



KONICA MINOLTA

Spectrophotometer **CM-5**

Stand alone Top-Port Spectrophotometer
with maximum Flexibility and Versatility



Food & Ingredients



Pharmaceuticals & Chemicals



Cosmetics & Perfumes

Giving Shape to Ideas

CM-5 Top-Port Spectrophotometer

offering versatile usage

and simple operation

Requirements for Colour measurement of Foods, Ingredients, Flavours & Fragrances, Drinks, Pharmaceuticals, Cosmetics and base Chemicals are especially demanding due to the extreme diversity of sample forms, from solids, powders, granules, pastes and liquids either opaque, translucent or transparent.

An instrument capable of covering this wide range of products must not only be flexible in terms of measurement methodology but even more importantly in terms of user friendliness and minimum sample preparation time to allow fast routine measurements in the laboratory or in production control.

The new Konica Minolta Bench-Top Spectrophotometer CM-5 offers exactly this combination of versatility and simplicity to cover all the requirements in a true "All in one" concept.

Full-featured

Stand alone instrument that

covers all your applications

➔ The top-port concept allows easy sample positioning and measurement of solid samples. Just place the sample on the measuring port and press the measurement button.

Measuring areas with 30, 8 and 3 mm allow perfect adaption to the sample size.

Samples in paste, powder or granule form can easily be measured with the optional Petri-Dish set.



Reflection measurement of solids



Reflection measurement of paste products

➔ Simply sliding the top cover, opens the large transmission chamber to measure all kind of transparent liquids or solids, such as foils or glass plates in Transmission mode.

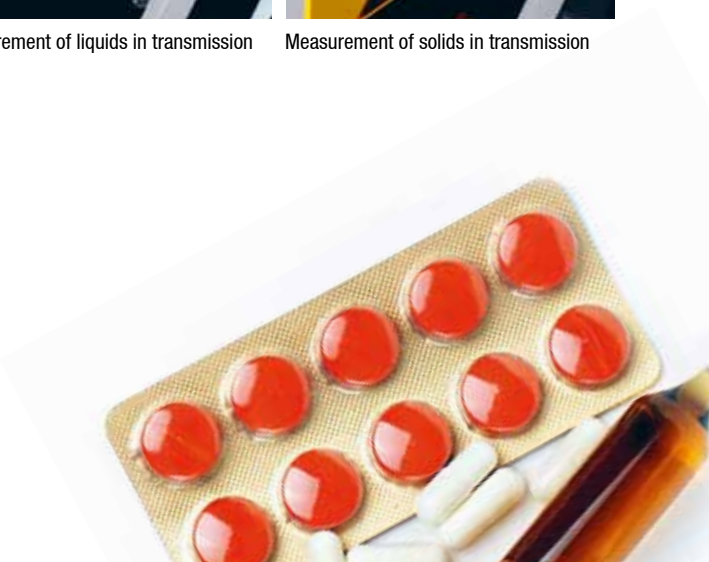
For liquids, glass or plastic cells of up to 60 mm path can be used, including 12.5 mm standard glass cells when using the optional adapter.



