CNR2 Net Radiometer

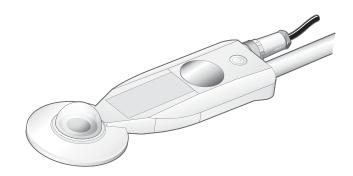


Kipp & Zonen's CNR2 Net Radiometer measures the energy balance between incoming short-wave and long-wave infrared radiation versus surface-reflected short-wave and outgoing long-wave infrared radiation. It consists of a pyranometer and pyrgeometer pair that face upward and a complementary pair that face downward. The pyranometers and pyrgeometers measure shortwave and far infrared radiation, respectively. Field-of-view is 180 degrees for the upper pyranometer, and 150 degrees for the lower pyranometer. Both upper and lower pyrgeometers provide a 150 degree field-of-view.

The CNR2 uses drying cartridges to prevent condensation. Please note that the CNR2 is not compatible with our CR200(X)-series dataloggers.

Mounting

To avoid shading and to promote spatial averaging, the CNR2 should be mounted at least 1.5 m above the ground and away from obstructions (see below). It can be attached to a vertical pipe or horizontal crossarm (CM202, CM204, or CM206). To do this, first connect the radiometer to the 26127 Mounting Boom.* The mounting boom then attaches to the pipe or crossarm via the 26120 Net Radiation Sensor Mounting Kit. The kit includes adjustment screws for leveling the CNR2. Sensitivity is reduced when the radiometer is not level (see tilt-error in specifications).



Ordering Information

Net Radiometer

CNR2 -L Kipp & Zonen Net Radiometer. Shipped with a 26127 Mounting Boom, a WRR Traceable Calibration Certificate for the pyranometers, a WRR Traceable Calibration Certificate for the pyrgeometers, two drying cartridges, and a cable with a user-specified length. Enter the cable length, in feet, after the -L. Must choose a cable termination option (see below).

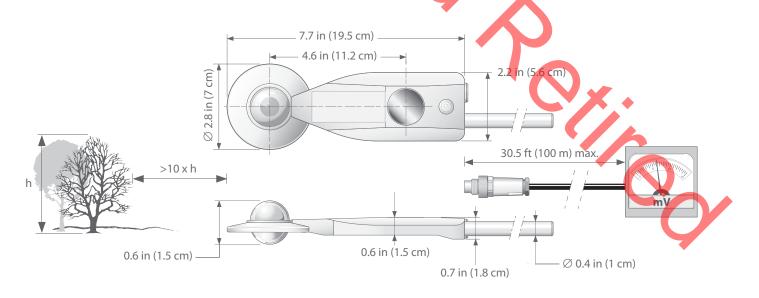
Cable Termination Options (choose one)

- -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.

Accessories/Replacement Parts

26120 Net Radiation Sensor Mounting Kit.

20645 Replacement Drying Cartridges (limited shelf life); should be replaced every six months.



*The 26127 Mounting Boom began shipping with the CNR2 in January 2010. If you purchased the radiometer before January 2010 or bought it directly from Kipp & Zonen, you need to purchase the 26127 Mounting Boom from Campbell Scientific in order to mount the CNR2 to a cross-arm or pole via the 26120 mounting kit.

Specifications

Spectral Response Tilt Error: <1% Pyranometer: 310 to 2800 nm **Pyrgeometer:** 4.5 to 42 µm **Uncertainty in Daily Total:** <10% <10 seconds <5% **Response Time: Sensor Asymmetry:** Temperature Dependence **Directional Error:** <20 W m⁻² (pyranometer) of Sensitivity: <5% (-10° to + 40°C) **Operating Temperature:** -40° to 80°C Sensitivity Range: 10 to 20 $\mu V \, W^{\mbox{--}1} \, m^2$ Weight **Output Range Radiometer:** 8.8 oz (250 g) **Pyranometer:** 0 to 50 mV Cable: 10.6 oz (300 g) with 30 ft length Pyrgeometer: ±5 mV Datalogger Requirements: Two differential analog channels Sensitivity Change **CE Compliance:** per Year: Conforms to the CE guideline 89/336/EEC 73/23/EEC

