GAMMA SCIENTIFIC™
Light Measurement Solutions

GS-1290 Spectroradiometers

9925 Carroll Canyon Road San Diego, CA 92131 | 858-279-8034 | contact@gamma-sci.com | www.gamma-sci.com

GAMMA SCIENTIFIC
Light Measurement Solutions

GS-1290 Spectroradiometers

As the inventors of the first high-performance, computer-controlled LED spectroradiometers, Gamma Scientific has continued to set the standard in spectroradiometer accuracy and reliability.

Spectroradiometers from Gamma Scientific are trusted by the world's leading organizations to provide accurate measurements.

Gamma Scientific spectroradiometers feature a proprietary optical design and back thinned CCD technology that provides exceptional low-light measurements, superior blue light sensitivity and highly accurate measurements of wavelength, color and power.

Original system calibration is performed in Gamma Scientific's NVLAP accredited laboratory using NIST-traceable standards.

Spectroradiometers can be self-calibrated and do not have to be returned to the factory for calibration.

Spectroradiometer Applications

- LED Testing
- Display Measurement
- Thin Film Reflectance Testing
- NVIS Testing

About Gamma Scientific

Since 1961 Gamma Scientific has produced LED, display and light measurement test solutions for production and R&D environments. Gamma Scientific instruments are trusted by leading global organizations that require high-speed, precision measurements and custom configurations for the most challenging environments. Gamma Scientific also operates a NVLAP accredited laboratory that performs LM-79/LM-80 LED testing and is ISO 17025 compliant. NVLAP Lab Code 200823-0.

To view the complete line of test and measurement solutions from Gamma Scientific, please visit our website at www.gamma-sci.com.

Gamma Scientific
9925 Carroll Canyon Road
San Diego, CA 92131
858-279-8034
contact@gamma-sci.com
www.gamma-sci.com

GAMMA SCIENTIFIC
Light Measurement Solutions

GS-1290 Spectroradiometers

Features

- High-resolution: 0.5nm per Pixel
- Multiple Models Covering UV, Visible and near-IR Wavelength Ranges
- High-quality TE cooled back-thinned CCD detector for high sensitivity and stability
- Exceptional Accuracy via High-Resolution Bandwidth Coverage
- Near Real Time (millisecond) Measurement Speed
- Production-line and R&D Software Solutions
- Powerful and Flexible Analysis Software
- Robust and Reliable Design
- NIST-Traceable Field-Calibration
- High Sensitivity and Spectral Resolution
- Self-calibration (system never has to be returned for calibration)
- Superior Wavelength and Color Accuracy
- Large Dynamic Range and Low Stray Light
- Thermal and Mechanical Stability
- Electronic Shutter for fast scans during production LED testing
- Mechanical Shutter to meet the high accuracy demands of R&D

About Gamma Scientific

Since 1961 Gamma Scientific has produced LED, display and light measurement test solutions for production and R&D environments. Gamma Scientific instruments are trusted by leading global organizations that require high-speed, precision measurements and custom configurations for the most challenging environments. Gamma Scientific also operates a NVLAP accredited laboratory that performs LM-79/LM-80 LED testing and is ISO 17025 compliant. NVLAP Lab Code 200823-0.

To view the complete line of test and measurement solutions from Gamma Scientific, please visit our website at www.gamma-sci.com.

Gamma Scientific
9925 Carroll Canyon Road
San Diego, CA 92131
858-279-8034
contact@gamma-sci.com
www.gamma-sci.com

