



CHP1/SHP1 PYRHELIOMETER, CONCENTRATED SOLAR POWER, FOR DIRECT NORMAL INCIDENCE SOLAR RADIATION MEASUREMENT

Field of view of 5°:

A pyr heliometer 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, & the detector design.

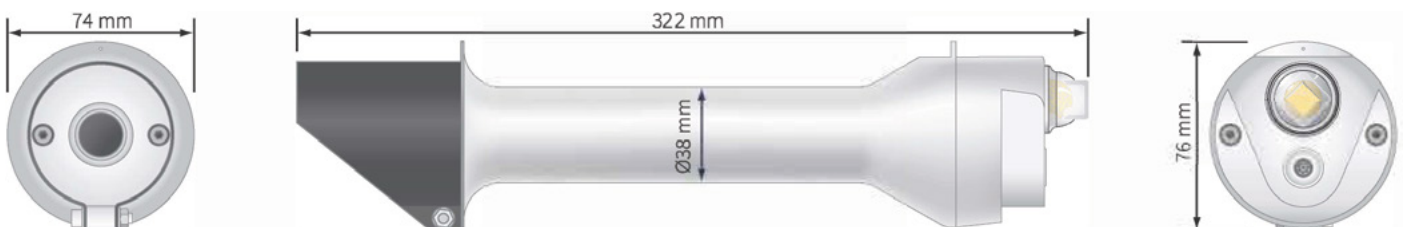
Analog or digital outputs:

CHP1 Pyr heliometer is a pyr heliometer that offers reliability & durability without requiring

any power. The analog outputs allow easy connection to virtually any data logger. SHP1 has a Modbus® interface plus amplified analog output, improved response time and temperature corrected measurement data.

Pyr heliometers mounted on sun trackers:

A pyr heliometer needs to be pointed accurately at the sun at all times. MUNRO sun trackers provide a stable mounting to keep the pyr heliometer pointing at the sun to accurately measure DNI.



CHP1/SHP1

Technical Specifications

MODEL	CHP1	SHP1
Classification to ISO 9060:2018	Spectrally Flat Class A	Spectrally Flat 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	-
Analog output• V-version	-	0 to 1 V
Analog output range*	-	-200 to 2000 W/m^2
Analog output• A-version	-	4to 20 mA
Analog output range*	-	0 to 1600 W/m^2
Serial output	-	RS-485 Mod bus® RTU
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 %
Spectral selectivity (350 to 1500 nm)	< 1 %	< 1 %
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) < 1 % (-40°C to +70°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
Supply voltage	-	5 to 30 VDC
Software. Windows	-	SmartExplorer Software, for configuration, test and data logging
Operating & storage temperature range	-40°C to +80°C	-40°C to +80°C
Humidity range	0 to 100 %	0 to 100 %
MTBF (Mean Time Between Failures)**	> 10 years	> 10 years
Ingress Protection (IP) rating	67	67
Recommended applications	High performance direct radiation monitoring for meteorological stations or concentrated solar energy applications	