

Metering Basics

Introduction

Your camera has a built-in light meter that measures the light in a scene and attempts to produce the correct exposure using a combination of aperture, shutter speed, and ISO.

Meter modes

All DSLRs (and most other cameras) have at least three meter modes.

1. The default mode measures the light across the several zones and averages them to determine proper exposure. Different brands have different names for this mode. For example, Matrix metering (Nikon), Evaluative metering (Canon), and Multi-segment metering (Pentax).
2. Center-weighted metering measures the light in the same zones but assigns more importance to the zones in the center of the scene, with less “weight” given to the outer edges.
3. Spot metering measures the light in a tiny spot, usually in the center.
4. Some cameras have additional modes such as a “partial” mode that covers an area slightly larger than spot metering, but we will stick with the basic three modes.

Icons for each metering mode from three camera manufacturers

	Canon	Nikon	Pentax
Matrix metering also known as Evaluate ou Multizone depending on the manufacturer			
Centre-weighted metering			
Spot metering			

When should each mode be used?

Matrix (evaluative, multi, etc.) is the standard meter mode which should be used nearly all the time. Modern cameras get very good exposures under most circumstances using this mode.

Center weighted metering is often used for portrait photography because gives more weight to the subject and less to the surrounding area. Some photographers think it is more predictable than matrix metering.

Spot metering is useful where the main subject is much lighter or darker than the surroundings, such as a person in shadow or backlit by bright light. For example, for portraits against a bright background, you can take a meter reading off your model's face to get the correct skin exposure. For landscapes, if you want to get the exposure right on a brightly lit area surrounded by shadow, you can take a meter reading off the brightly lit area.



SPOT METER



MATRIX METER



Changing Meter Settings

Check your owner's manual to learn how to change meter modes. Most digital cameras have a button or dial to activate a meter change, then the main control dial cycles through the meter modes. Most Nikon and Canon cameras use symbols, and Pentax uses "AE" to select a meter mode.

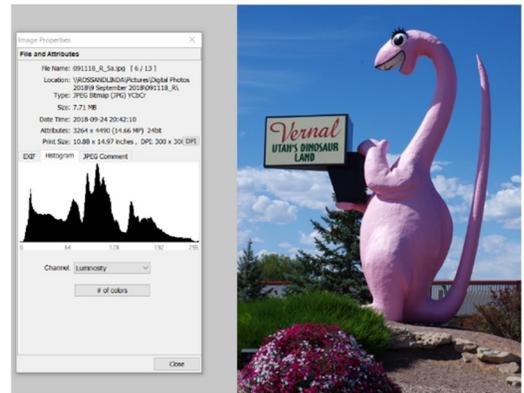
After you get your meter reading (by pressing the shutter release half way) you might want to lock in the exposure and recompose before taking the photo. If you have a DSLR, or many other cameras, you will have an "exposure lock" button. This comes in especially handy when using the spot meter. For example, you can

meter off a face, lock the exposure, and recompose so the face is off center. The exposure lock button is AE-L/AF-L (Nikon), under an asterisk (Canon), and AF/AE (Pentax).

No matter what you do, the camera can still get your exposure wrong. Your meter tries to average the brightness of every scene to a pre-set level called 18% gray. You can even buy a gray card that represents this value and use it to take neutral meter readings.

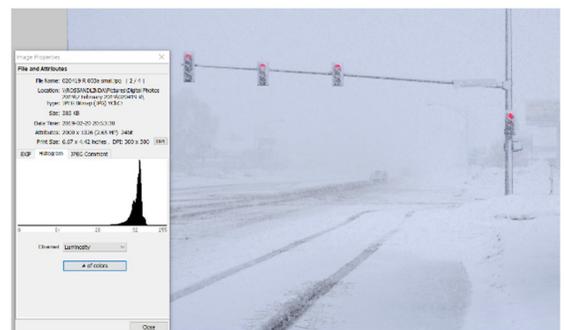
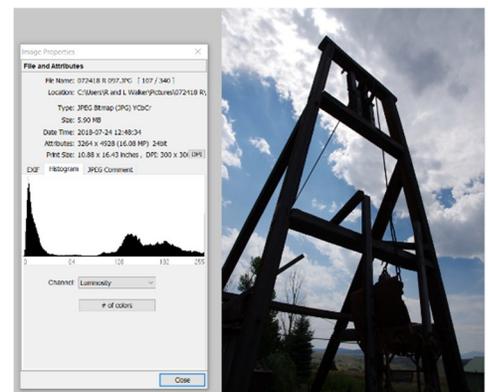
How do you know if you got the exposure right? View the photo on the camera's LCD and check the histogram, which looks like the diagram on the right.

The histogram with the dinosaur photo is a good exposure because it is entirely within the frame. The left side represents dark tones, the center is middle tones (18% gray) and the right represents light tones.



Histogram rules:

1. The graph should not stack against the left edge (too dark) or right edge (too light) or detail will be lost. The histogram with the mine structure is stacked against the left edge, so detail will be lost in the dark areas.
2. Correct exposure for very dark or very light scenes should not have the graph in the center, or the photo will be too gray. Dark scenes should be weighted on the left, and light scenes on the right, but NOT stacked against the edges. The snow scene should be very light, and the histogram is correctly shifted to the right but is not against the edge. If it had been centered, the image would be too gray.



How can you adjust your exposure? One way is to use your spot meter and exposure lock button as discussed above. Another way is to add or subtract 1 or 2 stops, retake the photo and check your histogram again. Typically, there will be a +/- button. Press and hold the button and turn a wheel to change exposure. The second photo of the cabin has had one stop added to whiten the snow.



And last, try HDR to get great detail in both dark and light areas. Refer to the HDR lesson on the club website.