


# HiSEER 4N

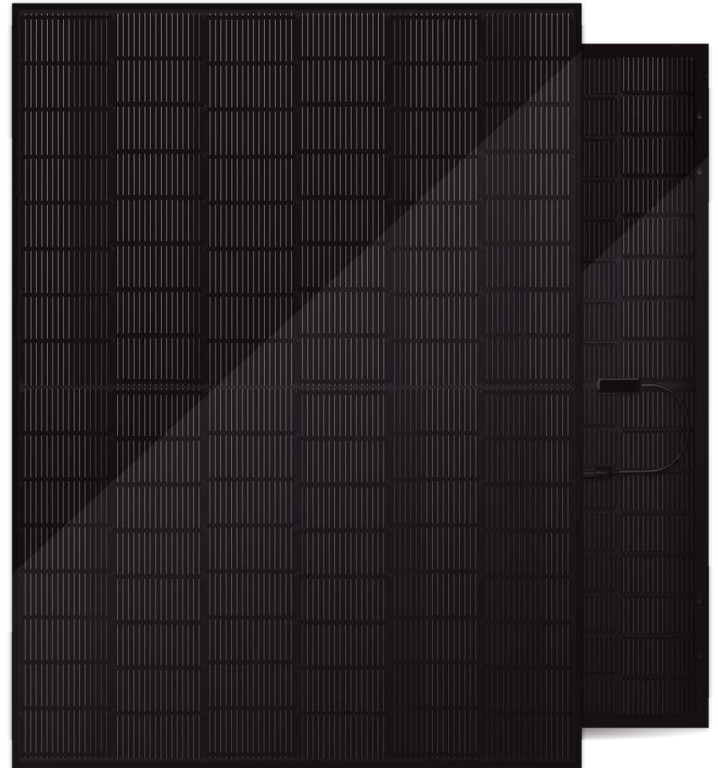
SH21R-48H-D 435-455W

All Black Bifacial Topcon Module

 **435-455W**  
Max. Power Output

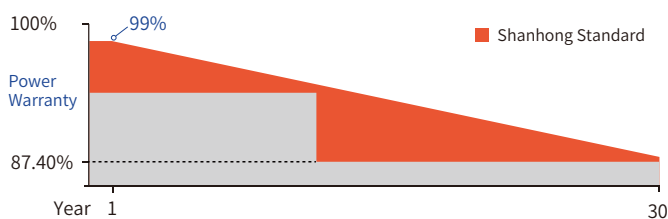
 **1762\*1134mm**  
Size

 **22.8%**  
Module Efficiency



## LINEAR PERFORMANCE WARRANTY

**30** Years linear power output warranty  
**15** Years product warranty on materials and workmanship



30 years decay  $\leq 0.40\%$  annually on average

## Product and System Certification

- IEC61215(2016)/IEC61730(2018)
- IEC61701/IEC62716/IEC60068 ● ISO9001:2015
- ISO14001:2015 ● ISO45001:2018

## Product advantages



### N-type TOPCon technology for lower LCOE

The lower temperature coefficient and better low irradiance performance of HJT technology can effectively reduce LCOE.



### Fire class A, harsh environment adaptability

The module adopt a double glass structure, which can adapt to all kinds of harsh environment, and the fire rating can reach Class A.



### 30-year power warranty

The average life of dual-glass module is 30 years, 5 years longer than that of single-glass modules.



### Double-sided power generation, higher income

The dual-glass module has a bifaciality of up to 80% and a power generation gain of 5%-25% on the back side.



## Electrical Characteristics(STC)

Maximum Power (Pmax)	435	440	445	450	455
Maximum Power Voltage (Vmp)	29.40	29.58	29.76	29.94	30.12
Maximum Power Current (Imp)	14.80	14.87	14.95	15.03	15.11
Open-circuit Voltage (Voc)	34.80	34.98	35.16	35.34	35.52
Short-circuit Current (Isc)	15.85	15.90	15.95	16.00	16.05
Module Efficiency [%]	21.8	22	22.3	22.5	22.8
Measuring tolerance [%]	0~+5%	0~+5%	0~+5%	0~+5%	0~+5%

