



Bio Instruments S.R.L.

SENSORS AND SYSTEMS
FOR MONITORING GROWING PLANTS

TIR-4z
Pyranometer

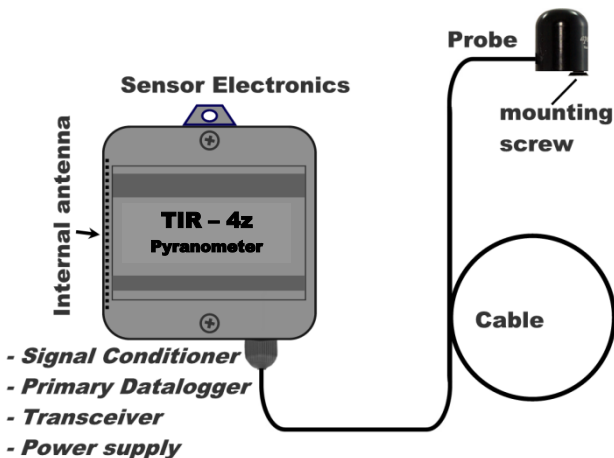


Introduction

The TIR-4z Pyranometer is a silicon-cell photodiode device based on the SP-110 Pyranometer (Apogee Instruments, USA), and calibrated to estimate all of the solar radiation energy in Watts per square meter.

All silicon-cell photodiode pyranometers sub-sample the shortwave radiation spectrum (from 300 to 1000 nm), and are calibrated to predict all of the solar radiation (from 280 to 2800 nm). For this reason, they should only be used to measure unobstructed solar radiation. The pyranometers should not be used to measure electric lights, under canopies of vegetation or to measure reflected radiation.

This cosine-corrected sensor is designed to maintain its accuracy when radiation comes from low zenith angles.



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 TIR-4z 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 TIR-4z is powered by three AA Alkaline batteries.

Readings

TIR-4z represents average value of the solar radiation measurements made 10 times evenly during the measurement time interval. For instance, at 30 min time interval, the TIR-4z measures the solar radiation every 3 minutes and, then, calculates and records the average of those ten values measured.

Installing the sensor

Position the TIR-4z Pyranometer is supplied with the special holder for mounting on a tripod. Keep TIR-4z 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 1250 W/m²

Absolute accuracy: ±5%

Resolution: 1 W/m²

Power Requirements: 4.5 Vdc (3xAA Alkaline batteries)

Operating Environment: -25 to +55 °C

Probe dimensions, mm: 24 Ø × 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 TIR-4z, 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.



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