



SUNERGY

SUNERGY USA WORKS LLC

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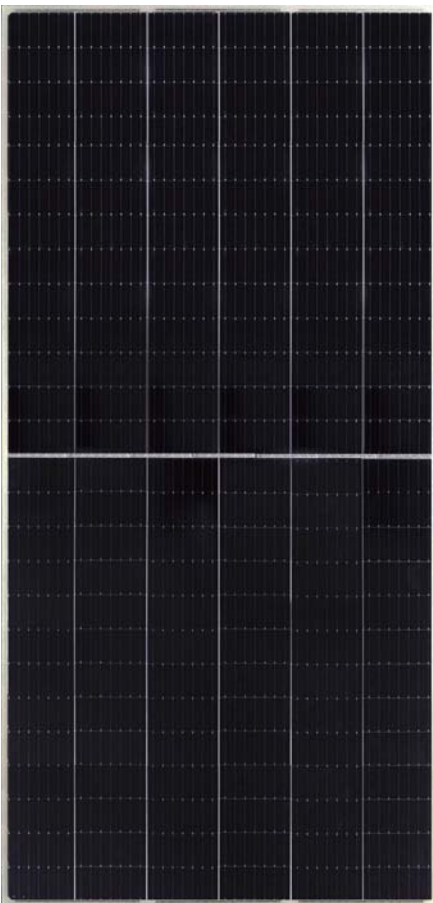
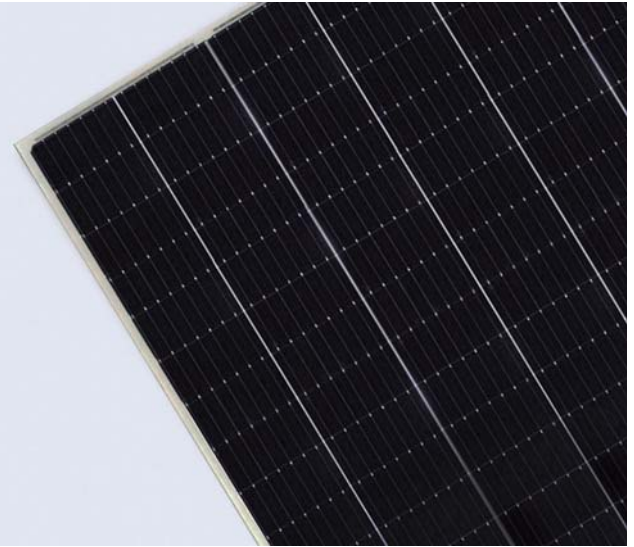
SUN 78M-HF

435W/440W/445W

SQUARE-MONO HAIF CUTTING
MODULE

IEC61215-1:2016; IEC61215-2:2016

IEC61730-1:2016; IEC61730-2:2016



High output power



The monolithic perc cell structure technology (low resistance characteristics) is adopted. The maximum output power of 156 cells mono crystalline is up to 445W (the maximum conversion efficiency of modules is up to 20.66%);

7BB PV cell



More uniform current collection ability, which reduces the current loss of the battery inside the module;

Connection of triangular welding belt



The utilization rate of incident light irradiated on the triangle welding belt is over 90%. The triangle welding belt has a visual invisible effect, and the solar PV module looks more beautiful;

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 2400pa wind load and 3600pa snow load test, ensuring that the module has a stable mechanical life. The module can't be installed using clamps.

Module Manufacturer : Chinaland Solar Energy Co., Ltd.

