Colo Science
Laboratory & Scientific Equipment

COLO.SCIENCE · TECHNICAL SPECIFICATION

PORTABLE D/8 SPECTROPHOTOMETER · PHOTODIODE ARRAY · UV

CP2222

Portable Spectrophotometer · d/8 · SCI/SCE · LED + UV · 400–700 nm · five apertures · 3.5" touch screen

CP2222 Portable Spectrophotometer measures colour and colour difference with d/8 geometry — diffuse illumination in a Ø40 mm integrating sphere and 8° viewing, with SCI and SCE in one measurement. A balanced full-spectrum LED and a UV source, plane-grating optics and a double-row silicon photodiode array give the reflectance curve 400–700 nm in 10 nm steps. Repeatability ΔE*ab 0.018 and inter-instrument agreement ΔE*ab 0.18 make it suitable for colour matching and for exchanging colour data between instruments, sites and suppliers.

d/8 · SCI + SCE | LED + UV | Grating + photodiode array | 400–700 nm / 10 nm | Five apertures | ΔE*ab 0.018 repeatability | 3.5" touch screen | USB + Bluetooth | Camera positioning

Document type: **Technical Specification Sheet**
Product: **CP2222 Portable Spectrophotometer**
Format: Print layout · A4 landscape

CP2222 product page | Spectroscopy & Color — overview | Spectroscopy & Color catalogue

Request quote

GEOMETRY	APERTURES
d/8 · SCI + SCE	five, Ø8 to 1×3 mm
REPEATABILITY	**INTER-INSTRUMENT**
ΔE*ab 0.018	ΔE*ab 0.18



CP2222 · portable d/8 spectrophotometer on its calibration base

MODEL
CP2222

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Polje ob Sotli 4
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CP2222 · product overview

Portable d/8 spectrophotometer with laboratory-grade repeatability for colour matching and colour transfer

CORE TECHNOLOGY

d/8 geometry with SCI and SCE — colour with and without the gloss component from one measurement, in a Ø40 mm integrating sphere.

Plane grating and a double-row silicon photodiode array (22 groups) — reflectance 400–700 nm in 10 nm steps; the large-area array handles bright and dark samples.

Balanced full-spectrum LED and UV source — no spectral gaps of a white LED; samples with optical brighteners are measured with UV included or excluded.

Dual optical path — a reference channel follows the light source, so data stay stable when the environment changes.

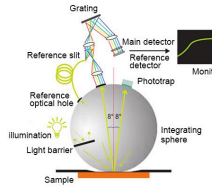
Repeatability ΔE*ab 0.018, inter-instrument agreement ΔE*ab 0.18 — several instruments give the same data for colour matching and colour transfer.

Five apertures — Five interchangeable: Ø8 mm / Ø10 mm flat and tip, Ø4 mm / Ø5 mm flat and tip, 1 × 3 mm (measuring / illumination).

Standard and sample modes with tolerances: ΔE, pass/fail and the direction of the colour offset; 3.5" capacitive touch screen.

500 standards, 20 000 samples (one record holds SCI and SCE); camera positioning, USB and Bluetooth 5.0 to the PC software and mobile app.

PRODUCT HIGHLIGHTS



Grating optics, dual path

Plane grating and photodiode array; a reference channel follows the light source and compensates drift in every measurement.



Five measuring apertures

Ø8 and Ø4 mm, flat or with tip for curved and recessed surfaces, plus 1 × 3 mm for narrow parts.



Camera positioning

The measured spot is shown on the screen — small and patterned samples are hit exactly.



PC software and app

Standards, tolerances, trends and reports on the PC; mobile app over Bluetooth.

APPLICATIONS



Paints & coatings



Plastics & electronics



Textiles & printing



Automotive parts



Food & cosmetics



Laboratories & QC

OBSERVERS	ILLUMINANTS	MEASURING TIME	BATTERY
2° and 10°	40 + user-defined	≈ 1 s	8 500 measurements in 8 h

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CP2222 · technical parameters

