207	500	191.9364	295.1545	66.88308	0.548087	31.40308	457.3121	457.3121	963.5066	111%	27.45984	0.479265	26.92784	0.469979	451.7746	216.8039	1.023106	332.9475	271.3439	4.781614	7.318771
75	40	1500	488.443	0.032735	0.767746	0.73501	750	287.9046	718.0212	263.8764	0.644382	36.92039	140.3984	140.3984	182.3824	30%	16.42522	0.286674	15.89322	0.277389	509.0004	468.3183	1.035349	488.3061	679.8008	114.1454	-0.13698
75	50	1500	488.443	0.041001	0.767746	0.726745	750	287.9046	709.9471	257.9753	0.641736	36.76875	166.2732	166.2732	221.0477	33%	16.7285	0.291967	16.1965	0.282682	513.322	464.1869	1.034759	488.3348	666.8634	81.38381	-0.10825
75	60	1500	488.443	0.049299	0.767746	0.718447	750	287.9046	701.8409	252.1177	0.639068	36.6159	191.3267	191.3267	259.7314	36%	17.03419	0.297303	16.50219	0.288018	517.6921	460.0417	1.034188	488.3824	654.3366	61.46547	-0.06059
75	70	1500	488.443	0.05763	0.767746	0.710116	750	287.9046	693.7023	246.3045	0.636379	36.46183	215.5942	215.5942	298.4367	38%	17.34233	0.302681	16.81033	0.293396	522.1116	455.8821	1.033634	488.4491	642.2029	48.407	0.006113
75	80	1500	488.443	0.065994	0.767746	0.701751	750	287.9046	685.5311	240.5362	0.633668	36.30653	239.109	239.109	337.1668	41%	17.65294	0.308102	17.12094	0.298817	526.5816	451.7074	1.033098	488.535	630.4455	39.35415	0.091998
75	90	1500	488.443	0.074392	0.767746	0.693353	750	287.9046	677.3272	234.8135	0.630936	36.14998	261.9026	261.9026	375.9249	44%	17.96605	0.313567	17.43405	0.304282	531.1031	447.5171	1.032579	488.6402	619.0487	32.80219	0.197196
75	100	1500	488.443	0.082824	0.767746	0.684921	750	287.9046	669.0903	229.1371	0.628182	35.99216	284.0048	284.0048	414.7144	46%	18.28168	0.319075	17.74968	0.30979	535.6773	443.3104	1.032076	488.7649	607.9976	27.89531	0.321848
75	110	1500	488.443	0.09129	0.767746	0.676456	750	287.9046	660.8201	223.5078	0.625405	35.83307	305.4439	305.4439	453.5384	48%	18.59985	0.324629	18.06785	0.315343	540.3053	439.0867	1.031588	488.9091	597.2781	24.1168	0.466103
75	120	1500	488.443	0.09979	0.767746	0.667956	750	287.9046	652.5166	217.9261	0.622606	35.6727	326.2467	326.2467	492.4003	51%	18.9206	0.330227	18.3886	0.320942	544.9883	434.8453	1.031114	489.0731	586.8767	21.13929	0.630113
75	130	1500	488.443	0.108324	0.767746	0.659421	750	287.9046	644.1795	212.3929	0.619784	35.51103	346.4386	346.4386	531.3033	53%	19.24395	0.33587	18.71195	0.326585	549.7274	430.5853	1.030655	489.2571	576.7807	18.74692	0.814038
75	140	1500	488.443	0.116893	0.767746	0.650852	750	287.9046	635.8086	206.9088	0.61694	35.34804	366.0439	366.0439	570.2507	56%	19.56992	0.34156	19.03792	0.332274	554.524	426.306	1.03021	489.4611	566.978	16.79253	1.018042
75	150	1500	488.443	0.125497	0.767746	0.642249	750	287.9046	627.4037	201.4746	0.614072	35.18373	385.0855	385.0855	609.2459	58%	19.89855	0.347295	19.36655	0.33801	559.3793	422.0067	1.029778	489.6853	557.4572	15.17288	1.242296
75	160	1500	488.443	0.134136	0.767746	0.63361	750	287.9046	618.9646	196.091	0.611181	35.01807	403.5853	403.5853	648.2921	61%	20.22985	0.353078	19.69785	0.343792	564.2947	417.6863	1.029358	489.93	548.2073	13.81376	1.486975
75	170	1500	488.443	0.14281	0.767746	0.624936	750	287.9046	610.4912	190.7589	0.608266	34.85107	421.5641	421.5641	687.3927	63%	20.56387	0.358907	20.03187	0.349622	569.2714	413.3441	1.028951	490.1953	539.218	12.66063	1.752259
75	180	1500	488.443	0.151519	0.767746	0.616227	750	287.9046	601.9831	185.479	0.605327	34.6827	439.0417	439.0417	726.5511	65%	20.90061	0.364784	20.36861	0.355499	574.3109	408.9792	1.028556	490.4814	530.4792	11.67269	2.038333
75	190	1500	488.443	0.160264	0.767746	0.607482	750	287.9046	593.4403	180.2521	0.602364	34.51294	456.037	456.037	765.7707	68%	21.24011	0.37071	20.70811	0.361425	579.4147	404.5905	1.028172	490.7884	521.9815	10.81888	2.345385
75	200	1500	488.443	0.169045	0.767746	0.598701	750	287.9046	584.8626	175.0789	0.599377	34.3418	472.5681	472.5681	805.0548	70%	21.5824	0.376684	21.0504	0.367399	584.5842	400.1771	1.027799	491.1166	513.7159	10.0752	2.673611
75	210	1500	488.443	0.177861	0.767746	0.589884	750	287.9046	576.2497	169.9603	0.596366	34.16925	488.6522	488.6522	844.407	73%	21.92751	0.382707	21.39551	0.373422	589.821	395.738	1.027437	491.4662	505.6739	9.422861	3.023209
75	220	1500	488.443	0.186714	0.767746	0.581032	750	287.9046	567.6016	164.8972	0.593329	33.99528	504.3058	504.3058	883.8305	75%	22.27545	0.38878	21.74345	0.379495	595.1266	391.272	1.027085	491.8374	497.8471	8.846972	3.39438
75	230	1500	488.443	0.195603	0.767746	0.572142	750	287.9046	558.918	159.8903	0.590268	33.81987	519.5445	519.5445	923.329	78%	22.62626	0.394903	22.09426	0.385618	600.5028	386.7781	1.026744	492.2304	490.2278	8.335604	3.787332
75	240	1500	488.443	0.204529	0.767746	0.563217	750	287.9046	550.1987	154.9406	0.587181	33.64302	534.3834	534.3834	962.9059	80%	22.97996	0.401076	22.44796	0.391791	605.9512	382.2551	1.026412	492.6453	482.8083	7.8791	4.202274
75	40	2000	651.2574	0.024503	0.767746	0.743243	1000	383.8728	968.0844	359.7607	0.647008	37.07083	151.5534	151.5534	191.643	26%	16.12434	0.281423	15.59234	0.272138	672.9682	629.9152	1.035958	651.0615	924.2233	174.1521	-0.19586
75	50	2000	651.2574	0.030674	0.767746	0.737071	1000	383.8728	960.0462	353.8113	0.645041	36.95811	178.3961	178.3961	230.2914	29%	16.34978	0.285357	15.81778	0.276072	677.2366	625.7987	1.035499	651.0691	910.802	125.6867	-0.18829
75	60	2000	651.2574	0.036864	0.767746	0.730882	1000	383.8728	951.9842	347.8939	0.643062	36.84472	204.5876	204.5876	268.9506	31%	16.57656	0.289316	16.04456	0.28003	681.5403	621.6724	1.035051	651.0907	897.7062	95.56551	-0.16663
75	70	2000	651.2574	0.043072	0.767746	0.724674	1000	383.8728	943.8981	342.009	0.641071	36.73065	230.1496	230.1496	307.6224	34%	16.80469	0.293297	16.27269	0.284012	685.88	617.5359	1.034614	651.1266	884.9252	75.51613	-0.13082
75	80	2000	651.2574	0.049299	0.767746	0.718447	1000	383.8728	935.7878	336.157	0.639068	36.6159	255.1023	255.1023	346.3086	36%	17.03419	0.297303	16.50219	0.288018	690.2561	613.3889	1.034188	651.1766	872.4488	61.46547	-0.08079
75	90	2000	651.2574	0.055544	0.767746	0.712202	1000	383.8728	927.6533	330.3382	0.637053	36.50047	279.4656	279.4656	385.0109	38%	17.26507	0.301332	16.73307	0.292047	694.6694	609.2311	1.033771	651.2409	860.2672	51.21572	-0.01648
75	100	2000	651.2574	0.061808	0.767746	0.705938	1000	383.8728	919.4944	324.5529	0.635026	36.38434	303.2583	303.2583	423.7313	40%	17.49733	0.305386	16.96533	0.296101	699.1203	605.0622	1.033364	651.3196	848.3709	43.49453	0.0622
75	110	2000	651.2574	0.068091	0.767746	0.699655	1000	383.8728	911.311	318.8016	0.632987	36.26751	326.4985	326.4985	462.4714	42%	17.73098	0.309464	17.19898	0.300179	703.6095	600.8818	1.032967	651.4127	836.7508	37.52301	0.155309
75	120	2000	651.2574	0.074392	0.767746	0.693353	1000	383.8728	903.1029	313.0847	0.630936	36.14998	349.2035	349.2035	501.2333	44%	17.96605	0.313567	17.43405	0.304282	708.1375	596.6895	1.032579	651.5203	825.3983	32.80219	0.262928
75	130	2000	651.2574	0.080713	0.767746	0.687033	1000	383.8728	894.8701	307.4025	0.628872	36.03173	371.39	371.39	540.0186	45%	18.20253	0.317694	17.67053	0.308409	712.705	592.4849	1.0322	651.6425	814.305	29.00011	0.385138
75	140	2000	651.2574	0.087053	0.767746	0.680693	1000	383.8728	886.6125	301.7554	0.626796	35.91278	393.074	393.074	578.8292	47%	18.44044	0.321846	17.90844	0.312561	717.3127	588.2677	1.03183	651.7794	803.463	25.88876	0.522021
75	150	2000	651.2574	0.093412	0.767746	0.674334	1000	383.8728	878.3299	296.1438	0.624707	35.7931	414.271	414.271	617.667	49%	18.67979	0.326024	18.14779	0.316739	721.9611	584.0374	1.031468	651.931	792.8645	23.30725	0.673663
75	160	2000	651.2574	0.09979	0.767746	0.667956	1000	383.8728	870.0222	290.5681	0.622606	35.6727	434.9956	434.9956	656.5337	51%	18.9206	0.330227	18.3886	0.320942	726.651	579.7937	1.031114	652.0975	782.5022	21.13929	0.840151
75	170	2000	651.2574	0.106187	0.767746	0.661558	1000	383.8728	861.6893	285.0288	0.620492	35.55157	455.2621	455.2621	695.4314	53%	19.16286	0.334455	18.63086	0.32517	731.3831	575.5361	1.030769	652.279	772.369	19.2991	1.021574
75	180	2000	651.2574	0.112604	0.767746	0.655141	1000	383.8728	853.3311	279.5262	0.618365	35.4297	475.0842	475.0842	734.3617	55%	19.4066	0.338709	18.8746	0.329424	736.158	571.2642	1.030431	652.4754	762.4579	17.72225	1.218026

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
75	190	2000	651.2574	0.119041	0.767746	0.648705	1000	383.8728	844.9474	274.0607	0.616225	35.30709	494.4751	494.4751	773.3265	56%	19.65183	0.342989	19.11983	0.333704	740.9764	566.9775	1.030101	652.687	752.7625	16.35954	1.429601
75	200	2000	651.2574	0.125497	0.767746	0.642249	1000	383.8728	836.5383	268.6328	0.614072	35.18373	513.4474	513.4474	812.3278	58%	19.89855	0.347295	19.36655	0.33801	745.8391	562.6755	1.029778	652.9138	743.2763	15.17288	1.656395
75	210	2000	651.2574	0.131973	0.767746	0.635773	1000	383.8728	828.1035	263.2428	0.611906	35.05961	532.0133	532.0133	851.3674	60%	20.14678	0.351628	19.61478	0.342342	750.7468	558.3579	1.029462	653.1559	733.9933	14.13237	1.898508
75	220	2000	651.2574	0.138468	0.767746	0.629277	1000	383.8728	819.6429	257.8913	0.609726	34.93474	550.1847	550.1847	890.4472	62%	20.39652	0.355986	19.86452	0.346701	755.7003	554.024	1.029153	653.4134	724.9076	13.21426	2.15604
75	230	2000	651.2574	0.144984	0.767746	0.622762	1000	383.8728	811.1565	252.5787	0.607533	34.8091	567.973	567.973	929.569	64%	20.64779	0.360372	20.11579	0.351087	760.7004	549.6734	1.028851	653.6865	716.0135	12.39951	2.429095
75	240	2000	651.2574	0.151519	0.767746	0.616227	1000	383.8728	802.6442	247.3053	0.605327	34.6827	585.3889	585.3889	968.7348	65%	20.90061	0.364784	20.36861	0.355499	765.7479	545.3056	1.028556	653.9752	707.3055	11.67269	2.717777
75	40	2500	814.0717	0.019579	0.767746	0.748166	1250	479.841	1218.122	455.679	0.648574	37.16053	161.9943	161.9943	200.9135	24%	15.94495	0.278292	15.41295	0.269007	836.9733	791.5019	1.036334	813.832	1169.003	238.1666	-0.23976
75	50	2500	814.0717	0.024503	0.767746	0.743243	1250	479.841	1210.105	449.7009	0.647008	37.07083	189.4417	189.4417	239.5537	26%	16.12434	0.281423	15.59234	0.272138	841.2103	787.394	1.035958	813.8269	1155.279	174.1521	-0.24483
75	60	2500	814.0717	0.029439	0.767746	0.738307	1250	479.841	1202.07	443.7482	0.645435	36.98071	216.3504	216.3504	278.2012	29%	16.30458	0.284569	15.77258	0.275283	845.4751	783.2785	1.03559	813.8331	1141.825	133.5256	-0.23866
75	70	2500	814.0717	0.034386	0.767746	0.73336	1250	479.841	1194.015	437.8212	0.643855	36.89016	242.7347	242.7347	316.857	31%	16.48568	0.287729	15.95368	0.278444	849.7681	779.1551	1.035229	813.8505	1128.633	106.0758	-0.22124
75	80	2500	814.0717	0.039345	0.767746	0.728401	1250	479.841	1185.941	431.92	0.642267	36.79918	268.6085	268.6085	355.5222	32%	16.66765	0.290905	16.13565	0.28162	854.0898	775.0237	1.034875	813.8792	1115.696	86.62446	-0.19251
75	90	2500	814.0717	0.044316	0.767746	0.72343	1250	479.841	1177.847	426.045	0.640671	36.70776	293.9852	293.9852	394.1981	34%	16.85048	0.294096	16.31848	0.284811	858.4403	770.8842	1.034528	813.9193	1103.007	72.3151	-0.15244
75	100	2500	814.0717	0.049299	0.767746	0.718447	1250	479.841	1169.735	420.1962	0.639068	36.6159	318.8779	318.8779	432.8857	36%	17.03419	0.297303	16.50219	0.288018	862.8202	766.7361	1.034188	813.9707	1090.561	61.46547	-0.10099
75	110	2500	814.0717	0.054293	0.767746	0.713452	1250	479.841	1161.603	414.3741	0.637457	36.52361	343.299	343.299	471.5863	37%	17.21878	0.300524	16.68678	0.291239	867.2297	762.5795	1.033854	814.0336	1078.351	53.03163	-0.03811
75	120	2500	814.0717	0.0593	0.767746	0.708446	1250	479.841	1153.451	408.5787	0.635839	36.43087	367.2606	367.2606	510.301	39%	17.40425	0.303762	16.87225	0.294476	871.6692	758.4139	1.033526	814.108	1066.37	46.33735	0.036253
75	130	2500	814.0717	0.064319	0.767746	0.703427	1250	479.841	1145.28	402.8104	0.634212	36.33769	390.7746	390.7746	549.031	40%	17.59062	0.307014	17.05862	0.297729	876.1392	754.2393	1.033204	814.1939	1054.613	40.92865	0.122134
75	140	2500	814.0717	0.069349	0.767746	0.698396	1250	479.841	1137.089	397.0694	0.632578	36.24406	413.8522	413.8522	587.7775	42%	17.77788	0.310283	17.24588	0.300997	880.6399	750.0554	1.032889	814.2913	1043.074	36.49132	0.219586
75	150	2500	814.0717	0.074392	0.767746	0.693353	1250	479.841	1128.879	391.3559	0.630936	36.14998	436.5043	436.5043	626.5416	44%	17.96605	0.313567	17.43405	0.304282	885.1719	745.8618	1.032579	814.4004	1031.748	32.80219	0.32866
75	160	2500	814.0717	0.079447	0.767746	0.688298	1250	479.841	1120.648	385.6702	0.629286	36.05544	458.7417	458.7417	665.3244	45%	18.15512	0.316867	17.62312	0.307581	889.7354	741.6585	1.032275	814.5211	1020.629	29.69911	0.449406
75	170	2500	814.0717	0.084515	0.767746	0.683231	1250	479.841	1112.398	380.0125	0.627628	35.96045	480.5747	480.5747	704.1272	47%	18.34511	0.320182	17.81311	0.310897	894.3309	737.4452	1.031977	814.6536	1009.713	27.0619	0.581877
75	180	2500	814.0717	0.089594	0.767746	0.678152	1250	479.841	1104.128	374.3831	0.625962	35.86499	502.013	502.013	742.9512	48%	18.53601	0.323514	18.00401	0.314229	898.9589	733.2215	1.031684	814.7979	998.9935	24.79991	0.726128
75	190	2500	814.0717	0.094686	0.767746	0.67306	1250	479.841	1095.838	368.7822	0.624288	35.76908	523.0665	523.0665	781.7974	49%	18.72784	0.326862	18.19584	0.317577	903.6197	728.9872	1.031397	814.9539	988.4667	22.84369	0.882212
75	200	2500	814.0717	0.09979	0.767746	0.667956	1250	479.841	1087.528	363.2102	0.622606	35.6727	543.7445	543.7445	820.6672	51%	18.9206	0.330227	18.3886	0.320942	908.3138	724.7421	1.031114	815.1219	978.1278	21.13929	1.050188
75	210	2500	814.0717	0.104906	0.767746	0.662839	1250	479.841	1079.197	357.6672	0.620916	35.57585	564.056	564.056	859.5616	52%	19.11429	0.333607	18.58229	0.324322	913.0416	720.486	1.030837	815.3018	967.972	19.64426	1.230113
75	220	2500	814.0717	0.110035	0.767746	0.65771	1250	479.841	1070.847	352.1535	0.619217	35.47853	584.0098	584.0098	898.4819	54%	19.30893	0.337004	18.77693	0.327719	917.8035	716.2184	1.030565	815.4938	957.9951	18.32482	1.422045
75	230	2500	814.0717	0.115177	0.767746	0.652569	1250	479.841	1062.476	346.6694	0.61751	35.38074	603.6145	603.6145	937.4292	55%	19.50452	0.340418	18.97252	0.331133	922.6001	711.9391	1.030298	815.6978	948.1928	17.15382	1.626045
75	240	2500	814.0717	0.120331	0.767746	0.647415	1250	479.841	1054.085	341.2151	0.615795	35.28247	622.8783	622.8783	976.4048	57%	19.70105	0.343848	19.16905	0.334563	927.4317	707.6479	1.030035	815.9139	938.5609	16.10919	1.842174
75	40	3000	976.8861	0.016303	0.767746	0.751442	1500	575.8092	1468.147	551.6141	0.649613	37.22009	172.0671	172.0671	210.188	22%	15.82583	0.276213	15.29383	0.266928	1000.997	953.0837	1.036588	976.6099	1413.966	303.9811	-0.27621
75	50	3000	976.8861	0.020399	0.767746	0.747347	1500	575.8092	1460.145	545.6171	0.648313	37.14561	199.9283	199.9283	248.8237	24%	15.97479	0.278813	15.44279	0.269527	1005.213	948.9814	1.036271	976.5964	1400.036	225.1615	-0.28966
75	60	3000	976.8861	0.024503	0.767746	0.743243	1500	575.8092	1452.127	539.6411	0.647008	37.07083	227.3301	227.3301	287.4645	26%	16.12434	0.281423	15.59234	0.272138	1009.452	944.8728	1.035958	976.5923	1386.335	174.1521	-0.29379
75	70	3000	976.8861	0.028615	0.767746	0.73913	1500	575.8092	1444.092	533.6863	0.645698	36.99576	254.2829	254.2829	326.1113	28%	16.27448	0.284043	15.74248	0.274758	1013.715	940.7579	1.035651	976.5975	1372.859	139.19	-0.28857
75	80	3000	976.8861	0.032735	0.767746	0.73501	1500	575.8092	1436.042	527.7528	0.644382	36.92039	280.7968	280.7968	364.7648	30%	16.42522	0.286674	15.89322	0.277389	1018.001	936.6365	1.035349	976.6121	1359.602	114.1454	-0.27396
75	90	3000	976.8861	0.036864	0.767746	0.730882	1500	575.8092	1427.976	521.8409	0.643062	36.84472	306.8815	306.8815	403.426	31%	16.57656	0.289316	16.04456	0.28003	1022.31	932.5085	1.035051	976.6361	1346.559	95.56551	-0.24995
75	100	3000	976.8861	0.041001	0.767746	0.726745	1500	575.8092	1419.894	515.9505	0.641736	36.76875	332.5464	332.5464	442.0955	33%	16.7285	0.291967	16.1965	0.282682	1026.644	928.3738	1.034759	976.6696	1333.727	81.38381	-0.2165
75	110	3000	976.8861	0.045145	0.767746	0.7226	1500	575.8092	1411.796	510.082	0.640405	36.69248	357.8007	357.8007	480.7742	34%	16.88104	0.29463	16.34904	0.285345	1031.002	924.2321	1.034471	976.7125	1321.1	70.30076	-0.17359
75	120	3000	976.8861	0.049299	0.767746	0.718447	1500	575.8092	1403.682	504.2355	0.639068	36.6159	382.6535	382.6535	519.4629	36%	17.03419	0.297303	16.50219	0.288018	1035.384	920.0834	1.034188	976.7649	1308.673	61.46547	-0.12119
75	130	3000	976.8861	0.05346	0.767746	0.714286	1500	575.8092	1395.551	498.4111	0.637726	36.53902	407.1132	407.1132	558.1623	37%	17.18795	0.299986	16.65595	0.290701	1039.791	915.9274	1.033909	976.8268	1296.443	54.30153	-0.05926
75	140	3000	976.8861	0.05763	0.767746	0.710116	1500	575.8092	1387.405	492.609	0.636379	36.46183	431.1885	431.1885	596.8734	38%	17.34233	0.302681	16.81033	0.293396	1044.223	911.7641	1.033634	976.8983	1284.406	48.407	0.012226
75	150	3000	976.8861	0.061808	0.767746	0.705938	1500	575.8092	1379.242	486.8294	0.635026	36.38434	454.8874	454.8874	635.5969	40%	17.49733	0.305386	16.96533	0.296101	1048.68	907.5933	1.033364	976.9794	1272.556	43.49453	0.0933
75	160	3000	976.8861	0.065994	0.767746	0.701751	1500	575.8092	1371.062	481.0724	0.633668	36.30653	478.2181	478.2181	674.3336	41%	17.65294	0.308102	17.12094	0.298817	1053.163	903.4148	1.033098	977.0701	1260.891	39.35415	0.183996
75	170	3000	976.8861	0.070189	0.767746	0.697557	1500	575.8092	1362.867	475.3382	0.632305	36.22841	501.1881	501.1881	713.0843	42%	17.80918	0.310829	17.27718	0.301544	1057.672	899.2285	1.032837	977.1704	1249.406	35.82952	0.284348
75	180	3000	976.8861	0.074392	0.767746	0.693353	1500	575.8092	1354.654	469.627	0.630936	36.14998	523.8052	523.8052	751.8499	44%	17.96605	0.313567	17.43405	0.304282	1062.206	895.0342	1.032579	977.2805	1238.097	32.80219	0.394392
75	190	3000	976.8861	0.078604	0.767746	0.689142	1500	575.8092	1346.426	463.939	0.629562	36.07123	546.0767	546.0767	790.6311	45%	18.12354	0.316316	17.59154	0.30703	1066.767	890.8317	1.032326	977.4002	1226.962	30.18112	0.514163
75	200	3000	976.8861	0.082824	0.767746	0.684921	1500	575.8092	1338.181	458.2743	0.628182	35.99216	568.0096	568.0096	829.4288	46%	18.28168	0.319075	17.74968	0.30979	1071.355	886.6209	1.032076	977.5298	1215.995	27.89531	0.643697
75	210	3000	976.8861	0.087053	0.767746	0.680693	1500	575.8092	1329.919	452.6331	0.626796	35.91278	589.6111	589.6111	868.2438	47%	18.44044	0.321846	17.90844	0.312561	1075.969	882.4015	1.03183	977.6691	1205.194	25.88876	0.783032
75	220	3000	976.8861	0.09129	0.767746	0.676456	1500	575.8092	1321.64	447.0155	0.625405	35.83307	610.8878	610.8878	907.0769	48%	18.59985	0.324629	18.06785	0.315343	1080.611	878.1735	1.031588	977.8183	1194.556	24.1168	0.932206
75	230	3000	976.8861	0.095536	0.767746	0.67221	1500	575.8092	1313.345	441.4219	0.624008	35.75305	631.8464	631.8464	945.9289	50%	18.7599	0.327422	18.2279	0.318137	1085.28	873.9366	1.031349	977.9773	1184.077	22.5434	1.091257
75	240	3000	976.8861	0.09979	0.767746	0.667956	1500	575.8092	1305.033	435.8522	0.622606	35.6727	652.4934	652.4934	984.8006	51%	18.9206	0.330227	18.3886	0.320942	1089.977	869.6906	1.031114	978.1463	1173.753	21.13929	1.260226
75	40	3500	1139.7	0.013966	0.767746	0.753779	1750	671.7774	1718.165	647.5587	0.650354	37.26252	181.9256	181.9256	219.4646	21%	15.74097	0.274732	15.20897	0.265447	1165.031	1114.663	1.036772	1139.392	1659.037	370.1252	-0.30839
75	50	3500	1139.7	0.017473	0.767746	0.750273	1750	671.7774	1710.173	641.5483	0.649242	37.19884	210.0874	210.0874	258.0973	23%	15.86833	0.276955	15.33633	0.267669	1169.232	1110.564	1.036497	1139.373	1644.956	277.5466	-0.32784
75	60	3500	1139.7	0.020985	0.767746	0.746761	1750	671.7774	1702.167	635.5558	0.648127	37.13494	237.8491	237.8491	296.734	25%	15.99612	0.279185	15.46412	0.2699	1173.453	1106.461	1.036226	1139.361	1631.075	216.5374	-0.3393
75	70	3500	1139.7	0.024503	0.767746	0.743243	1750	671.7774	1694.148	629.5813	0.647008	37.07083	265.2184	265.2184	335.3752	26%	16.12434	0.281423	15.59234	0.272138	1177.694	1102.352	1.035958	1139.358	1617.391	174.1521	-0.34276
75	80	3500	1139.7	0.028027	0.767746	0.739718	1750	671.7774	1686.115	623.625	0.645885	37.0065	292.2029	292.2029	374.0216	28%	16.253	0.283668	15.721	0.274383	1181.955	1098.237	1.035694	1139.362	1603.899	143.472	-0.3382
75	90	3500	1139.7	0.031557	0.767746	0.736188	1750	671.7774	1678.068	617.6869	0.644759	36.94195	318.8099	318.8099	412.6736	29%	16.38209	0.285921	15.85009	0.276636	1186.236	1094.117	1.035435	1139.375	1590.595	120.5237	-0.32561
75	100	3500	1139.7	0.035094	0.767746	0.732652	1750	671.7774	1670.008	611.7672	0.643628	36.87719	345.0466	345.0466	451.3319	31%	16.51162	0.288182	15.97962	0.278897	1190.537	1089.992	1.035178	1139.395	1577.477	102.8917	-0.30496
75	110	3500	1139.7	0.038636	0.767746	0.72911	1750	671.7774	1661.934	605.8661	0.642494	36.8122	370.9202	370.9202	489.9971	32%	16.6416	0.290451	16.1096	0.281166	1194.859	1085.86	1.034925	1139.424	1564.54	89.03796	-0.27624
75	120	3500	1139.7	0.042184	0.767746	0.725562	1750	671.7774	1653.846	599.9835	0.641356	36.74699	396.4373	396.4373	528.6698	33%	16.77202	0.292727	16.24002	0.283442	1199.201	1081.723	1.034676	1139.461	1551.781	77.94478	-0.23941
75	130	3500	1139.7	0.045738	0.767746	0.722007	1750	671.7774	1645.744	594.1197	0.640214	36.68156	421.6048	421.6048	567.3506	35%	16.90288	0.295011	16.37088	0.285726	1203.564	1077.58	1.03443	1139.506	1539.198	68.91679	-0.19447
75	140	3500	1139.7	0.049299	0.767746	0.718447	1750	671.7774	1637.629	588.2747	0.639068	36.6159	446.429	446.429	606.04	36%	17.03419	0.297303	16.50219	0.288018	1207.948	1073.431	1.034188	1139.559	1526.785	61.46547	-0.14139
75	150	3500	1139.7	0.052865	0.767746	0.714881	1750	671.7774	1629.499	582.4488	0.637918	36.55002	470.9165	470.9165	644.7387	37%	17.16595	0.299602	16.63395	0.290317	1212.353	1069.275	1.033948	1139.62	1514.542	55.23931	-0.08014
75	160	3500	1139.7	0.056438	0.767746	0.711308	1750	671.7774	1621.356	576.6419	0.636765	36.48392	495.0734	495.0734	683.4472	38%	17.29816	0.30191	16.76616	0.292625	1216.78	1065.113	1.033712	1139.69	1502.463	49.98008	-0.0107
75	170	3500	1139.7	0.060016	0.767746	0.707729	1750	671.7774	1613.199	570.8542	0.635607	36.41759	518.9057	518.9057	722.1661	39%	17.43082	0.304225	16.89882	0.29494	1221.228	1060.945	1.03348	1139.767	1490.547	45.49453	0.066941

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
75	180	3500	1139.7	0.063601	0.767746	0.704145	1750	671.7774	1605.028	565.0859	0.634445	36.35103	542.4194	542.4194	760.8961	40%	17.56394	0.306549	17.03194	0.297263	1225.698	1056.771	1.03325	1139.853	1478.79	41.63568	0.152821
75	190	3500	1139.7	0.067192	0.767746	0.700554	1750	671.7774	1596.843	559.337	0.633279	36.28424	565.6203	565.6203	799.6377	41%	17.69752	0.30888	17.16552	0.299595	1230.19	1052.589	1.033023	1139.947	1467.19	38.29007	0.246962
75	200	3500	1139.7	0.070789	0.767746	0.696957	1750	671.7774	1588.643	553.6078	0.63211	36.21722	588.514	588.514	838.3915	42%	17.83155	0.311219	17.29955	0.301934	1234.704	1048.401	1.0328	1140.05	1455.743	35.36897	0.349387
75	210	3500	1139.7	0.074392	0.767746	0.693353	1750	671.7774	1580.43	547.8982	0.630936	36.14998	611.1061	611.1061	877.1582	44%	17.96605	0.313567	17.43405	0.304282	1239.241	1044.207	1.032579	1140.161	1444.447	32.80219	0.460124
75	220	3500	1139.7	0.078002	0.767746	0.689744	1750	671.7774	1572.203	542.2085	0.629758	36.0825	633.4019	633.4019	915.9383	45%	18.10101	0.315922	17.56901	0.306637	1243.8	1040.005	1.032362	1140.28	1433.299	30.53356	0.579198
75	230	3500	1139.7	0.081618	0.767746	0.686128	1750	671.7774	1563.961	536.5388	0.628577	36.01478	655.4067	655.4067	954.7324	46%	18.23643	0.318286	17.70443	0.309001	1248.381	1035.796	1.032147	1140.407	1422.297	28.51769	0.706637
75	240	3500	1139.7	0.085239	0.767746	0.682506	1750	671.7774	1555.705	530.8892	0.627391	35.94684	677.1257	677.1257	993.5411	47%	18.37232	0.320657	17.84032	0.311372	1252.986	1031.579	1.031935	1140.543	1411.437	26.7176	0.842467
75	40	4000	1302.515	0.012215	0.767746	0.75553	2000	767.7456	1968.179	743.5093	0.650908	37.29427	191.6481	191.6481	228.7423	19%	15.67745	0.273623	15.14545	0.264338	1329.071	1276.24	1.036911	1302.177	1904.176	435.6231	-0.33793
75	50	4000	1302.515	0.01528	0.767746	0.752465	2000	767.7456	1960.194	737.4888	0.649937	37.23866	220.0385	220.0385	267.3731	22%	15.78868	0.275564	15.25668	0.266279	1333.262	1272.144	1.036668	1302.153	1889.981	330.4629	-0.36185
75	60	4000	1302.515	0.01835	0.767746	0.749395	2000	767.7456	1952.197	731.4839	0.648964	37.18288	248.0744	248.0744	306.007	23%	15.90023	0.277511	15.36823	0.268226	1337.469	1268.044	1.036429	1302.136	1875.963	259.9898	-0.3788
75	70	4000	1302.515	0.021424	0.767746	0.746321	2000	767.7456	1944.189	725.4948	0.647987	37.12694	275.7618	275.7618	344.6445	25%	16.01212	0.279464	15.48012	0.270179	1341.694	1263.94	1.036192	1302.126	1862.119	210.4029	-0.38876
75	80	4000	1302.515	0.024503	0.767746	0.743243	2000	767.7456	1936.169	719.5215	0.647008	37.07083	303.1068	303.1068	383.286	26%	16.12434	0.281423	15.59234	0.272138	1345.936	1259.83	1.035958	1302.123	1848.447	174.1521	-0.39172
75	90	4000	1302.515	0.027586	0.767746	0.740159	2000	767.7456	1928.137	713.564	0.646026	37.01455	330.115	330.115	421.932	28%	16.23689	0.283387	15.70489	0.274102	1350.196	1255.716	1.035727	1302.127	1834.943	146.8215	-0.38767
75	100	4000	1302.515	0.030674	0.767746	0.737071	2000	767.7456	1920.092	707.6225	0.645041	36.95811	356.7921	356.7921	460.5829	29%	16.34978	0.285357	15.81778	0.276072	1354.473	1251.597	1.035499	1302.138	1821.604	125.6867	-0.37659
75	110	4000	1302.515	0.033767	0.767746	0.733979	2000	767.7456	1912.036	701.6971	0.644053	36.9015	383.1438	383.1438	499.2392	30%	16.463	0.287334	15.931	0.278048	1358.768	1247.474	1.035274	1302.156	1808.428	108.9925	-0.35846
75	120	4000	1302.515	0.036864	0.767746	0.730882	2000	767.7456	1903.968	695.7878	0.643062	36.84472	409.1753	409.1753	537.9013	31%	16.57656	0.289316	16.04456	0.28003	1363.081	1243.345	1.035051	1302.181	1795.412	95.56551	-0.33327
75	130	4000	1302.515	0.039966	0.767746	0.72778	2000	767.7456	1895.888	689.8948	0.642068	36.78777	434.892	434.892	576.5697	33%	16.69045	0.291303	16.15845	0.282018	1367.411	1239.211	1.034831	1302.214	1782.554	84.59742	-0.301
75	140	4000	1302.515	0.043072	0.767746	0.724674	2000	767.7456	1887.796	684.0181	0.641071	36.73065	460.2991	460.2991	615.2448	34%	16.80469	0.293297	16.27269	0.284012	1371.76	1235.072	1.034614	1302.253	1769.85	75.51613	-0.26164
75	150	4000	1302.515	0.046183	0.767746	0.721563	2000	767.7456	1879.692	678.1578	0.640071	36.67336	485.4017	485.4017	653.9272	35%	16.91927	0.295297	16.38727	0.286012	1376.127	1230.927	1.0344	1302.3	1757.299	67.90746	-0.21518
75	160	4000	1302.515	0.049299	0.767746	0.718447	2000	767.7456	1871.576	672.314	0.639068	36.6159	510.2046	510.2046	692.6171	36%	17.03419	0.297303	16.50219	0.288018	1380.512	1226.778	1.034188	1302.353	1744.898	61.46547	-0.16158
75	170	4000	1302.515	0.052419	0.767746	0.715327	2000	767.7456	1863.447	666.4868	0.638062	36.55827	534.7129	534.7129	731.3152	37%	17.14946	0.299314	16.61746	0.290029	1384.916	1222.623	1.033978	1302.414	1732.644	55.96012	-0.10085
75	180	4000	1302.515	0.055544	0.767746	0.712202	2000	767.7456	1855.307	660.6763	0.637053	36.50047	558.9312	558.9312	770.0218	38%	17.26507	0.301332	16.73307	0.292047	1389.339	1218.462	1.033771	1302.482	1720.534	51.21572	-0.03295
75	190	4000	1302.515	0.058673	0.767746	0.709072	2000	767.7456	1847.154	654.8827	0.636041	36.44249	582.8643	582.8643	808.7374	39%	17.38102	0.303356	16.84902	0.294071	1393.78	1214.296	1.033566	1302.557	1708.568	47.09612	0.042126
75	200	4000	1302.515	0.061808	0.767746	0.705938	2000	767.7456	1838.989	649.1059	0.635026	36.38434	606.5166	606.5166	847.4625	40%	17.49733	0.305386	16.96533	0.296101	1398.241	1210.124	1.033364	1302.639	1696.742	43.49453	0.1244
75	210	4000	1302.515	0.064947	0.767746	0.702799	2000	767.7456	1830.812	643.346	0.634008	36.32601	629.8927	629.8927	886.1975	41%	17.61398	0.307422	17.08198	0.298137	1402.72	1205.947	1.033165	1302.729	1685.054	40.32616	0.213891
75	220	4000	1302.515	0.068091	0.767746	0.699655	2000	767.7456	1822.622	637.6033	0.632987	36.26751	652.9969	652.9969	924.9428	42%	17.73098	0.309464	17.19898	0.300179	1407.219	1201.764	1.032967	1302.825	1673.502	37.52301	0.310617
75	230	4000	1302.515	0.071239	0.767746	0.696507	2000	767.7456	1814.42	631.8777	0.631963	36.20883	675.8336	675.8336	963.699	43%	17.84834	0.311512	17.31634	0.302227	1411.737	1197.574	1.032772	1302.929	1662.083	35.03002	0.414599
75	240	4000	1302.515	0.074392	0.767746	0.693353	2000	767.7456	1806.206	626.1694	0.630936	36.14998	698.407	698.407	1002.467	44%	17.96605	0.313567	17.43405	0.304282	1416.275	1193.379	1.032579	1303.041	1650.797	32.80219	0.525856
75	40	4500	1465.329	0.010855	0.767746	0.756891	2250	863.7138	2218.189	839.4638	0.651338	37.31894	201.2791	201.2791	238.0206	18%	15.62812	0.272762	15.09612	0.263477	1493.116	1437.816	1.03702	1464.963	2149.36	499.836	-0.36569
75	50	4500	1465.329	0.013577	0.767746	0.754169	2250	863.7138	2210.21	833.4355	0.650477	37.26958	229.849	229.849	276.65	20%	15.72684	0.274485	15.19484	0.2652	1497.298	1433.723	1.036803	1464.936	2135.076	383.3009	-0.3931
75	60	4500	1465.329	0.016303	0.767746	0.751442	2250	863.7138	2202.221	827.4211	0.649613	37.22009	258.1007	258.1007	315.282	22%	15.82583	0.276213	15.29383	0.266928	1501.495	1429.626	1.036588	1464.915	2120.95	303.9811	-0.41431
75	70	4500	1465.329	0.019033	0.767746	0.748713	2250	863.7138	2194.221	821.4206	0.648747	37.17047	286.0391	286.0391	353.9169	24%	15.92507	0.277945	15.39307	0.26866	1505.708	1425.524	1.036376	1464.9	2106.98	247.4994	-0.42932
75	80	4500	1465.329	0.021766	0.767746	0.745979	2250	863.7138	2186.211	815.4341	0.647879	37.12071	313.6691	313.6691	392.555	25%	16.02457	0.279682	15.49257	0.270396	1509.935	1421.419	1.036166	1464.891	2093.165	205.8172	-0.43812
75	90	4500	1465.329	0.024503	0.767746	0.743243	2250	863.7138	2178.19	809.4617	0.647008	37.07083	340.9951	340.9951	431.1967	26%	16.12434	0.281423	15.59234	0.272138	1514.178	1417.309	1.035958	1464.888	2079.502	174.1521	-0.44069
75	100	4500	1465.329	0.027244	0.767746	0.740502	2250	863.7138	2170.158	803.5033	0.646135	37.02082	368.0218	368.0218	469.8425	28%	16.22437	0.283169	15.69237	0.273883	1518.437	1413.195	1.035753	1464.892	2065.989	149.5126	-0.43702
75	110	4500	1465.329	0.029988	0.767746	0.737758	2250	863.7138	2162.116	797.5591	0.64526	36.97067	394.7537	394.7537	508.4925	29%	16.32466	0.284919	15.79266	0.275634	1522.711	1409.077	1.03555	1464.902	2052.623	129.9489	-0.42711
75	120	4500	1465.329	0.032735	0.767746	0.73501	2250	863.7138	2154.063	791.6292	0.644382	36.92039	421.1952	421.1952	547.1473	30%	16.42522	0.286674	15.89322	0.277389	1527.001	1404.955	1.035349	1464.918	2039.402	114.1454	-0.41094
75	130	4500	1465.329	0.035487	0.767746	0.732259	2250	863.7138	2146	785.7137	0.643503	36.86998	447.3505	447.3505	585.8071	31%	16.52604	0.288434	15.99404	0.279149	1531.307	1400.828	1.03515	1464.941	2026.325	101.188	-0.3885
75	140	4500	1465.329	0.038242	0.767746	0.729504	2250	863.7138	2137.926	779.8125	0.64262	36.81943	473.2239	473.2239	624.4723	32%	16.62714	0.290198	16.09514	0.280913	1535.628	1396.697	1.034953	1464.969	2013.388	90.42565	-0.35978
75	150	4500	1465.329	0.041001	0.767746	0.726745	2250	863.7138	2129.841	773.9258	0.641736	36.76875	498.8196	498.8196	663.1432	33%	16.7285	0.291967	16.1965	0.282682	1539.966	1392.561	1.034759	1465.004	2000.59	81.38381	-0.32476
75	160	4500	1465.329	0.043763	0.767746	0.723983	2250	863.7138	2121.746	768.0536	0.640849	36.71794	524.1415	524.1415	701.8203	34%	16.83012	0.293741	16.29812	0.284456	1544.32	1388.42	1.034566	1465.046	1987.929	73.71025	-0.28342
75	170	4500	1465.329	0.046529	0.767746	0.721217	2250	863.7138	2113.64	762.1961	0.63996	36.66699	549.1938	549.1938	740.5039	35%	16.93202	0.29552	16.40002	0.286234	1548.69	1384.275	1.034376	1465.093	1975.403	67.13884	-0.23577
75	180	4500	1465.329	0.049299	0.767746	0.718447	2250	863.7138	2105.523	756.3532	0.639068	36.6159	573.9802	573.9802	779.1943	36%	17.03419	0.297303	16.50219	0.288018	1553.076	1380.125	1.034188	1465.147	1963.01	61.46547	-0.18178
75	190	4500	1465.329	0.052072	0.767746	0.715674	2250	863.7138	2097.395	750.5251	0.638174	36.56468	598.5047	598.5047	817.8919	37%	17.13663	0.299091	16.60463	0.289805	1557.479	1375.97	1.034001	1465.208	1950.748	56.53142	-0.12144
75	200	4500	1465.329	0.054849	0.767746	0.712897	2250	863.7138	2089.256	744.7119	0.637278	36.51333	622.771	622.771	856.597	38%	17.23934	0.300883	16.70734	0.291598	1561.899	1371.811	1.033817	1465.274	1938.615	52.21176	-0.05474
75	210	4500	1465.329	0.05763	0.767746	0.710116	2250	863.7138	2081.107	738.9135	0.636379	36.46183	646.7827	646.7827	895.3101	38%	17.34233	0.302681	16.81033	0.293396	1566.335	1367.646	1.033634	1465.347	1926.609	48.407	0.018339
75	220	4500	1465.329	0.060414	0.767746	0.707331	2250	863.7138	2072.947	733.1301	0.635478	36.4102	670.5437	670.5437	934.0314	39%	17.44559	0.304483	16.91359	0.295198	1570.788	1363.477	1.033454	1465.427	1914.728	45.03715	0.097812
75	230	4500	1465.329	0.063202	0.767746	0.704543	2250	863.7138	2064.775	727.3618	0.634574	36.35844	694.0573	694.0573	972.7614	40%	17.54913	0.30629	17.01713	0.297005	1575.258	1359.302	1.033275	1465.513	1902.971	42.03726	0.183692
75	240	4500	1465.329	0.065994	0.767746	0.701751	2250	863.7138	2056.593	721.6086	0.633668	36.30653	717.3271	717.3271	1011.5	41%	17.65294	0.308102	17.12094	0.298817	1579.745	1355.122	1.033098	1465.605	1891.336	39.35415	0.275994
75	40	5000	1628.143	0.009767	0.767746	0.757979	2500	959.682	2468.197	935.421	0.651682	37.33865	210.8456	210.8456	247.2995	17%	15.58871	0.272074	15.05671	0.262789	1657.163	1599.391	1.037108	1627.751	2394.577	562.3557	-0.39222
75	50	5000	1628.143	0.012215	0.767746	0.75553	2500	959.682	2460.223	929.3866	0.650908	37.29427	239.5601	239.5601	285.9278	19%	15.67745	0.273623	15.14545	0.264338	1661.339	1595.3	1.036911	1627.721	2380.22	435.6231	-0.42241
75	60	5000	1628.143	0.014667	0.767746	0.753079	2500	959.682	2452.24	923.3646	0.650132	37.2498	267.9862	267.9862	324.5583	21%	15.76641	0.275176	15.23441	0.265891	1665.528	1591.205	1.036717	1627.696	2366.007	348.1089	-0.44703
75	70	5000	1628.143	0.017122	0.767746	0.750624	2500	959.682	2444.247	917.355	0.649353	37.20521	296.1277	296.1277	363.1913	23%	15.85557	0.276732	15.32357	0.267447	1669.73	1587.106	1.036524	1627.677	2351.936	285.09	-0.46607
75	80	5000	1628.143	0.019579	0.767746	0.748166	2500	959.682	2436.244	911.358	0.648574	37.16053	323.9885	323.9885	401.8269	24%	15.94495	0.278292	15.41295	0.269007	1673.947	1583.004	1.036334	1627.664	2338.006	238.1666	-0.47953
75	90	5000	1628.143	0.02204	0.767746	0.745706	2500	959.682	2428.232	905.3736	0.647792	37.11573	351.5725	351.5725	440.4655	25%	16.03454	0.279855	15.50254	0.27057	1678.177	1578.898	1.036145	1627.656	2324.214	202.2601	-0.48739
75	100	5000	1628.143	0.024503	0.767746	0.743243	2500	959.682	2420.211	899.4018	0.647008	37.07083	378.8834	378.8834	479.1075	26%	16.12434	0.281423	15.59234	0.272138	1682.421	1574.788	1.035958	1627.654	2310.558	174.1521	-0.48965
75	110	5000	1628.143	0.026969	0.767746	0.740776	2500	959.682	2412.18	893.4428	0.646223	37.02582	405.925	405.925	517.753	28%	16.21435	0.282994	15.68235	0.273709	1686.678	1570.674	1.035773	1627.657	2297.038	151.722	-0.4863
75	120	5000	1628.143	0.029439	0.767746	0.738307	2500	959.682	2404.139	887.4965	0.645435	36.98071	432.7008	432.7008	556.4024	29%	16.30458	0.284569	15.77258	0.275283	1690.95	1566.557	1.03559	1627.666	2283.65	133.5256	-0.47733
75	130	5000	1628.143	0.031911	0.767746	0.735835	2500	959.682	2396.089	881.563	0.644646	36.93549	459.2144	459.2144	595.0559	30%	16.39502	0.286147	15.86302	0.276862	1695.236	1562.436	1.035409	1627.681	2270.393	118.552	-0.46272
75	140	5000	1628.143	0.034386	0.767746	0.73336	2500	959.682	2388.03	875.6424	0.643855	36.89016	485.4694	485.4694	633.7139	31%	16.48568	0.287729	15.95368	0.278444	1699.536	1558.31	1.035229	1627.701	2257.265	106.0758	-0.44248
75	150	5000	1628.143	0.036864	0.767746	0.730882	2500	959.682	2379.96	869.7348	0.643062	36.84472	511.4691	511.4691	672.3766	31%	16.57656	0.289316	16.04456	0.28003	1703.851	1554.181	1.035051	1627.727	2244.265	95.56551	-0.41658
75	160	5000	1628.143	0.039345	0.767746	0.728401	2500	959.682	2371.882	863.8401	0.642267	36.79918	537.217	537.217	711.0444	32%	16.66765	0.290905	16.13565	0.28162	1708.18	1550.047	1.034875	1627.758	2231.392	86.62446	-0.38503

