



SUNERGY

SUNERGY USA WORKS LLC

www.sunergyworks.com

SUN 60M-HF(BK) 330W/335W/340W/ 345W/350W/

9BB HALF-CELL MONO PV MODULE

ISO 9001: 2015 Quality management systems;
ISO 14001: 2015 Environmental management systems;
OHSAS 18001: 2007 Occupational health and safety management systems;

Power Space Technology



High output power



Assembled with multi-busbar PERC cells, the half-cell configuration of the modules offers the advantages of higher power output, reduces BOS cost effectively;

Better power generation under shadows



Special half-cell design reduces the energy loss caused by shadows, better anti-shading performance;

Strong anti-hot spot ability



Lower hot spot risks due to half-cell layout, offers an additional level of safety;

1500V system voltage



1500V DC voltage of the system, reducing the cost of the system side;

Super strong frame



The overflow tank is waterproof with double layers, and the cross section contains hooked aluminum frame, which enhances the mechanical load strength by 10%;

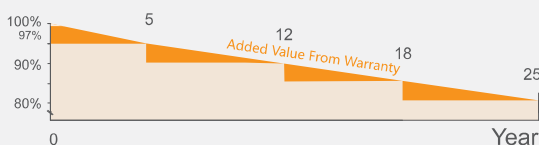
Strong mechanical load capacity



Passed the certification test of 5400 Pa snow load and 2400 Pa wind load;

LINEAR PERFORMANCE WARRANTY

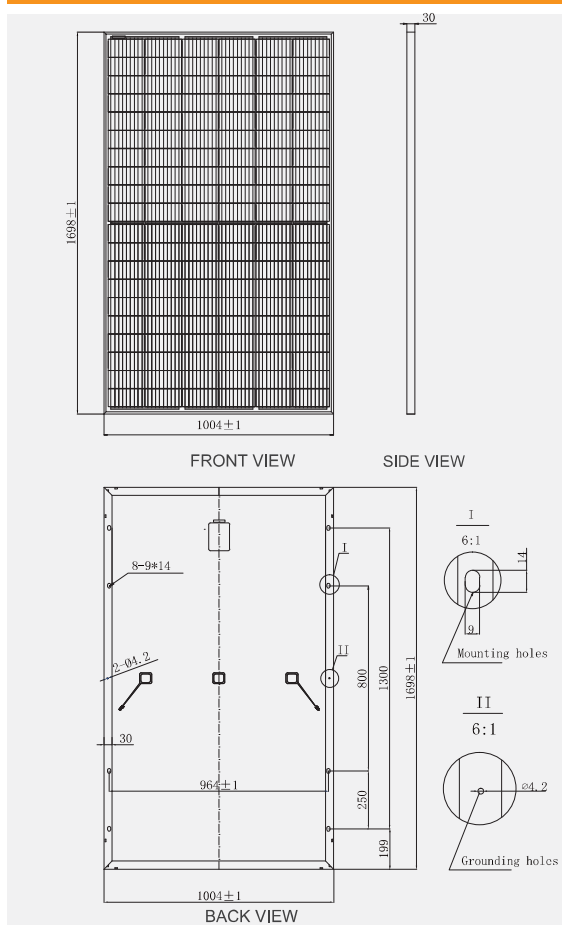
- 12 Years Manufacturing Warranty
- 12 Years 90% Power Output
- 25 Years 80% Power Output



QUALIFICATIONS AND CERTIFICATES



MECHANICAL DRAWINGS



MECHANICAL SPECIFICATION

Cell Type	Mono Crystalline 158.75x79.375mm
Number Of Cells	120 (6x20)
Dimensions(AxBxC)	1698x1004x30mm
Weights	19.0kg
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 ² ,+300mm,-300mm Customized Length

ELECTRICAL CHARACTERISTICS

Maximum Power At STC(Pmax)	330W	335W	340W	345W	350W	355W
Short Circuit Current(Isc)	10.30A	10.39A	10.48A	10.57A	10.66A	10.74A
Open Circuit Voltage(Voc)	41.6V	41.8V	42.0V	42.3V	42.5V	42.7V
Maximum Power Current(Imp)	9.76A	9.85A	9.94A	10.03A	10.12A	10.20A
Maximum Power Voltage(Vmpp)	33.8V	34.0V	34.2V	34.4V	34.6V	34.8V
Module Efficiency	19.36%	19.65%	19.94%	20.24%	20.53%	20.82%
Power Tolerance	0~+5w	0~+5w	0~+5w	0~+5w	0~+5w	0~+5w

