Colo Science
Laboratory & Scientific Equipment

COLO.SCIENCE · TECHNICAL SPECIFICATION

45/0 NON-CONTACT BENCHTOP SPECTROPHOTOMETER · MANUAL HEIGHT ADJUSTMENT

CN4520

Non-contact Benchtop Spectrophotometer · 45/0 · non-contact at 7.5 mm · LED · 400–700 nm · Ø20 mm · samples up to 150 mm · 7" touch screen

CN4520 Non-contact Benchtop Spectrophotometer measures colour without touching the sample: the measuring head on a stand works at 7.5 mm above the surface with 45/0 geometry — 45° ring-shaped illumination and 0° viewing, the geometry that matches visual assessment. Liquids in open containers, pastes, sauces, powders and wet or sensitive surfaces are measured as they are, without a cuvette and without contact with the measuring port. The measuring head moves up and down on the stand for samples up to 150 mm high — manually, with the measuring height stored for repeated series.

45/0 · non-contact | 7.5 mm sample distance | LED | Concave grating + CMOS array | 400–700 nm / 10 nm | Ø20 mm aperture | Height adjustment: manual | Samples up to 150 mm | 7" touch screen | USB

Document type: **Technical Specification Sheet**
Product: **CN4520 Non-contact Benchtop Spectrophotometer**
Format: Print layout · A4 landscape

CN4520 product page | Spectroscopy & Color — overview | Spectroscopy & Color catalogue | Request quote

GEOMETRY	HEIGHT
45/0 · non-contact	samples up to 150 mm
REPEATABILITY	**INTER-INSTRUMENT**
ΔE*ab 0.05	ΔE*ab 0.25



CN4520 · non-contact 45/0 measuring head on a height-adjustable stand

MODEL
CN4520

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CONTACT
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CN4520 · product overview

Non-contact 45/0 colour measurement on the lab bench — liquids, pastes, powders and sensitive surfaces up to 150 mm high

CORE TECHNOLOGY

Non-contact 45/0 measurement — 45° ring-shaped illumination and 0° viewing at 7.5 mm from the sample; no cuvette, no contamination of the measuring port.

Concave grating and a 256-pixel dual-array CMOS image sensor — reflectance 400–700 nm with 10 nm output.

Full-spectrum LED light source — no spectral gaps of a white LED in the visible range.

Camera positioning — the measured spot is shown on the screen before the measurement.

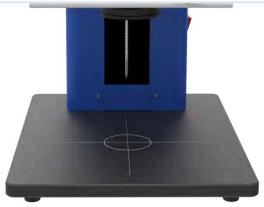
Repeatability ΔE*ab 0.05, inter-instrument agreement ΔE*ab 0.25 — stable data for laboratory and production samples.

Height adjustment: manual; the measuring height can be stored — repeated series are measured at the same distance.

Sample, quality-control and continuous statistical mode; single or average of 2–99 measurements; pass/fail and colour offset.

30 000 + 10 000 records on the instrument; USB for data transfer.

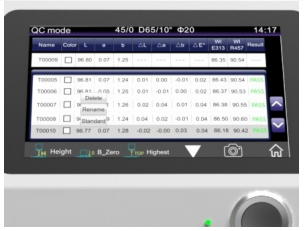
PRODUCT HIGHLIGHTS



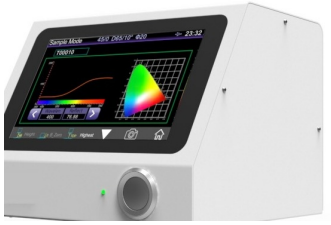
Height-adjustable stand
Samples up to 150 mm high; the head is set 7.5 mm above the sample by hand.



7" touch screen
Calibration, positioning, measuring mode, illuminant, colour space and tolerances on the instrument.



Quality-control mode
Standard and samples with ΔL, Δa, Δb, ΔE, whiteness and pass/fail in one table.



Spectral curve
Reflectance 400–700 nm and the colour position shown on the screen.

APPLICATIONS


Food, sauces & powders


Paints, inks & coatings


Plastics & electronics


Textiles & printing


Ceramics & parts


Cosmetics & laboratories

OBSERVERS	ILLUMINANTS	MEASURING TIME	STORAGE
2° and 10°	18	≈ 1.5 s	30 000 + 10 000

CN4520 product page | Spectroscopy & Color — overview | Spectroscopy & Color catalogue | Request quote

