



HANDHELD SPECTROPHOTOMETER

HANDHELD SPECTROPHOTOMETER BJH1D1 BJH1D2 BJH1D3

GRATING SPECTROPHOTOMETER

It inherits the core technology of large area array sensor and grating splitting in the field of color detection, and acutely analyzes the strong and weak light in 300-1100nm band. It has always been imitated, but never surpassed. The spectrophotometer is a compact, portable color measurement device designed for fast and accurate color analysis. Equipped with a single-beam optical system, it offers reliable performance for basic color evaluation in various industries, widely used for testing the color of different materials such as dental, printing, plastic, fruit, textile, car, etc.



Double 32 array sensor:
spectral range of 360-780 nm
Support standard color spaces like CIE LAB, XYZ, and sRGB
D/8 geometry (SCI/SCE)
Good repeatability ($\Delta E_{ab} \leq 0.02$) and interinstrument agreement ($\Delta E_{ab} \leq 0.15$)
Large area photodiode array (dual 32 arrays) sensor:
A larger area of double 26 array sensor, strong light saturation, weak light sensitivity and a wider spectrum response range, to ensure the instrument measurement speed, accuracy, stability and consistency, independent core technology, and international standards of the same platform, to achieve complete compatibility.
Adopt D/8 structure and SCI/SCE mode:
Spectrophotometer uses a widely used international use D/8 optical structure, SC

SPECIFICATIONS

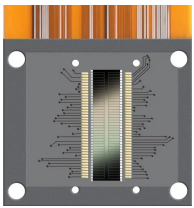
Model	BJH1D1	BJH1D2	BJH1D3
Old Model	BHSP-904	BHSP-905	BHSP-906
Optical Geometry	Reflectance: D/8 (Diffuse illumination, 8° acceptance) SCI & SCE; Include UV/Exclude UV		Reflectance: D/8 (Diffuse illumination, 8° acceptance) SCI & SCE; Exclude UV
Standards Compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO77241, ASTM E1164, DIN5033 Teil7		
Integrating Sphere Size	Φ40 mm		
Light Source	Combined full spectrum LED light source, UV light source		Combined full spectrum LED light source
Spectroscopic Method	Flat Grating		
Silicon photodiode array	Double row 32 groups	Double row 26 groups	Double row 20 groups
Spectral Range	360-780 nm	360-700 nm	400-700 nm
Wavelength Pitch	10 nm		
Photometric Range	0-200%		
Measurement Aperture	Five apertures: MAV: φ8 mm/φ10 mm; SAV: φ4 mm/φ5 mm; LAV: 1x3 mm	Four apertures: MAV: φ8 mm/φ10 mm; SAV: φ4 mm/φ5 mm	Two apertures (optional 8 mm or 4 mm)
Specular Component	SCI & SCE		
Color Spaces	CIE LAB, XYZ, Yxy, LCh, CIE LUV, sRGB, Hunter Lab, βxy, DIN Lab99, Munsell (C/2)		CIE LAB, XYZ, Yxy, LCh, CIE LUV, sRGB, Hunter Lab, βxy, Munsell (C/2)
Color difference formulas	ΔE^*_{ab} , ΔE^*_{uv} , ΔE^*_{94} , $\Delta E^*_{cmc}(2:1)$, $\Delta E^*_{cmc}(1:1)$, ΔE^*_{00} , DIN ΔE_{99} , ΔE (Hunter)	ΔE^*_{ab} , ΔE^*_{uv} , ΔE^*_{94} , $\Delta E^*_{cmc}(2:1)$, $\Delta E^*_{cmc}(1:1)$, ΔE^*_{00}	

