GS-1290 Spectroradiometers

As the inventors of the first high performance, computer-controlled LED spectroradiometers, the Gamma Scientific product range features a proprietary optical design with back-thinned CCD technology that delivers exceptional low-light measurements, superior blue light sensitivity and highly accurate measurement of wavelength, color and optical power.

Our wide range of light measurement solutions is complemented by ISO/IEC 17025 accreditation by NVLAP (NVLAP lab code 200823-0). Resulting in unmatched performance, traceable standards and highly precise custom calibration options.

Exceptional Sensitivity and Speed for Light Source Characterization

- Resolution of 0.5nm per pixel with dual-stage, cooled CCD
- Models for UV, VIS and near IR wavelength ranges
- Near real-time (msec) measurement speed
- Exceptional low-light measurement capability
- USB 2.0 interface and Windows-based Light Touch Software
- Can be user / field -calibrated with known standard
- LED testing
- Display measurement
- Thin film reflectance 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.

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Detector and Wavelength Specifications				
	GS-1290-1-RM	GS-1290-2-RM	GS-1290-2-RM-UV	GS-1290-3-RM
Nominal Spectral Range	200 to 800 nm	360 to 1100 nm	200 to 1100	360 to 940 nm
Data Point Interval	0.6 nm	0.9 nm	0.9 nm	0.6 nm
Spectral Bandwidth	Integrated user-selectable Half-Power-Bandwidth. Highlighted values are factory default settings			
	10.0 nm	20.0 nm	20.0 nm	10.0 nm
	5.0 nm	10.0 nm	10.0 nm	5.0 nm
	2.5 nm	5.0 nm	5.0 nm	2.5 nm
	1.4 nm	**2.7 nm**	**2.7 nm**	**1.4 nm**
	1.0 nm	1.8 nm	1.8 nm	1.0 nm
Wavelength Repeatability	0.02 nm	0.03 nm	0.03 nm	0.02 nm
Wavelength Accuracy	± 0.2 nm	± 0.2 nm	± 0.2 nm	± 0.2 nm

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

Sensitivity (3)				
Luminous Intensity (10:1 s:n)	2.0 x 10^{-6} to 1.5 x 10^{4} cd	2.0 x 10^{-6} to 1.5 x 10^{4} cd	2.0 x 10^{-6} to 1.5 x 10^{4} cd	2.0 x 10^{-6} to 1.5 x 10^{4} cd
Luminous Flux (300 mm sphere, 10:1 s:n)	1.0 x 10^{-6} to 2.4 x 10^{5} lm	1.0 x 10^{-6} to 2.4 x 10^{5} lm	1.0 x 10^{-6} to 2.4 x 10^{5} lm	1.0 x 10^{-6} to 2.4 x 10^{5} lm
Measuring Time	5 msec to 300 sec	5 msec to 300 sec	5 msec to 300 sec	5 msec to 300 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^{-4}
Spectral Sensor	Temperature stabilized back-thinned 1024 x 128 element CCD array
Electrical Resolution	16 bit
Fiber Optic Probe	2 meter
Dynamic Range	64,000:1 (single scan)
Shutter	Electronic for production environments + mechanical shutter for R&D use
Control Software	Light Touch LED software for Windows via USB 2.0 interface
Operating Temperature Range	0 to 35° C
Humidity	< 95% non-condensing
Dimensions	133 mm (5.3 in) H x 438 mm (17.3 in) W x 413 mm (16.3 in) L 13.6 kg (30 lbs)
Mounting	Benchtop or Rack Mount

(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-nose ratio.

(3) Sensitivity specifications assume a 10:1 signal-to-noise ratio for white 5000k CCT LED's

Specifications are subject to change without notice.

Rev 8.18.1