



DEDICATED TO CAR SURFACE INSPECTION

# MULTI-ANGLE SPECTROPHOTOMETER

The company is also the authorized agent of Philips and Sylvania. All products are widely used in plastic electronics, paint and ink, textile and dyeing, printing paper, food, medicine, cosmetics, scientific research, schools, laboratories, optical image testing, and other fields. The company has gathered a large number of highly talented professionals in the industry, applied for many innovative patents, and has the core technology and intellectual property rights of 3nh, Tilo and Sine image products.



Concave grating



Multiple light sources



Bluetooth transmission



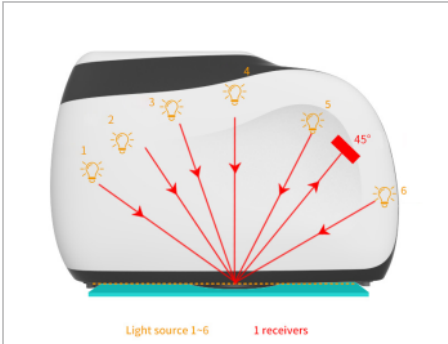
Full spectrum



Support PC software



# Product features



## 1, Multi-angle measurement

Adopt 6 illumination sources, 1 receivers to measure 6 measurement angles at the same time



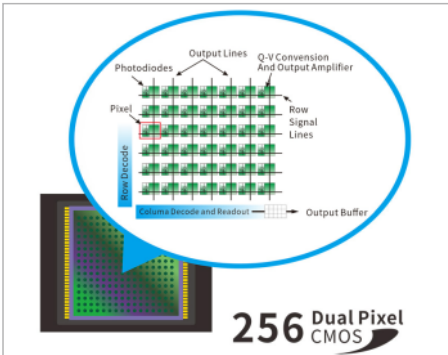
## 2, More intuitive display

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



## 3, Effect measurement discrimination function

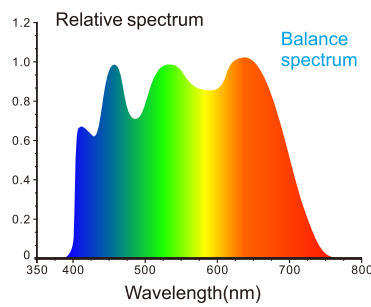
Quickly distinguish the sample Sparkle Grade(SG), Diffuse coarseness(DC) and Color Variation(CV), simple and effective quality inspection



**256 Dual Pixel CMOS**

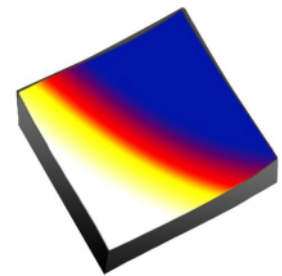
## 4, 256 Image Element Double Array CMOS Image Sensor

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



## 5, Blue light enhancement, full spectrum

Full spectrum illumination measurement is more professional to avoid spectrum loss



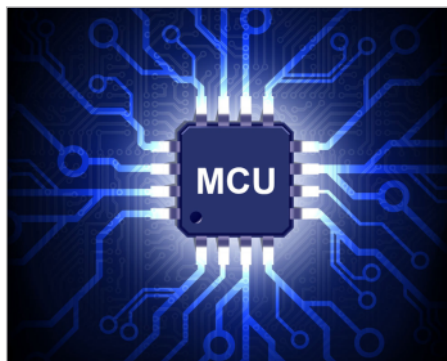
## 6, Concave grating spectrophotometric technology

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 designed for easy operation and can meet different holding habits



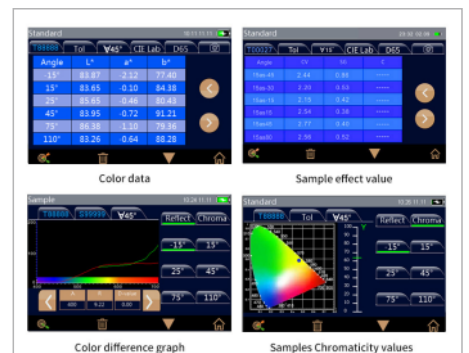
## 10, Color camera preview, can clearly observe the measured area

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



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

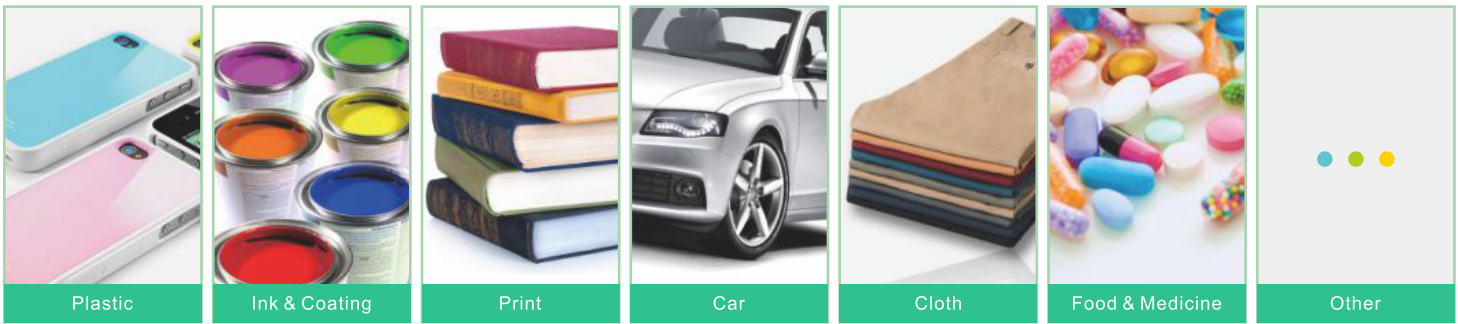
Provide 6 color spaces, multiple observation light sources



## 12, Easily analyze data

Multiple functions, the screen can display various data intuitively

# APPLICATION INDUSTRY



## MS3006 Product parameter

<b>Measurement Geometry</b>	6 measurement angles (6 illumination sources, 1 receivers)
<b>Measuring angle</b>	45°Receiver:45as-15°,45as15°,45as25°,45as45°,45as75°,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>	$\Delta E^*ab, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00, \Delta E^*DIN\Delta E99, \Delta E^*DIN6175$
<b>Other Colorimetric Index</b>	Flop Index, Int-Em
<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 6s
<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>	$\Delta E^* < 0.10$ , 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>	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: e0.09% (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-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>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, 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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