Committed to Delivering Clean Energy

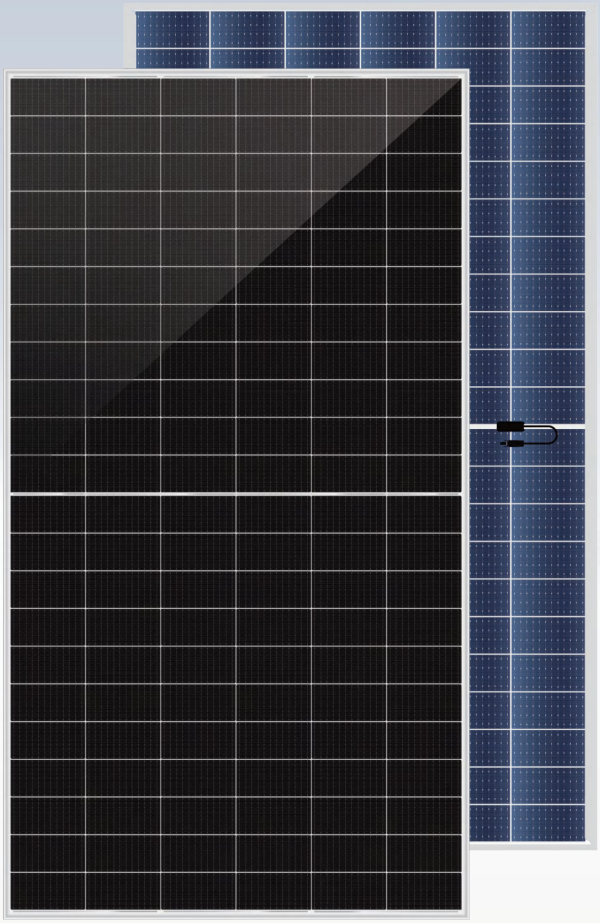
Hounen Solar

POWER RANGE

650-670W

HNM8-TPLDD132 Series

Hounen Solar 12BB HALF-CELL Bifacial
Monocrystalline P - TYPE Solar Module



KEY FEATURES

Excellent Cells Efficiency
MBB technology reduce the distance between busbars and finger grid line which is benefit to power increase.

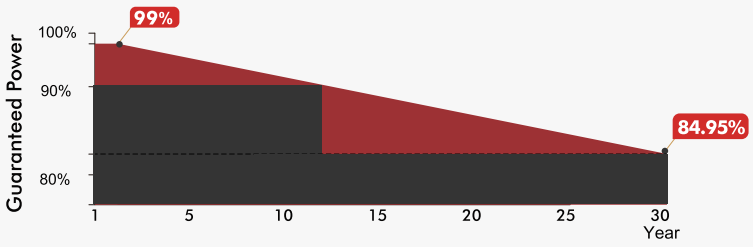
Anti PID
Ensured PID resistance through the quality control of cell manufacturing process and raw materials.

Bifacial Technology
Up to 25% additional power gain from back side depending on albedo.

Better Weak Illumination Response
More power output in weak light condition, such as haze, cloudy, and early morning.

Adapt To Harsh Outdoor Environment
Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity environment.

LINEAR PERFORMANCE WARRANTY



WARRANTY

12 YEARS Product Warranty

30 YEARS Power Warranty

SYSTEM AND PRODUCT CERTIFICATIONS:

IEC61730, UL61730
ISO9001:2015: Quality Management System
ISO14001:2015: Environment Management System
ISO45001:2018 Occupational health and safety management systems

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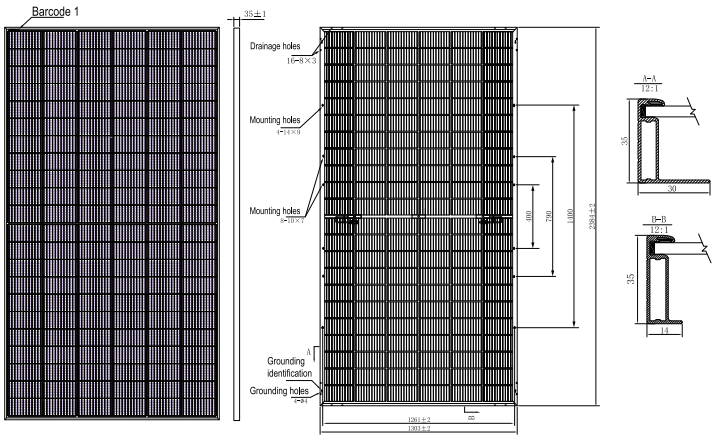
670W
MAXIMUM POWER OUTPUT

21.57%
MAXIMUM EFFICIENCY

70±5%
BIFACIALITY

DIMENSIONS OF PV MODULE

Unit: mm



Front View Side Back View

*Customized frame color available upon request.

