



*Bio Instruments S.R.L.*

SENSORS AND SYSTEMS  
FOR MONITORING GROWING PLANTS

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# **TIR-4T-V**

## Pyranometer

### Quick Start Guide



[www.phyto-sensor.com](http://www.phyto-sensor.com)

# Introduction

The TIR-4T Pyranometer is a silicon-cell photodiode device based on the [SP-110-SS](#) 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 360 to 1120 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.

## Sensor marking

TIR-4T-Vn

n – Supply voltage range

1: from 2.8 to 12 Vdc

2: from 5.0 to 16 Vdc

## Installation

Keep TIR-4T at vertical position.

## Connection

**The sequence and correctness of the connection must be observed!** The shield shall be grounded at the data loggers

side or connected to the 'minus' contact of the power source.

## Connection order



1	White	Ground
2	Black	Shield
3	Yellow	Voltage Output 0 to 2 V
4	Red	Power 2.8 to 12 Vdc or 5 to 16 Vdc

## Calibration factor

1 W m<sup>-2</sup> per mV

## Specifications

Calibration	Natural sunlight
Measurement range	from 0 to 2000 W m <sup>-2</sup>
Absolute accuracy	±5%
Repeatability	±1%
Cosine response	±5% at 75° zenith angle
Field of View	180°
Spectral Range	360 to 1120 nm
Analog output	from 0 to 2 V

<i>Power supply</i>	
TIR-4T-V1	from 2.8 to 12 Vdc @ 6 mA max
TIR-4T-V2	from 5.0 to 16 Vdc @ 6 mA max
Operating temperature	0 to 50 °C
Dimensions	24 Ø × 33 H mm
Mass (without cable)	180 g
Output auto update time	5 s
Excitation time	0.1 s
Cable length	5 m
Protection index	IP67

## Customer support

If you ever need assistance with your sensor, or if you just have questions or feedback, please e-mail at [support@phyto-sensor.com](mailto: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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