



Dual Orientation Irradiance Sensor

The Dual Orientation Irradiance Sensor is part of the SEVEN meteorological sensor range, which includes professional and intelligent measuring sensors with a digital interface for environmental and industrial applications such as dual orientation PV plants.

It is specially designed according to the requirements of PV plant monitoring systems based on standards such as IEC 61724 and IEC 60904 to calculate accurate Performance Ratio (PR) in dual orientation PV plants.

The number of PV panels in each orientation can be entered into the sensor via the SEVEN 3S-2IS Configuration Tool. The irradiance values in different orientations are proportioned with the number of panels to obtain the **Total Effective Irradiance** value required for the performance ratio calculation of the plant.

Temperature and wind speed data can also be measured with external sensors that can be connected. All measured meteorological data are transmitted to data loggers and receiving units via serial RS485 interface with Modbus RTU protocol.

Benefits and Features

- Total Effective Irradiance Calculation for PR
- Class A Compliance
- Fast & Simple to Install
- Free Software Update
- SunSpec Compliant
- SEVEN Remote Setup Service
- SEVEN Customer Support
- 5 Years Warranty

Technical Specifications

Measured Data	Total Effective Irradiance, Total Effective Module Temperature, 2 nos. POA Irradiance, 2 nos. Cell Temperature, 2 nos. Module Temperature, Ambient Temperature and Wind Speed
Output Rate	1/s
Data Output	RS485 up to 38400 Baud
Communication Protocol	Modbus RTU
Power Supply	12 to 30 V DC
Power Consumption	25 mA max @24 V DC
Electrical Connection	3 m LIYYC11Y PUR Cable, UV and Weather Resistant
Galvanic Isolation	1000 V between power supply and RS485 bus
Operating Temperature Range	-40°C to + 85°C
Operating Humidity Range	0 to 100 %RH
Dimensions	140 mm x 110 mm x 42 mm (W x L x H)
Weight	0.3 kg
IP Rating	IP54 (Optional IP 65, IP 68)
Sensor Housing Material	Aluminum
Standard	IEC 61724-1:2021 and IEC 60904
Calibration	Each sensor is calibrated under a Class AAA Sun Simulator according to IEC 60904-2 and IEC 60904-4 standards using a reference cell calibrated by the ISFH Institute in Germany.
Test	Each sensor is tested in natural sunlight using a reference cell calibrated by the Fraunhofer ISE Institute in Germany.
Origin	TÜRKİYE

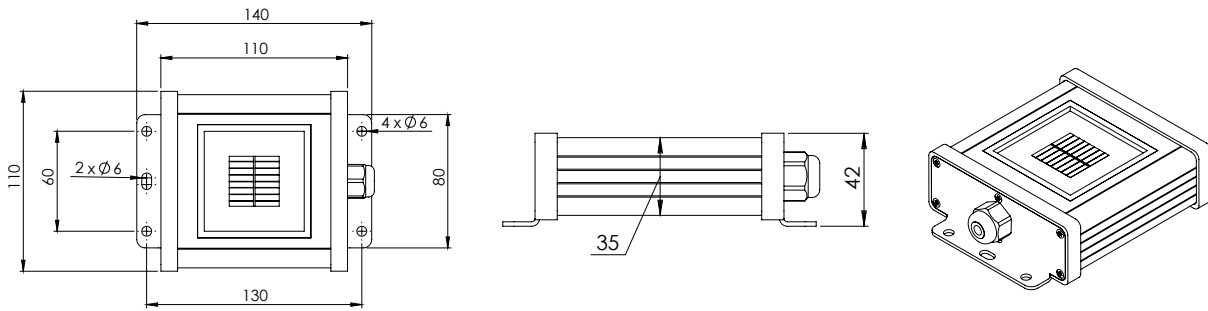
Technical Specifications

Sensor Type	Silicon Reference Cell (31 x 31 mm)
Irradiance Range	0 - 1600 W/m ²
Uncertainty	≤1,2% (less than 2%; as per IEC61724-1 standard Class A)
Resolution	0.1 W/m ² (less than 1W/m ² ; as per IEC61724-1 standard Class A)
Response Time	1 sec. (less than 3 sec; as per IEC61724-1 standard Class A)
Drift	<0.3% / Year
Field of View	170° (larger than 160°; as per IEC 61724-1 standard Class A)
Tilt-Azimuthal Angle	0° - 0° (± 1°; as per IEC61724-1 standard Class A)

*Since this product contains plastic parts, color changes may occur when exposed to direct sunlight.

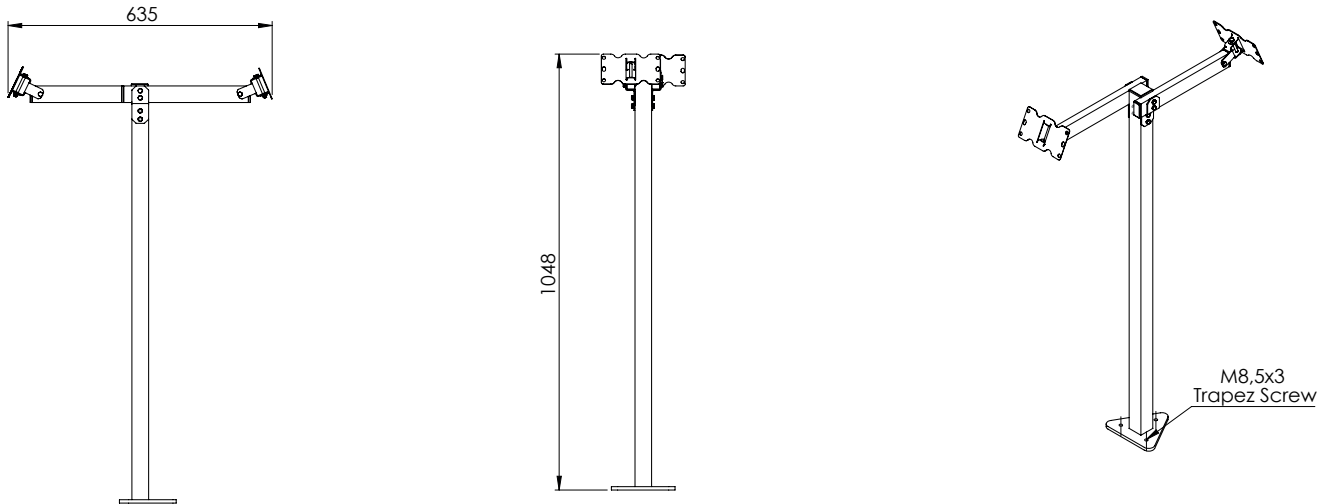
Technical Drawings

Technical Drawing of Irradiance Sensor



Technical Drawing of Mounting Structure

The Dual Orientation Irradiance Sensor is optionally available with a Mounting Structure. The Mounting Structure is designed for mounting two Irradiance Sensors.



Note: All dimensions are in mm.