MECHANICAL DATA

Solar cells	Mono P-Type
Number of cells	132 (6x22)
Module dimension	2384x1303x35 (With Frame)
Weight	38.5±1 kg
Glass	2.0 mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Junction Box	IP68, 3 diodes
Cables	4 mm², 1200mm (With Connectors)
Connectors	MC4-EVO2 (PV-KST4/6II-UR,PV-KBT4/6II-UR)

PACKAGING CONFIGURATION

Container	40'HQ
Piece/Box	31
Piece/Container	558

*Customized packaging is available upon request.

ELECTRICAL CHARACTERISTICS

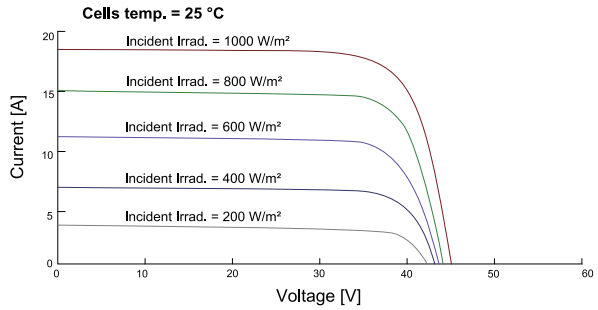
Module Type	HNM8-TPLDD132-650/M		HNM8-TPLDD132-655/M		HNM8-TPLDD132-660/M		HNM8-TPLDD132-665/M		HNM8-TPLDD132-670/M	
STC/NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Nominal Power Watt Pmax(W)*	650	488.6	655	492.3	660	496.10	665	499.8	670	503.6
Maximum Power Voltage Vmp(V)	37.70	35.20	37.90	35.40	38.10	35.60	38.30	35.70	38.50	35.90
Maximum Power Current Imp(A)	17.25	13.88	17.29	13.92	17.33	13.95	17.37	13.99	17.41	14.03
Open Circuit Voltage Voc(V)	45.20	42.40	45.40	42.60	45.60	42.80	45.80	43.00	46.00	43.20
Short Circuit Current Isc(A)	18.27	14.75	18.32	14.79	18.37	14.83	18.42	14.87	18.47	14.91
Module Efficiency (%)	20.92		21.09		21.25		21.41		21.57	

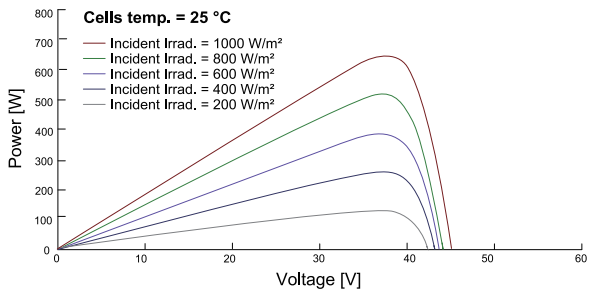
*The data above is for reference only and the actual data is in accordance with the pratical testing
*STC (Standard Test Condition): Irradiance 1000W/m², Module Temperature 25±2℃, AM 1.5.
*NMOT: Irradiance 800W/m², Ambient Temperature 20℃, AM 1.5, Wind Speed 1m/s.
*Measuring uncertainty: ±3%, Power tolerance: ±3%

*Electrical data in this catalog do not refer to a single module and they are not part of the offer.
*They only serve for comparison among different module types.
*All the electrical characteristics such as Im, Vm, Isc, Voc and FF are within ±5% tolerance.

I-V & P-V CURVES

(650W)





BIFACIAL OUTPUT-REARSIDE POWER GAIN

5%	Maximum Power (Pmax)	683Wp	688Wp	693Wp	698Wp	704Wp
	Maximum Efficiency STC (%)	21.97%	22.14%	22.31%	22.48%	22.65%
15%	Maximum Power (Pmax)	748Wp	753Wp	759Wp	765Wp	771Wp
	Maximum Efficiency STC (%)	24.06%	24.25%	24.43%	24.62%	24.80%
25%	Maximum Power (Pmax)	813Wp	819Wp	825Wp	831Wp	838Wp
	Maximum Efficiency STC (%)	26.16%	26.36%	26.56%	26.76%	26.96%

WORKING CONDITIONS

Maximum System Voltage	1500VDC
Operating Temperature	-40℃~+85℃
Maximum Fuse Rating	35A
Rear Side Mechanical Load	2400Pa
Front Side Mechanical Load	5400Pa
Safety Class	Class Ⅱ

TEMPERATURE RATINGS

NMOT	44℃±2℃
Temperature coefficient of Pmax	-0.34%/℃
Temperature coefficient of Voc	-0.29%/℃
Temperature coefficient of Isc	0.05%/℃
Refer. Bifacial Factor	70±5%

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