



Focal Length 15 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	4.762	4.466	3.998	3.581

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	4.746	Infinity	4.45	Infinity	3.982	Infinity	3.565	Infinity
40.000	4.274	Infinity	4.035	Infinity	3.649	Infinity	3.298	Infinity
20.000	3.888	Infinity	3.69	Infinity	3.367	Infinity	3.069	Infinity
13.000	3.543	Infinity	3.379	Infinity	3.108	Infinity	2.854	Infinity
10.000	3.292	Infinity	3.151	Infinity	2.916	Infinity	2.693	Infinity
8.000	3.058	Infinity	2.937	Infinity	2.733	Infinity	2.538	Infinity
7.000	2.91	Infinity	2.801	Infinity	2.616	Infinity	2.437	Infinity
6.000	2.733	Infinity	2.637	Infinity	2.474	Infinity	2.315	Infinity
5.000	2.519	Infinity	2.439	Infinity	2.3	Infinity	2.163	Infinity
4.500	2.394	76.162	2.322	Infinity	2.197	Infinity	2.072	Infinity
4.000	2.254	23.27	2.191	35.517	2.08	Infinity	1.969	Infinity
3.500	2.097	12.296	2.042	14.992	1.947	25.795	1.85	140.739
3.250	2.01	9.531	1.96	11.06	1.873	15.947	1.784	31.948
3.000	1.918	7.55	1.873	8.469	1.794	11.035	1.713	16.802
2.750	1.819	6.062	1.779	6.634	1.708	8.09	1.635	10.77
2.500	1.713	4.903	1.678	5.265	1.615	6.129	1.551	7.529
2.400	1.669	4.508	1.636	4.81	1.576	5.516	1.515	6.617
2.300	1.623	4.145	1.592	4.398	1.536	4.976	1.478	5.847
2.200	1.576	3.811	1.546	4.021	1.494	4.495	1.44	5.188
2.100	1.527	3.501	1.5	3.677	1.451	4.066	1.4	4.619
2.000	1.477	3.214	1.451	3.36	1.406	3.679	1.358	4.122
1.900	1.425	2.948	1.401	3.068	1.359	3.329	1.315	3.683
1.800	1.371	2.699	1.35	2.798	1.311	3.011	1.271	3.294
1.700	1.316	2.466	1.297	2.548	1.261	2.721	1.224	2.947
1.600	1.259	2.248	1.241	2.315	1.209	2.454	1.176	2.634
1.500	1.2	2.043	1.184	2.098	1.155	2.21	1.125	2.352
1.400	1.139	1.851	1.125	1.895	1.099	1.984	1.072	2.095
1.300	1.076	1.67	1.064	1.704	1.041	1.774	1.017	1.861
1.200	1.01	1.499	1	1.526	0.98	1.58	0.96	1.647
1.100	0.943	1.337	0.934	1.358	0.917	1.399	0.9	1.45
1.000	0.872	1.184	0.865	1.199	0.851	1.231	0.837	1.268
0.950	0.836	1.11	0.829	1.124	0.817	1.15	0.804	1.182
0.900	0.799	1.039	0.793	1.05	0.782	1.073	0.77	1.1
0.850	0.762	0.969	0.756	0.978	0.747	0.997	0.736	1.02
0.800	0.723	0.901	0.719	0.909	0.71	0.925	0.701	0.943
0.750	0.684	0.834	0.68	0.841	0.673	0.854	0.665	0.869
0.700	0.645	0.77	0.641	0.775	0.635	0.786	0.628	0.798
0.650	0.604	0.706	0.601	0.711	0.596	0.719	0.59	0.729
0.600	0.563	0.645	0.561	0.648	0.556	0.655	0.551	0.662
0.550	0.521	0.585	0.519	0.587	0.515	0.592	0.512	0.598
0.500	0.478	0.526	0.476	0.528	0.474	0.531	0.471	0.536
0.450	0.434	0.468	0.433	0.47	0.431	0.472	0.428	0.475
0.400	0.389	0.412	0.388	0.413	0.387	0.415	0.385	0.417
0.375	0.366	0.385	0.366	0.385	0.364	0.387	0.363	0.388
0.350	0.343	0.357	0.343	0.358	0.342	0.359	0.341	0.36



3.2	3.5	4	4.5	5
3.209	2.879	2.584	2.321	2.087

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
3.194	Infinity	2.863	Infinity	2.568	Infinity	2.306	Infinity	2.072	Infinity
2.98	Infinity	2.692	Infinity	2.432	Infinity	2.197	Infinity	1.985	Infinity
2.793	Infinity	2.541	Infinity	2.309	Infinity	2.098	Infinity	1.905	Infinity
2.617	Infinity	2.395	Infinity	2.19	Infinity	2	Infinity	1.826	Infinity
2.482	Infinity	2.283	Infinity	2.097	Infinity	1.924	Infinity	1.763	Infinity
2.351	Infinity	2.173	Infinity	2.005	Infinity	1.847	Infinity	1.7	Infinity
2.265	Infinity	2.101	Infinity	1.944	Infinity	1.796	Infinity	1.657	Infinity
2.161	Infinity	2.011	Infinity	1.869	Infinity	1.732	Infinity	1.603	Infinity
2.029	Infinity	1.898	Infinity	1.772	Infinity	1.65	Infinity	1.534	Infinity
1.95	Infinity	1.83	Infinity	1.713	Infinity	1.6	Infinity	1.491	Infinity
1.859	Infinity	1.751	Infinity	1.644	Infinity	1.54	Infinity	1.44	Infinity
1.754	Infinity	1.658	Infinity	1.563	Infinity	1.47	Infinity	1.38	Infinity
1.695	Infinity	1.606	Infinity	1.518	Infinity	1.43	Infinity	1.345	Infinity
1.631	41.28	1.549	Infinity	1.467	Infinity	1.386	Infinity	1.307	Infinity
1.561	17.254	1.487	54.601	1.412	Infinity	1.338	Infinity	1.264	Infinity
1.485	10.162	1.418	16.86	1.351	67.437	1.284	Infinity	1.216	Infinity
1.453	8.551	1.389	12.806	1.325	29.504	1.26	Infinity	1.196	Infinity
1.419	7.295	1.359	10.153	1.297	18.313	1.236	218.049	1.174	Infinity
1.384	6.288	1.327	8.282	1.269	12.955	1.21	36.288	1.151	Infinity
1.347	5.462	1.294	6.892	1.239	9.812	1.183	18.975	1.127	Infinity
1.309	4.773	1.259	5.818	1.207	7.746	1.155	12.447	1.102	40.524
1.27	4.189	1.223	4.964	1.174	6.285	1.125	9.02	1.075	17.925
1.228	3.688	1.185	4.268	1.14	5.196	1.094	6.908	1.047	11.071
1.185	3.254	1.145	3.69	1.103	4.354	1.061	5.476	1.017	7.759
1.14	2.873	1.103	3.203	1.065	3.683	1.026	4.442	0.986	5.807
1.093	2.537	1.06	2.786	1.025	3.136	0.989	3.659	0.952	4.519
1.044	2.238	1.014	2.426	0.982	2.681	0.95	3.046	0.916	3.607
0.992	1.97	0.965	2.111	0.937	2.297	0.908	2.554	0.878	2.926
0.938	1.729	0.914	1.834	0.89	1.969	0.864	2.149	0.837	2.399
0.881	1.511	0.861	1.588	0.84	1.685	0.817	1.81	0.794	1.979
0.821	1.313	0.804	1.368	0.786	1.436	0.767	1.523	0.747	1.636
0.79	1.22	0.774	1.267	0.758	1.324	0.741	1.395	0.723	1.487
0.758	1.132	0.744	1.17	0.729	1.218	0.714	1.276	0.697	1.351
0.725	1.047	0.712	1.079	0.699	1.118	0.685	1.166	0.67	1.225
0.691	0.965	0.68	0.992	0.668	1.023	0.656	1.062	0.643	1.11
0.656	0.887	0.647	0.909	0.637	0.934	0.626	0.965	0.614	1.003
0.621	0.813	0.612	0.83	0.604	0.85	0.594	0.874	0.584	0.904
0.584	0.741	0.577	0.754	0.57	0.77	0.562	0.789	0.553	0.811
0.546	0.671	0.54	0.682	0.534	0.694	0.528	0.708	0.52	0.725
0.507	0.605	0.503	0.612	0.498	0.622	0.492	0.632	0.486	0.645
0.467	0.541	0.464	0.546	0.46	0.553	0.456	0.56	0.451	0.569
0.426	0.479	0.423	0.483	0.42	0.487	0.417	0.492	0.414	0.498
0.384	0.419	0.382	0.422	0.38	0.424	0.377	0.428	0.375	0.432
0.362	0.39	0.36	0.392	0.359	0.394	0.357	0.397	0.355	0.4
0.34	0.361	0.339	0.363	0.337	0.365	0.336	0.367	0.334	0.369



5.6	6.3	7.1	8	9
1.879	1.693	1.527	1.38	1.249

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
1.863	Infinity	1.677	Infinity	1.512	Infinity	1.365	Infinity	1.233	Infinity
1.794	Infinity	1.622	Infinity	1.468	Infinity	1.33	Infinity	1.205	Infinity
1.73	Infinity	1.571	Infinity	1.427	Infinity	1.296	Infinity	1.179	Infinity
1.665	Infinity	1.519	Infinity	1.385	Infinity	1.263	Infinity	1.152	Infinity
1.614	Infinity	1.477	Infinity	1.35	Infinity	1.235	Infinity	1.129	Infinity
1.562	Infinity	1.434	Infinity	1.315	Infinity	1.206	Infinity	1.106	Infinity
1.526	Infinity	1.404	Infinity	1.291	Infinity	1.186	Infinity	1.09	Infinity
1.482	Infinity	1.367	Infinity	1.26	Infinity	1.161	Infinity	1.069	Infinity
1.423	Infinity	1.318	Infinity	1.22	Infinity	1.127	Infinity	1.041	Infinity
1.387	Infinity	1.288	Infinity	1.194	Infinity	1.106	Infinity	1.023	Infinity
1.343	Infinity	1.251	Infinity	1.163	Infinity	1.08	Infinity	1.002	Infinity
1.292	Infinity	1.207	Infinity	1.126	Infinity	1.049	Infinity	0.975	Infinity
1.262	Infinity	1.181	Infinity	1.104	Infinity	1.03	Infinity	0.96	Infinity
1.229	Infinity	1.153	Infinity	1.08	Infinity	1.009	Infinity	0.942	Infinity
1.192	Infinity	1.121	Infinity	1.052	Infinity	0.986	Infinity	0.922	Infinity
1.15	Infinity	1.085	Infinity	1.021	Infinity	0.959	Infinity	0.899	Infinity
1.132	Infinity	1.069	Infinity	1.007	Infinity	0.947	Infinity	0.889	Infinity
1.113	Infinity	1.052	Infinity	0.993	Infinity	0.935	Infinity	0.879	Infinity
1.092	Infinity	1.034	Infinity	0.977	Infinity	0.921	Infinity	0.867	Infinity
1.071	Infinity	1.016	Infinity	0.961	Infinity	0.907	Infinity	0.855	Infinity
1.049	Infinity	0.996	Infinity	0.944	Infinity	0.892	Infinity	0.842	Infinity
1.025	Infinity	0.975	Infinity	0.925	Infinity	0.876	Infinity	0.828	Infinity
1	35.661	0.952	Infinity	0.905	Infinity	0.859	Infinity	0.813	Infinity
0.973	14.831	0.929	Infinity	0.884	Infinity	0.84	Infinity	0.797	Infinity
0.945	8.954	0.903	23.659	0.862	Infinity	0.82	Infinity	0.779	Infinity
0.914	6.182	0.876	10.69	0.837	66.137	0.799	Infinity	0.76	Infinity
0.882	4.568	0.847	6.577	0.811	13.3	0.775	Infinity	0.74	Infinity
0.847	3.512	0.815	4.558	0.783	6.929	0.75	17.297	0.717	Infinity
0.81	2.768	0.781	3.358	0.752	4.449	0.722	7.109	0.692	23.046
0.77	2.214	0.745	2.563	0.719	3.13	0.692	4.198	0.665	6.934
0.726	1.787	0.705	1.998	0.682	2.311	0.659	2.819	0.635	3.779
0.703	1.608	0.683	1.772	0.663	2.007	0.641	2.37	0.619	2.994
0.679	1.447	0.661	1.575	0.642	1.753	0.622	2.014	0.602	2.434
0.655	1.301	0.638	1.401	0.621	1.535	0.603	1.726	0.584	2.014
0.629	1.17	0.614	1.246	0.598	1.348	0.582	1.487	0.565	1.688
0.601	1.049	0.588	1.108	0.574	1.185	0.56	1.286	0.545	1.428
0.573	0.94	0.562	0.984	0.549	1.041	0.537	1.115	0.523	1.215
0.544	0.839	0.534	0.872	0.523	0.914	0.512	0.967	0.5	1.037
0.512	0.746	0.504	0.77	0.495	0.801	0.486	0.839	0.476	0.887
0.48	0.659	0.473	0.677	0.466	0.699	0.458	0.725	0.449	0.758
0.446	0.58	0.44	0.592	0.434	0.607	0.428	0.625	0.421	0.647
0.41	0.505	0.406	0.514	0.401	0.523	0.396	0.535	0.391	0.549
0.372	0.436	0.369	0.441	0.366	0.447	0.363	0.455	0.359	0.463
0.353	0.403	0.35	0.407	0.348	0.412	0.345	0.417	0.342	0.424
0.332	0.371	0.331	0.374	0.328	0.378	0.326	0.382	0.324	0.387



10	11	13	14	16
1.132	1.027	0.935	0.852	0.778

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
1.116	Infinity	1.012	Infinity	0.919	Infinity	0.836	Infinity	0.763	Infinity
1.094	Infinity	0.994	Infinity	0.905	Infinity	0.825	Infinity	0.754	Infinity
1.073	Infinity	0.978	Infinity	0.892	Infinity	0.815	Infinity	0.745	Infinity
1.051	Infinity	0.96	Infinity	0.878	Infinity	0.803	Infinity	0.736	Infinity
1.033	Infinity	0.945	Infinity	0.866	Infinity	0.794	Infinity	0.729	Infinity
1.014	Infinity	0.93	Infinity	0.853	Infinity	0.784	Infinity	0.721	Infinity
1.001	Infinity	0.919	Infinity	0.845	Infinity	0.777	Infinity	0.715	Infinity
0.984	Infinity	0.905	Infinity	0.834	Infinity	0.768	Infinity	0.708	Infinity
0.961	Infinity	0.887	Infinity	0.818	Infinity	0.755	Infinity	0.698	Infinity
0.946	Infinity	0.875	Infinity	0.808	Infinity	0.747	Infinity	0.691	Infinity
0.928	Infinity	0.86	Infinity	0.796	Infinity	0.737	Infinity	0.683	Infinity
0.906	Infinity	0.842	Infinity	0.781	Infinity	0.725	Infinity	0.673	Infinity
0.893	Infinity	0.831	Infinity	0.772	Infinity	0.717	Infinity	0.667	Infinity
0.879	Infinity	0.818	Infinity	0.762	Infinity	0.709	Infinity	0.66	Infinity
0.862	Infinity	0.804	Infinity	0.75	Infinity	0.699	Infinity	0.652	Infinity
0.842	Infinity	0.788	Infinity	0.736	Infinity	0.688	Infinity	0.642	Infinity
0.834	Infinity	0.781	Infinity	0.73	Infinity	0.683	Infinity	0.638	Infinity
0.825	Infinity	0.773	Infinity	0.724	Infinity	0.677	Infinity	0.633	Infinity
0.815	Infinity	0.765	Infinity	0.717	Infinity	0.671	Infinity	0.628	Infinity
0.804	Infinity	0.756	Infinity	0.709	Infinity	0.665	Infinity	0.623	Infinity
0.793	Infinity	0.746	Infinity	0.701	Infinity	0.658	Infinity	0.617	Infinity
0.781	Infinity	0.736	Infinity	0.692	Infinity	0.651	Infinity	0.611	Infinity
0.768	Infinity	0.725	Infinity	0.683	Infinity	0.642	Infinity	0.604	Infinity
0.754	Infinity	0.712	Infinity	0.672	Infinity	0.634	Infinity	0.597	Infinity
0.739	Infinity	0.699	Infinity	0.661	Infinity	0.624	Infinity	0.588	Infinity
0.722	Infinity	0.685	Infinity	0.649	Infinity	0.613	Infinity	0.579	Infinity
0.704	Infinity	0.669	Infinity	0.635	Infinity	0.602	Infinity	0.569	Infinity
0.684	Infinity	0.652	Infinity	0.62	Infinity	0.589	Infinity	0.558	Infinity
0.662	Infinity	0.633	Infinity	0.603	Infinity	0.574	Infinity	0.546	Infinity
0.638	28.466	0.611	Infinity	0.584	Infinity	0.558	Infinity	0.531	Infinity
0.611	6.248	0.587	26.164	0.563	Infinity	0.539	Infinity	0.515	Infinity
0.597	4.31	0.574	8.832	0.551	Infinity	0.529	Infinity	0.506	Infinity
0.581	3.209	0.56	5.097	0.539	16.357	0.518	Infinity	0.496	Infinity
0.565	2.498	0.546	3.466	0.526	6.337	0.506	247.896	0.486	Infinity
0.548	2.002	0.53	2.552	0.512	3.761	0.493	8.484	0.475	Infinity
0.529	1.635	0.513	1.968	0.496	2.581	0.479	4.068	0.462	12.746
0.509	1.354	0.495	1.562	0.48	1.904	0.465	2.559	0.449	4.312
0.488	1.131	0.475	1.264	0.462	1.464	0.448	1.798	0.435	2.458
0.465	0.95	0.454	1.035	0.443	1.156	0.431	1.339	0.419	1.644
0.441	0.8	0.431	0.855	0.422	0.928	0.411	1.032	0.401	1.187
0.414	0.674	0.407	0.708	0.399	0.753	0.39	0.812	0.381	0.895
0.386	0.566	0.38	0.587	0.373	0.613	0.367	0.647	0.36	0.691
0.355	0.473	0.35	0.485	0.346	0.5	0.341	0.518	0.335	0.541
0.338	0.431	0.334	0.44	0.331	0.451	0.326	0.464	0.322	0.481
0.321	0.392	0.318	0.398	0.315	0.406	0.311	0.415	0.308	0.427



18	20	22
0.713	0.654	0.602

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
0.697	Infinity	0.639	Infinity	0.586	Infinity
0.69	Infinity	0.633	Infinity	0.582	Infinity
0.683	Infinity	0.628	Infinity	0.578	Infinity
0.676	Infinity	0.622	Infinity	0.573	Infinity
0.67	Infinity	0.617	Infinity	0.569	Infinity
0.664	Infinity	0.612	Infinity	0.565	Infinity
0.659	Infinity	0.608	Infinity	0.562	Infinity
0.653	Infinity	0.603	Infinity	0.558	Infinity
0.645	Infinity	0.597	Infinity	0.553	Infinity
0.64	Infinity	0.593	Infinity	0.55	Infinity
0.633	Infinity	0.587	Infinity	0.545	Infinity
0.625	Infinity	0.58	Infinity	0.54	Infinity
0.62	Infinity	0.576	Infinity	0.537	Infinity
0.614	Infinity	0.572	Infinity	0.533	Infinity
0.607	Infinity	0.566	Infinity	0.528	Infinity
0.599	Infinity	0.56	Infinity	0.523	Infinity
0.596	Infinity	0.557	Infinity	0.521	Infinity
0.592	Infinity	0.554	Infinity	0.518	Infinity
0.588	Infinity	0.55	Infinity	0.515	Infinity
0.584	Infinity	0.547	Infinity	0.512	Infinity
0.579	Infinity	0.543	Infinity	0.509	Infinity
0.573	Infinity	0.538	Infinity	0.505	Infinity
0.568	Infinity	0.533	Infinity	0.501	Infinity
0.561	Infinity	0.528	Infinity	0.497	Infinity
0.555	Infinity	0.522	Infinity	0.492	Infinity
0.547	Infinity	0.516	Infinity	0.487	Infinity
0.538	Infinity	0.509	Infinity	0.481	Infinity
0.529	Infinity	0.501	Infinity	0.474	Infinity
0.518	Infinity	0.491	Infinity	0.466	Infinity
0.506	Infinity	0.481	Infinity	0.457	Infinity
0.492	Infinity	0.469	Infinity	0.447	Infinity
0.484	Infinity	0.462	Infinity	0.441	Infinity
0.475	Infinity	0.455	Infinity	0.435	Infinity
0.466	Infinity	0.447	Infinity	0.428	Infinity
0.456	Infinity	0.438	Infinity	0.42	Infinity
0.445	Infinity	0.429	Infinity	0.412	Infinity
0.434	23.262	0.418	Infinity	0.403	Infinity
0.421	4.356	0.406	58.336	0.392	Infinity
0.406	2.254	0.394	4.045	0.381	98.482
0.39	1.445	0.379	1.948	0.368	3.352
0.372	1.017	0.363	1.213	0.353	1.577
0.352	0.751	0.345	0.838	0.337	0.971
0.33	0.571	0.324	0.611	0.318	0.665
0.317	0.501	0.312	0.528	0.307	0.563
0.304	0.441	0.3	0.458	0.295	0.48



3.2	3.5	4	4.5	5
10' 6.34"	9' 5.35"	8' 5.73"	7' 7.38"	6' 10.17"

3.2		3.5		4		4.5		5	
Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)
10' 5.74"	Infinity	9' 4.72"	Infinity	8' 5.11"	Infinity	7' 6.77"	Infinity	6' 9.56"	Infinity
9' 8.61"	Infinity	8' 9.41"	Infinity	7' 11.27"	Infinity	7' 2.1"	Infinity	6' 5.84"	Infinity
9' 0.7"	Infinity	8' 2.98"	Infinity	7' 6.06"	Infinity	6' 9.89"	Infinity	6' 2.44"	Infinity
8' 5.8"	Infinity	7' 9.3"	Infinity	7' 1.39"	Infinity	6' 6.07"	Infinity	5' 11.32"	Infinity
7' 11.72"	Infinity	7' 4.22"	Infinity	6' 9.18"	Infinity	6' 2.59"	Infinity	5' 8.45"	Infinity
7' 7.35"	Infinity	7' 0.55"	Infinity	6' 6.1"	Infinity	6' 0.02"	Infinity	5' 6.32"	Infinity
7' 1.5"	Infinity	6' 7.57"	Infinity	6' 1.89"	Infinity	5' 8.48"	Infinity	5' 3.35"	Infinity
6' 8.92"	Infinity	6' 3.63"	Infinity	5' 10.53"	Infinity	5' 5.62"	Infinity	5' 0.94"	Infinity
6' 5.24"	Infinity	6' 0.45"	Infinity	5' 7.79"	Infinity	5' 3.28"	Infinity	4' 10.95"	Infinity
6' 0.9"	Infinity	5' 8.66"	Infinity	5' 4.51"	Infinity	5' 0.46"	Infinity	4' 8.53"	Infinity
5' 10.43"	Infinity	5' 6.49"	Infinity	5' 2.61"	Infinity	4' 10.81"	Infinity	4' 7.12"	Infinity
5' 7.71"	Infinity	5' 4.1"	Infinity	5' 0.51"	Infinity	4' 8.98"	Infinity	4' 5.53"	Infinity
5' 4.72"	178' 6.05"	5' 1.44"	Infinity	4' 10.17"	Infinity	4' 6.93"	Infinity	4' 3.75"	Infinity
5' 3.1"	87' 2.93"	5'	Infinity	4' 8.89"	Infinity	4' 5.81"	Infinity	4' 2.76"	Infinity
5' 1.4"	55' 7.74"	4' 10.47"	169' 8.61"	4' 7.54"	Infinity	4' 4.61"	Infinity	4' 1.72"	Infinity
4' 11.6"	39' 7.39"	4' 8.86"	75' 4.84"	4' 6.1"	Infinity	4' 3.34"	Infinity	4' 0.59"	Infinity
4' 9.69"	29' 11.07"	4' 7.14"	46' 4.87"	4' 4.56"	124' 3.95"	4' 1.97"	Infinity	3' 11.39"	Infinity
4' 7.68"	23' 5.15"	4' 5.32"	32' 3.9"	4' 2.92"	56' 10.91"	4' 0.51"	427' 1.1"	3' 10.1"	Infinity
4' 5.54"	18' 9.3"	4' 3.37"	24' 0.07"	4' 1.17"	35' 1.74"	3' 10.94"	74' 6.95"	3' 8.7"	Infinity
4' 3.26"	15' 3.32"	4' 1.3"	18' 6.15"	3' 11.29"	24' 4.69"	3' 9.25"	38' 2.61"	3' 7.19"	108' 3.87"
4' 2.07"	13' 10"	4' 0.21"	16' 4.93"	3' 10.3"	20' 9.9"	3' 8.35"	30' 0.31"	3' 6.38"	60' 6.99"
4' 0.84"	12' 6.6"	3' 11.08"	14' 7.38"	3' 9.27"	17' 11.75"	3' 7.42"	24' 4.44"	3' 5.55"	41' 0.17"
3' 11.57"	11' 4.81"	3' 9.91"	13' 0.74"	3' 8.2"	15' 7.86"	3' 6.45"	20' 2.77"	3' 4.67"	30' 4.34"
3' 10.26"	10' 4.39"	3' 8.7"	11' 8.46"	3' 7.09"	13' 8.65"	3' 5.44"	17' 0.84"	3' 3.76"	23' 7.96"
3' 8.9"	9' 5.14"	3' 7.44"	10' 6.12"	3' 5.94"	12' 1.04"	3' 4.39"	14' 6.93"	3' 2.8"	19' 0.73"
3' 7.49"	8' 6.91"	3' 6.14"	9' 5.4"	3' 4.74"	10' 8.25"	3' 3.29"	12' 6.74"	3' 1.8"	15' 8.45"
3' 6.03"	7' 9.57"	3' 4.79"	8' 6.03"	3' 3.49"	9' 5.72"	3' 2.14"	10' 10.77"	3' 0.76"	13' 1.78"
3' 4.53"	7' 1"	3' 3.38"	7' 7.81"	3' 2.18"	8' 5.01"	3' 0.94"	9' 6.01"	2' 11.66"	11' 1.64"
3' 2.96"	6' 5.12"	3' 1.92"	6' 10.58"	3' 0.83"	7' 5.8"	2' 11.68"	8' 3.74"	2' 10.5"	9' 6.14"
3' 1.34"	5' 9.83"	3' 0.4"	6' 2.19"	2' 11.41"	6' 7.85"	2' 10.37"	7' 3.44"	2' 9.29"	8' 2.07"
2' 11.65"	5' 3.09"	2' 10.81"	5' 6.54"	2' 9.92"	5' 10.95"	2' 8.99"	6' 4.73"	2' 8.01"	7' 0.59"
2' 9.9"	4' 8.82"	2' 9.16"	4' 11.53"	2' 8.37"	5' 2.94"	2' 7.54"	5' 7.32"	2' 6.66"	6' 1.13"
2' 8.09"	4' 2.99"	2' 7.44"	4' 5.09"	2' 6.74"	4' 7.7"	2' 6.01"	4' 10.99"	2' 5.24"	5' 3.26"
2' 6.19"	3' 9.54"	2' 5.63"	3' 11.15"	2' 5.04"	4' 1.12"	2' 4.4"	4' 3.57"	2' 3.73"	4' 6.67"
2' 4.22"	3' 4.44"	2' 3.75"	3' 5.65"	2' 3.25"	3' 7.11"	2' 2.71"	3' 8.9"	2' 2.14"	3' 11.13"
2' 2.17"	2' 11.66"	2' 1.78"	3' 0.55"	2' 1.37"	3' 1.61"	2' 0.92"	3' 2.89"	2' 0.45"	3' 4.46"
2' 0.03"	2' 7.17"	1' 11.72"	2' 7.8"	1' 11.39"	2' 8.55"	1' 11.03"	2' 9.44"	1' 10.65"	2' 10.51"
1' 9.79"	2' 2.94"	1' 9.56"	2' 3.37"	1' 9.31"	2' 3.88"	1' 9.03"	2' 4.47"	1' 8.73"	2' 5.18"
1' 7.46"	1' 10.96"	1' 7.29"	1' 11.23"	1' 7.11"	1' 11.55"	1' 6.91"	1' 11.93"	1' 6.69"	2' 0.37"
1' 5.01"	1' 7.19"	1' 4.9"	1' 7.35"	1' 4.78"	1' 7.54"	1' 4.65"	1' 7.76"	1' 4.5"	1' 8.01"
1' 4.17"	1' 5.98"	1' 4.08"	1' 6.11"	1' 3.98"	1' 6.27"	1' 3.86"	1' 6.44"	1' 3.74"	1' 6.65"
1' 3.32"	1' 4.79"	1' 3.24"	1' 4.9"	1' 3.16"	1' 5.02"	1' 3.06"	1' 5.16"	1' 2.96"	1' 5.32"
1' 2.45"	1' 3.63"	1' 2.39"	1' 3.71"	1' 2.32"	1' 3.81"	1' 2.24"	1' 3.91"	1' 2.16"	1' 4.04"
1' 1.57"	1' 2.48"	1' 1.52"	1' 2.54"	1' 1.47"	1' 2.62"	1' 1.41"	1' 2.7"	1' 1.34"	1' 2.79"



5.6	6.3	7.1	8	9
6' 1.98"	5' 6.65"	5' 0.12"	4' 6.33"	4' 1.17"

5.6		6.3		7.1		8		9	
Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)
6' 1.35"	Infinity	5' 6.04"	Infinity	4' 11.52"	Infinity	4' 5.72"	Infinity	4' 0.55"	Infinity
5' 10.38"	Infinity	5' 3.67"	Infinity	4' 9.64"	Infinity	4' 4.22"	Infinity	3' 11.36"	Infinity
5' 7.64"	Infinity	5' 1.47"	Infinity	4' 7.87"	Infinity	4' 2.81"	Infinity	3' 10.22"	Infinity
5' 5.11"	Infinity	4' 11.42"	Infinity	4' 6.21"	Infinity	4' 1.46"	Infinity	3' 9.14"	Infinity
5' 2.76"	Infinity	4' 9.49"	Infinity	4' 4.64"	Infinity	4' 0.18"	Infinity	3' 8.11"	Infinity
5' 0.99"	Infinity	4' 8.04"	Infinity	4' 3.45"	Infinity	3' 11.21"	Infinity	3' 7.31"	Infinity
4' 10.52"	Infinity	4' 5.99"	Infinity	4' 1.75"	Infinity	3' 9.82"	Infinity	3' 6.17"	Infinity
4' 8.5"	Infinity	4' 4.3"	Infinity	4' 0.35"	Infinity	3' 8.65"	Infinity	3' 5.21"	Infinity
4' 6.81"	Infinity	4' 2.88"	Infinity	3' 11.16"	Infinity	3' 7.66"	Infinity	3' 4.39"	Infinity
4' 4.75"	Infinity	4' 1.14"	Infinity	3' 9.69"	Infinity	3' 6.44"	Infinity	3' 3.37"	Infinity
4' 3.54"	Infinity	4' 0.11"	Infinity	3' 8.82"	Infinity	3' 5.7"	Infinity	3' 2.75"	Infinity
4' 2.18"	Infinity	3' 10.94"	Infinity	3' 7.83"	Infinity	3' 4.87"	Infinity	3' 2.05"	Infinity
4' 0.64"	Infinity	3' 9.61"	Infinity	3' 6.7"	Infinity	3' 3.9"	Infinity	3' 1.24"	Infinity
3' 11.78"	Infinity	3' 8.88"	Infinity	3' 6.07"	Infinity	3' 3.37"	Infinity	3' 0.78"	Infinity
3' 10.87"	Infinity	3' 8.09"	Infinity	3' 5.39"	Infinity	3' 2.79"	Infinity	3' 0.29"	Infinity
3' 9.89"	Infinity	3' 7.24"	Infinity	3' 4.66"	Infinity	3' 2.16"	Infinity	2' 11.75"	Infinity
3' 8.83"	Infinity	3' 6.32"	Infinity	3' 3.86"	Infinity	3' 1.47"	Infinity	2' 11.17"	Infinity
3' 7.69"	Infinity	3' 5.32"	Infinity	3' 3"	Infinity	3' 0.73"	Infinity	2' 10.53"	Infinity
3' 6.46"	Infinity	3' 4.24"	Infinity	3' 2.05"	Infinity	2' 11.91"	Infinity	2' 9.82"	Infinity
3' 5.12"	Infinity	3' 3.06"	Infinity	3' 1.01"	Infinity	2' 11.01"	Infinity	2' 9.04"	Infinity
3' 4.4"	Infinity	3' 2.42"	Infinity	3' 0.46"	Infinity	2' 10.52"	Infinity	2' 8.62"	Infinity
3' 3.65"	187' 6.96"	3' 1.76"	Infinity	2' 11.87"	Infinity	2' 10.01"	Infinity	2' 8.18"	Infinity
3' 2.87"	71' 0.98"	3' 1.06"	Infinity	2' 11.26"	Infinity	2' 9.47"	Infinity	2' 7.7"	Infinity
3' 2.05"	42' 4.66"	3' 0.33"	Infinity	2' 10.61"	Infinity	2' 8.9"	Infinity	2' 7.21"	Infinity
3' 1.19"	29' 4.83"	2' 11.56"	77' 9.6"	2' 9.92"	Infinity	2' 8.29"	Infinity	2' 6.68"	Infinity
3' 0.29"	21' 11.97"	2' 10.75"	40' 8.27"	2' 9.2"	Infinity	2' 7.65"	Infinity	2' 6.11"	Infinity
2' 11.34"	17' 2.54"	2' 9.89"	26' 7.86"	2' 8.43"	72' 2.09"	2' 6.97"	Infinity	2' 5.51"	Infinity
2' 10.34"	13' 10.38"	2' 8.99"	19' 3.34"	2' 7.62"	34' 11.65"	2' 6.25"	Infinity	2' 4.87"	Infinity
2' 9.28"	11' 4.71"	2' 8.03"	14' 8.76"	2' 6.76"	22' 2.44"	2' 5.48"	53' 5.73"	2' 4.19"	Infinity
2' 8.17"	9' 5.9"	2' 7.02"	11' 7.74"	2' 5.85"	15' 8.98"	2' 4.66"	26' 6.21"	2' 3.46"	126' 9.28"
2' 6.99"	7' 11.82"	2' 5.95"	9' 4.98"	2' 4.87"	11' 10.24"	2' 3.78"	16' 10.71"	2' 2.67"	33' 2.65"
2' 5.75"	6' 9.12"	2' 4.8"	7' 8.73"	2' 3.83"	9' 2.95"	2' 2.83"	11' 11.4"	2' 1.82"	18' 0.61"
2' 4.43"	5' 8.96"	2' 3.59"	6' 4.88"	2' 2.72"	7' 4.55"	2' 1.82"	8' 11.31"	2' 0.9"	11' 10.07"
2' 3.03"	4' 10.71"	2' 2.29"	5' 4.13"	2' 1.52"	5' 11.72"	2' 0.72"	6' 11.03"	1' 11.9"	8' 5.5"
2' 1.53"	4' 1.97"	2' 0.9"	4' 5.65"	2' 0.23"	4' 10.61"	1' 11.54"	5' 5.58"	1' 10.82"	6' 4"
1' 11.94"	3' 6.41"	1' 11.41"	3' 8.89"	1' 10.84"	4' 0.11"	1' 10.25"	4' 4.43"	1' 9.64"	4' 10.48"
1' 10.24"	2' 11.83"	1' 9.8"	3' 1.46"	1' 9.34"	3' 3.51"	1' 8.85"	3' 6.17"	1' 8.34"	3' 9.71"
1' 8.42"	2' 6.03"	1' 8.07"	2' 7.07"	1' 7.71"	2' 8.34"	1' 7.32"	2' 9.94"	1' 6.92"	2' 11.98"
1' 6.46"	2' 0.89"	1' 6.2"	2' 1.52"	1' 5.93"	2' 2.27"	1' 5.64"	2' 3.19"	1' 5.34"	2' 4.32"
1' 4.35"	1' 8.31"	1' 4.18"	1' 8.65"	1' 3.99"	1' 9.06"	1' 3.79"	1' 9.55"	1' 3.58"	1' 10.14"
1' 3.61"	1' 6.88"	1' 3.46"	1' 7.16"	1' 3.3"	1' 7.49"	1' 3.13"	1' 7.87"	1' 2.95"	1' 8.34"
1' 2.85"	1' 5.51"	1' 2.73"	1' 5.73"	1' 2.59"	1' 5.98"	1' 2.45"	1' 6.28"	1' 2.29"	1' 6.64"
1' 2.07"	1' 4.18"	1' 1.97"	1' 4.35"	1' 1.86"	1' 4.55"	1' 1.74"	1' 4.78"	1' 1.61"	1' 5.04"
1' 1.27"	1' 2.9"	1' 1.19"	1' 3.03"	1' 1.1"	1' 3.17"	1' 1.01"	1' 3.34"	1' 0.9"	1' 3.54"