Address: Feidong New City Economic Development Zone,

Hefei, 231600, Anhui Province, PR China

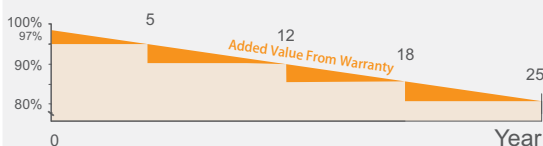
Tel/Fax: +86 551 67758555

Web: www.chnland.com

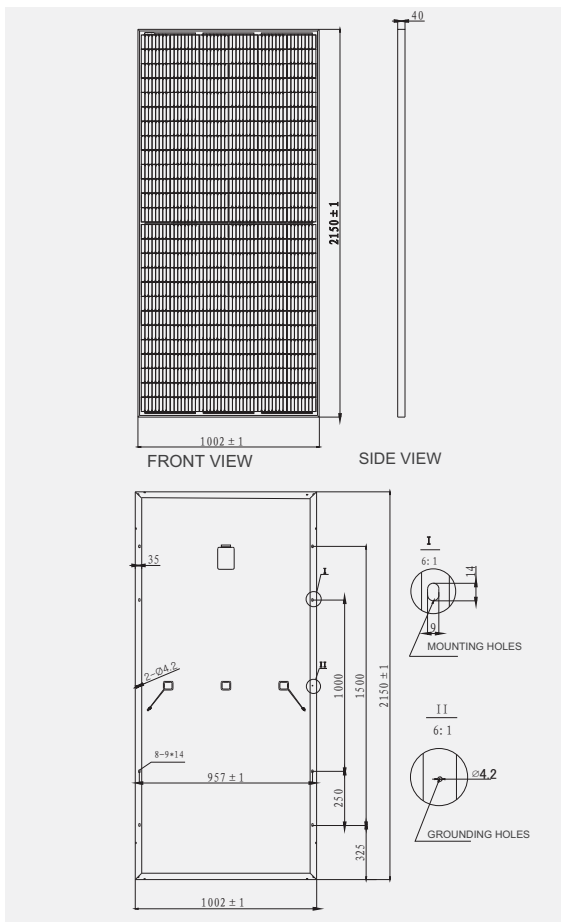
E-mail: chnland@chnland.com

LINEAR PERFORMANCE WARRANTY

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



MECHANICAL DRAWINGS



MECHANICAL SPECIFICATION

Cell Type	Mono Crystalline 158.75x79.375mm
Number Of Cells	156 (6x26)
Dimensions(AxBxC)	2150x1002x40mm
Weights	24.5kg
Glass	3.2mm Tempered Low Iron Glass
Aluminium Frame	Anodised Aluminium
Junction Box	Split Junction Box (IP68 ,three diode)
Connector	PV-JM608
Output Cables	TUV 4.0mm ² , ± 300 mm

ELECTRICAL CHARACTERISTICS

Module NO.	SUN435-78M-HF	SUN440-78M-HF	SUN445-78M-HF
Maximum Power At STC(Pmax)	435W	440W	445W
Short Circuit Current(Isc)	10.48A $\pm 5\%$	10.57A $\pm 5\%$	10.64A $\pm 5\%$
Open Circuit Voltage(Voc)	53.5V $\pm 5\%$	53.8V $\pm 5\%$	54.1V $\pm 5\%$
Maximum Power Current(Imp)	9.93A	10.02A	10.09A
Maximum Power Voltage(Vmp)	43.8V	43.9V	44.1V
Module Efficiency	20.19%	20.42%	20.66%
Power Tolerance	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$

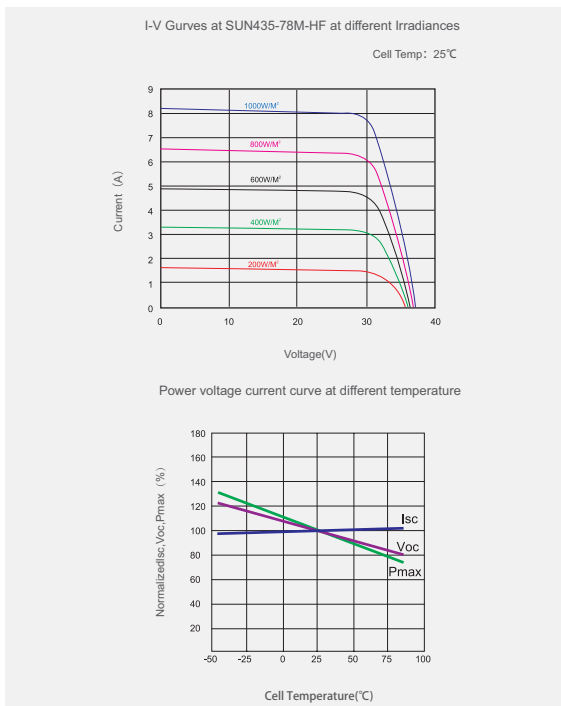
STC: 1000W/m² irradiance, 25°C cell temperature, AM1.5.

NOCT

	SUN435-78M-HF	SUN440-78M-HF	SUN445-78M-HF
Maximum Power At STC(Pmax)	327	330.7	334.5
Short Circuit Current(Isc)	8.48	8.56	8.61
Open Circuit Voltage(Voc)	49.9	50.2	50.5
Maximum Power Current(Imp)	8.04	8.11	8.17
Maximum Power Voltage(Vmp)	40.7	40.8	41.0

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	15A
Increased Snowload Acc.to IEC 61215	3600Pa
Operating Temperature	-40~+85°C
Number Of Bypass Diodes	3

TEMPERATURE CHARACTERISTICS

Nominal Operating Cell Temperature(Noct)	45°C ± 2 °C
Temperature Coefficient Of Pmax	-0.35% / °C
Temperature Coefficient Of Voc	-0.26% / °C
Temperature Coefficient Of Isc	0.04% / °C

PACKING CONFIGURATION

Container	40' HQ
Pieces Per Pallet	27
Pallets Per Container	20
Pieces Per Container	540