



Hitouch 6N

HN21RN-48H

435-455W

TOPCon

High Efficiency 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.

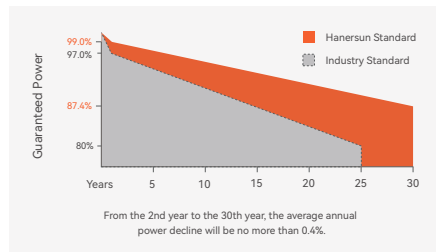


Lower Hot Spot and Crack Risk

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

Reduce crack risk by MBB solar cell design.

Power Warranty



Insurance

Munich RE

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-48H435W		HN21RN-48H440W		HN21RN-48H445W		HN21RN-48H450W		HN21RN-48H455W	
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.

Mechanical Parameters

Solar Cells	Monocrystalline (210R)
No. of Cells	96 [2 x (8 x 6)]
Module Dimensions	1762*1134*30mm
Weight	20.9kg
Glass	1.6mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EVA/POE
Backsheet	White
Frame	Anodized Aluminium Alloy
J-Box	IP68
Output Cable	4.0mm ²
(Including Connector)	Length Portrait:300/300mm (can be customized)
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)

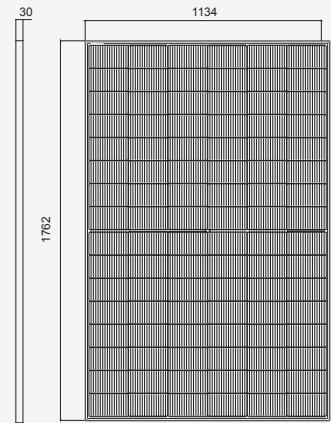
Packaging

Pcs per Pallet: 37
 Pcs per 40' HC: 962

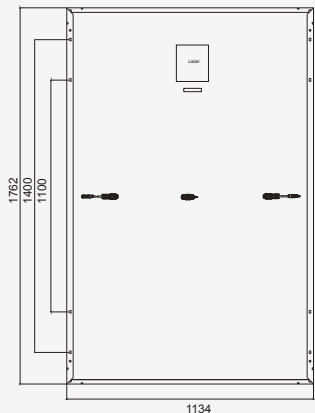
Operating Parameters

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

Dimensions (Unit: mm)

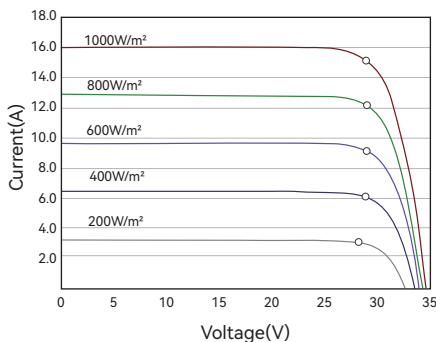


Front View



Back View

I-V Curves of PV Module (440W)



P-V Curves of PV Module (440W)

