

## 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<sup>2</sup> or BTU/ft<sup>2</sup>h.
- PV panel temperature in °C or °F.
- Ambient temperature in °C or °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)
<b>Irradiance</b>				
Measurement in W/m <sup>2</sup>	100 W/m <sup>2</sup> ...1400 W/m <sup>2</sup>	0 W/m <sup>2</sup> ...1400 W/m <sup>2</sup>	1 W/m <sup>2</sup>	±(5% m.v. + 2 digits)
Measurement in BTU/ft <sup>2</sup> h	32 BTU/ft <sup>2</sup> h...444 BTU/ft <sup>2</sup> h	0 BTU/ft <sup>2</sup> h...444 BTU/ft <sup>2</sup> h	1 BTU/ft <sup>2</sup> h	±(5% m.v. + 2 digits)
<b>PV and ambient temperature</b>				
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)
<b>Inclination angle</b>	-90°...+90°	-90°...+90°	1°	±4°
<b>Position direction - compass</b>	0°...360°	0°...360°	1°	±7°

# Other technical data

## Safety and work conditions

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






## Memory and communication

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

## Other information

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

## Standard accessories

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