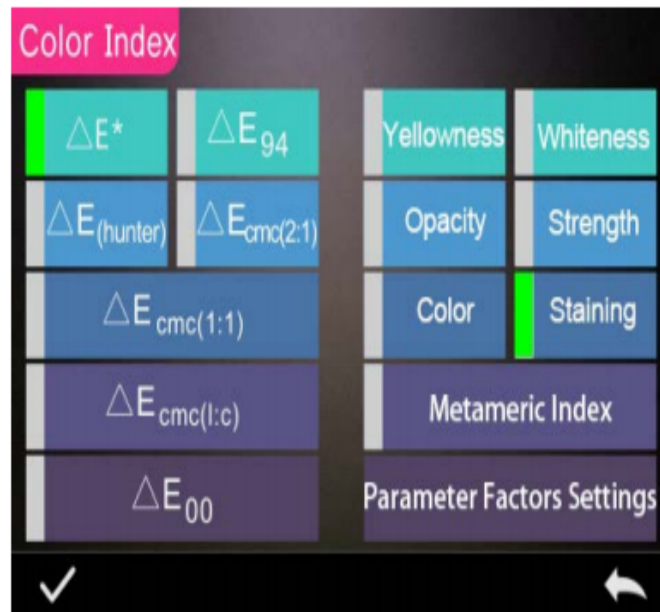


# Spectrophotometer PCE-CSM 20



**Spectrophotometer PCE-CSM 20**  
**High-quality spectrophotometer /**  
**Powerful lithium-ion battery / Single or average value measurement /**  
**Evaluation via software / 4 color LED as light source**

PCE-CSM 20 is a handheld spectrophotometer used for high-quality color measurement. Featuring a single 8 mm aperture and including SCI and SCE specular modes for industrial color measuring applications, the PCE-CSM 20 offers a long battery life, a long life 4-color lamp and an easy-to-use portable design. Camera/illumination locating for small samples.

The high-quality processing of the spectrophotometer is very fast. Whilst working with the spectrometer the high measuring accuracy of the device is important. In production grade and quality assurance, a spectrophotometer is often used. Here it is important that a constant quality is always produced and that individual parts not only look similar, but look identical. For this, a high measurement quality is of great importance. Depending on the model, the measured data can be transmitted to a computer via included USB. Appropriate software is also included in the delivery contents.

- ▶ Long battery life
- ▶ USB cable for data transfer to included software
- ▶ Portable for ease of use
- ▶ Reference memory of 2000 colors, storage for 20,000 samples
- ▶ Includes white and black calibration standards
- ▶ High measuring accuracy and stability with 4 illumination choices
- ▶ Single and average measurements with delta pass/fail display
- ▶ Spectrophotometer measures from 400 to 700 nm in 10 nm increments
- ▶ Conforms with CIE No. 15, GB/T 3978, GB2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil

# Specifications

Measuring geometry	8° / d
Integrated sphere size	48 mm
Light source	LED lighting system, UV light
Spectrophotometric operation	Concave grid
Sensor	256 Pixel CMOS image sensor
Wavelength range	400 ... 700 nm
Wavelength interval	10 nm
Measured reflection range	0 ... 200%
Measuring aperture	Single panel: 8 mm (0.3") / 10 mm (0.4")
Specular component	SCI, SCE
Colour ranges	CIE Lab, XYZ, Yxy, LCh, CIE LUV, Hunter LAB
Formulas for color inequality	$\Delta E^*ab$ , $\Delta E^*uv$ , $\Delta E^*94$ , $\Delta E^*cmc(2:1)$ , $\Delta E^*cmc(1:1)$ , $\Delta E^*00v$ , $\Delta E(\text{Hunter})$
Other colorimetric index	WI(ASTM E313, CIE/ISO, AATCC, Hunter), YI(ASTM D1925, ASTM 313), TI(ASTM E313, CIE/ISO), Metamerism Index MI, Staining Fastness, Color Fastness, Color Strength, Opacity, 8° Glossiness
Lighting type	D65, A, C, D50
Viewing angle	2° / 10°
Data display	Spectrogram values, colour values samples, colour difference values / graph, pass / fail result, colour balance
Measuring time	2.6 seconds
Repeatability	Standard deviation within $\Delta E^*ab 0.06$ Average of 30 measurements of standard white plate
Error between equipment	$\Delta E^*ab 0.4$
Measurement mode	Single measurement, average value measurement
Tracking procedure	Finding the measuring points by camera
Power supply	Built-in Li-ion battery
Dimensions	184 x 77 x 105 mm / 7.2 x 3.0 x 4.1" (L x W x H)
Weight	600 g / 1.3 lbs
Lamp lifespan	5 years / over 3 million measurements
Display	3.5 in TFT colour LCD, capacitive touchscreen
Data interface	USB
Data storage	2000 standards, 20,000 samples
Menu languages	English, Chinese
Operating conditions	0 ... 40°C / 32 ... 104°F 0 ... 85% relative humidity (non-condensing)
Storage conditions	-20 ... 50°C / -4 ... 122°F 0 ... 85% relative humidity (non-condensing)

Subject to change