Colo Science
Laboratory & Scientific Equipment

COLO.SCIENCE · TECHNICAL SPECIFICATION

PORTABLE 45/0 SPECTROPHOTOMETER

CS4510

Portable Spectrophotometer · 45/0 · LED · 400–700 nm · Ø8, Ø4 or Ø2 mm · 3.5" touch screen

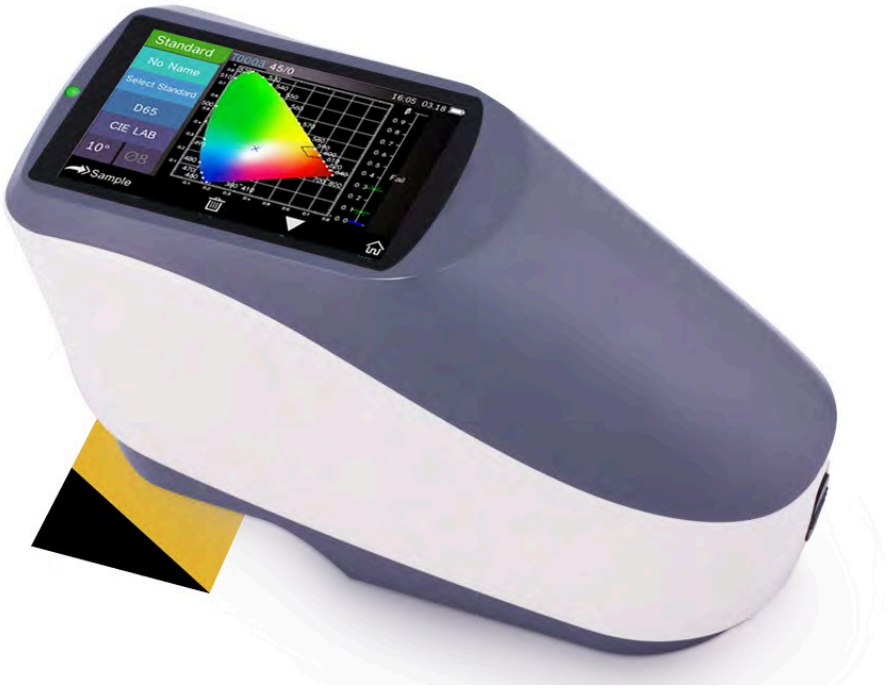
CS4510 Portable Spectrophotometer measures colour and colour difference the way the eye sees it — with 45° ring illumination and 0° viewing, the geometry for visual colour assessment of paints, inks, printed matter, plastics, textiles and coated surfaces. Concave grating and a 256-element dual-array CMOS sensor give stable spectral data in a 600 g instrument with a 3.5" touch screen. The entry model of the series: the same 45/0 optics with one aperture chosen for your samples and USB connection — for routine colour control.

45/0 · LED · 400–700 nm · Ø8, Ø4 or Ø2 mm · ΔE*ab ≤ 0.05 repeatability · 3.5" touch screen · USB

Document type: **Technical Specification Sheet**
Product: **CS4510 Portable Spectrophotometer**
Format: Print layout · A4 landscape

CS4510 product page · Spectroscopy & Color — overview · Spectroscopy & Color catalogue · Request quote

GEOMETRY	APERTURE
45/0 ring	Ø8, Ø4 or Ø2 mm
REPEATABILITY	**INTER-INSTRUMENT**
ΔE*ab ≤ 0.05	ΔE*ab ≤ 0.2



CS4510 · portable 45/0 spectrophotometer with touch screen

MODEL	ADDRESS / HQ	CONTACT
CS4510	Polje ob Sotli 4 SI-3255, Slovenia	sales@colo.si +386 70 713 437

CS4510 · product overview

Portable 45/0 colour measurement for laboratory, production and goods receipt

CORE TECHNOLOGY

45/0 geometry with ring illumination — matches visual assessment; the ring makes the result independent of the orientation of textured or striped samples.

