

EV Table - Exposure times, in seconds, for various exposure values and *f*-numbers (ISO 100)

EV	<i>f</i> -number													EV 100 at other ISO settings					
	1.0	1.4	2.0	2.8	4.0	5.6	8.0	11	16	22	32	45	64	200	400	800	1600	3200	
-6	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	256 m	512 m	1024 m	2048 m	4096 m	-7	-8	-9	-10	-11	
-5	30	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	256 m	512 m	1024 m	2048 m	-6	-7	-8	-9	-10	
-4	15	30	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	256 m	512 m	1024 m	-5	-6	-7	-8	-9	
-3	8	15	30	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	256 m	512 m	-4	-5	-6	-7	-8	
-2	4	8	15	30	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	256 m	-3	-4	-5	-6	-7	
-1	2	4	8	15	30	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	-2	-3	-4	-5	-6	
0	1	2	4	8	15	30	60	2 m	4 m	8 m	16 m	32 m	64 m	-1	-2	-3	-4	-5	
1	1/2	1	2	4	8	15	30	60	2 m	4 m	8 m	16 m	32 m	0	-1	-2	-3	-4	
2	1/4	1/2	1	2	4	8	15	30	60	2 m	4 m	8 m	16 m	1	0	-1	-2	-3	
3	1/8	1/4	1/2	1	2	4	8	15	30	60	2 m	4 m	8 m	2	1	0	-1	-2	
4	1/15	1/8	1/4	1/2	1	2	4	8	15	30	60	2 m	4 m	3	2	1	0	-1	
5	1/30	1/15	1/8	1/4	1/2	1	2	4	8	15	30	60	2 m	4	3	2	1	0	
6	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	8	15	30	60	5	4	3	2	1	
7	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	8	15	30	6	5	4	3	2	
8	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	8	15	7	6	5	4	3	
9	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	8	8	7	6	5	4	
10	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	9	8	7	6	5	
11	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	10	9	8	7	6	
12	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	11	10	9	8	7	
13	1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	12	11	10	9	8	
14		1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	13	12	11	10	9	
15	Sunny, Typical		1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	14	13	12	11	10	
16				1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	15	14	13	12	11	
17			ISO = 400 Sunny		1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	16	15	14	13	12	
18						1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	17	16	15	14	13	
19	Sunny 16 rule shown at ISO=250					1/250		1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	18	17	16	15	14
20	Sunny f16, slightly overcast f11, overcast f8, heavy overcast f5.6							1/8000	1/4000	1/2000	1/1000	1/500	1/250		19	18	17	16	15
	1.0	1.4	2.0	2.8	4.0	5.6	8.0	11	16	22	32	45	64						

EV values

Lighting Condition	EV ₁₀₀
Daylight	
Light sand or snow in full or slightly hazy sunlight (distinct shadows)	16
Typical scene in full or slightly hazy sunlight (distinct shadows)	15
Typical scene in hazy sunlight (soft shadows)	14
Typical scene, cloudy bright (no shadows)	13
Typical scene, heavy overcast	12
Areas in open shade, clear sunlight	12
Outdoor, Natural light	
Rainbows	
Clear sky background	15
Cloudy sky background	14
Sunsets and skylines	
Just before sunset	12-14
At sunset	12

At night

Lighting Condition	EV ₁₀₀
Just after sunset	9-11
The Moon , altitude > 40°	
Full	15
Gibbous	14
Quarter	13
Crescent	12
Moonlight , Moon altitude > 40°	
Full	-3 to -2
Gibbous	-4
Quarter	-6
Aurora borealis and australis	
Bright	-4 to -3
Medium	-6 to -5
Outdoor, Artificial Light	
Neon and other bright signs	9-10
Night sports	9
Fires and burning buildings	9
Bright street scenes	8
Night street scenes and window displays	7-8
Night vehicle traffic	5
Fairs and amusement parks	7
Christmas tree lights	4-5

Floodlit buildings, monuments, and fountains	3-5
Distant views of lighted buildings	2

Indoor, Artificial Light

Lighting Condition	EV ₁₀₀
Galleries	8-11
Sports events, stage shows, and the like	8-9
Circuses, floodlit	8
Ice shows, floodlit	9
Offices and work areas	7-8
Home interiors	5-7
Christmas tree lights	4-5

Sunny 16 (A way to estimate exposure)

Set speed = ISO

Aperture	Lighting Conditions	Shadow Detail
f/16	Sunny	Distinct
f/11	Slight Overcast	Soft around edges
f/8	Overcast	Barely visible
f/5.6	Heavy Overcast	No shadows

Full stop aperture gaps with Aperture values (at ISO100)

AV	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
f	0.5	0.7	1.0	1.4	2	2.8	4	5.6	8	11	16	22	32	45	64	90	128

Half stops

f	1.0	1.2	1.4	1.7	2	2.4	2.8	3.4	4	4.8	5.6	6.7
	8	9.5	11	13	16	19	22					

1/3 stops

f	1.0	1.1	1.2	1.4	1.6	1.8	2	2.2	2.5	2.8	3.3	3.5	4	4.5
5	5.6	6.3	7	8	9	10	11	12.5	14	16	18	20	22	

Shutter speeds (full stops only shown)

1	1/2	1/4	1/8	1/15	1/30	1/60
1/125	1/250	1/500	1/1000			

ISO (full stops shown with yellow background)

6	8	10	12	16	20	25	32
40	50	64	80	100	125	160	200
250	320	400	500	640	800	1000	1250
1600	2000	2500	3200	4000	5000	6400	

EV Table

The main tables are for ISO 100, with additions to 3200. Colour coding and stop details should prove helpful.

Exposure options on the same line are equal.

Guide figures to EV's are for 'in the open', reduce these for in the shade, shadow or darker than normal.

You can subtract from the EV. 1 stop = 1 EV
 ND filters ND0.3=1 stop, ND0.6=2 stops, ND0.9=3 stops
 Teleconverters 1.4x=1 stop, 1.7x=1.5 stop 2x = 2+ stops
 Polariser 1 stop

If in doubt, underexpose (use larger EV), you can recover detail in shadow, but not lost highlights.

Remember you have three variables, speed, aperture and ISO, use them all.

You can use these tables with any ISO by allowing for the 'stop' increase, by moving down a line for each stop, or upwards for lower ISO values.

Try to get the shutter speed equal or better than the focal length, ie 200mm requires 1/200 or shorter, unless stabilised. 400mm requires 1/400 or better, but VR can cope with camera shake at 1/50 (3 stops advantage).

Use the aperture (f) to get the depth of field you require, beyond this keep ISO below 800 where you can, to control noise. The solution is often a compromise.

This is not a replacement for your camera or other exposure meter and histogram, but a way to understand exposure options better and deal with difficult situations. If you experiment using EV's when you have time, you will find this can help in many ways considerably.

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