

## **GS-1160 Handheld Spectroradiometer**



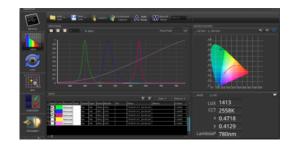
The GS-1160 spectroradiometer is a compact, high-speed and light weight spectrometer / flicker meter suitable for color and intensity measurement of all display types including LCD, LED, OLED and Quantum Dot displays.

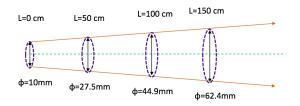
With an integrated touchscreen display, this batteryoperated unit is ideally suited to applications requiring a desktop test or calibration system. It is supported by LightTouch uSpectrum and uFlicker software for color and flicker analysis.

## Accurate and Repeatable Display Measurement

- Measures color, chromaticity, gamma, white balance, contrast, flicker and uniformity
- Luminance measurement from 0.05 to 5,000 cd/m²
- Color measurement in chromaticity including x/y/u'/v', XYZ, x10, y10, u10 and v10
- Wide range of flicker measurement, including JEITA, VESA,
   Contrast (min/max), rms, time domain and FFT
- Full spectral data capture and graphical display
- Measurement speeds ranging from 100 μsec to 5 seconds
- Automatic dark calibration

In addition to our exceptional technical and functional capabilities, Gamma Scientific is ISO/IEC 17025 accredited by NVLAP (NVLAP lab code 200823-0).





Measurement spot size at distance.