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
75	170	5000	1628.143	0.041829	0.767746	0.725917	2500	959.682	2363.793	857.9585	0.64147	36.75352	562.7164	562.7164	749.7174	33%	16.75896	0.292499	16.22696	0.283214	1712.523	1545.91	1.034701	1627.796	2218.642	78.9516	-0.3478
75	180	5000	1628.143	0.044316	0.767746	0.72343	2500	959.682	2355.695	852.09	0.640671	36.70776	587.9705	587.9705	788.3961	34%	16.85048	0.294096	16.31848	0.284811	1716.881	1541.768	1.034528	1627.839	2206.015	72.3151	-0.30489
75	190	5000	1628.143	0.046806	0.767746	0.72094	2500	959.682	2347.587	846.2346	0.639871	36.66189	612.9826	612.9826	827.0807	35%	16.94223	0.295698	16.41023	0.286412	1721.253	1537.622	1.034357	1627.887	2193.509	66.53402	-0.25629
75	200	5000	1628.143	0.049299	0.767746	0.718447	2500	959.682	2339.47	840.3925	0.639068	36.6159	637.7558	637.7558	865.7714	36%	17.03419	0.297303	16.50219	0.288018	1725.64	1533.472	1.034188	1627.941	2181.122	61.46547	-0.20198
75	210	5000	1628.143	0.051794	0.767746	0.715951	2500	959.682	2331.342	834.5636	0.638264	36.56981	662.2932	662.2932	904.4686	37%	17.12638	0.298912	16.59438	0.289626	1730.042	1529.318	1.03402	1628.001	2168.853	56.99534	-0.14196
75	220	5000	1628.143	0.054293	0.767746	0.713452	2500	959.682	2323.205	828.7481	0.637457	36.52361	686.598	686.598	943.1726	37%	17.21878	0.300524	16.68678	0.291239	1734.459	1525.159	1.033854	1628.067	2156.701	53.03163	-0.07621
75	230	5000	1628.143	0.056795	0.767746	0.71095	2500	959.682	2315.059	822.9461	0.636649	36.4773	710.673	710.673	981.8837	38%	17.31141	0.302141	16.77941	0.292856	1738.891	1520.996	1.033689	1628.139	2144.663	49.49945	-0.00473
75	240	5000	1628.143	0.0593	0.767746	0.708446	2500	959.682	2306.902	817.1574	0.635839	36.43087	734.5213	734.5213	1020.602	39%	17.40425	0.303762	16.87225	0.294476	1743.338	1516.828	1.033526	1628.216	2132.739	46.33735	0.072505
75	40	5500	1790.958	0.008877	0.767746	0.758869	2750	1055.65	2718.204	1031.38	0.651963	37.35476	220.3647	220.3647	256.5786	16%	15.55649	0.271512	15.02449	0.262227	1821.213	1760.966	1.037179	1790.54	2639.818	622.9328	-0.41785
75	50	5500	1790.958	0.011102	0.767746	0.756644	2750	1055.65	2710.234	1025.341	0.65126	37.31446	249.1985	249.1985	295.2062	18%	15.63709	0.272919	15.10509	0.263634	1825.383	1756.876	1.037	1790.507	2625.401	487.1185	-0.45031
75	60	5500	1790.958	0.013329	0.767746	0.754416	2750	1055.65	2702.255	1019.313	0.650555	37.27407	277.7683	277.7683	333.8356	20%	15.71786	0.274328	15.18586	0.265043	1829.565	1752.783	1.036823	1790.48	2611.116	392.0669	-0.47772
75	70	5500	1790.958	0.015559	0.767746	0.752186	2750	1055.65	2694.268	1013.296	0.649849	37.2336	306.0774	306.0774	372.467	22%	15.79881	0.275741	15.26681	0.266456	1833.76	1748.686	1.036646	1790.458	2596.961	322.8962	-0.50006
75	80	5500	1790.958	0.017792	0.767746	0.749954	2750	1055.65	2686.272	1007.29	0.649141	37.19304	334.1291	334.1291	411.1008	23%	15.87993	0.277157	15.34793	0.267872	1837.967	1744.587	1.036472	1790.44	2582.935	270.9547	-0.51733
75	90	5500	1790.958	0.020026	0.767746	0.747719	2750	1055.65	2678.267	1001.296	0.648432	37.15239	361.9267	361.9267	449.7371	24%	15.96122	0.278576	15.42922	0.269291	1842.186	1740.483	1.036299	1790.428	2569.037	230.932	-0.52951
75	100	5500	1790.958	0.022264	0.767746	0.745482	2750	1055.65	2670.254	995.3132	0.647721	37.11165	389.4732	389.4732	488.3761	25%	16.04269	0.279998	15.51069	0.270713	1846.418	1736.377	1.036128	1790.421	2555.263	199.4207	-0.53661
75	110	5500	1790.958	0.024503	0.767746	0.743243	2750	1055.65	2662.232	989.342	0.647008	37.07083	416.7718	416.7718	527.0182	26%	16.12434	0.281423	15.59234	0.272138	1850.663	1732.267	1.035958	1790.419	2541.614	174.1521	-0.53862
75	120	5500	1790.958	0.026745	0.767746	0.741001	2750	1055.65	2654.201	983.3824	0.646294	37.02992	443.8255	443.8255	565.6636	27%	16.20616	0.282851	15.67416	0.273566	1854.92	1728.153	1.03579	1790.422	2528.087	153.5681	-0.53552
75	130	5500	1790.958	0.028989	0.767746	0.738756	2750	1055.65	2646.162	977.4343	0.645578	36.98892	470.6373	470.6373	604.3124	28%	16.28816	0.284282	15.75616	0.274997	1859.19	1724.036	1.035623	1790.43	2514.681	136.5692	-0.52732
75	140	5500	1790.958	0.031236	0.767746	0.736509	2750	1055.65	2638.114	971.498	0.644861	36.94783	497.2102	497.2102	642.965	29%	16.37034	0.285716	15.83834	0.276431	1863.472	1719.916	1.035458	1790.444	2501.395	122.3617	-0.51399
75	150	5500	1790.958	0.033486	0.767746	0.73426	2750	1055.65	2630.058	965.5733	0.644143	36.90665	523.547	523.547	681.6215	30%	16.45269	0.287154	15.92069	0.277868	1867.768	1715.792	1.035294	1790.462	2488.226	110.3606	-0.49554
75	160	5500	1790.958	0.035737	0.767746	0.732008	2750	1055.65	2621.992	959.6603	0.643422	36.86539	549.6507	549.6507	720.2823	31%	16.53522	0.288594	16.00322	0.279309	1872.077	1711.664	1.035132	1790.486	2475.175	100.1271	-0.47196
75	170	5500	1790.958	0.037991	0.767746	0.729754	2750	1055.65	2613.918	953.7591	0.642701	36.82403	575.5241	575.5241	758.9475	32%	16.61794	0.290038	16.08594	0.280753	1876.398	1707.533	1.034971	1790.515	2462.238	91.32683	-0.44324
75	180	5500	1790.958	0.040248	0.767746	0.727498	2750	1055.65	2605.836	947.8698	0.641977	36.78259	601.1699	601.1699	797.6173	33%	16.70083	0.291484	16.16883	0.282199	1880.733	1703.398	1.034812	1790.548	2449.415	83.70106	-0.40936
75	190	5500	1790.958	0.042507	0.767746	0.725239	2750	1055.65	2597.744	941.9923	0.641252	36.74105	626.5908	626.5908	836.2922	33%	16.7839	0.292934	16.2519	0.283649	1885.081	1699.259	1.034653	1790.587	2436.705	77.04728	-0.37033
75	200	5500	1790.958	0.044768	0.767746	0.722977	2750	1055.65	2589.644	936.1268	0.640526	36.69943	651.7896	651.7896	874.9721	34%	16.86715	0.294387	16.33515	0.285102	1889.442	1695.116	1.034497	1790.632	2424.105	71.205	-0.32612
75	210	5500	1790.958	0.047032	0.767746	0.720713	2750	1055.65	2581.535	930.2732	0.639798	36.65771	676.769	676.769	913.6575	35%	16.95058	0.295843	16.41858	0.286558	1893.816	1690.97	1.034341	1790.681	2411.616	66.0457	-0.27674
75	220	5500	1790.958	0.049299	0.767746	0.718447	2750	1055.65	2573.417	924.4317	0.639068	36.6159	701.5314	701.5314	952.3486	36%	17.03419	0.297303	16.50219	0.288018	1898.204	1686.82	1.034188	1790.736	2399.234	61.46547	-0.22218
75	230	5500	1790.958	0.051567	0.767746	0.716178	2750	1055.65	2565.29	918.6023	0.638337	36.57401	726.0794	726.0794	991.0455	36%	17.11799	0.298765	16.58599	0.28948	1902.606	1682.665	1.034035	1790.795	2386.96	57.37955	-0.16242
75	240	5500	1790.958	0.053839	0.767746	0.713907	2750	1055.65	2557.154	912.785	0.637604	36.53202	750.4157	750.4157	1029.749	37%	17.20196	0.300231	16.66996	0.290946	1907.021	1678.507	1.033884	1790.86	2374.792	53.71821	-0.09745
75	40	6000	1953.772	0.008136	0.767746	0.75961	3000	1151.618	2968.21	1127.341	0.652198	37.36817	229.8483	229.8483	265.8579	16%	15.52966	0.271044	14.99766	0.261759	1985.265	1922.541	1.03724	1953.329	2885.076	681.4281	-0.4428
75	50	6000	1953.772	0.010174	0.767746	0.757571	3000	1151.618	2960.243	1121.297	0.651553	37.33126	258.7818	258.7818	304.4849	18%	15.60348	0.272332	15.07148	0.263047	1989.43	1918.452	1.037075	1953.295	2870.609	537.5699	-0.47716
75	60	6000	1953.772	0.012215	0.767746	0.75553	3000	1151.618	2952.268	1115.264	0.650908	37.29427	287.4722	287.4722	343.1134	19%	15.67745	0.273623	15.14545	0.264338	1993.607	1914.36	1.036911	1953.265	2856.264	435.6231	-0.50689
75	70	6000	1953.772	0.014258	0.767746	0.753487	3000	1151.618	2944.285	1109.241	0.650261	37.25722	315.9221	315.9221	381.7437	21%	15.75157	0.274917	15.21957	0.265632	1997.794	1910.265	1.036749	1953.24	2842.039	360.6971	-0.53197
75	80	6000	1953.772	0.016303	0.767746	0.751442	3000	1151.618	2936.295	1103.228	0.649613	37.22009	344.1343	344.1343	420.376	22%	15.82583	0.276213	15.29383	0.266928	2001.994	1906.167	1.036588	1953.22	2827.933	303.9811	-0.55241
75	90	6000	1953.772	0.01835	0.767746	0.749395	3000	1151.618	2928.296	1097.226	0.648964	37.18288	372.1115	372.1115	459.0105	23%	15.90023	0.277511	15.36823	0.268226	2006.204	1902.067	1.036429	1953.204	2813.944	259.9898	-0.5682
75	100	6000	1953.772	0.020399	0.767746	0.747347	3000	1151.618	2920.29	1091.234	0.648313	37.14561	399.8565	399.8565	497.6473	24%	15.97479	0.278813	15.44279	0.269527	2010.426	1897.963	1.036271	1953.193	2800.072	225.1615	-0.57933
75	110	6000	1953.772	0.02245	0.767746	0.745296	3000	1151.618	2912.275	1085.253	0.647661	37.10826	427.3718	427.3718	536.2868	25%	16.04949	0.280116	15.51749	0.270831	2014.66	1893.856	1.036114	1953.186	2786.314	197.1019	-0.58579
75	120	6000	1953.772	0.024503	0.767746	0.743243	3000	1151.618	2904.253	1079.282	0.647008	37.07083	454.6601	454.6601	574.929	26%	16.12434	0.281423	15.59234	0.272138	2018.905	1889.746	1.035958	1953.185	2772.67	174.1521	-0.58758
75	130	6000	1953.772	0.026558	0.767746	0.741187	3000	1151.618	2896.223	1073.322	0.646354	37.03333	481.7239	481.7239	613.5742	27%	16.19934	0.282732	15.66734	0.273447	2023.161	1885.632	1.035804	1953.187	2759.138	155.1337	-0.5847
75	140	6000	1953.772	0.028615	0.767746	0.73913	3000	1151.618	2888.185	1067.373	0.645698	36.99576	508.5658	508.5658	652.2226	28%	16.27448	0.284043	15.74248	0.274758	2027.43	1881.516	1.035651	1953.195	2745.717	139.19	-0.57713
75	150	6000	1953.772	0.030674	0.767746	0.737071	3000	1151.618	2880.139	1061.434	0.645041	36.95811	535.1882	535.1882	690.8743	29%	16.34978	0.285357	15.81778	0.276072	2031.71	1877.396	1.035499	1953.207	2732.406	125.6867	-0.56488
75	160	6000	1953.772	0.032735	0.767746	0.73501	3000	1151.618	2872.085	1055.506	0.644382	36.92039	561.5936	561.5936	729.5297	30%	16.42522	0.286674	15.89322	0.277389	2036.002	1873.273	1.035349	1953.224	2719.203	114.1454	-0.54792
75	170	6000	1953.772	0.034799	0.767746	0.732947	3000	1151.618	2864.023	1049.588	0.643723	36.88259	587.7844	587.7844	768.1888	31%	16.50081	0.287994	15.96881	0.278708	2040.305	1869.147	1.035199	1953.246	2706.108	104.1997	-0.52627
75	180	6000	1953.772	0.036864	0.767746	0.730882	3000	1151.618	2855.953	1043.682	0.643062	36.84472	613.7629	613.7629	806.8519	31%	16.57656	0.289316	16.04456	0.28003	2044.621	1865.017	1.035051	1953.272	2693.119	95.56551	-0.4999
75	190	6000	1953.772	0.038931	0.767746	0.728814	3000	1151.618	2847.874	1037.786	0.642399	36.80677	639.5316	639.5316	845.5193	32%	16.65245	0.29064	16.12045	0.281355	2048.948	1860.884	1.034904	1953.303	2680.234	88.01941	-0.46882
75	200	6000	1953.772	0.041001	0.767746	0.726745	3000	1151.618	2839.788	1031.901	0.641736	36.76875	665.0928	665.0928	884.191	33%	16.7285	0.291967	16.1965	0.282682	2053.288	1856.748	1.034759	1953.339	2667.454	81.38381	-0.43301
75	210	6000	1953.772	0.043072	0.767746	0.724674	3000	1151.618	2831.694	1026.027	0.641071	36.73065	690.4487	690.4487	922.8673	34%	16.80469	0.293297	16.27269	0.284012	2057.64	1852.608	1.034614	1953.38	2654.776	75.51613	-0.39247
75	220	6000	1953.772	0.045145	0.767746	0.7226	3000	1151.618	2823.592	1020.164	0.640405	36.69248	715.6015	715.6015	961.5483	34%	16.88104	0.29463	16.34904	0.285345	2062.004	1848.464	1.034471	1953.425	2642.199	70.30076	-0.34719
75	230	6000	1953.772	0.047221	0.767746	0.720525	3000	1151.618	2815.482	1014.312	0.639737	36.65423	740.5535	740.5535	1000.234	35%	16.95754	0.295965	16.42554	0.28668	2066.38	1844.317	1.034329	1953.475	2629.723	65.64318	-0.29716
75	240	6000	1953.772	0.049299	0.767746	0.718447	3000	1151.618	2807.364	1008.471	0.639068	36.6159	765.3069	765.3069	1038.926	36%	17.03419	0.297303	16.50219	0.288018	2070.768	1840.167	1.034188	1953.53	2617.347	61.46547	-0.24238
75	40	6500	2116.586	0.007509	0.767746	0.760237	3250	1247.587	3218.215	1223.303	0.652396	37.37951	239.3043	239.3043	275.1374	15%	15.50697	0.270648	14.97497	0.261363	2149.317	2084.115	1.037291	2116.119	3130.348	737.7782	-0.46724
75	50	6500	2116.586	0.00939	0.767746	0.758356	3250	1247.587	3210.25	1217.256	0.651801	37.34546	268.3227	268.3227	313.7638	17%	15.57507	0.271836	15.04307	0.262551	2153.479	2080.027	1.037138	2116.083	3115.839	586.8295	-0.5032
75	60	6500	2116.586	0.011273	0.767746	0.756472	3250	1247.587	3202.279	1211.218	0.651206	37.31135	297.1156	297.1156	352.3917	19%	15.64329	0.273027	15.11129	0.263742	2157.651	2075.936	1.036986	2116.052	3101.442	478.6035	-0.53489
75	70	6500	2116.586	0.013158	0.767746	0.754588	3250	1247.587	3194.3	1205.19	0.65061	37.27718	325.6853	325.6853	391.0211	20%	15.71164	0.27422	15.17964	0.264935	2161.833	2071.843	1.036836	2116.024	3087.157	398.3184	-0.5623
75	80	6500	2116.586	0.015045	0.767746	0.752701	3250	1247.587	3186.314	1199.171	0.650012	37.24294	354.0343	354.0343	429.6522	21%	15.78011	0.275415	15.24811	0.26613	2166.026	2067.747	1.036687	2116.001	3072.983	337.0824	-0.58542
75	90	6500	2116.586	0.016933	0.767746	0.750813	3250	1247.587	3178.321	1193.162	0.649413	37.20865	382.1649	382.1649	468.2852	23%	15.84871	0.276612	15.31671	0.267327	2170.229	2063.648	1.036539	2115.982	3058.918	289.2845	-0.60425
75	100	6500	2116.586	0.018823	0.767746	0.748923	3250	1247.587	3170.32	1187.162	0.648814	37.17429	410.0793	410.0793	506.9203	24%	15.91743	0.277811	15.38543	0.268526	2174.442	2059.546	1.036392	2115.968	3044.96	251.2413	-0.61878
75	110	6500	2116.586	0.020714	0.767746	0.747031	3250	1247.587	3162.312	1181.173	0.648213	37.13986	437.7799	437.7799	545.5577	25%	15.98627	0.279013	15.45427	0.269728	2178.666	2055.442	1.036246	2115.957	3031.11	220.4525	-0.62901
75	120	6500	2116.586	0.022608	0.767746	0.745138	3250	1247.587	3154.297	1175.193	0.647611	37.10538	465.2689	465.2689	584.1974	26%	16.05524	0.280217	15.52324	0.270932	2182.901	2051.335	1.036102	2115.952	3017.366	195.1725	-0.63494
75	130	6500	2116.586	0.024503	0.767746	0.743243	3250	1247.587	3146.274	1169.222	0.647008	37.07083	492.5485	492.5485	622.8397	26%	16.12434	0.281423	15.59234	0.272138	2187.147	2047.224	1.035958	2115.95	3003.726	174.1521	-0.63655
75	140	6500	2116.586	0.0264	0.767746	0.741346	3250	1247.587	3138.244	1163.262	0.646404	37.03622	519.6209	519.6209	661.4848	27%	16.19356	0.282631	15.66156	0.273346	2191.403	2043.111	1.035816	2115.953	2990.19	156.4781	-0.63385
75	150	6500	2116.586	0.028299	0.767746	0.739447	3250	1247.587	3130.207	1157.311	0.645799	37.00154	546.4882	546.4882	700.1328	28%	16.26291	0.283841	15.73091	0.274556	2195.67	2038.995	1.035674	2115.96	2976.756	141.4703	-0.62682

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
75	160	6500	2116.586	0.030199	0.767746	0.737547	3250	1247.587	3122.163	1151.37	0.645192	36.96681	573.1526	573.1526	738.7839	29%	16.33239	0.285054	15.80039	0.275769	2199.948	2034.876	1.035534	2115.971	2963.424	128.6134	-0.61547
75	170	6500	2116.586	0.032101	0.767746	0.735645	3250	1247.587	3114.111	1145.439	0.644585	36.932	599.6161	599.6161	777.4383	30%	16.40199	0.286269	15.86999	0.276984	2204.236	2030.754	1.035395	2115.987	2950.192	117.5114	-0.59978
75	180	6500	2116.586	0.034005	0.767746	0.733741	3250	1247.587	3106.051	1139.518	0.643977	36.89714	625.8809	625.8809	816.0961	30%	16.47172	0.287486	15.93972	0.278201	2208.536	2026.629	1.035257	2116.007	2937.06	107.8557	-0.57975
75	190	6500	2116.586	0.03591	0.767746	0.731835	3250	1247.587	3097.985	1133.607	0.643367	36.86221	651.949	651.949	854.7575	31%	16.54158	0.288705	16.00958	0.27942	2212.847	2022.5	1.035119	2116.031	2924.026	99.403	-0.55538
75	200	6500	2116.586	0.037818	0.767746	0.729928	3250	1247.587	3089.911	1127.706	0.642756	36.82722	677.8223	677.8223	893.4227	32%	16.61157	0.289927	16.07957	0.280641	2217.168	2018.369	1.034983	2116.06	2911.089	91.95916	-0.52665
75	210	6500	2116.586	0.039727	0.767746	0.728019	3250	1247.587	3081.829	1121.815	0.642144	36.79216	703.5029	703.5029	932.0918	32%	16.68168	0.29115	16.14968	0.281865	2221.501	2014.235	1.034848	2116.093	2898.249	85.36797	-0.49357
75	220	6500	2116.586	0.041638	0.767746	0.726108	3250	1247.587	3073.74	1115.934	0.641531	36.75704	728.9927	728.9927	970.7651	33%	16.75192	0.292376	16.21992	0.283091	2225.845	2010.097	1.034714	2116.13	2885.504	79.50242	-0.45612
75	230	6500	2116.586	0.04355	0.767746	0.724195	3250	1247.587	3065.644	1110.063	0.640917	36.72185	754.2937	754.2937	1009.443	34%	16.8223	0.293604	16.2903	0.284319	2230.2	2005.956	1.034581	2116.172	2872.853	74.25843	-0.41431
75	240	6500	2116.586	0.045465	0.767746	0.722281	3250	1247.587	3057.54	1104.202	0.640302	36.6866	779.4077	779.4077	1048.125	34%	16.8928	0.294835	16.3608	0.28555	2234.566	2001.812	1.034449	2116.218	2860.296	69.55003	-0.36811
75	40	7000	2279.401	0.006971	0.767746	0.760774	3500	1343.555	3468.219	1319.266	0.652565	37.38923	248.7386	248.7386	284.417	14%	15.48754	0.270309	14.95554	0.261023	2313.371	2245.688	1.037334	2278.91	3375.631	791.9719	-0.49127
75	50	7000	2279.401	0.008718	0.767746	0.759028	3500	1343.555	3460.257	1313.215	0.652014	37.35763	277.83	277.83	323.043	16%	15.55074	0.271412	15.01874	0.262126	2317.529	2241.601	1.037192	2278.872	3361.085	634.8014	-0.52861
75	60	7000	2279.401	0.010466	0.767746	0.75728	3500	1343.555	3452.288	1307.174	0.651461	37.32598	306.7112	306.7112	361.6703	18%	15.61404	0.272516	15.08204	0.263231	2321.697	2237.512	1.037051	2278.839	3346.644	520.8791	-0.56198
75	70	7000	2279.401	0.012215	0.767746	0.75553	3500	1343.555	3444.313	1301.141	0.650908	37.29427	335.3842	335.3842	400.299	19%	15.67745	0.273623	15.14545	0.264338	2325.874	2233.42	1.036911	2278.809	3332.308	435.6231	-0.59137
75	80	7000	2279.401	0.013966	0.767746	0.753779	3500	1343.555	3436.33	1295.117	0.650354	37.26252	363.8511	363.8511	438.9291	21%	15.74097	0.274732	15.20897	0.265447	2330.061	2229.325	1.036772	2278.784	3318.074	370.1252	-0.61679
75	90	7000	2279.401	0.015719	0.767746	0.752027	3500	1343.555	3428.341	1289.103	0.649798	37.2307	392.114	392.114	477.561	22%	15.80459	0.275842	15.27259	0.266557	2334.258	2225.228	1.036634	2278.763	3303.943	318.6921	-0.63822
75	100	7000	2279.401	0.017473	0.767746	0.750273	3500	1343.555	3420.346	1283.097	0.649242	37.19884	420.1748	420.1748	516.1947	23%	15.86833	0.276955	15.33633	0.267669	2338.465	2221.129	1.036497	2278.745	3289.913	277.5466	-0.65567
75	110	7000	2279.401	0.019228	0.767746	0.748518	3500	1343.555	3412.343	1277.1	0.648685	37.16692	448.0356	448.0356	554.8303	24%	15.93217	0.278069	15.40017	0.268784	2342.681	2217.026	1.036361	2278.732	3275.982	244.1018	-0.66913
75	120	7000	2279.401	0.020985	0.767746	0.746761	3500	1343.555	3404.334	1271.112	0.648127	37.13494	475.6982	475.6982	593.468	25%	15.99612	0.279185	15.46412	0.2699	2346.907	2212.921	1.036226	2278.722	3262.151	216.5374	-0.67859
75	130	7000	2279.401	0.022743	0.767746	0.745002	3500	1343.555	3396.318	1265.133	0.647568	37.10291	503.1647	503.1647	632.1081	26%	16.06017	0.280303	15.52817	0.271018	2351.143	2208.814	1.036091	2278.717	3248.418	193.5423	-0.68406
75	140	7000	2279.401	0.024503	0.767746	0.743243	3500	1343.555	3388.295	1259.163	0.647008	37.07083	530.4368	530.4368	670.7505	26%	16.12434	0.281423	15.59234	0.272138	2355.389	2204.703	1.035958	2278.715	3234.782	174.1521	-0.68552
75	150	7000	2279.401	0.026264	0.767746	0.741481	3500	1343.555	3380.266	1253.202	0.646447	37.03869	557.5166	557.5166	709.3955	27%	16.18861	0.282545	15.65661	0.273259	2359.645	2200.59	1.035826	2278.718	3221.242	157.6451	-0.68297
75	160	7000	2279.401	0.028027	0.767746	0.739718	3500	1343.555	3372.229	1247.25	0.645885	37.0065	584.4057	584.4057	748.0431	28%	16.253	0.283668	15.721	0.274383	2363.91	2196.474	1.035694	2278.724	3207.797	143.472	-0.6764
75	170	7000	2279.401	0.029792	0.767746	0.737954	3500	1343.555	3364.186	1241.307	0.645322	36.97426	611.1062	611.1062	786.6937	29%	16.31749	0.284794	15.78549	0.275509	2368.186	2192.356	1.035564	2278.735	3194.447	131.2087	-0.66582
75	180	7000	2279.401	0.031557	0.767746	0.736188	3500	1343.555	3356.136	1235.374	0.644759	36.94195	637.6198	637.6198	825.3472	29%	16.38209	0.285921	15.85009	0.276636	2372.472	2188.234	1.035435	2278.75	3181.19	120.5237	-0.65122
75	190	7000	2279.401	0.033325	0.767746	0.734421	3500	1343.555	3348.079	1229.45	0.644194	36.9096	663.9482	663.9482	864.0039	30%	16.4468	0.287051	15.9148	0.277766	2376.768	2184.11	1.035306	2278.768	3168.026	111.1547	-0.63259
75	200	7000	2279.401	0.035094	0.767746	0.732652	3500	1343.555	3340.015	1223.534	0.643628	36.87719	690.0933	690.0933	902.6639	31%	16.51162	0.288182	15.97962	0.278897	2381.075	2179.983	1.035178	2278.791	3154.953	102.8917	-0.60992
75	210	7000	2279.401	0.036864	0.767746	0.730882	3500	1343.555	3331.945	1217.629	0.643062	36.84472	716.0568	716.0568	941.3273	31%	16.57656	0.289316	16.04456	0.28003	2385.391	2175.853	1.035051	2278.818	3141.972	95.56551	-0.58322
75	220	7000	2279.401	0.038636	0.767746	0.72911	3500	1343.555	3323.867	1211.732	0.642494	36.8122	741.8403	741.8403	979.9943	32%	16.6416	0.290451	16.1096	0.281166	2389.718	2171.72	1.034925	2278.848	3129.08	89.03796	-0.55247
75	230	7000	2279.401	0.040409	0.767746	0.727336	3500	1343.555	3315.783	1205.845	0.641926	36.77962	767.4458	767.4458	1018.665	33%	16.70675	0.291588	16.17475	0.282303	2394.055	2167.585	1.0348	2278.883	3116.277	83.19567	-0.51767
75	240	7000	2279.401	0.042184	0.767746	0.725562	3500	1343.555	3307.692	1199.967	0.641356	36.74699	792.8746	792.8746	1057.34	33%	16.77202	0.292727	16.24002	0.283442	2398.402	2163.446	1.034676	2278.922	3103.563	77.94478	-0.47882
75	40	7500	2442.215	0.006506	0.767746	0.76124	3750	1439.523	3718.222	1415.229	0.652712	37.39765	258.1555	258.1555	293.6967	14%	15.47071	0.270015	14.93871	0.26073	2477.426	2407.262	1.037372	2441.7	3620.922	844.0339	-0.51498
75	50	7500	2442.215	0.008136	0.767746	0.75961	3750	1439.523	3710.262	1409.176	0.652198	37.36817	287.3103	287.3103	332.3224	16%	15.52966	0.271044	14.99766	0.261759	2481.581	2403.176	1.03724	2441.662	3606.345	681.4281	-0.5535
75	60	7500	2442.215	0.009767	0.767746	0.757979	3750	1439.523	3702.296	1403.132	0.651682	37.33865	316.2683	316.2683	370.9492	17%	15.58871	0.272074	15.05671	0.262789	2485.745	2399.087	1.037108	2441.627	3591.866	562.3557	-0.58833
75	70	7500	2442.215	0.011399	0.767746	0.756347	3750	1439.523	3694.324	1397.095	0.651166	37.30908	345.0313	345.0313	409.5772	19%	15.64785	0.273106	15.11585	0.263821	2489.918	2394.996	1.036976	2441.596	3577.484	472.504	-0.61945
75	80	7500	2442.215	0.013032	0.767746	0.754713	3750	1439.523	3686.345	1391.067	0.650649	37.27946	373.601	373.601	448.2066	20%	15.70708	0.27414	15.17508	0.264855	2494.1	2390.903	1.036846	2441.568	3563.199	403.0013	-0.64685
75	90	7500	2442.215	0.014667	0.767746	0.753079	3750	1439.523	3678.36	1385.047	0.650132	37.2498	401.9793	401.9793	486.8375	21%	15.76641	0.275176	15.23441	0.265891	2498.292	2386.807	1.036717	2441.545	3549.01	348.1089	-0.67054
75	100	7500	2442.215	0.016303	0.767746	0.751442	3750	1439.523	3670.368	1379.035	0.649613	37.22009	430.1678	430.1678	525.47	22%	15.82583	0.276213	15.29383	0.266928	2502.492	2382.709	1.036588	2441.525	3534.916	303.9811	-0.69052
75	110	7500	2442.215	0.017941	0.767746	0.749805	3750	1439.523	3662.37	1373.032	0.649094	37.19033	458.1684	458.1684	564.1042	23%	15.88534	0.277251	15.35334	0.267966	2506.701	2378.609	1.03646	2441.508	3520.916	267.9614	-0.70677
75	120	7500	2442.215	0.019579	0.767746	0.748166	3750	1439.523	3654.366	1367.037	0.648574	37.16053	485.9828	485.9828	602.7404	24%	15.94495	0.278292	15.41295	0.269007	2510.92	2374.506	1.036334	2441.496	3507.009	238.1666	-0.71929
75	130	7500	2442.215	0.021219	0.767746	0.746526	3750	1439.523	3646.356	1361.05	0.648053	37.13067	513.6126	513.6126	641.3785	25%	16.00465	0.279334	15.47265	0.270049	2515.148	2370.4	1.036208	2441.487	3493.194	213.2315	-0.72809
75	140	7500	2442.215	0.022861	0.767746	0.744885	3750	1439.523	3638.339	1355.072	0.647531	37.10078	541.0595	541.0595	680.0187	26%	16.06445	0.280378	15.53245	0.271092	2519.385	2366.292	1.036083	2441.482	3479.47	192.1465	-0.73315
75	150	7500	2442.215	0.024503	0.767746	0.743243	3750	1439.523	3630.316	1349.103	0.647008	37.07083	568.3252	568.3252	718.6612	26%	16.12434	0.281423	15.59234	0.272138	2523.631	2362.182	1.035958	2441.481	3465.837	174.1521	-0.73448
75	160	7500	2442.215	0.026147	0.767746	0.741599	3750	1439.523	3622.287	1343.142	0.646485	37.04084	595.4113	595.4113	757.3061	27%	16.18432	0.28247	15.65232	0.273185	2527.886	2358.069	1.035835	2441.483	3452.294	158.6677	-0.73207
75	170	7500	2442.215	0.027792	0.767746	0.739953	3750	1439.523	3614.251	1337.189	0.64596	37.0108	622.3194	622.3194	795.9535	28%	16.24441	0.283518	15.71241	0.274233	2532.151	2353.954	1.035712	2441.489	3438.84	145.2432	-0.7259
75	180	7500	2442.215	0.029439	0.767746	0.738307	3750	1439.523	3606.209	1331.245	0.645435	36.98071	649.0512	649.0512	834.6036	29%	16.30458	0.284569	15.77258	0.275283	2536.425	2349.835	1.03559	2441.499	3425.474	133.5256	-0.71599
75	190	7500	2442.215	0.031086	0.767746	0.736659	3750	1439.523	3598.161	1325.309	0.644909	36.95057	675.6082	675.6082	873.2564	29%	16.36485	0.285621	15.83285	0.276335	2540.709	2345.715	1.035469	2441.513	3412.196	123.2346	-0.70233
75	200	7500	2442.215	0.032735	0.767746	0.73501	3750	1439.523	3590.106	1319.382	0.644382	36.92039	701.992	701.992	911.9121	30%	16.42522	0.286674	15.89322	0.277389	2545.002	2341.591	1.035349	2441.53	3399.004	114.1454	-0.68491
75	210	7500	2442.215	0.034386	0.767746	0.73336	3750	1439.523	3582.045	1313.464	0.643855	36.89016	728.2041	728.2041	950.5709	31%	16.48568	0.287729	15.95368	0.278444	2549.304	2337.465	1.035229	2441.551	3385.898	106.0758	-0.66372
75	220	7500	2442.215	0.036038	0.767746	0.731708	3750	1439.523	3573.977	1307.554	0.643326	36.85988	754.246	754.246	989.2328	31%	16.54624	0.288786	16.01424	0.279501	2553.616	2333.337	1.03511	2441.576	3372.877	98.87727	-0.63877
75	230	7500	2442.215	0.037691	0.767746	0.730055	3750	1439.523	3565.903	1301.653	0.642797	36.82955	780.1193	780.1193	1027.898	32%	16.6069	0.289845	16.0749	0.28056	2557.938	2329.205	1.034992	2441.605	3359.94	92.42734	-0.61004
75	240	7500	2442.215	0.039345	0.767746	0.728401	3750	1439.523	3557.822	1295.76	0.642267	36.79918	805.8255	805.8255	1066.567	32%	16.66765	0.290905	16.13565	0.28162	2562.269	2325.071	1.034875	2441.638	3347.087	86.62446	-0.57754
75	40	8000	2605.03	0.006099	0.767746	0.761647	4000	1535.491	3968.226	1511.193	0.652841	37.40501	267.5581	267.5581	302.9764	13%	15.45598	0.269758	14.92398	0.260473	2641.481	2568.835	1.037406	2604.491	3866.221	894.0126	-0.53842
75	50	8000	2605.03	0.007626	0.767746	0.760119	4000	1535.491	3960.267	1505.138	0.652358	37.37739	296.7687	296.7687	341.6018	15%	15.51123	0.270722	14.97923	0.261437	2645.633	2564.75	1.037281	2604.452	3851.616	726.6809	-0.57799
75	60	8000	2605.03	0.009155	0.767746	0.758591	4000	1535.491	3952.303	1499.091	0.651876	37.34972	325.7942	325.7942	380.2283	17%	15.56655	0.271688	15.03455	0.262402	2649.795	2560.662	1.037157	2604.415	3837.103	602.9667	-0.61408
75	70	8000	2605.03	0.010684	0.767746	0.757061	4000	1535.491	3944.333	1493.051	0.651392	37.32202	354.6362	354.6362	418.8558	18%	15.62196	0.272655	15.08996	0.26337	2653.964	2556.572	1.037034	2604.383	3822.682	508.8783	-0.64671
75	80	8000	2605.03	0.012215	0.767746	0.75553	4000	1535.491	3936.357	1487.019	0.650908	37.29427	383.2962	383.2962	457.4845	19%	15.67745	0.273623	15.14545	0.264338	2658.142	2552.48	1.036911	2604.354	3808.352	435.6231	-0.67585
75	90	8000	2605.03	0.013747	0.767746	0.753998	4000	1535.491	3928.375	1480.994	0.650423	37.26649	411.776	411.776	496.1146	20%	15.73302	0.274593	15.20102	0.265308	2662.329	2548.386	1.036789	2604.328	3794.112	377.4487	-0.70152
75	100	8000	2605.03	0.01528	0.767746	0.752465	4000	1535.491	3920.388	1474.978	0.649937	37.23866	440.0769	440.0769	534.7461	22%	15.78868	0.275564	15.25668	0.266279	2666.523	2544.289	1.036668	2604.306	3779.962	330.4629	-0.7237
75	110	8000	2605.03	0.016815	0.767746	0.750931	4000	1535.491	3912.394	1468.969	0.649451	37.21079	468.2007	468.2007	573.3792	22%	15.84441	0.276537	15.31241	0.267252	2670.727	2540.19	1.036548	2604.287	3765.9	291.955	-0.7424
75	120	8000	2605.03	0.01835	0.767746	0.749395	4000	1535.491	3904.395	1462.968	0.648964	37.18288	496.1487	496.1487	612.014	23%	15.90023	0.277511	15.36823	0.268226	2674.939	2536.089	1.036429	2604.272	3751.926	259.9898	-0.7576
75	130	8000	2605.03	0.019887	0.767746	0.747859	4000	1535.491	3896.389	1456.975	0.648476	37.15493	523.9225	523.9225	650.6505	24%	15.95614	0.278487	15.42414	0.269202	2679.159	2531.985	1.03631	2604.26	3738.039	233.1556	-0.76931
75	140	8000	2605.03	0.021424	0.767746	0.746321	4000	1535.491	3888.378	1450.99	0.647987	37.12694	551.5236	551.5236	689.2889	25%	16.01212	0.279464	15.48012	0.270179	2683.389	2527.88	1.036192	2604.252	3724.238	210.4029	-0.77752

