SpectralLED® RS-9-NSS Night Sky Simulation Light Source



SpectralLED® RS-9-NSS is a programmable LED based light source for testing and characterization of Night Vision Devices (NVDs), Night Vision Goggles (NVGs), and NVIS-compatible imaging systems. Its multi-channel architecture enables independent control of spectral content and radiometric output, allowing predefined or userdefined night-sky illumination conditions to be reproduced with high repeatability.

Programmable Visible–SWIR Illumination Source for NVG and NVIS Testing and Characterization

Key Features

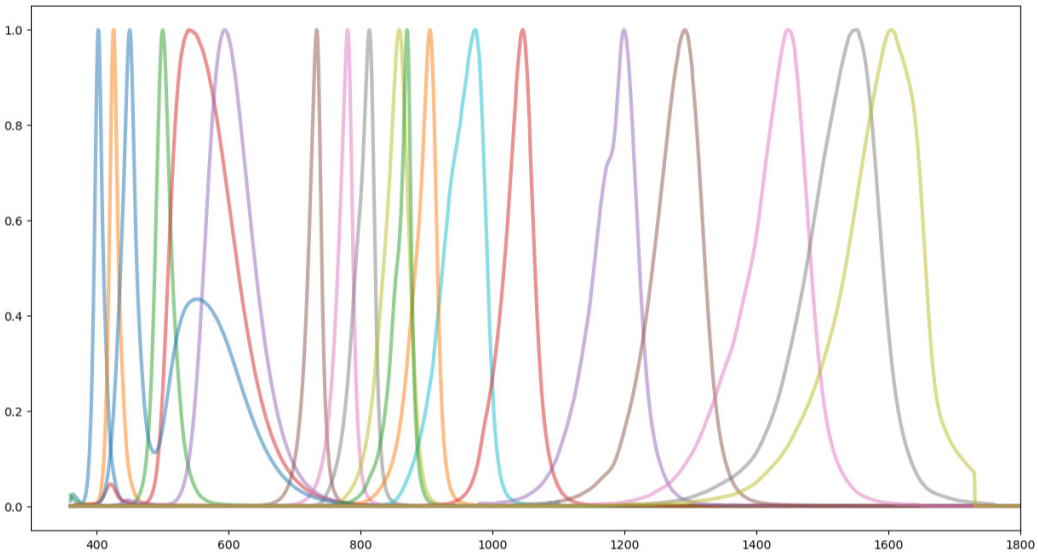
- Programable broadband spectral simulation-400-1700nm
- Includes presets spectral simulation of Starlight, OvercastNight, Quarter Moon, Full Moon
- Stable and repeatable radiometric output
- Fast spectral switching
- Active temperature control and closed-loop optical feedback
- Uniform Lambertian output
- NIST-traceable calibration
- ISO/IEC 17025 accredited by NVLAP (NVLAP lab code 200823-0)

Main Applications

- Night Sky illumination simulation
- Night Vision Device (NVD)
- Night Vision Goggle (NVG)
- NVIS-compatible imaging systems
- Image intensifier
- Low-light-level sensor
- Visible–SWIR camera characterization
- Spectral response measurement
- Radiometric calibration
- Quantum efficiency measurement
- Signal-to-noise characterization
- Gain and sensitivity measurements
- Uniformity and fixed-pattern evaluation
- Automated production testing

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RS-9 Night Sky Simulation Light Source Specifications	
Spectral Range	400 nm to 1700 nm UVA - SWIR
Spectral Output	34 discrete wavelengths
Source Geometry	150mm diameter uniform output, Lambertian radiant source (Other sizes available on request)
Translational Uniformity	Luminous uniformity: ≥ 95% for 130 mm at center and tapers off towards edges
	Chromatic uniformity: Δu'v' Max ≤ 3 points in 130mm spot in center and tapers off
Accuracy Specifications	
Illumination Stability	≥ 95% stable after 50ms rise time for single channels, 50ms for broadband spectra
Illumination Accuracy	± 2% absolute accuracy to NIST standard
Spectral Accuracy	± 1 nm peak wavelength for all discrete wavelengths
Color Accuracy	CIE 1931 x,y ± 0.003
Temperature Stability	Within ± 1° C via active TEC
General Specifications	
Software	SpectralLED Pro GUI Control Program, or any serial port terminal tool
Interface Connectors	USB 2.0 type B and DB15 RS485 serial
Interface Protocol	Simple ASCII commands
Supported Operating Systems	Windows using FTDI COM port drivers
Input Voltage and Power	100 to 240 VAC at 50-60Hz, 400W maximum
Dimensions (H x W x L)	Dependent on Integrating sphere chosen - Please contact factory for details
Environmental Conditions	15 – 35°C, ≤ 65 %RH

- Specifications are subject to change without notice.
- Calibration performed using measurement standards traceable to the National Institute of Standards & Technology (NIST)

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