

Hyperfocal Distance Tables for Circle of Confusion Constant 0.023

Note: Applicable cameras for these tables are listed below the tables.

18-mm focal length lens

F-stop	f/3.5	f/4	f/4.5	f/5	f/5.6	f/6.3	f/7.1	f/8	f/9	f/10	f/11	f/13	f/14	f/16	f/18	f/20	f/22
Focus at (ft.)	13.3	11.6	10.3	9.3	8.31	7.4	6.57	5.84	5.19	4.68	4.26	3.61	3.36	2.95	2.63	2.37	2.16
Sharp at (ft.)	6.63	5.81	5.16	4.65	4.16	3.7	3.28	2.92	2.6	2.34	2.13	1.81	1.68	1.47	1.31	1.18	1.08

20-mm focal length lens

F-stop	f/3.5	f/4	f/4.5	f/5	f/5.6	f/6.3	f/7.1	f/8	f/9	f/10	f/11	f/13	f/14	f/16	f/18	f/20	f/22
Focus at (ft.)	16.4	14.3	12.7	11.5	10.3	9.12	8.1	7.2	6.41	5.77	5.25	4.45	4.14	3.63	3.24	2.92	2.66
Sharp at (ft.)	8.18	7.17	6.37	5.74	5.13	4.56	4.05	3.6	3.2	2.89	2.63	2.23	2.07	1.82	1.62	1.46	1.33

24-mm focal length lens

F-stop	f/3.5	f/4	f/4.5	f/5	f/5.6	f/6.3	f/7.1	f/8	f/9	f/10	f/11	f/13	f/14	f/16	f/18	f/20	f/22
Focus at (ft.)	23.6	20.6	18.3	16.5	14.8	13.1	11.7	10.3	9.21	8.3	7.55	6.4	5.95	5.21	4.64	4.19	3.81
Sharp at (ft.)	11.8	10.3	9.17	8.26	7.38	6.56	5.83	5.17	4.6	4.15	3.77	3.2	2.97	2.61	2.32	2.09	1.91

28-mm focal length lens

F-stop	f/3.5	f/4	f/4.5	f/5	f/5.6	f/6.3	f/7.1	f/8	f/9	f/10	f/11	f/13	f/14	f/16	f/18	f/20	f/22
Focus at (ft.)	32	28.1	24.9	22.5	20.1	17.8	15.8	14.1	12.5	11.3	10.3	8.69	8.08	7.08	6.3	5.68	5.18
Sharp at (ft.)	16	14	12.5	11.2	10	8.92	7.92	7.04	6.26	5.64	5.13	4.35	4.04	3.54	3.15	2.84	2.59

35-mm focal length lens

F-stop	f/3.5	f/4	f/4.5	f/5	f/5.6	f/6.3	f/7.1	f/8	f/9	f/10	f/11	f/13	f/14	f/16	f/18	f/20	f/22
Focus at (ft.)	50	43.8	38.9	35.1	31.3	27.9	24.7	22	19.5	17.6	16	13.6	12.6	11	9.82	8.85	8.06
Sharp at (ft.)	25	21.9	19.5	17.5	15.7	13.9	12.4	11	9.77	8.79	8	6.78	6.3	5.52	4.91	4.43	4.03

45-mm focal length lens

F-stop	f/3.5	f/4	f/4.5	f/5	f/5.6	f/6.3	f/7.1	f/8	f/9	f/10	f/11	f/13	f/14	f/16	f/18	f/20	f/22
Focus at (ft.)	82.7	72.4	64.3	57.9	51.7	46	40.8	36.3	32.2	29	26.4	22.4	20.8	18.2	16.2	14.6	13.3
Sharp at (ft.)	41.3	36.2	32.2	29	25.9	23	20.4	18.1	16.1	14.5	13.2	11.2	10.4	9.1	8.1	7.3	6.64

55-mm focal length lens

F-stop	f/3.5	f/4	f/4.5	f/5	f/5.6	f/6.3	f/7.1	f/8	f/9	f/10	f/11	f/13	f/14	f/16	f/18	f/20	f/22
Focus at (ft.)	123	108	96.1	86.5	77.2	68.7	61	54.1	48.1	43.3	39.4	33.4	31	27.1	24.2	21.8	19.8
Sharp at (ft.)	61.7	54	48	43.2	38.6	34.3	30.5	27.1	24.1	21.7	19.7	16.7	15.5	13.6	12.1	10.9	9.9

70-mm focal length lens

F-stop	f/3.5	f/4	f/4.5	f/5	f/5.6	f/6.3	f/7.1	f/8	f/9	f/10	f/11	f/13	f/14	f/16	f/18	f/20	f/22
Focus at (ft.)	200	175	156	140	125	111	98.7	87.6	77.9	70.1	63.8	54	50.2	43.9	39.1	35.2	32
Sharp at (ft.)	100	87.5	77.8	70	62.5	55.6	49.3	43.8	38.9	35.1	31.9	27	25.1	22	19.5	17.6	16

85-mm focal length lens

F-stop	f/3.5	f/4	f/4.5	f/5	f/5.6	f/6.3	f/7.1	f/8	f/9	f/10	f/11	f/13	f/14	f/16	f/18	f/20	f/22
Focus at (ft.)	295	258	229	206	184	164	145	129	115	103	94	79.6	73.9	64.7	57.5	51.8	47.1
Sharp at (ft.)	147	129	115	103	92.2	81.9	72.7	64.6	57.4	51.7	47	39.8	36.9	32.3	28.8	25.9	23.6

105-mm focal length lens

F-stop	f/3.5	f/4	f/4.5	f/5	f/5.6	f/6.3	f/7.1	f/8	f/9	f/10	f/11	f/13	f/14	f/16	f/18	f/20	f/22
Focus at (ft.)	450	394	350	315	281	250	222	197	175	158	143	121	113	98.6	87.7	79	71.8
Sharp at (ft.)	225	197	175	157	141	125	111	98.5	87.5	78.8	71.7	60.7	56.3	49.3	43.9	39.5	35.9

Use these tables for the following cameras:

Canon: 1D, 1D Mark II, 1D Mark II N, 1D Mark III

Leica: M8