10	11	13	14	16
3' 8.57"	3' 4.43"	3' 0.81"	2' 9.54"	2' 6.63"

10		11		13		14		16	
Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)
3' 7.94"	Infinity	3' 3.84"	Infinity	3' 0.18"	Infinity	2' 8.93"	Infinity	2' 6.03"	Infinity
3' 7"	Infinity	3' 3.09"	Infinity	2' 11.59"	Infinity	2' 8.45"	Infinity	2' 5.65"	Infinity
3' 6.09"	Infinity	3' 2.36"	Infinity	2' 11.01"	Infinity	2' 7.99"	Infinity	2' 5.28"	Infinity
3' 5.22"	Infinity	3' 1.66"	Infinity	2' 10.45"	Infinity	2' 7.54"	Infinity	2' 4.92"	Infinity
3' 4.38"	Infinity	3' 0.99"	Infinity	2' 9.9"	Infinity	2' 7.11"	Infinity	2' 4.57"	Infinity
3' 3.74"	Infinity	3' 0.46"	Infinity	2' 9.48"	Infinity	2' 6.77"	Infinity	2' 4.3"	Infinity
3' 2.8"	Infinity	2' 11.71"	Infinity	2' 8.86"	Infinity	2' 6.27"	Infinity	2' 3.9"	Infinity
3' 2.01"	Infinity	2' 11.06"	Infinity	2' 8.34"	Infinity	2' 5.84"	Infinity	2' 3.55"	Infinity
3' 1.34"	Infinity	2' 10.5"	Infinity	2' 7.88"	Infinity	2' 5.47"	Infinity	2' 3.25"	Infinity
3' 0.49"	Infinity	2' 9.8"	Infinity	2' 7.31"	Infinity	2' 4.99"	Infinity	2' 2.86"	Infinity
2' 11.98"	Infinity	2' 9.38"	Infinity	2' 6.95"	Infinity	2' 4.7"	Infinity	2' 2.62"	Infinity
2' 11.39"	Infinity	2' 8.89"	Infinity	2' 6.55"	Infinity	2' 4.37"	Infinity	2' 2.35"	Infinity
2' 10.71"	Infinity	2' 8.32"	Infinity	2' 6.08"	Infinity	2' 3.98"	Infinity	2' 2.03"	Infinity
2' 10.32"	Infinity	2' 8"	Infinity	2' 5.81"	Infinity	2' 3.76"	Infinity	2' 1.84"	Infinity
2' 9.91"	Infinity	2' 7.65"	Infinity	2' 5.52"	Infinity	2' 3.51"	Infinity	2' 1.64"	Infinity
2' 9.45"	Infinity	2' 7.27"	Infinity	2' 5.2"	Infinity	2' 3.25"	Infinity	2' 1.42"	Infinity
2' 8.96"	Infinity	2' 6.85"	Infinity	2' 4.84"	Infinity	2' 2.95"	Infinity	2' 1.18"	Infinity
2' 8.41"	Infinity	2' 6.38"	Infinity	2' 4.45"	Infinity	2' 2.63"	Infinity	2' 0.9"	Infinity
2' 7.81"	Infinity	2' 5.87"	Infinity	2' 4.02"	Infinity	2' 2.26"	Infinity	2' 0.6"	Infinity
2' 7.14"	Infinity	2' 5.3"	Infinity	2' 3.53"	Infinity	2' 1.85"	Infinity	2' 0.25"	Infinity
2' 6.77"	Infinity	2' 4.99"	Infinity	2' 3.27"	Infinity	2' 1.63"	Infinity	2' 0.06"	Infinity
2' 6.39"	Infinity	2' 4.66"	Infinity	2' 2.99"	Infinity	2' 1.39"	Infinity	1' 11.86"	Infinity
2' 5.98"	Infinity	2' 4.31"	Infinity	2' 2.69"	Infinity	2' 1.13"	Infinity	1' 11.65"	Infinity
2' 5.55"	Infinity	2' 3.93"	Infinity	2' 2.37"	Infinity	2' 0.86"	Infinity	1' 11.42"	Infinity
2' 5.09"	Infinity	2' 3.53"	Infinity	2' 2.02"	Infinity	2' 0.57"	Infinity	1' 11.17"	Infinity
2' 4.59"	Infinity	2' 3.11"	Infinity	2' 1.66"	Infinity	2' 0.25"	Infinity	1' 10.9"	Infinity
2' 4.07"	Infinity	2' 2.65"	Infinity	2' 1.26"	Infinity	1' 11.91"	Infinity	1' 10.61"	Infinity
2' 3.51"	Infinity	2' 2.16"	Infinity	2' 0.83"	Infinity	1' 11.54"	Infinity	1' 10.3"	Infinity
2' 2.9"	Infinity	2' 1.63"	Infinity	2' 0.37"	Infinity	1' 11.15"	Infinity	1' 9.95"	Infinity
2' 2.25"	Infinity	2' 1.06"	Infinity	1' 11.87"	Infinity	1' 10.71"	Infinity	1' 9.58"	Infinity
2' 1.55"	Infinity	2' 0.44"	Infinity	1' 11.33"	Infinity	1' 10.24"	Infinity	1' 9.17"	Infinity
2' 0.79"	44' 3.4"	1' 11.76"	Infinity	1' 10.74"	Infinity	1' 9.72"	Infinity	1' 8.72"	Infinity
1' 11.97"	18' 11.53"	1' 11.03"	63' 4.52"	1' 10.08"	Infinity	1' 9.14"	Infinity	1' 8.22"	Infinity
1' 11.07"	11' 4.77"	1' 10.22"	19' 1.67"	1' 9.37"	93' 3.6"	1' 8.51"	Infinity	1' 7.66"	Infinity
1' 10.09"	7' 9.14"	1' 9.33"	10' 6.26"	1' 8.57"	18' 0.09"	1' 7.8"	110' 3.34"	1' 7.03"	Infinity
1' 9"	5' 7.49"	1' 8.35"	6' 10.22"	1' 7.69"	9' 2.31"	1' 7.01"	15' 4.23"	1' 6.33"	73' 10.92"
1' 7.81"	4' 2.62"	1' 7.26"	4' 9.82"	1' 6.69"	5' 9.32"	1' 6.11"	7' 6.4"	1' 5.52"	11' 8.99"
1' 6.49"	3' 2.66"	1' 6.04"	3' 6.32"	1' 5.58"	3' 11.55"	1' 5.1"	4' 7.6"	1' 4.6"	5' 9.41"
1' 5.01"	2' 5.75"	1' 4.66"	2' 7.6"	1' 4.3"	2' 10.05"	1' 3.93"	3' 1.45"	1' 3.54"	3' 6.4"
1' 3.35"	1' 10.86"	1' 3.1"	1' 11.75"	1' 2.85"	2' 0.86"	1' 2.57"	2' 2.3"	1' 2.29"	2' 4.21"
1' 2.75"	1' 8.89"	1' 2.54"	1' 9.58"	1' 2.31"	1' 10.42"	1' 2.07"	1' 11.49"	1' 1.82"	2' 0.87"
1' 2.12"	1' 7.07"	1' 1.94"	1' 7.58"	1' 1.75"	1' 8.21"	1' 1.54"	1' 8.99"	1' 1.33"	1' 9.98"
1' 1.47"	1' 5.36"	1' 1.32"	1' 5.74"	1' 1.16"	1' 6.2"	1' 0.98"	1' 6.77"	1' 0.8"	1' 7.47"
1' 0.79"	1' 3.77"	1' 0.67"	1' 4.05"	1' 0.53"	1' 4.37"	1' 0.39"	1' 4.77"	1' 0.24"	1' 5.25"



18	20	22
2' 4.07"	2' 1.75"	1' 11.7"

18		20		22	
Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)	Short Focus (ft-inch)	Long Focus (ft-inch)
2' 3.44"	Infinity	2' 1.14"	Infinity	1' 11.09"	Infinity
2' 3.14"	Infinity	2' 0.9"	Infinity	1' 10.9"	Infinity
2' 2.85"	Infinity	2' 0.67"	Infinity	1' 10.72"	Infinity
2' 2.57"	Infinity	2' 0.44"	Infinity	1' 10.53"	Infinity
2' 2.28"	Infinity	2' 0.22"	Infinity	1' 10.35"	Infinity
2' 2.06"	Infinity	2' 0.04"	Infinity	1' 10.21"	Infinity
2' 1.74"	Infinity	1' 11.78"	Infinity	1' 10"	Infinity
2' 1.46"	Infinity	1' 11.55"	Infinity	1' 9.82"	Infinity
2' 1.21"	Infinity	1' 11.35"	Infinity	1' 9.66"	Infinity
2' 0.9"	Infinity	1' 11.1"	Infinity	1' 9.45"	Infinity
2' 0.71"	Infinity	1' 10.94"	Infinity	1' 9.33"	Infinity
2' 0.48"	Infinity	1' 10.76"	Infinity	1' 9.18"	Infinity
2' 0.22"	Infinity	1' 10.54"	Infinity	1' 9"	Infinity
2' 0.06"	Infinity	1' 10.42"	Infinity	1' 8.9"	Infinity
1' 11.9"	Infinity	1' 10.28"	Infinity	1' 8.79"	Infinity
1' 11.72"	Infinity	1' 10.13"	Infinity	1' 8.67"	Infinity
1' 11.51"	Infinity	1' 9.97"	Infinity	1' 8.53"	Infinity
1' 11.29"	Infinity	1' 9.78"	Infinity	1' 8.38"	Infinity
1' 11.03"	Infinity	1' 9.57"	Infinity	1' 8.2"	Infinity
1' 10.75"	Infinity	1' 9.33"	Infinity	1' 8.01"	Infinity
1' 10.59"	Infinity	1' 9.2"	Infinity	1' 7.9"	Infinity
1' 10.42"	Infinity	1' 9.06"	Infinity	1' 7.78"	Infinity
1' 10.24"	Infinity	1' 8.91"	Infinity	1' 7.65"	Infinity
1' 10.04"	Infinity	1' 8.74"	Infinity	1' 7.52"	Infinity
1' 9.83"	Infinity	1' 8.57"	Infinity	1' 7.37"	Infinity
1' 9.61"	Infinity	1' 8.38"	Infinity	1' 7.21"	Infinity
1' 9.36"	Infinity	1' 8.17"	Infinity	1' 7.04"	Infinity
1' 9.09"	Infinity	1' 7.94"	Infinity	1' 6.85"	Infinity
1' 8.8"	Infinity	1' 7.69"	Infinity	1' 6.64"	Infinity
1' 8.48"	Infinity	1' 7.42"	Infinity	1' 6.41"	Infinity
1' 8.13"	Infinity	1' 7.12"	Infinity	1' 6.15"	Infinity
1' 7.74"	Infinity	1' 6.78"	Infinity	1' 5.87"	Infinity
1' 7.3"	Infinity	1' 6.41"	Infinity	1' 5.54"	Infinity
1' 6.82"	Infinity	1' 5.99"	Infinity	1' 5.18"	Infinity
1' 6.27"	Infinity	1' 5.51"	Infinity	1' 4.77"	Infinity
1' 5.64"	Infinity	1' 4.96"	Infinity	1' 4.29"	Infinity
1' 4.93"	35' 1.16"	1' 4.33"	Infinity	1' 3.74"	Infinity
1' 4.1"	8' 2.38"	1' 3.6"	16' 4.35"	1' 3.09"	Infinity
1' 3.14"	4' 2.24"	1' 2.73"	5' 4.42"	1' 2.31"	8' 1.46"
1' 1.99"	2' 6.84"	1' 1.68"	2' 10.65"	1' 1.36"	3' 4.65"
1' 1.56"	2' 2.71"	1' 1.28"	2' 5.26"	1' 1"	2' 9.02"
1' 1.1"	1' 11.27"	1' 0.86"	2' 0.98"	1' 0.61"	2' 3.38"
1' 0.61"	1' 8.35"	1' 0.4"	1' 9.5"	1' 0.18"	1' 11.03"
1' 0.08"	1' 5.85"	0' 11.91"	1' 6.61"	0' 11.73"	1' 7.58"



Focal Length 18 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	6.644	6.226	5.566	4.978

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	6.626	Infinity	6.208	Infinity	5.548	Infinity	4.959	Infinity
40.000	5.724	Infinity	5.412	Infinity	4.907	Infinity	4.444	Infinity
20.000	5.038	Infinity	4.797	Infinity	4.399	Infinity	4.026	Infinity
13.000	4.462	Infinity	4.273	Infinity	3.957	Infinity	3.655	Infinity
10.000	4.064	Infinity	3.908	Infinity	3.644	Infinity	3.388	Infinity
8.000	3.706	Infinity	3.576	Infinity	3.355	Infinity	3.139	Infinity
7.000	3.486	Infinity	3.372	Infinity	3.176	Infinity	2.983	Infinity
6.000	3.231	58.862	3.133	156.364	2.965	Infinity	2.797	Infinity
5.000	2.93	19.221	2.851	24.064	2.712	46.303	2.572	Infinity
4.500	2.759	13.266	2.689	15.387	2.566	22.131	2.441	43.84
4.000	2.571	9.563	2.511	10.607	2.404	13.393	2.295	19.045
3.500	2.364	7.038	2.314	7.58	2.224	8.885	2.132	11.028
3.250	2.253	6.055	2.207	6.448	2.126	7.36	2.042	8.76
3.000	2.135	5.206	2.095	5.492	2.022	6.133	1.946	7.065
2.750	2.011	4.467	1.975	4.673	1.911	5.124	1.844	5.751
2.500	1.88	3.816	1.849	3.964	1.793	4.279	1.735	4.701
2.400	1.825	3.577	1.796	3.706	1.744	3.978	1.689	4.339
2.300	1.77	3.35	1.742	3.461	1.693	3.696	1.642	4.003
2.200	1.712	3.132	1.687	3.229	1.642	3.431	1.593	3.692
2.100	1.654	2.924	1.631	3.008	1.588	3.181	1.543	3.402
2.000	1.594	2.725	1.572	2.797	1.533	2.945	1.492	3.131
1.900	1.533	2.535	1.513	2.596	1.477	2.722	1.439	2.879
1.800	1.47	2.352	1.452	2.404	1.419	2.51	1.384	2.642
1.700	1.405	2.177	1.389	2.221	1.359	2.31	1.328	2.419
1.600	1.339	2.008	1.324	2.045	1.298	2.12	1.269	2.21
1.500	1.271	1.847	1.258	1.877	1.235	1.939	1.209	2.013
1.400	1.202	1.691	1.19	1.716	1.169	1.766	1.147	1.827
1.300	1.13	1.541	1.12	1.562	1.102	1.602	1.083	1.651
1.200	1.057	1.397	1.049	1.413	1.033	1.446	1.016	1.484
1.100	0.982	1.258	0.975	1.271	0.962	1.296	0.947	1.326
1.000	0.904	1.124	0.899	1.134	0.888	1.153	0.876	1.175
0.950	0.865	1.058	0.86	1.067	0.85	1.084	0.839	1.103
0.900	0.825	0.994	0.82	1.002	0.812	1.016	0.802	1.033
0.850	0.784	0.931	0.78	0.937	0.773	0.95	0.764	0.964
0.800	0.743	0.869	0.74	0.874	0.733	0.885	0.726	0.897
0.750	0.701	0.808	0.698	0.813	0.693	0.821	0.686	0.831
0.700	0.659	0.748	0.656	0.752	0.652	0.759	0.646	0.767
0.650	0.616	0.689	0.614	0.692	0.61	0.698	0.605	0.704
0.600	0.573	0.631	0.571	0.634	0.567	0.638	0.564	0.643
0.550	0.528	0.574	0.527	0.576	0.524	0.58	0.521	0.584
0.500	0.483	0.518	0.482	0.52	0.48	0.522	0.478	0.525
0.450	0.438	0.463	0.437	0.464	0.436	0.466	0.434	0.468
0.400	0.392	0.409	0.391	0.41	0.39	0.411	0.389	0.412
0.375	0.368	0.382	0.368	0.383	0.367	0.384	0.366	0.385
0.350	0.345	0.355	0.344	0.356	0.344	0.357	0.343	0.357



3.2	3.5	4	4.5	5
4.454	3.987	3.571	3.2	2.87

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
4.435	Infinity	3.968	Infinity	3.552	Infinity	3.182	Infinity	2.851	Infinity
4.022	Infinity	3.637	Infinity	3.287	Infinity	2.969	Infinity	2.682	Infinity
3.679	Infinity	3.356	Infinity	3.058	Infinity	2.783	Infinity	2.531	Infinity
3.369	Infinity	3.099	Infinity	2.845	Infinity	2.607	Infinity	2.386	Infinity
3.142	Infinity	2.907	Infinity	2.684	Infinity	2.473	Infinity	2.275	Infinity
2.929	Infinity	2.725	Infinity	2.53	Infinity	2.343	Infinity	2.165	Infinity
2.793	Infinity	2.608	Infinity	2.43	Infinity	2.258	Infinity	2.093	Infinity
2.631	Infinity	2.467	Infinity	2.308	Infinity	2.153	Infinity	2.004	Infinity
2.432	Infinity	2.294	Infinity	2.157	Infinity	2.022	Infinity	1.892	Infinity
2.316	Infinity	2.191	Infinity	2.066	Infinity	1.944	Infinity	1.823	Infinity
2.185	36.427	2.074	Infinity	1.963	Infinity	1.853	Infinity	1.745	Infinity
2.037	15.166	1.942	26.358	1.845	160.82	1.749	Infinity	1.653	Infinity
1.956	11.159	1.868	16.172	1.779	32.934	1.69	Infinity	1.601	Infinity
1.869	8.531	1.789	11.148	1.708	17.087	1.626	43.179	1.544	Infinity
1.775	6.674	1.704	8.155	1.631	10.895	1.557	17.601	1.482	58.491
1.674	5.292	1.612	6.169	1.547	7.594	1.481	10.291	1.414	17.245
1.632	4.833	1.573	5.549	1.511	6.669	1.449	8.646	1.385	13.034
1.588	4.417	1.532	5.004	1.474	5.889	1.415	7.366	1.354	10.301
1.543	4.038	1.49	4.519	1.436	5.223	1.38	6.343	1.323	8.384
1.496	3.692	1.447	4.085	1.396	4.647	1.344	5.505	1.29	6.965
1.448	3.373	1.403	3.696	1.355	4.145	1.306	4.807	1.255	5.873
1.399	3.079	1.356	3.343	1.312	3.703	1.266	4.217	1.219	5.005
1.347	2.808	1.308	3.023	1.268	3.311	1.225	3.71	1.181	4.3
1.294	2.556	1.258	2.731	1.221	2.96	1.182	3.272	1.142	3.715
1.239	2.322	1.207	2.463	1.173	2.646	1.137	2.888	1.1	3.223
1.182	2.104	1.153	2.217	1.122	2.361	1.09	2.549	1.057	2.802
1.123	1.9	1.097	1.99	1.07	2.103	1.041	2.248	1.011	2.438
1.062	1.709	1.039	1.78	1.015	1.868	0.99	1.979	0.963	2.121
0.998	1.53	0.978	1.585	0.958	1.652	0.935	1.736	0.912	1.842
0.932	1.361	0.915	1.403	0.898	1.454	0.879	1.517	0.858	1.594
0.863	1.202	0.85	1.234	0.835	1.271	0.819	1.317	0.802	1.373
0.828	1.126	0.816	1.153	0.802	1.185	0.788	1.224	0.772	1.271
0.792	1.052	0.781	1.075	0.769	1.103	0.756	1.135	0.742	1.175
0.755	0.98	0.745	1	0.735	1.023	0.723	1.05	0.711	1.083
0.718	0.911	0.709	0.927	0.7	0.946	0.689	0.968	0.678	0.995
0.679	0.843	0.672	0.856	0.664	0.871	0.655	0.89	0.645	0.912
0.64	0.776	0.634	0.787	0.627	0.8	0.619	0.815	0.611	0.832
0.6	0.712	0.595	0.721	0.589	0.731	0.583	0.742	0.576	0.756
0.56	0.649	0.555	0.656	0.55	0.664	0.545	0.673	0.539	0.684
0.518	0.588	0.515	0.593	0.511	0.599	0.506	0.606	0.502	0.614
0.476	0.528	0.473	0.532	0.47	0.537	0.466	0.542	0.463	0.547
0.432	0.47	0.43	0.473	0.428	0.476	0.425	0.48	0.423	0.484
0.388	0.414	0.386	0.415	0.385	0.417	0.383	0.42	0.381	0.422
0.365	0.386	0.364	0.387	0.363	0.389	0.361	0.391	0.36	0.393
0.342	0.358	0.341	0.359	0.34	0.361	0.339	0.362	0.338	0.364



5.6	6.3	7.1	8	9
2.576	2.314	2.08	1.872	1.687

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
2.557	Infinity	2.295	Infinity	2.062	Infinity	1.854	Infinity	1.668	Infinity
2.422	Infinity	2.187	Infinity	1.976	Infinity	1.785	Infinity	1.614	Infinity
2.3	Infinity	2.089	Infinity	1.896	Infinity	1.721	Infinity	1.562	Infinity
2.181	Infinity	1.992	Infinity	1.817	Infinity	1.657	Infinity	1.511	Infinity
2.089	Infinity	1.916	Infinity	1.755	Infinity	1.606	Infinity	1.469	Infinity
1.998	Infinity	1.84	Infinity	1.692	Infinity	1.554	Infinity	1.426	Infinity
1.937	Infinity	1.789	Infinity	1.65	Infinity	1.519	Infinity	1.397	Infinity
1.862	Infinity	1.725	Infinity	1.596	Infinity	1.475	Infinity	1.36	Infinity
1.765	Infinity	1.644	Infinity	1.527	Infinity	1.416	Infinity	1.312	Infinity
1.706	Infinity	1.593	Infinity	1.484	Infinity	1.38	Infinity	1.281	Infinity
1.638	Infinity	1.534	Infinity	1.434	Infinity	1.337	Infinity	1.245	Infinity
1.558	Infinity	1.465	Infinity	1.374	Infinity	1.286	Infinity	1.201	Infinity
1.512	Infinity	1.425	Infinity	1.339	Infinity	1.256	Infinity	1.176	Infinity
1.462	Infinity	1.381	Infinity	1.301	Infinity	1.223	Infinity	1.147	Infinity
1.407	Infinity	1.333	Infinity	1.259	Infinity	1.186	Infinity	1.115	Infinity
1.346	74.49	1.279	Infinity	1.211	Infinity	1.145	Infinity	1.079	Infinity
1.32	30.832	1.255	Infinity	1.191	Infinity	1.127	Infinity	1.064	Infinity
1.293	18.836	1.231	335.134	1.169	Infinity	1.108	Infinity	1.047	Infinity
1.264	13.226	1.206	38.638	1.147	Infinity	1.088	Infinity	1.029	Infinity
1.235	9.974	1.179	19.629	1.123	Infinity	1.067	Infinity	1.011	Infinity
1.203	7.851	1.151	12.739	1.097	43.991	1.044	Infinity	0.991	Infinity
1.17	6.357	1.121	9.18	1.071	18.611	1.021	Infinity	0.97	Infinity
1.136	5.248	1.09	7.007	1.043	11.345	0.996	38.832	0.948	Infinity
1.1	4.392	1.057	5.542	1.013	7.901	0.969	15.389	0.924	Infinity
1.062	3.712	1.022	4.487	0.982	5.891	0.941	9.169	0.899	25.306
1.022	3.158	0.985	3.692	0.948	4.574	0.91	6.291	0.872	11.041
0.979	2.698	0.947	3.07	0.913	3.644	0.878	4.632	0.843	6.72
0.935	2.311	0.905	2.572	0.875	2.952	0.844	3.553	0.812	4.632
0.887	1.979	0.861	2.163	0.834	2.418	0.807	2.795	0.778	3.402
0.837	1.693	0.815	1.821	0.791	1.993	0.767	2.233	0.741	2.591
0.784	1.443	0.765	1.531	0.745	1.646	0.724	1.8	0.702	2.016
0.756	1.329	0.738	1.402	0.72	1.496	0.701	1.619	0.681	1.787
0.727	1.223	0.711	1.283	0.695	1.358	0.677	1.456	0.658	1.587
0.697	1.122	0.683	1.171	0.668	1.232	0.652	1.31	0.635	1.411
0.667	1.027	0.654	1.067	0.641	1.115	0.626	1.177	0.611	1.255
0.635	0.938	0.624	0.969	0.612	1.008	0.599	1.055	0.586	1.116
0.602	0.853	0.592	0.878	0.582	0.908	0.571	0.945	0.559	0.99
0.568	0.772	0.56	0.792	0.551	0.815	0.542	0.843	0.532	0.877
0.533	0.696	0.526	0.711	0.519	0.728	0.511	0.749	0.502	0.774
0.497	0.623	0.491	0.634	0.485	0.647	0.478	0.662	0.471	0.681
0.459	0.554	0.454	0.562	0.45	0.571	0.444	0.582	0.439	0.595
0.42	0.488	0.416	0.494	0.413	0.5	0.409	0.507	0.405	0.516
0.379	0.425	0.377	0.429	0.374	0.433	0.371	0.438	0.368	0.443
0.358	0.395	0.356	0.398	0.354	0.401	0.352	0.405	0.349	0.409
0.337	0.365	0.335	0.367	0.334	0.37	0.332	0.373	0.33	0.376



10	11	13	14	16
1.522	1.375	1.244	1.127	1.023

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
1.503	Infinity	1.356	Infinity	1.225	Infinity	1.109	Infinity	1.005	Infinity
1.46	Infinity	1.322	Infinity	1.198	Infinity	1.087	Infinity	0.987	Infinity
1.419	Infinity	1.289	Infinity	1.171	Infinity	1.066	Infinity	0.97	Infinity
1.377	Infinity	1.255	Infinity	1.144	Infinity	1.044	Infinity	0.953	Infinity
1.343	Infinity	1.228	Infinity	1.122	Infinity	1.026	Infinity	0.938	Infinity
1.308	Infinity	1.199	Infinity	1.099	Infinity	1.007	Infinity	0.923	Infinity
1.284	Infinity	1.179	Infinity	1.083	Infinity	0.994	Infinity	0.913	Infinity
1.254	Infinity	1.154	Infinity	1.062	Infinity	0.977	Infinity	0.899	Infinity
1.213	Infinity	1.121	Infinity	1.034	Infinity	0.954	Infinity	0.88	Infinity
1.188	Infinity	1.099	Infinity	1.017	Infinity	0.94	Infinity	0.868	Infinity
1.157	Infinity	1.074	Infinity	0.995	Infinity	0.922	Infinity	0.854	Infinity
1.12	Infinity	1.043	Infinity	0.969	Infinity	0.9	Infinity	0.836	Infinity
1.098	Infinity	1.024	Infinity	0.954	Infinity	0.887	Infinity	0.825	Infinity
1.074	Infinity	1.004	Infinity	0.937	Infinity	0.873	Infinity	0.813	Infinity
1.047	Infinity	0.98	Infinity	0.917	Infinity	0.856	Infinity	0.799	Infinity
1.016	Infinity	0.954	Infinity	0.894	Infinity	0.837	Infinity	0.782	Infinity
1.002	Infinity	0.942	Infinity	0.884	Infinity	0.828	Infinity	0.775	Infinity
0.987	Infinity	0.929	Infinity	0.873	Infinity	0.819	Infinity	0.767	Infinity
0.972	Infinity	0.916	Infinity	0.862	Infinity	0.809	Infinity	0.759	Infinity
0.956	Infinity	0.902	Infinity	0.85	Infinity	0.799	Infinity	0.75	Infinity
0.939	Infinity	0.887	Infinity	0.837	Infinity	0.788	Infinity	0.741	Infinity
0.92	Infinity	0.871	Infinity	0.823	Infinity	0.776	Infinity	0.731	Infinity
0.901	Infinity	0.854	Infinity	0.808	Infinity	0.763	Infinity	0.72	Infinity
0.88	Infinity	0.836	Infinity	0.792	Infinity	0.749	Infinity	0.708	Infinity
0.857	Infinity	0.816	Infinity	0.775	Infinity	0.734	Infinity	0.694	Infinity
0.833	83.196	0.794	Infinity	0.756	Infinity	0.718	Infinity	0.68	Infinity
0.807	13.928	0.771	Infinity	0.735	Infinity	0.7	Infinity	0.665	Infinity
0.779	7.112	0.746	18.547	0.713	Infinity	0.68	Infinity	0.647	Infinity
0.748	4.531	0.719	7.335	0.689	25.723	0.658	Infinity	0.628	Infinity
0.715	3.174	0.689	4.285	0.662	7.189	0.634	33.529	0.607	Infinity
0.679	2.337	0.656	2.862	0.632	3.864	0.608	6.496	0.583	31.368
0.66	2.029	0.638	2.402	0.616	3.05	0.593	4.436	0.57	9.403
0.639	1.77	0.619	2.039	0.599	2.474	0.578	3.283	0.557	5.298
0.618	1.549	0.6	1.745	0.581	2.043	0.562	2.546	0.542	3.566
0.596	1.359	0.579	1.502	0.562	1.71	0.544	2.035	0.526	2.611
0.572	1.194	0.557	1.299	0.542	1.444	0.526	1.659	0.51	2.005
0.547	1.049	0.534	1.125	0.52	1.227	0.506	1.371	0.492	1.588
0.521	0.92	0.51	0.975	0.498	1.047	0.485	1.144	0.472	1.282
0.493	0.806	0.484	0.845	0.473	0.894	0.463	0.96	0.451	1.048
0.464	0.703	0.456	0.73	0.447	0.764	0.438	0.807	0.429	0.864
0.433	0.61	0.426	0.629	0.419	0.651	0.412	0.679	0.404	0.715
0.4	0.526	0.395	0.538	0.39	0.553	0.384	0.57	0.378	0.592
0.365	0.449	0.361	0.457	0.357	0.466	0.353	0.476	0.349	0.489
0.346	0.414	0.343	0.419	0.34	0.426	0.337	0.434	0.333	0.443
0.327	0.379	0.325	0.383	0.322	0.388	0.32	0.394	0.317	0.401



18	20	22
0.93	0.848	0.774

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
0.912	Infinity	0.829	Infinity	0.756	Infinity
0.898	Infinity	0.818	Infinity	0.747	Infinity
0.885	Infinity	0.808	Infinity	0.739	Infinity
0.871	Infinity	0.797	Infinity	0.73	Infinity
0.859	Infinity	0.787	Infinity	0.722	Infinity
0.847	Infinity	0.777	Infinity	0.714	Infinity
0.838	Infinity	0.77	Infinity	0.709	Infinity
0.827	Infinity	0.761	Infinity	0.701	Infinity
0.812	Infinity	0.749	Infinity	0.691	Infinity
0.802	Infinity	0.741	Infinity	0.685	Infinity
0.79	Infinity	0.731	Infinity	0.677	Infinity
0.775	Infinity	0.719	Infinity	0.667	Infinity
0.766	Infinity	0.712	Infinity	0.661	Infinity
0.756	Infinity	0.703	Infinity	0.654	Infinity
0.744	Infinity	0.693	Infinity	0.646	Infinity
0.731	Infinity	0.682	Infinity	0.636	Infinity
0.725	Infinity	0.677	Infinity	0.632	Infinity
0.718	Infinity	0.672	Infinity	0.628	Infinity
0.711	Infinity	0.666	Infinity	0.623	Infinity
0.704	Infinity	0.659	Infinity	0.617	Infinity
0.696	Infinity	0.653	Infinity	0.612	Infinity
0.687	Infinity	0.645	Infinity	0.606	Infinity
0.678	Infinity	0.637	Infinity	0.599	Infinity
0.667	Infinity	0.629	Infinity	0.591	Infinity
0.656	Infinity	0.619	Infinity	0.583	Infinity
0.644	Infinity	0.608	Infinity	0.574	Infinity
0.63	Infinity	0.597	Infinity	0.564	Infinity
0.615	Infinity	0.584	Infinity	0.553	Infinity
0.599	Infinity	0.569	Infinity	0.541	Infinity
0.58	Infinity	0.553	Infinity	0.527	Infinity
0.559	Infinity	0.535	Infinity	0.511	Infinity
0.548	Infinity	0.525	Infinity	0.502	Infinity
0.535	18.733	0.514	Infinity	0.492	Infinity
0.522	6.698	0.502	Infinity	0.482	Infinity
0.508	3.898	0.489	9.249	0.471	Infinity
0.493	2.65	0.476	4.255	0.459	14.885
0.477	1.945	0.461	2.64	0.446	4.561
0.459	1.49	0.445	1.841	0.431	2.546
0.44	1.174	0.428	1.365	0.415	1.688
0.419	0.94	0.409	1.049	0.398	1.212
0.396	0.761	0.388	0.823	0.379	0.91
0.371	0.619	0.364	0.655	0.357	0.701
0.344	0.504	0.339	0.524	0.333	0.548
0.329	0.455	0.324	0.469	0.32	0.486
0.313	0.409	0.31	0.419	0.306	0.431



Focal Length 21 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	8.855	8.294	7.408	6.619

