



KONICA MINOLTA

# Spectrophotometer **CM-700d / 600d**

New Generation Spectrophotometers with  
Wireless Communication and Colour LCD Screen



The essentials of imaging

# Compact and lightweight spectrophotometer offering new technologies for perfect handling!

Objective Quality Control of colour by instrumental assessment has proven to be reliable and affordable technology for any products where colour is an important quality criterion, as in the Paints & Coatings-, Plastics-, Automotive-, Home-Appliance-, Ceramics-, Textiles- and many other Industries. In addition, the increasingly global relationship between raw material suppliers, component manufactures, assemblers and buyers make precise colour data communication essential in a world which is ever more colourful.

The new generation of portable spectrophotometers from Konica Minolta offers unprecedented ease of use and perfect handling by utilising new technologies, enhanced ergonomics and applying Konica Minolta's known advanced optical design and signal processing technology. The CM-700d and CM-600d models will change the way portable spectrophotometers are perceived and applied in Research & Development and QualityControl by improving usability and convenience.

## Experience impressive colour measurement!

### ➔ Measure anything anywhere.

With the CM-700d and CM-600d you can measure any sample anywhere! The ergonomic vertical alignment is perfectly suited to position and measure round or even concave shaped parts and samples with single hand operation. Weighing only 550 g, the CM-700d and CM-600d are the most lightweight instruments in their class and thus allow excellent portability for on-site measurement. The measuring aperture is selectable between Ø8 mm and Ø3 mm to measure even small sample sizes (CM-700d only).



### ➔ Communicate wireless.

The CM-700d and CM-600d are the world's first portable colour measuring instruments enabling wireless data communications with an external PC or a Printer using Bluetooth® class 1 technology. This brings a new dimension of freedom of operation to portable colour measurement in production eliminating the usual cable tangle associated with conventional instruments. Bluetooth® data communications with the new models can work at distances up to 100m including bi-directional communications displaying PASS/FAIL message or colorimetric data. In stationary mode, the instruments also offer communications via a USB port.



### ➔ See colours in colour.

The CM-700d and CM-600d are the world's first portable colour measuring instruments with a colour LCD screen to improve colour data reading & perception. The 2.36-inch bright TFT display shows colour readings both in numerical or graphical mode to improve operability and understanding. Pseudo colour simulations to express colour difference or metamerism are also possible for rapid visual indication.

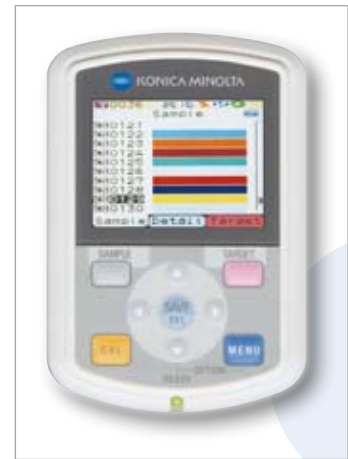


## → Easy to operate.

The CM-700d and CM-600d also set new standards in ease of use and intuitive operation. Five dedicated buttons for the most important operations and displayed menu guidance in 6 languages make it easy to navigate through all functions and features. Data memory capacity allows users to store up to 1.000 targets and 4.000 measurement sets. With the "Auto target" function, the instrument searches for the closest target of any measured colour.

## → Easy to read colour LCD screen.

Abundant information is displayed in colour for easy understanding. Measured colours can also be reproduced as colour patches on the colour LCD, which is useful to check the level of colour difference or to search for colours.



Spectral graph



Pseudocolour



Colour difference graph

## → More than you expect.

In addition to all the advanced technology, both models come with a full list of features and functions you can expect from the leader and pioneer in portable colour measurement:

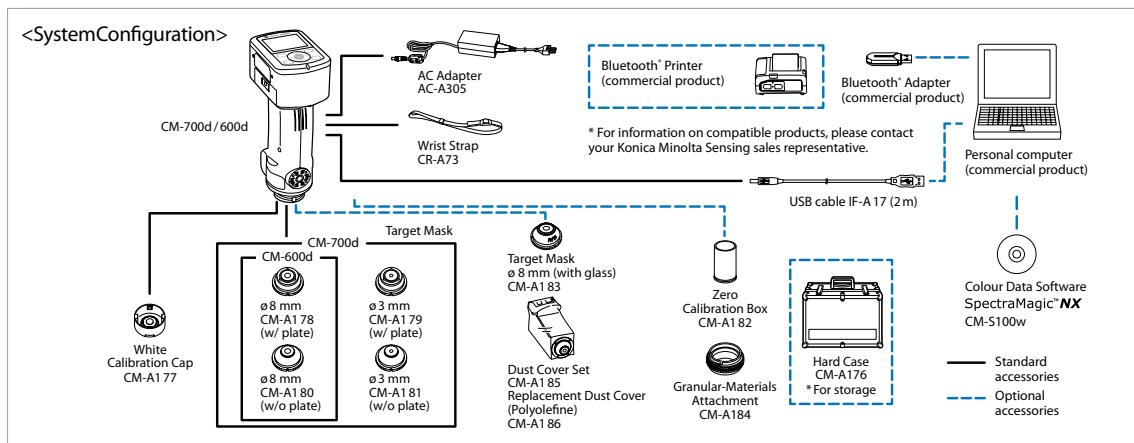
1. **Sphere geometry with simultaneous measurement (automatic switching) of specular components included (di:8°) and excluded (de:8°)**
2. **Powerful and long life Xenon Flash illumination for maximum accuracy even on dark and saturated colours**
3. **Highest levels in Inter-Instrument- and Inter-Model-Agreement, essential for global colour data exchange**
4. **Choice of 3 power supply modes: Dry battery, rechargeable batteries (4 AA size) or AC Adapter for maximum flexibility**
5. **Automatic "Stand-by" power saving function mode**



