

MS3012 multi-angle spectrophotometer adopts industrial-grade MCU and supports 12 measurement angles. It can provide accurate and consistent color measurement for metallic, pearlescent and other complex color products with special effects. The smooth operating system and superior performance optical measurement system allow the MS3012 multi-angle spectrophotometer to provide repeatable and reproducible flicker, color flicker, and particle size measurements.



## Multi-angle Spectrophotometer



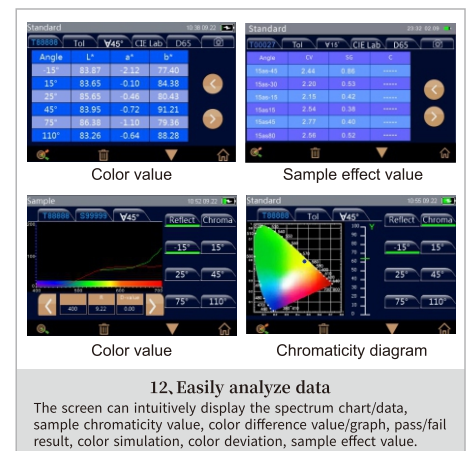
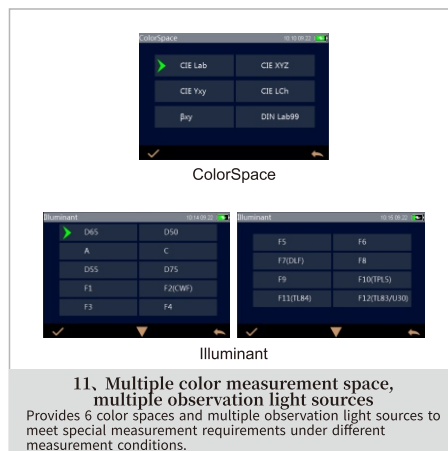
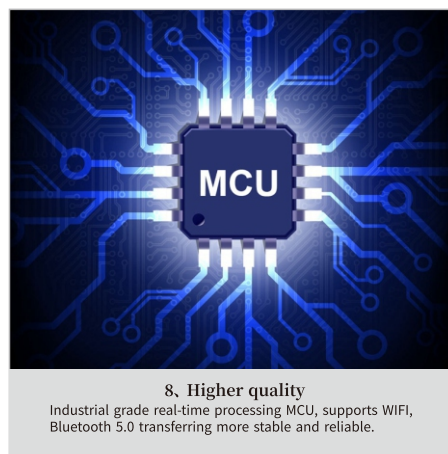
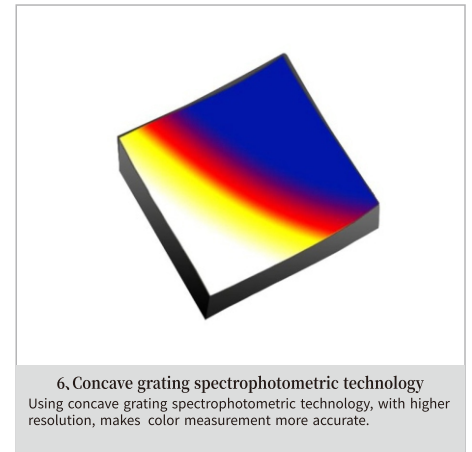
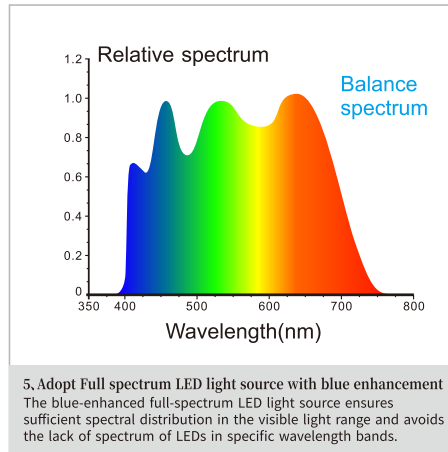
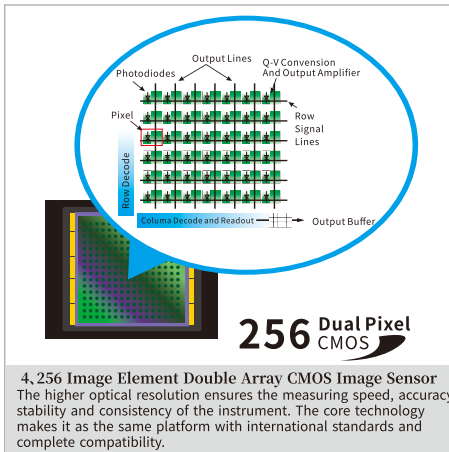
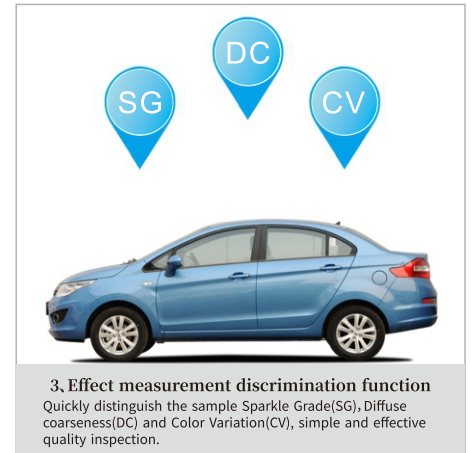
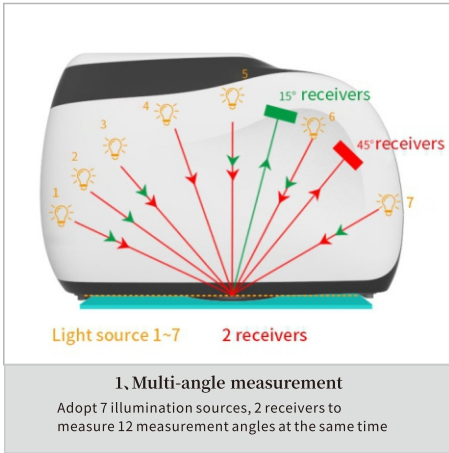
### PROFESSIONAL CAR SURFACE INSPECTION



