

Getting Exposure Right

By Chuck Palmer

One of the most confusing things to learn about photography is understanding how your camera's exposure metering works. How often have we set the exposure our camera metering says is perfect only to find the image is over-exposed or under-exposed? Well there is nothing wrong with your camera. It's the way your camera exposure metering works. Let's take a closer look at our typical digital camera metering system.

Perfect exposure is of course subject to the photographer's interpretation of the scene or subject. But we commonly think of exposure as the amount of light that provides us with the true tonality of the subject in the photo. A proper exposure provides details in both highlights and shadows. Although not always accurate for all scenes, one exposure method DSLR users commonly use is to "avoid the blinkies", or highlight clipping warnings on our LCD screen after a test shot. Understanding how our DSLR meter works might avoid numerous test shots.

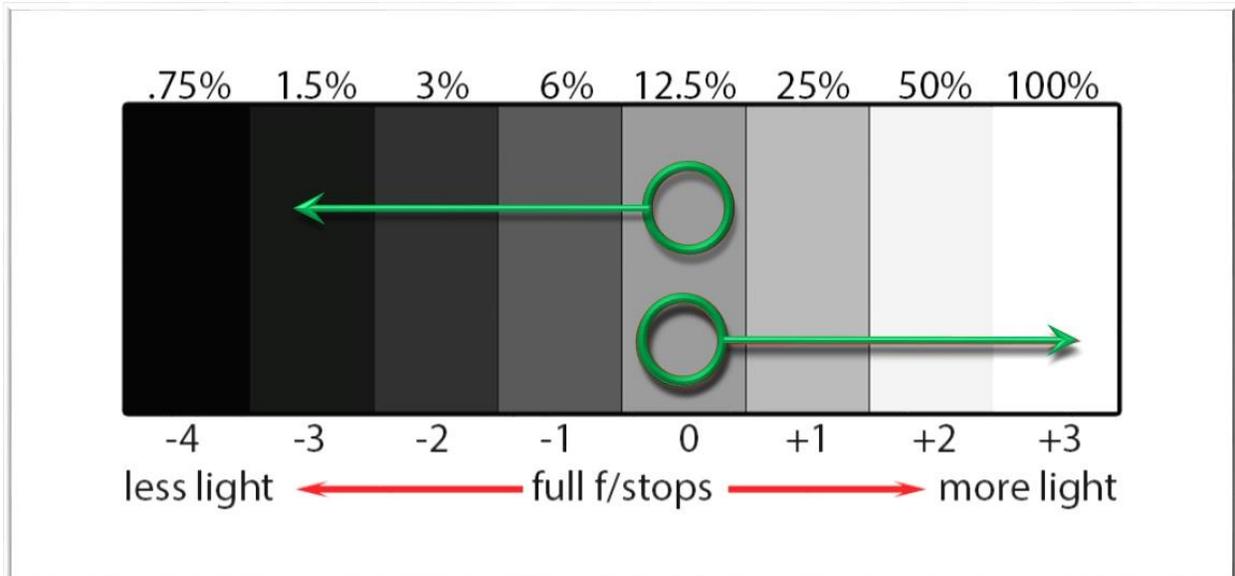
The meters in our digital cameras are "reflective" light meters. They measure the amount of light bouncing off our subject. But a meter must have some point of reference to compare the light measured. Reflective meters try to set the exposure to make whatever light it sees medium gray, or 12.5% gray. The older value of medium gray many of us may have learned at 18% comes from the print world. A newer ANSI standard meters use puts medium gray at 12.5%, a 1/2 stop under the 18% gray commonly found in printing.

Try this experiment with your own camera. On a bright sunny day, shoot a black card and a white card with your camera set to Program (P) mode. Fill your image frame with each card. Be sure to spot meter directly on the white and black cards. Make sure both cards are photographed in the exact same light. Don't look at your LCD monitor until you have taken both photos. You now have a photo of a pure black, and pure white card. Correct? Not exactly. Review your photos. You will see that you have two almost identical gray card photos. What happened? Your camera meter measured the reflected light and set your exposure to reproduce 12.5% gray.

So, understanding that your meter pushes or pulls your exposure to reproduce medium gray, we probably have to compensate exposure unless of course our subject reflects medium gray tones. Modern digital cameras incorporate some very sophisticated "matrix" or "evaluative" metering sensors that interpret tones and contrast of the scene with complicated algorithms which significantly improves meter accuracy. But we often must compensate for metering error, depending on the tones and light contrast of our scene.

So, do we just guess at exposure compensation? Well sort of. Understanding a reflective metering chart may help us pinpoint our exposure compensation target. If our subject is mostly white (think snow scene), and our meter gives us an exposure reproducing 12.5% gray, we would have to add 1.5 to 2.5 stops of exposure to reproduce white with some details. Likewise, if our subject is mostly dark, and our meter gives us an exposure reproducing 12.5% gray again, we would have to reduce our exposure 1 to 2.5 stops to reproduce blacks with some details (see chart). The most critical thing to remember is that a reflective meter will tend to under expose a white (light toned) subject, and over exposes a black or very dark toned subject. So, we have to compensate.

Reflective Metering Chart



Of course we typically don't take photos where the tonality is extremely black (dark), or totally white (light). But we can use our new knowledge of how our meters work to help us solve exposure challenges. The reflectance chart helps us make some decisions in setting our exposure compensation, or at least it provides an understanding as to whether we should add or subtract light for proper exposure. Exposure compensation can be changed by changing our lens aperture (f-number), shutter speed, ISO, or by just dialing in a compensation value using the Exposure Compensation feature on digital cameras.

As you gain experience judging the tonality of your subject, you will be able to quickly dial in a target exposure compensation. Here is a good rule of thumb guide I have used for exposure compensations when metering subjects with reflective light meters:

<u>Subject Tonality</u>	<u>Compensation (Exposure Stops)</u>
Very Light	+1 2/3
Light	+1
Medium Toned	0
Dark	-1/2
Very Dark	-1

And here's a real-life example. Nancy is photographed in a white blouse in front of a very light background in the shade. Photo 1 on the left shows a zero-compensation exposure with a Nikon camera

set to “Matrix” metering mode (Evaluative on Canon). You can see Nancy’s blouse is a predictable medium gray value, and her face is a little dark. Adding 1 1/3 stops of exposure compensation for Photo 2 on the right renders her blouse white with details and provides a proper exposure on her face.



Photo 1 – Zero Compensation



Photo 2 – Plus 1 1/3 stops more light

Once you have a good handle on how your meter works, and have some experience with exposure compensation, break some rules! Often the best and most interesting photos come from making the subject look a lot darker or lighter in the photo than it looked in real life. Turning a scene into your own artistic interpretation is what makes photography so much fun and rewarding. Keep experimenting, and may the remarkable photos be yours.