## **GS-1160 Handheld Spectroradiometer**



Wavelength Range		S	pectrum	
1 mm	Sensor	CMOS linear image senso	or	
Spectral Bandwidth   12 nm	Wavelength Range			
Acceptor Size	Wavelength Data Increment	1 nm		
Accuracy	Spectral Bandwidth			
Stray Light	Receptor Size	·		
Display Range	Acceptance Angle	±1°		
Luminance (1)    Accuracy	Wavelength Reproducibility	± 1 nm	(assumes stable input light source)	
Accuracy	Display Range	0.001 to 5,000 cd/m <sup>2</sup>		
From 0.05 to 5,000 cd/m²	Luminance (1)	Accuracy	± 5% from 0.2 to 100 cd/m <sup>2</sup> ± 5% from 0.05 to 0.2 cd/m <sup>2</sup>	
Accuracy	[From 0.05 to 5,000 cd/m <sup>2</sup> ]	Repeatability (2σ)	± 0.5% from 0.2 to 100 cd/m <sup>2</sup> ± 0.8% from 0.05 to 0.2 cd/m <sup>2</sup>	
Repeatability (2σ) ± 0.002 in CIE 1931 x,y for white from 0.2 to 100 cd/m² ± 0.002 in CIE 1931 x,y for white from 0.05 to 0.2 cd/m²  Stray Light -25 dB maximum (550 ± 40nm monochromatic source)  Polarized Error <2 %  Integration Time Range 100 µsec to 5 sec (fast mode / normal mode)  Digital Resolution 16 bit  Flicker  Measurement Range ≥ 5 cd/m²  Sampling Rate 100 kHz  Contrast (2) Accuracy: ± 1% (± 2% at 60Hz) Reproducibility: 1% (20 to 65 Hz)  JEITA (2) Accuracy: ± 0.5 dB Reproducibility: 0.3 dB  Measurement Capabilities Min/max, avg, rms & frequency JEITA and VESA Flicker Index and % (IES)  Features  Capture Function One-time or continuous  Operation Mode Stand-alone or USB  Integration Mode Auto or Manual  Automatic Dark Calibration Auto mode  Measuring Modes Basic Spectrum CIE 1931 Chromaticity Frequency Option  System Configuration  Display 320 x 240 mm (3.5 in) resistive touch LCD  Maximum Files 68,000 with 8 GB SD card, compatible with Excel® and JPG  Battery Operation Up to 5 hours, onboard 3.7 V Li-ion  External Power Adapter (included), 2500 mAh via USB connector  Data Interface SD card (SD2.0.SDHC up to 32 GB) or mini USB port (USB 2.0)  Dimensions 220 mm (8.7 in) H x 81 mm (3.2 in) W x 33 mm (1.3 in) D 330 g (0.73 lbs) including batter	Color (1)	Accuracy	± 0.003 in CIE 1931 x,y for white from 0.2 to 100 cd/m <sup>2</sup> ± 0.005 in CIE 1931 x,y for white from 0.05 to 0.2 cd/m <sup>2</sup>	
Polarized Error Integration Time Range 100 µsec to 5 sec (fast mode / normal mode) 16 bit  Flicker  Measurement Range 2 5 cd/m² Sampling Rate 100 kHz  Contrast (2) Accuracy: ± 1% (± 2% at 60Hz) Reproducibility: 1% (20 to 65 Hz)  JEITA (3) Accuracy: ± 0.5 dB Reproducibility: 0.3 dB Measurement Capabilities Min/max, avg, rms & frequency JEITA and VESA Flicker Index and % (IES)  Features  Capture Function One-time or continuous Operation Mode Auto or Manual Automatic Dark Calibration Measuring Modes Basic Browser Flicker Browser Flicker Frequency Display 320 x 240 mm (3.5 in) resistive touch LCD  Maximum Files Battery Operation Up to 5 hours, onboard 3.7 V Li-ion External Power Data Interface Data Interface SD card (SD2.0.SDHC up to 32 GB) or mini USB port (USB 2.0) Dimensions 220 mm (8.7 in) H x 81 mm (3.2 in) W x 33 mm (1.3 in) D 330 g (0.73 lbs) including battern	[From 0.05 to 5,000 cd/m <sup>2</sup> ]	Repeatability (2σ)	± 0.001 in CIE 1931 x,y for white from 0.2 to 100 cd/m <sup>2</sup>	
Integration Time Range Digital Resolution    Thicker   Flicker	Stray Light	-25 dB maximum (550 ± 40nm monochromatic source)		
Digital Resolution   16 bit     Flicker	Polarized Error	< 2%		
Measurement Range   ≥ 5 cd/m²	Integration Time Range			
Measurement Range ≥ 5 cd/m²  Sampling Rate 100 kHz  Contrast (2) Accuracy: ± 1% (± 2% at 60Hz) Reproducibility: 1% (20 to 65 Hz)  JEITA (2) Accuracy: ± 0.5 dB Reproducibility: 0.3 dB  Measurement Capabilities Min/max, avg, rms & frequency JEITA and VESA Flicker Index and % (IES)  Features  Capture Function One-time or continuous  Operation Mode Stand-alone or USB  Integration Mode Auto or Manual  Automatic Dark Calibration Auto mode  Basic Spectrum CIE 1931 Chromaticity Prequency Option  System Configuration  Display 320 x 240 mm (3.5 in) resistive touch LCD  Maximum Files 68,000 with 8 GB SD card, compatible with Excel® and JPG  Battery Operation Up to 5 hours, onboard 3.7 V Li-ion  External Power Adapter (included), 2500 mAh via USB connector  Data Interface SD card (SD2.0.SDHC up to 32 GB) or mini USB port (USB 2.0)  Dimensions 220 mm (8.7 in) H x 81 mm (3.2 in) W x 33 mm (1.3 in) D 330 g (0.73 lbs) including battern	Digital Resolution	16 bit		
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Auto or Manual Automatic Dark Calibration  Measuring Modes  Basic Browser  Spectrum Flicker Frequency Flicker  System Configuration  Display  Maximum Files Battery Operation  External Power Data Interface  SD card (SD2.0.SDHC up to 32 GB) or mini USB port (USB 2.0)  Auto mode  CIE 1931 Chromaticity CIE 1976 Chromaticity Prequency Option  CIE 1931 Chromaticity CIE 1976 Chromaticity Option  CIE 1931 Chromaticity CIE 1976 Chromaticity Option  CIE 1931 Chromaticity Option Option  CIE 1931 Chromaticity Option Option  CIE 1931 Chromaticity Option Option Option  CIE 1931 Chromaticity Option	Capture Function	One-time or continuous		
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Dimensions 220 mm (8.7 in) H x 81 mm (3.2 in) W x 33 mm (1.3 in) D 330 g (0.73 lbs) including battery	Data Interface			
Language Options English, Traditional Chinese, Simplified Chinese, Japanese	Dimensions	220 mm (8.7 in) H x 81 mm (3.2 in) W x 33 mm (1.3 in) D 330 g (0.73 lbs) including batter		
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<sup>1.</sup> At 23  $\pm$  2° C and relative humidity  $\leq$  50%

Specifications are subject to change without notice.

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<sup>2. 30</sup> Hz AC/DC 10% sine wave unless otherwise specified