

# Dedicated to traffic signs



## SPECTROPHOTOMETER YS4580

**One-click measurement of traffic road signs, markings, reflective film brightness factors, and chromaticity coordinates**

YS4580 spectrophotometer uses 45/0 (45 degree ring illumination, 0 degree reception) geometric optical structure in accordance with CIE No. 15 and adopts concave grating spectrometry to accurately measure sample reflectance and various colorimetric data; Built-in GB2893, GB/T18833 standard color, can be manually customized polygonal rectangle tolerance, one button to realize the measurement of traffic road signs, marking lines, reflective film brightness factor and chromaticity coordinates.



Safe color display



Day&Night color measurement



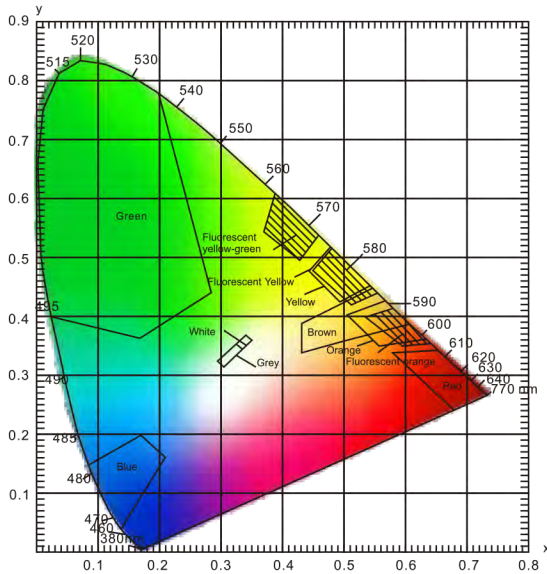
USB/Bluetooth



Concave grating



## Principle



In relevant standards such as "GB 2893 Safety Color" and "GB/T 18833 Road Traffic Reflective Film", a color area (multiple chromaticity coordinate points) and brightness factor requirements are usually given. Under 0 geometric conditions, it is determined whether the sample falls within the corresponding color area, so as to determine whether the sample meets the chromaticity requirements specified by the standard. Since the color area is a polygon, as shown in the left figure, it is impossible to complete the determination using an ordinary spectrophotometer. The spectrophotometer combined with the traffic sign measurement module of the SQCT software can easily solve this problem.

Explanation:

- The chromaticity coordinates of white, yellow, orange, red, green, blue, brown, and gray fill the area.
- The chromaticity coordinates of fluorescent yellow-green, fluorescent yellow, and fluorescent orange fill the area.

## PRODUCT FEATURES

The beautiful appearance is combined with the structural design in line with human mechanics;

45/0 geometric optical structure, in line with CIE No. 15, GB/T3978, GB2893, GB/T18833, 1S07724-1, ASTM E1164, DIN5033Teil7;

USB/Bluetooth 5.0 (compatible with 2.1) dual communication mode, wider adaptability;

Large-capacity storage space, can store more than 30,000 test data;

Φ20mm caliber is suitable for testing larger samples or uneven samples;

Using a combination of high-life and low-power LED light sources, including UV/excluding UV;

High electronic hardware configuration: 3.5-inch TFT true color screen, capacitive touch screen, concave grating, 256-pixel dual-array CMOS detector, etc.;

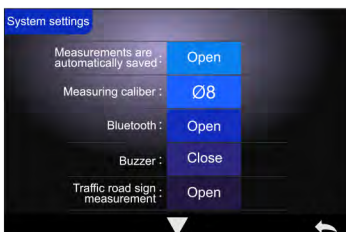
Built-in standard polygon tolerance setting and specific traffic sign color gamut, especially suitable for traffic sign brightness factor and chromaticity performance judgment;

Two standard observer angles, a variety of light source modes, a variety of color schemes, and a variety of standard chromaticity indicators to meet the needs of various customers for color measurement;

PC-side software has powerful function extensions;