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	8.833	Infinity	8.273	Infinity	7.387	Infinity	6.598	Infinity
40.000	7.284	Infinity	6.901	Infinity	6.278	Infinity	5.703	Infinity
20.000	6.196	Infinity	5.92	Infinity	5.459	Infinity	5.022	Infinity
13.000	5.338	Infinity	5.133	Infinity	4.786	Infinity	4.449	Infinity
10.000	4.772	Infinity	4.608	Infinity	4.328	Infinity	4.053	Infinity
8.000	4.279	79.862	4.149	216.742	3.922	Infinity	3.697	Infinity
7.000	3.986	32.202	3.873	43.114	3.676	121.478	3.478	Infinity
6.000	3.652	17.934	3.557	20.849	3.392	30.19	3.224	61.032
5.000	3.268	11.069	3.193	12.101	3.06	14.714	2.924	19.449
4.500	3.054	8.819	2.989	9.457	2.873	10.966	2.754	13.375
4.000	2.823	7.032	2.768	7.428	2.669	8.319	2.567	9.62
3.500	2.573	5.579	2.527	5.822	2.446	6.349	2.361	7.069
3.250	2.44	4.95	2.399	5.139	2.326	5.541	2.249	6.078
3.000	2.301	4.374	2.265	4.52	2.2	4.825	2.132	5.223
2.750	2.156	3.846	2.124	3.957	2.068	4.186	2.008	4.479
2.500	2.004	3.359	1.977	3.442	1.929	3.612	1.878	3.825
2.400	1.941	3.175	1.916	3.249	1.871	3.399	1.823	3.586
2.300	1.878	2.996	1.854	3.062	1.812	3.194	1.767	3.357
2.200	1.813	2.823	1.791	2.881	1.752	2.996	1.71	3.139
2.100	1.746	2.655	1.727	2.705	1.691	2.807	1.652	2.93
2.000	1.679	2.492	1.661	2.536	1.628	2.624	1.592	2.73
1.900	1.61	2.334	1.594	2.372	1.563	2.447	1.531	2.539
1.800	1.54	2.18	1.525	2.212	1.498	2.278	1.468	2.356
1.700	1.469	2.03	1.455	2.058	1.43	2.114	1.404	2.18
1.600	1.396	1.884	1.384	1.908	1.362	1.955	1.338	2.011
1.500	1.321	1.743	1.311	1.763	1.291	1.802	1.27	1.849
1.400	1.246	1.605	1.236	1.622	1.219	1.655	1.201	1.693
1.300	1.168	1.471	1.16	1.485	1.145	1.511	1.129	1.543
1.200	1.089	1.34	1.083	1.351	1.07	1.373	1.056	1.398
1.100	1.009	1.213	1.003	1.222	0.993	1.239	0.981	1.259
1.000	0.926	1.089	0.922	1.096	0.913	1.109	0.904	1.125
0.950	0.885	1.028	0.88	1.034	0.873	1.046	0.864	1.059
0.900	0.842	0.968	0.839	0.973	0.832	0.983	0.824	0.995
0.850	0.8	0.909	0.796	0.913	0.79	0.922	0.784	0.932
0.800	0.756	0.85	0.754	0.854	0.748	0.861	0.743	0.87
0.750	0.713	0.792	0.71	0.796	0.706	0.802	0.701	0.809
0.700	0.669	0.735	0.667	0.738	0.663	0.743	0.659	0.749
0.650	0.624	0.679	0.622	0.681	0.619	0.685	0.616	0.69
0.600	0.579	0.623	0.578	0.625	0.575	0.628	0.572	0.632
0.550	0.534	0.568	0.532	0.569	0.53	0.572	0.528	0.575
0.500	0.487	0.514	0.487	0.515	0.485	0.516	0.483	0.519
0.450	0.441	0.46	0.44	0.46	0.439	0.462	0.438	0.463
0.400	0.394	0.407	0.393	0.407	0.393	0.408	0.392	0.409
0.375	0.37	0.38	0.37	0.381	0.369	0.381	0.368	0.382
0.350	0.346	0.354	0.346	0.354	0.345	0.355	0.345	0.356



3.2	3.5	4	4.5	5
5.916	5.289	4.731	4.234	3.791

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
5.894	Infinity	5.268	Infinity	4.71	Infinity	4.213	Infinity	3.77	Infinity
5.174	Infinity	4.688	Infinity	4.244	Infinity	3.839	Infinity	3.47	Infinity
4.61	Infinity	4.223	Infinity	3.862	Infinity	3.526	Infinity	3.215	Infinity
4.126	Infinity	3.816	Infinity	3.521	Infinity	3.242	Infinity	2.979	Infinity
3.785	Infinity	3.524	Infinity	3.273	Infinity	3.032	Infinity	2.802	Infinity
3.474	Infinity	3.255	Infinity	3.041	Infinity	2.833	Infinity	2.633	Infinity
3.281	Infinity	3.086	Infinity	2.894	Infinity	2.706	Infinity	2.524	Infinity
3.055	Infinity	2.886	Infinity	2.719	Infinity	2.554	Infinity	2.392	Infinity
2.786	30.542	2.647	85.826	2.507	Infinity	2.367	Infinity	2.229	Infinity
2.632	17.783	2.508	28.323	2.383	85.796	2.257	Infinity	2.132	Infinity
2.462	11.683	2.354	15.416	2.244	24.127	2.133	66.871	2.022	Infinity
2.272	8.108	2.181	9.722	2.088	12.541	1.993	18.665	1.897	41.736
2.17	6.824	2.087	7.921	2.002	9.681	1.915	12.931	1.827	20.855
2.061	5.76	1.987	6.515	1.91	7.647	1.831	9.52	1.751	13.17
1.946	4.863	1.88	5.385	1.812	6.127	1.742	7.258	1.67	9.176
1.823	4.098	1.766	4.457	1.707	4.947	1.645	5.648	1.581	6.729
1.772	3.823	1.719	4.131	1.663	4.546	1.604	5.127	1.544	5.996
1.72	3.563	1.67	3.827	1.617	4.178	1.562	4.66	1.505	5.361
1.666	3.316	1.619	3.543	1.57	3.839	1.518	4.239	1.465	4.807
1.611	3.083	1.567	3.276	1.522	3.525	1.473	3.857	1.423	4.318
1.554	2.861	1.514	3.025	1.472	3.235	1.427	3.51	1.38	3.883
1.496	2.651	1.459	2.79	1.42	2.965	1.379	3.192	1.336	3.495
1.436	2.451	1.403	2.568	1.367	2.714	1.329	2.9	1.289	3.145
1.375	2.26	1.344	2.358	1.312	2.479	1.277	2.632	1.241	2.829
1.312	2.078	1.285	2.159	1.255	2.259	1.224	2.383	1.191	2.542
1.247	1.905	1.223	1.971	1.196	2.053	1.168	2.153	1.139	2.28
1.181	1.739	1.159	1.793	1.136	1.859	1.111	1.94	1.084	2.039
1.112	1.58	1.093	1.624	1.073	1.676	1.051	1.74	1.028	1.819
1.041	1.428	1.025	1.463	1.008	1.504	0.989	1.554	0.969	1.615
0.968	1.282	0.955	1.309	0.94	1.342	0.924	1.38	0.907	1.426
0.893	1.142	0.882	1.163	0.87	1.188	0.857	1.216	0.842	1.251
0.855	1.075	0.845	1.093	0.834	1.114	0.822	1.138	0.809	1.168
0.816	1.008	0.807	1.024	0.797	1.042	0.787	1.063	0.775	1.088
0.777	0.943	0.769	0.956	0.76	0.971	0.75	0.989	0.74	1.01
0.736	0.879	0.729	0.89	0.722	0.903	0.714	0.918	0.705	0.935
0.696	0.817	0.69	0.826	0.683	0.836	0.676	0.849	0.668	0.863
0.654	0.755	0.649	0.763	0.643	0.771	0.637	0.781	0.631	0.793
0.612	0.695	0.608	0.701	0.603	0.708	0.598	0.716	0.592	0.725
0.569	0.636	0.566	0.641	0.562	0.646	0.558	0.652	0.553	0.66
0.526	0.578	0.523	0.582	0.52	0.586	0.516	0.591	0.513	0.596
0.481	0.521	0.479	0.524	0.477	0.527	0.474	0.53	0.471	0.534
0.436	0.465	0.435	0.467	0.433	0.469	0.431	0.472	0.429	0.475
0.391	0.41	0.39	0.411	0.388	0.413	0.387	0.415	0.385	0.416
0.367	0.383	0.367	0.384	0.366	0.385	0.365	0.387	0.363	0.388
0.344	0.356	0.343	0.357	0.343	0.358	0.342	0.359	0.341	0.36



5.6	6.3	7.1	8	9
3.397	3.045	2.732	2.453	2.204

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
3.375	Infinity	3.024	Infinity	2.71	Infinity	2.431	Infinity	2.183	Infinity
3.136	Infinity	2.832	Infinity	2.557	Infinity	2.309	Infinity	2.085	Infinity
2.928	Infinity	2.663	Infinity	2.421	Infinity	2.199	Infinity	1.996	Infinity
2.732	Infinity	2.502	Infinity	2.289	Infinity	2.091	Infinity	1.908	Infinity
2.585	Infinity	2.379	Infinity	2.187	Infinity	2.006	Infinity	1.839	Infinity
2.442	Infinity	2.259	Infinity	2.086	Infinity	1.922	Infinity	1.769	Infinity
2.349	Infinity	2.18	Infinity	2.019	Infinity	1.866	Infinity	1.722	Infinity
2.235	Infinity	2.083	Infinity	1.937	Infinity	1.797	Infinity	1.664	Infinity
2.093	Infinity	1.961	Infinity	1.832	Infinity	1.707	Infinity	1.588	Infinity
2.009	Infinity	1.887	Infinity	1.768	Infinity	1.653	Infinity	1.541	Infinity
1.912	Infinity	1.802	Infinity	1.694	Infinity	1.589	Infinity	1.486	Infinity
1.8	Infinity	1.703	Infinity	1.608	Infinity	1.514	Infinity	1.421	Infinity
1.737	68.268	1.648	Infinity	1.559	Infinity	1.471	Infinity	1.384	Infinity
1.67	23.292	1.588	181.99	1.505	Infinity	1.424	Infinity	1.343	Infinity
1.596	13.098	1.522	25.433	1.447	Infinity	1.372	Infinity	1.297	Infinity
1.516	8.59	1.449	12.519	1.382	26.06	1.314	Infinity	1.247	Infinity
1.482	7.42	1.419	10.156	1.354	17.48	1.289	97.346	1.225	Infinity
1.446	6.463	1.386	8.428	1.325	12.874	1.264	32.198	1.202	Infinity
1.41	5.666	1.353	7.109	1.295	10	1.236	18.615	1.177	1017.791
1.372	4.993	1.318	6.069	1.264	8.037	1.208	12.734	1.152	38.133
1.332	4.415	1.282	5.228	1.231	6.61	1.178	9.451	1.125	18.528
1.291	3.915	1.244	4.534	1.196	5.526	1.147	7.357	1.097	11.818
1.248	3.478	1.204	3.951	1.16	4.675	1.114	5.904	1.067	8.428
1.203	3.092	1.163	3.456	1.122	3.988	1.079	4.837	1.036	6.384
1.156	2.749	1.12	3.028	1.082	3.424	1.043	4.02	1.003	5.016
1.107	2.442	1.074	2.656	1.04	2.95	1.004	3.375	0.968	4.037
1.056	2.166	1.027	2.33	0.996	2.548	0.964	2.853	0.93	3.302
1.003	1.916	0.977	2.04	0.949	2.202	0.921	2.421	0.891	2.729
0.947	1.689	0.924	1.782	0.9	1.901	0.875	2.058	0.848	2.27
0.889	1.482	0.869	1.551	0.848	1.638	0.826	1.748	0.803	1.894
0.827	1.292	0.811	1.342	0.793	1.404	0.775	1.482	0.755	1.581
0.795	1.203	0.78	1.245	0.764	1.297	0.747	1.362	0.73	1.443
0.763	1.117	0.749	1.153	0.735	1.196	0.719	1.249	0.703	1.316
0.729	1.035	0.717	1.065	0.704	1.1	0.69	1.144	0.676	1.198
0.695	0.956	0.684	0.98	0.673	1.01	0.661	1.045	0.647	1.089
0.659	0.88	0.65	0.9	0.64	0.924	0.629	0.952	0.618	0.987
0.623	0.807	0.615	0.823	0.607	0.842	0.597	0.864	0.587	0.891
0.586	0.736	0.579	0.749	0.572	0.764	0.564	0.781	0.556	0.802
0.548	0.668	0.542	0.678	0.536	0.689	0.53	0.703	0.522	0.719
0.508	0.602	0.504	0.61	0.499	0.618	0.494	0.629	0.488	0.64
0.468	0.539	0.465	0.544	0.461	0.551	0.457	0.558	0.452	0.566
0.427	0.478	0.424	0.482	0.421	0.486	0.418	0.491	0.414	0.497
0.384	0.419	0.382	0.421	0.38	0.424	0.378	0.427	0.375	0.431
0.362	0.39	0.36	0.392	0.359	0.394	0.357	0.397	0.355	0.399
0.34	0.361	0.339	0.363	0.337	0.365	0.336	0.367	0.334	0.369



10	11	13	14	16
1.983	1.785	1.609	1.453	1.313

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
1.961	Infinity	1.764	Infinity	1.588	Infinity	1.432	Infinity	1.292	Infinity
1.884	Infinity	1.702	Infinity	1.539	Infinity	1.392	Infinity	1.261	Infinity
1.812	Infinity	1.644	Infinity	1.493	Infinity	1.355	Infinity	1.231	Infinity
1.74	Infinity	1.587	Infinity	1.446	Infinity	1.318	Infinity	1.201	Infinity
1.683	Infinity	1.54	Infinity	1.408	Infinity	1.287	Infinity	1.176	Infinity
1.626	Infinity	1.492	Infinity	1.369	Infinity	1.255	Infinity	1.15	Infinity
1.587	Infinity	1.46	Infinity	1.342	Infinity	1.233	Infinity	1.132	Infinity
1.538	Infinity	1.419	Infinity	1.309	Infinity	1.205	Infinity	1.109	Infinity
1.474	Infinity	1.366	Infinity	1.264	Infinity	1.168	Infinity	1.078	Infinity
1.434	Infinity	1.332	Infinity	1.236	Infinity	1.145	Infinity	1.059	Infinity
1.388	Infinity	1.293	Infinity	1.202	Infinity	1.117	Infinity	1.035	Infinity
1.332	Infinity	1.245	Infinity	1.162	Infinity	1.082	Infinity	1.007	Infinity
1.3	Infinity	1.217	Infinity	1.138	Infinity	1.062	Infinity	0.99	Infinity
1.264	Infinity	1.187	Infinity	1.112	Infinity	1.04	Infinity	0.971	Infinity
1.224	Infinity	1.152	Infinity	1.082	Infinity	1.014	Infinity	0.949	Infinity
1.179	Infinity	1.113	Infinity	1.048	Infinity	0.985	Infinity	0.924	Infinity
1.16	Infinity	1.096	Infinity	1.034	Infinity	0.973	Infinity	0.914	Infinity
1.14	Infinity	1.078	Infinity	1.018	Infinity	0.959	Infinity	0.902	Infinity
1.118	Infinity	1.06	Infinity	1.002	Infinity	0.945	Infinity	0.89	Infinity
1.096	Infinity	1.04	Infinity	0.984	Infinity	0.93	Infinity	0.876	Infinity
1.072	Infinity	1.019	Infinity	0.966	Infinity	0.914	Infinity	0.862	Infinity
1.047	38.409	0.996	Infinity	0.946	Infinity	0.896	Infinity	0.847	Infinity
1.02	16.468	0.973	Infinity	0.925	Infinity	0.878	Infinity	0.831	Infinity
0.992	10.055	0.947	29.384	0.903	Infinity	0.858	Infinity	0.814	Infinity
0.962	6.994	0.92	12.738	0.879	218.861	0.837	Infinity	0.795	Infinity
0.93	5.202	0.892	7.762	0.853	17.815	0.814	Infinity	0.775	Infinity
0.896	4.025	0.861	5.369	0.825	8.699	0.79	30.312	0.754	Infinity
0.86	3.192	0.828	3.962	0.796	5.474	0.763	9.749	0.73	97.953
0.821	2.573	0.793	3.036	0.763	3.824	0.734	5.449	0.704	10.678
0.779	2.094	0.754	2.38	0.729	2.822	0.702	3.586	0.675	5.211
0.734	1.712	0.713	1.891	0.691	2.148	0.668	2.545	0.644	3.233
0.711	1.549	0.691	1.691	0.67	1.888	0.649	2.18	0.627	2.653
0.686	1.401	0.668	1.513	0.649	1.665	0.629	1.881	0.609	2.212
0.66	1.266	0.644	1.354	0.627	1.471	0.609	1.632	0.59	1.867
0.634	1.143	0.619	1.211	0.603	1.301	0.587	1.421	0.57	1.589
0.606	1.029	0.593	1.082	0.579	1.15	0.565	1.239	0.549	1.361
0.577	0.924	0.565	0.965	0.553	1.017	0.541	1.082	0.527	1.169
0.546	0.828	0.537	0.858	0.526	0.897	0.515	0.945	0.503	1.007
0.515	0.738	0.506	0.761	0.498	0.789	0.488	0.823	0.478	0.867
0.482	0.654	0.475	0.671	0.468	0.691	0.46	0.715	0.451	0.746
0.447	0.576	0.442	0.588	0.436	0.602	0.429	0.619	0.423	0.639
0.411	0.504	0.407	0.511	0.402	0.521	0.397	0.532	0.392	0.545
0.373	0.435	0.37	0.44	0.366	0.446	0.363	0.453	0.359	0.461
0.353	0.403	0.35	0.407	0.348	0.411	0.345	0.416	0.342	0.423
0.333	0.371	0.331	0.374	0.328	0.378	0.326	0.381	0.324	0.386



18	20	22
1.189	1.078	0.98

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
1.168	Infinity	1.057	Infinity	0.958	Infinity
1.143	Infinity	1.037	Infinity	0.943	Infinity
1.119	Infinity	1.018	Infinity	0.928	Infinity
1.095	Infinity	0.999	Infinity	0.912	Infinity
1.075	Infinity	0.983	Infinity	0.899	Infinity
1.054	Infinity	0.966	Infinity	0.885	Infinity
1.039	Infinity	0.954	Infinity	0.876	Infinity
1.02	Infinity	0.938	Infinity	0.863	Infinity
0.995	Infinity	0.918	Infinity	0.846	Infinity
0.979	Infinity	0.904	Infinity	0.835	Infinity
0.959	Infinity	0.888	Infinity	0.822	Infinity
0.935	Infinity	0.868	Infinity	0.805	Infinity
0.921	Infinity	0.856	Infinity	0.796	Infinity
0.905	Infinity	0.843	Infinity	0.784	Infinity
0.887	Infinity	0.828	Infinity	0.771	Infinity
0.866	Infinity	0.81	Infinity	0.757	Infinity
0.857	Infinity	0.802	Infinity	0.75	Infinity
0.847	Infinity	0.793	Infinity	0.743	Infinity
0.836	Infinity	0.785	Infinity	0.735	Infinity
0.825	Infinity	0.775	Infinity	0.727	Infinity
0.813	Infinity	0.765	Infinity	0.718	Infinity
0.8	Infinity	0.753	Infinity	0.709	Infinity
0.786	Infinity	0.741	Infinity	0.698	Infinity
0.771	Infinity	0.728	Infinity	0.687	Infinity
0.755	Infinity	0.714	Infinity	0.675	Infinity
0.737	Infinity	0.699	Infinity	0.662	Infinity
0.718	Infinity	0.682	Infinity	0.647	Infinity
0.697	Infinity	0.664	Infinity	0.631	Infinity
0.674	Infinity	0.643	Infinity	0.613	Infinity
0.648	10.949	0.621	Infinity	0.593	Infinity
0.62	4.702	0.596	9.935	0.571	Infinity
0.605	3.538	0.582	5.771	0.559	21.805
0.588	2.777	0.567	3.942	0.546	7.71
0.571	2.24	0.552	2.914	0.532	4.485
0.553	1.841	0.535	2.256	0.517	3.055
0.534	1.534	0.518	1.798	0.501	2.248
0.513	1.289	0.499	1.461	0.484	1.729
0.491	1.089	0.479	1.203	0.465	1.368
0.468	0.923	0.457	0.998	0.445	1.102
0.443	0.784	0.433	0.833	0.424	0.898
0.416	0.664	0.408	0.696	0.4	0.736
0.386	0.561	0.38	0.581	0.374	0.605
0.355	0.471	0.351	0.482	0.346	0.496
0.338	0.43	0.335	0.439	0.331	0.449
0.321	0.391	0.318	0.398	0.315	0.405



Focal Length 25 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	12.677	11.869	10.593	9.455

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	12.651	Infinity	11.843	Infinity	10.567	Infinity	9.43	Infinity
40.000	9.668	Infinity	9.193	Infinity	8.41	Infinity	7.679	Infinity
20.000	7.823	Infinity	7.511	Infinity	6.985	Infinity	6.476	Infinity
13.000	6.49	Infinity	6.275	Infinity	5.906	Infinity	5.541	Infinity
10.000	5.662	46.204	5.5	61.844	5.216	173.519	4.931	Infinity
8.000	4.975	21.156	4.85	23.902	4.63	31.731	4.406	50.275
7.000	4.578	15.251	4.472	16.619	4.285	20.037	4.094	26.076
6.000	4.138	11.115	4.052	11.819	3.899	13.436	3.741	15.883
5.000	3.647	8.056	3.581	8.416	3.462	9.195	3.338	10.266
4.500	3.379	6.808	3.323	7.061	3.221	7.597	3.114	8.308
4.000	3.096	5.703	3.049	5.878	2.964	6.241	2.874	6.708
3.500	2.794	4.718	2.756	4.836	2.687	5.076	2.614	5.377
3.250	2.636	4.265	2.602	4.361	2.541	4.554	2.476	4.792
3.000	2.473	3.836	2.443	3.912	2.39	4.065	2.333	4.253
2.750	2.304	3.428	2.279	3.488	2.233	3.608	2.183	3.753
2.500	2.13	3.04	2.108	3.086	2.069	3.179	2.027	3.29
2.400	2.058	2.89	2.039	2.932	2.002	3.015	1.963	3.114
2.300	1.986	2.743	1.968	2.78	1.934	2.854	1.897	2.942
2.200	1.913	2.599	1.896	2.632	1.865	2.698	1.831	2.776
2.100	1.838	2.457	1.823	2.487	1.794	2.545	1.763	2.614
2.000	1.763	2.318	1.749	2.344	1.723	2.396	1.694	2.456
1.900	1.686	2.182	1.674	2.205	1.65	2.25	1.624	2.302
1.800	1.609	2.048	1.597	2.068	1.576	2.107	1.553	2.153
1.700	1.53	1.917	1.52	1.934	1.501	1.968	1.48	2.007
1.600	1.45	1.788	1.441	1.803	1.424	1.832	1.406	1.865
1.500	1.37	1.662	1.361	1.674	1.346	1.699	1.33	1.727
1.400	1.287	1.537	1.28	1.548	1.267	1.568	1.253	1.592
1.300	1.204	1.415	1.198	1.424	1.187	1.441	1.174	1.46
1.200	1.12	1.295	1.114	1.302	1.105	1.316	1.094	1.332
1.100	1.034	1.177	1.029	1.183	1.022	1.194	1.013	1.207
1.000	0.947	1.061	0.943	1.065	0.937	1.074	0.93	1.084
0.950	0.903	1.004	0.9	1.008	0.894	1.015	0.887	1.024
0.900	0.858	0.947	0.856	0.95	0.85	0.957	0.845	0.965
0.850	0.814	0.891	0.811	0.894	0.807	0.899	0.802	0.906
0.800	0.768	0.835	0.766	0.837	0.763	0.842	0.758	0.848
0.750	0.723	0.78	0.721	0.782	0.718	0.786	0.714	0.79
0.700	0.677	0.725	0.676	0.726	0.673	0.73	0.67	0.734
0.650	0.631	0.67	0.63	0.672	0.628	0.675	0.625	0.678
0.600	0.585	0.616	0.584	0.617	0.582	0.62	0.58	0.622
0.550	0.538	0.563	0.537	0.564	0.536	0.565	0.534	0.567
0.500	0.491	0.51	0.49	0.51	0.489	0.512	0.488	0.513
0.450	0.443	0.457	0.443	0.458	0.442	0.458	0.441	0.46
0.400	0.395	0.405	0.395	0.405	0.394	0.406	0.394	0.407
0.375	0.371	0.379	0.371	0.379	0.371	0.38	0.37	0.38
0.350	0.347	0.353	0.347	0.353	0.346	0.354	0.346	0.354



3.2	3.5	4	4.5	5
8.442	7.54	6.735	6.019	5.381

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
8.417	Infinity	7.514	Infinity	6.71	Infinity	5.993	Infinity	5.355	Infinity
6.998	Infinity	6.367	Infinity	5.784	Infinity	5.248	Infinity	4.755	Infinity
5.989	Infinity	5.524	Infinity	5.083	Infinity	4.667	Infinity	4.276	Infinity
5.183	Infinity	4.834	Infinity	4.496	Infinity	4.169	Infinity	3.857	Infinity
4.648	Infinity	4.367	Infinity	4.091	Infinity	3.821	Infinity	3.558	Infinity
4.18	147.13	3.953	Infinity	3.727	Infinity	3.503	Infinity	3.283	Infinity
3.899	39.476	3.702	93.802	3.504	Infinity	3.306	Infinity	3.111	Infinity
3.579	19.983	3.413	28.181	3.245	52.434	3.076	1799.23	2.907	Infinity
3.21	11.816	3.077	14.239	2.941	18.519	2.803	28.024	2.664	66.614
3.003	9.286	2.888	10.708	2.769	12.941	2.647	16.921	2.523	25.922
2.779	7.326	2.681	8.174	2.579	9.401	2.474	11.318	2.366	14.7
2.536	5.762	2.455	6.268	2.37	6.956	2.282	7.939	2.191	9.445
2.407	5.093	2.334	5.481	2.258	5.996	2.178	6.707	2.096	7.742
2.272	4.486	2.207	4.781	2.139	5.165	2.068	5.679	1.994	6.397
2.13	3.932	2.074	4.155	2.015	4.438	1.952	4.808	1.887	5.307
1.982	3.424	1.934	3.59	1.883	3.797	1.829	4.061	1.772	4.407
1.921	3.233	1.876	3.38	1.828	3.561	1.777	3.791	1.724	4.089
1.858	3.048	1.816	3.177	1.772	3.336	1.724	3.536	1.674	3.792
1.795	2.869	1.756	2.982	1.714	3.121	1.67	3.294	1.623	3.513
1.73	2.696	1.694	2.795	1.655	2.915	1.614	3.064	1.571	3.252
1.664	2.528	1.631	2.614	1.595	2.718	1.557	2.846	1.517	3.006
1.596	2.365	1.566	2.439	1.534	2.529	1.499	2.638	1.462	2.774
1.527	2.207	1.5	2.271	1.47	2.347	1.439	2.44	1.405	2.555
1.457	2.053	1.432	2.108	1.406	2.173	1.377	2.252	1.347	2.347
1.385	1.905	1.363	1.951	1.339	2.006	1.314	2.072	1.286	2.151
1.312	1.76	1.292	1.799	1.271	1.845	1.249	1.9	1.224	1.965
1.237	1.62	1.22	1.652	1.202	1.69	1.182	1.735	1.16	1.789
1.161	1.483	1.146	1.51	1.13	1.541	1.113	1.577	1.094	1.621
1.083	1.35	1.07	1.372	1.057	1.397	1.042	1.426	1.025	1.461
1.003	1.221	0.993	1.238	0.981	1.258	0.969	1.281	0.955	1.308
0.922	1.096	0.913	1.109	0.904	1.124	0.893	1.142	0.882	1.162
0.88	1.034	0.873	1.046	0.864	1.059	0.855	1.074	0.845	1.092
0.839	0.973	0.832	0.983	0.824	0.995	0.816	1.008	0.807	1.023
0.796	0.913	0.79	0.922	0.784	0.932	0.776	0.943	0.768	0.956
0.753	0.854	0.748	0.861	0.742	0.87	0.736	0.879	0.729	0.89
0.71	0.796	0.706	0.802	0.701	0.809	0.695	0.817	0.689	0.826
0.666	0.738	0.663	0.743	0.658	0.749	0.654	0.756	0.649	0.763
0.622	0.681	0.619	0.685	0.615	0.69	0.612	0.695	0.607	0.702
0.577	0.625	0.575	0.628	0.572	0.632	0.569	0.636	0.565	0.641
0.532	0.57	0.53	0.572	0.528	0.575	0.525	0.578	0.522	0.582
0.486	0.515	0.485	0.517	0.483	0.519	0.481	0.521	0.479	0.524
0.44	0.461	0.439	0.462	0.437	0.464	0.436	0.465	0.434	0.467
0.393	0.407	0.392	0.408	0.391	0.409	0.39	0.411	0.389	0.412
0.369	0.381	0.369	0.382	0.368	0.383	0.367	0.383	0.366	0.385
0.346	0.355	0.345	0.355	0.344	0.356	0.344	0.357	0.343	0.357



5.6	6.3	7.1	8	9
4.812	4.306	3.854	3.452	3.094

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
4.787	Infinity	4.28	Infinity	3.829	Infinity	3.427	Infinity	3.068	Infinity
4.304	Infinity	3.893	Infinity	3.519	Infinity	3.179	Infinity	2.87	Infinity
3.911	Infinity	3.57	Infinity	3.255	Infinity	2.964	Infinity	2.696	Infinity
3.56	Infinity	3.278	Infinity	3.012	Infinity	2.763	Infinity	2.53	Infinity
3.305	Infinity	3.062	Infinity	2.831	Infinity	2.611	Infinity	2.404	Infinity
3.068	Infinity	2.859	Infinity	2.658	Infinity	2.464	Infinity	2.28	Infinity
2.918	Infinity	2.729	Infinity	2.546	Infinity	2.369	Infinity	2.199	Infinity
2.74	Infinity	2.574	Infinity	2.411	Infinity	2.253	Infinity	2.1	Infinity
2.524	Infinity	2.384	Infinity	2.245	Infinity	2.108	Infinity	1.975	Infinity
2.397	64.941	2.272	Infinity	2.146	Infinity	2.022	Infinity	1.9	Infinity
2.256	22.191	2.146	52.346	2.034	Infinity	1.923	Infinity	1.813	Infinity
2.098	12.021	2.003	17.379	1.906	35.058	1.81	Infinity	1.713	Infinity
2.011	9.377	1.924	12.317	1.835	19.089	1.746	50.581	1.656	Infinity
1.918	7.463	1.839	9.194	1.759	12.466	1.677	20.883	1.595	89.015
1.819	6.012	1.748	7.075	1.676	8.842	1.603	12.331	1.528	22.306
1.712	4.876	1.651	5.542	1.587	6.556	1.522	8.269	1.455	11.748
1.668	4.487	1.609	5.042	1.549	5.862	1.487	7.185	1.424	9.654
1.622	4.129	1.567	4.591	1.51	5.257	1.451	6.289	1.391	8.088
1.574	3.799	1.523	4.184	1.469	4.725	1.414	5.536	1.357	6.872
1.525	3.493	1.477	3.813	1.427	4.254	1.375	4.894	1.322	5.901
1.475	3.209	1.43	3.474	1.384	3.833	1.335	4.341	1.285	5.107
1.423	2.944	1.382	3.164	1.339	3.456	1.294	3.859	1.247	4.447
1.369	2.697	1.332	2.878	1.292	3.115	1.25	3.435	1.207	3.888
1.314	2.466	1.28	2.615	1.243	2.806	1.205	3.06	1.165	3.41
1.257	2.249	1.226	2.37	1.193	2.525	1.158	2.725	1.121	2.995
1.198	2.045	1.17	2.144	1.14	2.267	1.109	2.425	1.076	2.633
1.137	1.853	1.112	1.932	1.085	2.03	1.057	2.154	1.028	2.313
1.073	1.672	1.052	1.735	1.028	1.812	1.004	1.908	0.977	2.029
1.008	1.502	0.989	1.551	0.969	1.61	0.947	1.684	0.925	1.775
0.94	1.34	0.924	1.378	0.907	1.423	0.889	1.479	0.869	1.547
0.87	1.187	0.857	1.215	0.842	1.249	0.827	1.29	0.81	1.34
0.834	1.113	0.822	1.138	0.809	1.167	0.795	1.202	0.78	1.244
0.797	1.041	0.786	1.062	0.775	1.087	0.762	1.117	0.749	1.152
0.76	0.971	0.75	0.989	0.74	1.01	0.729	1.035	0.717	1.064
0.721	0.903	0.713	0.918	0.704	0.936	0.694	0.956	0.683	0.981
0.683	0.837	0.675	0.849	0.667	0.864	0.659	0.88	0.649	0.9
0.643	0.772	0.637	0.782	0.63	0.794	0.623	0.807	0.614	0.823
0.602	0.709	0.597	0.717	0.592	0.726	0.585	0.737	0.578	0.75
0.561	0.647	0.557	0.653	0.552	0.66	0.547	0.669	0.541	0.679
0.519	0.586	0.516	0.591	0.512	0.597	0.508	0.603	0.503	0.611
0.476	0.527	0.474	0.531	0.471	0.535	0.467	0.54	0.464	0.546
0.433	0.47	0.43	0.472	0.428	0.475	0.426	0.479	0.423	0.483
0.388	0.413	0.386	0.415	0.385	0.417	0.383	0.419	0.381	0.422
0.365	0.386	0.364	0.387	0.363	0.389	0.361	0.391	0.36	0.393
0.342	0.358	0.341	0.359	0.34	0.361	0.339	0.362	0.338	0.364



10	11	13	14	16
2.775	2.491	2.237	2.012	1.811

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
2.749	Infinity	2.465	Infinity	2.212	Infinity	1.986	Infinity	1.785	Infinity
2.591	Infinity	2.339	Infinity	2.111	Infinity	1.906	Infinity	1.721	Infinity
2.45	Infinity	2.224	Infinity	2.019	Infinity	1.832	Infinity	1.661	Infinity
2.314	Infinity	2.113	Infinity	1.928	Infinity	1.758	Infinity	1.602	Infinity
2.209	Infinity	2.026	Infinity	1.857	Infinity	1.699	Infinity	1.554	Infinity
2.105	Infinity	1.94	Infinity	1.785	Infinity	1.64	Infinity	1.505	Infinity
2.037	Infinity	1.883	Infinity	1.737	Infinity	1.6	Infinity	1.472	Infinity
1.952	Infinity	1.811	Infinity	1.677	Infinity	1.55	Infinity	1.43	Infinity
1.845	Infinity	1.72	Infinity	1.599	Infinity	1.484	Infinity	1.375	Infinity
1.78	Infinity	1.664	Infinity	1.551	Infinity	1.444	Infinity	1.341	Infinity
1.705	Infinity	1.599	Infinity	1.496	Infinity	1.396	Infinity	1.3	Infinity
1.617	Infinity	1.522	Infinity	1.429	Infinity	1.339	Infinity	1.251	Infinity
1.567	Infinity	1.478	Infinity	1.391	Infinity	1.306	Infinity	1.223	Infinity
1.513	Infinity	1.43	Infinity	1.349	Infinity	1.27	Infinity	1.192	Infinity
1.453	272.987	1.378	Infinity	1.303	Infinity	1.229	Infinity	1.157	Infinity
1.387	22.483	1.319	Infinity	1.251	Infinity	1.184	Infinity	1.117	Infinity
1.359	15.829	1.294	57.976	1.229	Infinity	1.164	Infinity	1.1	Infinity
1.33	11.977	1.268	26.414	1.206	Infinity	1.143	Infinity	1.082	Infinity
1.299	9.466	1.24	16.574	1.181	114.185	1.122	Infinity	1.063	Infinity
1.267	7.698	1.212	11.773	1.155	29.618	1.099	Infinity	1.042	Infinity
1.234	6.387	1.181	8.929	1.128	16.326	1.075	293.924	1.021	Infinity
1.199	5.376	1.15	7.049	1.1	10.915	1.049	29.136	0.998	Infinity
1.162	4.572	1.116	5.713	1.07	7.979	1.022	14.567	0.974	256.47
1.124	3.917	1.081	4.714	1.038	6.136	0.994	9.347	0.949	23.246
1.084	3.374	1.045	3.941	1.004	4.871	0.963	6.664	0.922	11.497
1.041	2.916	1.006	3.323	0.969	3.949	0.931	5.029	0.893	7.313
0.997	2.525	0.965	2.818	0.931	3.248	0.897	3.929	0.861	5.167
0.95	2.187	0.921	2.399	0.891	2.696	0.86	3.138	0.828	3.862
0.9	1.892	0.875	2.044	0.849	2.25	0.821	2.542	0.792	2.984
0.848	1.632	0.826	1.74	0.803	1.883	0.779	2.077	0.754	2.353
0.793	1.401	0.774	1.478	0.754	1.575	0.734	1.704	0.712	1.878
0.764	1.295	0.747	1.359	0.729	1.439	0.71	1.543	0.69	1.682
0.734	1.195	0.719	1.248	0.702	1.314	0.685	1.398	0.667	1.507
0.704	1.1	0.69	1.143	0.675	1.197	0.659	1.264	0.643	1.351
0.672	1.01	0.66	1.045	0.647	1.088	0.633	1.142	0.618	1.21
0.639	0.924	0.629	0.952	0.617	0.987	0.605	1.029	0.591	1.082
0.606	0.842	0.596	0.865	0.586	0.892	0.575	0.925	0.564	0.966
0.571	0.765	0.563	0.782	0.554	0.804	0.545	0.829	0.535	0.86
0.535	0.69	0.529	0.704	0.521	0.72	0.513	0.739	0.505	0.763
0.498	0.62	0.493	0.63	0.487	0.642	0.48	0.656	0.473	0.673
0.46	0.552	0.455	0.559	0.451	0.568	0.446	0.578	0.44	0.59
0.42	0.487	0.417	0.492	0.413	0.498	0.409	0.505	0.405	0.513
0.379	0.425	0.377	0.428	0.374	0.432	0.371	0.437	0.368	0.442
0.358	0.395	0.356	0.398	0.354	0.401	0.352	0.404	0.349	0.408
0.337	0.365	0.335	0.367	0.333	0.37	0.332	0.373	0.329	0.376



