

Color Measurement

SpectraRad™

TE Cooled Miniature Spectral Irradiance Meter



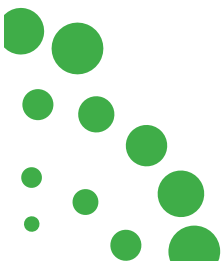
The SpectraRad™ is a miniature TE Cooled Spectral Irradiance Meter designed for industrial applications and lab use with a USB 2.0 interface. The SpectraRad™ is equipped with a fiber coupled right angle transmissive cosine corrector, which is irradiance calibrated against a NIST traceable tungsten light source. BWSpec™ software is provided for characterization and measurement of many application lighting devices and systems. The SpectraRad™ is ideal for lamp and LED characterization, color analysis, photostability testing, photobiology and photochemistry. Standard software features include timeline recording, data smoothing, illuminance (lux), chromaticity, color temperature, and other data-handling functions.

Applications:

- Illumination and Color Characterization
- UV Curing System QC
- LED Characterization
- Visible Spectroscopy / Spectroradiometry
- WL Identification
- Color Absorbance & Reflectance

Specifications:

Optical	
Spectral Range	380nm - 750nm, 350nm - 1050nm
Spectral Resolution	~1.5nm, ~2.0nm
Irradiance Range	25 nW/cm ² /nm - 4 mW/cm ² /nm
Electrical	
Detector Type	Response Enhanced 2048 element linear silicon CCD array
TE Cooling	14°C
External Trigger	Aux Port
Computer Interface	USB 2.0 / 1.1
Data Transfer Speed	Up to 180 spectra per second via USB 2.0
DC Power Input	5V DC < 1.5 Amps
Software	
Effective Integration Time	5 - 120,000ms
Operating Systems	Windows: XP, Vista (32-bit), 7 (32-bit)
Environmental	
Operating Temperature	15°C - 35°C
Operational Relative Humidity	85% Non-condensing



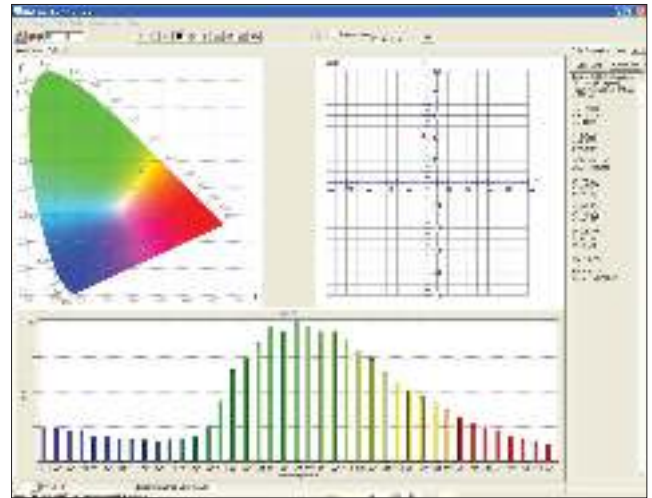
Advantages of... Spectral vs. Filter Based Instruments

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.

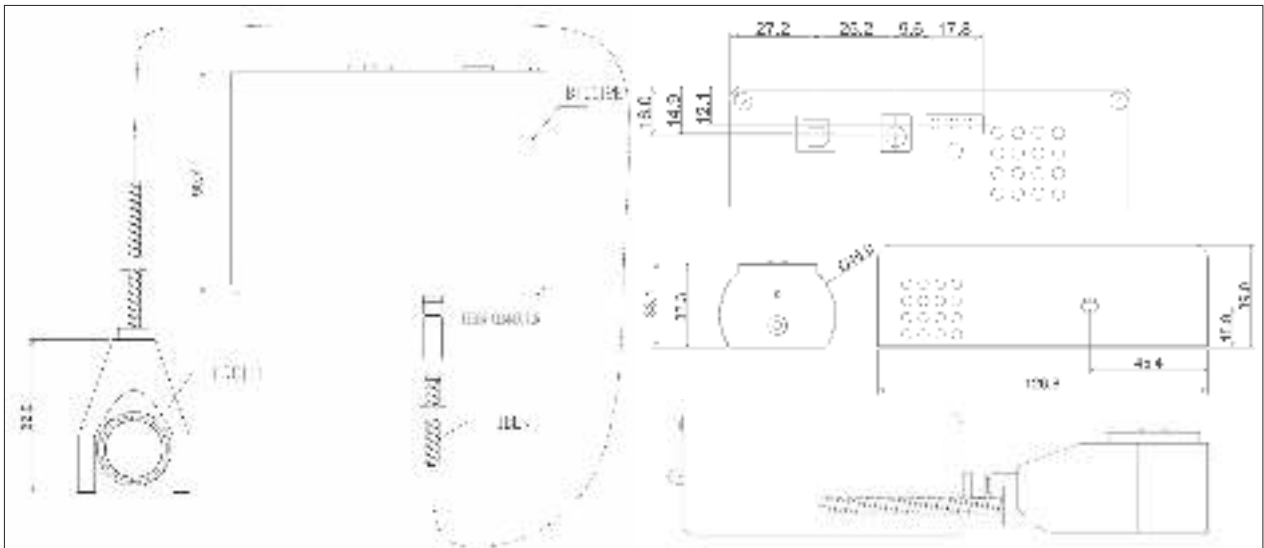
The SpectraRad™ avoids these problems at a comparable cost, higher speed and small footprint because it acquires hundreds of data points across the visible spectrum. In addition, the 2048 pixel linear CCD array provides the precision required to accurately measure narrow bandwidth light sources or LEDs. 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.

BWSpec™ Color Software

BWSpec™ features a wide range of tools designed to perform complex measurements and calculations at the click of a button. BWSpec™ allows the user to choose between multiple data formats and offers automatic optimization of integration time. BWSpec™ color software graphically displays positioning in the CIE 1931 Chromaticity Chart and in Lab* space. BWSpec™ also provides tristimulus values (X, Y, Z), Correlated Color Temperature (CCT), Dominant Wavelength, Ev (lux), x, y, u', v', and many more radiometric and color metrics in an easy-to-follow display window.



Dimensional... Drawings (mm)



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