



Without a neutral density filter, a small aperture renders an excessively large depth of field



With Neutral Density Filter 103, the lens aperture can be opened up in order to emphasize an important detail

ND FILTERS



Without a neutral density filter, a fast shutter speed virtually freezes the surging surf



A B+W 106 Neutral Density Filter permits to use a shutter speed that makes the surging water appear to flow again



Without a neutral density filter, the camera produces a snapshot of the moving scene



A B+W 110 Neutral Density Filter blurs movement, making it virtually invisible

B+W Neutral Density Filter 101 DIGITAL-PRO SLIM MRC

The lightest B+W Neutral Density Filter attenuates the light by one f-stop (log density 0.3), which can be beneficial, for instance, for the correct exposure of high-speed films when the brightness of the subject is still too high for the fastest shutter speed and the smallest aperture. It is recommended especially as a complement to B+W Neutral Density Filter 102 for fine adjustments. The filter factor is 2x.

B+W Neutral Density Filter 102 DIGITAL-PRO SLIM MRC

This B+W Neutral Density Filter reduces the light by two f-stops (log density 0.6), and it is the most popular ND filter in photographic work. It offers many benefits, for instance $f/4$ instead of $f/8$ for selective sharpness instead of a great depth of field, or $1/15$ s instead of $1/60$ s for a flowing instead of a "frozen" waterfall. It has excellent color neutrality, costs less than the denser filters, and is recommended as part of a basic outfit. The filter factor is 4x.

B+W Neutral Density Filter 103 DIGITAL-PRO SLIM

Somewhat more difficult to manufacture and thus a little costlier, this B+W Neutral Density Filter reduces the light intensity by three f-stops (log density 0.9). It still features very good color neutrality. This ND filter is especially appropriate for use on video cameras when the lens cannot be stopped down sufficiently in great brightness or when a deliberately low depth of field is desired. The filter factor is 8x.

B+W Neutral Density Filter 106

This B+W Neutral Density Filter reduces the light by six f-stops. With this filter and without changing the f-stop, a shutter speed of $1/60$ s is changed to a full second, thus requiring the use of a tripod. Flowing water is rendered as flowing in the photo, and people moving in streets are dissolved in unsharpness or become invisible. Because of its higher transmission in the red beyond 660 nm, this filter brings a slightly warm tone to color photographs. If this effect is undesirable, a B+W UV-/IR-Blocking Filter 486 in front of the neutral density filter (not behind it!) remedies that situation. The filter factor is 64x.

B+W Neutral Density Filter 110

With a light intensity reduction of ten f-stops, this B+W Neutral Density Filter has a slightly stronger warm tone than the ND 106. Its principal field of application is the observation and documentation of industrial processes with extreme brightness, such as steel furnaces, incinerators, glowing filaments in halogen- and other bulbs. The filter factor is 1000x.

B+W Neutral Density Filter 113

With its light reducing capability of 13 f-stops, this B+W Neutral Density Filter is used in astronomy for photographs of the sun and for recording the relative movements of heavenly bodies as light traces in extremely long exposure times. For photographs of the sun, this filter must be positioned in front of the lens and under no circumstances should it be located near the primary focus in front of, or behind the eyepiece because of the intense heat at those locations. It must not be used for observation of the sun (danger of blindness!) due to its greater transmission in the infrared range. The filter factor is 10000x.

B+W Neutral Density Filter 120

With its light reduction capability of 20 f-stops, this B+W ND Filter is used for the same astro-photographic applications as ND filter 113 when an even greater light attenuation is required. In spite of its much higher density, this filter too, must not be used for visual observation because of its transmission in the infrared range. The filter factor is 1000000x.

Charming selective sharpness

Modern high-speed lenses produce bright viewfinder images in reflex cameras and make fast shutter speeds possible in all types of cameras, even with slow-speed films or under poor light conditions. But their large apertures can also be used as an interesting creative element:

At wide apertures the depth of field is reduced so much that eventually only the main subject will be rendered sharply, whereas the fore- and background will be unsharp. This also focuses the attention on the main subject in a creative sense, it draws the attention of the viewer as if by magic, relegating everything else into the background. In intense brightness, however, with high-speed film or a short focal length (with correspondingly higher depth of field), using a large aperture to achieve the desired selective sharpness effect may not be possible without incurring over-exposure. This is when B+W neutral density filters provide the solution.

When the shutter speed is reduced by two or three steps instead opening the aperture, for instance, a neutral density filter can be used for equally creative blur effects with moving subjects.