18	20	22
1.632	1.472	1.33

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
1.606	Infinity	1.446	Infinity	1.304	Infinity
1.555	Infinity	1.406	Infinity	1.272	Infinity
1.507	Infinity	1.368	Infinity	1.241	Infinity
1.459	Infinity	1.329	Infinity	1.21	Infinity
1.42	Infinity	1.297	Infinity	1.184	Infinity
1.38	Infinity	1.264	Infinity	1.158	Infinity
1.352	Infinity	1.242	Infinity	1.139	Infinity
1.318	Infinity	1.213	Infinity	1.116	Infinity
1.272	Infinity	1.175	Infinity	1.084	Infinity
1.243	Infinity	1.151	Infinity	1.064	Infinity
1.209	Infinity	1.122	Infinity	1.04	Infinity
1.167	Infinity	1.087	Infinity	1.011	Infinity
1.143	Infinity	1.067	Infinity	0.994	Infinity
1.116	Infinity	1.044	Infinity	0.974	Infinity
1.086	Infinity	1.018	Infinity	0.952	Infinity
1.052	Infinity	0.988	Infinity	0.927	Infinity
1.037	Infinity	0.975	Infinity	0.916	Infinity
1.021	Infinity	0.962	Infinity	0.904	Infinity
1.004	Infinity	0.947	Infinity	0.891	Infinity
0.987	Infinity	0.932	Infinity	0.878	Infinity
0.968	Infinity	0.915	Infinity	0.864	Infinity
0.948	Infinity	0.898	Infinity	0.848	Infinity
0.927	Infinity	0.879	Infinity	0.832	Infinity
0.904	Infinity	0.859	Infinity	0.815	Infinity
0.88	67.757	0.838	Infinity	0.796	Infinity
0.854	15.231	0.814	Infinity	0.775	Infinity
0.826	8.082	0.79	22.901	0.753	Infinity
0.796	5.246	0.763	8.908	0.729	45.21
0.763	3.725	0.733	5.206	0.703	9.593
0.728	2.776	0.701	3.495	0.674	4.976
0.69	2.127	0.666	2.508	0.643	3.159
0.669	1.874	0.648	2.157	0.626	2.609
0.648	1.656	0.628	1.867	0.608	2.187
0.626	1.466	0.607	1.624	0.589	1.853
0.602	1.298	0.586	1.417	0.569	1.582
0.578	1.15	0.563	1.238	0.548	1.358
0.552	1.017	0.539	1.083	0.525	1.169
0.525	0.898	0.513	0.946	0.502	1.008
0.496	0.791	0.486	0.826	0.476	0.87
0.466	0.693	0.458	0.718	0.45	0.749
0.434	0.604	0.428	0.621	0.421	0.642
0.401	0.523	0.396	0.534	0.39	0.548
0.365	0.448	0.361	0.455	0.357	0.464
0.346	0.413	0.343	0.418	0.34	0.425
0.327	0.379	0.325	0.383	0.322	0.388



Focal Length 29 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	16.706	15.638	13.95	12.446

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	16.676	Infinity	15.608	Infinity	13.92	Infinity	12.417	Infinity
40.000	11.833	Infinity	11.289	Infinity	10.385	Infinity	9.53	Infinity
20.000	9.169	Infinity	8.842	Infinity	8.281	Infinity	7.733	Infinity
13.000	7.38	57.544	7.168	75.572	6.798	186.736	6.427	Infinity
10.000	6.323	24.462	6.167	27.201	5.894	34.551	5.614	49.643
8.000	5.473	15.074	5.357	16.063	5.151	18.351	4.938	21.851
7.000	4.994	11.831	4.898	12.429	4.725	13.747	4.547	15.61
6.000	4.471	9.194	4.395	9.548	4.257	10.301	4.112	11.305
5.000	3.9	7.008	3.843	7.209	3.738	7.626	3.627	8.156
4.500	3.594	6.049	3.545	6.197	3.457	6.5	3.362	6.879
4.000	3.273	5.165	3.233	5.272	3.16	5.488	3.081	5.753
3.500	2.936	4.349	2.904	4.423	2.845	4.572	2.782	4.753
3.250	2.761	3.963	2.733	4.025	2.681	4.147	2.625	4.293
3.000	2.581	3.592	2.557	3.642	2.512	3.741	2.463	3.859
2.750	2.397	3.234	2.376	3.274	2.338	3.353	2.296	3.446
2.500	2.208	2.888	2.19	2.92	2.158	2.981	2.123	3.054
2.400	2.131	2.753	2.115	2.782	2.085	2.837	2.052	2.903
2.300	2.053	2.62	2.038	2.646	2.01	2.696	1.98	2.755
2.200	1.974	2.489	1.96	2.512	1.935	2.557	1.907	2.609
2.100	1.895	2.36	1.882	2.38	1.859	2.42	1.833	2.467
2.000	1.814	2.232	1.803	2.25	1.781	2.286	1.758	2.327
1.900	1.733	2.106	1.722	2.122	1.703	2.153	1.682	2.19
1.800	1.651	1.982	1.641	1.996	1.624	2.023	1.605	2.055
1.700	1.567	1.86	1.559	1.872	1.544	1.896	1.527	1.923
1.600	1.483	1.739	1.476	1.749	1.462	1.77	1.447	1.793
1.500	1.398	1.619	1.392	1.628	1.38	1.646	1.367	1.666
1.400	1.312	1.502	1.307	1.509	1.296	1.524	1.285	1.541
1.300	1.225	1.386	1.221	1.392	1.212	1.404	1.202	1.418
1.200	1.138	1.271	1.133	1.276	1.126	1.286	1.118	1.298
1.100	1.049	1.158	1.045	1.162	1.039	1.17	1.032	1.179
1.000	0.959	1.046	0.956	1.049	0.951	1.055	0.945	1.063
0.950	0.913	0.99	0.911	0.993	0.906	0.999	0.901	1.005
0.900	0.868	0.935	0.866	0.938	0.861	0.943	0.857	0.948
0.850	0.822	0.881	0.82	0.883	0.816	0.887	0.812	0.892
0.800	0.776	0.826	0.774	0.828	0.771	0.832	0.768	0.836
0.750	0.729	0.772	0.728	0.774	0.725	0.777	0.722	0.781
0.700	0.682	0.719	0.681	0.72	0.679	0.723	0.677	0.726
0.650	0.635	0.665	0.634	0.667	0.633	0.669	0.631	0.671
0.600	0.588	0.612	0.587	0.613	0.586	0.615	0.584	0.617
0.550	0.541	0.56	0.54	0.56	0.539	0.562	0.538	0.563
0.500	0.493	0.507	0.492	0.508	0.491	0.509	0.49	0.51
0.450	0.445	0.455	0.444	0.456	0.444	0.457	0.443	0.457
0.400	0.396	0.404	0.396	0.404	0.396	0.405	0.395	0.405
0.375	0.372	0.378	0.372	0.378	0.371	0.379	0.371	0.379
0.350	0.348	0.352	0.348	0.353	0.347	0.353	0.347	0.353



3.2	3.5	4	4.5	5
11.107	9.913	8.85	7.902	7.059

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
11.077	Infinity	9.884	Infinity	8.82	Infinity	7.873	Infinity	7.029	Infinity
8.726	Infinity	7.974	Infinity	7.272	Infinity	6.62	Infinity	6.017	Infinity
7.199	Infinity	6.682	Infinity	6.185	Infinity	5.711	Infinity	5.259	Infinity
6.057	Infinity	5.689	Infinity	5.328	Infinity	4.975	Infinity	4.631	Infinity
5.331	97.634	5.047	Infinity	4.762	Infinity	4.48	Infinity	4.201	Infinity
4.719	27.825	4.497	40.193	4.271	80.476	4.044	Infinity	3.817	Infinity
4.362	18.419	4.172	23.097	3.978	32.35	3.781	58.96	3.583	808.492
3.961	12.697	3.805	14.739	3.644	18	3.48	23.975	3.313	38.307
3.51	8.848	3.388	9.783	3.261	11.105	3.13	13.097	2.996	16.417
3.262	7.361	3.157	7.992	3.048	8.846	2.934	10.056	2.816	11.888
2.998	6.083	2.91	6.504	2.817	7.053	2.72	7.794	2.619	8.841
2.715	4.973	2.643	5.248	2.567	5.595	2.487	6.046	2.404	6.65
2.566	4.471	2.502	4.69	2.434	4.964	2.363	5.313	2.288	5.77
2.411	4	2.355	4.173	2.296	4.386	2.233	4.654	2.166	4.998
2.251	3.558	2.203	3.692	2.151	3.856	2.096	4.06	2.038	4.316
2.085	3.14	2.044	3.244	2	3.368	1.953	3.52	1.902	3.709
2.016	2.98	1.978	3.072	1.937	3.183	1.893	3.318	1.846	3.485
1.947	2.824	1.912	2.906	1.874	3.004	1.833	3.123	1.789	3.269
1.877	2.671	1.844	2.744	1.809	2.831	1.771	2.935	1.73	3.063
1.805	2.521	1.775	2.586	1.743	2.662	1.708	2.754	1.67	2.865
1.733	2.375	1.705	2.431	1.675	2.498	1.643	2.578	1.609	2.675
1.659	2.232	1.634	2.281	1.607	2.34	1.577	2.409	1.546	2.492
1.584	2.092	1.561	2.135	1.537	2.185	1.51	2.245	1.482	2.316
1.508	1.955	1.488	1.992	1.466	2.035	1.442	2.086	1.416	2.147
1.431	1.82	1.413	1.852	1.393	1.889	1.371	1.933	1.348	1.984
1.352	1.689	1.336	1.716	1.319	1.747	1.3	1.784	1.279	1.827
1.272	1.56	1.258	1.583	1.243	1.609	1.226	1.639	1.208	1.675
1.191	1.434	1.179	1.453	1.166	1.474	1.151	1.5	1.136	1.529
1.108	1.311	1.098	1.326	1.087	1.343	1.075	1.364	1.061	1.387
1.024	1.19	1.016	1.202	1.007	1.216	0.996	1.232	0.985	1.251
0.939	1.071	0.932	1.081	0.924	1.092	0.916	1.104	0.907	1.119
0.896	1.013	0.89	1.021	0.883	1.031	0.875	1.042	0.867	1.054
0.852	0.955	0.847	0.962	0.841	0.97	0.834	0.98	0.827	0.991
0.808	0.897	0.803	0.904	0.798	0.911	0.792	0.919	0.786	0.928
0.764	0.841	0.76	0.846	0.755	0.852	0.75	0.859	0.744	0.867
0.719	0.784	0.715	0.789	0.711	0.794	0.707	0.8	0.702	0.807
0.674	0.729	0.671	0.733	0.667	0.737	0.664	0.742	0.66	0.747
0.628	0.674	0.626	0.677	0.623	0.68	0.62	0.684	0.616	0.689
0.582	0.619	0.58	0.622	0.578	0.624	0.575	0.627	0.573	0.631
0.536	0.565	0.534	0.567	0.533	0.569	0.531	0.571	0.528	0.574
0.489	0.511	0.488	0.513	0.487	0.514	0.485	0.516	0.483	0.518
0.442	0.458	0.441	0.459	0.44	0.461	0.439	0.462	0.438	0.463
0.395	0.406	0.394	0.406	0.393	0.407	0.392	0.408	0.391	0.409
0.371	0.38	0.37	0.38	0.369	0.381	0.369	0.382	0.368	0.382
0.347	0.354	0.346	0.354	0.346	0.355	0.345	0.355	0.344	0.356



5.6	6.3	7.1	8	9
6.307	5.637	5.04	4.508	4.035

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
6.277	Infinity	5.607	Infinity	5.011	Infinity	4.479	Infinity	4.005	Infinity
5.461	Infinity	4.95	Infinity	4.483	Infinity	4.055	Infinity	3.666	Infinity
4.833	Infinity	4.431	Infinity	4.055	Infinity	3.705	Infinity	3.379	Infinity
4.3	Infinity	3.981	Infinity	3.677	Infinity	3.389	Infinity	3.116	Infinity
3.928	Infinity	3.663	Infinity	3.406	Infinity	3.158	Infinity	2.922	Infinity
3.592	Infinity	3.37	Infinity	3.153	Infinity	2.941	Infinity	2.736	Infinity
3.385	Infinity	3.189	Infinity	2.994	Infinity	2.804	Infinity	2.618	Infinity
3.144	117.527	2.975	Infinity	2.806	Infinity	2.639	Infinity	2.475	Infinity
2.858	22.986	2.719	41.907	2.579	592.451	2.438	Infinity	2.299	Infinity
2.695	14.963	2.572	21.129	2.447	39.506	2.321	2269.825	2.195	Infinity
2.515	10.419	2.409	13.046	2.299	18.236	2.189	33.125	2.077	430.809
2.317	7.493	2.227	8.745	2.134	10.778	2.04	14.615	1.944	24.461
2.21	6.39	2.128	7.271	2.044	8.611	1.957	10.876	1.869	15.479
2.096	5.453	2.023	6.076	1.948	6.975	1.87	8.377	1.79	10.838
1.976	4.647	1.912	5.088	1.845	5.697	1.775	6.588	1.704	8.003
1.849	3.948	1.794	4.257	1.735	4.67	1.674	5.245	1.611	6.092
1.797	3.693	1.744	3.961	1.689	4.314	1.632	4.796	1.572	5.491
1.742	3.451	1.693	3.682	1.642	3.984	1.588	4.389	1.531	4.959
1.687	3.221	1.641	3.42	1.593	3.677	1.542	4.017	1.489	4.486
1.63	3.002	1.588	3.173	1.543	3.39	1.495	3.675	1.446	4.061
1.572	2.793	1.532	2.939	1.491	3.123	1.447	3.361	1.401	3.678
1.512	2.593	1.476	2.717	1.438	2.873	1.397	3.071	1.355	3.331
1.451	2.402	1.418	2.508	1.383	2.638	1.346	2.802	1.306	3.015
1.388	2.22	1.358	2.309	1.326	2.417	1.292	2.553	1.256	2.726
1.323	2.045	1.296	2.119	1.268	2.209	1.237	2.321	1.205	2.461
1.257	1.878	1.233	1.939	1.207	2.013	1.18	2.104	1.151	2.217
1.189	1.717	1.168	1.767	1.145	1.828	1.121	1.901	1.095	1.991
1.119	1.563	1.101	1.604	1.081	1.652	1.059	1.711	1.037	1.782
1.047	1.415	1.031	1.447	1.014	1.486	0.996	1.532	0.976	1.587
0.973	1.273	0.96	1.298	0.945	1.328	0.93	1.364	0.913	1.406
0.897	1.135	0.886	1.155	0.874	1.178	0.861	1.205	0.847	1.237
0.858	1.069	0.848	1.086	0.838	1.106	0.826	1.129	0.813	1.156
0.819	1.003	0.81	1.018	0.8	1.035	0.79	1.055	0.778	1.078
0.779	0.939	0.771	0.952	0.762	0.966	0.753	0.983	0.743	1.003
0.738	0.876	0.731	0.887	0.724	0.899	0.716	0.913	0.707	0.93
0.697	0.814	0.691	0.823	0.685	0.833	0.677	0.845	0.67	0.859
0.655	0.753	0.65	0.761	0.645	0.769	0.638	0.779	0.632	0.79
0.613	0.694	0.608	0.7	0.604	0.706	0.599	0.714	0.593	0.723
0.57	0.635	0.566	0.64	0.562	0.645	0.558	0.651	0.553	0.658
0.526	0.577	0.523	0.581	0.52	0.585	0.517	0.59	0.513	0.595
0.481	0.521	0.479	0.524	0.477	0.527	0.474	0.53	0.471	0.534
0.436	0.465	0.435	0.467	0.433	0.469	0.431	0.472	0.429	0.475
0.39	0.41	0.389	0.412	0.388	0.413	0.387	0.415	0.385	0.417
0.367	0.383	0.366	0.384	0.365	0.386	0.364	0.387	0.363	0.389
0.344	0.357	0.343	0.357	0.342	0.358	0.341	0.359	0.34	0.361



10	11	13	14	16
3.613	3.237	2.902	2.603	2.338

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
3.583	Infinity	3.207	Infinity	2.872	Infinity	2.574	Infinity	2.308	Infinity
3.311	Infinity	2.99	Infinity	2.699	Infinity	2.435	Infinity	2.198	Infinity
3.078	Infinity	2.8	Infinity	2.545	Infinity	2.311	Infinity	2.097	Infinity
2.86	Infinity	2.62	Infinity	2.397	Infinity	2.19	Infinity	1.998	Infinity
2.697	Infinity	2.484	Infinity	2.284	Infinity	2.096	Infinity	1.921	Infinity
2.54	Infinity	2.351	Infinity	2.172	Infinity	2.003	Infinity	1.844	Infinity
2.438	Infinity	2.265	Infinity	2.099	Infinity	1.941	Infinity	1.792	Infinity
2.315	Infinity	2.159	Infinity	2.009	Infinity	1.865	Infinity	1.727	Infinity
2.161	Infinity	2.026	Infinity	1.895	Infinity	1.767	Infinity	1.645	Infinity
2.07	Infinity	1.947	Infinity	1.826	Infinity	1.708	Infinity	1.593	Infinity
1.966	Infinity	1.855	Infinity	1.746	Infinity	1.639	Infinity	1.534	Infinity
1.847	102.939	1.75	Infinity	1.653	Infinity	1.557	Infinity	1.464	Infinity
1.78	29.707	1.69	Infinity	1.601	Infinity	1.511	Infinity	1.423	Infinity
1.708	16.236	1.626	37.252	1.543	Infinity	1.461	Infinity	1.379	Infinity
1.631	10.572	1.556	16.614	1.481	47.194	1.406	Infinity	1.33	Infinity
1.546	7.454	1.48	9.981	1.412	16.217	1.344	55.778	1.276	Infinity
1.51	6.566	1.447	8.438	1.383	12.468	1.318	27.233	1.253	Infinity
1.473	5.814	1.413	7.224	1.352	9.965	1.291	17.501	1.228	124.891
1.435	5.168	1.378	6.245	1.321	8.175	1.262	12.594	1.202	32.669
1.395	4.608	1.342	5.437	1.287	6.831	1.232	9.635	1.176	18.065
1.353	4.117	1.304	4.761	1.253	5.786	1.2	7.658	1.147	12.112
1.31	3.684	1.264	4.185	1.216	4.949	1.167	6.242	1.118	8.88
1.265	3.298	1.223	3.69	1.178	4.264	1.133	5.179	1.086	6.85
1.219	2.952	1.18	3.259	1.139	3.693	1.097	4.352	1.053	5.457
1.17	2.641	1.135	2.881	1.097	3.21	1.058	3.689	1.018	4.441
1.12	2.36	1.087	2.546	1.053	2.796	1.018	3.146	0.982	3.669
1.067	2.104	1.038	2.248	1.008	2.437	0.976	2.694	0.943	3.06
1.012	1.87	0.987	1.98	0.959	2.122	0.931	2.311	0.901	2.57
0.955	1.655	0.932	1.739	0.909	1.845	0.884	1.982	0.857	2.165
0.895	1.457	0.876	1.52	0.855	1.598	0.833	1.697	0.811	1.826
0.832	1.275	0.816	1.321	0.799	1.378	0.78	1.448	0.761	1.537
0.8	1.189	0.785	1.228	0.769	1.276	0.752	1.335	0.735	1.409
0.766	1.106	0.753	1.139	0.739	1.179	0.724	1.228	0.707	1.289
0.732	1.026	0.72	1.054	0.708	1.087	0.694	1.128	0.679	1.177
0.697	0.949	0.687	0.972	0.675	1	0.663	1.033	0.65	1.073
0.661	0.875	0.652	0.894	0.642	0.916	0.632	0.943	0.62	0.975
0.625	0.803	0.617	0.818	0.608	0.836	0.599	0.858	0.589	0.883
0.587	0.734	0.58	0.746	0.573	0.76	0.565	0.777	0.557	0.797
0.548	0.666	0.543	0.676	0.537	0.687	0.53	0.7	0.523	0.715
0.509	0.602	0.504	0.609	0.499	0.617	0.494	0.627	0.488	0.638
0.468	0.539	0.465	0.544	0.461	0.55	0.456	0.557	0.452	0.566
0.426	0.478	0.424	0.482	0.421	0.486	0.417	0.491	0.414	0.497
0.383	0.419	0.381	0.422	0.379	0.424	0.377	0.428	0.375	0.432
0.361	0.39	0.36	0.392	0.358	0.395	0.356	0.397	0.354	0.4
0.339	0.362	0.338	0.363	0.337	0.365	0.335	0.367	0.333	0.37



18	20	22
2.101	1.89	1.702

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
2.071	Infinity	1.86	Infinity	1.672	Infinity
1.983	Infinity	1.79	Infinity	1.617	Infinity
1.902	Infinity	1.725	Infinity	1.564	Infinity
1.822	Infinity	1.66	Infinity	1.512	Infinity
1.758	Infinity	1.608	Infinity	1.469	Infinity
1.694	Infinity	1.555	Infinity	1.426	Infinity
1.651	Infinity	1.519	Infinity	1.396	Infinity
1.597	Infinity	1.474	Infinity	1.359	Infinity
1.527	Infinity	1.415	Infinity	1.31	Infinity
1.484	Infinity	1.379	Infinity	1.279	Infinity
1.433	Infinity	1.335	Infinity	1.242	Infinity
1.372	Infinity	1.283	Infinity	1.198	Infinity
1.337	Infinity	1.253	Infinity	1.172	Infinity
1.299	Infinity	1.22	Infinity	1.143	Infinity
1.256	Infinity	1.183	Infinity	1.111	Infinity
1.208	Infinity	1.141	Infinity	1.075	Infinity
1.187	Infinity	1.123	Infinity	1.059	Infinity
1.166	Infinity	1.104	Infinity	1.042	Infinity
1.143	Infinity	1.084	Infinity	1.025	Infinity
1.119	4740.062	1.062	Infinity	1.006	Infinity
1.094	35.871	1.04	Infinity	0.986	Infinity
1.067	17.112	1.016	Infinity	0.965	Infinity
1.039	10.826	0.991	32.031	0.943	Infinity
1.009	7.677	0.964	14.321	0.919	1303.181
0.977	5.785	0.936	8.832	0.894	22.181
0.944	4.523	0.906	6.16	0.867	10.499
0.908	3.622	0.873	4.578	0.838	6.558
0.87	2.945	0.839	3.533	0.806	4.578
0.83	2.419	0.802	2.791	0.773	3.387
0.787	1.997	0.762	2.237	0.736	2.592
0.74	1.653	0.719	1.808	0.697	2.024
0.716	1.503	0.696	1.627	0.675	1.796
0.69	1.366	0.672	1.465	0.654	1.597
0.664	1.239	0.648	1.318	0.631	1.421
0.637	1.122	0.622	1.185	0.607	1.265
0.608	1.014	0.595	1.063	0.581	1.125
0.578	0.914	0.567	0.952	0.555	0.999
0.548	0.821	0.538	0.85	0.527	0.885
0.515	0.733	0.507	0.755	0.498	0.782
0.482	0.652	0.475	0.668	0.468	0.687
0.447	0.575	0.441	0.587	0.435	0.6
0.41	0.504	0.406	0.511	0.401	0.521
0.372	0.436	0.369	0.441	0.365	0.447
0.352	0.404	0.349	0.408	0.347	0.412
0.332	0.372	0.33	0.375	0.327	0.379



Focal Length 35 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	23.714	22.194	19.79	17.649

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	23.678	Infinity	22.158	Infinity	19.754	Infinity	17.613	Infinity
40.000	14.941	Infinity	14.326	Infinity	13.288	Infinity	12.29	Infinity
20.000	10.914	126.146	10.584	199.716	10.011	Infinity	9.437	Infinity
13.000	8.459	28.425	8.261	30.976	7.91	37.339	7.55	48.551
10.000	7.091	17.082	6.952	17.966	6.704	19.921	6.445	22.699
8.000	6.034	11.927	5.934	12.348	5.753	13.234	5.563	14.396
7.000	5.454	9.812	5.372	10.093	5.224	10.674	5.068	11.413
6.000	4.833	7.936	4.77	8.117	4.654	8.486	4.53	8.943
5.000	4.17	6.26	4.123	6.371	4.036	6.594	3.944	6.864
4.500	3.82	5.487	3.781	5.572	3.708	5.741	3.631	5.943
4.000	3.457	4.754	3.425	4.817	3.367	4.941	3.303	5.089
3.500	3.081	4.057	3.056	4.102	3.01	4.191	2.959	4.296
3.250	2.888	3.721	2.866	3.759	2.825	3.833	2.781	3.92
3.000	2.691	3.394	2.672	3.425	2.637	3.486	2.599	3.557
2.750	2.49	3.074	2.474	3.099	2.444	3.148	2.412	3.206
2.500	2.286	2.762	2.272	2.782	2.247	2.821	2.22	2.866
2.400	2.203	2.639	2.19	2.657	2.167	2.693	2.142	2.734
2.300	2.119	2.517	2.108	2.534	2.087	2.566	2.063	2.603
2.200	2.035	2.396	2.024	2.411	2.005	2.44	1.984	2.473
2.100	1.95	2.277	1.94	2.29	1.923	2.316	1.903	2.346
2.000	1.864	2.159	1.856	2.17	1.84	2.194	1.822	2.22
1.900	1.778	2.041	1.77	2.052	1.756	2.072	1.74	2.096
1.800	1.691	1.925	1.684	1.934	1.671	1.952	1.657	1.973
1.700	1.604	1.81	1.597	1.818	1.586	1.834	1.573	1.852
1.600	1.515	1.696	1.51	1.703	1.499	1.716	1.488	1.732
1.500	1.426	1.583	1.421	1.589	1.412	1.6	1.402	1.614
1.400	1.336	1.471	1.332	1.476	1.324	1.486	1.316	1.497
1.300	1.246	1.36	1.242	1.364	1.236	1.372	1.228	1.382
1.200	1.155	1.249	1.152	1.253	1.146	1.26	1.14	1.268
1.100	1.063	1.14	1.06	1.143	1.056	1.149	1.05	1.155
1.000	0.97	1.032	0.968	1.035	0.964	1.039	0.96	1.044
0.950	0.923	0.978	0.922	0.981	0.918	0.984	0.915	0.989
0.900	0.877	0.925	0.875	0.927	0.872	0.93	0.869	0.934
0.850	0.829	0.872	0.828	0.873	0.826	0.876	0.823	0.88
0.800	0.782	0.819	0.781	0.82	0.779	0.823	0.776	0.825
0.750	0.735	0.766	0.734	0.767	0.732	0.769	0.73	0.772
0.700	0.687	0.713	0.686	0.714	0.685	0.716	0.683	0.718
0.650	0.639	0.661	0.639	0.662	0.637	0.663	0.636	0.665
0.600	0.591	0.609	0.591	0.61	0.59	0.611	0.588	0.612
0.550	0.543	0.557	0.543	0.558	0.542	0.559	0.541	0.56
0.500	0.495	0.505	0.494	0.506	0.494	0.507	0.493	0.507
0.450	0.446	0.454	0.446	0.454	0.445	0.455	0.445	0.455
0.400	0.397	0.403	0.397	0.403	0.397	0.403	0.396	0.404
0.375	0.373	0.377	0.373	0.377	0.372	0.378	0.372	0.378
0.350	0.348	0.352	0.348	0.352	0.348	0.352	0.348	0.352



3.2	3.5	4	4.5	5
15.741	14.041	12.527	11.178	9.976

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
15.705	Infinity	14.006	Infinity	12.492	Infinity	11.143	Infinity	9.941	Infinity
11.336	Infinity	10.429	Infinity	9.571	Infinity	8.764	Infinity	8.008	Infinity
8.869	Infinity	8.307	Infinity	7.758	Infinity	7.222	Infinity	6.704	Infinity
7.184	73.297	6.814	171.733	6.443	Infinity	6.072	Infinity	5.704	Infinity
6.178	26.919	5.905	34.035	5.625	48.438	5.342	92.46	5.057	Infinity
5.365	15.972	5.159	18.215	4.946	21.631	4.727	27.418	4.504	39.228
4.903	12.377	4.731	13.675	4.553	15.503	4.368	18.249	4.178	22.792
4.399	9.52	4.261	10.264	4.116	11.253	3.966	12.622	3.809	14.623
3.845	7.195	3.74	7.608	3.63	8.132	3.513	8.816	3.391	9.738
3.548	6.188	3.459	6.488	3.364	6.863	3.264	7.341	3.16	7.964
3.234	5.266	3.161	5.48	3.083	5.743	2.999	6.071	2.911	6.487
2.905	4.42	2.846	4.568	2.783	4.747	2.716	4.966	2.644	5.239
2.733	4.022	2.682	4.144	2.626	4.29	2.566	4.466	2.503	4.684
2.557	3.64	2.512	3.738	2.464	3.856	2.411	3.997	2.356	4.169
2.376	3.273	2.338	3.351	2.296	3.444	2.251	3.555	2.203	3.689
2.19	2.919	2.158	2.981	2.123	3.053	2.085	3.139	2.043	3.242
2.114	2.781	2.084	2.837	2.052	2.902	2.016	2.979	1.978	3.071
2.038	2.646	2.01	2.696	1.98	2.754	1.947	2.823	1.911	2.905
1.96	2.512	1.935	2.557	1.907	2.609	1.876	2.671	1.844	2.743
1.882	2.38	1.858	2.42	1.833	2.467	1.805	2.521	1.775	2.585
1.802	2.251	1.781	2.286	1.758	2.327	1.732	2.375	1.705	2.432
1.722	2.123	1.703	2.154	1.682	2.19	1.658	2.232	1.633	2.282
1.641	1.997	1.623	2.024	1.604	2.055	1.583	2.092	1.561	2.135
1.559	1.872	1.543	1.896	1.526	1.923	1.507	1.955	1.487	1.992
1.476	1.75	1.462	1.77	1.447	1.794	1.43	1.821	1.412	1.853
1.391	1.629	1.379	1.646	1.366	1.667	1.351	1.69	1.335	1.717
1.306	1.51	1.296	1.525	1.284	1.542	1.271	1.561	1.257	1.584
1.22	1.392	1.211	1.405	1.201	1.419	1.19	1.435	1.178	1.454
1.133	1.277	1.125	1.287	1.117	1.298	1.108	1.312	1.097	1.327
1.045	1.162	1.038	1.171	1.031	1.18	1.024	1.191	1.015	1.203
0.955	1.05	0.95	1.056	0.945	1.063	0.938	1.072	0.931	1.081
0.91	0.994	0.906	1	0.901	1.006	0.895	1.013	0.889	1.022
0.865	0.938	0.861	0.943	0.856	0.949	0.851	0.955	0.846	0.963
0.819	0.883	0.816	0.888	0.812	0.893	0.808	0.898	0.803	0.904
0.774	0.829	0.77	0.832	0.767	0.837	0.763	0.841	0.759	0.847
0.727	0.774	0.725	0.778	0.722	0.781	0.718	0.785	0.715	0.79
0.681	0.72	0.679	0.723	0.676	0.726	0.673	0.729	0.67	0.733
0.634	0.667	0.632	0.669	0.63	0.671	0.628	0.674	0.625	0.677
0.587	0.614	0.586	0.615	0.584	0.617	0.582	0.62	0.58	0.622
0.54	0.561	0.538	0.562	0.537	0.564	0.536	0.565	0.534	0.567
0.492	0.508	0.491	0.509	0.49	0.51	0.489	0.512	0.488	0.513
0.444	0.456	0.443	0.457	0.443	0.458	0.442	0.459	0.441	0.46
0.396	0.404	0.395	0.405	0.395	0.405	0.394	0.406	0.394	0.407
0.372	0.378	0.371	0.379	0.371	0.379	0.37	0.38	0.37	0.38
0.347	0.353	0.347	0.353	0.347	0.353	0.346	0.354	0.346	0.354



