

## Office Furniture: Managing an Increasing Amount of Color Variation

Steelcase, a global, furniture manufacturing and design company, based in the United States, has been making furniture since 1912. Steelcase is the global leader in office furniture, interior architecture and space solutions for offices, hospitals, and classrooms. To achieve such success, Steelcase adapted their processes through times of depression, war and industrialization while maintaining a superior quality product. That trend continues today as the company has adapted to the current era of manufacturing capabilities by offering customized products and solutions, on demand. Customized solutions are a great way to personalize products to meet the exact needs of the customer, however as Steelcase found out, customization can be quite stressful for maintaining quality control.

Founded and headquartered in Grand Rapids, Michigan, Steelcase has expanded and now has many plants throughout the United States. Their largest manufacturing facility is located in Athens, Georgia and this particular facility manufactures everything from large custom walls to tiny mounting brackets. To ensure everything runs smoothly, the company employs people like Ken Newton, a Q-10 problem-solving leader, to handle the various challenges and issues that arise within the company. Before his current position, Ken worked at the facility as a Quality Engineer which had similar responsibilities to his current role, solve problems facing quality control in Athens plant.



## Customization Concerns

One of the ways Steelcase creates their custom solutions is providing their customers the option to powder coat their steel products to any color of their choice which, as Ken could tell you, created an unforeseen amount of control issues. Before custom manufacturing was the norm, controlling product paint color had a relatively simple formula. Create a color you want for your products; write down the exact procedure conducted to create that color and repeat it. Since the original process was only a set amount of colors and the same materials were used for the recipe after the initial development period, a simple colorimeter was the only instrument needed to check the color. However, when the option to have an endless amount of color variations are added, this process falls apart because there just is not enough time or workforce in the budget to match a color with the trial and error approach for each individual order.

Ken found that the simple 'yes or no' answer to the question "Is this the same color as everything else we have ever produced?" no longer applied. He needed to know answers to much more complex questions like "Is this the exact color that our customer is requesting?", "How do we create this color?", "How do we standardize the color across the whole order?", "Was the color off?" and if so, "Why, and by how much?" or "How do we correct it?".

At the time, unfortunately Ken was not using a Konica Minolta Sensing product which meant the quality control process was not the best it could be and to make matters worse, there was little to no support in terms of finding a solution from its manufacturer. Alas, Ken was on his own.

## Finding a Solution with Konica Minolta Sensing

When the number one priority of your job is [maintaining and controlling product quality](#), losing control is simply not an option. While many begin to worry in this situation, Ken stayed calm and proved why his role as the Q-10 Problem Solver at Steelcase was well earned. Ken investigated his options and spoke to people outside of Athens facility. A colleague in the Michigan headquarters who had worked with Konica Minolta Sensing in the past, intelligently recommended that Ken give us a call. Once Ken explained his issues and all the parameters unique to his situation, our color experts recommended the use of one of our more multi-purpose devices; the [CM-700d Spectrophotometer](#). Ken's experience with Konica Minolta did not end once the purchase was made, a few weeks later, we called back to check up on him, which seemed to be a surprise to him;

*"It was amazing. Completely caught me off guard- that was huge. Knowing I can pick up the phone [and still receive support] after the sale [was made]."*



When we spoke to Ken, he had some praise to give about the CM-700d, such as the ergonomic design, the portability of the device, and the consistency of results;

*"The L\*a\*b\* values are very repeatable."*

As much as we love to hear what people like about our products, that was not why we kept following up with him again. Ken's job was not finished, he had answered some of his pressing questions mentioned above but not all of them and of course, some new ones popped up along the way. One issue we hear a lot post-purchase, which is not unique to Ken's situation, is that despite the team's ability to use the device correctly, they struggled [implementing it into their process](#).

At Konica Minolta Sensing, we know that color measurement is not always a "plug and play" solution. The measurements are only half of the equation, the other half is putting together a process that eliminates as many variables as possible to give the truest, and most repeatable color readings of whatever sample is being measured. In Ken's case, we helped him discover that the largest variable afflicting his team's process was the paint's thickness and how his spectrophotometer readings correlated to his previous device's measurements which was not a complete shock to us. In general, when it comes to paint/material thickness for color formulation many use a mathematics model (Kubelka-Munk) which uses an important assumption: the sample is opaque. If measurements over white do not equal measurements over black, the samples require additional layers to achieve opacity. Other formulation models cannot formulate colors that do not hide and cannot predict the color and opacity at a prescribed thickness. Since working with Ken and the Athens facility, we have continued to work with Steelcase at some of their other facilities to help them with other unique challenges.

To learn more about Steelcase, please visit them online at; <https://www.steelcase.com>

## About Konica Minolta Sensing

Konica Minolta Sensing Americas, Inc. provides a range of high quality designed and hand assembled color and light measurement instruments recognized in the industry. Our color measurement instruments help you quantify, measure, and control color. Consistent color reduces manufacturing downtime and material waste while improving product quality. With an array of applications, our products serve many industries. You can find our equipment on the production line, in the laboratory or out in the field. Known for precision and accuracy, our instruments are the standard of the industry. Turn to Konica Minolta Sensing for all your color measurement needs.

To learn more, please visit us online at; <https://sensing.konicaminolta.us/industries>

Or email us at; [marketing.sus@konicaminolta.com](mailto:marketing.sus@konicaminolta.com)