



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 $\pm 0.5^\circ$ 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

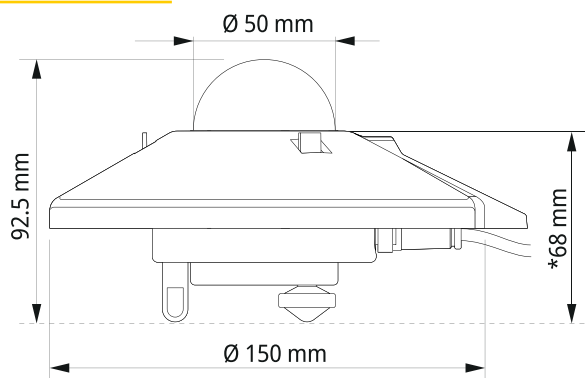
To protect the instrument in installations with poor grounding, less reliable power sources, or more lightning the SMP12 offers surge protection that conforms to EN 61000-6-2 Industrial standard for Measurement, Control and Laboratory Use. This greatly reduces the risk of failure and the need for expensive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

Technical Specifications

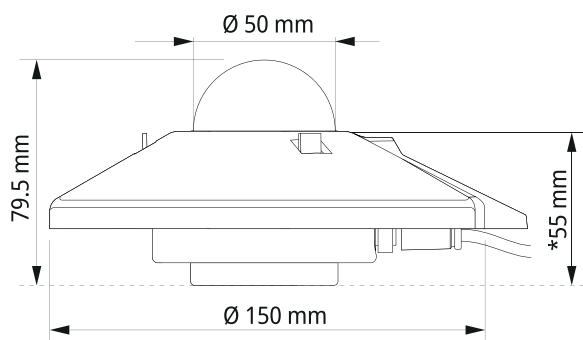
SMP12

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| ISO 9060:2018 | Fast Response Spectrally Flat Class A |
| IEC 61724-1:2021 | Class A monitoring |
| Spectral range (20% points) | 280 to 3000 nm |
| Spectral range (50% points) | 285 to 2750 nm |
| Spectral error clear sky GHI | < $\pm 0.1\%$ |
| Spectral selectivity 350 to 1500 nm | < $\pm 3\%$ |
| Response time (63%) | < 0.15 s |
| Response time (95%) | < 0.5 s |
| Zero offset A | < $\pm 1 \text{ W/m}^2$ |
| Zero offset B | < $\pm 1.5 \text{ W/m}^2$ |
| Total zero off-set including A&B | < $\pm 3 \text{ W/m}^2$ |
| Non-stability (percentage change in responsivity per year) | < $\pm 0.5\%$ |
| Non-linearity (100 to 1000 W/m^2) | < $\pm 0.2\%$ |
| Directional response (up to 80° with 1000 W/m^2 beam) | < $\pm 10 \text{ W/m}^2$ |
| Temperature response (-10 °C to +40 °C) | < $\pm 1\%$ |
| Temperature response (-40 °C to +70 °C) | < $\pm 2\%$ |
| Operating humidity range | 0 to 100% |
| Accuracy of bubble level | < $\pm 0.1^\circ$ |
| Tilt response due to change in tilt from 0° to 180° at 1000 W/m^2 irradiance | < $\pm 0.1\%$ |
| Operating temperature range | -40 °C to +70 °C |
| Storage temperature range | -40 °C to +80 °C |
| Digital tilt measurement | |
| Tilt range | 0° to 360° |
| Tilt accuracy | < $\pm 0.5^\circ$ |
| Pitch range | -180° to 180° |
| Roll range | -180° to 180° |
| Internal humidity measurement | |
| Range | 0 to 100% RH |
| Accuracy | < $\pm 3\%$ |
| Resolution | 1% |
| Communication | Modbus® RTU over 2-wire RS-485 |
| Power supply | 10 to 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) Rating | 67 |
| Weight | 500 g |

Dimensions



With feet



Without feet

* = Sensor height