Photography Metering – Are You a Meter Reader?

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{s1 Open & Hold Slide} – Western Company NA

{s2} {s2a} {s2b} Photography Metering – Are You a Meter Reader?

{s3} An old Arabic proverb – "All sunshine makes a desert". What it is saying is you need balance in your life. Let's see how this applies to photography. But first?

{s4} What does a meter do? [[]]

{s4a} What does a meter reader do? [[]] Note- As a meter reader you must have a starting point. You read the electric meter, and it has a huge number that has been accumulating for years. You need the ending number from the prior month. The difference of course is the amount of power you used. Keep this concept in mind as it comes in play later.

{s4b} What is metering in photography? [[]] Photography Life, "Metering in photography is the process by which your camera measures the brightness of a scene to determine the correct exposure settings (aperture, shutter speed, and ISO). Your camera's internal light meter evaluates reflected light and adjusts to create a balanced mid-tone, often called "18% gray" or neutral exposure." AI put it this way, "Every reflective meter — handheld or in-camera — is calibrated to render the average luminance of its measured area as a mid-tone of roughly 18% reflectance". Is this always perfect? No, wait until you shoot snow, coal, skin, sky and list goes on and on.

Let's break down what Photography Life wants you to understand regarding "what is metering in photography".

First, "Metering in photography is the process by which your camera measures the brightness of a scene…". So is photography just about the interrelationship of light? [[]] Correct? [[]] Zoner Studio put it this way, "At its core, photography literally translates to "drawing with light." While light is the foundation that makes an image possible, great photography goes far beyond basic illumination. It is the combination of light with other elements that turns an ordinary snapshot into a compelling piece of art" This statement is the foundation to the question, "what is the difference between a picture and an image"

Second, part of the original answer, "…determine the correct exposure settings (aperture, shutter speed, and ISO)" [[]] So now, we have the introduction of the famous Exposure {s5} Triangle aka photography triangle which is the combination of aperture, shutter speed and ISO, which together control the exposure of an image. The light meter in the camera will suggest settings of aperture, speed, and ISO based on what you have told the camera so

far. {s6} Let's say you have an opportunity to shoot a puppy (we all like puppies, even Democrats…well maybe) bouncing in bluebonnets. You want to include the puppy with the bluebonnets in the foreground of the image. So you elect aperture priority. This means the camera will set the speed – we assume for the moment ISO is locked down at native ISO. Do you know the native ISO of your camera? [[]]

New problem – the puppy is running faster that the camera understands and as such, you need to increase the shutter speed – your image is blurry. No problem, just switch to shutter priority (aka speed). Now, no blur, but the bluebonnets are now "soft" as the camera has opened the aperture wider to compensate creating a bokeh effect. OK, next step, switch to manual mode where you can control shutter speed and aperture – good news but Houston we have a problem. Something has to give. If you control the speed (how much light comes in before the gate closes) and aperture (how much light comes through a big hole or small hole), the sensitivity of the processor needs to be adjusted (aka ISO). You can experiment with various ISO settings; are better yet, just switch to auto ISO. Caveat – know your camera. I have a Nikon D7100 that is not a good low light camera. Its native ISO is 200 and I cap its upper limits at 3200. My Nikon D850 native ISO is 64 and while it has unbelievable upper number range, I set the cap at 25600. Typically speaking, ISO above 5000 noise in the image is becoming an issue.

Except for Canon users, which is the only mode of the 4 (Program, Aperture, Speed or Manual) that you can see the camera's light meter? [[]] Only in Manual [[]] In Manual Mode, {s7} {s8}if you point your camera at a very bright area, the bars will go to "+" side, indicating that there is too much light for the current exposure settings. If you point your camera at a very dark area, the bars will go to the "-" side, indicating that there is not enough light. Assuming ISO is in native mode (fixed\locked down), you turn your command dial for aperture or shutter speed the same direction making the adjustment. You could instead adjust ISO keeping the puppy bouncing through bluebonnets, turning ISO setting the opposite direction or simply adjusting ISO to Auto ISO. {s9} A harder approach would be to increase or decrease speed but the puppy is now blurry. You could increase or decrease aperture; this is even more difficult in addressing the light meter plus\minus readout and again you have problems with the puppy bouncing through the tulips. (A minute ago, I excluded Canon shooters. So, of the 4 modes (Program, Aperture, Speed or Manual) does Canon show you the light meter? [[]] Everything I have stated is the same for Canon…I just did not want to explain what M-Manual to Canon shooters)

Are you grasping the math concept of the Exposure Triangle? [[]] If an image needed a mystical base value of 6. Simply put, if aperture has a value of 2, speed has a value of 2 and ISO has a value of 2 then the desired total of 6 is obtained. If you need to increase speed to

3 then in this case Aperture is decreased to 1 and ISO stays at 2. The total is 6. You can do any combination if the final total in all cases is 6. Your takeaway is not my fictious math presented here but the understanding of the unbreakable bond in the Exposure Triangle of the interrelationship of Aperture, Speed and ISO. If you grasp this…you will do well on the final.

