

Pyranometer Kipp & Zonen CMP Series

S61130 / S61120 / S61110 / S61100

سنسور تشعشع تولید Kipp & Zonen سری CMP

کد سفارش

- Measurement of solar irradiance
- Specifications to ISO 9060 and IEC 60904 standards
- Widely used within World Meteorological Organisation scientific programmes



Description

The Kipp & Zonen range of thermopile-based pyranometers is respected around the world for the measurement of solar irradiance to World Meteorological Organisation and ISO 9060:1990 standards. The instruments are used in meteorological research, solar energy research, material testing, climate control in greenhouses, building physics, science and many other applications.

The CMP series of pyranometers have ergonomic features to facilitate installation, maintenance, and exchange for recalibration.

A waterproof socket is fitted for the signature yellow signal cable, which is available in a range of lengths. The integral bubble level is raised to the top of the housing and can be viewed without removing the sun shield. The screw-in drying cartridge can be reactivated with convenient refill packets.

The CMP10 has internal desiccant that lasts for 10 years. The CMP 11 has a removable drying cartridge. Kipp & Zonen offers 5 years manufacturer's warranty for the CMP10 pyranometer.

Calculation of irradiance

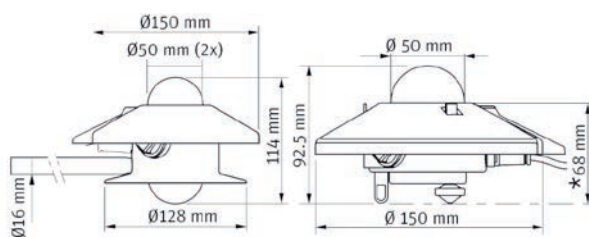
$$E = U / S$$

E [W/m²] = Irradiance

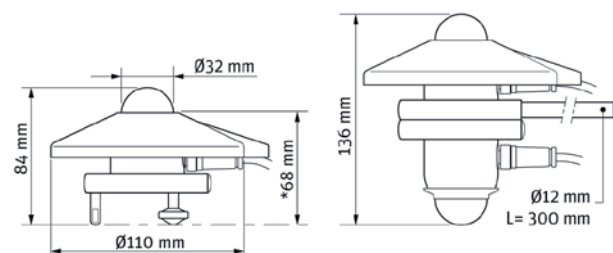
U [μV] = Output Voltage

S [μV/W/m²] = Sensitivity

Dimensional drawings



CMP11 + CMP10 + CMP6



CMP3

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Specifications

| | CMP11 / CMP10 | CMP6 | CMP3 |
|---|--|--|--|
| Order No. | S61120 / S61130 | S61110 | S61100 |
| Classification | Secondary Standard, ISO 9060 & WMO | First Class, ISO 9060 & WMO | Second Class, ISO 9060 & WMO |
| Sensitivity | 7 ... 14 $\mu\text{V}/\text{W}/\text{m}^2$ (see calibration protocol) | 5 ... 20 $\mu\text{V}/\text{W}/\text{m}^2$ (see calibration protocol) | 5 ... 20 $\mu\text{V}/\text{W}/\text{m}^2$ (see calibration protocol) |
| Spectral range (50% points) | 285 ... 2800 nm | 285 ... 2800 nm | 300 ... 2800 nm |
| Max. irradiance | 4000 W/m^2 | 2000 W/m^2 | 2000 W/m^2 |
| Typical signal output for atmospheric applications | 0 ... 15 mV | 0 ... 20 mV | 0 ... 20 mV |
| Response time (95%) | 5 s | 18 s | 18 s |
| Zero offset (a) thermal radiation (200 W/m^2) (b) temperature change (5k/hr) | <7 W/m^2 <2 W/m^2 | <12 W/m^2 <4 W/m^2 | <15 W/m^2 <5 W/m^2 |
| Non-linearity (0 ... 1000 W/m^2) | <0.2 % | <1 % | <1 % |
| Temperature dependence of sensitivity | <1 % (-10 ... +40 °C) | <4 % (-10 ... +40 °C) | <5 % (-10 ... +40 °C) |
| Level accuracy | 0.1° | 0.1° | 1° |
| Operating temperature | -40 ... +80 °C | -40 ... +80 °C | -40 ... +80 °C |
| Cable length | 10 m | 10 m | 10 m |
| Weight without cable | approx. 0.6 kg | approx. 0.6 kg | approx. 0.3 kg |

Delivery includes calibration certificate.

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Sensor connection to Ammonit Meteo-40 data logger

| Sensor | Plug PIN No. | Wire Colour (Kipp & Zonen) | Meteo-40 Voltage | Analog | Supply Sensor |
|------------------------------------|--------------|----------------------------|------------------|--------|-------------------|
| Solar irradiance Output voltage | 1 | red | Ax | | |
| | 2 | blue | Bx | | |
| Shield (Housing) | | | | | Main Ground (GND) |

Sensor connection diagram to Ammonit Meteo-40 data logger

