

# **MULTIPLE ANGLES ONE-KEY MEASUREMENT**

**Tailored for car paint color inspection**

## **MS3003**

Multi-angle spectrophotometer MS3003 is used to evaluate the effect of the surface of the topcoat

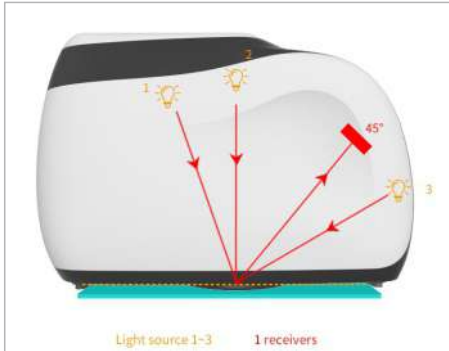
The appearance is affected by different viewing angles and viewing conditions, Can be used for metallic, pearlescent and other complex special effect colors

The product provides accurate and consistent color measurement.



S i m p l e a n d p r a c t i c a l

# Product features



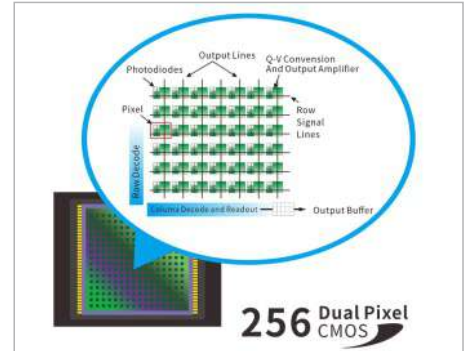
## 1, Multi-angle measurement

Adopt 3 illumination sources, 1 receivers to measure 3 measurement angles at the same time



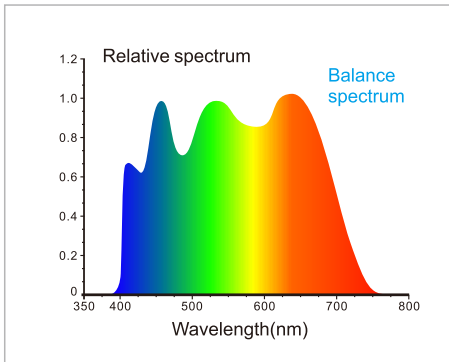
## 2, More intuitive display

Touch screen can display all Angle measurement results, more intuitive view of the comprehensive data



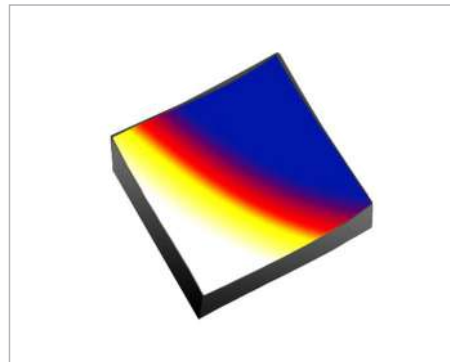
## 3, 256 Image Element Double Array CMOS Image Sensor

Higher optical resolution ensures the measurement speed, accuracy, stability and consistency of the instrument



## 4, Blue light enhancement, full spectrum

Full spectrum illumination measurement is more professional to avoid spectrum loss



## 5, Concave grating spectrophotometric technology

Using concave grating spectrophotometric technology, with higher resolution, makes color measurement more accurate.



## 6, Professional-grade white board

Professional-grade white board, high hardness in the surface, stable optical performance



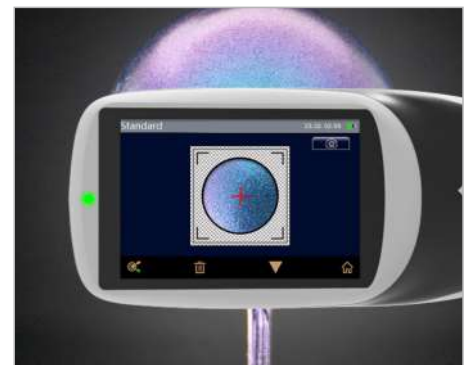
## 7, Higher quality

Industrial grade real-time processing MCU, supports WIFI, Bluetooth 5.0 transferring more stable and reliable



## 8, Ergonomics Novel and fashionable appearance design

The appearance of the instrument is designed for easy operation and can meet different holding habits



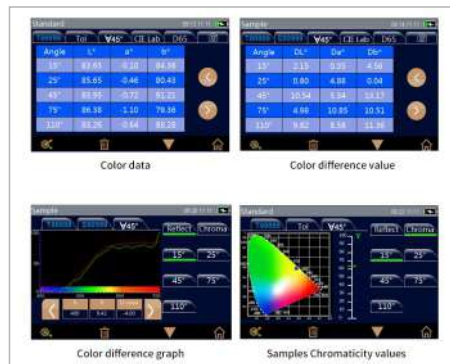
## 9, Color camera preview, can clearly observe the measured area

