

Summary of Relative Changes in Exposure Brightness for ISO, Aperture, and Exposure Time.

Rel. brightn ess	1/16 dark	1/8	1/4	1/2	1	2	4	8	16 brite	...
Stops	-4 ...	-3	-2	-1	0	1	2	3	4	...
ISO	100...	200	400	800	1600	3200	6400	12800	25600	...
Apertu re f	22...	16	11	8	5.6	4	2.8	2	1.4	...
Time s	1/16 ...	1/8	1/4	1/2	1	2	4	8	16	...

Note: Thinking of this as a table is misleading!

Reciprocity: Exposure Trio's Scale



Perfect exposure.
Zero the scale.

ISO 200 f/11 1/100s



One stop brighter--- 4 different ways.
Check out the scale.



One stop darker----
Check out the scale;
it's negative

← Vary all three --
at once -
ISO, aperture and
exposure time!

Volume of light <-> Addition of Stops

- $V = (I_t 2^l) \times (I_a 2^m) \times (I_i 2^n)$
- $V = V_0 (2^l \times 2^m \times 2^n)$
- l, m, n # of stops for shutter time, aperture, ISO

- Example
Double the time



$$V = V_0 (2^1 \times 2^0 \times 2^0) = 2V_0$$

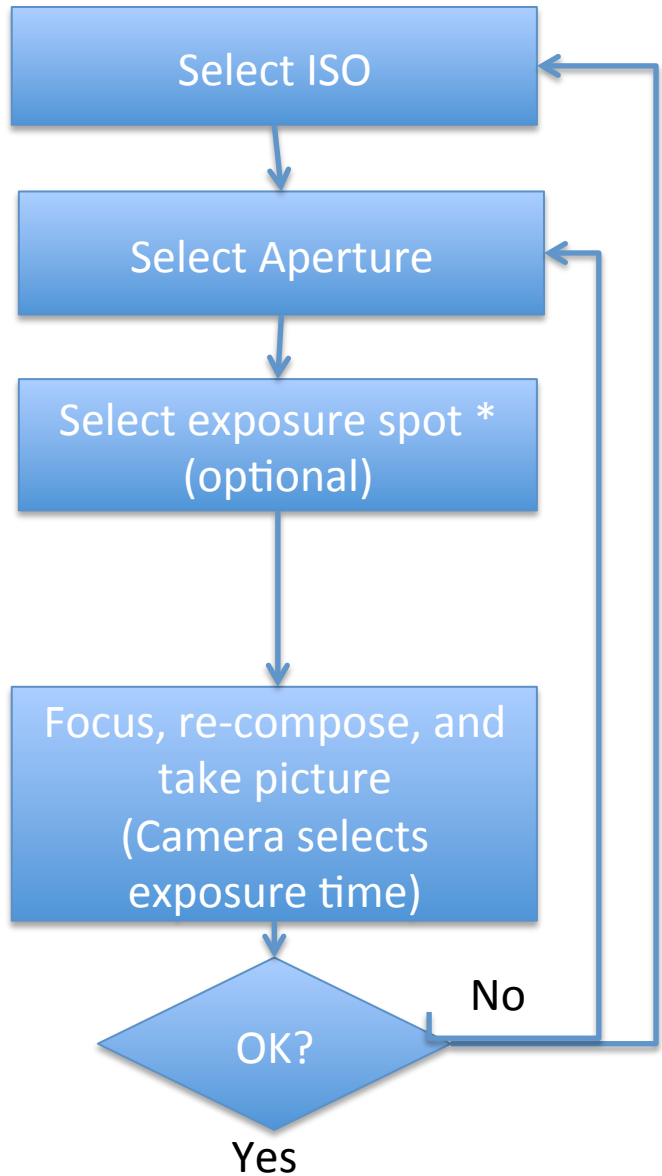
- $V = V_0 (2^l \times 2^m \times 2^n)$
- $V = V_0 2^{(l + m + n)}$
- Addition of stops easier than multiplication.

- Example
Double the time
= +1 to the stop



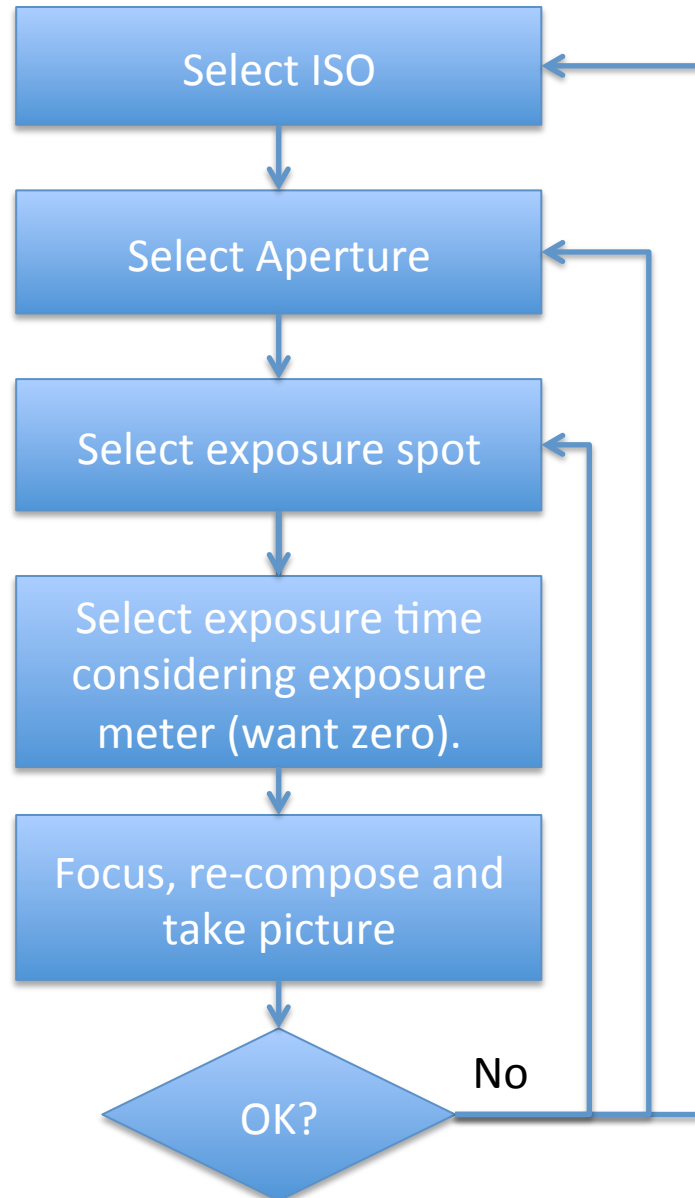
$$V = V_0 2^{(1 + 0 + 0)} = 2V_0$$

Av mode (aperture priority)



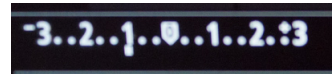
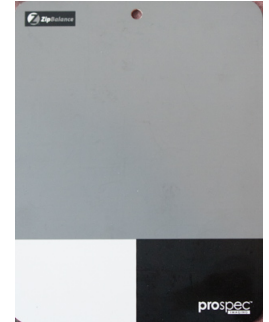
Use evaluative metering [(*)] unless using optional exposure spot *, in which case select spot metering [*].

One way to do Manual mode



Use spot metering [*].

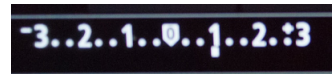
18% grey card for exposure



Underexposed



Almost just right



Overexposed