LI-210SA Photometric Sensor

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Measures Illuminance as Related to the CIE Standard Observer Curve

The LI-210SA Photometric Sensor utilizes a filtered silicon photodiode to provide a spectral response that matches the CIE curve within ± 5% with most light sources. This photodiode and filter combination is placed within a fully cosine-corrected sensor head to provide the proper response to radiation at various angles of incidence.

Some of the applications for the LI-210SA Photometric Sensor include interior and industrial lighting, outdoor illuminance, passive solar energy, architecture and lighting models, illumination engineering, and biological sciences that require illuminance measurements. The LI-210SA is a research grade photometric sensor that is very reasonably priced.

Photometric Sensors

Photometry refers to the measurement of visible radiation (light) with a sensor having a spectral responsivity curve equal to the average human eye. This curve is known as the CIE Standard Observer Curve (photopic curve).

Photometric sensors are used to measure lighting conditions where the eye is the primary receiver, such as illumination of work areas, interior lighting, television screens, etc. Although photometric measurements have been used in the past in plant science, PPFD and irradiance are the preferred measurements.

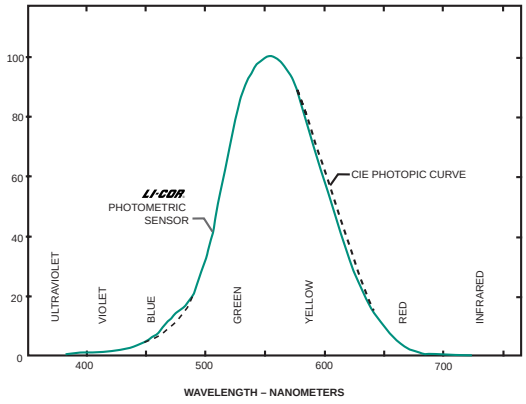


Figure 1. Typical spectral response of LI-COR Photometric Sensors vs. Wavelength and the CIE Standard Observer Curve.

LI-210SA Specifications

Absolute Calibration: ± 5% traceable to NBS.

Sensitivity: Typically 30 µA per 100 klux.

Linearity: Maximum deviation of 1% up to 100 klux.

Stability: < ± 2% change over a 1 year period.

Response Time: 10 µS.

Temperature Dependence: ± 0.15% per °C maximum.

Cosine Correction: Cosine corrected up to 80° angle of incidence.

Azimuth: < ± 1% error over 360° at 45° elevation.

Tilt: No error induced from orientation.

Operating Temperature: -20 to 65 °C.

Relative Humidity: 0 to 100%.

Detector: High stability silicon photovoltaic detector (blue enhanced).

Sensor Housing: Weatherproof anodized aluminum case with acrylic diffuser and stainless steel hardware.

Size: 2.38 Dia. × 2.54 cm H (0.94" × 1.0").

Weight: 28 g (1 oz.).

Cable Length: 10 ft. standard.



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Ordering Information

The LI-210SA Photometric Sensor cable terminates with a BNC connector that connects directly to the LI-250 Light Meter or LI-1400 DataLogger. The 2290 Millivolt Adapter should be ordered if the LI-210SA will be used with a strip chart recorder or datalogger that measures millivolts. The 2290 uses a 604 Ohm precision resistor to convert the LI-210SA output from microamps to millivolts. The Photometric Sensor can also be ordered with bare leads (without the connector) and is designated LI-210SZ. The 2003S Mounting and Leveling Fixture is recommended for each sensor unless other provisions for mounting are made. Other accessories are described on the Accessory Sheet.

LI-210SA Photometric Sensor
(with BNC connector)
LI-210SZ Quantum Sensor
(with bare leads)
2003S Mounting and Leveling Fixture
2222SB-50 Extension Cable (50 ft.)
2222SB-100 Extension Cable (100 ft.)
2290 Millivolt Adapter