Bio Instruments S.R.L.

SENSORS AND SYSTEMS
FOR MONITORING GROWING PLANTS

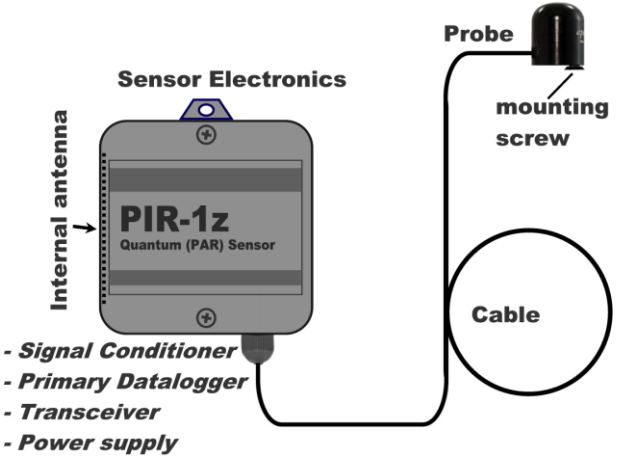
PIR-1z

Quantum (PAR) Sensor

www.phyto-sensor.com

Introduction

The PIR-1z Quantum Sensor measures Photosynthetic Photon Flux (PPF) in $\mu mol \cdot m^{-2} \cdot s^{-1}$. The sensor is cosine-corrected, and has a domed diffusion disk and head for improved self-cleaning characteristics and long-term stability. The cosine error for typical applications is less than 2%. The output increases approximately 1% per year because of changes in the optical transparency of the diffusion disk. Quantum sensor is calibrated for sunlight. Average spectral errors associated with different light sources are shown below:
Cool White Fluorescent: 8% high.
Metal Halide: 6% high.
High Pressure Sodium: 0% error.



The probe is connected by a standard 3 meter cable to the waterproof box with electronics, which combines signal conditioner, primary datalogger, RF 2.4 GHz transceiver, and power supply (3xAA Alkaline batteries).

Communication

The PIR-1z communicates over the radio 2.4 GHz channel with a network data logging unit. Activation of the sensor and measurement settings are described in the 'PM-11z Phytomonitor Quick Start Guide'

Power

The PIR-1z is powered by three AA Alkaline batteries.

Readings

PIR-1z represents average value of PPF measurements made 10 times evenly during the measurement time interval. For instance, at 30 min time interval, the PIR-1z measures PPF every 3 minutes and, then, calculates and records the average of those ten values measured.

Installing the sensor

Position the PIR-1z Quantum Sensor is supplied with the special holder for mounting on a tripod. Keep PIR-1z at vertical position.

The sensor should be mounted with the cable pointing toward the nearest magnetic pole. For example: in the Northern Hemisphere, point the cable toward the North Pole. In the Southern Hemisphere, point the cable toward the South Pole.

Specifications:

Calibration: Natural sunlight
Range of Measurement: 0 to 3000 μmol·m^{-2}·s^{-1}
Absolute accuracy: ±5%
Resolution: 1 μmol·m^{-2}·s^{-1}
Power Requirements: 4.5 Vdc (3xAA Alkaline batteries)
Operating Environment: -25 to +55 °C
Probe dimensions, mm: 24 ∅ × 27.5 H
Cable length: 3m
Datalogger Compatibility: Bio Instruments S.R.L.: PM-11z Phytomonitor and/or USB Gateway

Customer Support

If you ever need assistance with your PIR-1z, or if you just have questions or feedback, please e-mail at support@phyto-sensor.com. Please include as part of your message your name, address, phone, and fax number along with a description of your problem.

Phyto-Sensor Group

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