

BENCHTOP SPECTROPHOTOMET ER



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Benchtop Spectrophotometer is used for measuring the color and appearance of fluorescent, opaque, transparent and translucent samples under various illuminants

SPE71 BENCHTOP SPECTROPHOTOMETER

Double Array 256 Image Element CMOS Sensor; Long life-span stable LED UV LED.

With reflective and transmissive spectrum, accurate Lab value, good to calculate color formula and do precise color transmission.

Auto identify measuring aperture. Freely switchable between 3 measuring apertures: Φ 25.4mm/8mm/4mm. Users also can customize apertures.

Built-in temperature sensor to monitor and compensate the measuring temperature to ensure the measurement more precision.

Wavelength range 360nm - 780nm. Built-in 400nm/420nm/460nm cut off Xenon lamp, more professional in UV measurement.

Independent light source detector, continuously monitor the condition of light sources to ensure the light source reliable.

Multiple measurement modes: Quality Management Mode, Sample Mode; Meet more users' requirement.

More powerful extended functions at the PC software.

SPECIFICATIONS

Model	SPE71-460	SPE71-400	SPE71-420	SPE71-400A
Illuminant	360nm-780nm Xenon lamp, 400/420/460nm cut-off	360nm-780nm Xenon lamp, 400 nm cut-off	360nm-780nm Combined LED Lamp, 400nm cut-off, 420nm cut-off, UV Lamp	360nm-780nm Combined LED Lamp, 400nm cut-off
Sensor	256 Image Element Double Array CMOS I mage Sensor, Concave-grating		256 Image Element Double Array CMOS Image Sensor	
Wavelength Pitch	10 nm			
Semiband Width	5 nm	10 nm		
Reflectance Range	0-200%			
Measuring Aperture	Reflective:Φ30mm/Φ25.4mm,Φ18mm/Φ15mm,Φ10mm/Φ8mm, Φ6mm/Φ4mm;Transmissive:Φ30mm/Φ25.4mm;	Reflective:Φ30mm/Φ25.4mm, Φ10mm/Φ8mm, Φ6mm/Φ4mm;Transmissive: Φ25.4mm;	Reflective :Φ30mm/Φ25.4mm, Φ18mm/Φ15mm, Φ10mm/Φ8mm, Φ6mm/Φ4mm; Transmissive :Φ30mm, Φ25.4mm;	Reflective : Φ30mm/Φ25.4mm, Φ10mm/Φ8mm, Φ6mm/Φ4mm; Transmissive :Φ 30mm, Φ25.4mm;
Integrating Sphere Size	Φ 154mm			
Optical Geometry	Reflection: d/8°(diffused illumination, 8-direction reception);Transmission: d/0° (diffuse illumination: 0° direction reception);SCI/SCE measurement Include UV / excluded UV measurement Haze(ASTM D1003);		Reflectance: d/8 (SCI&SCE; Include UV/Exclude UV) Transmittance: d/0 (SCI&SCE; Include UV/Exclude UV) Conforms to CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7	
Standards compliant	CIE No.15,GB/T 3978,GB 2893,GB/T 18833, ISO7724/1, ASTM E1164, DIN5033 Teil7		-	-
Specular Component	Reflectance: SCI&SCE Transmittance: SCI&SCE		Reflectance: SCI&SCE / Transmittance: SCI&SCE	
Color Space	CIE Lab, XYZ, Yxy, LCh, CIE LUV, Hunter LAB, Munsell, s-RGB, HunterLab, DIN, βxy		CIE LAB,XYZ,Yxy,LCh,CIE LUV,Musell,s-RGB,HunterLab,βxy,DIN Lab99	
Color Difference Formula	ΔE ab, ΔE uv, ΔE 94, ΔE cmc(2:1), ΔE cmc(1:1), ΔE 00v, ΔE(Hunter)		ΔE ab,ΔE uv,ΔE 94,ΔE cmc(2:1),ΔE cmc(1:1),ΔE 00, DINΔE99,ΔE(Hunter)	

