

PERC Technology






# Hpower Series

## MSM-60



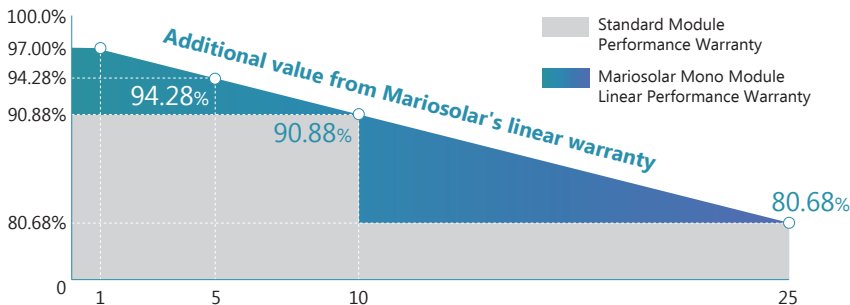
Mariosolar High Efficiency Monocrystalline Solar Module with Perc Technology

300-320W

-  **Higher Module Efficiency**  
10% more power than standard modules, due to advanced the PERC technology
-  **More Energy Yield**  
Better temperature coefficient, helps boost energy yield
-  **Approved Technology**  
Approved practice for different operating conditions
-  **Lower Operation Temperature**  
Less hot spot heating risk, make the module more reliable
-  **Aesthetic Design**  
Uniformity appearance, aesthetic design with black frame option



### LINEAR PERFORMANCE WARRANTY



**12years** Product Material & Workmanship

**25years** Linear Performance Warranty

#### About Mariosolar

Mariosolar, established in 2018, is dedicated to providing solar products with high quality, excellent performance and strong after-sales support. The company not only has strong financial support but also never stops innovating. Mariosolar will keep delivering the diversified solar products for all kinds of renewable energy generation systems around the world.

[www.mariosolar.com](http://www.mariosolar.com)

# Hpower Series MSM-60 Mariosolar High Efficiency Monocrystalline Solar Module with Perc Technology

ELECTRICAL DATA @ STC*		MSM300-60	MSM305-60	MSM310-60	MSM315-60	MSM320-60
Peak Power (Pmax)	(W)	300	305	310	315	320
Maximum Power Voltage (Vmp)	(V)	32.95	33.23	33.52	33.80	34.08
Maximum Power Current (Imp)	(A)	9.11	9.18	9.25	9.32	9.39
Open-circuit Voltage (Voc)	(V)	39.88	40.16	40.44	40.72	41.00
Short-circuit Current (Isc)	(A)	9.60	9.68	9.76	9.84	9.91
Module Efficiency	(%)	18.46	18.77	19.07	19.38	19.69
Operating Temperature		-40°C~+85°C				
Maximum System Voltage		1000V				
Maximum Series Fuse Rating		15A				
Application Class		Class A				
Power Tolerance		0~+3%				

\*STC (Standard Test Condition): Irradiance 1000W/ m<sup>2</sup>, Module Temperature 25°C, AM 1.5

### ELECTRICAL DATA @ NMOT\*

Peak Power (Pmax)	(W)	222	226	230	234	239
MPP Voltage (Vmp)	(V)	30.34	30.60	30.87	31.12	31.73
MPP Current (Imp)	(A)	7.33	7.39	7.45	7.50	7.52
Open Circuit Voltage (Voc)	(V)	37.62	37.88	38.15	38.41	38.84
Short Circuit Current (Isc)	(A)	7.75	7.82	7.88	7.95	8.00

\*Under Nominal Module Operating Temperature (NMOT), Irradiance of 800W/ m<sup>2</sup>, Spectrum AM 1.5, Ambient Temperature 20°C, Wind Speed 1m/s

### TEMPERATURE CHARACTERISTICS

Temperature coefficient of Pmax		-0.40%/°C
Temperature coefficient of Voc		-0.31%/°C
Temperature coefficient of Isc		0.05%/°C
NMOT		42±3°C

### MECHANICAL DATA

Cell Type		Mono-Crystalline, 6" inch
Cell Arrangement		60pcs (6×10)
Dimension (L×W×H)		1640×991×35mm
Weight		18.2kg
Front Cover		3.2mm Tempered Glass
Frame		Anodized Aluminium Alloy
Junction Box		IP67, 3 Bypass Diodes
Cable Type		4mm <sup>2</sup>
Length of Cable		1000mm
Connector		PV Connector

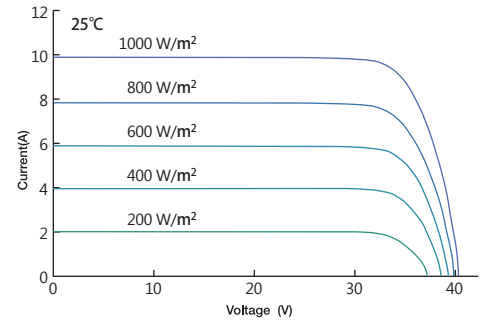
### PACKING MANNER

Packing Type		40HQ
Piece/Pallet		30
Pallet/Container		28
Piece/Container		840

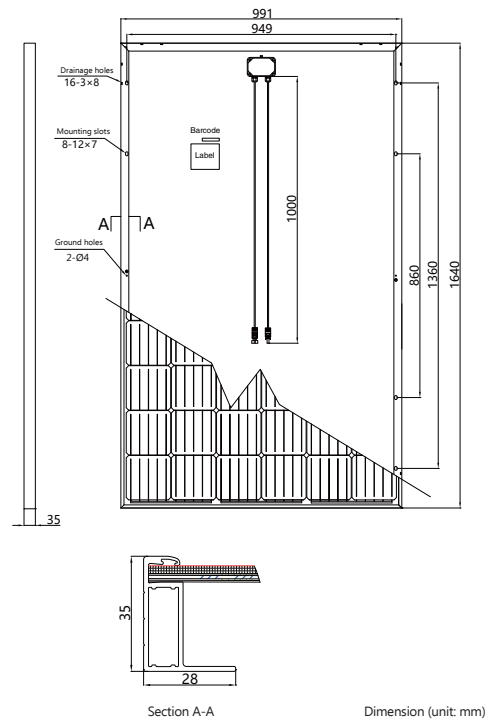
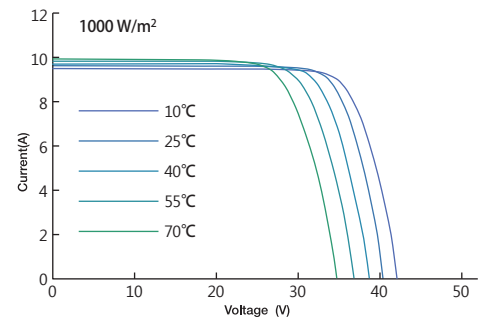
\*The specification and key features described in this datasheet may deviate slightly and are not guaranteed. Due to ongoing innovation, R&D enhancement, Mariosolar. Reserves the right to make any adjustment to the information described herein at any time without notice. Please always obtain the most recent version of the datasheet which shall be duly incorporated into the binding contract made by the parties governing all transactions related to the purchase and sale of the products described herein.

\*Power measurement tolerance: ±3%

### Current-Voltage Curve under different irradiance



### Current-Voltage Curve under different working temperatures



Dimension (unit: mm)

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