CHROMA METER
CR-400/410
Introducing the successor to the Konica Minolta CR-300/310, our best-selling colorimeter globally accepted as the standard in a wide range of industries.

CR-400
Measurement area ø8mm

CR-410
Measurement area ø50mm

The measuring head can perform measurement alone.
The measuring head is detachable from the data processor. Now, you can take measurements directly with the head alone. What's more, you can connect the measuring head directly to a PC. Simply install our optional software, and your PC can function as the data processor.

User-defined evaluation formulas freely set up.
The CR-400 Series features a User Index function that allows you to configure the evaluation formula and color-calculation formula as desired. This feature is intended to meet the needs of color-control applications in which industry-specific or customized evaluation formulas are used instead of the versatile color system and standard evaluation formula such as L*a*b*. (Settings can be configured via a PC with optional software installed.)

Abundant accessories applicable to various materials.
A varied selection of accessories is available to accommodate various types of targets including powder, paste and opaque liquids.

Compact data processor incorporates a high-speed printer.
The compact, lightweight data processor is battery-operated* and features a built-in high-speed printer. Its size and weight are approximately one-half those of the conventional DP-300 Series. In addition, the CR-400 Series is designed with a detachable shoulder strap for easier portability. *An AC adapter is included as a standard accessory.

Full data compatibility with the CR-300/310 series
To ensure data compatibility, the CR-400 Series utilizes the same illumination-viewing optical system as the conventional CR-300/310 Series. As a result, those upgrading from the preceding model can make full use of their existing data.

CR-400: \( \Delta E^{*ab} \) within 0.6
CR-410: \( \Delta E^{*ab} \) within 0.8

Repeatability: within \( \Delta E^{*ab} 0.07 \)

User calibration function ensures higher accuracy. (Settings can be configured with the data processor or via a PC with optional software installed.)

Color difference tolerance can be set to perform PASS/WARN/FAIL. (Settings can be configured with the data processor or via a PC with optional software installed.)

Offers a wider range of color systems than the CR-300/310 Series.

The measuring head alone can store up to 1,000 measurements. When the data processor is connected, up to 2,000 measurements can be stored. (The measuring head can store up to 100 color-difference target colors with or without the data processor connected.)

Capable of displaying color-difference graphs that provide a visual representation of the color difference. (When connected to data processor)

A simple, cellular-phone-type text entry system is provided for entering the names of color-difference target colors and calibration channels. (When connected to data processor)

Features a large, easy-to-see LCD with a built-in backlight.

The LCD offers six user-selectable languages for the display mode, including English and Japanese. (When connected to data processor)

Can be powered with rechargeable batteries for reduced operating costs.

Denotes a new feature not available with the previous CR-300/310 Series.
When measuring powders or pastes

With the varied accessories, you can measure targets with diverse profiles.

When color control is performed with a customized evaluation formula, instead of the versatile color system

User-defined evaluation formulas can be entered as desired. Now, you can control color with customized evaluation formulas.

When a compact colorimeter is needed in the field

The measuring head can be used independently of the data processor. This is advantageous when portability is required or limited space is available.

When measurements need to be printed on-site for labeling of samples

The compact data processor features a built-in printer for superior mobility.

The CR-400/410 Series really shows its abilities in these applications.
With the Granular-Materials Attachment CR-A50, the color of powders, pastes, grains, and other granular substances can be easily and accurately measured.

SpectraMagic™NX

SpectraMagic™NX enables you to perform comprehensive color inspection and analysis of incoming raw materials, in process production, and outbound color critical goods and materials in virtually any industry. With SpectraMagic™NX you can insert digital images with measured data. Measure samples in any of 8 universally accepted color spaces. Select from 16 illuminants, and up to 40 indices to determine specific color and appearance properties, such as brightness, haze, yellowness, opacity and strength. You can even configure up to 8 illuminants, and up to 40 indices to determine specific color and appearance properties, such as brightness, haze, yellowness, opacity and strength. You can even configure up to 8 indices to determine specific color and appearance properties, such as brightness, haze, yellowness, opacity and strength. The hardware of the computer system to be used must meet or exceed the greater of the recommended system requirements for the compatible OS being used or the following specifications.

