

Rocky Mountain Reflections Photography, Inc.

EXPOSURE



This is a discussion on exposure. New photographers should understand this before learning how to manually meter the camera.

Stop Values

What is a stop of light?

A **stop** of light is the amount of light required to either double the current amount of light

or

decrease by half the current amount of light.

To gain or “open up” 2 stops of light is to receive four times more light.

Conversely, to lose or “stop down” 2 stops of light is to receive four times less light.

Think of it this way, if a room is lit by two 100w bulbs, it can be 1 stop brighter by adding two more 100w bulbs.



Conversely, if a room is lit by two 100 bulbs and one bulb is removed, it is one stop darker.

Often one will hear photographers use the terms “opening up” and “stopping down”.

Opening up refers to letting in more light.

Stopping down refers to letting in less light.

Dynamic Range

Dynamic range is the range of light intensities that can be viewed/captured from very dark to very bright while still maintaining detail in both the very dark and very bright.



It's the number of stops from detail less white to blocked up black.

Our eyes can perceive about 12 stops of light without adjusting the pupil.

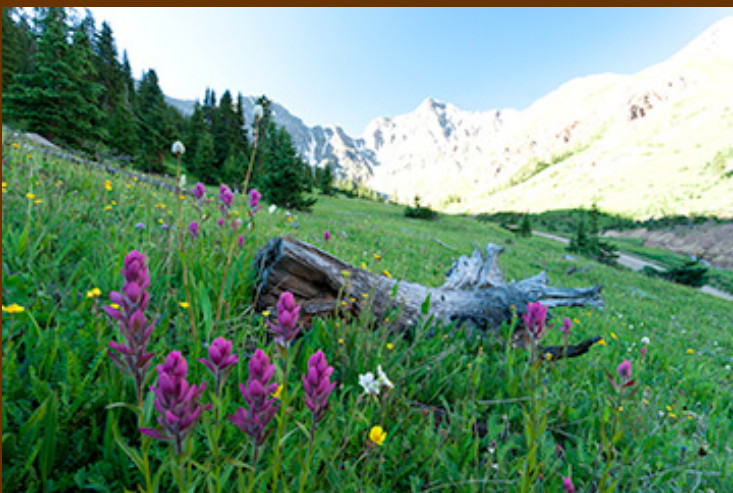


In situations where our pupils open and close for varying light, our eyes can perceive about 24 stops.

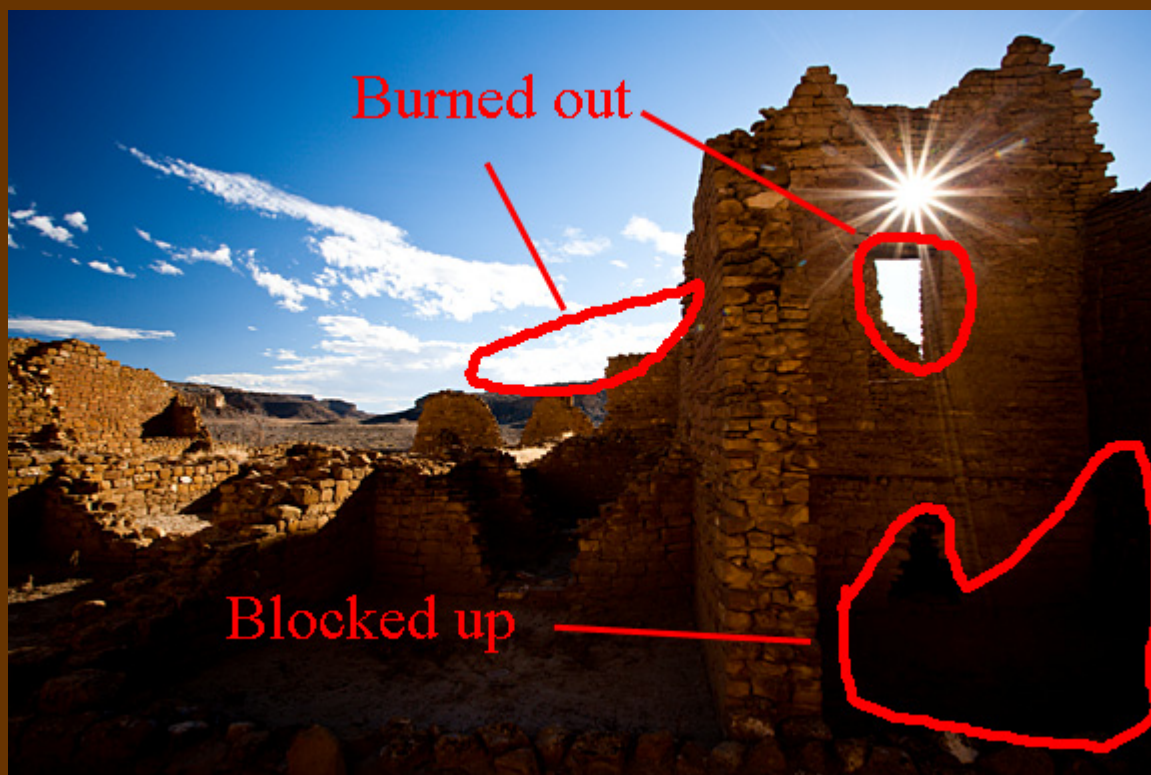
Most DSLRs capture 7 to 12 stops of light in any given scene.

