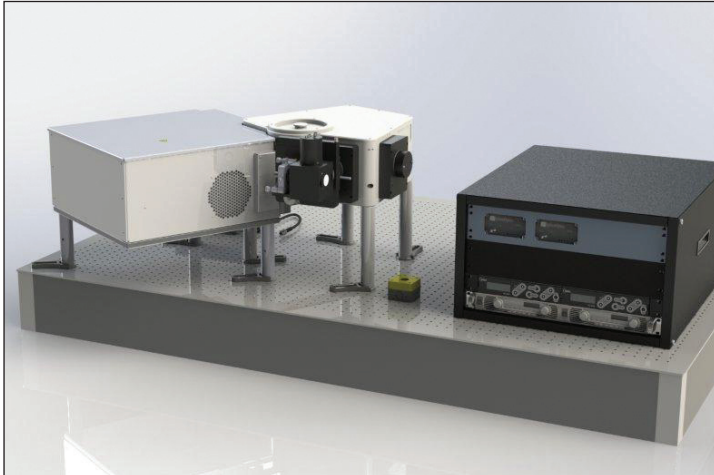




# TruLume Spectral Irradiance/Radiance Source Standards

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



## Accurate

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.

TruLume Spectral Irradiance/Radiance Source Standards provide 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.

## 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.

## Easy to use

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

## 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.

## 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

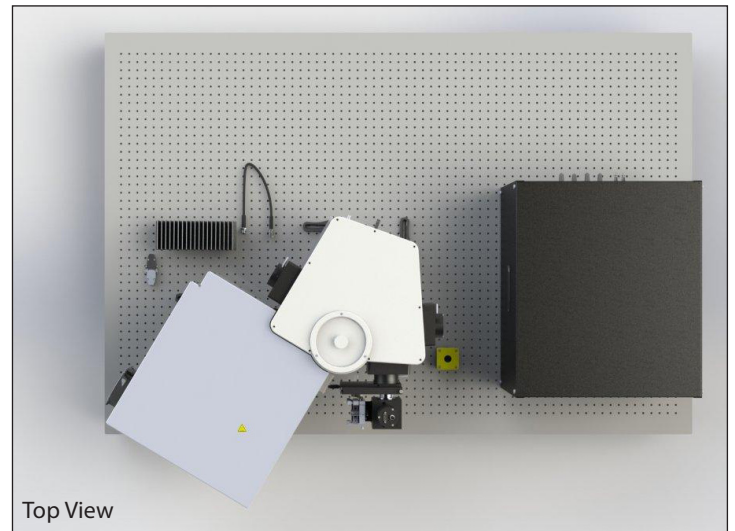
Real-time NIST traceable spectral irradiance/radiance

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

## MEASURE

Quantum efficiency  
Spectral responsivity

Linearity



## Order Information

Model Number	Order Number	Description
QES-1000	AA-01268-000	Spectral Irradiance/Radiance Source Standard

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



# Specifications

Wavelength Range:	375 - 1100 nm
Spectral Bandwidth:	5 nm to 10 nm
Wavelength Accuracy:	0.6 nm
Slit Scattering Function: (UV and VIS)	Triangle
Field Uniformity:	± 1% at f/2 over 64 mm <sup>2</sup>
Exit Port Diameter:	29 mm
Exit Port Aperture Diameters:	29 mm, 23.9 mm, 26.2 m, 22 mm
Maximum Spectral Irradiance at 400 nm:	12 μW/cm <sup>2</sup>
Maximum Spectral Irradiance at 600 nm:	21 μW/cm <sup>2</sup>
Maximum Spectral Irradiance at 800 nm:	5 μW/cm <sup>2</sup>
Stability at 550 nm: (UV-VIS Source)	< 1.5% over 5 sec period
Stability at 750 nm: (VIS-NIR Source)	< 0.05% over 5 sec period
Typical Signal Setting Time after Slew:	1 sec (typical)
Communications:	USB, RS232
User Mode Software:	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

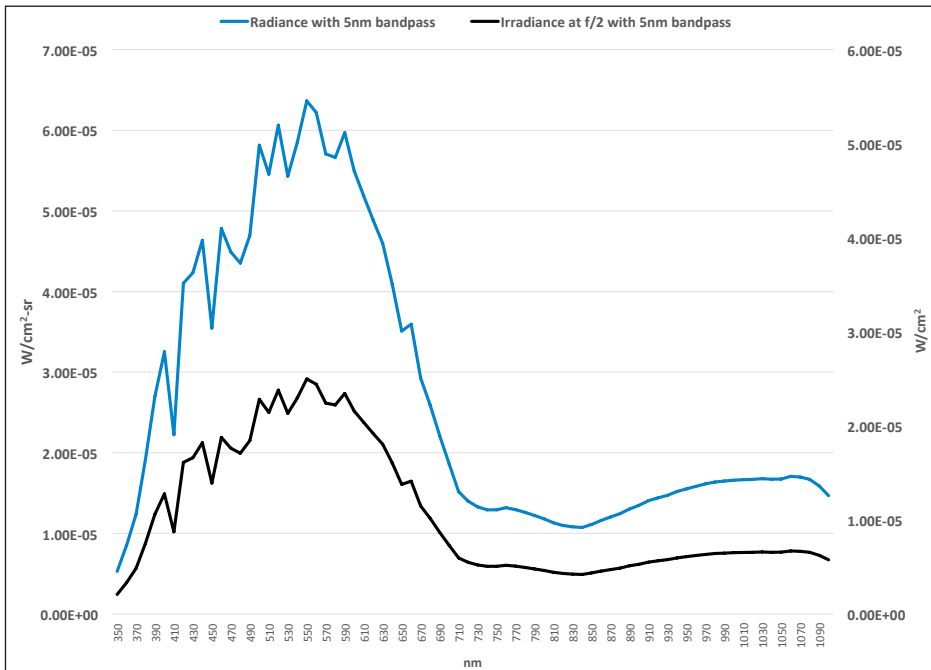
Operating Environment:	25 C ± 2 C	
Dimensions/Weight:	Height x Width x Depth	Weight
Table and Instrument:	61 cm x 183 cm x 122 cm	285 kg
Rack:	32 cm x 53 cm x 62 cm	18 kg

## Spectral Radiance

Wavelength Range:	375 - 1100 nm
Spectral Bandwidth:	5 nm to 10 nm
Wavelength Accuracy:	0.6 nm
Slit Scattering Function:	Triangle
Field Uniformity:	± 1%
Exit Port Diameter:	29 mm
Exit Port Aperture Diameters:	N/A
Maximum Spectral Radiance at 400 nm:	32 μW/cm <sup>2</sup> -sr
Maximum Spectral Radiance at 600 nm:	54 μW/cm <sup>2</sup> -sr
Maximum Spectral Radiance at 800 nm:	11 μW/cm <sup>2</sup> -sr
Stability at 550 nm: (UV-VIS Source)	< 1.5% over 5 sec period
Stability at 750 nm: (VIS-NIR Source)	< 0.05% over 5 sec period
Typical Signal Setting Time after Slew:	1 sec (typical)
Communications:	USB, RS232
User Mode Software:	Command set in User Mode provides high-level commands to operate the system to create simple test routines

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## Typical Maximum Spectral Irradiance/Radiance Levels