Other Colorimetric Index	Spectral reflectance; WI (ASTM E313, CIE/ISO, AATCC, Hunter, TaubeBergerStensby); YI (ASTM D1925, ASTM 313); Metamerism Index Mt; Color fastness; strength (dye/tinting); opacity; 8° glossiness; 555 hue classification; blackness (My, dM); color density CMYK (A, T, E, M), Tint; color density; Munsell (some functions via PC software)	WI (ASTM E313, CIE/ISO, AATCC, Hunter); YI (ASTM D1925, ASTM 313)	WI (ASTM D1925, ASTM 313); YI (ASTM D1925, ASTM 313)
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), B, U35, NBF, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2, LED-C2, LED-C3, LED-C5; customizable light source (41 kinds of light sources in total, some via PC software/APP)		
Displayed Data	Spectrogram/Data, Sample Colorimetric Value, Color Difference Value/Graph, PASS/FAIL Results, Color Simulation, Color Bias		
Measurement Time	About 1.5 s		
Repeatability	Chromaticity value: (MAV/SCI): $\Delta E^*ab \leq 0.02$ (After warmup correction, measure the average value of the white board 30 times at an interval of 5s); Spectral reflectance: (MAV/SCI), Standard Deviation $\leq 0.08\%$ (400-700 nm $\leq 0.18\%$)	Chromaticity (MAV/SCI): $\Delta E^*ab \leq 0.025$ (After warmup correction, measure the average value of the white board 30 times at an interval of 5s); Spectral reflectance (MAV/SCI) Standard Deviation $\leq 0.08\%$ (400-700 nm $\leq 0.18\%$)	Chromaticity (MAV/SCI): $\Delta E^*ab \leq 0.03$ (After warmup correction, measure the average value of the white board 30 times at an interval of 5s); Spectral reflectance MAV/SCI, Standard Deviation $\leq 0.1\%$ (400-700 nm $\leq 0.2\%$)
Inter-instrument agreement	MAV/SCI within ΔE^*ab 0.15 (Average for 12 BCRA Series II color tiles)		MAV/SCI within ΔE^*ab 0.2
Display accuracy	0.01		
Measurement Mode	Single measurement; Average measurement (2-99 times)		
Locating Method	Camera locating; stabilizer cross position		
Dimension & Weight	129 x 76 x 217 mm; Approx 600 g		
Battery	Lithium battery, 3.7 V, 5000 mAh; 8800 times within 8 hours		
Lamp Life	More than 1.5 million measurements in 10 years		
Screen	3.5-inch TFT color LCD; Capacitive Touch Screen		
Interface	USB, Bluetooth		
Data storage	Standard: 1000 pcs; Sample: 30,000 pcs (one data can include SCI/SCE at the same time); APP/PC mass storage		Standard: 1000 pcs; Sample: 20,000 pcs (one data can include SCI/SCE at the same time); APP/PC mass storage
Software support	Android, iOS, Windows, WeChat applet, Hongmeng		
Languages	Simplified Chinese, English, Traditional Chinese		
Standard Accessories	Power Adapter; User Guide; PC Software (download from office website); USB cable; White & Black Calibration Cavity; Protective Cover; Wrist strap; Five apertures .	Power Adapter; User Guide; PC Software (download from office website); USB cable; White & Black Calibration Cavity; Protective Cover; Wrist strap; Four apertures.	Power Adapter; User Guide; PC Software (download from office website); USB cable; White & Black Calibration Cavity; Protective Cover; Wrist strap; One aperture.
Alt Name	Grating Spectrophotometer		



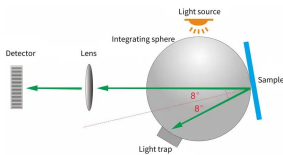
FEATURES

Double 32 array sensor:
spectral range of 360-780 nm
Support standard color spaces like CIE LAB, XYZ, and sRGB
D/8 geometry (SCI/SCE)
Good repeatability ($\Delta E_{ab} \leq 0.02$) and interinstrument agreement ($\Delta E_{ab} \leq 0.15$)



Large area photodiode array (dual 32 arrays) sensor:

A larger area of double 26 array sensor, strong light saturation, weak light sensitivity and a wider spectrum response range, to ensure the instrument measurement speed, accuracy, stability and consistency, independent core technology, and international standards of the same platform, to achieve complete compatibility.



Adopt D/8 structure and SCI/SCE mode:

Spectrophotometer uses a widely used international use D/8 optical structure, SCI/SCE (Specular Component Included/Specular Component Excluded) synthesis technology, supports SCI+SCE at the same time fast measurement, test time about 1.5 seconds.



Equipped with four kinds of measuring apertures:

It is equipped with five types of measuring apertures, which can meet the measurement needs of different sizes of samples, and is suitable for precise color measurement of samples with different specifications and shapes.

Spectrophotometer factory standard with 4mm flat aperture, 8mm flat aperture, 4mm flat aperture, 4mm tip aperture, 1x3mm aperture, a total of four measuring apertures, to meet the measurement needs of most special samples.



Camera positioning can clearly observe the measured area

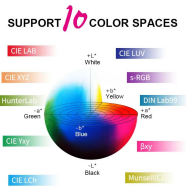
The spectrophotometer has a builtin camera. Through the realtime scenetaking of the camera, it can accurately determine whether the measured part of the object is the target center, which improves the measurement efficiency and accuracy.



