



# ***GAMMA SCIENTIFIC*** *Light Measurement Solutions*



## Gamma Scientific NVIS Spectroradiometers



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## GS-1290 NVIS Spectroradiometers

### 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](http://www.gamma-sci.com).

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With near real-time measurement, exceptional accuracy and low maintenance, [GS-1290 NVIS Spectroradiometers](#) are optimized for quick and accurate NVIS A and NVIS B testing.

The GS-1290-NVIS is an advanced, high-speed spectroradiometer that combines the leading-edge sensitivity of backside-thinned CCD detector technology with Gamma Scientific's industry-renowned RadOMA opto-electrical platform.

The GS-1290-NVIS is specifically configured for NVIS testing of cockpit displays and lighting. It exceeds all requirements outlined in MIL-L-85762A and MIL-STD-3009.

The GS-1290-NVIS represents the state-of-the-art in speed and accuracy in a commercially available spectroradiometer. Measurements that required a few minutes in the past with scanning grating spectroradiometer systems can now be performed in a matter of seconds.

The GS-1290-NVIS configuration covers 360-930 nm and includes six different field-of-view apertures.

Original system calibration is performed in Gamma Scientific's NVLAP accredited laboratory using NIST-traceable standards. RadOMA spectroradiometers can be self-calibrated and do not have to be returned to the factory for calibration.





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## GS-1290 NVIS Spectroradiometer Features

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### Features

- Measurements down to 0.00015 cd/m<sup>2</sup>
- Exceptional accuracy via high-resolution bandwidth coverage
- Near-real-time measurement and high resolution: 0.6 nm/pixel
- Spectral range 360-930 nm or 360-1100 nm
- Six aperture RadOMacam® telescope which projects the actual measurement spot onto the DUT for easy alignment
- USB 2.0 interface and Windows-based Light Touch NVIS control/analysis software
- NIST-traceable accuracy
- Direct Excel export for data and graphs
- Pass/Fail reporting per MIL specifications
- Self-calibrated: eliminates cost with downtime
- Optional X-Y translation stage
- Zoomable CIE Chromaticity plotting with NVIS type outlines

\*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%

\*\*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.

\*\*\*Revised on September 17, 2015



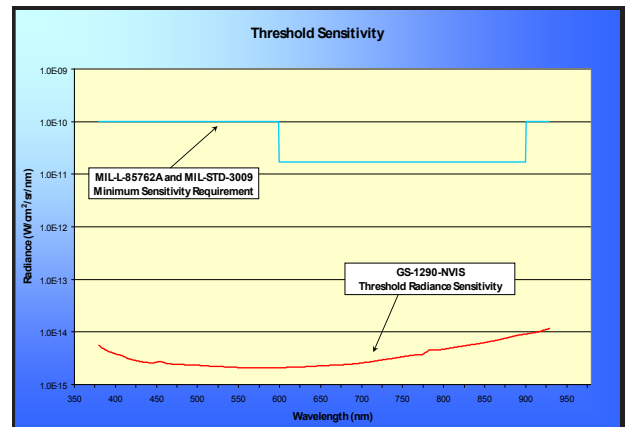
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## Light Measurement Solutions

### GS-1290 NVIS Spectroradiometer Specifications

#### Detector and Wavelength Specifications

	GS-1290-NVIS	GS-1290-NVIS-2
Wavelength Range	360-930 nm	360-1100 nm
Wavelength Resolution	0.6 nm	0.9 nm
Half Power Bandwidth	10 nm	
Wavelength Repeatability	0.02 nm	
Wavelength Accuracy	Better than 1 nm	
Stray Light (HeNe Laser Line)	< $1 \times 10^{-4}$ (can be < $1 \times 10^{-5}$ with stray-light correction applied)	
Polarization Error <sup>1</sup>	Less than 1%	
Electrical Resolution	16-Bit	
Measurement Aperture Sizes	5, 2, 1, 0.5, 0.33, and 0.1 degree standard	
Viewing System	RadOMAcam back-projected measurement aperture	
Lens	180 mm Macro Lens	
Computer Interface	USB 2.0	
Control Software	Light Touch RadOMA® for Windows®	
Dimensions:		
Height	11.8" (29.9 cm)	
Width	6" (15.1 cm)	
Length	12.1" (30.8 cm)	
Weight	10 lbs (4.6 kg)	