d/8 · SCI/SCE · 400–700 nm / 10 nm · five apertures · 2°/10° observer

TECHNICAL PARAMETERS

Optical geometry	d/8 (diffuse illumination, 8° viewing); SCI and SCE, UV included or excluded
Standards	CIE No.15, ISO 7724-1, ASTM E1164, DIN 5033 Part 7
Integrating sphere	Ø40 mm
Light source	Balanced full-spectrum LED and UV light source
Spectral separation	Plane grating
Sensor	Large-area silicon photodiode array, double row (22 groups); dual optical path with reference channel
Wavelength range	400–700 nm, 10 nm interval (31 reflectance values)
Reflectance range	0–200 %, resolution 0.01 %
Measuring aperture	Five interchangeable: Ø8 mm / Ø10 mm flat and tip, Ø4 mm / Ø5 mm flat and tip, 1 × 3 mm (measuring / illumination)
Colour spaces	CIE Lab, LCh, Hunter Lab, CIE LUV, XYZ, Yxy, RGB, Munsell
Colour difference	ΔE*ab, ΔE*cmc, ΔE*94, ΔE*00
Colorimetric indices	Spectral reflectance, whiteness (ASTM E313-00, ASTM E313-73, CIE/ISO, AATCC, Hunter, Taube, Berger, Stensby), yellowness (ASTM D1925, ASTM E313-00, ASTM E313-73), blackness (My, dM), tint (ASTM E313-00), staining and colour-change fastness, colour density CMYK (status A, T, E, M), metamerism index, opacity, colour strength
Observer	2° and 10°
Illuminants	A, B, C, D50, D55, D65, D75, F1–F12, CWF, U30, U35, DLF, NBF, TL83, TL84, ID50, ID65, LED-B1–B6, LED-BH1, LED-RGB1, LED-V1–V3, user-defined

Displayed data	Spectral curve and values, colorimetric values, colour difference values and graph, pass/fail, colour simulation, colour offset
Measuring time	approx. 1 s
Measurement mode	Single or average (2–99 measurements)
Repeatability	Within ΔE*ab 0.018 (white tile, 30 measurements at 5 s intervals after white calibration)
Inter-instrument agreement	Within ΔE*ab 0.18 (average of 12 BCRA Series II tiles)
Display resolution	0.01
Positioning	Camera positioning, stabiliser, visual
White calibration	Automatic white calibration on the calibration base (white tile reflectance ≥ 95 %)
Display	3.5" TFT colour LCD, capacitive touch screen
Interface	USB, Bluetooth 5.0
Data storage	500 standards, 20 000 samples (one record holds SCI and SCE); larger databases in the PC software or app
Software	PC software (Windows) and mobile app (Android, iOS, HarmonyOS)
Instrument languages	English, Russian, Chinese
Power supply	Li-ion battery, 8 500 measurements within 8 hours
Light source life	10 years, more than 1.5 million measurements
Dimensions (L × W × H)	114 × 70 × 208 mm
Weight	approx. 435 g (without calibration base)
Environment	Operation 0–40 °C, 0–85 % RH (non-condensing), altitude below 2 000 m; storage −20–50 °C

CP2222 · accessories and comparison

Standard delivery, optional components and comparison with CP2080

ACCESSORIES



Calibration base with white and black standard

STANDARD



Powder test box

OPTIONAL



Micro printer

OPTIONAL

Standard delivery

Instrument	CP2222 portable spectrophotometer with five interchangeable measuring apertures
Calibration	Calibration base with white and black standard (automatic white calibration)
Power	Built-in Li-ion battery, power adapter
Software and cable	PC colour management software (download), USB cable
Care	Protective cover, wrist strap
Documents	User guide

Optional

Powder test box	Repeatable surface for powders and granules
Micro printer	Prints results at the instrument

CP2080 or CP2222 — which model?

Model	CP2080	CP2222
Optics	Spectral sensor	**Grating + photodiode array**
Wavelength interval	—	**10 nm**
Apertures	Ø8 + Ø4 mm (flat and tip), 1×3 mm	**Ø8 + Ø4 mm (flat and tip), 1×3 mm**
Repeatability ΔE*ab	0.02	**0.018**
Inter-instrument ΔE*ab	0.2	**0.18**
Display	2.8"	**3.5"**
Standards / samples	500 / 10 000	**500 / 20 000**
Battery	8 000 measurements	**8 500 measurements**

Both: d/8 with SCI and SCE, Ø40 mm sphere, LED + UV, 400–700 nm, 0–200 %, camera positioning, USB and Bluetooth. CP2222 for colour matching and data exchange between instruments; CP2080 for routine quality control.

CP2222 · configuration and support

Ordering information, configuration checklist and contact

MEASUREMENT WORKFLOW, CONFIGURATION AND SUPPORT



CP2222 · measurement on a colour chart with spectral curve on the screen

Ordering information

Model	CP2222 Portable Spectrophotometer
Geometry	d/8, SCI and SCE, UV included or excluded
Apertures	Five interchangeable: Ø8 mm / Ø10 mm flat and tip, Ø4 mm / Ø5 mm flat and tip, 1 × 3 mm (measuring / illumination)
Option for powders	Powder test box

Configuration checklist

Samples: size of the smallest area, surface (glossy, matt, textured, curved), optical brighteners, powders.

Colour data: colour space, ΔE formula, illuminant and observer you report; SCI, SCE or both.

Data exchange: how many instruments, sites or suppliers must give the same values; PC software or mobile app.

SUPPLIER 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

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COLO.SCIENCE · COLOUR MEASUREMENT SUPPORT

Which aperture and accuracy fit 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.