GAMMA SCIENTIFIC
Light Measurement Solutions

GS-1290 Spectroradiometer Specifications

Detector and Wavelength Specifications			
Spectrometer	GS-1290-1-RM	GS-1290-2-RM	GS-1290-3-RM
Nominal Spectral Range	200-800 nm	200-1100 nm	360-940 nm
Datapoint Interval	0.6 nm	0.9 nm	0.6 nm
Spectral Bandwidth	Built-In User Selectable Half-Power Bandwidth (HPBW) Bold is factory setting		
	10 nm	20 nm	10 nm
	5.0 nm	10 nm	5.0 nm
	2.5 nm	5.0 nm	2.5 nm
	1.4 nm	**2.7 nm**	**1.4 nm**
	1.0 nm	1.8 nm	1.0 nm
Wavelength Repeatability	0.02 nm	0.03 nm	0.02 nm
Wavelength Accuracy	+/- 0.2 nm	+/- 0.2 nm	+/- 0.2 nm
Accuracy[1]			
Luminous Intensity	± 1%	± 1%	± 1%
Luminous Flux	± 1%	± 1%	± 1%
Chromaticity (CIE1931 xy)[2]	x,y=±0.0015	x,y=±0.002	x,y=±0.0015
Dominant Wavelength[2]	± 0.5 nm	± 0.5 nm	± 0.5 nm
Sensitivity[3]			
Luminous Intensity (10:1 signal-to-noise)	0.002 mcd to 15 kcd	0.002 mcd to 15 kcd	0.002 mcd to 15 kcd
Luminous Flux (12" sphere ; 10:1 signal-to-noise)	0.1 mlm – 240 klm	0.1 mlm – 240 klm	0.1 mlm – 240 klm
Measuring time (range)	5 msec to 300 sec	5 msec to 300 sec	5 msec to 300 sec
Measuring Time at 1 mcd (10:1 signal-to-noise)	40 msec	40 msec	40 msec
Specifications for All Spectrometers			
Stray Light	Less than 1 x 10^{-4} (at 8 times the HPBW from HeNe Laser Line)		
Spectral Sensor	Temperature-Stabilized Back-Thinned 1024x128 element CCD Array		
Electrical Resolution	16 Bit		
Dynamic Range (single scan)	64,000:1		
Computer Interface	USB 2.0		
Control Software	Lightouch LED software for Windows		
Dimensions:	5.25" H x 17.25" W x 16.25" L (13.34" cm x 43.8 cm W x 41.28 cm L)		
Weight	30 lbs (13.6 kg)		

1: Accuracy specifications assume sufficient signal to noise and are valid immediately after proper calibration, relative to the calibration standard.
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: Standard Operating Range for Gamma Scientific Instruments- Temperature: Minimum: 0°C (32°F) - Maximum: 35°C (95°F); Relative Humidity (Non-Condensing): Minimum: 20% - Maximum 70%
5: The information contained in this data sheet is based on Gamma Scientific's internal evaluation and is subject to change at any time without notice.
6: Revised on May 26, 2015

GAMMA SCIENTIFIC
Light Measurement Solutions

Spectroradiometer Accessories

940 LED Series Goniophotometers

Gamma Scientific's 940 LED Series of Goniophotometers utilize a RadOMA spectroradiometer to capture complete spectral measurements as a function of angle. 940 LED Goniophotometers are designed to analyze angle dependent spatial radiation properties of LED luminaires, lamps and modules.

With an angular resolution of 0.01°, the 940 LED-1250 captures highly accurate and repeatable LED measurements. The goniophotometer is in conformity with CIE, DIN and IES standards.

Integrating Spheres (Luminous and Radiant Flux)

With over 40 years of experience in designing integrating spheres, Gamma Scientific has the expertise to build custom integrating spheres and sphere systems to meet your testing requirements.

Gamma Scientific integrating spheres are available in a wide range of sizes from 25mm to 3m in diameter. Multi-purpose integrating spheres provide maximum flexibility and are custom built to meet your exact testing requirements. Light measurement spheres for LED testing are optimized for capturing total flux measurements of LEDs, lamps and luminaires.

Choose from our proprietary polytetrafluoroethylene (PTFE), a specially formulated barium-sulfate or gold coating. The PTFE coating gives > 99% reflectance over the UV/VIS/NIR region, and is almost perfectly Lambertian.

LED Test Sockets

Gamma Scientific offers a variety of precision and ultra-precision LED measurement sockets. These sockets accommodate regular, miniature and sub-miniature LED's and feature a locking flange that snaps firmly into place, ensuring proper alignment with the mechanical axis. Each test socket has banana connectors for use with high-precision power supplies.

About Gamma Scientific

Since 1961 Gamma Scientific has produced LED, display and light measurement test solutions for production and R&D environments. Gamma Scientific instruments are trusted by leading global organizations that require high-speed, precision measurements and custom configurations for the most challenging environments. Gamma Scientific also operates a NVLAP accredited laboratory that performs LM-79/LM-80 LED testing and is ISO 17025 compliant. NVLAP Lab Code 200823-0.

To view the complete line of test and measurement solutions from Gamma Scientific, please visit our website at www.gamma-sci.com.

Gamma Scientific
9925 Carroll Canyon Road
San Diego, CA 92131
858-279-8034
contact@gamma-sci.com
www.gamma-sci.com