

MS-80SH Pyranometer

Class A, Spectrally Flat & Fast Response



Overview

The MS-80SH, with integrated solid-state dome heating for efficient dew and frost resistance, builds on the already industry-leading features and characteristics of the ISO 9060:2018 fast-response, spectrally flat Class A MS-80S. This combination makes the MS-80SH a standout choice for IEC 61724-1:2021 Class A monitoring. Equipped with a state-of-the-art thermopile detector and quartz diffusor

technology, the MS-80SH also offers S-Series internal diagnostics, superior low zero-offset behavior, integrated surge protection, and digital Modbus RS-485 RTU and SDI-12 interfaces. Supported by a 5-year warranty and an industry-first 5-year calibration interval, it is ideally suited for applications that demand high value, accuracy, speed, and long-term reliability.

Features



<1.4W Total Power Consumption with High-Efficiency Dome Heating for Dew & Frost Resistance



<0.5s Super-Fast Response for Always Accurate Measurements



Level A EMI/EMC Electronics Surge Filter & Protection



5 Year Warranty & Recommended Recalibration Interval



<1W/m² Record Lowest Zero Offset A and <0.5% Lowest Non-Stability Over 5-Years



Internal Diagnostics for Temperature, Tilt, Roll, and Relative Humidity

Development

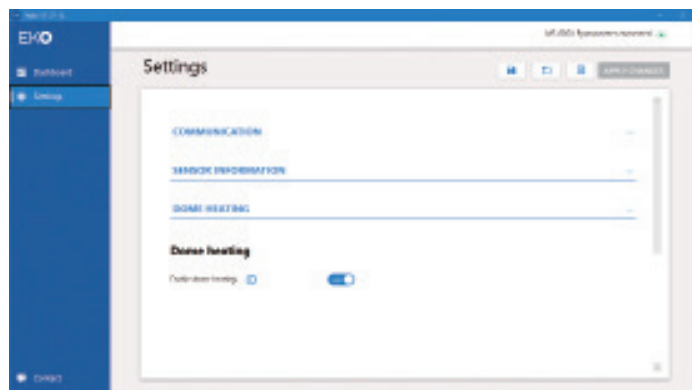
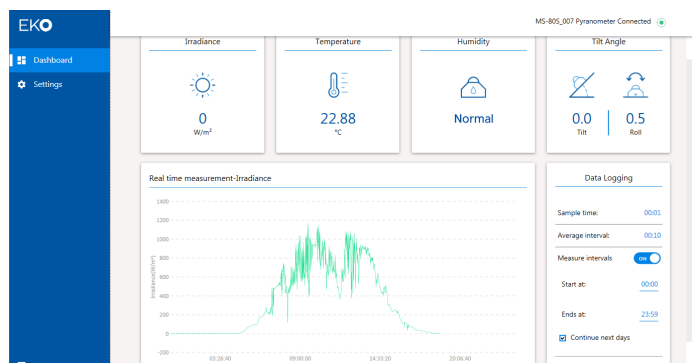
The MS-80 set new industry standards on launch in 2016 and remains a class-leader for ISO 9060:2018 Class A solar sensors today, one of the few Class A pyranometers before the MS-80S and MS-80SH, in the top tier 'fast-response' and 'spectrally flat' sub-categories, with unprecedented low-zero-offset behaviour, and a 5-year recalibration interval.

The MS-80S built on that achievement with the addition of Modbus 485 RTU and SDI-12 digital outputs for improved compatibility with data loggers and SCADA systems; also introducing new internal diagnostic systems, now standard with all S-Series sensors, offering visibility over internal temperature, humidity, tilt, and roll angle; helping to ensure optimum performance without the need for regular physical checks.

These features, along with EKO's unique 5-year recalibration interval and new high-efficiency, low power consumption, integrated solid-state dome heating make the MS-80SH one of the best value Class A sensors available; ideal for complex networks, hard to reach locations, and monitoring networks with restricted access.

Software

With 'Hibi', a new, custom-built programme developed by EKO, users can connect their pyranometer with a standard laptop for real-time access to the internal diagnostics, custom settings, and irradiance data, helping to make the MS-80SH the most accessible Class C pyranometer available. Easy to use, deploy, and maintain.



The simple ON/OFF toggle gives users complete control over the dome heating function.

Related Products



MS-Albedo Kit

The MS-Albedo kit can be used with any MS or S-Series EKO sensor, allowing two pyranometers to be deployed for albedo or reflected irradiance measurements for Bi-facial PV applications. The robust aluminium and stainless-steel parts provide a reliable solution for easy, on-site assembly.