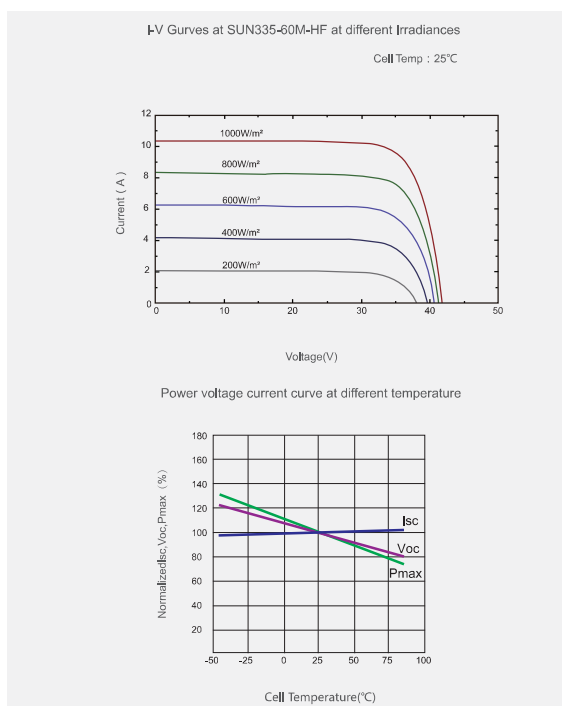
STC: 1000W/m² irradiance, 25°C cell temperature, AM1.5.

NOCT

Maximum Power At STC(Pmax)	248.1	251.8	255.6	259.3	263.1	266.8
Short Circuit Current(Isc)	8.34	8.41	8.48	8.56	8.63	8.70
Open Circuit Voltage(Voc)	38.8	39.0	39.2	39.4	39.6	39.8
Maximum Power Current(Imp)	7.90	7.97	8.04	8.11	8.18	8.24
Maximum Power Voltage(Vmpp)	31.4	31.6	31.8	32.0	32.2	32.4

NOCT: Irradiance at 800W/m² , Ambient Temperature 20°C , wind speed 1m/s .

I-V CURVES



SYSTEM INTEGRATION PARAMETERS

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

TEMPERATURE CHARACTERISTICS

Normal 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

PACKING CONFIGURATION

Container	40' HQ
Pieces Per Pallet	35
Pallets Per Container	26
Pieces Per Container	910



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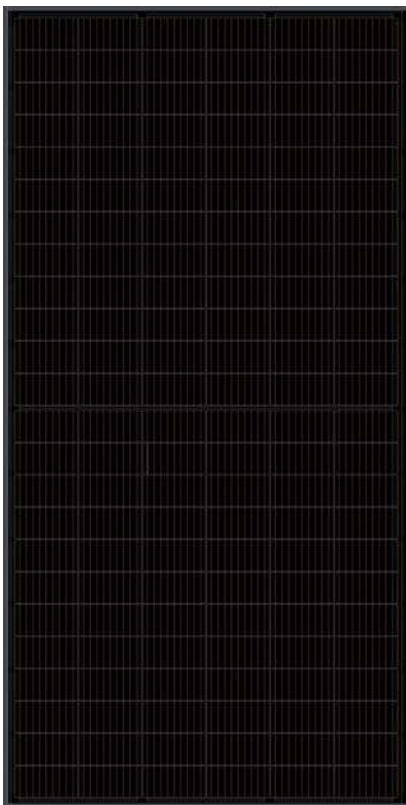
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SUN 72M-HF (BK) 395W/400W/405W/ 410W/415W/420W/

