Colo Science
Laboratory & Scientific Equipment

COLO.SCIENCE · TECHNICAL SPECIFICATION

BENCHTOP GRATING SPECTROPHOTOMETER

CS8520

Benchtop Spectrophotometer · Reflectance d/8 · Transmittance d/0 · LED with UV · 360–780 nm · 10.5" tablet

CS8520 Benchtop Spectrophotometer measures reflectance and transmittance colour and haze of plastics, coatings, textiles, films, liquids and powders. It combines an LED light source with UV and 400/420/460 nm cut-off, a 154 mm integrating sphere and simultaneous SCI/SCE measurement with a 10.5" rotatable tablet and a built-in positioning camera. LED model with tightened tolerances: repeatability ΔE*ab 0.014 and inter-instrument agreement ΔE*ab 0.14.

d/8 reflectance · d/0 transmittance · LED + UV · 360–780 nm · SCI + SCE · ΔE*ab ≤ 0.14 inter-instrument · Haze ASTM D1003 · 10.5" tablet · USB + Bluetooth

Document type: **Technical Specification Sheet**
Product: **CS8520 Benchtop Spectrophotometer**
Format: Print layout · A4 landscape

CS8520 product page · Spectroscopy & Color — overview · Spectroscopy & Color catalogue

Request quote



CS8520 · benchtop spectrophotometer with 10.5" tablet

REFLECTANCE	TRANSMITTANCE
d/8 · SCI + SCE · Ø25.4 to Ø4 mm	d/0 · SCI + SCE · haze ASTM D1003
REPEATABILITY	**INTER-INSTRUMENT**
ΔE*ab ≤ 0.014	ΔE*ab ≤ 0.14

MODEL
CS8520

ADDRESS / HQ
Polje ob Sotli 4
SI-3255, Slovenia

CONTACT
sales@colo.si
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CS8520 · product overview

Benchtop reflectance and transmittance colour with tablet operation

CORE TECHNOLOGY

LED light source with UV with 400/420/460 nm UV cut-off — UV included or excluded, for fluorescent and optically brightened samples.

Concave grating and 256-element double-array CMOS sensor — full spectrum 360–780 nm in 10 nm steps, 5 nm half bandwidth.

Four reflectance aperture pairs from Ø25.4/30 mm down to Ø4/6 mm, recognised automatically; custom apertures on request.

Open transmittance compartment — Ø25.4 mm, samples up to 54 mm thick, no limit on height and width.

10.5" independent rotatable tablet for measurement, standards, tolerances and reports; USB and Bluetooth.

Built-in camera shows the measured spot, so small parts and patterned samples are positioned exactly.

More than 40 indices and 41 illuminants, including haze (ASTM D1003), APHA/Hazen/Pt-Co, Gardner and Saybolt.

PC software for colour difference, trend control, reports and data export.

PRODUCT HIGHLIGHTS



Reflectance port
d/8 port with sample holder for plaques, panels, textiles and paper; SCI and SCE in one measurement.



10.5" rotatable tablet
Independent tablet for measurement, standards and tolerances; results also on the PC software.



Liquids, powders, pastes
Cuvettes, culture dish and sample holders cover liquid, powder and solid samples.

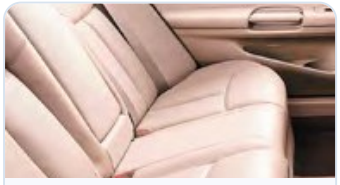


Measuring apertures
Ø25.4, 15, 8 and 4 mm in standard delivery, recognised automatically by the instrument.

APPLICATIONS



Automotive



Leather & textiles



Plastics & masterbatch



Paints, inks & pigments



Food



Laboratories & R&D

GEOMETRY	LIGHT SOURCE	REPEATABILITY	INTER-INSTRUMENT
d/8 reflectance · d/0 transmittance	LED · UV cut-off 400/420/460 nm	ΔE*ab ≤ 0.014 (Ø25.4 mm, SCI)	ΔE*ab ≤ 0.14

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CS8520 · technical parameters

LED · UV cut-off 400/420/460 nm · d/8 and d/0 · 360–780 nm · SCI/SCE

TECHNICAL PARAMETERS

Optical geometry	Reflectance: d/8 (diffuse illumination, 8° viewing), SCI and SCE simultaneously Transmittance: d/0 (diffuse illumination, 0° viewing), SCI and SCE UV included / UV excluded; haze (ASTM D1003)
Standards	CIE No.15, ISO 7724/1, ASTM E1164, DIN 5033 Teil 7, JIS Z8722 condition C
Integrating sphere	Ø 154 mm
Light source	Combined LED light source with UV and 400 nm / 420 nm / 460 nm cut-off, 360–780 nm
Spectral separation	Concave grating
Sensor	Double-array CMOS image sensor, 256 elements
Wavelength range	360–780 nm
Wavelength pitch	10 nm
Half bandwidth	5 nm
Reflectance range	0–200 %, resolution 0.01 %
Measuring apertures	Reflectance: Ø25.4/30 mm, Ø15/18 mm, Ø8/10 mm, Ø4/6 mm Transmittance: Ø25.4 mm, sample thickness up to 54 mm, no limit on height and width Automatic aperture recognition; custom apertures on request
Specular component	Reflectance: SCI & SCE · Transmittance: SCI & SCE
Colour spaces	CIE Lab, XYZ, Yxy, LCh, CIE LUV, Munsell, s-RGB, Hunter Lab, βxy, DIN Lab99
Colour difference	ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc (2:1), ΔE*cmc (1:1), ΔE*00, DIN ΔE99, ΔE (Hunter), ΔE*CH, 555 shade sorting

