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*.

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.

Easy-to-understand the name on the buttons, ensure smooth measurement and setting operations.

Achieves exceptional accuracy
Inter-instrument agreement : CR-400: ΔE*ab within 0.6
CR-410: ΔE*ab within 0.8
Repeatability : within ΔE*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.
(When connected to data processor)

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.

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

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

The compact data processor features a built-in printer for superior mobility.
Granular-Materials Attachment CR-A50

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 customized color equations. Reports range from simple Pass/Fail to trend charts, histograms, color plots, and spectral graphs. SpectraMagic™NX comes with predefined templates, or you can create your own templates. For illustrations and explanations to understanding color and color measurement technology, there is a link to Konica Minolta’s well known and respected “Precise Color Communication”.

Optional Accessories

CR-A12  (For CR-400)
Attaching the Pivoting Base CR-A12 to the Measuring head of the CR-400 ensures greater stability and accuracy in measurements Light-Projection Tube CR-A33c is also included.

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.

Specifications

- Color space: L*a*b, Lch, Labx, Lchx, XYZ, Hunter Lab, Yxy, Luv, LuvY, MunSELL, and their color differences (excluding Munsell)
- Color difference equation: ΔEa*b, ΔEa*b (CIE 1976), ΔEa*b (CIE 2000), ΔEa*b (DIN99), ΔE (Hunter), CMC (Ic, Ic'ac, Ns, NB, NS, Ns200)
- Observer: 2° Standard Observer
- Illuminant: C, D65
- Graph display: L*a*b, Lch, Labx, Lchx, XYZ, Hunter Lab, Lch, Lchx, Lch, Lchx, ΔEa*b, ΔEa*b (color difference distance), trend chart and hologram of each color space and color difference equation, Pseudo Color display

System requirements

- OS: Windows® 7 Professional 32-bit, 64-bit, Windows® 8 1 Pro 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
- CPU: Pentium® III 600 MHz equivalent or faster
- Memory: 128 MB or more (256 MB or more recommended)
- Hard disk: 450 MB or more of free space for installation
- Display resolution: 1,024 × 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 port (serial port or additional USB port) for connection to instrument when connecting via cable (or USB port for USB Bluetooth® adapter when using a USB Bluetooth® adapter for performing communication with CM-700d or CM-600d via Bluetooth®); Internet Explorer Version 5.01 or later.

System Diagram
Precise Color Communication. The hardware enables you to perform comprehensive color inspection and analysis of materials such as textiles are flat during measurements.