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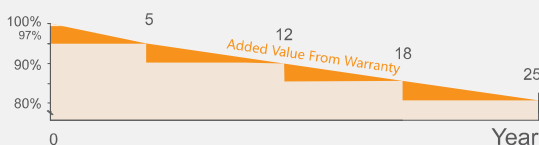
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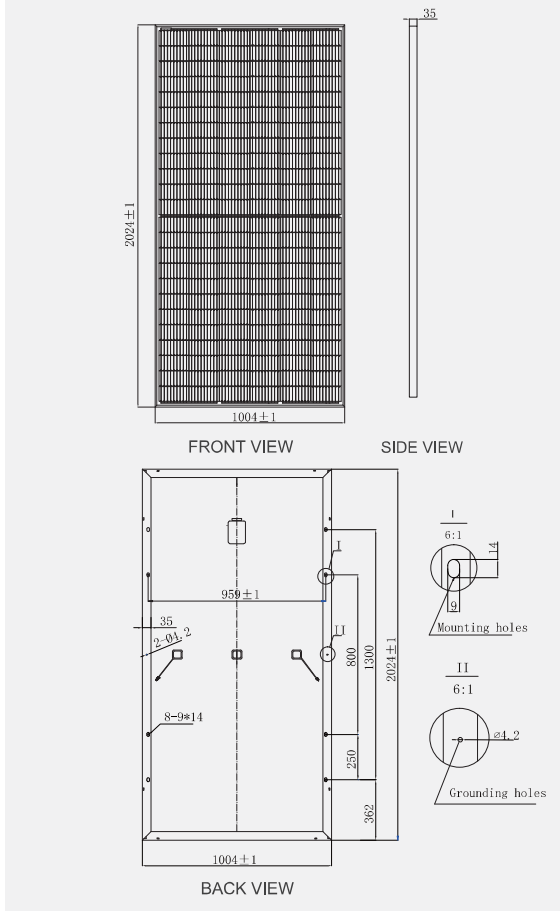
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- 12 Years 90% Power Output
- 25 Years 80% Power Output



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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 ² ,+300mm,-300mm Customized Length

ELECTRICAL CHARACTERISTICS

Maximum Power At STC(Pmax)	395W	400W	405W	410W	415W	420W
Short Circuit Current(Isc)	10.24A	10.31A	10.40A	10.47A	10.56A	10.64A
Open Circuit Voltage(Voc)	49.4V	49.7V	49.9V	50.2V	50.4V	50.7V
Maximum Power Current(Imp)	9.78A	9.85A	9.93A	10.00A	10.07A	10.15A
Maximum Power Voltage(Vmpp)	40.4V	40.6V	40.8V	41.0V	41.2V	41.4V
Module Efficiency	19.44%	19.68%	19.93%	20.18%	20.42%	20.67%
Power Tolerance	0~+5w	0~+5w	0~+5w	0~+5w	0~+5w	0~+5w

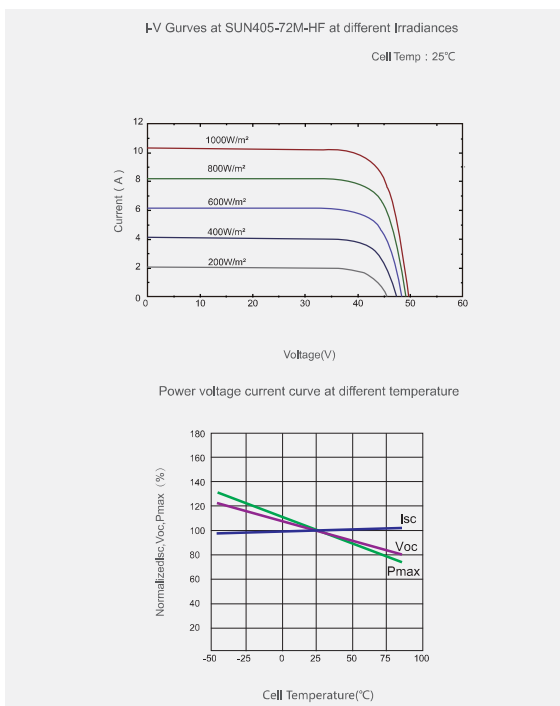
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NOCT

Maximum Power At STC(Pmax)	296.9	300.7	304.4	308.2	311.9	315.7
Short Circuit Current(Isc)	8.29	8.35	8.42	8.48	8.55	8.61
Open Circuit Voltage(Voc)	46.1	46.3	46.5	46.8	47.0	47.3
Maximum Power Current(Imp)	7.86	7.91	7.98	8.03	8.10	8.17
Maximum Power Voltage(Vmpp)	37.8	38.0	38.1	38.4	38.5	38.7

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Temperature Coefficient Of Voc	-0.29%/°C
Temperature Coefficient Of Isc	0.05%/°C

PACKING CONFIGURATION

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