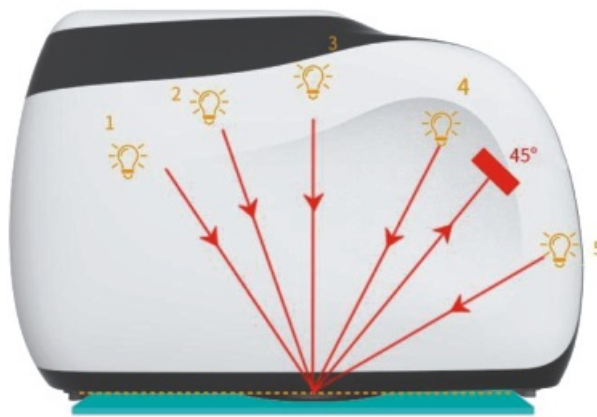


Multi-Angle Spectrophotometer

Introduction: **BGD 559 Multi-Angle Spectrophotometer** provides accurate and consistent color measurement for metallics, pearlescents and other complex special effect finished products. It adopts industrial-grade MCU and is equipped with 5 measuring angles. Under the superior performance of the optical measurement system, the instrument has excellent performance in multi-angle chromatic aberration measurement, even in the curved surface, but also has a high measurement accuracy and stability.

Features

- ◆ Multi-angle measurement: Adopt 5 illumination sources, 1 receivers to measure 5 measurement angles at the same time.



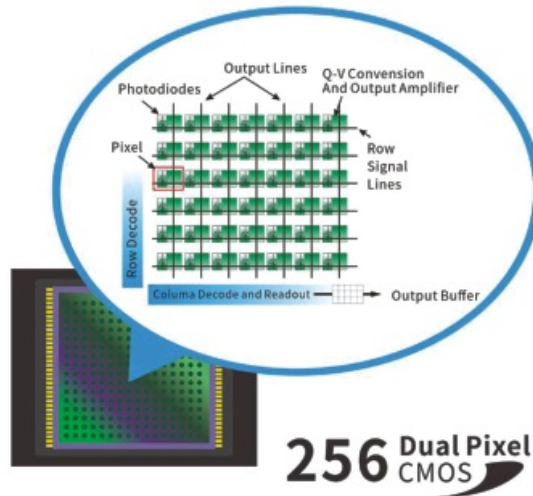
- ◆ More intuitive display: Touch screen can display all angle measurement results, more intuitive view of the comprehensive data.





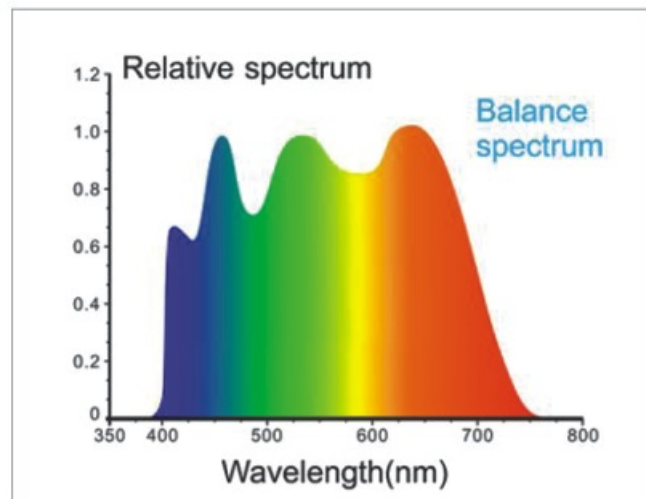
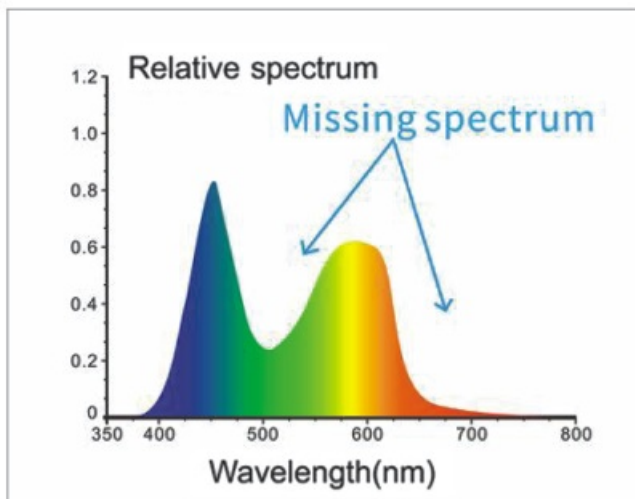
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◆ 256 Image Element Double Array CMOS Image Sensor: The higher optical resolution ensures the measuring speed, accuracy, stability and consistency of the instrument. The core technology makes it as the same platform with international standards and complete compatibility.



