



LABORATORY LINES

SPECTROPHOTOMETERS



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KALSTEIN® Spectrophotometers

Grating Spectrophotometer with 20mm Aperture

Model YR05503



Product Description

Kalstein launched new product YR05503 45/0 Grating Spectrophotometer with 20mm Aperture for Traffic Signs. It is used to measure the brightness factor and color coordinates of traffic signs, markings and reflective films. It contains GB 2893 and GB/T 18833 standard colors. It can customize the rectangular tolerance of polygons manually.

Kalstein new model YR05503 is special design with 20mm aperture for traffic signs, and contains GB 2893 and GB/T 18833 standard color, good to measure the brightness factor and color coordinates of traffic signs, markings and reflective films. It is used for accurate analysis and transmission of laboratory color, also for Fluorescence sample color measurement.

Apply in paints, inks, textiles, garments, printing and dyeing, printing etc industries for color transfer and quality control. YR05503 45/0 Grating Spectrophotometer with 20mm Aperture for Traffic Signs.



Safe color display



Day&Night
color measurement



USB/Bluetooth



Concave grating

Features:

- ✓ Beautiful appearance and perfect combination with ergonomic structure design;
- ✓ 45/0 geometric optical structure, in accordance with CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7, GB 2893, GB/T 18833;
- ✓ Adopt high-life and low-power combined LED light source, including UV/excluding UV;
- ✓ Φ20mm aperture adapt to larger samples or uneven samples;
- ✓ Measure sample spectra, accurate Lab data, can be used in color matching and accurate color transmission;
- ✓ High electronic hardware configuration: 3.5-inch TFT true color screen, capacitive touch screen, concave grating, 256-pixel dual-array CMOS detector, etc.;
- ✓ USB/Bluetooth 4.0 (compatible with 2.1) dual communication mode, more adaptable;
- ✓ Super stain-resistant and stable standard white calibration plate;
- ✓ Large-capacity storage space, can store more than 30,000 test data;
- ✓ Two standard observers, multiple light source modes, multiple color systems, and a variety of standard colorimetric indicators to meet the needs of various customers for color measurement;
- ✓ PC software has powerful function extensions;
- ✓ Built-in standard polygon tolerance setting and specific traffic sign gamut, especially suitable for traffic signage brightness factor and chromaticity performance judgment;



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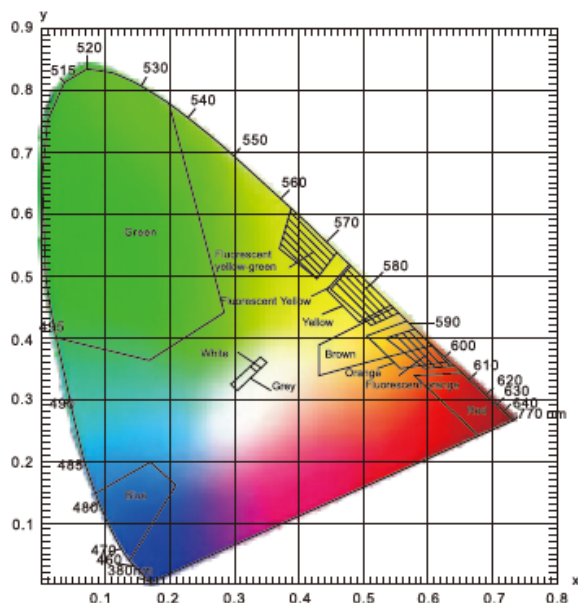
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



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;

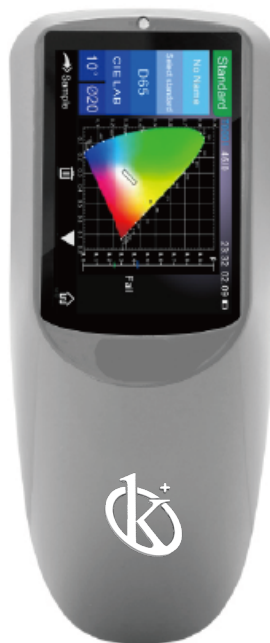
Using a combination of high-life and low-power LED light sources, including UV/excluding UV;

