

USING ND FILTERS

BLUEPRINT

In photography and optics, a neutral-density filter, or ND filter, is a filter that reduces or modifies the intensity of all wavelengths of light equally, giving no changes in hue or color rendition.



The purpose of a standard neutral-density filter is to reduce the amount of light entering the lens. This is done to achieve effects such as a shallower depth of field or motion blur of a subject in a wider range of situations and atmospheric conditions.

Typical situations when you'd want to use ND filters include:

- Blurring water motion
- Reducing depth of field in bright light
- Reducing the visibility of moving objects
- Long exposure photography



Examples of photos taken with an ND filter

1 TYPES OF ND FILTERS

There are four types of ND filters. Graduated ND filter is a filter that transitions from light to dark. Landscape photographers often use GND filters - they perform great when capturing sunset images.



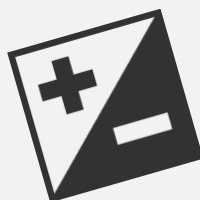
Variable neutral density filter gives the photographer the ability to dial in the amount of filtration by turning the outer ring of a dual-ring filter. Center neutral density filter is the smallest category of ND filter. It has a darkened center and lighter edges and it performs great with extreme wide angle lenses.

TIP:

Polarizing filter is also an ND filter! Most polarizers give a 2-stop ND filter effect while cutting down glare.

2 STOPS OF LIGHT

ND filters come in different strengths or darkness levels. For the photographer, the easiest thing would be to have ND filters that tell you how many stops of light they will darken your exposure.



For every stop of ND filter, you halve the amount of light entering the camera. When the light is halved, to maintain the same exposure, you need to double your shutter speed. If you add another ND stop, you need to double the shutter speed again.

TIP:

If the original exposure is ISO 200, f/16, 1/800s, the exposure with 6-stop ND filter would be ISO 200, f/16, 1/13s.

3 THE ESSENTIALS 3 STACKING FILTERS

If you have more than one ND filter, you may combine the two (or more filters) to get more ND stops for different photographic needs. If you combine a 6-stop ND filter and a 10-stop ND filter, you will get a 16-stop ND filter.



Many landscape photographers recommend that you start with a 6-stop ND and add your polarizer to make it an 8-stop ND stack when needed.

TIP:

Stacking too many filters can cause vignetting and chromatic aberration so using more than 2 filters together isn't recommended.