CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

LI190R

Quantum Sensor

Accurate, Versatile

Compatible with most Campbell Scientific dataloggers

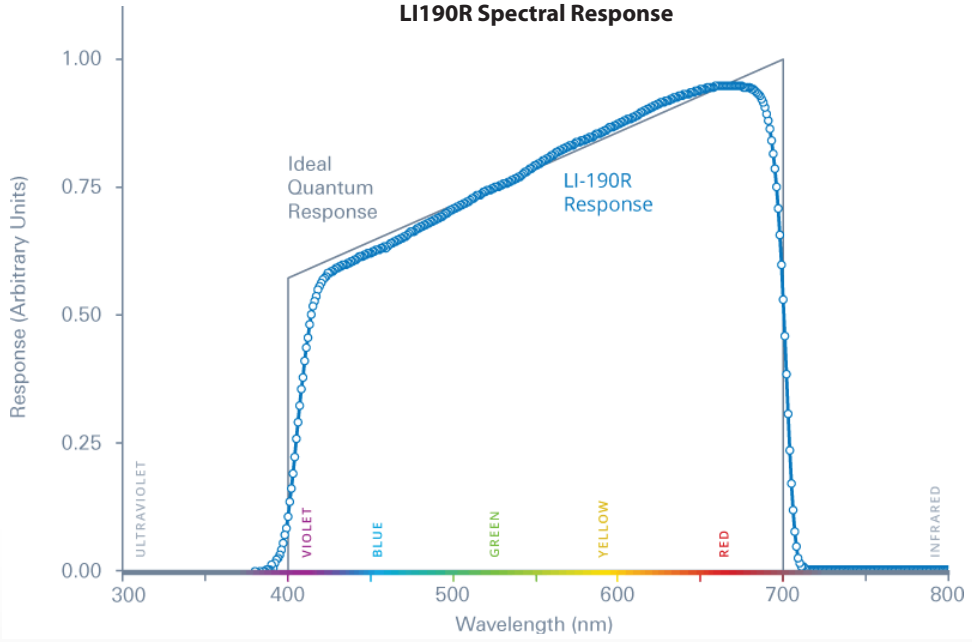
Overview

The LI190R Quantum Sensor[1] 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 cosine-corrected 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 datalogger[2].

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

LI190R Spectral Response



[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 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.

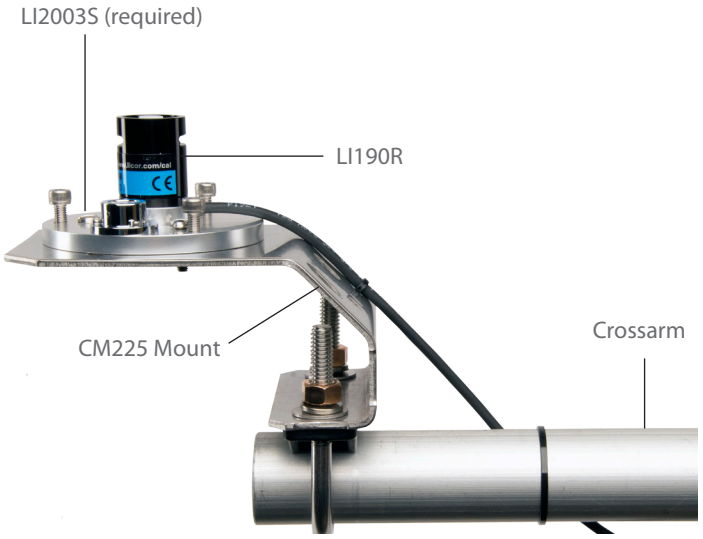
Ordering Information

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 that's used to attach the LI2003S and sensor to a tripod.



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

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.
- 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)
- Sensitivity: Typically 5 to 10 µA per 1000 µmole s^{-1} m^{-2}
- Linearity: Maximum deviation of 1% up to 10,000 µmole s^{-1} m^{-2}
- Shunt Resistor: 604 Ω, 0.1%, 25 ppm
- Light Spectrum Waveband: 400 to 700 nm