

Colour Measuring—Spectrophotometer

The CM2500d and CM2300d are portable spectrophotometers with unprecedented intuitive and comprehensive user interfaces combined with many innovative technical features which expand the boundaries for on site colour quality control in production. These portable spectrophotometers have become the instrument of choice for thousands of users world-wide due to the ergonomic and intuitive design, and unprecedented ease of use. Single handed operation, the exclusive "Navigation wheel", the unique sample observation device and the large data information display are the main highlight features of these portable spectrophotometers.



High reliability and long life. Maintenance free design.

The number of moving parts in the instrument is minimised through the introduction of numerical control technology. The CM spectrophotometer is an be used with confidence, since they have been developed, manufactured and calibrated to meet ISO 9001 requirements.

Allows measurement in any position. Compact, lightweight, with an easy-to-operate navigation wheel and large LCD display.

The battery-powered small, light body allows the instrument to be placed in any position at the sample surface. The CM spectrophotometer is large LCD displays and its reverse display function provide easy reading, irrespective of which hand it is

held in using your finger, navigation wheel allows simple user-friendly operation.

Promotes accurate, consistent colour communication. Conforms to widely accepted industry standards and allows measurement in all popular colour spaces.

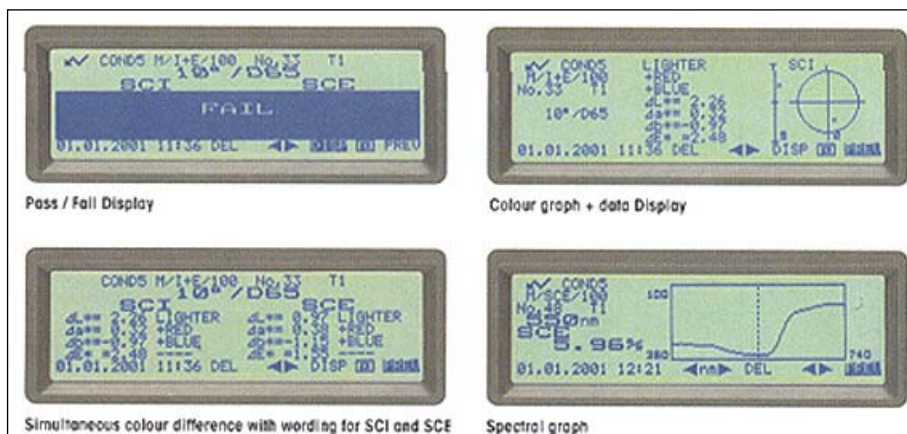
The illuminationintegrating sphere to provide diffuse illumination/8° viewing system. The CM spectrophotometer's conform to all widely accepted standards including ISO, JIS, DIN, CIE and ASTM, and generate measurements in colour no ship notations such as L*a*b*, Yxy, Munsell and CIE2000.

Simultaneous measurement of SCI (specular component included) and SCE (specular component excluded).

Simultaneous measurement of SCI and SCE displays the data on the LCD in only 1.5 seconds. Unlike conventional spectrophotometer is there is no need to mechanically switch between SCI and SCE mode. This improves working efficiency and provide stable measured data since the measurement area does not shift when the mode is switched. And also relevant to bitty gloss value can be displayed using numerical gloss control (on CM – 2500d)

Measures the target with high accuracy. Easy to carry stylish body with an illuminated viewfinder.

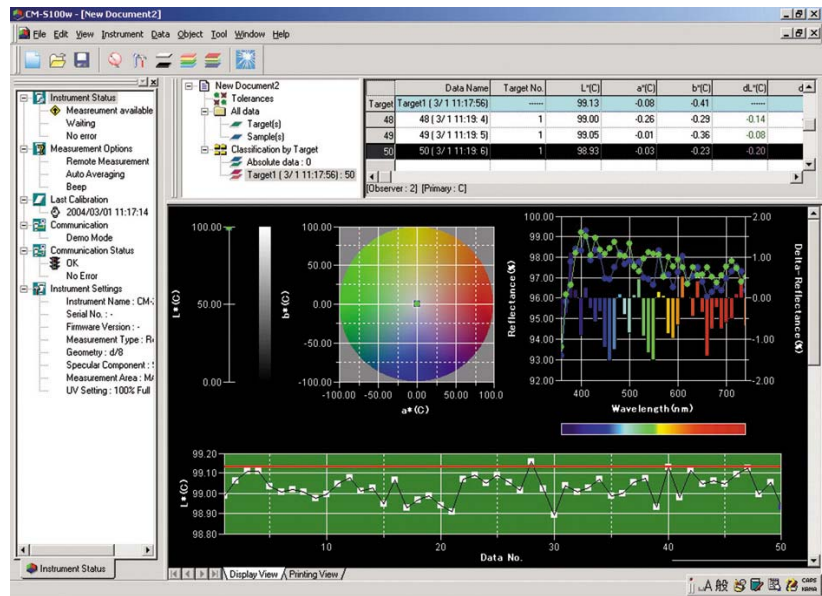
The user can choose the most suitable measurement area for the target. The easy to carry body with the illuminated viewfinder enables the user to position the instrument on the target quickly and accurately.



