



LARGE APERTURE COLORIMETER - TORONSPEC™ LA

50mm Aperture for Precise Color Analysis of Non-transparent Materials

The ToronSpec™ LA Large Aperture Colorimeter is specifically designed to measure and compare the color of powders, masterbatches, fabrics, pharmaceutical tablets, and other non-transparent samples.

Featuring a 50 mm test aperture and D/8° illumination geometry, this device provides consistent and accurate color measurements across a wide range of industrial applications, including paints, plastics, food, and pharmaceuticals.

It is ideal for color quality control, offering excellent inter-sample repeatability and reliable color comparison.

APPLICATIONS

Application and Measurement Performance

The large aperture colorimeter provides:

- Accurate measurement of powders and masterbatches
- 50 mm large test aperture for wide sample coverage
- Reflectance curves for detailed color analysis
- Repeatability of $\Delta E^*_{ab} \leq 0.03$
- Support for WI-R457, WI-Hunter, YI-98, and other standard parameters

It supports multiple color spaces and color difference formulas, while also displaying spectral reflectance curves for comprehensive color data review.

Common applications include:

- Powder color evaluationand
- Masterbatch color comparison
- Tablet whiteness testing (YI-98)
- Fabric color analysis

Large Aperture Colorimeter - ToronSpec-LA

ToronSpec™ LA Measuring Powder(WI-R457)

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ToronSpec™ LA Measuring Masterbatches

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ToronSpec™ LA Measuring Fabrics

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ToronSpec™ LA Measuring Tablets(YI-98)

Standards and Compliance

This colorimeter meets the following standards and protocols:

- ASTM E313-98 for yellowness and whiteness index
- Colorimeter verification and calibration guidelines
- Uniform color space and calculation methods
- Standard conditions for illuminants and geometry
- Paint film color measurement procedures
- Plastics color and yellowness evaluation methods

Connectivity and Software Features

The ToronSpec™ LA large aperture colorimeter offers both mobile and PC connectivity:

- **Mobile App:** Supports Android 7.0+ and iOS 7.0+. Install by scanning the QR code directly from the device.
- **PC Software:** Connect via USB. Compatible with Windows for data export and report generation.

FEATURES

Key Features of Large Aperture Colorimeter - ToronSpec™ LA

1. 50mm Large Test Aperture

The extra-large 50mm aperture allows for more comprehensive and reliable color measurement, making it ideal for analyzing coarse, uneven, or non-uniform surfaces such as powders and textured fabrics.

2. Professional Reflectance Curves

Equipped with a full-spectrum LED light source and advanced spectral sensors, the colorimeter provides precise spectral reflectance curves, delivering detailed insights into hue, saturation, and depth for enhanced color analysis.

3. High Precision and Repeatability

With exceptional repeatability ($\Delta E^*_{ab} \leq 0.03$), the instrument ensures consistent and reliable results, passing authoritative metrology institute tests for industry-leading accuracy.

4. Comprehensive Color Parameter Measurement

The device supports multiple color indices and measurement parameters, including WI-R457 (Whiteness Index), WI-Hunter, YI-98 (Yellowness Index), and more, ensuring compliance with global color quality standards.

5. Advanced Data Management & Connectivity

The colorimeter is compatible with PC software and a mobile app, allowing users to export data, generate reports, and document results effortlessly, making it a powerful tool for quality control and color management in plastics, textiles, pharmaceuticals, and coatings industries.

50mm Large Aperture

With a measuring aperture of up to 50mm, this device is particularly suited for color difference measurement of materials with rough surfaces, including masterbatches, powders, and textured fabrics.

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Display of Spectral Reflectance Curves

Utilizing a full-spectrum LED light source and advanced spectral sensors, this device delivers precise spectral reflectance curves, ensuring highly accurate color data. It provides detailed insights into hue, saturation, depth, and other essential color attributes for professional color measurement.

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Good Repeatability, $\Delta E^*_{ab} \leq 0.03$

High precision and excellent repeatability with standard deviation $\Delta E^*_{ab} \leq 0.03$. It can pass the test of authoritative metrology institute.

Free Special Plastic Cuvettes

It comes with specialized plastic cuvettes, designed for accurate measurement of masterbatches, powders, and opaque liquids.

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Simple Operation, Two-Step Color Difference Measurement

Measure color differences in just two clicks using the 7-inch color touchscreen, ensuring an effortless and intuitive experience.

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Provide QC Function

The QC function allows you to set a custom color difference threshold, automatically determining whether the color difference meets the required standards.

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Multiple Parameters Measurement

Multi parameters including CIE Lab, Luv, LCh, Yxy, CMYK, RGB, WI-98, WI-Gauz, WI-Hunter, YI-98, WI-R457, Spectral reflectance curve.

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Built-In Multiple Universal Electronic Color Charts

The colorimeter includes multiple universal electronic color charts, enabling quick and accurate color matching with a 90%+ accuracy rate during measurement.

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App is More Functional

It can share and export the color data by connecting to the mobile phone APP.

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Provide PC Software, Support Data Import and Export

The included PC software enhances color difference statistical analysis and allows for seamless data import and export from the device.

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Coffee Spectrophotometer & Colorimeter - CafféSpectra™

Full Spectrum LED Light Source

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Compensation Optical Path

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Large Storage Space

TECHNICAL SPECIFICATIONS

Parameters	Value
Illumination geometry	D/8, specular component include (SCI)
Illumination light source	Full spectrum LED light source
Spectral range	400-700nm
Spectral interval	10nm
Measuring aperture	50mm
Measurement conditions	Light source D65, field of view 10°
Measuring time	About 1.5s
Color space	CIE Lab, Luv, LCh, Yxy, CMYK, RGB, WI-98, WI-Gauz, WI-Hunter, YI-98, WI-R457, Reflectance
Color difference formula	ΔE^*_{ab} , ΔE^*_{uv} , ΔE^*_{94} , $\Delta E^*_{cmc}(2:1)$, $\Delta E^*_{cmc}(1:1)$, ΔE^*_{00} , $\Delta E^*_{cmc}(1:1)$, $\Delta E^*_{cmc}(1.4:1)$
Repeatability	Standard deviation ΔE^*_{ab} is within 0.03 (Measurement condition: the average value of 30 measurements on the whiteboard at an interval of 3s after calibration)
Inter-instrument agreement	$\Delta E^*_{ab} \leq 0.4$, based on avg. of 12 BCRA series II tiles
Dimension	21.1 × 26.4 × 15.5cm (L×W×H)
Weight	3.29kg
Voltage	100~277V 0.4A 50/60HZ
Display	7-inch 1024*600 dot matrix IPS color screen
Language	English and other
Data transmission	USB, Bluetooth

Parameters	Value
Operating temperature range	0~45°C, 0~85%RH (no condensation)
Storage temperature range	-25~55°C, 0~85%RH (no condensation)



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