



QNN210R-HG-48 **Full Black**

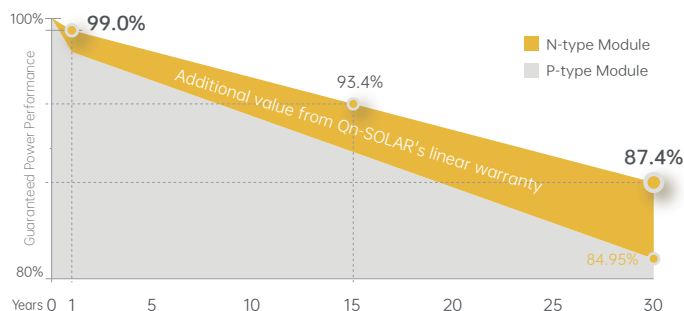
435-460W

TOPCon N-Type Bifacial Half-Cell Module

Max Efficiency 23.0%



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.

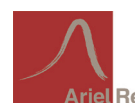


The module shows excellent weak light performance in the morning, evening and cloudy days.



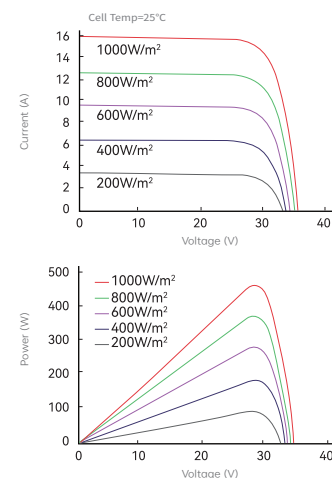
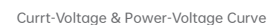
Improved cell technology and selected materials make the module has good PID resistance.

PERFORMANCE INSURANCE



Guardians of human health and the natural environment.

Qn-SOLAR PV LIMITED



Module Type	QNN210R-HG435-54	QNN210R-HG440-54	QNN210R-HG445-54	QNN210R-HG450-54	QNN210R-HG455-54	QNN210R-HG460-54
STC Peak Power - Pmax(Wp)	435	440	445	450	455	460
Optimum Working Voltage - Vmp(V)	28.92	29.10	29.28	29.46	29.64	29.82
Optimum Working Current - Imp(A)	15.04	15.12	15.20	15.27	15.35	15.43
Open Circuit Voltage - Voc(V)	35.01	35.21	35.41	35.61	35.81	36.01
Short Circuit Current - Isc(A)	15.69	15.75	15.81	15.87	15.93	15.99
Module Efficiency (%)	21.77	22.02	22.27	22.52	22.77	23.00

Total Equivalent power - Pmax (Wp)	478	484	490	495	500	506
Maximum Power Voltage - Vmp(V)	28.92	29.10	29.28	29.46	29.64	29.82
Maximum Power Current - Imp(A)	16.54	16.63	16.72	16.80	16.89	16.97
Open Circuit Voltage - Voc(V)	35.01	35.21	35.41	35.61	35.81	36.01
Short Circuit Current - Isc(A)	17.26	17.33	17.39	17.46	17.52	17.59

Cell Type	TOPCon N-Type Monocrystalline
Number of Half Cells	96 (2×48)
Module Size	1762±2 x 1134±2 x 30mm
Weight	20.9 kg(1.6mm glass) / 25.0 kg(2.0mm glass)
Glass	Dual, 1.6mm or 2.0mm Coated tempered glass
Frame	Anodized aluminum alloy (black)
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

Nominal Operating Cell Temperature (NOCT)	45±2 °C
Temperature Coefficient of Pmax	-0.28 %/°C
Temperature Coefficient of Voc	-0.24 %/°C
Temperature Coefficient of Isc	0.046 %/°C
Power Tolerance (W)	0~+5 W
Maximum Series Fuse Rating	30 A
Maximum System Voltage	DC 1500V
Operating Module Temperature	-40°C ~ +85°C

936 pcs / container , 26 pallets , 36 pcs / pallet