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
75	150	8000	2605.03	0.022963	0.767746	0.744782	4000	1535.491	3880.361	1445.012	0.647498	37.09891	578.9535	578.9535	727.9294	26%	16.06819	0.280443	15.53619	0.271158	2687.626	2523.771	1.036075	2604.247	3710.523	190.9381	-0.78224
75	160	8000	2605.03	0.024503	0.767746	0.743243	4000	1535.491	3872.337	1439.043	0.647008	37.07083	606.2135	606.2135	766.572	26%	16.12434	0.281423	15.59234	0.272138	2691.873	2519.661	1.035958	2604.246	3696.893	174.1521	-0.78345
75	170	8000	2605.03	0.026044	0.767746	0.741701	4000	1535.491	3864.308	1433.081	0.646517	37.04271	633.3052	633.3052	805.2168	27%	16.18057	0.282404	15.64857	0.273119	2696.128	2515.548	1.035842	2604.248	3683.347	159.571	-0.78115
75	180	8000	2605.03	0.027586	0.767746	0.740159	4000	1535.491	3856.273	1427.128	0.646026	37.01455	660.23	660.23	843.8639	28%	16.23689	0.283387	15.70489	0.274102	2700.392	2511.433	1.035727	2604.254	3669.885	146.8215	-0.77534
75	190	8000	2605.03	0.02913	0.767746	0.738616	4000	1535.491	3848.232	1421.183	0.645534	36.98635	686.9892	686.9892	882.5136	28%	16.29329	0.284372	15.76129	0.275086	2704.665	2507.315	1.035613	2604.264	3656.505	135.6064	-0.76601
75	200	8000	2605.03	0.030674	0.767746	0.737071	4000	1535.491	3840.185	1415.245	0.645041	36.95811	713.5843	713.5843	921.1658	29%	16.34978	0.285357	15.81778	0.276072	2708.946	2503.195	1.035499	2604.276	3643.208	125.6867	-0.75317
75	210	8000	2605.03	0.03222	0.767746	0.735526	4000	1535.491	3832.132	1409.316	0.644547	36.92983	740.0166	740.0166	959.8207	30%	16.40635	0.286345	15.87435	0.27706	2713.237	2499.072	1.035386	2604.293	3629.992	116.8684	-0.7368
75	220	8000	2605.03	0.033767	0.767746	0.733979	4000	1535.491	3824.073	1403.394	0.644053	36.9015	766.2875	766.2875	998.4784	30%	16.463	0.287334	15.931	0.278048	2717.536	2494.947	1.035274	2604.313	3616.856	108.9925	-0.71691
75	230	8000	2605.03	0.035315	0.767746	0.732431	4000	1535.491	3816.008	1397.481	0.643558	36.87313	792.3984	792.3984	1037.139	31%	16.51974	0.288324	15.98774	0.279039	2721.844	2490.82	1.035162	2604.336	3603.801	101.9278	-0.69349
75	240	8000	2605.03	0.036864	0.767746	0.730882	4000	1535.491	3807.937	1391.576	0.643062	36.84472	818.3506	818.3506	1075.803	31%	16.57656	0.289316	16.04456	0.28003	2726.161	2486.689	1.035051	2604.363	3590.825	95.56551	-0.66653
75	40	8500	2767.844	0.005739	0.767746	0.762006	4250	1631.459	4218.228	1607.158	0.652954	37.4115	276.9491	276.9491	312.2562	13%	15.44299	0.269531	14.91099	0.260246	2805.536	2730.409	1.037435	2767.282	4111.525	941.9717	-0.56164
75	50	8500	2767.844	0.007177	0.767746	0.760569	4250	1631.459	4210.272	1601.101	0.6525	37.38552	306.2089	306.2089	350.8814	15%	15.49497	0.270438	14.96297	0.261153	2809.687	2726.324	1.037318	2767.242	4096.896	770.5523	-0.60213
75	60	8500	2767.844	0.008615	0.767746	0.75913	4250	1631.459	4202.309	1595.051	0.652046	37.35949	335.2941	335.2941	389.5075	16%	15.54702	0.271347	15.01502	0.262061	2813.845	2722.237	1.037201	2767.205	4082.353	642.667	-0.63935
75	70	8500	2767.844	0.010054	0.767746	0.757691	4250	1631.459	4194.342	1589.008	0.651591	37.33343	364.2061	364.2061	428.1346	18%	15.59914	0.272256	15.06714	0.262971	2818.012	2718.147	1.037084	2767.171	4067.897	544.6826	-0.6733
75	80	8500	2767.844	0.011495	0.767746	0.756251	4250	1631.459	4186.368	1582.972	0.651136	37.30734	392.9462	392.9462	466.7628	19%	15.65133	0.273167	15.11933	0.263882	2822.186	2714.056	1.036969	2767.14	4053.527	467.9201	-0.70398
75	90	8500	2767.844	0.012936	0.767746	0.754809	4250	1631.459	4178.389	1576.944	0.65068	37.2812	421.5159	421.5159	505.3922	20%	15.70359	0.274079	15.17159	0.264794	2826.368	2709.963	1.036854	2767.112	4039.242	406.6399	-0.73139
75	100	8500	2767.844	0.014378	0.767746	0.753367	4250	1631.459	4170.405	1570.923	0.650223	37.25503	449.9165	449.9165	544.0229	21%	15.75593	0.274993	15.22393	0.265708	2830.558	2705.868	1.036739	2767.088	4025.042	356.9225	-0.75552
75	110	8500	2767.844	0.015822	0.767746	0.751924	4250	1631.459	4162.415	1564.909	0.649766	37.22883	478.1496	478.1496	582.655	22%	15.80834	0.275908	15.27634	0.266622	2834.756	2701.77	1.036626	2767.068	4010.925	316.0169	-0.77637
75	120	8500	2767.844	0.017266	0.767746	0.750479	4250	1631.459	4154.42	1558.903	0.649308	37.20259	506.2163	506.2163	621.2886	23%	15.86082	0.276824	15.32882	0.267538	2838.963	2697.671	1.036513	2767.05	3996.892	281.9458	-0.79393
75	130	8500	2767.844	0.018712	0.767746	0.749034	4250	1631.459	4146.419	1552.904	0.648849	37.17631	534.118	534.118	659.9238	24%	15.91338	0.277741	15.38138	0.268456	2843.177	2693.569	1.036401	2767.036	3982.941	253.2581	-0.80821
75	140	8500	2767.844	0.020158	0.767746	0.747588	4250	1631.459	4138.412	1546.913	0.64839	37.15	561.8562	561.8562	698.5607	24%	15.96601	0.278659	15.43401	0.269374	2847.399	2689.465	1.036289	2767.025	3969.072	228.8693	-0.8192
75	150	8500	2767.844	0.021605	0.767746	0.74614	4250	1631.459	4130.4	1540.929	0.64793	37.12364	589.432	589.432	737.1994	25%	16.01871	0.279579	15.48671	0.270294	2851.63	2685.359	1.036178	2767.017	3955.284	207.9555	-0.8269
75	160	8500	2767.844	0.023054	0.767746	0.744692	4250	1631.459	4122.382	1534.952	0.647469	37.09726	616.8468	616.8468	775.8401	26%	16.07149	0.2805	15.53949	0.271215	2855.868	2681.25	1.036068	2767.013	3941.577	189.8818	-0.83131
75	170	8500	2767.844	0.024503	0.767746	0.743243	4250	1631.459	4114.359	1528.983	0.647008	37.07083	644.1018	644.1018	814.4827	26%	16.12434	0.281423	15.59234	0.272138	2860.115	2677.14	1.035958	2767.011	3927.949	174.1521	-0.83241
75	180	8500	2767.844	0.025953	0.767746	0.741792	4250	1631.459	4106.33	1523.021	0.646546	37.04437	671.1985	671.1985	853.1275	27%	16.17726	0.282346	15.64526	0.273061	2864.37	2673.027	1.035849	2767.014	3914.401	160.3747	-0.83022
75	190	8500	2767.844	0.027405	0.767746	0.740341	4250	1631.459	4098.295	1517.067	0.646084	37.01787	698.1379	698.1379	891.7744	28%	16.23026	0.283271	15.69826	0.273986	2868.633	2668.912	1.035741	2767.019	3900.931	148.2366	-0.82472
75	200	8500	2767.844	0.028857	0.767746	0.738888	4250	1631.459	4090.255	1511.121	0.645621	36.99133	724.9214	724.9214	930.4237	28%	16.28333	0.284198	15.75133	0.274913	2872.904	2664.794	1.035633	2767.028	3887.539	137.4852	-0.81591
75	210	8500	2767.844	0.030311	0.767746	0.737435	4250	1631.459	4082.209	1505.181	0.645157	36.96476	751.5501	751.5501	969.0753	29%	16.33648	0.285125	15.80448	0.27584	2877.184	2660.675	1.035526	2767.04	3874.225	127.9151	-0.80379
75	220	8500	2767.844	0.031765	0.767746	0.73598	4250	1631.459	4074.157	1499.25	0.644692	36.93815	778.0254	778.0254	1007.729	30%	16.3897	0.286054	15.8577	0.276769	2881.472	2656.553	1.035419	2767.056	3860.987	119.3577	-0.78836
75	230	8500	2767.844	0.033221	0.767746	0.734525	4250	1631.459	4066.1	1493.326	0.644227	36.9115	804.3484	804.3484	1046.386	30%	16.44299	0.286984	15.91099	0.277699	2885.769	2652.429	1.035313	2767.074	3847.826	111.6733	-0.76961
75	240	8500	2767.844	0.034677	0.767746	0.733068	4250	1631.459	4058.038	1487.409	0.643762	36.88482	830.5203	830.5203	1085.046	31%	16.49636	0.287916	15.96436	0.278631	2890.073	2648.302	1.035208	2767.096	3834.74	104.746	-0.74754
75	40	9000	2930.658	0.00542	0.767746	0.762325	4500	1727.428	4468.231	1703.123	0.653055	37.41727	286.3303	286.3303	321.5361	12%	15.43145	0.26933	14.89945	0.260045	2969.592	2891.982	1.037462	2930.074	4356.835	987.985	-0.58468
75	50	9000	2930.658	0.006777	0.767746	0.760968	4500	1727.428	4460.275	1697.064	0.652626	37.39274	315.634	315.634	360.1611	14%	15.48052	0.270186	14.94852	0.260901	2973.741	2887.897	1.03735	2930.032	4342.183	813.0503	-0.62599
75	60	9000	2930.658	0.008136	0.767746	0.75961	4500	1727.428	4452.315	1691.012	0.652198	37.36817	344.7724	344.7724	398.7869	16%	15.52966	0.271044	14.99766	0.261759	2977.897	2883.811	1.03724	2929.994	4327.614	681.4281	-0.6642
75	70	9000	2930.658	0.009495	0.767746	0.758251	4500	1727.428	4444.349	1684.966	0.651768	37.34357	373.7467	373.7467	437.4136	17%	15.57886	0.271902	15.04686	0.262617	2982.061	2879.722	1.037129	2929.959	4313.127	579.8695	-0.69934
75	80	9000	2930.658	0.010855	0.767746	0.756891	4500	1727.428	4436.378	1678.928	0.651338	37.31894	402.5583	402.5583	476.0413	18%	15.62812	0.272762	15.09612	0.263477	2986.231	2875.632	1.03702	2929.927	4298.721	499.836	-0.73138
75	90	9000	2930.658	0.012215	0.767746	0.75553	4500	1727.428	4428.402	1672.896	0.650908	37.29427	431.2083	431.2083	514.6701	19%	15.67745	0.273623	15.14545	0.264338	2990.41	2871.54	1.036911	2929.898	4284.396	435.6231	-0.76033
75	100	9000	2930.658	0.013577	0.767746	0.754169	4500	1727.428	4420.42	1666.871	0.650477	37.26958	459.698	459.698	553.3001	20%	15.72684	0.274485	15.19484	0.2652	2994.596	2867.446	1.036803	2929.872	4270.151	383.3009	-0.78619
75	110	9000	2930.658	0.01494	0.767746	0.752806	4500	1727.428	4412.434	1660.853	0.650045	37.24485	488.0286	488.0286	591.9314	21%	15.7763	0.275348	15.2443	0.266063	2998.789	2863.349	1.036695	2929.849	4255.986	340.0905	-0.80896
75	120	9000	2930.658	0.016303	0.767746	0.751442	4500	1727.428	4404.442	1654.842	0.649613	37.22009	516.2014	516.2014	630.564	22%	15.82583	0.276213	15.29383	0.266928	3002.99	2859.251	1.036588	2929.83	4241.899	303.9811	-0.82862
75	130	9000	2930.658	0.017668	0.767746	0.750078	4500	1727.428	4396.445	1648.838	0.64918	37.19529	544.2176	544.2176	669.1981	23%	15.87542	0.277078	15.34342	0.267793	3007.199	2855.151	1.036482	2929.813	4227.891	273.489	-0.84518
75	140	9000	2930.658	0.019033	0.767746	0.748713	4500	1727.428	4388.442	1642.841	0.648747	37.17047	572.0783	572.0783	707.8337	24%	15.92507	0.277945	15.39307	0.26866	3011.415	2851.048	1.036376	2929.8	4213.961	247.4994	-0.85864
75	150	9000	2930.658	0.020399	0.767746	0.747347	4500	1727.428	4380.434	1636.851	0.648313	37.14561	599.7848	599.7848	746.471	24%	15.97479	0.278813	15.44279	0.269527	3015.639	2846.944	1.036271	2929.789	4200.108	225.1615	-0.86899
75	160	9000	2930.658	0.021766	0.767746	0.745979	4500	1727.428	4372.421	1630.868	0.647879	37.12071	627.3381	627.3381	785.11	25%	16.02457	0.279682	15.49257	0.270396	3019.871	2842.838	1.036166	2929.782	4186.331	205.8172	-0.87623
75	170	9000	2930.658	0.023134	0.767746	0.744611	4500	1727.428	4364.403	1624.892	0.647444	37.09579	654.7395	654.7395	823.7508	26%	16.07442	0.280552	15.54242	0.271266	3024.11	2838.729	1.036062	2929.778	4172.63	188.9504	-0.88036
75	180	9000	2930.658	0.024503	0.767746	0.743243	4500	1727.428	4356.38	1618.923	0.647008	37.07083	681.9902	681.9902	862.3935	26%	16.12434	0.281423	15.59234	0.272138	3028.357	2834.618	1.035958	2929.777	4159.005	174.1521	-0.88138
75	190	9000	2930.658	0.025873	0.767746	0.741873	4500	1727.428	4348.351	1612.961	0.646572	37.04584	709.0912	709.0912	901.0382	27%	16.17432	0.282295	15.64232	0.27301	3032.612	2830.506	1.035855	2929.779	4145.454	161.0945	-0.87927
75	200	9000	2930.658	0.027244	0.767746	0.740502	4500	1727.428	4340.317	1607.007	0.646135	37.02082	736.0437	736.0437	939.6849	28%	16.22437	0.283169	15.69237	0.273883	3036.874	2826.391	1.035753	2929.784	4131.978	149.5126	-0.87405
75	210	9000	2930.658	0.028615	0.767746	0.73913	4500	1727.428	4332.277	1601.059	0.645698	36.99576	762.8487	762.8487	978.3338	28%	16.27448	0.284043	15.74248	0.274758	3041.144	2822.274	1.035651	2929.793	4118.576	139.19	-0.8657
75	220	9000	2930.658	0.029988	0.767746	0.737758	4500	1727.428	4324.232	1595.118	0.64526	36.97067	789.5075	789.5075	1016.985	29%	16.32466	0.284919	15.79266	0.275634	3045.423	2818.155	1.03555	2929.804	4105.246	129.9489	-0.85423
75	230	9000	2930.658	0.031361	0.767746	0.736384	4500	1727.428	4316.182	1589.185	0.644821	36.94555	816.021	816.021	1055.639	29%	16.37491	0.285796	15.84291	0.276511	3049.708	2814.033	1.035449	2929.819	4091.99	121.6417	-0.83962
75	240	9000	2930.658	0.032735	0.767746	0.73501	4500	1727.428	4308.127	1583.258	0.644382	36.92039	842.3904	842.3904	1094.295	30%	16.42522	0.286674	15.89322	0.277389	3054.002	2809.91	1.035349	2929.836	4078.805	114.1454	-0.82189
75	40	9500	3093.473	0.005135	0.767746	0.762611	4750	1823.396	4718.233	1799.088	0.653145	37.42243	295.7032	295.7032	330.816	12%	15.42113	0.26915	14.88913	0.259864	3133.649	3053.555	1.037485	3092.865	4602.148	1032.131	-0.60757
75	50	9500	3093.473	0.00642	0.767746	0.761325	4750	1823.396	4710.279	1793.028	0.652739	37.3992	325.0463	325.0463	369.4408	14%	15.4676	0.269961	14.9356	0.260675	3137.796	3049.471	1.03738	3092.823	4587.477	854.1945	-0.6496
75	60	9500	3093.473	0.007707	0.767746	0.760039	4750	1823.396	4702.32	1786.973	0.652333	37.37593	354.2324	354.2324	408.0663	15%	15.51414	0.270773	14.98214	0.261488	3141.95	3045.385	1.037274	3092.784	4572.884	719.2347	-0.68872
75	70	9500	3093.473	0.008994	0.767746	0.758752	4750	1823.396	4694.356	1780.926	0.651927	37.35264	383.2627	383.2627	446.6927	17%	15.56073	0.271586	15.02873	0.262301	3146.111	3041.297	1.03717	3092.748	4558.369	614.4041	-0.72491
75	80	9500	3093.473	0.010282	0.767746	0.757464	4750	1823.396	4686.387	1774.884	0.651519	37.32931	412.1383	412.1383	485.32	18%	15.60737	0.2724	15.07537	0.263115	3150.279	3037.208	1.037066	3092.714	4543.931	531.3262	-0.75817
75	90	9500	3093.473	0.011571	0.767746	0.756175	4750	1823.396	4678.413	1768.849	0.651112	37.30596	440.8604	440.8604	523.9483	19%	15.65408	0.273215	15.12208	0.26393	3154.454	3033.116	1.036963	3092.684	4529.57	464.3495	-0.78851
75	100	9500	3093.473	0.01286	0.767746	0.754885	4750	1823.396	4670.434	1762.821	0.650704	37.28258	469.4301	469.4301	562.5777	20%	15.70084	0.274031	15.16884	0.264746	3158.636	3029.023	1.03686	3092.657	4515.285	409.5485	-0.81591
75	110	9500	3093.473	0.014151	0.767746	0.753595	4750	1823.396	4662.45	1756.799	0.650295	37.25917	497.8485	497.8485	601.2083	21%	15.74766	0.274849	15.21566	0.265563	3162.825	3024.928	1.036757	3092.632	4501.076	364.1269	-0.84039
75	120	9500	3093.473	0.015442	0.767746	0.752304	4750	1823.396	4654.462	1750.784	0.649886	37.23573	526.1167	526.1167	639.8401	22%	15.79454	0.275667	15.26254	0.266382	3167.022	3020.831	1.036656	3092.611	4486.942	326.0491	-0.86193
75	130	9500	3093.473	0.016734	0.767746	0.751012	4750	1823.396	4646.468	1744.776	0.649476	37.21226	554.2358	554.2358	678.4732	22%	15.84148	0.276486	15.30948	0.267201	3171.225	3016.732	1.036554	3092.592	4472.882	293.8043	-0.88053

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
75	140	9500	3093.473	0.018027	0.767746	0.749719	4750	1823.396	4638.469	1738.774	0.649066	37.18876	582.2068	582.2068	717.1077	23%	15.88848	0.277306	15.35648	0.268021	3175.436	3012.631	1.036454	3092.576	4458.897	266.2518	-0.89619
75	150	9500	3093.473	0.01932	0.767746	0.748425	4750	1823.396	4630.466	1732.778	0.648656	37.16523	610.0309	610.0309	755.7437	24%	15.93553	0.278127	15.40353	0.268842	3179.654	3008.528	1.036354	3092.564	4444.985	242.5178	-0.90892
75	160	9500	3093.473	0.020615	0.767746	0.747131	4750	1823.396	4622.457	1726.79	0.648245	37.14168	637.7091	637.7091	794.3813	25%	15.98264	0.27895	15.45064	0.269665	3183.879	3004.423	1.036254	3092.554	4431.145	221.9229	-0.91869
75	170	9500	3093.473	0.02191	0.767746	0.745835	4750	1823.396	4614.443	1720.808	0.647833	37.11809	665.2424	665.2424	833.0205	25%	16.02982	0.279773	15.49782	0.270488	3188.112	3000.317	1.036155	3092.547	4417.379	203.933	-0.92553
75	180	9500	3093.473	0.023206	0.767746	0.744539	4750	1823.396	4606.424	1714.832	0.647421	37.09448	692.6318	692.6318	871.6615	26%	16.07705	0.280597	15.54505	0.271312	3192.352	2996.208	1.036056	3092.543	4403.684	188.1232	-0.92941
75	190	9500	3093.473	0.024503	0.767746	0.743243	4750	1823.396	4598.401	1708.863	0.647008	37.07083	719.8785	719.8785	910.3042	26%	16.12434	0.281423	15.59234	0.272138	3196.599	2992.097	1.035958	3092.542	4390.061	174.1521	-0.93034
75	200	9500	3093.473	0.025801	0.767746	0.741945	4750	1823.396	4590.372	1702.901	0.646595	37.04716	746.9834	746.9834	948.9488	27%	16.17169	0.282249	15.63969	0.272964	3200.854	2987.985	1.035861	3092.544	4376.508	161.7429	-0.92832
75	210	9500	3093.473	0.027099	0.767746	0.740646	4750	1823.396	4582.338	1696.946	0.646181	37.02345	773.9476	773.9476	987.5954	28%	16.2191	0.283077	15.6871	0.273791	3205.115	2983.87	1.035764	3092.549	4363.026	150.6691	-0.92334
75	220	9500	3093.473	0.028399	0.767746	0.739347	4750	1823.396	4574.3	1690.997	0.645767	36.99972	800.772	800.772	1026.244	28%	16.26656	0.283905	15.73456	0.27462	3209.385	2979.753	1.035667	3092.557	4349.614	140.7439	-0.91541
75	230	9500	3093.473	0.029699	0.767746	0.738047	4750	1823.396	4566.256	1685.055	0.645352	36.97595	827.4576	827.4576	1064.895	29%	16.31409	0.284735	15.78209	0.275449	3213.661	2975.634	1.035571	3092.568	4336.271	131.8122	-0.90451
75	240	9500	3093.473	0.031	0.767746	0.736746	4750	1823.396	4558.207	1679.12	0.644937	36.95216	854.0054	854.0054	1103.548	29%	16.36168	0.285565	15.82968	0.27628	3217.945	2971.513	1.035475	3092.582	4322.997	123.7445	-0.89065
75	40	10000	3256.287	0.004878	0.767746	0.762868	5000	1919.364	4968.235	1895.054	0.653226	37.42708	305.0692	305.0692	340.0959	11%	15.41184	0.268987	14.87984	0.259702	3297.706	3215.128	1.037506	3255.657	4847.465	1074.493	-0.63033
75	50	10000	3256.287	0.006099	0.767746	0.761647	5000	1919.364	4960.282	1888.992	0.652841	37.40501	334.4477	334.4477	378.7205	13%	15.45598	0.269758	14.92398	0.260473	3301.851	3211.044	1.037406	3255.614	4832.776	894.0126	-0.67302
75	60	10000	3256.287	0.007321	0.767746	0.760425	5000	1919.364	4952.324	1882.936	0.652455	37.38291	363.6768	363.6768	417.3459	15%	15.50017	0.270529	14.96817	0.261244	3306.003	3206.959	1.037306	3255.574	4818.162	756.0817	-0.71294
75	70	10000	3256.287	0.008543	0.767746	0.759202	5000	1919.364	4944.362	1876.886	0.652069	37.36079	392.7576	392.7576	455.972	16%	15.54441	0.271301	15.01241	0.262016	3310.161	3202.872	1.037206	3255.537	4803.621	648.2623	-0.75008
75	80	10000	3256.287	0.009767	0.767746	0.757979	5000	1919.364	4936.395	1870.842	0.651682	37.33865	421.6911	421.6911	494.5989	17%	15.58871	0.272074	15.05671	0.262789	3314.327	3198.783	1.037108	3255.502	4789.154	562.3557	-0.78444
75	90	10000	3256.287	0.010991	0.767746	0.756755	5000	1919.364	4928.423	1864.805	0.651295	37.31647	450.4783	450.4783	533.2268	18%	15.63305	0.272848	15.10105	0.263563	3318.499	3194.692	1.037009	3255.471	4774.761	492.779	-0.81602
75	100	10000	3256.287	0.012215	0.767746	0.75553	5000	1919.364	4920.447	1858.773	0.650908	37.29427	479.1203	479.1203	571.8557	19%	15.67745	0.273623	15.14545	0.264338	3322.678	3190.6	1.036911	3255.442	4760.44	435.6231	-0.84482
75	110	10000	3256.287	0.013441	0.767746	0.754305	5000	1919.364	4912.465	1852.748	0.65052	37.27205	507.618	507.618	610.4856	20%	15.7219	0.274399	15.1899	0.265114	3326.863	3186.506	1.036814	3255.416	4746.191	388.0843	-0.87083
75	120	10000	3256.287	0.014667	0.767746	0.753079	5000	1919.364	4904.48	1846.729	0.650132	37.2498	535.9724	535.9724	649.1167	21%	15.76641	0.275176	15.23441	0.265891	3331.056	3182.41	1.036717	3255.393	4732.014	348.1089	-0.89406
75	130	10000	3256.287	0.015894	0.767746	0.751852	5000	1919.364	4896.489	1840.716	0.649743	37.22752	564.1845	564.1845	687.749	22%	15.81096	0.275953	15.27896	0.266668	3335.255	3178.312	1.03662	3255.372	4717.908	314.1649	-0.9145
75	140	10000	3256.287	0.017122	0.767746	0.750624	5000	1919.364	4888.494	1834.71	0.649353	37.20521	592.2554	592.2554	726.3825	23%	15.85557	0.276732	15.32357	0.267447	3339.461	3174.212	1.036524	3255.355	4703.872	285.09	-0.93214
75	150	10000	3256.287	0.01835	0.767746	0.749395	5000	1919.364	4880.493	1828.71	0.648964	37.18288	620.1859	620.1859	765.0175	23%	15.90023	0.277511	15.36823	0.268226	3343.674	3170.111	1.036429	3255.34	4689.907	259.9898	-0.947
75	160	10000	3256.287	0.019579	0.767746	0.748166	5000	1919.364	4872.489	1822.716	0.648574	37.16053	647.977	647.977	803.6538	24%	15.94495	0.278292	15.41295	0.269007	3347.893	3166.008	1.036334	3255.328	4676.011	238.1666	-0.95906
75	170	10000	3256.287	0.020809	0.767746	0.746936	5000	1919.364	4864.479	1816.728	0.648183	37.13814	675.6298	675.6298	842.2917	25%	15.98972	0.279073	15.45772	0.269788	3352.12	3161.903	1.036239	3255.319	4662.185	219.0698	-0.96832
75	180	10000	3256.287	0.02204	0.767746	0.745706	5000	1919.364	4856.465	1810.747	0.647792	37.11573	703.145	703.145	880.9311	25%	16.03454	0.279855	15.50254	0.27057	3356.353	3157.796	1.036145	3255.312	4648.427	202.2601	-0.97479
75	190	10000	3256.287	0.023271	0.767746	0.744475	5000	1919.364	4848.446	1804.772	0.6474	37.09329	730.5238	730.5238	919.5722	26%	16.07941	0.280639	15.54741	0.271354	3360.594	3153.687	1.036051	3255.308	4634.738	187.3835	-0.97845
75	200	10000	3256.287	0.024503	0.767746	0.743243	5000	1919.364	4840.422	1798.804	0.647008	37.07083	757.7669	757.7669	958.215	26%	16.12434	0.281423	15.59234	0.272138	3364.841	3149.576	1.035958	3255.308	4621.117	174.1521	-0.97931
75	210	10000	3256.287	0.025736	0.767746	0.74201	5000	1919.364	4832.393	1792.841	0.646616	37.04834	784.8753	784.8753	996.8595	27%	16.16932	0.282208	15.63732	0.272923	3369.095	3145.463	1.035865	3255.31	4607.562	162.3299	-0.97736
75	220	10000	3256.287	0.026969	0.767746	0.740776	5000	1919.364	4824.36	1786.886	0.646223	37.02582	811.85	811.85	1035.506	28%	16.21435	0.282994	15.68235	0.273709	3373.357	3141.349	1.035773	3255.314	4594.075	151.722	-0.9726
75	230	10000	3256.287	0.028204	0.767746	0.739542	5000	1919.364	4816.322	1780.936	0.645829	37.00328	838.6918	838.6918	1074.154	28%	16.25944	0.283781	15.72744	0.274496	3377.625	3137.232	1.035681	3255.322	4580.654	142.1658	-0.96504
75	240	10000	3256.287	0.029439	0.767746	0.738307	5000	1919.364	4808.279	1774.993	0.645435	36.98071	865.4016	865.4016	1112.805	29%	16.30458	0.284569	15.77258	0.275283	3381.9	3133.114	1.03559	3255.332	4567.299	133.5256	-0.95466
80	40	1000	297.7684	0.052102	0.839579	0.787476	500	209.8946	468.971	184.6517	0.682935	39.1293	175.0559	175.0559	257.5572	47%	12.00741	0.209569	11.47541	0.200284	316.2405	279.8554	1.047715	297.624	412.472	32.63219	-0.14442
80	50	1000	297.7684	0.065339	0.839579	0.774239	500	209.8946	461.088	178.4962	0.67894	38.90037	205.744	205.744	315.2604	53%	12.46526	0.21756	11.93326	0.208275	320.424	275.9423	1.045989	297.6832	397.128	23.62358	-0.08522
80	60	1000	297.7684	0.078663	0.839579	0.760916	500	209.8946	453.1535	172.4059	0.674892	38.66845	234.3831	234.3831	373.025	59%	12.92911	0.225655	12.39711	0.21637	324.6773	272.0142	1.044374	297.7742	382.8085	18.20319	0.005751
80	70	1000	297.7684	0.092073	0.839579	0.747505	500	209.8946	445.1669	166.3823	0.670791	38.43347	261.1555	261.1555	430.8623	65%	13.39906	0.233858	12.86706	0.224572	329.0027	268.0697	1.042862	297.897	369.4223	14.66229	0.128581
80	80	1000	297.7684	0.105573	0.839579	0.734006	500	209.8946	437.1275	160.427	0.666635	38.19539	286.2226	286.2226	488.7836	71%	13.87522	0.242168	13.34322	0.232883	333.4027	264.1078	1.041442	298.0519	356.8887	12.20653	0.283441
80	90	1000	297.7684	0.119162	0.839579	0.720417	500	209.8946	429.0347	154.5419	0.662425	37.95415	309.7281	309.7281	546.8005	77%	14.35771	0.250589	13.82571	0.241304	337.8795	260.127	1.040107	298.239	345.1359	10.4241	0.470549
80	100	1000	297.7684	0.132842	0.839579	0.706737	500	209.8946	420.888	148.7286	0.658158	37.70968	331.8003	331.8003	604.9244	82%	14.84663	0.259123	14.31463	0.249837	342.4358	256.1261	1.038851	298.4586	334.0998	9.083358	0.69017
80	110	1000	297.7684	0.146613	0.839579	0.692966	500	209.8946	412.6867	142.9889	0.653834	37.46194	352.5541	352.5541	663.1669	88%	15.34212	0.26777	14.81012	0.258485	347.0743	252.1033	1.037666	298.711	323.723	8.045417	0.942616
80	120	1000	297.7684	0.160477	0.839579	0.679102	500	209.8946	404.4302	137.3246	0.649452	37.21086	372.0926	372.0926	721.5398	94%	15.84427	0.276535	15.31227	0.26725	351.7978	248.0573	1.036548	298.9967	313.9537	7.222673	1.228233
80	130	1000	297.7684	0.174434	0.839579	0.665144	500	209.8946	396.1179	131.7377	0.645011	36.95639	390.5089	390.5089	780.0548	100%	16.35322	0.285418	15.82122	0.276132	356.6092	243.9863	1.035492	299.3158	304.7455	6.557496	1.547407
80	140	1000	297.7684	0.188487	0.839579	0.651092	500	209.8946	387.7492	126.2301	0.640509	36.69846	407.8872	407.8872	838.7239	106%	16.86908	0.294421	16.33708	0.285136	361.5116	239.8884	1.034493	299.669	296.0564	6.010629	1.900555
80	150	1000	297.7684	0.202635	0.839579	0.636944	500	209.8946	379.3235	120.8038	0.635946	36.43701	424.3035	424.3035	897.5591	112%	17.39198	0.303547	16.85998	0.294262	366.5083	235.7618	1.033547	300.0566	287.8482	5.554522	2.288124
80	160	1000	297.7684	0.21688	0.839579	0.622699	500	209.8946	370.8402	115.4609	0.63132	36.17198	439.8273	439.8273	956.5725	117%	17.92203	0.312798	17.39003	0.303513	371.6026	231.6043	1.032651	300.479	280.0864	5.169347	2.710591
80	170	1000	297.7684	0.231222	0.839579	0.608356	500	209.8946	362.2987	110.2034	0.626631	35.90332	454.5215	454.5215	1015.777	123%	18.45937	0.322177	17.92737	0.312892	376.7981	227.4138	1.031801	300.9369	272.7392	4.84051	3.168457
80	180	1000	297.7684	0.245663	0.839579	0.593915	500	209.8946	353.6985	105.0335	0.621877	35.63095	468.4439	468.4439	1075.184	130%	19.00411	0.331684	18.47211	0.322399	382.0985	223.1879	1.030994	301.4307	265.7781	4.557062	3.662251
80	190	1000	297.7684	0.260204	0.839579	0.579375	500	209.8946	345.039	99.95341	0.617058	35.35481	481.6471	481.6471	1134.807	136%	19.55638	0.341323	19.02438	0.332038	387.5078	218.9241	1.030228	301.961	259.1764	4.310643	4.192522
80	200	1000	297.7684	0.274845	0.839579	0.564733	500	209.8946	336.3196	94.96545	0.612171	35.07484	494.1798	494.1798	1194.658	142%	20.11631	0.351096	19.58431	0.341811	393.0301	214.6197	1.0295	302.5283	252.9101	4.094775	4.759843
80	210	1000	297.7684	0.289588	0.839579	0.549991	500	209.8946	327.5398	90.07194	0.607217	34.79098	506.0863	506.0863	1254.751	148%	20.68404	0.361005	20.15204	0.351719	398.6697	210.2719	1.028808	303.1332	246.9568	3.904369	5.364807
80	220	1000	297.7684	0.304433	0.839579	0.535146	500	209.8946	318.6991	85.27527	0.602194	34.50316	517.4079	517.4079	1315.098	154%	21.25967	0.371051	20.72767	0.361766	404.4312	205.8776	1.02815	303.7765	241.2961	3.735373	6.008025
80	230	1000	297.7684	0.319381	0.839579	0.520198	500	209.8946	309.797	80.57788	0.5971	34.21132	528.1824	528.1824	1375.714	160%	21.84335	0.381238	21.31135	0.371953	410.3194	201.4334	1.027524	304.4586	235.9088	3.58453	6.690128
80	240	1000	297.7684	0.334433	0.839579	0.505146	500	209.8946	300.833	75.98229	0.591935	33.9154	538.445	538.445	1436.611	167%	22.43521	0.391568	21.90321	0.382283	416.3393	196.9359	1.026928	305.1802	230.7775	3.449191	7.411763
80	40	1500	446.6526	0.034586	0.839579	0.804992	750	314.842	719.1039	289.4366	0.688183	39.42996	195.8861	195.8861	271.0432	38%	11.40607	0.199073	10.87407	0.189788	466.1512	427.5767	1.05021	446.3916	652.0569	58.63746	-0.26103
80	50	1500	446.6526	0.043326	0.839579	0.796253	750	314.842	711.2971	283.1862	0.68557	39.28028	230.0373	230.0373	328.6753	43%	11.70545	0.204299	11.17345	0.195013	470.2339	423.6843	1.048933	446.4032	634.9814	42.51929	-0.24941
80	60	1500	446.6526	0.052102	0.839579	0.787476	750	314.842	703.4566	276.9776	0.682935	39.1293	262.5839	262.5839	386.3357	47%	12.00741	0.209569	11.47541	0.200284	474.3607	419.783	1.047715	446.436	618.708	32.63219	-0.21664
80	70	1500	446.6526	0.060917	0.839579	0.778661	750	314.842	695.5821	270.8114	0.680277	38.97701	293.6279	293.6279	444.0296	51%	12.31198	0.214885	11.77998	0.205599	478.5327	415.8724	1.046551	446.4899	603.186	26.09683	-0.16272
80	80	1500	446.6526	0.069771	0.839579	0.769808	750	314.842	687.6734	264.6882	0.677596	38.8234	323.2628	323.2628	501.7619	55%	12.6192	0.220247	12.0872	0.210962	482.7508	411.952	1.045439	446.565	588.3686	21.53134	-0.08764
80	90	1500	446.6526	0.078663	0.839579	0.760916	750	314.842	679.7303	258.6088	0.674892	38.66845	351.5746	351.5746	559.5375	59%	12.92911	0.225655	12.39711	0.21637	487.0159	408.0212	1.044374	446.6613	574.2127	18.20319	0.008627
80	100	1500	446.6526	0.087593	0.839579	0.751985	750	314.842	671.7524	252.5739	0.672164	38.51214	378.6426	378.6426	617.3616	63%	13.24172	0.231112	12.70972	0.221826	491.3292	404.0796	1.043355	446.7788	560.6787	15.69364	0.126133
80	110	1500	446.6526	0.096563	0.839579	0.743015	750	314.842	663.7394	246.5843	0.669412	38.35446	404.5398	404.5398	675.2393	67%	13.55708	0.236616	13.02508	0.227331	495.6915	400.1266	1.042378	446.9176	547.7301	13.74865	0.264949
80	120	1500	446.6526	0.105573	0.839579	0.734006	750	314.842	655.6912	240.6405	0.666635	38.19539	429.3339	429.3339	733.1755	71%	13.87522	0.242168	13.34322	0.232883	500.104	396.1617	1.041442	447.0778	535.3331	12.20653	0.425161

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
80	130	1500	446.6526	0.114622	0.839579	0.724956	750	314.842	647.6074	234.7436	0.663835	38.03492	453.0873	453.0873	791.1753	75%	14.19617	0.24777	13.66417	0.238485	504.5678	392.1842	1.040543	447.2595	523.4563	10.9602	0.606871
80	140	1500	446.6526	0.123712	0.839579	0.715867	750	314.842	639.4877	228.8941	0.661009	37.87302	475.8583	475.8583	849.244	78%	14.51996	0.253421	13.98796	0.244136	509.0839	388.1935	1.03968	447.4628	512.0709	9.93636	0.810193
80	150	1500	446.6526	0.132842	0.839579	0.706737	750	314.842	631.332	223.0929	0.658158	37.70968	497.7005	497.7005	907.3866	82%	14.84663	0.259123	14.31463	0.249837	513.6537	384.1891	1.038851	447.6879	501.1498	9.083358	1.035256
80	160	1500	446.6526	0.142012	0.839579	0.697566	750	314.842	623.1398	217.3407	0.655282	37.54489	518.6641	518.6641	965.6083	86%	15.17622	0.264875	14.64422	0.25559	518.2782	380.1701	1.038053	447.9348	490.668	8.363926	1.282199
80	170	1500	446.6526	0.151224	0.839579	0.688355	750	314.842	614.911	211.6385	0.65238	37.37862	538.7957	538.7957	1023.914	90%	15.50875	0.270679	14.97675	0.261394	522.9588	376.136	1.037287	448.2038	480.6021	7.750581	1.551177
80	180	1500	446.6526	0.160477	0.839579	0.679102	750	314.842	606.6453	205.9869	0.649452	37.21086	558.1389	558.1389	1082.31	94%	15.84427	0.276535	15.31227	0.26725	527.6966	372.086	1.036548	448.495	470.9306	7.222673	1.84235
80	190	1500	446.6526	0.169771	0.839579	0.669807	750	314.842	598.3423	200.387	0.646498	37.0416	576.7342	576.7342	1140.8	98%	16.18281	0.282443	15.65081	0.273158	532.4931	368.0193	1.035838	448.8085	461.6329	6.764428	2.155894
80	200	1500	446.6526	0.179108	0.839579	0.660471	750	314.842	590.0019	194.8395	0.643517	36.8708	594.6197	594.6197	1199.39	102%	16.5244	0.288405	15.9924	0.27912	537.3496	363.9351	1.035153	449.1446	452.6902	6.363616	2.491991
80	210	1500	446.6526	0.188487	0.839579	0.651092	750	314.842	581.6237	189.3452	0.640509	36.69846	611.8308	611.8308	1258.086	106%	16.86908	0.294421	16.33708	0.285136	542.2674	359.8326	1.034493	449.5035	444.0846	6.010629	2.850833
80	220	1500	446.6526	0.197908	0.839579	0.64167	750	314.842	573.2076	183.9052	0.637474	36.52455	628.4008	628.4008	1316.892	110%	17.21689	0.300491	16.68489	0.291206	547.2481	355.7109	1.033857	449.8853	435.7996	5.697824	3.232622
80	230	1500	446.6526	0.207372	0.839579	0.632206	750	314.842	564.7532	178.5202	0.634411	36.34907	644.3611	644.3611	1375.815	114%	17.56786	0.306617	17.03586	0.297332	552.293	351.5692	1.033243	450.2902	427.8195	5.419059	3.637567
80	240	1500	446.6526	0.21688	0.839579	0.622699	750	314.842	556.2602	173.1913	0.63132	36.17198	659.7409	659.7409	1434.859	117%	17.92203	0.312798	17.39003	0.303513	557.4039	347.4064	1.032651	450.7185	420.1295	5.169347	4.065886
80	40	2000	595.5369	0.025884	0.839579	0.813694	1000	419.7893	969.1698	394.304	0.690773	39.57838	213.359	213.359	284.5793	33%	11.10925	0.193893	10.57725	0.184608	616.1491	575.2809	1.051549	595.2016	893.3205	87.86951	-0.33528
80	50	2000	595.5369	0.032407	0.839579	0.807171	1000	419.7893	961.4006	388.0075	0.688832	39.46719	249.4464	249.4464	342.1853	37%	11.33163	0.197774	10.79963	0.188489	620.1831	571.398	1.050538	595.1894	875.2768	64.28437	-0.34751
80	60	2000	595.5369	0.038951	0.839579	0.800627	1000	419.7893	953.6063	381.7417	0.686879	39.35528	284.2253	284.2253	399.808	41%	11.55544	0.20168	11.02344	0.192395	624.2494	567.5088	1.049564	595.193	857.8873	49.51473	-0.34382
80	70	2000	595.5369	0.045516	0.839579	0.794062	1000	419.7893	945.7868	375.5069	0.684914	39.24265	317.7603	317.7603	457.45	44%	11.78069	0.205612	11.24869	0.196327	628.3485	563.6131	1.048623	595.2126	841.1198	39.61509	-0.32427
80	80	2000	595.5369	0.052102	0.839579	0.787476	1000	419.7893	937.9421	369.3035	0.682935	39.1293	350.1119	350.1119	515.1143	47%	12.00741	0.209569	11.47541	0.200284	632.481	559.7107	1.047715	595.248	824.9441	32.63219	-0.28885
80	90	2000	595.5369	0.05871	0.839579	0.780868	1000	419.7893	930.0719	363.1319	0.680944	39.0152	381.3367	381.3367	572.8037	50%	12.23559	0.213551	11.70359	0.204266	636.6472	555.8013	1.046837	595.2993	809.3316	27.50697	-0.23757
80	100	2000	595.5369	0.065339	0.839579	0.774239	1000	419.7893	922.1761	356.9925	0.67894	38.90037	411.4879	411.4879	630.5208	53%	12.46526	0.21756	11.93326	0.208275	640.8479	551.8846	1.045989	595.3664	794.256	23.62358	-0.17043
80	110	2000	595.5369	0.07199	0.839579	0.767589	1000	419.7893	914.2545	350.8856	0.676922	38.78479	440.6155	440.6155	688.2687	56%	12.69643	0.221594	12.16443	0.212309	645.0835	547.9604	1.045168	595.4495	779.6923	20.60348	-0.08741
80	120	2000	595.5369	0.078663	0.839579	0.760916	1000	419.7893	906.307	344.8118	0.674892	38.66845	468.7662	468.7662	746.05	59%	12.92911	0.225655	12.39711	0.21637	649.3546	544.0283	1.044374	595.5484	765.6169	18.20319	0.011502
80	130	2000	595.5369	0.085357	0.839579	0.754222	1000	419.7893	898.3335	338.7713	0.672848	38.55134	495.9841	495.9841	803.8677	62%	13.16331	0.229743	12.63131	0.220458	653.6617	540.0881	1.043606	595.6632	752.0079	16.26015	0.126348
80	140	2000	595.5369	0.092073	0.839579	0.747505	1000	419.7893	890.3337	332.7645	0.670791	38.43347	522.3109	522.3109	861.7246	65%	13.39906	0.233858	12.86706	0.224572	658.0055	536.1395	1.042862	595.794	738.8445	14.66229	0.257163
80	150	2000	595.5369	0.098812	0.839579	0.740767	1000	419.7893	882.3076	326.792	0.66872	38.31482	547.7856	547.7856	919.6235	68%	13.63635	0.237999	13.10435	0.228714	662.3865	532.1821	1.042141	595.9409	726.1072	13.33026	0.40399
80	160	2000	595.5369	0.105573	0.839579	0.734006	1000	419.7893	874.2549	320.8541	0.666635	38.19539	572.4451	572.4451	977.5673	71%	13.87522	0.242168	13.34322	0.232883	666.8053	528.2156	1.041442	596.1037	713.7774	12.20653	0.566882
80	170	2000	595.5369	0.112356	0.839579	0.727222	1000	419.7893	866.1756	314.9512	0.664537	38.07517	596.3244	596.3244	1035.559	74%	14.11566	0.246365	13.58366	0.23708	671.2626	524.2397	1.040764	596.2828	701.8378	11.24851	0.745896
80	180	2000	595.5369	0.119162	0.839579	0.720417	1000	419.7893	858.0694	309.0838	0.662425	37.95415	619.4562	619.4562	1093.601	77%	14.35771	0.250589	13.82571	0.241304	675.759	520.2541	1.040107	596.478	690.2719	10.4241	0.941097
80	190	2000	595.5369	0.12599	0.839579	0.713588	1000	419.7893	849.9363	303.2523	0.660299	37.83232	641.8718	641.8718	1151.697	79%	14.60136	0.254842	14.06936	0.245557	680.2951	516.2583	1.03947	596.6894	679.0641	9.708752	1.152554
80	200	2000	595.5369	0.132842	0.839579	0.706737	1000	419.7893	841.776	297.4571	0.658158	37.70968	663.6006	663.6006	1209.849	82%	14.84663	0.259123	14.31463	0.249837	684.8716	512.2521	1.038851	596.9172	668.1997	9.083358	1.380341
80	210	2000	595.5369	0.139716	0.839579	0.699863	1000	419.7893	833.5884	291.6988	0.656003	37.58623	684.6706	684.6706	1268.06	85%	15.09355	0.263432	14.56155	0.254147	689.4892	508.235	1.03825	597.1614	657.6647	8.5329	1.624539
80	220	2000	595.5369	0.146613	0.839579	0.692966	1000	419.7893	825.3733	285.9777	0.653834	37.46194	705.1081	705.1081	1326.334	88%	15.34212	0.26777	14.81012	0.258485	694.1486	504.2067	1.037666	597.4221	647.4459	8.045417	1.885232
80	230	2000	595.5369	0.153533	0.839579	0.686045	1000	419.7893	817.1307	280.2944	0.651651	37.33682	724.9384	724.9384	1384.673	91%	15.59235	0.272138	15.06035	0.262853	698.8504	500.1667	1.037099	597.6994	637.5308	7.611282	2.16251
80	240	2000	595.5369	0.160477	0.839579	0.679102	1000	419.7893	808.8603	274.6493	0.649452	37.21086	744.1852	744.1852	1443.08	94%	15.84427	0.276535	15.31227	0.26725	703.5955	496.1146	1.036548	597.9933	627.9074	7.222673	2.456467
80	40	2500	744.4211	0.020681	0.839579	0.818898	1250	524.7366	1219.209	499.2037	0.692317	39.66682	229.3756	229.3756	298.1307	30%	10.93237	0.190806	10.40037	0.181521	766.1811	722.9786	1.052384	744.0285	1135.312	118.7915	-0.39254
80	50	2500	744.4211	0.025884	0.839579	0.813694	1250	524.7366	1211.462	492.88	0.690773	39.57838	266.6987	266.6987	355.7241	33%	11.10925	0.193893	10.57725	0.184608	770.1864	719.1011	1.051549	744.002	1116.651	87.86951	-0.41911
80	60	2500	744.4211	0.031101	0.839579	0.808478	1250	524.7366	1203.696	486.5804	0.689221	39.48948	302.9197	302.9197	413.3286	36%	11.28704	0.196996	10.75504	0.187711	774.2172	715.2188	1.050737	743.9882	1098.54	68.11221	-0.43292
80	70	2500	744.4211	0.036331	0.839579	0.803248	1250	524.7366	1195.909	480.3054	0.687662	39.40013	338.0832	338.0832	470.9459	39%	11.46574	0.200115	10.93374	0.19083	778.2737	711.3315	1.049949	743.9871	1080.958	54.68054	-0.434
80	80	2500	744.4211	0.041575	0.839579	0.798004	1250	524.7366	1188.102	474.055	0.686094	39.31032	372.2314	372.2314	528.5779	42%	11.64537	0.20325	11.11337	0.193965	782.3564	707.4392	1.049183	743.9987	1063.884	45.10805	-0.42238
80	90	2500	744.4211	0.046832	0.839579	0.792747	1250	524.7366	1180.275	467.8296	0.684519	39.22004	405.4043	405.4043	586.2263	45%	11.82592	0.206401	11.29392	0.197116	786.4654	703.5415	1.048439	744.023	1047.298	38.02799	-0.39806
80	100	2500	744.4211	0.052102	0.839579	0.787476	1250	524.7366	1172.428	461.6294	0.682935	39.1293	437.6399	437.6399	643.8929	47%	12.00741	0.209569	11.47541	0.200284	790.6012	699.6384	1.047715	744.06	1031.18	32.63219	-0.36106
80	110	2500	744.4211	0.057387	0.839579	0.782192	1250	524.7366	1164.56	455.4546	0.681343	39.03808	468.9741	468.9741	701.5796	50%	12.18984	0.212753	11.65784	0.203468	794.7641	695.7297	1.04701	744.1097	1015.513	28.41726	-0.31137
80	120	2500	744.4211	0.062685	0.839579	0.776894	1250	524.7366	1156.672	449.3055	0.679743	38.94639	499.4413	499.4413	759.288	52%	12.37321	0.215953	11.84121	0.206668	798.9544	691.8152	1.046325	744.1721	1000.279	25.05597	-0.24899
80	130	2500	744.4211	0.067997	0.839579	0.771582	1250	524.7366	1148.763	443.1823	0.678134	38.85423	529.0739	529.0739	817.0202	54%	12.55755	0.219171	12.02555	0.209885	803.1724	687.8948	1.045657	744.2472	985.4631	22.32787	-0.17391
80	140	2500	744.4211	0.073323	0.839579	0.766256	1250	524.7366	1140.834	437.0853	0.676517	38.76158	557.9029	557.9029	874.7777	57%	12.74284	0.222405	12.21084	0.213119	807.4186	683.9683	1.045007	744.335	971.0486	20.07996	-0.08613
80	150	2500	744.4211	0.078663	0.839579	0.760916	1250	524.7366	1132.884	431.0147	0.674892	38.66845	585.9577	585.9577	932.5625	59%	12.92911	0.225655	12.39711	0.21637	811.6932	680.0354	1.044374	744.4355	957.0211	18.20319	0.014378
80	160	2500	744.4211	0.084016	0.839579	0.755562	1250	524.7366	1124.913	424.9708	0.673258	38.57483	613.2664	613.2664	990.3764	61%	13.11635	0.228923	12.58435	0.219638	815.9967	676.096	1.043758	744.5487	943.3668	16.61811	0.127629
80	170	2500	744.4211	0.089384	0.839579	0.750194	1250	524.7366	1116.921	418.9539	0.671615	38.48071	639.8557	639.8557	1048.221	64%	13.30457	0.232209	12.77257	0.222923	820.3294	672.1499	1.043156	744.6747	930.0721	15.26567	0.253648
80	180	2500	744.4211	0.094766	0.839579	0.744812	1250	524.7366	1108.908	412.9642	0.669964	38.38611	665.7512	665.7512	1106.099	66%	13.49379	0.235511	12.96179	0.226226	824.6917	668.197	1.04257	744.8135	917.1244	14.1012	0.392462
80	190	2500	744.4211	0.100162	0.839579	0.739416	1250	524.7366	1100.874	407.002	0.668304	38.291	690.977	690.977	1164.011	68%	13.684	0.238831	13.152	0.229546	829.084	664.2369	1.041999	744.9652	904.5115	13.0904	0.544102
80	200	2500	744.4211	0.105573	0.839579	0.734006	1250	524.7366	1092.819	401.0676	0.666635	38.19539	715.5564	715.5564	1221.959	71%	13.87522	0.242168	13.34322	0.232883	833.5066	660.2695	1.041442	745.1297	892.2218	12.20653	0.708602
80	210	2500	744.4211	0.110998	0.839579	0.728581	1250	524.7366	1084.742	395.1612	0.664958	38.09928	739.5117	739.5117	1279.946	73%	14.06745	0.245523	13.53545	0.236238	837.96	656.2946	1.040898	745.3071	880.2442	11.42852	0.886001
80	220	2500	744.4211	0.116437	0.839579	0.723142	1250	524.7366	1076.644	389.2831	0.663271	38.00265	762.8639	762.8639	1337.972	75%	14.2607	0.248896	13.7287	0.239611	842.4446	652.3119	1.040368	745.4974	868.568	10.73954	1.076338
80	230	2500	744.4211	0.121891	0.839579	0.717688	1250	524.7366	1068.524	383.4336	0.661576	37.90551	785.6334	785.6334	1396.041	78%	14.45497	0.252287	13.92297	0.243002	846.9608	648.3213	1.03985	745.7007	857.1833	10.12605	1.279656
80	240	2500	744.4211	0.127359	0.839579	0.71222	1250	524.7366	1060.383	377.6129	0.659872	37.80786	807.8395	807.8395	1454.153	80%	14.65028	0.255696	14.11828	0.246411	851.5089	644.3224	1.039344	745.9171	846.0803	9.577008	1.496003
80	40	3000	893.3053	0.01722	0.839579	0.822359	1500	629.6839	1469.235	604.1195	0.693341	39.72552	244.6298	244.6298	311.6884	27%	10.81495	0.188756	10.28295	0.179471	916.2299	870.6732	1.052955	892.864	1377.685	150.3917	-0.44128
80	50	3000	893.3053	0.021547	0.839579	0.818031	1500	629.6839	1461.503	597.7777	0.69206	39.65211	282.8096	282.8096	369.2747	31%	10.96179	0.191319	10.42979	0.182034	920.2163	866.7992	1.052243	892.8279	1358.595	112.5264	-0.47743
80	60	3000	893.3053	0.025884	0.839579	0.813694	1500	629.6839	1453.755	591.456	0.690773	39.57838	320.0384	320.0384	426.869	33%	11.10925	0.193893	10.57725	0.184608	924.2237	862.9213	1.051549	892.8024	1339.981	87.86951	-0.50293
80	70	3000	893.3053	0.030231	0.839579	0.809348	1500	629.6839	1445.99	585.1544	0.689481	39.50433	356.349	356.349	484.4724	36%	11.25734	0.196478	10.72534	0.187193	928.2523	859.0394	1.050871	892.7875	1321.826	70.87474	-0.5178
80	80	3000	893.3053	0.034586	0.839579	0.804992	1500	629.6839	1438.208	578.8732	0.688183	39.42996	391.7723	391.7723	542.0864	38%	11.40607	0.199073	10.87407	0.189788	932.3024	855.1534	1.05021	892.7832	1304.114	58.63746	-0.52207
80	90	3000	893.3053	0.038951	0.839579	0.800627	1500	629.6839	1430.409	572.6125	0.686879	39.35528	426.338	426.338	599.712	41%	11.55544	0.20168	11.02344	0.192395	936.3741	851.2632	1.049564	892.7896	1286.831	49.51473	-0.51574
80	100	3000	893.3053	0.043326	0.839579	0.796253	1500	629.6839	1422.594	566.3725	0.68557	39.28028	460.0746	460.0746	657.3505	43%	11.70545	0.204299	11.17345	0.195013	940.4677	847.3686	1.048933	892.8065	1269.963	42.51929	-0.49882
80	110	3000	893.3053	0.047709	0.839579	0.791869	1500	629.6839	1414.762	560.1534	0.684255	39.20495	493.0092	493.0092	715.0033	45%	11.8561	0.206928	11.3241	0.197643	944.5834	843.4696	1.048317	892.834	1253.495	37.02819	-0.47133

