



CM21 Features & Benefits

- low dome thermal offset error
- excellent cosine/directional response
- excellent long term stability of sensitivity
- excellent linearity performance
- excellent temperature dependence performance

CM21 Pyranometer Specifications:

Spectral range	305 – 2800 nm (50% points)
Sensitivity	7 - 17 $\mu\text{V}/\text{W}/\text{m}^2$
Impedance (nominal)	50 - 60 Ω
Response time (95%)	5 sec.
Non-linearity	$< \pm 0.25\%$ ($< 1000 \text{ W}/\text{m}^2$)
Temp. dependence of sensitivity	$< \pm 1\%$ (-20 to +50°C)
Directional error	$< \pm 10 \text{ W}/\text{m}^2$ (beam 1000 W/m^2)
Tilt error	None
Zero-offset due to temp. changes	$< \pm 2 \text{ W}/\text{m}^2$ at 5 K/h temp. change
Operating temperature	-40°C to +80°C
ISO-9060 Class	Secondary Standard
Dimensions W x H	150.0 mm x 91.5 mm
Weight	850 grams
Cable length	10 m

For high accuracy solar radiation measurement research ...

The CM21 pyranometer is intended for high accuracy total global, or diffuse sky, solar radiation measurement research on a plane/level surface, for extreme temperature environments. The CM21 offers improved low temperature performance, linearity, and response time specifications over the CM11 pyranometer model.

The CM21 is fully compliant with the ISO-9060 Secondary Standard pyranometer performance category (highest ISO performance criteria for a pyranometer). Instrument cosine response and temperature dependence are verified and documented upon instrument manufacture. Extremely high mechanical tolerances are maintained during manufacture to ensure optimal measurement performance in the field.

The CM21 houses a second built-in complimentary sensing element (temperature compensation element), in addition to the black receiving element/detector. Calibrated to identical sensitivity as the receiving detector, the compensation element is connected in anti-series to the receiving detector. Instrument output signal is measured across the entire anti-series circuit. Any change in body temperature, due to thermal shock or temperature gradient effect, are quickly detected by the built-in compensation element, and an offset correction signal is applied to the instrument output signal.

The receiving element is coated with a highly stable carbon based non-organic coating, which delivers excellent spectral absorption and long term stability characteristics. The sensing element is housed under two concentric fitting Schott K5 glass domes.

Additional CM21 features include an integrated built-in bubble level, reusable desiccant drying cartridge, white sunscreen, and a permanently attached shielded output signal cable.

The CM21 can be used in conjunction with the optional Kipp & Zonen CV2 ventilation system, for enhanced measurement performance and overall reduced instrument maintenance.