5.6	6.3	7.1	8	9
8.905	7.951	7.102	6.345	5.67

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
8.87	Infinity	7.916	Infinity	7.066	Infinity	6.309	Infinity	5.635	Infinity
7.303	Infinity	6.648	Infinity	6.042	Infinity	5.484	Infinity	4.97	Infinity
6.206	Infinity	5.73	Infinity	5.277	Infinity	4.849	Infinity	4.446	Infinity
5.342	Infinity	4.988	Infinity	4.644	Infinity	4.311	Infinity	3.992	Infinity
4.773	Infinity	4.49	Infinity	4.211	Infinity	3.937	Infinity	3.671	Infinity
4.278	76.158	4.051	Infinity	3.824	Infinity	3.599	Infinity	3.376	Infinity
3.984	31.666	3.787	56.394	3.589	469.411	3.39	Infinity	3.193	Infinity
3.649	17.801	3.484	23.569	3.317	37.123	3.148	105.516	2.978	Infinity
3.264	11.037	3.133	12.988	2.998	16.217	2.861	22.534	2.721	40.186
3.05	8.806	2.936	9.996	2.818	11.791	2.697	14.784	2.573	20.713
2.819	7.03	2.722	7.762	2.621	8.792	2.517	10.34	2.41	12.901
2.568	5.583	2.488	6.029	2.405	6.626	2.317	7.458	2.227	8.688
2.435	4.955	2.363	5.301	2.288	5.754	2.21	6.366	2.128	7.235
2.296	4.381	2.233	4.647	2.166	4.988	2.096	5.438	2.023	6.054
2.151	3.853	2.096	4.055	2.038	4.31	1.976	4.638	1.912	5.075
1.999	3.366	1.952	3.518	1.902	3.706	1.849	3.943	1.793	4.25
1.937	3.182	1.893	3.316	1.846	3.482	1.796	3.69	1.743	3.956
1.873	3.003	1.832	3.122	1.788	3.268	1.742	3.449	1.692	3.679
1.808	2.83	1.77	2.935	1.729	3.062	1.686	3.219	1.64	3.417
1.742	2.662	1.707	2.753	1.669	2.864	1.629	3.001	1.586	3.171
1.675	2.499	1.642	2.578	1.608	2.675	1.571	2.792	1.531	2.938
1.606	2.34	1.577	2.409	1.545	2.492	1.511	2.593	1.475	2.717
1.536	2.186	1.509	2.245	1.481	2.317	1.45	2.403	1.417	2.508
1.465	2.036	1.441	2.087	1.415	2.148	1.387	2.221	1.357	2.309
1.392	1.89	1.37	1.933	1.347	1.985	1.322	2.046	1.295	2.12
1.318	1.748	1.299	1.785	1.278	1.828	1.256	1.879	1.232	1.941
1.242	1.61	1.225	1.641	1.207	1.676	1.188	1.719	1.166	1.769
1.165	1.476	1.15	1.501	1.135	1.53	1.118	1.565	1.099	1.605
1.086	1.345	1.074	1.365	1.06	1.389	1.046	1.416	1.03	1.449
1.006	1.217	0.995	1.233	0.984	1.252	0.972	1.274	0.958	1.3
0.924	1.093	0.915	1.105	0.906	1.12	0.896	1.137	0.885	1.157
0.882	1.032	0.874	1.043	0.866	1.055	0.857	1.07	0.847	1.087
0.84	0.971	0.833	0.981	0.826	0.992	0.818	1.005	0.809	1.02
0.797	0.912	0.791	0.92	0.785	0.93	0.778	0.941	0.77	0.953
0.754	0.853	0.749	0.86	0.743	0.868	0.737	0.877	0.73	0.888
0.711	0.795	0.706	0.801	0.701	0.808	0.696	0.815	0.69	0.824
0.667	0.738	0.663	0.743	0.659	0.748	0.654	0.755	0.649	0.762
0.622	0.681	0.619	0.685	0.616	0.69	0.612	0.695	0.607	0.701
0.577	0.625	0.575	0.628	0.572	0.632	0.569	0.636	0.565	0.641
0.532	0.57	0.53	0.572	0.528	0.575	0.525	0.578	0.522	0.582
0.486	0.515	0.484	0.517	0.483	0.519	0.481	0.522	0.478	0.524
0.44	0.461	0.438	0.462	0.437	0.464	0.436	0.466	0.434	0.468
0.393	0.408	0.392	0.409	0.391	0.41	0.39	0.411	0.389	0.412
0.369	0.381	0.368	0.382	0.368	0.383	0.367	0.384	0.366	0.385
0.345	0.355	0.345	0.356	0.344	0.356	0.343	0.357	0.343	0.358



10	11	13	14	16
5.069	4.534	4.057	3.632	3.253

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
5.034	Infinity	4.499	Infinity	4.022	Infinity	3.597	Infinity	3.218	Infinity
4.5	Infinity	4.07	Infinity	3.678	Infinity	3.322	Infinity	2.998	Infinity
4.068	Infinity	3.716	Infinity	3.388	Infinity	3.085	Infinity	2.806	Infinity
3.687	Infinity	3.397	Infinity	3.123	Infinity	2.866	Infinity	2.625	Infinity
3.413	Infinity	3.164	Infinity	2.927	Infinity	2.701	Infinity	2.488	Infinity
3.158	Infinity	2.946	Infinity	2.74	Infinity	2.543	Infinity	2.354	Infinity
2.999	Infinity	2.807	Infinity	2.621	Infinity	2.441	Infinity	2.267	Infinity
2.809	Infinity	2.642	Infinity	2.477	Infinity	2.316	Infinity	2.16	Infinity
2.581	346.167	2.44	Infinity	2.3	Infinity	2.162	Infinity	2.027	Infinity
2.448	37.833	2.322	566.653	2.196	Infinity	2.07	Infinity	1.947	Infinity
2.3	17.903	2.189	31.849	2.078	265.712	1.966	Infinity	1.855	Infinity
2.134	10.675	2.04	14.391	1.943	23.721	1.846	88.869	1.749	Infinity
2.044	8.551	1.957	10.762	1.869	15.203	1.779	28.503	1.689	2900.145
1.947	6.94	1.869	8.316	1.789	10.715	1.707	15.903	1.625	35.185
1.844	5.677	1.775	6.556	1.703	7.944	1.629	10.447	1.555	16.236
1.734	4.659	1.673	5.228	1.61	6.064	1.545	7.401	1.478	9.864
1.688	4.306	1.63	4.784	1.571	5.47	1.509	6.529	1.445	8.361
1.641	3.978	1.586	4.38	1.53	4.944	1.472	5.788	1.412	7.173
1.592	3.672	1.541	4.01	1.488	4.475	1.433	5.15	1.376	6.211
1.541	3.388	1.494	3.671	1.444	4.054	1.393	4.596	1.34	5.415
1.49	3.122	1.446	3.359	1.4	3.674	1.351	4.109	1.302	4.747
1.436	2.872	1.396	3.07	1.353	3.329	1.308	3.679	1.262	4.177
1.381	2.638	1.344	2.802	1.305	3.014	1.264	3.296	1.221	3.685
1.325	2.418	1.291	2.554	1.255	2.726	1.217	2.952	1.177	3.257
1.266	2.211	1.235	2.322	1.203	2.462	1.168	2.642	1.132	2.881
1.206	2.015	1.178	2.106	1.149	2.218	1.118	2.362	1.085	2.548
1.144	1.829	1.119	1.903	1.093	1.993	1.065	2.106	1.036	2.25
1.079	1.654	1.058	1.713	1.035	1.784	1.01	1.872	0.984	1.983
1.013	1.488	0.994	1.534	0.974	1.59	0.953	1.658	0.93	1.742
0.944	1.33	0.928	1.366	0.911	1.409	0.893	1.46	0.874	1.524
0.873	1.18	0.86	1.207	0.845	1.239	0.83	1.278	0.814	1.325
0.836	1.107	0.824	1.131	0.812	1.159	0.798	1.192	0.783	1.232
0.799	1.037	0.788	1.057	0.777	1.081	0.764	1.109	0.751	1.142
0.761	0.968	0.752	0.985	0.741	1.005	0.73	1.029	0.718	1.057
0.723	0.901	0.714	0.915	0.705	0.932	0.695	0.952	0.685	0.975
0.683	0.835	0.676	0.847	0.668	0.861	0.66	0.877	0.65	0.896
0.643	0.771	0.637	0.78	0.63	0.792	0.623	0.805	0.615	0.821
0.603	0.708	0.597	0.716	0.592	0.725	0.586	0.736	0.579	0.748
0.561	0.646	0.557	0.653	0.552	0.66	0.547	0.668	0.541	0.678
0.519	0.586	0.516	0.591	0.512	0.597	0.507	0.603	0.503	0.611
0.476	0.528	0.473	0.531	0.47	0.535	0.467	0.54	0.463	0.546
0.432	0.47	0.43	0.473	0.428	0.476	0.425	0.479	0.422	0.483
0.387	0.414	0.386	0.416	0.384	0.418	0.382	0.42	0.38	0.423
0.365	0.386	0.363	0.388	0.362	0.389	0.361	0.391	0.359	0.393
0.342	0.359	0.341	0.36	0.34	0.361	0.339	0.363	0.337	0.364



18	20	22
2.916	2.616	2.348

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
2.881	Infinity	2.58	Infinity	2.313	Infinity
2.705	Infinity	2.44	Infinity	2.201	Infinity
2.549	Infinity	2.314	Infinity	2.099	Infinity
2.401	Infinity	2.192	Infinity	2	Infinity
2.286	Infinity	2.098	Infinity	1.922	Infinity
2.174	Infinity	2.004	Infinity	1.844	Infinity
2.1	Infinity	1.942	Infinity	1.792	Infinity
2.009	Infinity	1.865	Infinity	1.727	Infinity
1.895	Infinity	1.767	Infinity	1.643	Infinity
1.825	Infinity	1.707	Infinity	1.592	Infinity
1.745	Infinity	1.637	Infinity	1.532	Infinity
1.652	Infinity	1.556	Infinity	1.462	Infinity
1.599	Infinity	1.51	Infinity	1.421	Infinity
1.542	Infinity	1.459	Infinity	1.377	Infinity
1.479	43.623	1.404	Infinity	1.328	Infinity
1.41	15.834	1.342	50.485	1.274	Infinity
1.381	12.257	1.316	25.992	1.25	Infinity
1.35	9.841	1.288	17.019	1.226	99.209
1.318	8.1	1.259	12.365	1.2	30.756
1.285	6.785	1.229	9.515	1.173	17.521
1.25	5.758	1.198	7.592	1.144	11.894
1.214	4.933	1.165	6.206	1.115	8.779
1.176	4.255	1.13	5.16	1.083	6.801
1.136	3.689	1.094	4.342	1.05	5.434
1.095	3.209	1.056	3.685	1.016	4.432
1.051	2.797	1.015	3.147	0.979	3.666
1.005	2.439	0.973	2.696	0.94	3.062
0.957	2.126	0.928	2.315	0.898	2.574
0.906	1.849	0.881	1.987	0.855	2.17
0.853	1.602	0.831	1.702	0.808	1.831
0.796	1.382	0.778	1.453	0.758	1.543
0.767	1.28	0.75	1.339	0.732	1.414
0.737	1.183	0.721	1.232	0.705	1.294
0.705	1.091	0.692	1.132	0.677	1.182
0.673	1.003	0.661	1.036	0.648	1.077
0.64	0.919	0.63	0.946	0.618	0.979
0.606	0.839	0.597	0.861	0.587	0.887
0.571	0.763	0.563	0.78	0.555	0.8
0.535	0.689	0.528	0.703	0.521	0.718
0.498	0.619	0.492	0.629	0.486	0.641
0.459	0.552	0.455	0.56	0.45	0.568
0.419	0.488	0.416	0.493	0.412	0.499
0.378	0.426	0.376	0.429	0.373	0.433
0.357	0.396	0.355	0.399	0.353	0.402
0.336	0.366	0.334	0.368	0.332	0.371



Focal Length 40 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	29.928	28.007	24.969	22.263

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	29.888	Infinity	27.966	Infinity	24.929	Infinity	22.223	Infinity
40.000	17.177	Infinity	16.529	Infinity	15.426	Infinity	14.352	Infinity
20.000	12.051	59.711	11.731	69.241	11.168	99.344	10.598	194.243
13.000	9.12	22.763	8.937	24.014	8.609	26.809	8.269	30.843
10.000	7.547	14.875	7.422	15.395	7.196	16.49	6.958	17.922
8.000	6.359	10.815	6.27	11.085	6.109	11.637	5.938	12.327
7.000	5.716	9.05	5.645	9.238	5.514	9.616	5.376	10.08
6.000	5.037	7.433	4.982	7.558	4.881	7.808	4.772	8.109
5.000	4.318	5.946	4.278	6.025	4.204	6.181	4.125	6.366
4.500	3.944	5.246	3.91	5.307	3.849	5.427	3.782	5.568
4.000	3.557	4.573	3.531	4.619	3.481	4.709	3.427	4.814
3.500	3.16	3.926	3.139	3.96	3.1	4.025	3.057	4.1
3.250	2.956	3.612	2.938	3.64	2.904	3.694	2.867	3.757
3.000	2.75	3.303	2.734	3.326	2.705	3.371	2.673	3.423
2.750	2.54	3	2.527	3.019	2.502	3.056	2.475	3.098
2.500	2.327	2.702	2.316	2.718	2.295	2.747	2.273	2.781
2.400	2.241	2.585	2.231	2.599	2.212	2.626	2.191	2.656
2.300	2.154	2.468	2.145	2.481	2.127	2.505	2.108	2.533
2.200	2.067	2.352	2.059	2.364	2.043	2.386	2.025	2.411
2.100	1.979	2.237	1.972	2.248	1.957	2.267	1.941	2.29
2.000	1.891	2.123	1.884	2.132	1.871	2.15	1.856	2.17
1.900	1.802	2.01	1.796	2.018	1.784	2.034	1.771	2.051
1.800	1.713	1.897	1.707	1.905	1.696	1.918	1.684	1.934
1.700	1.623	1.786	1.618	1.792	1.608	1.804	1.598	1.818
1.600	1.532	1.675	1.528	1.68	1.519	1.691	1.51	1.703
1.500	1.441	1.565	1.437	1.569	1.43	1.578	1.422	1.589
1.400	1.349	1.455	1.346	1.459	1.339	1.467	1.332	1.476
1.300	1.257	1.347	1.254	1.35	1.248	1.356	1.242	1.364
1.200	1.164	1.239	1.161	1.242	1.157	1.247	1.152	1.253
1.100	1.07	1.132	1.068	1.134	1.065	1.138	1.06	1.143
1.000	0.976	1.025	0.974	1.027	0.971	1.031	0.968	1.034
0.950	0.929	0.972	0.927	0.974	0.925	0.977	0.922	0.98
0.900	0.881	0.92	0.88	0.921	0.878	0.924	0.875	0.927
0.850	0.834	0.867	0.833	0.868	0.83	0.871	0.828	0.873
0.800	0.786	0.815	0.785	0.816	0.783	0.818	0.781	0.82
0.750	0.738	0.763	0.737	0.763	0.736	0.765	0.734	0.767
0.700	0.69	0.711	0.689	0.711	0.688	0.713	0.686	0.714
0.650	0.642	0.659	0.641	0.659	0.64	0.661	0.639	0.662
0.600	0.593	0.607	0.593	0.608	0.592	0.609	0.591	0.61
0.550	0.545	0.556	0.544	0.556	0.543	0.557	0.543	0.558
0.500	0.496	0.504	0.496	0.505	0.495	0.505	0.494	0.506
0.450	0.447	0.453	0.447	0.453	0.446	0.454	0.446	0.454
0.400	0.398	0.402	0.398	0.402	0.397	0.403	0.397	0.403
0.375	0.373	0.377	0.373	0.377	0.373	0.377	0.373	0.377
0.350	0.349	0.351	0.348	0.352	0.348	0.352	0.348	0.352



3.2	3.5	4	4.5	5
19.852	17.704	15.79	14.085	12.566

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
19.812	Infinity	17.664	Infinity	15.75	Infinity	14.045	Infinity	12.527	Infinity
13.313	Infinity	12.314	Infinity	11.359	Infinity	10.451	Infinity	9.592	Infinity
10.025	Infinity	9.452	Infinity	8.882	Infinity	8.321	Infinity	7.771	Infinity
7.918	37.122	7.559	48.138	7.193	72.238	6.823	165.3	6.451	Infinity
6.71	19.86	6.452	22.61	6.185	26.777	5.911	33.779	5.632	47.852
5.758	13.207	5.568	14.36	5.37	15.923	5.163	18.142	4.951	21.516
5.228	10.658	5.072	11.391	4.907	12.348	4.736	13.634	4.557	15.445
4.656	8.476	4.533	8.93	4.402	9.503	4.264	10.241	4.12	11.223
4.038	6.588	3.946	6.856	3.848	7.185	3.743	7.596	3.632	8.117
3.71	5.736	3.633	5.937	3.549	6.181	3.461	6.48	3.366	6.852
3.368	4.938	3.304	5.085	3.236	5.261	3.163	5.474	3.084	5.736
3.011	4.189	2.961	4.293	2.906	4.416	2.847	4.564	2.784	4.742
2.826	3.831	2.782	3.917	2.734	4.019	2.683	4.14	2.627	4.286
2.638	3.484	2.6	3.555	2.558	3.638	2.513	3.736	2.465	3.853
2.445	3.147	2.413	3.204	2.377	3.271	2.339	3.349	2.297	3.442
2.248	2.82	2.221	2.865	2.191	2.918	2.159	2.979	2.123	3.051
2.168	2.692	2.143	2.733	2.115	2.78	2.085	2.836	2.052	2.901
2.087	2.565	2.064	2.602	2.038	2.645	2.011	2.694	1.98	2.753
2.005	2.439	1.984	2.473	1.961	2.511	1.935	2.556	1.907	2.608
1.923	2.316	1.904	2.345	1.882	2.379	1.859	2.419	1.833	2.466
1.84	2.193	1.822	2.219	1.803	2.25	1.781	2.285	1.758	2.326
1.756	2.072	1.74	2.095	1.722	2.122	1.703	2.153	1.682	2.189
1.671	1.952	1.657	1.972	1.641	1.996	1.624	2.023	1.605	2.055
1.586	1.833	1.573	1.851	1.559	1.872	1.543	1.895	1.526	1.923
1.5	1.716	1.488	1.732	1.476	1.749	1.462	1.77	1.447	1.793
1.413	1.6	1.403	1.613	1.392	1.629	1.38	1.646	1.366	1.666
1.325	1.485	1.316	1.497	1.306	1.51	1.296	1.524	1.284	1.541
1.236	1.372	1.228	1.381	1.22	1.392	1.211	1.405	1.201	1.419
1.146	1.26	1.14	1.268	1.133	1.276	1.125	1.287	1.117	1.298
1.056	1.149	1.051	1.155	1.045	1.162	1.039	1.17	1.032	1.18
0.964	1.039	0.96	1.044	0.956	1.05	0.95	1.056	0.945	1.063
0.918	0.984	0.915	0.989	0.91	0.994	0.906	0.999	0.901	1.006
0.872	0.93	0.869	0.934	0.865	0.938	0.861	0.943	0.857	0.949
0.826	0.876	0.823	0.88	0.819	0.883	0.816	0.888	0.812	0.893
0.779	0.823	0.776	0.825	0.774	0.829	0.77	0.832	0.767	0.837
0.732	0.769	0.73	0.772	0.727	0.774	0.725	0.778	0.722	0.781
0.685	0.716	0.683	0.718	0.681	0.72	0.679	0.723	0.676	0.726
0.637	0.663	0.636	0.665	0.634	0.667	0.632	0.669	0.63	0.671
0.59	0.611	0.588	0.612	0.587	0.614	0.586	0.615	0.584	0.617
0.542	0.559	0.541	0.56	0.54	0.561	0.539	0.562	0.537	0.564
0.494	0.507	0.493	0.507	0.492	0.508	0.491	0.509	0.49	0.51
0.445	0.455	0.445	0.455	0.444	0.456	0.443	0.457	0.443	0.458
0.397	0.403	0.396	0.404	0.396	0.404	0.395	0.405	0.395	0.405
0.372	0.378	0.372	0.378	0.372	0.378	0.371	0.379	0.371	0.379
0.348	0.352	0.348	0.352	0.347	0.353	0.347	0.353	0.347	0.353



5.6	6.3	7.1	8	9
11.213	10.008	8.934	7.977	7.124

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
11.174	Infinity	9.968	Infinity	8.894	Infinity	7.937	Infinity	7.085	Infinity
8.783	Infinity	8.025	Infinity	7.319	Infinity	6.663	Infinity	6.055	Infinity
7.235	Infinity	6.716	Infinity	6.218	Infinity	5.741	Infinity	5.287	Infinity
6.08	Infinity	5.713	Infinity	5.35	Infinity	4.996	Infinity	4.651	Infinity
5.349	90.07	5.064	12628.352	4.779	Infinity	4.496	Infinity	4.217	Infinity
4.732	27.207	4.509	38.74	4.284	74.099	4.056	Infinity	3.829	Infinity
4.372	18.157	4.182	22.628	3.988	31.308	3.791	55.117	3.593	384.675
3.969	12.578	3.813	14.557	3.652	17.689	3.488	23.347	3.32	36.497
3.516	8.795	3.394	9.709	3.267	10.995	3.136	12.921	3.001	16.1
3.267	7.326	3.162	7.945	3.052	8.78	2.938	9.957	2.82	11.73
3.001	6.061	2.913	6.475	2.821	7.014	2.724	7.739	2.623	8.759
2.717	4.96	2.645	5.231	2.57	5.573	2.49	6.016	2.406	6.607
2.568	4.461	2.504	4.678	2.436	4.947	2.365	5.291	2.29	5.74
2.413	3.993	2.357	4.164	2.297	4.375	2.234	4.639	2.167	4.978
2.252	3.552	2.204	3.686	2.152	3.848	2.097	4.049	2.039	4.302
2.085	3.137	2.044	3.239	2	3.363	1.953	3.513	1.903	3.7
2.017	2.977	1.979	3.069	1.938	3.179	1.894	3.313	1.847	3.477
1.947	2.821	1.912	2.903	1.874	3.001	1.833	3.119	1.789	3.263
1.877	2.669	1.844	2.741	1.809	2.828	1.771	2.932	1.73	3.058
1.805	2.52	1.775	2.584	1.743	2.66	1.708	2.751	1.67	2.861
1.733	2.374	1.705	2.43	1.675	2.497	1.643	2.576	1.608	2.672
1.659	2.231	1.634	2.28	1.607	2.338	1.577	2.407	1.545	2.49
1.584	2.091	1.561	2.134	1.536	2.184	1.51	2.244	1.481	2.315
1.508	1.954	1.487	1.991	1.465	2.035	1.441	2.086	1.415	2.146
1.43	1.821	1.412	1.852	1.392	1.889	1.371	1.932	1.348	1.984
1.352	1.689	1.336	1.716	1.318	1.747	1.299	1.784	1.278	1.827
1.272	1.561	1.258	1.583	1.242	1.609	1.226	1.64	1.208	1.676
1.19	1.435	1.178	1.453	1.165	1.475	1.151	1.5	1.135	1.529
1.108	1.311	1.098	1.327	1.086	1.344	1.074	1.365	1.061	1.388
1.024	1.19	1.015	1.203	1.006	1.217	0.996	1.233	0.984	1.252
0.938	1.072	0.931	1.081	0.924	1.092	0.915	1.105	0.906	1.12
0.895	1.013	0.889	1.022	0.882	1.031	0.874	1.042	0.866	1.055
0.852	0.955	0.846	0.963	0.84	0.971	0.833	0.981	0.826	0.992
0.808	0.898	0.803	0.904	0.797	0.912	0.791	0.92	0.785	0.929
0.763	0.841	0.759	0.847	0.754	0.853	0.749	0.86	0.743	0.868
0.718	0.785	0.715	0.79	0.711	0.795	0.706	0.801	0.701	0.808
0.673	0.729	0.67	0.733	0.667	0.738	0.663	0.742	0.659	0.748
0.628	0.674	0.625	0.677	0.622	0.681	0.619	0.685	0.616	0.689
0.582	0.62	0.58	0.622	0.577	0.625	0.575	0.628	0.572	0.632
0.536	0.565	0.534	0.567	0.532	0.57	0.53	0.572	0.528	0.575
0.489	0.512	0.488	0.513	0.486	0.515	0.484	0.517	0.483	0.519
0.442	0.459	0.441	0.46	0.44	0.461	0.438	0.462	0.437	0.464
0.394	0.406	0.394	0.407	0.393	0.408	0.392	0.409	0.391	0.41
0.37	0.38	0.37	0.381	0.369	0.381	0.368	0.382	0.368	0.383
0.346	0.354	0.346	0.354	0.345	0.355	0.345	0.356	0.344	0.356



10	11	13	14	16
6.365	5.688	5.086	4.549	4.07

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
6.325	Infinity	5.649	Infinity	5.046	Infinity	4.509	Infinity	4.031	Infinity
5.495	Infinity	4.981	Infinity	4.509	Infinity	4.078	Infinity	3.685	Infinity
4.858	Infinity	4.454	Infinity	4.076	Infinity	3.722	Infinity	3.394	Infinity
4.318	Infinity	3.998	Infinity	3.693	Infinity	3.403	Infinity	3.128	Infinity
3.943	Infinity	3.676	Infinity	3.418	Infinity	3.169	Infinity	2.932	Infinity
3.603	Infinity	3.381	Infinity	3.163	Infinity	2.95	Infinity	2.744	Infinity
3.395	Infinity	3.197	Infinity	3.002	Infinity	2.811	Infinity	2.625	Infinity
3.151	99.945	2.982	Infinity	2.812	Infinity	2.645	Infinity	2.48	Infinity
2.864	22.275	2.724	39.252	2.583	280.153	2.443	Infinity	2.303	Infinity
2.699	14.674	2.576	20.466	2.45	36.897	2.324	394.088	2.198	Infinity
2.519	10.287	2.412	12.806	2.302	17.695	2.191	31.098	2.08	215.518
2.319	7.431	2.229	8.646	2.136	10.603	2.041	14.24	1.945	23.249
2.211	6.347	2.13	7.206	2.045	8.505	1.959	10.678	1.87	15.011
2.097	5.424	2.024	6.034	1.949	6.911	1.87	8.267	1.79	10.621
1.977	4.629	1.913	5.061	1.846	5.658	1.776	6.526	1.704	7.894
1.85	3.936	1.794	4.241	1.735	4.647	1.674	5.209	1.611	6.035
1.797	3.684	1.744	3.948	1.689	4.295	1.631	4.769	1.571	5.447
1.743	3.443	1.693	3.672	1.641	3.969	1.587	4.367	1.531	4.926
1.687	3.215	1.641	3.412	1.593	3.665	1.542	4	1.489	4.46
1.63	2.997	1.587	3.166	1.542	3.381	1.495	3.662	1.445	4.042
1.571	2.789	1.532	2.934	1.49	3.116	1.446	3.351	1.4	3.664
1.512	2.591	1.475	2.714	1.437	2.868	1.396	3.064	1.354	3.321
1.45	2.401	1.417	2.505	1.382	2.635	1.345	2.798	1.305	3.008
1.387	2.219	1.357	2.307	1.325	2.415	1.291	2.55	1.255	2.721
1.322	2.045	1.295	2.118	1.267	2.208	1.236	2.319	1.203	2.458
1.256	1.878	1.232	1.939	1.206	2.013	1.179	2.103	1.149	2.215
1.188	1.718	1.167	1.768	1.144	1.828	1.119	1.901	1.093	1.991
1.118	1.564	1.099	1.604	1.079	1.653	1.058	1.711	1.035	1.782
1.046	1.416	1.03	1.448	1.013	1.487	0.994	1.533	0.974	1.588
0.972	1.274	0.959	1.299	0.944	1.329	0.928	1.365	0.911	1.408
0.896	1.137	0.885	1.156	0.873	1.179	0.86	1.206	0.846	1.239
0.857	1.07	0.847	1.087	0.836	1.107	0.824	1.13	0.812	1.158
0.818	1.005	0.809	1.019	0.799	1.036	0.788	1.057	0.777	1.08
0.778	0.94	0.77	0.953	0.761	0.968	0.752	0.985	0.742	1.005
0.737	0.877	0.73	0.888	0.723	0.9	0.714	0.915	0.705	0.931
0.696	0.815	0.69	0.824	0.683	0.835	0.676	0.847	0.668	0.861
0.654	0.755	0.649	0.762	0.643	0.77	0.637	0.78	0.63	0.792
0.612	0.695	0.607	0.701	0.603	0.708	0.598	0.716	0.592	0.725
0.569	0.636	0.565	0.641	0.561	0.646	0.557	0.653	0.552	0.66
0.525	0.578	0.522	0.582	0.519	0.586	0.516	0.591	0.512	0.597
0.481	0.522	0.478	0.524	0.476	0.528	0.473	0.531	0.47	0.535
0.436	0.466	0.434	0.468	0.432	0.47	0.43	0.473	0.428	0.476
0.39	0.411	0.389	0.412	0.387	0.414	0.386	0.416	0.384	0.418
0.367	0.384	0.366	0.385	0.365	0.386	0.363	0.388	0.362	0.389
0.343	0.357	0.343	0.358	0.342	0.359	0.341	0.36	0.34	0.361



18	20	22
3.644	3.264	2.926

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
3.605	Infinity	3.225	Infinity	2.887	Infinity
3.328	Infinity	3.004	Infinity	2.71	Infinity
3.091	Infinity	2.811	Infinity	2.554	Infinity
2.871	Infinity	2.629	Infinity	2.404	Infinity
2.705	Infinity	2.491	Infinity	2.29	Infinity
2.546	Infinity	2.357	Infinity	2.177	Infinity
2.444	Infinity	2.27	Infinity	2.103	Infinity
2.319	Infinity	2.163	Infinity	2.012	Infinity
2.165	Infinity	2.029	Infinity	1.897	Infinity
2.073	Infinity	1.949	Infinity	1.827	Infinity
1.968	Infinity	1.857	Infinity	1.747	Infinity
1.848	81.669	1.75	Infinity	1.653	Infinity
1.781	27.73	1.691	674.691	1.601	Infinity
1.709	15.664	1.626	33.854	1.543	Infinity
1.631	10.346	1.556	15.953	1.48	41.318
1.546	7.352	1.479	9.762	1.411	15.527
1.51	6.491	1.446	8.288	1.382	12.074
1.472	5.758	1.412	7.12	1.351	9.724
1.434	5.127	1.377	6.171	1.319	8.022
1.394	4.578	1.34	5.386	1.286	6.731
1.352	4.095	1.302	4.724	1.251	5.72
1.309	3.668	1.263	4.16	1.215	4.905
1.264	3.287	1.221	3.673	1.177	4.235
1.217	2.945	1.178	3.248	1.137	3.675
1.169	2.637	1.133	2.874	1.095	3.198
1.118	2.357	1.086	2.542	1.051	2.789
1.066	2.103	1.036	2.246	1.006	2.434
1.011	1.87	0.985	1.98	0.957	2.122
0.953	1.656	0.931	1.74	0.907	1.846
0.893	1.459	0.874	1.522	0.853	1.6
0.83	1.277	0.814	1.323	0.796	1.38
0.798	1.191	0.783	1.231	0.767	1.279
0.765	1.108	0.751	1.142	0.737	1.182
0.73	1.028	0.718	1.056	0.706	1.09
0.696	0.951	0.685	0.974	0.673	1.002
0.66	0.877	0.65	0.896	0.64	0.919
0.623	0.805	0.615	0.82	0.606	0.839
0.586	0.735	0.579	0.748	0.571	0.762
0.547	0.668	0.541	0.678	0.535	0.689
0.507	0.603	0.503	0.611	0.498	0.619
0.467	0.54	0.463	0.546	0.459	0.552
0.425	0.479	0.422	0.483	0.419	0.488
0.382	0.42	0.38	0.423	0.378	0.426
0.361	0.391	0.359	0.393	0.357	0.396
0.339	0.363	0.337	0.364	0.336	0.366



Focal Length 50 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	46.842	43.83	39.067	34.823

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	46.791	Infinity	43.778	Infinity	39.016	Infinity	34.773	Infinity
40.000	21.639	272.097	20.977	454.688	19.826	Infinity	18.676	Infinity
20.000	14.074	34.681	13.793	36.537	13.289	40.667	12.766	46.584
13.000	10.224	17.88	10.076	18.357	9.807	19.336	9.521	20.567
10.000	8.282	12.634	8.186	12.869	8.008	13.339	7.818	13.909
8.000	6.869	9.587	6.803	9.72	6.681	9.984	6.549	10.298
7.000	6.123	8.178	6.07	8.274	5.973	8.464	5.868	8.687
6.000	5.348	6.838	5.308	6.905	5.234	7.035	5.154	7.188
5.000	4.543	5.562	4.515	5.606	4.462	5.691	4.404	5.789
4.500	4.129	4.947	4.105	4.981	4.062	5.048	4.014	5.124
4.000	3.706	4.346	3.688	4.372	3.653	4.423	3.615	4.481
3.500	3.275	3.759	3.261	3.778	3.234	3.816	3.204	3.858
3.250	3.057	3.471	3.044	3.487	3.021	3.518	2.995	3.555
3.000	2.836	3.185	2.825	3.199	2.805	3.225	2.783	3.255
2.750	2.613	2.903	2.604	2.915	2.587	2.936	2.568	2.961
2.500	2.387	2.625	2.38	2.634	2.366	2.651	2.351	2.671
2.400	2.296	2.514	2.29	2.522	2.277	2.538	2.263	2.556
2.300	2.205	2.404	2.199	2.411	2.187	2.426	2.174	2.442
2.200	2.114	2.294	2.108	2.301	2.097	2.314	2.085	2.329
2.100	2.022	2.185	2.017	2.191	2.007	2.203	1.996	2.216
2.000	1.929	2.076	1.925	2.082	1.916	2.092	1.906	2.104
1.900	1.837	1.968	1.832	1.973	1.825	1.982	1.816	1.993
1.800	1.744	1.861	1.74	1.865	1.733	1.873	1.725	1.883
1.700	1.65	1.753	1.647	1.757	1.641	1.764	1.634	1.773
1.600	1.556	1.647	1.553	1.65	1.548	1.656	1.542	1.663
1.500	1.462	1.54	1.459	1.543	1.455	1.549	1.449	1.555
1.400	1.367	1.434	1.365	1.437	1.361	1.442	1.356	1.447
1.300	1.272	1.329	1.27	1.331	1.267	1.335	1.263	1.339
1.200	1.177	1.224	1.175	1.226	1.172	1.229	1.169	1.233
1.100	1.081	1.12	1.08	1.121	1.077	1.124	1.075	1.127
1.000	0.985	1.016	0.984	1.017	0.982	1.019	0.98	1.021
0.950	0.936	0.964	0.936	0.965	0.934	0.967	0.932	0.969
0.900	0.888	0.912	0.887	0.913	0.886	0.915	0.884	0.917
0.850	0.84	0.861	0.839	0.861	0.838	0.863	0.836	0.864
0.800	0.791	0.809	0.79	0.81	0.789	0.811	0.788	0.812
0.750	0.742	0.758	0.742	0.758	0.741	0.759	0.74	0.761
0.700	0.694	0.707	0.693	0.707	0.692	0.708	0.691	0.709
0.650	0.645	0.655	0.644	0.656	0.644	0.657	0.643	0.657
0.600	0.596	0.604	0.595	0.605	0.595	0.605	0.594	0.606
0.575	0.571	0.579	0.571	0.579	0.57	0.58	0.57	0.58
0.550	0.547	0.553	0.546	0.554	0.546	0.554	0.545	0.555
0.525	0.522	0.528	0.522	0.528	0.521	0.529	0.521	0.529
0.500	0.497	0.503	0.497	0.503	0.497	0.503	0.496	0.504