2 SpectraMagic NX QC Software.

Colour measurement and control for all industries, such as, Food, Plastics, Paint & Coatings, Cosmetics, Pharmaceuticals, Textiles, Graphic Arts, Construction, and Transportation. Whether your colour control involves incoming raw materials, in process production or outbound colour critical goods and materials, SpectraMagic™NX makes it easy to inspect and control colour. Utilize pre-defined screen templates for Pass/Fail assessment, statistical process control, and sophisticated R&D analysis. Or, design your own screen layout based on your particular industry and/or application. Each graph type (colour, spectral, colour difference or trend), as well as the data list, can be scaled to the desired size with total ease. SpectraMagic™NX - lots of options to help you choose just what's right for you.

As a world first[™], SpectraMagic™NX allows you to insert digital pictures to your measurement data and mark the exact measuring spot, thus opening totally new dimensions to colour communication with customers and suppliers. The Data List View allows you to swiftly export measurement data into Excel using the copy and paste function. Any graph can be copied into a spreadsheet by "drag and drop" method. Reports can be customized to show color data in a format that meets end user requirements. Furthermore, SpectraMagic™NX can share data within a local area network (LAN) and operate under Windows environments



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	CM2500d	CM2300d
Illumination / Viewing System	d:8° (diffuse illumination, 8-degree viewing), equipped with simultaneous measurement of SCI (di:8° specular component included) / SCE (de:8° specular component excluded) Conforms to CIE No.15,ISO 7724/1,ASTM E1164,DIN 5033 Teil7 and JIS Z8722 Condition C standard.	
Sphere size (diameter)	52mm	
Light receiving element	Silicon photodiode array (dual 40 elements)	
Spectral separation device	Diffraction grating	
Wavelength range	360nm to 740nm	
Wavelength pitch	10nm	
Half bandwidth	Approx 10nm	
Reflectance range	0 to 175%, resolution 0.01%	
Light source	2 pulsed xenon lamps	
Measurement time	Approx 1.5 seconds	
Measurement / illumination area	MAV 8mm / 11mm	
Repeatability	Spectral Reflectance:Standard deviation within 0.1% (360 to 380 nm within 0.2%) Colorimetric Value : Standard deviation within ΔE*ab 0.04 †	Spectral Reflectance:Standard deviation within 0.2% (360 to 380 nm within 0.4%) Colorimetric Value : Standard deviation within ΔE*ab 0.08 †
Inter Instrument agreement	withinΔE*ab 0.2 (MAV/SCI) ‡	withinΔE*ab 0.4 (MAV/SCI) ‡
Measurement mode	Single measurement/automatic averaging of multiple measurements(auto mode: 3, 5, 8 times/manual mode)	
Illuminant condition	CIE: A, C, D50, D65, F2, F6, F7, F8, F10, F11, F12 (simultaneous evaluation is possible using two light sources)	
Display data	Spectral value/graph, colorimetric value, color difference value; PASS/FAIL result, relative gloss value	
Colour space / colorimetric data	L*a*b*, L*C*h, CMC (1:1), CMC (2:1), CIE94, Hunter Lab, Yxy, Munsell, XYZ, MI, WI (ASTM E313), YI (ASTM E313/ASTM D1925), ISO Brightness (ISO 2470), Density statusA / T, WI/Tint (CIE/Ganz), CIE00	L*a*b*, L*C*h, CMC (1:1), CMC (2:1), CIEDE94, CIEDE00, Yxy, Munsell, XYZ, MI, WI (ASTM E313-73), YI (ASTM D1925)
Dimensions / weight	69 x 96 x 113mm, 670 grams (without batteries)	
Standard accessories	White calibration plate, Target mask 3mm (CM2500 only) 8mm dia, RS232c cable, AC Adapter, 5 x 1.5V (AA) batteries	
Optional accessories	Hard case, Dust cover set, Dust cover, SpectraMagic™NX (software), Zero calibration box	