



MARIOSOLAR



MBB

5BB

\*Black frame product can be provided upon request.

# HIGH EFFICIENCY POLY MODULE MSRH-315 | 320 | 325 | 330P (1000 V / 1500 V)

## MORE POWER



Low power loss in cell connection



Low NMOT:  $42 \pm 3 \text{ }^\circ\text{C}$   
Low temperature coefficient (Pmax):  $-0.36 \text{ } \%/ \text{ }^\circ\text{C}$



Better shading tolerance



High PTC rating of up to: 93.27 %

## MORE RELIABLE



Lower hot spot temperature



Minimizes micro-crack impacts



Heavy snow load up to 6000 Pa,  
wind load up to 4000 Pa\*



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 / CQC / MCS / INMETRO  
UL 1703 / IEC 61215 performance: CEC listed (US)  
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.

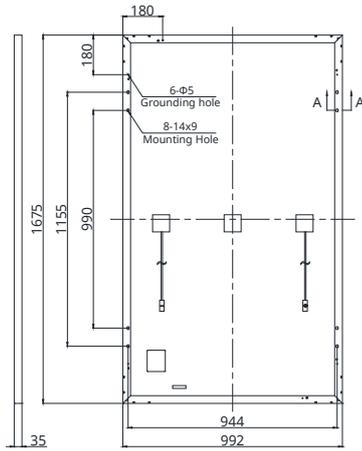
\* For detailed information, please refer to the Installation Manual.

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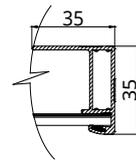
Building 4, Changfa Plaza, 88 Hongshan Road, Xuanwu District, Nanjing, [www.mariosolar.com](http://www.mariosolar.com), [sales@mariosolar.com](mailto:sales@mariosolar.com)

## ENGINEERING DRAWING (mm)

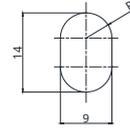
### Rear View



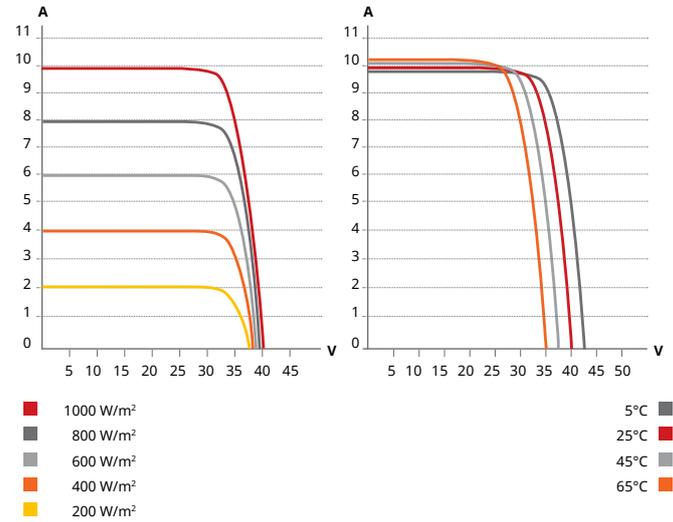
### Frame Cross Section A-A



### Mounting Hole



## MSRH-320P / I-V CURVES



## ELECTRICAL DATA | STC\*

MSRH	315P	320P	325P	330P
Nominal Max. Power (Pmax)	315 W	320 W	325 W	330 W
Opt. Operating Voltage (Vmp)	33.3 V	33.5 V	33.7 V	33.9 V
Opt. Operating Current (Imp)	9.46 A	9.56 A	9.65 A	9.74 A
Open Circuit Voltage (Voc)	39.9 V	40.1 V	40.9 V	41.1 V
Short Circuit Current (Isc)	9.89 A	9.97 A	10.21 A	10.29 A
Module Efficiency	19.0%	19.3%	19.6%	19.9%
Operating Temperature	-40°C ~ +85°C			
Max. System Voltage	1500V (IEC/UL) or 1000V (IEC/UL)			
Module Fire Performance	TYPE 1 (UL 1703) or Class C (IEC 61730)			
Max. Series Fuse Rating	30 A			
Application Classification	Class A			
Power Tolerance	0 ~ + 10 W			

\* Under Standard Test Conditions (STC) of irradiance of 1000 W/m<sup>2</sup>, spectrum AM 1.5 and cell temperature of 25°C.

## ELECTRICAL DATA | NMOT\*

MSRH	315P	320P	325P	330P
Nominal Max. Power (Pmax)	235 W	238 W	242 W	246 W
Opt. Operating Voltage (Vmp)	31.0 V	31.2 V	31.4 V	31.6 V
Opt. Operating Current (Imp)	7.57 A	7.64 A	7.72 A	7.79 A
Open Circuit Voltage (Voc)	37.5 V	37.7 V	38.4 V	38.6 V
Short Circuit Current (Isc)	7.98 A	8.04 A	8.24 A	8.30 A

\* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m<sup>2</sup>, spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

## MECHANICAL DATA

Specification	Data
Cell Type	Poly-crystalline
Cell Arrangement	120 [2 X (10 X 6) ]
Dimensions	1675 X 992 X 35 mm (65.9 X 39.1 X 1.38 in)
Weight	18.5 kg (40.8 lbs)
Front Cover	3.2 mm tempered glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 bypass diodes
Cable	4.0 mm <sup>2</sup> (IEC), 12 AWG (UL)
Cable Length (Including Connector)	Portrait: 400 mm (15.7 in) (+) / 280 mm (11.0 in) (-); landscape: 1160 mm (45.7 in)*
Connector	T4 series or H4 UTX or MC4-EVO2
Per Pallet	30 pieces
Per Container (40' HQ)	840 pieces

\* 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)	-0.28 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	42 ± 3°C

## PARTNER SECTION



\* 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 adjustments 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.

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