KIPP & ZONEN
an OTT HydroMet brand

CMP6 | SMP6

Applications

Solar Monitoring for PV
Weather Services
Hydrological Networks
Agriculture

Pyranometer

For reliable Class B measurement of solar irradiance

ISO 9060 Spectrally Flat Class B
Extremely robust construction
Active temperature correction
Analog and digital outputs
5 years warranty

ISO 9060 & IEC 61724 Class B

Fully compliant with ISO 9060:2018 spectrally flat Class B specifications, the CMP6 and SMP6 deliver excellent spectral absorption and long-term stability characteristics. Compared to the CMP3 & SMP3 models, these instruments provide improved performance due to the increased thermal mass and the double glass dome construction.

Minimized maintenance

The CMP6 and SMP6 are robust pyranometers that have been designed to provide high quality measurements with little maintenance needs. The CMP6 has an easy-to-remove drying cartridge filled with easy-to-replace desiccant that is supplied in convenient refill packets. In contrast, the SMP6 is fitted with a maintenance-free internal desiccant that lasts at least 10 years.

Analog or digital outputs

The CMP6 does not require any power. Incoming solar radiation generates a continuous millivolt output, which is converted in a data logger to irradiance in W/m^2 using the calibrated sensitivity. For easy integration into SCADA systems the SMP6 has Modbus® RTU RS-485 serial communication, plus an amplified analog output. The sensitivity is stored inside for standardized outputs and it features improved response time and digital temperature compensation.

5 years warranty

All pyranometers from Kipp & Zonen come with a 5-year warranty and we have service and calibration centers around the world.

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Technical Specifications

	CMP6	SMP6
Classification to ISO 9060:2018	Spectrally Flat Class B	Spectrally Flat Class B
Sensitivity	5 to 20 µV/W/m²	-
Impedance	20 to 200 Ω	-
Expected output range (0 to 1500 W/m²)	0 to 30 mV	-
Maximum operational irradiance	2000 W/m²	2000 W/m²
Analogue output • V-version	-	0 to 1 V
Analogue output range • V-version*	-	-200 to 2000 W/m²
Analogue output • A-version	-	4 to 20 mA
Analogue output range • A-version*	-	0 to 1600 W/m²
Serial output	-	RS-485 Modbus® RTU
Serial output range	-	-400 to 2000 W/m²
Response time (63 %)	< 6 s	< 1.5 s
Response time (95 %)	< 12 s	< 12 s
Spectral range (20 % points)	270 to 3000 nm	270 to 3000 nm
Spectral range (50 % points)	285 to 2800 nm	285 to 2800 nm
Zero offsets (unventilated)		
(a) thermal radiation (at 200 W/m²)	< ±8 W/m²	< ±8 W/m²
(b) temperature change (5 K/h)	< ±2 W/m²	< ±2 W/m²
(c) total zero offset	< ±10 W/m²	< ±10 W/m²
Non-stability (change/year)	< ±1%	< ±1%
Non-linearity (100 to 1000 W/m²)	< ±1%	< ±1%
Directional response (up to 80° with 1000 W/m² beam)	< ±20 W/m²	< ±15 W/m²
Spectral selectivity (350 to 1500 nm)	< ±3%	< ±3%
Tilt response (0° to 180° at 1000 W/m²)	< ±1%	< ±1%
Temperature response	< ±2% (-10 to +40°C)	< ±2% (-10 to +40°C) < ±4% (-40 to +70°C)
Field of view	180°	180°
Accuracy of bubble level	±0.1°	±0.1°
Power consumption (at 12 VDC)	-	V-version: 55 mW A-version: 100 mW
Supply voltage	-	5 to 30 VDC
Software, Windows™	-	SmartExplorer Software, for configuration, test and data logging
Detector type	Thermopile	Thermopile
Operating temperature range	-40 °C to +80 °C	-40 °C to +70 °C
Storage temperature range	-40 °C to +80 °C	-40 °C to +80 °C
Humidity range	0 to 100%	0 to 100%
MTBF (Mean Time Between Failures)	> 10 years	> 10 years
Ingress Protection (IP) rating	IP67	IP67
Recommended applications	Good quality measurements for hydrology networks, greenhouse climate control	Good quality measurements for hydrology networks, greenhouse climate control

Dimensions	CMP6	SMP6
Diameter x height	150 x 92.5 mm	150 x 92.5 mm
Diffusor height	68 mm	68 mm
Cable length	10, 25, or 50 m	10, 25, or 50 m

** adjustable with SmartExplorer Software | Note: The performance specifications quoted are worst-case and/or maximum values*

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