Measurement of liquids in transmission

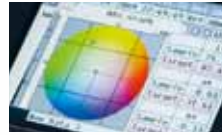


Measurement of solids in transmission



Functions & Features that make your daily work faster and easier

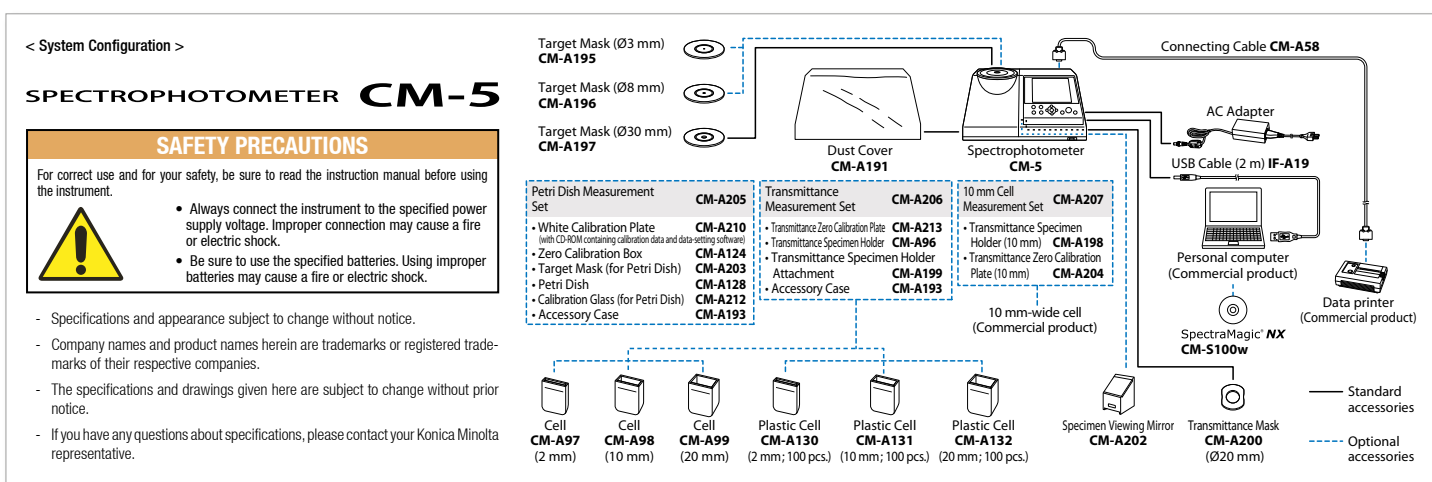
- ➔ The large LCD screen shows the measurement results delete either numerically or graphically including Reflectance values, all colour systems and PASS/FAIL evaluations.
- ➔ To simplify the operation; the “Operation Wizard” is a perfect step by step on screen user guide in 7 Languages to ease operation.
- ➔ To simplify the use of the CM-5 by several people in parallel, measurement data and instrument settings can be saved on a USB stick.
- ➔ In addition to the classic colorimetric evaluation systems, the CM-5 offers measurement results of liquids to be evaluated in terms of industry specific indices (colour scales) such as Gardner, Iodine, Hazen (APHA), European and US Pharmacopeia, spectral reflectance/transmission and spectral absorbance.



! Top 10 Features

1. High-end Spectrophotometer with wide wavelength range
2. Top-port concept for Reflectance measurements
3. Large Transmission chamber for liquids & solids
4. Stand alone function with LCD Screen and Firmware
5. Measurement of Industry specific indices
6. Storage of user settings and data on USB stick
7. “Operation Wizard” with real time on screen user guidance
8. Firmware in 7 Languages
9. Extremely easy operation with automatic calibration
10. Compact, lightweight and functional Design

Specifications		Spectrophotometer CM-5	
Illumination/viewing system	Reflectance:	di:8°, de:8° (diffuse illumination: 8° viewing) / SCI (specular component included)/SCE (specular component excluded) switchable Conforms to CIE No. 15, ISO 7724/1, ASTM E 1164, DIN 5033 Teil 7, and JIS Z 8722 (Condition c)	
	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		
Wavelength range	360 nm to 740 nm		
Wavelength pitch	10 nm		
Half bandwidth	Approx. 10 nm		
Measurement range	0 to 175 % (Reflectance or transmittance); Output/display resolution: 0.01%		
Light source	Pulsed Xenon lamp		
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:	Ø20 mm	
Repeatability	Spectral reflectance: Standard deviation within 0.1% (400 nm to 740 nm) / 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) (Based on 12 BCRA Series II color tiles compared to values measured with a master body at 23°C)		
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	14.5 cm TFT color LCD		
Display languages	English, Japanese, German, French, Italian, Spanish, Simplified Chinese		
White calibration	Automatic white calibration (reflectance) / 100% calibration (transmittance) 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	A, C, D50, D65, F2, F6, F7, F8, F10, F11, F12, ID50, ID65 (simultaneous evaluation with two light sources possible)		
Displayed data	Spectral values, spectral graph, 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:	M; WI (ASTM E 313-73, ASTM E 313-96); YI (ASTM E 313-73, ASTM E 313-96, ASTM D 1925); ISO Brightness, B (ASTM E 313-73)	
	Transmittance:	Gardner, Iodine, Hazen (APHA), European Pharmacopoeia, US Pharmacopoeia	
User index	User-defined index		
Color-difference equation	ΔE^*ab (CIE 1976), ΔE^*94 (CIE 1994), ΔE_{00} (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	Sample 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 (Security-en-abled USB memory sticks cannot be used.)		
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. 5.8 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		



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