3.2	3.5	4	4.5	5
31.043	27.675	24.675	22.002	19.62

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
30.993	Infinity	27.625	Infinity	24.625	Infinity	21.952	Infinity	19.57	Infinity
17.536	Infinity	16.412	Infinity	15.312	Infinity	14.242	Infinity	13.207	Infinity
12.227	55.684	11.674	71.342	11.11	104.295	10.54	216.862	9.966	Infinity
9.221	22.153	8.905	24.253	8.576	27.146	8.234	31.346	7.883	37.946
7.615	14.612	7.4	15.49	7.173	16.613	6.934	18.086	6.685	20.087
6.407	10.675	6.255	11.133	6.093	11.696	5.921	12.402	5.74	13.304
5.755	8.952	5.633	9.27	5.502	9.655	5.362	10.129	5.214	10.719
5.067	7.367	4.973	7.579	4.871	7.833	4.762	8.139	4.645	8.513
4.341	5.904	4.272	6.038	4.198	6.196	4.117	6.384	4.031	6.609
3.962	5.213	3.905	5.317	3.843	5.438	3.776	5.582	3.704	5.752
3.573	4.548	3.527	4.626	3.476	4.717	3.422	4.824	3.363	4.949
3.172	3.908	3.136	3.964	3.096	4.03	3.054	4.107	3.007	4.197
2.967	3.596	2.936	3.644	2.901	3.699	2.864	3.763	2.823	3.837
2.759	3.29	2.732	3.329	2.703	3.375	2.67	3.428	2.635	3.489
2.548	2.989	2.525	3.021	2.5	3.059	2.473	3.101	2.443	3.151
2.334	2.694	2.315	2.72	2.294	2.749	2.271	2.783	2.246	2.823
2.247	2.577	2.23	2.6	2.21	2.627	2.189	2.658	2.166	2.694
2.16	2.461	2.144	2.482	2.126	2.507	2.107	2.535	2.086	2.567
2.072	2.346	2.058	2.365	2.041	2.387	2.024	2.412	2.004	2.441
1.984	2.231	1.971	2.249	1.956	2.269	1.94	2.291	1.922	2.317
1.895	2.118	1.883	2.133	1.87	2.151	1.855	2.171	1.839	2.194
1.806	2.005	1.795	2.019	1.783	2.035	1.77	2.052	1.755	2.073
1.716	1.893	1.706	1.905	1.696	1.919	1.684	1.935	1.671	1.953
1.626	1.782	1.617	1.793	1.608	1.805	1.597	1.818	1.585	1.834
1.535	1.671	1.527	1.681	1.519	1.691	1.509	1.703	1.499	1.717
1.443	1.562	1.437	1.57	1.429	1.579	1.421	1.589	1.412	1.601
1.351	1.453	1.346	1.46	1.339	1.467	1.332	1.476	1.324	1.486
1.259	1.345	1.254	1.35	1.248	1.357	1.242	1.364	1.236	1.372
1.165	1.237	1.161	1.242	1.157	1.247	1.152	1.253	1.146	1.26
1.072	1.13	1.068	1.134	1.064	1.138	1.06	1.143	1.056	1.149
0.977	1.024	0.974	1.027	0.971	1.031	0.968	1.034	0.964	1.039
0.93	0.971	0.927	0.974	0.925	0.977	0.922	0.98	0.918	0.984
0.882	0.919	0.88	0.921	0.878	0.924	0.875	0.927	0.872	0.93
0.834	0.866	0.833	0.868	0.831	0.871	0.828	0.873	0.826	0.876
0.787	0.814	0.785	0.816	0.783	0.818	0.781	0.82	0.779	0.822
0.739	0.762	0.737	0.763	0.736	0.765	0.734	0.767	0.732	0.769
0.69	0.71	0.689	0.711	0.688	0.713	0.686	0.714	0.685	0.716
0.642	0.658	0.641	0.659	0.64	0.66	0.639	0.662	0.637	0.663
0.594	0.607	0.593	0.607	0.592	0.608	0.591	0.609	0.59	0.611
0.569	0.581	0.569	0.582	0.568	0.583	0.567	0.583	0.566	0.584
0.545	0.555	0.544	0.556	0.544	0.557	0.543	0.557	0.542	0.558
0.52	0.53	0.52	0.53	0.519	0.531	0.519	0.532	0.518	0.532
0.496	0.504	0.496	0.505	0.495	0.505	0.494	0.506	0.494	0.506



5.6	6.3	7.1	8	9
17.499	15.608	13.925	12.424	11.088

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
17.449	Infinity	15.559	Infinity	13.875	Infinity	12.375	Infinity	11.038	Infinity
12.212	Infinity	11.262	Infinity	10.359	Infinity	9.505	Infinity	8.701	Infinity
9.393	Infinity	8.824	Infinity	8.264	Infinity	7.715	Infinity	7.181	Infinity
7.523	49.711	7.156	76.312	6.786	191.631	6.414	Infinity	6.044	Infinity
6.426	22.941	6.158	27.303	5.884	34.727	5.604	50.029	5.321	99.213
5.549	14.489	5.35	16.101	5.143	18.404	4.93	21.932	4.711	27.962
5.057	11.471	4.892	12.452	4.719	13.778	4.54	15.653	4.354	18.482
4.521	8.977	4.39	9.563	4.251	10.32	4.106	11.329	3.955	12.729
3.938	6.883	3.839	7.218	3.733	7.637	3.622	8.169	3.505	8.865
3.626	5.956	3.542	6.204	3.453	6.509	3.358	6.889	3.258	7.374
3.299	5.099	3.23	5.277	3.156	5.494	3.078	5.76	2.994	6.092
2.956	4.302	2.902	4.427	2.842	4.577	2.779	4.758	2.712	4.98
2.779	3.925	2.731	4.028	2.679	4.151	2.623	4.298	2.563	4.477
2.597	3.561	2.555	3.645	2.51	3.744	2.461	3.862	2.408	4.005
2.41	3.209	2.374	3.276	2.336	3.355	2.294	3.449	2.249	3.561
2.219	2.868	2.189	2.922	2.156	2.984	2.121	3.057	2.083	3.144
2.141	2.736	2.113	2.784	2.083	2.84	2.05	2.905	2.014	2.983
2.062	2.604	2.037	2.648	2.009	2.698	1.978	2.757	1.945	2.826
1.983	2.475	1.959	2.514	1.933	2.559	1.905	2.611	1.875	2.673
1.902	2.347	1.881	2.382	1.857	2.422	1.832	2.469	1.804	2.523
1.821	2.221	1.802	2.252	1.78	2.287	1.757	2.329	1.731	2.377
1.739	2.097	1.721	2.124	1.702	2.155	1.681	2.191	1.657	2.234
1.656	1.974	1.64	1.997	1.623	2.025	1.604	2.056	1.583	2.093
1.572	1.852	1.558	1.873	1.543	1.897	1.525	1.924	1.507	1.956
1.488	1.732	1.475	1.75	1.461	1.771	1.446	1.794	1.429	1.822
1.402	1.614	1.391	1.629	1.379	1.647	1.366	1.667	1.351	1.69
1.316	1.497	1.306	1.51	1.296	1.525	1.284	1.542	1.271	1.561
1.228	1.382	1.22	1.393	1.211	1.405	1.201	1.419	1.19	1.435
1.14	1.268	1.133	1.277	1.125	1.287	1.117	1.298	1.108	1.312
1.05	1.155	1.045	1.162	1.038	1.17	1.031	1.18	1.024	1.19
0.96	1.044	0.956	1.05	0.95	1.056	0.945	1.063	0.938	1.072
0.915	0.989	0.91	0.994	0.906	0.999	0.901	1.006	0.895	1.013
0.869	0.934	0.865	0.938	0.861	0.943	0.857	0.949	0.852	0.955
0.823	0.879	0.82	0.883	0.816	0.888	0.812	0.892	0.808	0.898
0.776	0.825	0.774	0.829	0.771	0.832	0.767	0.836	0.763	0.841
0.73	0.772	0.727	0.774	0.725	0.777	0.722	0.781	0.719	0.785
0.683	0.718	0.681	0.72	0.679	0.723	0.676	0.726	0.674	0.729
0.636	0.665	0.634	0.667	0.632	0.669	0.63	0.671	0.628	0.674
0.589	0.612	0.587	0.614	0.586	0.615	0.584	0.617	0.582	0.619
0.565	0.586	0.564	0.587	0.562	0.589	0.561	0.59	0.559	0.592
0.541	0.559	0.54	0.561	0.539	0.562	0.537	0.563	0.536	0.565
0.517	0.533	0.516	0.534	0.515	0.536	0.514	0.537	0.513	0.538
0.493	0.507	0.492	0.508	0.491	0.509	0.49	0.51	0.489	0.512



10	11	13	14	16
9.897	8.836	7.891	7.049	6.299

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
9.847	Infinity	8.787	Infinity	7.842	Infinity	7	Infinity	6.249	Infinity
7.949	Infinity	7.248	Infinity	6.597	Infinity	5.995	Infinity	5.44	Infinity
6.664	Infinity	6.168	Infinity	5.693	Infinity	5.242	Infinity	4.815	Infinity
5.676	Infinity	5.315	Infinity	4.961	Infinity	4.618	Infinity	4.286	Infinity
5.036	Infinity	4.751	Infinity	4.469	Infinity	4.19	Infinity	3.916	Infinity
4.488	40.492	4.262	81.711	4.035	Infinity	3.807	Infinity	3.582	Infinity
4.164	23.201	3.97	32.561	3.773	59.67	3.574	962.011	3.376	Infinity
3.798	14.784	3.637	18.07	3.472	24.102	3.305	38.63	3.136	120.479
3.383	9.805	3.255	11.134	3.124	13.139	2.989	16.483	2.851	23.114
3.153	8.008	3.043	8.866	2.928	10.082	2.81	11.926	2.689	15.022
2.906	6.515	2.813	7.066	2.715	7.811	2.614	8.863	2.51	10.45
2.64	5.255	2.563	5.604	2.483	6.057	2.399	6.664	2.312	7.512
2.499	4.697	2.431	4.971	2.359	5.322	2.284	5.781	2.205	6.404
2.352	4.178	2.293	4.393	2.229	4.662	2.162	5.007	2.092	5.464
2.2	3.696	2.148	3.861	2.093	4.066	2.034	4.323	1.973	4.656
2.041	3.247	1.997	3.372	1.95	3.525	1.899	3.715	1.846	3.955
1.976	3.076	1.935	3.187	1.89	3.323	1.843	3.49	1.793	3.699
1.91	2.909	1.871	3.008	1.83	3.127	1.786	3.274	1.739	3.457
1.842	2.746	1.807	2.834	1.768	2.939	1.728	3.067	1.684	3.226
1.773	2.588	1.741	2.665	1.705	2.757	1.668	2.869	1.627	3.006
1.703	2.434	1.673	2.501	1.641	2.581	1.606	2.678	1.569	2.797
1.632	2.283	1.605	2.342	1.575	2.412	1.544	2.495	1.51	2.597
1.56	2.137	1.535	2.187	1.508	2.247	1.479	2.319	1.448	2.406
1.486	1.993	1.464	2.037	1.44	2.088	1.414	2.15	1.386	2.223
1.411	1.854	1.391	1.891	1.37	1.935	1.346	1.986	1.321	2.048
1.335	1.717	1.317	1.749	1.298	1.785	1.278	1.829	1.255	1.88
1.257	1.584	1.242	1.61	1.225	1.641	1.207	1.677	1.187	1.719
1.178	1.454	1.165	1.476	1.15	1.501	1.135	1.53	1.117	1.565
1.097	1.327	1.086	1.345	1.074	1.365	1.06	1.389	1.046	1.416
1.015	1.203	1.006	1.217	0.995	1.233	0.984	1.252	0.972	1.274
0.931	1.081	0.924	1.092	0.915	1.105	0.906	1.12	0.896	1.137
0.889	1.022	0.882	1.031	0.875	1.042	0.866	1.055	0.857	1.07
0.846	0.963	0.84	0.971	0.833	0.981	0.826	0.992	0.818	1.004
0.803	0.904	0.797	0.911	0.792	0.92	0.785	0.929	0.778	0.94
0.759	0.847	0.754	0.853	0.749	0.86	0.744	0.868	0.737	0.877
0.715	0.789	0.711	0.795	0.707	0.8	0.702	0.807	0.696	0.815
0.67	0.733	0.667	0.737	0.663	0.742	0.659	0.748	0.654	0.754
0.625	0.677	0.623	0.681	0.619	0.685	0.616	0.689	0.612	0.694
0.58	0.622	0.578	0.625	0.575	0.628	0.572	0.631	0.569	0.636
0.557	0.594	0.555	0.597	0.553	0.6	0.55	0.603	0.547	0.607
0.534	0.567	0.532	0.569	0.53	0.572	0.528	0.575	0.525	0.578
0.511	0.54	0.509	0.542	0.508	0.544	0.506	0.547	0.503	0.549
0.488	0.513	0.486	0.515	0.485	0.517	0.483	0.519	0.481	0.521



18	20	22
5.631	5.035	4.505

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
5.581	Infinity	4.986	Infinity	4.455	Infinity
4.93	Infinity	4.462	Infinity	4.036	Infinity
4.414	Infinity	4.038	Infinity	3.688	Infinity
3.967	Infinity	3.663	Infinity	3.375	Infinity
3.65	Infinity	3.393	Infinity	3.146	Infinity
3.36	Infinity	3.142	Infinity	2.93	Infinity
3.179	Infinity	2.984	Infinity	2.793	Infinity
2.966	Infinity	2.797	Infinity	2.63	Infinity
2.712	42.306	2.571	669.755	2.43	Infinity
2.565	21.241	2.44	39.857	2.313	3798.326
2.403	13.094	2.293	18.322	2.182	33.366
2.222	8.77	2.129	10.813	2.034	14.673
2.123	7.289	2.039	8.636	1.952	10.912
2.019	6.089	1.943	6.993	1.864	8.4
1.908	5.098	1.841	5.71	1.771	6.604
1.79	4.265	1.731	4.68	1.67	5.256
1.741	3.968	1.685	4.322	1.627	4.807
1.69	3.689	1.638	3.991	1.584	4.398
1.638	3.426	1.589	3.683	1.538	4.025
1.585	3.178	1.539	3.396	1.492	3.682
1.53	2.943	1.488	3.129	1.444	3.367
1.473	2.722	1.435	2.878	1.394	3.077
1.415	2.511	1.38	2.642	1.343	2.807
1.356	2.312	1.324	2.421	1.289	2.557
1.294	2.122	1.265	2.213	1.234	2.325
1.231	1.942	1.205	2.016	1.178	2.107
1.166	1.77	1.143	1.83	1.119	1.904
1.099	1.606	1.079	1.654	1.057	1.713
1.03	1.449	1.013	1.488	0.994	1.534
0.958	1.299	0.944	1.33	0.928	1.365
0.885	1.156	0.873	1.179	0.86	1.206
0.847	1.087	0.836	1.107	0.825	1.13
0.809	1.019	0.799	1.036	0.789	1.056
0.77	0.953	0.761	0.967	0.752	0.984
0.73	0.888	0.723	0.9	0.715	0.914
0.69	0.824	0.684	0.834	0.677	0.846
0.649	0.761	0.644	0.77	0.638	0.78
0.608	0.7	0.603	0.707	0.598	0.715
0.566	0.64	0.562	0.646	0.557	0.652
0.544	0.611	0.541	0.616	0.537	0.621
0.523	0.582	0.519	0.586	0.516	0.59
0.501	0.553	0.498	0.556	0.495	0.56
0.479	0.524	0.476	0.527	0.474	0.531



Focal Length 65 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	74.468	69.672	62.09	55.335

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	74.401	Infinity	69.605	Infinity	62.024	Infinity	55.27	Infinity
40.000	26.081	86.083	25.47	93.532	24.387	111.905	23.277	143.578
20.000	15.811	27.238	15.586	27.936	15.177	29.366	14.743	31.156
13.000	11.103	15.688	10.993	15.916	10.789	16.366	10.569	16.903
10.000	8.845	11.506	8.776	11.628	8.646	11.864	8.505	12.142
8.000	7.249	8.928	7.202	9	7.115	9.141	7.02	9.303
7.000	6.421	7.696	6.384	7.75	6.316	7.853	6.242	7.972
6.000	5.572	6.501	5.545	6.538	5.494	6.611	5.438	6.695
5.000	4.702	5.339	4.683	5.364	4.647	5.413	4.607	5.468
4.500	4.259	4.771	4.243	4.791	4.214	4.829	4.181	4.873
4.000	3.81	4.211	3.797	4.226	3.774	4.256	3.748	4.289
3.500	3.355	3.659	3.345	3.67	3.327	3.692	3.308	3.717
3.250	3.125	3.385	3.117	3.395	3.102	3.414	3.084	3.435
3.000	2.894	3.114	2.887	3.122	2.874	3.138	2.859	3.156
2.750	2.662	2.845	2.656	2.851	2.645	2.864	2.632	2.879
2.500	2.428	2.577	2.423	2.583	2.414	2.593	2.404	2.605
2.400	2.334	2.471	2.329	2.476	2.321	2.485	2.311	2.496
2.300	2.239	2.364	2.235	2.369	2.227	2.378	2.219	2.388
2.200	2.145	2.258	2.141	2.263	2.134	2.27	2.126	2.279
2.100	2.05	2.153	2.047	2.157	2.04	2.164	2.033	2.172
2.000	1.955	2.047	1.952	2.051	1.946	2.057	1.94	2.064
1.900	1.859	1.942	1.857	1.945	1.852	1.951	1.846	1.958
1.800	1.764	1.838	1.762	1.84	1.757	1.845	1.752	1.851
1.700	1.668	1.733	1.666	1.736	1.662	1.74	1.657	1.745
1.600	1.572	1.629	1.57	1.631	1.567	1.635	1.563	1.639
1.500	1.476	1.525	1.474	1.527	1.471	1.53	1.468	1.534
1.400	1.379	1.422	1.378	1.423	1.375	1.426	1.372	1.429
1.300	1.282	1.318	1.281	1.319	1.279	1.322	1.276	1.325
1.200	1.185	1.215	1.184	1.216	1.182	1.218	1.18	1.221
1.100	1.088	1.112	1.087	1.113	1.086	1.115	1.084	1.117
1.000	0.99	1.01	0.99	1.011	0.988	1.012	0.987	1.013
0.950	0.941	0.959	0.941	0.959	0.94	0.961	0.938	0.962
0.900	0.892	0.908	0.892	0.908	0.891	0.909	0.89	0.91
0.850	0.843	0.857	0.843	0.857	0.842	0.858	0.841	0.859
0.800	0.794	0.806	0.794	0.806	0.793	0.807	0.792	0.808
0.750	0.745	0.755	0.745	0.755	0.744	0.756	0.743	0.757
0.725	0.721	0.73	0.72	0.73	0.72	0.73	0.719	0.731
0.700	0.696	0.704	0.696	0.704	0.695	0.705	0.694	0.706
0.675	0.671	0.679	0.671	0.679	0.671	0.68	0.67	0.68
0.650	0.647	0.653	0.646	0.654	0.646	0.654	0.645	0.655



3.2	3.5	4	4.5	5
49.317	43.956	39.18	34.924	31.133

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
49.253	Infinity	43.892	Infinity	39.116	Infinity	34.861	Infinity	31.07	Infinity
22.146	210.477	21.001	441.509	19.849	Infinity	18.7	Infinity	17.559	Infinity
14.284	33.447	13.802	36.456	13.299	40.554	12.776	46.414	12.237	55.409
10.333	17.55	10.081	18.338	9.812	19.312	9.526	20.537	9.226	22.113
8.353	12.47	8.188	12.86	8.011	13.328	7.821	13.897	7.619	14.596
6.917	9.493	6.804	9.716	6.682	9.979	6.551	10.292	6.409	10.667
6.16	8.11	6.071	8.271	5.975	8.46	5.87	8.683	5.756	8.947
5.376	6.791	5.309	6.903	5.235	7.033	5.155	7.185	5.068	7.364
4.563	5.532	4.515	5.605	4.462	5.69	4.404	5.788	4.341	5.902
4.145	4.923	4.106	4.981	4.062	5.047	4.015	5.123	3.962	5.212
3.719	4.328	3.688	4.372	3.653	4.422	3.615	4.481	3.573	4.548
3.285	3.746	3.261	3.778	3.234	3.815	3.204	3.858	3.172	3.907
3.065	3.459	3.044	3.487	3.021	3.518	2.995	3.554	2.967	3.596
2.843	3.176	2.825	3.199	2.805	3.225	2.783	3.255	2.759	3.29
2.619	2.896	2.604	2.915	2.587	2.936	2.568	2.961	2.548	2.989
2.392	2.618	2.38	2.634	2.366	2.651	2.35	2.671	2.333	2.694
2.301	2.508	2.289	2.522	2.277	2.538	2.262	2.556	2.247	2.577
2.209	2.399	2.199	2.411	2.187	2.426	2.174	2.442	2.16	2.461
2.117	2.29	2.108	2.301	2.097	2.314	2.085	2.329	2.072	2.346
2.025	2.181	2.016	2.191	2.007	2.203	1.996	2.216	1.984	2.232
1.933	2.073	1.925	2.082	1.916	2.093	1.906	2.104	1.895	2.118
1.839	1.965	1.832	1.973	1.824	1.983	1.816	1.993	1.806	2.005
1.746	1.858	1.74	1.865	1.733	1.873	1.725	1.883	1.716	1.893
1.652	1.751	1.647	1.757	1.64	1.764	1.633	1.773	1.626	1.782
1.558	1.644	1.553	1.65	1.548	1.656	1.542	1.663	1.535	1.672
1.464	1.538	1.459	1.543	1.454	1.549	1.449	1.555	1.443	1.562
1.369	1.433	1.365	1.437	1.361	1.442	1.356	1.447	1.351	1.453
1.273	1.328	1.27	1.331	1.267	1.335	1.263	1.34	1.258	1.345
1.178	1.223	1.175	1.226	1.172	1.229	1.169	1.233	1.165	1.237
1.082	1.119	1.08	1.121	1.077	1.124	1.074	1.127	1.071	1.13
0.985	1.015	0.984	1.017	0.982	1.019	0.979	1.022	0.977	1.024
0.937	0.963	0.935	0.965	0.934	0.967	0.932	0.969	0.93	0.971
0.889	0.912	0.887	0.913	0.886	0.915	0.884	0.917	0.882	0.919
0.84	0.86	0.839	0.862	0.837	0.863	0.836	0.865	0.834	0.866
0.791	0.809	0.79	0.81	0.789	0.811	0.788	0.813	0.786	0.814
0.743	0.758	0.742	0.758	0.741	0.759	0.74	0.761	0.738	0.762
0.718	0.732	0.717	0.733	0.717	0.734	0.715	0.735	0.714	0.736
0.694	0.706	0.693	0.707	0.692	0.708	0.691	0.709	0.69	0.71
0.669	0.681	0.669	0.681	0.668	0.682	0.667	0.683	0.666	0.684
0.645	0.655	0.644	0.656	0.644	0.657	0.643	0.657	0.642	0.658



5.6	6.3	7.1	8	9
27.756	24.747	22.066	19.678	17.55

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
27.693	Infinity	24.684	Infinity	22.003	Infinity	19.615	Infinity	17.488	Infinity
16.434	Infinity	15.333	Infinity	14.262	Infinity	13.225	Infinity	12.229	Infinity
11.684	70.828	11.12	103.048	10.549	210.793	9.975	Infinity	9.402	Infinity
8.91	24.199	8.581	27.067	8.24	31.227	7.888	37.745	7.528	49.316
7.403	15.47	7.176	16.586	6.938	18.049	6.688	20.035	6.429	22.863
6.257	11.123	6.095	11.684	5.924	12.386	5.742	13.283	5.551	14.46
5.634	9.264	5.503	9.648	5.364	10.119	5.215	10.706	5.058	11.454
4.974	7.576	4.872	7.829	4.763	8.134	4.646	8.506	4.522	8.968
4.273	6.036	4.198	6.194	4.118	6.381	4.031	6.606	3.938	6.878
3.906	5.315	3.844	5.437	3.777	5.58	3.704	5.749	3.626	5.953
3.527	4.626	3.477	4.716	3.422	4.823	3.363	4.948	3.299	5.097
3.136	3.964	3.097	4.03	3.054	4.106	3.007	4.196	2.956	4.301
2.936	3.643	2.901	3.698	2.864	3.762	2.823	3.837	2.779	3.924
2.732	3.329	2.703	3.375	2.67	3.427	2.635	3.489	2.597	3.56
2.525	3.021	2.5	3.058	2.473	3.101	2.443	3.151	2.41	3.208
2.315	2.72	2.294	2.749	2.271	2.783	2.246	2.823	2.219	2.868
2.229	2.6	2.21	2.627	2.189	2.659	2.166	2.694	2.141	2.736
2.144	2.482	2.126	2.507	2.107	2.535	2.085	2.567	2.062	2.604
2.057	2.365	2.041	2.387	2.023	2.413	2.004	2.442	1.982	2.475
1.97	2.249	1.956	2.269	1.94	2.291	1.922	2.317	1.902	2.347
1.883	2.134	1.87	2.151	1.855	2.171	1.839	2.195	1.821	2.221
1.795	2.019	1.783	2.035	1.77	2.053	1.755	2.073	1.739	2.097
1.706	1.905	1.695	1.919	1.684	1.935	1.67	1.953	1.656	1.974
1.617	1.793	1.607	1.805	1.597	1.819	1.585	1.834	1.572	1.852
1.527	1.681	1.519	1.691	1.509	1.703	1.499	1.717	1.487	1.733
1.437	1.57	1.429	1.579	1.421	1.589	1.412	1.601	1.402	1.614
1.345	1.46	1.339	1.467	1.332	1.476	1.324	1.486	1.315	1.497
1.254	1.35	1.248	1.357	1.242	1.364	1.235	1.373	1.228	1.382
1.161	1.242	1.157	1.247	1.151	1.253	1.146	1.26	1.14	1.268
1.068	1.134	1.064	1.139	1.06	1.143	1.055	1.149	1.05	1.155
0.974	1.027	0.971	1.031	0.968	1.035	0.964	1.039	0.96	1.044
0.927	0.974	0.924	0.977	0.921	0.981	0.918	0.985	0.914	0.989
0.88	0.921	0.878	0.924	0.875	0.927	0.872	0.93	0.869	0.934
0.832	0.868	0.83	0.871	0.828	0.873	0.825	0.876	0.823	0.88
0.785	0.816	0.783	0.818	0.781	0.82	0.779	0.823	0.776	0.826
0.737	0.764	0.735	0.765	0.734	0.767	0.732	0.769	0.73	0.772
0.713	0.737	0.712	0.739	0.71	0.741	0.708	0.743	0.706	0.745
0.689	0.711	0.688	0.713	0.686	0.714	0.685	0.716	0.683	0.718
0.665	0.685	0.664	0.687	0.662	0.688	0.661	0.69	0.659	0.692
0.641	0.659	0.64	0.661	0.639	0.662	0.637	0.663	0.636	0.665



10	11	13	14	16
15.655	13.966	12.462	11.121	9.927

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
15.592	Infinity	13.903	Infinity	12.399	Infinity	11.059	Infinity	9.865	Infinity
11.278	Infinity	10.373	Infinity	9.517	Infinity	8.713	Infinity	7.959	Infinity
8.833	Infinity	8.272	Infinity	7.723	Infinity	7.188	Infinity	6.67	Infinity
7.161	75.245	6.791	184.053	6.419	Infinity	6.048	Infinity	5.68	Infinity
6.162	27.175	5.887	34.487	5.607	49.454	5.324	96.617	5.039	Infinity
5.352	16.06	5.145	18.342	4.932	21.829	4.713	27.767	4.489	40.016
4.893	12.429	4.72	13.745	4.541	15.604	4.356	18.402	4.165	23.053
4.391	9.551	4.252	10.303	4.107	11.305	3.956	12.694	3.799	14.729
3.839	7.212	3.734	7.629	3.622	8.159	3.505	8.85	3.383	9.784
3.542	6.2	3.453	6.503	3.358	6.882	3.258	7.364	3.153	7.994
3.23	5.275	3.156	5.491	3.078	5.756	2.994	6.087	2.905	6.507
2.901	4.426	2.842	4.575	2.779	4.756	2.711	4.977	2.639	5.251
2.73	4.027	2.678	4.15	2.622	4.296	2.562	4.475	2.498	4.694
2.555	3.644	2.509	3.743	2.461	3.861	2.408	4.004	2.352	4.176
2.374	3.276	2.335	3.355	2.293	3.449	2.248	3.56	2.199	3.695
2.189	2.922	2.156	2.984	2.12	3.057	2.082	3.143	2.041	3.247
2.113	2.784	2.083	2.84	2.05	2.905	2.014	2.983	1.975	3.075
2.036	2.648	2.008	2.698	1.978	2.757	1.945	2.826	1.909	2.909
1.959	2.514	1.933	2.559	1.905	2.611	1.874	2.673	1.841	2.746
1.88	2.382	1.857	2.422	1.831	2.469	1.803	2.524	1.773	2.588
1.801	2.252	1.78	2.287	1.756	2.329	1.731	2.377	1.703	2.434
1.721	2.124	1.702	2.155	1.68	2.192	1.657	2.234	1.632	2.284
1.64	1.998	1.622	2.025	1.603	2.057	1.582	2.094	1.559	2.137
1.558	1.873	1.542	1.897	1.525	1.925	1.506	1.957	1.486	1.994
1.475	1.751	1.461	1.771	1.446	1.795	1.429	1.822	1.411	1.854
1.391	1.63	1.379	1.647	1.365	1.667	1.35	1.691	1.334	1.718
1.306	1.51	1.295	1.525	1.283	1.542	1.271	1.562	1.257	1.585
1.22	1.393	1.211	1.405	1.201	1.419	1.19	1.436	1.177	1.455
1.133	1.277	1.125	1.287	1.116	1.299	1.107	1.312	1.097	1.327
1.044	1.163	1.038	1.171	1.031	1.18	1.023	1.191	1.015	1.203
0.955	1.05	0.95	1.056	0.944	1.064	0.938	1.072	0.931	1.082
0.91	0.994	0.906	1	0.9	1.006	0.895	1.014	0.889	1.022
0.865	0.939	0.861	0.944	0.856	0.949	0.851	0.956	0.846	0.963
0.819	0.884	0.816	0.888	0.812	0.893	0.807	0.898	0.802	0.905
0.773	0.829	0.77	0.833	0.767	0.837	0.763	0.841	0.759	0.847
0.727	0.774	0.725	0.778	0.722	0.781	0.718	0.785	0.715	0.79
0.704	0.747	0.702	0.75	0.699	0.754	0.696	0.757	0.692	0.761
0.681	0.721	0.679	0.723	0.676	0.726	0.673	0.729	0.67	0.733
0.657	0.694	0.655	0.696	0.653	0.699	0.651	0.702	0.648	0.705
0.634	0.667	0.632	0.669	0.63	0.672	0.628	0.674	0.625	0.677



18	20	22
8.863	7.916	7.071

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
8.801	Infinity	7.853	Infinity	7.009	Infinity
7.256	Infinity	6.604	Infinity	6	Infinity
6.173	Infinity	5.698	Infinity	5.246	Infinity
5.318	Infinity	4.964	Infinity	4.62	Infinity
4.753	Infinity	4.47	Infinity	4.191	Infinity
4.263	79.469	4.036	Infinity	3.808	Infinity
3.971	32.218	3.773	58.324	3.575	667.176
3.638	17.972	3.473	23.895	3.305	38.002
3.255	11.101	3.124	13.084	2.989	16.38
3.042	8.846	2.928	10.052	2.81	11.876
2.812	7.055	2.715	7.795	2.614	8.838
2.563	5.598	2.483	6.049	2.399	6.652
2.43	4.967	2.359	5.316	2.283	5.773
2.292	4.39	2.228	4.658	2.161	5.002
2.147	3.86	2.092	4.063	2.033	4.32
1.996	3.371	1.949	3.524	1.899	3.713
1.934	3.187	1.89	3.322	1.842	3.488
1.871	3.007	1.829	3.127	1.785	3.273
1.806	2.834	1.768	2.939	1.727	3.067
1.74	2.665	1.705	2.757	1.667	2.869
1.673	2.501	1.64	2.581	1.605	2.678
1.604	2.342	1.575	2.412	1.543	2.495
1.534	2.188	1.508	2.248	1.479	2.319
1.463	2.037	1.439	2.089	1.413	2.15
1.391	1.891	1.369	1.935	1.346	1.987
1.317	1.749	1.298	1.786	1.277	1.829
1.241	1.611	1.224	1.642	1.206	1.678
1.164	1.476	1.15	1.501	1.134	1.531
1.085	1.345	1.073	1.366	1.06	1.389
1.005	1.217	0.995	1.234	0.983	1.253
0.923	1.093	0.915	1.106	0.905	1.12
0.882	1.032	0.874	1.043	0.866	1.056
0.84	0.971	0.833	0.981	0.825	0.992
0.797	0.912	0.791	0.92	0.784	0.93
0.754	0.853	0.749	0.86	0.743	0.868
0.711	0.795	0.706	0.801	0.701	0.808
0.689	0.766	0.685	0.772	0.68	0.778
0.667	0.738	0.663	0.743	0.659	0.748
0.645	0.709	0.641	0.714	0.637	0.719
0.622	0.681	0.619	0.685	0.616	0.69



Focal Length 75 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	107.295	100.379	89.445	79.705

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	107.208	Infinity	100.294	Infinity	89.362	Infinity	79.623	Infinity
40.00	29.182	63.625	28.648	66.331	27.687	72.153	26.682	80.041
20.00	16.89	24.524	16.71	24.913	16.381	25.687	16.026	26.614
13.00	11.619	14.757	11.534	14.896	11.377	15.168	11.206	15.484
10.00	9.167	11.002	9.114	11.078	9.017	11.227	8.91	11.398
8.00	7.461	8.624	7.426	8.671	7.362	8.761	7.291	8.864
7.00	6.586	7.471	6.559	7.506	6.509	7.573	6.453	7.65
6.00	5.695	6.34	5.675	6.365	5.637	6.413	5.596	6.468
5.00	4.788	5.232	4.774	5.249	4.748	5.281	4.719	5.318
4.50	4.328	4.686	4.317	4.699	4.296	4.725	4.272	4.754
4.00	3.865	4.145	3.856	4.156	3.839	4.175	3.82	4.198
3.50	3.397	3.61	3.39	3.617	3.377	3.632	3.363	3.649
3.25	3.162	3.344	3.156	3.35	3.144	3.363	3.132	3.377
3.00	2.925	3.079	2.92	3.085	2.91	3.095	2.9	3.108
2.75	2.687	2.816	2.683	2.82	2.675	2.829	2.666	2.839
2.50	2.449	2.554	2.445	2.557	2.439	2.565	2.431	2.573
2.40	2.353	2.449	2.35	2.453	2.344	2.459	2.337	2.467
2.30	2.257	2.345	2.254	2.348	2.248	2.354	2.242	2.361
2.20	2.161	2.241	2.158	2.244	2.153	2.249	2.147	2.255
2.10	2.064	2.137	2.062	2.14	2.057	2.145	2.052	2.15
2.00	1.968	2.033	1.966	2.036	1.962	2.04	1.957	2.045
1.90	1.871	1.93	1.869	1.932	1.866	1.936	1.861	1.94
1.80	1.774	1.826	1.773	1.828	1.769	1.832	1.766	1.836
1.70	1.677	1.723	1.676	1.725	1.673	1.728	1.67	1.732
1.60	1.58	1.62	1.579	1.622	1.576	1.625	1.573	1.628
1.50	1.483	1.518	1.481	1.519	1.479	1.521	1.477	1.524
1.40	1.385	1.415	1.384	1.416	1.382	1.418	1.38	1.421
1.30	1.287	1.313	1.286	1.314	1.285	1.316	1.283	1.318
1.25	1.238	1.262	1.238	1.263	1.236	1.264	1.234	1.266
1.20	1.189	1.211	1.189	1.212	1.187	1.213	1.186	1.215
1.15	1.14	1.16	1.14	1.161	1.138	1.162	1.137	1.163
1.10	1.091	1.109	1.091	1.11	1.09	1.111	1.088	1.112
1.05	1.042	1.058	1.042	1.059	1.041	1.06	1.039	1.061
1.00	0.993	1.007	0.992	1.008	0.992	1.009	0.991	1.01
0.95	0.944	0.956	0.943	0.957	0.943	0.958	0.942	0.959
0.90	0.894	0.906	0.894	0.906	0.893	0.907	0.893	0.908
0.85	0.845	0.855	0.845	0.855	0.844	0.856	0.844	0.857
0.80	0.796	0.804	0.796	0.805	0.795	0.805	0.794	0.806
0.75	0.746	0.754	0.746	0.754	0.746	0.754	0.745	0.755



