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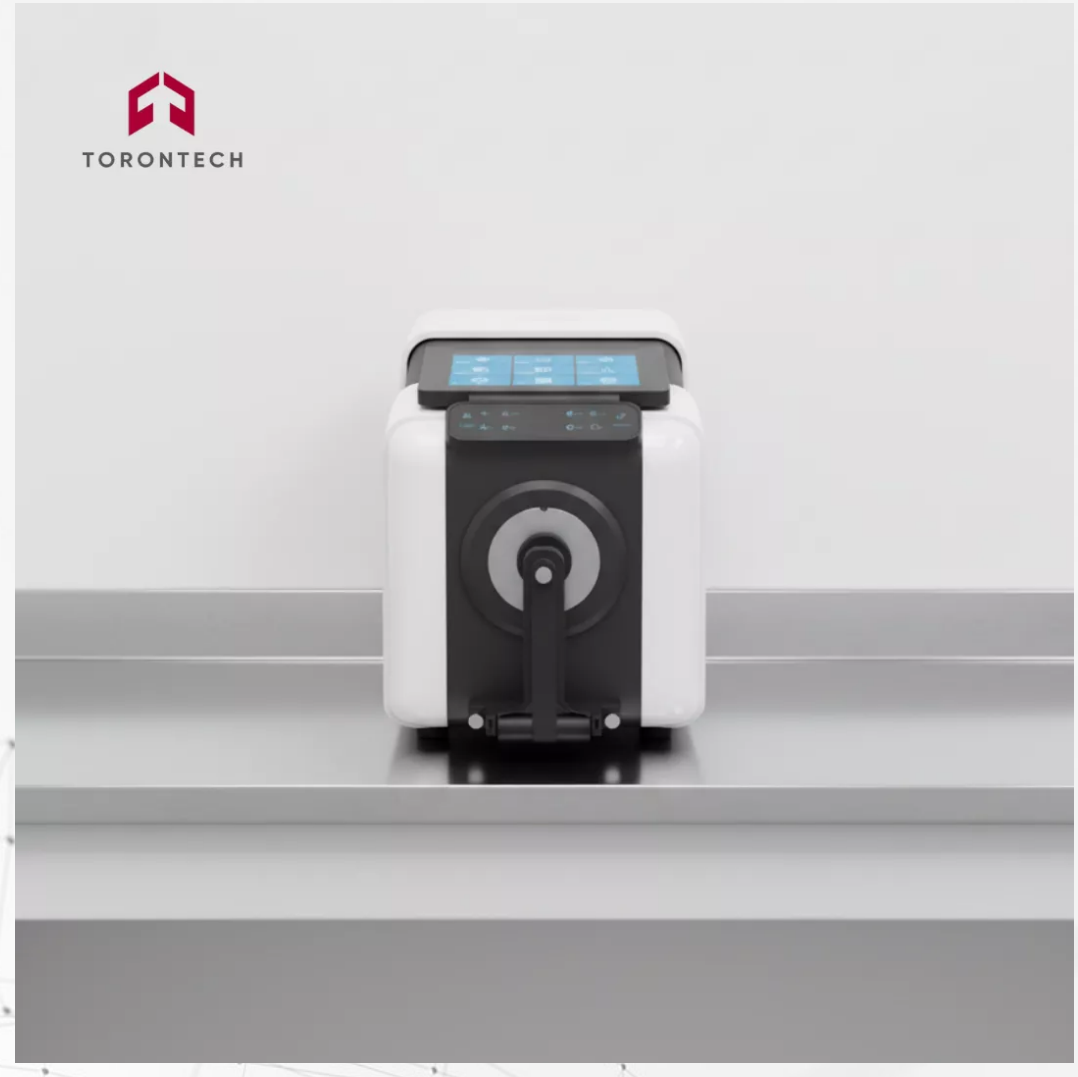

BENCHTOP COLOR SPECTROPHOTOMETER – COLORIMETER

Precision color control with high stability and advanced calibration

The ToronSpec™ Benchtop Spectrophotometer is engineered for high-accuracy color measurement using a differential spectroscopy engine and 1 nm grating. Its dual optical path design enhances stability and repeatability, making it a reliable choice for quality control in laboratories and production environments.

