



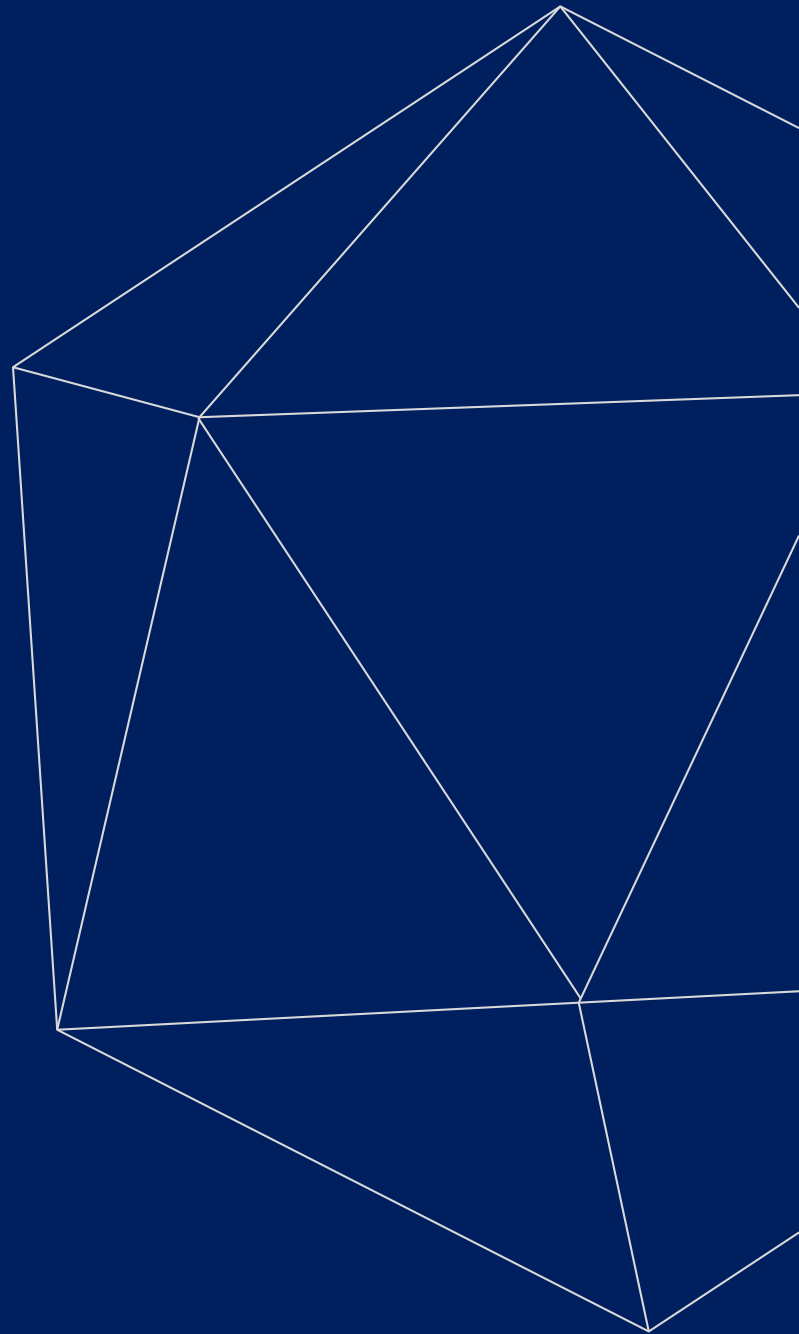
# LABORATORY SECTOR

SPECTROPHOTOMETER



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# Kalstein®

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## KALSTEIN® Spectrophotometer

### Non-contact Benchtop Spectrophotometer

#### Model YR05480



#### Product Description:

YR05480 spectrophotometer is a color measuring instrument which adopts D/8 standard color measuring instrument (diffuse illumination, reception in 8°, SCI includes specular reflection light), non-contact test between test probe and tested sample, to obtain liquid and sauces. powder and other non-contact precision color measurement.

#### 256-pixel dual-matrix CMOS image sensor:

Higher optical resolution ensures measurement speed, accuracy, stability and consistency of the instrument, mastering the core technology and achieving full compatibility on the same platform with international standards.

#### Use of full spectrum LED light source:

The full-spectrum LED light source ensures sufficient spectrum distribution in the visible light range, avoids missing LED spectra in specific bands, and guarantees the accuracy of the instrument's measurement results and low-cost maintenance.

#### PC control configuration:

PC software control through connection, one PC can control maximum 10 instruments.

#### Easy to use and more flexible:

The YR01868 portable PCR workstation is designed to be small and lightweight. This can greatly enhance the mobility of this PCR workstation for on-site testing.

