



MARIOSOLAR

**NEW GENERATION BIFACIAL MODULE**  
**FRONT POWER RANGE: 375W ~ 400W**  
**UP TO 30% MORE POWER FROM THE BACK SIDE**  
**MSRH-375 | 380 | 385 | 390 | 395 | 400MB-AG**



FRONT

BACK

**MORE POWER**



Up to 30% more power from the back side



Low NMOT:  $41 \pm 3 \text{ }^\circ\text{C}$   
Low temperature coefficient (Pmax):  $-0.36 \text{ } \%/ \text{ }^\circ\text{C}$



Better shading tolerance

**MORE RELIABLE**



Lower internal current,  
lower hot spot temperature



Minimizes micro-crack impacts



Heavy snow load up to 5400 Pa,  
wind load up to 2400 Pa \*



5BB cell



MBB cell

\* Both 5BB and MBB modules will be supplied.



**linear power output warranty\***



**enhanced product warranty on materials and workmanship\***

\*According to the applicable Mario Solar Limited Warranty Statement.

**MANAGEMENT SYSTEM CERTIFICATES\***

ISO 9001:2015 / Quality management system

ISO 14001:2015 / Standards for environmental management system

OHSAS 18001:2007 / International standards for occupational health & safety

**PRODUCT CERTIFICATES\***

IEC 61215 / IEC 61730: VDE / CE / MCS / INMETRO

UL 1703 / IEC 61215 performance: CEC listed (US) / FSEC (US Florida)

UL 1703: CSA / IEC 61701 ED2: VDE / IEC 62716: VDE / IEC 60068-2-68: SGS Take-e-way



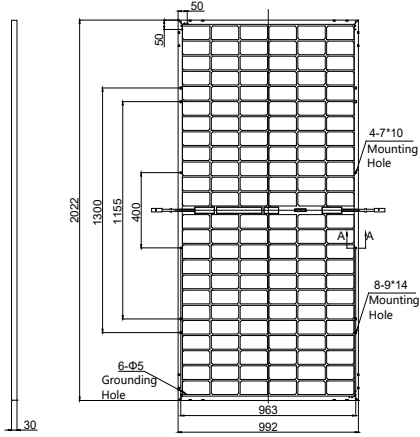
\* As there are different certification requirements in different markets, please contact your local Mario Solar sales representative for the specific certificates applicable to the products in the region in which the products are to be used.

**MARIO SOLAR CO., LTD.** is committed to providing high quality solar products, solar system solutions and services to customers around the world. No. 1 module supplier for quality and performance/price ratio in IHS Module Customer Insight Survey. As a leading PV project developer and manufacturer of solar modules with over 2 GW deployed around the world since 2018.

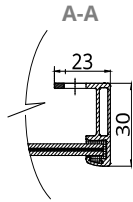
\* For detailed information, please refer to Installation Manual.

