

## GS-1220 Spectroradiometers



RadOMA GS-1220 spectroradiometers are optimized for quality control and high speed LED testing applications, with up to 100 ms optical integration time.

The GS-1220 spectroradiometer features a proprietary optical design and back illuminated CCD technology that provides exceptional low-light measurements, superior blue light sensitivity and highly accurate measurements of wavelength, color and power.

The 2048 pixel back illuminated CCD is temperature cooled for superior instrument repeatability.

Original system calibration is performed in Gamma Scientific's NVLAP accredited laboratory (NVLAP Lab Code 200823-0) using NIST-traceable standards.

## Exceptional Sensitivity and Speed for Light Source Characterization

- High resolution, cooled-back illuminated 2048 pixel CCD Sensor
- Exceptional accuracy via high-resolution bandwidth coverage
- Superior wavelength and color accuracy
- Near-real-time measurement
- Integrated neutral density filter wheel
- Hardware input/output trigger
- Windows based control/analysis software with Excel integration
- LED Testing
- Display Measurement
- Reflectance & Transmission Testing
- NVIS Testing

### Broad Range of Accessories

Goniophotometers	Capture complete spectral measurements as a function of angle for LED's luminaires, lamps and other light modules
Integrating Spheres	Available in a wide range of sizes from 25 mm to 3 meters in diameter, with PTFE, Barium-sulfate or gold coatings.
LED Test Sockets	Accommodate regular, miniature and sub-miniature LED;s and feature a locking flange to ensure proper alignment with the mechanical axis.
RadOMAcam Integration	Radiometric telescope with internal spot projector for precision measurement of NVIS displays and associated lighting.
RS-7 SpectralLED® Tunable Light Sources	Uniform intensity light sources with 35 discrete wavelengths capable of synthesis of commercially available light sources or based on spectra that you import.

Detector and Wavelength Specifications				
	GS-1220-0	GS-1220-1	GS-1220-2	GS-1220-3
Nominal Spectral Range	250 to 900 nm	360 to 900 nm	360 to 1100 nm	200-1100 nm
Data Point Interval	0.32 nm	0.32 nm	0.35nm	0.52
Spectral Bandwidth	Integrated user-selectable Half-Power-Bandwidth. Highlighted values are factory default settings			
	10.0 nm	10.0 nm	10.0 nm	20.0 nm
	5.0 nm	5.0 nm	5.0 nm	10.0 nm
	<b>2.5 nm</b>	<b>2.5 nm</b>	<b>2.5 nm</b>	5.0 nm
	1.4 nm	1.4 nm	1.4 nm	<b>2.7 nm</b>
	1.0 nm	1.0 nm	1.0 nm	1.8 nm
Wavelength Repeatability	0.02 nm	0.02 nm	0.02 nm	0.03 nm
Wavelength Accuracy	± 0.1 nm	± 0.1 nm	± 0.1 nm	± 0.1 nm

Accuracy <sup>(1)</sup>				
Luminous Intensity	± 1%	± 1%	± 1%	± 1%
Luminous Flux	± 1%	± 1%	± 1%	± 1%
Chromaticity (CIE1931 xy) <sup>(2)</sup>	x,y = ± 0.0015	x,y = ± 0.0015	x,y = ± 0.0015	x,y = ± 0.002
Dominant Wavelength <sup>(2)</sup>	± 0.5 nm	± 0.5 nm	± 0.5 nm	± 0.5 nm

Sensitivity <sup>(3)</sup>				
Luminous Intensity (10:1 s:n)	2.0 x 10 <sup>-5</sup> to 1.5 x 10 <sup>4</sup> cd	2.0 x 10 <sup>-5</sup> to 1.5 x 10 <sup>4</sup> cd	2.0 x 10 <sup>-5</sup> to 1.5 x 10 <sup>4</sup> cd	2.0 x 10 <sup>-5</sup> to 1.5 x 10 <sup>4</sup> cd
Luminous Flux (300 mm sphere, 10:1 s:n)	1.0 x 10 <sup>-3</sup> to 2.4 x 10 <sup>5</sup> lm	1.0 x 10 <sup>-3</sup> to 2.4 x 10 <sup>5</sup> lm	1.0 x 10 <sup>-3</sup> to 2.4 x 10 <sup>5</sup> lm	1.0 x 10 <sup>-3</sup> to 2.4 x 10 <sup>5</sup> lm
Illuminance Sensitivity (10:1 s:n)	2.0 x 10 <sup>-5</sup> to 1.5 x 10 <sup>4</sup> lux	2.0 x 10 <sup>-5</sup> to 1.5 x 10 <sup>4</sup> lux	2.0 x 10 <sup>-5</sup> to 1.5 x 10 <sup>4</sup> lux	2.0 x 10 <sup>-5</sup> to 1.5 x 10 <sup>4</sup> lux
Measuring Time	3 µsec to 2.67 sec	3 µsec to 2.67 sec	3 µsec to 2.67 sec	3 µsec to 2.67 sec
Measuring Time at 1 mcd (10:1 s:n)	40 msec	40 msec	40 msec	40 msec

Common Specifications	
Stray Light	< 1.0 x 10 <sup>-4</sup>
Spectral Sensor	Temperature stabilized high resolution 2048 pixel CCD sensor
Electrical Resolution	16 bit
Dynamic Range	6,670:1 (single scan)
Control Software	USB 2.0 interface with Light Touch™ LED software for Windows®
Operating Temp Range	0 to 35° C
Humidity	< 95% non-condensing
Dimensions	Dash 3: 150 mm (5.75 in) H x 508 mm (20 in) W x 305 mm (12 in) L 10.5 kg (23.3 lbs.) Other Models: 133 mm (5.3 in) H x 305 mm (12 in) W x 260 mm (10.2 in) L 9 kg (20 lbs.)

- (1) Accuracy specifications assume sufficient signal-to-noise ratio and are valid only on certified calibration.  
 (2) Applies to colored LEDs with sufficient signal-to-noise ratio.  
 (3) Sensitivity specifications assume a 10:1 signal-to-noise ratio for white 5000k CCT LED's  
 (4) Luminous flux is with a GS-IS150 integrating sphere calibrated with Deuterium and tungsten standards to cover a 250 to 860nm range.  
 Specifications are subject to change without notice.