256 Dual Pixel
CMOS

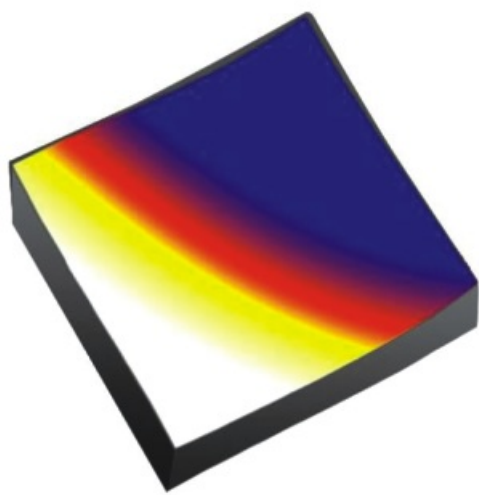
◆ Full spectrum LED light source with blue enhancement: It ensures sufficient spectral distribution in the visible light range, avoids the spectral loss of LED in a specific band, and ensures the accuracy of instrument measurement results and low cost maintenance.





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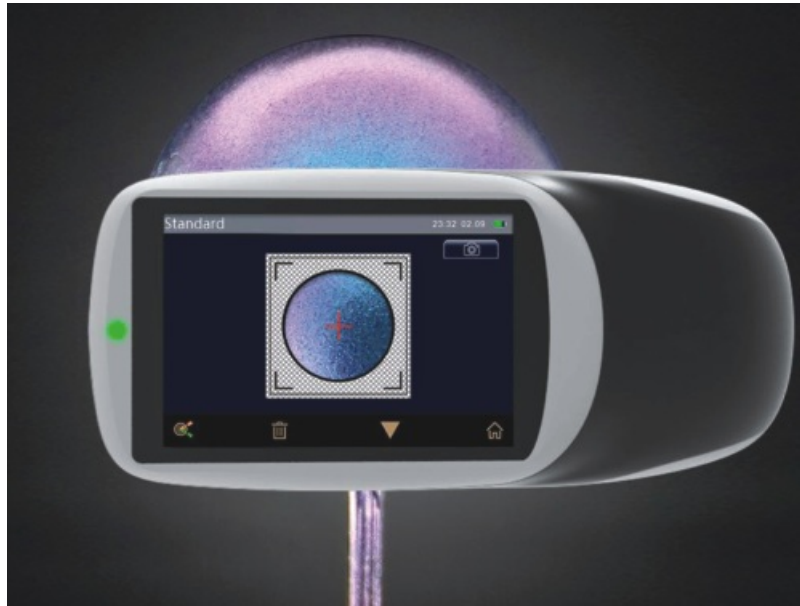
- ◆ Concave grating spectrophotometric technology: Higher resolution and more accurate color measurement.
- ◆ Professional-grade white board: High hardness in the surface, stable optical performance.



- ◆ Higher quality: Industrial grade real-time processing MCU, Bluetooth 5.0 transferring more stable and reliable.
- ◆ Ergonomics Novel and fashionable appearance design: The instrument 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.



- ◆ Built-in color camera positioning, can accurately judge the object measured position, and improve the measurement efficiency and accuracy.



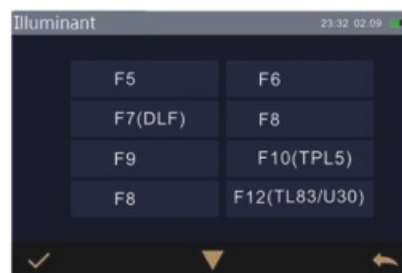
- ◆ Multiple color measurement space, multiple observation light sources, which can meet the special measurement demand under different measurement conditions.



