

The Wonderful World of Filters

Part II The Graduated Neutral Density Filter

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I told you about the most important filter to have, the Polarizer, in Part I of this article. Now, let us talk about the filter I feel is the second most important, the Graduated Neutral Density Filter. It has many slightly different names, Graduated ND Filter, Split Neutral Density Filter, Reverse Graduated Neutral Density Filter, and Colored Graduated Filter.

No matter what type of photography you tend to shoot, everyone shoots landscapes too. For great landscape images to pop, you need dramatic lighting to give depth and texture to the image. With dramatic lighting also comes a host of problems to overcome. One such problem is uneven lighting in your composition. An early morning or late afternoon set-up is one where there most likely will be areas in bright direct sun light and other areas in deep shadows. You can expose for the bright areas, and the details in the shadows will be lost. On the other hand, you can exposure for the shadow area and the bright area will be blown out. There is no one exposure that can render both areas correctly. First, you must train yourself to recognize this situation when it presents itself. The human eye is a wonderful and vastly superior sensor of light than film or the best digital chip, being produced. Becoming aware of this unseen problem, and knowing how to deal with it, will greatly improve your final image.

All film and sensors can only record a certain range of light levels. For slide film, it is the narrowest, about 3-4 stops from brightest white to darkest black. Color negative print film can capture a wider range of about 5-7 stops, and B&W about 8-10 stops. With digital cameras, this exposure latitude is measured by the sensor's dynamic range, and displayed by the histogram readout. In most cases, dramatic lighting far exceeds the range of slide film, and pushes the limits of color negative print film. As for digital sensors, I am no expert and do not know the exact limits of the technology, but I have read there are similar restriction that need to be dealt with.

So, what is one to do if the brightness of the scene is more than what your film or sensor can handle? The answer is, change the range of brightness. This is where the Grad ND filters comes in. This filter has one half clear glass or resin plastic, and the only half tinted with a neutral gray coloring. The tinting is in degrees of f-stops. Usually 1, 2 and 3 stops of tinting, meaning that a 1-stop filter will hold back 1 stop of light from passing through it. The 2 and 3 hold back 2 stops and 3 stops respectively. In the middle where the clear meets, the tinting is what is called the transition. The transition zone can be what is called hard or soft. A soft transition is where the tinting changes from its dark area to clear more gradually and over a longer length of distance of the filter. A hard transition is the opposite, where the tint changes more abruptly over a short distance. The soft transition is easier to work with, as it is less noticeable if not properly positioned or there is an irregular boundary between the light and dark areas in your composition. The hard transition works best in situations where the boundary between light and dark is straight and well defined. A characteristic of Grad ND filters is that the small the f-stop used in your exposure the more pronounced the transition will appear in the final image. This is also a determination factor for using a hard vs., soft transition.

Most photographers are familiar with the circular screw-on filters, but this is one case where you want to seriously consider a rectangular filter system. If you buy a round screw-on Grad ND filter, the transition will always be in the center of the viewfinder. You will only be able to compose images where the light and dark boundary is in the middle of your composition. That is not likely, and very restrictive. A rectangular filter system has a holder that screws-on the lens. The filter is then slid into the holder and can be adjusted infinitely up and down and the holder can be turned to make the transition pass diagonal through the image. This gives the photographer all the freedom to compose his / her image anyway they want and the Grad ND filter will be able to adapt. Examples of placement of the transition are the water line of a lake that is reflecting the sun lit mountains and sky, an edge between dark green pine trees and the light rock face of mountains, and the horizon of any seascape. An interesting variation of the Grad ND filter is the Reverse Grad ND filter. In this case, the darkest part of the tint is at the center transition boundary and it turns to a lighter tint as it moves away from the clear side. The reason for this is for many sunset or sunrise shots the sky is brightest at the horizon and turns darker as you look higher in the sky. The Reverse Grad ND filter has the darkest tint in the middle to compensate for the brightest part of the sky bring on the horizon. Another variation is the Colored Grad Filter. Not only does this filter compensate for the difference in exposure of light and dark areas, but it also adds color to the tinted half of the filter. As with all filter use, the main intent is to make the image better without making it look like you used any filters. With Colored Grad Filter that is easier said than done. I love my full collection of 12 or more Colored Grad Filters but I have taken images that were not as subtle as I would like to see the effect come out.

How does one know which strength Grad ND filter to use? You can simply measure the exposure difference with your camera's light meter. Set the camera on manual, and find the right exposure for the shadow areas. Then move your camera's spot meter to the bright area and read how many stops difference there is between the two areas. If for example there were a 3-stop difference, I would use a 2-stop Grad ND filter. Why not a 3-stop filter? Well bright areas are supposed to be lighter than dark areas, if you totally compensated for the differences in the bright and shadow areas the resulting image would be flat and lack that popping effect of dramatic lighting. In addition, it is helpful to bracket not only with exposure, but to also bracket by using different strength Grad ND filters. But if you were to only get one filter, the 2 stop soft transition Grad ND filter is the one you should get. The rationale behind this thought is a 1-stop filter in a 2-stop difference from light to shadows is not going to be as effective as a 2-stop filter in a 3-4 stop difference from light to shadows. You can use a 2-stop filter in a 2-stop difference situation, but a 1-stop filter is useless in a 2-3 stop difference situation. The best is to have a 1 stop and 2 stop filter, either of which can be used alone, but the two together can be used as a 3 stop filter for really extreme lighting conditions.

The easiest way to position a Grad ND filter is by using the depth of field preview button on your camera. By darkening the scene in the viewfinder, you will more easily be able to see the transition boundary and place it accurately in the composition. A 2-stop filter can be placed higher than normal if the difference is only 2 stops so that only the lightest portion of the filter is used. Always be careful to not let any edge of the filter to be in the image area.

It may not be visible with the lens wide open, but at the smaller apertures, the increased depth of field will show the edge of the filter even at the clear end.

As I have pointed out in past articles and workshops, you have to take control over your photographic experiences and see the potential in the scenes before you. Knowing when to use a Grad ND filter, which strength to use, how to position it, and make it seem as though no filter was used will undoubtedly make your images rise to a higher level of proficiency and make for more dramatic image.