

INNOVATIVE TECHNOLOGIES



Portable Color Spectrophotometer— Colorimeter ToronSpec™-700D



TORONTECH



Portable Color Spectrophotometer—Colorimeter

ToronSpec™-700D

Portable Color Spectrophotometer—Colorimeter ToronSpec™-700D features an excellent technical and technological level for accurate color measurement, ensuring superb inter-instrument agreement with **dEab < 0.25**. The dual-path design featuring a flat-field concave grating enhances instrument repeatability to **dEab < 0.025**.

ToronSpec™-700D offers over **30 measurement parameters** and nearly **40 evaluation light sources for selection**. It comes with four aperture sizes (11mm, 6mm, 3mm, 1*3mm) to accommodate different sample sizes. Additional features include camera viewfinder positioning, ultraviolet UV measurement, mobile phone measurement, and color matching software.

This cutting-edge spectrophotometer conforms to international standard including **ASTM E1164, ISO7724-1, and DIN5033**.

APPLICATIONS



Measuring color difference of plastic sheets



Measuring Coating Coverage



Measuring Lab Value of Fruits



Measure metal spray color



Measure vegetable leaf color



Small aperture measurement of surface object color



Measuring fluorescence color

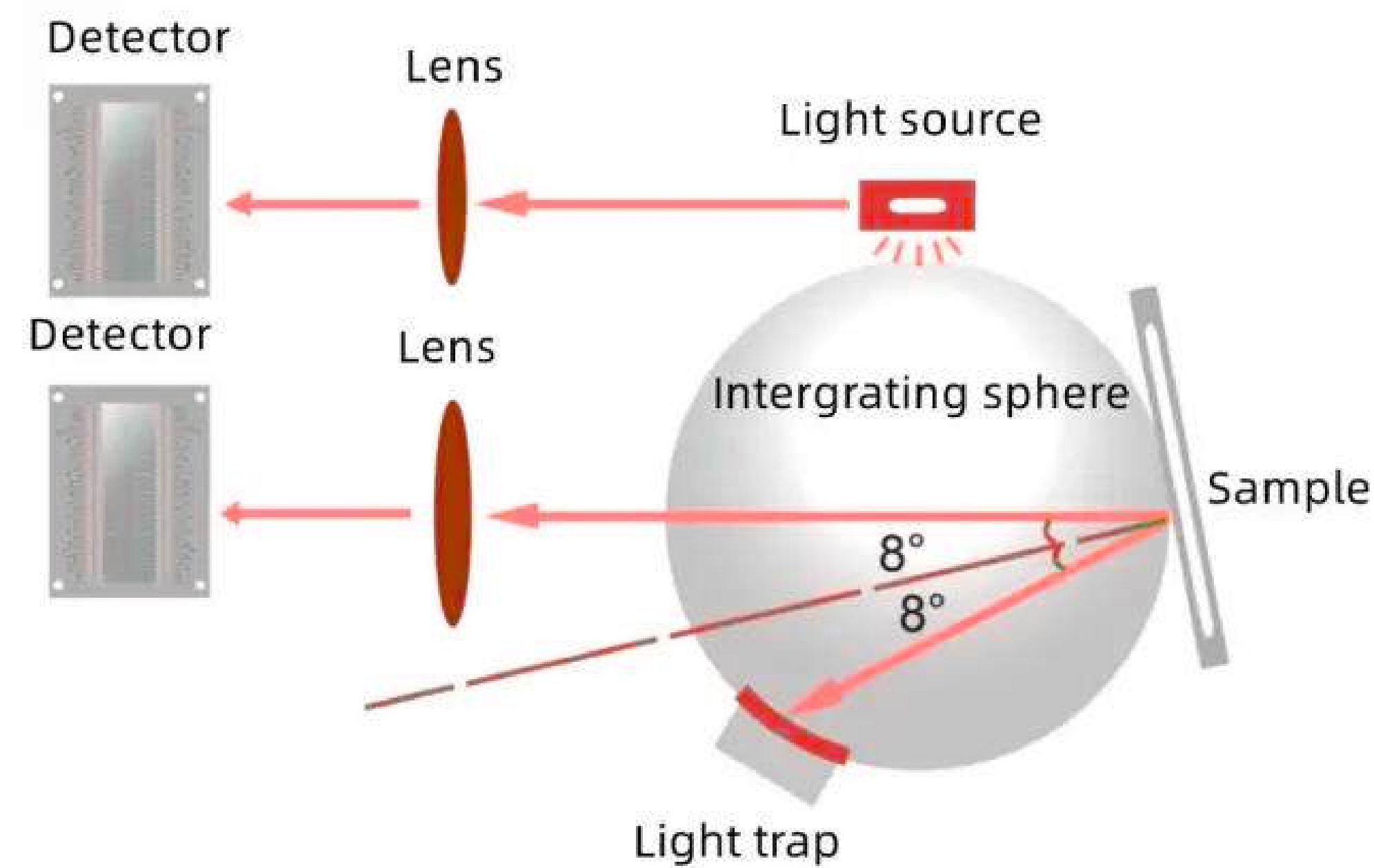


Measure yarn color



Measure lipstick color

WORKING PRINCIPLE



The ToronSpec™-700D operates on a **dual optical path high-precise CMOS array sensor**, which enhances repeatability accuracy by monitoring the energy fluctuations of the light source during sample signal measurement. This design minimizes interference and ensures higher stability in accurate color measurement. The advanced technology results in a repeatability index of $dE^*ab \leq 0.02$, ensuring high standards of measurement speed, accuracy, and stability between stations.