With automatic calibration technology and excellent inter-instrument agreement, this benchtop colorimeter ensures long-term consistency, even in fluorescence measurements. It is ideal for industries that require precise color evaluation across multiple locations or timeframes.

APPLICATIONS

Benchtop Color Spectrophotometer â€“ Colorimeter

- **Paints & Coatings** – Provides precise color measurement for paints, coatings, and finishes, ensuring batch-to-batch consistency.
- **Plastics & Polymers** – Evaluates solid, powder, and transparent plastic samples for accurate color control in manufacturing.
- **Textiles & Fabrics** – Ensures reliable color matching for dyes, fibers, and fabrics under multiple illuminants.
- **Printing & Packaging** – Guarantees accurate reproduction of brand colors across labels, films, and printed materials.
- **Cosmetics & Personal Care** – Measures creams, powders, and liquids to achieve uniform color appearance across product lines.
- **Food & Beverages** – Monitors color quality in liquids, powders, and packaging to meet strict industry standards.
- **Electronics & Consumer Products** – Enables consistent color inspection of casings, displays, and electronic components.

FEATURES

Key Features of ToronSpec™-36D, 37D, and 39D

The ToronSpec™ benchtop spectrophotometer is equipped with both a pulse xenon lamp and LED light source. It offers 37 standard illuminants and over 40 measurement parameters, making it suitable for complex color evaluation tasks.

This benchtop colorimeter features:

- Automatic recognition and switching between four aperture sizes
- Temperature and humidity compensation for stable performance
- 7-inch Android touchscreen for smooth, user-friendly operation
- Integration with ColorExpert software for detailed color data analysis
- Cloud-based storage with account login to avoid data loss
- PC connectivity to export or print test reports
- Compatibility with color matching software to enhance formulation workflows

Benchtop Color Spectrophotometer â€“ ColorimeterBenchtop Color Spectrophotometer â€“ Colorimeter

Advanced Optical Capabilities

Built for high-end applications, the benchtop spectrophotometer integrates a differential spectrum engine that increases light input by 50% and boosts spectral resolution by 30%. The result is higher signal-to-noise ratio and more reliable color data.

- Repeatability accuracy reaches dE*ab ≤ 0.005
- Inter-instrument agreement reaches dE*ab ≤ 0.08, ideal for cross-facility consistency

- Dual optical path design monitors light fluctuations and improves stability
- Advanced 1 nm resolution grating uses MEMS fabrication for superior accuracy
- Fluorescence calibration adjusts UV intensity to ensure accurate readings of fluorescent samples
- Long-term stability supported by automatic calibration technology
- Accuracy maintained under changing temperatures, from 0°C to 40°C

Benchtop Color Spectrophotometer â€“ ColorimeterBenchtop Color Spectrophotometer â€“ Colorimeter

Versatile Measurement Functions

This benchtop colorimeter supports flexible sample handling:

- Four aperture sizes allow for easy measurement of various shapes and surfaces
- Reflection mode for solids, powders, and non-transparent liquids
- Transmission mode for glass, films, and clear liquids
- High-resolution 1400 dpi preview camera improves image clarity by 350%
- Brightness calibration algorithm enhances dark color accuracy
- Simultaneous saving of sample data and images for full sample traceability

Benchtop Color Spectrophotometer â€“ ColorimeterBenchtop Color Spectrophotometer â€“ Colorimeter

