

Mitsubishi Thin Film Photovoltaic Module

# MA Series

FOR EUROPE



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# A New Generation of Photovoltaic Power Systems

## MHI launches the MA, a new series of thin film photovoltaic modules

The MHI MA series is a new line of cost-effective photovoltaic modules installable in any site not subject to mounting space constraints.

MHI realized a high-performance, high-quality, process for the manufacture of large modules using advanced PCVD (plasma chemical vapor deposition), a key proprietary technology for the mass production of thin film (amorphous silicon) photovoltaic modules.

A thin film photovoltaic module is made from silane gas by depositing thin layers of semiconductor alloys on a glass substrate. In addition to its environmental advantages over the crystalline photovoltaic module (less energy used for manufacturing, less silicon required, shorter energy payback time), the thin film photovoltaic modules has a weatherproof structure and performs stably under high temperatures during summer. These features make the MA series an ideal solution for BIPV (building integrated photovoltaics) and grid-connected power systems for commercial and residential facilities.



### Quality and Safety

The MA series is awarded the following international certifications:

- Certified by TÜV Rheinland Product Safety GmbH (IEC61646, Safety Class II)
- Manufactured in an ISO 9001 certified factory



### Limited Warranty

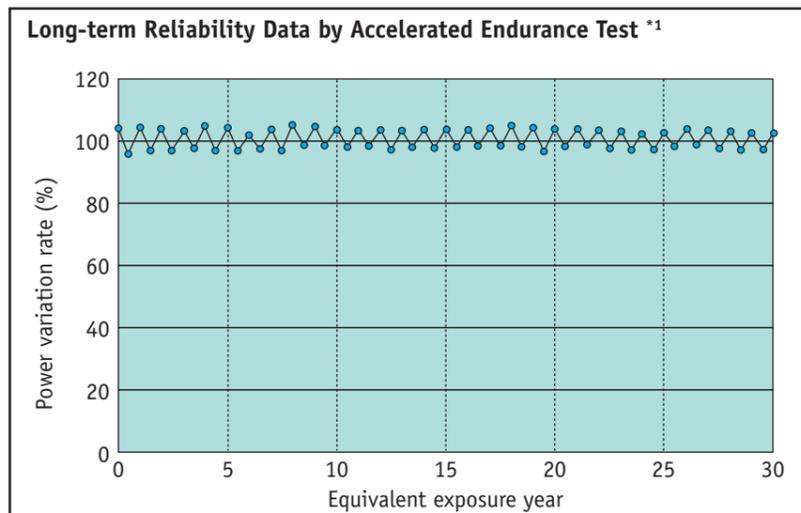
The MA series is covered by the following limited warranty:

- Power output for 20 years (maintain more than 80% of minimum rated power)
- Free from defects in materials and workmanship for 2 years

Please contact your local representative for the full terms of the above warranties.

### Long Term Reliability

MHI's thin film photovoltaic modules maintain stable power output over a long period. The test results performed by the third party organization indicate very few variations in power generation in 30 years usage.



\*1: Accelerated endurance test result by AIST (National Institute of Advanced Industrial Science and Technology)

## MA100 | Nominal maximum power of 100 watts. The large-size module is suitable for both commercial and industrial use.

The largest (1.4 m x 1.1 m) and most cost-effective module is the MA100 enclosed in an aluminum frame. The MA100 is especially well suited for the grid-connected systems of commercial buildings and industrial facilities. Very high

voltage makes it easy to design layouts and cabling configurations with fewer connections for most applications.

### MA100 Principal Specifications

Model	MA100
Module type	Amorphous Silicon (PIN single junction)
<b>Mechanical characteristics</b>	
Dimensions	L 1,410 x W 1,110 x T 35 mm
Weight	Approx. 21 kg
<b>Electrical characteristics</b>	
Maximum output power	100 W ±5%
Maximum output power voltage	108 V
Maximum output power current	0.93 A
Open circuit voltage	141 V
Short circuit current	1.17 A
Maximum system voltage	450 V

### Temperature coefficients

Maximum output power (W)	-0.20%/°C
Maximum output power voltage (V)	-0.32%/°C
Maximum output power current (A)	+0.14%/°C
Open circuit voltage (V)	-0.33%/°C
Short circuit current (A)	+0.09%/°C

Measurements made under the standard test conditions (STC):

- Irradiance of 1 kW/m<sup>2</sup>
- Spectrum of AM1.5
- Module temperature of 25°C

\* MHI reserves its rights to change without prior notice the contents of this data.

### Outline of MA100T1

