SpectrALL
Spectra-QT Quantum Tunable Irradiance/Radiance Calibration Source

Characterize spectral responsivity and quantum efficiency of your image sensors and camera modules

For the image sensor industry, accurate knowledge of its electro-optical quantum efficiency is essential to product performance. A well characterized sensor allows device integrators to specify and tailor the input optics and spectral filtering and apply performance enhancing corrections through the end product.

Spectra-QT provides control of known levels of uniform monochromatic light over the spectral sensitivity range of silicon-based optical sensors for test and characterization of image sensors for spectral responsivity and quantum efficiency and linearity.

This turnkey, plug and play instrument means valuable resources can spend their time on value-added development.

Value:

- Highest light levels and dynamic range to meet the demands of image sensor characterization

- Uniform spectral irradiance across the entire sensor ensures consistent comparative results and correction

- Controllable monochrome light levels allowing the largest gamut of testing of multiple electro-optical devices

- Real-time NIST traceable spectral irradiance/radiance

- Software Development Kit for rapid development of user defined test protocols

Measure:

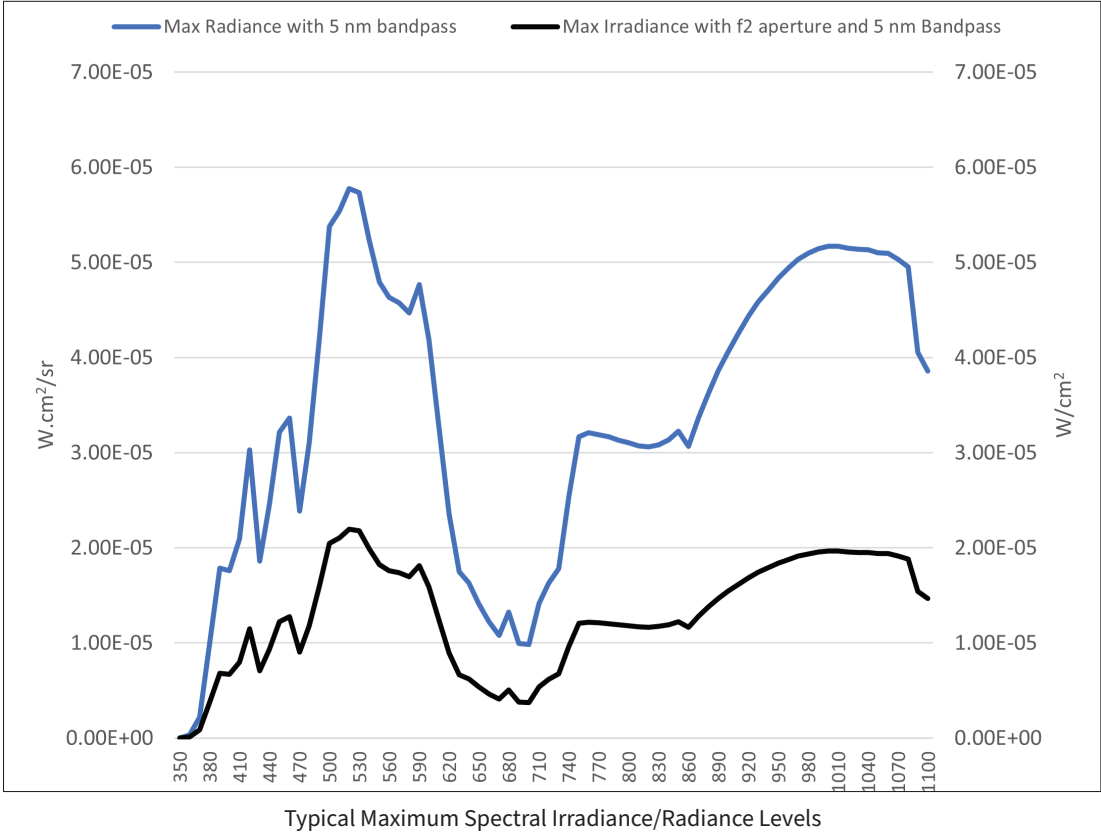- Quantum efficiency

- Spectral responsivity

- Linearity
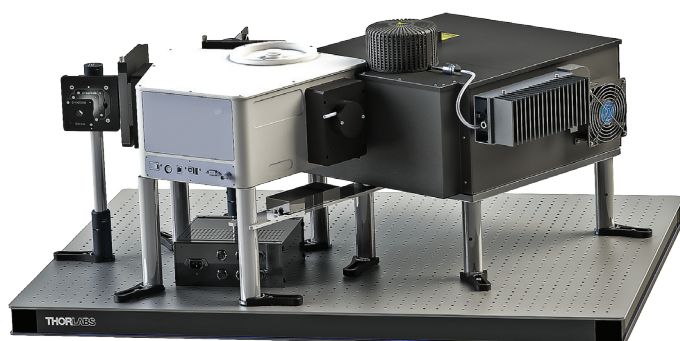
Rear View

Flexible design

Industry requires measurements which can be difficult to make with consistency and high throughput. Labsphere's instrument seamlessly utilizes two lamps for the greatest efficiency in the UV-VIS and NIR. Six position optical density filter wheel allows control of the light levels at the sensor. The integrated light monitors ensures the light falling on the sensor is known in real time and industry's best integrating sphere technology ensures the highest uniformity across the image sensor.

Customized to fit your application

Labsphere knows every customer's application is unique. Starting with this system's base design, Labsphere will work with you to create the system that best suits your specialized requirements.