Built-in color camera positioning, can accurately judge the object measured position, and improve the measurement efficiency and accuracy



## 10, Multiple color measurement space, multiple observation light sources

Provide 6 color spaces, multiple observation light sources



## 11, Easily analyze data

Multiple functions, the screen can display various data intuitively



## 12, Support PC software

Can be connected to a computer, use computer control to measure and manage data

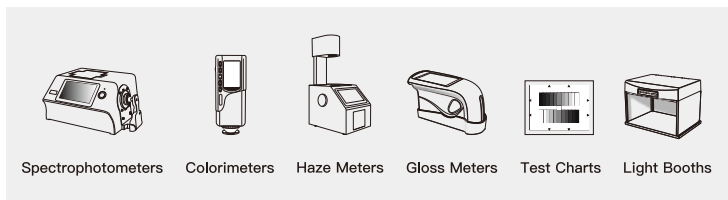
# APPLICATION INDUSTRY



## MS3003 Product parameter

<b>Measurement Geometry</b>	3 measurement angles (3 illumination sources, 1 receivers)
<b>Measuring angle</b>	45°Receiver: 45as25°, 45as45°, 45as110°
<b>Conform to the standards</b>	ASTM D2244, E308, E1164, E2194, E2539, DIN 5033, 5036, 6174, 6175-1, 6175-2; ISO 7724, 11664-4, SAE J1545
<b>Application</b>	Provide accurate and consistent color measurement for metallic, pearlescent and other complex special effect color products
<b>Lighting source</b>	Full spectrum LED light source with blue enhancement
<b>Lamp Life</b>	5 years, 3 million times measurements
<b>Spectrophotometric Mode</b>	Concave grating
<b>Sensor</b>	256 Image Element Double Array CMOS Image Sensor
<b>Wavelength Range</b>	400nm-700nm
<b>Wavelength Interval</b>	10nm
<b>Measurement Range</b>	0~600%
<b>Semiband Width</b>	10nm
<b>Measuring Aperture</b>	Φ12mm
<b>Color Space</b>	CIE LAB, XYZ, Yxy, LCh, βxy, DIN Lab99
<b>Color Difference Formula</b>	$\Delta E^*ab, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00, \text{DIN}\Delta E99, \Delta E \text{ DIN}6175$
<b>Other Colorimetric Index</b>	Flop Index
<b>Observer Angle</b>	2°/10°
<b>Illuminant</b>	D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4, F5, F6, F7 (DLF), F8, F9, F10 (TPL5), F11 (TL84), F12 (TL83/U30)
<b>Displayed</b>	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset
<b>Measuring Time</b>	Approx. 1 second for one angle, Approx. 3 seconds for all angles
<b>Repeatability</b>	Spectral reflectance: Standard deviation within 0.08% Chromaticity value: $\Delta E^*ab$ 0.04 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)
<b>Reproducibility</b>	$\Delta E^* < 0.10$ , avg on the gray tile of BCRA tile set $\Delta E^* < 0.25$ , avg on the color BCRA tile set
<b>Inter-instrument Error</b>	0.2 $\Delta E^*00$ (avg on reference Series II BCRA tile set)
<b>Effect Parameters</b>	/
<b>Effect Measurement</b>	/
<b>Effect Repeatability</b>	/
<b>Effect Reproducibility</b>	/
<b>Trigger mode</b>	Pressure sensing trigger, key trigger, software trigger
<b>Measuring Mode</b>	Single measurement, average measurement (1-99), continuous measurement (1-99)
<b>Locating Method</b>	Color camera preview
<b>Dimension</b>	Length x width x height=195X83X128mm
<b>Weight</b>	about 1Kg
<b>Power</b>	lithium-ion battery, 3.7V, 3200mAh, Continuous test 6000 times within 8 hours of full charge
<b>Display screen</b>	3.5-inch TFT color LCD, Capacitive Touch Screen
<b>Interface</b>	USB, Bluetooth
<b>Data Storage</b>	Standard 1000 Pcs, Sample 4000 Pcs
<b>Language</b>	Simplified Chinese, English, Traditional Chinese
<b>Operating Environment</b>	10°C to 50°C, humidity does not exceed 85%, no condensation
<b>Storage Environment</b>	-20°C to 50°C, humidity does not exceed 85%, no condensation
<b>Calibration</b>	Built-in white board parameters, external white board, black light trap
<b>Calibration interval</b>	4 hours, 8 hours, 24 hours, Startup calibration
<b>Standard accessories</b>	Power Adapter, USB Cable, User Guide, PC Software (download from the official website), Calibration Board, black light trap, Protective cap, wristband
<b>Optional accessories</b>	Micro Printer

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