



Quantum Sensor



Accurate, Versatile

Compatible with most Campbell Scientific dataloggers

Overview

The L1190R Quantum Sensor' accurately measures photosynthetic photon flux density (PPFD), which is the number of photons in the 400 to 700 nm waveband incident per unit time on a unit surface. It uses a silicon photovoltaic detector mounted in a cosinecorrected head. A shunt resistor in the sensor's cable converts the signal from microamps to millivolts, allowing these sensors to be measured directly by a Campbell Scientific datalogger².

Benefits and Features

- Ideal for growth chambers and greenhouses
- Measures Photosynthetic Photon Flux Density (PPFD) in both natural and artificial light
- Compatible with the CWS900-series interfaces, allowing it to be used in a wireless sensor network



¹*The LI190R is manufactured by LI-COR*®.

 2 The LI190R is not compatible with the CR200(X)-series dataloggers.



Mounting

To ensure accurate measurements, the sensor should be leveled using a LI2003S leveling fixture, which incorporates a bubble level and three adjusting screws. The LI2003S leveling fixture mounts to a

Ordering Information

Solar Radiation Sensor

LI190R-L LI-COR® Quantum Sensor with user-specified cable length. Enter length, in feet, after the -L. Recommended length is 11 ft. Must choose a cable termination option.

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 interface. Connection to a CWS900 interface allows the LI190R to be used in a wireless sensor network.

Accessories

LI2003S	Base and leveling fixture used to level the sensor.
CM225	Solar Sensor Mounting Stand that's used to attach the LI2003S and sensor to a crossarm.
015ARM	Solar Sensor Mounting Arm used to attach the LI2003S and sensor to a tripod.

Specifications

- > Stability: <±2% change over a 1 year period
- **)** Response Time: < 1 μs
- > Temperature Dependence: ±0.15% per °C maximum
- Cosine Correction: Cosine corrected up to 82° angle of incidence
- > Operating Temperature Range: -40° to +65°C
- Relative Humidity Range: 0 to 100%, non-condensing
- Detector: High stability silicon photovoltaic detector (blue enhanced)
- > Sensor Housing: Weatherproof anodized aluminum case with acrylic diffuser and stainless-steel hardware; O-ring seal on the removable base and cable assembly.

tripod using the 015ARM or to a crossarm using the CM225 mount. These sensors should be mounted away from all obstructions and reflective surfaces that might adversely effect the measurement.



The CM225 attaches to a crossarm by placing the U-bolt in the holes on the bottom of the bracket.

- Diameter: 2.36 cm (0.93 in)
- Height: 3.63 cm (1.43 in)
- Weight: 84 g (2.96 oz)
- Calibration: ±5% traceable to the U.S. National Institute of Standards Technology (NIST)
- View EU Declaration of Conformity at: <u>www.campbellsci.com/li190r-l</u>
- > Sensitivity: Typically 5 to 10 μA per 1000 μmole s⁻¹ m⁻²
-) Linearity: Maximum deviation of 1% up to 10,000 $\mu mole~s^{-1}~m^{-2}$
- **)** Shunt Resistor: 604 Ω, 0.1%, 25 ppm
- Light Spectrum Waveband: 400 to 700 nm



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