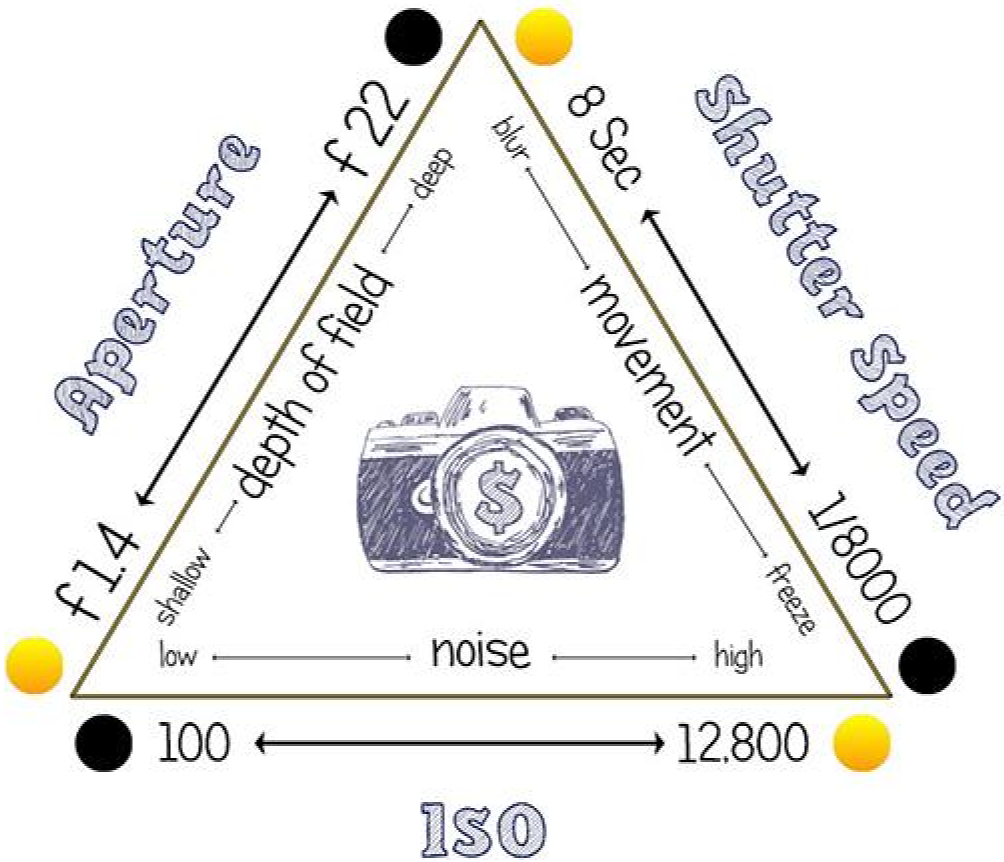
50mm Framework

Exposure Triangle



The Exposure Triangle image is used to show you how to balance your settings for a correct exposure. When I was learning how to shoot in Manual Mode I found this image to be no use at all. I'll show you how to get the correct exposure every time.

I see lots of questions online, like, “what are the best settings to shoot a wedding?” Well there isn't one setting for every occasion, I wish there was.

To shoot in Manual Mode and get a correct exposure you need to control three settings:

APERTURE - controls how much light passes through the Aperture blades inside the lens.
SHUTTER SPEED - controls how much light is allowed onto the image sensor.
ISO - controls how sensitive the image sensor is to light.

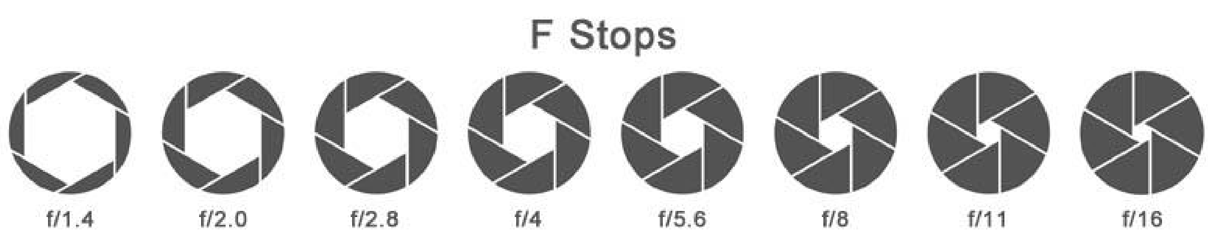
You need to think of Aperture, Shutter Speed, and ISO in terms of STOPS. These STOPS are a way to measure how much light is needed to create a correctly exposed photograph.

