

# Understanding Aperture and Exposure



Understanding how your camera works and all the variables that make up a proper exposure is as essential to photography and breathing is to life.

The basic formula for a proper exposure and the key element that is Aperture. We will also look at the actual mechanics of aperture and visually see what a larger and smaller aperture looks like. Understanding your aperture settings and f-stops backwards and forwards is essential.

When creating an image we have three main variables that we can control with our camera, Aperture, Shutter, and ISO. When students are first learning this I try to compartmentalize things as much as possible and tell them, for the sake of our lesson just say that:

Aperture + Shutter = Exposure

So when you press the shutter release on your camera there is a shutter and aperture variable, The exact choices that you or your camera makes for these variables will result in how much light gets to your sensor or film. When too much light hits your sensor or film, your image is over exposed and conversely not enough light results in an image that is too dark.

## So What Exactly is Aperture?

Aperture or the Aperture Ring that dictates the aperture setting, is an element that exists in the lens of your camera. The Aperture ring is a tangible thing that you can see, and if you have an old film camera lying around, you can actually see the aperture ring opening and closing as you turn the aperture ring on the outside of the lens.



When first learning you also have to get use to the fact that the smaller number is actually the larger opening. So the aperture setting of  $f - 2/8$  is a large opening that allows in a lot of light and  $f - 11$  is a smaller opening that allows in less light.



A larger opening will allow more light to hit your sensor and a smaller opening will allow in less light. Each time you click the aperture ring on your film lens from one f-stop to the next, say f/2.8 to f/4 you are allowing in half as much light as before.



When looking at these variables – Aperture, Shutter, and ISO – it's essential to understand that there is always a give and take. As you change the setting on your Aperture ring you are gaining one thing at the compromise of losing another.

### **Gaining:**

As we open up our aperture to the larger openings we are allowing in more light and light after all is the thing that photography lives on. So the major gain as we open up to larger openings is allowing more light to hit our sensors or film.

### **Losing:**

What you are losing as you open to larger Aperture opening is Depth of Field in short, the amount of your image that is in focus in your Depth of Field. When you have a smaller opening your image will show more in focus information and when you open to a larger aperture you will wind up with a shallow depth of field that has less information (from front to back not left to right) that is in focus.