

# SMP3



**SMP3** is our entry level smart pyranometer. It is ISO Second Class, with the same housing and detector design as the passive CMP3 model. SMP3 is equipped with a smart interface. There are two versions, one has an analogue output of 0 to 1 V, the other has 4 to 20 mA. Both have a 2-wire RS-485 interface with Modbus® (RTU) protocol. All the outputs are protected against short-circuits.

SMP series pyranometers have analog outputs that allow easy connection to virtually any data logger without the need for sensitive mV inputs. Modbus® interfaces directly to RTU's, PLC's, SCADA systems, industrial networks and controllers. An integrated temperature sensor and polynomial functions provide correction for the temperature sensitivity of the detector. The response time is improved and the output ranges are standardised.

Using Modbus® a range of instrument status and configuration information is available, with user-selectable options. SMP pyranometers have extremely low power consumption, so that internal heating does not affect the detector performance, and they operate from a wide range of supply voltages.

SMP3 is ideal for solar energy performance monitoring and for the new generation of all-digital automatic weather stations.

The included Smart Sensor Explorer Software allows up to 10 smart radiometers to be connected to a Windows™ computer; for configuration, testing, read-out of settings and parameters and basic data logging function.

Part number	Instrument
0374900-102	SMP3-V Smart Pyranometer • 0 to 1 V version • 10 m cable
0374900-100	SMP3-V Smart Pyranometer • 0 to 1 V version • no plug, no cable
0374900-202	SMP3-A Smart Pyranometer • 4 to 20 mA version • 10 m cable
0374900-200	SMP3-A Smart Pyranometer • 4 to 20 mA version • no plug, no cable

**SMP3 Second Class Albedometer**  
 An ISO Second Class Albedometer can be self-assembled by ordering:  
 2x SMP3 Pyranometer + 1x Mounting Rod

Specifications	
Classification to ISO 9060:1990	Second Class
Analogue output • V-version	0 to 1V
Analogue output range*	-200 to 2000 W/m <sup>2</sup>
Analogue output • A-version	4 to 20 mA
Analogue output range*	0 to 1600 W/m <sup>2</sup>
Serial output	RS-485 Modbus®
Serial output range	-400 to 2000 W/m <sup>2</sup>
Response time (63%)	< 1.5 s
Response time (95%)	< 12 s
Spectral range (20% points)	285 to 3000 nm
Spectral range (50% points)	300 to 2800 nm
Zero offsets (unventilated)	
(a) thermal radiation (at 200 W/m <sup>2</sup> )	< 15 W/m <sup>2</sup>
(b) temperature change (5 K/h)	< 5 W/m <sup>2</sup>
Non-stability (change/year)	< 1%
Non-linearity (100 to 1000 W/m <sup>2</sup> )	< 1.5%
Directional response (up to 80° with 1000 W/m <sup>2</sup> beam)	< 20 W/m <sup>2</sup>
Temperature response	< 2% (-20°C to +50°C) < 4% (-40°C to +70°C)
Spectral selectivity (350 to 1500 nm)	< 1%
Tilt response (0° to 90° at 1000 W/m <sup>2</sup> )	< 1%
Field of view	180°
Accuracy of bubble level	< 0.2°
Power consumption (at 12VDC)	V-version: 55 mW A-version: 100 mW
Software, Windows™	Smart Sensor Explorer Software, for configuration, test and data logging
Supply voltage	5 to 30 VDC
Detector type	Thermopile
Operating temperature range	-40°C to +80°C
Storage temperature range	-40°C to +80°C
Humidity range	0 to 100%
MTBF (Mean Time Between Failures)	> 10 years
Ingress Protection (IP) rating	67

Part number	Accessories
0338720	Mounting Rod Screw-in 300 mm long x 12 mm ø
0362700	CMF1 Mounting Fixture For 1 or 2 unventilated radiometers (1 upper / 1 lower) Diameter 88 mm. Mounting rod 350 mm long x 16 mm ø
0367718	Adjustable Tilt Radiometer Mounting Kit For a SMP3 pyranometer to measure tilted diffuse radiation Zenith angle can be adjusted from 0° to 90° with graduated scale
0369701	CMB1 Mounting Bracket In combination with mounting rod for easy attachment to a pole or a wall
0346900	CM121B Shadow Ring for unventilated radiometers Manually adjusted device provides diffuse sky irradiance measurement

Note: SMP3 cannot be used with the Glare Screen Kit

(\*) This product will need to be registered by the end-user within 6 months of purchase to activate the warranty extension.