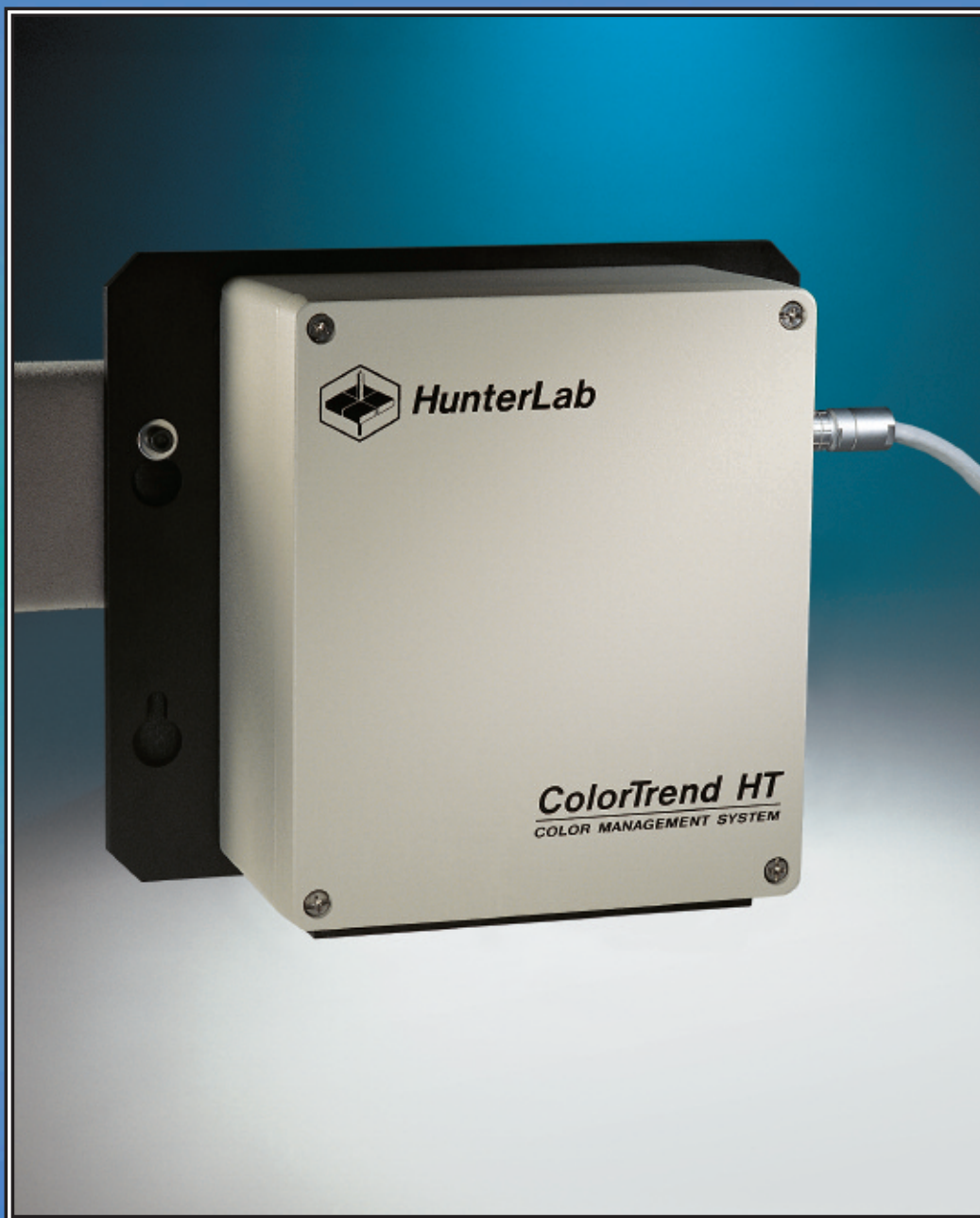


# Continuous On-Line Color Measurement A Process Tool For Consistent Quality



ColorTrend<sup>®</sup> HT

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## On-Line Color Monitor - A cost effective process tool for color control.

Real-time color measurement lets you react to product color changes when they happen, as they happen.

