

CGR 4



CGR 4 is the best pyrgeometer currently available and is the choice for scientific use and in top level solar radiation monitoring networks such as the Baseline Surface Radiation Network (BSRN) of the World Meteorological Organisation. It is the partner for CMP 11, CMP 21 and CMP 22 pyranometers.

CGR 4 has a specially designed silicon meniscus dome that provides a 180 ° field of view and has a hard-carbon coating on the outside to smooth the spectral response and provide extra surface protection.

All pyrgeometers use infrared window materials that absorb a large part of the short-wave solar radiation. The window heats up and creates an offset in the readings. It is normally necessary to shade pyrgeometers from direct solar radiation to minimise this effect. However, the unique design of CGR 4 reduces the dome heating offset to a negligible level (particularly when ventilated), eliminating the need for dome temperature measurements or dome shading.

Specifications	
Response time (95 %)	< 18 s
Non-stability (change/year)	< 1 %
Non-linearity (-250 to 250 W/m²)	< 1 %
Window heating offset (with 1000 W/m² direct solar radiation)	< 4 W/m²
Temperature dependence of sensitivity	< 1 % (-20 °C to +50 °C)
Sensitivity	5 to 10 µV/W/m²
Operating temperature	-40 °C to +80 °C
Field of view	180 °
Spectral range (50 % points)	4.5 to 42 µm
Irradiance (net)	-250 to 250 W/m²
Temperature sensor	10 K Thermistor (optional Pt-100)

Article	Part number
CGR 4 Pyrgeometer • 10 K • 10 m cable	0363900-012
Options for CGR 4	
CGR 4 Pyrgeometer • 10 K • 25 m cable	0363900-014
CGR 4 Pyrgeometer • 10 K • 50 m cable	0363900-015
CGR 4 Pyrgeometer • 10 K • plug only, no cable	0363900-018
CGR 4 Pyrgeometer • Pt-100 • 10 m cable	0363900-022
CGR 4 Pyrgeometer • Pt-100 • 25 m cable	0363900-024
CGR 4 Pyrgeometer • Pt-100 • 50 m cable	0363900-025
CGR 4 Pyrgeometer • Pt-100 • plug only, no cable	0363900-028
CGR 4 Pyrgeometer • Ampbox • 10 K • 10 m cable	0363900-812
CGR 4 Pyrgeometer • Ampbox • 10 K • 25 m cable	0363900-814
CGR 4 Pyrgeometer • Ampbox • 10 K • 50 m cable	0363900-815
CGR 4 Pyrgeometer • Ampbox • 10 K • plug only, no cable	0363900-818
CGR 4 Pyrgeometer • Ampbox • Pt-100 • 10 m cable	0363900-822
CGR 4 Pyrgeometer • Ampbox • Pt-100 • 25 m cable	0363900-824
CGR 4 Pyrgeometer • Ampbox • Pt-100 • 50 m cable	0363900-825
CGR 4 Pyrgeometer • Ampbox • Pt-100 • plug only, no cable	0363900-828
100 m cable	On request
Note: AMPBOX is adjusted with offset zero for negative values; 4 mA = -300 W/m², 16 mA = 0 W/m², 20 mA = +100 W/m²	

Accessories for CGR 4	Part number
Desiccant Refill Pack , minimum order 10 packs	2643951
Extended Temperature Test for CGR 4 Temperature dependence from -40 °C to +50 °C in 10 steps of 10 °C	0999920-3
CVF 3 Ventilation Unit Recommended to reduce offsets and frequency of dome cleaning	See accessories
CMF 1 Mounting Fixture For 1 or 2 unventilated radiometers (1 upper / 1 lower) Diameter 88 mm. Mounting rod 350 mm long x 16 mm Ø	0362700
CMF 2 Mounting Fixture For 1 or 2 ventilated or unventilated radiometers (1 upper / 1 lower) Diameter 220 mm. Mounting rod 350 mm long x 16 mm Ø	0362701
CMB 1 Mounting Bracket In combination with mounting rod for easy attachment to a pole or a wall	0369701
Note: It is not necessary to use shading with the CGR 4. The effect of direct solar heating is very small and insignificant when the CVF 3 is used	