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;



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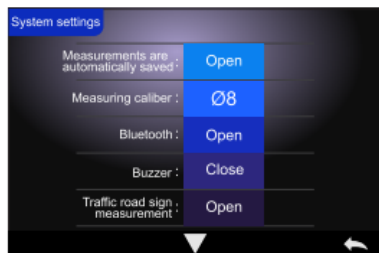


KALSTEIN® Spectrophotometers Grating Spectrophotometer with 20mm Aperture

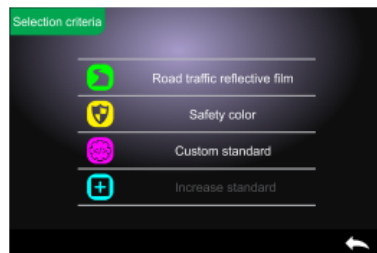
Model YR05503



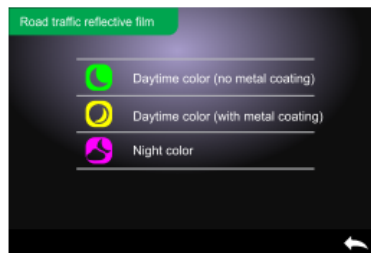
Product interface



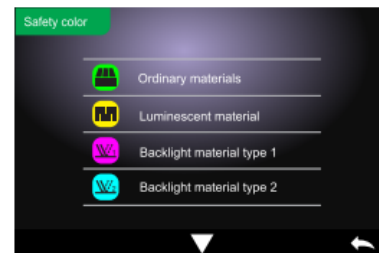
Traffic road sign measurement options



Choose standard interface



Road traffic light-emitting film interface



Safe color selection

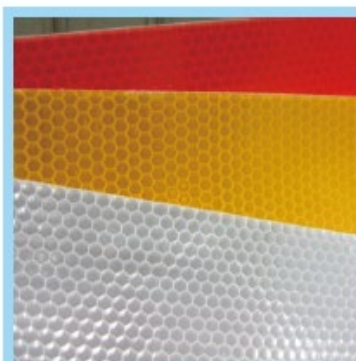
APPLICATION INDUSTRY



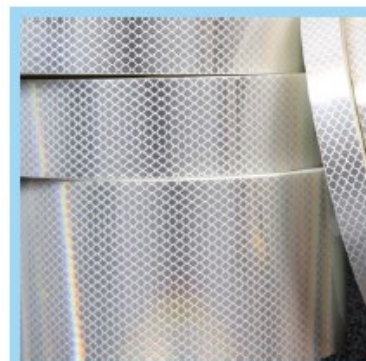
Traffic signs



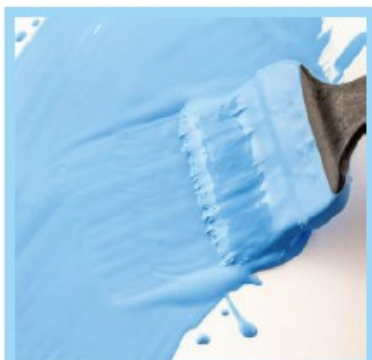
Traffic marking



3M engineering grade reflective film



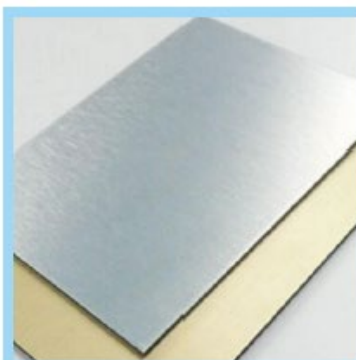
3M High strength level



Coating



Color steel plate



Metal



Plastic



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KALSTEIN® Spectrophotometers

