KONICA MINOLTA

SPECTROPHOTOMETER

CM-3700A

THE NEW LEADER

Konica Minolta's flagship model: High accuracy and repeatability even at low reflectance/transmittance

The Standard in Measuring Color & Light

Giving Shape to Ideas

A high-accuracy, top-class model filled with Konica Minolta's advanced optical technology. Ideal for demanding customers with strict requirements for R&D, QC, and CCM applications.

Full data compatibility with CM-3700d

An advanced spectrophotometer for reflectance and transmittance measurements of a broad range of subjects including pigments, dyes, plastic, textiles, paints, ceramics, etc.

Top-of-the-line model providing high accuracy and high reliability

Konica Minolta's advanced optical, sensing, and signal-processing technology provide excellent repeatability.

Strictly selected high-quality parts ensure long-term stability and reliability.

Strict accuracy control traceable to national standards ensures high quality with high inter-instrument agreement.

1 Illumination/viewing geometry conforms to CIE, ISO, ASTM, DIN, and JIS requirements for di:8°, de:8° (diffuse illumination/8° viewing) geometry for reflectance and to CIE, ASTM, DIN, and JIS requirements for transmittance.

2 Pulsed xenon arc lamp light source provides high stability, long life, and excellent repeatability even on dark and high-chromaticity colors.

3 6-inch integrating sphere has a powdered barium sulfate ($BaSO_4$) coating with superior optical characteristics.

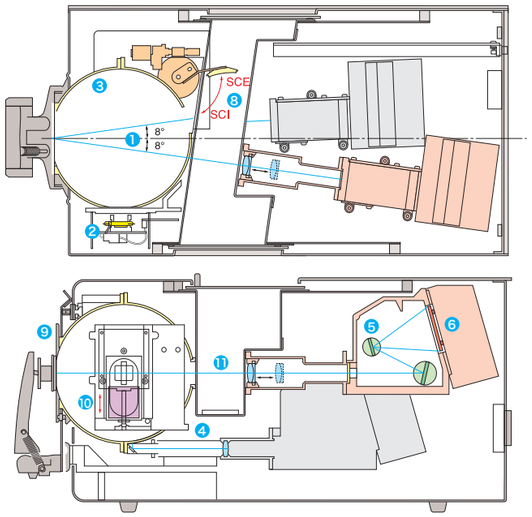
4 Double-beam feedback system directly monitors the light emitted by the xenon lamp at the time of measurement and automatically compensates for changes in brightness or spectral characteristics to ensure high-accuracy measurements.

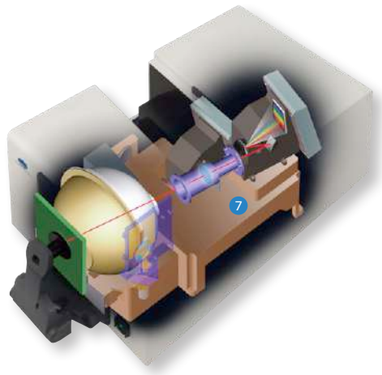
5 6 Polychromatic unit

A diffraction grating ⑤ provides high-efficiency separation of light by wavelength, ensuring high repeatability even when measuring dark colors, and the silicon photodiode array sensor ⑥ quickly converts the separated light into electrical currents. These elements are mounted on stainless steel with a low coefficient of thermal expansion to ensure long-term stability.

7 The optical systems for sample measurement and light-source monitoring are mounted on an aluminum alloy block for long-term stability.

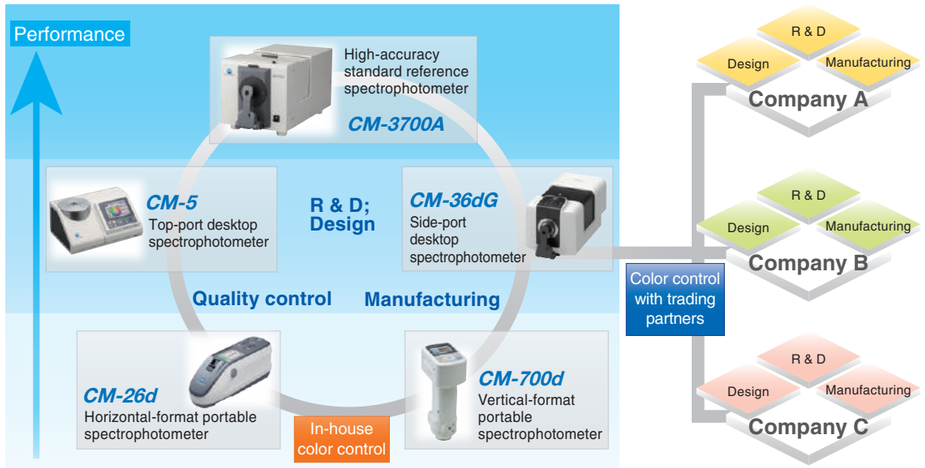
* CM-3700A is computer-controlled. Software such as optional SpectraMagic NX2 required.





