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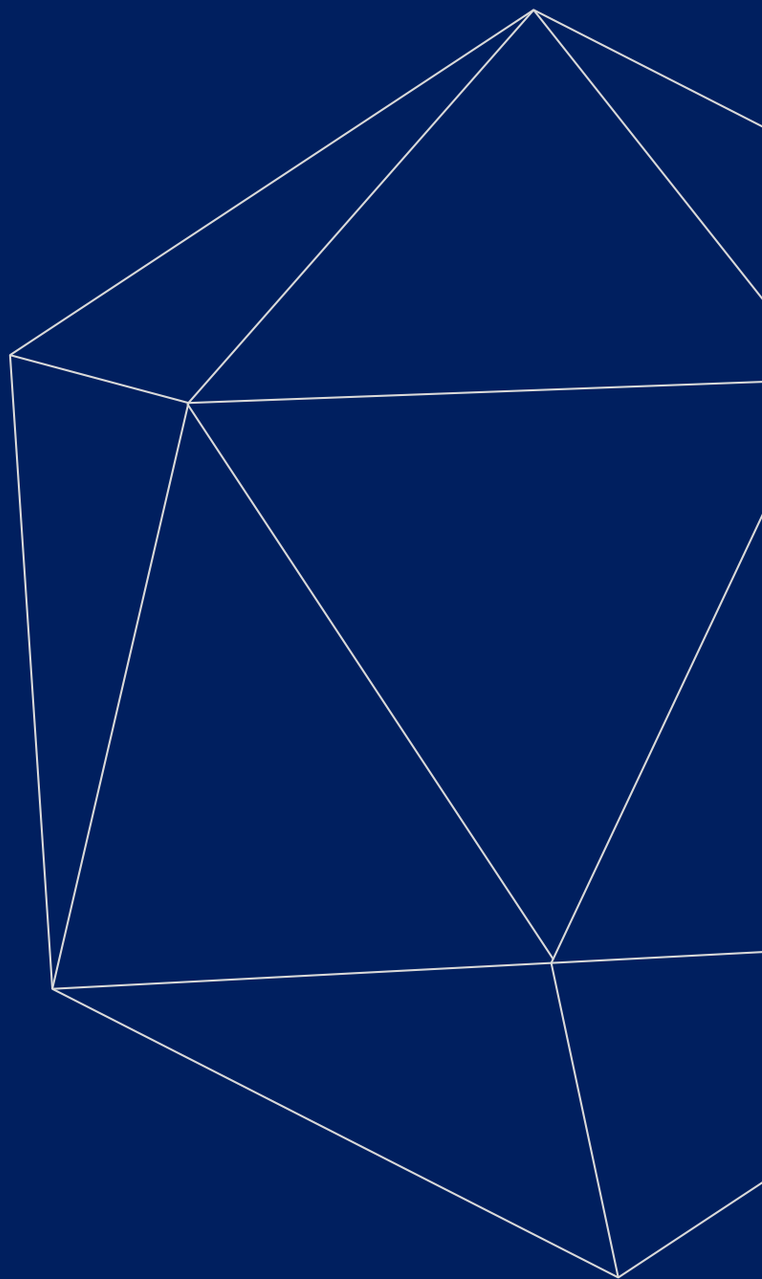
LABORATORY SECTOR

SPECTROPHOTOMETER



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OUR SERVICES

Benefits and Support

In Kalstein France, we take care of the full satisfaction of our customers, that is why we provide value-added services of the highest level based on our experience.

Online Inductions and Trainings

In any part of the world, receive your induction or training from our specialized team of engineers

Quick Response

Our work team is always available to response all your consults or questions, in order to support you in any situation.

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Thanks to your purchase, a donation will be made to a non-profit foundation that fights against breast cancer and helps most vulnerable communities.

Technical Support

Enjoy of personalized advice for the correct preventive and corrective maintenance of your equipment, thanks to Kalstein's manuals and articles, special catalogues and video tutorials.

Delivery Logistics

We take care of all the necessary logistics for the dispatch of your goods, whether is by sea, land or.air.

Kalstein Worldwide

With more than 25 years growing with our customers, Kalstein's multiformat and modern content, is now present in more than 10 countries and increasing.