Specifications

<table>
<thead>
<tr>
<th>Name</th>
<th>CR-400 Head</th>
<th>CR-410 Head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illumination viewing system</td>
<td>Office Illumination viewing angle (Spectral component included/Conforms to JS Z 9722 condition c standard.)</td>
<td>Wide area Illumination viewing angle (Spectral component included)</td>
</tr>
<tr>
<td>Spectroradiometer</td>
<td>Silicon photo cells (6)</td>
<td>C, CL, D65, UV, Fluorescent lamp, D55, D65, D85b</td>
</tr>
<tr>
<td>Display range</td>
<td>Y, 0.01 to 1000.00% (reflectance)</td>
<td>Approx. 400 measurements when using D65&quot; illuminant and companies’ standards</td>
</tr>
<tr>
<td>Brightness</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>Measurement time</td>
<td>1 seconds</td>
<td>Approx. 1 second</td>
</tr>
<tr>
<td>Minimum Measurement Interval</td>
<td>3 seconds</td>
<td>1 second</td>
</tr>
<tr>
<td>Display interface</td>
<td>Data display by LCD with back light ([15 chars x 8 lines + 1 line for icon display])</td>
<td>Data display by LCD with back light ([15 chars x 8 lines + 1 line for icon display])</td>
</tr>
<tr>
<td>Power</td>
<td>AAA size alkaline or Ni-MH batteries, AC Adapter AC121V~ 50/60Hz (for worldwide except N.America)</td>
<td>AC230V~ 50/60Hz (for worldwide except N.America)</td>
</tr>
<tr>
<td>Size (W x H x D)</td>
<td>Approx. 105 x 215 x 63 mm</td>
<td>Approx. 105 x 245 x 63 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 550g</td>
<td>Approx. 600g</td>
</tr>
<tr>
<td>Operation temperature/humidity range</td>
<td>0 to 40°C, relative humidity 85% or less at 35°C with no condensation</td>
<td>0 to 40°C, relative humidity 85% or less at 35°C with no condensation</td>
</tr>
<tr>
<td>Interfaces</td>
<td>RS-232C compliant/data processor/PC</td>
<td>USB 2.0 (When using USB-Serial Convertor Cable (2 m) CR-A105)</td>
</tr>
<tr>
<td>Calibration channels</td>
<td>20 channels (with white calibration, ch0 to ch19, user calibration)</td>
<td>20 channels (with white calibration, ch0 to ch19, user calibration)</td>
</tr>
<tr>
<td>Page function</td>
<td>100 pages</td>
<td>80 pages</td>
</tr>
<tr>
<td>Display</td>
<td>Dot matrix LCD with back light ([15 chars x 8 lines + 1 line for icon display])</td>
<td>Data display by LCD with back light ([15 chars x 8 lines + 1 line for icon display])</td>
</tr>
<tr>
<td>Measurement time</td>
<td>30 seconds</td>
<td>30 seconds</td>
</tr>
<tr>
<td>Brightness</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>Statistical function</td>
<td>Maximum, minimum, average, and standard deviation</td>
<td>Maximum, minimum, average, and standard deviation</td>
</tr>
<tr>
<td>Automatic measurement</td>
<td>Data and time display: year, month, day, time, minute</td>
<td>Data and time display: year, month, day, time, minute</td>
</tr>
<tr>
<td>Interface</td>
<td>RS-232C compliant</td>
<td>USB 2.0 (When using USB-Serial Convertor Cable (2 m) CR-A105)</td>
</tr>
<tr>
<td>Power</td>
<td>AAA size alkaline or Ni-MH batteries, AC Adapter AC120V~ 50/60Hz (for worldwide except N.America)</td>
<td>AC230V~ 50/60Hz (for worldwide except N.America)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 600g (not including batteries, paper, cables)</td>
<td>Approx. 700g (not including batteries, paper, cables)</td>
</tr>
<tr>
<td>Resolution</td>
<td>8 bit, 0.01° viewing angle</td>
<td>8 bit, 0.01° viewing angle</td>
</tr>
<tr>
<td>Reflectance/Transmission</td>
<td>0 to 40°, relative humidity 85% or less at 35°C with no condensation</td>
<td>0 to 40°, relative humidity 85% or less at 35°C with no condensation</td>
</tr>
<tr>
<td></td>
<td>15° 2° Standard Observer</td>
<td>15° 2° Standard Observer</td>
</tr>
<tr>
<td></td>
<td>E*94 (CIE 1994)</td>
<td>E*94 (CIE 1994)</td>
</tr>
<tr>
<td>Other</td>
<td>User calibration function (multi-calibration/manual calibration)</td>
<td>User calibration function (multi-calibration/manual calibration)</td>
</tr>
</tbody>
</table>

Data Processor DP-400

<table>
<thead>
<tr>
<th>Name</th>
<th>Data Processor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>DP-400</td>
</tr>
<tr>
<td>Display range</td>
<td>Y, 0 to 160.00% (reflectance)</td>
</tr>
<tr>
<td>Memory measurement results</td>
<td>200,000 (when using batteries under company testing Konica Minolta’s conditions)</td>
</tr>
<tr>
<td>Brightness</td>
<td>Included</td>
</tr>
</tbody>
</table>

Dimensions (Units: mm)

- **CR-400 Head**
  - Measuring Head: 100 x 73 x 248 mm
- **CR-410 Head**
  - Measuring Head: 100 x 73 x 248 mm
  - Data Processor: 263 x 150 x 32 mm

**SAFETY PRECAUTIONS**

For correct use and for your safety, be sure to read the instruction manual before using the instrument.

- Always connect the instrument to the specified power supply voltage. Improper connection may cause a fire or electric shock.
- Be sure to use the specified batteries. Using improper batteries may cause a fire or electric shock.

Your local distributor of Konica Minolta measuring instruments: