



Bio Instruments S.R.L.

SENSORS AND SYSTEMS
FOR MONITORING GROWING PLANTS

PIR-1P

Quantum (PAR) Sensor



Introduction

The PIR-1P Quantum Sensor measures Photosynthetic Photon Flux (PPF) in $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$. 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 is shown below:

- Cool White Fluorescent: 8% high.
- Metal Halide: 6% high.
- High Pressure Sodium: 0% error.

The sensor has standard 3-m cable with the IP-67 BINDER plug for easy and trouble free connection to the datalogger.

Installation

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

Connection

Plug the sensor into any analog input of the PM-11 Phytomonitor or the PTM-48A Photosynthesis Monitor. In the PC program, specify the input number where the sensor is connected to.

If you use the sensor for the first time, please make the appropriate record in the Sensors Database as described on page 5 of the PM-11 Phytomonitor Terminal Emulator software Guide or on page 11 of the PTM-48A Photosynthesis Monitor User's Guide.

Sensor data

Type: PIR-1Pe

ID: #xxxx

Description: Quantum Sensor

Units: micromol/m2*s

Format: #

Measurement mode: Normal

Measurement ranges

Minimum: 0 micromol/m2*s

Maximum: 2500 micromol/m2*s

Max Volts: 1.0 V

Coefficients

Standard

#	Coefficient
C0	0.00000e+000
C1	5.00000e+003
C2	0.00000e+000
C3	0.00000e+000
C4	0.00000e+000
C5	0.00000e+000

Edit

Defaults

Sensors Database Window in PM-11 / PTM-48A

Specifications

Calibration	Natural sunlight
Measurement range	0 to 2500 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$
Absolute accuracy	$\pm 5\%$
Repeatability	$\pm 1\%$
Operating temperature	0 to 50 °C
Dimensions, mm	24 \varnothing × 27.5 H
Protection index	IP 67



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