3.2	3.5	4	4.5	5
71.027	63.296	56.408	50.272	44.805

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
70.947	Infinity	63.217	Infinity	56.33	Infinity	50.194	Infinity	44.728	Infinity
25.638	91.24	24.56	108.245	23.453	136.892	22.324	194.772	21.18	370.852
15.646	27.739	15.24	29.121	14.809	30.847	14.354	33.045	13.875	35.92
11.02	15.856	10.819	16.294	10.601	16.817	10.367	17.446	10.117	18.21
8.792	11.597	8.664	11.829	8.525	12.1	8.374	12.42	8.211	12.8
7.213	8.983	7.127	9.121	7.033	9.28	6.93	9.466	6.819	9.684
6.392	7.738	6.325	7.839	6.251	7.956	6.171	8.091	6.083	8.249
5.55	6.53	5.5	6.602	5.445	6.684	5.384	6.779	5.317	6.889
4.686	5.36	4.651	5.407	4.611	5.462	4.568	5.524	4.52	5.596
4.246	4.787	4.217	4.825	4.184	4.868	4.149	4.918	4.11	4.974
3.799	4.224	3.776	4.253	3.75	4.286	3.722	4.324	3.691	4.367
3.347	3.668	3.329	3.69	3.309	3.715	3.287	3.743	3.263	3.775
3.118	3.394	3.103	3.412	3.086	3.433	3.067	3.457	3.046	3.485
2.888	3.121	2.875	3.137	2.86	3.154	2.844	3.175	2.826	3.197
2.656	2.851	2.645	2.864	2.633	2.878	2.62	2.895	2.604	2.913
2.423	2.582	2.414	2.593	2.404	2.604	2.393	2.618	2.38	2.633
2.329	2.475	2.321	2.485	2.312	2.496	2.301	2.508	2.29	2.522
2.235	2.369	2.228	2.377	2.219	2.387	2.21	2.398	2.199	2.411
2.141	2.262	2.134	2.27	2.126	2.279	2.118	2.289	2.108	2.301
2.047	2.156	2.04	2.164	2.033	2.172	2.025	2.181	2.017	2.191
1.952	2.051	1.946	2.057	1.94	2.064	1.933	2.073	1.925	2.082
1.857	1.945	1.852	1.951	1.846	1.958	1.839	1.965	1.832	1.973
1.761	1.84	1.757	1.845	1.752	1.851	1.746	1.858	1.74	1.865
1.666	1.736	1.662	1.74	1.657	1.745	1.652	1.751	1.646	1.757
1.57	1.631	1.566	1.635	1.562	1.64	1.558	1.645	1.553	1.65
1.474	1.527	1.471	1.53	1.467	1.534	1.463	1.539	1.459	1.543
1.378	1.423	1.375	1.426	1.372	1.429	1.368	1.433	1.365	1.437
1.281	1.32	1.279	1.322	1.276	1.325	1.273	1.328	1.27	1.332
1.233	1.268	1.23	1.27	1.228	1.273	1.225	1.276	1.222	1.279
1.184	1.216	1.182	1.218	1.18	1.221	1.178	1.223	1.175	1.226
1.135	1.165	1.134	1.167	1.132	1.169	1.13	1.171	1.127	1.174
1.087	1.114	1.085	1.115	1.083	1.117	1.082	1.119	1.079	1.122
1.038	1.062	1.037	1.064	1.035	1.065	1.033	1.067	1.031	1.069
0.989	1.011	0.988	1.012	0.987	1.014	0.985	1.015	0.983	1.017
0.941	0.96	0.939	0.961	0.938	0.962	0.937	0.964	0.935	0.965
0.892	0.908	0.891	0.91	0.89	0.911	0.888	0.912	0.887	0.914
0.843	0.857	0.842	0.858	0.841	0.859	0.84	0.861	0.839	0.862
0.794	0.806	0.793	0.807	0.792	0.808	0.791	0.809	0.79	0.81
0.745	0.755	0.744	0.756	0.743	0.757	0.742	0.758	0.741	0.759



5.6	6.3	7.1	8	9
39.935	35.596	31.73	28.287	25.219

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
39.858	Infinity	35.52	Infinity	31.654	Infinity	28.211	Infinity	25.143	Infinity
20.029	Infinity	18.877	Infinity	17.734	Infinity	16.606	Infinity	15.499	Infinity
13.375	39.81	12.854	45.321	12.317	53.665	11.765	67.656	11.202	95.675
9.85	19.152	9.567	20.333	9.268	21.846	8.954	23.839	8.627	26.561
8.035	13.256	7.847	13.808	7.646	14.485	7.432	15.33	7.206	16.404
6.698	9.941	6.568	10.246	6.427	10.612	6.276	11.055	6.116	11.599
5.987	8.434	5.883	8.652	5.77	8.91	5.649	9.219	5.519	9.592
5.244	7.016	5.164	7.165	5.078	7.34	4.984	7.547	4.884	7.794
4.468	5.68	4.41	5.776	4.348	5.888	4.28	6.019	4.206	6.174
4.067	5.039	4.019	5.115	3.968	5.202	3.911	5.304	3.85	5.423
3.656	4.417	3.618	4.475	3.576	4.541	3.531	4.617	3.481	4.707
3.236	3.812	3.207	3.854	3.174	3.903	3.138	3.959	3.099	4.024
3.023	3.516	2.997	3.551	2.969	3.592	2.938	3.639	2.904	3.694
2.806	3.223	2.784	3.253	2.76	3.287	2.734	3.326	2.704	3.371
2.588	2.935	2.569	2.959	2.549	2.987	2.526	3.019	2.501	3.056
2.366	2.65	2.351	2.67	2.334	2.692	2.315	2.718	2.295	2.748
2.277	2.538	2.263	2.556	2.247	2.576	2.23	2.599	2.211	2.626
2.187	2.425	2.174	2.442	2.16	2.46	2.144	2.482	2.126	2.506
2.097	2.314	2.085	2.329	2.072	2.345	2.058	2.365	2.042	2.387
2.007	2.203	1.996	2.216	1.984	2.231	1.971	2.249	1.956	2.268
1.916	2.092	1.906	2.104	1.895	2.118	1.883	2.133	1.87	2.151
1.824	1.983	1.816	1.993	1.806	2.005	1.795	2.019	1.783	2.035
1.732	1.873	1.725	1.883	1.716	1.893	1.706	1.906	1.695	1.919
1.64	1.765	1.633	1.773	1.625	1.782	1.617	1.793	1.607	1.805
1.547	1.657	1.541	1.664	1.534	1.672	1.527	1.681	1.518	1.692
1.454	1.549	1.449	1.555	1.443	1.562	1.436	1.57	1.429	1.579
1.361	1.442	1.356	1.447	1.351	1.453	1.345	1.46	1.338	1.468
1.266	1.336	1.262	1.34	1.258	1.345	1.253	1.351	1.248	1.357
1.219	1.283	1.216	1.287	1.211	1.291	1.207	1.297	1.202	1.302
1.172	1.23	1.169	1.233	1.165	1.238	1.161	1.242	1.156	1.248
1.124	1.177	1.121	1.18	1.118	1.184	1.114	1.188	1.11	1.193
1.077	1.124	1.074	1.127	1.071	1.131	1.068	1.135	1.064	1.139
1.029	1.072	1.027	1.075	1.024	1.078	1.021	1.081	1.017	1.085
0.981	1.02	0.979	1.022	0.977	1.025	0.974	1.028	0.971	1.031
0.933	0.967	0.931	0.969	0.929	0.972	0.927	0.975	0.924	0.978
0.885	0.915	0.884	0.917	0.882	0.919	0.879	0.922	0.877	0.924
0.837	0.863	0.836	0.865	0.834	0.867	0.832	0.869	0.83	0.871
0.789	0.812	0.788	0.813	0.786	0.815	0.784	0.816	0.782	0.818
0.74	0.76	0.739	0.761	0.738	0.762	0.737	0.764	0.735	0.766



10	11	13	14	16
22.485	20.05	17.881	15.948	14.226

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
22.41	Infinity	19.975	Infinity	17.805	Infinity	15.873	Infinity	14.151	Infinity
14.422	Infinity	13.379	Infinity	12.375	Infinity	11.415	Infinity	10.502	Infinity
10.632	178.908	10.058	7916.498	9.483	Infinity	8.912	Infinity	8.349	Infinity
8.287	30.469	7.936	36.503	7.576	46.95	7.21	69.211	6.839	148.167
6.969	17.806	6.721	19.698	6.462	22.367	6.195	26.386	5.921	33.063
5.945	12.278	5.764	13.143	5.574	14.272	5.376	15.798	5.17	17.954
5.38	10.05	5.232	10.619	5.076	11.341	4.912	12.278	4.74	13.536
4.775	8.092	4.659	8.454	4.536	8.903	4.405	9.466	4.267	10.192
4.126	6.358	4.04	6.577	3.947	6.843	3.849	7.168	3.744	7.573
3.783	5.563	3.711	5.729	3.633	5.929	3.55	6.17	3.461	6.466
3.427	4.811	3.368	4.934	3.304	5.08	3.236	5.255	3.162	5.466
3.057	4.099	3.01	4.187	2.96	4.291	2.905	4.414	2.846	4.56
2.866	3.757	2.826	3.83	2.781	3.916	2.733	4.018	2.681	4.138
2.672	3.423	2.637	3.484	2.599	3.554	2.557	3.637	2.512	3.735
2.474	3.098	2.444	3.147	2.411	3.204	2.376	3.271	2.337	3.349
2.272	2.782	2.247	2.821	2.219	2.866	2.189	2.918	2.157	2.98
2.19	2.657	2.167	2.692	2.141	2.733	2.113	2.781	2.083	2.837
2.107	2.534	2.086	2.566	2.062	2.603	2.037	2.646	2.009	2.696
2.024	2.412	2.004	2.441	1.983	2.474	1.959	2.512	1.933	2.557
1.94	2.291	1.922	2.317	1.902	2.346	1.881	2.381	1.857	2.421
1.855	2.171	1.839	2.194	1.821	2.221	1.801	2.251	1.78	2.287
1.769	2.053	1.755	2.073	1.739	2.096	1.721	2.124	1.701	2.155
1.683	1.935	1.67	1.953	1.656	1.974	1.64	1.998	1.622	2.025
1.596	1.819	1.585	1.835	1.572	1.853	1.557	1.873	1.542	1.897
1.509	1.704	1.498	1.717	1.487	1.733	1.474	1.751	1.46	1.772
1.42	1.59	1.411	1.601	1.401	1.615	1.39	1.63	1.378	1.648
1.331	1.477	1.323	1.487	1.315	1.498	1.305	1.511	1.294	1.526
1.241	1.365	1.235	1.373	1.227	1.383	1.219	1.394	1.21	1.406
1.196	1.309	1.19	1.317	1.183	1.326	1.175	1.336	1.167	1.347
1.151	1.254	1.145	1.261	1.139	1.269	1.132	1.278	1.124	1.288
1.105	1.199	1.1	1.205	1.094	1.212	1.088	1.221	1.081	1.23
1.059	1.144	1.055	1.15	1.049	1.156	1.044	1.164	1.037	1.172
1.013	1.09	1.009	1.095	1.004	1.1	0.999	1.107	0.993	1.114
0.967	1.035	0.963	1.04	0.959	1.045	0.954	1.051	0.949	1.057
0.921	0.981	0.917	0.985	0.914	0.99	0.909	0.995	0.905	1.001
0.874	0.928	0.871	0.931	0.868	0.935	0.864	0.94	0.86	0.945
0.827	0.874	0.825	0.877	0.822	0.881	0.818	0.884	0.815	0.889
0.78	0.821	0.778	0.823	0.775	0.826	0.773	0.83	0.769	0.834
0.733	0.768	0.731	0.77	0.729	0.773	0.726	0.775	0.724	0.779



18	20	22
12.692	11.325	10.108

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
12.617	Infinity	11.25	Infinity	10.032	Infinity
9.638	Infinity	8.824	Infinity	8.062	Infinity
7.797	Infinity	7.259	Infinity	6.738	Infinity
6.467	Infinity	6.095	Infinity	5.725	Infinity
5.642	46.207	5.358	83.549	5.072	916.054
4.956	21.209	4.737	26.638	4.514	37.405
4.561	15.298	4.375	17.919	4.185	22.198
4.122	11.153	3.971	12.476	3.814	14.395
3.633	8.086	3.516	8.753	3.394	9.648
3.366	6.834	3.266	7.301	3.161	7.909
3.084	5.725	3	6.047	2.912	6.455
2.783	4.737	2.715	4.953	2.644	5.221
2.626	4.282	2.566	4.457	2.502	4.671
2.463	3.851	2.411	3.991	2.354	4.161
2.295	3.442	2.25	3.552	2.201	3.684
2.121	3.052	2.083	3.138	2.042	3.24
2.05	2.902	2.015	2.978	1.976	3.07
1.978	2.754	1.945	2.823	1.909	2.904
1.905	2.609	1.875	2.67	1.842	2.743
1.831	2.467	1.803	2.522	1.773	2.586
1.756	2.328	1.73	2.376	1.702	2.432
1.68	2.191	1.657	2.233	1.631	2.283
1.603	2.057	1.582	2.093	1.559	2.136
1.524	1.925	1.505	1.957	1.485	1.994
1.445	1.795	1.428	1.823	1.41	1.855
1.364	1.668	1.349	1.692	1.333	1.719
1.282	1.543	1.27	1.563	1.255	1.586
1.199	1.421	1.188	1.437	1.176	1.456
1.158	1.36	1.147	1.375	1.136	1.392
1.115	1.3	1.106	1.313	1.095	1.329
1.073	1.24	1.064	1.253	1.054	1.267
1.03	1.181	1.022	1.192	1.013	1.205
0.987	1.123	0.979	1.133	0.972	1.144
0.943	1.065	0.937	1.074	0.93	1.083
0.899	1.007	0.893	1.015	0.887	1.024
0.855	0.95	0.85	0.957	0.844	0.965
0.811	0.894	0.806	0.9	0.801	0.906
0.766	0.838	0.762	0.843	0.757	0.848
0.721	0.782	0.717	0.786	0.713	0.791



Focal Length 100 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	182.332	170.573	151.981	135.418

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	182.202	Infinity	170.446	Infinity	151.86	Infinity	135.302	Infinity
40.00	32.836	51.174	32.435	52.181	31.701	54.203	30.916	56.668
20.00	18.043	22.435	17.922	22.625	17.697	22.995	17.451	23.424
13.00	12.149	13.98	12.095	14.053	11.992	14.194	11.88	14.355
10.00	9.492	10.567	9.458	10.608	9.396	10.688	9.327	10.778
8.00	7.673	8.356	7.652	8.382	7.611	8.431	7.566	8.487
7.00	6.75	7.27	6.733	7.289	6.702	7.327	6.667	7.369
6.00	5.816	6.196	5.804	6.21	5.781	6.237	5.755	6.267
5.00	4.873	5.134	4.864	5.144	4.848	5.162	4.83	5.183
4.50	4.397	4.608	4.39	4.616	4.377	4.63	4.363	4.647
4.00	3.919	4.084	3.914	4.09	3.903	4.102	3.892	4.115
3.50	3.438	3.564	3.434	3.568	3.426	3.577	3.418	3.587
3.25	3.197	3.305	3.194	3.309	3.187	3.316	3.179	3.324
3.00	2.955	3.046	2.952	3.05	2.946	3.056	2.94	3.063
2.75	2.713	2.789	2.71	2.791	2.705	2.796	2.7	2.802
2.50	2.469	2.532	2.467	2.534	2.463	2.538	2.459	2.543
2.40	2.372	2.429	2.37	2.431	2.366	2.435	2.362	2.439
2.30	2.274	2.326	2.272	2.328	2.269	2.332	2.265	2.336
2.20	2.177	2.224	2.175	2.226	2.172	2.229	2.168	2.232
2.10	2.079	2.122	2.077	2.123	2.074	2.126	2.071	2.129
2.00	1.981	2.02	1.979	2.021	1.977	2.024	1.974	2.026
1.90	1.883	1.918	1.882	1.919	1.879	1.921	1.877	1.924
1.80	1.785	1.816	1.784	1.817	1.782	1.819	1.779	1.821
1.70	1.686	1.714	1.685	1.715	1.684	1.717	1.682	1.719
1.60	1.588	1.612	1.587	1.613	1.586	1.615	1.584	1.616
1.50	1.49	1.511	1.489	1.511	1.488	1.513	1.486	1.514
1.40	1.391	1.409	1.39	1.41	1.389	1.411	1.388	1.412
1.30	1.292	1.308	1.292	1.308	1.291	1.309	1.29	1.31
1.20	1.194	1.206	1.193	1.207	1.192	1.208	1.191	1.209
1.10	1.095	1.105	1.094	1.106	1.094	1.106	1.093	1.107
1.00	0.996	1.004	0.995	1.005	0.995	1.005	0.994	1.006
0.95	0.946	0.954	0.946	0.954	0.945	0.955	0.945	0.955
0.90	0.897	0.903	0.896	0.904	0.896	0.904	0.896	0.905
0.85	0.847	0.853	0.847	0.853	0.847	0.854	0.846	0.854



3.2	3.5	4	4.5	5
120.662	107.516	95.804	85.37	76.075

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
120.55	Infinity	107.407	Infinity	95.697	Infinity	85.265	Infinity	75.971	Infinity
30.08	59.718	29.194	63.557	28.259	68.501	27.28	75.055	26.258	84.088
17.183	23.926	16.892	24.516	16.577	25.214	16.237	26.046	15.872	27.049
11.756	14.541	11.619	14.755	11.47	15.004	11.308	15.293	11.13	15.63
9.251	10.882	9.167	11.001	9.074	11.138	8.973	11.295	8.861	11.478
7.516	8.551	7.461	8.624	7.4	8.707	7.332	8.803	7.258	8.912
6.628	7.417	6.585	7.471	6.538	7.533	6.486	7.604	6.428	7.685
5.726	6.302	5.694	6.341	5.659	6.385	5.62	6.436	5.577	6.493
4.81	5.206	4.788	5.232	4.763	5.262	4.735	5.296	4.705	5.335
4.346	4.665	4.328	4.686	4.308	4.71	4.286	4.737	4.261	4.768
3.879	4.129	3.865	4.145	3.849	4.164	3.831	4.185	3.811	4.209
3.408	3.598	3.397	3.61	3.385	3.624	3.371	3.64	3.356	3.657
3.171	3.333	3.161	3.344	3.151	3.356	3.139	3.369	3.126	3.385
2.933	3.071	2.925	3.079	2.916	3.089	2.906	3.101	2.895	3.114
2.694	2.809	2.687	2.816	2.68	2.824	2.671	2.834	2.662	2.844
2.454	2.548	2.448	2.554	2.442	2.561	2.435	2.568	2.428	2.577
2.358	2.444	2.353	2.449	2.347	2.456	2.341	2.463	2.333	2.471
2.261	2.34	2.257	2.345	2.251	2.351	2.246	2.357	2.239	2.364
2.165	2.237	2.16	2.241	2.156	2.246	2.15	2.252	2.144	2.259
2.068	2.133	2.064	2.137	2.06	2.142	2.055	2.147	2.05	2.153
1.971	2.03	1.968	2.034	1.964	2.038	1.959	2.042	1.955	2.048
1.874	1.927	1.871	1.93	1.867	1.934	1.864	1.938	1.859	1.943
1.777	1.824	1.774	1.827	1.771	1.83	1.767	1.834	1.764	1.838
1.68	1.721	1.677	1.724	1.674	1.727	1.671	1.73	1.668	1.734
1.582	1.618	1.58	1.621	1.577	1.623	1.575	1.626	1.572	1.629
1.484	1.516	1.482	1.518	1.48	1.52	1.478	1.523	1.475	1.526
1.387	1.414	1.385	1.415	1.383	1.417	1.381	1.42	1.379	1.422
1.289	1.312	1.287	1.313	1.286	1.315	1.284	1.317	1.282	1.319
1.19	1.21	1.189	1.211	1.188	1.212	1.186	1.214	1.185	1.216
1.092	1.108	1.091	1.109	1.09	1.11	1.089	1.111	1.088	1.113
0.994	1.006	0.993	1.007	0.992	1.008	0.991	1.009	0.99	1.01
0.944	0.956	0.944	0.956	0.943	0.957	0.942	0.958	0.941	0.959
0.895	0.905	0.894	0.906	0.894	0.906	0.893	0.907	0.892	0.908
0.846	0.854	0.845	0.855	0.844	0.856	0.844	0.856	0.843	0.857



5.6	6.3	7.1	8	9
67.793	60.415	53.842	47.986	42.769

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
67.691	Infinity	60.314	Infinity	53.742	Infinity	47.886	Infinity	42.67	Infinity
25.199	97.225	24.108	117.906	22.991	154.901	21.854	239.151	20.706	614.334
15.481	28.27	15.064	29.78	14.623	31.679	14.158	34.123	13.669	37.359
10.938	16.028	10.73	16.499	10.505	17.062	10.264	17.742	10.007	18.573
8.74	11.689	8.607	11.936	8.463	12.227	8.307	12.57	8.138	12.979
7.177	9.039	7.088	9.185	6.99	9.355	6.884	9.553	6.769	9.786
6.364	7.779	6.294	7.886	6.218	8.011	6.134	8.155	6.042	8.324
5.529	6.56	5.477	6.636	5.419	6.723	5.355	6.824	5.286	6.94
4.671	5.379	4.634	5.43	4.593	5.488	4.548	5.554	4.498	5.631
4.233	4.803	4.203	4.843	4.169	4.889	4.132	4.941	4.091	5.001
3.789	4.236	3.765	4.267	3.738	4.302	3.708	4.342	3.676	4.388
3.339	3.678	3.32	3.701	3.3	3.727	3.277	3.757	3.251	3.791
3.111	3.402	3.095	3.421	3.077	3.444	3.057	3.469	3.035	3.498
2.882	3.128	2.868	3.144	2.853	3.163	2.836	3.184	2.817	3.209
2.651	2.856	2.64	2.87	2.627	2.885	2.613	2.903	2.597	2.923
2.419	2.587	2.409	2.598	2.399	2.61	2.387	2.625	2.374	2.641
2.326	2.48	2.317	2.49	2.307	2.501	2.296	2.514	2.284	2.529
2.232	2.373	2.224	2.382	2.215	2.392	2.205	2.404	2.194	2.417
2.138	2.266	2.131	2.274	2.122	2.284	2.113	2.295	2.103	2.307
2.044	2.16	2.037	2.167	2.029	2.176	2.021	2.185	2.012	2.196
1.949	2.054	1.943	2.061	1.936	2.068	1.929	2.077	1.92	2.087
1.854	1.948	1.849	1.954	1.843	1.961	1.836	1.969	1.829	1.978
1.759	1.843	1.754	1.848	1.749	1.854	1.743	1.861	1.736	1.869
1.664	1.738	1.66	1.743	1.655	1.748	1.649	1.754	1.643	1.761
1.568	1.633	1.564	1.637	1.56	1.642	1.556	1.647	1.55	1.653
1.472	1.529	1.469	1.532	1.465	1.536	1.461	1.541	1.457	1.546
1.376	1.425	1.373	1.428	1.37	1.431	1.367	1.435	1.363	1.44
1.28	1.321	1.277	1.324	1.275	1.326	1.272	1.33	1.268	1.334
1.183	1.218	1.181	1.22	1.179	1.222	1.176	1.225	1.173	1.228
1.086	1.114	1.084	1.116	1.082	1.118	1.08	1.12	1.078	1.123
0.989	1.012	0.987	1.013	0.986	1.015	0.984	1.016	0.982	1.019
0.94	0.96	0.939	0.962	0.937	0.963	0.936	0.965	0.934	0.966
0.891	0.909	0.89	0.91	0.889	0.911	0.887	0.913	0.886	0.915
0.842	0.858	0.841	0.859	0.84	0.86	0.839	0.861	0.838	0.863



10	11	13	14
38.121	33.981	30.292	27.005

10		11		13		14	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
38.022	Infinity	33.882	Infinity	30.193	Infinity	26.907	Infinity
19.553	Infinity	18.403	Infinity	17.264	Infinity	16.144	Infinity
13.16	41.811	12.632	48.271	12.088	58.404	11.531	76.422
9.733	19.604	9.443	20.908	9.138	22.595	8.818	24.846
7.957	13.472	7.763	14.071	7.557	14.811	7.338	15.741
6.644	10.062	6.509	10.39	6.364	10.786	6.209	11.268
5.943	8.521	5.835	8.755	5.719	9.033	5.594	9.367
5.21	7.077	5.128	7.236	5.038	7.424	4.941	7.646
4.443	5.719	4.384	5.822	4.319	5.942	4.248	6.082
4.046	5.071	3.997	5.151	3.943	5.244	3.884	5.353
3.64	4.441	3.6	4.502	3.557	4.573	3.509	4.655
3.223	3.83	3.192	3.875	3.158	3.927	3.121	3.986
3.011	3.531	2.984	3.569	2.955	3.612	2.922	3.663
2.797	3.236	2.774	3.268	2.748	3.304	2.72	3.346
2.579	2.946	2.56	2.972	2.538	3.001	2.515	3.035
2.359	2.659	2.343	2.68	2.325	2.704	2.306	2.731
2.271	2.546	2.256	2.565	2.239	2.586	2.221	2.611
2.181	2.433	2.168	2.45	2.153	2.47	2.136	2.492
2.092	2.32	2.079	2.336	2.065	2.354	2.05	2.374
2.002	2.209	1.99	2.223	1.978	2.239	1.964	2.257
1.911	2.098	1.901	2.111	1.889	2.125	1.877	2.141
1.82	1.987	1.811	1.999	1.801	2.012	1.789	2.026
1.729	1.878	1.72	1.888	1.711	1.899	1.701	1.912
1.637	1.769	1.629	1.777	1.621	1.787	1.612	1.799
1.544	1.66	1.538	1.668	1.531	1.676	1.523	1.686
1.452	1.552	1.446	1.559	1.439	1.566	1.432	1.575
1.358	1.445	1.353	1.45	1.348	1.457	1.342	1.464
1.264	1.338	1.26	1.343	1.255	1.348	1.25	1.354
1.17	1.232	1.167	1.236	1.163	1.24	1.158	1.245
1.075	1.126	1.072	1.129	1.069	1.133	1.065	1.137
0.98	1.021	0.978	1.023	0.975	1.026	0.972	1.03
0.932	0.969	0.93	0.971	0.928	0.973	0.925	0.976
0.884	0.916	0.882	0.918	0.88	0.921	0.878	0.923
0.836	0.864	0.835	0.866	0.833	0.868	0.831	0.87



16	18	20	22
24.077	21.469	19.145	17.074

16		18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
23.979	Infinity	21.37	Infinity	19.047	Infinity	16.976	Infinity
15.048	Infinity	13.983	Infinity	12.955	Infinity	11.968	Infinity
10.964	116.94	10.391	289.113	9.816	Infinity	9.242	Infinity
8.484	27.978	8.139	32.591	7.784	40	7.421	53.721
7.107	16.935	6.864	18.512	6.611	20.676	6.349	23.8
6.043	11.863	5.868	12.611	5.683	13.572	5.49	14.844
5.46	9.772	5.317	10.272	5.166	10.898	5.006	11.699
4.837	7.913	4.725	8.236	4.606	8.631	4.479	9.123
4.171	6.249	4.089	6.446	4	6.684	3.904	6.973
3.821	5.48	3.751	5.631	3.677	5.81	3.596	6.026
3.457	4.75	3.401	4.862	3.34	4.994	3.274	5.152
3.081	4.055	3.036	4.136	2.988	4.23	2.935	4.342
2.887	3.721	2.848	3.788	2.806	3.867	2.76	3.959
2.69	3.394	2.656	3.449	2.62	3.514	2.58	3.589
2.489	3.074	2.46	3.12	2.429	3.172	2.395	3.233
2.284	2.763	2.26	2.799	2.234	2.84	2.205	2.889
2.201	2.64	2.179	2.673	2.155	2.711	2.128	2.754
2.117	2.518	2.097	2.548	2.075	2.582	2.05	2.622
2.033	2.398	2.015	2.425	1.994	2.455	1.972	2.491
1.948	2.278	1.931	2.302	1.912	2.33	1.892	2.362
1.863	2.16	1.847	2.182	1.83	2.206	1.811	2.234
1.776	2.043	1.762	2.062	1.747	2.084	1.73	2.109
1.689	1.927	1.677	1.944	1.663	1.963	1.648	1.985
1.602	1.812	1.591	1.826	1.578	1.843	1.565	1.862
1.514	1.697	1.504	1.71	1.493	1.725	1.481	1.742
1.425	1.584	1.416	1.595	1.406	1.608	1.396	1.622
1.335	1.472	1.327	1.482	1.319	1.492	1.31	1.505
1.244	1.361	1.238	1.369	1.231	1.378	1.223	1.388
1.153	1.251	1.148	1.258	1.142	1.265	1.135	1.273
1.061	1.142	1.057	1.147	1.052	1.153	1.046	1.16
0.969	1.034	0.965	1.038	0.961	1.043	0.956	1.048
0.922	0.98	0.919	0.984	0.915	0.988	0.911	0.993
0.875	0.926	0.872	0.93	0.869	0.933	0.866	0.938
0.828	0.873	0.826	0.876	0.823	0.879	0.82	0.883



Focal Length 125 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	285.543	267.121	237.997	212.051

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	285.339	Infinity	266.927	Infinity	237.818	Infinity	211.884	Infinity
60.00	49.612	75.898	49.027	77.312	47.953	80.145	46.802	83.582
30.00	27.167	33.494	26.991	33.765	26.664	34.293	26.306	34.904
20.00	18.705	21.488	18.622	21.599	18.466	21.813	18.294	22.058
15.00	14.262	15.818	14.214	15.878	14.124	15.993	14.023	16.124
12.00	11.525	12.516	11.494	12.553	11.435	12.625	11.369	12.706
10.00	9.669	10.354	9.647	10.38	9.606	10.428	9.56	10.483
9.00	8.732	9.285	8.714	9.306	8.68	9.344	8.643	9.388
8.00	7.788	8.224	7.774	8.24	7.747	8.27	7.717	8.304
7.00	6.838	7.17	6.827	7.182	6.806	7.205	6.784	7.231
6.50	6.36	6.646	6.351	6.656	6.333	6.676	6.313	6.698
6.00	5.881	6.124	5.873	6.132	5.858	6.149	5.841	6.168
5.50	5.4	5.603	5.394	5.611	5.381	5.625	5.367	5.64
5.00	4.918	5.085	4.912	5.091	4.902	5.102	4.89	5.115
4.50	4.434	4.568	4.429	4.573	4.421	4.582	4.411	4.592
4.25	4.191	4.311	4.187	4.315	4.179	4.323	4.171	4.332
4.00	3.948	4.053	3.944	4.057	3.938	4.064	3.93	4.072
3.75	3.704	3.797	3.701	3.8	3.695	3.806	3.689	3.813
3.50	3.46	3.541	3.458	3.543	3.453	3.549	3.447	3.555
3.25	3.216	3.285	3.214	3.287	3.209	3.292	3.204	3.297
3.00	2.971	3.029	2.969	3.031	2.966	3.035	2.961	3.04
2.80	2.775	2.825	2.773	2.827	2.77	2.831	2.767	2.834
2.60	2.579	2.622	2.577	2.623	2.574	2.626	2.571	2.629
2.50	2.48	2.52	2.479	2.521	2.476	2.524	2.474	2.527
2.40	2.382	2.418	2.381	2.42	2.378	2.422	2.376	2.425
2.35	2.333	2.368	2.332	2.369	2.329	2.371	2.327	2.374
2.30	2.283	2.317	2.282	2.318	2.28	2.32	2.278	2.323
2.25	2.234	2.266	2.233	2.267	2.231	2.269	2.229	2.272
2.20	2.185	2.215	2.184	2.216	2.182	2.218	2.18	2.221
2.15	2.136	2.165	2.135	2.166	2.133	2.167	2.131	2.17
2.10	2.086	2.114	2.085	2.115	2.084	2.117	2.082	2.119
2.05	2.037	2.063	2.036	2.064	2.034	2.066	2.033	2.068
2.00	1.988	2.012	1.987	2.013	1.985	2.015	1.983	2.017
1.95	1.938	1.962	1.938	1.963	1.936	1.964	1.934	1.966
1.90	1.889	1.911	1.888	1.912	1.887	1.913	1.885	1.915
1.85	1.84	1.861	1.839	1.861	1.838	1.863	1.836	1.864
1.80	1.79	1.81	1.789	1.811	1.788	1.812	1.787	1.813
1.75	1.741	1.759	1.74	1.76	1.739	1.761	1.738	1.763
1.70	1.691	1.709	1.691	1.709	1.69	1.711	1.688	1.712
1.65	1.642	1.658	1.641	1.659	1.64	1.66	1.639	1.661
1.60	1.592	1.608	1.592	1.608	1.591	1.609	1.59	1.61
1.55	1.543	1.557	1.542	1.558	1.541	1.559	1.54	1.56
1.50	1.493	1.507	1.493	1.507	1.492	1.508	1.491	1.509
1.45	1.444	1.456	1.443	1.457	1.443	1.457	1.442	1.458
1.40	1.394	1.406	1.394	1.406	1.393	1.407	1.392	1.408
1.35	1.345	1.355	1.344	1.356	1.344	1.356	1.343	1.357
1.30	1.295	1.305	1.295	1.305	1.294	1.306	1.293	1.307
1.25	1.246	1.254	1.245	1.255	1.245	1.255	1.244	1.256



