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Benchtop Spectrophotometer

Description: For applications requiring extremely high precision in color control, benchtop spectrophotometers offer significant advantages. Compared to portable spectrophotometers, benchtop models feature a more stable optical structure, enabling the detection of very subtle color differences (e.g., ÄE < 0.015). Additionally, inter-instrument variation (ÄE*ab) can be controlled within 0.15, making them ideal for demanding scenarios such as scientific research and quality inspection.

Key Features:

◆ Adopts the internationally recognized D/8 structure, compatible with SCI/SCE measurement, and supports simultaneous fast measurement of SCI+SCE.

◆ Equipped with a 7-inch standalone rotatable tablet (Android), offering fast response and convenient operation.

◆Dual-array CMOS image sensor with high sensitivity and a broad spectral response range, enabling high-precision and highly repeatable measurements.

◆Provides 40+ measurement indices and 41 light sources, including D65, A, C, D50, D55, D75, F1-F12, CWF, DLF, TL83, TL84, TPL5, U30B, U35, NBF, ID50, ID65, LED-B1-B5, LED-BH1, LED-RGB1, LED-V1/V2, LED-C2/C3/C5, and customizable sources (some via PC software), meeting specialized measurement needs under various conditions.

◆Utilizes composite full-spectrum LED light sources (360nm~780nm), including UV, 400nm cut-off, 420nm cut-off, and 460nm cut-off options.

◆Automatic aperture recognition: Supports Ö25.4mm, Ö15mm, Ö8mm, and Ö4mm measurement apertures, allowing flexible configuration of aperture and lens position to accommodate special measurement requirements.

◆ Multi-directional measurement capability: Side, upward, and downward (with accessories) measurement options; open transmission compartment (supports samples up to 54mm thick) for broader sample compatibility.

◆Built-in camera for framing and positioning: Real-time camera view ensures precise alignment of the measurement target, improving efficiency and accuracy.

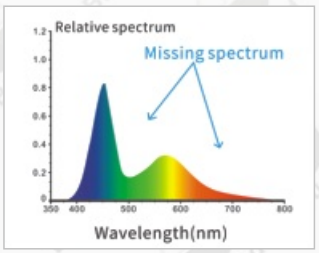
◆ Includes SQCX quality management software, suitable for quality control and color data management across industries. Digitizes color management, compares color differences, generates test reports, provides multiple color space data, and customizes color workflows.

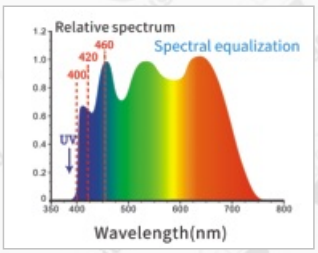
◆ Automatic temperature and humidity compensation ensures more accurate measurement results.





