EKO INSTRUMENTS CO., LTD.

ISO first class

MS-56

NEW

DNI Sensor

Attained the world's fastest response time.

Perfectly suits for the evaluation of CPV(Concentrated Photovoltaic) and CSP(Concentrated Solar Power).

- Fast Response time
- Accurate temperature compensation
- Thermally balanced detector
- Double body temperature sensor
- Low-power 12V window heater
- Compact, light weight, and stylish design

The ISO First Class pyrheliometer "MS-56" is a high quality DNI (Direct Normal Incidence) solar radiation sensor which is well suitable to be used as a reference instrument for precise and accurate direct solar irradiance measurements and routine operation on a solar tracker.

EKO adopted most recent technological innovations such as the ultra fast new thermopile detector with 95% response time <1s and excellent thermal stability.

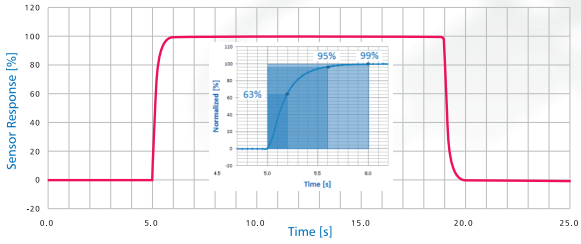
Even though the MS-56 is a relatively light-weight construction zero-offset effects were eliminated and the stability of the sensor made excellent, also under various environmental and solar irradiance conditions.

The MS-56 sensor includes a passive temperature compensation module to minimize the detector temperature dependency to less than ±0,5% over a wide temperature range (-20°C to 50°C).

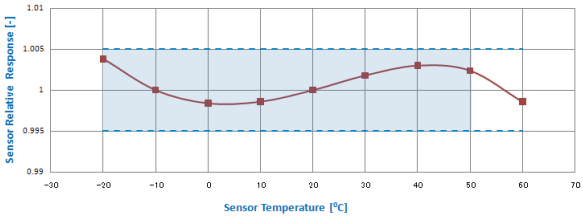
The detector temperature can be accurately monitored with the built-in PT-100 RTD or YSI 44031 10kΩ NTC.

The possibility of dew-deposition or condensation on the outside of the entrance optics is significantly reduced with the built-in low-power heater at the inside of the sensor.

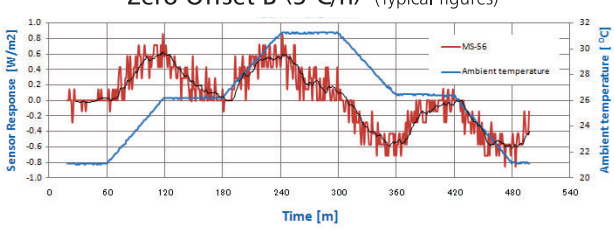
Response Time (Typical figures)



Temperature dependency (Typical figures)



Zero Offset B (5°C/h) (Typical figures)



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Pyrheliometer

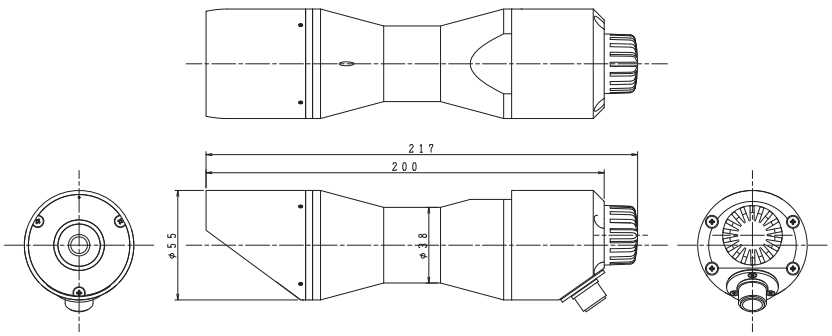
Specifications

	MS-56	ISO 9060First Class	WMO Good quality
Response time (95%)	< 1 s	< 20 s	< 30 s
Non-Linearity (100-1000W/m^2)	< +/– 0.5 %	< +/– 0.5 %	< +/– 0.5 %
Zero offset (response to 5 K/h change in ambient temperature)	< +/– 1 W/m2	< +/– 3 W/m^2	< 4 W/m^2
Spectral selectivity (350 to 1500 nm ISO /3000 nm WMO)	< +/– 1 %	< +/– 1%	1 %
Tilt response	< +/– 0.2 %	< +/– 0.5 %	0.5 %
Temperature dependency (–20 to +50℃/@20℃)	< +/– 0.5 %	< +/– 2 % (for 50℃ band)	< 2 % (for 50℃ band)
Non stability (Change per year)	< +/– 0.5 %	< +/– 1 %	< +/– 0.5 %
Expected daily uncertainty	< +/– 1 %	–	< +/– 1 %
Irradiance range	0 - 2000 W/m^2	–	–
Spectral range (FWHM)	200 - 4000 nm	–	–
Sensitivity	Approx. 10 μV/Wm^2	–	–
Detector impedance @25℃	Approx. 5 kΩ	–	–
Operating temperature	-40 to +80 ℃	–	–
Calibration traceability (ISO9847)	WRR	–	–
Outer dimensions (Length x Diameter)	217 x 55 mm	–	–
Cable length (standard)	10m	–	–
Weight	0.6 kg 1.6kg (including 10m cable)	–	–
Heater power for optional window heater to prevent dew deposition	DC12V / 0.5W	–	–

Mounted on the sun tracker, STR-21G.

Outline drawing

(mm)



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