

144cells Monocrystalline Bifacial Dual Glass Module



HRAP-144HBD-N570-N590M10

N-TOPCon Technology

22.80%

Maximum Module Efficiency

590W

Maximum Power Output

Power Shorting Tolerance:0-3W

2279x1134x30mm

Module Dimensions

IEC 61215 / IEC 61730

Fire safty class:Class C according to UL790

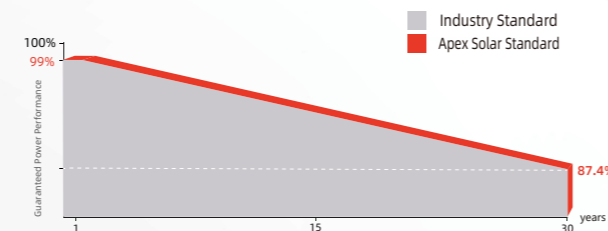
ISO 9001 :Quality Management System

ISO 14001 :Environment Management



Industry Leading Linear Power Warranty

12-year Warranty for Materials and Processing .30-year Warranty for Extra Linear Power Output



12 Process Warranty

30 Power Warranty

HRAP-144HBD-N570-N590M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	570	575	580	585	590
Maximum Power Voltage(Vmp) [V]	43.58	43.73	43.88	44.02	44.17
Maximum Power Current(Impp) [A]	13.08	13.15	13.22	13.29	13.36
Open Circuit Voltage(Voc) [V]	52.10	52.30	52.50	52.70	52.90
Short Circuit Current(Isc) [A]	13.83	13.89	13.95	14.01	14.07
Module Efficiency [%]	22.10	22.30	22.50	22.70	22.80

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

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	430	433	437	441	445
Maximum Power Voltage(Vmp) [V]	40.56	40.73	40.89	41.05	41.21
Maximum Power Current(Impp) [A]	10.59	10.64	10.69	10.74	10.79
Open Circuit Voltage(Voc) [V]	49.49	49.68	49.87	50.06	50.25
Short Circuit Current(Isc) [A]	11.16	11.21	11.26	11.31	11.36

NMOT: Irradiance 800 W/m2 ambient temperature 20°C wind speed: 1m/s

BIFACIAL OUTPUT-REAR SIDE POWER GAIN

5%	Maximum Power (Pmax) [W]	599	604	609	614	620
	Module Efficiency STC[%]	23.16	23.36	23.56	23.77	23.97
10%	Maximum Power (Pmax) [W]	627	633	638	644	649
	Module Efficiency STC[%]	24.26	24.47	24.69	24.90	25.11
20%	Maximum Power (Pmax) [W]	684	690	696	702	708
	Module Efficiency STC[%]	26.47	26.70	26.93	27.16	27.40

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
Cell Dimensions	182x182mm
Cell Arrangement	144(6x24)
Weight	31kg(±3%)
Module Dimensions	2279x1134x30mm
Cable	4.0 mm ² positive/negative:300mm(11.8inches),length Can be customized
Front Glass	2.0 mm (0.08 inches), High Transmission, ARCoated Heat Strengthened Glass
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Connector	Mc4 Compatible
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

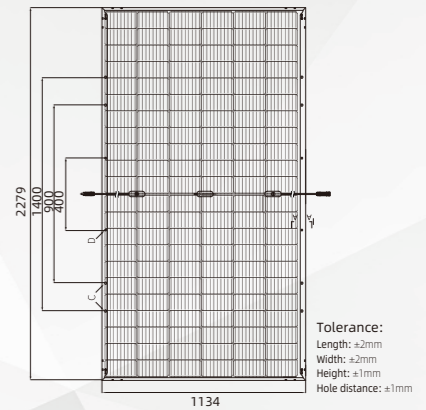
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.34%/°C
Voc Temperature Coefficient	-0.28%/°C
ISC Temperature Coefficient	+0.05%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	30A

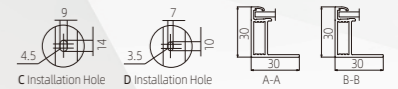
PPACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	720pcs/40HQ

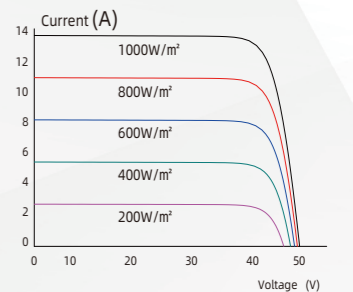
Module Dimension(mm)



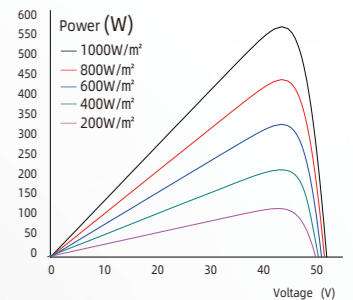
Tolerance:
Length: ±2mm
Width: ±2mm
Height: ±1mm
Hole distance: ±1mm



Current-Voltage Curve (590W)



Power-Voltage Curve (590W)



0-3W

0-3W%

Guaranteed 0-3W positive tolerance ensures the power output reliability



High customer value

Lower cost per kilowatt hour.High quality silicon wafer guarantee, high power module output, excellent cost performance advantage, is an ideal choice for solar power stations



Highly reliable due to stringent quality control

Three times strict EL testing beyond certification requirements



Fusion of MBB and half-cut cells technology

The new circuit design, minimizes the impact of shadow on the power generation of solar module.Excellent light utilization and current collection capacity, effectively improve product power output and reliability



Excellent Anti-PID performance

Ensure that the scale production passes the PID test, and greatly reduce the attenuation caused by PID by optimizing the wafer process



Outstanding low light performance

The coated glass with high transmittance and the surface technology of the wafer are used to achieve excellent performance in low light environment