



Pyranometer

New First Class Pyranometer MS-410

The EKO Pyranometer MS-410 measures the broad-band global solar irradiance. The MS-410 is perfectly suited for sampling 10-minute averages of the solar radiative flux in horizontal or tilted configurations. The MS-410 is fully compliant with the ISO9060:1990 "First Class" norm. The flat sensor surface, coated with a special, highly absorbing black paint, is protected by two transparent hemispheric glass domes.

The sensing elements are coated with a highly stable carbon based non organic coating, which delivers excellent spectral absorption and long term stability characteristics.

The MS-410 has a 180° field-of-view for measuring the hemispheric solar radiation with a cosine-weighting function. The two transparent glass domes protect the sensor efficiently from negative thermal effects. The MS-410 has a practical light-weight anodized aluminum housing and a highly efficient sensor coating. These features, together with the two, high quality machined hemispheric glass domes are the key to the excellent performance characteristics of the MS-410. EKO has over 50 years of experience in developing and manufacturing solar radiometers. This know-how is integrated into the MS-410 to present a fully-sealed and all-weather instrument built to measure the global solar irradiance in unattended outdoor installations throughout the year.

Specifications

MS-410	
Response time 95%(sec)	≤18
Protection	IP67
Zero offset thermal radiation (200w/m ²)	<6 W/m ²
Zero offset temperature change(50w/m ²)	<2 W/m ²
Non-linearity (at 100 a 1000w/m ²)	<1 %
Thermocouple	64 (series connected)
Spectral selectivity (0.35-1.5um)	<3%
Temp. response	4%
Tilt response (at 1000w/m ²)	<1%
Sensitivity (uv/w/m ²)	5 to 20 uV/W/m ²
Operating temperature	-40°C to +80°C
Detector type	Thermopile
Humidity range	0 to 100 non condensing
Impedance	20 to 200Ω
Spectral range (50% points)	285 to 2800nm
Expected output range (0 to 1500 W/m ²)	0 to 30mV
Non-stability	<1%
Maximum operational irradiance	2000 W/m ²
Sensitivity temperature dependent	4% (-10°C to +40°C)
Directional response	<20W/m ²
(Up to 80° with 1000W/m ² beam)	
Material	anodized aluminum main body
Supplies and accessories	silica gel, support/mounting fixture