TECHNICAL SPECIFICATIONS

Specification of Benchtop Color Spectrophotometer – Colorimeter ToronSpec™

Model	ToronSpec-36D	ToronSpec-37D	ToronSpec-39D
Lighting/measuring conditions	Reflection: d/8 (diffuse illumination, 8° direction reception)		
	SCI (Contains specular reflected light / SCE (not contain specular reflected light) measure at same time. Compliance standards: CIE No.15, ISO7724/1, DIN5033 Teil7,JIS Z8722 Condition C, ASTM E1164, ASTM-D1003-07, GB/T 3978, GB 2893, GB/T 18833		
	Transmission: d/0 (diffuse illumination, vertical reception)		
Sensor	Differential spectrum engine		
Spectroscopic method	Concave grating		
Integrating sphere diameter	152mm		
Wavelength range	360nm-780nm		
Wavelength interval	10nm		
Reflectance measurement range	0-200% resolution0.01%		
Lighting source	Pulsed xenon lamps and LED		
Ultraviolet measurement	Includes UV, 400nm cutoff, 420nm cutoff, 460nm cutoff		
Measuring time	Single mode <2s		
Lighting/measuring calibers	Reflection: XLAV Φ25.4mm/Φ30mm LAVΦ15mm/Φ18mm MAVΦ8mm/Φ11mm SAVΦ3mm/Φ6mmUsers can customize the calibre, and the calibre switch is automatically recognizedTransmission Φ17mm/Φ25mm		
Transmission measurement specification	Sample height and thickness: height is not limited, thickness ≤50mm		
Long-term repeatability	XLAV chroma value: standard deviation ΔE*ab 0.01 or less (under constant temperature conditions, the white correction plate is measured every hour within 24 hours)		

Repeatability *	ΔE*ab≤0.01， Spectral reflection/transmittance ≤0.1%	ΔE*ab≤0.005， Spectral reflection/transmittance ≤0.1%	
Inter-Instrument Agreement**	XLAV ΔE*ab 0.18	XLAV ΔE*ab 0.12	XLAV ΔE*ab 0.08
Standard observer	2° and 10°		
Viewing light source	A, B, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, U30, U35, DLF, NBF, TL83, TL84, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2		
Language	English and others		
Display content	Spectral data, Spectrogram, chromaticity data, chromaticity Data, chromaticity map, Pass/Fail judgment, Simulation color, Color evaluation, fog, liquid chromaticity, Color bias		
Color space	CIE LAB,CIE LUV, LCh, Hunter Lab, Yxy, XYZ, Musell, s-RGB, βxy		
Chroma index	WI(ASTM E313-20, ASTM E313-73, CIE, ISO2470/R457, AATCC, Hunter, Taube, Berger Stensby), YI(ASTMD1925, ASTM E313-20, ASTM E313-73), Tint(ASTM E313-20), Isochromatic index Milm, color fastness, color changing fastness, ISO brightness, R457, A density, T density,E density, Mdensity, APHA/Hazen/Pt-Co(platinum-cobalt index),Gardner(Gardner Index), Saybolt(Seibert Index), Astm color, fog, total transmittance, covering power, force, intensity		
Color difference formula	ΔE*ab,ΔE*CH,ΔE*uv,ΔE*cmc,ΔE*94,ΔE*00,ΔEab(Hunter),555 color tone classification		
Storage	8GB		
Screen size	7-inch capacitive touch screen		
Operating system	Android		
Power source	Dc regulated power supply		
Operating temperature and humidity	5 ~ 40°C, relative humidity 80%(35°C) below no condensation		
Storage temperature and humidity	-20 ~ 45°C, relative humidity 80%(35°C) below no condensation		

Accessories	Power adapter, USB cable, transmission fixture, software U disk, black cavity, white board, greenboard,30mm aperture, 18mm aperture ,11mm aperture, 6mm aperture, support table, cuvette,
Optional accessories	Heating transmission jig (including control circuit), vertical bracket, pneumatic jacking rod (including control circuit), small sample holding accessories, reflection cupping plate (non-removable), fiber test box, film jig, micro transmission jig, rod box, European standard plug, American standard plug
Port	RS-232, USB, USB-B, Bluetooth
Camera positioning	Ultra HD camera (1400dpi)
Automatic calibration	√ (Can greatly improve the long-term repeatability of the instrument)
Fluorescence calibration	√ (Can automatically adjust the UV intensity, and ensure that the value of the instrument is highly consistent with that of other instruments when measuring materials containing fluorescence)
Brightness calibration	√ (Through the brightness calibration algorithm, the real color of ultra-dark samples is restored)
Others	The instrument can be measured sideways, up and down (using accessories); Automatic temperature and humidity compensation function; PC side software save sample image function

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