



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.



Measurement area ø50mm

CR-400 CR-410

Data Processor DP-400

a boad can porform Easy-to-un

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 batteryoperated* 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: Σ E*ab within 0.6 CR-410: Σ E*ab within 0.8 Repeatability : within Σ 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.

The CR-400/410 Series really shows its abilities in these applications.



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

Granular-Materials Attachment **CR-A50**

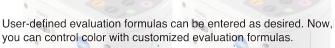




When color control is performed with a customized evaluation formula stead of the versatile color system



Glass Light-Projection Tube CR-A33f (For CR-400) CR-A33e (For CR-410)



The compact data processor features a built-in printer for

Grade Ba Grade A Grade B1 User index function -Example-Evaluation of tomato ripeness=a*/b*+0.3a*/L 1.0 -1.0 0.0 strate the



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



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

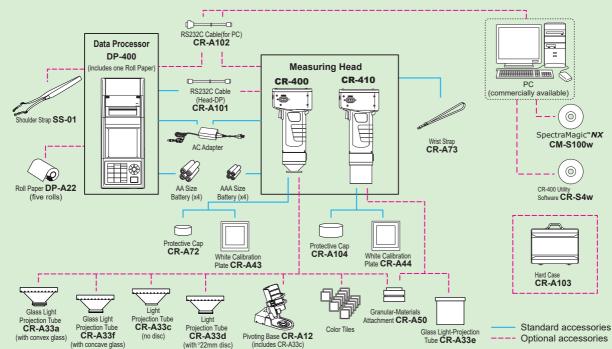
superior mobility.







System Diagram



Optional Accessories



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**



Glass Light-Projection Tube CR-A33f(For CR-400) and CR-A33e (For CR-410) Glass Light-Projection Tube CR-A33f and CR-A33e have a glass plate at the tip and can be used for measuring wet surfaces or for ensuring that materials such as textiles are flat during measurements.

Supports Windows[®] Vista/7/8/8.1

SpectraMaci Menables you to perform comprehensive colorins pection and analysis of To take measurements or change the incoming raw materials, in process production, and outbound color critical goods and materials in vintually any industry. With SpectraMagic[®] **NX** youcaninsertdigitalim.ag 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, o 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

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System requirements

- OS: Windows® Vista Business 32 bit, 64 bit Windows® 7 Professional 32 bit, 64 bit Windows® 8 Pro 32 bit, 64 bit Windows® 8.1 Pro 32 bit, 64 bit

- τ) The hardware of the computer system to be used must me exceed the greater of the recommended system requirem for the compatible OS being used or the following specifica 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

Specifications

Color space	L*a*b*, L*C*h, Lab99, LCh99, XYZ, Hunter Lab, Yxy, L*u'v', L*u*v*, Munsell, and their color differences (excluding Munsell)			
Index	WI (CIE 1982, ASTM E313-73, Hunter, Berge Taube, Stensby, Ganz), Tint(Ganz), YI (ASTM D1925-70, ASTM E313-73, ASTM E313-96, DIN6167), WB (B ASTM E313-73), Standard Depth (ISO 105.A06), RxRvRz, Gray scale(ISO 105.A05)			
Color difference equation	ΣE*ab (CIE 1976), ΣE*94 (CIE 1994), ΣE00 (CIE 2000), ΣE99 (DIN99), ΣE (Hunter), CMC (I:c), FMC-2, NBS 100, NBS 200			
Observer	2 Standard Observer			
Illuminant	C, D65			
Graph display	L*a*b* absolute value, Σ L*a*b* (color difference distribution), Hunter Lab absolute value, Hunter Σ Lab (color difference distribution), Trend chart and histogram of each color space and color difference equation, Pseudo Color display			

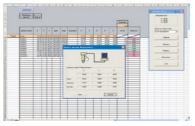
Display:Resolution: 1,024 x 768 dots or more/ 16-bit colors or more Other: DVD-ROM drive (required for installation); one free USB port for protection key; one free port (serial port or additional USB port) for connection to instrument when connecting via cable (or USB port for USB Bluetooth^e adapter when using a USB Bluetooth^e adapter for performing communication with CM-7000 or CM-600d via Bluetooth^e); Internet Explorer Version 5 01 or later 5.01 or late



Pivoting Base 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

- measurement parameters of the CR-
- NX you can insert digitalim ages w4016/410 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.



System requirements

OS□	S Windows® XP Professional 32 bit SP3, 64 bit SP2					
	Windows [®] 7 Professional 32 bit, 64 bit					
Windows [®] 8 Pro 32 bit, 64 bit						
CPU	Pentium [®] 166MHz or higher					
Memory	32MB or higher					
Hard disk□	100MB or more free space					
Display resolution UGA (640Z 480) or higher						

□n□Windows[®]isa trademark or registered trademark of Microsoft Corporation in the USA and other countries. □n□Pentium[®]isa trademark of Intel Corporation in the USA and other countries.

□n_Bluetooth®isa registered trademark of Bluetooth SIG. Inc. and

I) Didetoon is registered trademark of bidetoon ord, inc. and is used under license agreement. □n Thespecifications and appearance shown herein are subject to change without notice.

Specifications

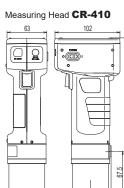
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	Measuring Head can be used) lish (default), German, French, Italia	an Snanish Japanoos	
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Dimensions (Units: mm) CR-400

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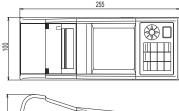
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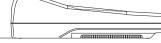
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P-400



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	Standard/Optional accessories	CR. Uning L	Measuring L	DR 400 1640	
	Color Data Software CM-S100w SpectraMagic [™] NX	0	0	0	
	CR-400 Utility Software CR-S4w	0	0	0	
_	White Calibration Plate CR-A43	•			
-	White Calibration Plate CR-A44		٠		
-	Protective Cap	•			
_	Protective Cap CR-A104 RS-232C Cable		•		
	CR-A101(Head-DP) RS-232C Cable	O O	O	•	
_	CR-A102(for PC) AC Adapter	O O	O.	0	
	Wrist Strap CR-A73	•	•	•	
_	Shoulder Strap	_	-0	0	
_	Hard Case CR-A103	O.	O ^{II}	0	
	Roll Paper (one roll)□			•	
_	Roll Paper DP-A22 (five rolls)			0	
	4 AA Size Batteries□			•	
-	4 AAA Size Batteries Glass Light-Projection Tube	•			
_	CR-A33a/f Light-Projection Tube	Q O			
	CR-A33c/d Glass Light-Projection Tube		0		
_	CR-A33e Granular-Materials Attachment CR-A50	o O	Q Q		
n	Pivoting Base	0			
	Color Tiles	0			
F 00		 Standard accessory Optional accessory 			

appearance shown herein are subject to change without notice. tion manual before using the instrument. SAFETY PRECAUTIONS

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.

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