CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

LP02

Solar Radiation Sensor

High Quality

Blackened thermopile provides full solar spectrum range

Overview

The LP02* is an ISO-second-class pyranometer that monitors solar radiation for the full solar spectrum range. It produces a millivolt signal that is measured directly by a Campbell Scientific datalogger. The LP02 can provide solar radiation measurements for a variety of meteorological applications.

Benefits and Features

- Compatible with most Campbell Scientific dataloggers
- Measures reflected solar radiation when inverted
- Provides measurements in direct sunlight, under plant canopies, when the sky is cloudy, and in artificial light
- Compatible with the CWS900-series interfaces, allowing it to be used in a wireless sensor network
- Includes bubble level and leveling screws eliminating need for a separate leveling base, which simplifies installation
- Acceptable for providing the solar radiation data used in stability estimations
- Dome protects thermopile and allows water to roll off of it

Technical Description

The LP02 measures solar radiation with a high-quality blackened thermopile protected by a dome. The blackened thermopile provides a flat spectral response for the full solar spectrum range, which allows the LP02 to be used under plant canopies or lamps, when the sky is cloudy, and for reflected radiation measurements.

The LP02 includes a bubble level, three adjusting screws, and a cable gland. The bubble level and adjusting screws allow the sensor to be leveled without using a leveling base. The gland facilitates cable replacement. Two LP02 pyranometers can be mounted back-to-back to make a low-cost albedometer. Contact Campbell Scientific for more information.

**The LP02 is manufactured by Hukseflux. Prior to December 2008, the LP02 included a 15-ft cable instead of a cable with a user-specified length. Because the LP02 is a second-class pyranometer, it is acceptable for providing the solar radiation data used in stability estimations (EPA Meteorological Monitoring Guidance for Regulatory Modeling Applications, pages 2-10).*

Mounting

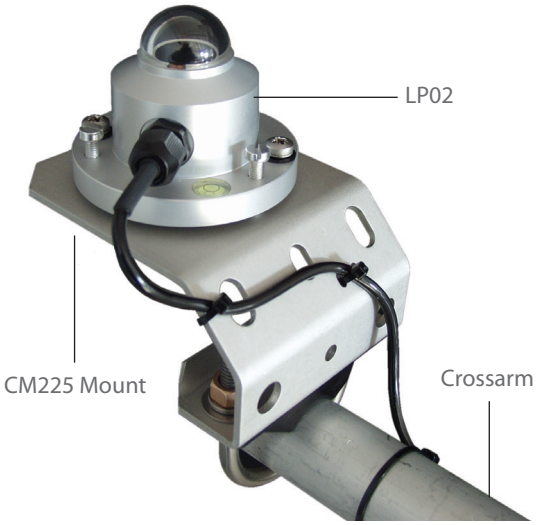
The LP02 includes a bubble level and three adjusting leveling screws, which allow the sensor to be leveled without using a leveling base. The CM225 Solar Sensor Mounting Stand is used to attach the sensor to a crossarm. The CM225 consists of rectangular plate, mounting bracket, U-bolts, washers, lock washers, and nuts. The LP02 should be mounted away from all obstructions and reflective surfaces that might adversely effect the measurement.

Ordering Information

Solar Radiation Sensor	
LP02-L	Hukseflux pyranometer with user-specified cable length. Enter cable length, in feet, after the -L. Must choose a cable termination option (see below).

Cable Termination Options (choose one)	
-PT	Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.
-PW	Cable terminates in a connector for attachment to a prewired enclosure.
-CWS	Cable terminates in a connector for attachment to a CWS900-series interface. Connection to a CWS900-series interface allows this sensor to be used in a wireless sensor network.

Mount	
CM225	Solar Sensor Mounting Stand for attaching the sensor to a CM202, CM203, CM204, or CM206 crossarm.



To attach the CM225 to a crossarm, place the U-bolt in the holes on the bottom of the bracket.

Specifications

- Light Spectrum Waveband: 285 to 3000 nm
- Maximum Irradiance: 2000 W/m^2
- Sensitivity (nominal): 15 µV/W/m^2
- Operating Temperature Range: -40° to +80°C
- Temperature Dependence: < 0.15% per °C
- ISO Classification: Second Class
- Width: 7.8 cm (3.1 in)
- Height: 5.9 cm (2.3 in)
- Dome Diameter: 3.0 cm (1.2 in)
- Weight with 15 ft cable: 363 g (0.8 lb)