AUTOMATA
Remote Monitoring & Control

SOLAR RADIATION SENSOR

Part# 630-0200-001

Description

The LI-200 SZ + 35 Pyranometer is designed for field measurement of global solar radiation in agricultural, meteorological, and solar energy studies. In clear, unobstructed daylight conditions, the LI-COR pyranometer compares favorably with first class thermopile-type pyranometers, but is priced at a fraction of the cost.

Patterned after the work of Kerr, Thurtell and Tanner, the LI-200 features a silicon photovoltaic detector mounted in a fully cosine-corrected miniature head. Current output, which is directly proportional to solar radiation, is calibrated against an Eppley Precision Spectral Pyranometer (PSP) under natural daylight conditions in units of watts per square meter (W m-2). Under most conditions of natural daylight, the error is < 5%.

The solar radiation sensor comes with 10' of cable with additional cable available upon request. This sensor also includes input calibration required for use with all of Automata's MINI Field Stations.

Specifications	
Response Time	10 μs
Temp. Dependence	0.15% per ^{0}C maximum
Cosine Correction	Cosine corrected up to 80^0 angle of incidence.
Azimuth	< ± 1% error over 360^0 at 45^0 elevation.
Tile	No error induced from orientation.
-Detector	High stability silicon photovoltaic detector (blue enhanced)
Sensor Housing	Weatherproof anodized aluminum case with acrylic diffuser and stainless steel hardware.
Size	2.38 cm Dia. X 2.54 cm H (0.94" x 1.0")
Calibration	Calibrated against Eppley Precision Spectral Pyranometer (PSP) under natural daylight conditions. Absolute error under these conditions is ± 5%.
Sensitivity	Typically 90 μA per 1000 W m $^{-2}$ (calibration constant supplied with each unit.)
Stability	<± 2% change over a one-year period.

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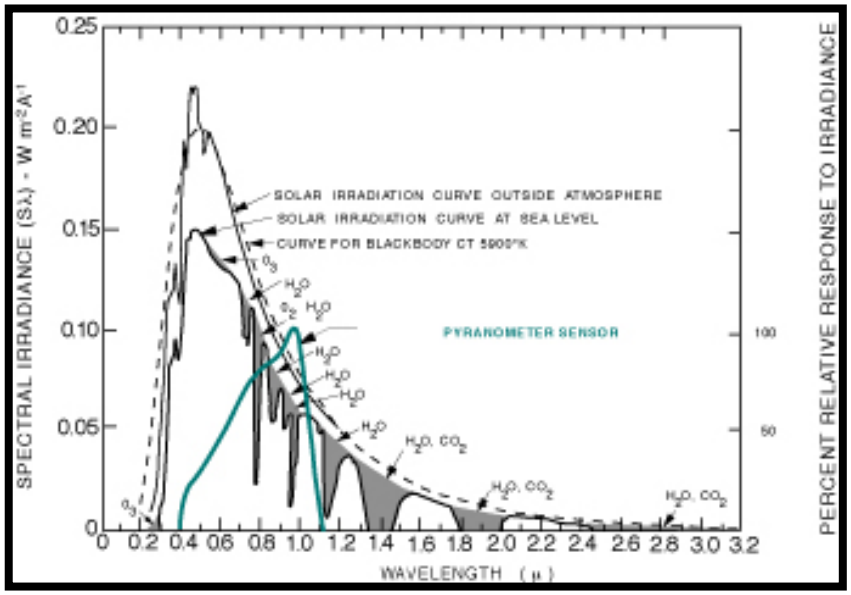
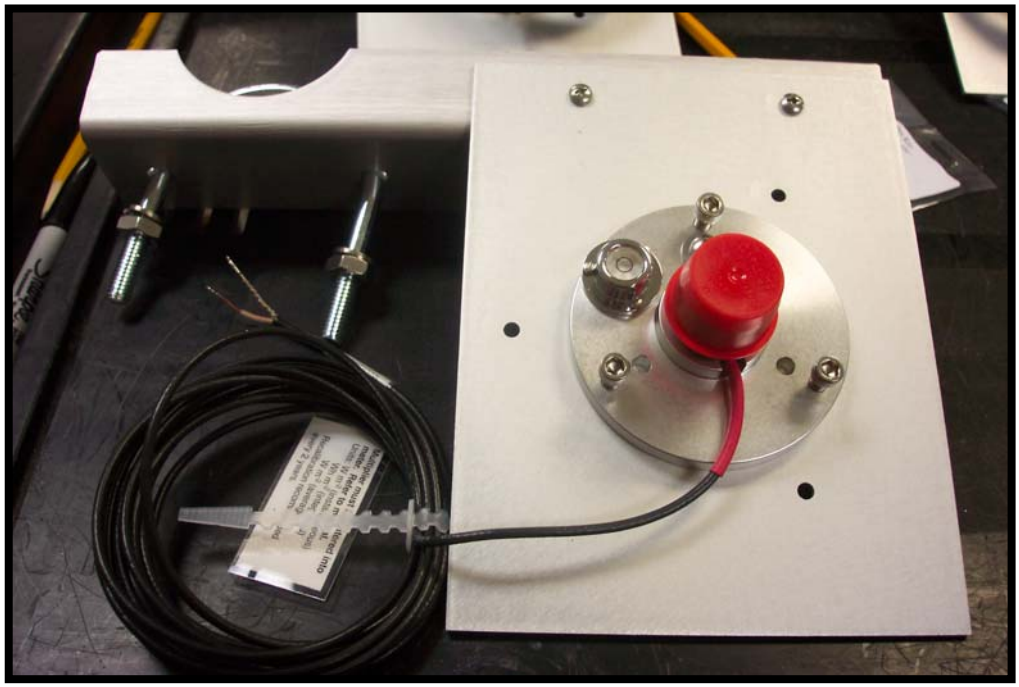


The LI-200 Pyranometer spectral response is illustrated along with the energy distribution in the solar spectrum (3).



LI-COR Pyranometer with leveling bubble on mounting hardware (included).