

Portable Spectrophotometer CWD 4560 PLUS



URAI®

Portable Spectrophotometer CWD 4560 PLUS

The portable spectrophotometer model CWD 4560 PLUS belongs to the new generation of instruments for measuring color with LED technology. Instrument with 45°/0° geometry with a compact and ergonomic design equipped with a 3.5-inch TFT color touch screen display.

Special design with double aperture of 8 or 4 mm is suitable for the control of PPE and all HIGH VISIBILITY fabrics, it is used to measure the brightness factor and the chromatic coordinates of road clothing, technical fabric and reflective films.

It is used for the accurate analysis and transmission of laboratory color, also for the measurement of the color of the fluorescence sample.



MAIN FEATURES

**45°/0° geometry
compliant with CIE
No.15, GB/T 3978, GB
2893, GB/T 18833,
ISO7724/1, ASTM
E1164, DIN5033 Teil7**

**The instrument is
equipped with a
sophisticated 3.5-inch
TFT color LCD display
with capacitive Touch
Screen**

**Optional double
measurement 8mm /
4mm**

**Data communication
with the PC is via the
USB port and Bluetooth**

**The internal memory
allows you to store over
30,000 measurements**

**Suitable for checking
PPE and all HIGH
VISIBILITY fabrics**

Portable Spectrophotometer CWD 4560 PLUS

TECHNICAL CHARACTERISTICS OF THE INSTRUMENT

Optical Geometry	45°/0° (45 ring-shaped illumination, vertical viewing)
Light Source	Combined LED Light, UV Light
Color space	CIE Lab, XYZ, Yxy, LCh, CIE LUV, HunterLab
Color Difference Formula	ΔE^*_{ab} , ΔE^*_{uv} , ΔE^*_{94} , $\Delta E^*_{cmc}(2:1)$, $\Delta E^*_{cmc}(1:1)$, ΔE^*_{00} , DIN ΔE_{99} , ΔE (Hunter)
Observer Angle	2°/10°
Colorimetric Index	WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), MI (Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity, Supporting Colorimetric Polygon Tolerance
Illuminant	D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6, F7 (DLF), F8, F9, F10 (TPL5), F11 (TL84), F12 (TL83/U30)
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset
Spectrophotometric Mode	Concave Grating
Wavelength Range	400nm~700nm
Wavelength Interval	10 nm
Semiband Width	10 nm
Measured Reflectance Range	0~200%
Sensor	256 Image Element Double Array CMOS Image Sensor
Measuring Time	1.5 second
Measuring Aperture	MAV: $\Phi 8\text{mm}/\Phi 10\text{mm}$; SAV: $\Phi 4\text{mm}/\Phi 5\text{mm}$
Repeatability	MAV/SCI: $\Delta E^* \leq 0.08$ (da 400 nm a 700 nm)
	Chromaticity value: within ΔE^*_{ab} 0.03 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)
Inter-instrument Error	Within ΔE^*_{ab} 0.15 (Average for 12 BCRA Series II color tiles)
Data Port	USB, Bluetooth
Data Storage	Standard 1000 Pcs, Sample 30000 Pcs
Language	Chinese, English
Power	LI-Li-ion battery. 5000 measurements within 8 hours
Illuminant Life Span	5 years, more than 3 million times measurements
Display	3.5-inch TFT color LCD, Capacitive Touch Screen
Operating Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation)
Storage Environment	Temperature: -20~50°C; Humidity: 0~85% (No Condensation)
Dimension	184 × 77 × 105 mm
Weight	600 gr.
Standard Accessory	Power Adapter, USB Cable, User Manual, White and Black Calibration Board
Optional Accessory	Micro printer