

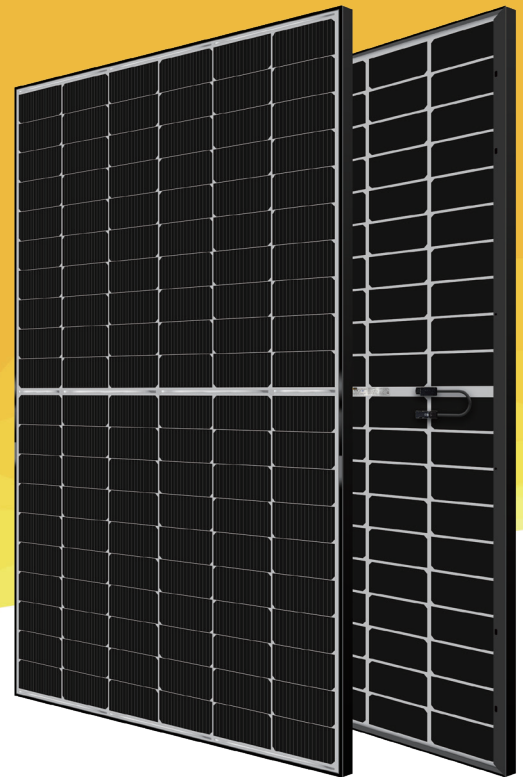


QNN182-HG-60 **Black Frame**

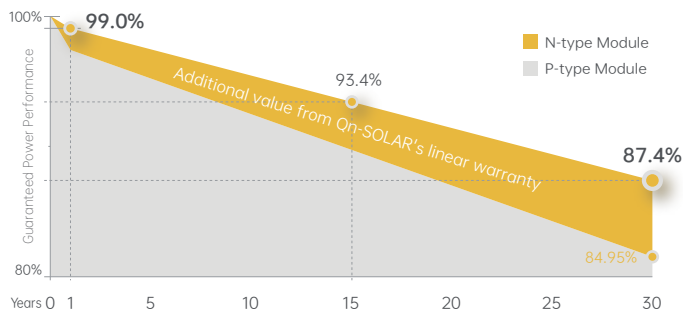
465-505W

TOPCon N-Type Bifacial Half-Cell Module

Max Efficiency 23.34%



LINEAR PERFORMANCE WARRANTY



Linear power guarantee over 87.4% power output after 30 years

20~30 years

Product materials and process warranty

30 years

Linear power warranty

< 1%

First year power degradation

< 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.



Ultrahigh bifaciality, 20% more rear side maximum out power than PERC.



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.

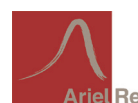


The module shows excellent weak light performance in the morning, evening and cloudy days.