Combined full-spectrum LED light source (without UV) — light source life 5 years.

Concave grating and 256-element dual-array CMOS sensor, 400–700 nm in 10 nm steps.

Aperture Ø8, Ø4 or Ø2 mm — selected with the order to match your samples.

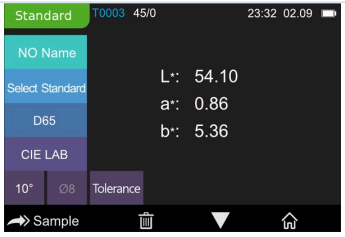
Fast measurement — approx. 1.5 s per reading, Li-ion battery for 5 000 measurements within 8 hours.

3.5" capacitive touch screen with colour values, ΔE, pass/fail and spectral curve.

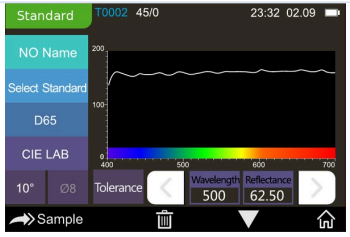
500 standards, 20 000 samples stored in the instrument; single or averaged measurement (2–99).

USB to the PC software for standards, tolerances, trends and reports.

PRODUCT HIGHLIGHTS



Results on the instrument
Colour values, ΔE and pass/fail against stored standards on the 3.5" touch screen.



Spectral curve
Reflectance curve 400–700 nm for standard and sample, for colour matching and analysis.



Compact body
Stands stably on flat samples; measuring port on the base.



PC software
Standards, tolerances, trends and reports on the PC; data transfer by USB.

APPLICATIONS


Paints & inks


Plastics


Leather & textiles


Automotive parts


Food


Laboratories & QC

LIGHT SOURCE	COLOUR SPACES	MEASURING TIME	WEIGHT
LED	CIE Lab, XYZ, LCh ...	≈ 1.5 s	≈ 600 g · Li-ion battery

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CS4510 · technical parameters

45/0 · LED · 400–700 nm · Ø8, Ø4 or Ø2 mm

TECHNICAL PARAMETERS

Optical geometry	45/0 (45° ring illumination, 0° vertical viewing)
Standards	CIE No.15, ISO 7724-1, ASTM E1164, DIN 5033 Teil 7
Light source	Combined full-spectrum LED light source (without UV)
Spectral separation	Concave grating
Sensor	CMOS image sensor, dual array, 256 elements
Wavelength range	400–700 nm
Wavelength pitch	10 nm
Half bandwidth	10 nm
Reflectance range	0–200 %
Measuring aperture	One, selected with the order: Ø8 mm, Ø4 mm or Ø2 mm
Colour spaces	CIE Lab, XYZ, Yxy, LCh, CIE LUV, Hunter Lab, βxy
Colour difference	ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc (2:1), ΔE*cmc (1:1), ΔE*00, ΔE (Hunter)
Colorimetric indices	WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM E313), metamerism index MI, staining fastness, colour fastness, colour strength, opacity

Observer	2° and 10°
Illuminants	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	Spectral curve and values, chromaticity values, colour difference values and graph, pass/fail, colour assessment
Measuring time	approx. 1.5 s
Repeatability	ΔE*ab ≤ 0.05; spectral reflectance s.d. ≤ 0.1 % (400–700 nm: 0.2 %) (white tile, 30 measurements at 5 s intervals after white calibration)
Inter-instrument agreement	ΔE*ab ≤ 0.2 (average of 12 BCRA Series II tiles)
Measurement mode	Single measurement, average of 2–99 measurements
Display	3.5" TFT colour LCD, capacitive touch screen
Interfaces	USB
Data storage	500 standards, 20 000 samples
Power supply	Li-ion battery, 5 000 measurements within 8 hours
Light source life	5 years, > 3 million measurements
Dimensions (L × W × H)	184 × 77 × 105 mm
Weight	approx. 600 g
Environment	Operation 0–40 °C, 0–85 % RH (non-condensing), altitude < 2000 m; storage −20–50 °C