Colorimetric Index	WI (ASTM E313, CIE/ISO, AATCC, Hunter),YI (ASTM D1925, ASTM 313),Mt (Metamerism Index),8°Gloss Staining Fastness,Color Fastness, Color Strength, Opacity,Gard ner Index, Pt-Co Index, 555 Index,Haze (ASTM D1003)		WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), MI (Metamerism Index), Staining Fastness, Color Fastness, Color Strength, Opacity, 8° Glossiness,Gardner Index, APHA/Pt-Co Index, 555 Index	
Observer	2° / 10°			
Illuminants	D65,A,C,D50,D55,D75, F1,F2,F3,F4,F5,F6, F7,F8,F9,F10,F11,F12, CWF,DLF,TL83,TL84,TPL5,U30		D65,A,C,D50,D55,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11,F12	
Displayed Data	Spectrogram/Values, Chromaticity Values, Color Difference Values/Graph, Pass/Fail Result, Color Offset			
Measurement time	About 2.4s (Measure SCI & SCE about 5s)			
Repeatability	Spectral reflectance: Φ25.4mm/SCI, Standard deviation within 0.06% (400 nm to 700 nm: within 0.05%) Chromaticity value: Φ25.4mm/SCI, Standard deviation within ΔE*ab 0.012 Spectral Transmittance: Φ25.4mm/SCI, Standard deviation within 0.06% (400 nm to 700 nm: within 0.06%) Chromaticity value: Φ25.4mm/SCI, Standard deviation within ΔE*ab 0.015	Spectral reflectance: Φ25.4mm/SCI, Standard deviation within 0.07% Chromaticity value: Φ25.4mm/SCI, Standard deviation within ΔE*ab 0.015 Spectral Transmittance: Φ25.4mm/SCI, Standard deviation within 0.07% Chromaticity value: Φ25.4mm/SCI, Standard deviation within ΔE*ab 0.15	Spectral reflectance: Φ25.4mm/SCI, Standard deviation within 0.05% (400 nm to 700 nm: within 0.04%) Chromaticity value:Φ25.4mm/SCI, Standard deviation within ΔE*ab 0.01 Spectral Transmittance: Φ25.4mm/SCI, Standard deviation within 0.05% (400 nm to 700 nm: within 0.04%) Chromaticity value:Φ25.4mm/SCI, Standard deviation within ΔE*ab 0.02	Spectral reflectance: Φ25.4mm/SCI, Standard deviation within 0.05% Chromaticity value:Φ25.4mm/SCI, Standard deviation within ΔE*ab 0.02 Chromaticity value:Φ25.4mm/SCI, Standard deviation within ΔE*ab 0.03
Inter-instrument Error	Φ25.4mm/SCI, Within ΔE*ab 0.12 (Average for 12 BCRA Series II color tiles)		Φ25.4mm/SCI, Within ΔE*ab 0.15 (Average for 12 BCRA Series II color tiles)	
Working Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation)			
Storage Environment	Temperature: -20~50°C; Humidity: 0~85% (No Condensation)			
Language	English and Chinese			
Data Storage capacity	Standard 5000 Pcs, Sample 40000 Pcs (one PCS can include both SCI and SCE)	Standard 2000 Pcs, Sample 20000 Pcs	Standard 5000 Pcs, Sample 40000 Pcs (one PCS can include both SCI and SCE)	Standard 2000 Pcs, Sample 20000 Pcs
Light Source Device Life	5 years, more than 3 million times measurements.			
Screen	7" TFT Capacitive Screen-touch Display			
Data Port	USB & Bluetooth & Print serial port	USB, print serial port	USB & Bluetooth	Bluetooth
Standard Accessory	Black Calibration Board, Standard calibration plate,Fixing frame Sample Holder, Φ4mm,Φ8mm,Φ15mm,Φ25.4mm Aperture, PowerAdapter,USB Cable, User Guide, PC Software Transmissive Test Clamp Component,Transmission blackboard	Black Calibration Board,Standard calibration plate, Sample Holder,Φ4mm,Φ8mm,Φ25.4mm Aperture, Power Adapter,USB Cable,User Guide,PC Software Fixing frame,Transmission blackboard	White and Black Calibration Board, Checking Green Board, Sample Holder,Φ4 mm,Φ8 mm, Φ15 mm, Φ25.4mm Aperture, Power Adapter,USB Cable, User Guide, PC Software Transmissive Test Clamp Component	White and Black Calibration Board, Checking Green Board, Sample Holder, Φ4mm, Φ8mm, Φ25.4mm Aperture,Power Adapter,USB Cable, User Guide, PC Software
Optional Accessory	Micro printer, micro hole (4mm) transmission component, instrument inversion component	Micro printer, transmission test component, micro hole (4mm) transmission component, instrument inversion component	Micro-printer	Micro-printer, Transmissive Test Clamp Component
Size	370x300x200 mm			
Weight	About 9.6kg		9.6kg	
Power Supply	DC 24V, 3A Power Adapter			

SPE71 BENCHTOP SPECTROPHOTOMETER

Non-contact, 45 / 0 geometric optical structure to measure the reflectance and chromaticity of objects;

The movable measuring head moves up and down according to the actual height of the measured object;

Large touch screen measurement interface, real-time display of measurement data, to realize more measurement functions;

Multiple measurement modes (sample, quality control, continuous statistical mode) can be selected to meet the personalized needs.

