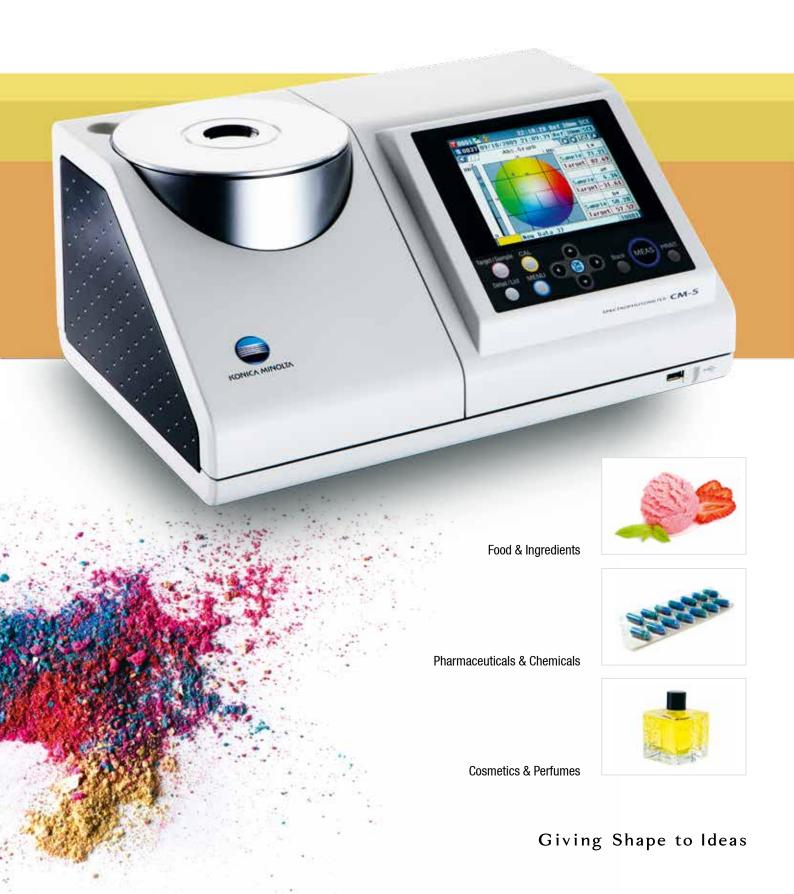


Spectrophotometer CM-5

Stand alone Top—Port Spectrophotometer with maximum Flexibility and Versatility



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.

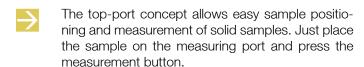
An instrument capable of covering this wide range of products must not only be flexible in terms of measurement methodology but even more importantly in terms of user friendliness and minimum sample preparation time to allow fast routine measurements in the laboratory or in production control.

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



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

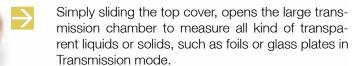
Samples in paste, powder or granule form can easily be measured with the optional Petri-Dish set.



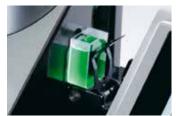
Reflection measurement of solids



Reflection measurement of paste products



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



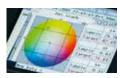
Measurement of solids in transmission





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
- Compact, lightweight and functional Design

Specifications	Spectropl	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-elemen	Dual 40-element silicon photodiode arrays	
Spectral separation device	Planar diffraction	Planar diffraction grating	
Wavelength range	360 nm to 740 n	360 nm to 740 nm	
Wavelength pitch	10 nm	10 nm	
Half bandwidth	Approx. 10 nm	Approx. 10 nm	
Measurement range	0 to 175 % (Refle	0 to 175 % (Reflectance or transmittance); Output/display resolution: 0.01%	
Light source	Pulsed Xenon lan	Pulsed Xenon lamp	
Measurement time	Approx. 1 s (to da	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 ΔΕ*ab 0.04 *When a white calibration plate is measured 30 times at 10–second intervals after white calibration	
Inter-instrument agreement	Within ∆E*ab 0.1	Within ΔE*ab 0.15 (Typical) I (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 cold	14.5 cm TFT color LCD	
Display languages	English, Japanes	English, Japanese, German, French, Italian, Spanish, Simplified Chinese	
White calibration	Automatic white	Automatic white calibration (reflectance) / 100% calibration (transmittance) using internal white calibration plate	
Interfaces	USB 1.1 (connec	USB 1.1 (connection to PC; USB memory stick (without security feature); USB Keyboard (only US layout supported); RS-232C (connection to serial printer)	
Observer	2° Standard Obs	2° Standard Observer or 10° Standard Observer	
Illuminant	A, C, D50, D65, F	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 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, Hu	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 E313–73, ASTM E313–96, Hunter); 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 Pharmacopeia	
User index	User-defined ind	User-defined index	
Color-difference equation	ΔE*ab (CIE 1976	ΔΕ*ab (CIE 1976), ΔΕ*94 (CIE 1994), ΔΕ00 (CIE 2000), ΔΕ (Hunter), CMC (I: c)	
Pass/fail judgment	Tolerances can b	Tolerances can be set to colorimetric values (except Munsell), color-difference values, or reflectance index values	
Storable data	Sample data: 4,0	Sample data: 4,000 measurements; Target color data: 1,000 measurements	
USB memory stick storage	Storage of measi	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,	AC 100 to 240 V, 50/60 Hz (using exclusive AC adapter)	
Size	Slide cover close	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	Approx. 5.8 kg	
Operating temperature/humidity range	13 to 33°C, relati	13 to 33°C, relative humidity 80 % or less (at 35°C) with no condensation	
Storage temperature/humidity range	0 to 40°C, relativ	0 to 40°C, relative humidity 80 % or less (at 35°C) with no condensation	

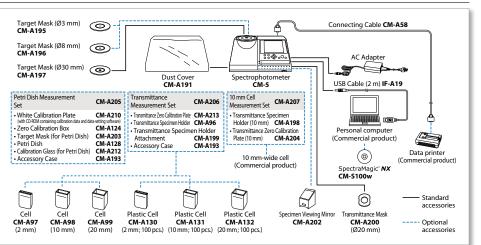


SAFETY PRECAUTIONS

For correct use and for your safety, be sure to read the instruction manual before using



- · 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.



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Certificat No: JQA-E-80027 Date d'enregistrement: 12 mars 1997

Konica Minolta Sensing Singapore Pte Ltd. Konica Minolta Sensing

Konica Minolta (CHINA) Investment Ltd.

Addresses and telephone numbers are subject to change without notice. For the latest contact information, please refer to the KONICA MINOLTA Worldwide Offices web page:

http://konicaminolta.com/instruments/network