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
80	120	3000	893.3053	0.052102	0.839579	0.787476	1500	629.6839	1406.913	553.9552	0.682935	39.1293	525.1678	525.1678	772.6715	47%	12.00741	0.209569	11.47541	0.200284	948.7214	839.5661	1.047715	892.872	1237.416	32.63219	-0.43327
80	130	3000	893.3053	0.056505	0.839579	0.783073	1500	629.6839	1399.047	547.7783	0.681609	39.05332	556.5754	556.5754	830.3564	49%	12.15936	0.212221	11.62736	0.202936	952.882	835.6579	1.047126	892.9207	1221.712	29.05323	-0.38464
80	140	3000	893.3053	0.060917	0.839579	0.778661	1500	629.6839	1391.164	541.6228	0.680277	38.97701	587.2558	587.2558	888.0592	51%	12.31198	0.214885	11.77998	0.205599	957.0654	831.7449	1.046551	892.9799	1206.372	26.09683	-0.32543
80	150	3000	893.3053	0.065339	0.839579	0.774239	1500	629.6839	1383.264	535.4887	0.67894	38.90037	617.2319	617.2319	945.7812	53%	12.46526	0.21756	11.93326	0.208275	961.2719	827.8269	1.045989	893.0497	1191.384	23.62358	-0.25565
80	160	3000	893.3053	0.069771	0.839579	0.769808	1500	629.6839	1375.347	529.3764	0.677596	38.8234	646.5256	646.5256	1003.524	55%	12.6192	0.220247	12.0872	0.210962	965.5016	823.904	1.045439	893.13	1176.737	21.53134	-0.17528
80	170	3000	893.3053	0.074212	0.839579	0.765367	1500	629.6839	1367.412	523.286	0.676247	38.74609	675.158	675.158	1061.288	57%	12.77382	0.222945	12.24182	0.21366	969.7548	819.9759	1.044901	893.221	1162.421	19.74384	-0.08431
80	180	3000	893.3053	0.078663	0.839579	0.760916	1500	629.6839	1359.461	517.2176	0.674892	38.66845	703.1492	703.1492	1119.075	59%	12.92911	0.225655	12.39711	0.21637	974.0319	816.0425	1.044374	893.3225	1148.425	18.20319	0.017253
80	190	3000	893.3053	0.083123	0.839579	0.756455	1500	629.6839	1351.491	511.1715	0.673531	38.59046	730.5187	730.5187	1176.886	61%	13.08507	0.228378	12.55307	0.219092	978.3329	812.1036	1.043859	893.4347	1134.741	16.86474	0.129441
80	200	3000	893.3053	0.087593	0.839579	0.751985	1500	629.6839	1343.505	505.1479	0.672164	38.51214	757.2852	757.2852	1234.723	63%	13.24172	0.231112	12.70972	0.221826	982.6583	808.1593	1.043355	893.5576	1121.357	15.69364	0.252265
80	210	3000	893.3053	0.092073	0.839579	0.747505	1500	629.6839	1335.501	499.1468	0.670791	38.43347	783.4664	783.4664	1292.587	65%	13.39906	0.233858	12.86706	0.224572	987.0082	804.2092	1.042862	893.691	1108.267	14.66229	0.385744
80	220	3000	893.3053	0.096563	0.839579	0.743015	1500	629.6839	1327.479	493.1685	0.669412	38.35446	809.0796	809.0796	1350.479	67%	13.55708	0.236616	13.02508	0.227331	991.383	800.2533	1.042378	893.8352	1095.46	13.74865	0.529898
80	230	3000	893.3053	0.101063	0.839579	0.738515	1500	629.6839	1319.44	487.2132	0.668027	38.2751	834.1414	834.1414	1408.399	69%	13.7158	0.239386	13.1838	0.230101	995.7828	796.2914	1.041905	893.99	1082.929	12.9349	0.684749
80	240	3000	893.3053	0.105573	0.839579	0.734006	1500	629.6839	1311.382	481.2811	0.666635	38.19539	858.6677	858.6677	1466.351	71%	13.87522	0.242168	13.34322	0.232883	1000.208	792.3234	1.041442	894.1556	1070.666	12.20653	0.850323
80	40	3500	1042.19	0.014751	0.839579	0.824828	1750	734.6313	1719.254	709.0444	0.694071	39.76734	259.4349	259.4349	325.2492	25%	10.73132	0.187297	10.19932	0.178012	1066.288	1018.366	1.053369	1041.704	1620.283	182.0033	-0.48514
80	50	3500	1042.19	0.018455	0.839579	0.821123	1750	734.6313	1711.533	702.6898	0.692976	39.70458	298.2435	298.2435	382.831	28%	10.85684	0.189488	10.32484	0.180202	1070.261	1014.495	1.05275	1041.661	1600.878	137.7191	-0.52814
80	60	3500	1042.19	0.022166	0.839579	0.817412	1750	734.6313	1703.797	696.3523	0.691876	39.64159	336.2163	336.2163	440.4189	31%	10.98281	0.191686	10.45081	0.182401	1074.252	1010.62	1.052143	1041.628	1581.892	108.3674	-0.56201
80	70	3500	1042.19	0.025884	0.839579	0.813694	1750	734.6313	1696.047	690.0319	0.690773	39.57838	373.3782	373.3782	498.0138	33%	11.10925	0.193893	10.57725	0.184608	1078.261	1006.742	1.051549	1041.603	1563.311	87.86951	-0.58675
80	80	3500	1042.19	0.029609	0.839579	0.809969	1750	734.6313	1688.283	683.7289	0.689666	39.51493	409.7529	409.7529	555.6165	36%	11.23615	0.196108	10.70415	0.186823	1082.288	1002.86	1.050967	1041.587	1545.124	72.9612	-0.60238
80	90	3500	1042.19	0.033341	0.839579	0.806238	1750	734.6313	1680.505	677.4433	0.688554	39.45124	445.3635	445.3635	613.2281	38%	11.36351	0.198331	10.83151	0.189046	1086.334	998.9748	1.050397	1041.581	1527.318	61.75995	-0.60892
80	100	3500	1042.19	0.037079	0.839579	0.802499	1750	734.6313	1672.713	671.1753	0.687439	39.38733	480.2318	480.2318	670.8494	40%	11.49135	0.200562	10.95935	0.191277	1090.398	995.0861	1.049839	1041.583	1509.884	53.11709	-0.60637
80	110	3500	1042.19	0.040825	0.839579	0.798754	1750	734.6313	1664.906	664.9249	0.686319	39.32318	514.3792	514.3792	728.4813	42%	11.61965	0.202801	11.08765	0.193516	1094.48	991.1937	1.049292	1041.595	1492.81	46.29875	-0.59475
80	120	3500	1042.19	0.044577	0.839579	0.795002	1750	734.6313	1657.085	658.6924	0.685195	39.25879	547.826	547.826	786.1248	43%	11.74842	0.205049	11.21642	0.195764	1098.582	987.2976	1.048755	1041.615	1476.087	40.81791	-0.57406
80	130	3500	1042.19	0.048336	0.839579	0.791242	1750	734.6313	1649.249	652.4777	0.684067	39.19416	580.5919	580.5919	843.7807	45%	11.87768	0.207305	11.34568	0.198019	1102.702	983.3977	1.04823	1041.645	1459.704	36.34077	-0.5443
80	140	3500	1042.19	0.052102	0.839579	0.787476	1750	734.6313	1641.399	646.2811	0.682935	39.1293	612.6958	612.6958	901.4501	47%	12.00741	0.209569	11.47541	0.200284	1106.842	979.4938	1.047715	1041.684	1443.652	32.63219	-0.50548
80	150	3500	1042.19	0.055876	0.839579	0.783703	1750	734.6313	1633.534	640.1027	0.681799	39.06419	644.156	644.156	959.1337	49%	12.13762	0.211841	11.60562	0.202556	1111.001	975.5859	1.04721	1041.732	1427.922	29.52256	-0.4576
80	160	3500	1042.19	0.059656	0.839579	0.779923	1750	734.6313	1625.655	633.9425	0.680658	38.99885	674.99	674.99	1016.833	51%	12.26831	0.214122	11.73631	0.204837	1115.179	971.6739	1.046714	1041.789	1412.505	26.88694	-0.40066
80	170	3500	1042.19	0.063443	0.839579	0.776136	1750	734.6313	1617.761	627.8008	0.679514	38.93326	705.2148	705.2148	1074.548	52%	12.39949	0.216412	11.86749	0.207127	1119.377	967.7578	1.046228	1041.855	1397.393	24.63164	-0.33466
80	180	3500	1042.19	0.067237	0.839579	0.772341	1750	734.6313	1609.852	621.6776	0.678365	38.86742	734.8468	734.8468	1132.28	54%	12.53115	0.21871	11.99915	0.209425	1123.595	963.8373	1.045751	1041.93	1382.577	22.68519	-0.25958
80	190	3500	1042.19	0.071039	0.839579	0.76854	1750	734.6313	1601.929	615.5731	0.677211	38.80134	763.9017	763.9017	1190.03	56%	12.66331	0.221016	12.13131	0.211731	1127.833	959.9126	1.045284	1042.014	1368.049	20.99235	-0.17543
80	200	3500	1042.19	0.074847	0.839579	0.764732	1750	734.6313	1593.99	609.4874	0.676054	38.73502	792.3948	792.3948	1247.799	57%	12.79596	0.223332	12.26396	0.214047	1132.092	955.9833	1.044825	1042.107	1353.803	19.5098	-0.0822
80	210	3500	1042.19	0.078663	0.839579	0.760916	1750	734.6313	1586.037	603.4206	0.674892	38.66845	820.3408	820.3408	1305.588	59%	12.92911	0.225655	12.39711	0.21637	1136.371	952.0495	1.044374	1042.21	1339.83	18.20319	0.020129
80	220	3500	1042.19	0.082485	0.839579	0.757093	1750	734.6313	1578.069	597.3729	0.673725	38.60162	847.7539	847.7539	1363.397	61%	13.06275	0.227988	12.53075	0.218703	1140.67	948.1111	1.043932	1042.321	1326.123	17.04498	0.131557
80	230	3500	1042.19	0.086315	0.839579	0.753263	1750	734.6313	1570.087	591.3444	0.672555	38.53455	874.6478	874.6478	1421.228	62%	13.19689	0.230329	12.66489	0.221044	1144.99	944.1679	1.043498	1042.442	1312.676	16.01289	0.252101
80	240	3500	1042.19	0.090152	0.839579	0.749426	1750	734.6313	1562.089	585.3352	0.67138	38.46723	901.0358	901.0358	1479.082	64%	13.33154	0.232679	12.79954	0.223394	1149.331	940.2199	1.043072	1042.571	1299.482	15.08871	0.381772
80	40	4000	1191.074	0.012901	0.839579	0.826678	2000	839.5786	1969.268	813.9749	0.694617	39.79863	273.9534	273.9534	338.8118	24%	10.66874	0.186205	10.13674	0.176919	1216.352	1166.058	1.053684	1190.548	1863.023	213.1899	-0.52594
80	50	4000	1191.074	0.016139	0.839579	0.82344	2000	839.5786	1961.554	807.6108	0.693661	39.74383	313.2431	313.2431	396.3906	27%	10.77834	0.188118	10.24634	0.178832	1220.315	1162.188	1.053135	1190.5	1843.378	163.0636	-0.5741
80	60	4000	1191.074	0.019382	0.839579	0.820196	2000	839.5786	1953.829	801.2615	0.692701	39.68885	351.7875	351.7875	453.9742	29%	10.88829	0.190037	10.35629	0.180751	1224.294	1158.316	1.052597	1190.459	1824.106	129.2883	-0.61425
80	70	4000	1191.074	0.022631	0.839579	0.816948	2000	839.5786	1946.09	794.9272	0.691739	39.6337	389.6062	389.6062	511.5633	31%	10.99859	0.191962	10.46659	0.182677	1228.288	1154.44	1.052068	1190.427	1805.197	105.4067	-0.6464
80	80	4000	1191.074	0.025884	0.839579	0.813694	2000	839.5786	1938.34	788.6079	0.690773	39.57838	426.7179	426.7179	569.1586	33%	11.10925	0.193893	10.57725	0.184608	1232.298	1150.562	1.051549	1190.403	1786.641	87.86951	-0.67057
80	90	4000	1191.074	0.029143	0.839579	0.810435	2000	839.5786	1930.577	782.3038	0.689804	39.52287	463.141	463.141	626.7608	35%	11.22026	0.19583	10.68826	0.186545	1236.324	1146.68	1.051039	1190.387	1768.43	74.59223	-0.68677
80	100	4000	1191.074	0.032407	0.839579	0.807171	2000	839.5786	1922.801	776.015	0.688832	39.46719	498.8929	498.8929	684.3707	37%	11.33163	0.197774	10.79963	0.188489	1240.366	1142.796	1.050538	1190.379	1750.554	64.28437	-0.69501
80	110	4000	1191.074	0.035677	0.839579	0.803902	2000	839.5786	1915.013	769.7414	0.687857	39.41132	533.9906	533.9906	741.9888	39%	11.44335	0.199724	10.91135	0.190439	1244.424	1138.908	1.050047	1190.378	1733.005	56.11161	-0.6953
80	120	4000	1191.074	0.038951	0.839579	0.800627	2000	839.5786	1907.213	763.4833	0.686879	39.35528	568.4507	568.4507	799.616	41%	11.55544	0.20168	11.02344	0.192395	1248.499	1135.018	1.049564	1190.386	1715.775	49.51473	-0.68765
80	130	4000	1191.074	0.042231	0.839579	0.797348	2000	839.5786	1899.399	757.2407	0.685898	39.29906	602.2889	602.2889	857.2528	42%	11.66788	0.203643	11.13588	0.194358	1252.59	1131.124	1.049089	1190.402	1698.856	44.10728	-0.67206
80	140	4000	1191.074	0.045516	0.839579	0.794062	2000	839.5786	1891.574	751.0137	0.684914	39.24265	635.5206	635.5206	914.9001	44%	11.78069	0.205612	11.24869	0.196327	1256.697	1127.226	1.048623	1190.425	1682.24	39.61509	-0.64853
80	150	4000	1191.074	0.048807	0.839579	0.790772	2000	839.5786	1883.735	744.8025	0.683926	39.18607	668.1608	668.1608	972.5585	46%	11.89387	0.207587	11.36187	0.198302	1260.821	1123.326	1.048165	1190.457	1665.92	35.83917	-0.61708
80	160	4000	1191.074	0.052102	0.839579	0.787476	2000	839.5786	1875.884	738.607	0.682935	39.1293	700.2238	700.2238	1030.229	47%	12.00741	0.209569	11.47541	0.200284	1264.962	1119.421	1.047715	1190.496	1649.888	32.63219	-0.57769
80	170	4000	1191.074	0.055404	0.839579	0.784175	2000	839.5786	1868.02	732.4274	0.681941	39.07234	731.7235	731.7235	1087.911	49%	12.12131	0.211557	11.58931	0.202272	1269.12	1115.514	1.047272	1190.543	1634.138	29.88312	-0.53038
80	180	4000	1191.074	0.05871	0.839579	0.780868	2000	839.5786	1860.144	726.2638	0.680944	39.0152	762.6734	762.6734	1145.607	50%	12.23559	0.213551	11.70359	0.204266	1273.294	1111.603	1.046837	1190.599	1618.663	27.50697	-0.47514
80	190	4000	1191.074	0.062022	0.839579	0.777557	2000	839.5786	1852.254	720.1163	0.679943	38.95788	793.0867	793.0867	1203.317	52%	12.35024	0.215552	11.81824	0.206267	1277.486	1107.688	1.046409	1190.662	1603.457	25.43775	-0.41197
80	200	4000	1191.074	0.065339	0.839579	0.774239	2000	839.5786	1844.352	713.985	0.67894	38.90037	822.9759	822.9759	1261.042	53%	12.46526	0.21756	11.93326	0.208275	1281.696	1103.769	1.045989	1190.733	1588.512	23.62358	-0.34086
80	210	4000	1191.074	0.068662	0.839579	0.770917	2000	839.5786	1836.437	707.8699	0.677933	38.84267	852.3533	852.3533	1318.781	55%	12.58066	0.219574	12.04866	0.210289	1285.923	1099.847	1.045575	1190.812	1573.823	22.02321	-0.26182
80	220	4000	1191.074	0.07199	0.839579	0.767589	2000	839.5786	1828.509	701.7713	0.676922	38.78479	881.2309	881.2309	1376.537	56%	12.69643	0.221594	12.16443	0.212309	1290.167	1095.921	1.045168	1190.899	1559.385	20.60348	-0.17483
80	230	4000	1191.074	0.075324	0.839579	0.764255	2000	839.5786	1820.568	695.6891	0.675909	38.72671	909.6202	909.6202	1434.31	58%	12.81258	0.223622	12.28058	0.214337	1294.429	1091.991	1.044768	1190.994	1545.19	19.33748	-0.07989
80	240	4000	1191.074	0.078663	0.839579	0.760916	2000	839.5786	1812.614	689.6235	0.674892	38.66845	937.5323	937.5323	1492.1	59%	12.92911	0.225655	12.39711	0.21637	1298.709	1088.057	1.044374	1191.097	1531.234	18.20319	0.023004
80	40	4500	1339.958	0.011463	0.839579	0.828115	2250	944.5259	2219.279	918.9092	0.695041	39.82293	288.2777	288.2777	352.3754	22%	10.62014	0.185356	10.08814	0.176071	1366.421	1313.749	1.053932	1339.393	2105.861	243.6705	-0.56471
80	50	4500	1339.958	0.014339	0.839579	0.825239	2250	944.5259	2211.571	912.5377	0.694192	39.7743	327.9474	327.9474	409.952	25%	10.71741	0.187054	10.18541	0.177769	1370.376	1309.881	1.053439	1339.341	2086.026	188.2854	-0.61688
80	60	4500	1339.958	0.01722	0.839579	0.822359	2250	944.5259	2203.853	906.1793	0.693341	39.72552	366.9447	366.9447	467.5326	27%	10.81495	0.188756	10.28295	0.179471	1374.345	1306.01	1.052955	1339.296	2066.528	150.3917	-0.66192
80	70	4500	1339.958	0.020104	0.839579	0.819475	2250	944.5259	2196.124	899.8342	0.692488	39.67661	405.2854	405.2854	525.1273	30%	10.91277	0.190464	10.38077	0.181179	1378.328	1302.136	1.052478	1339.258	2047.357	123.283	-0.69984
80	80	4500	1339.958	0.022992	0.839579	0.816587	2250	944.5259	2188.383	893.5023	0.691631	39.62756	442.9848	442.9848	582.7078	32%	11.01087	0.192176	10.47887	0.182891	1382.325	1298.261	1.05201	1339.227	2028.508	103.1923	-0.73066
80	90	4500	1339.958	0.025884	0.839579	0.813694	2250	944.5259	2180.632	887.1839	0.690773	39.57838	480.0577	480.0577	640.3034	33%	11.10925	0.193893	10.57725	0.184608	1386.336	1294.382	1.051549	1339.204	2009.971	87.86951	-0.75439
80	100	4500	1339.958	0.028781	0.839579	0.810798	2250	944.5259	2172.87	880.879	0.689912	39.52905	516.5183	516.5183	697.9053	35%	11.20791	0.195615	10.67591	0.18633	1390.361	1290.501	1.051095	1339.187	1991.741	75.90206	-0.77103

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
80	110	4500	1339.958	0.031681	0.839579	0.807897	2250	944.5259	2165.096	874.5876	0.689049	39.47958	552.3807	552.3807	755.5138	37%	11.30685	0.197342	10.77485	0.188057	1394.4	1286.617	1.050649	1339.177	1973.81	66.36635	-0.7806
80	120	4500	1339.958	0.034586	0.839579	0.804992	2250	944.5259	2157.312	868.3098	0.688183	39.42996	587.6584	587.6584	813.1295	38%	11.40607	0.199073	10.87407	0.189788	1398.454	1282.73	1.05021	1339.175	1956.171	58.63746	-0.7831
80	130	4500	1339.958	0.037495	0.839579	0.802083	2250	944.5259	2149.516	862.0456	0.687314	39.38021	622.3644	622.3644	870.7531	40%	11.50558	0.20081	10.97358	0.191525	1402.522	1278.841	1.049777	1339.179	1938.818	52.28	-0.77853
80	140	4500	1339.958	0.040408	0.839579	0.79917	2250	944.5259	2141.709	855.7953	0.686444	39.33032	656.5114	656.5114	928.385	41%	11.60537	0.202552	11.07337	0.193267	1406.604	1274.948	1.049352	1339.191	1921.744	46.98297	-0.76691
80	150	4500	1339.958	0.043326	0.839579	0.796253	2250	944.5259	2133.891	849.5587	0.68557	39.28028	690.1119	690.1119	986.0258	43%	11.70545	0.204299	11.17345	0.195013	1410.702	1271.053	1.048933	1339.21	1904.944	42.51929	-0.74824
80	160	4500	1339.958	0.046247	0.839579	0.793332	2250	944.5259	2126.062	843.3361	0.684694	39.23009	723.1777	723.1777	1043.676	44%	11.80581	0.20605	11.27381	0.196765	1414.814	1267.155	1.048521	1339.235	1888.411	38.71997	-0.72251
80	170	4500	1339.958	0.049173	0.839579	0.790406	2250	944.5259	2118.222	837.1275	0.683816	39.17977	755.7206	755.7206	1101.336	46%	11.90646	0.207807	11.37446	0.198522	1418.94	1263.253	1.048115	1339.268	1872.14	35.45705	-0.68973
80	180	4500	1339.958	0.052102	0.839579	0.787476	2250	944.5259	2110.37	830.9329	0.682935	39.1293	787.7518	787.7518	1159.007	47%	12.00741	0.209569	11.47541	0.200284	1423.082	1259.349	1.047715	1339.308	1856.124	32.63219	-0.64991
80	190	4500	1339.958	0.055037	0.839579	0.784542	2250	944.5259	2102.507	824.7524	0.682052	39.07868	819.2823	819.2823	1216.689	49%	12.10864	0.211336	11.57664	0.20205	1427.239	1255.442	1.047321	1339.355	1840.359	30.16879	-0.60303
80	200	4500	1339.958	0.057975	0.839579	0.781604	2250	944.5259	2094.632	818.5861	0.681166	39.02792	850.3228	850.3228	1274.383	50%	12.21016	0.213108	11.67816	0.203822	1431.411	1251.531	1.046933	1339.409	1824.839	28.0064	-0.54911
80	210	4500	1339.958	0.060917	0.839579	0.778661	2250	944.5259	2086.746	812.4341	0.680277	38.97701	880.8837	880.8837	1332.089	51%	12.31198	0.214885	11.77998	0.205599	1435.598	1247.617	1.046551	1339.47	1809.558	26.09683	-0.48815
80	220	4500	1339.958	0.063864	0.839579	0.775714	2250	944.5259	2078.849	806.2965	0.679386	38.92595	910.9752	910.9752	1389.808	53%	12.41409	0.216667	11.88209	0.207382	1439.801	1243.7	1.046175	1339.538	1794.512	24.40124	-0.42012
80	230	4500	1339.958	0.066815	0.839579	0.772763	2250	944.5259	2070.94	800.1733	0.678492	38.87475	940.6069	940.6069	1447.54	54%	12.5165	0.218454	11.9845	0.209169	1444.019	1239.78	1.045804	1339.613	1779.697	22.88805	-0.34505
80	240	4500	1339.958	0.069771	0.839579	0.769808	2250	944.5259	2063.02	794.0646	0.677596	38.8234	969.7884	969.7884	1505.286	55%	12.6192	0.220247	12.0872	0.210962	1448.252	1235.856	1.045439	1339.695	1765.106	21.53134	-0.26292
80	40	5000	1488.842	0.010314	0.839579	0.829264	2500	1049.473	2469.288	1023.846	0.69538	39.84235	302.4644	302.4644	365.9397	21%	10.58131	0.184679	10.04931	0.175394	1516.491	1461.44	1.054131	1488.24	2348.768	273.2697	-0.60205
80	50	5000	1488.842	0.012901	0.839579	0.826678	2500	1049.473	2461.585	1017.469	0.694617	39.79863	342.4418	342.4418	423.5147	24%	10.66874	0.186205	10.13674	0.176919	1520.441	1457.572	1.053684	1488.185	2328.779	213.1899	-0.65743
80	60	5000	1488.842	0.015491	0.839579	0.824088	2500	1049.473	2453.873	1011.103	0.693852	39.7548	381.8068	381.8068	481.0931	26%	10.75639	0.187734	10.22439	0.178449	1524.402	1453.703	1.053244	1488.136	2309.097	171.4955	-0.70639
80	70	5000	1488.842	0.018084	0.839579	0.821494	2500	1049.473	2446.151	1004.749	0.693085	39.71087	420.5724	420.5724	538.6752	28%	10.84427	0.189268	10.31227	0.179983	1528.376	1449.831	1.052811	1488.093	2289.714	141.3379	-0.74893
80	80	5000	1488.842	0.020681	0.839579	0.818898	2500	1049.473	2438.418	998.4075	0.692317	39.66682	458.7512	458.7512	596.2614	30%	10.93237	0.190806	10.40037	0.181521	1532.362	1445.957	1.052384	1488.057	2270.624	118.7915	-0.78508
80	90	5000	1488.842	0.023281	0.839579	0.816298	2500	1049.473	2430.676	992.0777	0.691546	39.62265	496.3556	496.3556	653.8523	32%	11.0207	0.192347	10.4887	0.183062	1536.361	1442.081	1.051963	1488.027	2251.822	101.4739	-0.81484
80	100	5000	1488.842	0.025884	0.839579	0.813694	2500	1049.473	2422.925	985.7599	0.690773	39.57838	533.3974	533.3974	711.4483	33%	11.10925	0.193893	10.57725	0.184608	1540.373	1438.202	1.051549	1488.004	2233.301	87.86951	-0.83821
80	110	5000	1488.842	0.028491	0.839579	0.811088	2500	1049.473	2415.163	979.4543	0.689998	39.53399	569.8882	569.8882	769.0498	35%	11.19803	0.195442	10.66603	0.186157	1544.397	1434.321	1.05114	1487.987	2215.056	76.97694	-0.85521
80	120	5000	1488.842	0.031101	0.839579	0.808478	2500	1049.473	2407.391	973.1609	0.689221	39.48948	605.8394	605.8394	826.6572	36%	11.28704	0.196996	10.75504	0.187711	1548.434	1430.438	1.050737	1487.976	2197.08	68.11221	-0.86584
80	130	5000	1488.842	0.033714	0.839579	0.805864	2500	1049.473	2399.609	966.8796	0.688443	39.44486	641.2619	641.2619	884.2711	38%	11.37627	0.198553	10.84427	0.189268	1552.484	1426.552	1.050341	1487.972	2179.369	60.79518	-0.8701
80	140	5000	1488.842	0.036331	0.839579	0.803248	2500	1049.473	2391.818	960.6107	0.687662	39.40013	676.1664	676.1664	941.8919	39%	11.46574	0.200115	10.93374	0.19083	1556.547	1422.663	1.049949	1487.974	2161.917	54.68054	-0.86801
80	150	5000	1488.842	0.038951	0.839579	0.800627	2500	1049.473	2384.016	954.3542	0.686879	39.35528	710.5633	710.5633	999.52	41%	11.55544	0.20168	11.02344	0.192395	1560.624	1418.772	1.049564	1487.983	2144.718	49.51473	-0.85956
80	160	5000	1488.842	0.041575	0.839579	0.798004	2500	1049.473	2376.204	948.11	0.686094	39.31032	744.4628	744.4628	1057.156	42%	11.64537	0.20325	11.11337	0.193965	1564.713	1414.878	1.049183	1487.997	2127.769	45.10805	-0.84476
80	170	5000	1488.842	0.044202	0.839579	0.795377	2500	1049.473	2368.382	941.8783	0.685308	39.26524	777.8747	777.8747	1114.8	43%	11.73553	0.204824	11.20353	0.195538	1568.815	1410.982	1.048809	1488.019	2111.063	41.31623	-0.82362
80	180	5000	1488.842	0.046832	0.839579	0.792747	2500	1049.473	2360.55	935.6592	0.684519	39.22004	810.8086	810.8086	1172.453	45%	11.82592	0.206401	11.29392	0.197116	1572.931	1407.083	1.048439	1488.046	2094.596	38.02799	-0.79613
80	190	5000	1488.842	0.049465	0.839579	0.790113	2500	1049.473	2352.708	929.4526	0.683728	39.17473	843.2739	843.2739	1230.114	46%	11.91654	0.207983	11.38454	0.198698	1577.06	1403.181	1.048074	1488.08	2078.363	35.15626	-0.7623
80	200	5000	1488.842	0.052102	0.839579	0.787476	2500	1049.473	2344.855	923.2587	0.682935	39.1293	875.2797	875.2797	1287.786	47%	12.00741	0.209569	11.47541	0.200284	1581.202	1399.277	1.047715	1488.12	2062.36	32.63219	-0.72212
80	210	5000	1488.842	0.054743	0.839579	0.784836	2500	1049.473	2336.993	917.0775	0.68214	39.08375	906.8349	906.8349	1345.467	48%	12.0985	0.211159	11.5665	0.201874	1585.358	1395.37	1.04736	1488.167	2046.583	30.4007	-0.6756
80	220	5000	1488.842	0.057387	0.839579	0.782192	2500	1049.473	2329.12	910.9091	0.681343	39.03808	937.9482	937.9482	1403.159	50%	12.18984	0.212753	11.65784	0.203468	1589.528	1391.459	1.04701	1488.219	2031.026	28.41726	-0.62274
80	230	5000	1488.842	0.060034	0.839579	0.779544	2500	1049.473	2321.237	904.7536	0.680544	38.9923	968.628	968.628	1460.862	51%	12.28141	0.214351	11.74941	0.205066	1593.712	1387.546	1.046665	1488.279	2015.686	26.64563	-0.56353
80	240	5000	1488.842	0.062685	0.839579	0.776894	2500	1049.473	2313.344	898.6109	0.679743	38.94639	998.8826	998.8826	1518.576	52%	12.37321	0.215953	11.84121	0.206668	1597.909	1383.63	1.046325	1488.344	2000.559	25.05597	-0.49798
80	40	5500	1637.726	0.009374	0.839579	0.830204	2750	1154.421	2719.295	1128.785	0.695657	39.85822	316.5501	316.5501	379.5044	20%	10.54957	0.184125	10.01757	0.17484	1666.564	1609.13	1.054295	1637.088	2591.725	301.8844	-0.63835
80	50	5500	1637.726	0.011725	0.839579	0.827854	2750	1154.421	2711.596	1122.403	0.694964	39.81852	356.7816	356.7816	437.0783	23%	10.62897	0.185511	10.09697	0.176225	1670.508	1605.264	1.053887	1637.03	2571.609	237.6405	-0.69636
80	60	5500	1637.726	0.014078	0.839579	0.825501	2750	1154.421	2703.889	1116.031	0.69427	39.77872	396.4511	396.4511	494.6549	25%	10.70855	0.186899	10.17655	0.177614	1674.464	1601.395	1.053484	1636.978	2551.774	192.4625	-0.74853
80	70	5500	1637.726	0.016434	0.839579	0.823145	2750	1154.421	2696.172	1109.67	0.693574	39.73884	435.5692	435.5692	552.2347	27%	10.78832	0.188292	10.25632	0.179007	1678.43	1597.525	1.053086	1636.932	2532.215	159.445	-0.79486
80	80	5500	1637.726	0.018792	0.839579	0.820786	2750	1154.421	2688.447	1103.32	0.692876	39.69886	474.1467	474.1467	609.8181	29%	10.86827	0.189687	10.33627	0.180402	1682.408	1593.652	1.052694	1636.891	2512.927	134.555	-0.83537
80	90	5500	1637.726	0.021153	0.839579	0.818425	2750	1154.421	2680.713	1096.981	0.692177	39.65879	512.1938	512.1938	667.4053	30%	10.94841	0.191086	10.41641	0.181801	1686.397	1589.778	1.052307	1636.856	2493.903	115.3073	-0.87006
80	100	5500	1637.726	0.023518	0.839579	0.816061	2750	1154.421	2672.969	1090.653	0.691476	39.61863	549.7207	549.7207	724.9969	32%	11.02874	0.192488	10.49674	0.183203	1690.398	1585.901	1.051925	1636.827	2475.14	100.1016	-0.89895
80	110	5500	1637.726	0.025884	0.839579	0.813694	2750	1154.421	2665.217	1084.336	0.690773	39.57838	586.7371	586.7371	782.5931	33%	11.10925	0.193893	10.57725	0.184608	1694.41	1582.022	1.051549	1636.804	2456.631	87.86951	-0.92203
80	120	5500	1637.726	0.028254	0.839579	0.811325	2750	1154.421	2657.456	1078.03	0.690069	39.53803	623.2527	623.2527	840.1943	35%	11.18995	0.195301	10.65795	0.186016	1698.434	1578.141	1.051177	1636.787	2438.374	77.87482	-0.93932
80	130	5500	1637.726	0.030626	0.839579	0.808952	2750	1154.421	2649.685	1071.735	0.689363	39.49758	659.2767	659.2767	897.801	36%	11.27084	0.196713	10.73884	0.187428	1702.469	1574.258	1.05081	1636.776	2420.362	69.5969	-0.95081
80	140	5500	1637.726	0.033001	0.839579	0.806577	2750	1154.421	2641.906	1065.451	0.688655	39.45704	694.8183	694.8183	955.4133	38%	11.35191	0.198128	10.81991	0.188843	1706.516	1570.373	1.050448	1636.77	2402.591	62.65891	-0.95653
80	150	5500	1637.726	0.035379	0.839579	0.804199	2750	1154.421	2634.117	1059.178	0.687946	39.41641	729.8864	729.8864	1013.032	39%	11.43318	0.199547	10.90118	0.190262	1710.575	1566.485	1.050091	1636.77	2385.057	56.78254	-0.95646
80	160	5500	1637.726	0.03776	0.839579	0.801819	2750	1154.421	2626.32	1052.916	0.687235	39.37568	764.4897	764.4897	1070.657	40%	11.51464	0.200968	10.98264	0.191683	1714.646	1562.595	1.049738	1636.776	2367.755	51.75855	-0.95061
80	170	5500	1637.726	0.040143	0.839579	0.799435	2750	1154.421	2618.513	1046.666	0.686523	39.33486	798.6366	798.6366	1128.289	41%	11.59629	0.202393	11.06429	0.193108	1718.729	1558.703	1.04939	1636.787	2350.682	47.42715	-0.93898
80	180	5500	1637.726	0.042529	0.839579	0.797049	2750	1154.421	2610.697	1040.427	0.685809	39.29394	832.3353	832.3353	1185.928	42%	11.67812	0.203822	11.14612	0.194537	1722.823	1554.808	1.049047	1636.805	2333.832	43.66452	-0.92159
80	190	5500	1637.726	0.044919	0.839579	0.79466	2750	1154.421	2602.872	1034.199	0.685093	39.25292	865.594	865.594	1243.575	44%	11.76015	0.205253	11.22815	0.195968	1726.93	1550.911	1.048707	1636.828	2317.203	40.37354	-0.89843
80	200	5500	1637.726	0.04731	0.839579	0.792268	2750	1154.421	2595.037	1027.983	0.684375	39.21181	898.4206	898.4206	1301.229	45%	11.84238	0.206688	11.31038	0.197403	1731.049	1547.011	1.048372	1636.857	2300.79	37.4771	-0.86949
80	210	5500	1637.726	0.049705	0.839579	0.789874	2750	1154.421	2587.194	1021.778	0.683656	39.1706	930.8226	930.8226	1358.893	46%	11.9248	0.208127	11.3928	0.198842	1735.18	1543.109	1.048041	1636.892	2284.589	34.91335	-0.8348
80	220	5500	1637.726	0.052102	0.839579	0.787476	2750	1154.421	2579.341	1015.585	0.682935	39.1293	962.8077	962.8077	1416.564	47%	12.00741	0.209569	11.47541	0.200284	1739.323	1539.205	1.047715	1636.932	2268.596	32.63219	-0.79433
80	230	5500	1637.726	0.054503	0.839579	0.785076	2750	1154.421	2571.479	1009.403	0.682212	39.08789	994.3831	994.3831	1474.245	48%	12.09021	0.211014	11.55821	0.201729	1743.478	1535.297	1.047392	1636.978	2252.808	30.5927	-0.7481
80	240	5500	1637.726	0.056906	0.839579	0.782673	2750	1154.421	2563.607	1003.233	0.681488	39.04639	1025.556	1025.556	1531.936	49%	12.17321	0.212463	11.64121	0.203177	1747.646	1531.388	1.047073	1637.03	2237.222	28.76117	-0.6961
80	40	6000	1786.611	0.008592	0.839579	0.830987	3000	1259.368	2969.301	1233.725	0.695888	39.87143	330.5593	330.5593	393.0695	19%	10.52314	0.183664	9.991144	0.174378	1816.639	1756.82	1.054433	1785.937	2834.72	329.4608	-0.67387
80	50	6000	1786.611	0.010745	0.839579	0.828833	3000	1259.368	2961.605	1227.339	0.695253	39.83507	371.0045	371.0045	450.6424	21%	10.59586	0.184933	10.06386	0.175648	1820.578	1752.954	1.054056	1785.877	2814.498	261.5437	-0.73407
80	60	6000	1786.611	0.012901	0.839579	0.826678	3000	1259.368	2953.902	1220.962	0.694617	39.79863	410.9301	410.9301	508.2177	24%	10.66874	0.186205	10.13674	0.176919	1824.529	1749.087	1.053684	1785.822	2794.535	213.1899	-0.78891
80	70	6000	1786.611	0.015059	0.839579	0.824519	3000	1259.368	2946.191	1214.596	0.69398	39.76212	450.3455	450.3455	565.7957	26%	10.74177	0.187479	10.20977	0.178194	1828.489	1745.218	1.053317	1785.772	2774.827	177.5051	-0.83841
80	80	6000	1786.611	0.01722	0.839579	0.822359	3000	1259.368	2938.471	1208.239	0.693341	39.72552	489.2596	489.2596	623.3768	27%	10.81495	0.188756	10.28295	0.179471	1832.46	1741.346	1.052955	1785.728	2755.37	150.3917	-0.88256
80	90	6000	1786.611	0.019382	0.839579	0.820196	3000	1259.368	2930.743	1201.892	0.692701	39.68885	527.6812	527.6812	680.9613	29%	10.88829	0.190037	10.35629	0.180751	1836.441	1737.473	1.052597	1785.689	2736.159	129.2883	-0.92137

