

# ZL4510

precision measurement for sample reflectivity  
and various color parameters



## ZL4510 - Standard Spectrophotometer

ZL4510 standard spectrophotometer with 45/0 geometrical optics structure (45 ring-shaped illumination, vertical viewing), comply CIE No. 15.

Adopting concave grating light splitting method, accurately measure the reflectivity and various chromaticity data of samples. User can customize the measurement aperture (8 mm, 4 mm, 2 mm) according to the sample measuring demands, meet the industry accurate color measurement and quality control.



Concave-Grating  
Spectral



Long lifetime & full  
spectrum LED sources



Customizable  
Measurement Aperture



High hardware  
configuration



## PRODUCT FEATURES

1. Aesthetic design perfectly combined with ergonomics structure;
2. Conforms with CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7, GB 2893, GB/T 18833;
3. High precision 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. Includes/excludes UV;
7. Customizable single apertures: MAV:  $\Phi 8\text{mm}/\Phi 10\text{mm}$ ; SAV:  $\Phi 4\text{mm}/\Phi 5\text{mm}$ ; SSAV:  $\Phi 2\text{mm}/\Phi 3\text{mm}$ , suitable for more samples measurement;
8. USB port, widely useful;
9. PC software has a powerful function extension.

## APPLICATION INDUSTRY

Grating spectrophotometer can easily achieve color transferring, and be used as a precision instrument for color matching system. It's widely used in traffic marker, plastics, electronics, painting, ink, textile and garment, printing, ceramics and other industries accurate color measurement and quality control, the instrument has a separate UV light source for fluorescence sample measurement.



Traffic marker



Textile



Plastic



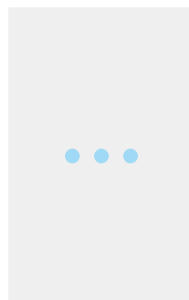
Paint



Food



Laboratory



Others

## TECHNICAL SPECIFICATIONS

Model:YS4510

Illumination:45/0(45 ring-shaped illumination, vertical viewing)

Standard:CIE No.15,GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil17

Integrating sphere Size :58mm

Light Source:Combined LED source,

Spectral mode:Concave-Grating

Sensor:256-pixel dual-array CMOS image sensor,

Wavelength range:400~700nm

Wavelength pitch:10nm

Half bandwidth:10nm

Reflectance range:0~200%

Measurement Aperture:Customized Single Aperture MAV: $\Phi 8\text{mm}/\Phi 10\text{mm}$ ;

SAV: $\Phi 4\text{mm}/\Phi 5\text{mm}$ ;SSAV:  $\Phi 2\text{mm}/\Phi 3\text{mm}$

Color Space:CIE Lab, XYZ, Yxy, LCh, CIE LUV, Hunter LAB,  $\beta_{xy}/\Phi 3\text{mm}$

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

Observer Angle :2°/10°

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)

Measuring time:Approx. 1.5s

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

Repeatability:Spectral Reflectance: standard deviation within 0.1%(400~700nm: within 0.2%)Colorimetric Value: Standard deviation within  $\Delta E^*ab$

0.05(Measurement conditions: white calibration plate measured 30 times at 5 seconds intervals after white calibration was performed.)

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

Size:L\*W\*H 184X77X105mm

Weight:Approx. 600g

Battery life: lithium battery, 5000 times in 8 hours

Lighting source life: 5 years, more than 3 million measurements

Display screen: TFT true color 3.5 inch,

Touch Screen Interface: USB

Storage:500 Standards, 20000 Samples

Language:Chinese,English

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,

Optional accessories: Micro printer Powder Test Box, Universal Test Components.

**Distribuito da:**

**Zetalab s.r.l.**

Via Umberto Giordano, 5 - 35132 Padova

Tel. 049/2021144 - Fax 049/2021143

www.zetalab.it - info@zetalab.it