Easy to operate with big display Pad,
measurement is faster and more accurate







SQCX Color Quality Management Software

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Ordering Information → Technical Parameters ↓	BGD 554/1 Basic Benchtop Spectrophotometer	BGD 554/2 Premium Benchtop Spectrophotometer
Illumination Method	Reflection: D/8 （diffuse illumination, 8° receiving angle） Transmission: D/0 （diffuse illumination, 0° receiving angle） Supports SCI/SCE measurement, UV inclusion/exclusion measurement, and haze （ASTM D1003） Complies with CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO 7724/1, ASTM E1164, DIN 5033 Teil 7, JIS Z8722 Condition C	
Integrating Sphere Size	Φ154mm	
Light Source	360nm~780nm composite LED light source, including UV, 400nm cut-off, 420nm cut-off, and 460nm cut-off options	
Spectroscopic Method	Concave grating	
Sensor	256-pixel dual-array CMOS image sensor	
Measurement Wavelength Range	360nm~780nm	
Wavelength Interval	10nm	
Bandwidth （FWHM）	5nm	
Reflectance Measurement Range	0~200%	
Reflectance Resolution	0.01	
Measurement Apertures	Reflection: XLAV Φ25.4mm/Φ30mm, LAVΦ15mm/Φ18mm, MAVΦ8mm/Φ10mm, SAVΦ4mm/Φ6mm; Transmission: Φ25.4mm（no height/thickness restriction, max. thickness ≤54mm）; Note: 1-Automatic aperture switching & recognition 2-Users can configure aperture and lens position as needed	
Measurement Modes	Reflection （SCI/SCE）, Transmission （SCI/SCE）	
Color Spaces	CIE LAB、XYZ、Yxy、LCh、CIE LUV、Musell、s-RGB、HunterLab、βxy、DIN Lab99	
Color Difference Formulas	△E*ab、△E*uv、△E*94、△E*cmc（2:1）、△E*cmc（1:1）、 △E*00、 DIN△E99、△E（Hunter）, △E*CH, 555Hue Classification	
Other Chromatic Indices	Whiteness （WI）: ASTM E313, CIE/ISO, AATCC, Hunter, Taube, Berger Stensby; Yellowness （YI）: ASTM D1925, ASTM 313; ISO Brightness, R457, Metamerism Index （Mt）, Color Fastness, Staining Fastness, Strength, Opacity, APHA/Hazen/Pt-Co （Platinum-Cobalt Index）, Gardner Index, Haze Transmittance （ASTM D1003）, Saybolt Index, ASTM D1500 Color Scale, 8° Gloss, 555 Hue Classification, Blackness （My, dM）, Color Density （CMYK - A/T/E/M）, Tint, Spectral Density （some functions require PC software）	
Observer Angle	2° /10°	
Light Sources	D65, A, C, D50, D55, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, DLF, TI83, TI84, TPL5, U30, B, U35, NBF, Id50, Id65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2, LED-C2, LED-C3, LED-C5 and customizable sources （41 total, some via PC software）	
Display	Spectrum graph/data, sample chromaticity values, color difference/graph, chromaticity diagram, color simulation, pass/fail results, color deviation, color evaluation, haze, liquid chromaticity	
Measurement Time	Approx. 2.0s （approx.4s for simultaneous SCI/SCE measurement）	
Repeatability	Reflection Chromaticity （Φ25.4mm/SCI）: △E*ab ≤ 0.015 （avg. standard deviation of 30 white tile measurements at 5s intervals after warm-up & calibration） Spectral Reflectance/Transmittance: ≤0.1%	Reflection Chromaticity (Φ25.4mm/SCI): △E*ab ≤ 0.014 (avg. standard deviation of 30 white tile measurements at 5s intervals after warm-up & calibration) Spectral Reflectance/Transmittance: ≤ 0.1%
Inter-Instrument Agreement	Φ25.4mm/SCI: △E*ab ≤ 0.15 （avg. of BCRA Series II 12-color tile measurements）	Φ25.4mm/SCI: △E*ab ≤ 0.14 （avg. of BCRA Series II 12-color tile measurements）
Size	440mm×248mm×283mm（L×W×H）	
Weight	Approx. 13.5 kg	
Power Supply	24V DC, 3A adapter	
Light Source Lifetime	5 years（over 3 million measurements）	
Display	7" standalone rotatable tablet, 32GB storage	
Interface	USB, Bluetooth® 5.0, printer serial port	
Data Storage		
Languages	Simplified Chinese, Traditional Chinese, English（customizable: German, French, Spanish, Russian, Japanese, Thai, Korean, Polish, Portuguese）	
Standard Accessories	32GB, supports ~400,000 records (SCI/SCE counted as one record) Power adapter, user manual, quality management software （USB drive）, data cable, calibration tiles, black calibration box, transmission black baffle, sample holder, 25.4/15/8/4mm apertures, transmission fixture set, cuvette, 10.5" tablet	
Optional Accessories	Mini printer, inverted stand, Petri dish, micro-well （4mm）transmission fixture set, film holder	