



The true color saturation of a sheer or net fabric can't be evaluated with the naked eye—it requires tools, such as a spectrophotometer. Image: Flickr CC user Wedding Dress Factory Outlet

It was mid-October. I found myself wandering the aisles of an NYC garment district lace shop, running my fingertips over bolts of the most beautiful lace I had ever seen. In a vast sea of what [most would call “white,”](#) my untrained eye appreciated subtle differences in tone, shimmer, and hue. Knowing precisely which shade of white was on the bolt before me required more than the naked eye and much more than I happened to have in my purse. Such precision required the use of superior quality tools, such as a spectrophotometer.

Bridal lace manufacturers know all too well the difference between ivory, bone, cream, and eggshell. They live in those differences (and make a living on them). To accompany a fall line of wedding gowns influenced by warm-tone ivory brocades, you must produce the correct corresponding accent fabrics—in just the right colors.



The true color saturation of a sheer or net fabric can't be evaluated with the naked eye—it requires tools, such as a spectrophotometer. Image: Flickr CC user Wedding Dress Factory Outlet

The Tricky Problem of Consistent Lace Color

When dyeing an entire swath of illusion netting, organza, or georgette, conventional methods of judging color saturation may prove insufficient. Sheer or net fabrics are nearly impossible to evaluate by the naked eye, as my trip to the lace shop revealed.

Translucent and non-uniform fabrics may incorporate differences in light reflection and absorption, which significantly alter color perception. These subtle varieties in color make all the difference between a fall fantasy and a dreary disaster in a finished wedding gown.

Often, the only way to judge the true saturation of a piece of lace is to pair it with a solid, opaque, more substantial fabric (such as a silk bodice). However, this trick only serves designers in the final stages of gown production. When a dress reaches the design floor and the lace is discovered to be a slightly different, uncomplimentary shade of eggshell than advertised, you may have a very unhappy designer on your hands.

The best lace manufacturers pride themselves on maintaining a consistent ivory hue across all products labeled as such. Each bolt of “cream” must precisely match the saturation of every other “cream” offered to truly be valuable on a mass production scale. The shade must also be consistent within and throughout each individual yard of lace produced. To sell at the highest price, a sample of lace must be the same shade, saturation, and transparency as the entire bolt.

The real challenge is that most pristine—and expensive—laces are hand-embellished and hand-dyed, making quality assurance even more difficult for creators of handcrafted lace. With the use of the right tools, though, [consistency is easily attainable](#).



Use of spectrophotometers for quality control of color saturation in lace ensures your customers don't end up with a lace that doesn't coordinate with the other fabrics in their wedding gown design. Image: Flickr CC user Mary Frances-Main

The Necessity of Spectral Analysis in Lace Manufacturing

Today's textile industry benefits immensely from sophisticated spectrophotometers that judge minute measurements of color without destruction of the sample—whether it's in the lab or in the field. Some models are even portable, which allow for checking and rechecking a color's composition no matter where the fabric might be or which light source may be tricking your eye.

When producing lace on a global scale, especially using handmade samples, you must be able to maintain color standards with confidence. Many of the most delicate lace samples are created abroad and shipped to the United States from Italy, Ireland, and East Asia. Manufacturers must be able to guarantee identical color saturation in their samples, regardless of which location produced the lace. Sophisticated tools such as spectrophotometers help ease this process.

Accurately Measuring the Color Saturation of Lace

Lace, netting, and other translucent samples present an interesting challenge when using a spectral analysis instrument. Due to the light that passes through the fabric and escapes the measuring instrument, it will be necessary to fold the fabric into layers to measure a correct sample average. Advanced spectrophotometers assess light absorption and reflection levels from multiple angles at one reading, which prevents discrepancies in measurement due to slight flaws inherent in handmade samples.

Using a sample clip or backing to hold the sample in place before the reflectance device is crucial to an accurate reading. The opaque background of the sample clip ensures a consistent measurement regardless of which section of the lace you select.

When analyzing the color saturation of non-uniform samples, it is also important to take multiple readings across various areas of the fabric. This process is especially necessary with samples which, like lace, involve a highly complex weaving of fibers. Taking multiple measurements using different sections of a fabric ensures a consistent average reading.

Spectrophotometers accurately and easily analyze the color of lace where the naked eye cannot, assuring quality in every yard.

Superior Spectral Analysis Instrumentation

Advances in spectrophotometric technology have led to increased ease in quality control within the textile industry. Lace manufacturers can now confidently advertise samples across a wide variety of precisely defined colors on a global scale, regardless of where the lace was created.

Offering portable, bench, and online spectrophotometer models, [HunterLab](#) is the leader in advanced color analysis instrumentation. [Contact us](#) to learn more about HunterLab's expertise in the textile industry.