CN4520 · technical parameters

45/0 · non-contact at 7.5 mm · 400–700 nm / 10 nm · Ø20 mm · 2°/10° observer

TECHNICAL PARAMETERS

Optical geometry	45/0 (45° ring-shaped illumination, 0° viewing)
Standards	CIE No.15, ISO 7724-1, ASTM E1164, DIN 5033 Part 7
Measurement principle	Non-contact: the measuring head does not touch the sample
Light source	Full-spectrum LED light source
Spectral separation	Concave grating
Sensor	256-pixel dual-array CMOS image sensor
Wavelength range	400–700 nm, 10 nm output
Reflectance range	0–200 %
Measuring aperture	Ø20 mm
Sample distance	7.5 mm
Sample height	0–150 mm
Height adjustment	Manual; the measuring height can be stored
Positioning	Camera positioning
Colour spaces	CIE Lab, XYZ, Yxy, LCh, CIE LUV, Hunter Lab
Colour difference	ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc (2:1), ΔE*cmc (1:1), ΔE*00, ΔE (Hunter)
Observer	2° and 10°

Colorimetric indices	Whiteness WI (ASTM E313, CIE/ISO, AATCC, Hunter), yellowness YI (ASTM D1925, ASTM E313), metamerism index MI, staining fastness, colour fastness, colour strength, opacity
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 and graph, colour difference values and graph, colour simulation, pass/fail, colour offset
Measuring time	approx. 1.5 s
Measurement mode	Single or average (2–99 measurements); sample, quality-control and continuous statistical mode
Repeatability	Spectral reflectance: standard deviation within 0.08 %; chromaticity within ΔE*ab 0.05 (white tile, 30 measurements at 5 s intervals after white calibration)
Inter-instrument agreement	Within ΔE*ab 0.25 (average of 12 BCRA Series II tiles)
Data storage	30 000 records in sample and quality-control mode; 10 000 in continuous statistical mode
Display	7" TFT colour LCD, capacitive touch screen
Interface	USB
Instrument languages	English, Chinese
Power supply	DC 24 V, 3 A power adapter
Light source life	5 years, more than 3 million measurements
Dimensions (L × W × H)	330 × 250 × 370 mm
Weight	approx. 10 kg
Environment	Operation 0–40 °C, 0–85 % RH (non-condensing), altitude below 2 000 m; storage −20–50 °C

CN4520 · delivery and model choice

Standard delivery, CN4560 or CN4520, and the non-contact series

DELIVERY AND MODEL CHOICE

Standard delivery

Instrument	CN4520 with measuring head, height-adjustable stand and 7" touch screen
Calibration	Standard white calibration board, black calibration cavity
Power and data	Power adapter DC 24 V / 3 A, USB cable
Documents	User guide

CN4560 or CN4520 — which model?

Model	CN4560	CN4520
Light source	LED + UV	**LED**
Height adjustment	Manual + automatic	**Manual**
Repeatability ΔE*ab	0.05	**0.05**
Inter-instrument ΔE*ab	0.2	**0.25**
Storage	40 000 + 10 000	**30 000 + 10 000**
Interface	USB, Bluetooth	**USB**
Fluorescent samples	yes (UV)	**—**

Non-contact series

Model	CN4668	CN4660	CN4560	CN4520
Version	Measuring head for integration	Measuring head for integration	Benchtop with stand	**Benchtop with stand**
Geometry	45/0	d/8	45/0	**45/0**
Aperture	Ø20 mm	Ø20 mm	Ø20 mm	**Ø20 mm**
Sample distance	7.5 mm	7.5 mm	7.5 mm	**7.5 mm**

All models: non-contact measurement, concave grating with 256-pixel CMOS array, 400–700 nm, 0–200 %, 7" touch screen. Benchtop models (CN45xx) stand on the lab bench with their own height-adjustable stand; measuring heads (CN46xx) are built into a line or fixture. 45/0 for colour as seen by the eye; d/8 when gloss should not influence the result.

Typical samples

Liquids and pastes: sauces, juices, creams, paints and inks in an open container.

Powders and granules: spices, pigments, flour, plastic granules — no pressing against a port.

Sensitive surfaces: wet, soft, sticky or freshly coated samples, foods and cosmetics.

CN4520 · configuration and support

Ordering information, configuration checklist and contact

MEASUREMENT WORKFLOW, CONFIGURATION AND SUPPORT



CN4520 · measuring head on the stand with the 7" touch screen

Ordering information

Model	CN4520 Non-contact Benchtop Spectrophotometer
Geometry	45/0, non-contact at 7.5 mm
Aperture	Ø20 mm
Height adjustment	Manual; the measuring height can be stored

Configuration checklist

Samples: liquid, paste, powder or solid; container and sample height; fluorescence.

Workflow: number of samples per series, repeated measurements at the same height, quality-control limits.

Colour data: colour space, ΔE formula, illuminant, observer and indices you report; data transfer to your system.

SUPPLIER AND SUPPORT

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

Selection guidance: send your sample type and how it is presented to the instrument — we confirm the model, aperture and delivery time with the quotation.

QUICK CONTACT

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+386 70 713 437

COLO.SCIENCE · COLOUR MEASUREMENT SUPPORT

Measuring colour without touching the sample?

Send your sample type, the container or surface 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.