



TORONTECH

PORTABLE COLOR SPECTROPHOTOMETER - COLORIMETER TORONSPEC™ 700D



The ToronSpec™ 700D Portable Color Spectrophotometer is a professional handheld instrument designed for accurate, consistent, and repeatable color measurement. It delivers high-precision color evaluation across different devices, with excellent inter-instrument agreement and repeatability. This ensures reliable color data for quality control, product inspection, and color communication.

Built with a dual-path optical system and a flat-field concave grating, the ToronSpec™ 700D provides stable performance even under changing lighting conditions. The system supports a wide range of color measurement parameters and evaluation light sources, allowing precise color analysis across multiple industries. Its optical design helps reduce measurement interference and improves long-term consistency.

The ToronSpec™ 700D is designed for flexibility in real-world applications. It supports four interchangeable apertures, making it suitable for samples of different sizes and surface conditions. Additional tools such as a camera-assisted viewfinder, UV measurement capability, and mobile phone integration improve positioning accuracy and data handling. Combined with professional color matching software, the device streamlines color evaluation and reporting while maintaining high measurement confidence.

Key Highlights

- High-precision portable spectrophotometer for accurate color evaluation
- Excellent inter-instrument agreement and repeatability for consistent results
- Dual-path optical system for stable and reliable measurements
- Supports multiple color parameters and evaluation light sources
- Four interchangeable apertures for flexible sample measurement
- Camera-assisted viewfinder for precise targeting
- UV measurement support for advanced color analysis
- Mobile and PC software integration for efficient color matching and data sharing

APPLICATIONS

Advanced Optical Design for Superior Accuracy

The double optical path design improves repeatability to $dE^*_{ab} \leq 0.025$ by monitoring both the light source energy and sample signal in real time. This reduces measurement interference and enhances color stability across multiple testing environments. Technologies used in this system are protected by U.S. invention patents.

Portable Color Spectrophotometer “ Colorimeter

Innovative Concave Grating Structure

The instrument’s optical system uses a concave grating light path to achieve performance surpassing 10 nm resolution. This breakthrough enhances optical precision and supports high-speed, high-accuracy color analysis. The design is protected by U.S. patents and holds independent global intellectual property rights.

Portable Color Spectrophotometer “ Colorimeter

FEATURES

Features of Portable Spectrophotometer ToronSpec™ 700D

Portable Color Spectrophotometer “ Colorimeter

Excellent inter-station consistency $dE^*_{ab} \leq 0.25$

The ToronSpec™ 700D features an excellent technical and technological level, ensuring superior inter-instrument agreement. Using the BCRA series of standard color tiles for color transfer and color value tracing guarantees that the same type of instrument maintains outstanding desk-to-desk consistency between upstream and downstream companies.

Portable Color Spectrophotometer “ Colorimeter

Ultra-high repeatability accuracy: $dE^*_{ab} < 0.025$

Repeatability accuracy is a crucial index for describing the accuracy of a spectrophotometer. The ToronSpec™ 700D spectrophotometer features an exceptional photoelectric test system that ensures its repeatability accuracy is unmatched by similar products. The repeatability evaluation of the ToronSpec™ 700D follows stringent standards, demonstrating its excellent repeatability accuracy.

The calibration white tile is a zirconium reference with a Mohs hardness of 9 to calibrate the instrument, which guarantees the long-term stability of the instrument

Unlike existing products, this spectrophotometer does not require frequent manual calibration. Simply placing it on the calibration base allows the instrument to automatically calibrate its functions and accuracy according to its state and environmental factors, ensuring it remains in a stable and ready-to-use condition at all times.

Calibrating the white tile is fundamental to the instrument's operation. Through extensive investment and research, we have incorporated zirconium materials, known as "artificial diamonds," into the calibration white tile, achieving a surface Mohs hardness of 9.

This material's hardness and stability, comparable to diamonds, ensure that the calibration white tile surface remains scratch-free and does not change color with variations in temperature and humidity. In contrast to similar foreign and domestic products, which use ordinary industrial ceramics or even plastics for their calibration whiteboards, our choice of zirconium material significantly enhances the stability, durability, and overall performance of the instrument.

Portable Color Spectrophotometer – Colorimeter

Portable Color Spectrophotometer – Colorimeter ToronSpec™-700D

Calibrated white tile (artificial diamond zirconium material)

- Mohs hardness: 9
- Spectral reflectance: >90%
- No discoloration due to changes in temperature and humidity
- No discoloration from oxidation
- Ultra-high strength and resistant to scratching

More than 30 measurement parameters and nearly 40 evaluation light sources are available

The ToronSpec™ 700D spectrophotometer provides over 30 measurement indicators, including spectral reflectance, CIE-Lab, CIE-LCh, $\hat{I}^*E^*ab$, covering power, whiteness, and yellowness. It offers nearly 40 evaluation light sources, such as A, B, C, D50, D55, and D65, covering almost all the color measurement indicators and light source types in the industry.

