

Spectrometer System

SpectraRad™ Xpress



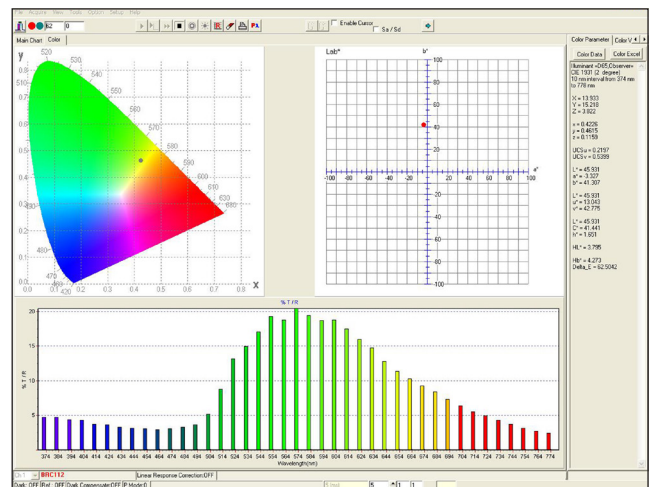
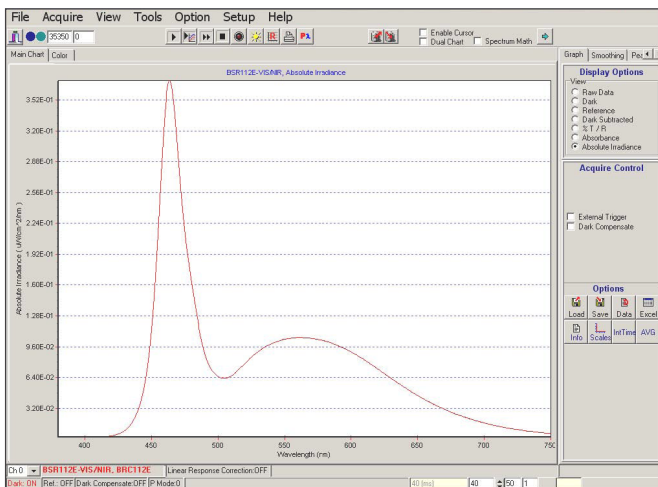
The SpectraRad™ Xpress is a miniature Spectral Irradiance Meter designed for field, industrial, and lab applications with a plug-and-play USB 2.0 interface. A transmissive cosine corrector is coupled to a spectrometer which then is irradiance calibrated against a NIST traceable Tungsten light source. Optimized software is provided for characterization and measurement of many application lighting devices and systems. Standard software features include timeline recording, data smoothing, illuminance (lux), chromaticity, color temperature, external triggered pulsed light capturing, and other data handling functions. The SpectraRad™ Xpress is ideal for lamp and LED characterization (requires input optic option), color analysis, solar studies, photostability testing, photobiology and photochemistry.

Applications:

- Illumination and Color Rendering from Lighting
- Solar Irradiance Monitoring (outdoors)
- Solar Simulator Validation (indoors)
- UV Curing System QC
- LED Characterization

Highlights:

- Spectral Range: 380-750nm, 350-1050nm
- Input Optics: Transmissive Cosine Corrector (default)
- CIE 127 Compliant Adaptor (ADP-CIE127 option)
- NIST Traceable Calibration
- Wavelength Accuracy: better than 0.3nm



Specifications:

Power Input	USB at < 350mA
Detector Type	Response enhanced 2048 element linear silicon CCD array
Detector Pixel Format	2048 x 1 elements @ 14µm x 200µm per element
Spectrograph F#	3.0
Spectrograph Optical Layout	Crossed Czerny-Turner
Dynamic Range	275 typical
Digitizer Resolution	16-bit or 65,535:1
Readout Speed	500 kHz
Data Transfer Speed	Up to 180 spectra per second via USB 2.0
Effective Integration Time	1 to >=20,000 ms
External Trigger	Aux Port
Operating Temperature	15°C - 35°C
Relative Humidity	0 - 85% RH non condensing
Weight	~0.23 kg (0.5 lbs)
Dimensions	See Drawings
Computer Interface	USB 2.0/1.1
Operating Systems	Windows XP, Vista (32 bit), & 7 (32 bit)

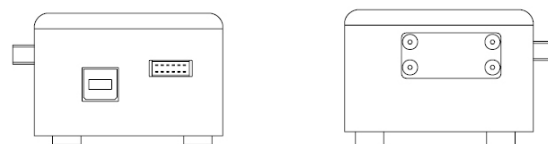
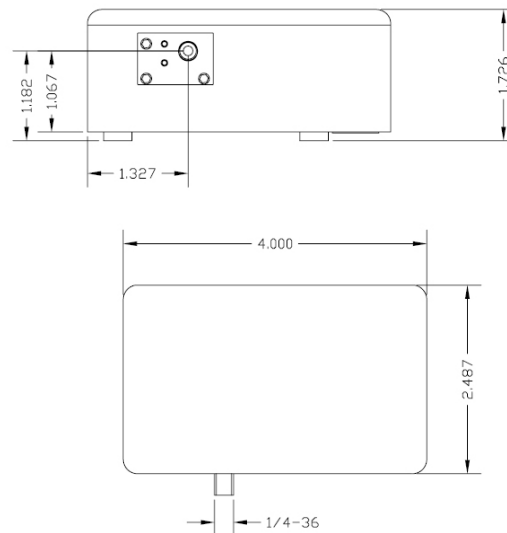
Model	BSR112E-VIS	BSR112E-VIS/NIR
Range	380-750nm	350-1050
Slit	100µm	100µm
Resolution	~3.0nm	~4.0nm
Irradiance Range	20nW/cm ² /nm - 400µW/cm ² /nm	30nW/cm ² /nm - 600µW/cm ² /nm

Advantages of Spectral vs. Filter Based Instruments

Although filter based instruments are desired for certain properties such as cost, speed and portability, they are not always the best choice for analytical measurements. Filter based instruments only acquire three data points across the entire spectrum of light to yield colorimetric values. This is accomplished by the use of filters corresponding to the normal human eye response. These filters can only be manufactured to a certain degree of accuracy. Due to these facts, filter based meters are susceptible to errors because of the deviation of the filter response from the ideal human eye response and the lack of resolution needed to accurately describe narrow bandwidth light sources.

The SpectraRad™ Xpress avoids these problems at a comparable cost, higher speed, and small footprint because it acquires hundreds of data points across the visible spectrum. In addition, the 2048 pixel linear CCD array provides the precision required to accurately measure narrow bandwidth light sources or LEDs. Having multiple sensors also enables the unit to report spectral data and display spectral graphs, making it the ideal instrument for evaluating LEDs, which are today's dominant light source.

Dimensions (inches):



Dimensions (mm):

