

## GS-1160 Handheld Spectroradiometer

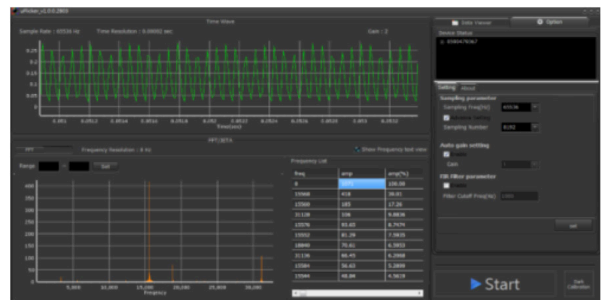


The GS-1160 spectroradiometer is a compact, high-speed and light weight spectrometer/flicker meter suitable for color and luminance measurement of all display types including LCD, LED, OLED and quantum dot displays.

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

## Accurate and Repeatable Display Measurement

- Luminance , CCT, CIE x, y, u', v' and spectrum
- Luminance measurement from 0.005 to 5,000 cd/m<sup>2</sup>
- Contrast, white balance and color gamut determination
- Automatic dark calibration
- Integrated flicker sensor: 100K samples/second
- USB 2.0 SCPI command compliant and SDK/API library support



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

| Spectrum                   |  |  |
|----------------------------|--|--|
| Sensor                     | CMOS linear image sensor                         |  |
| Wavelength Range           | 380 to 780 nm                                    |  |
| Wavelength Data Increment  | 1 nm   |  |
| Spot Size                  | 10 mm, working distance 0 - 30 mm                |  |
| Acceptance Angle           | ± 1°   |  |
| Wavelength Reproducibility | ± 1 nm (assumes stable input light source)       |  |
| Luminance <sup>(1,2)</sup> | Measurement range                                | 0.005 to 5,000 cd/m <sup>2</sup>   |
|                            | Accuracy   | ± 1.5% from 100 to 5,000 cd/m <sup>2</sup><br>± 2% from 0.2 to 100 cd/m <sup>2</sup><br>± 4% from 0.05 to 0.2 cd/m <sup>2</sup><br>± 8% from 0.005 to 0.05 cd/m <sup>2</sup>   |
|                            | Repeatability (2σ) <sup>(3)</sup>                | ± 0.2% from 100 to 5,000 cd/m <sup>2</sup><br>± 0.5% from 0.2 to 100 cd/m <sup>2</sup><br>± 0.8% from 0.05 to 0.2 cd/m <sup>2</sup><br>± 8% from 0.005 to 0.05 cd/m <sup>2</sup>   |
| Color <sup>(1,2)</sup>     | Measurement range                                | 0.01 to 5,000 cd/m <sup>2</sup>  |
|                            | Accuracy   | ± 0.002 in CIE 1931 x,y for white from 100 to 5,000 cd/m <sup>2</sup><br>± 0.002 in CIE 1931 x,y for white from 0.2 to 100 cd/m <sup>2</sup><br>± 0.003 in CIE 1931 x,y for white from 0.05 to 0.2 cd/m <sup>2</sup><br>± 0.006 in CIE 1931 x,y for white from 0.01 to 0.05 cd/m <sup>2</sup>  |
|                            | Repeatability (2σ) <sup>(3)</sup>                | ± 0.0005 in CIE 1931 x,y for white from 100 to 5,000 cd/m <sup>2</sup><br>± 0.001 in CIE 1931 x,y for white from 0.2 to 100 cd/m <sup>2</sup><br>± 0.002 in CIE 1931 x,y for white from 0.05 to 0.2 cd/m <sup>2</sup><br>± 0.006 in CIE 1931 x,y for white from 0.01 to 0.05 cd/m <sup>2</sup> |
| 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 <sup>2</sup>  |
| Sampling Rate            | 100 kHz  |
| Contrast <sup>(4)</sup>  | Accuracy: ± 1% (± 2% at 60Hz)      Reproducibility: 1% (20 to 65 Hz)             |
| JEITA <sup>(4)</sup>     | 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      CIE 1976 Chromaticity<br>Browser      Flicker      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 and Battery | Adapter 5V, 2000mA (included), 2500 mAh (3.7 rechargeable Li-ion battery)                       |
| 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. Luminance and color testing are based on standard light source at 2856K, 6500K and 9300K.      Specifications are subject to change without notice.  
 2. Measure in normal mode with temperature 23° ±2°C and relative humidity ≤ 50%.  
 3. Repeatability test is based on the status of shutter opening.  
 4. 30 Hz AC/DC 10% sine wave unless otherwise specified