N-TOPCon

HANERSUN




# Hitouch 6N

## HN21RN-48H

# 430-455W

**MONOFACIAL**
High Efficiency Module

**22.8%**
Maximum Efficiency

### Long-Term Reliability

Module certified to withstand mechanical test load +5400Pa /-2400Pa.

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

### Higher Power Output

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

MBB technology enhances current collection with lower series resistance.

### Lower Hot Spot and Crack Risk

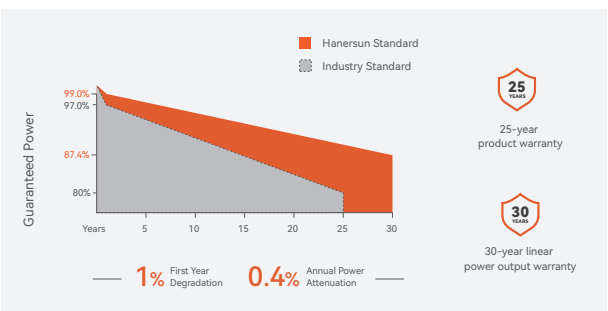
Reduce hot-spot risk with optimized electrical design and lower operating current.

Reduce crack risk by MBB solar cell design.

### Excellent Temperature Coefficient

Lower operating temperature and temperature coefficient increases the power output.

## Power Warranty




## Certificates

Warranty partner

Munich RE

## About Hanersun

Hanersun is a world-leading clean energy company, focusing on R&D, manufacturing and distribution of solar module and energy storage system, as well as comprehensive clean energy solutions. Committed to high-efficiency technologies, the company is one of the first to launch PV modules of 600W+ and 700W+ in the industry.

Made in China

## Electrical Characteristics (STC)

| Module Type | HN21RN-48H430W | HN21RN-48H435W | HN21RN-48H440W | HN21RN-48H445W | HN21RN-48H450W | HN21RN-48H455W |
|---|---|---|---|---|---|---|
| Maximum Power (Pmax)* | 430 | 435 | 440 | 445 | 450 | 455 |
| Maximum Power Voltage (Vmp) | 29.14 | 29.30 | 29.46 | 29.62 | 29.78 | 29.94 |
| Maximum Power Current (Imp) | 14.76 | 14.85 | 14.94 | 15.03 | 15.12 | 15.20 |
| Open-circuit Voltage (Voc)* | 34.93 | 35.13 | 35.33 | 35.53 | 35.73 | 35.93 |
| Short-circuit Current (Isc)* | 15.76 | 15.82 | 15.88 | 15.94 | 16.00 | 16.06 |
| Module Efficiency(%) | 21.5% | 21.8% | 22.0% | 22.3% | 22.5% | 22.8% |

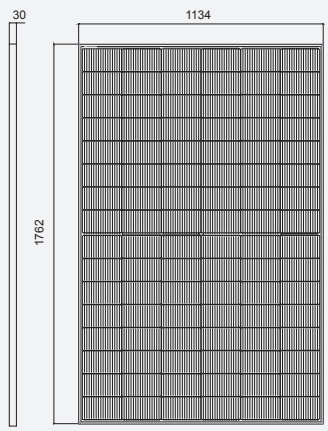
STC: Irradiance 1000W/m², Cell Temperature 25℃, Air Mass AM1.5.

*Measuring Tolerance: ±3%
Power Binning Tolerance: 0~+5W

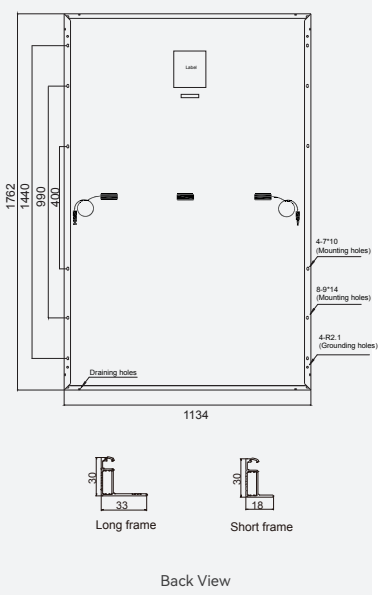
## Mechanical Parameters

| | |
|---|---|
| Solar Cells | N-TYPE Monocrystalline(210R) |
| No. of Cells | 96 [2 x (8 x 6) ] |
| Module Dimensions | 1762*1134*30/35mm |
| Weight | 21.0kg |
| Glass | 3.2mm, Anti-reflection Coating, High Transmission, Low Iron, Tempered Glass |
| Backsheet | White |
| Frame | Anodized Aluminium Alloy |
| J-Box | IP68 |
| Output Cable | 4.0mm² |
| Cable Length | Length Portrait:300/300mm (can be customized) |
| Connector | Zerun Co.,Ltd / Z4S-abcd<br>Stäubli Electrical connectors AG / PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy |

## Dimensions (Unit: mm)




Front View




Back View

## Operating Parameters

| | |
|---|---|
| Operational Temperature | -40℃~+70℃ |
| Maximum System Voltage | 1500V DC (IEC) |
| Maximum Series Fuse Rating | 30A |
| Bifacility | / |
| Fire Class Rating | Class C |

## Temperature Ratings

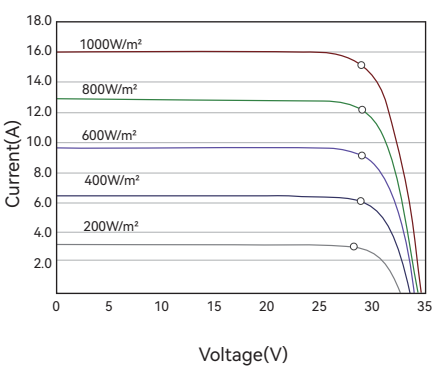
| | |
|---|---|
| Temperature Coefficient of Pmax | -0.28%/℃ |
| Temperature Coefficient of Voc | -0.23%/℃ |
| Temperature Coefficient of Isc | +0.045%/℃ |

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

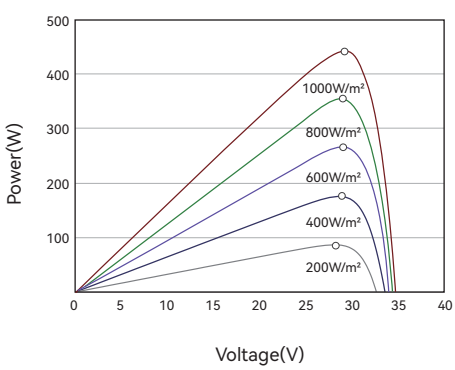
## Packaging

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

## I-V Curves of PV Module (440W)




## P-V Curves of PV Module (440W)





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