Typical Maximum Spectral Irradiance/Radiance Levels

Specifications

	Spectral Irradiance	Spectral Radiance
Wavelength Range:	350 - 1100 nm	350 - 1100 nm
Spectral Bandwidth:	5 nm to 10 nm	5 nm to 10 nm
Wavelength Accuracy:	0.05 nm to 5 nm	0.05 nm to 5 nm
Slit Scattering Function: (UV and VIS)	Triangle	Triangle
Field Uniformity:	± 1% at f/2 over 64 mm^2	± 1%
Exit Port Diameter:	29 mm	29 mm
Exit Port F/#:	f2.0, f2.2, f2.4, f2.6	N/A
Maximum Radiometric Output At 400 nm:	6 µW/cm^2	17 µW/cm^2-sr
Maximum Radiometric Output At 600 nm:	15 µW/cm^2	40 µW/cm^2-sr
Maximum Radiometric Output At 800 nm:	13 µW/cm^2	30 µW/cm^2-sr
Maximum Radiometric Output at 1000 nm:	20 µW/cm^2	50 µW/cm^2-sr
Stability at 550 nm: (UV-VIS Source)	0.1% over 30 minutes in Test Mode 3% over 30 minutes in Rest Mode	0.1% over 30 minutes in Test Mode 3% over 30 minutes in Rest Mode
Stability at 750 nm: (VIS-NIR Source)	< 0.05% over 5 sec period	< 0.05% over 5 sec period
Typical Signal Setting Time after Slew:	1 sec (typical)	1 sec (typical)
Communications:	USB, RS232	USB, RS232
User Mode Software:	Command set in User Mode provides high-level commands to operate the system to create simple test routines	Command set in User Mode provides high-level commands to operate the system to create simple test routines
Software Development Kit:	Feature Controls: • Source Control • Shutter • Order Sorting Filter Wheel • ND Filter Wheel • Slit Widths • Gratings • Wavelength Slew • Wavelength Sweep • Radiometer • Go/Stop/Time Out	Feature Controls: • Source Control • Shutter • Order Sorting Filter Wheel • ND Filter Wheel • Slit Widths • Gratings • Wavelength Slew • Wavelength Sweep • Radiometer • Go/Stop/Time Out
Operating Environment:	25 C ± 2 C	25 C ± 2 C
Dimensions (H x W x D)		
Table and Instrument:	61 cm x 183 cm x 122 cm	61 cm x 183 cm x 122 cm
Rack:	32 cm x 53 cm x 62 cm	32 cm x 53 cm x 62 cm
Weight:		
Table and Instrument:	285 kg	285 kg
Rack:	18 kg	18 kg

Ordering Information

Model Number	Order Number	Description
QT-1100	AA-01469-100	Spectra-QT Quantum Tunable Irradiance/Radiance Calibration Source

Work with our Application Specific Engineers to create the system that meets your specific requirements.