

# Accurate measurement of sample reflectance and various chromaticity data



## YS4510- Standard grating spectrophotometer

YS4510 standard spectrophotometer with 45/0 geometrical optics structure( 45 ring-shaped illumination ,vertical viewing), comply with CIE No . 15. Adopting concave grating light splitting method. accurately measure the reflectivity and various chromaticity data of samples. users can customize the measurement aperture( $\Phi$  8 /  $\Phi$  4 /  $\Phi$  2 mm) according to the sample measuring demands, meet the industry accurate color measurement and quality control.



Concave-Grating Spectral



Long life LED light sources



Customized measuring aperture



High-configuration electronic hardware



## APPLICATION INDUSTRIES

The grating spectrophotometer can easily achieve the accurate transmission of color, and can also be used as the detection equipment of the accurate color matching system; it is used for accurate color measurement and quality control of traffic road signs, plastics, electronics, paint and ink, textile and garment, printing and dyeing , ceramics and other industries.



Traffic road sign



Textile



Plastic



Paint



Food



Laboratory



Other

## PRODUCT FEATURES

1. Perfect combination of beautiful appearance and the human body mechanics structural design
2. 45/0 geometrical optics, conforms with CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO 7724/1, ASTM E1164, DIN 5033 Teil 7, GB 2893, GB/T 18833
3. Accurate color measurement and quality control
4. High electronic hardware configuration: 3.5-inch TFT color LCD, Capacitive Touch Screen, concave grating, 256 image Element Double Arrays CMOS Image Sensor
5. Measure sample spectra, accurate Lab data, can be used in color matching and accurate color transmission
6. Use long life and low power consumption combined LED light source
7. Customized single aperture: MAV: >8mm/Φ10mm; SAV: Φ4mm/Φ5mm; SSAV: Φ2mm/Φ3mm, suitable for more samples
8. USB port, widely useful
9. PC software has a powerful function extension

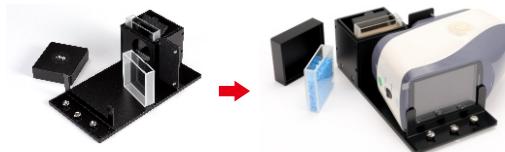


## OPTIONAL ACCESSORIES

The instrument is equipped with various accessories; Such as micro printer, powder test box, etc.; Meet the needs of more measurement samples.



Powder test box: Easy to use, focusing on powdered target measurement.



Multifunctional test components: can be used to test liquid reagents, sauces (such as ketchup, paint), powders (such as coffeeBrown), color masterbatch, etc.



Micro printer: easy to carry, without computer can continuously print out the measurement of various parameters, easy to save.

## SPECIFICATION PARAMETERS

**Model:** YS4510

**Illumination:** 45/0 (45 circular illumination, vertical viewing)

**Standard:** CIE No.15, GB/T3978, GB2893, GB/T 18833, 1S07724-1, ASTM E1164, DIN5033 Teil7

**Integrating Sphere Size:** 48mm

**Light Source:** Combined LED Light

**Spectrophotometric Mode:** Concave Grating

**Sensor:** 256 Image Element Double Array CMOS Image Sensor

**Wavelength Range:** 400-700nm

**Wavelength Interval:** 10nm

**Semiband Width:** 10nm

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

**Measuring Aperture:** customized single aperture: MAV:Φ8mm/Φ10mm;

SAV:Φ4mm/Φ5mm;SSAV:Φ2mm/Φ3mm

**Color Space:** CIE LAB, XYZ, XyY, LCh, CIE LUV, Hunter LAB, Bxy

**Color Difference Formula:**  $\Delta E^*ab$ ,  $\Delta E^*uv$ ,  $\Delta E^*94$ ,  $\Delta E^*cmc(2:1)$ ,  $\Delta E^*cmc(1:1)$ ,  $\Delta E^*00$ ,  $\Delta E(Hunter)$

**Other Colorimetric Index:** WI(ASTM E313, CIE/ISO, AATCC, Hunter), YI(ASTM D1925, ASTM 313), Metamerism Index MI, Staining Fastness, Color Fastness, Color Strength, Opacity

**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)

**Displayed Data:** Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset

**Observer Angle:** 2°/10°

**Measuring Time:** 1.5s

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

**Chromaticity value:** MAV, within  $\Delta E^*ab$  0.05 (After calibration, measure the average value of the white board 30 times each 5S.)

**Inter-instrument agreement:** MAV, within  $\Delta E^*ab$  0.2 (Average value for 12 BCRA series II color tiles)

**Battery:** Li-ion battery. 5000 measurements within 8 hours

**Dimension:** L\*W\*H=184\*77\*105mm

**Weight:** 600g

**Illuminant Life Span:** 5 years, more than 3 million times measurements

**Display:** 3.5-inch TFT color LCD, Capacitive Touch Screen

**Data Port:** USB

**Data Storage:** Standard 500 Pcs, Sample 20000 Pcs

**Language:** English, Chinese

**Operating Environment:** 0~40°C, 0~85%RH (no condensing), Altitude < 2000m

**Storage Environment:** -20~50°C, 0~85%RH (no condensing)

**Standard accessories:** power adapter, data line, built-in lithium batteries, instructions, quality control software (download from official website), black and white calibration board, protection cover, polarization filter box (Optional accessories: Micro printer, Powder test box, multi-functional test component)