KONICA MINOLTA

Spectrophotometer
CM-M6

High–Precision Multi–Angle Spectrophotometer
with 6 angles for Automotive Exteriors

Innovative “Double–Path” Optical System for stable measurements even on curved surfaces

Compact, lightweight vertical alignment for easy measurements in the assembly line

Small measurement area (Ø6mm), perfect for small surfaces

Giving Shape to Ideas

Accurate measurements of automotive exterior finishes **in the assembly line**

The CM-M6 is a compact and lightweight Multi-Angle Spectrophotometer using a patented “Double Path” optical system with outstanding performance on curved surfaces and thus perfect for measurements on the assembly line.

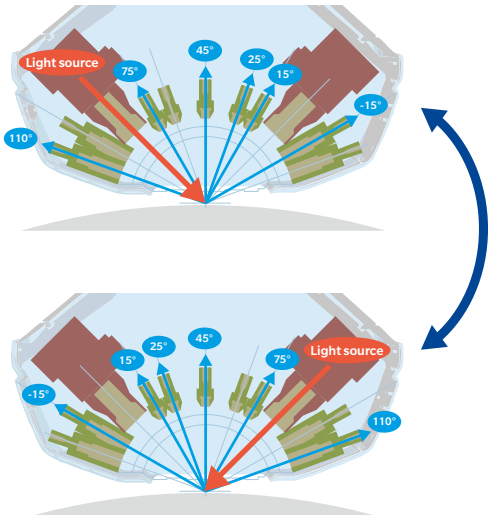
Multi-Angle measurements – 45° illumination and 6 viewing angles

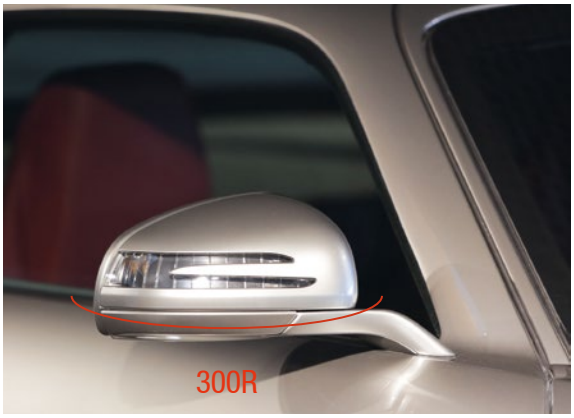
Double-path optical system

Illlumination angle: 45°

Aspecular viewing angles: -15°, 15°, 25°, 45°, 75°, 110°

As the appearance of effect surfaces changes with viewing angle and lighting conditions, the optical setup of the CM-M6 makes it possible to control the lightness and colour gradient travel of metallic and pearl effect finishes.





Double-path optical system

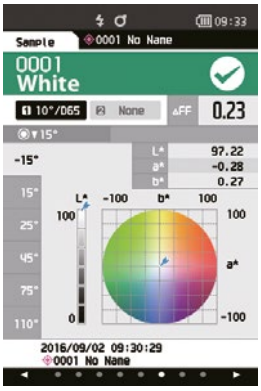
By using 45° illumination and 6 aspecular viewing angles from opposite sides, the “Double-Path” optical system measures two illumination paths for one reading and enables stable measurements even on curved surfaces (r > 300).

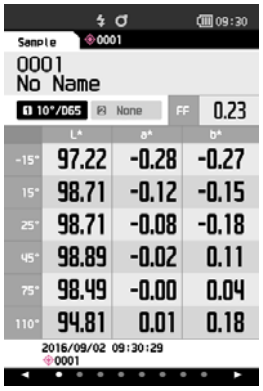
Compact, lightweight with vertical alignment

Being compact and lightweight, a user can hold the vertical body of the CM-M6 with one or two hands for stable measurements. Designed to measure automotive exteriors in the assembly line, the CM-M6 offers many useful features for simple routine work, e.g. optional Bluetooth® for wireless data communication with external devices.

Ø6 mm measuring field for small surfaces

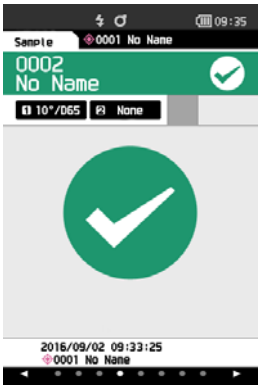
The measurement area is 6 mm in diameter in order to measure small surfaces with the utmost stability and surfaces which are impossible to measure with normal instruments.





