MS-80S Pyranometer

Technical Specifications

ISO 9060:2018 Class A (Secondary standard)

Unique "fast response & spectrally flat"

Quartz diffuser technology

ISO 17025 certified calibration

5 year warranty and recommended recalibration

The MS-80S is an ISO 9060:2018 Class A pyranometer, in the top tier 'fast-response' and 'spectrally flat' sub-categories, with unprecedented low zero-offset behaviour, fast sensor response, and a 5-year recalibration interval.

Building on the innovative patented design of the original MS-80, released in 2016, the MS-80S includes a state-of-the-art thermopile sensor, a new internal diagnostics system, and 4-channel smart interface.

The internal diagnostics system offers users visibility over internal temperature, humidity, tilt and roll angle; helping to ensure optimum performance without the need for regular physical checks; while the 4-channel smart signal transducer allows the MS-80S to easily connect to any analogue or digital measuring system, giving users a choice with Modbus 485 RTU, and SDI-12 for digital output; alongside 4-20mA, and 0-10mA (0-1V) analogue options.

The digital output options also enable users to connect with a standard laptop and 'Hibi'; a new, custom-built programme developed by EKO, giving real-time access to the internal diagnostics, custom settings, and data on irradiance, humidity, internal temperature and tilt angle from the sensor.

With the MV-01 ventilator and heater, an optional add-on, to keep the sensor IEC 61724-1 compliant, free of dew, ice and snow; the MS-80S guarantees optimal performance under any environmental conditions; thanks to its ultra-low temperature dependency and exceptional non-linearity characteristics.

MS-80S pyranometers are manufactured with strict quality controls, including a final performance evaluation before shipping. The directional response and temperature dependency of each unit are measured and validated through a measurement

report that comes with the sensor. EKO calibration is compliant to international standards defined by ISO/IEC17025/9847, and each unit comes with a setting report detailing all of the parameters which were set and tested during the manufacturing process including; current range settings, digital output communication settings, tilt position calibration, relative humidity and sensor temperature.

With a 5-year warranty and 5-year recommended recalibration interval, the MS-80S is best in class for accuracy, speed, reliability, and an ideal option for scientific research, industrial applications, and photovoltaic system performance monitoring.

	MS-80S
ISO 9060:2018	Class A
ISO 9060:2018	(Secondary Standard)
Sub-category "Spectrally flat"	Compliant
Sub-category "Fast response"	Compliant
Output	(MODBUS 485 RTU, SDI-12, 4-20mA, configurable 0-10mA / 0-1V with external optional 100Ω precision shunt resistor)
Response time 95%	< 0.5 Sec.
Zero off-set a) 200W/m²	+/- 1 W/m²
Zero off-set b) 5K/hr	+/- 1 W/m²
Complete zero off-set c)	+/- 2 W/m²
Non-stability change/1 year	-
Non-stability change/5 years	+/- 0.5 %
Non-linearity at 1000W/m²	+/- 0.2 %
Directional response at 1000W/m²	+/- 10 W/m²
Spectral error	+/- 0.2 %
Temperature response -10°C to 40°C	+/- 0.5 %
Temperature response -20°C to 50°C	+/- 0.5 %
Tilt response at 1000W/m²	+/- 0.2 %
Operating temperature range	-40 - 80 °C
Irradiance range	0 - 4000 W/m²
Wavelength range	285 - 3000 nm (50% points)
Power supply	5 - 30 VDC
Power consumption	< 0.2 W
Ingress protection IP	67

Cable length	10 m
Additional signal processing errors	< 1 W/m²

Options	MS-80S
Cable length	20 / 30 / 50 m
Ventilation unit	MV-01
Albedo mounting kit	MS-albedo Kit

Specifications are subject to change without further notice.