This explains, why, even though we can see detail in the highlight area of a scene with our eyes, what often records on the sensor is blown out; overexposed.

Or, why, even though we can see detail in the shadow areas of a scene with our eyes, what often records on the sensor is blocked up; underexposed.



Often the contrast of a given scene may exceed the range of the sensor's ability to record it.



Looking through the viewfinder of the camera I could see detail in the burned out and blocked up areas of this image.

Unfortunately, due to the limited dynamic range of the camera, the details did not record.

To overcome the limited dynamic range of the camera, a photographer can utilize the auto exposure bracketing (AEB) feature of their camera.

This will cause the camera, with one trip of the shutter release, to take multiple shots of a scene where the length of the shutter speed is varying in each shot.

This allows the photographer to capture the entire dynamic range of the scene.

I frequently use this feature.

Exposure

In photography, an **exposure** occurs when we allow light to pass into our light tight boxes (cameras) and record on a medium (sensor).



More accurately for our purposes, **exposure** is the total amount of light allowed to fall on the sensor during the process of taking a photograph.



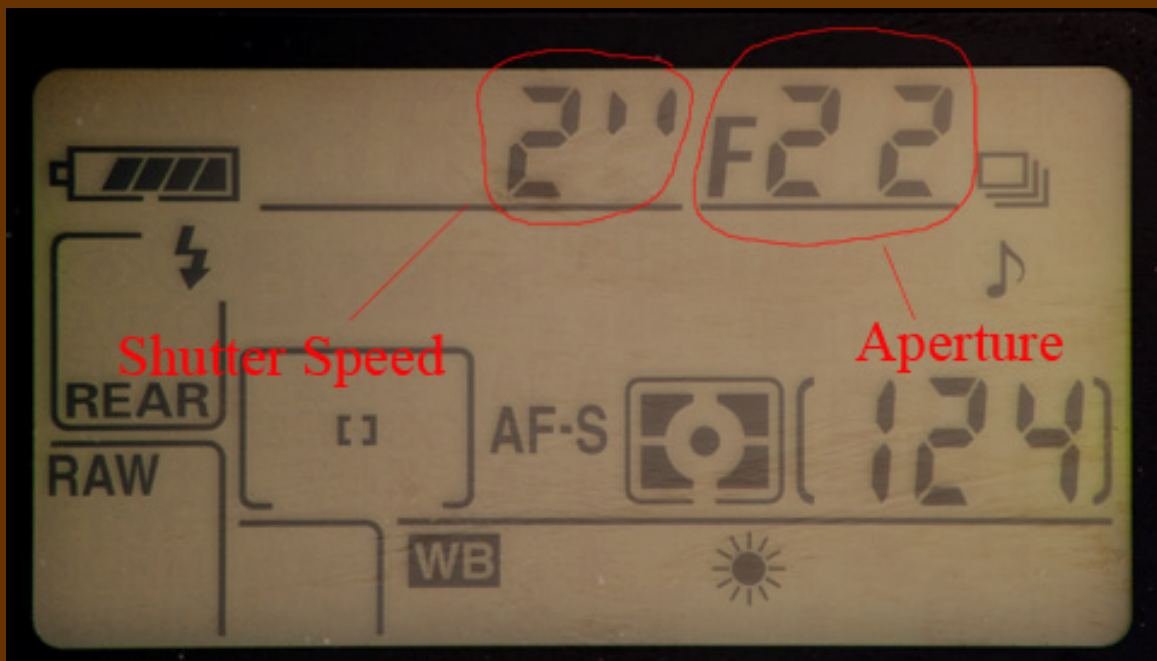
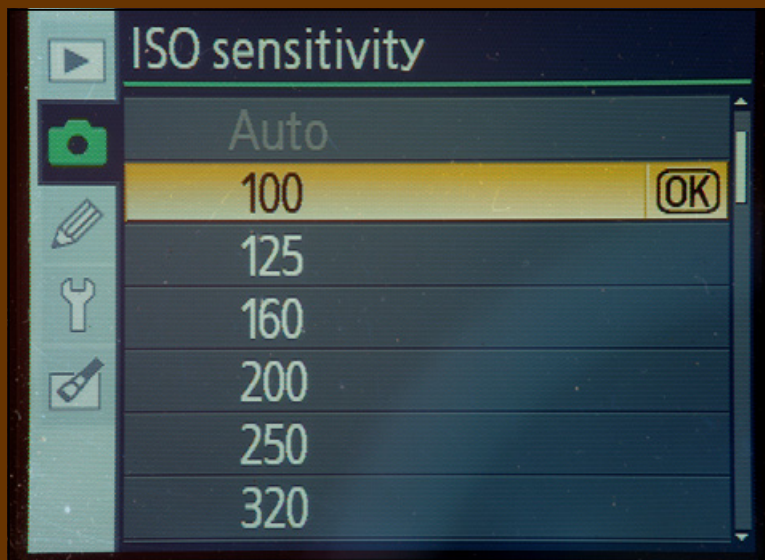
Contributing Factors for Exposure

Only three camera settings affect exposure:

1. ISO
2. Aperture
3. Shutter Speed

That is it!

With all of the fancy buttons, dials and menu settings available on today's cameras, the exposure is determined by only three settings.



How do we gain the greatest control over ISO, Aperture, and Shutter Speed?

By selecting a particular shooting mode.

Any guesses as to which mode?

**Yes,
the
Manual Shooting Mode.**

**For a detailed discussion please
view our “Manual Metering
Lesson”.**