CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

CMP10

ISO Class A Pyranometer

Overview

The CMP10, manufactured by Kipp & Zonen, is an ISO Class A (secondary standard) pyranometer that monitors solar radiation for the full solar spectrum range. It connects directly to a Campbell Scientific data logger and is well-suited for meteorological networks and solar-energy research and development.

Benefits and Features

- Detector design and faster response make it a step above the CMP6
- Compatible with most Campbell Scientific data loggers
- Integrated bubble level is visible without removing sun shield
- Internal drying cartridge 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
- Measures reflected solar radiation when inverted
- Provides measurements in direct sunlight, under plant canopies, when the sky is cloudy, and in artificial light

Detailed Description

The CMP10 measures solar radiation with a high-quality blackened thermopile protected by two glass domes. Its flat spectral sensitivity, from 285 to 2800 nm, makes it ideal for applications in natural sunlight, under plant canopies, in greenhouses or buildings, and inverted to measure reflected solar radiation.

An internal drying cartridge prevents dew from forming on the inner sides of the CMP10's domes. Campbell Scientific also offers the CVF4 heater/ventilator that keeps its domes free from ice and dew.

The CMP10 includes a white snap-on sun shield that reduces the sensor's temperature. A bubble level and adjusting leveling screws enable the sensor to be leveled without using a leveling base.

The CMP10 produces a millivolt signal that is measured directly by a Campbell Scientific data logger.

Specifications

Sensor	High-quality blackened thermopile protected by two glass domes
Measurement Description	Monitors solar radiation for the full solar spectrum range
ISO Classification	Class A (secondary standard)
Spectral Range	285 to 2800 nm
Sensitivity	7 to 14 µV/W/m^2
Temperature Dependence of Sensitivity	< 1% (-10° to +40°C)
Response Time	< 5 s (95% of final value)
Zero Offset Due to Thermal Radiation	< 7 W/m^2 (200 W/m^2)
Non-Stability	< 0.5% (change/year)
Non-Linearity	< 0.2% (0 to 1000 W/m^2)
Directional Error	< 10 W/m^2 (up to 80° with 1000 W/m^2 beam)
Tilt Error	< 0.2%
Level Accuracy	0.1°
Impedance	10 to 100 Ω
Operating Temperature Range	-40° to +80°C
Typical Signal Output	0 to 15 mV (for atmospheric applications)
Maximum Irradiance	4000 W/m^2
Expected Daily Uncertainty	< 2%
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/cmp10

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