Portable Color Spectrophotometer – Colorimeter

Supports 4 Apertures

To accommodate different sample sizes, the ToronSpec™ 700D spectrophotometer supports four apertures: Φ11mm, Φ6mm, Φ3mm, and 1*3mm. This flexibility allows it to be used effectively in various sample testing scenarios.

Portable Color Spectrophotometer “ Colorimeter

Built-in HD camera for clear viewing of measured area

The ToronSpec™ 700D spectrophotometer features a camera that captures images of the measured area during the measurement process. This allows for clear localization of the sample's measured area, preventing measurement inaccuracies caused by errors in area selection.

Portable Color Spectrophotometer “ Colorimeter

Support Android, Apple, and Mobile APP

The ToronSpec™ 700D spectrophotometer can connect to various mobile phones using the Color Meter App. Users can easily share color data, eliminating the need to convey color values manually for samples and physical objects. The app allows users to identify the most similar colors across multiple sets of color cards.

Additionally, users can create personalized color databases and input information for color cards used in printing, paint, and textiles. These color libraries can be uploaded to the cloud for convenient color processing and shared across multiple devices.

For business users, the app enables them to create and manage their own color card information library and color recipes in the cloud. They can then share this information and recipes with their users through a unique invitation code.

Portable Color Spectrophotometer “ Colorimeter

Use the powerful PC-based colour management system ColorExpert*

My Color feature for Portable Color Spectrophotometer – Colorimeter

MY COLOR

- Create and collect custom color libraries with community sharing.
- Access hundreds of shared color libraries from other users.
- PC and mobile app accounts sync seamlessly across devices.

Color QC feature for Portable Color Spectrophotometer – Colorimeter

COLOR QC

- Calibrate, measure, and configure via PC software.
- Use cloud database colors as specimens for comparison.
- Access spectrograms, color difference graphs, and trial data.
- Export data-rich test reports for documentation.

Color matching feature for Portable Color Spectrophotometer – Colorimeter

COLOR MATCHING

- Automated formula calculation after sample measurement.
- Accurate adjustment for reliable color matching results.
- Ideal for paint, coating, printing, textile, and related industries.
- Supports computerized automatic color matching workflows.

Personal Centre feature for Portable Color Spectrophotometer – Colorimeter

PERSONAL CENTRE

- Edit and manage personal account information.
- Search, connect, or delete linked instruments.
- Control downstream users and shared color libraries.

Appearance structure and accessories

Portable Color Spectrophotometer – Colorimeter

Component	Quantity
Spectrophotometer	1
Aperture	4
Calibration base	1
Portable package	1

Instructions	1
Charger	1
USB cable	1
Calibration Certificate	1
Software U Disk	1

TECHNICAL SPECIFICATIONS

Specification of Portable Color Spectrophotometer - Calorimeter ToronSpec™ 700D

Product model	ToronSpec™ 700D
Measuring Geometry*	D/8° SCI/SCE
Measurement repeatability**	$\Delta E^*_{ab} \leq 0.025$
Inter-instrument Agreement***	$\Delta E^*_{ab} \leq 0.25$
Display accuracy	0.01
Measuring aperture	Φ11mm Φ6mm Φ3mm 1*3mm

Color Spaces and Indices	Reflectance, CIE-Lab, CIE-LCh, HunterLab, CIE Luv, XYZ, Yxy, RGB, Color difference(ΔE^*ab , ΔE^*cmc , ΔE^*94 , ΔE^*00), WI (ASTM E313-00, ASTM E313-73, CIE/ISO, AATCC, Hunter, Taube Berger Stensby), YI (ASTM D1925, ASTM E313-00, ASTM E313-73), Blackness(My,dM), Color Fastness, Tint, (ASTM E313-00), Color Density CMYK(A,T,E,M), Milm, Munsell, Opacity, Color strength
Illuminants	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
Light source	LED+UV
Measurement observation method	Camera
Calibration	Auto calibration
Software	Android, iOS, Windows
Guaranteed accuracy	Guaranteed first class measurement
Observer	2° $\square$ 10°
Integrating sphere diameter	40mm
Standards	CIE No.15, ISO7724-1, ASTM E1164, DIN5033 Teil7
Spectrometry	Grating
Sensor	Two-column high precision CMOS array sensor
Wavelength interval	10nm
Wavelength range	400-700nm
Reflectance determination range	0-200%
Reflectance resolution	0.01%
Measurement time	Less than 2 seconds

Interface	USB, Bluetooth
Screen	IPS full color screen, 3.5 inches
Battery capacity	8000 consecutive measurements, 7.2V/3000mAh with a single charge
Life of Light Source	10 years and 1 million cycles
Language	English and others
Storage Memory	Instrument: 100 standard samples and 10,000 samples; APP: Mass Storage



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