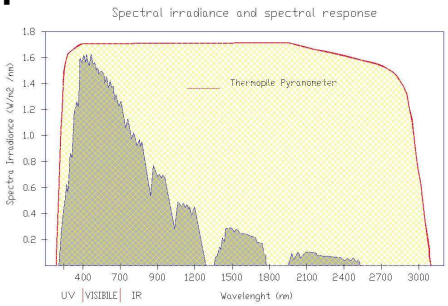
MS-80SH Class A Pyranometer

MS-80SH by EKO Instruments is a spectrally flat, fast response thermopile pyranometer with integrated solid-state dome heating. Manufacturing and Calibrations are done following the **ISO 9060:2018 Class A – ISO/IEC 17025 – ISO 9847 standards.**

Spectrum of interest



Measurement features

MS-80SH combines a state-of-the-art thermopile detector and quartz diffusor with smart electronics providing two digital outputs: Modbus RTU over RS485 and SDI-12. Internal diagnostic sensors monitor temperature, humidity, tilt and roll angle, and an integrated surge filter guarantees noise immunity and reliable operation. Response time is below 0.5 s, with record low zero offset behaviour.

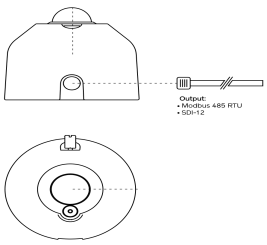
Most common uses

MS-80SH is used in meteorological applications, scientific research and for controlling the performance of PV systems, in compliance with IEC 61724-1:2021 Class A monitoring.

Physical characteristics

Compact aluminium casing with single dome and quartz diffusor; IP 67 ingress protection. The integrated solid-state dome heating (< 1.4 W) prevents dew and frost build-up.

Dimensions





Levelling

- With bubble level and adjustable feet
- With digital tilt / roll sensor through Modbus / SDI-12 output and Hibi configuration software

Name		ISO 9060:2018 Class A	MS-80SH
Type of product	Spectrally flat, fast response thermopile pyranometer with dome heating		
Reference standard	ISO 9060:2018 Class A / IEC 61724-1:2021 Class A monitoring		
Output	Modbus RTU on RS485 / SDI-12		
Calibration	ISO/IEC 17025 accredited, complies to ISO 9847; uncertainty < 0.7% (k = 1.96)		
Calibration traceability	WRR		
Spectral range	285 to 3000 nm		
Input range	0 to 4000 W/m² (digital output –200 to 2000 W/m²)		
Response time	95%	< 10 s	< 0.5 s
Zero offset A	thermal radiation (200 W/m²)	± 7 W/m²	± 1 W/m²
Zero offset B	temperature change (5 K/h)	± 2 W/m²	± 1 W/m²
Zero offset C	total zero offset	± 10 W/m²	± 2 W/m²
Non-stability	change / year	± 0.8 %	< 0.5 % / 5 years
Non linearity	100 to 1000 W/m²	± 0.5 %	± 0.2 %
Directional response	at 1000 W/m², 0 to 80°	± 10 W/m²	± 10 W/m²
Spectral error		± 0.5 %	± 0.2 %
Temperature response	–20 to +50 °C	± 1 %	± 0.5 %
Tilt response	0 ÷ 90°, 1000 W/m²	± 0.5 %	± 0.2 %
Additional signal processing errors		± 2 W/m²	< 1 W/m²
Sensor diagnostics	Relative humidity ± 2% / Temp. ± 0.1% / Tilt angle ± 1°		
Dome heating	Solid-state; ON/OFF toggle via Hibi software or Modbus / SDI-12 commands		
EMC / Surge protection	IEC 61326-1 (industrial) / IEC 61000-4-5 (Level 2, criterion B)		
Supply	8 ÷ 30 Vdc		
Power consumption	< 1.5 W (dome heating < 1.4 W)		
Working range	–40 ÷ +80 °C		
Field of view	180°		
Warranty / Recalibration interval	5 years / 5 years		
Encapsulation	Quartz diffusor, single dome		
Case	Aluminium; IP 67		
Cable	10 m with waterproof connector (optional 20, 30, 50 m)		
Dimensions / Weight	Ø 96 x h 101 mm / 0.41 kg		