#### Concave grating spectroscopy technology:

By using concave grating spectroscopy technology, it has higher resolution and makes color measurement more accurate. Better quality.

Using industrial-grade real-time processing MCU, Bluetooth 5.0 transmission is more stable and reliable.

#### Multicolor measuring space and observation light source:

Provide CIE LAB, XYZ, Yxy, LCh, CIE LUV, Musell, s-RGB, HunterLab,  $\beta$ xy, DIN Lab99 color space and D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4 multiple observation light sources, F5, F6, F7 (DLF), F8, F9, F10 (TPL5), F11 (TL84), F12 (TL83/U30) can meet the special measurement requirements under different measurement conditions.

#### Efficient:

A complete measurement cycle takes only 200 milliseconds and more than 400,000 samples can be measured per day.



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# KALSTEIN® Spectrophotometer

## Non-contact Benchtop Spectrophotometer

### Model YR05480



<b>Model</b>	YR05480
<b>optical geometry</b>	D/8 (diffuse illumination, reception at 8°, SCI includes specular reflection light); Complies with CIE standard No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724-1, ASTM E1164, DIN5033 Teil7, GB 2893, GB/T 18833
<b>Features</b>	Non-contact test between the test probe and the tested sample, to achieve accurate non-contact color measurement of liquids, sauces, powders, etc. Mainly used for accurate color measurement and quality control of automated production lines; the measurement time can be adjusted from 0.2 to 1.5 seconds, and the software functions can be customized (additional customization function needs to be evaluated).
<b>Light source</b>	Full-spectrum LED light source, UV light source
<b>Spectrophotometric mode</b>	concave grid
<b>Sensor</b>	256-pixel dual-matrix CMOS image sensor
<b>Wave range</b>	400~700nm, 10nm output
<b>Measured reflectance range</b>	0-200%
<b>Measuring aperture</b>	Φ20mm (Φ10mm can be customized)
<b>Non-contact distance</b>	3.0 mm (±0.2 mm)
<b>Sample height</b>	Unlimited thickness, only test probes are used
<b>Distance adjustment method</b>	Fixed height according to actual sample
<b>Measuring mode</b>	Software customization function (additional customization function to be evaluated)
<b>Locating</b>	camera location
<b>Color space</b>	Laboratory CIE,XYZ,Yxy,LCh,LUV CIE,Musell,s-RGB,HunterLab,βxy,DIN Lab99
<b>Color difference formula</b>	$\Delta E^*ab, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00, \Delta E^*(Hunter), \Delta E^*DIN99.$
<b>Other colorimetric index</b>	WI (ASTM E313, CIE/ISO, AATCC, Hunter),
	YI (ASTM D1925, ASTM 313),
	Index of metamerism MI,
	Stain resistance, color fastness, strength, opacity, opacity
<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>Data shown</b>	Spectrogram/values, sample chromaticity values, color difference/graphic values, color simulation, pass/fail result, display tolerance can be configured
<b>Measuring time</b>	As fast as 0.2 seconds
<b>Data storage</b>	Sample mode + Quality control mode 18,000
	Continuous statistical mode 30,000, for a total of not more than 48,000
<b>Repeatability</b>	In the optimal measurement mode (when the time of a single measurement is 1.5 seconds):
	Spectral reflectance: within 0.1% of standard deviation:
	Chromaticity value: $\Delta E^*ab$ within 0.03 (after warming up and calibrating the instrument, measure the average value of the slate 30 times within 5 s).
<b>Error between instruments</b>	Within $\Delta E^*ab$ 0.2 (Average value measured from 12 mosaics of BCRA series II).
<b>Method of measurement</b>	Single measurement, average measurement (2~99 times)
<b>Dimension</b>	200*200*160mm (test probe)
<b>Weight</b>	Approx. 3 kg (test probe only)
<b>Energy</b>	AC 24V, power adapter power supply 3A
<b>Illuminating life</b>	5 years, more than 3 million times measurements
<b>Monitor</b>	7-inch TFT color LCD, capacitive touch screen
<b>Data port</b>	USB, Bluetooth®5.0
<b>Language</b>	Simplified Chinese, Traditional Chinese, English
<b>Operating environment</b>	0~40 °C, 0~85 % RH (non-condensing), altitude: less than 2000 m
<b>Storage environment</b>	-20~50°C, 0~85%RH (no condensation)
<b>Standard accessory</b>	Power adaptor, manual, data cable, standard calibration plate, black calibration box
<b>notes</b>	This model is especially suitable for optimized production lines, deep customization of functions will incur additional customization costs.



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