



## Low cost pyranometer

Easy levelling device

### Overview

Kipp & Zonen's CMP3\* pyranometer is an ISO second class pyranometer that measures solar radiation with a high-quality blackened thermopile protected by a dome. The blackened thermopile provides a flat spectral response for the full solar spectrum range, which allows the CMP3

to be used under plant canopies or lamps, when the sky is cloudy, and for reflected radiation measurements. The CMP3 produces a millivolt signal that is measured directly by a Campbell Scientific datalogger.

### Benefits and Features

- › Low cost radiometer for accurate routine measurements
- › Weatherproof cable connector
- › Easy way of levelling the instrument
- › Sun shield reduces the heating of the body
- › Two CMP3s can form an albedometer
- › Compatible with most Campbell Scientific dataloggers
- › Compatible with the CWS900-series interfaces, allowing it to be used in a wireless sensor network
- › Dome protects thermopile and allows water to roll off of it
- › Acceptable for providing the solar radiation data used in stability estimations
- › Measures reflected solar radiation when inverted

### Technical Information

The CMP3 measures solar radiation with a high-quality blackened thermopile protected by a dome. The blackened thermopile provides a flat spectral response for the full solar spectrum range, allowing the CMP3 to be used under plant canopies or lamps, when the sky is cloudy, and for reflected radiation measurements.

The CMP3 also includes a white snap-on sun shield that reduces the sensor's temperature. Customers can mount two CMP3s back-to-back to make a low cost albedometer. Contact Campbell Scientific for more information.

\*The CMP3 is manufactured by Kipp and Zonen, and then cabled by Campbell Scientific. Prior to December 2008, the CMP3 included Kipp and Zonen's 10 m cable. Because the CMP3 is a second-class pyranometer, it is acceptable for providing the solar radiation data used in stability estimations (EPA Meteorological Monitoring Guidance for Regulatory Modelling Applications, pages 2-10).

## Specifications

- › Light Spectrum Waveband: 300 to 2800 nm
- › Maximum Irradiance: 2000 W/m<sup>2</sup>
- › Sensitivity: 5 to 20 μV/W/m<sup>2</sup>
- › Operating Temperature: -40° to +80°C
- › Temperature Dependence: ±5% (-10° to +40°C)
- › Non-linearity (0 to 1000 W/m<sup>2</sup>): <±2.5%
- › Tilt Response (±80°): <±2% at 1000 W/m<sup>2</sup>
- › Dimensions: 7.9 cm (3.1") width, 6.7 cm (2.6") height, 3.2 cm (1.3") dome diameter
- › Weight (with cable): 600 g (1.2 lbs)
- › ISO Classification: Second Class

## Mounting

The CMP3 includes a bubble level and three adjusting levelling screws, which allow the sensor to be levelled without using a levelling base. The CM225E Solar Sensor Mounting Bracket is used to attach the sensor to a crossarm. The CM225E consists of rectangular plate,

mounting bracket, U-bolts, washers, lock washers, and nuts. The CMP3 should be mounted away from all obstructions or reflective surfaces that might adversely affect the measurement.

## Ordering information

**CMP3** Pyranometer, includes 10 m lead length.

**CM225E** Mounting bracket for fitting to CM200 series mounting arms (specify arm of a length to suit the application).

