# Topic 4 - Introduction to Metering on a DSLR

## Learning Outcomes

In this lesson, we will look at another important feature on a DSLR camera called “Metering Mode”. By the end of this lesson, you will have a better idea of the role that metering plays when thinking about exposure in your photography.

# Introduction to Metering on a DSLR

## Introduction to Metering

"Metering Mode" may also be called "Camera Metering", "Exposure Metering" or even "Metering". One of the things that might have already frustrated you is a scenario in which some photographs come out too bright or, in some cases, too dark. By understanding the metering modes, you will be better equipped to tackle this. Let us first talk about what metering is, before moving on to see how it works and how you can use your understanding of it, to enhance your photography.

## 1) What is Metering?

Metering, in its simplest meaning, is basically how your camera determines what the correct shutter speed and aperture should be, depending on the amount of light that goes into the camera and the sensitivity of the sensor.

In the age of digital technology, we are fortunate enough that every DSLR camera is built with an integrated light meter. This device is clever in that it automatically measures the reflected light and determines the optimal exposure.

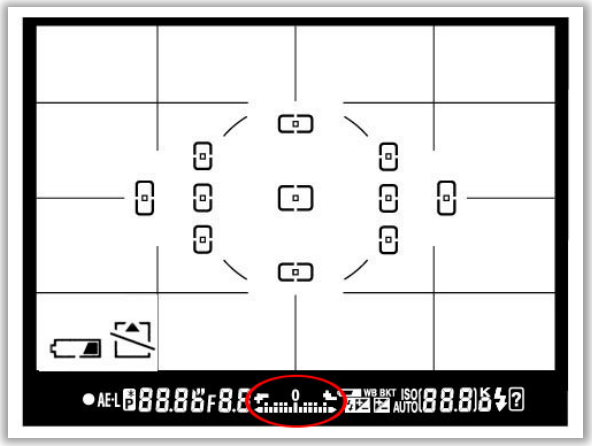
It's important to look at the most common metering modes that are found in digital cameras today:

1. Matrix Metering (Nikon), also known as Evaluative Metering (Canon)
2. Center-weighted Metering
3. Spot Metering

You can see the camera meter in action when you shoot in Manual Mode – look inside the viewfinder and you will see bars going left or right, with a zero in the middle, as illustrated in the diagram. Think of this as the balance, or middle point on a weighing scale. When you're perfectly in the middle, this is the point at which your camera believes there to be optimal exposure.

# Introduction to Metering on a DSLR

**Nikon Viewfinder**



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. You would then need to increase or decrease your shutter speed to get to "0", which is the optimal exposure, according to your camera meter.

A camera meter is not only useful for just the Manual Mode – when you choose another mode such as Aperture Priority, Shutter Priority or Program Mode, the camera automatically adjusts the settings based on what it reads from the meter.

**Problems with Metering**

Camera meters work great when the scene is lit evenly. However, it gets problematic and challenging for light meters to determine the exposure, when there are objects with different light levels and intensities. For example, if you are taking a picture of the blue sky with no clouds or sun in the frame, the image will be correctly exposed, because there is just one light level to deal with. The job gets a little harder if you add a few clouds into the image – the meter now needs to evaluate the brightness of the clouds versus the brightness of the sky and try to determine the optimal exposure. As a result, the camera meter might brighten up the sky a little bit, in order to

properly expose the white clouds – otherwise, the clouds would look too white or "overexposed".

What would happen if you added a big mountain into the scene? Now the camera would see that there is a large object that is much darker relative to the clouds and the sky. And it would try to come up with something in the middle so that the mountain is properly exposed as well. By default the camera meter look at the light levels in the entire frame and ties to come up with an exposure that is balanced for all the objects within the frame.

Let's look at another example. This is one I'm sure you've had trouble with already. You're photographing a portrait shot of your subject standing in front of a wide window. You're staring into the window and your camera is flooded with light. You have two different light sources here. The natural light flooding the room and the artificial light within the room. Because your frame is filled with the exterior, natural light, your camera will push towards the – side to get to the middle 0. Your subject, then, will appear darker and you will lose detail. This is another example of the give and take within photography.

**2) Matrix / Evaluative Metering**

Matrix Metering or Evaluative Metering mode is the default metering mode on most DSLRs. It works by dividing the entire frame into multiple "zones", which are then all analysed on individual basis for light and dark tones. One of the key factors (in addition to colour, distance, subjects, highlights, etc) that affects matrix/evaluative metering, is where the camera focus point is set to. After reading information from all individual zones, the metering system looks at where you focused within the frame and marks it more important than all other zones.

There are many other variables used in the equation, which differ from manufacturer to manufacturer. Nikon, for example, also compares image data to a database of

thousands of pictures for exposure calculation. You should use this mode for most of your photography, since it will generally do a pretty good job in determining the correct exposure.

**3) Center-weighted Metering**

Using the whole frame for determining the correct exposure is not always desirable. Let's say you are trying to take a headshot of a person with the sun behind you? This is where center-weighted metering comes in handy. Center-weighted Metering evaluates the light in the middle of the frame and its surroundings and ignores the corners. Compared to Matrix/ Evaluative Metering, Center-weighted Metering does not look at the focus point you select and only evaluates the middle area of the image.

You should use this mode when you want the camera to prioritize the middle of the frame, which works great for close-up portraits and relatively large subjects that are in the middle of the frame. For example, if you were taking a headshot of a person with the sun behind him/her, then this mode would expose the face of the person correctly, even though everything else would probably get heavily overexposed. Again, each situation is different, but at least you can be aware of what your camera is trying to do and how it is behaving, this is half the battle.

## 4) Spot Metering

Spot Metering only evaluates the light around your focus point and ignores everything else. It evaluates a single zone/ cell and calculates exposure based on that single area, and nothing else. Some wildlife photographers would be quite fond of this mode, at least those who are capturing smaller animals, especially birds. Birds generally occupy a small area of the frame and the photographer needs to make sure that they are exposed properly, whether the background is bright or dark. Because the light is evaluated where you place your focus point, you could get an accurate exposure on the bird even when the bird is in the corner of the frame.

Let's take another example, if you were taking a photograph of a person with the sun behind but they occupied a small part of the frame, it is best to use the spot metering mode in this situation. When your subjects do not take much of the space within the frame, using Matrix/ Evaluative or Centre-weighted metering modes, would most likely result in a silhouette, if the subject was back-lit. Spot metering works great for back-lit subjects like this.

Using spot metering when photographing the Moon is another useful scenario. Because the moon would take up a small portion of the frame and the sky is completely dark around it, it is best to use Spot metering – in this way, you are only looking at the light level coming from the moon and nothing else. Some DSLRs like the Canon 1D range are capable of multi-spot metering. Quite simply, this allows you to choose multiple spots to measure light and come up with an average value for a good exposure.

**5) How to change camera metering mode**

Unfortunately, this varies not only from manufacturer to manufacturer, but also from model to model. On the Nikon D5300, for example, it is done through the menu setting (Info button). On professional cameras such as the Nikon D810 and Nikon D4s, there is a separate button on the top left dial for camera metering. Changing metering on Canon cameras also varies from model to model, but generally it is done through a key combination, which is "Set" button, camera menu or a dedicated metering button close to the top LCD.

# Introduction to Metering on a DSLR

**What have we learned in this lesson? A Summary**

We have had a good introduction into what your camera is trying to do when it is metering.

We have also learned about the three modes in which a DSLR camera can meter a scene. These three are:

1) Matrix Metering (Nikon), or Evaluative Metering (Canon)
2) Center-weighted Metering
3) Spot Metering