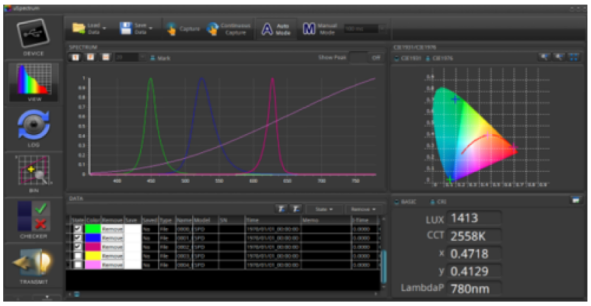
GS-1160 Handheld Spectroradiometer

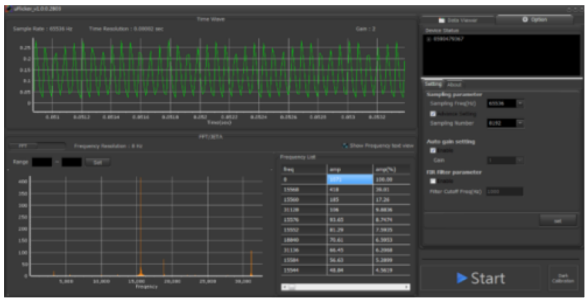
The GS-1160 spectroradiometer is a compact, high-speed and light weight spectrometer / flicker meter suitable for color and intensity measurement of all display types including LCD, LED, OLED and Quantum Dot displays.

With an integrated touchscreen display, this battery-operated unit is ideally suited to applications requiring a desktop test or calibration system.

Accurate and Repeatable Display Measurement

- Measures color, chromaticity, gamma, white balance, contrast, flicker and uniformity
- Luminance measurement from 0.05 to 5,000 cd / m^2
- 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).

GS-1160 Handheld Spectroradiometer

GAMMA SCIENTIFIC

Spectrum		
Sensor	CMOS linear image sensor	
Wavelength Range	380 to 780 nm	
Wavelength Data Increment	1 nm	
Spectral Bandwidth	12 nm (half power bandwidth)	
Sensor Size	10 mm diameter	
Acceptance Angle	± 1°	
Wavelength Reproducibility	± 1 nm (assumes stable input light source)	
Display Range	0.001 to 5000 cd/m^2	
Luminance (1) [From 0.05 to 5000 cd/m^2]	Accuracy	± 2% from 100 to 5000 cd/m^2 ± 3% from 0.2 to 100 cd/m^2 ± 4% from 0.05 to 0.2 cd/m^2
	Repeatability (2σ)	± 0.2% from 100 to 5000 cd/m^2 ± 0.5% from 0.2 to 100 cd/m^2 ± 0.8% from 0.05 to 0.2 cd/m^2
Color (1) [From 0.05 to 5000 cd/m^2]	Accuracy	± 0.002 in CIE 1931 x,y for white from 100 to 5000 cd/m^2 ± 0.003 in CIE 1931 x,y for white from 0.2 to 100 cd/m^2 ± 0.005 in CIE 1931 x,y for white from 0.05 to 0.2 cd/m^2
	Repeatability (2σ)	± 0.0005 in CIE 1931 x,y for white from 100 to 5000 cd/m^2 ± 0.001 in CIE 1931 x,y for white from 0.2 to 100 cd/m^2 ± 0.002 in CIE 1931 x,y for white from 0.05 to 0.2 cd/m^2
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/m^2		
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 Browser	Spectrum Flicker	CIE 1931 Chromaticity Frequency	CIE 1976 Chromaticity 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), 2500mAh 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 battery
Language Options	English, Traditional Chinese, Simplified Chinese, Japanese	

(1) At 23 ± 2° C and relative humidity ≤ 50%

(2) 30 Hz AC/DC 10% sine wave unless otherwise specified

Specifications are subject to change without notice.

CE

Rev 4.18.1

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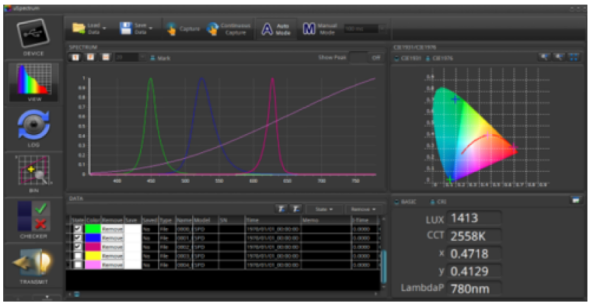
GS-1160B Portable Spectroradiometer

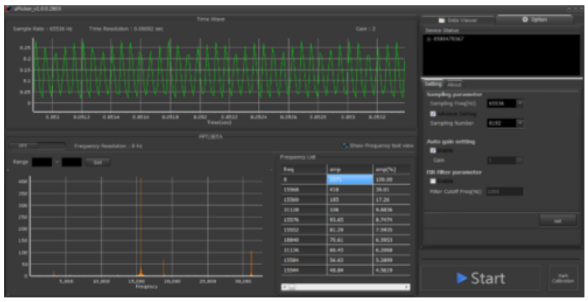
The GS-1160B portable spectroradiometer is a compact, high-speed and light weight spectrometer / flicker meter suitable for color and intensity measurement of all display types including LCD, LED, OLED and Quantum Dot displays.

User interface options include USB and RS-232. Along with an available API command set for custom test suites, this desktop version of our handheld unit is ideally suited to applications in a laboratory or industrial setting.

Accurate and Repeatable Display Measurement

- Measures color, chromaticity, gamma, white balance, contrast, flicker and uniformity
- Luminance measurement from 0.05 to 5,000 cd / m^2
- 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





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GS-1160B Portable Spectroradiometer

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Spectral Bandwidth	12 nm (half power bandwidth)	
Sensor Size	10 mm diameter	
Acceptance Angle	± 1°	
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Display Range	0.001 to 5000 cd/m^2	
Luminance [1] [From 0.05 to 5000 cd/m^2]	Accuracy	± 2% from 100 to 5000 cd/m^2 ± 3% from 0.2 to 100 cd/m^2 ± 4% from 0.05 to 0.2 cd/m^2
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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	
Measuring Capabilities	Luminance (cd/m^2) Δx, Δy, Δu', Δv' Excitation Purity Peak Wavelength (λp)	Correlated Color Temp (CCT) Delta UV (Duv) CRI and Ra (R1 to R15) Peak Wavelength Value (λpV)	CIE 1931 Chromaticity Coordinates Dominant Wavelength (λd) Spectral Power Distribution (SPD) mW/m^2 Integration Time (I-Time) Scotopic & Photopic Ration (S/P)

Flicker			
Measurement Range	≥ 5 cd/m^2		
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	
Measuring Capabilities	Min/max, avg, rms & frequency	JEITA and VESA	Flicker Index and % (IES)

Features			
Capture Function	One-time or continuous		
Operation Mode	RS-232 or USB		
Integration Mode	Auto or Manual		
Automatic Dark Calibration	Auto mode		
Measuring Modes	Basic Browser	Spectrum Flicker	CIE 1931 Chromaticity Frequency	CIE 1976 Chromaticity Option

System Configuration		
External Power	Adapter (included) with USB connector	
Data Interface	Mini USB port (USB 2.0)	
Dimensions	204 mm (8 in) H x 90 mm (3.6 in) W x 45 mm (1.8 in) D	620 g (1.4 lbs)
Language Options	English, Traditional Chinese, Simplified Chinese, Japanese	

(1) At 23 ± 2° C and relative humidity ≤ 50%

(2) 30 Hz AC/DC 10% sine wave unless otherwise specified

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