Colo Science
Laboratory & Scientific Equipment

COLO.SCIENCE · TECHNICAL SPECIFICATION

PORTABLE D/8 SPECTROCOLORIMETER · SCI/SCE · UV

# CP2080

## Portable Spectrocolorimeter · d/8 · SCI/SCE · LED + UV · 400–700 nm · Ø8 + Ø4 + 1×3 mm · 2.8" touch screen

**CP2080 Portable Spectrocolorimeter** 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 CMOS dual-path spectral sensor and a full-spectrum LED source give the reflectance curve 400–700 nm, the usual colour spaces and ΔE formulas in a hand-held instrument. The top model of the series: the best repeatability and inter-instrument agreement, the full set of apertures down to 1 × 3 mm, UV, camera positioning and Bluetooth.

d/8 · SCI + SCE | LED + UV | 400–700 nm | Ø8 + Ø4 + 1×3 mm | 2° / 10° observer | ΔE*ab 0.02 repeatability | 2.8" touch screen | USB + Bluetooth | Camera positioning

Document type: **Technical Specification Sheet**
Product: **CP2080 Portable Spectrocolorimeter**
Format: Print layout · A4 landscape

CP2080 product page | Spectroscopy & Color — overview | Spectroscopy & Color catalogue

Request quote

| GEOMETRY | APERTURE |
|---|---|
| d/8 · SCI + SCE | Ø8 + Ø4 + 1×3 mm |
| **REPEATABILITY** | **INTER-INSTRUMENT** |
| ΔE*ab 0.02 | ΔE*ab 0.2 |



CP2080 · portable d/8 spectrocolorimeter with touch screen


MODEL
CP2080

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# CP2080 · product overview

Portable d/8 colour measurement with SCI and SCE for production and quality control

## 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.

**Full reflectance spectrum 400–700 nm**, measured by a CMOS dual-path spectral sensor — a reference channel monitors the combined full-spectrum LED source and compensates its drift; a UV light source serves samples with optical brighteners.

**Two observers (2° and 10°) and 22 illuminants**, part of them in the PC software or app.

**Measuring aperture Ø8 + Ø4 + 1×3 mm** — MAV Ø8 mm / Ø10 mm and SAV Ø4 mm / Ø5 mm (flat and tip), plus 1 × 3 mm.

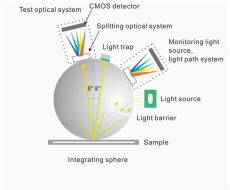
**Standard and sample modes** with tolerances: measure the master once, then every sample shows ΔE, pass/fail and the direction of the colour offset.

**2.8" capacitive touch screen**; single or average measurement (2–99 readings) for uneven samples.

**500 standards, 10 000 samples (one record holds SCI and SCE)** stored in the instrument; larger databases in the PC software.

**Camera positioning and Bluetooth** — the measured spot is seen on the screen; data go to the PC software or the mobile app.

## PRODUCT HIGHLIGHTS




### d/8 optics with reference channel

Integrating sphere with a measuring channel and a second channel that monitors the light source — drift is compensated in every measurement.




### Touch-screen operation

2.8" capacitive screen: illuminants, colour spaces, standards and tolerances selected on the instrument.



### Measurement on the sample

Placed on the sample with the Ø8 + Ø4 + 1×3 mm aperture; result and pass/fail in about one second.



### PC software

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

## APPLICATIONS



Paints & inks



Plastics & electronics



Textiles & printing



Automotive parts



Food



Ceramics & QC

| OBSERVERS | COLOUR SPACES | MEASURING TIME | BATTERY |
|---|---|---|---|
| 2° and 10° | CIE Lab, LCh, Hunter Lab ... | ≈ 1 s | 8 000 measurements in 8 h |

