KONICA MINOLTA

Main specifications

Model	COLORIMETER CR-5	
Illumination/Viewing System	Reflectance:	de:8° (diffuse illumination 8° viewing) / SCE (Specular component excluded)
	Transmittance:	di:0°, de:0° (diffuse illumination: 0° viewing)
Integrating Sphere Size	Ø152 mm	
Detector	Dual 40-element silicon photodiode arrays	
Spectral Separation Device	Planar diffraction grating	
Light Source	Pulsed xenon lamp (with UV cut filter)	
Measurement Time	Approx. 1 s (to data display/output); Minimum measurement interval: Approx. 3 s	
Measurement/Illumination Area	Reflectance:	Changeable by changing mask and settings. LAV: Ø30 mm/Ø36 mm; MAV (optional): Ø8 mm/Ø11 mm; SAV (optional): Ø3 mm/Ø6 mm
	Transmittance:	Measurement area changeable by changing mask Ø30 mm; 5 × 20 mm (optional)
Repeatability	Chromaticity value: Standard deviation within ΔE*ab 0.04 * When a white calibration plate is measured 30 times at 10-second intervals after white calibration	
Inter-Instrument Agreement	Within ΔE*ab 0.15 (Typical)(LAV/SCE) (Based on 12 BCRA Series II color tiles compared to values measured with a master body under Konica Minolta standard conditions)	
Transmittance Chamber	No sides (unlimited sample length); Depth (maximum sample thickness): 60 mm Sample holder (optional) for holding sheet samples or containers of liquid samples can be installed/removed	
Display	5.7-inch TFT color LCD	
Display Languages	English, Japanese, German, French, Italian, Spanish, Simplified Chinese	
White Calibration	Automatic white calibration using internal white calibration plate	
Interfaces	USB 1.1 (Connection to PC; USB memory stick); RS-232C standard (Connection to serial printer)	
Observer	2° Standard Observer or 10° Standard Observer	
Illuminant	C, D65 (simultaneous evaluation with two light sources possible)	
Displayed Data	Colorimetric values, color-difference values, color difference graph, pass/fail judgment, pseudo color, color assessment.	
Color Space	L*a*b*, L*C*h, Hunter Lab, Yxy, XYZ, Munsell, and color differences in these spaces (except for Munsell)	
Index	Reflectance:	MI; WI (ASTM E 313-73, ASTM E 313-96); YI (ASTM E 313-73, ASTM E 313-96, ASTM D 1925); ISO Brightness, WB (ASTM E 313-73)
	Transmittance:	Gardner, Iodine, Hazen (APHA), European Pharmacopoeia, US Pharmacopeia
User Index	Not available	
Color-Difference Equation	ΔE*ab (CIE 1976), ΔE*94 (CIE 1994), ΔE00 (CIE 2000), ΔE (Hunter), CMC (l: c)	
Pass/Fail Judgment	Tolerances can be set to colorimetric values (except Munsell), color-difference values, or reflectance index values	
Storable Data	Measurement data: 4,000 measurements; Target color data: 1,000 measurements	
USB Memory Stick* Storage	Storage of measurement data and target color data. Storage/reading of measurement condition settings	
Power	AC 100 to 240 V, 50/60 Hz (using exclusive AC adapter)	
Size	Slide cover closed: 385 (W) × 192 (H) × 261 (D) mm Slide cover open: 475 (W) × 192 (H) × 261 (D) mm	
Weight	Approx. 6.5 kg	
Operating Temperature/Humidity Range	13 to 33°C, relative humidity 80 % or less (at 35°C) with no condensation	
Storage Temperature/Humidity Range	0 to 40°C, relative humidity 80 % or less (at 35°C) with no condensation	

* Security-enabled USB memory sticks cannot be used.

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.

The specifications and drawings given here are subject to change without prior notice.
- If you have any questions about specifications, please contact your Konica Minolta representative.
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Certificate No: YKA 0937154
Registration Date: March 3, 1995

Certificate No: JQA-E-80027
Registration Date: March 12, 1997

KONICA MINOLTA

CR-5 Colorimeter



An advanced all-in-one colorimeter with innovative operation to let anyone take measurements easily anytime

The CR-5 makes color measurements simple. Just switch it on and start taking measurements. No need to bother with a computer; the CR-5 has a full range of advanced functions including specialized indices for a variety of applications and a large color display that makes results easy to read.
Finally high accuracy and ease of use in a compact top-port colorimeter!

KONICA MINOLTA

Measurement as simple as 1-2-3!



Switch on Power

The CR-5 starts up and *automatically performs white/100% calibration** using an internal white calibration plate behind the shutter.

* Not applicable to liquid transmittance measurements using cells



Position sample

For reflectance, the *top port* makes measuring samples of various shapes and sizes easy. For transmittance, sliding open the CR-5 reveals a *large transmittance chamber.* Liquids can be measured using optional cells.

