

Solar Irradiance Meter



The solar irradiance meter measures instantaneous solar power and provides the reading in Watts per square meter. You can calculate the total power striking the PV array by multiplying the area of the active PV material by the reading from the meter. You can estimate the output power from the PV array for that condition by multiplying by the advertised module efficiency. You would have to adjust that value for losses, temperature effects, inverter efficiency, etc., to obtain the actual system output.

PV Sensor: The monitor uses a polycrystalline silicon PV cell as the sensor. The cell is mounted on the top end of the meter, perpendicular to the display. The sensor responds to a spectrum bandwidth of approximately 0.3-1.1 microns. The meter is intended for outdoor measurements of natural sunlight. The PV sensor is located behind a plastic diffuser.

The solar irradiance meter provides an accurate reading (3%) from 0 - 1200 Watts/m² when it is pointed at the sun. Resolution is 1 W/m², maximum display reading is 1999. The irradiance value is presented on a 0.75" easy-to-read LCD display. The meter is (2.5" x 4.5" x 1.0" inches) (6.4 x 11.4 x 2.5 cm) and weighs (less than 5 ounces) (140 g) with the 9-V battery installed.