

HT48-210R(ND)-F

Double Glass TOPCon PV Module

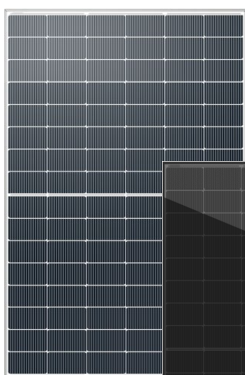
HIGH

High power

HT48-210R(ND)-F-XXX

XXX=Pmax at STC

440W/445W/450W/455W/460W/465W/470W/475W



- Module Efficiency: 23.8%
- No. of Cells 96(6×16)
- Weight 24.0kg
- Dimensions 1762×1134×30mm
- Bifaciality 80(±5)%
- For Australia market



Lianyungang Shenzhou New Energy CO., Ltd.
Made in China



Half cut cell technology can reduce the internal power loss and improve module overall power. Excellent heat dissipation avoids hot spot production.

15/30Ys

Product warranty
15Yrs for ground mounted
30Yrs for rooftop

30Ys

Warranty on power output
(front side)

EL

Microcrack resistant
Double glass structure
enhance reliability,
double EL tested of high
quality control.



Design load (positive
/negative):3600Pa/1600Pa
Safety factors:1.5

TOPCon

Double glass, The optimized number and width of main gate lines, Maximize the light receiving area of modules and Reduce module power consumption.



1500V

Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BoS costs.



2%

All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

0~+3%

Power Binning range 0~+3%

Anti PID

PID resistant

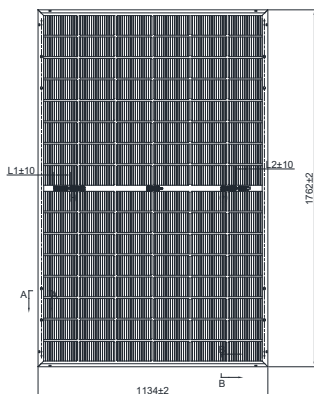
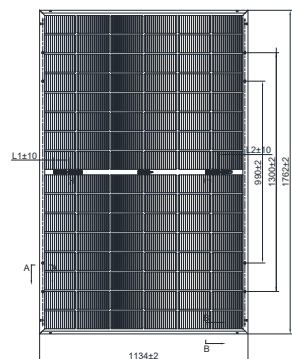
**Comprehensive and first-rate
certification system**

IEC 61215, IEC 61730 Latest Standard
SA 8000, ISO 9001, ISO 14001 and ISO 45001
meeting the highest international standards
Strict quality control



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Electrical Characteristics (STC)

Module Type	HT48-210R(ND)-F							
Maximum Power(Pmax)	440W	445W	450W	455W	460W	465W	470W	475W
Open Circuit Voltage(Voc)	35.33V	35.52V	35.71V	35.90V	36.09V	36.28V	36.47V	36.66V
Short Circuit Current(Isc)	16.19A	16.22A	16.25A	16.28A	16.31A	16.34A	16.37A	16.40A
Maximum Power Voltage(Vmp)	28.86V	29.11V	29.36V	29.61V	29.86V	30.11V	30.36V	30.61V
Maximum Power Current(Imp)	15.25A	15.29A	15.33A	15.37A	15.41A	15.45A	15.49A	15.53A
Module Efficiency	22.0%	22.3%	22.5%	22.8%	23.0%	23.3%	23.5%	23.8%
Isc(BSI)	20.08A	20.11A	20.15A	20.19A	20.22A	20.26A	20.30A	20.35A
Power/Voc/Isc	±3%/±5%/±5%							
Measurement Tolerances	±3%/±5%/±5%							
Maximum System Voltage	1500V DC(IEC)							
Maximum Series Fuse Rating	30A							
Operating Temperature	-40~70°C, Module[T98] max :70°C							

* STC: AM 1.5, Irradiance 1000W/m², temperature 25°C

Electrical Characteristics (NMOT)

Module Type	HT48-210R(ND)-F							
Maximum Power(Pmax)	334W	337W	341W	345W	349W	353W	356W	360W
Open Circuit Voltage(Voc)	33.74V	33.92V	34.10V	34.28V	34.47V	34.65V	34.83V	35.01V
Short Circuit Current(Isc)	13.06A	13.08A	13.11A	13.13A	13.16A	13.18A	13.20A	13.23A
Maximum Power Voltage(Vmp)	27.56V	27.80V	28.04V	28.28V	28.52V	28.76V	28.99V	29.23V
Maximum Power Current(Imp)	12.12A	12.12A	12.16A	12.20A	12.24A	12.27A	12.28A	12.32A

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

Electrical ratings at irradiance level at BNPI

Rated Voc at BNPI [V] / tolerance ±5%	35.31	35.5	35.69	35.88	36.07	36.26	36.45	36.64
Rated Isc at BNPI [A] / tolerance ±5%	17.94	17.97	18.01	18.04	18.07	18.1	18.14	18.17
Rated Vmp at BNPI [V]	28.88	29.13	29.38	29.63	29.88	30.13	30.38	30.63
Rated Imp at BNPI [A]	16.9	16.94	16.99	17.03	17.07	17.12	17.16	17.21
Rated Pmax at BNPI [W] / tolerance ±3%	488	493.5	499	504.6	510.2	515.8	521.4	527.1

Bifaciality coefficient with tolerance(BNPI)

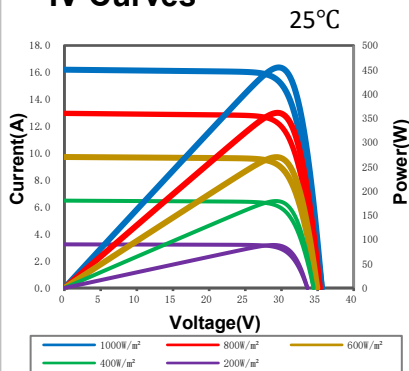
φPmax	80%±5%
φVoc	98%±5%
φIsc	80%±5%

Fire Class Rating

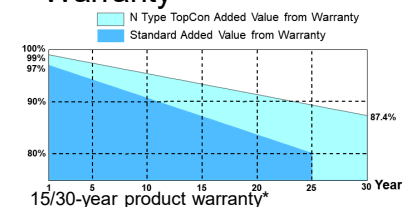
Class C

Nominal Module Operating Temperature(NMOT)		43±2℃
Temperature Coefficient of Pmax	γ (Pm)	-0.29%/℃
Temperature Coefficient of Voc	β (Voc)	-0.25%/℃
Temperature Coefficient of Isc	α (Isc)	0.046%/℃
Solar Cells		Monocrystalline
No. of Cells	96 (6×16)	
Dimensions		1762×1134×30mm
Weight	24.0 kg	
Glass		Heat strengthened glass
Frame	Anodized aluminum alloy/Polymer Composite Material Frame	
Junction Box		IP68
Cable	4mm² (IEC) Length: (+) 200mm, (-) 300mm or customized	
Connectors		PV-HT005-1(Shanghai Aerospace Automobile Electromechanical Co., Ltd.)
Packaging Configuration	37 pcs/box: 962 pcs/ 40' HQ Container	

IV Curves



Warranty



*The module recycling should be carried out by the professional institutions at the end of module life cycle

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