

240-8104 Albedometer

Model 240-8104 Albedometer

The **Model 240-8104 Albedometer** is essentially a combination of two star pyranometers, one facing upward and one facing downward. The upward facing pyranometer measures global radiation (diffuse and direct solar radiation), while the downward facing pyranometer measures reflected solar radiation. Separate outputs are provided for each pyranometer, which can be recorded together on a strip chart recorder. Albedo, the fraction of incident radiation reflected by a surface, can be calculated from the output data (albedo = reflected radiation \div global radiation). Short-wave net radiation can also be calculated.

Like the 240-8101 Star Pyranometer, the 240-8104 Albedometer has a spectral response of 0.3 to 3 microns. Thus, no long-wave terrestrial radiation is measured. This is the major difference between the albedometer and the 240-8111 Pyrradiometer, which measures short and long-wave radiation and is similar in appearance to the 240-8104.

Each star pyranometer is protected by a crystal glass dome. Desiccant tubes are attached to the housing to absorb internal moisture. An 8" long mounting handle is provided. Circular levels are included on each face to aid in installation. Each sensor is supplied with a calibration certificate.

- WMO & ISO 9060 First Class
- Two separate outputs
- Global and reflected solar radiation
- Independent from ambient temperature

Specifications

Sensing element: 12 black & white copper segments with 6 thermocouples each
 Sensitivity: 0.3 to 3 μm
 Azimuth response: < 3% of the value
 Cosine response: < 3% 0.95% of the value, 0° to 80° zenith angle \pm 3% from 60° to 80° zenith angle
 Response time: < 25 seconds
 Measuring range: 0-1500 W/m²
 Resolution: < 1 W/m²
 Stability: < 1% per year (temporary operation)
 Temperature effect: < 1% of the value between -20 °C to 40 °C
 Linearity: < 0.5% in the range 0.5-1330 W/m²
 Impedance: Approx 35 ohms
 Ambient temperature: -40°C to +60°C
 Windshield: Polished glass dome, 2.75" dia x 0.08" thick (70 x 2 mm)
 Leveling: Bull's-eye level on each face
 Size: 14.6" L x 4.5" W x 4.2" H (371 x 114 x 107 mm)
 Weight/shipping: 3.5 lbs/10 lbs (1.6 kg/4.5 kg)
 Cable: 2 polar shielded, 3 m length

Ordering Information

240-8104	Albedometer; including 2 desiccant tubes, silica gel, and 3 meters of cable
240-8104-D	Glass Dome, 2 required
240-8104-OR	O-Rings, set of 6
240-8104-SG	Silica Gel, 100 grams
240-8104-SGC	Silica Gel Container, filled
330-0524	Additional Cable, per foot