

CN1-R NET PYRRADIOMETER

For Balance Measurement of Solar & Reflected Radiation



The Middleton CN1-R Net Pyrradiometer measures the net total radiation flux (solar, terrestrial, and atmospheric) downward and upward through a horizontal surface. It is suitable for solar energy studies in agriculture and meteorology.

Performance Specification

Response time	15s (1/e); 45s (95%)
Non-stability (per year)	+2%, -1.0%
Non-linearity	±1%
Cosine response (at 80° inclination)	-4%
upwards and downwards sensitivity variation	<3%
shortwave and longwave sensitivity variation	<5%
Temperature coefficient	-0.05%/°C

MATCHED SHORTWAVE AND LONGWAVE SENSITIVITY

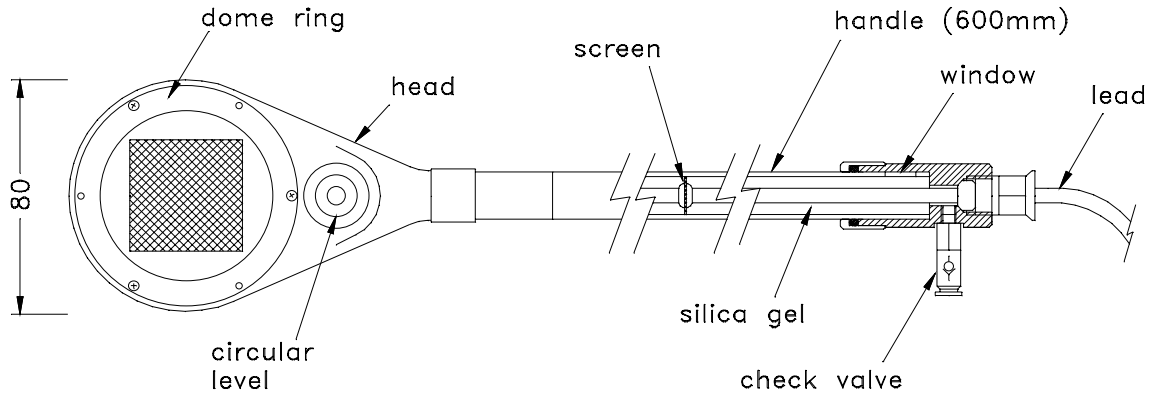
Weatherproof and durable.

Matched upward and downward response.

Fully sealed construction for low-maintenance.

Protective polythene domes have minimal selective absorptency.

Middleton Solar CN1-R Net Pyrradiometer Detailed Specification



Thermopile sensor has flat spectral response.
Diagonal white lines on the sensor selectively reflect shortwave radiation (the lines are transparent to longwave) and thus balance the spectral response.
Semi-rigid polythene domes protect the sensors from air temperature fluctuations.
Domes inflated by blowing into a check valve in the handle and remain inflated indefinitely.
The handle contains silica gel to prevent internal condensation (the desiccant can be inspected through a window in the handle).
User's Guide and Calibration Certificate included.

General Specification

Viewing angle	4π steradians
Sensitivity	$25\mu\text{V}/\text{W}\cdot\text{m}^{-2}$ (typical)
Spectral range	0.3 to $60\mu\text{m}$
Impedance	$70\text{-}80\Omega$
Operating temperature	-35 to $+60^\circ\text{C}$
Transmissivity of dome (average)	81%
Sensor thermopile	$38\times 38\text{mm}$; 250 junction copper-constantan
Output lead	2m, 2 core
Shipping size & weight	$95\text{dia} \times 880\text{mm}$; 1Kg
desiccant	Orange silica gel, non-toxic (in handle)
Construction: head	cast epoxy resin; integral vent to handle
ferrule	chrome plated brass
handle	anodised aluminium
dome (semi-rigid)	0.4mm polythene film

The CN1-R can be used in conjunction with the Middleton Solar EQ16/E Pyrano-albedometer for applications requiring separation of the shortwave component (0.3 to $3\mu\text{m}$) from the total net radiation signal.

Optional accessories are a Signal Amplifier and a hand-operated Dome Inflator.

Available from: