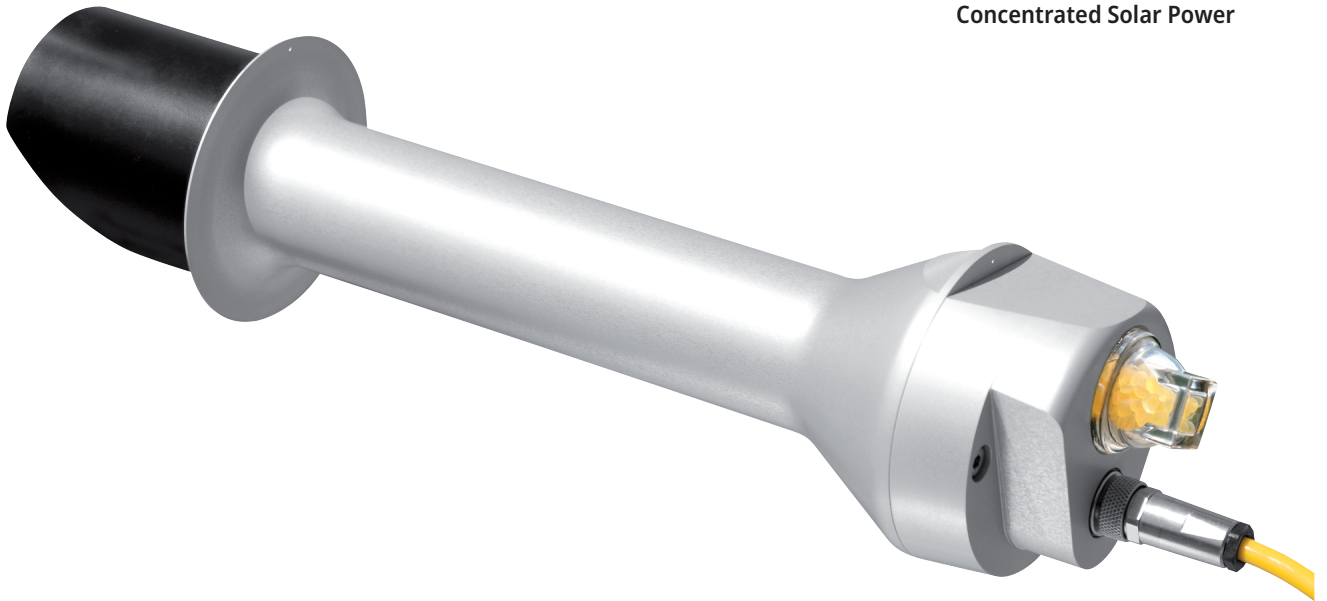


Applications

Weather Services and Research
Meteorology
Concentrated Solar Power



Pyrheliometer

For direct normal incidence solar radiation measurement

Most accurate DNI measurement for CSP

Used in the global BSRN network

ISO 9060 Class A

Analogue and digital outputs

5 year warranty

Field of view of 5°

A pyrheliosensor is an instrument designed specifically to measure DNI (Direct Normal Incidence) with a field of view of 5°. This is achieved by the shape of the collimation tube, with precision apertures, and the detector design.

Analogue or digital outputs

CHP 1 Pyrheliosensor is a pyrheliosensor that offers reliability and durability without requiring any power. The analogue outputs allow easy connection to virtually

any data logger. SHP1 has a Modbus® interface plus amplified analogue output, improved response time and temperature corrected measurement data

Pyrheliosensors mounted on sun trackers

A pyrheliosensor needs to be pointed accurately at the sun at all times. Kipp & Zonen sun trackers provide a stable mounting to keep the pyrheliosensor pointing at the sun to accurately measure DNI.

Technical Specifications

| | CHP1 | SHP1 |
|---|--|--|
| Classification to ISO 9060:1990 | Class A | Class A |
| Sensitivity | 7 to 14 $\mu\text{V}/\text{W}/\text{m}^2$ | - |
| Expected output range (0 to 1400 W/m ²) | 10 to 20 mV | - |
| Maximum operational irradiance | 4000 W/m ² | - |
| Analogue output • V-version | - | 0 to 1 V |
| Analogue output range* | - | -200 to 2000W/m ² |
| Analogue output • A-version | - | 4 to 20 mA |
| Analogue output range* | - | 0 to 1600 W/m ² |
| Serial output | - | RS-485 Modbus® |
| Serial output range | - | -400 to 4000 W/m ² |
| Response time (63 %) | < 1.7 s | < 0.7 s |
| Response time (95 %) | < 5 s | < 2 s |
| Spectral range (50 % points) | 200 to 4000 nm | 200 to 4000 nm |
| Zero offsets (unventilated) (b) temperature change (5 K/h) | < 1 W/m ² | < 1 W/m ² |
| Non-stability (change/year) | < 0.5 % | < 0.5 % |
| Non-linearity (0 to 1000 W/m ²) | < 0.2 % | < 0.2 % |
| Required sun tracker accuracy | < 0.5 ° from ideal | < 0.5 ° from ideal |
| Weight (excluding cable) | 0.9 kg | 0.9 kg |
| Slope angle | 1 ° \pm 0.2 ° | 1 ° \pm 0.2 ° |
| Temperature response | < 0.5 % (-20 °C to +50 °C) | < 0.5 % (-30 °C to +60 °C) |
| Field of view | 5 ° \pm 0.2 ° | 5 ° \pm 0.2 ° |
| Power consumption (at 12 VDC) | - | 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 |
| Operating and storage temperature range | -40 °C to +80 °C | -40 °C to +80 °C |
| Humidity range | 0 to 100 % | 0 to 100 % |
| Ingress Protection (IP) rating | 67 | 67 |
| Recommended applications | High performance direct radiation monitoring for meteorological stations or concentrated solar energy applications | High performance direct radiation monitoring for meteorological stations or concentrated solar energy applications |

Note: The performance specifications quoted are worst-case and/or maximum values.

* adjustable with Smart Explorer Software

Dimensions

