



## MS-57 Pyrheliometer

### Technical Specifications

ISO 9060:2018 Class A (First Class)

"Fast response" and "Spectrally flat"

Ultra fast <0.2s response detector

Lowest measurement uncertainty

ISO17025 / 9059 Outdoor calibration

The new MS-57 pyrheliometer is a unique pyrheliometer compliant to the "Fast response" and "Spectrally flat" sub-category under ISO9060:2018 Class A. The pyrheliometer is a breakthrough in unprecedented low thermal offset behavior and fast thermopile response (< 0.2s / 95%). MS-57 First Class is a direct normal incidence (DNI) solar irradiance sensor. Also known as a pyrheliometer, it is used as a reference sensor for routine operation on a Solar Tracker. The all-weather MS-57 is responsive to solar irradiance in the spectral range from 200 - 4000nm and works under the most extreme conditions in a temperature range from -40°C - 80°C. The integrated low power window heater can prevent dew deposition or frost on the outside window.

Each MS-57 is calibrated outdoors and tested at EKO upon manufacture against EKO's reference sensors, which are fully traceable to the WRR (World Radiometric Reference). The recommended period of recalibration can be extended to 5 years, which is

typically 2 years for other sensor models in the market. The long-term stability of the sensor responsivity is less than 0.5% in a period of 5 years which makes it unique.

The MS-57 pyrheliometers are manufactured in a consistent way followed by strict quality inspection and performance evaluation. For each sensor the temperature dependency are measured and validated through a measurement report that comes with the sensor. EKO provides a unique outdoors calibration compliant to the international standards defined by ISO/IEC17025/9059. As an option we offer a calibration indoor under controlled conditions (Ambient temperature, Irradiance @ 1000W/m<sup>2</sup>).

	<b>MS-57</b>
<b>ISO 9060:2018</b>	Class A
<b>ISO 9060:1990</b>	First Class
<b>Sub-category "Spectrally flat"</b>	Compliant
<b>Sub-category "Fast response"</b>	Compliant
<b>Output</b>	Analog (mV)
<b>Response time 95%</b>	< 0.2 Sec.
<b>Zero off-set a) 200W/m<sup>2</sup></b>	0 W/m <sup>2</sup>
<b>Zero off-set b) 5K/hr</b>	< 1 W/m <sup>2</sup>
<b>Complete zero off-set c)</b>	< 1 W/m <sup>2</sup>
<b>Non-stability change/1 year</b>	-
<b>Non-stability change/5 years</b>	< 0.5 %
<b>Non-linearity at 1000W/m<sup>2</sup></b>	< 0.2 %
<b>Spectral error</b>	+/- 0.2 %
<b>Temperature response -20°C to 50°C</b>	< 0.5 %
<b>Tilt response at 1000W/m<sup>2</sup></b>	< 0.2 %
<b>Sensitivity</b>	Approx. 7 $\mu$ V/W/m <sup>2</sup>
<b>Impedance</b>	< 15000 $\Omega$
<b>Operating temperature range</b>	-40 - 80 °C
<b>Irradiance range</b>	0 - 4000 W/m <sup>2</sup>
<b>Wavelength range</b>	200 - 4000 nm
<b>Ingress protection IP</b>	67
<b>Cable length</b>	10 m

<b>Options</b>	<b>MS-57</b>
<b>Cable length</b>	20 / 30 m

Specifications are subject to change without further notice.