CR-400 Utility Software CR-S4w

- To take measurements or change the measurement parameters of the CR-400/410 Series, you can control the unit with a PC.
- Measurement data can be transferred directly to a Microsoft Excel® file by means of the OLE function.
- Calibration data and color-difference reference color data can be uploaded or modified.

Display resolution: 1,024 x 768 dots or more '16-bit colors or more
Other: DVD-ROM drive (required for installation); one free USB port for protection key; one free USB port for USB Bluetooth® adapter for performing communication with CM-700d or CM-600d via Bluetooth®; Internet Explorer Version 5.01 or later.

System requirements

OS: Windows® 7 Professional 32-bit, 64-bit
Windows® 10 Pro 32-bit, 64-bit
- The hardware of the computer system to be used must meet or exceed the greater of the recommended system requirements for the compatible OS being used or the following specifications.
  - Windows® is a trademark or registered trademark of Microsoft Corporation in the USA and other countries.
  - Pentium® is a trademark of Intel Corporation in the USA and other countries.
  - Bluetooth® is a registered trademark of Bluetooth SIG, Inc. and is used under license agreement.

CPU: Pentium® III 600 MHz or equivalent or faster
Memory: 128 MB or more
Hard disk: 450 MB or more of free space for installation
Display resolution: 800 x 600 dots or more

Additional information

- The hardware of the computer system to be used must meet or exceed the greater of the recommended system requirements for the compatible OS being used or the following specifications.
- Windows® is a trademark or registered trademark of Microsoft Corporation in the USA and other countries.
- Pentium® is a trademark of Intel Corporation in the USA and other countries.
- Bluetooth® is a registered trademark of Bluetooth SIG, Inc. and is used under license agreement.
Specifications

Name: Chroma Meter Measuring Head
Model: CR-400 Head
Illumination/viewing system: C-1 illuminant + 15°/10° viewing angle (Specular component included/Conforms to JIS Z 8720 condition c standard.)

Model: CR-410 Head
Web-illuminated viewing angle (Specular component included)

Detector: Silicone photo cells (6)
Display range: 0 to 199.99% (reflectance)
Light source: Fused planar lamp
Measurement time: 1 second
Measurement time: 3 seconds
Power supply: Approx. 800 measurements
when using batteries under company testing Konica Minolta's conditions
Repeatability: ±0.07 standard deviation (when the white calibration plate is measured 30 times at intervals of 10 seconds)
Inter-insensitive agreement: AE: ±0.6 \( \Delta E \) ab: ±0.8
Observer: 2 degrees CIE 1931 Standard Observers: (x, y, z, v)
Illuminant: C, D65
Display: Colorimetric data/ Color difference values, color difference graphs, \( \Delta E_{AB} \), \( \Delta E_{AB} \) (in absolute values)

Data Memory: 1,000 (measuring head and data processor save different data)
Color difference target colors: 100
Notations: (1) includes 18 channels (white calibration, chip, user calibration)
Display: 10� 4� LCD (reflectance)
Interface: USB 2.0 (when using USB-Serial Converter Cable (2 m) CR-A105)
Size (W x H x D): 217 x 63 x 217 mm
Weight: Approx. 540g

Other: Approx. 2 to 3 years of service (under normal use)

Display temperature/humidity range: 0 to 40°C, relative humidity 85% or less at (35°C), 20°C (CIE condition), 80°C (data stored)

Lithium batteries: Approx. 100 (AAA size alkaline or Ni-MH batteries)

Optional accessories:

Standard/Optional accessories

Color Data Software CM-5100w
SpectraMagic NX
US-60 Utility Software
CR-5uw
White Calibration Plate
CR-43
White Calibration Plate
CR-44
Color Target Plate
CR-472
Protective Cap
CR-410
Protective Cap
CR-4101 (Head-DP)
Cr-4102 (for CR-410)
CR-4104 (Data Processor)

Optional accessories

Paper Roll (one roll)
Print Paper (one roll)
4 AAA Size Batteries
4 AAA Size Batteries
Glass Light-Probe Tube
Glass Light-Probe Tube
Cordless Light-Probe Tube
Cordless Light-Probe Tube
Silver-Taping Attachments
Silver-Taping Attachments
Color Filters
Color Filters

The specifications and appearance shown herein are subject to change without notice.