

MEASURES THE TEMPERATURES OF ROAD SURFACES, PLANT CANOPIES, AND SOIL, SNOW, AND WATER SURFACES.

DESCRIPTION

Measures the temperatures of road surfaces, plant canopies, and soil, snow and water surfaces.

Measurement of surface temperature is a crucial component of energy transfer. Accurate measurement of the leaf-to-air temperature gradient is essential to the determination of transpiration rate and stomatal conductance in both single leaves and plant canopies.

This gradient is often less than 1 degree Celsius, which means that leaf temperature should be measured to within 0.2 C. To achieve this accuracy, the Apogee Instruments Infrared Radiometers correct for changes in the sensor body temperature with a subroutine designed for Campbell Scientific dataloggers.

Field of View (FOV) is reported as the half-angle of the apex of the cone formed by the target (cone base) and the detector (cone apex). The target is a circle from which 98% of the radiation being viewed by the detector is being emitted.



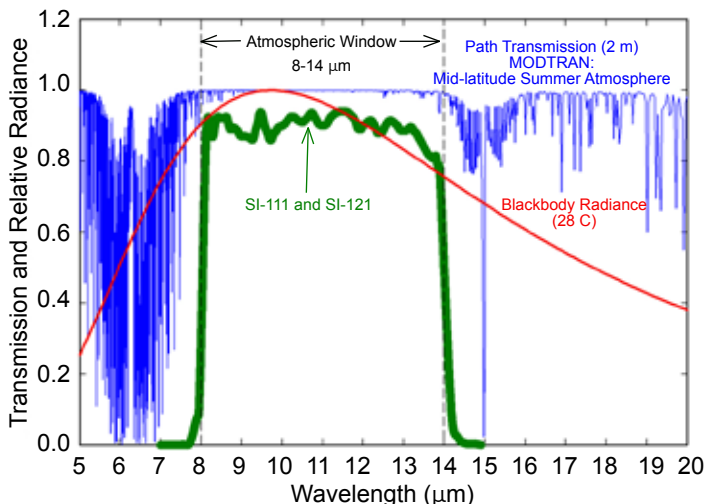
Model SI-111 half-angle = 22.0°

Model SI-121 half-angle = 18.0°

ORDERING

All products can be ordered at www.apogeeinstruments.com

For technical information contact techsupport@apogee-inst.com



The 8-14 μm window of the IRR models corresponds to the atmospheric window. This minimizes the effects of water bands below 8 μm and above 14 μm.

SPECIFICATIONS

FIELD OF VIEW

- Standard: 22° half angle
- Narrow: 18° half angle

OUTPUT TARGET TEMP

- Standard: 60 μV per $^{\circ}\text{C}$ difference from sensor body
- Narrow: 40 μV per $^{\circ}\text{C}$ difference from sensor body

OUTPUT SENSOR BODY TEMP

- Standard: 0 - 2500 mV
- Precision Narrow: 0 - 2500 mV

OPTICS

- Germanium lens

ACCURACY -10 TO 65 C

- ± 0.2 C absolute accuracy
- ± 0.1 C uniformity
- ± 0.05 C repeatability

WAVELENGTH RANGE

- 8 - 14 μm (corresponds to atmospheric window)

RESPONSE TIME

- < 1 second to changes in target temperature

INPUT POWER

- 2.5 V excitation
- Additional cable \$2.95/meter

MASS

- 190 g

CABLE

- 5 meters twisted-pair 4-conductor wire
- Shielded w/ Santoprene casing
- Ending in pigtail leads
- Additional cable is available in multiples of 5 meters

DATALOGGER CHANNELS

- 1 differential (detector)
- 1 single-ended (thermistor)

ACCURACY -40 TO 70 C

- $\pm 0.5^{\circ}$ C absolute accuracy
- $\pm 0.3^{\circ}$ C uniformity
- $\pm 0.1^{\circ}$ C repeatability and uniformity

OPERATING ENVIRONMENT

- -55 to 80° C
- 0 to 100% non-condensing relative humidity
- Water resistant
- Designed for continuous outdoor use

WARRANTY

- 1 year against defects in materials and workmanship

MEASUREMENTS

