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.







PROFESSIONAL CAR SURFACE INSPECTION



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



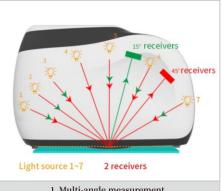








PRODUCT FEATURES -



1. Multi-angle measurement

Adopt 7 illumination sources, 2 receivers to measure 12 measurement angles at the same time

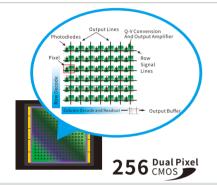


2, More intuitive display
Touch screen can display all Angle measurement results,
more intuitive view of the comprehensive data.

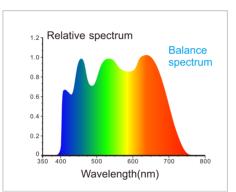


3, Effect measurement discrimination function

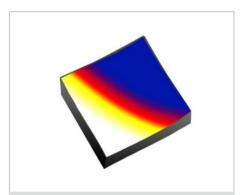
Quickly distinguish the sample Sparkle Grade(SG), Diffuse coarseness(DC) and Color Variation(CV), simple and effective quality inspection.



4,256 Image Element Double Array CMOS Image Sensor The higher optical resolution ensures the measuring speed, accuracy, stability and consistency of the instrument. The core technology makes it as the same platform with international standards and complete compatibility.



5, Adopt Full spectrum LED light source with blue enhancement The blue-enhanced full-spectrum LED light source ensures sufficient spectral distribution in the visible light range and avoids the lack of spectrum of LEDs in specific wavelength bands.



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



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



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



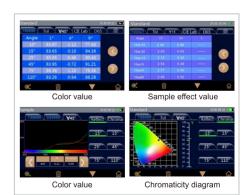
 $9, Ergonomics \ Novel \ and \ fashionable \ appearance \ design$ The appearance of the instrument is stylish, the hand feels comfortable, and the measurement is convenient



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



11. Multiple color measurement space, multiple observation light sources
Provides 6 color spaces and multiple observation light sources to meet special measurement requirements under different measurement conditions.



12, Easily analyze data

The screen can intuitively display the spectrum chart/data, sample chromaticity value, color difference value/graph, pass/fail result, color simulation, color deviation, sample effect value.

APPLICATION INDUSTRY















MS3012 Product parameter

Measurement Geometry 12 measuring angles (7 light sources, 2 receivers)

Measuring angle 45°Receiver: 45as-15°,45as15°,45as25°,45as45°,45as75°,45as110° 15°Receiver: 15as-45°,15as-15°,15as15°,15as-30°,15as45°,15as-30°,15as45°,15as-30°,15as45°,15as-30°,15as45°,15as-30°,15as45°,15as-30°,15as45°,15as-30°,15as-3

Standards compliant ASTM D2244,E308,E1164,E2194, E2539,DIN 5033,5036,6174,6175-1,6175-2;ISO 7724, 11664-4, SAE J1545

Characteristic Provide accurate and consistent color measurement for metallic, pearlescent and other complex color products with special effects

Lighting source Blue enhanced full spectrum LED Lamp Life 5 years, 3 million times measurements

Spectrophotometric Mode Concave grating

> sensor 256 pixel dual array CMOS image sensor

wavelength range 400nm-700nm Wavelength interval 10nm 0~600% Measurement Range **Semiband Width**

Measuring Aperture Illumination size Φ23mm / Measuring spot 9X12mm (Customized: Illumination size Φ10mm / Measuring spot 6X8mm)

Color Space CIE LAB, XYZ, Yxy, LCh, Bxy, DIN Lab99

Color Difference Formula ΔE*ab, ΔE*94, ΔE*cmc(2:1), ΔE*cmc(1:1), ΔE*00, DINΔE99, ΔE DIN6175, color difference formulas of multiple car brands

Other Colorimetric Index Flop Index, Radiation intensity value

Observer Angle

Repeatability

llluminant D65,A,C,D50,D55,D75,F1,F2(CWF),F3,F4,F5,F6,F7(DLF),F8,F9,F10(TPL5),F11(TL84),F12(TL83/U30)

Displayed Spectral graph/value, sample chromaticity value, color difference value/graph, pass/fail result, color simulation,

sample effect value, effect difference value

Single angle measurement time is about 1s, all angle measurement takes about 12s, (not including the effective color measuring time) **Measuring Time**

Reflectance: standard deviation within 0.08%, chromaticity value: 0.02 ΔE*ab

(after the instrument is warmed up and corrected, the average value of 30 measurements on the whiteboard at an interval of 5s)

Reproducibility \triangle E*<0.10, the average value on the gray BCRA swatch, \triangle E*<0.25, the average value on the color BCRA swatch

Inter-instrument Error 0.18ΔE*00 (Measured average value of 12 swatches of BCRA series II) Sparkle Grade(SG), Diffuse coarseness(DC) and Color Variation(CV) **Effect Parameters**

6 angles Sparkle Grade(SG), Color Variation(CV):15as-45°,15as-30°,15as-15°,15as-15°,15as-45°,15as-80°,15d Diffuse coarseness(DC) **Effect Measurement** Sparkle Grade(SG) Short-term repeatability: 0.12% (10 times standard deviations) (When a color plate is measured 10 times at 10 **Effect Repeatability**

second intervals after white calibration)

Diffuse coarseness(DC) Short-term repeatability:e0.09% (10 times standard deviations) (When a color plate is measured 10 times at

10 second intervals after white calibration)

Sparkle Grade(SG) Reproducibility: 1.9% (10 times standard deviations) (avg on reference Series II BCRA tile set) **Effect Reproducibility**

Diffuse coarseness(DC) Reproducibility: 1.4% (10 times standard deviations)(avg on reference Series II BCRA tile set)

Pressure sensing trigger, key trigger, software trigger Trigger mode

Measuring Mode Single measurement, average measurement (1-99), continuous measurement (1-99)

Color camera preview **Locating Method**

Length x width x height=195X83X128mm Dimension

Weight about 1Kg

Lithium battery, 3.7V, 3200mAh, can continuously test 6000 times within 8 hours of full charge Power

Display screen TFT true color 3.5inch, capacitive touch screen

USB, Bluetooth Interface

Standard 1000 Pcs, Sample 4000 Pcs **Data Storage** Simplified Chinese, English, Traditional Chinese Language

Built-in white board parameters, external white board, black light trap, color board Calibration

Calibration interval 4 hours, 8 hours, 24 hours, boot calibration

Power adapter, data cable, manual, quality management software (download from official website), calibration box, Standard accessories

black light trap, protective cover, wrist strap

Optional accessories Micro Printer

Guangdong Sanenshi Intelligent Technology Co., Ltd.



Spectrophotometers



Colorimeters















Test Charts

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