Top standard instrument for color control systems

With its high accuracy, high repeatability, and high reliability, the CM-3700A can be used as the top standard instrument to which other instruments are referenced in color quality control systems including multiple instruments, both within a company or between companies.



Strict quality assurance system ensures reliability and peace of mind

Konica Minolta's color-measuring instruments are traceable to national standards for wavelength accuracy and white calibration for strict accuracy control. Konica Minolta has also received ISO 9001 and ISO 14001 certification for its integrated quality control system from product development through manufacturing and after-sales service.

Comprehensive support system

Konica Minolta has service facilities worldwide to perform quick inspection, calibration, and repair and ensure that your instruments always provide their best performance.

Comprehensive measurement functions

Reflectance measurements

8 Switchable between SCI and SCE measurements

SCI (specular component included) measurements minimize the influence of surface conditions on measured values, making it suitable for CCM applications. SCE (specular component excluded) measurements correspond closely to professional visual evaluation.

9 Selectable measurement areas

Measurement areas of Ø25.4mm, Ø8mm, and 3×5mm (rectangular) can be selected according to the application.

10 Variable UV for measuring fluorescent samples

The UV cut filter can be adjusted in 1000 steps for measurements of samples containing optical whitening agents such as paper, pulp, etc.

Transmittance measurements

11 Sideless transmittance chamber for unlimited sample length
(Maximum thickness: Approx. 50 mm)

di:0°, de:0° (diffuse illumination/0° viewing angle) geometry for spectral transmittance measurements of sheet samples such as glass, filters, etc. as well as cells containing liquid samples such as foods, cosmetics, etc.

Additional Features of CM-3700A

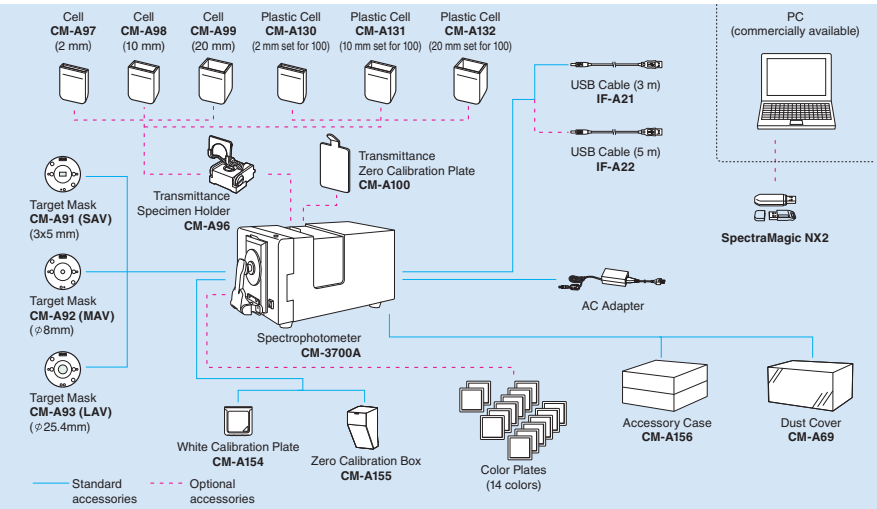
Long sample holder arm enables measurement at center of A4-size sample.

Sample holder arm stays open when opened fully for easy positioning of thick samples.

Frame around power switch prevents switching power off by mistake.

USB communication interface for easy connection and high-speed communication

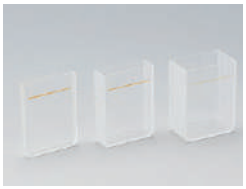
System Diagram



Optional Accessories

Transmittance Specimen Holder CM-A96

Glass Cell CM-A97/CM-A98/CM-A99



Transmittance Zero Calibration Plate CM-A100

Color Plates (14 colors)