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# CP2080 · technical parameters

d/8 · SCI/SCE · 400–700 nm · Ø8 + Ø4 + 1×3 mm · 2°/10° observer

## TECHNICAL PARAMETERS

| | |
|---|---|
| **Optical geometry** | d/8 (diffuse illumination, 8° viewing), SCI and SCE |
| **Standards** | CIE No.15, ISO 7724-1, ASTM E1164, DIN 5033 Part 7 |
| **Integrating sphere** | Ø40 mm |
| **Light source** | Combined full-spectrum LED and UV light source |
| **Sensor** | CMOS dual-path spectral sensor |
| **Wavelength range** | 400–700 nm |
| **Reflectance range** | 0–200 % |
| **Measuring aperture** | MAV Ø8 mm / Ø10 mm and SAV Ø4 mm / Ø5 mm (flat and tip), plus 1 × 3 mm |
| **Colour spaces** | CIE Lab, XYZ, Yxy, LCh, CIE LUV, 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) |
| **Colorimetric indices** | Spectral reflectance, WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM E313), metamerism index, staining and colour fastness, colour strength, opacity, Munsell (C/2)* |
| **Observer** | 2° and 10° |
| **Illuminants** | D65, A, C, D50, D55, D75, F1–F12 (incl. CWF, DLF, TPL5, TL84, TL83/U30), U35, NBF, ID50, ID65* |

| | |
|---|---|
| **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** | Colorimetric: within ΔE*ab 0.02 (MAV/SCI, white tile, 30 measurements at 5 s intervals)<br>Spectral reflectance: s.d. within 0.08 % (400–700 nm: 0.18 %) |
| **Inter-instrument agreement** | Within ΔE*ab 0.2 (MAV/SCI, average of 12 BCRA Series II tiles) |
| **Positioning** | Camera positioning and stabiliser |
| **White calibration** | Non-contact automatic white calibration |
| **Display** | 2.8" TFT colour LCD, capacitive touch screen |
| **Interface** | USB, Bluetooth |
| **Data storage** | 500 standards, 10 000 samples (one record holds SCI and SCE) |
| **Software** | PC software (Windows) and mobile app (Android, iOS) |
| **Power supply** | Li-ion battery 3.7 V, 8 000 measurements within 8 hours |
| **Light source life** | More than 1.2 million measurements in 10 years |
| **Dimensions (L × W × H)** | 94 × 68 × 188 mm |
| **Weight** | approx. 410 g |
| **Environment** | Operation 0–40 °C, below 85 % RH (non-condensing); storage −20–50 °C |

* Part of the indices and illuminants is available in the PC software or the mobile app.

# CP2080 · accessories and series

Standard delivery, optional components and the CP2010 / CP2050 / CP2080 models at a glance

## ACCESSORIES



**Calibration base with white and black standard**

STANDARD



**Powder test box**

OPTIONAL



**Micro printer**

OPTIONAL

### Standard delivery

| | |
|---|---|
| **Instrument** | CP2080 portable spectrocolorimeter with measuring apertures |
| **Calibration** | White and black calibration box |
| **Power** | Built-in Li-ion battery, power adapter |
| **Software and cable** | PC colour management software (download), data 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 |

### CP2010, CP2050 or CP2080 — which model?

| Model | CP2010 | CP2050 | CP2080 |
|---|---|---|---|
| **Light source** | LED | LED + UV | **LED + UV** |
| **Apertures** | Ø8 mm | Ø8 + Ø4 mm | **Ø8 + Ø4 mm (flat and tip), 1×3 mm** |
| **Repeatability ΔE*ab** | 0.04 | 0.03 | **0.02** |
| **Inter-instrument ΔE*ab** | 0.4 | 0.3 | **0.2** |
| **Camera positioning** | — | yes | **yes** |
| **Interface** | USB | USB, Bluetooth | **USB, Bluetooth** |
| **Standards / samples** | 500 / 5 000 | 500 / 10 000 | **500 / 10 000** |

All models: d/8 with SCI and SCE, Ø40 mm sphere, 400–700 nm, 0–200 %, 2.8" touch screen, 94 × 68 × 188 mm, approx. 410 g.

# CP2080 · configuration and support

Ordering information, configuration checklist and contact

## MEASUREMENT WORKFLOW, CONFIGURATION AND SUPPORT



CP2080 · portable d/8 measurement on plastics, paints, textiles and printed matter

### Ordering information

| | |
|---|---|
| **Model** | CP2080 Portable Spectrocolorimeter |
| **Geometry** | d/8, SCI and SCE |
| **Aperture** | MAV Ø8 mm / Ø10 mm and SAV Ø4 mm / Ø5 mm (flat and tip), plus 1 × 3 mm |
| **Option for powders** | Powder test box |

### Configuration checklist

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

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

**Use:** laboratory, production line or goods receipt; stand-alone, with 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 light source 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.