

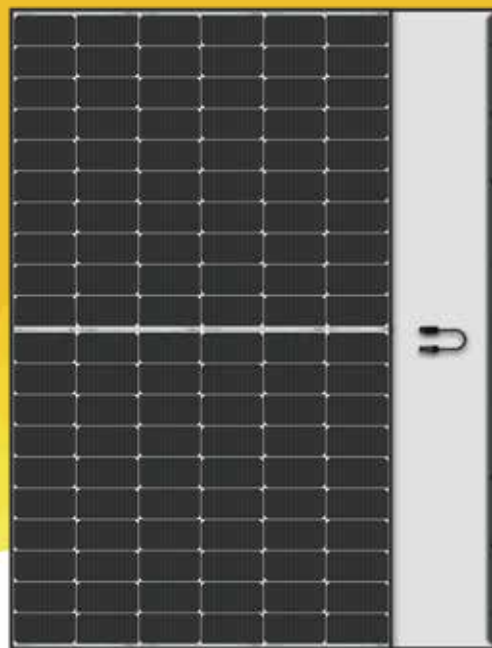


QNN182-HS-60

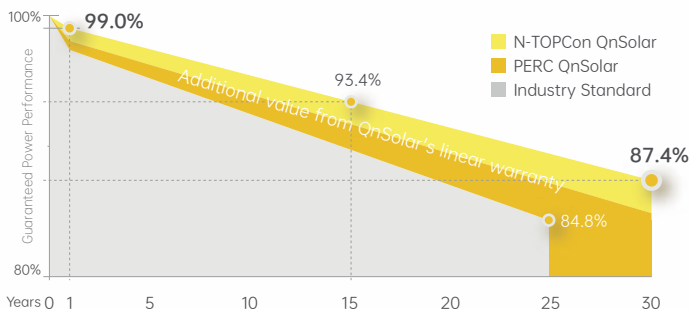
460-480W

N-Type TOPCon Monofacial Half-Cell Module

Max Efficiency 22.18%



LINEAR PERFORMANCE WARRANTY



Linear power guarantee over 87.4% power output after 30 years

15 years

Product materials and process warranty

< 1%

First year power degradation

30 years

Linear power warranty

< 0.4%

Year 2-30 power degradation

COMPREHENSIVE CERTIFICATES



• IEC 61215, IEC 61730 • UNI9177 • ISO 9001:2015 • ISO 14001:2015 • ISO 45001:2018

* Different markets have different certification requirements. Also, the products are under rapid innovation. Please confirm the certification status with regional sales representatives.



Excellent lower temperature coefficient, 1%-2% more power generation than P-type modules in high temperature areas



Lower LCOE, 3.5% more power generation than PERC modules, greatly reduce the cost of power generation.



0~+5W positive power tolerance peak power output ensures the reliability of the module



The module shows excellent weak light performance in the morning, evening and cloudy days.



