VeriColor®

Non-Contact Color Verification and Identification System

Eliminate costly production line color errors with this automated in-line color sensor that provides non-contact measurement and continuous reporting. Easy to operate, the system works on virtually any material and in the harshest production environments to offer comparisons to specific standards or absolute measurements.

x-rite
right on color

Finally, the industrial color verification tool you've been waiting for

The advantages of the VeriColor system go well beyond its patented, high-resolution color sensing technology. It's the first complete system designed specifically to solve color problems in today's fast-paced sequential assembly and sorting operations.

High spectral resolution for more accurate color identification

The VeriColor system recognizes more detailed color information than other industrial sensing systems. A full-spectrum illumination system detects subtle color differences on varying surfaces, and isn't fooled by false metameric matches — where different colors appear the same under certain lighting conditions.

Non-contact measurement

The VeriColor system is a non-contact device that's tolerant of depth fluctuations as well as surface curves and irregularities. Non-contact measurement makes the system both flexible and practical — ideal for use in a wide range of applications.

Unaffected by ambient light

With the VeriColor system, you don't need to change plant lighting or install special baffling to shield the system's sensors from ambient light. The system provides accurate, repeatable measurements under typical production lighting conditions.

Stores information for up to 50 active colors at a time

Able to distinguish thousands of colors, the VeriColor system stores information for 50 active colors at once. This eliminates the need for constant color reprogramming and enables users to verify color across an entire product palette.

Reliable, solid-state design

The VeriColor system isn't subject to wear or mechanical failure. Lamp life is greater than 25 years. The system provides consistent performance without involved maintenance routines or constant adjustment. Preventative maintenance involves simply keeping sensor lenses clean.

Withstands industrial conditions

The system is designed to withstand heat, cold, humidity, shock, and contaminants typical of industrial production environments.

Quick setups and changeouts

The VeriColor system adapts easily to changing requirements. Hub units are rack mountable and sensors are linked in series for flexible integration into a wide range of assembly systems. Components can be replaced and system configuration changed in just minutes.

Configuration options for greater productivity

Interface options include RS-232, RS-485, PLC discrete, and Ethernet. Configure the system manually or use the Windows-based software, which offers multiple format options and allows you to create a convenient, productive environment for operator set-up and use.

The VeriColor system supports RS-232, RS-485, PLC discrete, and Ethernet interface options.

Outstanding design and application flexibility

The VeriColor system is far more than an advanced sensor head. It's a complete, easy-to-use and set-up system that's equipped with easy to use windows based software. VeriColor 2.0 software assists operators in setting up color standards and tolerances.

1. Compare Mode

This mode enables the user to quickly determine color differences without having to perform or modify the setup of the sensor. It shows the color difference between two measurements in terms of dLED, dIntensity and dColor. Users can choose sequential or simulaneous measuring when multiple sensors are used. Each measurement will be compared to a temporary Standard that is learned by a single measurement with the "Quick Learn Button"

2. Setup Mode

The ability to create a project that consists of up to 50 Standards. Once the project is created, it can be downloaded to the instrument. Each Standard within the project is created by selecting from Colors that are created using a "learning" process which guides the user through the process of taking multiple measurements which are averaged together to determine target color value. Measurements can be accepted to use with the Color or discarded if undesirable. Users can add or edit readings and adjust tolerances for a color in set up mode. This feature assists the user in selecting the best tolerance values for reliable performance and color identification.

3. Color Measurement History

Version 2.0 allows easy adjustments when generating a standard after the initial set up. New measurements can be added, hidden or deleted at any time.

4. Visual Tolerancing

VeriColor 2.0 provides an overview in quick-to-read graphing terms. The Visual Tolerancing feature helps the user search for the correct standard since tolerances that are critical for deteremining pass or fail are presented graphically.

5. Auto Standard Search

The ability to specify which sensors are used to determine the next closest color. The user can select a single head or all six.

6. Monitor Mode

Enhancements include a new easy to read color wheel and allowing up to six sense heads to be displayed at once, showing the different tolerances and individual pass/fail tolerances that are associated with each head.

