



The Solar Radiation Sensor, or solar pyranometer, measures global radiation, the sum at the point of measurement of both the direct and diffuse components of solar irradiance. The sensor's transducer, which converts incident radiation to electrical current, is a silicon photodiode with wide spectral response. From the sensor's output voltage, the console calculates and displays solar irradiance. It also integrates the irradiance values and displays total incident energy over a set period of time.

The outer shell shields the sensor body from thermal radiation and provides an airflow path for convection cooling of the body, minimizing heating of the sensor interior. It includes a cutoff ring for cosine response, a level indicator, and fins to aid in aligning the sensor with the sun's rays. The space between the shield and the body also provides a run-off path for water, greatly reducing the possibility of rain- or irrigation-water entrapment. The diffuser is welded to the body for a weather-tight seal; it provides an excellent cosine response. The transducer is an hermetically-sealed silicon photodiode; the included amplifier converts the transducer current into 0 to +2.5 VDC. Spring-loaded mounting screws, in conjunction with the level indicator, enable rapid and accurate levelling of the sensor. Each sensor is calibrated against a secondary standard which is calibrated periodically against an Eppley Precision Spectral Pyranometer in natural daylight.

The Solar Radiation Sensor is included with the Vantage Pro2 Plus weather station and is optional on the Vantage Pro2.

Please refer to the WeatherLink® for Vantage Pro® and Vantage Pro2™ specification sheet for optional data logging and charting capabilities available for this product.

## General

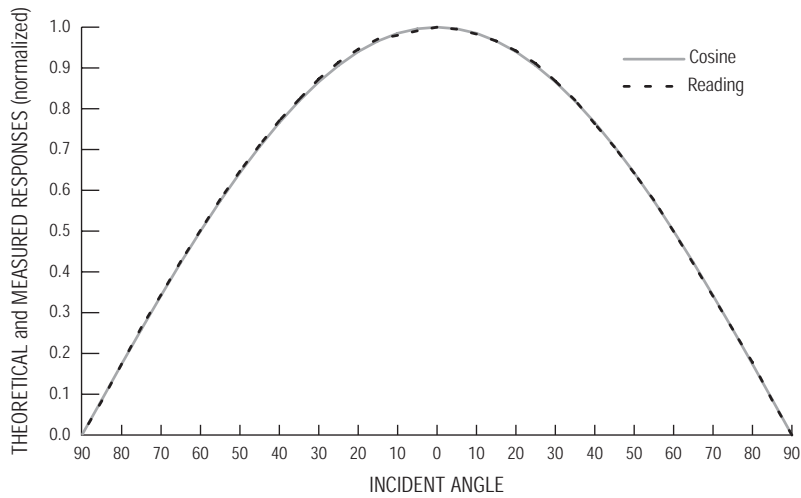
Operating Temperature	..... -40° to +150° F (-40° to +65° C)
Non-operating Temperature	..... -50° to +158°F (-45° to +70°C)
Transducer	..... Silicon photodiode
Spectral Response (10% points)	..... 400 to 1100 nanometers
Cosine Response	
Percent of Reading	..... ±3% (0° to ±70° incident angle); ±10% (±70° to ±85° incident angle)
Percent of Full Scale	..... ±2% (0° to ±90°)
Supplied Cable Length	..... 3' (0.9 m)
Cable Type	..... 4-conductor, 26 AWG
Connector	..... Modular RJ-11
I/O Specifications	
Green wire	..... Output (0 to +3VDC); 1.67 mV per W/m <sup>2</sup>
Red & Black wires	..... Ground
Yellow wire	..... +3 VDC ±10%; 1mA (typical)
Temperature Coefficient	..... +0.067% per °F (+ 0.12% per °C)
Reference temperature	..... 77°F (25°C)
Correction per degree above reference temp	..... -0.067% of reading per °F (-0.12% per °C)
Correction per degree below reference temp	..... +0.067% of reading per °F (+0.12% per °C)
Housing Material	..... UV-resistant PVC plastic
Dimensions (Length x Width x Height)	..... 2.00" x 2.75" x 2.25" (51 mm x 70 mm x 57 mm)
Weight	..... 0.5 lbs. (226 g)

## Sensor Output

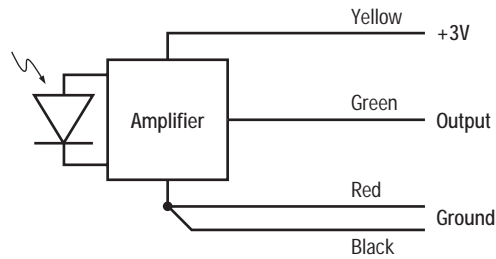
Resolution and Units	..... 1 W/m <sup>2</sup>
Range	..... 0 to 1800 W/m <sup>2</sup>
Accuracy	..... ±5% of full scale (Reference: Eppley PSP at 1000 W/m <sup>2</sup> ) plus 45 W/m <sup>2</sup> per 100' (30 m) of additional cable

Drift ..... up to  $\pm 2\%$  per year  
 Update Interval ..... 50 seconds to 1 minute (5 minutes when dark)  
 Current Data ..... Instant Reading and Hourly Average; Daily, Monthly High  
 Historical Data ..... Hourly Average, Daily, Monthly Highs  
 Alarm ..... High Threshold from Instant Reading

## Cosine Response (typical)



## Connections



## Package Dimensions

Product #	Package Dimensions (Length x Width x Height)	Package Weight	UPC Codes
6450	6.00" x 4.25" x 3.25" (152 mm x 108 mm x 83 mm)	1.1 lbs (.5 kg)	011698 00240 5