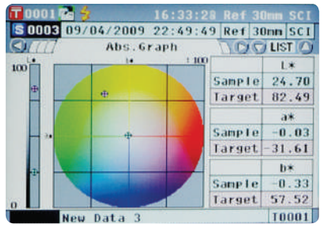


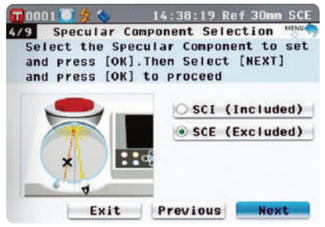
Press MEAS

The measurement is taken and the results appear in the display. The *large color LCD* enables data to be shown not only numerically, but also on the colorimetric plots that normally require a computer to display.

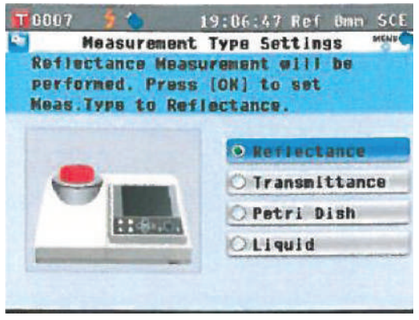
Actual Screens!

Screens can be shown in any of *7 languages:* English, Japanese, German, French, Italian, Spanish, and Simplified Chinese.





Just Follow the Wizard!



Even beginners can take measurements easily without mistakes. The CR-5 wizard mode guides users through each step, helping users to make settings and take measurements without having to get out the instruction manual each time.

Avoid Multi-User confusion with USB!

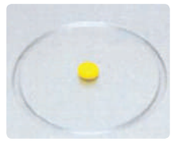
Do many people in your lab use the same instrument? The CR-5 helps eliminate any confusion by letting users store their personal settings on their own USB memory stick. This allows users to save their settings without creating extra work. Then, the measurement and target data can be stored on the USB drive for further analysis.



Compact, Versatile color instrument

Reflectance Measurements

The measuring port of the CR-5 is on top, so users can simply place a solid object on the port and press the MEAS. button. There's no need to clamp the sample in a sample holder, and there's no worry about the sample shifting position. And, by using a Petri dish (optional accessory), liquids, pastes, and powders can also be measured easily.



By using the Ø3mm target mask (optional accessory), small samples can be measured.

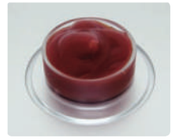
Samples are simply placed on top, so large samples can be measured.



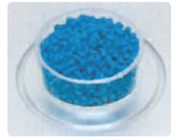
The following items can be measured in raw form using a Petri dish (optional accessory)



Chunky materials



Pastes



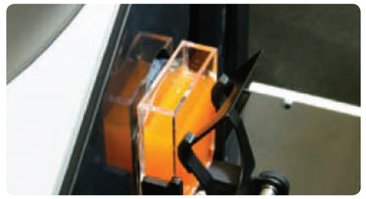
Colorant Pellets

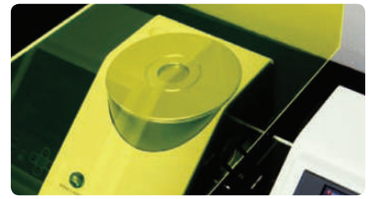


Tiny amounts of costly samples

Transmittance Measurements

The CR-5 transmittance chamber is large and sideless, enabling measurement of large sample sheets with thicknesses up to 60mm. For liquids, optional cells with 3 optical path lengths for different sample densities are available, and commercial 10mm-wide cells can also be used.



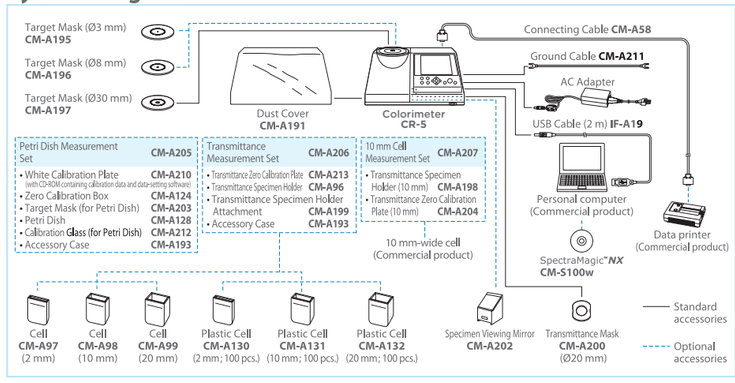


Standard Chemical indices without the hassle of handling standard solutions

The CR-5 can measure several of the standard color indices commonly used in the chemical field: Gardner, Hazen/APHA, Iodine Color Number, European Pharmacopoeiz, and US Pharmacopeia. Calibration curves for these indices are stored in the CR-5, eliminating the need to prepare and handle the standard solutions for each index. Index measurements can be taken using the optional 10mm Cell Measurement with the commercially available 10mm-wide cells used for other types of chemical analysis, letting the CR-5 easily fit into your current workflow.



System Diagram





Transmittance Measurement Set **CM-A206**



Petri Dish Measurement Set **CM-A205**



10mm Cell Measurement Set **CM-A207**