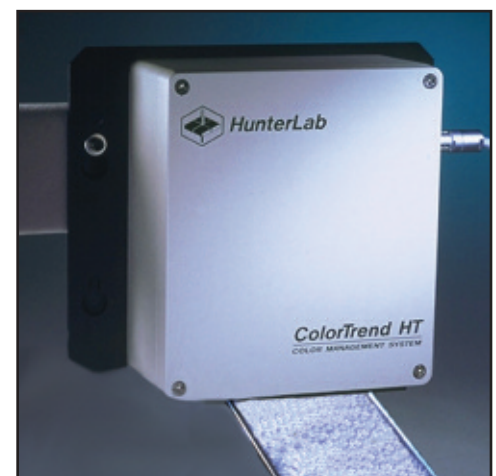
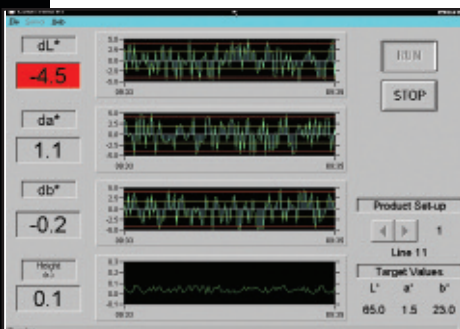
On-line color measurement gives you a continuous flow of information, which lets you make faster, better informed decisions to optimize your process and maintain quality. With real-time color measurement, costly process upsets are minimized, and your operation can take on-the-spot corrective action without waiting for laboratory results. ColorTrend<sup>®</sup> HT is a versatile, rugged, and cost-effective tool for continuous measuring, analyzing and reporting trends in color and height.

### ColorTrend HT provides accurate measurement without contact.

Positioned anywhere between 50mm (2") to 150mm (6") away from the moving product, ColorTrend HT measures color, yet does not come in contact with your product or interfere with your process.

Color analysis - measure color as your eye sees it.

In order to quantify color, globally accepted scales have been developed that correlate with color perception. These scales simulate the process of human vision, which can be quantified by instrumental measurement. For example the L\*,a\*,b\* scale measures color by quantifying the degree of light to dark (L\*), red to green (a\*) and yellow to blue (b\*). Consequently, we can say that the ColorTrend HT measures a product's color as the human eye sees it, but more consistently and repeatably.



## Results correlate to off-line measurements.

You can tie ColorTrend HT's continuous on-line performance directly to established lab results for conformance to product specifications. And for monitoring production trends, it's both compatible with, and complementary to, HunterLab and other laboratory color measurement products used for more critical periodic checks.



## Measure product height and color simultaneously.

Inconsistent product height or bed depth can be related to a number of process performance parameters such as bulk density and moisture content in the baking industry, or conveying system problems in the handling of bulk granules, powders or flakes. Likewise, product height is important for packaging and consistent product appearance. ColorTrend HT increases your color monitoring capability dramatically. It has the ability to simultaneously measure product height or bed depth in addition to color, to assist you in maintaining important quality control standards.

## Engineered for rugged, dependable performance.

ColorTrend HT is designed and built to withstand real-world conditions including harsh plant environments.

Engineered to stand up to heat, dust, chemicals and grease, both the sensors and its wall-mounted support unit are sealed in a durable NEMA 4/IP 65 enclosure. And, like all HunterLab systems, ColorTrend HT's performance is backed by a comprehensive support program with a range of service options, including preventive maintenance, operator training and on-site service.

## More ColorTrend HT system features:

- ◆ A hitch feature gives users the capability to track the ColorTrend HT with laboratory color measuring instruments or against other plant standards.
- ◆ The AutoCal option provides automated sensor calibration at user selectable intervals. An airwipe option keeps the automatic calibrator free of debris.
- ◆ To eliminate background belt or pan interference, a color "tracking" and height cutoff feature allows users to disregard either colorimetric or height data which lies outside preset thresholds or limits. Users can also choose which color within a product to monitor—such as measuring the color of a cookie but not the chocolate chips.
- ◆ Comprehensive PC software manages and presents information with point-and-click simplicity.
  - Establish product set-ups
  - Display data in real time
  - Plot color trends graphically
  - Archive and retrieve run data
  - Perform system diagnostics
- ◆ ColorTrend HT integrates easily into plant control systems via analog outputs that function as the color signal output for closed-loop control or plant data acquisition systems.



