



MS-21 Pyrgeometer

Technical Specifications

4.5 μ m - 42 μ m flat spectral response

Lowest window heating offset

PT 100 / 4W temperature sensor

Temperature compensation

WISG traceable calibration

The MS-21 pyrgeometer is added to the top of the range, of most accurate and robust infrared radiometers for scientific research applications. The analog sensor can measure longwave downwelling radiation and longwave net-radiation in a wide spectral band. In meteorology, wavelengths from 0.3 to about 4.5 μ m are called shortwave radiation, which is the solar radiation measured by a pyranometer. Wavelengths beyond the solar spectrum are called longwave radiation which is a function of the sky temperature and typically measured with a pyrgeometer. For climate research applications it is important to measure the earth surface radiation balance which is an important parameter and critical process indicator for climate change.

MS-21 has Silicon meniscus dome with solar blind interference filter (cut-on 4.5 μ m) and hard carbon coating to measure only the longwave radiation component under all atmospheric conditions. During the day the unwanted solar shortwave radiation will be

blocked and longwave radiation can be accurately measured. Based on a new thermal design the common window heating error phenomenon could be strongly suppressed. It makes that the sensor can be operated during daytime without the need for a sun tracker with shading device or shadow ring. The onboard temperature compensation electronics guarantee a stable sensitivity independent from the sensor operating temperature, which make setup and operating much easier without the need to make significant corrections.

MS-21 has a built-in Pt100 4 wire class A temperature sensor to measure the detector junction temperature which is needed to calculate emitted detector longwave irradiance with high accuracy. Moreover the sensor can be enhanced by installing the optional MV-01 ventilation unit with heater for mitigating of dew, frost, and sensor soiling on the sensor.

MS-21 is supplied with WISG (World Infrared Standard

Group) traceable calibration and 5 years warranty.

	MS-21
Response time 95%	< 18 Sec.
Non-linearity	< 1 %
Sensitivity	> 10 - < 20 $\mu\text{V/W/m}^2$
Temperature response -20°C to 50°C	< 1 %
Window heating Offset	< 4 W/m ²
Operating temperature range	-40 - 80 °C
Wavelength range	4.5 - 42 μm
Dome temperature	-
Body temperature	PT-100
Field of View FOV	180 °
Cable length	10 m

Options	MS-21
Cable length	20 / 30 / 40 / 50 m
Ventilation unit	MV-01
Albedo mounting kit	MS-albedo kit (for net radiation)

Specifications are subject to change without further notice.