

# Model C-11ASR ANVIS Spectroradiometer

## PRODUCT SUMMARY

The Model C-11ASR ANVIS-compatibility spectroradiometer system is designed to measure the compatibility of instrumentation panels and other sources with night vision imaging system equipment. Comprised of a GS-4100 intelligent radiometer, a DC-51C or DC-49C thermoelectric water-cooled photomultiplier tube, an NM-3DH or NM-7DHA monochromator, a GS-2110A scanning telemicroscope, and a laptop or desktop PC, driven by Gamma's Light Touch software under Windows 2000/XP, the C-11ASR is completely automated, measuring low levels of light for production, R&D, and military applications alike.

The Gamma Scientific Model C-11ASR ANVIS measurement system is a versatile spectroradiometer/photometer, which can be configured to meet a variety of application requirements. The system is capable of performing as a basic microphotometer or a sophisticated microspectroradiometer.

Configured as a spectroradiometer, the system can acquire spectroradiometric data over a wavelength range of 370 nanometers to 1010 nanometers, with sensitivities as low as  $1 \times 10^{-13}$  to  $1 \times 10^{-15}$  Watts/cm<sup>2</sup>·nm·sr. The acquired spectral information is converted to radiance, ANVIS/NVIS Radiance (A&B), color, color temperature and luminance by using the "Analysis" routine resident in the Light Touch NVIS software program.



### FEATURES

- *GS-2110A scanning telemicroscope*
- *NM-3DH holographic grating monochromator or NM-7DHA double-holographic grating monochromator (both 300-1100 nm)*
- *DC-51C cooled photomultiplier detector assembly 360-1010 nm (200-1010 nm with quartz window)*
- *GS-4100-014 intelligent radiometer / controller*
- *Light Touch NVIS software for Windows*
- *RS-12 NIST-traceable light source*



**GAMMA SCIENTIFIC**

8581 Aero Drive, San Diego, CA 92123 Ph (858) 279-8034 Fax (858) 576-9286  
Website: [www.gamma-sci.com](http://www.gamma-sci.com)

# Model C-11ASR ANVIS Spectroradiometer

## SPECIFICATIONS

Power	7 watts
Line voltage	105/125 or 210/250 VAC, 50-60 Hz
Wavelength Range	360-1010 nm
Sensitivity	$10^{-16}$ W/cm <sup>2</sup> /nm/sr
Dynamic Range	$10^{-9}$ W/cm <sup>2</sup> /nm/sr using no filters
Diffraction Grating (Single- Grating Monochromator)	Holographic recorded, aberration corrected, concave, 800 grooves per mm, especially optimized for flat spectral response from 300 nm to 1.1 microns.
Effective Aperture	f/3.5
Wavelength linearity	< ± 0.3 nm
Half-power bandwidth	10, 6, 3, or 1.2 nm
Scattered light	$5 \times 10^{-4}$ at less than 2 bandwidths from the HeNe laser line
Scan rate	10 nm/sec to 0.7 nm/sec.
Digital Wavelength Accuracy	±0.1 nm
Higher order rejection filter	Automatic in/out at 590 nm blocks below 550
Ghosts	No ghost above $10^{-10}$ of its parent
Optical design	No mirrors or lenses between slits
Reciprocal dispersion	12 nm per mm
Power	7 watts
Line voltage	105/125 or 210/250 VAC, 50-60 Hz
Photomultiplier Detector Cooling	Triple-Stage Thermo-electrically cooled to approx. -40 °C

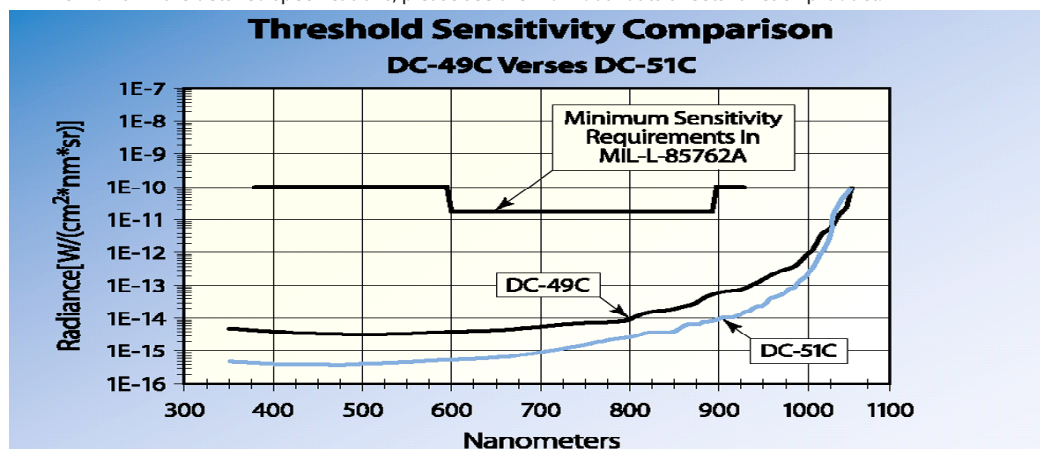
### Telemicroscope

#### Interchangeable Telemicroscope Apertures (in image plane)

#### Microscope Objective Lenses

Model Number	Aperture Diameter/Dimensions		Model Number	Magnification	Numerical Aperture	Working Distance (Lens to Work)	
	µm	Inches				mm	In
GS-2110-01	25	0.001	GS-2110-52	1	0.08	150	5.91
GS-2110-02	50	0.002	GS-2110-53	3.2	0.02-0.36	19/34	
GS-2110-03	150	0.006	GS-2110-54	5	0.13	12	0.47
GS-2110-04	450	0.018	GS-2110-55 <sup>1</sup>	10	0.28	4	0.16
GS-2110-05	700	0.027					
GS-2110-06	1250	0.050	GS-2110-48	0.04	0.004	4000	157
GS-2110-07	8000	0.315	GS-2110-49	0.12	0.011	1320	52
GS-2110-08	25x8000 (2 Slit 750 Sep.)	0.001x0.315 (2 Slit 0.029 Sep.)	GS-2110-50	0.30	0.030	495	19.5
GS-2110-09	75x8000 (2 Slit 3800 Sep.)	0.003x0.315 (2 Slit 0.150 Sep.)	GS-2110-51	0.54	0.050	291	11.5
GS-2110-10	25x8000	0.001x0.315	<sup>1</sup> Aperture continuously variable from 0.02 to 0.36 with stops at 0.02, 0.03, 0.05, 0.06, 0.09, 0.13, 0.18, 0.25, and 0.36. Working distance with/without flares/held.				
GS-2110-11	75x8000	0.003x0.315					

NOTE: For more detailed specifications, please see the individual data sheets for each product.



Comparison is for a spectroradiometer configured with a 2020-31B telescope with 3 degree field-of-view and a 10 nm half-power bandwidth



**GAMMA SCIENTIFIC**

8581 Aero Drive, San Diego, CA 92123 Ph (858) 279-8034 Fax (858) 576-9286  
Website: www.gamma-sci.com