SPECIFICATIONS

Model	SPE71-360	SPE71-780
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)	
Sensor	256 Image Element Double Array CMOS Image Sensor	
Light Source Device	360nm-780nm Combined LED Lamp, UV Lamp	360nm -780nm Combined LED Lamp
Spectroscopic Method	Concave-grating	
Spectral Range	400-700nm/10nm Output	
Sample Distance	>7.5mm	
Height Adjustment	Manual adjustment, automatic adjustment (the test height can be stored)	Manual adjustment (the test height can be stored)
Optical Geometry	45/0(45°Ring uniform illumination,0°accept)	
Standards compliant	CI EN o.15, GB/T 39T8,GB 2893,GB/T 18833, ISOT724-1,ASTM E1164, DIN5033 TeilT,GB 2893. GB/T 18833	
Height range	0~150mm	
Photometric Range	0~200%	
Integrating Sphere size	Φ20mm (Customized <20mm)	Φ20mm
Measurement mode	Sample mode, quality control mode, continuous statistical mode	
Locate Mode	Display camera locating	
Color Space	CIE LAB,XYZ,Yxy, LCh,CIE LUV, Hunte rLAB	
Color difference formulas	$\Delta E^*ab, \Delta E^*uv, \Delta E^*94, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*00, \Delta E$ (Hunter)	
Other Colorimetric Data	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	2° / 10°	
Displayed Data	Spectrogram/Values, Chromaticity Va lues, Color Difference Values/G ra ph, Pass/Fail Result, Color Offset	
Measurement time	About 1.5 s	
Repeatability	Spectral reflectance:Standard deviation within 0.08% (400 to 700nm: within 0.18%) Chromaticity value:within ΔE^*ab 0.05 After calibration, measure the average value of the whiteboard 30 times at 5s intervals	Spectral reflectance:Standard deviation within 0.08% (400 to 700nm: within 0.18%) Chromaticity value:within ΔE^*ab 0.03
Inter-instrument Error	Within ΔE^*ab 0.2(Average for 12 BCRA Series II color tiles)	
Measurement method	measurement, average measurement (2-99 times) 330 (L)	
Life Lamp	5 years, more than 3 million times measurements.	
Screen	7" TFT Capacitive Screen-touch Display	

Interface	USB & Bluetooth	USB
Data Storage	Sample mode + quality control mode 30000; continuous statistics mode 10000	Sample mode + quality control mode 40000; continuous statistics mode 10000
Language	English and Chinese	
Operating Environment	Temperature: 0~40°C; Humidity: 0~85% (No Condensation)	
Storage Environment	Temperature: -20~50°C; Humidity: 0~85% (No Condensation)	
Standard Accessory	Power Adapter,USB Cable,User Guide,PC Software(Download from website),Standard calibration plate, Black Calibration Board	
Optional Accessory	Micro Printer,Powder test box	

SPE71 BENCHTOP SPECTROPHOTOMETER

Adopt international common use d/8 SCI/SCE Synthesis technology

Silicon photodiode array sensor (40 groups with double rows)

A variety of color space, a variety of observation light sources

Adopt combination full spectrum LED light source and UV light source Each

Camera locating can clearly observe the measured area

Calibration Certificate

Industrial-grade HD touch screen, easy to use user interface

Color management software

Optional Accessory

SPECIFICATIONS

Model	SPE71-700	SPE71-200	SPE71-200A
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)	D65,A,C,D50,F2(CWF),F7(DLF),F10(TPL5),F11(TL84),F12(TL83/U30)	D65,A,C,D50,D55,D75,F1,F2(CWF),F3,F4,F5,F6,F7(DLF),F8,F9,F10(TPL5),F11(TL84),F12(TL83/U30)
Sensor	Silicon photodiode array (40 groups)		256 Image Element Double Array CMOS Image Sensor
Wavelength Pitch	10 nm		
Semiband Width	10 nm		
Spectral Range	400-700nm		
Spectroscopic method	Plane Grating		
Light source Device	Combined LED Lamp, UV Lamp	Combined LED Lamp	Combined LED Lamp, UV Lamp
Integrating Sphere Size	Φ 40mm		
Optical Geometry	D/8(Diffuse illumination, 8° acceptance) ; SCI&SCE; Include UV/Exclude UV		45/0(45 ring-shaped illumination, 0 degree viewing angle)
Standards compliant	CIE N o.15,GB/T 3978,GB 2893,GB/T 18833, ISO7724-1,ASTM E 1164, DINS033 Teil7		
Photometric Range	0~200%		
Measurement aperture	MAV:Φ8mm/Φ10mm; SAV:Φ4mm/Φ5mm	Customized single caliber: MAV:Φ08mm/Φ10mm SAV: Φ4mm/Φ5mm	Customized single caliber: LAV: Φ18mm/Φ20mm MAV:Φ8mm/Φ10mm; SAV:Φ4mm/Φ5mm
Light Included mode	Both SCE/SCI modes		45/0



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