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
80	100	6000	1786.611	0.021547	0.839579	0.818031	3000	1259.368	2923.007	1195.555	0.69206	39.65211	565.6191	565.6191	738.5494	31%	10.96179	0.191319	10.42979	0.182034	1840.433	1733.598	1.052243	1785.656	2717.19	112.5264	-0.95485
80	110	6000	1786.611	0.023715	0.839579	0.815864	3000	1259.368	2915.262	1189.229	0.691417	39.61528	603.0816	603.0816	796.1415	32%	11.03544	0.192605	10.50344	0.18332	1844.435	1729.722	1.051894	1785.628	2698.459	98.98067	-0.98301
80	120	6000	1786.611	0.025884	0.839579	0.813694	3000	1259.368	2907.51	1182.912	0.690773	39.57838	640.0769	640.0769	853.7379	33%	11.10925	0.193893	10.57725	0.184608	1848.447	1725.843	1.051549	1785.605	2679.962	87.86951	-1.00585
80	130	6000	1786.611	0.028056	0.839579	0.811522	3000	1259.368	2899.749	1176.605	0.690127	39.54139	676.6131	676.6131	911.3389	35%	11.18322	0.195184	10.65122	0.185899	1852.471	1721.962	1.051208	1785.587	2661.693	78.63606	-1.02338
80	140	6000	1786.611	0.030231	0.839579	0.809348	3000	1259.368	2891.979	1170.309	0.689481	39.50433	712.698	712.698	968.9449	36%	11.25734	0.196478	10.72534	0.187193	1856.505	1718.079	1.050871	1785.575	2643.651	70.87474	-1.0356
80	150	6000	1786.611	0.032407	0.839579	0.807171	3000	1259.368	2884.202	1164.022	0.688832	39.46719	748.3393	748.3393	1026.556	37%	11.33163	0.197774	10.79963	0.188489	1860.549	1714.194	1.050538	1785.568	2625.83	64.28437	-1.04252
80	160	6000	1786.611	0.034586	0.839579	0.804992	3000	1259.368	2876.416	1157.746	0.688183	39.42996	783.5445	783.5445	1084.173	38%	11.40607	0.199073	10.87407	0.189788	1864.605	1710.307	1.05021	1785.566	2608.228	58.63746	-1.04413
80	170	6000	1786.611	0.036768	0.839579	0.802811	3000	1259.368	2868.621	1151.481	0.687532	39.39266	818.321	818.321	1141.795	40%	11.48067	0.200376	10.94867	0.19109	1868.671	1706.418	1.049885	1785.57	2590.839	53.75948	-1.04045
80	180	6000	1786.611	0.038951	0.839579	0.800627	3000	1259.368	2860.819	1145.225	0.686879	39.35528	852.676	852.676	1199.424	41%	11.55544	0.20168	11.02344	0.192395	1872.748	1702.526	1.049564	1785.579	2573.662	49.51473	-1.03147
80	190	6000	1786.611	0.041137	0.839579	0.798441	3000	1259.368	2853.008	1138.98	0.686225	39.31782	886.6164	886.6164	1257.059	42%	11.63036	0.202988	11.09836	0.193703	1876.836	1698.633	1.049246	1785.593	2556.692	45.79636	-1.01721
80	200	6000	1786.611	0.043326	0.839579	0.796253	3000	1259.368	2845.188	1132.745	0.68557	39.28028	920.1492	920.1492	1314.701	43%	11.70545	0.204299	11.17345	0.195013	1880.935	1694.737	1.048933	1785.613	2539.925	42.51929	-0.99765
80	210	6000	1786.611	0.045516	0.839579	0.794062	3000	1259.368	2837.361	1126.521	0.684914	39.24265	953.281	953.281	1372.35	44%	11.78069	0.205612	11.24869	0.196327	1885.046	1690.839	1.048623	1785.638	2523.36	39.61509	-0.9728
80	220	6000	1786.611	0.047709	0.839579	0.791869	3000	1259.368	2829.524	1120.307	0.684255	39.20495	986.0184	986.0184	1430.007	45%	11.8561	0.206928	11.3241	0.197643	1889.167	1686.939	1.048317	1785.668	2506.991	37.02819	-0.94267
80	230	6000	1786.611	0.049905	0.839579	0.789674	3000	1259.368	2821.679	1114.103	0.683596	39.16716	1018.368	1018.368	1487.671	46%	11.93167	0.208247	11.39967	0.198962	1893.299	1683.037	1.048014	1785.703	2490.816	34.71308	-0.90725
80	240	6000	1786.611	0.052102	0.839579	0.787476	3000	1259.368	2813.826	1107.91	0.682935	39.1293	1050.336	1050.336	1545.343	47%	12.00741	0.209569	11.47541	0.200284	1897.443	1679.132	1.047715	1785.744	2474.832	32.63219	-0.86654
80	40	6500	1935.495	0.007929	0.839579	0.831649	3250	1364.315	3219.306	1338.667	0.696083	39.8826	344.5093	344.5093	406.6348	18%	10.5008	0.183274	9.9688	0.173988	1966.714	1904.51	1.05455	1934.786	3077.745	355.9793	-0.70879
80	50	6500	1935.495	0.009917	0.839579	0.829662	3250	1364.315	3211.613	1332.277	0.695497	39.84906	385.1365	385.1365	464.2069	21%	10.56788	0.184444	10.03588	0.175159	1970.65	1900.645	1.0542	1934.724	3057.432	284.8376	-0.77085
80	60	6500	1935.495	0.011906	0.839579	0.827673	3250	1364.315	3203.913	1325.896	0.694911	39.81546	425.2808	425.2808	521.7811	23%	10.63508	0.185617	10.10308	0.176332	1974.596	1896.778	1.053855	1934.667	3037.36	233.6013	-0.82796
80	70	6500	1935.495	0.013897	0.839579	0.825682	3250	1364.315	3196.206	1319.525	0.694323	39.78179	464.9501	464.9501	579.3578	25%	10.70242	0.186793	10.17042	0.177507	1978.551	1892.91	1.053514	1934.615	3017.525	195.4403	-0.88012
80	80	6500	1935.495	0.01589	0.839579	0.823689	3250	1364.315	3188.491	1313.162	0.693734	39.74805	504.1522	504.1522	636.9371	26%	10.7699	0.18797	10.2379	0.178685	1982.516	1889.04	1.053177	1934.567	2997.924	166.2277	-0.92735
80	90	6500	1935.495	0.017885	0.839579	0.821694	3250	1364.315	3180.768	1306.809	0.693144	39.71425	542.8948	542.8948	694.5193	28%	10.8375	0.18915	10.3055	0.179865	1986.491	1885.168	1.052844	1934.525	2978.553	143.3492	-0.96966
80	100	6500	1935.495	0.019882	0.839579	0.819697	3250	1364.315	3173.038	1300.465	0.692553	39.68038	581.1853	581.1853	752.1047	29%	10.90524	0.190332	10.37324	0.181047	1990.475	1881.294	1.052515	1934.488	2959.407	125.0827	-1.00703
80	110	6500	1935.495	0.021881	0.839579	0.817698	3250	1364.315	3165.3	1294.13	0.691961	39.64645	619.0311	619.0311	809.6936	31%	10.97311	0.191517	10.44111	0.182232	1994.468	1877.419	1.052189	1934.455	2940.484	110.2559	-1.03949
80	120	6500	1935.495	0.023881	0.839579	0.815697	3250	1364.315	3157.555	1287.804	0.691368	39.61244	656.4392	656.4392	867.2862	32%	11.04111	0.192704	10.50911	0.183419	1998.472	1873.542	1.051867	1934.428	2921.78	98.04777	-1.06704
80	130	6500	1935.495	0.025884	0.839579	0.813694	3250	1364.315	3149.802	1281.488	0.690773	39.57838	693.4166	693.4166	924.8828	33%	11.10925	0.193893	10.57725	0.184608	2002.485	1869.663	1.051549	1934.405	2903.292	87.86951	-1.08967
80	140	6500	1935.495	0.027889	0.839579	0.811689	3250	1364.315	3142.041	1275.181	0.690177	39.54424	729.9703	729.9703	982.4836	35%	11.17752	0.195085	10.64552	0.185799	2006.508	1865.782	1.051234	1934.387	2885.015	79.28963	-1.10741
80	150	6500	1935.495	0.029896	0.839579	0.809683	3250	1364.315	3134.273	1268.883	0.68958	39.51004	766.1068	766.1068	1040.089	36%	11.24593	0.196278	10.71393	0.186993	2010.54	1861.899	1.050923	1934.375	2866.947	71.98601	-1.12024
80	160	6500	1935.495	0.031905	0.839579	0.807674	3250	1364.315	3126.497	1262.595	0.688982	39.47576	801.8328	801.8328	1097.699	37%	11.31447	0.197475	10.78247	0.18819	2014.583	1858.015	1.050615	1934.367	2849.084	65.71418	-1.12817
80	170	6500	1935.495	0.033916	0.839579	0.805663	3250	1364.315	3118.713	1256.316	0.688383	39.44143	837.1547	837.1547	1155.314	38%	11.38315	0.198673	10.85115	0.189388	2018.635	1854.128	1.05031	1934.364	2831.423	60.28584	-1.13122
80	180	6500	1935.495	0.035928	0.839579	0.80365	3250	1364.315	3110.922	1250.047	0.687782	39.40702	872.0787	872.0787	1212.935	39%	11.45196	0.199874	10.91996	0.190589	2022.698	1850.24	1.050009	1934.365	2813.961	55.554	-1.12937
80	190	6500	1935.495	0.037943	0.839579	0.801636	3250	1364.315	3103.123	1243.787	0.687181	39.37254	906.6111	906.6111	1270.561	40%	11.52091	0.201078	10.98891	0.191793	2026.771	1846.35	1.049711	1934.372	2796.694	51.40255	-1.12263
80	200	6500	1935.495	0.03996	0.839579	0.799619	3250	1364.315	3095.316	1237.536	0.686578	39.338	940.7579	940.7579	1328.193	41%	11.59	0.202284	11.058	0.192998	2030.853	1842.457	1.049417	1934.384	2779.621	47.73874	-1.11101
80	210	6500	1935.495	0.041979	0.839579	0.7976	3250	1364.315	3087.501	1231.296	0.685974	39.30339	974.525	974.525	1385.831	42%	11.65922	0.203492	11.12722	0.194207	2034.946	1838.563	1.049125	1934.4	2762.738	44.48779	-1.0945
80	220	6500	1935.495	0.043999	0.839579	0.795579	3250	1364.315	3079.679	1225.064	0.685368	39.26871	1007.918	1007.918	1443.475	43%	11.72858	0.204702	11.19658	0.195417	2039.049	1834.666	1.048837	1934.422	2746.041	41.58878	-1.07311
80	230	6500	1935.495	0.046022	0.839579	0.793556	3250	1364.315	3071.849	1218.843	0.684762	39.23396	1040.943	1040.943	1501.126	44%	11.79808	0.205915	11.26608	0.19663	2043.162	1830.768	1.048552	1934.448	2729.528	38.99175	-1.04684
80	240	6500	1935.495	0.048047	0.839579	0.791532	3250	1364.315	3064.011	1212.631	0.684154	39.19914	1073.605	1073.605	1558.784	45%	11.86772	0.207131	11.33572	0.197846	2047.285	1826.867	1.04827	1934.479	2713.197	36.65535	-1.01569
80	40	7000	2084.379	0.007362	0.839579	0.832217	3500	1469.263	3469.31	1443.609	0.69625	39.89217	358.4127	358.4127	420.2003	17%	10.48166	0.182939	9.949659	0.173654	2116.79	2052.199	1.05465	2083.636	3320.794	381.4428	-0.74323
80	50	7000	2084.379	0.009207	0.839579	0.830372	3500	1469.263	3461.62	1437.216	0.695707	39.86105	399.1967	399.1967	477.7718	20%	10.54391	0.184026	10.01191	0.174741	2120.724	2048.335	1.054325	2083.572	3300.402	307.4837	-0.80689
80	60	7000	2084.379	0.011053	0.839579	0.828526	3500	1469.263	3453.923	1430.832	0.695162	39.82987	439.5297	439.5297	535.3451	22%	10.60626	0.185114	10.07426	0.175829	2124.666	2044.469	1.054003	2083.513	3280.235	253.6411	-0.86594
80	70	7000	2084.379	0.012901	0.839579	0.826678	3500	1469.263	3446.219	1424.456	0.694617	39.79863	479.4185	479.4185	592.9206	24%	10.66874	0.186205	10.13674	0.176919	2128.617	2040.601	1.053684	2083.459	3260.291	213.1899	-0.9204
80	80	7000	2084.379	0.014751	0.839579	0.824828	3500	1469.263	3438.508	1418.089	0.694071	39.76734	518.8699	518.8699	650.4985	25%	10.73132	0.187297	10.19932	0.178012	2132.576	2036.732	1.053369	2083.409	3240.565	182.0033	-0.97028
80	90	7000	2084.379	0.016602	0.839579	0.822977	3500	1469.263	3430.79	1411.73	0.693524	39.73599	557.8905	557.8905	708.0789	27%	10.79402	0.188391	10.26202	0.179106	2136.545	2032.861	1.053058	2083.363	3221.055	157.4338	-1.01557
80	100	7000	2084.379	0.018455	0.839579	0.821123	3500	1469.263	3423.065	1405.38	0.692976	39.70458	596.487	596.487	765.6621	28%	10.85684	0.189488	10.32484	0.180202	2140.522	2028.989	1.05275	2083.323	3201.757	137.7191	-1.05629
80	110	7000	2084.379	0.02031	0.839579	0.819269	3500	1469.263	3415.333	1399.038	0.692426	39.67312	634.6656	634.6656	823.2483	30%	10.91977	0.190586	10.38777	0.181301	2144.509	2025.115	1.052445	2083.287	3182.667	121.6483	-1.09243
80	120	7000	2084.379	0.022166	0.839579	0.817412	3500	1469.263	3407.594	1392.705	0.691876	39.64159	672.4326	672.4326	880.8379	31%	10.98281	0.191686	10.45081	0.182401	2148.504	2021.239	1.052143	2083.255	3163.784	108.3674	-1.12401
80	130	7000	2084.379	0.024024	0.839579	0.815554	3500	1469.263	3399.848	1386.38	0.691325	39.61001	709.7942	709.7942	938.4309	32%	11.04597	0.192789	10.51397	0.183503	2152.509	2017.362	1.051844	2083.228	3145.103	97.25931	-1.15103
80	140	7000	2084.379	0.025884	0.839579	0.813694	3500	1469.263	3392.094	1380.064	0.690773	39.57838	746.7564	746.7564	996.0276	33%	11.10925	0.193893	10.57725	0.184608	2156.522	2013.483	1.051549	2083.206	3126.622	87.86951	-1.17349
80	150	7000	2084.379	0.027746	0.839579	0.811833	3500	1469.263	3384.334	1373.757	0.69022	39.54668	783.325	783.325	1053.628	35%	11.17264	0.194999	10.64064	0.185714	2160.545	2009.602	1.051256	2083.188	3108.338	79.85684	-1.1914
80	160	7000	2084.379	0.029609	0.839579	0.809969	3500	1469.263	3376.567	1367.458	0.689666	39.51493	819.5059	819.5059	1111.233	36%	11.23615	0.196108	10.70415	0.186823	2164.576	2005.72	1.050967	2083.174	3090.247	72.9612	-1.20476
80	170	7000	2084.379	0.031474	0.839579	0.808104	3500	1469.263	3368.792	1361.168	0.68911	39.48311	855.3046	855.3046	1168.842	37%	11.29977	0.197218	10.76777	0.187933	2168.617	2001.836	1.05068	2083.165	3072.348	66.98143	-1.21357
80	180	7000	2084.379	0.033341	0.839579	0.806238	3500	1469.263	3361.01	1354.887	0.688554	39.45124	890.7269	890.7269	1226.456	38%	11.36351	0.198331	10.83151	0.189046	2172.667	1997.95	1.050397	2083.161	3054.637	61.75995	-1.21783
80	190	7000	2084.379	0.035209	0.839579	0.804369	3500	1469.263	3353.221	1348.614	0.687997	39.41931	925.7781	925.7781	1284.075	39%	11.42737	0.199445	10.89537	0.19016	2176.726	1994.062	1.050116	2083.161	3037.111	57.17185	-1.21756
80	200	7000	2084.379	0.037079	0.839579	0.802499	3500	1469.263	3345.425	1342.351	0.687439	39.38733	960.4636	960.4636	1341.699	40%	11.49135	0.200562	10.95935	0.191277	2180.795	1990.172	1.049839	2083.166	3019.768	53.11709	-1.21274
80	210	7000	2084.379	0.038951	0.839579	0.800627	3500	1469.263	3337.622	1336.096	0.686879	39.35528	994.7887	994.7887	1399.328	41%	11.55544	0.20168	11.02344	0.192395	2184.873	1986.281	1.049564	2083.176	3002.606	49.51473	-1.20339
80	220	7000	2084.379	0.040825	0.839579	0.798754	3500	1469.263	3329.812	1329.85	0.686319	39.32318	1028.758	1028.758	1456.963	42%	11.61965	0.202801	11.08765	0.193516	2188.96	1982.387	1.049292	2083.19	2985.621	46.29875	-1.1895
80	230	7000	2084.379	0.0427	0.839579	0.796879	3500	1469.263	3321.994	1323.613	0.685758	39.29101	1062.378	1062.378	1514.603	43%	11.68398	0.203924	11.15198	0.194639	2193.057	1978.492	1.049022	2083.208	2968.811	43.41483	-1.17107
80	240	7000	2084.379	0.044577	0.839579	0.795002	3500	1469.263	3314.169	1317.385	0.685195	39.25879	1095.652	1095.652	1572.25	43%	11.74842	0.205049	11.21642	0.195764	2197.163	1974.595	1.048755	2083.231	2952.174	40.81791	-1.14811
80	40	7500	2233.263	0.00687	0.839579	0.832708	3750	1574.21	3719.314	1548.552	0.696394	39.90046	372.2784	372.2784	433.7659	17%	10.46508	0.18265	9.933079	0.173365	2266.867	2199.889	1.054737	2232.486	3563.861	405.8699	-0.7773
80	50	7500	2233.263	0.008592	0.839579	0.830987	3750	1574.21	3711.626	1542.157	0.695888	39.87143	413.1991	413.1991	481.3369	19%	10.52314	0.183664	9.991144	0.174378	2270.798	2196.025	1.054433	2232.421	3543.4	329.4608	-0.84234
80	60	7500	2233.263	0.010314	0.839579	0.829264	3750	1574.21	3703.931	1535.769	0.69538	39.84235	453.6966	453.6966	548.9095	21%	10.58131	0.184679	10.04931	0.175394	2274.737	2192.159	1.054131	2232.36	3523.152	273.2697	-0.90307
80	70	7500	2233.263	0.012038	0.839579	0.82754	3750	1574.21	3696.23	1529.39	0.694872	39.81322	493.777	493.777	606.484	23%	10.63957	0.185696	10.10757	0.17641	2278.684	2188.293	1.053833	2232.304	3503.111	230.707	-0.95953
80	80	7500	2233.263	0.013764	0.839579	0.825815	3750	1574.21	3688.523	1523.018	0.694362	39.78403	533.4462	533.4462	664.0607	24%	10.69793	0.186714	10.16593	0.177429	2282.639	2184.424	1.053537	2232.252	3483.277	197.6702	-1.01169

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
80	90	7500	2233.263	0.015491	0.839579	0.824088	3750	1574.21	3680.809	1516.655	0.693852	39.7548	572.7101	572.7101	721.6396	26%	10.75639	0.187734	10.22439	0.178449	2286.603	2180.554	1.053244	2232.204	3463.645	171.4955	-1.05958
80	100	7500	2233.263	0.01722	0.839579	0.822359	3750	1574.21	3673.089	1510.299	0.693341	39.72552	611.5745	611.5745	779.221	27%	10.81495	0.188756	10.28295	0.179471	2290.575	2176.683	1.052955	2232.16	3444.213	150.3917	-1.1032
80	110	7500	2233.263	0.01895	0.839579	0.820629	3750	1574.21	3665.361	1503.951	0.692829	39.6962	650.0449	650.0449	836.8051	29%	10.87361	0.18978	10.34161	0.180495	2294.555	2172.81	1.052668	2232.121	3424.978	133.1177	-1.14254
80	120	7500	2233.263	0.020681	0.839579	0.818898	3750	1574.21	3657.628	1497.611	0.692317	39.66682	688.1268	688.1268	894.3921	30%	10.93237	0.190806	10.40037	0.181521	2298.543	2168.936	1.052384	2232.086	3405.937	118.7915	-1.17762
80	130	7500	2233.263	0.022414	0.839579	0.817165	3750	1574.21	3649.887	1491.279	0.691803	39.63739	725.8258	725.8258	951.9822	31%	10.99123	0.191833	10.45923	0.182548	2302.54	2165.06	1.052103	2232.055	3387.087	106.7721	-1.20844
80	140	7500	2233.263	0.024148	0.839579	0.81543	3750	1574.21	3642.14	1484.956	0.691288	39.60791	763.1472	763.1472	1009.576	32%	11.05019	0.192862	10.51819	0.183577	2306.546	2161.182	1.051824	2232.028	3368.426	96.58416	-1.23501
80	150	7500	2233.263	0.025884	0.839579	0.813694	3750	1574.21	3634.387	1478.64	0.690773	39.57838	800.0961	800.0961	1067.172	33%	11.10925	0.193893	10.57725	0.184608	2310.559	2157.303	1.051549	2232.006	3349.952	87.86951	-1.25732
80	160	7500	2233.263	0.027622	0.839579	0.811957	3750	1574.21	3626.627	1472.332	0.690257	39.54879	836.6777	836.6777	1124.773	34%	11.16841	0.194926	10.63641	0.18564	2314.582	2153.423	1.051276	2231.988	3331.661	80.35375	-1.27538
80	170	7500	2233.263	0.029361	0.839579	0.810218	3750	1574.21	3618.86	1466.033	0.68974	39.51916	872.8971	872.8971	1182.377	35%	11.22767	0.19596	10.69567	0.186675	2318.612	2149.54	1.051005	2231.974	3313.551	73.82381	-1.28919
80	180	7500	2233.263	0.031101	0.839579	0.808478	3750	1574.21	3611.087	1459.741	0.689221	39.48948	908.7591	908.7591	1239.986	36%	11.28704	0.196996	10.75504	0.187711	2322.652	2145.656	1.050737	2231.964	3295.62	68.11221	-1.29875
80	190	7500	2233.263	0.032843	0.839579	0.806736	3750	1574.21	3603.306	1453.458	0.688703	39.45975	944.2687	944.2687	1297.599	37%	11.3465	0.198034	10.8145	0.188749	2326.699	2141.771	1.050472	2231.959	3277.866	63.08576	-1.30408
80	200	7500	2233.263	0.034586	0.839579	0.804992	3750	1574.21	3595.52	1447.183	0.688183	39.42996	979.4307	979.4307	1355.216	38%	11.40607	0.199073	10.87407	0.189788	2330.756	2137.884	1.05021	2231.958	3260.285	58.63746	-1.30516
80	210	7500	2233.263	0.036331	0.839579	0.803248	3750	1574.21	3587.726	1440.916	0.687662	39.40013	1014.25	1014.25	1412.838	39%	11.46574	0.200115	10.93374	0.19083	2334.821	2133.995	1.049949	2231.961	3242.875	54.68054	-1.30201
80	220	7500	2233.263	0.038077	0.839579	0.801501	3750	1574.21	3579.926	1434.657	0.68714	39.37024	1048.73	1048.73	1470.465	40%	11.52551	0.201158	10.99351	0.191873	2338.895	2130.104	1.049692	2231.969	3225.635	51.14404	-1.29462
80	230	7500	2233.263	0.039825	0.839579	0.799753	3750	1574.21	3572.119	1428.407	0.686618	39.34031	1082.877	1082.877	1528.097	41%	11.58539	0.202203	11.05339	0.192918	2342.978	2126.212	1.049436	2231.98	3208.562	47.96941	-1.283
80	240	7500	2233.263	0.041575	0.839579	0.798004	3750	1574.21	3564.306	1422.165	0.686094	39.31032	1116.694	1116.694	1585.734	42%	11.64537	0.20325	11.11337	0.193965	2347.069	2122.317	1.049183	2231.996	3191.653	45.10805	-1.26715
80	40	8000	2382.147	0.00644	0.839579	0.833138	4000	1679.157	3969.317	1653.495	0.696521	39.90771	386.1134	386.1134	447.3316	16%	10.45058	0.182397	9.918578	0.173112	2416.945	2347.578	1.054814	2381.336	3806.943	429.2894	-0.81106
80	50	8000	2382.147	0.008053	0.839579	0.831525	4000	1679.157	3961.631	1647.098	0.696046	39.88051	427.1543	427.1543	504.9021	18%	10.50499	0.183347	9.972988	0.174061	2420.874	2343.715	1.054528	2381.27	3786.423	350.7603	-0.87731
80	60	8000	2382.147	0.009668	0.839579	0.829911	4000	1679.157	3953.939	1640.708	0.695571	39.85326	467.7965	467.7965	562.4742	20%	10.55948	0.184298	10.02748	0.175013	2424.81	2339.85	1.054244	2381.208	3766.102	292.4597	-0.93952
80	70	8000	2382.147	0.011284	0.839579	0.828295	4000	1679.157	3946.24	1634.325	0.695094	39.82597	508.0456	508.0456	620.0479	22%	10.61407	0.18525	10.08207	0.175965	2428.753	2335.983	1.053963	2381.15	3745.977	247.9559	-0.99771
80	80	8000	2382.147	0.012901	0.839579	0.826678	4000	1679.157	3938.536	1627.95	0.694617	39.79863	547.9068	547.9068	677.6236	24%	10.66874	0.186205	10.13674	0.176919	2432.705	2332.116	1.053684	2381.096	3726.047	213.1899	-1.05189
80	90	8000	2382.147	0.014519	0.839579	0.825059	4000	1679.157	3930.826	1621.582	0.694139	39.77125	587.3853	587.3853	735.2012	25%	10.72349	0.18716	10.19149	0.177875	2436.664	2328.247	1.053409	2381.045	3706.307	185.4957	-1.10205
80	100	8000	2382.147	0.016139	0.839579	0.82344	4000	1679.157	3923.109	1615.222	0.693661	39.74383	626.4862	626.4862	792.7812	27%	10.77834	0.188118	10.24634	0.178832	2440.631	2324.376	1.053135	2380.999	3686.757	163.0636	-1.1482
80	110	8000	2382.147	0.01776	0.839579	0.821819	4000	1679.157	3915.386	1608.869	0.693181	39.71636	665.2144	665.2144	850.3635	28%	10.83327	0.189076	10.30127	0.179791	2444.606	2320.505	1.052865	2380.957	3667.393	144.6294	-1.19035
80	120	8000	2382.147	0.019382	0.839579	0.820196	4000	1679.157	3907.657	1602.523	0.692701	39.68885	703.575	703.575	907.9484	29%	10.88829	0.190037	10.35629	0.180751	2448.588	2316.631	1.052597	2380.919	3648.213	129.2883	-1.22849
80	130	8000	2382.147	0.021006	0.839579	0.818573	4000	1679.157	3899.922	1596.185	0.69222	39.6613	741.5727	741.5727	965.536	30%	10.9434	0.190998	10.4114	0.181713	2452.578	2312.757	1.052331	2380.885	3629.214	116.3784	-1.26264
80	140	8000	2382.147	0.022631	0.839579	0.816948	4000	1679.157	3892.181	1589.854	0.691739	39.6337	779.2123	779.2123	1023.127	31%	10.99859	0.191962	10.46659	0.182677	2456.577	2308.88	1.052068	2380.855	3610.394	105.4067	-1.2928
80	150	8000	2382.147	0.024257	0.839579	0.815322	4000	1679.157	3884.433	1583.531	0.691256	39.60606	816.4985	816.4985	1080.72	32%	11.05388	0.192927	10.52188	0.183641	2460.583	2305.003	1.051807	2380.828	3591.751	95.99955	-1.31896
80	160	8000	2382.147	0.025884	0.839579	0.813694	4000	1679.157	3876.679	1577.216	0.690773	39.57838	853.4358	853.4358	1138.317	33%	11.10925	0.193893	10.57725	0.184608	2464.597	2301.124	1.051549	2380.806	3573.282	87.86951	-1.34114
80	170	8000	2382.147	0.027513	0.839579	0.812065	4000	1679.157	3868.919	1570.908	0.690289	39.55064	890.0288	890.0288	1195.918	34%	11.16471	0.194861	10.63271	0.185576	2468.619	2297.243	1.051293	2380.788	3554.986	80.79265	-1.35933
80	180	8000	2382.147	0.029143	0.839579	0.810435	4000	1679.157	3861.153	1564.608	0.689804	39.52287	926.2819	926.2819	1253.522	35%	11.22026	0.19583	10.68826	0.186545	2472.649	2293.361	1.051039	2380.774	3536.859	74.59223	-1.37354
80	190	8000	2382.147	0.030775	0.839579	0.808804	4000	1679.157	3853.381	1558.315	0.689319	39.49505	962.1994	962.1994	1311.13	36%	11.2759	0.196802	10.7439	0.187516	2476.686	2289.477	1.050787	2380.764	3518.9	69.12733	-1.38377
80	200	8000	2382.147	0.032407	0.839579	0.807171	4000	1679.157	3845.602	1552.03	0.688832	39.46719	997.7857	997.7857	1368.741	37%	11.33163	0.197774	10.79963	0.188489	2480.732	2285.592	1.050538	2380.757	3501.107	64.28437	-1.39002
80	210	8000	2382.147	0.034041	0.839579	0.805537	4000	1679.157	3837.817	1545.753	0.688345	39.43928	1033.045	1033.045	1426.357	38%	11.38745	0.198748	10.85545	0.189463	2484.787	2281.705	1.050291	2380.755	3483.478	59.97104	-1.3923
80	220	8000	2382.147	0.035677	0.839579	0.803902	4000	1679.157	3830.026	1539.483	0.687857	39.41132	1067.981	1067.981	1483.978	39%	11.44335	0.199724	10.91135	0.190439	2488.849	2277.817	1.050047	2380.757	3466.009	56.11161	-1.3906
80	230	8000	2382.147	0.037313	0.839579	0.802265	4000	1679.157	3822.229	1533.221	0.687369	39.38332	1102.599	1102.599	1541.602	40%	11.49935	0.200702	10.96735	0.191416	2492.919	2273.927	1.049804	2380.763	3448.701	52.64353	-1.38494
80	240	8000	2382.147	0.038951	0.839579	0.800627	4000	1679.157	3814.425	1526.967	0.686879	39.35528	1136.901	1136.901	1599.232	41%	11.55544	0.20168	11.02344	0.192395	2496.998	2270.035	1.049564	2380.772	3431.549	49.51473	-1.3753
80	40	8500	2531.032	0.006061	0.839579	0.833518	4250	1784.105	4219.32	1758.439	0.696633	39.91411	399.9232	399.9232	460.8974	15%	10.43779	0.182174	9.905789	0.172889	2567.023	2495.267	1.054882	2530.187	4050.038	451.7361	-0.84457
80	50	8500	2531.032	0.007579	0.839579	0.832	4250	1784.105	4211.635	1752.04	0.696186	39.88851	441.0704	441.0704	518.4676	18%	10.48898	0.183067	9.956976	0.173782	2570.95	2491.404	1.054612	2530.12	4029.465	371.3831	-0.91188
80	60	8500	2531.032	0.009098	0.839579	0.830481	4250	1784.105	4203.945	1745.647	0.695738	39.86288	481.841	481.841	576.0391	20%	10.54024	0.183962	10.00824	0.174677	2574.883	2487.54	1.054344	2530.056	4009.08	311.1934	-0.9754
80	70	8500	2531.032	0.010618	0.839579	0.82896	4250	1784.105	4196.249	1739.262	0.69529	39.83721	522.2397	522.2397	633.6122	21%	10.59158	0.184858	10.05958	0.175573	2578.824	2483.674	1.054078	2529.997	3988.88	264.9098	-1.03513
80	80	8500	2531.032	0.01214	0.839579	0.827439	4250	1784.105	4188.548	1732.883	0.694842	39.8115	562.2714	562.2714	691.187	23%	10.643	0.185755	10.111	0.17647	2582.772	2479.807	1.053815	2529.941	3968.864	228.5314	-1.09107
80	90	8500	2531.032	0.013662	0.839579	0.825916	4250	1784.105	4180.84	1726.512	0.694392	39.78575	601.9406	601.9406	748.7636	24%	10.69449	0.186654	10.16249	0.177369	2586.727	2475.939	1.053554	2529.888	3949.03	199.4025	-1.14324
80	100	8500	2531.032	0.015186	0.839579	0.824392	4250	1784.105	4173.127	1720.147	0.693942	39.75997	641.2518	641.2518	806.3422	26%	10.74607	0.187554	10.21407	0.178269	2590.69	2472.069	1.053296	2529.84	3929.374	175.7036	-1.19163
80	110	8500	2531.032	0.016711	0.839579	0.822868	4250	1784.105	4165.408	1713.79	0.693492	39.73414	680.2096	680.2096	863.923	27%	10.79772	0.188456	10.26572	0.179171	2594.66	2468.198	1.05304	2529.795	3909.895	156.1537	-1.23625
80	120	8500	2531.032	0.018237	0.839579	0.821342	4250	1784.105	4157.683	1707.439	0.69304	39.70828	718.8183	718.8183	921.5062	28%	10.84944	0.189359	10.31744	0.180073	2598.637	2464.326	1.052786	2529.755	3890.591	139.8297	-1.2771
80	130	8500	2531.032	0.019764	0.839579	0.819814	4250	1784.105	4149.953	1701.095	0.692588	39.68238	757.0824	757.0824	979.0918	29%	10.90125	0.190263	10.36925	0.180978	2602.622	2460.452	1.052534	2529.717	3871.459	126.0525	-1.31419
80	140	8500	2531.032	0.021292	0.839579	0.818286	4250	1784.105	4142.216	1694.759	0.692135	39.65643	795.0059	795.0059	1036.68	30%	10.95313	0.191168	10.42113	0.181883	2606.614	2456.577	1.052284	2529.684	3852.497	114.3134	-1.34752
80	150	8500	2531.032	0.022822	0.839579	0.816757	4250	1784.105	4134.474	1688.429	0.691682	39.63045	832.5933	832.5933	1094.271	31%	11.00509	0.192075	10.47309	0.18279	2610.613	2452.701	1.052037	2529.655	3833.703	104.225	-1.37709
80	160	8500	2531.032	0.024353	0.839579	0.815226	4250	1784.105	4126.726	1682.107	0.691228	39.60443	869.8485	869.8485	1151.865	32%	11.05713	0.192983	10.52513	0.183698	2614.62	2448.823	1.051792	2529.629	3815.076	95.48841	-1.4029
80	170	8500	2531.032	0.025884	0.839579	0.813694	4250	1784.105	4118.972	1675.792	0.690773	39.57838	906.7756	906.7756	1209.462	33%	11.10925	0.193893	10.57725	0.184608	2618.634	2444.944	1.051549	2529.607	3796.612	87.86951	-1.42496
80	180	8500	2531.032	0.027417	0.839579	0.812161	4250	1784.105	4111.212	1669.484	0.690317	39.55228	943.3786	943.3786	1267.062	34%	11.16145	0.194804	10.62945	0.185519	2622.656	2441.063	1.051308	2529.588	3778.311	81.18313	-1.44327
80	190	8500	2531.032	0.028951	0.839579	0.810627	4250	1784.105	4103.446	1663.183	0.689861	39.52614	979.6615	979.6615	1324.666	35%	11.21372	0.195716	10.68172	0.186431	2626.685	2437.181	1.051069	2529.574	3760.169	75.28107	-1.45783
80	200	8500	2531.032	0.030487	0.839579	0.809092	4250	1784.105	4095.675	1656.889	0.689404	39.49996	1015.628	1015.628	1382.273	36%	11.26607	0.19663	10.73407	0.187345	2630.722	2433.298	1.050832	2529.563	3742.186	70.0436	-1.46864
80	210	8500	2531.032	0.032023	0.839579	0.807556	4250	1784.105	4087.898	1650.602	0.688947	39.47375	1051.282	1051.282	1439.884	37%	11.31851	0.197545	10.78651	0.18826	2634.766	2429.413	1.050597	2529.556	3724.359	65.37312	-1.47572
80	220	8500	2531.032	0.033561	0.839579	0.806018	4250	1784.105	4080.114	1644.323	0.688489	39.44749	1086.628	1086.628	1497.499	38%	11.37102	0.198462	10.83902	0.189177	2638.818	2425.526	1.050364	2529.553	3706.686	61.18943	-1.47904
80	230	8500	2531.032	0.035099	0.839579	0.804479	4250	1784.105	4072.325	1638.051	0.68803	39.42119	1121.668	1121.668	1555.118	39%	11.42361	0.19938	10.89161	0.190094	2642.878	2421.639	1.050133	2529.553	3689.166	57.4261	-1.47863
80	240	8500	2531.032	0.036639	0.839579	0.802939	4250	1784.105	4064.53	1631.786	0.68757	39.39486	1156.407	1156.407	1612.741	39%	11.47628	0.200299	10.94428	0.191014	2646.945	2417.749	1.049904	2529.557	3671.797	54.02772	-1.47449
80	40	9000	2679.916	0.005724	0.839579	0.833855	4500	1889.052	4469.322	1863.383	0.696732	39.91979	413.7117	413.7117	479.4243	15%	10.42642	0.181975	9.894424	0.17269	2717.102	2642.957	1.054942	2679.038	4293.144	473.2487	-0.87787
80	50	9000	2679.916	0.007157	0.839579	0.832422	4500	1889.052	4461.639	1856.982	0.69631	39.89563	454.9538	454.9538	532.0331	17%	10.47475	0.182819	9.94275	0.173534	2721.026	2639.094	1.054686	2678.97	4272.523	391.3366	-0.94613
80	60	9000	2679.916	0.008592	0.839579	0.830987	4500	1889.052	4453.951	1850.588	0.695888	39.87143	495.8389	495.8389	589.6042	19%	10.52314	0.183664	9.991144	0.174378	2724.958	2635.23	1.054433	2678.905	4252.081	329.4608	-1.0108
80	70	9000	2679.916	0.010027	0.839579	0.829552	4500	1889.052	4446.257	1844.2	0.695465	39.8472	536.3714	536.3714	647.1767	21%	10.57161	0.184509	10.03961	0.175224	2728.896	2631.364	1.054181	2678.844	4231.814	281.5489	-1.0719

