

## Exposure Compensation

### Monday Morning Tip

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Exposure Compensation (EC) is an invaluable control for making quick adjustments to exposure. Just about every digital camera has EC but most people have no idea of the power behind that strange icon (EC is also available on high end film cameras). To understand EC, we have to first understand the basics of exposure.



An exposure is created when the shutter is released and light strikes the sensor. The amount of light determines the exposure. This is controlled by aperture and shutter speed. The amount of light needed to create an image is controlled by ISO. This is the basis for Lee's Rule of Exposure Triad, the three-legged stool that supports the concept of a "proper" exposure. Briefly, the Exposure Triad says anytime aperture, shutter speed or ISO is changed, one or both of the other two variables must be adjusted. EC allows you to quickly make these adjustments by simply dialing in more or less light.

As we've learned in prior MMTs, the camera's metered exposure may not be what you want for a number of reasons. Some cameras are miscalibrated, they read too high or too low straight out of the box. Sometimes, backlight or spotlight fools the meter. More often, you want more or less light for creative reasons. Whatever the reason, exposure compensation (EC) is the key to getting the proper amount of light on the sensor.

When the camera is in Av (aperture priority) Mode, adjusting EC increases or decreases shutter speed to let in more or less light. Conversely, in Tv (shutter priority) Mode, EC increases or decreases the aperture. In P (program) Mode, adjusting EC changes both aperture and shutter speed at the same time. For example, let's say your camera has metered the scene and set aperture to f/8 and shutter speed to 1/250 second. After the first shot, you check the histogram and see that it's too dark so you want to add more light. When you add +1 EC, depending on how your camera is programmed, the aperture might increase to f/9.5 (1/2 stop between f/8 and f/11) and the shutter speed might slow to 1/180 second (halfway between 1/125 second and 1/250 second). Since both aperture and shutter speed each added 1/2 stop, the image has had 1 full stop of light added.

In M (manual) Mode, EC is not active since any negative or positive bias can be adjusted directly with the aperture and shutter speed controls.

In Canon dSLRs, there are 2 distinct methods of adjusting EC. In the Digital Rebel series, hold down the EC button near the top right corner of the rear LCD and turn the Main Dial located behind the shutter release button. Watch the exposure level display at the bottom of the viewfinder or in the rear LCD and add or subtract the desired amount of EC. (DR manual page 75, XTi page 74)



On Canon xxD series dSLRs (10D thru 50D), simply turn the rear dial after half pressing the shutter release. Half press activates the camera's automatic exposure meter. (20D manual page 83, 40D page 93)

On a Nikon D80, press the EC button on top, behind the shutter release and turn the Main Command Dial on the back, top right corner of the camera. The amount of EC can be read along the bottom of the viewfinder. Notice that it has a + or – symbol next to it. (Nikon D80 manual page 54, D40 page 47)

Almost all digital SLRs have very similar controls for adjusting EC (Olympus E510 manual page 55, Sony A100 scattered throughout manual, Pentax page 100). Keep in mind that all dSLRs that I'm familiar with retain the EC adjustment when the camera is turned off. In other words, always be sure to check EC next time you use the camera. It's a sick feeling in the pit of your stomach when you suddenly realize that the first dozen photos are all too light or dark because EC setting from your last shoot is still in effect.

The following photos were taken with seconds of each other with a Canon 100/2.8 macro lens. Both were taken at f/2.8. The left (darker) image was taken at 1/160 second (less light) while the right (lighter) image was created at 1/40 second (more light). This is equal to 2 stops. Do this on a regular basis so you begin to see how 1, 2, 3 or more stops of lights changes exposure. Then, when you're in the field, your eyes and fingers will automatically know how much EC to apply.

