



SMP10-L

Radiation Sensor with Digital RS-485 Output



High-Quality Class A ISO Pyranometer

Double glass dome

Overview

The SMP10-L pyranometer, manufactured by Kipp & Zonen and cabled by Campbell Scientific, measures solar radiation with a high-quality blackened thermopile protected by two glass domes. Its flat spectral sensitivity makes it ideal for applications in natural sunlight, under plant canopies, in greenhouses or buildings, and inverted to measure reflected solar radiation. Communications to on-site RTUs, SCADA systems, or other data acquisition systems are simplified with

the industry-standard Modbus RTU communications protocol. Typical uses include environmental monitoring, solar resource assessment, and solar power performance applications.

Typically, this pyranometer is oriented perpendicular to the Earth's surface to measure global horizontal irradiance (GH). Diffuse sky radiation can also be measured with the use of a shade mechanism.

Benefits and Features

- › Double glass dome
- › Wide integration compatibility using Modbus communications
- › Integrated bubble level is visible without removing sun shield
- › Internal desiccant prevents dew from forming on the inner sides of the domes
- › Compatible with the CVF4 heater/ventilator that keeps the domes free from ice and dew

Detailed Description

Mounting

The SMP10-L should be mounted away from all obstructions and reflective surfaces that might adversely affect the measurement. The pyranometer has a bubble level and two leveling feet, which allow the SMP10-L to be leveled without using a leveling base.

The pyranometer typically mounts to a mast, crossarm, or pole (1.0 in. to 2.1 in. OD) via the CM255 or CM255LS mounting stand, assuming the heater/ventilator is not used. The pyranometer mounts near the end cap of an ATI or NexTracker torque tube via the CM260 or CM265 mounting kit, respectively.

The CVF4 Heater/Ventilator attaches to the 31153 Mounting Stand, which mounts to a crossarm or pole via the CM225

Right-Angle Mount or the 17953 Nu-Rail fitting.

Specifications

-NOTE- Specifications for the CVF4-L are provided on the [CVF4-L web page](#).

Sensor	High-quality blackened thermopile protected by two glass domes
Measurement Description	Measures solar radiation
ISO Classification	Class A (secondary standard)
Spectral Range	285 to 2800 nm (50% points)
Operating Temperature Range	-40° to +80°C
Response Time	» < 0.7 s (53% of final value) » < 2 s (95% of final value)
Zero Offset A	< 7 W/m ²

Zero Offset B	< 2 W/m ²
Directional Response	< 10 W/m ² (up to 80° with 1000 W/m ² beam)
Temperature Dependence of Sensitivity	< 1% (-20° to +50°C)
Sensitivity	2-wire RS-485 Modbus
Digital Output	Modbus two-wire RS-485
Dome Diameter	5 cm (2 in.)
Width	15 cm (5.9 in.) with shield
Height	9.25 cm (3.64 in.)
Weight	0.9 kg (2 lb) with 10.1 m (33 ft) cable

For comprehensive details, visit: www.campbellsci.com/smp10-l 



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