

CM4



CM4 is a high temperature pyranometer for measuring solar or artificial light irradiance under the most extreme temperature conditions. With an operating temperature range from -40 °C to +150 °C and measurement up to 4000 W/m² it is a unique instrument. All the radiometer components are specially selected for their ability to withstand these extremely high temperature and irradiance levels.

CM4 has internal first-order temperature compensation, but it is also supplied with a built in Pt-100 temperature sensor to provide additional information on the measurement conditions. To optimize the accuracy in different applications the CM4 is supplied with calibration information split into temperature sections. Beside the standard calibration factor for +25 °C the following intervals are defined: -20 to +25, +25 to +75, +75 to +100, +100 to +150 °C. For each temperature range the sensitivity and the maximum temperature error (in %) are specified. CM4 is supplied as standard with 10 m of special high temperature signal cable.

CM4 is specifically designed for use in environmental chambers and solar simulators and materials testing. The CLF4 levelling fixture is a base with levelling screws and an accurately machined cap that can be placed over the pyranometer dome, and has a bubble level with 0.2° accuracy mounted on the top.

Specifications	
Classification to ISO 9060:1990	Second Class
Spectral range (50% points)	300 to 2800 nm
Sensitivity	4 to 10 μV/W/m ²
Impedance	200 to 2000 Ω
Expected output range (0 to 2500 W/m ²)	0 to 25 mV
Maximum operational irradiance	4000 W/m ²
Response time (63%)	< 2.5 s
Response time (95%)	< 8 s
Zero offsets	
(a) thermal radiation (at 200 W/m ²)	< 15 W/m ²
(b) temperature change (5 K/h)	< 4 W/m ²
Non-stability (change/year)	< 1%
Non-linearity (100 to 1000 W/m ²)	< 3%
Directional response (up to 80° with 1000 W/m ² beam)	< 20 W/m ²
Spectral selectivity (350 to 1500 nm)	< 3%
Temperature response (Over any 50 °C interval in the range from -25 °C to +150 °C)	< 3%
Tilt response (0° to 90° at 1000 W/m ²)	< 1%
Field of view	180°
Temperature sensor output	Pt-100 4 wire
Detector type	Thermopile
Operating temperature range	-40 °C to +150 °C
Storage temperature range	-40 °C to +150 °C
Humidity range	0 to 100 % non-condensing
Ingress Protection (IP) rating	67

Part number	Instrument
0356900-022	CM4 High Temperature Pyranometer • 10 m cable
0356900-722	CM4 High Temperature Pyranometer • METEON • 10 m cable
0356900-822	CM4 High Temperature Pyranometer • AMPBOX • 10 m cable
Note: AMPBOX is adjusted so that 4 to 20 mA output = 0 to 4000 W/m ²	
Note: AMPBOX and METEON are not suitable for use in extreme temperatures	

Part number	Accessories
2643960	Desiccant Refill Pack Contains 10 sachets
0356700	CLF4 Levelling Fixture High temperature design for CM4 only