

Color measurement

— on-line and on-the-move

by Christine M. Taylor,
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The Frigidaire Laundry Division of Webster City, IA, builds free-standing washers, dryers and laundry centers. With customers like General Electric, Sears, and Montgomery Ward, Frigidaire's products must be top-notch.

When Frigidaire could not get consistent color readings on suppliers' samples, they were concerned. When they started asking suppliers to resubmit samples due to color variation, they knew it was time to find a new color measurement system. Due to the variety of components on the washers and dryers, the system had to be versatile enough to check different materials, and give accurate, numerical measurements.

Frigidaire decided on the Minolta Model CM-503i portable spectrophotometer. It is



Minolta's benchtop and portable spectrophotometers.

used to check color on pre-painted coil for side panels; trim plates, which are coated with ink; and various plastics for endcaps and knobs. The system is also utilized for inspection of incoming materials, sample approval, and for the gathering and analysis of defective purchased materials.

"We had an old spectrophotometer for several years, but we were getting inaccurate readings," says Don Deuel, purchasing quality administrator for Frigidaire's Laundry Division. "We purchased the Minolta because of its software program, and because it allows us to retain a lot of history. It also lets us look at color measurements in a three dimensional mode, rather than a flat line chart.

"The model that I use has a very small aperture," he continues. "This allows us to take readings on very small surfaces. With the European styling of today's major appliances, many parts are contoured. Before we used the Minolta, it was very difficult to find an area small enough and flat enough to take a reading on."

The CM-503i is well-designed for this application since it features a $\varnothing 3\text{mm}$ measurement area to analyze extremely small samples. It also calculates data using a variety of color and color-difference formulas, observer functions, and any of 11 illuminants. Data can be stored on the CM-503i's memory card for future comparisons, or the data can be transferred to a PC for further analysis.

Since the system's implementation in October of 1994, Frigidaire's suppliers have



Color is checked on a Frigidaire laundry center with a Minolta CM-503i spectrophotometer.

already reported reduced scrap. Also, the time required to approve a supplier's color standard has been decreased by 50 percent.

Another plus is the benefit to Frigidaire suppliers. Previously, if the color did not match, suppliers were required to resubmit samples, which proved costly.

"Repeating the process and remaking samples is expensive," explains Deuel. "On top of that, our projects were delayed. Now, we are getting more accurate and better correlation between our readings and our suppliers'. This helps reduce time and cost." ■



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