



Lense Basics

Unlike camera bodies, lenses are the most vital part of ANY photographic system. They are what project the image onto the film, or digital sensor. If you have the best camera in the world, and the worst lens, your pictures will be very low quality. However, if you have the best lens in the world, and the worst camera (film), your images will be sharp. I wish I could say the best lenses are not the most expensive, but that just isn't true. Usually, the most expensive lenses are constructed with the best optics, and the best optics produce the sharpest images. However, don't run and buy the most expensive lens out there. Shop around and research the different optics available, then decide what you want.

If you look at any 35mm lens, you will see a range of numbers printed near the base. These numbers are known as the aperture scale, which consists of the following type of numbers: 32, 22, 16, 11, 8, 5.6, 4, and 2.8. These numbers are known as f-stops. To get an understanding of what happens in the lens when you change to a different f-stop, look down your lens from the front, and twist the scale to read different values. You should notice that the bigger the f-stop the smaller the hole, and the smaller the f-stop, the bigger the hole. The determination of an f-stop value comes from a very simple mathematical equation. If you take the length of your lens, say 200mm, and divide it by the diameter of the hole, say 25mm, the resulting number is the f-stop, in this case 8. Therefore, you can see that the ratio of lens length to hole diameter gets larger with hole decrease, and smaller with hole increase. It is important to understand this concept, so that you can control how much light will hit your film.

Lenses are classified by two characteristics, length and speed. Have you ever looked at buying a lens and seen something like 50mm f-2.8 printed on the box? Have you ever wondered what that meant? What these values tell you is the lens focal length (50mm) and speed (f-2.8). Now that you understand what an f-stop is, speed is easy. Speed is defined as the smallest f-stop the lens can produce. The reason it is called speed, is with the smallest f-stop, the hole is at it's largest, and the most light possible is hitting the film. This enables you to use fast shutter speeds in lower light. A fast lens is like a 200mm f-2. This means that the hole diameter is 100mm, which is pretty big. This results in a much larger lens, and much more expensive. I would not recommend you buy one of these unless you are a very serious photographer, or have a few thousand dollars to spend. Remember, the lens will not take good pictures for you, only good photo techniques.