

Color Measurement

for Metal Packaging Manufacturers





Metal substrates are a primary method for brands to convey identity and brand values.

However, two-piece metal packaging is expensive to produce. Not only is it difficult to evaluate color on reflective surfaces like beverage cans, but the high-speed production environment makes print color control a challenge.

Color measurement is the fastest, most accurate and cost-effective way to produce consistent color across processing plants and achieve sustainability initiatives.

Why Visual Evaluation is Not Sufficient to Evaluate Color on Metal Cans

Three things are required to see color – our eyes, light, and the object – and all three are subject to variability.

1. Variations in the Human Eye: Genetics, color memory, eye fatigue, color deficiencies, and the impact of medications are just some of the variables that affect our ability to distinguish color differences. Plus, we all see color a little differently, which leads to disagreement between operators on different shifts, supervisors, and of course customers. It is nearly impossible to consistently communicate and quantify color differences based on visual assessment.

When it comes to reflective surfaces like metal packaging, visual evaluation on reflective surfaces is hugely variable. If you hold the package one way the color may look acceptable, but if you turn it to the side or step into the sun, the appearance changes. Although it may pass in your opinion, the brand owner may see it differently, and there is no way to know if it will match the companion packaging on the shelf.

2. Variations in the Type of Light: The colors we see are dependent upon the quality and quantity of light that shines onto the object. Each light source has a different energy output – some appear more yellow, some more blue, etc. – which in turn impacts the appearance of color. Since a beverage can simply reflects light from its environment, this leads to different color outcomes. To ensure color consistency on a beverage can, you evaluate it in a well-controlled lighting environment.
3. The Reflection of the Object: The ink applied to a beverage can has properties that determine which wavelengths of light are absorbed and which are reflected. The pigments used, the opacity and varnish all impact how light is reflected and how it the color will behave under different light sources.



In summary, when cost and quality drive your bottom line, visual evaluation alone is not sufficient to evaluate color.

How a Digital Color Workflow Solves These Problems

The only secure way to ensure accurate color across multiple sites is with digital specification and evaluation – that is, using digital values for color in conjunction with physical references. Once you shift the emphasis of color evaluation from a physical reference to a known digital value, everyone can do a better job of achieving the original design intent color and staying consistent with other manufacturing sites.



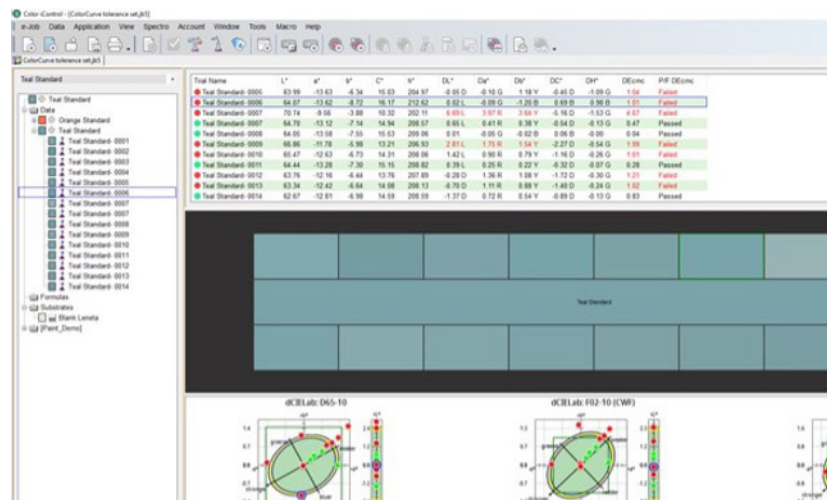
Digital Color Standards

For global manufacturing consistency, you must use accessible, accurate, achievable color targets. PantoneLIVE color libraries are the answer for the beverage can sector. These libraries consist of Pantone-approved color targets for the entire Pantone coated library, and every color is available in both opaque and transparent versions. With PantoneLIVE, beverage can producers can target and print approved Pantone colors with confidence that the target colors are the approved industry standards for Pantone, and that matching those colors will provide consistency across factories and geographies.

Digital Color Measurement

- A Color Measurement Device: Taking spectral measurements will help you spot check production samples to ensure color remains in tolerance throughout each run.
- Quality Control Software: By entering the digital specification for the standard and the acceptable dE tolerance, you can use the digital data from the color measurement device to immediately determine if your color is on target. You can also track trends and report color compliance back to brands. Using quality control software also enables you to track and control key parameters like mileage and color strength.

