

Mono PERC Module

**120
Cells
SERIES**



CYLINDRICAL TABBING WIRE is used to reduce the shadow on cell active area



NON-DESTRUCTIVE CELL CUTTING reduces the chances of micro cracks in Solar Cells



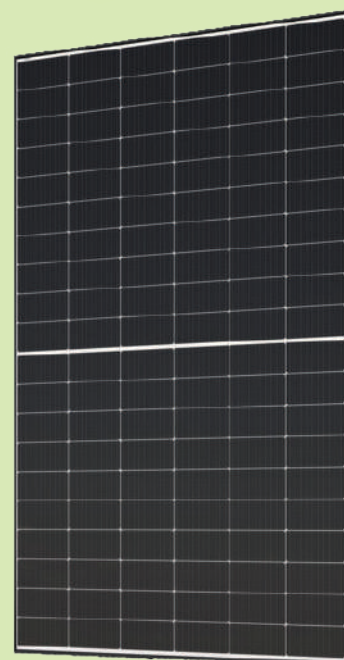
Implementation of bypass diodes in split JB series-parallel connections enable the module to perform in **PARTIAL SHADOW CONDITIONS** with respect to full-cell module



HIGHER NUMBER OF BUSBAR makes the PV modules less prone to loss in efficiency and increases tolerance to micro cracks



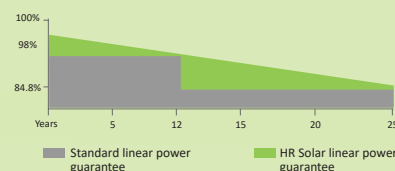
LCOE IS CUT BACK by using M10 size solar cell with adding more power output than lower size cell module



MECHANICAL DATA

Length × Width × Height	1911 × 1134 × 35mm
Weight	21.5 Kg
Junction Box	IP68, Split Junction Box with individual bypass diodes
Cable & Connectors	400 mm (+ve terminal) and 400 mm (-ve terminal) length cables, MC4 Compatible/MC4 Connectors
Application Class	Class A (Safety class II)
Superstrate	3.2 mm high transmission low iron tempered glass, AR coated
Cells	60 Mono PERC (120 half-cells) P-Type solar cells
Back Sheet	Composite film
Frame	Anodized aluminium frame with twin wall profile > 15µm
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Maximum Series Fuse Rating	25A

Performance Warranty



-2.00%
First year power degradation

-0.71%
Annual degradation

**12
Years**

Materials and workmanship warranty

**25
Years**

Performance power warranty

CERTIFICATIONS



IS 14286 : 2010 / IEC 61215 : 2005
IS / IEC 61730 (Part 1) : 2004
IS / IEC 61730 (Part 2) : 2004

R-51001686



HR Solar Solution (P) Limited

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Factory Address : Raghudebpur, NH 6, Panchla, Block - Uluberia II, Howrah, West Bengal - 711322

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SPECIFICATIONS:

Electricals Characteristics

Model Name	H450M120
Maximum Power Pmax (Wp)	450 WP
Open Circuit Voltage (Voc)	41.36
Optimum Operating Voltage (Vmp)	34.89
Optimum Operating Current (Imp)	12.90
Short Circuit Current (Isc)	13.83
Fill Factor (%)	78.68 %
Module Efficiency (%)	20.78 %

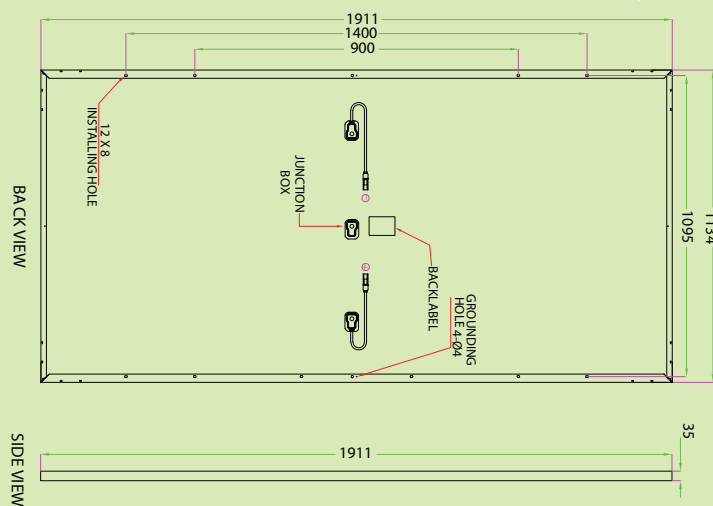
Electrical Parameters at NOCT

Maximum Power Pmax (Wp)	332
Open Circuit Voltage (Voc)	38.55
Optimum Operating Voltage (Vmp)	32.52
Optimum Operating Current (Imp)	10.21
Short Circuit Current (Isc)	10.94

Temperature Coefficients (Tc)

Operating Conditions	-40°C to +85°C at 85% RH
Temp Co-eff for Voc / °C (B)	-0.28%
Temp Co-eff for Isc/ °C (a)	0.048%
Temp Co-eff for Power/ °C (y)	-0.35%
NOCT	45°C +/- 2°C
System Voltage (V)	1500 V

Module Frame Assembly



All Dimensions in mm

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