



PRECISION INFRARED RADIOMETER MODEL GEO-PIR



The **Precision Infrared Radiometer, Pyrgeometer**, is intended for unidirectional operation in the measurement, separately, of incoming or outgoing terrestrial radiation as distinct from net long-wave flux. The PIR comprises a circular multi-junction wire-wound Eppley thermopile which has the ability to withstand severe mechanical vibration and shock. Its receiver is coated with Parson's black lacquer (non-wavelength selective absorption). Temperature compensation of detector response is incorporated. Radiation emitted by the detector in its corresponding orientation is automatically compensated, eliminating that portion of the signal. A battery voltage, precisely controlled by a thermistor which senses detector temperature continuously, is introduced into the principle electrical circuit.

Isolation of long-wave radiation from solar short-wave radiation in daytime is accomplished by using a silicone dome. The inner surface of this hemisphere has a vacuum-deposited interference filter with a transmission range of approximately 3.5 to 50 μm .

SPECIFICATIONS

Sensitivity: approx. 4 $\mu\text{V}/\text{Wm}^{-2}$

Impedance: approx. 700 Ohms

Temperature Dependence: $\pm 1\%$ over ambient temperature range -20 to +40°C

Linearity: $\pm 1\%$ from 0 to 700 Wm^{-2}

Response time: 2 seconds (1/e signal)

Cosine: better than 5%.

Mechanical Vibration: tested up to 20 g's without damage

Calibration: blackbody reference

Size: 5.75 inch diameter, 3.5 inches high

Weight: 7 pounds

Orientation: Performance is not affected by orientation or tilt