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SPECTROPHOTOMETER

KALSTEIN® Spectrophotometer

Multi Angle Spectrophotometer With 8 Angles

Model YR05491 // YR05492

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SPECTROPHOTOMETER

KALSTEIN® Spectrophotometer

Multi Angle Spectrophotometer With 8 Angles

Model YR05491 // YR05492

Product Description:

The multi-angle spectrophotometer adopts industrial-grade MCU and is equipped with 3 measuring angles, under the superior performance of the optical measurement system supported by the multi-angle spectrophotometer has excellent performance in multi-angle chromatic aberration measurement, even in the curved surface, but also has a high measurement accuracy and stability. Kalstein Multi-angle spectrophotometer is used to measure the color difference for the surface paint which is affected by different viewing angles and viewing conditions. It can provide accurate and consistent color measurement for metallic, pearlescent and other complex special effect finished products.

Technical Characteristic:

- ✓ Multi-angle measurement Adopt 3 illumination sources, 1 receivers to measure 3 measurement angles at the same time
- ✓ More intuitive display Touch screen can display all Angle measurement results, more intuitive view of the comprehensive data.
- ✓ 256 Image Element Double Array CMOS Image Sensor The higher optical resolution ensures the measuring speed, accuracy, stability and consistency of the instrument. The core technology makes it as the same platform with international standards and complete compatibility.
- ✓ Adopt Full spectrum LED light source with blue enhancement The Full spectrum LED light source with blue enhancement ensures sufficient spectral distribution in the visible light range, avoids the spectral loss of LED in a specific band, and ensures the accuracy of instrument measurement results and low cost maintenance.
- ✓ Concave grating spectrophotometric technology Using concave grating spectrophotometric technology, with higher resolution, makes color measurement more accurate.
- ✓ Professional-grade white board Professional-grade white board, high hardness in the surface, stable optical performance
- ✓ Higher quality Industrial grade real-time processing MCU, supports WIFI, Bluetooth 5.0 transferring more stable and reliable.
- ✓ Ergonomics Novel and fashionable appearance design The instrument appearance design is easy to operate, and the hand holding position and the measurement button are well-designed, which can meet different holding habits, smooth and fine surface, from the high-precision appearance treatment process.
- ✓ Color camera preview, can clearly observe the measured area Built-in color camera positioning, can accurately judge the object measured position, and improve the measurement efficiency and accuracy.
- ✓ Multiple color measurement space, multiple observation light sources Offer CIE LAB,XYZ,Yxy,LCh,β XY,DIN Lab99 color space, And D65, A, C, D50, D55, D75, F1, F2 (CWF), F3, F4 and F5, F6 and F7 (DLF), F8, F9, F10 (TPL5), and F11 (TL84), F12 (TL83/U30) A variety of light source, which can meet the special measurement demand under different measurement conditions.
- ✓ Easily analyze data The screen can intuitively display spectrum/data, sample chromaticity value, color difference value/figure, pass/fail results, color simulation, sample effect value, effect difference value and other data, convenient to view while also greatly improve the user's work efficiency.