*The versatility and on-line measurement capability of ColorTrend HT are ideally suited to a wide range of process applications.*

### *Some examples are:*

- ◆ **Plastics:** pellets, flakes, and extruded products
- ◆ **Building Products:** wallboard, fiber glass, roofing granules, crushed stone, grout, concrete and cement
- ◆ **Industrial Minerals:** lime stone, calcium carbonate, dry organic chemicals and catalysts
- ◆ **Food:** cookies, crackers, nuts, pasta, noodles, cereal, chips, snack food, and pet food



## ColorTrend<sup>®</sup> HT On-Line Color Monitor

### Specifications

#### Operating Requirements:

Ambient temperature: 10°-50°C (50°-122°F)

#### Input/Output (I/O):

Analog outputs: Four (4) 4-20 mA; user-definable tristimulus color scales plus height.

Digital: RS485/RS232 serial link for bidirectional communications to set-up and configuration software

#### Physical:

Sensor Unit Enclosure Dimensions: 24cm (9.3") H x 20cm (7.8") W x 11cm (4.3") D

Support Unit Enclosure Dimensions: 57cm (22.5") H x 41cm (16") W x 20cm (7.8") D

Sensor Unit Weight: 4.5kg (10 lbs); Support Unit Weight: 11.3kg (25 lbs) Optional Stainless Steel Enclosure

#### Photometric:

Optical geometry: Degrees illumination/viewing: 0°/45° typical

Illuminant/Observer: C/2°

Viewing area: 20mm (0.78") diameter

Light source: LED

#### Measurement Performance:

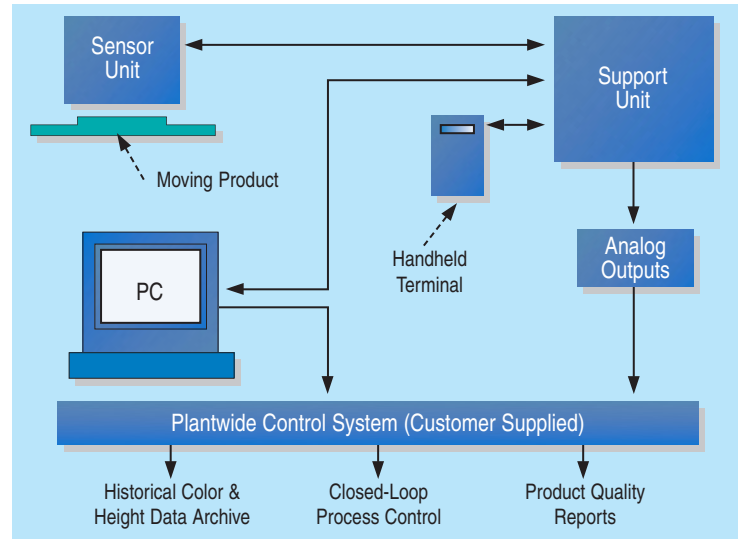
Measurement resolution: Color: ±0.1 CIELAB units; Height: ±0.1mm

Measurement repeatability, 24 hours: <±0.5CIELAB units without restandardization

#### Electrical:

Power input: 90-250 VAC, 47-63 Hz, <5 amp typical

Specifications subject to change without notice.



The ColorTrend HT system consists of a sensor, a support unit, and various interface options. These include analog outputs, connection to a PC, handheld operator terminal and fixed terminal that is built into the cover of the support unit.

## HunterLab - providing color management solutions worldwide.

Dedicated to worldwide support through local representation, HunterLab provides over 50 years of experience to meet the color management needs of customers in 70 countries. We offer the industry's most comprehensive set of end-to-end solutions - an integrated package of resources, from the complete array of instrumentation, software, and support services to training, education and decades of know-how.

For more information, call HunterLab today at 1-703-471-6870, Or visit our Web site at [www.hunterlab.com](http://www.hunterlab.com)

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