It is through metering, the camera can help set the correct aperture, speed, and ISO, but understand…you may not be interested in the camera's "correct". The camera's light meter definition of correct and your desire may be different. You may want a running puppy through beautiful bluebonnets…by the way, did I mention the day was cloudy? This is why you must be the meter reader.

In the beginning of this presentation, I know it seems hours ago, I stated that the meter reader must have a starting point. It is not the end number to charge for the electricity you use but the end number minus the end number from the month prior to determine the amount of electricity you used. In similar fashion, a camera has a beginning number also, it is a percentage, what is it? [[]] 18% [[]] Photography Life – {s10} "Your camera's internal light meter evaluates reflected light and adjusts to create a balanced mid-tone, often called "18% gray" or neutral exposure." …and as Paul Harvey used to say, now for the rest of the story. Ever used a "gray card" or seen a photographer have the model hold up a gray whatever and take a picture…now you know. That gray card\whatever is 18%. When you are post-processing in Lightroom you can set the WB (aka White Balance) to a series of possibilities (As Shot, Auto, Daylight, Cloudy, Shade, Tungsten, Fluorescent, Flash, & Custom). You can also use the eyedropper. Take the eyedropper, look at the image and find a spot that you feel is 18% gray. Now you know how the gray card is used. Post process the image for a series of like condition images, take the eyedropper and touch the 18% gray card and this becomes your WB\white balance setting for that set of images.

Did not use a gray card? [[]] You can also seek out a mid-tone in the image and accomplish your light setting goal. Bonus – if you have a series of near identical images, under the same lighting conditions set the white balance, then use Lightroom sync for the remaining near identical images. Is life great or what?

As the meter reader, aka photographer, you need to help the camera understand what you want. You need to tell your camera how to read the light…based on what you want. [[]] Let me repeat, you need to tell your camera how to read the light.

How you tell the camera how to read the light is through meter settings. You start with the Metering button. {s11} Let me address all 4 settings from least I use to the most popular.

1. {s12} Highlight-Weighted Metering: Prioritizes the brightest areas of your scene. This is extremely useful in high-contrast or theatrical lighting where you want to prevent blowing out important highlight details (like a bride's white dress or stage lights). In this example, you see the impact of Matrix vs. Highlight-weighted metering. The image on the left has blown out detail especially in the dress, hair, and face while the image on the right the detail is perfect where it counts. The shadows of the lower part of the dress help tell the story. Fair comparison? Maybe not, while the aperture stayed the same (f\5.6) the speed in the Highlight-weighted, right image increased from 100 to 320. This will lessen the amount of light in the image. As Jack Reacher said, in an investigation, details mater.

2. {s13a} Center-Weighted Metering: Measures the whole frame but places the greatest emphasis on a large circle in the center (often 8mm to 15mm). It has no focus-point bias. Excellent for classic portraits or subjects where the center of the frame dictates the overall exposure. (Center-Weighted Metering vs. Matrix Metering) – Center Weighted evaluates the light in the middle of the frame and it surroundings and ignores the corners while Matrix does look at the focus point you select and only evaluates the middle area of the image.

A better way to understand Center-Weighted is to compare it with Spot Metering. Looking at the two images, the one on the left, Spot Metering, is too dark in the face and loses some detail. So why did Center-Weighted win out? [[]] Actually, I cannot tell you why, but what I can tell you where the camera's light meter got its data. {s13b}. In the coyote example, the one on top is spot metering while the lower shows the dynamic difference in size of the read. Think of Center-Weighted Metering as Spot Metering on steroids.

OK, now we need to inject a disclaimer at this point. Spot Metering covers more than just the single point of focus. It is bigger than you think. Center-Weighted Metering takes Spot Metering to a higher level.

3. Spot Metering: Measures only a very small circle (about 1.5% of the frame) centered on the active focus point (yes, but still bigger than you think). Ideal for high-contrast scenes, backlit subjects, or when you need absolute precision on a specific point. {s14}. Here we have a mother and child in a loving scene with a bright sun that would destroy the image. By using Spot Metering, the photographer instructed the camera that they are the subject, "the everything" resulting in a great image of the mother\child while bokeh-ing the background and totally taking the sun out of the equation. Had the photographer not used Spot Metering and Matrix instead, the two people would be blacked out and all highlights blown out as the photographer was shooting directly into the sun.

On Memorial Day, I was honored to shoot the Texas Rangers vs. Houston Astros game featuring Purple Heart recipients. {s15} In this first image of 200 people, you have near perfect lighting. Light is coming in from behind me from the lighted playing field as you see here {s16}. In this next shot {s17}, the senior management team of the Military Order of the Purple Heart and the two celebrities wanted a shot of them with the ballfield behind them. The first take was a disaster, instantly (more on this in just a minute), I switched to Spot Metering and got the shot.