Noncontact automatic calibration, professional imported white board, more wearresistant, dirty, stable



Place the base safely to ensure that the whiteboard is not dirty.



Offer 10 kinds of color measurement space and 41 kinds of observation light source:

Offer CIE LAB,XYZ,Yxy,LCh,CIE LUV, SRGB, HunterLab, βxy , DIN Lab99, Munsell(C/2) color spaces, and 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, U35, NBF, ID50, ID65, LEDB1, LEDB2, LEDB3, LEDB4, LEDB5, LEDBH1, LEDRGB1, LEDV1, LEDV2, LEDC2, LEDC3, LEDC5. It also can be customized as a light source (A total of 41 kinds of light source, partially realized through the PC software /APP software), and can meet the special measurement requirements under different measurement conditions.

APPLICATIONS

Spectrophotometer is equipped with 5 kinds of measuring apertures, with wider adaptability, accurate color measurement and stable performance. It is used for accurate color measurement and quality control in dentistry, plastic electronics, paint ink, textile and garment printing and dyeing, printing, ceramics and other industries, and can be used for fluorescent sample measurement.



Precise Tooth Shade Determination:

It was developed for precise, fast and reliable shade determination of natural teeth and ceramic restorations. Highprecision spectrophotometer technology accurately determines tooth shade. It does so objectively and reproducibly, regardless of ambient light conditions. For greater process reliability and fewer complaints.

HANDHELD SPECTROPHOTOMETER BJH1B1 BJH1B2 BJH1B3

DUAL OPTICAL PATHS FLAT GRATING SPECTROPHOTOMETER

Handheld Spectrophotometer BJH1B1

The versatile, rugged and easy-to-use piece of test equipment color spectrometer, a product of three years dedicated R&D. It features a 1000 line precision blazed grating for light splitting and a double row 40 group silicon photodiode array sensor. This large area sensor ensures no saturation under strong light, high sensitivity to weak light, and a broad spectral response, guaranteeing fast, accurate, stable, and consistent measurements.

1000 line precision blazed grating for light splitting and a double row 40 group silicon photodiode array sensor

D/8 geometric optical illumination (SCI/SCE) measurement structure

Measure SCI and SCE reflectance data for both regular and fluorescent samples

Repeatability ($\Delta E_{ab} \leq 0.03$) and inter-instrument error ($\Delta E_{ab} \leq 0.15$)

Three measuring apertures ($\phi 8\text{mm}$, $\phi 4\text{mm}$, $1 \times 3\text{mm}$)

Fast: capture times less than one second



Handheld Spectrophotometer BJH1B1

Silicon photodiode array (double 40 array) sensor:

The larger area of the double 40 array sensor, the strong light will not saturate, weak light sensitivity and a wider spectrum response range, to ensure the instrument measurement speed, accuracy, stability and consistency, master the core technology, and the international standard of the same platform, complete compatibility.

Professional whiteboard, a lifetime never change color commitment

Fast charging:

Special fast charging mode, low voltage to remind charging or use off-duty time charging, to ensure the capacity and life of the battery (note: frequent repeated battery charging causes more harm).

SPECIFICATIONS

Model	BJH1B1	BJH1B2
Old Model	BHSP-901	BHSP-902
Optical Geometry	Reflectance: D/8 (Diffuse illumination, 8° acceptance) SCI & SCE; Include UV/Exclude UV	
Standards Compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO77241, ASTM E1164, DIN5033 Teil7	
Integrating Sphere Size	$\Phi 40\text{ mm}$	
Light Source	Combined full spectrum LED light source, UV light source	
Spectroscopic Method	Flat Grating	
Sensor	Silicon photodiode array (double row 40 groups)	
Spectral Range	400-700 nm	
Wavelength Pitch	10 nm	
Semibandwidth	10 nm	
Photometric Range	0-200%	
Measurement Aperture	Three apertures: MAV: $\phi 8\text{ mm}/\phi 10\text{ mm}$; SAV: $\phi 4\text{ mm}/\phi 5\text{ mm}$; LAV: $1 \times 3\text{ mm}$ (slightly worse accuracy; for color difference test)	Double aperture: MAV: $\phi 8\text{ mm}/\phi 10\text{ mm}$; SAV: $\phi 4\text{ mm}/\phi 5\text{ mm}$
Specular Component	SCI & SCE	
Color Spaces	CIE LAB, XYZ, Yxy, Lch, CIE LUV, sRGB, Hunter Lab, LRV, β_{xy} , DIN Lab99, Munsell (C/2)	
Color difference formulas	ΔE^*_{ab} , ΔE^*_{uv} , ΔE^*_{94} , $\Delta E^*_{cmc}(2:1)$, $\Delta E^*_{cmc}(1:1)$, ΔE^*_{00} , DIN ΔE_{99} , $\Delta E(\text{Hunter})$	
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, 8° Glossiness, 555 tone classification	
Observer Angle	$2^\circ / 10^\circ$	
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)	

