

UP to  
350Wpe

# MBA-GG60 BiSoN series 270-280Wp\*

High Efficiency Bifacial Monocrystalline N-type Photovoltaic Module

\* 270-280Wp only front at STC

\*\* 338-350Wpe (Watt peak equivalent) with Bifacial gain

## Key Product Features

MegaCell introduces the new MBA modules born from the 30+ years long experience in photovoltaic manufacturing. Highest level of efficiency, quality and reliability are guaranteed from the BiSoN cell technology, the Bifacial cell up to 20,4% front efficiency (25,6% with 30% back side contribution) developed in collaboration with the ISC Konstanz.



### Highest Bifacial factor

85% of bifaciality factor ( $\epsilon_{ff rear} = \epsilon_{ff front} \times 0,85$ ), thanks to the patented BiSoN technology.



### N-Type

Module made with 60 high efficiency Bifacial monocrystalline N-type cells made in Italy.



### Zero PID

Anti PID (Potential Induced Degradation) technology using glass - glass modules and high quality encapsulation solution



### LID near zero

LID-effect (Light Induced Degradation) near 0% despite 2-3% occurring with all the common P-type cells



### Electrical Performance

Lower power reduction <0,3%/year, compared to common 0,8%/year of Monofacial P-type modules



### High Performance

Up to 280 Wp on front side only, equivalent up to 350 Wpe (Watt peak equivalent) with back side contribution



### Rear face 18-80%

Rear face contributes to increase the energy production with a further contribution up to +55%. Expected increases of energy yield:  
+ 30% with high-reflectance surfaces (white sand)  
+ 55% with single-axis tracking system



### Durability

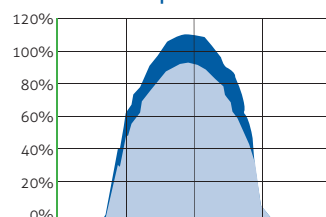
Longterm stability due to special new modules technology design and the strictest test program



### Made In Italy

Engineered and produced in Italy

### Power Output as % of Peak Power



■ MegaCell MBA-GG60-280B  
■ Standard P-type module



Engineered with BiSoN

## HIGH EFFICIENCY

From 16% (Monofacial) to over 20% (with Bifacial gain) of module efficiency

## WARRANTY

12 years of Product Warranty  
25 years of Linear Power Warranty (optional extension to 40 years)

# MBA-GG60<sup>BISoN</sup> series 270-280Wp\*

High Efficiency Bifacial Monocrystalline N-type Photovoltaic Module

## Electrical Specifications

### MBF-GG60-270

			Only front (STC <sup>1</sup> )	Irradiance % on back side (depending on ground reflection)			
				15%	20%	25%	30%
<b>Equivalent peak power (Bifacial gain)</b>	Pmpp	Wpe	<b>270</b>	<b>304,4</b> (+12,75%)	<b>315,9</b> (+17,00%)	<b>327,4</b> (+21,25%)	<b>338,8</b> (+25,50%)
Short Circuit Current	Isc	A	9,1	10,26	10,65	11,04	11,43
Open Circuit Voltage	Voc	V	38,76	38,82	38,84	38,88	38,94
Current at Pmpp	Impp	A	8,6	9,67	10,04	10,38	10,73
Voltage at Pmpp	Vmpp	V	31,4	31,47	31,48	31,51	31,54
Efficiency (Nominal P)	$\eta$	%	16,3	18,3	19,0	19,7	20,4

<sup>1</sup> Measurement conditions: STC 1000 W/m<sup>2</sup> - AM 1.5 - Temperature 25 °C • Measurement uncertainty  $\leq$  3%

• Sun simulator calibration with modules calibrated by Fraunhofer Institute. Electrical characteristics may change by  $\pm$ 5% and power by -0/+5W.

## Electrical Specifications

### MBF-GG60-280

			Only front (STC <sup>1</sup> )	Irradiance % on back side (depending on ground reflection)			
				15%	20%	25%	30%
<b>Equivalent peak power (Bifacial gain)</b>	Pmpp	Wpe	<b>280</b>	<b>315,7</b> (+12,75%)	<b>327,6</b> (+17,00%)	<b>339,5</b> (+21,25%)	<b>351,4</b> (+25,50%)
Short Circuit Current	Isc	A	9,21	10,38	10,78	11,17	11,56
Open Circuit Voltage	Voc	V	39,12	39,16	39,2	39,24	39,30
Current at Pmpp	Impp	A	8,72	9,8	10,18	10,52	10,88
Voltage at Pmpp	Vmpp	V	32,13	32,2	32,21	32,26	32,27
Efficiency (Nominal P)	$\eta$	%	16,9	19,0	19,7	20,4	21,2

<sup>1</sup> Measurement conditions: STC 1000 W/m<sup>2</sup> - AM 1.5 - Temperature 25 °C • Measurement uncertainty  $\leq$  3%

• Sun simulator calibration with modules calibrated by Fraunhofer Institute. Electrical characteristics may change by  $\pm$ 5% and power by -0/+5W.

