

# PMA 2144 CLASS II PYRANOMETER

**SENSORS**  
**ATMOSPHERIC**  
**INSTRUMENTATION**  
**INDUSTRIAL LIGHT**  
**MEASUREMENT**  
**LABORATORY LIGHT**  
**MEASUREMENT**  
**SOLAR CELL RESEARCH AND QC**

Delivery on all products is  
 Stock to 2 weeks.

Every product is calibrated to  
 NIST traceable standards  
 before shipment.



The PMA 2144 Class II pyranometer is an ISO-classified second class pyranometer. It is based on thermopile technology for broad spectral sensitivity with exceptional flatness and long term stability.

The precision optical glass dome acts as a filter, allowing the full solar spectrum to pass through to the sensor. It also protects the sensor from the elements.

The sensor is a high quality blackened thermopile. Heating of the sensor by solar radiation produces a signal in the  $\mu$ volt range. Each pyranometer has its own calibration factor and with the processing algorithm, it is programmed into a memory chip in the sensor. When connected to the PMA2100 the algorithm is loaded into the meter and the correct reading is displayed on the LCD.

Thermopile type sensors show the widest and most uniform spectral response. They are used to monitor the total solar radiation as well as artificial sources. The sensitivity of these types of sensors is limited and measurements of radiant flux below  $10 \text{ W/m}^2$  are difficult.

Due to the flatness of the spectral response the pyranometer can be used with low wavelength blocking filters to measure radiant power distribution in various bands. The difference between the total power and the power measured with the filter is the radiant power in the band blocked by the filter.

## Uses

Measures full spectrum radiation from 280-2800nm for atmospheric, PV cell research and laboratory studies

## Alternate Views



## Applications

Meteorology  
 Agriculture

Solar power research and testing  
 Heating and air conditioning

Lighting  
 Physics and optical laboratories

## Features

Very wide and flat spectral  
 response  
 Excellent long term stability

Cosine corrected  
 NIST traceable calibration  
 ISO classified

Low cost  
 Weatherproof  
 Bubble level

## Specifications

### Spectral response

310-2800nm FWHM Figure 1  
**Range**

2000  $[\text{W/m}^2]$ , 200  $[\text{mW/cm}^2]$

### Response time

18 seconds (95%)

### Sensitivity change/year

<1%

### Non-linearity

<2.5% (1000 $\text{W/m}^2$ )

### Temperature dependence

<5% (-40 to -10°C), <5% (-10 to +40°C), <10% (+40 to +80°C)

### Angular response

2% for angles <70°

### Zero offsets

<15 $\text{W/m}^2$  @200  $\text{W/m}^2$  thermal radiation

### Display resolution

1 $[\text{W/m}^2]$ , 0.1 $[\text{mW/cm}^2]$

### Operating environment

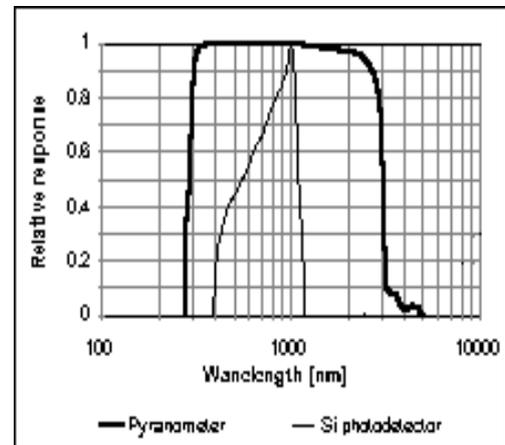
-40 to 175 °F (-40 to +80 °C), outdoors

### Cable

30ft, 9m

### Diameter with Sun Screen

2.375" (60.3 mm)



**Diameter Without Sun Screen**

3.08" (78.11mm)Height 3.31" (84.0mm)

**Weight**

11oz (0.31kg)

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