SMP3

SMP3 is our entry level smart pyranometer. It is ISO Second Class, with the same housing and detector design as the passive CMP 3 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.

Specifications	
Classification to ISO 9060:1990	Second Class
Spectral range (50 % points)	300 to 2800 nm
Analogue output • V-version Analogue output range	0 to 1 V -200 to 2000 W/m²
Analogue output • A-version Analogue output range	4 to 20 mA 0 to 1600 W/m²
Serial output	RS-485 Modbus®
Serial output range	-400 to 2000 W/m²
Response time (63 %) Response time (95 %)	< 1.5 s < 12 s
Zero offsets (a) thermal radiation (at 200 W/m²) (b) temperature change (5 K/h)	< 15 W/m² < 5 W/m²
Non-stability (change/year)	< 1 %
Non-linearity (100 to 1000 W/m²)	< 1.5 %
Directional response (up to 80° with 1000 W/m² beam)	< 20 W/m²
Spectral selectivity (350 to 1500 nm)	< 3 %
Temperature response	< 3 % (-20 °C to +50 °C) < 5 % (-40 °C to +70 °C)
Tilt response (0° to 90° at 1000 W/m²)	< 1 %
Field of view	180°
Accuracy of bubble level	< 0.2°
Supply voltage	5 to 30 VDC
Power consumption (at 12 VDC)	-V version: 55 mW -A version: 100 mW
Detector type	Thermopile
Software, Windows™	Smart Sensor Explorer Software, for configuration, test and data logging
Operating temperature range	-40 °C to +80 °C
Storage temperature range	-40 °C to +80 °C
Humidity range	0 to 100 % non-condensing
Ingress Protection (IP) rating	67

Part number	Instrument
0374900-102	SMP3-V Smart Pyranometer • 0 to 1 V version • 10 m cable
0374900-104	SMP3-V Smart Pyranometer • 0 to 1 V version • 25 m cable
0374900-105	SMP3-V Smart Pyranometer • 0 to 1 V version • 50 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
0374900-204	SMP3-A Smart Pyranometer • 4 to 20 mA version • 25 m cable
0374900-205	SMP3-A Smart Pyranometer • 4 to 20 mA version • 50 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

Part number	Accessories
0338720	Mounting Rod Screw-in 300 mm long x 12 mm Ø
0362700	CMF 1 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 Pyranometer Mounting Kit For a SMP3 pyranometer to measure tilted diffuse radiation Zenith angle can be adjusted from 0° to 90° with graduated scale
0369701	CMB 1 Mounting Bracket In combination with mounting rod for easy attachment to a pole or a wall
0346900	CM 121B Shadow Ring for unventilated radiometers Manually adjusted device provides diffuse sky irradiance measurement
Note: SMP3 cannot be used with the Glare Screen Kit	

Pyranometers

Pyrgeometers

Pyrheliometer

Sun Trackers

Albedometers

UV Radiometers

Net Radiometers

Horticultural Sensors

Sunshine Duration Sensors

Laboratory Thermopile

Data Loggers

Solar Accessories