



HRAP-120H-N460-N480M10

N-TOPCon Technology

22.24%

Maximum Module Efficiency

480W

Maximum Power Output

Power Shorting Tolerance:0~+3W

1903×1134×30mm

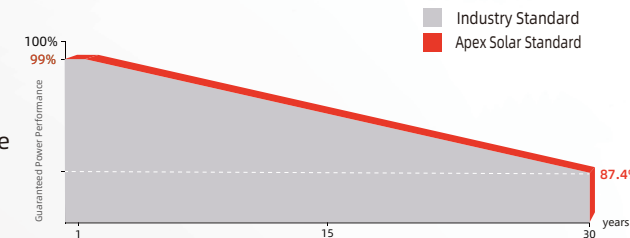
Module Dimensions

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-120H-N460-N480M10

ELECTRICAL PARAMETERS AT STC

Rated Maximum Power(Pmax) [W]	460	465	470	475	480
Maximum Power Voltage(Vmp) [V]	34.72	34.89	35.05	35.21	35.38
Maximum Power Current(Imp) [A]	13.25	13.33	13.41	13.49	13.57
Open Circuit Voltage(Voc) [V]	42.05	42.22	42.38	42.54	42.71
Short Circuit Current(Isc) [A]	13.99	14.07	14.15	14.23	14.31
Module Efficiency [%]	21.32	21.55	21.78	22.01	22.24

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

ELECTRICAL PARAMETERS AT NMOT

Rated Maximum Power(Pmax)[W]	346	350	353	357	361
Maximum Power Voltage(Vmp) [V]	32.60	32.77	32.94	33.10	33.27
Maximum Power Current(Imp) [A]	10.61	10.67	10.73	10.79	10.85
Open Circuit Voltage(Voc) [V]	39.94	40.10	40.25	40.41	40.57
Short Circuit Current(Isc) [A]	11.29	11.36	11.42	11.49	11.55

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

MECHANICAL SPECIFICATION

Cell Type	N-Type Monocrystalline
Cell Dimensions	182×182mm
Cell Arrangement	120(2×60)
Weight	24.2kg(±3%)
Module Dimensions	1903×1134×30mm
Cable	4.0 mm ² positive/negative:300mm(11.8inches),length Can be customized
Front Glass	3.2 mm high transmittance,AR coating tempered glass
Frame	Anodized aluminium alloy
Junction Box	Protection class IP68
Type of Connector	PV-XT101.1 (Suzhou Xtong Photovoltage Technology Co., Ltd)
Mechanical Load	Front side 5400Pa/Rear side 2400Pa

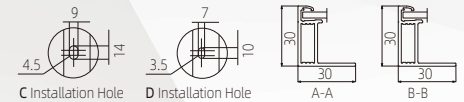
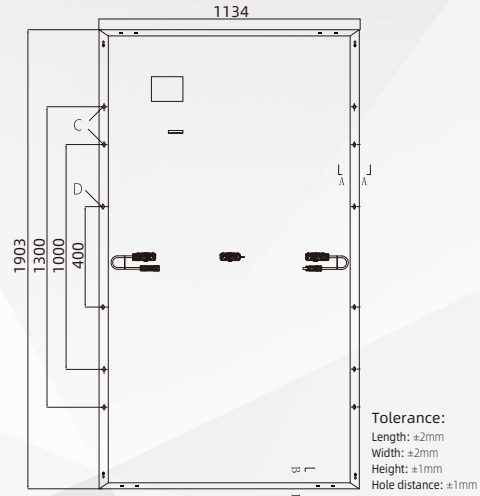
OPERATING CONDITIONS

Maximum System Voltage (V)	1000/1500VDC (IEC)
Pmax Temperature Coefficient	-0.30%/°C
Voc Temperature Coefficient	-0.25%/°C
ISC Temperature Coefficient	0.046%/°C
Nominal Operating Cell Temperature	45±2°C
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	25A

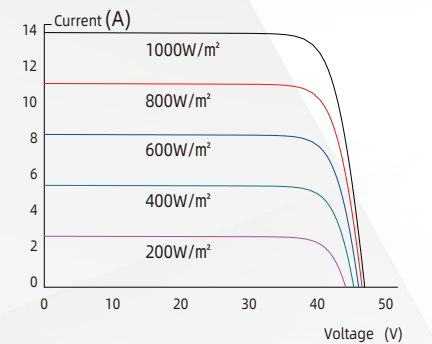
PPACKING CONFIGURATION

Quantity/Pallet	36pcs/pallet
Quantity/Container	864pcs/40HQ

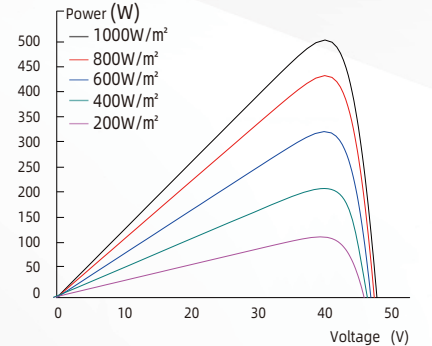
Module Dimension(mm)



Current-Voltage Curve (480W)



Power-Voltage Curve (480W)



- 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