ColorSpace



Illuminant





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◆ 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.

Angle	L*	a*	b*
15°	83.65	-0.10	84.38
25°	85.65	-0.46	80.43
45°	83.95	-0.72	91.21
75°	86.38	-1.10	79.36
110°	83.26	-0.64	88.28

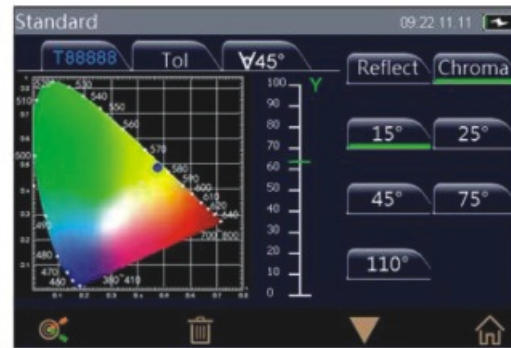
Color data

Angle	DL*	Da*	Db*
15°	2.15	0.35	4.56
25°	0.80	4.88	0.04
45°	10.54	5.34	13.17
75°	4.98	10.85	10.51
110°	9.82	8.58	11.36

Color difference value



Color difference graph



Samples Chromaticity values

◆ Conform to standards: ASTM D2244, E308, E1164, E2194, E2539; DIN 5033, 5036, 6174, 6175-1, 6175-2; ISO 7724, 11664-4; SAE J 1545





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Main Technical Parameters:

- ★ Measure Angle: 45° Receiver, 45 as 15° , 45 as 25° , 45 as 45° , 45 as 75° , 45 as 110°
- ★ Light Source: Full spectrum LED light source with blue enhancement, the lifetime can reach 5 years or 3 million measurements.
- ★ Spectrophotometric Mode: Concave Grating
- ★ Sensor: 256 Image Element Double Array CMOS Image Sensor
- ★ Wavelength Range: 400nm–700nm
- ★ Wavelength Interval: 10nm
- ★ Semiband Width: 10nm
- ★ Measurement Range: 0~600%
- ★ Measuring Aperture: Φ 12mm
- ★ Color Space: CIE LAB, XYZ, Yxy, LCh, β xy, DIN Lab99
- ★ Color Difference Formula: ΔE^*ab , ΔE^*94 , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*00 , DIN $\Delta E99$, ΔE DIN6175
- ★ 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: Spectrogram/Values, Samples Chromaticity Values, Color Difference Values/Graph, PASS/FAIL Result, Color Offset
- ★ Measuring Time: Approx. 1 second for one angle, approx. 5 seconds for all angles
- ★ Repeatability: 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)
- ★ Reproducibility: $\Delta E^* < 0.10$, avg on the gray tile of BCRA tile set; $\Delta E^* < 0.25$, avg on the color BCRA tile set
- ★ Inter-instrument Error: $0.2 \Delta E^*00$ (avg on reference Series II BCRA tile set)
- ★ Trigger Mode: Pressure sensing trigger, button trigger, software trigger
- ★ Measuring Mode: Single measurement, average measurement (1–99), continuous measurement (1–99)
- ★ Locating Mode: Color camera preview
- ★ Power: 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
- ★ Interface: USB, Bluetooth 5.0
- ★ Data Storage: 1000 pcs Standards, 4000 pcs Samples
- ★ Language: Simplified Chinese, Traditional Chinese, English
- ★ Calibration: Built-in white board parameters, external white board, black light trap
- ★ Calibration Interval: 4 hours, 8 hours, 24 hours, Startup calibration
- ★ Dimension: 195mm × 83mm × 128mm (W × D × H)
- ★ Net Weight: About 1Kg
- ★ Standard Accessories: 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
- ★ **Ordering Information:** BGD 559/3---Tri-Angle Spectrophotometer (25° /45° /110°)
BGD 559/5---Five-Angle Spectrophotometer (15° /25° /45° /75° /110°)