

Simple and compact in PV measurements



Features

- Measurement of solar radiation and temperature.
- The LoRa interface for communication with a master meter – offers a larger range than the Bluetooth technology!
- Automatic data synchronization with a master meter with reSYNC function.
- Built-in compass and inclination sensor.
- Built-in recorder that can be used to record solar radiation before constructing PV systems, as well as to measure the shading of existing systems.
- Large measurement memory: 999 cache memory cells and 5000 recorder records available (one-time recording) with the option of overwriting them (continuous recording).

Measured parameters

- Solar radiation intensity (irradiance) in W/m^2 or BTU/ft^2h .
- PV panel temperature in $^{\circ}C$ or $^{\circ}F$.
- Ambient temperature in $^{\circ}C$ or $^{\circ}F$.
- Inclination angle of panels
- Orientation of the panels with the built-in compass.

Simple and compact

IRM-1, small, but indispensable for testing PV systems. By measuring solar radiation values, as well as panel and ambient temperatures, it provides the necessary data to convert the results into STC conditions. A built-in recorder with a memory of 5000 records enables the instrument to be used as a tool in the PV plant design process, as well as to diagnose panel shading problems.



Tightness and durability

The meter performs well in harsh environmental conditions. Protection against the ingress of dust and water is provided by the housing rated at **IP65**. This is especially important for measurements on photovoltaic systems, which are outdoor installations.

Communication and software

Measurement data from the IRM-1 can be transferred to a computer via the USB port. In addition, the device has a built-in wireless **LoRa interface** (Long Range) for automatic data exchange with the master meter – even over long distances.



Specifications

Parameter	Measurement range	Display range	Resolution	Accuracy ±(% m.v. + digits)
Irradiance				
Measurement in W/m ²	100 W/m ² ...1400 W/m ²	0 W/m ² ...1400 W/m ²	1 W/m ²	±(5% m.v. + 2 digits)
Measurement in BTU/ft ² h	32 BTU/ft ² h...444 BTU/ft ² h	0 BTU/ft ² h...444 BTU/ft ² h	1 BTU/ft ² h	±(5% m.v. + 2 digits)
PV and ambient temperature				
Measurement in °C	-20.0°C...100.0°C	-20.0°C...100.0°C	0.1°C	±(1% m.v. + 5 digits)
Measurement in °F	-4.0°F...212.0°F	-4.0°F...212.0°F	0.1°F	±(1% m.v. + 5 digits)
Inclination angle	-90°...+90°	-90°...+90°	1°	±4°
Position direction - compass	0°...360°	0°...360°	1°	±7°

Other technical data

Safety and work conditions

Ingress protection	IP65
Power supply	Li-Ion 3.7 V 1.3 Ah rechargeable battery
Dimensions	134 x 79 x 28 mm
Weight	ca. 0.2 kg
Operating temperature	-10...+50°C
Storage temperature	-20...+60°C
Humidity	20...80%
Nominal temperature	23 ± 2°C
Reference humidity	40%...60%






Memory and communication

Memory of measurement results	user measurement memory: 999 records recorder: 5000 records
Data transmission	USB
Communication with a master meter	LoRa

Other information

Quality standard – development, design and production	IEC 61010-1
The product meets the EMC (emission for industrial environment) requirements according to standards	IEC 61326-1

Standard accessories

		IRM-1	IRM-1 MPI
		WMGBIRM1	WMGBIRTMPI
	Solar radiation meter mounting kit for PV panels + probe for measuring the temperature of PV panels and the ambient temperature WASONTPVCKPL	1	1
	LORA-S1 adapter for data transmission WAADAUSBLORA		1
	5 V power supply with USB 2.0 output and a detachable micro-USB cable WAZASZ24	1	1
	M14 carrying case WAFUTM14	1	1
	Factory calibration certificate	1	1

Optional accessories



Solar radiation meter mounting kit for PV panels

WAPOZUCHPV



Clamp for mounting the solar radiation meter to the solar panels

WAZACPV



Probe for measuring the temperature of PV panels and the ambient temperature

WASONTPVC



LORA-S1 adapter for data transmission
only for IRM-1

WAADAUSBLORA



Calibration certificate without accreditation