



HAVELLS



HAVELLS ENVIRO SOLAR PV MONO MODULE

2 X 72 Half Cut Cell Monofacial Module 545-560 Wp



KEY SALIENT FEATURES



High module conversion efficiency

Module efficiency up to 21.7% achieved through advanced cell technology and manufacturing process.



Compatible with mainstream trackers

The module design is highly compatible with power plant tracking systems, which offers a cost-effective solution for large power plants



Enhanced Mechanical Load

Certified to withstand extreme wind loads (2400 Pa) and snow loads (5400 Pa).



Low Light performance

Excellent performance in low light conditions



Withstand harsh environments

Reliable high quality that makes module resistant even to high temperatures, salt water and ammonia

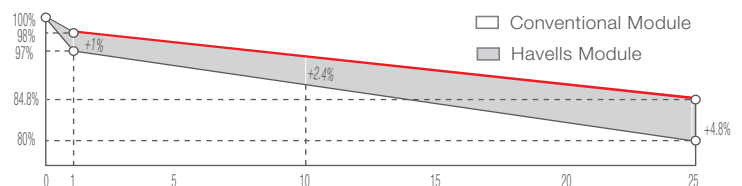


Current sorting process

Up to 2 % power loss caused by current mismatch could be diminished by current sorting technique to maximize system power output

LINEAR PERFORMANCE WARRANTY

- 98% in the first year; thereafter, for years two through twenty-five, 0.55% maximum decrease from MODULE'S nominal power output per year, ending with 84.8% in the 25th year after the defined WARRANTY STARTING DATE.
- Product Warranty is of 12 Years**
- 25-year linear performance warranty**



First year power degradation: 2%
Annual degradation: 0.55%

25 years of linear warranty
12 years of product warranty

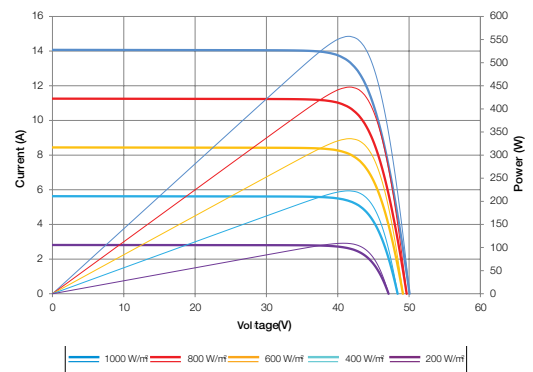
Module Type	Unit of measure)	560 Wp		555 Wp		550 Wp		545 Wp	
		STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Testing Condition	(UOM)	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Panel Rating	Pmax	560	425.2	555	421.4	550	417.7	545	414.2
Optimum Operating Voltage	(Vmp/V)	42.4	39.2	42.24	39	42.05	38.9	41.87	38.7
Optimum Operating Current	(Imp/A)	13.21	10.85	13.14	10.8	13.08	10.75	13.02	10.71
Open Circuit Voltage	(Voc/V)	50.23	47.4	50.07	47.2	49.88	47	49.69	46.9
Short Circuit Current	(Isc/A)	14.14	11.41	14.07	11.35	1	4.01	11.3	13.96
Module Efficiency	(%)	21.7		21.5		21.3		21.1	
Power Tolerance	Wp	0/+5 W							

STC: Irradiance 1000 W/m², module temperature 25 °C, AM=1.5.

NMOT: Irradiance 800 W/m², ambient temperature 20 °C, AM=1.5, wind speed 1 m/s; Tolerance of Pmax is within +/- 3%.

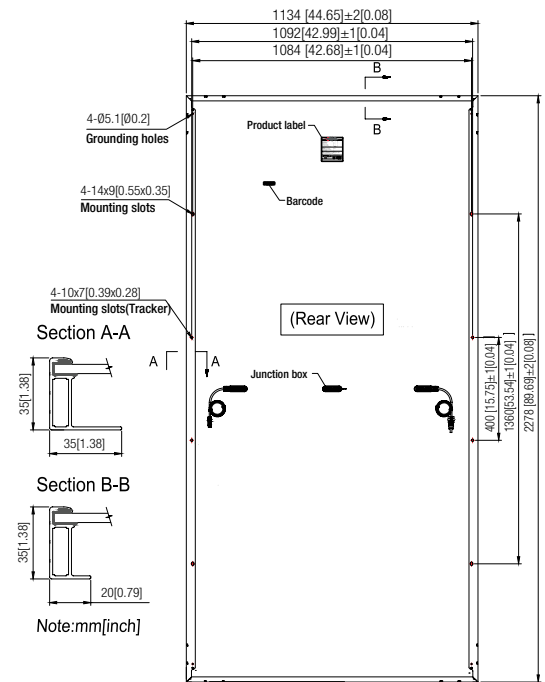
TEMPERATURE CHARACTERISTICS

Nominal Module Operating Temperature (NMOT)	(°C)	42 ± 2
Temperature Coefficient	(Voc)	-0.26 % / °C
Temperature Coefficient	(Isc)	0.050 % / °C
Temperature Coefficient	(Pmax)	-0.34 % / °C



MECHANICAL CHARACTERISTICS

Solar Cell	Monocrystalline silicon 182 mm
No. of Cells	144 (6 × 24)
Dimensions	2278 × 1134 × 30 mm (89.7 × 44.6 × 1.18 inches)
Weight	27.5 kgs (60.6 lbs.)
Front Glass	3.2 mm (0.126 inches) fully tempered glass
Output Cables	4.0 mm ² , (-) 350 mm (+) 160 mm in length or customized length
Junction Box	IP68 rated (3 bypass diodes)
Operating Module Temperature	-40 °C to +85 °C
Maximum System Voltage	1500 V DC (IEC)
Connectors	MC4 connectors
Maximum Series Fuse Rating	25 A
Frame	Anodized aluminum alloy frame
Packing Configuration	36 Pieces per pallet, 720 Pieces per container /40'HC, 2310×1120×1255 1040kg



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