Furthermore, the innovative concave grating light path structure achieves optical performance surpassing 10 nm, significantly enhancing the product's technical capabilities. These related technologies are protected by American invention patents, ensuring robust and reliable performance for diverse applications.

COMPONENTS



ITEM	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

FEATURES/ADVANTAGES

Excellent Inter-Station Consistency: $dE^*ab \leq 0.25$

Ensures superior inter-instrument agreement with BCRA standard color tiles, guaranteeing consistent performance between companies.

Ultra-High Repeatability Accuracy: $dE^*ab < 0.025$

Unmatched repeatability accuracy with an exceptional photoelectric test system, ensuring stability with $dE^*ab \leq 0.02$.



Intelligent Auto Calibration White Tile (Artificial Diamond Zirconium Material)

The calibration white tile is a **zirconium** reference with a **Mohs hardness of 9**, ensuring long-term stability and minimal need for manual calibration. Simply place the tile on the calibration base for automatic function and accuracy adjustments, maintaining the instrument in a ready-to-use condition.

Our zirconium material, known as "**artificial diamonds**," provides exceptional hardness, stability, and spectral reflectance of over 90%. It remains scratch-free and unaffected by temperature and humidity changes. Unlike other products using industrial ceramics or plastics, our zirconium tile enhances stability, durability, and overall instrument performance. It is also resistant to discoloration from temperature, humidity, and oxidation.



FEATURES/ADVANTAGES

Built-In HD Camera for Clear Viewing of Measured Area

Features a camera that captures images of the measured area during the measurement process, ensuring clear localization and preventing inaccuracies caused by errors in area selection.



