KIPP & ZONEN
an OTT HydroMet brand

SMP12

Solar Monitoring for PV
Weather Services and Research Climatology

Fast Response Spectrally Flat Class A pyranometer

For accurate all-weather solar irradiance measurement

Reports solar irradiance, internal humidity and temperature, tilt angle
ISO 9060:2018 and IEC 61724-1:2021 Class A compliant
Dome heating to prevent dew and frost
Best-in-class surge protection conforms to EN 61000-6-2 Industrial standard
Maintenance-free operation – no moving parts that can wear out
Easy system integration – RS-485 and Modbus® RTU compatible

Fully Class A compliant

The SMP12 is fully ISO 9060 – 2018 and IEC 61724 – 2021 compliant with built-in dome heating to prevent dew and frost. Built on strong foundations of SMP10 to achieve reliable all-weather performance.

Very low Zero offset A

The new micro-thermopile, diffuser and filter combine to give a spectrally flat response with extremely low zero offsets; improving the accuracy of the measurements even further.

Remote tilt angle monitoring

Long-term correct POA tilt angle is crucial for reliable and accurate measurements. The SMP12 offers ±0.5° tilt angle measurement accuracy with long-term stability without recalibration.

Easy system integration

Industry standard RS-485 connectivity and the Modbus® RTU protocol make it easy to integrate the SMP12 with data loggers and SCADA systems.

Dome heating for untouchable precision

Integrated dome heating with no moving parts maintains a slightly higher temperature than the surrounding air, mitigating the effects of morning dew and frost on the accuracy of your measurements.

Best-in-class surge protection

To protect the instrument in installations with poor grounding, less reliable power sources, or more lightning the SMP12 offers surge protection that conforms to EN 61000-6-2 Industrial standard for Measurement, Control and Laboratory Use. This greatly reduces the risk of failure and the need for expensive on-site replacements.

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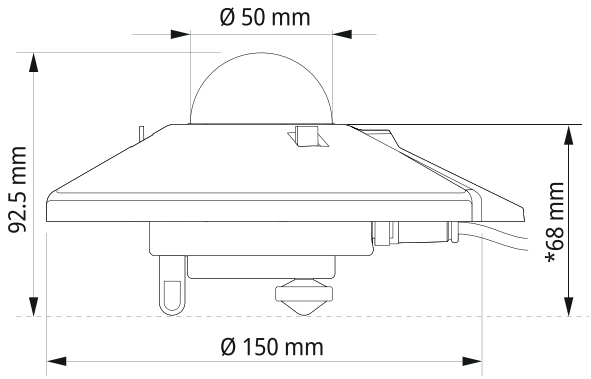
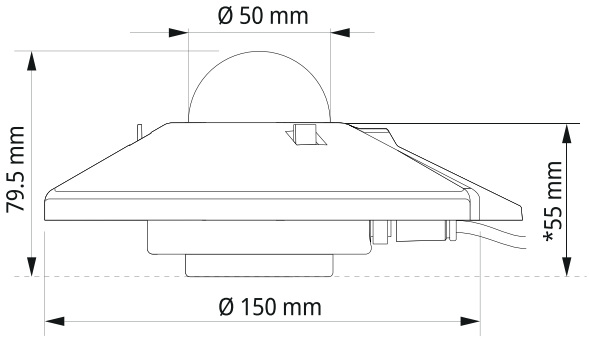
Technical Specifications

	SMP12
ISO 9060:2018	Fast Response Spectrally Flat Class A
IEC 61724-1:2021	Class A monitoring
Spectral range (50 % points)	285 - 2750 nm
Spectral error clear sky GHI	< ±0.2 %
Spectral selectivity 350 – 1500nm	< 3 %
Response time (63 %)	< 0.15 s
Response time (95 %)	< 0.5 s
Zero offset A	< ±1 W/m²
Zero offset B	< ±1.5 W/m²
Total zero off-set including the above	< ±3 W/m²
Non-stability (percentage change in responsivity per year)	< ±0.5 %
Non-linearity (100 to 1000 W/m²)	< ±0.2 %
Directional response (up to 80° with 1000 W/m² beam)	< ±10 W/m²
Temperature dependence of sensitivity (-10 °C to +40 °C)	< ±1 %
Temperature dependence of sensitivity (-40 °C to +70 °C)	< ±2 %
Tilt response due to change in tilt from 0° to 180° at 1000 W/m² irradiance	< ±0.1%
Operating temperature range	-40 °C to +70 °C
Storage temperature range	-40 °C to +80 °C
Tilt measurement	-180 ° to 180 °, ±0.5 °
Internal humidity measurement	0 - 100 % RH (±3 % accuracy and 1 % resolution)
Communication	Modbus® RTU over 2-wire RS-485
Power supply	8 - 30 VDC
Power consumption	Maximum 3.5 W
Inrush current	1.5 A for 10 µs
Surge protection class	EN 61000-6-2 Industrial standard for measurement, control and laboratory use
Ingress Protection (IP) Class	67
Weight	500 g

Dimensions



With feet



Without feet

* = Sensor height

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