If you listened to Episode #3 of the Photography Q&A podcast about lenses you already know what an F Stop is.

An aperture is an opening that light travels through. Lenses have internal aperture blades that regulate how much light passes through to the camera's digital sensor (or film). The amount of light that passes through a lens is measured using the "focal stop scale", abbreviated to f stop. The lower the number, the more light passes through.

f/1 – f/1.4 – f/2 – f/2.8 – f/4 – f5.6 – f/8 – f/11 – f/16 – f/22 – f/32

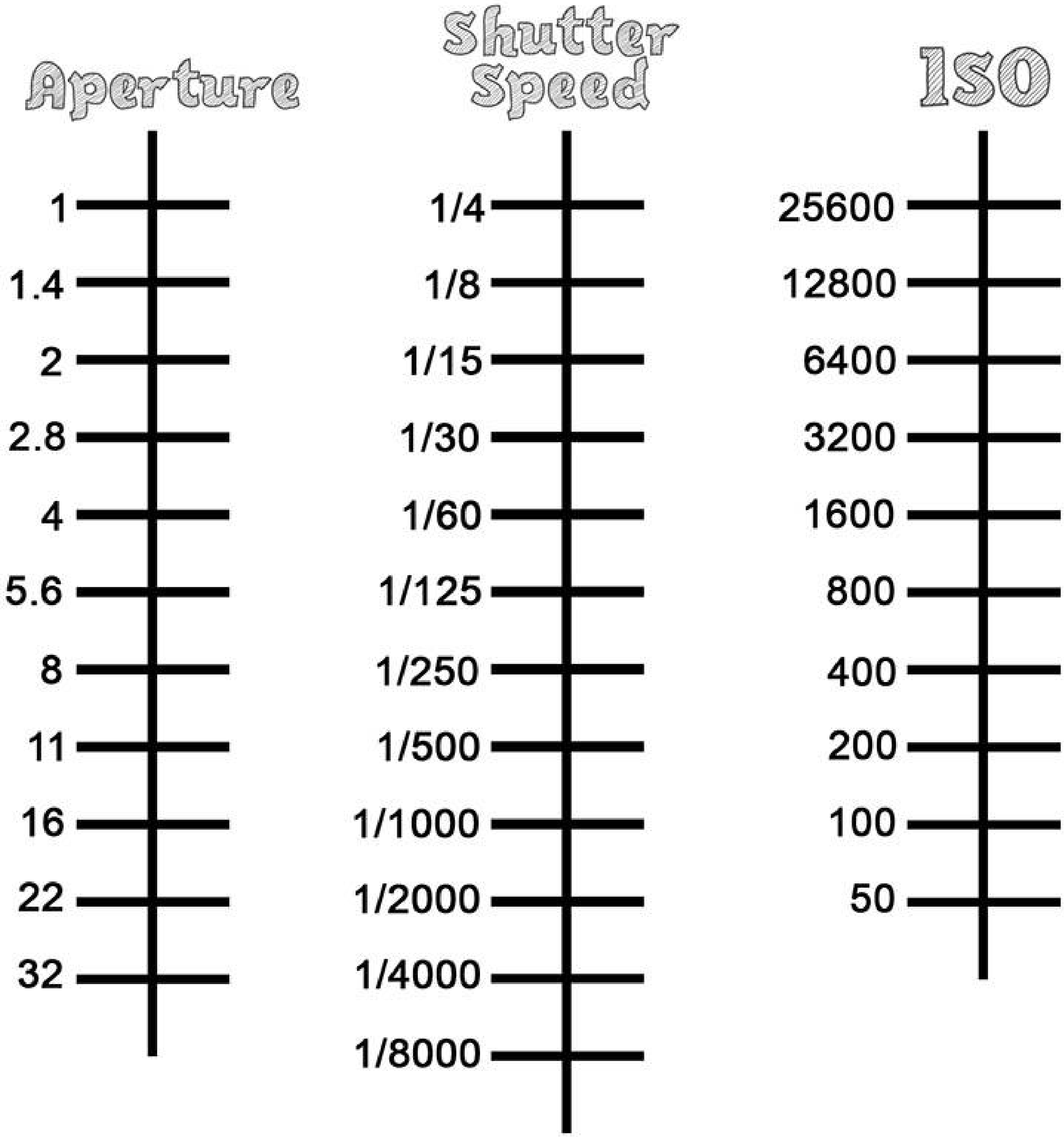
Each number represents a full "f stop". Starting with the lowest number, each f stop lets 2x the amount of light in as the next stop. For example, f/2.8 lets 2x the amount of light that f/4 does, f/4 double that of f/5.6.