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Model	YR05491	YR05492
Measurement Geometry	8 measurement angles (6 illumination sources, 2 receivers)	12 measurement angles (7 illumination sources, 2 receivers)
Measure Angle	45° Receiver：	45° Receiver：
	45as-15°,45as15°,45as25°,45as45°,45as75°,45as110°	45as-15°,45as15°,45as25°,45as45°,45as75°,45as110°
	15°Receiver：	15°Receiver：
	15as-45°,15as-15°	15as-45°,15as-15°,15as15°,15as-30°,15as45°,15as80°
	Conform to the standards：ASTM D 2244,E 308,E 1164,E 2194,	Conform to the standards：ASTM D 2244,E 308,E 1164,E 2194,
	E2539,DIN 5033,5036,6174,6175-1,6175-2;ISO 7724, 11664-4	E2539,DIN 5033,5036,6174,6175-1,6175-2;ISO 7724, 11664-4
	SAE J 1545	SAE J 1545
Application	Provide accurate and consistent color measurement for metallic,	Provide accurate and consistent color measurement for metallic,
	pearlescent and other complex special effect color products	pearlescent and other complex special effect color products
Light Source	Full spectrum LED light source with blue enhancement	Full spectrum LED light source with blue enhancement
Lamp Life	5 years, 3 million times measurements	5 years, 3 million times measurements
Spectrophotometric Mode	Concave Grating	Concave Grating
Sensor	256 Image Element Double Array CMOS Image Sensor	256 Image Element Double Array CMOS Image Sensor
Wavelength Range	400nm-700nm	400nm-700nm
Wavelength Interval	10nm	10nm
Measurement Range	0~600%	0~600%
Semiband Width	10nm	10nm
Measuring Aperture	Φ12mm	Φ12mm
Color Space	CIE LAB,XYZ,Yxy,LCh,βxy,DIN Lab99	CIE LAB,XYZ,Yxy,LCh,βxy,DIN Lab99
Color Difference Formula	ΔE*ab,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00,DINΔE99,ΔE DIN6175	ΔE*ab,ΔE*94,ΔE*cmc(2:1),ΔE*cmc(1:1),ΔE*00,DINΔE99,ΔE DIN6175
Other Colorimetric Index	Flop Index, Int-Em	Flop Index, Int-Em
Observer Angle	2°/10°	2°/10°
Illuminant	D65,A,C,D50,D55,D75,F1,F2(CWF),F3,F4,F5,F6,F7(DLF),	D65,A,C,D50,D55,D75,F1,F2(CWF),F3,F4,F5,F6,F7(DLF),
	F8,F9,F10(TPL5),F11(TL84),F12(TL83/U30)	F8,F9,F10(TPL5),F11(TL84),F12(TL83/U30)
Display	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset, Color simulation, Sample effect value, Effect difference value	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset, Color simulation, Sample effect value, Effect difference value
Measuring Time	Approx. 1 second for one angle	Approx. 1 second for one angle
	Approx. 8 seconds for all angles	Approx. 12 seconds for all angles
Repeatability	Spectral reflectance: Standard deviation within 0.08%	Spectral reflectance: Standard deviation within 0.08%
	Chromaticity value: ΔE*ab 0.03 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)	Chromaticity value: ΔE*ab 0.02 (When a white calibration plate is measured 30 times at 5 second intervals after white calibration)

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Multi Angle Spectrophotometer With 8 Angles

Model YR05491 // YR05492

Reproducibility	ΔE*<0.10,avg on the gray tile of BCRA tile set	ΔE*<0.10,avg on the gray tile of BCRA tile set
	ΔE*<0.25,avg on the color BCRA tile set	ΔE*<0.25,avg on the color BCRA tile set
Inter-instrument Error	0.18ΔE*00(avg on reference Series II BCRA tile set)	0.18ΔE*00(avg on reference Series II BCRA tile set)
Effect Parameters	Sparkle Grade(SG),Diffuse coarseness(DC) and Color Variation(CV)	Sparkle Grade(SG),Diffuse coarseness(DC) and Color Variation(CV)
Effect Measurement	6 angles Sparkle Grade(SG),Color Variation(CV):15as-45°,15as-30°,15as-15°,15as15°,15as45°,15as80°	6 angles Sparkle Grade(SG),Color Variation(CV):15as-45°,15as-30°,15as-15°,15as15°,15as45°,15as80°
	15d Diffuse coarseness(DC)	15d Diffuse coarseness(DC)
Effect Repeatability	Sparkle Grade(SG) Short-term repeatability: 0.12% (10 times standard deviations) (When a color plate is measured 10 times at 10 second intervals after white calibration)	Sparkle Grade(SG) Short-term repeatability: 0.12% (10 times standard deviations) (When a color plate is measured 10 times at 10 second intervals after white calibration)
	Diffuse coarseness(DC) Short-term repeatability:e0.09% (10 times standard deviations) (When a color plate is measured 10 times at 10 second intervals after white calibration)	Diffuse coarseness(DC) Short-term repeatability:e0.09% (10 times standard deviations) (When a color plate is measured 10 times at 10 second intervals after white calibration)
Effect Reproducibility	Sparkle Grade(SG) Reproducibility: 1.9% (10 times standard deviations)	Sparkle Grade(SG) Reproducibility: 1.9% (10 times standard deviations)
	(avg on reference Series II BCRA tile set)	(avg on reference Series II BCRA tile set)
	Diffuse coarseness(DC) Reproducibility: 1.4% (10 times standard deviations)(avg on reference Series II BCRA tile set)	Diffuse coarseness(DC) Reproducibility: 1.4% (10 times standard deviations)(avg on reference Series II BCRA tile set)
Trigger mode	Pressure sensing trigger, button trigger, software trigger	Pressure sensing trigger, button trigger, software trigger
Measuring Mode	Single measurement, average measurement (1-99), continuous measurement (1-99)	Single measurement, average measurement (1-99), continuous measurement (1-99)
Locating Mode	Color camera preview	Color camera preview
Dimension	L*W*H=195X83X128mm	L*W*H=195X83X128mm
Weight	About 1Kg	About 1Kg

