

NR01

Research-grade Net Radiometer



The NR01 net radiometer is manufactured by Hukseflux for applications requiring research-grade performance. The radiometer measures the energy balance between incoming short-wave and long-wave infrared radiation versus surface-reflected short-wave and outgoing long-wave infrared radiation. It consists of a pyranometer and pyrgeometer pair that faces upward and a complementary pair that faces downward. The pyranometers and pyrgeometers measure short-wave and far infrared radiation, respectively.

The NR01 has a 1-W heater that can minimize the formation of dew and melt frost. An on-board RTD is used to measure the radiometer's internal temperature. A 4WPB100 module is required to interface the RTD with dataloggers other than the CR3000 or CR5000. Please note that the NR01 is not compatible with our CR200(X)-series, CR800, or CR850 dataloggers.



Mounting

To avoid shading effects and to promote spatial averaging, the NR01 should be mounted at least 1.5 m above the ground. Campbell Scientific recommends mounting the NR01 to a CM300-series mounting pole at least 25 feet away from other mounting structures. The NR01 is attached to the CM300-series mounting pole via a CM204 or CM206 crossarm and the 121271 pipe reducer.

Ordering Information

Research-grade Net Radiometer

NR01-L Hukseflux 4-Component Net Radiation Sensor with user-specified cable length. Enter the cable length in feet after the -L. Recommended length is 50, 75, or 100 ft. Must choose a cable termination option (see below).

Cable Termination Options (choose one)

- PT** Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.
- PW** Cable terminates in connector for attachment to a prewired enclosure.

Common Accessories

- 21271** 1 inch to 3/4 inch Pipe Reducer Fitting used to attach the sensor to a crossarm
- 4WPB100** 100 ohm 4-Wire PRT Bridge Module for interfacing the NR01's RTD with a datalogger

Specifications

Sensor:	Hukseflux's SR01 ISO-class, thermopile pyranometer, IR01 pyrgeometer, PT100 RTD
Spectral Response	
Pyranometer:	305 to 2800 nm
Pyrgeometer:	4500 to 50,000 nm
Response Time:	18 seconds
Sensitivity Range:	10 to 40 $\mu\text{V W}^{-1} \text{ m}^2$
Expected Output Range:	-0.1 to +50 mV
Expected Accuracy for Daily Totals:	$\pm 10\%$
Heater:	90 Ohms, 1.6 W at 12 Vdc
Operating Temperature:	-40° to 80°C
Dimensions:	10.4 in. x 4.4 in. x 4.8 in. (26.3 cm x 11.3 cm x 12.1 cm)
Weight:	2.9 lbs (1.3 kg) with 5 m cable; 2 lbs (0.9 kg) sensor only
CE Compliance:	CE compliant under the European Union's EMC directive
Heater Current Drain:	~140 mA

