

# f/stop

The "f" in f/stop (or f-number) stands for the focal length of the lens. The focal length of the lens divided by the diameter of the aperture is the f/stop: for example, f/8 means the aperture diameter is 1/8th the focal length. f/8 on a 45mm lens means that the diameter of the aperture is 45/8, or 5.6mm.

These ratios allow the use of the same number series for all lenses. f/8 on a 45mm lens lets in exactly the same volume of light as f/8 on a 135mm lens (although the actual diameter of the aperture of these two lenses at these settings is different). The amount of light let through the aperture does not depend on the diameter but the area of the aperture.

Typical f/stop scale:

2 2.8 4 5.6 8 11 16 22

Although the numbers seem irregular, each of the stops represents a halving to the right, or doubling to the left, of the aperture area and therefore the volume of light, from its immediate neighbor on the scale (see Aperture Area Calculation in the Appendix).

The smaller the f-number, the larger the aperture.  
The larger the f-number, the smaller the aperture.