Displayed Data	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset	
Measurement Time	About 1.5 s (SCI & SCE about 3.2 s)	
Repeatability	Spectral reflectance: MAV/SCI, std. dev. within 0.08% (400-700 nm: within 0.18%); Chromaticity value: MAV/SCI, within ΔE^*ab 0.03 (after calibration; measure the average whiteboard 30x at 5 s intervals)	
Interinstrument agreement	MAV/SCI, within ΔE^*ab 0.15 (Average for 12 BCRA Series II color tiles)	
Measurement Mode	Single measurement, Average measurement (2-99 times)	
Locating Method	Camera locating, stabilizer cross position	
Dimension (LxWxH)	129 x 76 x 217 mm	
Weight	Approx. 600 g	
Battery	Li-ion battery; 6000 measurements within 8 hours	
Lamp Life	5 years; >3 million measurements	
Screen	3.5-inch TFT color LCD; capacitive touch screen	
Interface	USB, Bluetooth	
Data storage	Standard: 1,000 pcs; Sample: 30,000 pcs (one PCS can include both SCI & SCE)	
Languages	Simplified Chinese, English, Traditional Chinese	
Operating Environment	Temp: 0-40 °C; Humidity: 0-85% (no condensation); Altitude <2000 m	
Storage Environment	Temp: -20-50 °C; Humidity: 0-85% (no condensation)	
Standard Accessories	Power Adapter; User Guide; PC Software (download From office website); USB cable; White & Black Calibration Cavity; Protective Cover; Wrist strap; 8 mm flat aperture; 8 mm tip aperture; 4 mm flat aperture; 4 mm tip aperture; 1x3 mm tip aperture	Power Adapter; User Guide; PC Software (download from office website); USB cable; White & Black Calibration Cavity; Protective Cover; Wrist strap; 8 mm flat aperture; 8 mm tip aperture; 4 mm flat aperture; 4 mm tip aperture
Optional Accessories	Micro Printer; Powder test box	
Alt Name	Handheld Spectrophotometer	

Model	BJH1B3
Old Model	BHSP-903
Optical Geometry	Reflectance: D/8 (Diffuse illumination, 8° acceptance) SCI & SCE; Exclude UV
Standards Compliant	CIE No.15, GB/T 3978, GB 2893, GB/T 18833, ISO77241, ASTM E1164, DIN5033 Teil7
Integrating Sphere Size	Φ40 mm
Light Source	Combined full spectrum LED light source
Spectrophotometric Mode	Flat Grating
Sensor	Silicon photodiode array (double row 40 groups)
Wavelength Range	400-700 nm
Wavelength Interval	10 nm
Semiband Width	10 nm
Measured Reflectance Range	0-200%
Measurement Aperture	Customized one aperture: MAV: φ8 mm/φ10 mm; SAV: φ4 mm/φ5 mm
Specular Component	SCI & SCE
Color Spaces	CIE LAB, XYZ, Yxy, LCh, CIE LUV, sRGB, βxy, Munsell (C/2)
Color difference formulas	ΔE^*ab , ΔE^*uv , ΔE^*94 , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*00
Other Colorimetric Index	WI (ASTM E313, CIE/ISO, AATCC, Hunter), YI (ASTM D1925, ASTM 313), Staining Fastness, Color Fastness, Color Strength, Opacity, 8° Glossiness
Observer	2° / 10°
Illuminant	D65, A, C, D50, F2 (CWF), F7 (DLF), F10 (TPL5), F11 (TL84), F12 (TL83/U30)
Displayed Data (results)	Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset
Measurement Time	About 1.5 s (simultaneous measurement SCI/SCE about 3.2 s)