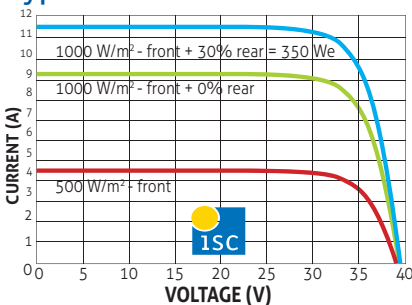
## Temperature Coefficients (at 1000W/m<sup>2</sup>, 25°C, AM 1.5)

Temperature Coefficients of Isc	0,041	%/°C
Temperature Coefficients of Voc	-0,280	%/°C
Temperature Coefficients of Pmpp	-0,397	%/°C

## Operating Conditions

Max system Voltage Vsys	1000 VDC	Safety Class II
Max reverse Current Ir	15A	Fire rating C
Wind / Snow Load	up to 2400 Pa	Permitted module temperature -40°C/+85°C

## Typical I-V curve 280W



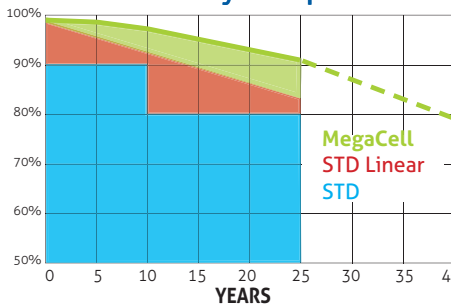
## Output Power Advantages

		Std	MegaCell
<b>LID</b>	after first week of installation	3,0%	0,3%
<b>Power degradation</b>	from first to 12th year	0,6%	0,2%
<b>Power degradation</b>	from 13th to 25th year	0,75%	0,35%

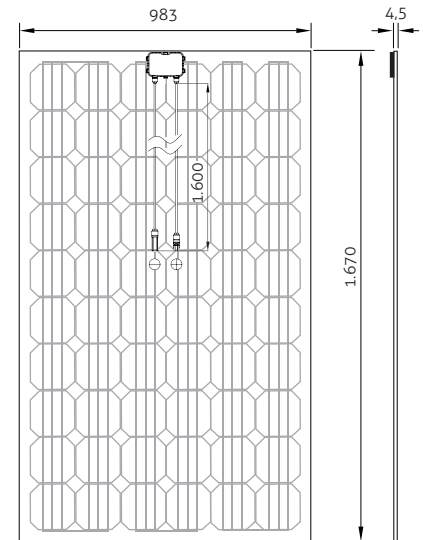
  

Years	Bifacial energy contribution	Total energy increase MegaCell vs Std
25	15%	25%
25	20%	30%
25	25%	35%

## Power Warranty comparison



\* 270-280Wp only front at STC;  
338-350Wpe (Watt peak equivalent) with Bifacial gain



Warning: Read the Installation and User Manual before handling, installing, and operating MegaCell modules.

## Warranties, Qualifications and Certificates

IEC 61215 -ed2 / IEC 61730

Salt mist atmosphere (IEC 61701: 2011, Salt mist corrosion testing of photovoltaic (PV) modules)

Certificates of production ISO 9001

Product Warranty 12 years

Output Power Warranty Linear 25 years at 91,6% (optional extension to 40 years). Expected life cycle of 50 years.



## Construction Specifications

<b>Format</b>	1670 mm x 983 x 4,5 mm (module frameless)
<b>Weight</b>	19,5 kg
<b>Front Glass</b>	2 mm tempered glass with AR- technology
<b>Back Glass</b>	2 mm tempered glass
<b>Cell</b>	6 x 10 N-type monocrystalline solar cell
<b>Junction box</b>	1 JB, 3 bypass diodes, IP 65, TUV certified
<b>Cable</b>	2 x 4 mm 2, 1600 mm solar cable.
<b>Connector</b>	MC 4 compatible, IP 65, 30A current rate

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