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
80	80	9000	2679.916	0.011463	0.839579	0.828115	4500	1889.052	4438.558	1837.818	0.695041	39.82293	576.5554	576.5554	704.7508	22%	10.62014	0.185356	10.08814	0.176071	2732.841	2627.498	1.053932	2678.786	4211.722	243.6705	-1.12942
80	90	9000	2679.916	0.012901	0.839579	0.826678	4500	1889.052	4430.853	1831.444	0.694617	39.79863	616.3952	616.3952	762.3265	24%	10.66874	0.186205	10.13674	0.176919	2736.793	2623.63	1.053684	2678.733	4191.802	213.1899	-1.18337
80	100	9000	2679.916	0.014339	0.839579	0.825239	4500	1889.052	4423.143	1825.075	0.694192	39.7743	655.8947	655.8947	819.9041	25%	10.71741	0.187054	10.18541	0.177769	2740.752	2619.761	1.053439	2678.682	4172.053	188.2854	-1.23376
80	110	9000	2679.916	0.015779	0.839579	0.8238	4500	1889.052	4415.427	1818.714	0.693767	39.74993	695.0581	695.0581	877.4836	26%	10.76614	0.187905	10.23414	0.17862	2744.717	2615.891	1.053196	2678.635	4152.471	167.6651	-1.28058
80	120	9000	2679.916	0.01722	0.839579	0.822359	4500	1889.052	4407.706	1812.359	0.693341	39.72552	733.8894	733.8894	935.0652	27%	10.81495	0.188756	10.28295	0.179471	2748.69	2612.02	1.052955	2678.592	4133.055	150.3917	-1.32383
80	130	9000	2679.916	0.018661	0.839579	0.820917	4500	1889.052	4399.98	1806.01	0.692915	39.70109	772.3923	772.3923	992.6491	29%	10.86383	0.18961	10.33183	0.180324	2752.669	2608.147	1.052716	2678.552	4113.804	135.7717	-1.36354
80	140	9000	2679.916	0.020104	0.839579	0.819475	4500	1889.052	4392.248	1799.668	0.692488	39.67661	810.5708	810.5708	1050.235	30%	10.91277	0.190464	10.38077	0.181179	2756.656	2604.273	1.052478	2678.516	4094.715	123.283	-1.39968
80	150	9000	2679.916	0.021547	0.839579	0.818031	4500	1889.052	4384.51	1793.333	0.69206	39.65211	848.4287	848.4287	1107.824	31%	10.96179	0.191319	10.42979	0.182034	2760.649	2600.398	1.052243	2678.484	4075.786	112.5264	-1.43228
80	160	9000	2679.916	0.022992	0.839579	0.816587	4500	1889.052	4376.767	1787.005	0.691631	39.62756	885.9696	885.9696	1165.416	32%	11.01087	0.192176	10.47887	0.182891	2764.649	2596.521	1.05201	2678.455	4057.015	103.1923	-1.46132
80	170	9000	2679.916	0.024438	0.839579	0.815141	4500	1889.052	4369.018	1780.683	0.691203	39.60299	923.1973	923.1973	1223.01	32%	11.06003	0.193034	10.52803	0.183749	2768.657	2592.643	1.051778	2678.429	4038.401	95.03772	-1.48682
80	180	9000	2679.916	0.025884	0.839579	0.813694	4500	1889.052	4361.264	1774.368	0.690773	39.57838	960.1153	960.1153	1280.607	33%	11.10925	0.193893	10.57725	0.184608	2772.671	2588.764	1.051549	2678.407	4019.942	87.86951	-1.50878
80	190	9000	2679.916	0.027332	0.839579	0.812247	4500	1889.052	4353.505	1768.06	0.690343	39.55373	996.7273	996.7273	1338.207	34%	11.15854	0.194753	10.62654	0.185468	2776.693	2584.883	1.051321	2678.389	4001.636	81.53279	-1.52719
80	200	9000	2679.916	0.028781	0.839579	0.810798	4500	1889.052	4345.74	1761.758	0.689912	39.52905	1033.037	1033.037	1395.811	35%	11.20791	0.195615	10.67591	0.18633	2780.721	2581.002	1.051095	2678.374	3983.482	75.90206	-1.54207
80	210	9000	2679.916	0.030231	0.839579	0.809348	4500	1889.052	4337.969	1755.463	0.689481	39.50433	1069.047	1069.047	1453.417	36%	11.25734	0.196478	10.72534	0.187193	2784.757	2577.118	1.050871	2678.362	3965.477	70.87474	-1.5534
80	220	9000	2679.916	0.031681	0.839579	0.807897	4500	1889.052	4330.193	1749.175	0.689049	39.47958	1104.761	1104.761	1511.028	37%	11.30685	0.197342	10.77485	0.188057	2788.8	2573.234	1.050649	2678.355	3947.619	66.36635	-1.5612
80	230	9000	2679.916	0.033133	0.839579	0.806445	4500	1889.052	4322.411	1742.894	0.688616	39.45479	1140.184	1140.184	1568.641	38%	11.35642	0.198207	10.82442	0.188922	2792.85	2569.348	1.050428	2678.35	3929.908	62.30679	-1.56547
80	240	9000	2679.916	0.034586	0.839579	0.804992	4500	1889.052	4314.624	1736.62	0.688183	39.42996	1175.317	1175.317	1626.259	38%	11.40607	0.199073	10.87407	0.189788	2796.907	2565.46	1.05021	2678.35	3912.342	58.63746	-1.5662
80	40	9500	2828.8	0.005422	0.839579	0.834157	4750	1993.999	4719.325	1968.328	0.69682	39.92487	427.4823	427.4823	488.0293	14%	10.41626	0.181798	9.884259	0.172513	2867.181	2790.646	1.054996	2827.889	4536.259	493.8681	-0.91099
80	50	9500	2828.8	0.00678	0.839579	0.832799	4750	1993.999	4711.643	1961.925	0.696421	39.90199	468.8096	468.8096	545.5988	16%	10.46203	0.182597	9.930026	0.173312	2871.104	2786.783	1.054754	2827.82	4515.595	410.6334	-0.9801
80	60	9500	2828.8	0.008138	0.839579	0.83144	4750	1993.999	4703.956	1955.529	0.696021	39.87907	509.7976	509.7976	603.1695	18%	10.50785	0.183397	9.975854	0.174112	2875.033	2782.92	1.054513	2827.754	4495.101	347.2575	-1.04581
80	70	9500	2828.8	0.009498	0.839579	0.830081	4750	1993.999	4696.264	1949.139	0.695621	39.85613	550.4502	550.4502	660.7415	20%	10.55374	0.184198	10.02174	0.174912	2878.969	2779.055	1.054274	2827.692	4474.775	297.8593	-1.10813
80	80	9500	2828.8	0.010858	0.839579	0.82872	4750	1993.999	4688.567	1942.755	0.69522	39.83315	590.7713	590.7713	718.3149	22%	10.5997	0.185	10.0677	0.175714	2882.911	2775.189	1.054036	2827.633	4454.614	258.5881	-1.16706
80	90	9500	2828.8	0.01222	0.839579	0.827359	4750	1993.999	4680.865	1936.377	0.694818	39.81015	630.7645	630.7645	775.8899	23%	10.64571	0.185803	10.11371	0.176518	2886.86	2771.322	1.053801	2827.577	4434.618	226.8364	-1.22261
80	100	9500	2828.8	0.013582	0.839579	0.825996	4750	1993.999	4673.157	1930.005	0.694416	39.78711	670.4336	670.4336	833.4665	24%	10.69178	0.186607	10.15978	0.177322	2890.815	2767.453	1.053568	2827.525	4414.783	200.787	-1.27478
80	110	9500	2828.8	0.014945	0.839579	0.824633	4750	1993.999	4665.445	1923.64	0.694013	39.76404	709.7823	709.7823	891.0449	26%	10.73792	0.187412	10.20592	0.178127	2894.777	2763.584	1.053336	2827.477	4395.109	179.1418	-1.32357
80	120	9500	2828.8	0.01631	0.839579	0.823269	4750	1993.999	4657.727	1917.281	0.69361	39.74094	748.8141	748.8141	948.6253	27%	10.78412	0.188218	10.25212	0.178933	2898.746	2759.713	1.053107	2827.431	4375.593	160.953	-1.36898
80	130	9500	2828.8	0.017675	0.839579	0.821904	4750	1993.999	4650.004	1910.928	0.693207	39.71781	787.5326	787.5326	1006.208	28%	10.83038	0.189026	10.29838	0.179741	2902.72	2755.841	1.052879	2827.389	4356.234	145.5158	-1.41102
80	140	9500	2828.8	0.019041	0.839579	0.820538	4750	1993.999	4642.276	1904.582	0.692802	39.69465	825.9412	825.9412	1063.792	29%	10.8767	0.189834	10.3447	0.180549	2906.702	2751.968	1.052653	2827.35	4337.029	132.2967	-1.44969
80	150	9500	2828.8	0.020408	0.839579	0.819171	4750	1993.999	4634.542	1898.241	0.692398	39.67146	864.0434	864.0434	1121.379	30%	10.92308	0.190644	10.39108	0.181359	2910.69	2748.094	1.052429	2827.315	4317.978	120.886	-1.485
80	160	9500	2828.8	0.021775	0.839579	0.817803	4750	1993.999	4626.804	1891.908	0.691992	39.64823	901.8426	901.8426	1178.968	31%	10.96953	0.191454	10.43753	0.182169	2914.685	2744.218	1.052206	2827.283	4299.079	110.9649	-1.51694
80	170	9500	2828.8	0.023144	0.839579	0.816435	4750	1993.999	4619.06	1885.58	0.691586	39.62498	939.342	939.342	1236.56	32%	11.01604	0.192266	10.48404	0.182981	2918.686	2740.342	1.051985	2827.255	4280.329	102.2821	-1.54552
80	180	9500	2828.8	0.024514	0.839579	0.815065	4750	1993.999	4611.311	1879.259	0.69118	39.60169	976.5451	976.5451	1294.155	33%	11.06261	0.193079	10.53061	0.183794	2922.694	2736.464	1.051766	2827.229	4261.727	94.63735	-1.57074
80	190	9500	2828.8	0.025884	0.839579	0.813694	4750	1993.999	4603.557	1872.944	0.690773	39.57838	1013.455	1013.455	1351.752	33%	11.10925	0.193893	10.57725	0.184608	2926.708	2732.584	1.051549	2827.208	4243.272	87.86951	-1.5926
80	200	9500	2828.8	0.027256	0.839579	0.812323	4750	1993.999	4595.797	1866.635	0.690365	39.55503	1050.075	1050.075	1409.352	34%	11.15595	0.194708	10.62395	0.185423	2930.73	2728.704	1.051333	2827.189	4224.962	81.84772	-1.61111
80	210	9500	2828.8	0.028628	0.839579	0.81095	4750	1993.999	4588.033	1860.333	0.689957	39.53165	1086.408	1086.408	1466.955	35%	11.20271	0.195524	10.67071	0.186239	2934.758	2724.822	1.051119	2827.174	4206.796	76.46473	-1.62626
80	220	9500	2828.8	0.030002	0.839579	0.809577	4750	1993.999	4580.263	1854.038	0.689549	39.50823	1122.458	1122.458	1524.561	36%	11.24953	0.196341	10.71753	0.187056	2938.793	2720.939	1.050906	2827.162	4188.771	71.63204	-1.63806
80	230	9500	2828.8	0.031376	0.839579	0.808203	4750	1993.999	4572.488	1847.748	0.68914	39.48479	1158.226	1158.226	1582.171	37%	11.29642	0.19716	10.76442	0.187875	2942.834	2717.055	1.050695	2827.154	4170.887	67.27603	-1.64651
80	240	9500	2828.8	0.032751	0.839579	0.806827	4750	1993.999	4564.707	1841.465	0.68873	39.46131	1193.717	1193.717	1639.784	37%	11.34337	0.197979	10.81137	0.188694	2946.883	2713.169	1.050486	2827.148	4153.141	63.33505	-1.65161
80	40	10000	2977.684	0.005151	0.839579	0.834428	5000	2098.946	4969.327	2073.273	0.6969	39.92944	441.2377	441.2377	501.5953	14%	10.40711	0.181638	9.875113	0.172353	3017.26	2938.335	1.055045	2976.74	4779.381	513.6353	-0.94396
80	50	10000	2977.684	0.00644	0.839579	0.833138	5000	2098.946	4961.646	2066.869	0.696521	39.90771	482.6418	482.6418	559.1645	16%	10.45058	0.182397	9.918578	0.173112	3021.181	2934.473	1.054814	2976.67	4758.679	429.2894	-1.01383
80	60	10000	2977.684	0.007731	0.839579	0.831848	5000	2098.946	4953.961	2060.471	0.696141	39.88595	523.7227	523.7227	616.7349	18%	10.4941	0.183157	9.962099	0.173871	3025.109	2930.609	1.054585	2976.604	4738.139	364.5837	-1.08047
80	70	10000	2977.684	0.009022	0.839579	0.830557	5000	2098.946	4946.27	2054.079	0.695761	39.86416	564.4839	564.4839	674.3065	19%	10.53768	0.183917	10.00568	0.174632	3029.043	2926.745	1.054357	2976.54	4717.758	313.8318	-1.1439
80	80	10000	2977.684	0.010314	0.839579	0.829264	5000	2098.946	4938.575	2047.692	0.69538	39.84235	604.9288	604.9288	731.8793	21%	10.58131	0.184679	10.04931	0.175394	3032.983	2922.879	1.054131	2976.48	4697.536	273.2697	-1.2041
80	90	10000	2977.684	0.011607	0.839579	0.827971	5000	2098.946	4930.875	2041.312	0.694999	39.8205	645.0609	645.0609	789.4536	22%	10.62499	0.185441	10.09299	0.176156	3036.929	2919.012	1.053907	2976.423	4677.47	240.3248	-1.26109
80	100	10000	2977.684	0.012901	0.839579	0.826678	5000	2098.946	4923.17	2034.937	0.694617	39.79863	684.8835	684.8835	847.0295	24%	10.66874	0.186205	10.13674	0.176919	3040.881	2915.145	1.053684	2976.369	4657.558	213.1899	-1.31486
80	110	10000	2977.684	0.014196	0.839579	0.825383	5000	2098.946	4915.46	2028.569	0.694235	39.77673	724.4	724.4	904.6069	25%	10.71254	0.186969	10.18054	0.177684	3044.839	2911.276	1.053464	2976.319	4637.8	190.565	-1.36542
80	120	10000	2977.684	0.015491	0.839579	0.824088	5000	2098.946	4907.745	2022.206	0.693852	39.7548	763.6135	763.6135	962.1861	26%	10.75639	0.187734	10.22439	0.178449	3048.804	2907.406	1.053244	2976.272	4618.193	171.4955	-1.41277
80	130	10000	2977.684	0.016787	0.839579	0.822791	5000	2098.946	4900.026	2015.849	0.693469	39.73285	802.5274	802.5274	1019.767	27%	10.8003	0.188501	10.2683	0.179216	3052.775	2903.535	1.053027	2976.227	4598.736	155.2674	-1.45692
80	140	10000	2977.684	0.018084	0.839579	0.821494	5000	2098.946	4892.301	2009.499	0.693085	39.71087	841.1448	841.1448	1077.35	28%	10.84427	0.189268	10.31227	0.179983	3056.752	2899.662	1.052811	2976.186	4579.428	141.3379	-1.49787
80	150	10000	2977.684	0.019382	0.839579	0.820196	5000	2098.946	4884.571	2003.154	0.692701	39.68885	879.4687	879.4687	1134.935	29%	10.88829	0.190037	10.35629	0.180751	3060.735	2895.789	1.052597	2976.149	4560.266	129.2883	-1.53562
80	160	10000	2977.684	0.020681	0.839579	0.818898	5000	2098.946	4876.837	1996.815	0.692317	39.66682	917.5025	917.5025	1192.523	30%	10.93237	0.190806	10.40037	0.181521	3064.725	2891.914	1.052384	2976.114	4541.249	118.7915	-1.57016
80	170	10000	2977.684	0.021981	0.839579	0.817598	5000	2098.946	4869.097	1990.482	0.691931	39.64475	955.2489	955.2489	1250.113	31%	10.9765	0.191576	10.4445	0.182291	3068.72	2888.039	1.052173	2976.083	4522.376	109.589	-1.60152
80	180	10000	2977.684	0.023281	0.839579	0.816298	5000	2098.946	4861.353	1984.155	0.691546	39.62265	992.7112	992.7112	1307.705	32%	11.0207	0.192347	10.4887	0.183062	3072.722	2884.162	1.051963	2976.055	4503.644	101.4739	-1.62968
80	190	10000	2977.684	0.024582	0.839579	0.814996	5000	2098.946	4853.604	1977.835	0.69116	39.60053	1029.892	1029.892	1365.299	33%	11.06494	0.19312	10.53294	0.183835	3076.731	2880.284	1.051755	2976.03	4485.054	94.27933	-1.65464
80	200	10000	2977.684	0.025884	0.839579	0.813694	5000	2098.946	4845.849	1971.52	0.690773	39.57838	1066.795	1066.795	1422.897	33%	11.10925	0.193893	10.57725	0.184608	3080.746	2876.404	1.051549	2976.008	4466.603	87.86951	-1.67642
80	210	10000	2977.684	0.027187	0.839579	0.812391	5000	2098.946	4838.09	1965.211	0.690386	39.55619	1103.422	1103.422	1480.497	34%	11.15361	0.194667	10.62161	0.185382	3084.767	2872.524	1.051344	2975.989	4448.289	82.13282	-1.69501
80	220	10000	2977.684	0.028491	0.839579	0.811088	5000	2098.946	4830.326	1958.909	0.689998	39.53399	1139.776	1139.776	1538.1	35%	11.19803	0.195442	10.66603	0.186157	3088.794	2868.642	1.05114	2975.974	4430.112	76.97694	-1.71042
80	230	10000	2977.684	0.029796	0.839579	0.809783	5000	2098.946	4822.556	1952.612	0.68961	39.51175	1175.861	1175.861	1595.705	36%	11.24251	0.196219	10.71051	0.186934	3092.828	2864.759	1.050938	2975.962	4412.069	72.32491	-1.72264
80	240	10000	2977.684	0.031101	0.839579	0.808478	5000	2098.946	4814.782	1946.322	0.689221	39.48948	1211.679	1211.679	1653.314	36%	11.28704	0.196996	10.75504	0.187711	3096.869	2860.875	1.050737	2975.953	4394.161	68.11221	-1.73167
85	40	1000	272.6636	0.054807	0.916881	0.862074	500	229.2201	470.1124	202.6358	0.726971	41.65236	295.2405	295.2405	512.5412	74%	6.961274	0.121497	6.429274	0.112212	290.2694	255.6105	1.083535	272.2452	352.3797	11.47224	-0.41845
85	50	1000	272.6636	0.068746	0.916881	0.848135	500	229.2201	462.511	196.1358	0.723066	41.42865	337.714	337.714	627.5144	86%	7.408703	0.129306	6.876703	0.120021	294.236	251.915	1.0782	272.2793	331.143	8.768026	-0.38439
85	60	1000	272.6636	0.082783	0.916881	0.834098	500	229.2201	454.8563	189.6974	0.719107	41.2018	375.3188	375.3188	742.6126	98%	7.862405	0.137225	7.330405	0.12794	298.2665	248.2112	1.073462	272.3521	312.3406	7.099035	-0.31153

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
85	70	1000	272.6636	0.096919	0.916881	0.819962	500	229.2201	447.1477	183.3221	0.715092	40.97174	408.7934	408.7934	857.8588	110%	8.32251	0.145255	7.79051	0.13597	302.3629	244.4982	1.069227	272.4626	295.6033	5.984008	-0.20103
85	80	1000	272.6636	0.111155	0.916881	0.805726	500	229.2201	439.3843	177.0116	0.71102	40.73842	438.7345	438.7345	973.2763	122%	8.78915	0.1534	8.25715	0.144114	306.5273	240.7753	1.06542	272.61	280.6327	5.195129	-0.05367
85	90	1000	272.6636	0.125493	0.916881	0.791388	500	229.2201	431.5653	170.7677	0.706889	40.50177	465.6297	465.6297	1088.889	134%	9.262461	0.16166	8.730461	0.152375	310.7619	237.0413	1.06198	272.7937	267.1852	4.612312	0.130017
85	100	1000	272.6636	0.139934	0.916881	0.776946	500	229.2201	423.69	164.5921	0.702699	40.26171	489.881	489.881	1204.719	146%	9.742581	0.17004	9.210581	0.160755	315.0692	233.2952	1.058857	273.0134	255.0595	4.166955	0.349734
85	110	1000	272.6636	0.154481	0.916881	0.7624	500	229.2201	415.7575	158.4868	0.698449	40.01817	511.8234	511.8234	1320.791	158%	10.22965	0.178541	9.697652	0.169256	319.4515	229.536	1.056011	273.269	244.0883	3.81733	0.605338
85	120	1000	272.6636	0.169133	0.916881	0.747748	500	229.2201	407.7672	152.4535	0.694136	39.77109	531.7379	531.7379	1437.129	170%	10.72382	0.187166	10.19182	0.177881	323.9114	225.7623	1.053407	273.5605	234.1311	3.536753	0.896832
85	130	1000	272.6636	0.183893	0.916881	0.732988	500	229.2201	399.7182	146.4943	0.689761	39.52039	549.8621	549.8621	1553.757	183%	11.22523	0.195917	10.69323	0.186632	328.4516	221.9729	1.051016	273.888	225.069	3.307444	1.224339
85	140	1000	272.6636	0.198762	0.916881	0.718119	500	229.2201	391.6097	140.6112	0.685321	39.26599	566.3984	566.3984	1670.699	195%	11.73403	0.204797	11.20203	0.195512	333.0749	218.1664	1.048815	274.2517	216.8008	3.117138	1.588076
85	150	1000	272.6636	0.213741	0.916881	0.703139	500	229.2201	383.441	134.8062	0.680815	39.00781	581.5203	581.5203	1787.979	207%	12.25037	0.213809	11.71837	0.204524	337.7842	214.3412	1.046781	274.652	209.2399	2.957129	1.988347
85	160	1000	272.6636	0.228833	0.916881	0.688048	500	229.2201	375.2111	129.0816	0.676242	38.74579	595.3773	595.3773	1905.623	220%	12.77442	0.222956	12.24242	0.213671	342.5826	210.4959	1.044899	275.0892	202.3114	2.821081	2.425528
85	170	1000	272.6636	0.244038	0.916881	0.672843	500	229.2201	366.9194	123.4395	0.6716	38.47984	608.0991	608.0991	2023.656	233%	13.30632	0.232239	12.77432	0.222954	347.4734	206.6286	1.043151	275.5637	195.9505	2.704278	2.900058
85	180	1000	272.6636	0.259358	0.916881	0.657522	500	229.2201	358.5649	117.8823	0.666888	38.20988	619.7988	619.7988	2142.104	246%	13.84625	0.241663	13.31425	0.232377	352.46	202.7376	1.041525	276.0761	190.1006	2.603146	3.412432
85	190	1000	272.6636	0.274795	0.916881	0.642086	500	229.2201	350.147	112.4122	0.662105	37.93582	630.5753	630.5753	2260.991	259%	14.39436	0.251229	13.86236	0.241944	357.5459	198.8208	1.04001	276.6268	184.7124	2.514931	3.963195
85	200	1000	272.6636	0.290349	0.916881	0.626532	500	229.2201	341.6648	107.0319	0.657249	37.65759	640.5158	640.5158	2380.345	272%	14.95082	0.260941	14.41882	0.251656	362.7349	194.8762	1.038595	277.2166	179.7421	2.437476	4.552939
85	210	1000	272.6636	0.306023	0.916881	0.610858	500	229.2201	333.1175	101.7437	0.652319	37.3751	649.6974	649.6974	2500.191	285%	15.51581	0.270802	14.98381	0.261517	368.031	190.9014	1.037271	277.8459	175.1513	2.369069	5.182293
85	220	1000	272.6636	0.321817	0.916881	0.595063	500	229.2201	324.5043	96.55034	0.647312	37.08826	658.1884	658.1884	2620.558	298%	16.08948	0.280814	15.55748	0.271529	373.4383	186.894	1.03603	278.5156	170.9058	2.308339	5.851929
85	230	1000	272.6636	0.337734	0.916881	0.579147	500	229.2201	315.8246	91.45439	0.642229	36.79699	666.0498	666.0498	2741.472	312%	16.67202	0.290982	16.14002	0.281696	378.9612	182.8515	1.034867	279.2262	166.9751	2.254169	6.562549
85	240	1000	272.6636	0.353774	0.916881	0.563107	500	229.2201	307.0773	86.45863	0.637066	36.5012	673.3362	673.3362	2862.961	325%	17.2636	0.301307	16.7316	0.292021	384.6044	178.7709	1.033774	279.9785	163.3319	2.205647	7.314891
85	40	1500	408.9955	0.036371	0.916881	0.88051	750	343.8302	720.2489	317.0931	0.732094	41.94588	344.104	344.104	539.0975	57%	6.37424	0.111251	5.84224	0.101966	427.6148	390.7898	1.091785	408.3944	577.948	19.00217	-0.60109
85	50	1500	408.9955	0.045568	0.916881	0.871313	750	343.8302	712.7261	310.5037	0.729544	41.79979	395.6591	395.6591	653.9258	65%	6.66641	0.116351	6.13441	0.107066	431.4892	387.1051	1.08748	408.3672	552.1705	14.37276	-0.62829
85	60	1500	408.9955	0.054807	0.916881	0.862074	750	343.8302	705.1685	303.9537	0.726971	41.65236	442.8608	442.8608	768.8118	74%	6.961274	0.121497	6.429274	0.112212	435.4041	383.4158	1.083535	408.3678	528.5696	11.47224	-0.62768
85	70	1500	408.9955	0.064089	0.916881	0.852792	750	343.8302	697.576	297.4435	0.724374	41.50357	486.2077	486.2077	883.7659	82%	7.25887	0.126691	6.72687	0.117406	439.3603	379.7216	1.079907	408.3953	506.8961	9.51785	-0.60018
85	80	1500	408.9955	0.073414	0.916881	0.843467	750	343.8302	689.9481	290.9741	0.721753	41.35338	526.1252	526.1252	998.7982	90%	7.559234	0.131934	7.027234	0.122648	443.3585	376.022	1.07656	408.4489	486.9374	8.128387	-0.54652
85	90	1500	408.9955	0.082783	0.916881	0.834098	750	343.8302	682.2845	284.546	0.719107	41.2018	562.9782	562.9782	1113.919	98%	7.862405	0.137225	7.330405	0.12794	447.3998	372.3167	1.073462	408.5282	468.5109	7.099035	-0.4673
85	100	1500	408.9955	0.092195	0.916881	0.824685	750	343.8302	674.5849	278.1601	0.716437	41.04879	597.0822	597.0822	1229.138	106%	8.168422	0.142566	7.636422	0.133281	451.485	368.6054	1.070588	408.6325	451.4589	6.311234	-0.36299
85	110	1500	408.9955	0.101653	0.916881	0.815228	750	343.8302	666.849	271.8169	0.713741	40.89434	628.7105	628.7105	1344.467	114%	8.477324	0.147957	7.945324	0.138672	455.615	364.8876	1.067914	408.7615	435.6447	5.692212	-0.23397
85	120	1500	408.9955	0.111155	0.916881	0.805726	750	343.8302	659.0764	265.5174	0.71102	40.73842	658.1018	658.1018	1459.915	122%	8.78915	0.1534	8.25715	0.144114	459.7909	361.1629	1.06542	408.915	420.9491	5.195129	-0.08051
85	130	1500	408.9955	0.120702	0.916881	0.796178	750	343.8302	651.2667	259.2623	0.708273	40.58103	685.4651	685.4651	1575.492	130%	9.103941	0.158894	8.571941	0.149609	464.0137	357.4309	1.063089	409.0926	407.2675	4.788636	0.097159
85	140	1500	408.9955	0.130295	0.916881	0.786585	750	343.8302	643.4197	253.0523	0.705499	40.42213	710.9842	710.9842	1691.21	138%	9.421738	0.16444	8.889738	0.155155	468.2843	353.691	1.060906	409.2944	394.5079	4.451052	0.298895
85	150	1500	408.9955	0.139934	0.916881	0.776946	750	343.8302	635.5349	246.8882	0.702699	40.26171	734.8215	734.8215	1807.078	146%	9.742581	0.17004	9.210581	0.160755	472.6038	349.9429	1.058857	409.5201	382.5892	4.166955	0.524601
85	160	1500	408.9955	0.14962	0.916881	0.76726	750	343.8302	627.6121	240.771	0.699873	40.09974	757.1213	757.1213	1923.108	154%	10.06651	0.175694	9.534514	0.166409	476.9734	346.1859	1.056931	409.7697	371.4394	3.925108	0.774227
85	170	1500	408.9955	0.159353	0.916881	0.757528	750	343.8302	619.6509	234.7014	0.697018	39.93621	778.0115	778.0115	2039.309	162%	10.39358	0.181402	9.861579	0.172117	481.3941	342.4196	1.055118	410.0432	360.9942	3.717153	1.047766
85	180	1500	408.9955	0.169133	0.916881	0.747748	750	343.8302	611.6508	228.6803	0.694136	39.77109	797.6068	797.6068	2155.693	170%	10.72382	0.187166	10.19182	0.177881	485.8671	338.6434	1.053407	410.3407	351.1966	3.536753	1.345248
85	190	1500	408.9955	0.178961	0.916881	0.73792	750	343.8302	603.6117	222.7085	0.691227	39.60436	816.0097	816.0097	2272.271	178%	11.05728	0.192986	10.52528	0.183701	490.3937	334.8568	1.051791	410.6622	341.9952	3.379029	1.666735
85	200	1500	408.9955	0.188837	0.916881	0.728044	750	343.8302	595.5331	216.787	0.688288	39.436	833.3123	833.3123	2389.052	187%	11.394	0.198863	10.862	0.189578	494.975	331.059	1.050263	411.0078	333.3439	3.240164	2.012318
85	210	1500	408.9955	0.198762	0.916881	0.718119	750	343.8302	587.4146	210.9167	0.685321	39.26599	849.5976	849.5976	2506.048	195%	11.73403	0.204797	11.20203	0.195512	499.6123	327.2495	1.048815	411.3776	325.2012	3.117138	2.382114
85	220	1500	408.9955	0.208736	0.916881	0.708145	750	343.8302	579.256	205.0985	0.682324	39.0943	864.9407	864.9407	2623.27	203%	12.07741	0.210791	11.54541	0.201505	504.307	323.4277	1.047442	411.7717	317.5297	3.007529	2.776263
85	230	1500	408.9955	0.218759	0.916881	0.698121	750	343.8302	571.0568	199.3334	0.679298	38.9209	879.4096	879.4096	2740.728	212%	12.42419	0.216843	11.89219	0.207558	509.0604	319.5927	1.046138	412.1904	310.2952	2.909378	3.194929
85	240	1500	408.9955	0.228833	0.916881	0.688048	750	343.8302	562.8167	193.6223	0.676242	38.74579	893.0659	893.0659	2858.435	220%	12.77442	0.222956	12.24242	0.213671	513.8739	315.7438	1.044899	412.6338	303.467	2.821081	3.638292
85	40	2000	545.3273	0.027216	0.916881	0.889664	1000	458.4403	970.3166	431.6281	0.73462	42.09064	383.4765	383.4765	565.7558	48%	6.084729	0.106199	5.552729	0.096913	565.0399	525.9603	1.096501	544.6007	808.2618	27.20085	-0.72662
85	50	2000	545.3273	0.034078	0.916881	0.882802	1000	458.4403	962.8324	424.9953	0.732727	41.98219	440.6244	440.6244	680.531	54%	6.301615	0.109984	5.769615	0.100699	568.8698	522.2804	1.092923	544.5409	779.6878	20.60264	-0.78643
85	60	2000	545.3273	0.040964	0.916881	0.875917	1000	458.4403	955.3224	418.3914	0.730822	41.873	493.9468	493.9468	795.3401	61%	6.519991	0.113795	5.987991	0.10451	572.7293	518.5974	1.089585	544.503	753.0266	16.39455	-0.82431
85	70	2000	545.3273	0.047873	0.916881	0.869007	1000	458.4403	947.7866	411.8167	0.728903	41.76306	543.7957	543.7957	910.1886	67%	6.739872	0.117633	6.207872	0.108348	576.6188	514.911	1.086462	544.4864	728.1022	13.5266	-0.84094
85	80	2000	545.3273	0.054807	0.916881	0.862074	1000	458.4403	940.2247	405.2715	0.726971	41.65236	590.4811	590.4811	1025.082	74%	6.961274	0.121497	6.429274	0.112212	580.5388	511.2211	1.083535	544.4904	704.7595	11.47224	-0.83691
85	90	2000	545.3273	0.061764	0.916881	0.855116	1000	458.4403	932.6366	398.7564	0.725025	41.54089	634.2773	634.2773	1140.027	80%	7.184213	0.125388	6.652213	0.116103	584.4897	507.5275	1.080786	544.5146	682.8613	9.942638	-0.81271
85	100	2000	545.3273	0.068746	0.916881	0.848135	1000	458.4403	925.022	392.2716	0.723066	41.42865	675.428	675.428	1255.029	86%	7.408703	0.129306	6.876703	0.120021	588.4721	503.83	1.0782	544.5585	662.286	8.768026	-0.76877
85	110	2000	545.3273	0.075752	0.916881	0.841129	1000	458.4403	917.3807	385.8176	0.721094	41.31562	714.1501	714.1501	1370.093	92%	7.634762	0.133252	7.102762	0.123967	592.4863	500.1283	1.075763	544.6218	642.9249	7.842977	-0.70546
85	120	2000	545.3273	0.082783	0.916881	0.834098	1000	458.4403	909.7127	379.3947	0.719107	41.2018	750.6377	750.6377	1485.225	98%	7.862405	0.137225	7.330405	0.12794	596.533	496.4223	1.073462	544.7042	624.6812	7.099035	-0.62307
85	130	2000	545.3273	0.089838	0.916881	0.827042	1000	458.4403	902.0176	373.0034	0.717106	41.08718	785.0644	785.0644	1600.431	104%	8.091649	0.141226	7.559649	0.131941	600.6127	492.7118	1.071287	544.8054	607.4678	6.49007	-0.52187
85	140	2000	545.3273	0.096919	0.916881	0.819962	1000	458.4403	894.2954	366.6441	0.715092	40.97174	817.5869	817.5869	1715.718	110%	8.32251	0.145255	7.79051	0.13597	604.7258	488.9965	1.069227	544.9252	591.2066	5.984008	-0.40207
85	150	2000	545.3273	0.104024	0.916881	0.812857	1000	458.4403	886.5457	360.3173	0.713063	40.8555	848.3459	848.3459	1831.089	116%	8.555005	0.149313	8.023005	0.140028	608.8729	485.2761	1.067274	545.0634	575.827	5.557942	-0.26385
85	160	2000	545.3273	0.111155	0.916881	0.805726	1000	458.4403	878.7685	354.0232	0.71102	40.73842	877.4691	877.4691	1946.553	122%	8.78915	0.1534	8.25715	0.144114	613.0546	481.5506	1.06542	545.2199	561.2655	5.195129	-0.10735
85	170	2000	545.3273	0.118311	0.916881	0.79857	1000	458.4403	870.9635	347.7625	0.708962	40.62052	905.0719	905.0719	2062.113	128%	9.024963	0.157515	8.492963	0.14823	617.2714	477.8195	1.063657	545.3946	547.464	4.88308	0.067306
85	180	2000	545.3273	0.125493	0.916881	0.791388	1000	458.4403	863.1305	341.5354	0.706889	40.50177	931.2593	931.2593	2177.777	134%	9.262461	0.16166	8.730461	0.152375	621.5239	474.0826	1.06198	545.5873	534.3703	4.612312	0.260034
85	190	2000	545.3273	0.132701	0.916881	0.78418	1000	458.4403	855.2694	335.3425	0.704802	40.38217	956.127	956.127	2293.55	140%	9.501661	0.165835	8.969661	0.15655	625.8127	470.3397	1.060382	545.7981	521.9365	4.375512	0.470769
85	200	2000	545.3273	0.139934	0.916881	0.776946	1000	458.4403	847.3799	329.1843	0.702699	40.26171	979.7621	979.7621	2409.438	146%	9.742581	0.17004	9.210581	0.160755	630.1384	466.5905	1.058857	546.0268	510.119	4.166955	0.699467
85	210	2000	545.3273	0.147194	0.916881	0.769686	1000	458.4403	839.4619	323.0611	0.700582	40.14038	1002.244	1002.244	2525.446	152%	9.985239	0.174275	9.453239	0.16499	634.5016	462.8347	1.057402	546.2734	498.8778	3.982106	0.946105
85	220	2000	545.3273	0.154481	0.916881	0.7624	1000	458.4403	831.5151	316.9736	0.698449	40.01817	1023.647	1023.647	2641.582	158%	10.22965	0.178541	9.697652	0.169256	638.903	459.072	1.056011	546.538	488.1766	3.81733	1.210675
85	230	2000	545.3273	0.161793	0.916881	0.755087	1000	458.4403	823.5393	310.922	0.696301	39.89508	1044.037	1044.037	2757.851	164%	10.47584	0.182838	9.943839	0.173553	643.3432	455.302	1.054681	546.8205	477.9816	3.669682	1.493187
85	240	2000	545.3273	0.169133	0.916881	0.747748	1000	458.4403	815.5345	304.907	0.694136	39.77109	1063.476	1063.476	2874.258	170%	10.72382	0.187166	10.19182	0.177881	647.8228	451.5246	1.053407	547.121	468.2621	3.536753	1.793665
85	40	2500	681.6591	0.021743	0.916881	0.895137	1250	573.0504	1220.357	546.1935	0.736125	42.17686	418.4201	418.4201	592.4451	42%	5.912283	0.103189	5.380283	0.093904	702.4961	661.1275	1.099553	680.831	1040.79	35.6989	-0.82807
85	50	2500	681.6591	0.027216	0.916881	0.889664	1250	573.0504	1212.896	539.5351	0.73462	42.09064	479.3456	479.3456	707.1947	48%	6.084729	0.106199	5.552729	0.096913	706.2999	657.4503	1.096501	680.7508	1010.327	27.20085	-0.90828

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
85	60	2500	681.6591	0.032704	0.916881	0.884177	1250	573.0504	1205.414	532.8995	0.733107	42.00394	536.8912	536.8912	821.9668	53%	6.258119	0.109225	5.726119	0.09994	710.1269	653.7708	1.093619	680.6888	981.5544	21.68241	-0.97031
85	70	2500	681.6591	0.038207	0.916881	0.878674	1250	573.0504	1197.912	526.2868	0.731586	41.91677	591.3167	591.3167	936.765	58%	6.432461	0.112268	5.900461	0.102982	713.9775	650.0887	1.090893	680.6444	954.3416	17.87474	-1.01468
85	80	2500	681.6591	0.043725	0.916881	0.873156	1250	573.0504	1190.389	519.6975	0.730056	41.82912	642.8562	642.8562	1051.593	64%	6.607762	0.115327	6.075762	0.106042	717.8519	646.404	1.088311	680.6173	928.5719	15.1235	-1.04184
85	90	2500	681.6591	0.049258	0.916881	0.867622	1250	573.0504	1182.845	513.1316	0.728518	41.74098	691.7207	691.7207	1166.454	69%	6.78403	0.118404	6.25203	0.109119	721.7505	642.7166	1.085861	680.6069	904.1396	13.06226	-1.05221
85	100	2500	681.6591	0.054807	0.916881	0.862074	1250	573.0504	1175.281	506.5894	0.726971	41.65236	738.1013	738.1013	1281.353	74%	6.961274	0.121497	6.429274	0.112212	725.6735	639.0264	1.083535	680.613	880.9493	11.47224	-1.04613
85	110	2500	681.6591	0.060371	0.916881	0.85651	1250	573.0504	1167.695	500.0713	0.725416	41.56325	782.1714	782.1714	1396.292	79%	7.139501	0.124608	6.607501	0.115323	729.6213	635.3331	1.081323	680.6352	858.9143	10.21589	-1.02393
85	120	2500	681.6591	0.06595	0.916881	0.85093	1250	573.0504	1160.089	493.5773	0.723852	41.47364	824.0885	824.0885	1511.276	83%	7.31872	0.127736	6.78672	0.118451	733.5942	631.6368	1.079216	680.6733	837.9558	9.203062	-0.98586
85	130	2500	681.6591	0.071545	0.916881	0.845335	1250	573.0504	1152.461	487.1078	0.722279	41.38353	863.9962	863.9962	1626.308	88%	7.498938	0.130881	6.966938	0.121596	737.5924	627.9373	1.077208	680.7269	818.0019	8.372523	-0.93219
85	140	2500	681.6591	0.077156	0.916881	0.839724	1250	573.0504	1144.812	480.6631	0.720697	41.29292	902.0257	902.0257	1741.392	93%	7.680164	0.134044	7.148164	0.124759	741.6163	624.2343	1.075292	680.796	798.9871	7.681432	-0.86312
85	150	2500	681.6591	0.082783	0.916881	0.834098	1250	573.0504	1137.141	474.2434	0.719107	41.2018	938.2971	938.2971	1856.531	98%	7.862405	0.137225	7.330405	0.12794	745.6663	620.5279	1.073462	680.8803	780.8515	7.099035	-0.77883
85	160	2500	681.6591	0.088425	0.916881	0.828456	1250	573.0504	1129.449	467.8489	0.717508	41.11016	972.9202	972.9202	1971.73	103%	8.045672	0.140423	7.513672	0.131138	749.7426	616.8178	1.071712	680.9796	763.5399	6.60276	-0.6795
85	170	2500	681.6591	0.094083	0.916881	0.822797	1250	573.0504	1121.734	461.48	0.715899	41.01801	1005.996	1005.996	2086.992	107%	8.229971	0.14364	7.697971	0.134355	753.8456	613.104	1.070038	681.0939	747.0018	6.175715	-0.56526
85	180	2500	681.6591	0.099758	0.916881	0.817123	1250	573.0504	1113.999	455.1368	0.714282	40.92534	1037.618	1037.618	2202.32	112%	8.415311	0.146875	7.883311	0.13759	757.9756	609.3862	1.068434	681.2229	731.1908	5.805034	-0.43622
85	190	2500	681.6591	0.105448	0.916881	0.811432	1250	573.0504	1106.241	448.8198	0.712655	40.83215	1067.872	1067.872	2317.718	117%	8.601701	0.150128	8.069701	0.140843	762.1331	605.6643	1.066896	681.3666	716.064	5.480771	-0.29251
85	200	2500	681.6591	0.111155	0.916881	0.805726	1250	573.0504	1098.461	442.529	0.71102	40.73842	1096.836	1096.836	2433.191	122%	8.78915	0.1534	8.25715	0.144114	766.3182	601.9382	1.06542	681.5249	701.5818	5.195129	-0.13419
85	210	2500	681.6591	0.116878	0.916881	0.800003	1250	573.0504	1090.658	436.2649	0.709375	40.64417	1124.585	1124.585	2548.741	127%	8.977666	0.15669	8.445666	0.147405	770.5315	598.2077	1.064003	681.6978	687.7076	4.941919	0.038659
85	220	2500	681.6591	0.122617	0.916881	0.794263	1250	573.0504	1082.834	430.0277	0.70772	40.54937	1151.185	1151.185	2664.373	131%	9.167259	0.159999	8.635259	0.150714	774.7732	594.4726	1.062641	681.8851	674.4076	4.716174	0.225974
85	230	2500	681.6591	0.128373	0.916881	0.788508	1250	573.0504	1074.987	423.8177	0.706056	40.45403	1176.7	1176.7	2780.091	136%	9.357936	0.163327	8.825936	0.154042	779.0438	590.7327	1.061331	682.0868	661.6502	4.513867	0.427713
85	240	2500	681.6591	0.134145	0.916881	0.782735	1250	573.0504	1067.117	417.6351	0.704383	40.35815	1201.187	1201.187	2895.898	141%	9.549707	0.166674	9.017707	0.157389	783.3436	586.988	1.060071	682.303	649.4063	4.331701	0.643841
85	40	3000	817.9909	0.018103	0.916881	0.898778	1500	687.6604	1470.384	660.774	0.737124	42.23408	450.9406	450.9406	619.1473	37%	5.79784	0.101191	5.26584	0.091906	839.9677	796.2932	1.10169	817.0739	1274.53	44.25923	-0.91705
85	50	3000	817.9909	0.022654	0.916881	0.894226	1500	687.6604	1462.938	654.0986	0.735875	42.16252	514.5852	514.5852	733.8824	43%	5.940959	0.103689	5.408959	0.094404	843.7542	792.6178	1.099032	816.9797	1242.707	33.98818	-1.01127
85	60	3000	817.9909	0.027216	0.916881	0.889664	1500	687.6604	1455.475	647.4421	0.73462	42.09064	575.2147	575.2147	848.6336	48%	6.084729	0.106199	5.552729	0.096913	847.5598	788.9404	1.096501	816.901	1212.393	27.20085	-1.08993
85	70	3000	817.9909	0.031788	0.916881	0.885092	1500	687.6604	1447.995	640.8046	0.73336	42.01842	633.0283	633.0283	963.4037	52%	6.229155	0.108719	5.697155	0.099434	851.3849	785.261	1.094088	816.8375	1183.486	22.4593	-1.15345
85	80	3000	817.9909	0.036371	0.916881	0.88051	1500	687.6604	1440.498	634.1862	0.732094	41.94588	688.2079	688.2079	1078.195	57%	6.37424	0.111251	5.84224	0.101966	855.2296	781.5796	1.091785	816.7888	1155.896	19.00217	-1.20218
85	90	3000	817.9909	0.040964	0.916881	0.875917	1500	687.6604	1432.984	627.5871	0.730822	41.873	740.9202	740.9202	1193.01	61%	6.519991	0.113795	5.987991	0.10451	859.094	777.8961	1.089585	816.7545	1129.54	16.39455	-1.23646
85	100	3000	817.9909	0.045568	0.916881	0.871313	1500	687.6604	1425.452	621.0075	0.729544	41.79979	791.3181	791.3181	1307.852	65%	6.66641	0.116351	6.13441	0.107066	862.9785	774.2103	1.08748	816.7344	1104.341	14.37276	-1.25658
85	110	3000	817.9909	0.050182	0.916881	0.866699	1500	687.6604	1417.903	614.4475	0.72826	41.72625	839.5421	839.5421	1422.722	69%	6.813503	0.118918	6.281503	0.109633	866.8831	770.5221	1.085465	816.7281	1080.229	12.76902	-1.2628
85	120	3000	817.9909	0.054807	0.916881	0.862074	1500	687.6604	1410.337	607.9073	0.726971	41.65236	885.7216	885.7216	1537.624	74%	6.961274	0.121497	6.429274	0.112212	870.8082	766.8316	1.083535	816.7356	1057.139	11.47224	-1.25536
85	130	3000	817.9909	0.059442	0.916881	0.857438	1500	687.6604	1402.753	601.3871	0.725675	41.57814	929.9759	929.9759	1652.559	78%	7.109728	0.124088	6.577728	0.114803	874.7539	763.1387	1.081684	816.7565	1035.012	10.40637	-1.23448
85	140	3000	817.9909	0.064089	0.916881	0.852792	1500	687.6604	1395.152	594.8871	0.724374	41.50357	972.4154	972.4154	1767.532	82%	7.25887	0.126691	6.72687	0.117406	878.7205	759.4431	1.079907	816.7906	1013.792	9.51785	-1.20036
85	150	3000	817.9909	0.068746	0.916881	0.848135	1500	687.6604	1387.533	588.4074	0.723066	41.42865	1013.142	1013.142	1882.543	86%	7.408703	0.129306	6.876703	0.120021	882.7081	755.7449	1.0782	816.8378	993.429	8.768026	-1.15316
85	160	3000	817.9909	0.073414	0.916881	0.843467	1500	687.6604	1379.896	581.9482	0.721753	41.35338	1052.25	1052.25	1997.596	90%	7.559234	0.131934	7.027234	0.122648	886.717	752.044	1.07656	816.8979	973.8748	8.128387	-1.09304
85	170	3000	817.9909	0.078093	0.916881	0.838788	1500	687.6604	1372.242	575.5097	0.720433	41.27777	1089.828	1089.828	2112.694	94%	7.710466	0.134573	7.178466	0.125288	890.7474	748.3402	1.074982	816.9708	955.086	7.577512	-1.02015
85	180	3000	817.9909	0.082783	0.916881	0.834098	1500	687.6604	1364.569	569.0921	0.719107	41.2018	1125.956	1125.956	2227.838	98%	7.862405	0.137225	7.330405	0.12794	894.7995	744.6335	1.073462	817.0563	937.0218	7.099035	-0.9346
85	190	3000	817.9909	0.087484	0.916881	0.829397	1500	687.6604	1356.878	562.6955	0.717775	41.12547	1160.712	1160.712	2343.031	102%	8.015056	0.139889	7.483056	0.130604	898.8736	740.9237	1.071999	817.1544	919.6441	6.680266	-0.83651
85	200	3000	817.9909	0.092195	0.916881	0.824685	1500	687.6604	1349.17	556.3201	0.716437	41.04879	1194.164	1194.164	2458.277	106%	8.168422	0.142566	7.636422	0.133281	902.9699	737.2108	1.070588	817.265	902.9178	6.311234	-0.72598
85	210	3000	817.9909	0.096919	0.916881	0.819962	1500	687.6604	1341.443	549.9662	0.715092	40.97174	1226.38	1226.38	2573.576	110%	8.32251	0.145255	7.79051	0.13597	907.0887	733.4947	1.069227	817.3878	886.8099	5.984008	-0.6031
85	220	3000	817.9909	0.101653	0.916881	0.815228	1500	687.6604	1333.698	543.6339	0.713741	40.89434	1257.421	1257.421	2688.933	114%	8.477324	0.147957	7.945324	0.138672	911.2301	729.7752	1.067914	817.523	871.2895	5.692212	-0.46793
85	230	3000	817.9909	0.106398	0.916881	0.810482	1500	687.6604	1325.935	537.3234	0.712383	40.81657	1287.344	1287.344	2804.35	118%	8.632869	0.150672	8.100869	0.141387	915.3944	726.0523	1.066645	817.6704	856.3279	5.430667	-0.32056
85	240	3000	817.9909	0.111155	0.916881	0.805726	1500	687.6604	1318.153	531.0348	0.71102	40.73842	1316.204	1316.204	2919.829	122%	8.78915	0.1534	8.25715	0.144114	919.5819	722.3258	1.06542	817.8299	841.8982	5.195129	-0.16102
85	40	3500	954.3228	0.015507	0.916881	0.901374	1750	802.2705	1720.403	775.363	0.737835	42.27483	481.9913	481.9913	645.8558	34%	5.716348	0.099769	5.184348	0.090484	977.448	931.4581	1.103269	953.324	1509.004	52.72999	-0.99873
85	50	3500	954.3228	0.019402	0.916881	0.897478	1750	802.2705	1712.968	768.6756	0.736767	42.21367	547.6856	547.6856	760.5817	39%	5.838665	0.101904	5.306665	0.092619	981.2222	927.7838	1.100917	953.2196	1476.157	40.83885	-1.10318
85	60	3500	954.3228	0.023305	0.916881	0.893575	1750	802.2705	1705.518	762.0043	0.735696	42.15227	610.664	610.664	875.3201	43%	5.961457	0.104047	5.429457	0.094762	985.0128	924.108	1.098663	953.1287	1444.668	32.8497	-1.19402
85	70	3500	954.3228	0.027216	0.916881	0.889664	1750	802.2705	1698.054	755.3491	0.73462	42.09064	671.0839	671.0839	990.0726	48%	6.084729	0.106199	5.552729	0.096913	988.8198	920.4305	1.096501	953.0512	1414.458	27.20085	-1.27159
85	80	3500	954.3228	0.031134	0.916881	0.885746	1750	802.2705	1690.575	748.7102	0.73354	42.02876	729.0903	729.0903	1104.841	52%	6.208482	0.108358	5.676482	0.099073	992.6435	916.7513	1.094426	952.9866	1385.455	23.04482	-1.33617
85	90	3500	954.3228	0.035061	0.916881	0.88182	1750	802.2705	1683.082	742.0877	0.732456	41.96664	784.818	784.818	1219.628	55%	6.33272	0.110527	5.80072	0.101242	996.4839	913.0703	1.092432	952.9347	1357.591	19.88832	-1.38804
85	100	3500	954.3228	0.038994	0.916881	0.877886	1750	802.2705	1675.574	735.4817	0.731368	41.90428	838.3915	838.3915	1334.434	59%	6.457445	0.112704	5.925445	0.103419	1000.341	909.3875	1.090516	952.8953	1330.804	17.42779	-1.42744
85	110	3500	954.3228	0.042936	0.916881	0.873945	1750	802.2705	1668.051	728.8923	0.730275	41.84167	889.9267	889.9267	1449.262	63%	6.58266	0.114889	6.05066	0.105604	1004.216	905.7028	1.088671	952.8682	1305.037	15.46777	-1.4546
85	120	3500	954.3228	0.046885	0.916881	0.869996	1750	802.2705	1660.513	722.3197	0.729178	41.77882	939.5311	939.5311	1564.113	66%	6.708368	0.117083	6.176368	0.107798	1008.107	902.0162	1.086895	952.853	1280.234	13.87758	-1.46972
85	130	3500	954.3228	0.050842	0.916881	0.866039	1750	802.2705	1652.961	715.7639	0.728077	41.71571	987.305	987.305	1678.99	70%	6.834571	0.119286	6.302571	0.110001	1012.016	898.3276	1.085185	952.8498	1256.347	12.56705	-1.47299
85	140	3500	954.3228	0.054807	0.916881	0.862074	1750	802.2705	1645.393	709.2252	0.726971	41.65236	1033.342	1033.342	1793.894	74%	6.961274	0.121497	6.429274	0.112212	1015.943	894.6369	1.083535	952.8582	1233.329	11.47224	-1.46459
85	150	3500	954.3228	0.05878	0.916881	0.858101	1750	802.2705	1637.811	702.7036	0.725861	41.58876	1077.729	1077.729	1908.828	77%	7.088478	0.123717	6.556478	0.114432	1019.887	890.9441	1.081944	952.8781	1211.136	10.54671	-1.44466
85	160	3500	954.3228	0.06276	0.916881	0.85412	1750	802.2705	1630.213	696.1992	0.724746	41.52491	1120.547	1120.547	2023.792	81%	7.216187	0.125946	6.684187	0.116661	1023.849	887.2491	1.080407	952.9094	1189.726	9.756091	-1.41336
85	170	3500	954.3228	0.066749	0.916881	0.850132	1750	802.2705	1622.6	689.7122	0.723627	41.4608	1161.873	1161.873	2138.789	84%	7.344404	0.128184	6.812404	0.118899	1027.829	883.5519	1.078924	952.952	1169.063	9.074415	-1.3708
85	180	3500	954.3228	0.070745	0.916881	0.846135	1750	802.2705	1614.973	683.2428	0.722504	41.39643	1201.778	1201.778	2253.821	88%	7.473131	0.130431	6.941131	0.121146	1031.828	879.8523	1.077489	953.0056	1149.111	8.481788	-1.31713
85	190	3500	954.3228	0.07475	0.916881	0.842131	1750	802.2705	1607.329	676.7909	0.721376	41.33181	1240.329	1240.329	2368.889	91%	7.602371	0.132686	7.070371	0.123401	1035.844	876.1504	1.076103	953.0703	1129.835	7.962733	-1.25243
85	200	3500	954.3228	0.078762	0.916881	0.838118	1750	802.2705	1599.671	670.3569	0.720244	41.26694	1277.589	1277.589	2483.997	94%	7.732129	0.134951	7.200129	0.125666	1039.879	872.446	1.074761	953.1459	1111.206	7.505056	-1.17681
85	210	3500	954.3228	0.082783	0.916881	0.834098	1750	802.2705	1591.997	663.9408	0.719107	41.2018	1313.616	1313.616	2599.144	98%	7.862405	0.137225	7.330405	0.12794	1043.933	868.7391	1.073462	953.2324	1093.192	7.099035	-1.09037
85	220	3500	954.3228	0.086811	0.916881	0.830069	1750	802.2705	1584.308	657.5427	0.717966	41.1364	1348.466	1348.466	2714.334	101%	7.993205	0.139508	7.461205	0.130223	1048.005	865.0295	1.072205	953.3296	1075.767	6.736837	-0.99317
85	230	3500	954.3228	0.090848	0.916881	0.826032	1750	802.2705	1576.603	651.1627	0.71682	41.07074	1382.191	1382.191	2829.568	105%	8.12453	0.1418	7.59253	0.132515	1052.097	861.3173	1.070986	953.4375	1058.904	6.412092	-0.8853
85	240	3500	954.3228	0.094893	0.916881	0.821988	1750	802.2705	1568.883	644.8011	0.715669	41.00481	1414.841	1414.841	2944.848	108%	8.256384	0.144101	7.724384	0.134816	1056.208	857.6024	1.069804	953.5559	1042.58	6.119569	-0.76682
85	40	4000	1090.655	0.013562	0.916881	0.903319	2000	916.8806	1970.417	889.9573	0.738367	42.30532	512.0835	512.0835	672.5678	31%	5.655368	0.098705	5.123368	0.08942	1114.934	1066.622	1.104484	1089.579	1743.958	61.01525	-1.07578