Colour Display

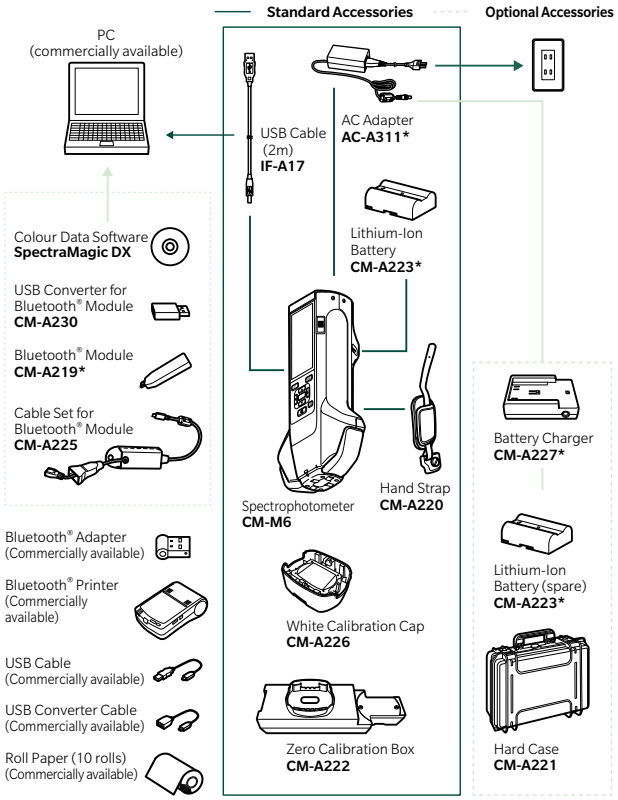
The CM-M6 has a built-in 3.5” colour LCD allowing measurement values to be evaluated numerically and graphically or just as a PASS/FAIL message against a defined standard.



Main specifications

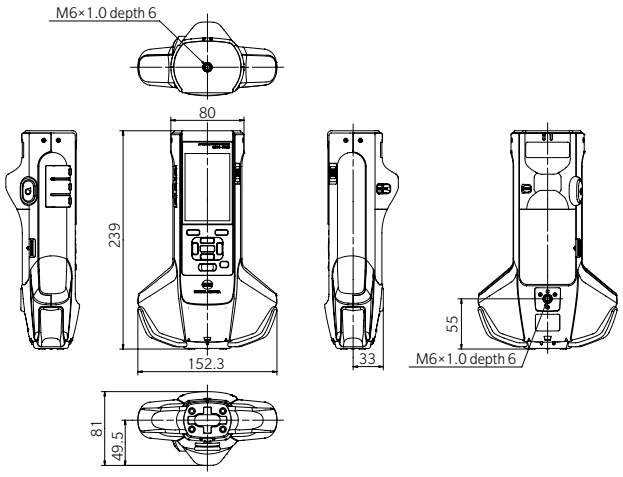
Model	Spectrophotometer CM-M6
Illumination/viewing system	45° illumination : –15°/15°/25°/45°/75°/110° aspecular viewing angles with double–path technology
Detector	Dual 40–element silicon photodiode arrays
Spectral separation device	Linear variable filter
Wavelength range	400–700 nm
Wavelength pitch	10 nm
Measurement range	6 angles: 0–600%; Output/display resolution :0.01 %
Light source	High–CRI white LED
Measurement time	Approx. 4.5 seconds
Minimum measurement interval	Approx. 5 seconds
Battery performance	Approx. 1,500 measurements/charge (at 10–second intervals at 23°C)
Measurement / illumination area	Ø6 mm / Ø12 mm
Repeatability	Chromaticity value :Standard deviation within ΔE*ab 0.05 (When a white calibration plate is measured 30 times at 10–second intervals after white calibration)
Inter-instrument agreement	Within ΔE*ab 0.2 (Typical) (Based on 12 BCRA Series II colour tiles compared to values measured with a master body under Konica Minolta standard measurement conditions)
Observer	2 ° or 10 ° Standard Observer
Illuminant	A, C, D50, D65, F2, F6, F7, F8, F10, F11, F12 (simultaneous evaluation with two illuminants possible)
Displayed data	Colourimetric values, colour–difference values/graph, line graph (Colourimetric/colour–difference values), pass/fail judgement
Colourimetric data	L*a*b*, L*C*h
Indexes	MI, FF value (Flop value)
Colour-difference formula	ΔE*ab (CIE 1976), Δ(L*a*b*), Δ(L*C*H*), CMC (l:c), ΔE*94 (CIE 1994), ΔE00 (CIE DE2000), ΔE (DIN 6175)
Data memory	Target data: 200 measurements; Sample data: 800 measurements
Pass/Fail judgement	Tolerances can be set for colour–difference values
Displayed languages	Japanese, English, German, French, Italian, Spanish, Chinese (Simplified), Portuguese, Russian, Turkish, Polish
Display	3.5–inch TFT Colour LCD
Interfaces	USB2.0, Bluetooth® (Option)
Power	Rechargeable lithium–ion battery (removable), dedicated AC adapter
Charging time	Approx. 5 hours when no charge remains
Operation temperature/ humidity range	0–40 °C, relative humidity 80% or less (at 35 °C) with no condensation
Storage temperature/ humidity range	–20 – 45 °C, relative humidity 80% or less (at 35 °C) with no condensation
Size (W×H×D)	Approx. 152 × 239 × 81 mm
Weight	Approx. 1.1 kg (including battery)

System diagram



*Not available in all areas.

Dimensions (Unit: 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 incorrect batteries may cause a fire or electric shock.

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- Displays shown are for illustration purpose only.
- The specifications and appearance shown herein are subject to change without notice.

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