

# Quantum Sensor

SQ-100 & 300 Series

## Measure photosynthetic photon flux

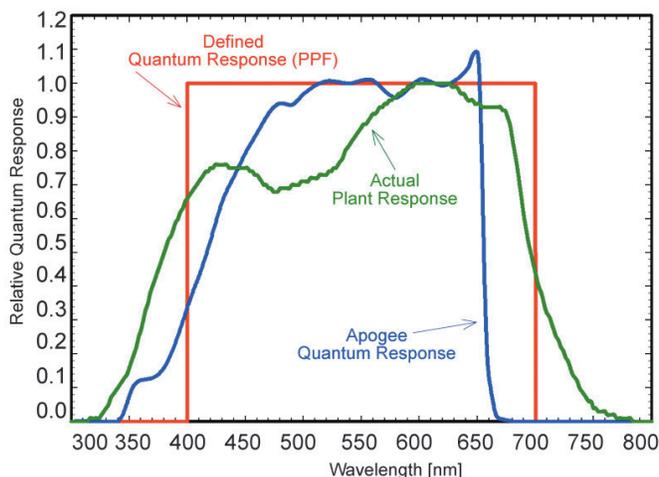


This is our quantum sensor and line quantum sensor, designed for use with dataloggers. Line quantum sensors are often used to quantify the variable light in greenhouses and below plant canopies because they provide a spatial average.

An innovative blue lens improves the accuracy of these sensors. The pigments in the lens filter incoming light for an improved spectral response.

Photosynthesis is driven by the number of photons between 400 and 700 nanometers (nm). This is called the Photosynthetic Photon Flux (PPF) and is measured in  $\mu\text{mol m}^{-2} \text{s}^{-1}$  (micromols of photons per square meter per second). PPF sensors are commonly called quantum sensors because a quantum refers to the amount of energy carried by a photon.

Quantum response is from 400 to 700 nm and gives equal emphasis to all photons. A blue lens filters the light and improves the spectral response. The spectral response of the Apogee sensor and a typical plant response are shown below.



50 cm line with 3 sensors

50 cm line with 6 sensors

70 cm line with 10 sensors

## Related Product



**AL-100**  
A plate used to keep the sensor heads level.

# Specifications

## Cosine Response

- 45° zenith angle: ± 1%
- 75° zenith angle: ± 5%

## Absolute Accuracy

- ± 5%

## Repeatability

- ± 1%

## Dimensions

- SQ-100 series: 2.4 cm diameter by 2.75 cm height
- SQ-313, 316, 323, 326: 50 cm
- SQ-311, 321: 70 cm

## Long-Term Drift

- Less than 3% per year

## Operating Environment

- -25 to 55 C
- 0 to 100% relative humidity
- Designed for continuous outdoor use
- Can be submerged in water

## Mass

- SQ-100 series: 70 g (with 5 meters lead wire)
- SQ-313, 316, 323, 326: 275g
- SQ-311, 321: 375g

## Materials

- Anodized aluminum with cast acrylic lens

## Cable

- 5 meters of twisted-pair wire
- Foil shield
- Santoprene jacket
- Ending in pigtail leads
- Additional cable is available in multiples of 5 meters

## Warranty

- 1 year against defects in materials and workmanship

# Measurements

