

# Aperture

## 1. Understand aperture

The most fundamental element any photographer should understand is aperture. The aperture is the physical opening within your lens that allows light through to the sensor (or film in an older camera). The wider the aperture opening, the more light can pass through, and vice versa.

The size of the opening, which is regulated by a series of fins encroaching from the edge of the lens barrel, is measured in so-called f-stops, written  $f/2.8$ ,  $f/5.9$  and so on, with smaller numbers denoting wider apertures. If you find this inverse relationship tricky to remember, imagine instead that it relates not to the size of the hole but the amount of each fin encroaching into the opening.

A narrow opening is regulated by a large amount of each fin encroaching into the barrel, and so has a high f-stop number, such as  $f/16$ ,  $f/18$  and so on. A wide opening is characterised by a small number, such as  $f/3.2$ , with only a small amount of each fin obscuring the light.



Picture the size of the fins, visible here inside this lens, when trying to understand the concept of f-stops.

## 2. Aperture measurements

Lenses almost always have their maximum aperture setting engraved or stamped on one end of the barrel. On a zoom lens you'll see two measurements, often stated as f/3.5-f/5.9 or similar.

Rather than being opposite ends of a single scale these describe the maximum aperture at the wide angle and telephoto (maximum zoom) lens positions respectively. Always buy a lens with the smallest number you can afford in each position.

## 3. Avoid using aperture to compensate for poor lighting

Changing the aperture has a dramatic effect on the amount of light coming into the camera, as we have already said. You'll notice this is the case when shooting landscapes with a narrower aperture (higher numbered f-stop) as your camera will often want to take a longer exposure -- so much so that you may have to use a tripod to avoid motion blur.

You should avoid using the aperture scale to compensate for unfavourable lighting, however, as it also changes the amount of the image that remains in focus, as we'll explain below.



**The image on the left was taken with a wide aperture and so has a shallow depth of field; the image on the right was taken with a narrow aperture and so has a long depth of field.**

## 4. Use a wide aperture for portraits

Anyone with a cat knows that when they're hunting or playing their irises contract to enlarge the size of their pupils. This has the same effect as widening the aperture in a camera lens: it makes the subject they are focusing on very sharp while causing everything behind and in front of it to blur. We call this a shallow depth of field. This is perfect for portrait photography, as it draws forward your model within the scene, making them the central focus while the background falls away. Choose f/1.8 or similar wherever possible.



**This image of a chicken was taken with a wide aperture to keep the subject in focus while blurring the background.**

#### **5. Use a narrow aperture for landscapes**

For landscapes, on the other hand, you want to have everything from close-at-hand foliage to a distant mountain in focus. This is achieved by selecting a narrow aperture. If possible stray towards  $f/22$ , or whatever the tightest setting your camera allows.



**This image of a Moroccan campfire is taken with a narrow aperture to maximise the depth of field.**

#### **6. 'f/8 and be there'**

Static models and immobile landscapes are easy to shoot as you can predict with a great deal of certainty which aperture setting you need to get the best out of either. Reportage and street photography, weddings, Christenings and so on are less predictable as your subjects will be moving in relation to the frame. In these circumstances, adopt the pro photographer's adage, "f/8 and be there".

Set your aperture to f/8 for a practical, manageable balance of fairly fast shutter speeds and broad depths of field, allowing you to spend more time thinking about composition within the frame than you do about optical algebra. When shooting indoors without a flash, and depending on the lighting conditions, you may need to increase your camera's sensitivity setting at this aperture, but be careful not to push it so high that you introduce grain into your images, unless you are chasing that specific effect.