Grating Spectrophotometer with 20mm Aperture

Model YR05503



Technical Specifications

Model	YR05503
Illumination/Observation system	45/0(45 ring-shaped illumination, vertical viewing);
	Comply with CIE No.15, GB/T 3978,GB 2893,GB/T 18833,ISO7724-1,ASTM E1164,DIN5033 Teil7,GB 2893、GB/T 18833
Features	20mm aperture special design for traffic signs , It is used to measure the brightness factor and color coordinates of traffic signs, markings and reflective films. It contains GB 2893 and GB/T 18833 standard colors. It can customize the rectangular tolerance of polygons manually.
	It is used for accurate analysis and transmission of laboratory color, also for Fluorescence sample color measurement .
	Apply in paints, inks, textiles, garments, printing and dyeing, printing etc industries for color transfer and quality control.
Integrating Sphere Size	Φ48mm
Light Source	Combined LED Light, UV Light
Spectral separation device	Concave Grating
Detector	256 Image Element Double Array CMOS Image Sensor
Wavelength Range	400~700nm
Wavelength Pitch	10nm
Half Bandwidth	10nm



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Technical Specifications

Model	YR05503
Reflectance Range	0~200%
Measuring Aperture	Φ20mm
Color Space	CIE LAB,XYZ,Yxy,LCh,CIE LUV, HunterLAB,βxy
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),
	MI (Metamerism Index),
	Staining Fastness, Color Fastness, Color Strength, Opacity,Supporting Colorimetric Polygon Tolerance
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)
Display Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset
Measurement Time	About 1.5s
Repeatability	Spectral reflectance: Standard deviation within 0.1% (400 nm to 700 nm: within 0.2%)
	Chromaticity value:within ΔE^*ab 0.04 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)



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Technical Specifications

Model	YR05503
Inter-instrument Error	Within ΔE^*ab 0.2 (Average for 12 BCRA Series II color tiles)
Measurement mode	Single Measurement, Average Measurement(2-99)
Size(L*W*H)	184*77*105mm
Weight	About 600g
Power source	Li-ion battery. 5000 measurements within 8 hours
Illuminant Life Span	5 years, more than 3 million times measurements
Display	3.5-inch TFT color LCD, Capacitive Touch Screen
Interface	USB, Bluetooth 4.0
Data memory	Standard 1000 Pcs, Sample 30000 Pcs
Language	English
Working Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation);altitude: less than 2000 m
Storage Environment	Temperature: -20~50°C; Humidity: 0~85% (No Condensation))
Standard Accessory	Power Adapter, USB Cable, Built-in li-ion battery, User Manual, software(download from the website)White and Black Calibration Board, Protective Cover.
Optional Accessory	Micro Printer, Powder Test Box, Universal test components, Locating Plate
Notes: The specifications are subject to change without notice.	



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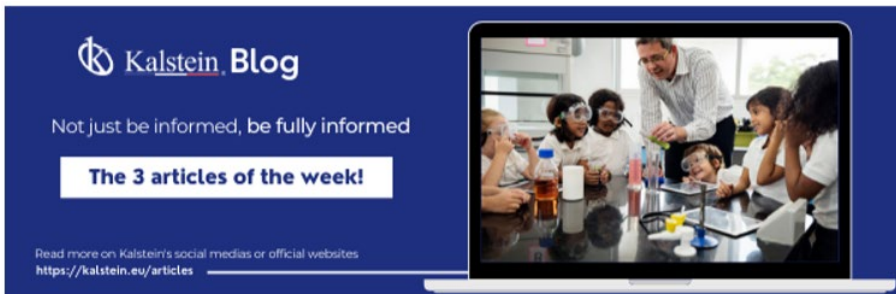
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PARIS - FRANCE
HEADQUARTER
2 Rue Jean Lantier
75001 Paris - France

Tlf: +33 (0) 01 78 95 87 89
Cel: +33 (0) 6 80 76 07 10
sales@kalstein.eu

<https://kalstein.eu/>
<https://www.kalstein.fr/>

