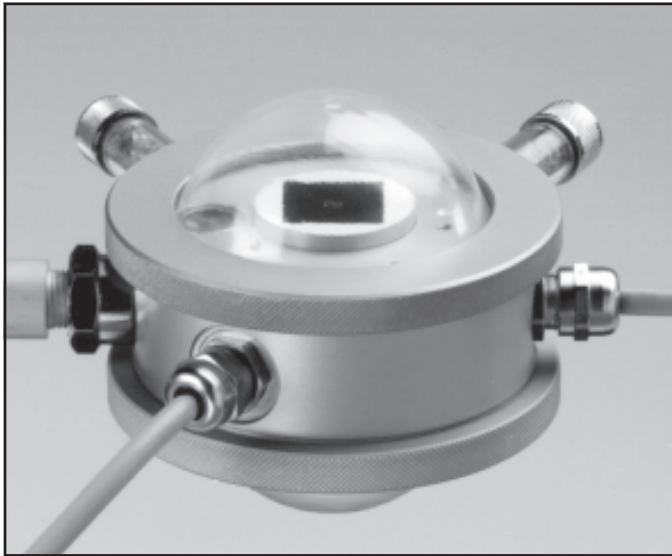


## 240-8111 Pyrradiometer



Model 240-8111 Pyrradiometer

The **Model 240-8111 Pyrradiometer** is a total hemispherical radiometer, used for exact determination of net radiation in short-wave and long-wave radiation range (0.3 to  $>30 \mu\text{m}$ ) with two separately working receivers and with a built-in Pt-100 resistance thermometer to determine reference temperature. Two black, radiation absorbing plates act as sensors, one facing upward and one facing downward. Each transfers the energy absorbed to a separate 90-junction copper-constantan thermopile. Both of the two outputs are approximately  $15 \mu\text{V/W/m}^2$ , one representing downward total radiation and the other representing upward total radiation. The difference between these two provides net radiation.

Lupolene domes shield the thermopiles from wind and moisture. Lupolene is essentially transparent to radiation from 0.3 to 60 microns. Two desiccant tubes are supplied to remove water vapor from inside the instrument housing. For long-term applications, fittings permit attachment of a nitrogen source for continuous purging. Levels are embedded in both the top and bottom faces of the pyrradiometer, and a 10" mounting arm is included.

- *WMO First Class*
- *Long-wave and short-wave measurements*
- *Independent from ambient temperature*
- *Separate outputs for upward and downward radiation*

### Specifications

Internal temperature sensor: 100-ohm platinum resistance sensor  
 Spectral Sensitivity: 0.3 to  $>30 \mu\text{m}$   
 Azimuth response:  $< 5\%$  of the value  
 Cosine response:  $< 5\%$  of the value, zenith angle  $0^\circ$  to  $80^\circ$   
 Response time:  $< 25 \text{ sec}$  (95%),  $< 45 \text{ sec}$  (99%)  
 Measuring range: 0-1500  $\text{W/m}^2$   
 Resolution:  $< 1 \text{ W/m}^2$   
 Stability:  $< 3\%$  per year (temporary operation)  
 Temperature effect:  $< 2\%$  of the value between  $-20^\circ\text{C}$  to  $+40^\circ\text{C}$   
 Linearity:  $< 2\%$  in the range 0.5-1330  $\text{W/m}^2$   
 Impedance: About 190 ohm/receiver plate  
 Output: About  $15 \mu\text{V/W/m}^2$   
 Ambient temperature:  $-40^\circ\text{C}$  to  $+60^\circ\text{C}$   
 Windshield: Lupolene dome, 2.4" (62 mm) diameter  
 Leveling: Bull's-eye levels on each face  
 Size: 14" L x 4" W x 3.5" H (355 x 100 x 90 mm)  
 Weight/shipping: 4 lbs/7 lbs (1.8 kg/3.2 kg)  
 Cable: 4 polar shielded, 5 m length

### Ordering Information

240-8111	Pyrradiometer, including 2 desiccant tubes, silica gel, platinum resistance temperature sensor, and 5 meters of cable
240-8111-D	Lupolene Dome, 2 required
240-8111-OR	O-Rings, set of 4
240-8111-PT	Pt-100 Platinum Element
240-8111-SG	Silica Gel, 100 grams
240-8111-SGC	Silica Gel Container, filled
330-0420	Additional Cable, per foot