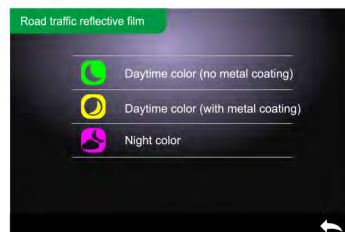
## Product interface



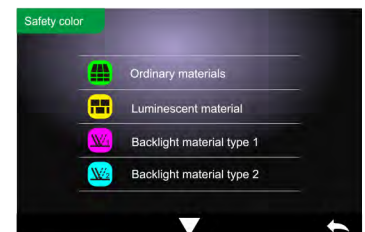
Traffic road sign measurement options



Choose standard interface



Road traffic light-emitting film interface



Safe color selection

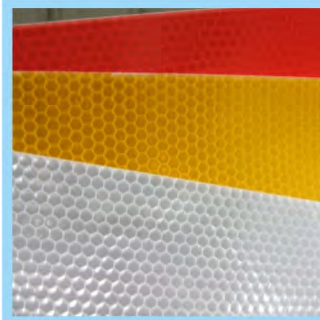




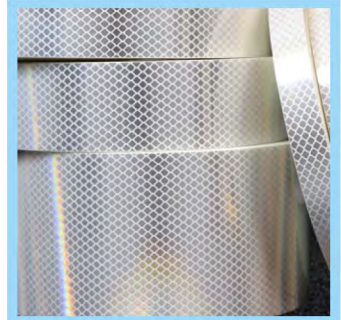
Traffic signs



Traffic marking



3M engineering grade reflective film



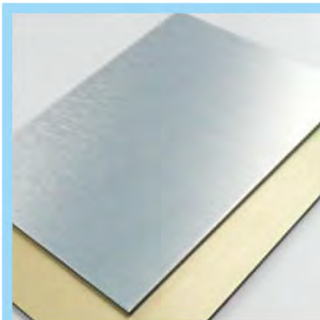
3M High strength level



Coating



Color steel plate



Metal



Plastic

## TECHNICAL SPECIFICATIONS

**Model:** YS4580(Traffic dedicated)

**Optical Geometry:** 45/0 (45 degree circular uniform illumination 0 degree reception)

**Standard:** CIE No.15, GB/T3978,GB2893,GB/T18833, 1S07724-1 ASTM, E1164,DIN5033Teil7

**Integrating Sphere Size:**  $\phi$ 48mm

**Light Source:** Combination of LED light source,UV light source

**Spectrophotometric Mode:** Concave grating

**Sensor:** Dual array 256 pixel CMOS image sensor

**Wavelength Range:** 400~700nm

**Wavelength interval:** 10nm

**Semiband Width:** 10nm

**Measured Reflectance Range:** 0~200%

**Measuring Aperture:**  $\phi$ 20mm

**Measurement method:** Single measurement, average measurement (2~99 times)

**Color Space:** CIELAB,XYZ,Yxy,LCh,CIELUV,HunterLAB, $\beta$ xy

**Color Difference**  $\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1),$

**Formula:**  $\Delta E^*cmc(1:1), \Delta E^*00, \Delta E(Hunter)$

**Other measurements:** WI(ASTM E313, CIE/ISO,AATCC,Hunter), YI(ASTM D1925, ASTM313), Metamerism index MI, color fastness, color fastness, strength, opacity, support chromaticity polygon tolerance

**Measure time:** About 1.5s

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

**Observer Angle:** 2°/10°

**Displayed Data:** Spectrogram/data, sample chromaticity value, Color difference value/graph, pass/fail result, color deviation

**Repeatability:** Spectral reflectance: standard deviation within 0.1% (400~700nm: within 0.2%)

**Chroma value:** Within  $E^*ab0.04$  (after the instrument is warmed up and corrected, the average value of 30 measurements on the whiteboard at an interval of 5s)

**Inter-instrument Error:** MAV,  $\Delta E^* ab0.2$  (Measured average value of 12 swatches of BCRA series II)

**Size:** L\*W\*H=184X77X105mm

**Weight:** About 600g

**Battery:** Lithium battery, 5000 times in 8 hours

**Illuminant Life Span:** More than 3 million measurements in 5 years

**Display:** TFT true color 3.5inch, capacitive touch screen

**Data Port:** USB,Bluetooth

**Data Storage:** 1000 standard samples, 30000 samples

**Language:** Simplified Chinese, English

**Standard Accessories:** Power adapter, data cable, built-in lithium battery, manual, SQCX quality management software (download from official website), black and white calibration box, protective cover

**Optional Accessories:** Micro printer, powder test box