Repeatability	Spectral reflectance: MAV/SCI, Standard deviation within 0.1% (400-700 nm: within 0.20%). Chromaticity value: MAV/SCI, within ΔE^*ab 0.04 (30x white plate at 5 s intervals after calibration)
Interinstrument Error	MAV/SCI within ΔE^*ab 0.2 (Average for 12 BCRA Series II color tiles)
Measurement Mode	Single measurement, average measurement (2-99 times)
Locating Method	Camera locating, stabilizer cross position
Dimension (LxWxH)	129 x 76 x 217 mm
Weight	Approx. 600 g
Battery	3.7V, 5000mAh Li-ion; 6000 measurements within 8 hours
Illuminant Life Span	5 years; more than 3 million times measurements
Screen/Display	3.5-inch TFT color LCD; capacitive touch screen
Data Port	USB
Data storage	Standard: 1000 pcs; Sample: 20,000 pcs (one PCS can include both SCI & SCE)
Languages	Simplified Chinese, English, Traditional Chinese
Operating Environment	Temperature: 0-40 °C; Humidity: 0-85% (no condensation); Altitude < 2000 m
Storage Environment	Temperature: -20-50 °C; Humidity: 0-85% (no condensation)
Standard Accessories	Power Adapter; User Guide; PC Software (download from office website); USB cable; White & Black Calibration Cavity; Protective Cover; Wrist strap; One aperture (8 mm or 4 mm)
Optional Accessories	Micro Printer; Powder test box
Alt Name	Handheld Spectrophotometer



BJH1B1



BJH1B1



BJH1B1



BJH1B1



BJH1B2



BJH1B2



BJH1B2



BJH1B3



BJH1B3



BJH1B3

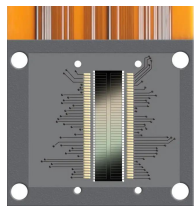


BJH1B3



BJH1B3

FEATURES BJH1B1



Silicon photodiode array (double 40 array) sensor:

The larger area of the double 40 array sensor, the strong light will not saturation, weak light sensitivity and a wider spectrum response range, to ensure the instrument measurement speed, accuracy, stability and consistency, master the core technology, and the international standard of the same platform, complete compatibility.



Professional whiteboard, a lifetime never change color commitment



Fast charging:

Special fast charging mode, low voltage to remind charging or use off duty time charging, to ensure the capacity and life of the battery (note: frequent repeated battery charging causes more harm).



Equipped with three measuring apertures to meet the most samples measurement:

The Factory configuration of high performance spectrophotometer is with $\varnothing$ 8mm flat aperture, $\varnothing$ 8mm tip aperture, $\varnothing$ 4mm flat aperture, $\varnothing$ 4mm tip aperture, $\varnothing$ 1x3mm aperture, a total of five measuring apertures, to meet the most samples measurement.



Camera positioning can clearly observe the measured area:

Spectrophotometer builtin camera positioning, through the camera realtime view, can accurately determine whether the object measured part is the target center, improving the measurement efficiency and accuracy.



PC software has powerful function expansion:

SQCX quality management software with spectrophotometer is suitable for quality monitoring and color data management of various industries. Digitize user data color management.

FEATURES BJH1B2

Professional guarantee

Large capacity: 1000 standard samples, 30,000 samples (SCI/SCE counts one data);

Illumination light source: Life span is more than 3 million measurements in 5 years.



Dual Channel



Four calibers



Full spectrum



Flat Grating

FEATURES BJH1B3

D / 8 geometric optical structure

Adopt combined LED light source with high life and low power consumption;

Customized one 8mm or 4mm aperture (the flat/ tip measuring aperture can be switched easily, which is suitable for more tested sample)

Dual optical path system, the optical resolution in the visible range is less than 10nm, which can measure the SCI and SCE spectrum of the sample at the same time;

Accurate spectrum and lab data, used for color matching and accurate color transmission;

High hardware configuration: 3.5inch TFT true color screen, capacitive touch screen, 1000 line blazed grating, silicon photocell array detector with large photosensitive area, etc;

USB interface, convenient for expansion of various functions;

Super dirt resistant and stable standard white calibration board; Calibrated white tile (artificial diamond zirconium material)

Mohs hardness: 9

Spectral reflectance: >90%

No discoloration due to changes in temperature and humidity

No discoloration from oxidation

Ultrahigh strength and resistant to scratching

Large capacity storage space, which can store more than 20000 pieces of test data

2/10 standard observer's angle, multiple light source modes, multiple surface color systems, meet various standards of chromaticity indicators, and the needs of various customers for color measurement;

Camera locating position and Stabilizer cross measurement position;

PC software has powerful function expansion;

APPLICATIONS BJH1B1

Widely used in plastic electronics, paint coatings, textile printing and dyeing, printing, automotive, medical, cosmetics, and food industries

APPLICATIONS BJH1B2

Suitable for color analysis and transmission of various solids, liquids, transparent ,fluorescent samples, scientific research experiments, etc.



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