Colorimetric indices	WI (ASTM E313, CIE/ISO, AATCC, Hunter, Taube, Berger, Stensby), YI (ASTM D1925, ASTM E313), ISO brightness R457, metamerism index MI, staining and colour fastness, colour strength, opacity, APHA/Hazen/Pt-Co, Gardner, haze (ASTM D1003), Saybolt, colour code ASTM D1500, 8° gloss, 555 index, density CMYK (partly in PC software)
Observer	2° and 10°
Illuminants	41 in total: D65, A, C, D50, D55, D75, F1–F12, CWF, DLF, TL83, TL84, TPL5, U30, U35, NBF, ID50, ID65, LED series and user-defined (partly in PC software)
Displayed data	Spectrum and values, chromaticity values, colour difference values and graph, pass/fail, colour offset, colour assessment, haze, liquid chromaticity
Measuring time	approx. 2.0 s (SCI + SCE approx. 4 s)
Repeatability	Ø25.4 mm/SCI: ΔE*ab ≤ 0.014 spectral reflectance/transmittance SD ≤ 0.1 % (white tile, 30 measurements at 5 s intervals)
Inter-instrument agreement	Ø25.4 mm/SCI: ΔE*ab ≤ 0.14
Display	10.5" independent rotatable tablet
Interfaces	USB, Bluetooth
Data storage	more than 50 000 records
Positioning	Built-in camera for sample positioning
Light source life	5 years, > 3 million measurements
Power supply	24 V, 3 A power adapter
Dimensions (L × W × H)	440 × 248 × 283 mm
Weight	approx. 13.5 kg

CS8520 · accessories and sample handling

Standard delivery and optional components

ACCESSORIES



Reflectance sample holder

STANDARD



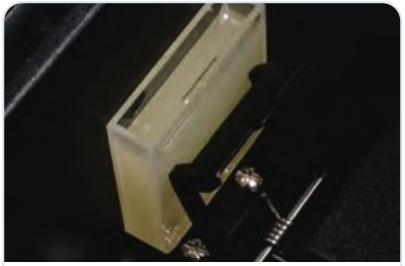
Apertures Ø25.4 / 15 / 8 / 4 mm

STANDARD



10.5" tablet

STANDARD



Transmittance test component, cuvette

STANDARD



Culture dish, film fixture

OPTIONAL

Standard delivery

Instrument	CS8520 benchtop spectrophotometer
Calibration	White calibration board, black calibration cavity
Apertures	Ø25.4 mm, Ø15 mm, Ø8 mm, Ø4 mm
Transmittance	Transmittance test component, cuvette, transmission black baffle
Sample handling	Sample holder
Operation	10.5" tablet, PC software, USB cable, power adapter
Documents	User guide

Optional

Micro-aperture clamp	Ø4 mm transmittance test clamp for small samples
Inversion component	For measuring with the port facing up or down
Culture dish	For powders, granules and pastes
Film fixture	Holds films flat in transmittance
Custom apertures	On request

Cuvette size and sample holders are selected according to the sample; COLO confirms the set with the quotation.

REFLECTANCE APERTURES
Ø25.4/30 · Ø15/18 · Ø8/10 · Ø4/6 mm

TRANSMITTANCE
Ø25.4 mm · samples up to 54 mm

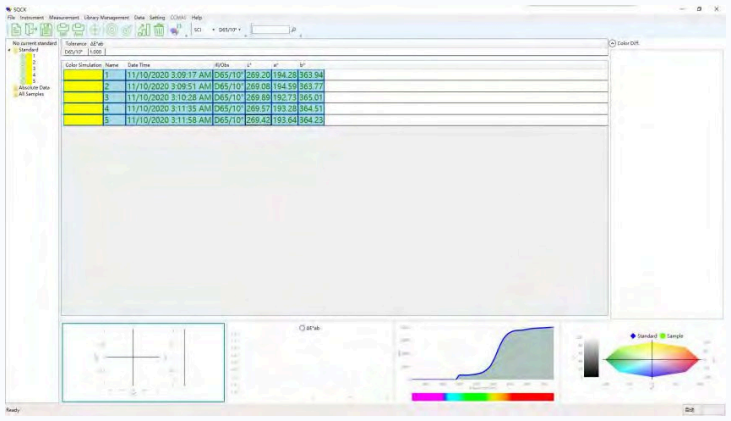
SAMPLE TYPES
Solids · films · liquids · powders

MEASURING TIME
≈ 2.0 s · SCI + SCE ≈ 4 s

CS8520 · configuration and support

Ordering information, configuration checklist and contact

SOFTWARE, CONFIGURATION AND SUPPORT



PC software · colour difference, spectrum and colour plot

Ordering information

Model	CS8520 Benchtop Spectrophotometer
Light source	Combined LED light source with UV and 400 nm / 420 nm / 460 nm cut-off, 360–780 nm
Measurement	Reflectance d/8; transmittance d/0 and haze (transmittance test component included)
Operation	10.5" tablet, PC software, USB and Bluetooth

Configuration checklist

Samples: opaque solids, films, liquids or powders — defines apertures and holders.

Measurement: reflectance, transmittance, haze or all three.

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

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 configuration, accessories and delivery time with the quotation.

QUICK CONTACT

colo.si

sales@colo.si

+386 70 713 437

COLO.SCIENCE · COLOUR MEASUREMENT SUPPORT

Need help choosing the light source, apertures or the right colour data?

Send your sample type (solid, film, liquid or powder), the colour space and ΔE formula you report and any reference values — we propose the configuration 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.