

- Low temperature dependence of sensitivity
- Very low window heating
- Reliable all weather performance
- Compact and light weight
- Connector for easy mounting and recalibration



Pyrgeometers are radiometers for measuring the Far Infrared Radiation (FIR) at wavelengths longer than $4 \mu\text{m}$. The instruments have a silicon window with a solar blind filter coating on the inside to block all short-wave solar radiation. An internal temperature sensor is fitted to enable calculation of the downward long-wave radiation.



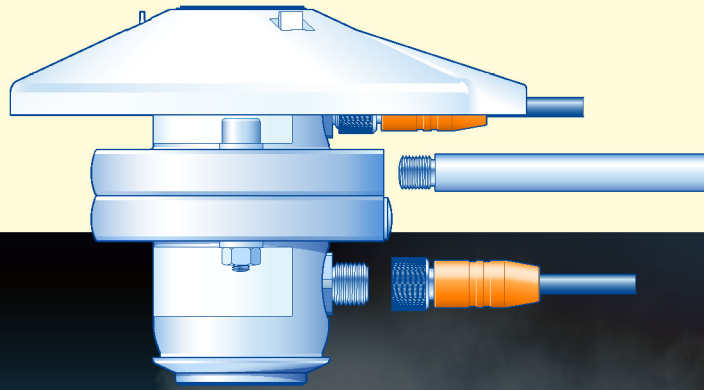
CGR 3 pyrgeometer is designed for good quality measurement in a compact package. The CGR 3 provides a voltage that is proportional to the incoming FIR. The data represents the radiation exchange between the instrument and the whole hemisphere because the reference CGR 3 is calibrated outdoors with respect to a CGR 4, which has a 180 degrees field of view. The CGR 3 has an internal (non replaceable) drying cartridge and needs little maintenance.

Kipp & Zonen pyrgeometers are suitable for permanent outdoor use under all weather conditions. A waterproof plug and socket is fitted for the signal cable providing ease of installation and maintenance. A snap-on white sun shield minimizes heating of the pyrgeometer body.

CGR 4 is the best pyrgeometer currently available for the highest quality scientific measurements. The specially designed meniscus dome provides a 180° field of view with negligible directional response error. A hard-carbon coating on the outside of the dome smoothes the spectral response and provides extra protection to the silicon surface. The excellent thermal stability of the dome construction and coupling to the instrument body eliminates the need for dome temperature measurements or dome shading. CGR 4 can be fitted with the CV 2 Ventilation Unit to further improve its performance.



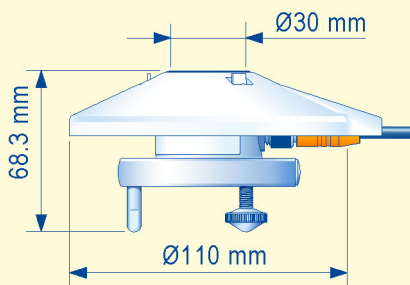
The net long-wave radiation can be calculated using two pyrgeometers, one looking up and one looking down. The CGR 3 is specially designed so that two instruments can be mounted base-to-base and fitted with the optional mounting rod. In this case the temperature of the pyrgeometers is the same and is irrelevant for the net radiation calculation.



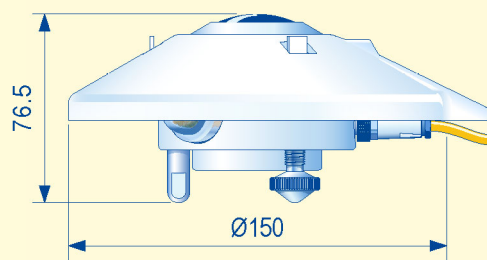
SPECIFICATIONS

	CGR 3	CGR 4
Spectral range (50% points)	4.5 to 42 μm	4.5 to 42 μm
Sensitivity	5 to 7 $\mu\text{V/W/m}^2$	5 to 10 $\mu\text{V/W/m}^2$
Response time (95%)	< 18 s	< 18 s
Non-linearity (-250 to 250 W/m^2)	< 1 %	< 1 %
Window heating offset (with 1000 W/m^2 solar radiation)	< 15 W/m^2	< 4 W/m^2
Operating temperature	-40 to +80 $^{\circ}\text{C}$	-40 to +80 $^{\circ}\text{C}$
Field of view	150 $^{\circ}$	180 $^{\circ}$
Irradiance (net)	-250 to +250 W/m^2	-250 to +250 W/m^2
Temperature dependence of sensitivity	(-10 to +40 $^{\circ}\text{C}$) < 5%	(-20 to +50 $^{\circ}\text{C}$) < 1%
Non stability change / year	< 1 %	< 1 %
Internal temperature sensor	Thermistor (YSI 44031) Optional Pt-100	Thermistor (YSI 44031) Optional Pt-100
Cable length (optional length)	10 m	10 m (optional 25, 50 m)

Note: The performance specifications quoted are worst-case and/or maximum values



CGR 3



CGR 4

CGR SERIES PYRGEOMETER RANGE



Kipp & Zonen B.V. reserve the right to alter specifications of the equipment described in this documentation without prior notice

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