



ISO First Class

Double glass dome and increased thermal mass improve performance

Overview

The CMP6, manufactured by Kipp & Zonen, is an ISO first-class pyranometer that monitors solar radiation for the full solar spectrum range. It connects directly to a Campbell

Scientific datalogger and is commonly used for environmental monitoring, solar resource assessment, and solar power performance applications.

Benefits and Features

- ▶ Double glass dome and increased thermal mass improve performance, allowing it to have an ISO first-class classification
- ▶ Compatible with most Campbell Scientific data loggers
- ▶ Integrated bubble level is visible without removing sun shield
- ▶ Desiccant-filled 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
- ▶ Compatible with the CWS900-series interfaces, allowing it to be used in a wireless sensor network

Technical Description

The CMP6 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 green houses or buildings, and inverted to measure reflected solar radiation.

A desiccant-filled drying cartridge prevents dew from forming on the inner sides of the CMP6's domes. Campbell

Scientific also offers the CVF4 heater/ventilator that keeps its domes free from ice and dew.

The CMP6 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 CMP6 produces a millivolt signal that is measured directly by a Campbell Scientific datalogger.

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 B (first class)
Spectral Range	285 to 2800 nm
Sensitivity	5 to 20 $\mu\text{V W}^{-1} \text{m}^2$
Temperature Dependence of Sensitivity	< 4% (-10° to +40°C)
Response Time	< 18 s (95% of final value)
Zero Offset Due to Thermal Radiation	< 15 W/m^2 (200 W/m^2)
Non-Stability	< 1% (change/year)
Non-Linearity	< 1% (0 to 1000 W/m^2)

Directional Error	< 20 W/m^2 (up to 80° with 1000 W/m^2 beam)
Tilt Error	< 1%
Level Accuracy	0.1°
Impedance	20 to 200 Ω
Operating Temperature Range	-40° to +80°C
Typical Signal Output	0 to 20 mV (for atmospheric applications)
Maximum Irradiance	2000 W/m^2
Expected Daily Uncertainty	< 5%
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.eu/cmp6 



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