

APERTURE AND EXPOSURE

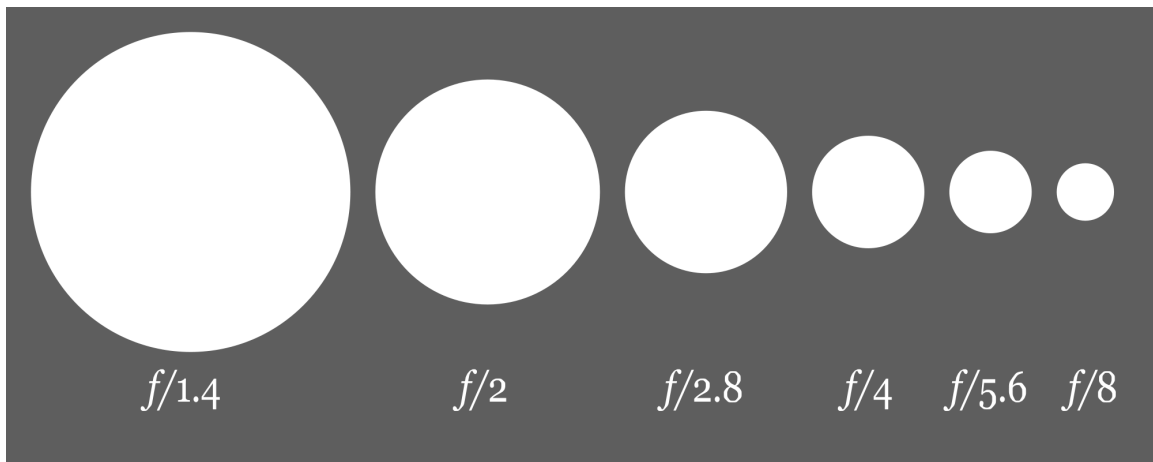
An aperture is the adjustable lens opening that determines the amount of light allowed to pass through the lens. Small metal leaves come together to form a hole through which light passes on its way to the shutter. Different size holes are referred to as f stops. So, if I were to ask you what aperture you were using, the correct way to answer would be f 11, for example, or f 5.6.

The bigger the aperture, or lens opening, the smaller the f stop number. The smaller the aperture, the larger the f stop number.

*Large aperture = Small f stop number
Small aperture = Big f stop number.*

Larger apertures (bigger holes, smaller number) allow for more light to fit in through the lens, and thus mean shorter exposure times. Smaller apertures (smaller holes, bigger numbers), mean longer exposure times since there is a smaller hole for light to fit through.

*Larger apertures = Shorter exposures
Smaller apertures = Longer exposures*



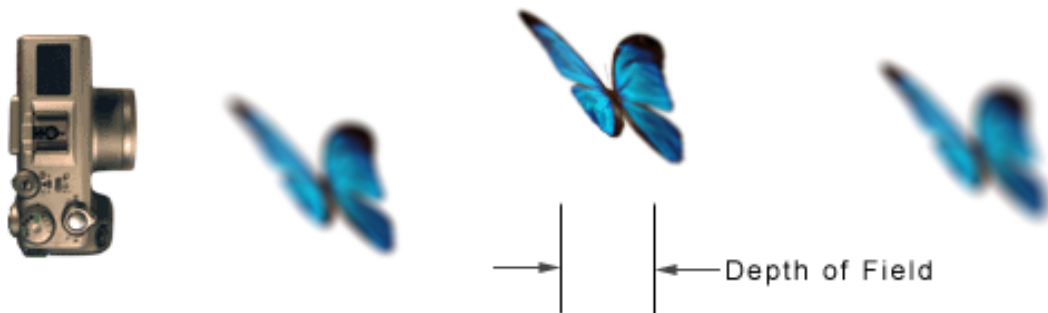
Aperture directly relates to depth of field. Depth of field is how much of the original scene is in sharp focus. When you focus on something, a small part in front and a larger part behind it will also be in focus depending on which aperture you use. Aperture helps determine how much in front and behind the focal point is also in focus. A smaller aperture (higher numbered) will allow for more to be in focus than a larger aperture (larger numbered) aperture.

*Larger apertures = Less in Focus
Smaller apertures = More in Focus*



f 32 top left

f 5 bottom right



Since aperture is the adjustable lens opening, the range of f stops is directly related to the specific lens on your camera at that point and will change as you change lenses. When you are buying a lens, the maximum aperture will be listed as a selling point, and the smaller the f stop number, the faster the lens. A faster lens means one with larger apertures (smaller number, bigger hole = more light entering, thus faster shutter speeds can be used). Fixed lenses (ex. 50mm) are always faster than zooms (ex. 35mm-70mm) since there are less parts to get in the way. With a zoom lens, you have to use smaller apertures the more you zoom in. The numbers on the LCD will stop going down when you have reached the maximum aperture.

Also, you will hear this:

Wide open = Largest possible aperture
Closed down = Smallest possible aperture

DSLRs have apertures listed in 1/3 of a stop increments. A full stop has exactly half as much light coming in through the opening in the leaves when you close down a stop (go to a bigger number) or conversely twice as much coming in when you open up a stop (go to a smaller number).

Full stop numbers include
f1 f1.4 f2 f2.8 f4 f5.6 f8 f11 f16 f22 f32 f45 f64 f90 f128

Third stop numbers include
f3.5 f4 f4.5 f5 f5.6 f6.3 f7.1 f8 f9 f10 f11 f13 f14 f16 f18 f20 f22

Sunny 16 rule

An approximately correct exposure will be obtained on a sunny day by using an aperture of *f16* and a shutter speed close to the ISO speed being used; for example, using ISO 200, an aperture of *f16* and a shutter speed of 1/200 second. The f-number may then be adjusted downwards for situations with lower light.

Aperture Preview

DSLR camera lenses always are wide open (largest possible aperture) so you can see a brighter image in the viewfinder. However, there is a feature called aperture preview on many cameras that allow you to see the aperture leaves if you look in the lens, and also you can see the image through the view finder as the final product will actually look when you make the exposure at that aperture. You should see the leaves come together when this button is depressed, and if you depress the button while looking through the viewfinder, it will most likely get darker and make more of the scene look in focus.