



Hitouch 6N

HN21RN-48HT

435-455W

TOPCon

Bifacial Module

22.8%

Maximum Efficiency

15 YEARS

Product Warranty



Higher Power Output

Higher module conversion efficiency benefit from bigger wafer and half-cell structure.

MBB technology enhances current collection with lower series resistance.



Excellent Temperature Coefficient

Lower operating temperature and temperature coefficient increases the power output.



Long-Term Reliability

Module certified to withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal).

Excellent anti-PID performance to guarantee a better sustainability in harsh environment.

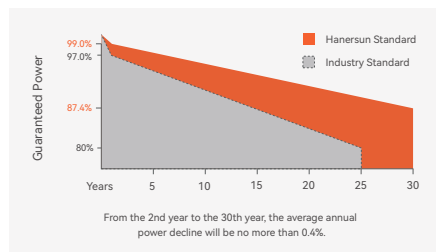


Lower Hot Spot and Crack Risk

Reduce hot-spot risk with optimized electrical design and lower operating current.

Reduce crack risk by MBB solar cell design.

Power Warranty



Insurance



Certificates



15-year product warranty



30-year linear power output warranty

About Hanersun

Hanersun is a world-leading energy technology company, with a business scope from the R&D and intelligent manufacturing of solar modules, energy storage products, to comprehensive energy solutions.

Electrical Characteristics

Module Type	HN21RN-48HT435W		HN21RN-48HT440W		HN21RN-48HT445W		HN21RN-48HT450W		HN21RN-48HT455W	
Testing Condition	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power (Pmax)	435	331	440	335	445	339	450	343	455	347
Maximum Power Voltage (Vmp)	29.30	27.68	29.46	27.85	29.62	28.02	29.78	28.19	29.94	28.36
Maximum Power Current (Imp)	14.85	11.96	14.94	12.03	15.03	12.10	15.12	12.17	15.20	12.24
Open-circuit Voltage (Voc)	35.13	32.95	35.33	33.13	35.53	33.31	35.73	33.49	35.93	33.67
Short-circuit Current (Isc)	15.82	12.88	15.88	12.92	15.94	12.96	16.00	13.00	16.06	13.04
Module Efficiency(%)	21.8%		22.0%		22.3%		22.5%		22.8%	

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5.
*Measuring tolerance: 0 ~ +5W

NMOT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

Electrical Characteristics with 10% Solar Irradiation Ratio

Module Type	HN21RN-48HT435W	HN21RN-48HT440W	HN21RN-48HT445W	HN21RN-48HT450W	HN21RN-48HT455W
Maximum Power (Pmax)	478	484	489	495	500
Maximum Power Voltage (Vmp)	29.30	29.46	29.62	29.78	29.94
Maximum Power Current (Imp)	16.32	16.43	16.51	16.63	16.71
Open-circuit Voltage (Voc)	35.13	35.33	35.53	35.73	35.93
Short-circuit Current (Isc)	17.41	17.47	17.54	17.60	17.67

Mechanical Parameters

Solar Cells	Monocrystalline (210R)
Module Dimensions	1762*1134*30mm
Glass	1.6mm-1.6mm
Frame	Anodized Aluminium Alloy
Output Cable	4.0mm ² , 300/300mm

No. of Cells	96 [2 x (8 x 6)]
Weight	20.9kg
Encapsulant Material	EVA/POE
J-Box	IP68
Connector	MC4 Compatible

Temperature Ratings

NMOT (Nominal operating cell temperature)	43°C(±2°C)
Temperature Coefficient of Pmax	-0.280%/°C
Temperature Coefficient of Voc	-0.230%/°C
Temperature Coefficient of Isc	+0.045%/°C

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

Operating Parameters

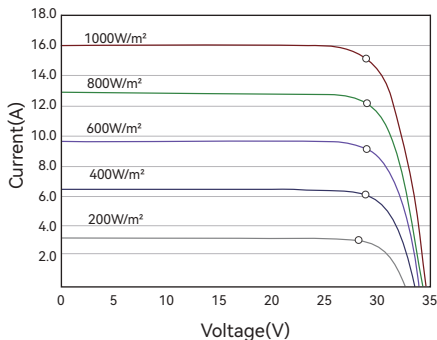
Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500V DC (IEC)
Maximum Series Fuse Rating	30A
Bifacility	80%-85%

Packaging

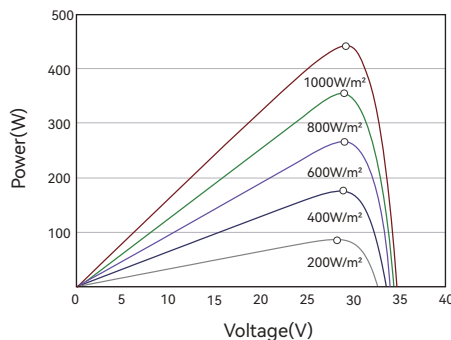
Pcs per Pallet: 37

Pcs per 40' HC: 962

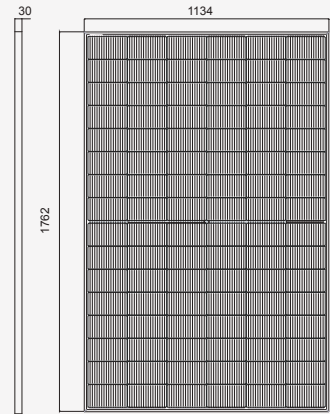
I-V Curves of PV Module (440W)



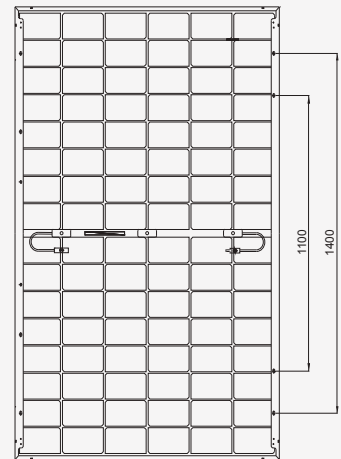
P-V Curves of PV Module (440W)



Dimensions (Unit: mm)



Front View



Back View