Supports 4 Apertures

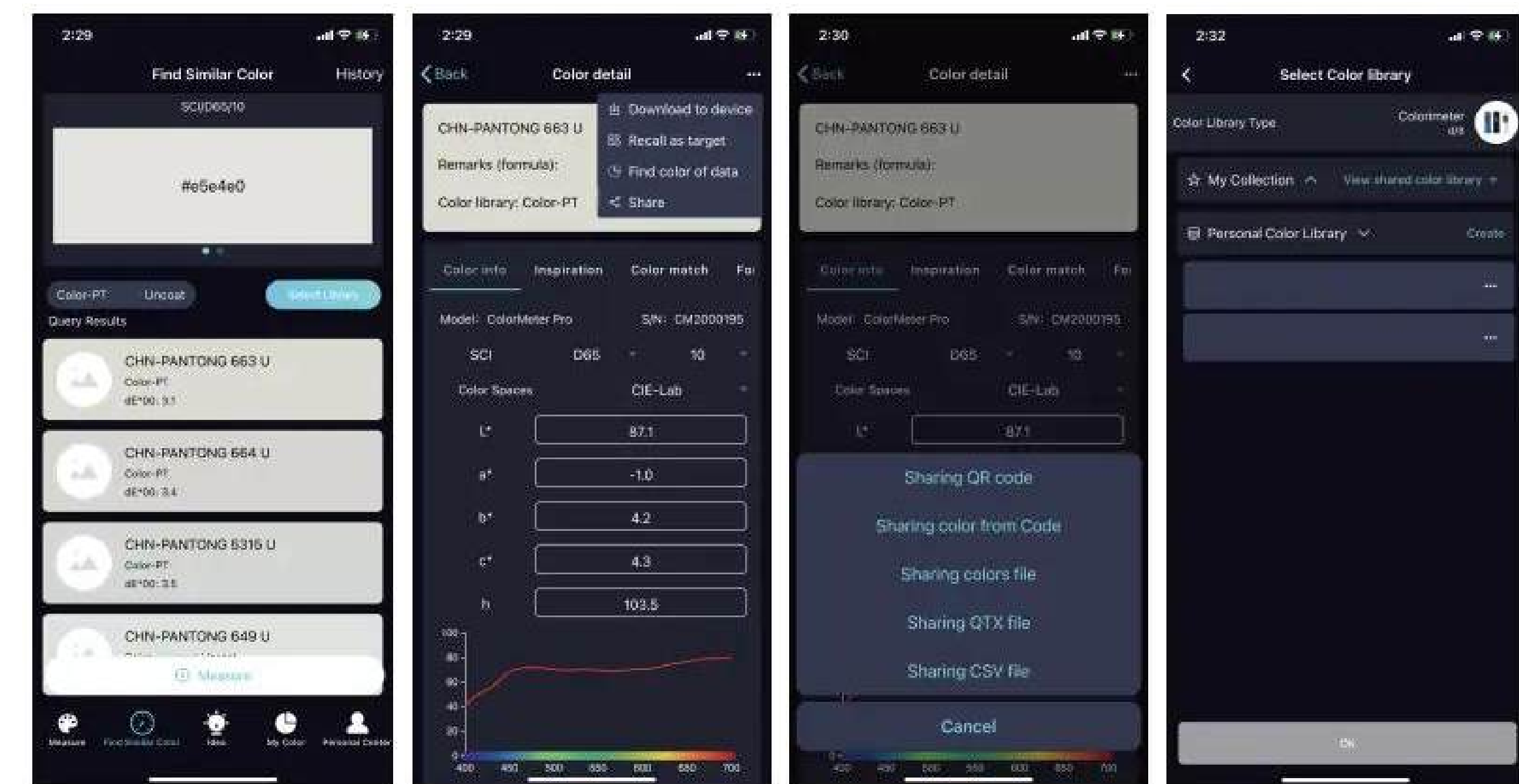
Accommodates different sample sizes with four apertures: Ø11mm, Ø6mm, Ø3mm, and 1*3mm, allowing for flexibility in various sample testing scenarios.



Support for Android, Apple, and Mobile APP

Connects to Android and Apple devices via the Color Meter App for easy color data sharing. Users can create personalized color databases and input information for color cards used in printing, paint, and textiles.

The app enables business users to create and manage their own color card information library and color recipes in the cloud, sharing them through a unique invitation code.



Check color card number

Set standard with color

Share color data

Create Individual Color Library

SOFTWARE



Use the Powerful PC-Based Color Management System ColorExpert™

The ToronSpec™-700D spectrophotometer equipped with an advanced Windows-based color management system known as ColorExpert.

Designed to meet the diverse needs for accurate color measurement and analysis. It connects seamlessly to the spectrophotometer via Bluetooth or USB cable, providing a versatile and user-friendly interface for managing color data.

ColorExpert comprises four functional modules: My Color, Color QC, Color Matching System, and Personal Center, each tailored to enhance the user experience and streamline workflows.

Whether you're creating custom color libraries, performing precise quality control, or matching colors with high accuracy, ColorExpert delivers powerful capabilities to ensure consistent and reliable results.



My Color: Users can collect or create their own color library from hundreds of other users' shared color libraries. This feature allows for extensive customization and organization of color data. Both the PC software and mobile app can share accounts, allowing color library data to synchronize between PC and mobile devices.



Color QC: Users can calibrate, measure, and configure the spectrophotometer using the PC software. They can utilize colors from the cloud database as specimens to measure color differences, view spectrograms, create color difference graphs, analyze specimen trial data, and export the desired data test reports.



Color Matching: Offering a more convenient and efficient color matching process, The system automates formula calculation after measuring the sample's color, ensuring accurate color matching by automatically adjusting the color. It is ideal for applications in paint, coating, printing, textile, and other industries.



My Color: Users can define, store, and manage their own color standards, ensuring consistent color quality across batches and products. This feature allows for quick reference and comparison, maintaining strict color standards in production processes and integrating with other modules for uniformity.



Personal Center: Users can edit personal information, search for or delete connected instruments, manage downstream users, and manage color libraries shared with downstream users.

TECHNICAL SPECIFICATIONS


SPECIFICATION	DETAILS
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	Ø11mm, Ø6mm, Ø3mm, 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°, 10°

SPECIFICATION	DETAILS
Integrating sphere diameter	40mm
Standards	ASTM E1164, ISO7724-1, DIN5033
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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