

Topic 1 - Exposure: MLU & Bracketing

Learning Outcomes

In this lesson, we will take a look at a concept known as 'Bracketing' in photography and also at the Mirror Lock Up (MLU) setting in a DSLR camera. By the end of this lesson, you will have a good idea how Bracketing works and what the functions of the MLU are.

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Exposure: MLU and Bracketing

Up to this point, we've talked about the three main exposure values: ISO, Shutter Speed and Aperture. We've looked at how these are the three primary factors for how you can control the look of your photograph in terms of exposure. You will also recall the side effects with each:

Aperture - has background blur.

ISO - has noise.

Shutter Speed - has motion blur.

Of course, you must contend with these three things every time you take a photo, no matter what device you are using. There is one factor that will influence all of the three main exposure values and that is, the availability of light. Depending on how much light you have at your disposal will dictate much of what you can do with these primary exposure values. When using the manual mode, there is a good trick that can help you to figure out a good exposure for each of these three values on a bright sunny day and they are the following settings:



Shutter speed: 1/100th of a second

Sensitivity: ISO 100

Aperture: f/16

These settings will expose a bright sunny day properly. Now, obviously you can adjust any of these, depending on what it is that you want to do. f/ 16 is quite high, perhaps you want to adjust it to f/ 8. What would you need to change in order to do this? Shutter speed could be something like 1/ 200th of a second, now that you've doubled the amount of light that is allowed in, going from f/ 16 to f/ 8.



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Mirror Lock-up (MLU)

A number of higher end cameras have a feature which is called MLU or Mirror Lock Up. Some cameras will have a dedicated button for the MLU and other cameras will hide it deep within the menus. This is an important feature on your camera. There are a range of shutter speeds, and regardless of whether you have a steady tripod, solid ground and no wind, and there is no obvious vibration that can impact the photograph, the motion of the mirror as the mirror flips up can actually cause enough vibration in which you can actually see some blur. This can be anything from 1/8th to 3/4s of a second and anything within this range, is at risk of having the vibration impact your work.

So, the whole idea of using mirror lock up is to prevent this from happening. It does exactly what it says it will do, and it causes the mirror to flick up out of the way first. So now, instead of hitting the shutter button once and both the mirror flipping up and the shutter opening to capture that exposure, MLU will ensure that the mirror moves up first, then, you can wait something like two seconds, and during this time, that initial vibration from when the mirror flipped up, will be dampened by the camera and tripod, if you have one. Push the button a second time and the shutter will open, properly exposing your picture and you'll get a sharp image as a result. Because the shutter is much lighter than the mirror, it does not cause that same vibration. The pixels we deal with are so small so we want to minimise any vibrations that we can avoid. The mirror lock up often works really well with the timers that you get on most camera models.



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Exposure, really though, is not as simple as just talking about the three main exposure values that we have looked at. Not every picture you take can be exposed correctly because the range of light in a scene is much greater than what you can capture on your camera. This is where we get problems like this:



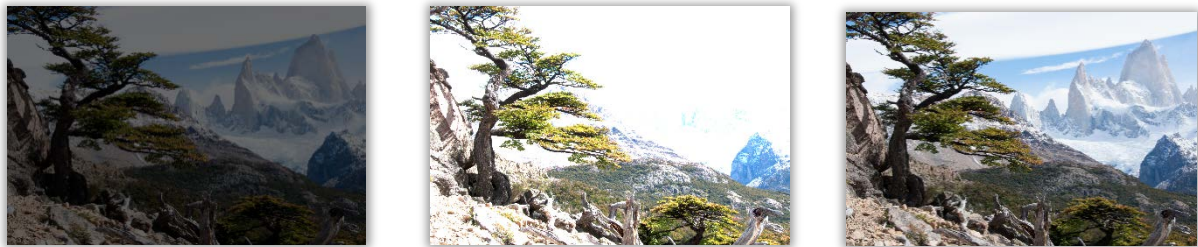
Here, the sky is blown out and overexposed so we see very little detail. The space in the rock, then, is underexposed and we can see very little detail. This is like the situations we discussed when we looked at metering and the problems with the sky and darker objects within a scene. Huge dynamic range can prevent us from taking good, balanced photographs. Generally, we can't do much with our three exposure values without making certain regions much darker or much brighter, neither of which will be good.



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Bracketing

The first thing we can do is a thing called Bracketing, a feature that you have on the camera itself. Bracketing works by taking multiple exposures, while your camera is in the one position, but with different exposure values. Each photo, then, would focus on exposing a specific section of the scene correctly. Think of it like taking a photograph of a mountain landscape. The grass would require one setting to be properly exposed, the mountains would require another setting, and the sky would also require a different setting. What then? You have three pretty badly exposed images.



Well, you could use Photoshop to composite the three images, and you can use the exposure from the ones that you want. However, this requires a bit of work. And, if you're not using a tripod, this might be difficult to line them up properly. Alternatively, you could try to modify the light within the scene. However, the fact remains, our cameras cannot see the range of light that we see and we must think creatively and use these tricks available to us, in order to get the best results. The time of day is crucial when taking mountain landscape photography - a ten-minute window at dawn and dusk. At this time, the light is evenly distributed in the sky and there are also some beautiful reds and oranges available to capture.

There may be instances in which you want to intentionally cause an overexposure or an underexposure. You may want to overexpose something in order to cause a silhouette or in the case of exercising an underexposure, you may be looking to remove the background entirely. This can be useful if you're trying to do some product photography like what we have here. Generally, you'll find it useful to add



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light or to have secondary light in your scene, in order to get these kinds of results. It's important to use the same bulbs when doing this, as different lamps will give off different glows and your image will lose consistency.



Figure 1: 15.0s, ISO 100, f/16



Figure 2: 8.0s, ISO 100, f/8

It's important to note that there is different light in a scene. The vast majority of light we see is reflected light. Very few things are incident light. Reflected light is generally what is measured by the camera. This is why it's important for a camera to measure specific areas of a scene, which is what we looked at when we discussed metering and the various metering modes, a little earlier.



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What have we learned in this lesson? A Summary

We have learned about the MLU setting in a DSLR camera and how this can be useful for your photography. We have also looked at Bracketing and how this concept is used when dealing with awkward lighting situations.

