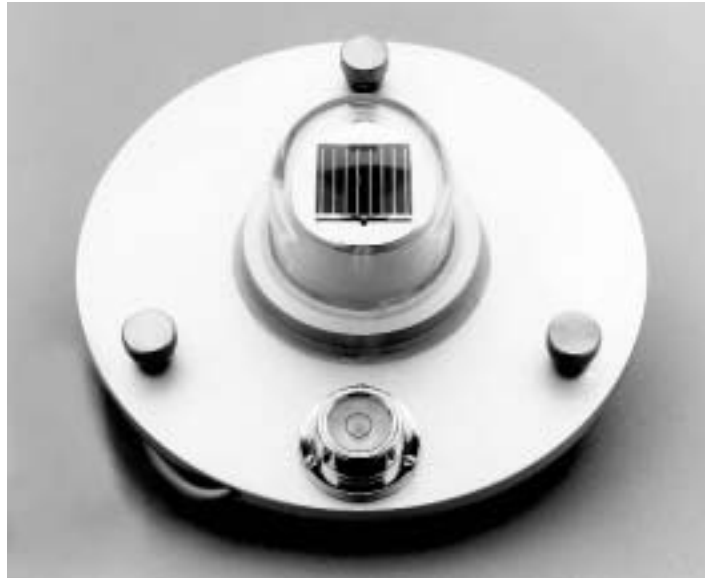




# Silicon Cell Pyranometer

- Rugged & weatherproof
- Low-cost, lightweight and easy to install



## Silicon Cell Pyranometer

### Description

Rugged and weatherproof, the Model 3120 Silicon Cell Pyranometer measures global solar radiation. When used with the Model 3079 shadow ring, it will measure diffuse radiation. This pyranometer is low cost, lightweight, and easy to install.

The sensor is a silicon photovoltaic cell which absorbs radiation from 0.35 to 1.15 microns. The silicon cell converts this light energy directly into electrical energy, and the output voltage (approximately 70 mV/W/m<sup>2</sup>) is essentially linear with light intensity. Full-scale response time is less than 1 millisecond due to the fact that the instrument is light sensitive, not heat sensitive as the thermopile pyranometers are. If the output is integrated over a daily period, the accuracy of the value is within  $\pm 3\%$ . Accuracy of instantaneous values is  $\pm 5\%$ . Temperature compensation is provided from 4° to 60°C.

### Features

A pyrex glass dome protects the silicon cell from wind and moisture. Desiccant is included to prevent moisture condensation on the inside of the glass. A 10' length of cable is provided. The positive output lead is connected internally to chassis ground, therefore requiring isolation at the mounting hardware. The Model 30318 mast adapter provides the needed isolation.

## Shadow Ring

### Description

The Model 3079 shadow ring is used with a pyranometer for measurement of diffuse sky radiation. The shadow ring prevents direct solar radiation from reaching the pyranometer. If used in conjunction with a second pyranometer without a shadow ring, direct radiation can be calculated by finding the difference between the two pyranometer measurements.

### Features

A platform at the center of the ring supports the pyranometer in a level position. Adjustments are provided for shadow ring leveling and for orientation according to latitude and sun declination.



## Specifications

### Silicon Cell Pyranometer

Spectral response:	0.35 to 1.15 microns
Sensitivity:	approx 70 $\mu\text{V}/\text{W}/\text{m}^2$ (50 mV/ly/min)
Sensor (transducer):	silicon photovoltaic cell
Impedance:	1 ohm
Accuracy:	$\pm 5\%$
Full-scale response time:	< 1 millisecond
Temperature Compensation:	+ 4° to + 60°C
Windshield:	pyrex glass dome
Leveling:	circular level and 3 threaded feet
Size:	5" dia x 2" H (127 x 51 mm)
Weight/shipping:	1 lb/1.5 lbs (0.5 kg/0.7 kg)

### Shadow Ring

Band width:	3" (76 mm)
Declination adjustment:	25°
Latitude adjustment:	0° to 60°
Accuracy:	correctable to 2%
Size:	26" W x 29" H x 23" D (660 x 737 x 584 mm)
Weight/shipping:	19 lbs/26 lbs (8.6 kg/11.8 kg)

## Ordering Information

### Silicon Cell Pyranometer

3120	Silicon Cell Pyranometer; includes 10' of cable
30310	Mast, 5' with mounting adapter
30318	Mast Adapter with 6' boom for mounting 3120 to Model 8500 tripod tower
30318-A	Mast Adapter without boom for mounting 3120 to 1.05" o.d. mounting stub
T600502	Cable, 2-conductor, 20 AWG shielded

### Shadow Ring

3079	Shadow Ring
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