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
85	50	4000	1090.655	0.016967	0.916881	0.899914	2000	916.8806	1962.99	883.261	0.737435	42.25192	579.3776	579.3776	787.2876	36%	5.762161	0.100569	5.230161	0.091284	1118.699	1062.949	1.102375	1089.467	1710.311	47.66467	-1.18802
85	60	4000	1090.655	0.020377	0.916881	0.896503	2000	916.8806	1955.551	876.5786	0.7365	42.19834	644.2039	644.2039	902.0173	40%	5.869318	0.102439	5.337318	0.093154	1122.478	1059.274	1.100344	1089.366	1677.898	38.55434	-1.28817
85	70	4000	1090.655	0.023794	0.916881	0.893087	2000	916.8806	1948.098	869.9103	0.735562	42.14458	706.6895	706.6895	1016.758	44%	5.97684	0.104316	5.44484	0.09503	1126.272	1055.598	1.098388	1089.278	1646.655	32.0378	-1.3765
85	80	4000	1090.655	0.027216	0.916881	0.889664	2000	916.8806	1940.633	863.2561	0.73462	42.09064	766.953	766.953	1131.512	48%	6.084729	0.106199	5.552729	0.096913	1130.08	1051.921	1.096501	1089.201	1616.524	27.20085	-1.45324
85	90	4000	1090.655	0.030644	0.916881	0.886236	2000	916.8806	1933.155	856.6162	0.733675	42.03651	825.1049	825.1049	1246.279	51%	6.192987	0.108088	5.660987	0.098803	1133.902	1048.241	1.094681	1089.136	1587.448	23.50183	-1.51863
85	100	4000	1090.655	0.034078	0.916881	0.882802	2000	916.8806	1925.665	849.9906	0.732727	41.98219	881.2488	881.2488	1361.062	54%	6.301615	0.109984	5.769615	0.100699	1137.74	1044.561	1.092923	1089.082	1559.376	20.60264	-1.57286
85	110	4000	1090.655	0.037518	0.916881	0.879362	2000	916.8806	1918.161	843.3794	0.731776	41.92769	935.4815	935.4815	1475.862	58%	6.410616	0.111886	5.878616	0.102601	1141.592	1040.879	1.091226	1089.038	1532.259	18.28309	-1.61613
85	120	4000	1090.655	0.040964	0.916881	0.875917	2000	916.8806	1910.645	836.7828	0.730822	41.873	987.8937	987.8937	1590.68	61%	6.519991	0.113795	5.987991	0.10451	1145.459	1037.195	1.089585	1089.006	1506.053	16.39455	-1.64861
85	130	4000	1090.655	0.044416	0.916881	0.872465	2000	916.8806	1903.116	830.2007	0.729864	41.81813	1038.57	1038.57	1705.518	64%	6.629742	0.115711	6.097742	0.106426	1149.341	1033.509	1.087998	1088.984	1480.715	14.83365	-1.67048
85	140	4000	1090.655	0.047873	0.916881	0.869007	2000	916.8806	1895.573	823.6333	0.728903	41.76306	1087.591	1087.591	1820.377	67%	6.739872	0.117633	6.207872	0.108348	1153.238	1029.822	1.086462	1088.973	1456.204	13.5266	-1.68188
85	150	4000	1090.655	0.051337	0.916881	0.865543	2000	916.8806	1888.018	817.0808	0.727939	41.70781	1135.032	1135.032	1935.259	71%	6.850382	0.119562	6.318382	0.110277	1157.15	1026.133	1.084975	1088.972	1432.484	12.4195	-1.68295
85	160	4000	1090.655	0.054807	0.916881	0.862074	2000	916.8806	1880.449	810.5431	0.726971	41.65236	1180.962	1180.962	2050.165	74%	6.961274	0.121497	6.429274	0.112212	1161.078	1022.442	1.083535	1088.981	1409.519	11.47224	-1.67381
85	170	4000	1090.655	0.058282	0.916881	0.858598	2000	916.8806	1872.868	804.0204	0.726	41.59672	1225.449	1225.449	2165.096	77%	7.07255	0.123439	6.54055	0.114154	1165.021	1018.75	1.082139	1089	1387.276	10.65441	-1.6546
85	180	4000	1090.655	0.061764	0.916881	0.855116	2000	916.8806	1865.273	797.5128	0.725025	41.54089	1268.555	1268.555	2280.055	80%	7.184213	0.125388	6.652213	0.116103	1168.979	1015.055	1.080786	1089.029	1365.723	9.942638	-1.62542
85	190	4000	1090.655	0.065252	0.916881	0.851629	2000	916.8806	1857.665	791.0204	0.724048	41.48487	1310.338	1310.338	2395.041	83%	7.296263	0.127344	6.764263	0.118059	1172.954	1011.358	1.079474	1089.068	1344.831	9.31865	-1.58637
85	200	4000	1090.655	0.068746	0.916881	0.848135	2000	916.8806	1850.044	784.5432	0.723066	41.42865	1350.856	1350.856	2510.058	86%	7.408703	0.129306	6.876703	0.120021	1176.944	1007.66	1.0782	1089.117	1324.572	8.768026	-1.53754
85	210	4000	1090.655	0.072246	0.916881	0.844635	2000	916.8806	1842.409	778.0814	0.722082	41.37223	1390.16	1390.16	2625.105	89%	7.521536	0.131276	6.989536	0.12199	1180.95	1003.959	1.076964	1089.176	1304.92	8.279238	-1.47903
85	220	4000	1090.655	0.075752	0.916881	0.841129	2000	916.8806	1834.761	771.6352	0.721094	41.31562	1428.3	1428.3	2740.186	92%	7.634762	0.133252	7.102762	0.123967	1184.973	1000.257	1.075763	1089.244	1285.85	7.842977	-1.41091
85	230	4000	1090.655	0.079264	0.916881	0.837616	2000	916.8806	1827.1	765.2045	0.720102	41.25881	1465.324	1465.324	2855.3	95%	7.748385	0.135235	7.216385	0.12595	1189.011	996.5517	1.074596	1089.321	1267.338	7.451655	-1.33326
85	240	4000	1090.655	0.082783	0.916881	0.834098	2000	916.8806	1819.425	758.7894	0.719107	41.2018	1501.275	1501.275	2970.45	98%	7.862405	0.137225	7.330405	0.12794	1193.066	992.8446	1.073462	1089.408	1249.362	7.099035	-1.24613
85	40	4500	1226.986	0.012051	0.916881	0.90483	2250	1031.491	2220.428	1004.555	0.73878	42.32899	541.516	541.516	699.2819	29%	5.60802	0.097878	5.07602	0.088593	1252.423	1201.786	1.105447	1225.837	1979.242	69.05617	-1.14968
85	50	4500	1226.986	0.015074	0.916881	0.901806	2250	1031.491	2213.008	997.8519	0.737953	42.28161	610.0933	610.0933	813.9974	33%	5.702787	0.099532	5.170787	0.090247	1256.181	1198.114	1.103536	1225.718	1944.953	54.40421	-1.26807
85	60	4500	1226.986	0.018103	0.916881	0.898778	2250	1031.491	2205.576	991.161	0.737124	42.23408	676.4109	676.4109	928.7209	37%	5.79784	0.101191	5.26584	0.091906	1259.952	1194.44	1.10169	1225.611	1911.795	44.25923	-1.37557
85	70	4500	1226.986	0.021136	0.916881	0.895744	2250	1031.491	2198.133	984.4825	0.736292	42.18641	740.5735	740.5735	1043.453	41%	5.89318	0.102855	5.36118	0.09357	1263.735	1190.765	1.099903	1225.514	1879.713	36.92229	-1.47241
85	80	4500	1226.986	0.024174	0.916881	0.892707	2250	1031.491	2190.678	977.8165	0.735457	42.1386	802.6798	802.6798	1158.196	44%	5.98881	0.104524	5.45681	0.095239	1267.531	1187.088	1.098175	1225.428	1848.66	31.42971	-1.55879
85	90	4500	1226.986	0.027216	0.916881	0.889664	2250	1031.491	2183.212	971.1632	0.73462	42.09064	862.8221	862.8221	1272.95	48%	6.084729	0.106199	5.552729	0.096913	1271.34	1183.411	1.096501	1225.352	1818.589	27.20085	-1.6349
85	100	4500	1226.986	0.030263	0.916881	0.886617	2250	1031.491	2175.735	964.5224	0.733781	42.04253	921.0877	921.0877	1387.717	51%	6.18094	0.107878	5.64894	0.098593	1275.162	1179.732	1.09488	1225.286	1789.456	23.86839	-1.7009
85	110	4500	1226.986	0.033315	0.916881	0.883566	2250	1031.491	2168.247	957.8944	0.732938	41.99428	977.5585	977.5585	1502.497	54%	6.277443	0.109562	5.745443	0.100277	1278.996	1176.051	1.093309	1225.229	1761.221	21.19042	-1.75698
85	120	4500	1226.986	0.036371	0.916881	0.88051	2250	1031.491	2160.747	951.2792	0.732094	41.94588	1032.312	1032.312	1617.292	57%	6.37424	0.111251	5.84224	0.101966	1282.844	1172.369	1.091785	1225.183	1733.844	19.00217	-1.80327
85	130	4500	1226.986	0.039432	0.916881	0.877449	2250	1031.491	2153.235	944.6769	0.731246	41.89733	1085.421	1085.421	1732.103	60%	6.471333	0.112946	5.939333	0.103661	1286.705	1168.686	1.090307	1225.146	1707.29	17.18813	-1.83993
85	140	4500	1226.986	0.042497	0.916881	0.874383	2250	1031.491	2145.713	938.0875	0.730397	41.84864	1136.954	1136.954	1846.931	62%	6.568723	0.114646	6.036723	0.105361	1290.58	1165.002	1.088873	1225.119	1681.523	15.66531	-1.86709
85	150	4500	1226.986	0.045568	0.916881	0.871313	2250	1031.491	2138.178	931.5112	0.729544	41.79979	1186.977	1186.977	1961.777	65%	6.66641	0.116351	6.13441	0.107066	1294.468	1161.315	1.08748	1225.102	1656.511	14.37276	-1.88487
85	160	4500	1226.986	0.048643	0.916881	0.868238	2250	1031.491	2130.632	924.9479	0.728689	41.7508	1235.551	1235.551	2076.643	68%	6.764397	0.118061	6.232397	0.108776	1298.369	1157.628	1.086127	1225.093	1632.224	13.26489	-1.89338
85	170	4500	1226.986	0.051722	0.916881	0.865158	2250	1031.491	2123.075	918.3978	0.727831	41.70166	1282.735	1282.735	2191.528	71%	6.862684	0.119776	6.330684	0.110491	1302.284	1153.938	1.084813	1225.094	1608.633	12.30698	-1.89274
85	180	4500	1226.986	0.054807	0.916881	0.862074	2250	1031.491	2115.506	911.861	0.726971	41.65236	1328.582	1328.582	2306.436	74%	6.961274	0.121497	6.429274	0.112212	1306.212	1150.247	1.083535	1225.103	1585.709	11.47224	-1.88304
85	190	4500	1226.986	0.057896	0.916881	0.858985	2250	1031.491	2107.925	905.3374	0.726108	41.60292	1373.147	1373.147	2421.365	76%	7.060167	0.123223	6.528167	0.113938	1310.155	1146.555	1.082292	1225.122	1563.426	10.73967	-1.86438
85	200	4500	1226.986	0.06099	0.916881	0.855891	2250	1031.491	2100.332	898.8273	0.725242	41.55332	1416.478	1416.478	2536.319	79%	7.159365	0.124954	6.627365	0.115669	1314.111	1142.861	1.081084	1225.15	1541.761	10.09265	-1.83685
85	210	4500	1226.986	0.064089	0.916881	0.852792	2250	1031.491	2092.728	892.3306	0.724374	41.50357	1458.623	1458.623	2651.298	82%	7.25887	0.126691	6.72687	0.117406	1318.081	1139.165	1.079907	1225.186	1520.688	9.51785	-1.80053
85	220	4500	1226.986	0.067192	0.916881	0.849688	2250	1031.491	2085.112	885.8475	0.723503	41.45366	1499.626	1499.626	2766.302	84%	7.358682	0.128433	6.826682	0.119148	1322.065	1135.467	1.078762	1225.231	1500.187	9.004487	-1.7555
85	230	4500	1226.986	0.070301	0.916881	0.84658	2250	1031.491	2077.484	879.3781	0.722629	41.4036	1539.53	1539.53	2881.334	87%	7.458803	0.130181	6.926803	0.120896	1326.063	1131.767	1.077646	1225.285	1480.235	8.543751	-1.70182
85	240	4500	1226.986	0.073414	0.916881	0.843467	2250	1031.491	2069.844	872.9223	0.721753	41.35338	1578.375	1578.375	2996.394	90%	7.559234	0.131934	7.027234	0.122648	1330.076	1128.066	1.07656	1225.347	1460.812	8.128387	-1.63956
85	40	5000	1363.318	0.010842	0.916881	0.906038	2500	1146.101	2470.437	1119.155	0.73911	42.3479	570.475	570.475	725.9975	27%	5.570193	0.097218	5.038193	0.087933	1389.915	1336.95	1.10623	1362.097	2214.763	76.81867	-1.22136
85	50	5000	1363.318	0.013562	0.916881	0.903319	2500	1146.101	2463.022	1112.447	0.738367	42.30532	640.1044	640.1044	840.7097	31%	5.655368	0.098705	5.123368	0.08942	1393.667	1333.278	1.104484	1361.974	2179.948	61.01525	-1.34472
85	60	5000	1363.318	0.016285	0.916881	0.900595	2500	1146.101	2455.596	1105.749	0.737622	42.26261	707.6506	707.6506	955.4287	35%	5.740774	0.100195	5.208774	0.09091	1397.431	1329.605	1.10279	1361.86	2146.175	49.92319	-1.45818
85	70	5000	1363.318	0.019012	0.916881	0.897868	2500	1146.101	2448.16	1099.062	0.736874	42.21979	773.2015	773.2015	1070.155	38%	5.826412	0.10169	5.294412	0.092405	1401.206	1325.93	1.101148	1361.756	2113.399	41.81717	-1.56193
85	80	5000	1363.318	0.021743	0.916881	0.895137	2500	1146.101	2440.714	1092.387	0.736125	42.17686	836.8403	836.8403	1184.89	42%	5.912283	0.103189	5.380283	0.093904	1404.992	1322.255	1.099553	1361.662	2081.58	35.6989	-1.65613
85	90	5000	1363.318	0.024478	0.916881	0.892403	2500	1146.101	2433.258	1085.723	0.735374	42.13381	898.6454	898.6454	1299.635	45%	5.998389	0.104692	5.466389	0.095406	1408.79	1318.578	1.098005	1361.577	2050.677	30.95731	-1.74096
85	100	5000	1363.318	0.027216	0.916881	0.889664	2500	1146.101	2425.791	1079.07	0.73462	42.09064	958.6912	958.6912	1414.389	48%	6.084729	0.106199	5.552729	0.096913	1412.6	1314.901	1.096501	1361.502	2020.654	27.20085	-1.81655
85	110	5000	1363.318	0.029958	0.916881	0.886922	2500	1146.101	2418.315	1072.429	0.733865	42.04735	1017.048	1017.048	1529.155	50%	6.171305	0.10771	5.639305	0.098424	1416.421	1311.222	1.09504	1361.435	1991.476	24.16891	-1.88306
85	120	5000	1363.318	0.032704	0.916881	0.884177	2500	1146.101	2410.828	1065.799	0.733107	42.00394	1073.782	1073.782	1643.934	53%	6.258119	0.109225	5.726119	0.09994	1420.254	1307.542	1.093619	1361.378	1963.109	21.68241	-1.94061
85	130	5000	1363.318	0.035454	0.916881	0.881427	2500	1146.101	2403.331	1059.181	0.732347	41.96041	1128.958	1128.958	1758.725	56%	6.34517	0.110744	5.81317	0.101459	1424.098	1303.86	1.092237	1361.329	1935.521	19.61484	-1.98934
85	140	5000	1363.318	0.038207	0.916881	0.878674	2500	1146.101	2395.824	1052.574	0.731586	41.91677	1182.633	1182.633	1873.53	58%	6.432461	0.112268	5.900461	0.102982	1427.955	1300.177	1.090893	1361.289	1908.683	17.87474	-2.02935
85	150	5000	1363.318	0.040964	0.916881	0.875917	2500	1146.101	2388.306	1045.978	0.730822	41.873	1234.867	1234.867	1988.35	61%	6.519991	0.113795	5.987991	0.10451	1431.823	1296.493	1.089585	1361.257	1882.566	16.39455	-2.06077
85	160	5000	1363.318	0.043725	0.916881	0.873156	2500	1146.101	2380.778	1039.395	0.730056	41.82912	1285.712	1285.712	2103.186	64%	6.607762	0.115327	6.075762	0.106042	1435.704	1292.808	1.088311	1361.235	1857.144	15.1235	-2.08369
85	170	5000	1363.318	0.04649	0.916881	0.870391	2500	1146.101	2373.24	1032.823	0.729288	41.78511	1335.221	1335.221	2218.039	66%	6.695775	0.116863	6.163775	0.107578	1439.596	1289.121	1.08707	1361.22	1832.39	14.02277	-2.09821
85	180	5000	1363.318	0.049258	0.916881	0.867622	2500	1146.101	2365.691	1026.263	0.728518	41.74098	1383.441	1383.441	2332.909	69%	6.78403	0.118404	6.25203	0.109119	1443.501	1285.433	1.085861	1361.214	1808.279	13.06226	-2.10442
85	190	5000	1363.318	0.052031	0.916881	0.86485	2500	1146.101	2358.132	1019.715	0.727745	41.69674	1430.421	1430.421	2447.798	71%	6.87253	0.119948	6.34053	0.110663	1447.418	1281.744	1.084683	1361.216	1784.79	12.21835	-2.10241
85	200	5000	1363.318	0.054807	0.916881	0.862074	2500	1146.101	2350.562	1013.179	0.726971	41.65236	1476.203	1476.203	2562.706	74%	6.961274	0.121497	6.429274	0.112212	1451.347	1278.053	1.083535	1361.226	1761.899	11.47224	-2.09227
85	210	5000	1363.318	0.057587	0.916881	0.859294	2500	1146.101	2342.982	1006.655	0.726194	41.60787	1520.83	1520.83	2677.635	76%	7.050264	0.12305	6.518264	0.113765	1455.289	1274.36	1.082415	1361.244	1739.585	10.80883	-2.07406
85	220	5000	1363.318	0.060371	0.916881	0.85651	2500	1146.101	2335.391	1000.143	0.725416	41.56325	1564.343	1564.343	2792.585	79%	7.139501	0.124608	6.607501	0.115323	1459.243	1270.666	1.081323	1361.27	1717.829	10.21589	-2.04785
85	230	5000	1363.318	0.063159	0.916881	0.853722	2500	1146.101	2327.789	993.6425	0.724635	41.51851	1606.78	1606.78	2907.557	81%	7.228986	0.12617	6.696986	0.116884	1463.209	1266.971	1.080257	1361.305	1696.61	9.68339	-2.01372
85	240	5000	1363.318	0.06595	0.916881	0.85093	2500	1146.101	2320.177	987.1546	0.723852	41.47364	1648.177	1648.177	3022.553	83%	7.31872	0.127736	6.78672	0.118451	1467.188	1263.274	1.079216	1361.347	1675.912	9.203062	-1.97173

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
85	40	5500	1499.65	0.009854	0.916881	0.907026	2750	1260.711	2720.445	1233.758	0.73938	42.36336	599.0828	599.0828	752.7139	26%	5.539277	0.096679	5.007277	0.087393	1527.408	1472.114	1.106878	1498.359	2450.459	84.28528	-1.29142
85	50	5500	1499.65	0.012325	0.916881	0.904555	2750	1260.711	2713.033	1227.044	0.738705	42.32469	669.5902	669.5902	867.4237	30%	5.616623	0.098029	5.084623	0.088743	1531.156	1468.442	1.105271	1498.231	2415.205	67.46945	-1.41888
85	60	5500	1499.65	0.014799	0.916881	0.902081	2750	1260.711	2705.612	1220.341	0.738029	42.28592	738.166	738.166	982.1392	33%	5.69416	0.099382	5.16216	0.090097	1534.914	1464.769	1.103707	1498.113	2380.917	55.51589	-1.53726
85	70	5500	1499.65	0.017277	0.916881	0.899604	2750	1260.711	2698.182	1213.648	0.73735	42.24706	804.885	804.885	1096.861	36%	5.771888	0.100738	5.239888	0.091453	1538.682	1461.096	1.102187	1498.003	2347.557	46.69364	-1.64673
85	80	5500	1499.65	0.019757	0.916881	0.897124	2750	1260.711	2690.743	1206.965	0.73667	42.2081	869.8182	869.8182	1211.59	39%	5.849808	0.102098	5.317808	0.092813	1542.461	1457.421	1.100708	1497.903	2315.091	39.98236	-1.74742
85	90	5500	1499.65	0.02224	0.916881	0.89464	2750	1260.711	2683.295	1200.292	0.735989	42.16904	933.0329	933.0329	1326.327	42%	5.927921	0.103462	5.395921	0.094177	1546.25	1453.745	1.099268	1497.811	2283.484	34.74813	-1.83947
85	100	5500	1499.65	0.024727	0.916881	0.892154	2750	1260.711	2675.837	1193.629	0.735305	42.12989	994.5933	994.5933	1441.073	45%	6.006228	0.104828	5.474228	0.095543	1550.05	1450.069	1.097867	1497.727	2252.703	30.57978	-1.92303
85	110	5500	1499.65	0.027216	0.916881	0.889664	2750	1260.711	2668.371	1186.977	0.73462	42.09064	1054.56	1054.56	1555.828	48%	6.084729	0.106199	5.552729	0.096913	1553.86	1446.391	1.096501	1497.652	2222.72	27.20085	-1.99821
85	120	5500	1499.65	0.029709	0.916881	0.887172	2750	1260.711	2660.895	1180.335	0.733933	42.05129	1112.992	1112.992	1670.594	50%	6.163425	0.107572	5.631425	0.098287	1557.68	1442.712	1.095171	1497.585	2193.504	24.41976	-2.06512
85	130	5500	1499.65	0.032204	0.916881	0.884676	2750	1260.711	2653.409	1173.704	0.733245	42.01184	1169.943	1169.943	1785.37	53%	6.242317	0.108949	5.710317	0.099664	1561.512	1439.032	1.093874	1497.526	2165.028	22.10018	-2.12389
85	140	5500	1499.65	0.034703	0.916881	0.882177	2750	1260.711	2645.914	1167.083	0.732555	41.9723	1225.467	1225.467	1900.158	55%	6.321405	0.110329	5.789405	0.101044	1565.354	1435.351	1.09261	1497.475	2137.266	20.14291	-2.17461
85	150	5500	1499.65	0.037205	0.916881	0.879675	2750	1260.711	2638.41	1160.472	0.731863	41.93265	1279.613	1279.613	2014.959	57%	6.400691	0.111713	5.868691	0.102428	1569.206	1431.668	1.091378	1497.433	2110.193	18.4743	-2.21738
85	160	5500	1499.65	0.03971	0.916881	0.87717	2750	1260.711	2630.897	1153.872	0.731169	41.89291	1332.43	1332.43	2129.773	60%	6.480174	0.1131	5.948174	0.103815	1573.07	1427.985	1.090175	1497.398	2083.785	17.03871	-2.2523
85	170	5500	1499.65	0.042218	0.916881	0.874662	2750	1260.711	2623.374	1147.283	0.730474	41.85307	1383.962	1383.962	2244.601	62%	6.559857	0.114491	6.027857	0.105206	1576.944	1424.3	1.089001	1497.371	2058.019	15.79344	-2.27946
85	180	5500	1499.65	0.04473	0.916881	0.872151	2750	1260.711	2615.842	1140.704	0.729777	41.81313	1434.254	1434.254	2359.444	65%	6.639738	0.115885	6.107738	0.1066	1580.83	1420.614	1.087856	1497.351	2032.873	14.70527	-2.29893
85	190	5500	1499.65	0.047244	0.916881	0.869636	2750	1260.711	2608.3	1134.136	0.729078	41.77309	1483.347	1483.347	2474.302	67%	6.71982	0.117283	6.18782	0.107998	1584.726	1416.927	1.086737	1497.339	2008.326	13.748	-2.31079
85	200	5500	1499.65	0.049762	0.916881	0.867119	2750	1260.711	2600.749	1127.579	0.728377	41.73295	1531.281	1531.281	2589.176	69%	6.800103	0.118684	6.268103	0.109399	1588.633	1413.239	1.085645	1497.335	1984.359	12.90076	-2.31513
85	210	5500	1499.65	0.052283	0.916881	0.864598	2750	1260.711	2593.188	1121.032	0.727675	41.69271	1578.095	1578.095	2704.068	71%	6.880587	0.120089	6.348587	0.110804	1592.552	1409.549	1.084578	1497.338	1960.953	12.14673	-2.31201
85	220	5500	1499.65	0.054807	0.916881	0.862074	2750	1260.711	2585.618	1114.497	0.726971	41.65236	1623.823	1623.823	2818.977	74%	6.961274	0.121497	6.429274	0.112212	1596.482	1405.858	1.083535	1497.349	1938.089	11.47224	-2.30149
85	230	5500	1499.65	0.057334	0.916881	0.859547	2750	1260.711	2578.038	1107.972	0.726265	41.61192	1668.502	1668.502	2933.905	76%	7.042164	0.122909	6.510164	0.113624	1600.423	1402.166	1.082516	1497.366	1915.749	10.86606	-2.28365
85	240	5500	1499.65	0.059864	0.916881	0.857016	2750	1260.711	2570.449	1101.458	0.725557	41.57137	1712.164	1712.164	3048.852	78%	7.123258	0.124324	6.591258	0.115039	1604.375	1398.472	1.081519	1497.392	1893.918	10.31893	-2.25853
85	40	6000	1635.982	0.009031	0.916881	0.907849	3000	1375.321	2970.451	1348.361	0.739605	42.37623	627.4228	627.4228	779.4311	24%	5.513538	0.096229	4.981538	0.086944	1664.903	1607.277	1.107424	1634.622	2686.289	91.44963	-1.36024
85	50	6000	1635.982	0.011295	0.916881	0.905585	3000	1375.321	2963.042	1341.644	0.738987	42.34081	698.6741	698.6741	894.1389	28%	5.584373	0.097466	5.052373	0.088181	1668.647	1603.606	1.105935	1634.491	2650.663	73.7485	-1.49114
85	60	6000	1635.982	0.013562	0.916881	0.903319	3000	1375.321	2955.626	1334.936	0.738367	42.30532	768.1252	768.1252	1008.852	31%	5.655368	0.098705	5.123368	0.08942	1672.401	1599.934	1.104484	1634.368	2615.937	61.01525	-1.61367
85	70	6000	1635.982	0.015831	0.916881	0.901049	3000	1375.321	2948.201	1328.237	0.737746	42.26974	835.8405	835.8405	1123.57	34%	5.726523	0.099947	5.194523	0.090662	1676.163	1596.26	1.103069	1634.254	2582.08	51.52947	-1.72794
85	80	6000	1635.982	0.018103	0.916881	0.898778	3000	1375.321	2940.768	1321.548	0.737124	42.23408	901.8812	901.8812	1238.295	37%	5.79784	0.101191	5.26584	0.091906	1679.935	1592.586	1.10169	1634.148	2549.059	44.25923	-1.8341
85	90	6000	1635.982	0.020377	0.916881	0.896503	3000	1375.321	2933.326	1314.868	0.7365	42.19834	966.3059	966.3059	1353.026	40%	5.869318	0.102439	5.337318	0.093154	1683.717	1588.911	1.100344	1634.05	2516.847	38.55434	-1.93226
85	100	6000	1635.982	0.022654	0.916881	0.894226	3000	1375.321	2925.876	1308.197	0.735875	42.16252	1029.17	1029.17	1467.765	43%	5.940959	0.103689	5.408959	0.094404	1687.508	1585.236	1.099032	1633.959	2485.415	33.98818	-2.02253
85	110	6000	1635.982	0.024934	0.916881	0.891947	3000	1375.321	2918.417	1301.536	0.735248	42.12662	1090.528	1090.528	1582.512	45%	6.012762	0.104942	5.480762	0.095657	1691.309	1581.559	1.097751	1633.877	2454.736	30.27115	-2.10503
85	120	6000	1635.982	0.027216	0.916881	0.889664	3000	1375.321	2910.95	1294.884	0.73462	42.09064	1150.429	1150.429	1697.267	48%	6.084729	0.106199	5.552729	0.096913	1695.12	1577.881	1.096501	1633.802	2424.785	27.20085	-2.17986
85	130	6000	1635.982	0.029501	0.916881	0.88738	3000	1375.321	2903.474	1288.242	0.733991	42.05457	1208.924	1208.924	1812.032	50%	6.15686	0.107457	5.62486	0.098172	1698.94	1574.202	1.09528	1633.735	2395.538	24.63229	-2.24712
85	140	6000	1635.982	0.031788	0.916881	0.885092	3000	1375.321	2895.99	1281.609	0.73336	42.01842	1266.057	1266.057	1926.807	52%	6.229155	0.108719	5.697155	0.099434	1702.77	1570.522	1.094088	1633.675	2366.972	22.4593	-2.3069
85	150	6000	1635.982	0.034078	0.916881	0.882802	3000	1375.321	2888.497	1274.986	0.732727	41.98219	1321.873	1321.873	2041.593	54%	6.301615	0.109984	5.769615	0.100699	1706.61	1566.841	1.092923	1633.623	2339.063	20.60264	-2.35929
85	160	6000	1635.982	0.036371	0.916881	0.88051	3000	1375.321	2880.996	1268.372	0.732094	41.94588	1376.416	1376.416	2156.39	57%	6.37424	0.111251	5.84224	0.101966	1710.459	1563.159	1.091785	1633.578	2311.792	19.00217	-2.40437
85	170	6000	1635.982	0.038666	0.916881	0.878214	3000	1375.321	2873.486	1261.768	0.731458	41.90948	1429.725	1429.725	2271.199	59%	6.447032	0.112522	5.915032	0.103237	1714.319	1559.476	1.090672	1633.54	2285.137	17.61154	-2.44222
85	180	6000	1635.982	0.040964	0.916881	0.875917	3000	1375.321	2865.967	1255.174	0.730822	41.873	1481.84	1481.84	2386.02	61%	6.519991	0.113795	5.987991	0.10451	1718.188	1555.792	1.089585	1633.509	2259.08	16.39455	-2.47292
85	190	6000	1635.982	0.043264	0.916881	0.873616	3000	1375.321	2858.44	1248.59	0.730184	41.83644	1532.799	1532.799	2500.855	63%	6.593116	0.115072	6.061116	0.105786	1722.067	1552.107	1.088521	1633.485	2233.601	15.32259	-2.49654
85	200	6000	1635.982	0.045568	0.916881	0.871313	3000	1375.321	2850.904	1242.015	0.729544	41.79979	1582.636	1582.636	2615.703	65%	6.66641	0.116351	6.13441	0.107066	1725.957	1548.421	1.08748	1633.469	2208.682	14.37276	-2.51315
85	210	6000	1635.982	0.047873	0.916881	0.869007	3000	1375.321	2843.36	1235.45	0.728903	41.76306	1631.387	1631.387	2730.566	67%	6.739872	0.117633	6.207872	0.108348	1729.857	1544.733	1.086462	1633.459	2184.306	13.5266	-2.52282
85	220	6000	1635.982	0.050182	0.916881	0.866699	3000	1375.321	2835.807	1228.895	0.72826	41.72625	1679.084	1679.084	2845.444	69%	6.813503	0.118918	6.281503	0.109633	1733.766	1541.044	1.085465	1633.456	2160.458	12.76902	-2.52559
85	230	6000	1635.982	0.052493	0.916881	0.864388	3000	1375.321	2828.245	1222.35	0.727616	41.68935	1725.759	1725.759	2960.337	72%	6.887303	0.120206	6.355303	0.110921	1737.686	1537.354	1.08449	1633.46	2137.12	12.08765	-2.52154
85	240	6000	1635.982	0.054807	0.916881	0.862074	3000	1375.321	2820.674	1215.815	0.726971	41.65236	1771.443	1771.443	3075.247	74%	6.961274	0.121497	6.429274	0.112212	1741.616	1533.663	1.083535	1633.471	2114.278	11.47224	-2.51072
85	40	6500	1772.314	0.008335	0.916881	0.908546	3250	1489.931	3220.456	1462.965	0.739795	42.38711	655.5539	655.5539	806.1487	23%	5.491774	0.09585	4.959774	0.086564	1802.399	1742.441	1.107891	1770.886	2922.223	98.31275	-1.4281
85	50	6500	1772.314	0.010424	0.916881	0.906456	3250	1489.931	3213.05	1456.245	0.739225	42.35445	727.4436	727.4436	920.855	27%	5.557109	0.09699	5.025109	0.087705	1806.14	1738.77	1.106503	1770.752	2886.278	79.84138	-1.56194
85	60	6500	1772.314	0.012515	0.916881	0.904365	3250	1489.931	3205.637	1449.533	0.738653	42.32171	797.6479	797.6479	1035.566	30%	5.622581	0.098133	5.090581	0.088847	1809.889	1735.098	1.105149	1770.626	2851.176	66.40552	-1.688
85	70	6500	1772.314	0.014609	0.916881	0.902272	3250	1489.931	3198.217	1442.83	0.738081	42.28891	866.2229	866.2229	1150.281	33%	5.688189	0.099278	5.156189	0.089992	1813.647	1731.425	1.103826	1770.507	2816.889	56.30765	-1.80638
85	80	6500	1772.314	0.016705	0.916881	0.900176	3250	1489.931	3190.788	1436.135	0.737507	42.25603	933.222	933.222	1265.002	36%	5.753933	0.100425	5.221933	0.09114	1817.414	1727.751	1.102534	1770.396	2783.389	48.51285	-1.9172
85	90	6500	1772.314	0.018803	0.916881	0.898078	3250	1489.931	3183.352	1429.449	0.736932	42.22309	998.6965	998.6965	1379.729	38%	5.819816	0.101575	5.287816	0.09229	1821.19	1724.077	1.101272	1770.293	2750.652	42.36037	-2.02058
85	100	6500	1772.314	0.020903	0.916881	0.895978	3250	1489.931	3175.908	1422.772	0.736356	42.19008	1062.695	1062.695	1494.462	41%	5.885836	0.102727	5.353836	0.093442	1824.974	1720.402	1.100039	1770.197	2718.652	37.41185	-2.1166
85	110	6500	1772.314	0.023005	0.916881	0.893876	3250	1489.931	3168.456	1416.103	0.735778	42.157	1125.266	1125.266	1609.202	43%	5.951995	0.103882	5.419995	0.094597	1828.767	1716.726	1.098833	1770.108	2687.367	33.36695	-2.20537
85	120	6500	1772.314	0.025109	0.916881	0.891771	3250	1489.931	3160.996	1409.443	0.7352	42.12385	1186.452	1186.452	1723.95	45%	6.018292	0.105039	5.486292	0.095754	1832.569	1713.049	1.097654	1770.027	2656.774	30.01415	-2.28698
85	130	6500	1772.314	0.027216	0.916881	0.889664	3250	1489.931	3153.529	1402.791	0.73462	42.09064	1246.299	1246.299	1838.706	48%	6.084729	0.106199	5.552729	0.096913	1836.38	1709.371	1.096501	1769.952	2626.851	27.20085	-2.36152
85	140	6500	1772.314	0.029325	0.916881	0.887555	3250	1489.931	3146.054	1396.149	0.734039	42.05735	1304.846	1304.846	1953.471	50%	6.151305	0.107361	5.619305	0.098075	1840.199	1705.692	1.095373	1769.885	2597.577	24.81467	-2.42906
85	150	6500	1772.314	0.031436	0.916881	0.885444	3250	1489.931	3138.57	1389.515	0.733457	42.02399	1362.133	1362.133	2068.245	52%	6.218022	0.108525	5.686022	0.09924	1844.028	1702.012	1.09427	1769.824	2568.933	22.77129	-2.4897
85	160	6500	1772.314	0.03355	0.916881	0.883331	3250	1489.931	3131.079	1382.89	0.732874	41.99056	1418.199	1418.199	2183.028	54%	6.284879	0.109692	5.752879	0.100407	1847.866	1698.332	1.09319	1769.77	2540.9	21.00642	-2.5435
85	170	6500	1772.314	0.035665	0.916881	0.881215	3250	1489.931	3123.58	1376.273	0.732289	41.95706	1473.081	1473.081	2297.822	56%	6.351876	0.110861	5.819876	0.101576	1851.713	1694.65	1.092133	1769.723	2513.46	19.47035	-2.59054
85	180	6500	1772.314	0.037783	0.916881	0.879098	3250	1489.931	3116.073	1369.666	0.731703	41.92349	1526.812	1526.812	2412.627	58%	6.419016	0.112033	5.887016	0.102748	1855.569	1690.967	1.091097	1769.683	2486.594	18.12406	-2.63089
85	190	6500	1772.314	0.039903	0.916881	0.876977	3250	1489.931	3108.558	1363.068	0.731116	41.88985	1579.428	1579.428	2527.443	60%	6.486297	0.113207	5.954297	0.103922	1859.434	1687.284	1.090084	1769.649	2460.286	16.93664	-2.66461
85	200	6500	1772.314	0.042025	0.916881	0.874855	3250	1489.931	3101.035	1356.478	0.730527	41.85614	1630.96	1630.96	2642.271	62%	6.55372	0.114384	6.02172	0.105099	1863.309	1683.599	1.089091	1769.622	2434.52	15.88328	-2.69176
85	210	6500	1772.314	0.04415	0.916881	0.872731	3250	1489.931	3093.505	1349.898	0.729938	41.82236	1681.439	1681.439	2757.111	64%	6.621286	0.115563	6.089286	0.106278	1867.192	1679.913	1.088118	1769.601	2409.28	14.94391	-2.71241
85	220	6500	1772.314	0.046277	0.916881	0.870604	3250	1489.931	3085.966	1343.327	0.729347	41.7885	1730.897	1730.897	2871.964	66%	6.688996	0.116745	6.156996	0.10746	1871.085	1676.227	1.087164	1769.587	2384.552	14.10212	-2.7266
85	230	6500	1772.314	0.048406	0.916881	0.868475	3250	1489.931	3078.419	1336.764	0.728755	41.75458	1779.36	1779.36	2986.831	68%	6.756849	0.117929	6.224849	0.108644	1874.988	1672.539	1.08623	1769.579	2360.32	13.3444	-2.73441