Threshold sensitivity curve obtained using 5 degree field-of-view

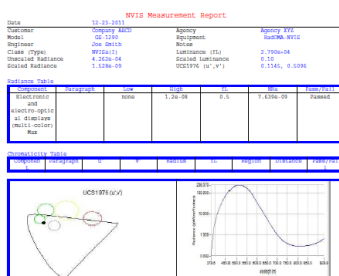
#### Sensitivity and Accuracy Chart<sup>2</sup>

Measuring Aperture	5°	2°	1°	0.5°	0.3°	0.1°
Sensitivity (cd/m <sup>2</sup> )	0.000015 to 36500	0.000022 to 53,600	0.00009 to 220,000	0.00034 to 829,000	0.0016 to 3,900,000	0.009 to 21,900,000
Chromaticity Accuracy	x,y : +/-0.0020 (0.00015-0.05 cd/m <sup>2</sup> )  x,y : +/-0.0015 (0.05-800 cd/m <sup>2</sup> )  x : +/-0.0015 y : +/-0.001 (800-36500 cd/m <sup>2</sup> )	x,y : +/-0.0025 (0.0002-0.07 cd/m <sup>2</sup> )  x,y : +/-0.0015 (0.07-1150 cd/m <sup>2</sup> )  x : +/-0.0015 y : +/-0.001 (1150-53600 cd/m <sup>2</sup> )	x,y : +/-0.0025 (0.0009-0.3 cd/m <sup>2</sup> )  x,y : +/-0.0015 (0.3-4700 cd/m <sup>2</sup> )  x : +/-0.0015 y : +/-0.001 (4700-220k cd/m <sup>2</sup> )	x,y : +/-0.0025 (0.003-1.1 cd/m <sup>2</sup> )  x,y : +/-0.0015 (1.1-17750 cd/m <sup>2</sup> )  x : +/-0.0015 y : +/-0.001 (17750-829k cd/m <sup>2</sup> )	x,y : +/-0.0025 (0.016-5.1 cd/m <sup>2</sup> )  x,y : +/-0.0015 (5.1-83500 cd/m <sup>2</sup> )  x : +/-0.0015 y : +/-0.001 (83500-3.9M cd/m <sup>2</sup> )	x,y : +/-0.0025 (0.09-29 cd/m <sup>2</sup> )  x,y : +/-0.0015 (29-470k cd/m <sup>2</sup> )  x : +/-0.0015 y : +/-0.001 (470k-21.9M cd/m <sup>2</sup> )
Measurement Spot Size @ 279 mm (11") W.D. <sup>3</sup>	10.49 mm (0.413")	4.20 mm (0.165")	2.10 mm (0.083")	1.05 mm (0.041")	0.69 mm (0.027")	0.21 mm (0.008")

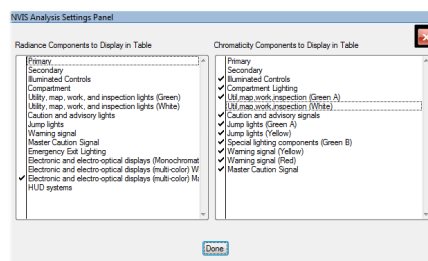
<sup>1</sup> Measuring 100% linearly polarized light through a Glan-Thompson Prism

<sup>2</sup> Sensitivities are for a 10:1 signal-to-noise ratio based on the percent coefficient of variance measuring the luminance of a CIE Illuminant A source

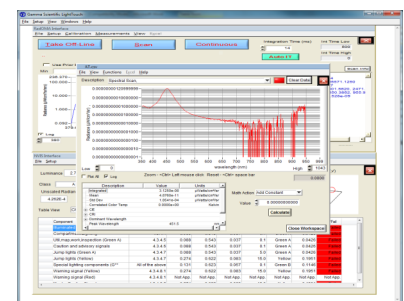
<sup>3</sup> Tamron 180mm macro 1:3.5



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