

SpectralLED® RS-7-1-SWIR Benchtop Uniform Light Source

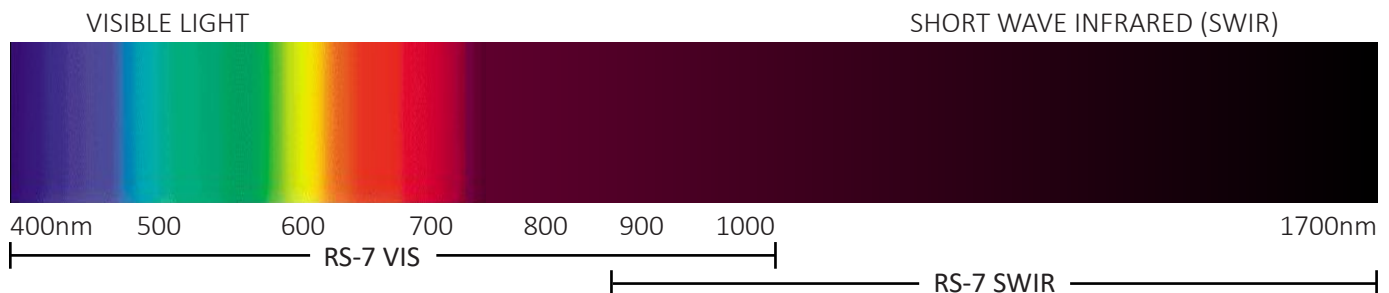


For the ultimate in resolution and accuracy, the SpectralLED® Tunable SWIR source incorporates 10 shortwave infrared wavelengths for synthesis of commercially available light sources or based on spectra that you import.

The platform is easily adaptable for automated test systems and production line integration, with integrated optical feedback and temperature control to ensure rock-solid stability and consistent results.

Unprecedented Resolution and Accuracy For Camera & Image Sensor Calibration

- Integrating Sphere with 75mm Output port
- Constant Current Drivers & Built-in Optical Feedback
- Accurate & Flicker-free Output in Real Time
- All Solid-State Design for Rapid Start-up & Repeatable Performance
- ISO/IEC 17025 Accredited by NVLAP (NVLAP lab code 200823-0) for Calibration Accuracy
- Camera and Image Sensor Calibration
- Photodiode Detector Responsivity Characterization
- Diagnostic Medical Imaging
- Technical and Industrial Imaging



Measurement Applications

- Calibration & Test of Night Vision Equipment
- Remote Sensing Sensor Calibration
- Quantum Efficiency
- Spatial Non-uniformity
- Pixel Defects
- Crosstalk
- Fluorescence Imaging
- Sensitivity
- Responsivity
- Signal to noise
- Linearity
- Dynamic range

Gamma Scientific is ISO/IEC 17025 accredited by NVLAP (NVLAP lab code 200823-0) and performs LM-79 / LM-80 LED testing.

Optical Specifications

Spectral Range	900 nm to 1700 nm (custom ranges available on request)
Spectral Output	10 discrete LED channels SWIR resolution ~ 50 nm (typical channel spacing)
Spectral Peaks	910nm, 940nm, 980nm, 1050nm, 1200nm, 1300nm, 1450nm, 1550nm, 1650nm (custom configurations available)
Spectral Bandwidth	50nm FWHM
Custom Preset Spectra	Configurable at time of order via API. Contact factory for details

Accuracy Specifications

Illumination Stability	≥ 99.99% after 50 ms for radiance or after 2,000 ms for spectrum
Illumination Accuracy	± 3% Absolute
Spectral Accuracy	± 2.5 nm centroid wavelength
Linearity	< 0.1 % RMS of full scale
Temperature Stability	Within ± 1° C via active TEC

Electrical Specifications

Electrical Resolution	16 bit DAC for channel current drivers 24 bit ADC for internal radiance monitor feedback
Dynamic Range Adjustment	4-5 decades typical (spectrum dependent)
LED Control	Pure DC constant current with floating differential sensing

General Specifications

Software	Firmware includes full spectral calibration with spectral fitting, preset storage, real-time optical feedback, radiometric units supported	
Interface Connectors	USB 2.0 type B and DB-9	
Interface Protocol	Simple ASCII commands with optional binary block transfer	
Supported Operating Systems	USB drivers for Windows, OSX and Linux via FTDI virtual COM port Legacy RS-232 serial port for integration (no OS required)	
Input Voltage and Power	110 to 240 VAC at 50-60Hz, 600W maximum	
Dimensions	405mm (16 in) x 460mm (18.1in) x 305mm (12in). Weight 17.5 kg (38.6 lbs)	
Operating Temperature	Minimum: 0°C (32°F)	Maximum: 35°C (95°F)
Operating Humidity	Minimum: 20%	Maximum: 80%

Specifications are subject to change without notice.