## Main specifications

Model	CM-700d	CM-600d
Illumination / viewing system	di: 8°, de: 8° (diffused illumination, 8-degree viewing angle), SCI (specular component included)/SCE (specular component excluded) selectable with automatic switching (Conforms to CIE No. 15, ISO 7724/1, DIN5033 Teil7, ASTM E 1164, and JIS Z 8722)	
Size of integrating sphere	ø40 mm	
Detector	Silicon photodiode array (dual 36-element)	
Spectral separation device	Diffraction grating	
Wavelength range	400 nm to 700 nm	
Wavelength pitch	10 nm	
Half bandwidth	Approx. 10 nm	
Reflectance range	0 to 175%, Display resolution: 0.01%	
Light source	Pulsed xenon lamp (with UV cut filter)	
Measurement time	Approx. 1 second	
Minimum measurement interval	Approx. 2 seconds (in SCI or SCE mode)	
Battery performance	With alkaline dry batteries: Approx. 2,000 measurements With nickel-metal-hydrate rechargeable batteries (2300 mAh): Approx. 2,000 measurements with full charge * Stand-alone continuous measurement fixed to either SCI or SCE mode at 10-second intervals at 23°C	
Measurement/illumination area	MAV: ø8 mm/ ø11 mm SAV: ø3 mm/ ø6 mm * Changeable by replacing target mask and selecting lens position	MAV: ø8 mm/ ø11 mm only
Repeatability	Spectral reflectance: Standard deviation within 0.1%, Chromaticity value: Standard deviation within $\Delta E^*_{ab}$ 0.04 * When a white calibration plate is measured 30 times at 10-second intervals after white calibration	
Inter-instrument agreement	Within $\Delta E^*_{ab}$ 0.2 (MAV/SCI) * Based on 12 BCRA Series II colour tiles compared to values measured with a master body at 23°C	
No. of averaging measurements	1 to 10 (Auto averaging), 1 to 30 (Manual averaging)	
Display	2.36-inch TFT colour LCD	
Interfaces	USB1.1; Bluetooth® standard version 1.2*	
Observer	2° observer or 10° observer	
Illuminant	A, C, D <sub>50</sub> , D <sub>65</sub> , F2, F6, F7, F8, F10, F11, F12 (Simultaneous evaluation with two light sources possible)	
Displayed data	Spectral values/graph, colorimetric values, colour difference values/graph, PASS/FAIL result, pseudocolour, colour assessment	
Colour spaces	L*a*b*, L*C*h, Hunter Lab, Yxy, XYZ, Munsell, and colour difference in these spaces (except for Munsell)	
Colorimetric data	MI, WI (ASTM E313-73/E313-96), YI (ASTM E313-73/ASTM D1925), ISO Brightness, 8° gloss value	
Colour difference formulas	$\Delta E^*_{ab}$ (CIE1976), $\Delta E^*_{94}$ (CIE1994), $\Delta E^*_{00}$ (CIE 2000), CMC (l: c)	
Storable data sets	Measurement data: 4,000 sets / Target colour difference data: 1,000 sets	
Pass/fail judgment	Tolerances can be set to colorimetric values (excluding Munsell), colour difference values, colour values (excluding 8° gloss value) respectively	
Power	Special AC adapter; 4 AA-size alkaline dry batteries or nickel-metal-hydrate rechargeable batteries	
Size	73 (W) x 211.5 (H) x 107 (D) mm	
Weight	Approx. 550 g (without white calibration cap and batteries)	
Operating temperature/humidity range	5 to 40°C, relative humidity 80% or less (at 35°C) with no condensation	
Storage temperature/humidity range	0 to 45°C, relative humidity 80% or less (at 35°C) with no condensation	

\* Applicable Bluetooth® profile: Serial Port Profile, Output: Bluetooth® Power Class 1. The communication distance may vary depending on the obstacles and radio wave conditions between the devices. Successful wireless communication is not guaranteed with all Bluetooth®-ready equipment.  
• Bluetooth® is a registered trademark of Bluetooth SIG, Inc. and is used under license agreement.



**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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