

# Mars Series

395W/400W/405W/410W/415W/  
420W

## SUN 72M-HF(BK)

MBB HALF-CELL MONO PV MODULE



### COMPREHENSIVE CERTIFICATES

IEC61215 / IEC61730 / IEC61701 / IEC62716 / IEC62804  
ISO 9001: 2015 Quality management systems;  
ISO 14001: 2015 Environmental management systems;  
OHSAS 18001: 2007 Occupational health and safety management systems;

### KEY SALIENT FEATURES



High output power



Better power generation under shadows



Strong anti-hot spot ability



Strong mechanical load capacity



Super strong frame



1500V system voltage

### SUNERGY USA WORKS LLC

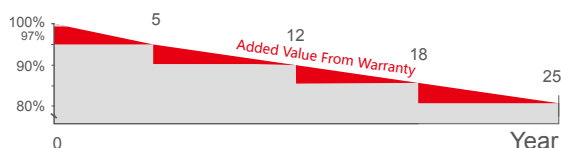
Founded in 2008, Sunergy is a manufacturer of high-performance photovoltaic products. With 12 manufacturing bases and more than 20 branches around the world, the company's business covers modules, photovoltaic power stations and EPC. Sunergy products are available in over 120 countries and regions and are used extensively in ground-mounted power plants, commercial & industrial rooftop PV systems and residential rooftop PV systems.

### QUALIFICATIONS AND CERTIFICATES



### LINEAR PERFORMANCE WARRANTY

- 12 Years Manufacturing Warranty
- 12 Years 90% Power Output
- 25 Years 80% Power Output

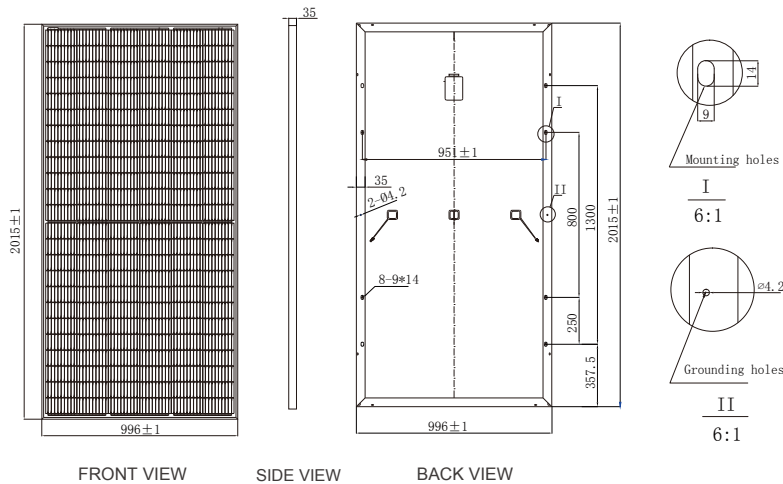


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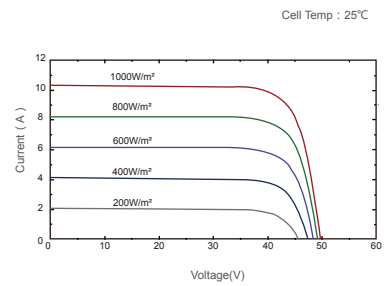
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## MECHANICAL DRAWINGS

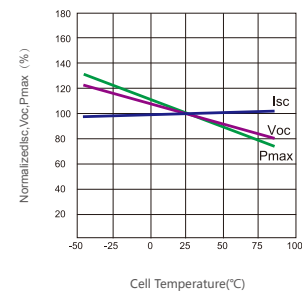


## I-V CURVES

I-V Curves at SUN405-72M-HF(BK) at different Irradiances



Power voltage current curve at different temperature



## MECHANICAL SPECIFICATION

Cell Type	Mono Crystalline 158.75x79.375mm
Number Of Cells	144 (6x24)
Dimensions(AxBxC)	2015x996x35mm
Weights	23.0kg
Glass	3.2mm Tempered Low Iron Glass
Aluminium Frame	Anodised Aluminium
Junction Box	Split Junction Box (IP68 ,three diode)
Connector	Mc4 Compatible
Output Cables	4.0mm <sup>2</sup> ,+300mm,-300mm Customized Length

## PACKING CONFIGURATION

Container	40' HQ
Pieces Per Pallet	30
Pallets Per Container	22
Pieces Per Container	660

## ELECTRICAL CHARACTERISTICS

Module Type	395W		400W		405W		410W		415W		420W	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power At STC(Pmax)	395W	296.9W	400W	300.7W	405W	304.4W	410W	308.2W	415W	311.9W	420W	315.7W
Short Circuit Current(Isc)	10.24A	8.29A	10.31A	8.35A	10.40A	8.42A	10.47A	8.48A	10.56A	8.55A	10.64A	8.61A
Open Circuit Voltage(Voc)	49.4V	46.1V	49.7V	46.3V	49.9V	46.5V	50.2V	46.8V	50.4V	47.0V	50.7V	47.3V
Maximum Power Current(Imp)	9.78A	7.86A	9.85A	7.91A	9.93A	7.98A	10.00A	8.03A	10.07A	8.10A	10.15A	8.17A
Maximum Power Voltage(Vmpp)	40.4V	37.8V	40.6V	38.0V	40.8V	38.1V	41.0V	38.4V	41.2V	38.5V	41.4V	38.7V
Module Efficiency	19.68%		19.93%		20.18%		20.43%		20.68%		20.93%	
Power Tolerance	0~+5W		0~+5W		0~+5W		0~+5W		0~+5W		0~+5W	
Maximum System Voltage	VDC 1500V											
Maximum Series Fuse	20A											
Increased Snowload Acc.to Iec 61215	5400Pa											
Operating Temperature	-40~+85°C											
Number Of Bypass Diodes	3											
Norminal Operating Cell Temperature(Noct)	45°C±2°C											
Temperature Coefficient Of Pmax	-0.36%/°C											
Temperature Coefficient Of Voc	-0.29%/°C											
Temperature Coefficient Of Isc	0.05%/°C											

STC: 1000W/m<sup>2</sup> irradiance, 25°C cell temperature, AM1.5. NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, wind speed 1m/s.



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