



Benchtop Spectrophotometer CWD 8500S



URAI[®]

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The CWD 8500S spectrophotometer belongs to the new generation of instruments for measuring and controlling color. It is equipped with LED technology. It is able to perform reflectance and transmittance measurements on liquid, solid, opaque, translucent and transparent samples.

The compact and ergonomic instrument is equipped with a sample holder for transmittance. Optical geometry $d/8^\circ$, in reflectance with the specular mode included and excluded, and $d/0^\circ$ in transmittance.

The CWD 8500S spectrophotometer allows high precision and great reliability and is the ideal partner for the laboratory and for production. Thanks to its shape it is possible to use it in multiple positions such as lateral measurement, upward measurement and downward measurement (using the accessories).



MAIN FEATURES

Equipped with a 256-element dual array CMOS image sensor and stable, long-life LED illumination

Automatic identification of the measuring aperture, switchable between 4 available apertures

Built-in temperature and humidity sensor to monitor and compensate for more precise measurement

Wide wavelength range from 360nm-780nm with cut-off option at 400/420nm and including UV

Convenient measurement and large sample adaptation for use in multiple positions.

High-quality reflectance and transmittance measurements for quality control and color formulation

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TECHNICAL CHARACTERISTICS OF THE INSTRUMENT

Optical Geometry	Reflect: d / 8 ° (diffused illumination, 8 ° viewing angle); SCI & SCE / SPIN & SPEX; Include/excluded UV. Transmittance: d / 0 ° (diffused illumination, 0° viewing angle); SCI & SCE / SPIN & SPEX; Include/excluded UV
Light Source	360nm–780nm combined LED Light. Including UV, 400nm 420nm 460 nm cut-off light source
Specular Component	Reflect: SCI&SCE - Transmittance: SCI&SCE
Color space	CIE LAB,XYZ,Yxy,LCh,CIE LUV,Musell,s-RGB,HunterLab,βxy,DIN Lab99
Color Difference Formula	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00, \text{DIN}\Delta E99, \Delta E(\text{Hunter})$
Observer Angle	2°/10°
Colorimetric Index	WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), TI (ASTM E313, CIE/ISO), MI (Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity, 8° Glossiness, Gardner Index, Pt-Co Index, 555 Index,
Illuminant	D65,A,C,D50,D55,D75, F1,F2,F3,F4,F5,F6,F7,F8 ,F9,F10,F11,F12,CWF,DLF,TL83,TL84,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
Displayed Data	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset, Color assessment, haze, liquid chromaticity
Spectrophotometric Mode	Concave Grating
Wavelength Range	360~780nm
Wavelength Interval	10 nm
Semiband Width	5 nm
Measured Reflectance Range	0 a 200%
Integrating Sphere Size	Ø154 mm
Sensor	256 Image Element Double Array CMOS Image Sensor
Measuring Time	2.0s (Measure SCI & SCE meantime about 4s)
Measuring Aperture	Reflective: Φ30mm / Φ25.4mm, Φ18mm / Φ15mm, Φ10mm / Φ8mm Φ6mm / Φ4mm. Transmissive: Φ30mm / Φ25mm (No limit on sample height and width, but thickness≤54mm)
Repeatability	Reflectance chromaticity value:Φ25.4mm/SCI, Standard deviation within ΔE^*ab 0.015 (Under LED light source, when a white calibration plate is measured 30 times at 5 second intervals after white calibration);
Inter-instrument Error	Φ25.4mm/SCI, Within ΔE^*ab 0.15 (Average for 12 BCRA Series II color tiles)
Data Port	USB, Bluetooth
Data Storage	Share with PC storage
Power	AC 24V, 3A Power adapter power supply
Illuminant Life Span	5 years, more than 3 million times measurements
Storage Environment	-20~50°C, 0~85%RH (no condensing)
Operating Environment	0~40°C, 0~85%RH (no condensing)
Dimension	L*W*H=440x248x283mm
Weight	Approx. 13.5kg
Standard Accessory	Power Adapter, USB cable, Standard Calibration Board, Black Calibration Cavity, Transmission black baffle, Sample holder, 25.4 caliber, 15 caliber, 8 caliber, 4 caliber, Transmissive Test Component, cuvette
Optional Accessory	Micro Aperture(4mm) transmission test clamp component, Instrument inversion components, culture dish, Film fixture