CS4510 · accessories and series

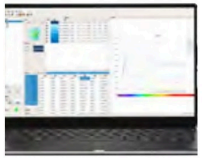
Standard delivery, optional components and the CS45 series at a glance

ACCESSORIES



White and black calibration standard

STANDARD



PC software

STANDARD



Powder test box

OPTIONAL



Micro printer

OPTIONAL

Standard delivery

Instrument	CS4510 portable spectrophotometer
Aperture	One aperture, Ø8 mm, Ø4 mm or Ø2 mm (selected with the order)
Calibration	White and black calibration standard
Care	Dust cover
Operation	Power adapter, built-in Li-ion battery, USB cable, user guide
Software	PC software (download)

Optional

Micro printer	Prints results directly from the instrument
Powder test box	For powders, granules and pastes
Universal test component	For samples that need a fixed measuring position
Locating plate	For repeatable positioning on the sample

CS45 series — which model?

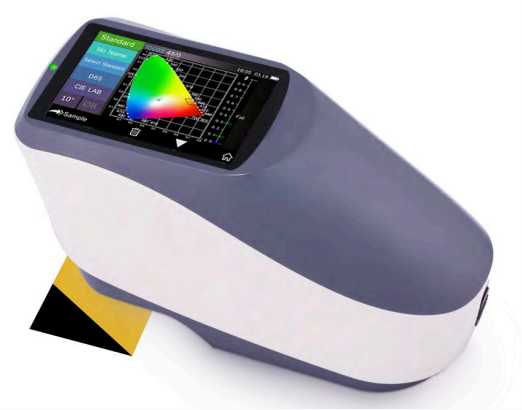
Model	CS4580	CS4560	CS4510
Light source	LED + UV	LED + UV	**LED**
Apertures	Ø20 mm	Ø8 + Ø4 mm	**Ø8, Ø4 or Ø2 mm**
Traffic signs	yes	yes	**—**
Repeatability ΔE*ab	0.04	0.03	**0.05**
Inter-instrument ΔE*ab	0.2	0.15	**0.2**
Standards / samples	1 000 / 30 000	1 000 / 30 000	**500 / 20 000**
Connection	USB + Bluetooth	USB + Bluetooth	**USB**

All models: 45/0 ring illumination, concave grating, 400–700 nm, 3.5" touch screen, approx. 1.5 s, 184 × 77 × 105 mm, approx. 600 g.

CS4510 · configuration and support

Ordering information, configuration checklist and contact

SOFTWARE, CONFIGURATION AND SUPPORT



CS4510 · portable 45/0 measurement on panels, prints and plastics

Ordering information

Model	CS4510 Portable Spectrophotometer
Measurement	45/0, combined full-spectrum LED light source (without UV)
Aperture	One, selected with the order: Ø8 mm, Ø4 mm or Ø2 mm
Connection	USB

Configuration checklist

Samples: size of the smallest area to measure, surface (flat, textured, striped, reflective film), powders or granules.

Colour data: colour space, ΔE formula, illuminant and observer you report.

Use: laboratory, production line, goods receipt or field; stand-alone or with PC software.

Existing data: reference standards or values to be transferred.

MANUFACTURER AND SUPPORT

COLO Lab Experts
Polje ob Sotli 4, SI-3255, Slovenia

Selection guidance: send your sample type and the colour values you report — we confirm the model, accessories and delivery time with the quotation.

QUICK CONTACT

colo.si
sales@colo.si
+386 70 713 437

COLO.SCIENCE · COLOUR MEASUREMENT SUPPORT

45/0 or d/8 — not sure which fits your samples?

Send your sample type, the smallest area to measure and the colour data you report — we propose the model and confirm it with the quotation.

Request quotation | sales@colo.si | +386 70 713 437

Specifications are subject to change without notice. Values refer to standard laboratory conditions.