Pyranometers

Pyrgeometers

Pyrheliometer

Sun Trackers

Albedometers

UV Radiometers

Net Radiometers

Horticultural Sensors

Sunshine Duration Sensors

Laboratory Thermopile

Data Loggers

Solar Accessories

SMP10

SMP10 is a ISO Secondary Standard pyranometer that combines the sensor technology from the CMP 11, the Smart interface from the SMP11 and the low maintenance from the CMP10.

The SMP10 has internal desiccant that will last for at least 10 years if the housing is not opened. This minimizes maintenance significantly.

The interval for dome cleaning can be extended, and the quality of measurements maximized, by fitting SMP10 with the CVF4 ventilation unit.

The SMP10 has Modbus® interface, amplified analogue output, improved response time and temperature corrected measurement data. The wide and low power supply range from 5 to 30 VDC makes integration in meteorological and solar energy stations easy. The SMP10 is protected against over voltage, reversed polarity and short circuiting.

Thanks to the identical sensitivity and connections of every SMP10, exchanging instruments for recalibration is easy.

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 functions.

Specifications	
Classification to ISO 9060:1990	Secondary Standard
Spectral range (50 % points)	285 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 4000 W/m²
Response time (63 %) Response time (95 %)	< 0.7 s < 2 s
Zero offsets (a) thermal radiation (at 200 W/m²) (b) temperature change (5 K/h)	 < 7 W/m² < 2 W/m²
Non-stability (change/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
Spectral selectivity (350 to 1500 nm)	< 3 %
Temperature response	< 1 % (-20 °C to +50 °C) < 2 % (-40 °C to +70 °C)
Tilt response (0° to 90° at 1000 W/m²)	< 0.2 %
Field of view	180°
Accuracy of bubble level	< 0.1°
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
0374905-102	SMP10-V Smart Pyranometer • 0 to 1 V version • 10 m cable
0374905-104	SMP10-V Smart Pyranometer • 0 to 1 V version • 25 m cable
0374905-105	SMP10-V Smart Pyranometer • 0 to 1 V version • 50 m cable
0374905-100	SMP10-V Smart Pyranometer • 0 to 1 V version • no plug, no cable
0374905-202	SMP10-A Smart Pyranometer • 4 to 20 mA version • 10 m cable
0374905-204	SMP10-A Smart Pyranometer • 4 to 20 mA version • 25 m cable
0374905-205	SMP10-A Smart Pyranometer • 4 to 20 mA version • 50 m cable
0374905-200	SMP10-A Smart Pyranometer • 4 to 20 mA version • no plug, no cable

SMP10 Secondary Standard Smart Albedometer
A ventilated ISO Secondary Standard Smart Albedometer can be self-assembled by ordering: 2x SMP10 Smart Pyranometer + 1x CMF4 Mounting Fixture + 2x CVF4 Ventilation Unit
An unventilated ISO Secondary Standard Smart Albedometer can be self-assembled by ordering: 2x SMP10 Smart Pyranometer + 1x CMF 1 Mounting Fixture + 1x Glare Screen Kit

Part number	Accessories
See accessories	**CVF4 Ventilation Unit** Recommended to reduce offsets and frequency of dome cleaning
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
0362703	**CMF4 Mounting Fixture** For 1 or 2 ventilated or unventilated radiometers (1 upper / 1 lower) Length 375 mm, width 280 mm. Mounting rod 350 mm long x 20 mm Ø
0367718	**Adjustable Tilt Pyranometer Mounting Kit** For a SMP10 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: CM 121B can not be used with CVF4 Ventilation Unit
0346901	**CM 121C Shadow Ring for ventilated radiometers** Manually adjusted device provides diffuse sky irradiance measurement Mounts the radiometer at the correct height when used with a CVF4
0305722	**Glare Screen Kit** Sun protection screen for downward facing radiometers, with fixings