

Bi-Facial Module

**144
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



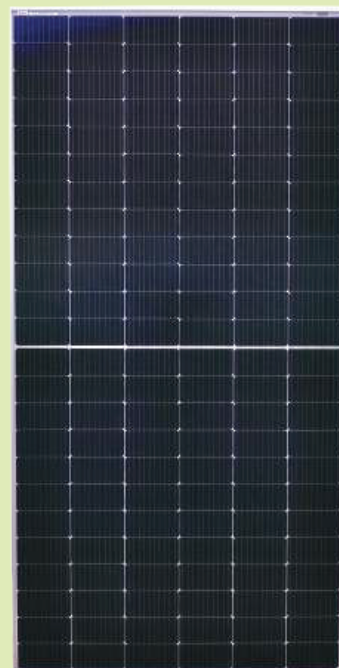
Implementation of bypass diodes in split JB series-parallel connections enable the module to perform in **PARTIAL SHADOW CONDITIONS** with respect to full-cell module



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



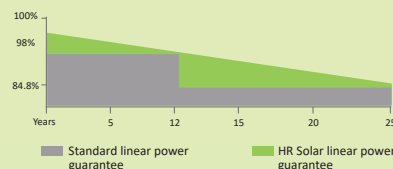
LCOE IS CUT BACK by using M10 size solar cell with adding more power output than lower size cell module



MECHANICAL DATA

Length × Width × Height	2279 × 1134 × 35mm
Weight	28.2 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	72 Mono PERC (144 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

-0.7%
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



IEC 61701 - Salt Mist test
IEC 62804 - PID test
IEC 61853 - Performance Test



HR Solar Solution (P) Limited

Registered Address : 14 NS Road, Suite no - 102, Kolkata - 700001

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

Email : info@hrsolarsolution.com **Website :** www.hrsolarsolution.com **Phone :** +91 33 2243 4540

SPECIFICATIONS:

Electricals Characteristics

Model Name	H530M144	H535M144	H540M144	H545M144	H550M144
Maximum Power Pmax (Wp)	530 WP	535 WP	540 WP	545 WP	550 WP
Open Circuit Voltage (Voc)	49.10	49.25	49.38	49.50	49.61
Optimum Operating Voltage (Vmp)	42.05	42.22	42.37	42.51	42.64
Optimum Operating Current (Imp)	12.61	12.68	12.75	12.83	12.93
Short Circuit Current (Isc)	13.5	13.58	13.66	13.73	13.81
Fill Factor (%)	80 %	80.04 %	80.09 %	80.25 %	80.29 %
Module Efficiency (%)	20.50 %	20.70 %	20.90 %	21.09 %	21.29 %

Bi-Facial: Pmax with Rear side Power Gain

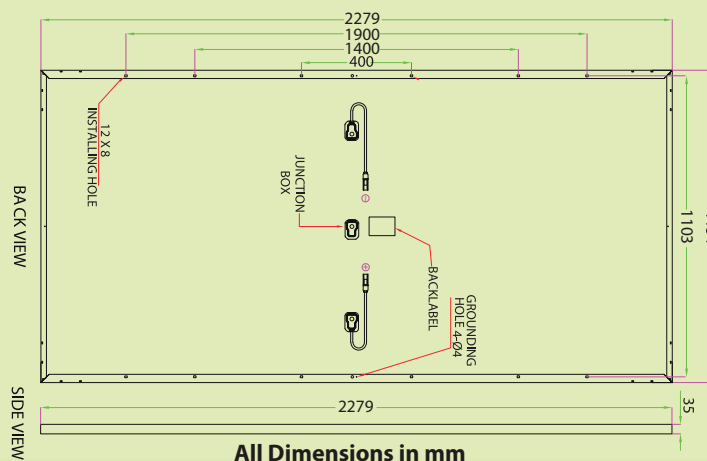
The additional power gain from the rear side compared to the front side power in STC depends on the mounting structure (height, tilt angle, etc.) and ground reflectivity.

Gain	Description	H530M144	H535M144	H540M144	H545M144	H550M144
5%	Power Output (Wp)	557	562	567	572	578
	Module Efficiency (%)	21.54%	21.75%	21.95%	22.15%	22.36%
10%	Power Output (Wp)	583	589	594	600	605
	Module Efficiency (%)	22.57%	22.78%	22.99%	23.21%	23.42%
15%	Power Output (Wp)	610	615	621	627	633
	Module Efficiency (%)	23.59%	23.82%	24.04%	24.26%	24.48%
20%	Power Output (Wp)	636	642	648	654	660
	Module Efficiency (%)	24.62%	24.85%	25.08%	25.32%	25.55%
25%	Power Output (Wp)	663	669	675	681	688
	Module Efficiency (%)	25.65%	25.89%	26.13%	26.37%	26.61%
30%	Power Output (Wp)	689	696	702	709	715
	Module Efficiency (%)	26.67%	26.92%	27.18%	27.43%	27.68%

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



HR Solar Solution (P) Limited

Registered Address : 14 NS Road, Suite no - 102, Kolkata - 700001

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

Email : info@hrsolarsolution.com **Website :** www.hrsolarsolution.com **Phone :** +91 33 2243 4540