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5

## Electrical Characteristics(NOCT)

Maximum Power (Pmax)	328	332	336	340	344
Maximum Power Voltage (Vmp)	27.48	27.66	27.84	28.02	28.20
Maximum Power Current (Imp)	11.93	12.00	12.07	12.13	12.20
Open-circuit Voltage (Voc)	32.86	33.04	33.22	33.40	33.58
Short-circuit Current (Isc)	12.86	12.91	12.96	13.01	13.06

NOCT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s

## Mechanical Data

Module Dimensions	1762*1134*30mm
Solar Cells	Monocrystalline (182*210)
No. of Cells	96 [2 x (8 x 6)]
Glass	2*1.6mm, Heat Strengthened Glass
Frame	Black Anodized Aluminium Alloy
Encapsulant	EPE/EVA
J-Box	IP68
Connector	MC4 Compatible
Output Cable	4.0mm <sup>2</sup> , 300/300mm
Weight	21kg

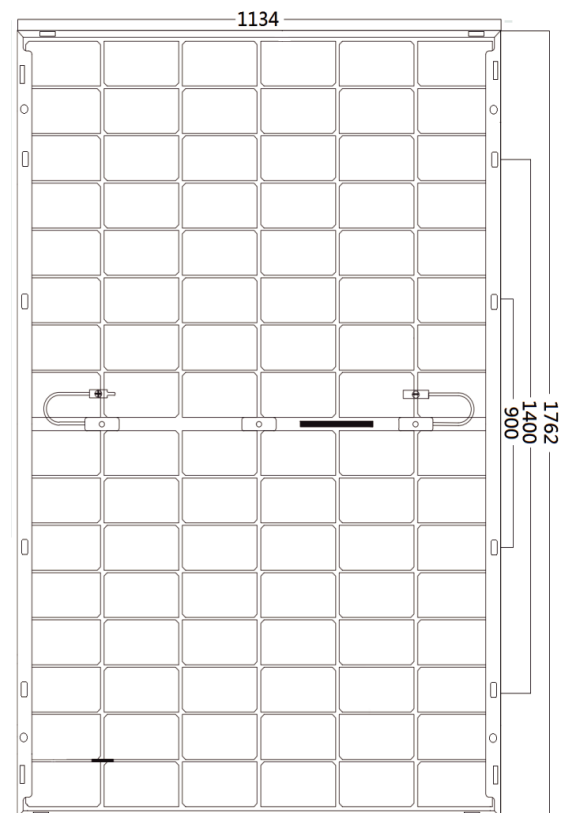
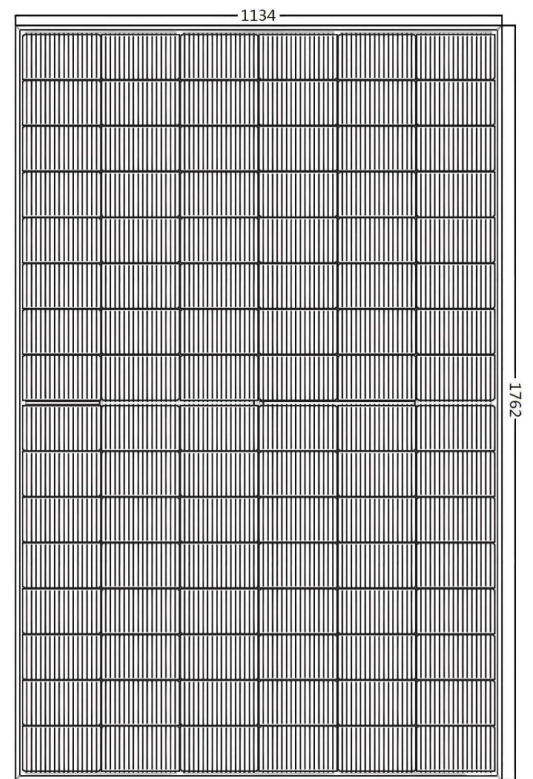
## Operating Data

Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500V DC (IEC)
Maximum Series Fuse Rating	30A
Bifacility	80±5%

## Temperature Ratings

Nominal operating cell temperature	45°C(±2°C)
Temperature Coefficient of Pmax	-0.290%/°C
Temperature Coefficient of Voc	-0.250%/°C
Temperature Coefficient of Isc	+0.040%/°C

## Structural Diagram(mm)



## Packaging

Pallet Dimensions	1792×1130×1250 mm
Information	36Pcs per Pallet, 936Pcs per 40' HC

## IV Curve and PV Curve