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
85	240	6500	1772.314	0.050537	0.916881	0.866343	3250	1489.931	3070.864	1330.211	0.728161	41.72058	1826.858	1826.858	3101.712	70%	6.824846	0.119116	6.292846	0.109831	1878.899	1668.85	1.085314	1769.578	2336.571	12.65951	-2.73586
85	40	7000	1908.646	0.007738	0.916881	0.909142	3500	1604.541	3470.46	1577.571	0.739957	42.39643	683.5191	683.5191	832.8667	22%	5.473132	0.095524	4.941132	0.086239	1939.896	1877.604	1.108293	1907.15	3158.24	104.8805	-1.49522
85	50	7000	1908.646	0.009678	0.916881	0.907203	3500	1604.541	3463.057	1570.848	0.739428	42.36612	755.9625	755.9625	947.5716	25%	5.53376	0.096582	5.00176	0.087297	1943.634	1873.933	1.106995	1907.014	3122.019	85.74238	-1.63159
85	60	7000	1908.646	0.011619	0.916881	0.905262	3500	1604.541	3455.647	1564.133	0.738898	42.33575	826.8218	826.8218	1062.28	28%	5.594505	0.097643	5.062505	0.088357	1947.38	1870.262	1.105725	1906.885	3086.589	71.67575	-1.76068
85	70	7000	1908.646	0.013562	0.916881	0.903319	3500	1604.541	3448.23	1557.425	0.738367	42.30532	896.1461	896.1461	1176.994	31%	5.655368	0.098705	5.123368	0.08942	1951.134	1866.589	1.104484	1906.763	3051.927	61.01525	-1.88261
85	80	7000	1908.646	0.015507	0.916881	0.901374	3500	1604.541	3440.806	1550.726	0.737835	42.27483	963.9826	963.9826	1291.712	34%	5.716348	0.099769	5.184348	0.090484	1954.896	1862.916	1.103269	1906.648	3018.009	52.72999	-1.99747
85	90	7000	1908.646	0.017454	0.916881	0.899427	3500	1604.541	3433.374	1544.035	0.737302	42.24428	1030.376	1030.376	1406.435	36%	5.777447	0.100835	5.245447	0.09155	1958.666	1859.242	1.10208	1906.54	2984.812	46.15346	-2.10535
85	100	7000	1908.646	0.019402	0.916881	0.897478	3500	1604.541	3425.936	1537.351	0.736767	42.21367	1095.371	1095.371	1521.163	39%	5.838665	0.101904	5.306665	0.092619	1962.444	1855.568	1.100917	1906.439	2952.314	40.83885	-2.20635
85	110	7000	1908.646	0.021353	0.916881	0.895528	3500	1604.541	3418.49	1530.676	0.736232	42.183	1159.008	1159.008	1635.899	41%	5.900001	0.102974	5.368001	0.093689	1966.231	1851.892	1.099778	1906.345	2920.496	36.47732	-2.30055
85	120	7000	1908.646	0.023305	0.916881	0.893575	3500	1604.541	3411.036	1524.009	0.735696	42.15227	1221.328	1221.328	1750.64	43%	5.961457	0.104047	5.429457	0.094762	1970.026	1848.216	1.098663	1906.257	2889.336	32.8497	-2.38804
85	130	7000	1908.646	0.02526	0.916881	0.891621	3500	1604.541	3403.576	1517.349	0.735159	42.12148	1282.369	1282.369	1865.389	45%	6.023033	0.105122	5.491033	0.095837	1973.828	1844.539	1.097571	1906.177	2858.816	29.79684	-2.46889
85	140	7000	1908.646	0.027216	0.916881	0.889664	3500	1604.541	3396.108	1510.698	0.73462	42.09064	1342.168	1342.168	1980.145	48%	6.084729	0.106199	5.552729	0.096913	1977.64	1840.861	1.096501	1906.102	2828.916	27.20085	-2.54317
85	150	7000	1908.646	0.029174	0.916881	0.887706	3500	1604.541	3388.633	1504.055	0.734081	42.05973	1400.76	1400.76	2094.91	50%	6.146545	0.107277	5.614545	0.097992	1981.459	1837.182	1.095453	1906.035	2799.62	24.97287	-2.61097
85	160	7000	1908.646	0.031134	0.916881	0.885746	3500	1604.541	3381.151	1497.42	0.73354	42.02876	1458.181	1458.181	2209.682	52%	6.208482	0.108358	5.676482	0.099073	1985.287	1833.503	1.094426	1905.973	2770.91	23.04482	-2.67234
85	170	7000	1908.646	0.033097	0.916881	0.883784	3500	1604.541	3373.661	1490.794	0.732999	41.99773	1514.462	1514.462	2324.464	53%	6.27054	0.109442	5.73854	0.100156	1989.123	1829.822	1.093419	1905.918	2742.769	21.36384	-2.72736
85	180	7000	1908.646	0.035061	0.916881	0.88182	3500	1604.541	3366.164	1484.175	0.732456	41.96664	1569.636	1569.636	2439.255	55%	6.33272	0.110527	5.80072	0.101242	1992.968	1826.141	1.092432	1905.869	2715.182	19.88832	-2.77608
85	190	7000	1908.646	0.037026	0.916881	0.879854	3500	1604.541	3358.659	1477.565	0.731912	41.93549	1623.733	1623.733	2554.056	57%	6.395021	0.111614	5.863021	0.102329	1996.821	1822.458	1.091465	1905.827	2688.133	18.58518	-2.81857
85	200	7000	1908.646	0.038994	0.916881	0.877886	3500	1604.541	3351.148	1470.963	0.731368	41.90428	1676.783	1676.783	2668.868	59%	6.457445	0.112704	5.925445	0.103419	2000.683	1818.775	1.090516	1905.791	2661.609	17.42779	-2.85488
85	210	7000	1908.646	0.040964	0.916881	0.875917	3500	1604.541	3343.629	1464.37	0.730822	41.873	1728.814	1728.814	2783.69	61%	6.519991	0.113795	5.987991	0.10451	2004.553	1815.091	1.089585	1905.76	2635.593	16.39455	-2.88508
85	220	7000	1908.646	0.042936	0.916881	0.873945	3500	1604.541	3336.102	1457.785	0.730275	41.84167	1779.853	1779.853	2898.524	63%	6.58266	0.114889	6.05066	0.105604	2008.431	1811.406	1.088671	1905.736	2610.073	15.46777	-2.9092
85	230	7000	1908.646	0.044909	0.916881	0.871971	3500	1604.541	3328.568	1451.208	0.729727	41.81027	1829.928	1829.928	3013.369	65%	6.645452	0.115985	6.113452	0.1067	2012.319	1807.72	1.087775	1905.718	2585.036	14.63283	-2.92731
85	240	7000	1908.646	0.046885	0.916881	0.869996	3500	1604.541	3321.027	1444.639	0.729178	41.77882	1879.062	1879.062	3128.227	66%	6.708368	0.117083	6.176368	0.107798	2016.215	1804.032	1.086895	1905.706	2560.469	13.87758	-2.93944
85	40	7500	2044.977	0.007222	0.916881	0.909659	3750	1719.151	3720.464	1692.177	0.740098	42.40451	711.3502	711.3502	859.5849	21%	5.456985	0.095242	4.924985	0.085957	2077.394	2012.767	1.108645	2043.416	3394.325	111.1618	-1.56172
85	50	7500	2044.977	0.009031	0.916881	0.907849	3750	1719.151	3713.063	1685.451	0.739605	42.37623	784.2785	784.2785	974.2888	24%	5.513538	0.096229	4.981538	0.086944	2081.129	2009.097	1.107424	2043.277	3357.861	91.44963	-1.7003
85	60	7500	2044.977	0.010842	0.916881	0.906038	3750	1719.151	3705.656	1678.733	0.73911	42.3479	855.7125	855.7125	1088.996	27%	5.570193	0.097218	5.038193	0.087933	2084.872	2005.425	1.10623	2043.145	3322.144	76.81867	-1.83205
85	70	7500	2044.977	0.012655	0.916881	0.904226	3750	1719.151	3698.242	1672.023	0.738615	42.31952	925.6958	925.6958	1203.707	30%	5.62695	0.098209	5.09495	0.088924	2088.623	2001.753	1.10506	2043.02	3287.152	65.64263	-1.95707
85	80	7500	2044.977	0.014469	0.916881	0.902411	3750	1719.151	3690.821	1665.319	0.738119	42.29109	994.2702	994.2702	1318.423	33%	5.68381	0.099201	5.15181	0.089916	2092.381	1998.081	1.103913	2042.902	3252.865	56.90019	-2.07545
85	90	7500	2044.977	0.016285	0.916881	0.900595	3750	1719.151	3683.394	1658.623	0.737622	42.26261	1061.476	1061.476	1433.143	35%	5.740774	0.100195	5.208774	0.09091	2096.146	1994.407	1.10279	2042.79	3219.262	49.92319	-2.18727
85	100	7500	2044.977	0.018103	0.916881	0.898778	3750	1719.151	3675.96	1651.935	0.737124	42.23408	1127.351	1127.351	1547.868	37%	5.79784	0.101191	5.26584	0.091906	2099.919	1990.733	1.10169	2042.685	3186.324	44.25923	-2.29262
85	110	7500	2044.977	0.019922	0.916881	0.896958	3750	1719.151	3668.519	1645.254	0.736625	42.2055	1191.934	1191.934	1662.599	39%	5.85501	0.102189	5.32301	0.092904	2103.7	1987.058	1.100611	2042.586	3154.033	39.59295	-2.39157
85	120	7500	2044.977	0.021743	0.916881	0.895137	3750	1719.151	3661.071	1638.581	0.736125	42.17686	1255.26	1255.26	1777.335	42%	5.912283	0.103189	5.380283	0.093904	2107.488	1983.383	1.099553	2042.493	3122.37	35.6989	-2.4842
85	130	7500	2044.977	0.023566	0.916881	0.893315	3750	1719.151	3653.616	1631.915	0.735624	42.14817	1317.364	1317.364	1892.078	44%	5.969661	0.10419	5.437661	0.094905	2111.284	1979.706	1.098516	2042.407	3091.318	32.41237	-2.57057
85	140	7500	2044.977	0.02539	0.916881	0.89149	3750	1719.151	3646.155	1625.256	0.735123	42.11943	1378.279	1378.279	2006.828	46%	6.027143	0.105193	5.495143	0.095908	2115.088	1976.029	1.097499	2042.327	3060.861	29.61067	-2.65076
85	150	7500	2044.977	0.027216	0.916881	0.889664	3750	1719.151	3638.687	1618.605	0.73462	42.09064	1438.037	1438.037	2121.584	48%	6.084729	0.106199	5.552729	0.096913	2118.9	1972.351	1.096501	2042.253	3030.982	27.20085	-2.72483
85	160	7500	2044.977	0.029044	0.916881	0.887837	3750	1719.151	3631.212	1611.962	0.734117	42.06179	1496.669	1496.669	2236.348	49%	6.14242	0.107205	5.61042	0.09792	2122.719	1968.672	1.095522	2042.185	3001.666	25.11141	-2.79284
85	170	7500	2044.977	0.030873	0.916881	0.886008	3750	1719.151	3623.731	1605.326	0.733612	42.03289	1554.205	1554.205	2351.12	51%	6.200217	0.108214	5.668217	0.098929	2126.546	1964.993	1.094562	2042.122	2972.898	23.2866	-2.85485
85	180	7500	2044.977	0.032704	0.916881	0.884177	3750	1719.151	3616.242	1598.698	0.733107	42.00394	1610.674	1610.674	2465.9	53%	6.258119	0.109225	5.726119	0.09994	2130.381	1961.312	1.093619	2042.066	2944.663	21.68241	-2.91092
85	190	7500	2044.977	0.034537	0.916881	0.882344	3750	1719.151	3608.747	1592.078	0.732601	41.97494	1666.103	1666.103	2580.689	55%	6.316127	0.110237	5.784127	0.100952	2134.223	1957.631	1.092694	2042.016	2916.949	20.2637	-2.9611
85	200	7500	2044.977	0.036371	0.916881	0.88051	3750	1719.151	3601.245	1585.465	0.732094	41.94588	1720.52	1720.52	2695.487	57%	6.37424	0.111251	5.84224	0.101966	2138.074	1953.949	1.091785	2041.972	2889.74	19.00217	-3.00546
85	210	7500	2044.977	0.038207	0.916881	0.878674	3750	1719.151	3593.736	1578.86	0.731586	41.91677	1773.95	1773.95	2810.295	58%	6.432461	0.112268	5.900461	0.102982	2141.932	1950.266	1.090893	2041.933	2863.025	17.87474	-3.04403
85	220	7500	2044.977	0.040045	0.916881	0.876836	3750	1719.151	3586.22	1572.263	0.731077	41.88761	1826.419	1826.419	2925.113	60%	6.490787	0.113286	5.958787	0.104	2145.799	1946.582	1.090017	2041.9	2836.79	16.86249	-3.07687
85	230	7500	2044.977	0.041884	0.916881	0.874997	3750	1719.151	3578.697	1565.674	0.730567	41.85839	1877.951	1877.951	3039.94	62%	6.549221	0.114305	6.017221	0.10502	2149.673	1942.898	1.089156	2041.873	2811.025	15.94976	-3.10402
85	240	7500	2044.977	0.043725	0.916881	0.873156	3750	1719.151	3571.167	1559.092	0.730056	41.82912	1928.569	1928.569	3154.779	64%	6.607762	0.115327	6.075762	0.106042	2153.556	1939.212	1.088311	2041.852	2785.716	15.1235	-3.12553
85	40	8000	2181.309	0.00677	0.916881	0.910111	4000	1833.761	3970.467	1806.783	0.740222	42.41157	739.0714	739.0714	886.3034	20%	5.442862	0.094996	4.910862	0.085711	2214.892	2147.93	1.108954	2179.681	3630.464	117.1675	-1.62774
85	50	8000	2181.309	0.008465	0.916881	0.908415	4000	1833.761	3963.068	1800.056	0.739759	42.38507	812.4277	812.4277	1001.006	23%	5.495854	0.095921	4.963854	0.086636	2218.625	2144.26	1.107803	2179.541	3593.786	96.964	-1.76824
85	60	8000	2181.309	0.010163	0.916881	0.906718	4000	1833.761	3955.663	1793.335	0.739296	42.35853	884.3702	884.3702	1115.713	26%	5.548935	0.096847	5.016935	0.087562	2222.366	2140.589	1.106675	2179.407	3557.815	81.82986	-1.90233
85	70	8000	2181.309	0.011862	0.916881	0.905019	4000	1833.761	3948.252	1786.621	0.738832	42.33195	954.9375	954.9375	1230.422	29%	5.602106	0.097775	5.070106	0.08849	2226.113	2136.917	1.105569	2179.279	3522.531	70.1827	-2.03007
85	80	8000	2181.309	0.013562	0.916881	0.903319	4000	1833.761	3940.835	1779.915	0.738367	42.30532	1024.167	1024.167	1345.136	31%	5.655368	0.098705	5.123368	0.08942	2229.867	2133.245	1.104484	2179.158	3487.917	61.01525	-2.15155
85	90	8000	2181.309	0.015264	0.916881	0.901617	4000	1833.761	3933.411	1773.215	0.737901	42.27864	1092.095	1092.095	1459.853	34%	5.708719	0.099636	5.176719	0.090351	2233.629	2129.572	1.103419	2179.042	3453.953	53.66108	-2.26685
85	100	8000	2181.309	0.016967	0.916881	0.899914	4000	1833.761	3925.98	1766.522	0.737435	42.25192	1158.755	1158.755	1574.575	36%	5.762161	0.100569	5.230161	0.091284	2237.398	2125.898	1.102375	2178.933	3420.622	47.66467	-2.37604
85	110	8000	2181.309	0.018671	0.916881	0.898209	4000	1833.761	3918.544	1759.836	0.736968	42.22515	1224.182	1224.182	1689.302	38%	5.815694	0.101503	5.283694	0.092218	2241.173	2122.224	1.10135	2178.83	3387.909	42.7059	-2.47918
85	120	8000	2181.309	0.020377	0.916881	0.896503	4000	1833.761	3911.101	1753.157	0.7365	42.19834	1288.408	1288.408	1804.035	40%	5.869318	0.102439	5.337318	0.093154	2244.956	2118.549	1.100344	2178.733	3355.796	38.55434	-2.57634
85	130	8000	2181.309	0.022085	0.916881	0.894796	4000	1833.761	3903.652	1746.485	0.736031	42.17148	1351.463	1351.463	1918.772	42%	5.923033	0.103376	5.391033	0.094091	2248.746	2114.873	1.099357	2178.642	3324.268	35.04059	-2.66759
85	140	8000	2181.309	0.023794	0.916881	0.893087	4000	1833.761	3896.196	1739.821	0.735562	42.14458	1413.379	1413.379	2033.516	44%	5.97684	0.104316	5.44484	0.09503	2252.543	2111.196	1.098388	2178.556	3293.31	32.0378	-2.753
85	150	8000	2181.309	0.025504	0.916881	0.891376	4000	1833.761	3888.735	1733.163	0.735091	42.11763	1474.184	1474.184	2148.266	46%	6.030739	0.105256	5.498739	0.095971	2256.348	2107.519	1.097436	2178.477	3262.908	29.44941	-2.83261
85	160	8000	2181.309	0.027216	0.916881	0.889664	4000	1833.761	3881.266	1726.512	0.73462	42.09064	1533.906	1533.906	2263.023	48%	6.084729	0.106199	5.552729	0.096913	2260.16	2103.841	1.096501	2178.403	3233.047	27.20085	-2.90648
85	170	8000	2181.309	0.028929	0.916881	0.887951	4000	1833.761	3873.792	1719.869	0.734148	42.06359	1592.573	1592.573	2377.787	49%	6.138812	0.107142	5.606812	0.097857	2263.979	2100.162	1.095583	2178.334	3203.714	25.23373	-2.97468
85	180	8000	2181.309	0.030644	0.916881	0.886236	4000	1833.761	3866.311	1713.232	0.733675	42.03651	1650.21	1650.21	2492.558	51%	6.192987	0.108088	5.660987	0.098803	2267.805	2096.483	1.094681	2178.272	3174.895	23.50183	-3.03725
85	190	8000	2181.309	0.032361	0.916881	0.88452	4000	1833.761	3858.823	1706.603	0.733202	42.00937	1706.843	1706.843	2607.337	53%	6.247254	0.109035	5.715254	0.09975	2271.638	2092.803	1.093794	2178.215	3146.578	21.96811	-3.09425
85	200	8000	2181.309	0.034078	0.916881	0.882802	4000	1833.761	3851.329	1699.981	0.732727	41.98219	1762.498	1762.498	2722.124	54%	6.301615	0.109984	5.769615	0.100699	2275.479	2089.122	1.092923	2178.163	3118.751	20.60264	-3.14571
85	210	8000	2181.309	0.035797	0.916881	0.881083	4000	1833.761	3843.829	1693.366	0.732252	41.95497	1817.197	1817.197	2836.919	56%	6.356068	0.110934	5.824068	0.101649	2279.328	2085.44	1.092067	2178.117	3091.402	19.381	-3.1917
85	220	8000	2181.309	0.037518	0.916881	0.879362	4000	1833.761	3836.322	1686.759	0.731776	41.92769	1870.963	1870.963	2951.724	58%	6.410616	0.111886	5.878616	0.102601	2283.183	2081.757	1.091226	2178.077	3064.518	18.28309	-3.23226

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
85	230	8000	2181.309	0.03924	0.916881	0.87764	4000	1833.761	3828.809	1680.159	0.731299	41.90037	1923.819	1923.819	3066.537	59%	6.465256	0.11284	5.933256	0.103555	2287.047	2078.074	1.090398	2178.042	3038.09	17.29224	-3.26742
85	240	8000	2181.309	0.040964	0.916881	0.875917	4000	1833.761	3821.29	1673.566	0.730822	41.873	1975.787	1975.787	3181.36	61%	6.519991	0.113795	5.987991	0.10451	2290.917	2074.389	1.089585	2178.012	3012.106	16.39455	-3.29723
85	40	8500	2317.641	0.006371	0.916881	0.91051	4250	1948.371	4220.47	1921.39	0.74033	42.4178	766.7013	766.7013	913.022	19%	5.430407	0.094778	4.898407	0.085493	2352.39	2283.094	1.109228	2315.948	3866.649	122.9095	-1.69334
85	50	8500	2317.641	0.007966	0.916881	0.908914	4250	1948.371	4213.073	1914.661	0.739895	42.39287	840.4384	840.4384	1027.724	22%	5.480259	0.095649	4.948259	0.086363	2356.122	2279.423	1.108139	2315.805	3829.781	102.2883	-1.83556
85	60	8500	2317.641	0.009564	0.916881	0.907317	4250	1948.371	4205.67	1907.938	0.739459	42.3679	912.8338	912.8338	1142.429	25%	5.53019	0.09652	4.99819	0.087235	2359.86	2275.752	1.10707	2315.669	3793.583	86.70705	-1.97172
85	70	8500	2317.641	0.011162	0.916881	0.905719	4250	1948.371	4198.261	1901.222	0.739023	42.3429	983.9223	983.9223	1257.138	28%	5.580201	0.097393	5.048201	0.088108	2363.605	2272.081	1.106021	2315.539	3758.039	74.63049	-2.10187
85	80	8500	2317.641	0.012762	0.916881	0.904119	4250	1948.371	4190.846	1894.512	0.738586	42.31785	1053.737	1053.737	1371.849	30%	5.630292	0.098267	5.098292	0.088982	2367.356	2268.409	1.104992	2315.415	3723.131	65.06885	-2.22611
85	90	8500	2317.641	0.014363	0.916881	0.902518	4250	1948.371	4183.426	1887.808	0.738148	42.29277	1122.311	1122.311	1486.565	32%	5.680463	0.099143	5.148463	0.089858	2371.114	2264.736	1.10398	2315.296	3688.844	57.36027	-2.34449
85	100	8500	2317.641	0.015965	0.916881	0.900916	4250	1948.371	4175.999	1881.112	0.73771	42.26764	1189.676	1189.676	1601.284	35%	5.730714	0.10002	5.198714	0.090735	2374.879	2261.063	1.102987	2315.184	3655.162	51.04824	-2.45708
85	110	8500	2317.641	0.017568	0.916881	0.899312	4250	1948.371	4168.566	1874.422	0.73727	42.24248	1255.86	1255.86	1716.008	37%	5.781045	0.100898	5.249045	0.091613	2378.65	2257.389	1.102011	2315.077	3622.07	45.80945	-2.56395
85	120	8500	2317.641	0.019173	0.916881	0.897708	4250	1948.371	4161.128	1867.738	0.73683	42.21727	1320.895	1320.895	1830.737	39%	5.831457	0.101778	5.299457	0.092493	2382.428	2253.714	1.101052	2314.976	3589.552	41.40962	-2.66515
85	130	8500	2317.641	0.020779	0.916881	0.896102	4250	1948.371	4153.683	1861.061	0.73639	42.19203	1384.808	1384.808	1945.471	40%	5.881949	0.102659	5.349949	0.093374	2386.213	2250.039	1.10011	2314.88	3557.596	37.67548	-2.76074
85	140	8500	2317.641	0.022386	0.916881	0.894494	4250	1948.371	4146.233	1854.391	0.735948	42.16674	1447.626	1447.626	2060.21	42%	5.932522	0.103542	5.400522	0.094257	2390.004	2246.363	1.099185	2314.79	3526.187	34.47664	-2.85078
85	150	8500	2317.641	0.023995	0.916881	0.892886	4250	1948.371	4138.776	1847.727	0.735506	42.14141	1509.377	1509.377	2174.954	44%	5.983176	0.104426	5.451176	0.095141	2393.803	2242.686	1.098275	2314.706	3495.312	31.71339	-2.93533
85	160	8500	2317.641	0.025605	0.916881	0.891276	4250	1948.371	4131.314	1841.07	0.735064	42.11604	1570.085	1570.085	2289.705	46%	6.033912	0.105312	5.501912	0.096026	2397.608	2239.009	1.097381	2314.627	3464.958	29.30838	-3.01443
85	170	8500	2317.641	0.027216	0.916881	0.889664	4250	1948.371	4123.845	1834.419	0.73462	42.09064	1629.775	1629.775	2404.462	48%	6.084729	0.106199	5.552729	0.096913	2401.42	2235.331	1.096501	2314.553	3435.112	27.20085	-3.08814
85	180	8500	2317.641	0.028829	0.916881	0.888052	4250	1948.371	4116.371	1827.776	0.734176	42.06519	1688.472	1688.472	2519.226	49%	6.135628	0.107087	5.603628	0.097802	2405.238	2231.652	1.095636	2314.484	3405.764	25.34253	-3.1565
85	190	8500	2317.641	0.030442	0.916881	0.886438	4250	1948.371	4108.891	1821.139	0.733731	42.0397	1746.199	1746.199	2633.996	51%	6.186608	0.107977	5.654608	0.098692	2409.064	2227.973	1.094786	2314.421	3376.9	23.69465	-3.21957
85	200	8500	2317.641	0.032058	0.916881	0.884823	4250	1948.371	4101.404	1814.508	0.733286	42.01416	1802.979	1802.979	2748.774	52%	6.237671	0.108868	5.705671	0.099583	2412.896	2224.293	1.09395	2314.364	3348.511	22.22576	-3.27738
85	210	8500	2317.641	0.033674	0.916881	0.883207	4250	1948.371	4093.912	1807.885	0.732839	41.98859	1858.832	1858.832	2863.559	54%	6.288816	0.109761	5.756816	0.100475	2416.736	2220.612	1.093127	2314.311	3320.584	20.91016	-3.32998
85	220	8500	2317.641	0.035292	0.916881	0.881589	4250	1948.371	4086.413	1801.268	0.732392	41.96298	1913.782	1913.782	2978.352	56%	6.340043	0.110655	5.808043	0.101369	2420.582	2216.93	1.092317	2314.264	3293.109	19.72663	-3.37741
85	230	8500	2317.641	0.036911	0.916881	0.87997	4250	1948.371	4078.908	1794.658	0.731944	41.93732	1967.847	1967.847	3093.154	57%	6.391353	0.11155	5.859353	0.102265	2424.436	2213.248	1.091521	2314.221	3266.076	18.65757	-3.41972
85	240	8500	2317.641	0.038531	0.916881	0.87835	4250	1948.371	4071.398	1788.055	0.731496	41.91163	2021.049	2021.049	3207.964	59%	6.442746	0.112447	5.910746	0.103162	2428.296	2209.565	1.090737	2314.184	3239.475	17.68822	-3.45694
85	40	9000	2453.973	0.006016	0.916881	0.910864	4500	2062.981	4470.473	2035.997	0.740427	42.42333	794.2548	794.2548	939.7408	18%	5.419339	0.094585	4.887339	0.0853	2489.889	2418.257	1.109473	2452.214	4102.873	128.4001	-1.75861
85	50	9000	2453.973	0.007523	0.916881	0.909357	4500	2062.981	4463.077	2029.266	0.740016	42.3998	868.3327	868.3327	1054.442	21%	5.466403	0.095407	4.934403	0.086122	2493.619	2414.587	1.108439	2452.07	4065.834	107.4268	-1.90236
85	60	9000	2453.973	0.009031	0.916881	0.907849	4500	2062.981	4455.676	2022.542	0.739605	42.37623	941.1341	941.1341	1169.147	24%	5.513538	0.096229	4.981538	0.086944	2497.355	2410.916	1.107424	2451.932	4029.433	91.44963	-2.04035
85	70	9000	2453.973	0.01054	0.916881	0.90634	4500	2062.981	4448.269	2015.823	0.739193	42.35263	1012.69	1012.69	1283.854	27%	5.560743	0.097053	5.028743	0.087768	2501.097	2407.245	1.106427	2451.8	3993.655	78.98263	-2.17267
85	80	9000	2453.973	0.012051	0.916881	0.90483	4500	2062.981	4440.857	2009.11	0.73878	42.32899	1083.032	1083.032	1398.564	29%	5.60802	0.097878	5.07602	0.088593	2504.846	2403.573	1.105447	2451.673	3958.484	69.05617	-2.29936
85	90	9000	2453.973	0.013562	0.916881	0.903319	4500	2062.981	4433.439	2002.404	0.738367	42.30532	1152.188	1152.188	1513.277	31%	5.655368	0.098705	5.123368	0.08942	2508.601	2399.9	1.104484	2451.552	3923.906	61.01525	-2.4205
85	100	9000	2453.973	0.015074	0.916881	0.901806	4500	2062.981	4426.015	1995.704	0.737953	42.28161	1220.187	1220.187	1627.995	33%	5.702787	0.099532	5.170787	0.090247	2512.362	2396.227	1.103536	2451.437	3889.907	54.40421	-2.53614
85	110	9000	2453.973	0.016588	0.916881	0.900292	4500	2062.981	4418.586	1989.01	0.737539	42.25786	1287.056	1287.056	1742.716	35%	5.750277	0.100361	5.218277	0.091076	2516.129	2392.554	1.102605	2451.326	3856.472	48.89791	-2.64633
85	120	9000	2453.973	0.018103	0.916881	0.898778	4500	2062.981	4411.151	1982.322	0.737124	42.23408	1352.822	1352.822	1857.442	37%	5.79784	0.101191	5.26584	0.091906	2519.903	2388.88	1.10169	2451.222	3823.589	44.25923	-2.75115
85	130	9000	2453.973	0.019619	0.916881	0.897262	4500	2062.981	4403.711	1975.64	0.736708	42.21026	1417.511	1417.511	1972.172	39%	5.845474	0.102023	5.313474	0.092738	2523.683	2385.205	1.100789	2451.122	3791.245	40.31182	-2.85063
85	140	9000	2453.973	0.021136	0.916881	0.895744	4500	2062.981	4396.265	1968.965	0.736292	42.18641	1481.147	1481.147	2086.907	41%	5.89318	0.102855	5.36118	0.09357	2527.47	2381.529	1.099903	2451.028	3759.426	36.92229	-2.94483
85	150	9000	2453.973	0.022654	0.916881	0.894226	4500	2062.981	4388.813	1962.296	0.735875	42.16252	1543.756	1543.756	2201.647	43%	5.940959	0.103689	5.408959	0.094404	2531.263	2377.853	1.099032	2450.939	3728.122	33.98818	-3.0338
85	160	9000	2453.973	0.024174	0.916881	0.892707	4500	2062.981	4381.356	1955.633	0.735457	42.1386	1605.36	1605.36	2316.393	44%	5.98881	0.104524	5.45681	0.095239	2535.062	2374.177	1.098175	2450.855	3697.32	31.42971	-3.11758
85	170	9000	2453.973	0.025694	0.916881	0.891186	4500	2062.981	4373.893	1948.977	0.735039	42.11463	1665.982	1665.982	2431.144	46%	6.036733	0.105361	5.504733	0.096076	2538.867	2370.499	1.097331	2450.777	3667.009	29.18398	-3.19623
85	180	9000	2453.973	0.027216	0.916881	0.889664	4500	2062.981	4366.425	1942.326	0.73462	42.09064	1725.644	1725.644	2545.901	48%	6.084729	0.106199	5.552729	0.096913	2542.68	2366.821	1.096501	2450.703	3637.178	27.20085	-3.26979
85	190	9000	2453.973	0.028739	0.916881	0.888142	4500	2062.981	4358.95	1935.682	0.734201	42.0666	1784.368	1784.368	2660.664	49%	6.132798	0.107038	5.600798	0.097752	2546.498	2363.143	1.095684	2450.635	3607.816	25.43993	-3.3383
85	200	9000	2453.973	0.030263	0.916881	0.886617	4500	2062.981	4351.47	1929.045	0.733781	42.04253	1842.175	1842.175	2775.434	51%	6.18094	0.107878	5.64894	0.098593	2550.323	2359.463	1.09488	2450.571	3578.912	23.86839	-3.40181
85	210	9000	2453.973	0.031788	0.916881	0.885092	4500	2062.981	4343.985	1922.414	0.73336	42.01842	1899.085	1899.085	2890.211	52%	6.229155	0.108719	5.697155	0.099434	2554.155	2355.783	1.094088	2450.512	3550.458	22.4593	-3.46035
85	220	9000	2453.973	0.033315	0.916881	0.883566	4500	2062.981	4336.493	1915.789	0.732938	41.99428	1955.117	1955.117	3004.995	54%	6.277443	0.109562	5.745443	0.100277	2557.993	2352.102	1.093309	2450.459	3522.441	21.19042	-3.51396
85	230	9000	2453.973	0.034842	0.916881	0.882038	4500	2062.981	4328.996	1909.17	0.732516	41.9701	2010.29	2010.29	3119.786	55%	6.325805	0.110406	5.793805	0.101121	2561.837	2348.421	1.092541	2450.41	3494.855	20.04322	-3.56268
85	240	9000	2453.973	0.036371	0.916881	0.88051	4500	2062.981	4321.494	1902.558	0.732094	41.94588	2064.624	2064.624	3234.585	57%	6.37424	0.111251	5.84224	0.101966	2565.689	2344.739	1.091785	2450.366	3467.688	19.00217	-3.60655
85	40	9500	2590.305	0.005699	0.916881	0.911181	4750	2177.591	4720.475	2150.605	0.740513	42.42828	821.7434	821.7434	966.4597	18%	5.40944	0.094413	4.87744	0.085127	2627.388	2553.42	1.109692	2588.481	4339.128	133.6518	-1.82359
85	50	9500	2590.305	0.007126	0.916881	0.909754	4750	2177.591	4713.081	2143.872	0.740124	42.40599	896.1282	896.1282	1081.161	21%	5.454011	0.09519	4.922011	0.085905	2631.117	2549.75	1.10871	2588.336	4301.936	112.3846	-1.9687
85	60	9500	2590.305	0.008555	0.916881	0.908326	4750	2177.591	4705.681	2137.146	0.739735	42.38368	969.2958	969.2958	1195.864	23%	5.498645	0.095969	4.966645	0.086684	2634.851	2546.079	1.107743	2588.196	4265.352	96.05823	-2.10836
85	70	9500	2590.305	0.009984	0.916881	0.906896	4750	2177.591	4698.276	2130.425	0.739345	42.36133	1041.274	1041.274	1310.57	26%	5.543343	0.09675	5.011343	0.087464	2638.591	2542.408	1.106793	2588.062	4229.363	83.23707	-2.24261
85	80	9500	2590.305	0.011414	0.916881	0.905466	4750	2177.591	4690.866	2123.71	0.738954	42.33895	1112.092	1112.092	1425.279	28%	5.588105	0.097531	5.056105	0.088246	2642.337	2538.737	1.105858	2587.933	4193.954	72.97363	-2.37151
85	90	9500	2590.305	0.012846	0.916881	0.904035	4750	2177.591	4683.451	2117.001	0.738563	42.31653	1181.774	1181.774	1539.991	30%	5.632931	0.098313	5.100931	0.089028	2646.089	2535.065	1.104938	2587.81	4159.113	64.62165	-2.49513
85	100	9500	2590.305	0.014278	0.916881	0.902602	4750	2177.591	4676.03	2110.298	0.738171	42.29409	1250.348	1250.348	1654.707	32%	5.67782	0.099097	5.14582	0.089812	2649.847	2531.392	1.104033	2587.691	4124.826	57.72784	-2.61351
85	110	9500	2590.305	0.015712	0.916881	0.901169	4750	2177.591	4668.604	2103.6	0.737779	42.27161	1317.838	1317.838	1769.426	34%	5.722774	0.099881	5.190774	0.090596	2653.611	2527.719	1.103142	2587.578	4091.081	51.96646	-2.72671
85	120	9500	2590.305	0.017146	0.916881	0.899734	4750	2177.591	4661.173	2096.909	0.737386	42.2491	1384.269	1384.269	1884.149	36%	5.767792	0.100667	5.235792	0.091382	2657.381	2524.045	1.102266	2587.47	4057.866	47.09844	-2.83477
85	130	9500	2590.305	0.018582	0.916881	0.898299	4750	2177.591	4653.736	2090.223	0.736993	42.22656	1449.663	1449.663	1998.876	38%	5.812874	0.101454	5.280874	0.092169	2661.157	2520.37	1.101404	2587.367	4025.168	42.94505	-2.93775
85	140	9500	2590.305	0.020018	0.916881	0.896862	4750	2177.591	4646.294	2083.543	0.736599	42.20399	1514.045	1514.045	2113.607	40%	5.858021	0.102242	5.326021	0.092957	2664.939	2516.695	1.100555	2587.269	3992.978	39.3704	-3.0357
85	150	9500	2590.305	0.021456	0.916881	0.895425	4750	2177.591	4638.847	2076.869	0.736204	42.18138	1577.435	1577.435	2228.344	41%	5.903233	0.103031	5.371233	0.093746	2668.727	2513.02	1.099719	2587.176	3961.282	36.26971	-3.12866
85	160	9500	2590.305	0.022894	0.916881	0.893986	4750	2177.591	4631.394	2070.201	0.735809	42.15875	1639.857	1639.857	2343.085	43%	5.948509	0.103821	5.416509	0.094536	2672.521	2509.344	1.098896	2587.088	3930.072	33.56103	-3.21667
85	170	9500	2590.305	0.024334	0.916881	0.892547	4750	2177.591	4623.936	2063.539	0.735413	42.13607	1701.33	1701.33	2457.831	44%	5.993851	0.104612	5.461851	0.095327	2676.321	2505.667	1.098085	2587.005	3899.335	31.17956	-3.29978
85	180	9500	2590.305	0.025774	0.916881	0.891106	4750	2177.591	4616.473	2056.883	0.735017	42.11337	1761.876	1761.876	2572.583	46%	6.039257	0.105405	5.507257	0.09612	2680.127	2501.989	1.097287	2586.927	3869.062	29.07345	-3.37802
85	190	9500	2590.305	0.027216	0.916881	0.889664	4750	2177.591	4609.004	2050.233	0.73462	42.09064	1821.513	1821.513	2687.34	48%	6.084729	0.106199	5.552729	0.096913	2683.939	2498.311	1.096501	2586.853	3839.243	27.20085	-3.45145
85	200	9500	2590.305	0.028659	0.916881	0.888222	4750	2177.591	4601.53	2043.589	0.734223	42.06787	1880.262	1880.262	2802.103	49%	6.130266	0.106993	5.598266	0.097708	2687.758	2494.633	1.095727	2586.785	3809.869	25.52763	-3.52009
85	210	9500	2590.305	0.030103	0.916881	0.886778	4750	2177.591	4594.05	2036.951	0.733825	42.04507	1938.14	1938.14	2916.873	50%	6.175869	0.107789	5.643869	0.098504	2691.582	2490.953	1.094964	2586.721	3780.93	24.02574	-3.58399

Rim Angle (deg)	Length of the facet (mm)	Dish Diameter (mm)	Focal Length (mm)	k	u1	u2	x1	y1	x2	y2	alpha	alpha (deg)	Proposed Model (Solar image) (mm)	Graphical Model (Solar Image) (mm)	Kaushika Model (Solar Image) (mm)	Error	rho1 (deg)	rho1 (rad)	rho2 (deg)	rho2 (rad)	f1	f2	c1	s (mm)	x''	Concentration Ratio	deviation in image distance (mm)
85	220	9500	2590.305	0.031547	0.916881	0.885333	4750	2177.591	4586.565	2030.319	0.733426	42.02223	1995.167	1995.167	3031.648	52%	6.221537	0.108586	5.689537	0.099301	2695.413	2487.273	1.094212	2586.661	3752.417	22.67194	-3.64318
85	230	9500	2590.305	0.032993	0.916881	0.883887	4750	2177.591	4579.075	2023.693	0.733027	41.99936	2051.359	2051.359	3146.431	53%	6.267271	0.109385	5.735271	0.100099	2699.25	2483.593	1.093472	2586.607	3724.32	21.44687	-3.6977
85	240	9500	2590.305	0.03444	0.916881	0.88244	4750	2177.591	4571.579	2017.073	0.732628	41.97646	2106.734	2106.734	3261.22	55%	6.313071	0.110184	5.781071	0.100899	2703.093	2479.912	1.092742	2586.557	3696.633	20.33423	-3.74757
85	40	10000	2726.636	0.005414	0.916881	0.911467	5000	2292.201	4970.477	2265.212	0.740591	42.43273	849.1766	849.1766	993.1787	17%	5.400533	0.094257	4.868533	0.084972	2764.888	2688.583	1.109891	2724.748	4575.412	138.6768	-1.88832
85	50	10000	2726.636	0.00677	0.916881	0.910111	5000	2292.201	4963.084	2258.479	0.740222	42.41157	923.8392	923.8392	1107.879	20%	5.442862	0.094996	4.910862	0.085711	2768.615	2684.913	1.108954	2724.602	4538.08	117.1675	-2.03467
85	60	10000	2726.636	0.008126	0.916881	0.908754	5000	2292.201	4955.686	2251.751	0.739852	42.39038	997.3385	997.3385	1222.582	23%	5.485248	0.095736	4.953248	0.08645	2772.347	2681.243	1.108031	2724.461	4501.331	100.5344	-2.17582
85	70	10000	2726.636	0.009484	0.916881	0.907397	5000	2292.201	4948.283	2245.028	0.739481	42.36915	1069.7	1069.7	1337.287	25%	5.527692	0.096476	4.995692	0.087191	2776.086	2677.572	1.107123	2724.325	4465.15	87.3928	-2.31182
85	80	10000	2726.636	0.010842	0.916881	0.906038	5000	2292.201	4940.875	2238.311	0.73911	42.3479	1140.95	1140.95	1451.995	27%	5.570193	0.097218	5.038193	0.087933	2779.83	2673.9	1.10623	2724.194	4429.525	76.81867	-2.44273
85	90	10000	2726.636	0.012202	0.916881	0.904679	5000	2292.201	4933.461	2231.599	0.738739	42.32662	1211.112	1211.112	1566.706	29%	5.612751	0.097961	5.080751	0.088676	2783.579	2670.229	1.10535	2724.068	4394.444	68.17603	-2.56858
85	100	10000	2726.636	0.013562	0.916881	0.903319	5000	2292.201	4926.043	2224.893	0.738367	42.30532	1280.209	1280.209	1681.419	31%	5.655368	0.098705	5.123368	0.08942	2787.334	2666.556	1.104484	2723.947	4359.896	61.01525	-2.68944
85	110	10000	2726.636	0.014923	0.916881	0.901957	5000	2292.201	4918.62	2218.193	0.737995	42.28398	1348.264	1348.264	1796.137	33%	5.698042	0.09945	5.166042	0.090164	2791.095	2662.883	1.10363	2723.831	4325.868	55.01103	-2.80535
85	120	10000	2726.636	0.016285	0.916881	0.900595	5000	2292.201	4911.192	2211.498	0.737622	42.26261	1415.301	1415.301	1910.857	35%	5.740774	0.100195	5.208774	0.09091	2794.862	2659.21	1.10279	2723.72	4292.349	49.92319	-2.91636
85	130	10000	2726.636	0.017648	0.916881	0.899232	5000	2292.201	4903.758	2204.809	0.737248	42.24122	1481.34	1481.34	2025.582	37%	5.783564	0.100942	5.251564	0.091657	2798.634	2655.536	1.101963	2723.614	4259.33	45.57119	-3.02252
85	140	10000	2726.636	0.019012	0.916881	0.897868	5000	2292.201	4896.32	2198.125	0.736874	42.21979	1546.403	1546.403	2140.31	38%	5.826412	0.10169	5.294412	0.092405	2802.412	2651.861	1.101148	2723.513	4226.798	41.81717	-3.12386
85	150	10000	2726.636	0.020377	0.916881	0.896503	5000	2292.201	4888.876	2191.447	0.7365	42.19834	1610.51	1610.51	2255.043	40%	5.869318	0.102439	5.337318	0.093154	2806.195	2648.186	1.100344	2723.416	4194.745	38.55434	-3.22043
85	160	10000	2726.636	0.021743	0.916881	0.895137	5000	2292.201	4881.428	2184.774	0.736125	42.17686	1673.681	1673.681	2369.78	42%	5.912283	0.103189	5.380283	0.093904	2809.985	2644.51	1.099553	2723.324	4163.16	35.6989	-3.31227
85	170	10000	2726.636	0.02311	0.916881	0.89377	5000	2292.201	4873.974	2178.107	0.73575	42.15535	1735.935	1735.935	2484.522	43%	5.955306	0.10394	5.423306	0.094655	2813.78	2640.834	1.098773	2723.237	4132.033	33.18435	-3.39942
85	180	10000	2726.636	0.024478	0.916881	0.892403	5000	2292.201	4866.516	2171.446	0.735374	42.13381	1797.291	1797.291	2599.269	45%	5.998389	0.104692	5.466389	0.095406	2817.58	2637.157	1.098005	2723.155	4101.355	30.95731	-3.48191
85	190	10000	2726.636	0.025847	0.916881	0.891034	5000	2292.201	4859.052	2164.79	0.734997	42.11224	1857.768	1857.768	2714.021	46%	6.041529	0.105445	5.509529	0.096159	2821.387	2633.479	1.097248	2723.077	4071.116	28.97459	-3.5598
85	200	10000	2726.636	0.027216	0.916881	0.889664	5000	2292.201	4851.583	2158.14	0.73462	42.09064	1917.382	1917.382	2828.779	48%	6.084729	0.106199	5.552729	0.096913	2825.199	2629.801	1.096501	2723.003	4041.309	27.20085	-3.6331
85	210	10000	2726.636	0.028587	0.916881	0.888294	5000	2292.201	4844.109	2151.496	0.734243	42.06901	1976.153	1976.153	2943.542	49%	6.127988	0.106954	5.595988	0.097668	2829.018	2626.123	1.095765	2722.935	4011.924	25.60701	-3.70186
85	220	10000	2726.636	0.029958	0.916881	0.886922	5000	2292.201	4836.63	2144.858	0.733865	42.04735	2034.096	2034.096	3058.311	50%	6.171305	0.10771	5.639305	0.098424	2832.842	2622.443	1.09504	2722.87	3982.952	24.16891	-3.76612
85	230	10000	2726.636	0.031331	0.916881	0.88555	5000	2292.201	4829.146	2138.225	0.733486	42.02566	2091.228	2091.228	3173.086	52%	6.214683	0.108467	5.682683	0.099182	2836.672	2618.764	1.094324	2722.811	3954.386	22.86637	-3.82589
85	240	10000	2726.636	0.032704	0.916881	0.884177	5000	2292.201	4821.656	2131.598	0.733107	42.00394	2147.565	2147.565	3287.867	53%	6.258119	0.109225	5.726119	0.09994	2840.508	2615.083	1.093619	2722.755	3926.218	21.68241	-3.88123