Solar Monitoring Station

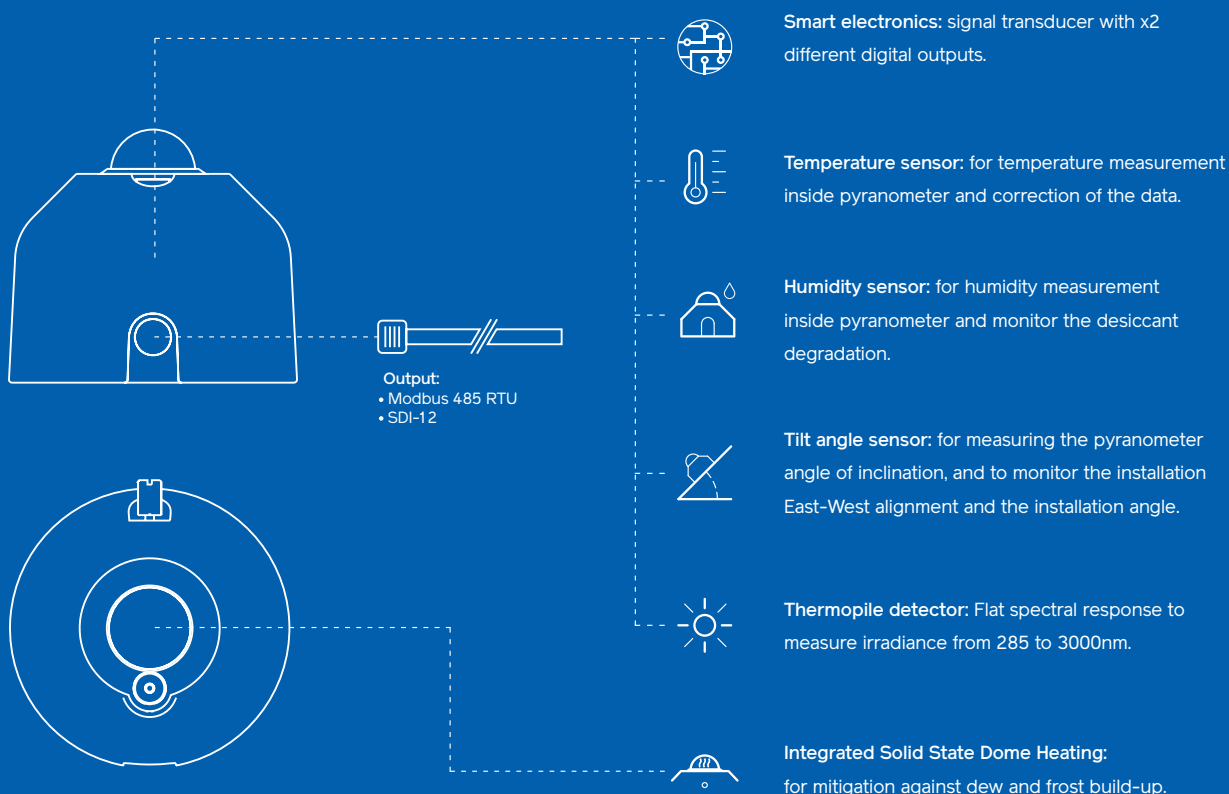
Combine the class-leading MS-80SH, STR-Series Sun Tracker & MS-57 Pyrheliometer with integrated low-power heating for ultra-accurate GHI, DHI & DNI measurements for PV site evaluation, performance monitoring, and cell optimisation.



MV-01 Ventilator & Heater for Extreme Weather

Compatible with the MS-80SH, the MV-01 ventilator and heater is designed for more severe weather conditions and can help ensure IEC 61724-1 compliance even in heavy snow. The MV-01 is proven to work with EKO sensors in challenging environments worldwide, ensuring reliable operation and data availability.

Feature Diagram



ISO Specifications

ISO 9060:2018 Parameters	CLASS A	MS-80SH
Response time 95%	< 10s	< 0.5s
Zero offset A - Thermal Radiation (200W/m ²)	± 7W/m ²	± 1W/m ²
Zero offset B - Temperature change (5K/hr)	± 2W/m ²	± 1W/m ²
Zero offset C - Total zero off-set	± 10W/m ²	± 2W/m ²
Non-stability (change/year)	± 0.8%	< 0.5% / 5 years
Non-linearity (100 to 1000W/m ²)	± 0.5%	± 0.2%
Directional Response (at 1000W/m ² 0 to 80°)	± 10W/m ²	± 10W/m ²
Spectral Error	± 0.5%	± 0.2%
Temperature Response (-20°C to 50°C)	± 1%	± 0.5%
Temperature response (-10° to 40°)	±0.5%	±0.5%
Tilt Response (0-90° 1000W/m ²)	± 0.5%	± 0.2%
Additional Signal Processing error	± 2W/m ²	< 1 W/m ²

Applications



Designed for scientific research, industrial applications, and photovoltaic system performance monitoring, the patented design of the MS-80SH assures best in class accuracy, speed, and reliability whatever your application.

Built to last, with a 5-year warranty, 5-year recalibration interval, low-zero offset, and incredible stability, the MS-80SH is ideal for utility-scale applications and other large-scale projects.



Learn More

Visit our website, contact our team, to find out more about the **MS-80SH** Pyranometer, related products, and the full range of Class and industry-leading products from EKO.

Technical Features

Wavelength Range (nm)	285 to 3000
Maximum Operational Irradiance (W/m ²)	4000
Digital Output Irradiance (W/m ²)	-200 to 2000
Signal Output	Modbus 485 RTU / SDI-12
Sensor Diagnostic	Relative Humidity ± 2% Temp. ± 0.1% / Tilt Angle ± 1°
Dome Heating Control	Toggle on/off via Hibi software or Commands via Modbus/SDI-12
Operating temperature	-40 to 80°C
Supply voltage	8 to 30 VDC
EMC / Surge Protection Standard	IEC61326-1 (Industrial Electromagnetic Environment test level) / IEC61000-4-5 (Level 2, Test Criterion B)
Power Consumption	< 1.5 W
Ingress Protection	IP 67
Calibration traceability / uncertainty	ISO 17025 / WRR / < 0.7% (k = 1.96)
Standard Cable Length	10m (Optional lengths 20m, 30m, 50m)

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