By moving from a physical reference to a known digital value, beverage can makers can confidently achieve the original design intent color consistently between manufacturing sites.



A Complete X-Rite Pantone Solution to Measure Color on Metal Cans



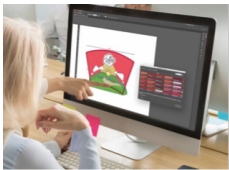
Ci64 Sphere Spectrophotometer

The Ci64 offers simultaneous SPIN/SPEX and correlated gloss to collect reliable spectral data for statistical process control with simultaneous SPIN/SPEX. With configurable menus, operators can view measurement procedures and data directly from the device for consistency across shifts and facilities.



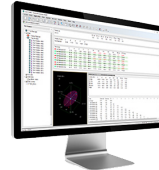
Cup and Cylinder Fixture

The X-Rite Cup and Cylinder Fixture has a sample-positioning arm to hold an un-necked beverage can and a bench to position the Ci64 at the correct height and angle for consistent measurements without deformation or distortion.



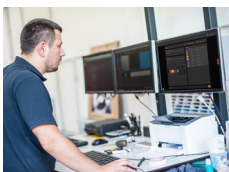
PantoneLIVE

PantoneLIVE is a digital, cloud-based repository that houses all Pantone digital color master and material dependent standards so beverage can suppliers can retrieve spectral data of achievable target colors. The world's leading CPG brands use PantoneLIVE to share Pantone as well as their own private brand colors.



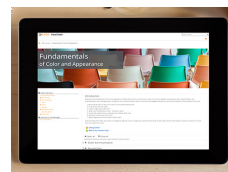
Color iQC Software

This configurable, job-based software solution helps operators easily evaluate whether a measured sample is in tolerance of the standard. With Color iQC, brands, suppliers, and manufacturers can define standards, tolerances, settings, measurement modes and ensure correct color measurement practices between operators and across global locations.



NetProfiler Software

This cloud-based blend of software and color standards automatically verifies and optimizes device performance to calibrate issues caused by age, wear, or environmental conditions. NetProfiler also identifies instruments in need of service before they result in off-color products and reduces variation between devices from different suppliers.



Learning Resources

Perhaps the best part of an X-Rite solution is the support you will receive from our Color Experts. We offer onsite consultation and training as well as certification programs to maximize your color measurement processes.

Industry Best Practices and Learning Resources

How Coca-Cola Addresses Packaging Sustainability

Learn how X-Rite Pantone's Digital Print Quality Program addresses Coca Cola's sustainability initiatives and facilitates accurate color on different packaging materials across their supply chain.



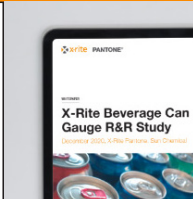
Color Measurement & Tolerancing for Metal Packaging

Download this whitepaper to learn how an X-Rite color measurement solution helps create a repeatable measurement process for consistent packaging color with less waste.



Beverage Can Gauge R&R Study

Completed by X-Rite and Sun Chemical, this study confirms the accuracy and repeatability of an X-Rite digital color solution for manufacturing beverage cans.



Ci62/Ci64 Series Training

This free eLearning course explains how to operate the Ci62/Ci64 spectrophotometer with Color iQC quality assurance software.



How to Capture Color on Cylindrical-Shaped Items

Learn how X-Rite's Cup and Cylinder Fixture and a Ci64 spectrophotometer measure cylindrical-shaped samples at the correct height and angle.





We're color experts.

We recognize that great color portrays great quality and know that your success hinges on the consistent and accurate production of this color. With so many places for color to go wrong, it can be hard to know how to get it right. That's where we can help. By blending the art and science of color, we help you achieve the highest level of color integrity so your product – and your customer's product – comes out ahead.

End-To-End Solutions

We provide solutions that span the entire workflow, from design through production, to ensure your color is optimized.

Innovation

Bridging the gap between color and appearance, we are blazing the trail for you to take your color operations to the next level.

Experience

With 60+ years of experience in color manufacturing, our expertise spans a range of industries.

Passion

Inspired by the great color our customers produce, our X-Rite color team provides quality support and training services.

Learn more at [xrite.com](https://www.xrite.com)



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