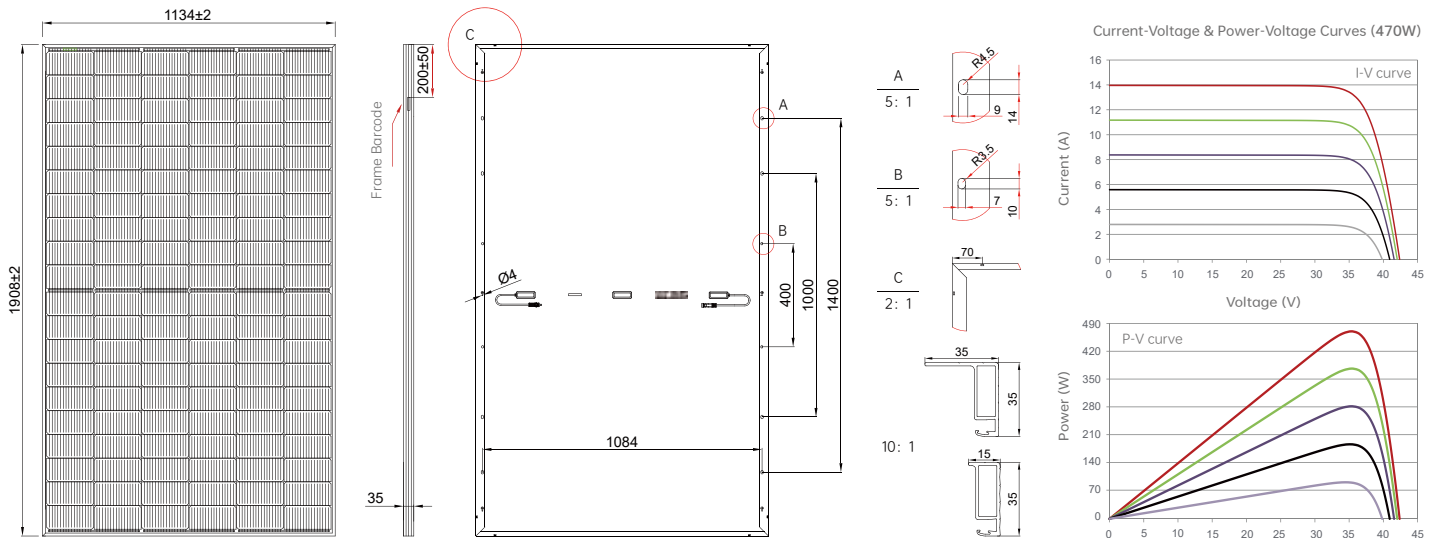
Improved cell technology and selected materials make the module has good PID resistance

PERFORMANCE INSURANCE



MODULE DIMENSIONS (mm)

120 cells



ELECTRIC CHARACTERISTICS

Module Type	QNN182-HS460-60	QNN182-HS465-60	QNN182-HS470-60	QNN182-HS475-60	QNN182-HS480-60
STC Peak Power - P_{max}(Wp)	460	465	470	475	480
Optimum Working Voltage - V_{mp}(V)	34.72	34.89	35.05	35.21	35.38
Optimum Working Current - I_{mp}(A)	13.25	13.33	13.41	13.49	13.57
Open Circuit Voltage - V_{oc}(V)	42.05	42.22	42.38	42.54	42.71
Short Circuit Current - I_{sc}(A)	13.99	14.07	14.15	14.23	14.31
Module Efficiency (%)	21.26	21.49	21.72	21.95	22.18

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25 °C, Spectra at AM1.5.

MECHANICAL CHARACTERISTICS

Cell Type	N-type TOPCon Monocrystalline
Number of Half Cells	120 (2x60)
Module Size	1908mm × 1134mm × 30mm (35mm)
Weight	23.7kg (30mm Frame) / 23.9kg (35mm Frame)
Glass	3.2mm Coated tempered glass
Frame	Anodized aluminum alloy (Black)
Junction Box	IP68 standard (3 bypass diode)
Output Cable	TUV (2pfg1169:2007) 4mm ² /1200mm
Connector	MC4 or (Compatible with MC4)
Hailstone Test	25mm Hailstone at the speed of 23m/s
Mechanical Load	Max. Snow load 5400 Pa, Max. Wind load 2400 Pa

NOCT : Irradiance 800W/m², Ambient Temperature 20°C, Spectra at AM1.5, Wind at 1m/s.

TEMPERATURE CHARACTERISTICS

Nominal Operating Cell Temperature (NOCT)	45±2°C
Temperature Coefficient of P_{max}	-0.30%/°C
Temperature Coefficient of V_{oc}	-0.25%/°C
Temperature Coefficient of I_{sc}	0.046%/°C
Power Tolerance (W)	0~+5
Maximum Series Fuse Rating	25A
Maximum System Voltage	DC1500V
Operating Module Temperature	-40°C ~ +85°C

PACKING CONFIGURATION (40'HC)

864 pcs / container, 24 Pallets, 36 pcs / pallet (30mm Frame)

744 pcs / container, 24 Pallets, 31 pcs / pallet (35mm Frame)



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