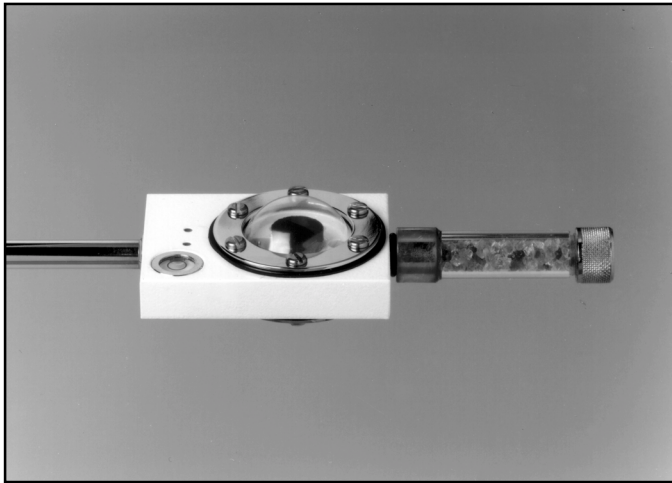


240-8110 Net Radiometer



240-8110 Net Radiometer

The **Model 240-8110 Net Radiometer** is an instrument for direct and instantaneous determination of net radiation (difference between incident and reflected radiation) in short and long wavelength range.

The receiver plate facing up measures short-wave global radiation and long-wave radiation of the atmosphere according to its temperature. The receiver plate facing down measures reflected short-wave radiation and long-wave radiation according to the temperature emitted by the surface beneath the sensor. Both of the receiver plates are electrically cross connected, thus, a direct determination of net radiation is possible.

A positive sign of the value measured means radiation flux directed to the reference surface, a negative sign radiation flux off the reference surface. Hence follows that the reference surface is gaining radiant energy when positive values are measured. At negative signs the surface loses energy by long-wave radiation.

The instrument consists of the sensor with a desiccant (silica gel) container and a 400 mm (16") long support arm. The sensing element of the instrument consists of 16 Cu-CuNi thermocouple covered by two circular blackened copper plates (receiver plates) which are protected by two lupolene domes. Watertight sealing is achieved by two fixing rings and o-rings. Two bull's-eye levels permit horizontal adjustment. The silica gel container is incorporated in the front of the case.

- *WMO First Class*
- *Independent from ambient temperature*
- *Direct and instantaneous determination of net radiation*

Specifications

Spectral sensitivity: 0.3 to >30 μm
 Azimuth response: 0.5% of the value
 Cosine response: < 5% of the value, zenith angle 0° to 80°
 Response time: < 25 sec (95%), < 45 sec (99%)
 Measuring range: 0-1500 Wm^2 (positive & negative)
 Resolution: < 1 Wm^2
 Stability: < 3% per year (temporary operation)
 Temperature effect: < 2% of the value between -20°C to +40°C
 Linearity: < 2% in the range 0.5-1330 Wm^2
 Impedance: About 5 ohm
 Output: About 15 $\mu\text{V/Wm}^2$ (positive & negative)
 Ambient temperature: -40°C to +60°C (-40°F to +140°F)
 Windshield: Lupolene dome, 1.2" (31 mm) diameter
 Size: 21" L x 2" W x 1.5" H
 Weight/shipping: 1 lb/4 lbs

Ordering Information

240-8110	Net Radiometer, includes desiccant tube, silica gel, and 3 meters cable
240-8110-C	Additional Cable, per meter
240-8110-D	Lupolene Dome, 2 required
240-8110-OR	O-Rings, set of 3
240-8110-SG	Silica Gel, 100 grams
240-8110-SGC	Silica Gel Container, filled