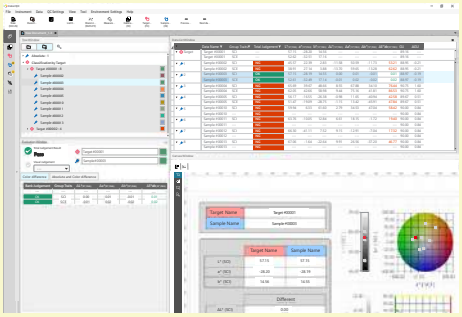
Specifications

Illumination/viewing system	Reflectance	di:8°, de:8° (diffuse illumination/8° viewing angle)
		SCI (specular component included)/SCE (specular component excluded) switchable
		Conforms to CIE No.15 (2004), ISO 7724/1, ASTM E 1164, DIN 5033 Teil 7 and JIS Z 8722 condition c standard.
	Transmittance	di:0°, de:0° (diffuse illumination/0° viewing angle)
		Conforms to CIE No.15 (2004), ASTM E 1164, DIN 5033 Teil 7 and JIS Z 8722 condition g standard.
Detector	Silicon photodiode array with flat holographic grating	
Wavelength range	360 to 740 nm	
Wavelength pitch	10 nm	
Half bandwidth	Approx. 14 nm average	
Measuring range	0 to 200%; Resolution: 0.001%	
Light source	Pulsed xenon arc lamp	
Integrating sphere size	ø152 mm	
Minimum measurement interval	3 seconds	
Measurement/illumination area	Reflectance:Changeable between SAV, MAV, and LAV SAV : 3x5 mm measurement / ø5x7 mm illumination MAV : ø8 mm measurement / ø11 mm illumination LAV : ø25.4 mm measurement / ø28 mm illumination Transmittance: Approx. ø20 mm / ø25 mm	
Repeatability	When white calibration plate is measured 30 times at 10-sec. intervals after white calibration has been performed: Spectral reflectance: Standard deviation within 0.05% Chromaticity: Standard deviation within ΔE^*_{ab} 0.005	
	When black tile (BCRA Series II; reflectance: 1%) is measured 30 times at 10-second intervals after white calibration has been performed: Spectral reflectance: 380 to 740 nm: Standard deviation within 0.02% 360 and 370 nm: Standard deviation within 0.04% Chromaticity: Standard deviation within ΔE^*_{ab} 0.05	
Inter-instrument agreement	Mean ΔE^*_{ab} 0.08 (typical) Average for 12 BCRA Series II color tiles. Max ΔE^*_{ab} 0.3 (corresponds to approx. ΔE^*_{CMC} 0.2) for any of 12 BCRA Series II color tiles compared to values measured with Konica Minolta master body.	
UV adjustment	Computer controlled: continuously variable	
Transmittance chamber	Maximum sample thickness: Approx. 50 mm Maximum sample length: Unlimited (no sides when transmittance chamber cover is open) Sample holder (optional) for holding sheet samples or containers of liquid samples can be installed/removed	
Interface	USB 1.1	
Power	AC 100 to 240 V 50/60 Hz 25 VA (using included AC Adapter)	
Operation temperature/humidity range (*1)	13 to 33°C, relative humidity 80% or less (at 33°C) with no condensation	
Storage temperature/humidity range	0 to 40°C, relative humidity 80% or less (at 35°C) with no condensation	
Size (WxHxD)	271 x 274 x 500 mm (10-11/16 x 10-3/4 x 19-11/16 in.)	
Weight	18 kg (39.7 lb.)	

*1 Operation temperature/humidity range of products for North America : 13 to 33°C, relative humidity 80% or less (at 31°C) with no condensation

SpectraMagic NX2 (Optional)

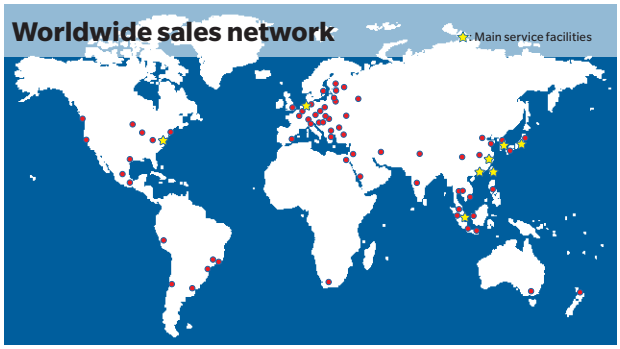
SpectraMagic NX2 is color management software that gives users a customizable screen display and a wide range of functions for operating and configuring their spectrophotometer or Chroma Meter from a computer. Users can display data lists and create color difference graphs and spectral graphs to assist in color management that requires judgment based on numerous values and indicators.



You can see the details in the catalog from the following 2D code. →

SpectraMagic NX2 web Site

Worldwide sales network



- Displays shown are for illustration purposes only.
- The specifications and appearance shown herein are subject to change without notice.
- Company names and product names used herein are trademarks or registered trademarks of their respective companies.
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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.

ISO Certifications of KONICA MINOLTA, Inc., Sakai Site

ISO 9001
JQA-QMA15888
Design, development, manufacture/manufacturing management, calibration, and service of measuring instruments

ISO 14001
JQA-E-80027
Design, development, manufacture, service and sales of measuring instruments

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