Bonus – when shooting the moon for best results use Spot Metering. While this may appear to be reverse logic based on the prior example, it makes total sense as the light level coming from the moon is the target and nothing else.

4. {s18} Matrix Metering (aka Evaluative Metering in Canon and Matel): The default mode. The mode that came with the camera. The mode most people just never touch. It evaluates the entire scene, analyzing tone, color, composition, and distance to produce balanced, natural exposures for most situations.

Unlike Spot and Center-Weighted metering, Matrix takes a high percentage of what you see through the lens into consideration. In landscape photography it is your 99% solution. {s19} Look carefully at the image on the screen. Matrix Metering? [[]] Yes, somewhat, well, kind of. [[]] Yes, it is Matrix Metering but you cannot capture the full range needed with just one shot. Remember a couple of months back when we discussed High-Definition Range (HDR)? This is 5 Raw (not jpeg and not "in-camera") images shot (-2,-1,0,+1,+2) melded into what you see here all in Matrix Metering. All five images shot in under 1 second.

Recommendation – {s20} I have a 3-page checklist in Excel that is completed before every major shoot. Each camera setting is addressed including Metering Mode. Metering Mode is always set to Matrix as a starting point. In short, when the camera is ready to go out the door, the metering mode is reset for Matrix…you are welcomed – Check list available upon request…just send an email.

Bonus – {s21} most cameras offer additional programable buttons. If you are using back button focusing (if not, you have no idea what you are missing); you already understand reprograming a button or two. On my D850s, the front lower button always gives constant feedback regarding horizonal and vertical level.

When held in place, the front top button switches the camera instantly to Spot Metering. When you release it goes back to the prior meter mode selection which was most likely Matrix Metering. Remember the Purple Heart shot with executives and celebrities and I said I switched to Spot Metering instantly…now you know.

{s22} Are you still with me…let's take another step forward into metering.

What if after all this work, you still feel the need to increase or decrease exposure? Maybe you are happy with your aperture, speed and ISO settings and are not willing to make any adjustments. What if you feel the image needs just a little help. What if the light meter is telling you are too dark or too light. Not a problem – just adjust Exposure Compensation by increasing or decreasing exposure value (aka EV) as needed. While EV is not curable with Penicillin, it does do miracles in making the difference between a picture and an image.

{s23} Earlier, we talked about how your light meter in manual mode will keep you up to date as you change aperture, shutter speed and\or ISO. What if you still are not happy? [[]] Simply hold down the exposure compensation button and turn your command dial to brighten or darken. In the example on screen, the first image was too dark so the photographer increased the brightness by 1-stop.

{s24} In this example, you can see the impact of increasing or decreasing exposure. By the way, you can combine these five images to into one…you just made an HDR. Better yet, as the image does not have a lot of light diversification and despite the camera feeling O EV is the winner…I like -1.0 EV.

Don't want to start from scratch? [[]] {s25} Understanding your environment can provide you with a quick start regarding exposure value. AI put it this way, "exposure compensation does not override the meter — it shifts what the meter calls 'correct'. In any semi-automatic mode, it is the working photographer's primary instrument of intent". Keep this chart on your smartphone.

{s26} Exposure Compensation is a good segway to "after the shot but before the next shot". You can use Exposure Compensation before the shot, everything we have talked about up to the point has been before the shot, but more likely you will make adjustments after the shot you just took. You will see a photographer take a picture and look at the results on the back of their camera. If he is an amateur, he is most likely "chimping" – just looking at a picture. {s27} If she is professional, the image appears but in the two seconds of review, she is looking at the Histogram besides the image.

High-end DSLRs and many mirrorless cameras will even provide before the shot Histograms. While I can see in certain types of photography like studio portraits how this could be an asset, I don't use it before the shot. [[]] Why? Because it is faster to look at the last shot's histogram, make adjustments and take the next shot.

I use the camera Histograms after the shot every time **in every series of images** I take. As an example, if my situation is static, I take the first shot and review the Histogram. The next 10 under identical conditions lessens the need for additional histogram review. As you

know with histograms, light to right and dark to the left. Overexposed images (too far the right) are blown-out images. Underexposed images (too far to the left) increases noise and lack detail. You want your images to be slightly to the right – ETTR – Exposure to the Right.

{s28} In conclusion, and you did not think this was ever going to end, all light makes a desert. It also makes a blown out, worthless image. The absence of light makes an equally worthless picture. Images that tell a story reflect the balance of light and darkness via shadows. We started this journey tonight with old Arabic proverb – "All sunshine makes a desert". What it is saying is you need balance in your life. You also need balance in your photography, and you accomplish this with metering.

Special Notes - Metering

In photography, luminance is the objective measurement of the intensity of light emitted, passed through, or reflected from a surface. It represents the brightness or black-and-white tonal value of an image, independent of color.

Need Help:

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