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

PERFORMANCE INSURANCE

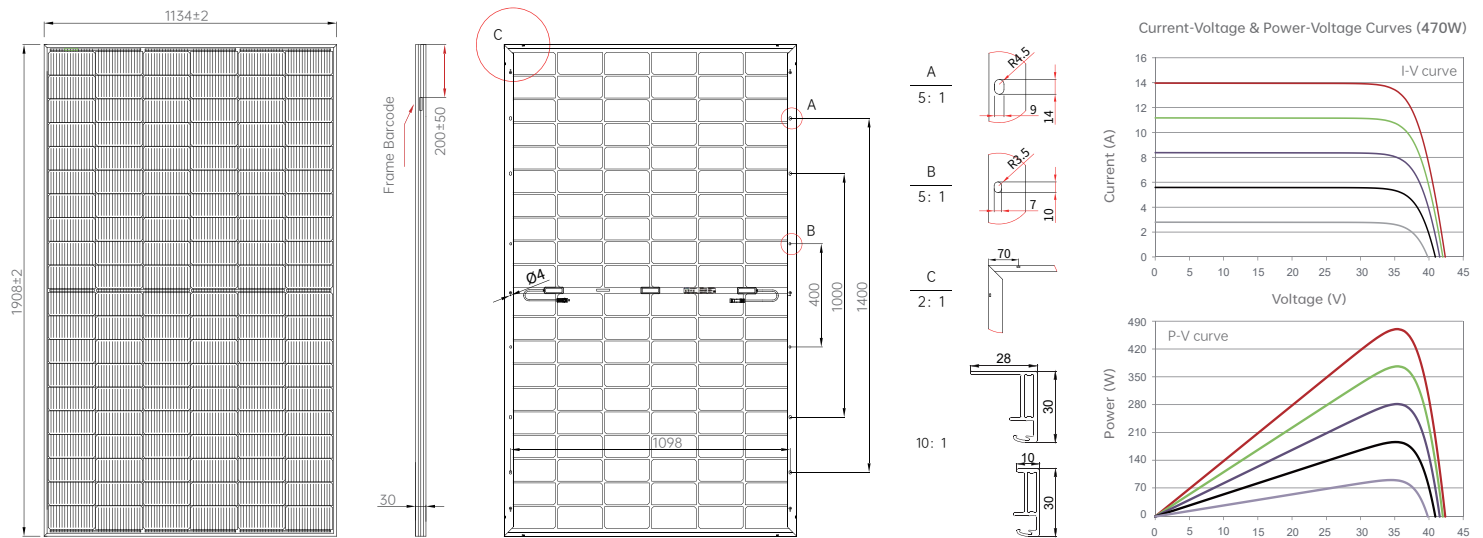


LLOYD'S

Underwriters

Guardians of human health and the natural environment.

Qn-SOLAR PV LIMITED



ELECTRIC CHARACTERISTICS (STC)

Module Type	QNN182-HG465-60	QNN182-HG470-60	QNN182-HG475-60	QNN182-HG480-60	QNN182-HG485-60	QNN182-HG490-60	QNN182-HG495-60	QNN182-HG500-60	QNN182-HG505-60
STC Peak Power - P_{max}(Wp)	465	470	475	480	485	490	495	500	505
Optimum Working Voltage - V_{mp}(V)	35.89	36.05	36.22	36.38	36.54	36.72	36.87	37.05	37.23
Optimum Working Current - I_{mp}(A)	12.96	13.04	13.11	13.19	13.27	13.34	13.43	13.50	13.56
Open Circuit Voltage - V_{oc}(V)	43.32	43.48	43.64	43.81	43.98	44.15	44.32	44.49	44.66
Short Circuit Current - I_{sc}(A)	13.71	13.79	13.87	13.95	14.03	14.11	14.19	14.27	14.35
Module Efficiency (%)	21.49	21.72	21.95	22.18	22.42	22.65	22.88	23.11	23.34

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

ELECTRICAL CHARACTERISTICS WITH 10% REAR SIDE POWER GAIN

Total Equivalent power - P_{max} (Wp)	512	517	523	528	534	539	545	550	556
Maximum Power Voltage - V_{mp}(V)	35.89	36.05	36.22	36.38	36.54	36.72	36.87	37.05	37.23
Maximum Power Current - I_{mp}(A)	14.25	14.34	14.43	14.51	14.60	14.68	14.77	14.84	14.92
Open Circuit Voltage - V_{oc}(V)	43.32	43.48	43.64	43.81	43.98	44.15	44.32	44.49	44.66
Short Circuit Current - I_{sc}(A)	15.08	15.17	15.25	15.34	15.43	15.52	15.61	15.69	15.78

Rear side power gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

MECHANICAL PARAMETERS

Cell Type	TOPCon N-type Monocrystalline
Number of Half Cells	120 (2x60)
Module Size	1908mm × 1134mm × 30mm (35mm)
Weight	26.1kg (30mm Frame) / 26.3kg (35mm Frame)
Glass	Dual, 2.0mm Coated tempered glass
Frame	Black Anodized aluminum alloy
Junction Box	IP68 standard (3 bypass diode)
Output Cable	TUV (2pfg1169:2007) 4mm² / 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}	-0.29%/°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)