3.2	3.5	4	4.5	5
188.936	168.342	149.996	133.651	119.089

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
188.778	Infinity	168.192	Infinity	149.851	Infinity	133.511	Infinity	118.952	Infinity
45.575	87.81	44.272	93.096	42.896	99.843	41.449	108.685	39.938	120.683
25.915	35.618	25.49	36.454	25.03	37.441	24.532	38.614	23.997	40.022
18.105	22.34	17.897	22.664	17.67	23.04	17.422	23.478	17.151	23.989
13.912	16.273	13.79	16.444	13.655	16.64	13.507	16.866	13.344	17.127
11.296	12.798	11.216	12.903	11.127	13.023	11.029	13.16	10.92	13.318
9.508	10.546	9.452	10.617	9.388	10.697	9.319	10.79	9.242	10.895
8.601	9.438	8.554	9.495	8.503	9.559	8.446	9.633	8.383	9.716
7.684	8.343	7.647	8.387	7.606	8.437	7.56	8.494	7.51	8.559
6.758	7.26	6.729	7.293	6.698	7.331	6.663	7.374	6.623	7.422
6.291	6.723	6.267	6.752	6.239	6.784	6.209	6.82	6.175	6.862
5.822	6.189	5.801	6.213	5.778	6.24	5.752	6.271	5.723	6.306
5.351	5.658	5.333	5.678	5.313	5.7	5.291	5.726	5.267	5.755
4.877	5.129	4.862	5.146	4.846	5.164	4.828	5.185	4.808	5.209
4.401	4.604	4.389	4.617	4.376	4.632	4.361	4.649	4.344	4.667
4.162	4.342	4.151	4.354	4.139	4.367	4.126	4.382	4.111	4.399
3.922	4.081	3.912	4.092	3.902	4.103	3.89	4.116	3.877	4.131
3.681	3.821	3.673	3.83	3.664	3.84	3.654	3.851	3.642	3.864
3.441	3.562	3.433	3.569	3.425	3.578	3.416	3.588	3.407	3.599
3.199	3.303	3.193	3.309	3.186	3.317	3.178	3.325	3.17	3.335
2.957	3.045	2.951	3.05	2.946	3.056	2.939	3.063	2.932	3.071
2.762	2.839	2.758	2.843	2.753	2.849	2.747	2.855	2.741	2.862
2.568	2.633	2.564	2.637	2.56	2.642	2.555	2.647	2.549	2.653
2.47	2.53	2.467	2.534	2.463	2.538	2.458	2.543	2.453	2.549
2.373	2.428	2.369	2.431	2.366	2.435	2.362	2.44	2.357	2.445
2.324	2.377	2.321	2.38	2.317	2.384	2.313	2.388	2.309	2.393
2.275	2.325	2.272	2.329	2.269	2.332	2.265	2.336	2.261	2.341
2.226	2.274	2.223	2.277	2.22	2.281	2.217	2.285	2.213	2.289
2.177	2.223	2.175	2.226	2.172	2.229	2.168	2.233	2.164	2.237
2.128	2.172	2.126	2.175	2.123	2.178	2.12	2.181	2.116	2.185
2.079	2.121	2.077	2.124	2.074	2.126	2.071	2.13	2.068	2.133
2.03	2.07	2.028	2.072	2.025	2.075	2.022	2.078	2.019	2.082
1.981	2.019	1.979	2.021	1.977	2.024	1.974	2.027	1.971	2.03
1.932	1.968	1.93	1.97	1.928	1.973	1.925	1.975	1.922	1.979
1.883	1.917	1.881	1.919	1.879	1.921	1.877	1.924	1.874	1.927
1.834	1.866	1.832	1.868	1.83	1.87	1.828	1.873	1.825	1.876
1.785	1.815	1.783	1.817	1.781	1.819	1.779	1.821	1.777	1.824
1.736	1.764	1.734	1.766	1.732	1.768	1.73	1.77	1.728	1.773
1.687	1.713	1.685	1.715	1.684	1.717	1.682	1.719	1.679	1.721
1.638	1.662	1.636	1.664	1.635	1.666	1.633	1.668	1.631	1.67
1.588	1.612	1.587	1.613	1.586	1.615	1.584	1.617	1.582	1.619
1.539	1.561	1.538	1.562	1.536	1.564	1.535	1.565	1.533	1.567
1.49	1.51	1.489	1.511	1.487	1.513	1.486	1.514	1.484	1.516
1.441	1.459	1.44	1.461	1.438	1.462	1.437	1.463	1.435	1.465
1.391	1.409	1.39	1.41	1.389	1.411	1.388	1.412	1.386	1.414
1.342	1.358	1.341	1.359	1.34	1.36	1.339	1.361	1.337	1.363
1.293	1.307	1.292	1.308	1.291	1.309	1.29	1.311	1.288	1.312
1.243	1.257	1.242	1.258	1.242	1.259	1.241	1.26	1.239	1.261



5.6	6.3	7.1	8	9
106.116	94.558	84.262	75.088	66.916

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
105.982	Infinity	94.427	Infinity	84.132	Infinity	74.96	Infinity	66.789	Infinity
38.368	137.754	36.746	163.758	35.082	207.793	33.386	297.649	31.667	578.488
23.423	41.73	22.811	43.83	22.161	46.455	21.475	49.802	20.753	54.186
16.857	24.59	16.539	25.301	16.196	26.15	15.828	27.175	15.434	28.424
13.166	17.43	12.972	17.783	12.761	18.197	12.532	18.685	12.285	19.265
10.801	13.5	10.671	13.71	10.528	13.953	10.373	14.237	10.203	14.57
9.157	11.016	9.063	11.155	8.96	11.315	8.848	11.5	8.725	11.715
8.313	9.812	8.236	9.922	8.151	10.048	8.058	10.193	7.956	10.362
7.454	8.633	7.392	8.717	7.324	8.814	7.249	8.926	7.167	9.054
6.58	7.478	6.532	7.541	6.479	7.613	6.421	7.695	6.356	7.79
6.137	6.909	6.096	6.962	6.05	7.024	5.999	7.094	5.943	7.174
5.691	6.345	5.655	6.39	5.615	6.442	5.572	6.5	5.523	6.568
5.24	5.788	5.21	5.825	5.176	5.868	5.139	5.916	5.098	5.971
4.785	5.236	4.76	5.266	4.732	5.3	4.701	5.34	4.667	5.385
4.326	4.689	4.306	4.713	4.283	4.741	4.258	4.772	4.23	4.807
4.095	4.417	4.077	4.439	4.056	4.463	4.034	4.491	4.009	4.522
3.863	4.147	3.847	4.166	3.829	4.188	3.809	4.212	3.787	4.239
3.63	3.879	3.615	3.895	3.6	3.914	3.582	3.935	3.563	3.959
3.395	3.611	3.383	3.625	3.369	3.641	3.354	3.66	3.337	3.68
3.16	3.345	3.149	3.357	3.138	3.371	3.124	3.386	3.11	3.404
2.924	3.08	2.915	3.091	2.905	3.102	2.893	3.115	2.881	3.13
2.734	2.87	2.726	2.878	2.717	2.888	2.707	2.899	2.696	2.912
2.543	2.659	2.536	2.667	2.529	2.675	2.52	2.685	2.511	2.696
2.448	2.555	2.441	2.562	2.434	2.569	2.427	2.578	2.418	2.588
2.352	2.45	2.346	2.456	2.34	2.463	2.333	2.472	2.325	2.481
2.304	2.398	2.299	2.404	2.292	2.411	2.285	2.418	2.278	2.427
2.256	2.346	2.251	2.352	2.245	2.358	2.238	2.365	2.231	2.374
2.208	2.294	2.203	2.299	2.197	2.305	2.191	2.312	2.184	2.32
2.16	2.242	2.155	2.247	2.15	2.253	2.144	2.259	2.137	2.267
2.112	2.19	2.107	2.195	2.102	2.2	2.096	2.206	2.09	2.214
2.064	2.138	2.059	2.142	2.054	2.148	2.049	2.154	2.043	2.16
2.015	2.086	2.011	2.09	2.007	2.095	2.002	2.101	1.996	2.107
1.967	2.034	1.963	2.038	1.959	2.043	1.954	2.048	1.948	2.054
1.919	1.982	1.915	1.986	1.911	1.991	1.906	1.996	1.901	2.002
1.871	1.93	1.867	1.934	1.863	1.938	1.859	1.943	1.854	1.949
1.822	1.879	1.819	1.882	1.815	1.886	1.811	1.891	1.806	1.896
1.774	1.827	1.771	1.83	1.767	1.834	1.763	1.838	1.759	1.843
1.725	1.775	1.722	1.779	1.719	1.782	1.715	1.786	1.711	1.791
1.677	1.724	1.674	1.727	1.671	1.73	1.667	1.734	1.663	1.738
1.628	1.672	1.626	1.675	1.623	1.678	1.619	1.682	1.616	1.686
1.58	1.621	1.577	1.624	1.574	1.626	1.571	1.63	1.568	1.634
1.531	1.57	1.529	1.572	1.526	1.575	1.523	1.578	1.52	1.581
1.482	1.518	1.48	1.52	1.478	1.523	1.475	1.526	1.472	1.529
1.434	1.467	1.432	1.469	1.429	1.471	1.427	1.474	1.424	1.477
1.385	1.416	1.383	1.418	1.381	1.42	1.379	1.422	1.376	1.425
1.336	1.364	1.334	1.366	1.332	1.368	1.33	1.37	1.328	1.373
1.287	1.313	1.285	1.315	1.284	1.317	1.282	1.319	1.28	1.321
1.238	1.262	1.237	1.264	1.235	1.265	1.233	1.267	1.231	1.269



10	11	13	14
59.635	53.148	47.369	42.221

10		11		13		14	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
59.509	Infinity	53.023	Infinity	47.245	Infinity	42.097	Infinity
29.937	Infinity	28.208	Infinity	26.492	Infinity	24.798	Infinity
19.999	60.128	19.215	68.571	18.406	81.403	17.575	103.058
15.014	29.972	14.57	31.923	14.102	34.441	13.611	37.787
12.019	19.961	11.733	20.804	11.429	21.841	11.106	23.134
10.02	14.963	9.821	15.43	9.608	15.991	9.379	16.67
8.591	11.967	8.445	12.262	8.288	12.612	8.118	13.03
7.845	10.557	7.724	10.786	7.592	11.055	7.449	11.374
7.077	9.203	6.978	9.375	6.871	9.577	6.755	9.815
6.286	7.899	6.208	8.026	6.123	8.173	6.031	8.344
5.881	7.266	5.813	7.373	5.739	7.496	5.658	7.64
5.47	6.645	5.412	6.733	5.348	6.836	5.278	6.955
5.053	6.035	5.003	6.108	4.949	6.191	4.889	6.288
4.629	5.436	4.588	5.495	4.542	5.562	4.492	5.64
4.199	4.848	4.165	4.894	4.128	4.948	4.086	5.009
3.981	4.558	3.951	4.599	3.917	4.646	3.88	4.699
3.762	4.271	3.735	4.306	3.705	4.347	3.672	4.394
3.541	3.986	3.517	4.017	3.49	4.052	3.461	4.093
3.318	3.704	3.297	3.73	3.274	3.76	3.248	3.795
3.093	3.424	3.075	3.446	3.055	3.472	3.033	3.501
2.867	3.146	2.851	3.165	2.834	3.187	2.815	3.211
2.684	2.926	2.671	2.943	2.656	2.961	2.639	2.982
2.501	2.708	2.489	2.722	2.476	2.737	2.462	2.755
2.408	2.599	2.398	2.612	2.386	2.626	2.372	2.643
2.316	2.491	2.306	2.502	2.295	2.516	2.283	2.531
2.269	2.437	2.26	2.448	2.249	2.46	2.238	2.475
2.223	2.383	2.214	2.393	2.204	2.405	2.192	2.419
2.176	2.329	2.168	2.339	2.158	2.351	2.147	2.363
2.13	2.275	2.121	2.285	2.112	2.296	2.102	2.308
2.083	2.222	2.075	2.231	2.066	2.241	2.056	2.253
2.036	2.168	2.029	2.177	2.02	2.187	2.011	2.198
1.989	2.115	1.982	2.123	1.974	2.132	1.965	2.143
1.942	2.061	1.936	2.069	1.928	2.078	1.919	2.088
1.895	2.008	1.889	2.015	1.882	2.024	1.874	2.033
1.848	1.955	1.842	1.962	1.835	1.97	1.828	1.979
1.801	1.902	1.795	1.908	1.789	1.916	1.782	1.924
1.754	1.849	1.748	1.855	1.742	1.862	1.735	1.87
1.706	1.796	1.701	1.802	1.696	1.808	1.689	1.816
1.659	1.743	1.654	1.748	1.649	1.755	1.643	1.762
1.612	1.69	1.607	1.695	1.602	1.701	1.596	1.708
1.564	1.638	1.56	1.642	1.555	1.648	1.55	1.654
1.516	1.585	1.512	1.59	1.508	1.595	1.503	1.6
1.469	1.533	1.465	1.537	1.461	1.541	1.456	1.547
1.421	1.48	1.417	1.484	1.414	1.488	1.409	1.493
1.373	1.428	1.37	1.432	1.366	1.436	1.362	1.44
1.325	1.376	1.322	1.379	1.319	1.383	1.315	1.387
1.277	1.324	1.274	1.327	1.271	1.33	1.268	1.334
1.229	1.272	1.226	1.275	1.224	1.278	1.22	1.281



16	18	20	22
37.634	33.548	29.908	26.664

16		18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
37.511	Infinity	33.425	Infinity	29.784	Infinity	26.541	Infinity
23.138	Infinity	21.522	Infinity	19.957	Infinity	18.453	Infinity
16.728	146.951	15.87	281.639	15.006	Infinity	14.142	Infinity
13.099	42.413	12.569	49.173	12.023	59.892	11.464	79.305
10.764	24.783	10.405	26.938	10.029	29.853	9.639	33.983
9.135	17.506	8.876	18.55	8.603	19.882	8.315	21.625
7.935	13.533	7.74	14.146	7.531	14.904	7.311	15.858
7.296	11.754	7.131	12.213	6.954	12.772	6.766	13.464
6.628	10.096	6.492	10.431	6.346	10.835	6.19	11.327
5.931	8.545	5.822	8.783	5.705	9.067	5.579	9.407
5.57	7.808	5.474	8.005	5.371	8.239	5.259	8.519
5.201	7.093	5.118	7.255	5.027	7.446	4.93	7.673
4.823	6.401	4.752	6.532	4.674	6.686	4.59	6.868
4.437	5.73	4.376	5.834	4.311	5.956	4.239	6.099
4.041	5.079	3.991	5.16	3.936	5.255	3.877	5.366
3.839	4.761	3.794	4.832	3.745	4.915	3.692	5.011
3.635	4.448	3.595	4.51	3.551	4.581	3.503	4.664
3.429	4.139	3.393	4.192	3.354	4.254	3.312	4.325
3.22	3.835	3.189	3.88	3.154	3.933	3.117	3.993
3.008	3.535	2.981	3.573	2.951	3.618	2.918	3.668
2.794	3.239	2.771	3.272	2.745	3.308	2.717	3.35
2.621	3.006	2.6	3.034	2.578	3.065	2.553	3.101
2.446	2.776	2.428	2.799	2.409	2.825	2.387	2.856
2.358	2.661	2.341	2.682	2.323	2.707	2.303	2.734
2.269	2.548	2.254	2.567	2.237	2.589	2.219	2.614
2.225	2.491	2.21	2.509	2.194	2.53	2.176	2.554
2.18	2.434	2.166	2.452	2.151	2.472	2.134	2.495
2.135	2.378	2.122	2.395	2.107	2.414	2.091	2.436
2.09	2.322	2.078	2.338	2.064	2.356	2.048	2.377
2.046	2.266	2.033	2.281	2.02	2.298	2.005	2.318
2	2.21	1.989	2.225	1.976	2.241	1.962	2.26
1.955	2.155	1.944	2.168	1.932	2.184	1.919	2.201
1.91	2.099	1.9	2.112	1.888	2.127	1.875	2.143
1.865	2.044	1.855	2.056	1.844	2.07	1.832	2.085
1.819	1.989	1.81	2	1.799	2.013	1.788	2.028
1.774	1.934	1.765	1.944	1.755	1.957	1.744	1.971
1.728	1.879	1.719	1.889	1.71	1.9	1.7	1.913
1.682	1.824	1.674	1.833	1.665	1.844	1.655	1.857
1.636	1.769	1.628	1.778	1.62	1.788	1.611	1.8
1.59	1.715	1.583	1.723	1.575	1.733	1.566	1.744
1.544	1.661	1.537	1.669	1.53	1.677	1.522	1.687
1.497	1.607	1.491	1.614	1.484	1.622	1.477	1.631
1.451	1.553	1.445	1.559	1.439	1.567	1.432	1.576
1.404	1.499	1.399	1.505	1.393	1.512	1.386	1.52
1.358	1.445	1.353	1.451	1.347	1.457	1.341	1.465
1.311	1.392	1.306	1.397	1.301	1.403	1.295	1.41
1.264	1.338	1.26	1.343	1.255	1.349	1.25	1.355
1.217	1.285	1.213	1.289	1.209	1.294	1.204	1.3



Focal Length 150 mm

Circle of Confusion 0.025 mm

T/No	2.1	2.2	2.5	2.8
Hyperfocal Distance (m)	412.526	385.909	343.83	306.341

T/No	2.1		2.2		2.5		2.8	
Focus Distance (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
Infinity	412.209	Infinity	385.613	Infinity	343.565	Infinity	306.1	Infinity
60.00	52.411	70.163	51.957	70.993	51.118	72.623	50.208	74.544
30.00	27.984	32.33	27.855	32.505	27.613	32.84	27.346	33.226
20.00	19.088	21.004	19.028	21.078	18.915	21.218	18.79	21.377
15.00	14.483	15.555	14.449	15.595	14.384	15.671	14.312	15.758
12.00	11.669	12.351	11.646	12.376	11.604	12.424	11.558	12.478
10.00	9.77	10.241	9.754	10.258	9.725	10.291	9.692	10.328
9.00	8.814	9.194	8.801	9.208	8.777	9.234	8.751	9.264
8.00	7.853	8.153	7.843	8.163	7.824	8.184	7.803	8.207
7.00	6.888	7.116	6.88	7.124	6.866	7.14	6.85	7.157
6.50	6.403	6.599	6.397	6.606	6.385	6.62	6.371	6.635
6.00	5.918	6.084	5.912	6.09	5.902	6.102	5.89	6.114
5.50	5.431	5.57	5.427	5.575	5.418	5.585	5.408	5.595
5.00	4.943	5.058	4.94	5.062	4.932	5.07	4.924	5.078
4.50	4.454	4.546	4.451	4.55	4.445	4.556	4.439	4.563
4.25	4.21	4.291	4.207	4.294	4.202	4.3	4.196	4.306
4.00	3.964	4.036	3.962	4.039	3.957	4.044	3.952	4.049
3.75	3.719	3.782	3.717	3.784	3.713	3.788	3.708	3.793
3.50	3.473	3.528	3.471	3.529	3.468	3.533	3.464	3.537
3.25	3.227	3.274	3.225	3.275	3.222	3.278	3.219	3.282
3.00	2.98	3.02	2.979	3.021	2.976	3.024	2.974	3.027
2.90	2.882	2.919	2.88	2.92	2.878	2.922	2.875	2.925
2.80	2.783	2.817	2.782	2.818	2.78	2.821	2.777	2.823
2.70	2.684	2.716	2.683	2.717	2.681	2.719	2.679	2.722
2.60	2.585	2.615	2.584	2.616	2.583	2.618	2.58	2.62
2.50	2.487	2.514	2.486	2.514	2.484	2.516	2.482	2.518
2.45	2.437	2.463	2.436	2.464	2.435	2.466	2.433	2.467
2.40	2.388	2.412	2.387	2.413	2.385	2.415	2.384	2.417
2.35	2.338	2.362	2.337	2.363	2.336	2.364	2.334	2.366
2.30	2.289	2.311	2.288	2.312	2.287	2.314	2.285	2.315
2.25	2.239	2.261	2.239	2.262	2.237	2.263	2.236	2.265
2.20	2.19	2.21	2.189	2.211	2.188	2.212	2.186	2.214
2.15	2.14	2.16	2.14	2.16	2.138	2.162	2.137	2.163
2.10	2.091	2.109	2.09	2.11	2.089	2.111	2.088	2.113
2.05	2.041	2.059	2.041	2.059	2.039	2.061	2.038	2.062
2.00	1.992	2.008	1.991	2.009	1.99	2.01	1.989	2.011
1.95	1.942	1.958	1.942	1.958	1.941	1.96	1.939	1.961
1.90	1.893	1.907	1.892	1.908	1.891	1.909	1.89	1.91
1.85	1.843	1.857	1.842	1.858	1.842	1.858	1.841	1.86
1.80	1.793	1.807	1.793	1.807	1.792	1.808	1.791	1.809
1.75	1.744	1.756	1.743	1.757	1.743	1.758	1.742	1.758
1.70	1.694	1.706	1.694	1.706	1.693	1.707	1.692	1.708
1.65	1.645	1.656	1.644	1.656	1.643	1.657	1.643	1.657
1.60	1.595	1.605	1.595	1.606	1.594	1.606	1.593	1.607
1.55	1.545	1.555	1.545	1.555	1.544	1.556	1.544	1.556
1.50	1.496	1.504	1.495	1.505	1.495	1.505	1.494	1.506



3.2	3.5	4	4.5	5
272.943	243.188	216.68	193.063	172.023

3.2		3.5		4		4.5		5	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
272.721	Infinity	242.982	Infinity	216.486	Infinity	192.879	Infinity	171.847	Infinity
49.225	76.825	48.166	79.558	47.03	82.867	45.818	86.925	44.53	91.982
27.053	33.669	26.732	34.181	26.38	34.775	25.996	35.467	25.578	36.276
18.652	21.559	18.499	21.767	18.331	22.005	18.146	22.278	17.942	22.593
14.232	15.856	14.144	15.967	14.046	16.094	13.937	16.239	13.817	16.406
11.506	12.539	11.448	12.608	11.384	12.687	11.313	12.776	11.234	12.878
9.656	10.369	9.616	10.417	9.571	10.47	9.521	10.531	9.465	10.6
8.721	9.297	8.688	9.335	8.652	9.378	8.611	9.426	8.566	9.481
7.78	8.233	7.754	8.262	7.725	8.296	7.692	8.333	7.656	8.376
6.832	7.177	6.812	7.199	6.789	7.224	6.765	7.253	6.737	7.285
6.355	6.652	6.338	6.671	6.319	6.692	6.297	6.717	6.273	6.744
5.877	6.128	5.862	6.145	5.846	6.163	5.827	6.183	5.807	6.207
5.397	5.607	5.384	5.621	5.371	5.636	5.355	5.653	5.338	5.672
4.915	5.088	4.905	5.099	4.893	5.111	4.881	5.125	4.866	5.141
4.432	4.571	4.423	4.579	4.414	4.589	4.404	4.601	4.392	4.613
4.189	4.313	4.182	4.321	4.174	4.329	4.164	4.339	4.154	4.35
3.946	4.055	3.94	4.062	3.933	4.07	3.924	4.079	3.915	4.088
3.703	3.798	3.697	3.804	3.691	3.811	3.684	3.819	3.676	3.827
3.459	3.542	3.454	3.547	3.449	3.553	3.443	3.559	3.436	3.567
3.215	3.286	3.211	3.29	3.206	3.295	3.201	3.301	3.195	3.307
2.97	3.03	2.967	3.034	2.963	3.038	2.958	3.043	2.953	3.048
2.872	2.928	2.869	2.932	2.865	2.936	2.861	2.94	2.856	2.945
2.774	2.826	2.771	2.829	2.768	2.833	2.764	2.837	2.76	2.842
2.676	2.724	2.673	2.727	2.67	2.731	2.667	2.734	2.663	2.739
2.578	2.622	2.575	2.625	2.572	2.628	2.569	2.632	2.565	2.636
2.48	2.521	2.477	2.523	2.475	2.526	2.472	2.529	2.468	2.533
2.431	2.47	2.428	2.472	2.426	2.475	2.423	2.478	2.419	2.481
2.381	2.419	2.379	2.421	2.377	2.424	2.374	2.427	2.371	2.43
2.332	2.368	2.33	2.37	2.328	2.373	2.325	2.375	2.322	2.379
2.283	2.317	2.281	2.319	2.279	2.322	2.276	2.324	2.273	2.327
2.234	2.266	2.232	2.268	2.23	2.271	2.227	2.273	2.225	2.276
2.185	2.216	2.183	2.218	2.181	2.22	2.178	2.222	2.176	2.225
2.135	2.165	2.134	2.167	2.132	2.169	2.129	2.171	2.127	2.174
2.086	2.114	2.084	2.116	2.082	2.118	2.08	2.12	2.078	2.122
2.037	2.063	2.035	2.065	2.033	2.067	2.031	2.069	2.029	2.071
1.987	2.013	1.986	2.014	1.984	2.016	1.982	2.018	1.98	2.02
1.938	1.962	1.937	1.964	1.935	1.965	1.933	1.967	1.931	1.969
1.889	1.911	1.887	1.913	1.886	1.914	1.884	1.916	1.882	1.918
1.839	1.861	1.838	1.862	1.837	1.864	1.835	1.865	1.833	1.867
1.79	1.81	1.789	1.811	1.787	1.813	1.786	1.814	1.784	1.816
1.741	1.759	1.739	1.761	1.738	1.762	1.737	1.763	1.735	1.765
1.691	1.709	1.69	1.71	1.689	1.711	1.688	1.713	1.686	1.714
1.642	1.658	1.641	1.659	1.64	1.661	1.638	1.662	1.637	1.663
1.592	1.608	1.591	1.609	1.59	1.61	1.589	1.611	1.588	1.612
1.543	1.557	1.542	1.558	1.541	1.559	1.54	1.56	1.539	1.562
1.493	1.507	1.492	1.508	1.492	1.509	1.491	1.51	1.489	1.511



5.6	6.3	7.1	8	9
153.279	136.58	121.703	108.448	96.64

5.6		6.3		7.1		8		9	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
153.109	Infinity	136.414	Infinity	121.541	Infinity	108.29	Infinity	96.484	Infinity
43.167	98.409	41.734	106.785	40.235	118.065	38.676	133.951	37.064	157.783
25.125	37.231	24.635	38.364	24.107	39.721	23.541	41.363	22.937	43.376
17.719	22.958	17.475	23.382	17.209	23.877	16.92	24.458	16.607	25.144
13.685	16.596	13.54	16.815	13.38	17.068	13.206	17.362	13.015	17.703
11.147	12.995	11.051	13.128	10.945	13.281	10.829	13.457	10.701	13.661
9.403	10.678	9.335	10.767	9.26	10.87	9.177	10.987	9.085	11.121
8.515	9.544	8.46	9.615	8.398	9.696	8.33	9.789	8.255	9.895
7.616	8.425	7.572	8.48	7.523	8.543	7.468	8.614	7.408	8.696
6.706	7.321	6.672	7.363	6.634	7.41	6.591	7.463	6.545	7.524
6.246	6.775	6.217	6.811	6.184	6.851	6.147	6.896	6.107	6.948
5.784	6.233	5.759	6.263	5.731	6.296	5.699	6.335	5.664	6.378
5.319	5.694	5.297	5.719	5.274	5.747	5.247	5.779	5.218	5.815
4.851	5.159	4.833	5.179	4.813	5.202	4.791	5.228	4.767	5.257
4.379	4.628	4.365	4.644	4.349	4.662	4.331	4.683	4.312	4.706
4.143	4.363	4.13	4.377	4.116	4.394	4.1	4.412	4.082	4.432
3.905	4.1	3.894	4.112	3.881	4.126	3.867	4.142	3.852	4.16
3.667	3.837	3.657	3.848	3.646	3.86	3.634	3.874	3.62	3.89
3.428	3.575	3.419	3.585	3.41	3.595	3.399	3.607	3.387	3.621
3.188	3.314	3.181	3.322	3.173	3.331	3.163	3.342	3.153	3.353
2.948	3.054	2.941	3.061	2.934	3.069	2.927	3.077	2.918	3.087
2.851	2.95	2.845	2.957	2.839	2.964	2.832	2.972	2.823	2.981
2.755	2.847	2.749	2.853	2.743	2.859	2.736	2.867	2.729	2.875
2.658	2.743	2.653	2.749	2.647	2.755	2.641	2.762	2.634	2.77
2.561	2.64	2.557	2.645	2.551	2.651	2.545	2.657	2.539	2.664
2.464	2.537	2.46	2.541	2.455	2.547	2.45	2.552	2.444	2.559
2.416	2.485	2.412	2.49	2.407	2.495	2.402	2.5	2.396	2.506
2.367	2.434	2.363	2.438	2.359	2.443	2.354	2.448	2.348	2.454
2.319	2.382	2.315	2.386	2.311	2.391	2.306	2.396	2.301	2.402
2.27	2.331	2.266	2.335	2.262	2.339	2.258	2.344	2.253	2.349
2.221	2.279	2.218	2.283	2.214	2.287	2.21	2.292	2.205	2.297
2.173	2.228	2.169	2.231	2.166	2.235	2.162	2.24	2.157	2.245
2.124	2.177	2.121	2.18	2.117	2.184	2.114	2.188	2.109	2.193
2.075	2.125	2.072	2.128	2.069	2.132	2.065	2.136	2.061	2.14
2.027	2.074	2.024	2.077	2.021	2.08	2.017	2.084	2.013	2.088
1.978	2.023	1.975	2.026	1.972	2.029	1.969	2.032	1.965	2.036
1.929	1.972	1.926	1.974	1.924	1.977	1.92	1.981	1.917	1.984
1.88	1.92	1.878	1.923	1.875	1.926	1.872	1.929	1.869	1.933
1.831	1.869	1.829	1.872	1.826	1.874	1.824	1.877	1.82	1.881
1.782	1.818	1.78	1.82	1.778	1.823	1.775	1.826	1.772	1.829
1.733	1.767	1.731	1.769	1.729	1.771	1.727	1.774	1.724	1.777
1.684	1.716	1.682	1.718	1.68	1.72	1.678	1.723	1.675	1.725
1.635	1.665	1.634	1.667	1.632	1.669	1.629	1.671	1.627	1.674
1.586	1.614	1.585	1.616	1.583	1.618	1.581	1.62	1.578	1.622
1.537	1.563	1.536	1.565	1.534	1.566	1.532	1.568	1.53	1.571
1.488	1.512	1.487	1.514	1.485	1.515	1.483	1.517	1.481	1.519



10	11	13	14	16
86.12	76.748	68.399	60.96	54.333

10		11		13		14		16	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
85.966	Infinity	76.595	Infinity	68.247	Infinity	60.809	Infinity	54.183	Infinity
35.407	197.165	33.717	273.921	32.002	486.597	30.274	3792.654	28.544	Infinity
22.295	45.884	21.615	49.068	20.901	53.214	20.153	58.792	19.375	66.634
16.269	25.963	15.906	26.948	15.518	28.146	15.104	29.626	14.665	31.484
12.808	18.103	12.583	18.574	12.34	19.133	12.078	19.802	11.797	20.611
10.561	13.896	10.408	14.171	10.242	14.492	10.062	14.871	9.867	15.321
8.985	11.276	8.875	11.455	8.754	11.663	8.623	11.906	8.48	12.191
8.172	10.017	8.081	10.158	7.981	10.32	7.872	10.509	7.753	10.73
7.341	8.79	7.268	8.898	7.188	9.022	7.099	9.165	7.003	9.332
6.493	7.594	6.436	7.674	6.373	7.766	6.304	7.871	6.228	7.993
6.062	7.007	6.012	7.075	5.957	7.153	5.897	7.242	5.831	7.345
5.626	6.428	5.583	6.485	5.536	6.55	5.485	6.624	5.427	6.71
5.185	5.856	5.149	5.903	5.11	5.956	5.066	6.017	5.017	6.087
4.74	5.291	4.71	5.329	4.677	5.372	4.64	5.421	4.6	5.478
4.29	4.732	4.265	4.763	4.238	4.797	4.208	4.836	4.175	4.881
4.063	4.456	4.041	4.483	4.017	4.513	3.99	4.547	3.96	4.587
3.834	4.181	3.815	4.204	3.793	4.231	3.77	4.261	3.743	4.295
3.605	3.908	3.588	3.928	3.569	3.951	3.548	3.977	3.524	4.007
3.374	3.636	3.359	3.654	3.342	3.674	3.324	3.696	3.304	3.722
3.142	3.366	3.129	3.381	3.115	3.398	3.099	3.417	3.081	3.439
2.908	3.098	2.897	3.111	2.885	3.125	2.872	3.141	2.857	3.159
2.814	2.991	2.804	3.003	2.793	3.016	2.78	3.031	2.766	3.048
2.72	2.885	2.711	2.895	2.7	2.907	2.689	2.921	2.676	2.937
2.626	2.778	2.617	2.788	2.608	2.799	2.597	2.812	2.585	2.826
2.532	2.672	2.524	2.681	2.515	2.692	2.504	2.703	2.493	2.717
2.437	2.566	2.43	2.575	2.421	2.584	2.412	2.595	2.402	2.607
2.39	2.514	2.383	2.522	2.375	2.531	2.366	2.541	2.356	2.552
2.342	2.461	2.335	2.468	2.328	2.477	2.319	2.487	2.31	2.498
2.295	2.408	2.288	2.415	2.281	2.424	2.273	2.433	2.264	2.444
2.247	2.355	2.241	2.362	2.234	2.37	2.226	2.379	2.217	2.389
2.2	2.303	2.194	2.309	2.187	2.317	2.179	2.325	2.171	2.335
2.152	2.25	2.146	2.257	2.14	2.264	2.133	2.272	2.125	2.281
2.104	2.198	2.099	2.204	2.093	2.211	2.086	2.218	2.078	2.227
2.056	2.145	2.051	2.151	2.045	2.158	2.039	2.165	2.032	2.173
2.009	2.093	2.004	2.099	1.998	2.105	1.992	2.112	1.985	2.119
1.961	2.041	1.956	2.046	1.951	2.052	1.945	2.058	1.938	2.066
1.913	1.989	1.908	1.994	1.903	1.999	1.898	2.005	1.892	2.012
1.865	1.937	1.861	1.941	1.856	1.946	1.851	1.952	1.845	1.959
1.817	1.884	1.813	1.889	1.808	1.894	1.803	1.899	1.798	1.905
1.769	1.832	1.765	1.837	1.761	1.841	1.756	1.846	1.751	1.852
1.721	1.781	1.717	1.784	1.713	1.789	1.709	1.793	1.704	1.799
1.672	1.729	1.669	1.732	1.665	1.736	1.661	1.741	1.657	1.746
1.624	1.677	1.621	1.68	1.617	1.684	1.614	1.688	1.609	1.693
1.576	1.625	1.573	1.628	1.57	1.632	1.566	1.636	1.562	1.64
1.527	1.573	1.525	1.576	1.522	1.58	1.518	1.583	1.514	1.587
1.479	1.522	1.476	1.524	1.474	1.527	1.47	1.531	1.467	1.535



18	20	22
48.429	43.169	38.483

18		20		22	
Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)	Short Focus (m)	Long Focus (m)
48.279	Infinity	43.02	Infinity	38.334	Infinity
26.824	Infinity	25.126	Infinity	23.459	Infinity
18.571	78.37	17.744	97.691	16.9	135.085
14.201	33.869	13.715	37.017	13.208	41.332
11.496	21.602	11.177	22.835	10.84	24.399
9.657	15.859	9.432	16.51	9.191	17.308
8.325	12.528	8.158	12.929	7.978	13.411
7.624	10.989	7.484	11.295	7.333	11.66
6.898	9.527	6.784	9.755	6.66	10.025
6.145	8.135	6.055	8.3	5.957	8.493
5.759	7.464	5.679	7.602	5.593	7.763
5.365	6.808	5.296	6.923	5.221	7.056
4.964	6.168	4.905	6.262	4.841	6.37
4.555	5.543	4.506	5.618	4.452	5.704
4.139	4.932	4.098	4.991	4.054	5.058
3.927	4.632	3.891	4.683	3.851	4.742
3.714	4.335	3.682	4.38	3.646	4.431
3.499	4.041	3.47	4.08	3.439	4.124
3.281	3.751	3.256	3.784	3.229	3.822
3.062	3.463	3.04	3.492	3.016	3.524
2.84	3.179	2.822	3.203	2.801	3.23
2.751	3.067	2.734	3.089	2.715	3.113
2.661	2.955	2.645	2.975	2.627	2.998
2.571	2.843	2.556	2.861	2.54	2.882
2.481	2.732	2.467	2.749	2.452	2.768
2.39	2.621	2.377	2.636	2.363	2.654
2.345	2.566	2.332	2.581	2.319	2.597
2.299	2.51	2.287	2.525	2.274	2.541
2.253	2.456	2.242	2.469	2.23	2.485
2.208	2.401	2.197	2.414	2.185	2.428
2.162	2.346	2.151	2.358	2.14	2.372
2.116	2.291	2.106	2.303	2.095	2.316
2.07	2.237	2.06	2.248	2.05	2.261
2.024	2.183	2.015	2.193	2.005	2.205
1.977	2.128	1.969	2.138	1.959	2.15
1.931	2.074	1.923	2.084	1.914	2.094
1.885	2.02	1.877	2.029	1.869	2.039
1.838	1.966	1.831	1.975	1.823	1.984
1.792	1.912	1.785	1.92	1.777	1.929
1.745	1.859	1.739	1.866	1.731	1.875
1.698	1.805	1.692	1.812	1.685	1.82
1.651	1.752	1.646	1.758	1.639	1.766
1.604	1.698	1.599	1.705	1.593	1.711
1.557	1.645	1.552	1.651	1.547	1.657
1.51	1.592	1.505	1.597	1.5	1.603
1.463	1.539	1.459	1.544	1.454	1.55