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Multi Angle Spectrophotometer With 8 Angles

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Power	lithium-ion battery, 3.7V,3200mAh, Continuous test 6000 times within 8 hours of full charge	lithium-ion battery, 3.7V,3200mAh, Continuous test 6000 times within 8 hours of full charge
Display	3.5-inch TFT color LCD, Capacitive Touch Screen	3.5-inch TFT color LCD, Capacitive Touch Screen
Interface	USB, Bluetooth 5.0	USB, Bluetooth 5.0
Data Storage	1000 pcs Standards,4000 pcs Samples	1000 pcs Standards,4000 pcs Samples
Language	Simplified Chinese, Traditional Chinese, English	Simplified Chinese, Traditional Chinese, English
Operating Environment	10℃ to 50℃, humidity does not exceed 85%, no condensation	10℃ to 50℃, humidity does not exceed 85%, no condensation
Storage Environment	-20℃ to 50℃, humidity does not exceed 85%, no condensation	-20℃ to 50℃, humidity does not exceed 85%, no condensation
Calibration	Built-in white board parameters, external white board, black light trap, color board	Built-in white board parameters, external white board, black light trap, color board
Calibration Interval	4 hours,8 hours,24 hours,Startup calibration	4 hours,8 hours,24 hours,Startup calibration
Standard accessories	Power Adapter, USB Cable, User Guide,PC Software(download from the official website), Calibration Board, black light trap,Protective cap, wristband	Power Adapter, USB Cable, User Guide,PC Software(download from the official website), Calibration Board, black light trap,Protective cap, wristband
Optional Accessory	Micro-printer	Micro-printer
Notes	Technical parameters are for reference only, subject to actual sales products.	Technical parameters are for reference only, subject to actual sales products.

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ONE TREE PLANTED

https://onetreeplanted.org

Humatem

Solidarité et coopération biomédicale

https://www.humatem.org/

MANIAPURE FOUNDATION USA

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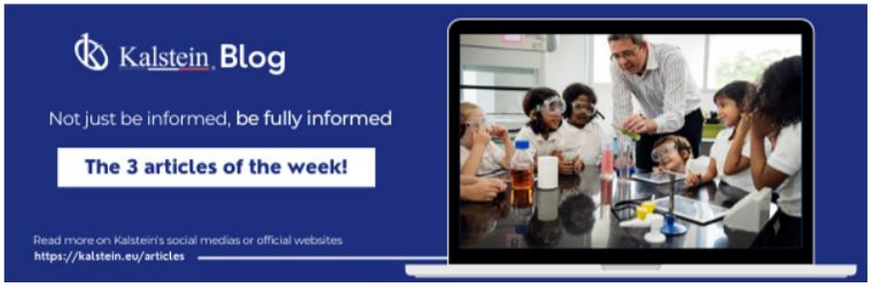
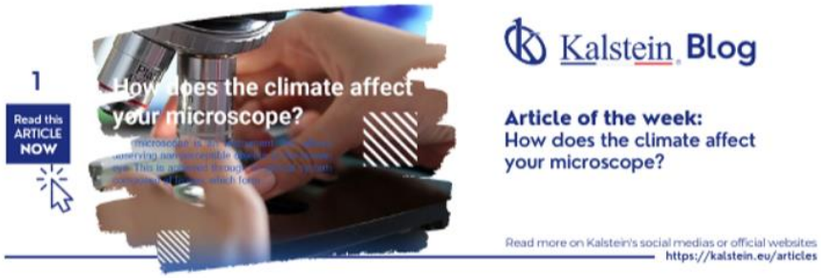
Articles Kalstein
(Social Networks and Official Websites)





Kalstein Training Videos
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