



"Having a reliable portable instrument like the X-Rite Ci64UV that we can use throughout the plant to confirm color accuracy at all stages of production has made a significant difference to our business."

— Anthony Guarriello, President, Ultimate Textile Inc.

Ultimate Textile Case Study

Ultimate Textile Inc. | Textiles Industry | Americas/United States



Challenge:

A long-time X-Rite customer, Ultimate Textile was looking for the next generation in handheld devices to ensure the continued delivery of the highest quality dyed fabrics to its customers. Before making a decision, the company evaluated a number of color measurement solutions available in the market.



Solution:

Ultimate Textile chose the Ci64UV sphere spectrophotometer for its color measurement needs. The company also uses X-Rite Color iMatch software to process, aggregate and report on color performance in a mixed instrument environment, as well as lighting systems from X-Rite.



Results:

Ultimate Textile President Anthony Guarriello can carry his new X-Rite Ci64UV with him anywhere throughout the plant to ensure the utmost in color quality. By teaming the Ci64UV with Color iMatch software, Guarriello has also made the customer approval process more fact-based and less emotional. "The spectrophotometer is the most objective viewer in the whole process chain," he says. "It doesn't have a bad day. It just reports what it sees."



Anthony Guarriello grew up working in his father's textile operation in Rhode Island. "I love the business," he says, "and about 20 years ago, decided to strike out on my own." Guarriello relocated to Rutherfordton NC and built a new textile operation from the ground up. "Weavers send us greige goods," he explains, "and we finish the fabrics according to our customer's end-use specifications, including color and finish. I consider this business to be a reflection of my own personal reputation, and that means ensuring the ultimate quality of the goods we ship out." About three years ago, Ultimate Textile achieved the prestigious GOTS certification. Ultimate processes fabrics for a wide variety of end uses, including upholstery, high-tech fire-resistant uniforms, ballistic vests, tote bags and much more.

Color Measurement Instruments: A Believer

Guarriello understands the benefits of having accurate color measurement instruments and the right lighting conditions throughout the plant. He says, "I've had a long-term relationship with X-Rite. In fact, I collaborated with X-Rite during the development of one of its early products back in 1993, the SP-78. I was even pictured in the product brochure!"

That being said, when he decided to update his color measurement instrumentation, Guarriello did the appropriate due diligence, testing several options. "I decided to go with the X-Rite Ci64UV sphere spectrophotometer," he says. "The long-term relationship was important, of course. But also factoring into the decision was the accuracy and reliability of the instrument. "A key decision factor for Guarriello was the X-Rite software augmenting the instrument. "Color iMatch makes the work easy," he says. "I can take my Ci64UV around the plant with me, measure several different things, download the data into iMatch, evaluate the results, and print out reports as necessary."

Ultimate Textile operates in a mixed-instrument environment and also uses the X-Rite Color i7, the X-Rite ColorEye 7000A, and a few instruments from other brands. "This is another important aspect of the Color iMatch software," he says. "It does a nice job of consolidating data in a mixed instrument environment."

The Process

Ultimate Textile receives grieg fabrics from the mills for processing according to customer specifications. Much of the fabric is woven from natural fibers that come from all over the world. "Because they are natural fibers," Guarriello explains, "colors can range widely, so our first step is to normalize the color as much as possible using bleaching or scouring processes, depending on the fiber. Following that, we read the white range with the Ci64UV. The reason we acquired the UV version is to accommodate the optical brightening agents that are used in polyesters and some of the other man-made fibers."

The reflectance values recorded by the Ci64UV are then read into a special computer program that matches the reflectance value to the reflectance value of the dyes and generates a formula. "The Ci64UV is critical in this process," Guarriello says.

"Once we have the formula and we put the right fabric with the right dyes in the infrared dyeing machines, we can replicate the fabric colors with little variation. The last thing you want to do is guess when you are putting fabric into production, and the Ci64UV takes most, if not all, of the guesswork out of the process. Guessing is expensive. While you may be talking about mils and hundreds of grams in the lab, you multiply that by thousands for production. If there is a small error in the lab, you end up with a gigantic error in production."

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Ultimate is an exhaust jig dyer. Guarriello explains, "Time, temperature and chemistry are important in this process. After dye exhaustion, we take a small fabric sample, condition it, dry it and read it with the Ci64UV. With the iMatch software, the result is a plot that tells you where you are in the color space, whether you are using L*a*b, CMC or other standards."

Once the fabric goes into production, says, Guarriello, there are six or seven additional check points, adding, "Every time you handle something, there is a chance you will change it. If you add water repellency or other chemicals, use the hot dryer or tumbler, each process has the ability to change the color, so we check frequently during the manufacturing process to make sure we stay in tolerance."

Lighting is Critical

Guarriello also understands that the lighting under which color is examined and measured is critical. To that end, he uses Macbeth EXAMOLITE over the dyers' desks and a Spectra Light III in the lab. All of the lighting in the sample room, dyers' office and lab are TL-84 narrow band 4,100 kW lights and all of those rooms are painted in Munsell Neutral Gray.

The Final Word

Guarriello is proud of the operation he has built and the strong customer base he has acquired as the only U.S.-based organically certified plant. In line with his GOTS certification, product is stamped from field to weaver to his shop to the

ultimate end manufacturer. And he keeps a meticulous plant, saying, "I make fine finished fabrics; why shouldn't I have a plant that reflects my finished product?"

He is also concerned about being as environmentally sustainable as possible. "I do everything green whether I have to or not," he says. "My grandchildren and other family members work here. I don't want to be a polluter. I want to be responsible. Part of that responsibly is our use of X-Rite color measurement and management solutions that ultimately help us eliminate waste in dyeing since dye is one of the hardest wastes to treat in a municipal treatment plant.

"It is exciting to see the progress X-Rite has made over the last two decades since I first started working with them and using the SP-78. The Ci64UV is a compact instrument with good battery life, excellent calibration, and is easy to use in production. It is a very secure and well-thought-out instrument and I am pleased to add it to the mix as we continue to work to improve our quality in a dynamic and highly competitive marketplace."



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