**ENGINEERING DRAWING (mm)**

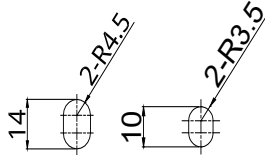
**Rear View**



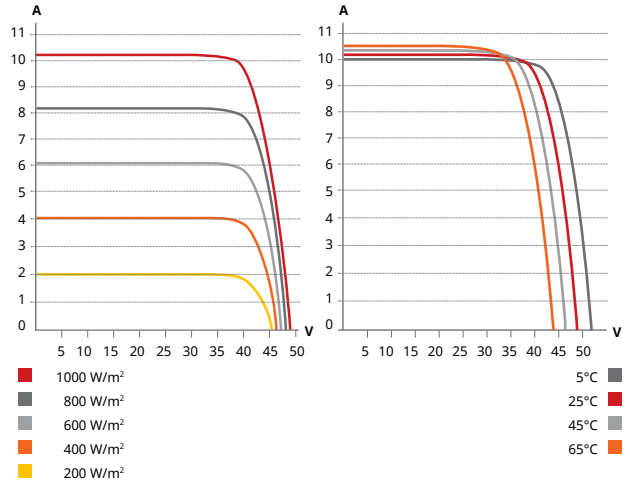
**Frame Cross Section**



**Mounting Hole**



**MSRH-390MB-AG / I-V CURVES**



**ELECTRICAL DATA | STC\***

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)	Module Efficiency	
<b>MSRH-375MB-AG</b>	375 W	39.8 V	9.43 A	47.6 V	9.93 A	18.7%	
<b>Bifacial Gain**</b>	5%	394 W	39.8 V	9.90 A	47.6 V	10.43 A	19.6%
	10%	413 W	39.8 V	10.37 A	47.6 V	10.92 A	20.6%
	20%	450 W	39.8 V	11.32 A	47.6 V	11.92 A	22.4%
	30%	488 W	39.8 V	12.26 A	47.6 V	12.91 A	24.3%
<b>MSRH-380MB-AG</b>	380 W	40.0 V	9.50 A	47.8 V	10.01 A	18.9%	
<b>Bifacial Gain**</b>	5%	399 W	40.0 V	9.98 A	47.8 V	10.51 A	19.9%
	10%	418 W	40.0 V	10.45 A	47.8 V	11.01 A	20.8%
	20%	456 W	40.0 V	11.40 A	47.8 V	12.01 A	22.7%
	30%	494 W	40.0 V	12.35 A	47.8 V	13.01 A	24.6%
<b>MSRH-385MB-AG</b>	385 W	40.2 V	9.58 A	48.0 V	10.09 A	19.2%	
<b>Bifacial Gain**</b>	5%	404 W	40.2 V	10.06 A	48.0 V	10.59 A	20.1%
	10%	424 W	40.2 V	10.54 A	48.0 V	11.1 A	21.1%
	20%	462 W	40.2 V	11.50 A	48.0 V	12.11 A	23.0%
	30%	501 W	40.2 V	12.45 A	48.0 V	13.12 A	25.0%
<b>MSRH-390MB-AG</b>	390 W	40.4 V	9.66 A	48.2 V	10.17 A	19.4%	
<b>Bifacial Gain**</b>	5%	410 W	40.4 V	10.14 A	48.2 V	10.68 A	20.4%
	10%	429 W	40.4 V	10.63 A	48.2 V	11.19 A	21.4%
	20%	468 W	40.4 V	11.59 A	48.2 V	12.2 A	23.3%
	30%	507 W	40.4 V	12.56 A	48.2 V	13.22 A	25.3%
<b>MSRH-395MB-AG</b>	395 W	40.6 V	9.73 A	48.4 V	10.25 A	19.7%	
<b>Bifacial Gain**</b>	5%	415 W	40.6 V	10.22 A	48.4 V	10.76 A	20.7%
	10%	435 W	40.6 V	10.70 A	48.4 V	11.28 A	21.7%
	20%	474 W	40.6 V	11.68 A	48.4 V	12.3 A	23.6%
	30%	514 W	40.6 V	12.65 A	48.4 V	13.33 A	25.6%
<b>MSRH-400MB-AG</b>	400 W	40.8 V	9.81 A	48.6 V	10.33 A	19.9%	
<b>Bifacial Gain**</b>	5%	420 W	40.8 V	10.30 A	48.6 V	10.85 A	20.9%
	10%	440 W	40.8 V	10.79 A	48.6 V	11.36 A	21.9%
	20%	480 W	40.8 V	11.77 A	48.6 V	12.40 A	23.9%
	30%	520 W	40.8 V	12.75 A	48.6 V	13.43 A	25.9%

\* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.  
 \*\* Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

**ELECTRICAL DATA**

Operating Temperature	-40°C ~ +85°C
Max. System Voltage	1500 V (IEC/UL) or 1000 V (IEC/UL)
Module Fire Performance	TYPE 3 (UL 1703) or CLASS C (IEC 61730)
Max. Series Fuse Rating	25 A
Application Classification	Class A
Power Tolerance	0 ~ + 10 W
Power Bifaciality*	70 %

\* Power Bifaciality =  $P_{max, rear} / P_{max, front}$  both  $P_{max, rear}$  and  $P_{max, front}$  are tested under STC, Bifaciality Tolerance: ± 5 %

\* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. Mario Solar co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice.  
 Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

**ELECTRICAL DATA | NMOT\***

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)
<b>MSRH-375MB-AG</b>	280 W	37.2 V	7.54 A	44.8 V	8.01 A
<b>MSRH-380MB-AG</b>	284 W	37.4 V	7.60 A	45.0 V	8.07 A
<b>MSRH-385MB-AG</b>	288 W	37.6 V	7.66 A	45.1 V	8.14 A
<b>MSRH-390MB-AG</b>	292 W	37.7 V	7.72 A	45.3 V	8.20 A
<b>MSRH-395MB-AG</b>	295 W	37.9 V	7.78 A	45.5 V	8.26 A
<b>MSRH-400MB-AG</b>	299 W	38.1 V	7.84 A	45.7 V	8.33 A

\* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m² spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

**MECHANICAL DATA**

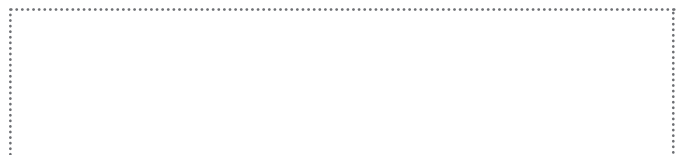
Specification	Data
Cell Type	Mono-crystalline
Cell Arrangement	144 [2X (12 X 6)]
Dimensions	2022 x 992 x 30 mm (79.6 x 39.1 x 1.18 in)
Weight	25.9 kg (57.1 lbs)
Front / Back Glass	2.0 mm heat strengthened glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 diodes
Cable	4.0 mm² (IEC), 12 AWG (UL)
Cable Length (Including Connector)	Portrait: 400 mm (15.7 in) (+) / 280 mm (11.0 in) (-); landscape: 1400 mm (55.1 in); leap-frog connection: 1670 mm (65.7 in)*
Connector	T4 series or H4 UTX or MC4-EVO2
Per Pallet	33 pieces
Per Container (40' HQ)	726 pieces or 594 pieces (only for US)

\* For detailed information, please contact your local Mario Solar sales and technical representatives.

**TEMPERATURE CHARACTERISTICS**

Specification	Data
Temperature Coefficient (Pmax)	-0.36 % / °C
Temperature Coefficient (Voc)	-0.29 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	41 ± 3°C

**PARTNER SECTION**



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