VeriColor Advantages

- **Multi-Point Measurement.** Ideal for multiple-point color verification and identification, providing large area viewing in sorting and assembly operations
- **Spectral Resolution.** 8-band high resolution for more accurate color discrimination than RGB sensors and color cameras
- **Unaffected by Ambient Light.** Repeatable, accurate measurements are produced under all types of production lighting conditions with no special plant lighting or shrouding required
- **Quick, Consistent Measurement.** The system stores information on up to 50 active colors at once, eliminating the need for constant reprogramming
- **Industrially Hardened.** Designed to tolerate heat, cold, humidity, shock, and typical industrial containments. Meets NEMA 4/IP 56 requirements
- **Flexible System Interface.** Supports multiple interfaces: RS-232, RS-485, PLC Discreet and Ethernet
- **Intuitive Software.** Windows based software and menu based programming for easy operator set-up
- **Easy Set-Up.** Includes the ability to monitor or set up remotely via Ethernet
- **Standard Measurement History**. Allows for easy adjustments when generating a standard after initial set-up by adding, hiding, or deleting new measurements at any time
- **Visual Tolerancing.** Tolerances that are critical for determining pass/fail are presented in quick-to-read graphs
- **Visual Color Difference.** Intuitive color graphs enhance determination of color differences
- **Log-File Access.** Easy to view and maintain data functionality

System Components

- Hub
- Sensor heads (option of 1 to 6 per hub)
- Windows set-up software
- DIN rail mounting kit for hub
- Calibration kit
- Interface cables (5 meter RS-232, 5 meter PLC)
- Operation manual

Options

- 1 meter, 3 meter, 10 meter, RS-232 and PLC cables
- 12 mm spot sensor head
- 6 mm spot sensor head

Specifications:

General Specifications

Instrument Type
High resolution reflective color system

Geometry
0° / 30° or 30° / 0°

Measurement Area
12 or 6 mm spot sizes

Color Resolution
.25 ΔE*, typical

Illuminant Observer
N/A. Reports color differences in DLED (scaled similar to ΔE)

Operating Temperature Range
0 to 50°C (32 to 122°F)

Operating Humidity Range
0 to 95% non-condensing

Enclosure Specification
NEMA-12 / NEMA-4 or IP-67 (Hub / Head)

Hub Size
L: 6.9" (17.5 cm)
W: 4.2" (10.7 cm)
H: 3.2" (8.1 cm)

Hub Weight
24.6 oz (700 g)

Sensor Head Size
L: 5.1" (13 cm)
W: 2.9" (7.4 cm)
H: 1.3" (3.3 cm)

Sensor Head Weight
11.4 oz (325 g)

Power Source
18-30V AC or DC, 3 Amps Max. (Ityp ≤ 1 amp)

Performance Specifications

Repeatability — Black
.05% Reflectance
(approx. = 0.3 ΔE)
0 to 40°C (32 - 104°F)

Repeatability — White
.15% Reflectance
(approx. = 0.1 ΔE)
0 to 40°C (32 - 104°F)

Lamp Life
25+ years
(@ 1 measure / sec. 24 x 7)

Calibration Time
Typically 90 days

Measurement Time
250 ms

Cycle Time
<1 sec.
(time interval between measurements)

Measurement Distance
40 mm from sensor lens ±
5 mm positional insensitivity

*In color science, ΔE is a color difference in L*a*b* color space where the threshold of human perception is typically 1ΔE.

X-Rite: Your source for accurate color. On time. Every time.

X-Rite is a world leader in providing global color control solutions for manufacturing and quality management requirements.

We lead the industry in offering service options to ensure uninterrupted performance of all X-Rite products. Training and educational resources are available globally and online for both new and experienced users to optimize their color measurement capabilities.

Visit xrite.com for more information about X-Rite products. X-Rite customers worldwide may also call the Applications Support team at CASupport@xrite.com or Customer Service at 800-248-9748.

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L10-293 (07/07)