

# Neutral Density Filters

## A Comparison Test

**N**eutral density (ND) filters have many applications. They are best for making adjustments in excessive light situations, especially when they cannot be handled in any other way. The filters' usefulness is based on their ability to absorb light evenly throughout the visible spectrum. That's what makes them "neutral." They are not supposed to produce a color bias.

Tiffen ND filters always have been designed to function similarly to the traditional industry standard, the Kodak Wratten gel filters. Decades of successful production use are evidence that they produce photographically neutral results. Even so, when a leading dealer came to us with his own test slides, we felt that they were of sufficient interest to share them with you, our customers.

First a little background as to their source. Although the dealer requested that we maintain their anonymity, they are, in fact, one of our worldwide dealers and they represent the other filter manufacturers in the test. All of the tested filters were pulled from their own stock, without any special selection process.

### THE TEST

The slides represent comparisons of color charts made through neutral density (ND) filters from various manufacturers in densities of 0.3, 0.6, and 0.9. They are Kodak Wratten (W), Tiffen (T), Schneider (S), and Harrison (H). One control shot was made without a filter to provide a basis for comparison.

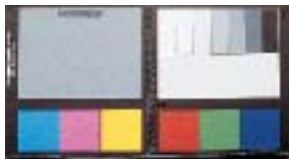
During the test, the Kodak Wratten gel filters provided clean, unbiased color reproduction. All three filter examples are the same in appearance as the unfiltered control image. Not surprisingly, the Tiffen ND filters performed in a virtually identical neutral manner as the Wratten gel filters.

On the other hand, the same could not be said for the other two manufacturers' tested products. In each case, there is a serious color cast, which is imparted by the supposedly "neutral" filters. The bias, toward blue in one case and red in the other, is even worse when the filter density increases. The color casts are especially apparent in the ND 0.9 examples.

The reason these filters may appear suitable for use, when you only otherwise take a visual look through them, is that it is generally hard to tell how neutral an ND filter is unless you have a standard for comparison. This is often not available when the cameraman first holds the filter to his eye. The real significance of this test is the direct comparison of the performance of these filters on reversal film (which represents the original image unaffected by subsequent printing variances, as would have been the case with tests on negative film). Testing was done in a controlled situation. This allows the viewer to see clearly the relative abilities of these filters to produce neutral results.

It is also important to note that these tests were not influenced in any way by anyone at Tiffen. They were solely and independently initiated, produced, and provided by our dealer, who found the results of sufficient importance to make them available to us.

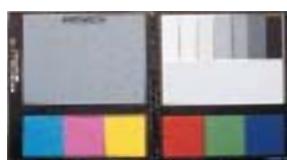
Next time you have a requirement for a neutral density filter, to improve the quality of your image, we at Tiffen think you know where to go to get the absolute best quality for your project.



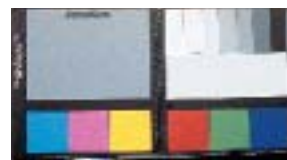
NO FILTER



W ND3



T ND3



S ND3



H ND3



W ND6



T ND6



S ND6



H ND6



W ND9



T ND9



S ND9



H ND9