

The 500 Rule

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SHUTTER MUSE

Maximum exposure time for preventing star trails. Print Friendly PDF.

Full Frame Focal Length (35mm)	Max Exposure Time	Crop Sensor (1.5x) Equivalent (mm)	Max Exposure Time	Crop Sensor (1.6x) Equivalent (mm)	Max Exposure Time
8	63	12	42	13	39
9	56	14	37	14	35
10	50	15	33	16	31
11	45	17	30	18	28
12	42	18	28	19	26
13	38	20	26	21	24
14	36	21	24	22	22
15	33	23	22	24	21
16	31	24	21	26	20
17	29	26	20	27	18
18	28	27	19	29	17
19	26	29	18	30	16
20	25	30	17	32	16
21	24	32	16	34	15
22	23	33	15	35	14
23	22	35	14	37	14
24	21	36	14	38	13
25	20	38	13	40	13
26	19	39	13	42	12
27	19	41	12	43	12
28	18	42	12	45	11
29	17	44	11	46	11
30	17	45	11	48	10
31	16	47	11	50	10
32	16	48	10	51	10
33	15	50	10	53	9
34	15	51	10	54	9
35	14	53	10	56	9
40	13	60	8	64	8
50	10	75	7	80	6
60	8	90	6	96	5
70	7	105	5	112	4
80	6	120	4	128	4
90	6	135	4	144	3
100	5	150	3	160	3
120	4	180	3	192	3
150	3	225	2	240	2
175	3	263	2	280	2
200	3	300	2	320	2

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Maximum exposure time for preventing star trails. Print Friendly PDF.

Full Frame Focal Length (35mm)	Max Exposure Time	M 4/3 Sensor (2x) Equivalent (mm)	Max Exposure Time
8	63	16	31
9	56	18	28
10	50	20	25
11	45	22	23
12	42	24	21
13	38	26	19
14	36	28	18
15	33	30	17
16	31	32	16
17	29	34	15
18	28	36	14
19	26	38	13
20	25	40	13
21	24	42	12
22	23	44	11
23	22	46	11
24	21	48	10
25	20	50	10
26	19	52	10
27	19	54	9
28	18	56	9
29	17	58	9
30	17	60	8
31	16	62	8
32	16	64	8
33	15	66	8
34	15	68	7
35	14	70	7
40	13	80	6
50	10	100	5
60	8	120	4
70	7	140	4
80	6	160	3
90	6	180	3
100	5	200	3
120	4	240	2
150	3	300	2
175	3	350	1
200	3	400	1