- ◆ Sparkle Grade(SG)
- ◆ Diffuse coarseness(DC)
- ◆ Color Variation(CV)

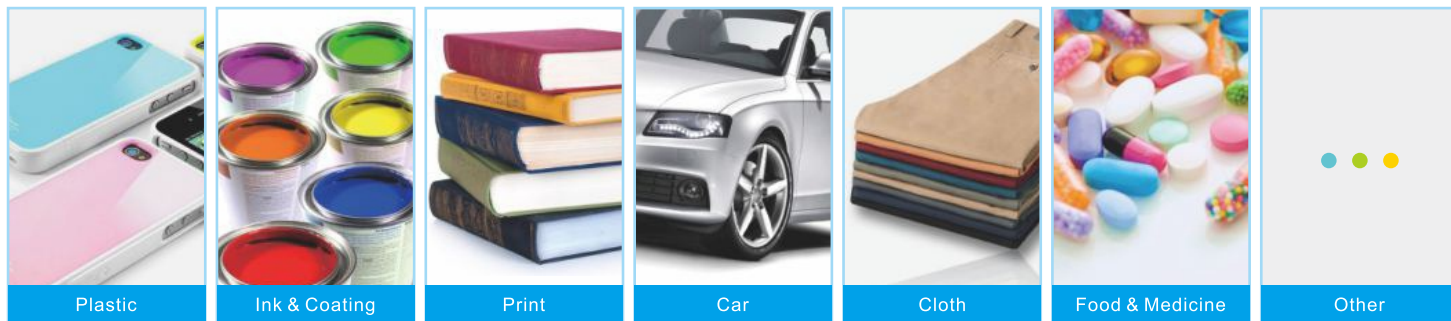


# PRODUCT FEATURES





# APPLICATION INDUSTRY



## MS3012 Product parameter

<b>Measurement Geometry</b>	12 measuring angles (7 light sources, 2 receivers)
<b>Measuring angle</b>	45°Receiver: 45as-15°, 45as15°, 45as25°, 45as45°, 45as75°, 45as110° 15°Receiver: 15as-45°, 15as-15°, 15as15°, 15as-30°, 15as45°, 15as80°
<b>Standards compliant</b>	ASTM D2244, E308, E1164, E2194, E2539, DIN 5033, 5036, 6174, 6175-1, 6175-2; ISO 7724, 11664-4, SAE J1545
<b>Characteristic</b>	Provide accurate and consistent color measurement for metallic, pearlescent and other complex color products with special effects
<b>Lighting source</b>	Blue enhanced full spectrum LED
<b>Lamp Life</b>	5 years, 3 million times measurements
<b>Spectrophotometric Mode</b>	Concave grating
<b>sensor</b>	256 pixel dual 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>	Illumination size Φ23mm / Measuring spot 9X12mm (Customized: Illumination size Φ10mm / Measuring spot 6X8mm)
<b>Color Space</b>	CIE LAB, XYZ, Yxy, LCh, βxy, DIN Lab99
<b>Color Difference Formula</b>	$\Delta E^*ab$ , $\Delta E^*94$ , $\Delta E^*cmc(2:1)$ , $\Delta E^*cmc(1:1)$ , $\Delta E^*00$ , DIN $\Delta E99$ , $\Delta E$ DIN6175, color difference formulas of multiple car brands
<b>Other Colorimetric Index</b>	Flop Index, Radiation intensity value
<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>	Spectral graph/value, sample chromaticity value, color difference value/graph, pass/fail result, color simulation, sample effect value, effect difference value
<b>Measuring Time</b>	Single angle measurement time is about 1s, all angle measurement takes about 12s, (not including the effective color measuring time)
<b>Repeatability</b>	Reflectance: standard deviation within 0.08%, chromaticity value: 0.02 $\Delta E^*ab$ (after the instrument is warmed up and corrected, the average value of 30 measurements on the whiteboard at an interval of 5s)
<b>Reproducibility</b>	$\Delta E^* < 0.10$ , the average value on the gray BCRA swatch, $\Delta E^* < 0.25$ , the average value on the color BCRA swatch
<b>Inter-instrument Error</b>	0.18 $\Delta E^*00$ (Measured average value of 12 swatches of BCRA series II)
<b>Effect Parameters</b>	Sparkle Grade(SG), Diffuse coarseness(DC) and Color Variation(CV)
<b>Effect Measurement</b>	6 angles Sparkle Grade(SG), Color Variation(CV): 15as-45°, 15as-30°, 15as-15°, 15as15°, 15as45°, 15as80° 15d Diffuse coarseness(DC)
<b>Effect Repeatability</b>	Sparkle Grade(SG) Short-term repeatability: 0.12% (10 times standard deviations) (When a color plate is measured 10 times at 10 second intervals after white calibration) Diffuse coarseness(DC) Short-term repeatability: 0.09% (10 times standard deviations) (When a color plate is measured 10 times at 10 second intervals after white calibration)
<b>Effect Reproducibility</b>	Sparkle Grade(SG) Reproducibility: 1.9% (10 times standard deviations) (avg on reference Series II BCRA tile set) Diffuse coarseness(DC) Reproducibility: 1.4% (10 times standard deviations) (avg on reference Series II BCRA tile set)
<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 battery, 3.7V, 3200mAh, can continuously test 6000 times within 8 hours of full charge
<b>Display screen</b>	TFT true color 3.5inch, 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>Calibration</b>	Built-in white board parameters, external white board, black light trap, color board
<b>Calibration interval</b>	4 hours, 8 hours, 24 hours, boot calibration
<b>Standard accessories</b>	Power adapter, data cable, manual, quality management software (download from official website), calibration box, black light trap, protective cover, wrist strap
<b>Optional accessories</b>	Micro Printer

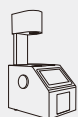
Guangdong Sanenshi Intelligent Technology Co., Ltd.



Spectrophotometers



Colorimeters



Haze Meters



Gloss Meters



Test Charts



Light Booths

## ★ CONTACT US



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