





## Spectroradiometer Measurement Quantities

The optical quantity measured by a spectroradiometer system is determined by the input optic employed, as described in the table below. An appropriate calibration source is required in each case. Bentham manufactures spectroradiometers covering the spectral range 150nm to 30µm. All photometric, colorimetric, UV radiometric, etc. quantities are most accurately determined by performing spectroradiometric measurements and using software to integrate/weight values as defined by CIE etc. However, Bentham also supplies a range of filter based radiometers/photometers with close match spectral responses for simple integral type measurements.

Typically a light source and UMS, Universal Measurement Station, is added to spectroradiometer type systems in order to perform spectrophotometric measurements such as transmission and reflectance.

Typical Input Optic	Measurement Quantity	Unit	Photometric Parameter	Photometric Unit
Diffuser 	Spectral irradiance	mW/(m <sup>2</sup> .nm)	Illuminance	lux
Telescope 	Spectral radiance	mW/(sr.m <sup>2</sup> .nm)	Luminance	cd/m <sup>2</sup>
Baffled tube 	Spectral radiant intensity	mW/(sr.nm)	Luminous intensity	cd
Integrating Sphere 	Spectral total radiant flux	mW/nm	Total luminous flux	lumens

### Definitions

<b>Spectroradiometer</b>	An instrument for measurement of radiometric quantities in narrow wavelength intervals over a given spectral region (e.g. irradiance, radiance, etc.) (CIE)
<b>Spectrophotometer</b>	An instrument for measurement of the ratio of two values of a radiometric quantity at the same wavelength (e.g. transmission, reflection, absorption) (CIE)