When you change the aperture on your camera you will notice there are other numbers in between the ones on the f scale. They represent ⅓ of a stop and give greater exposure accuracy. Example, between f/2.8 and f/4 there is f/3.2 and f/3.5. Don't worry about these right now, concentrate on the stops.

The STOPS aren't just for the Aperture settings,
Shutter Speed, and ISO have them too.

Stops

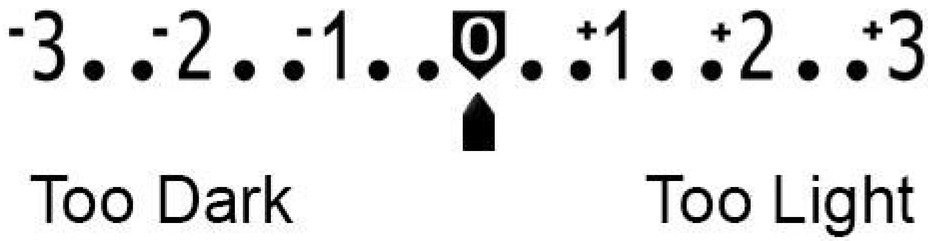


Each Stop on lets in twice (2x) as much light in as the one below it.

Aperture setting of f/1.4 lets in 16x more light than f/5.6 (4 stops = 2x2x2x2=16).
Shutter Speed set at 1/125 lets in 2x more light than 1/250 (1 stop)
ISO setting of 100 creates half the amount of light that ISO 200 does (1 stop)

Q) How do you know when the 3 settings are correct?

The answer is: your internal light meter



When you look into your viewfinder you can see the light meter (or exposure Meter). The aim is to get the indicator to the middle at “0”.

EXAMPLE

If you are taking a portrait and you are shooting in Manual Mode.

Step 1. Turn the ISO to 100

Step 2. Decide what Depth of Field you want. f/2.8 is perfect from a distance of 6 - 8 feet. Use the PhotoPills DoF App if you’re not sure.

Step 3. If your subject isn’t moving choose a slow shutter speed that won’t cause camera shake. Let’s go with 1/125

Check your light meter.

If the indicator is on the minus (-) side, the image won’t get enough light.

This meter shows that the image will be 1 Stop underexposed. So you need 1 Stop of extra light to correct it.

You could change the Shutter Speed to 1/60 but that might cause camera shake.
Changing the Aperture to f/2 would give the 1 Stop of light you need but it would give a shallower Depth of Field.
The ISO needs to be changed from 100 to 200, that gives you 1 Stop of extra light and moves the indicator to “0”.

If the Indicator is on the plus (+) side, the image has too much light.

This meter shows that the image will be 2 Stops overexposed. So you need to reduce the light by 2 Stops.

You can’t change the ISO this time because on most cameras the smallest setting is ISO 100 (If your camera goes down to ISO 50 you could get back 1 Stop).
You could change the Aperture to f/5.6 but again that would change the DoF, so don’t change that.
Shutter Speed can be changed this time because we need to cut down the amount of light by 2 Stops. This means it will change from 1/125 to 1/500 (2 Stops) and there is no chance of camera shake at 1/500 of a second.
If you can turn the ISO down to ISO 50 (1 Stop) you could then just change the Shutter Speed to 1/250 (1 Stop) which gives you 2 Stops total and the meter indicator is back at “0”.

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