



## Hitouch 5

HN18-60H

440-460W

### MONO PERC

High Efficiency Module

21.24%

Maximum Efficiency

12 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.

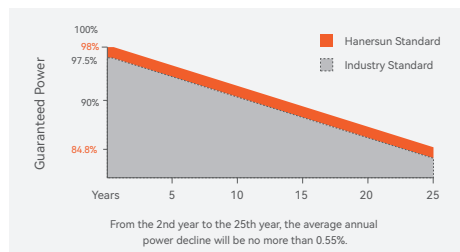


#### Lower Hot Spot and Crack Risk

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

Reduce crack risk by MBB solar cell design.

### Power Warranty



12-year product warranty



25-year linear power output warranty

### Insurance



### Certificates



### About Hanersun

Hanersun is a world leading solar module manufacturer and comprehensive energy solution provider. We provide customers with cutting edge solar modules, and services for the entire project life cycle.

## Electrical Characteristics

Module Type	HN18-60H440W		HN18-60H445W		HN18-60H450W		HN18-60H455W		HN18-60H460W	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power (Pmax)	440	333	445	336	450	340	455	344	460	349
Maximum Power Voltage (Vmp)	34.33	32.46	34.50	32.56	34.67	32.76	34.87	32.95	35.08	33.15
Maximum Power Current (Imp)	12.82	10.26	12.90	10.32	12.98	10.38	13.05	10.44	13.12	10.53
Open-circuit Voltage (Voc)	41.08	38.45	41.21	38.57	41.33	38.68	41.46	38.81	41.66	39.01
Short-circuit Current (Isc)	13.71	10.97	13.79	11.03	13.87	11.10	13.94	11.15	14.02	11.23
Module Efficiency(%)	20.31%		20.54%		20.77%		21.00%		21.24%	

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.  
\*Measuring tolerance: 0 ~ +5W

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

## Mechanical Parameters

Solar Cells	Monocrystalline (182mm)
No. of Cells	120 [2 x (10 x 6) ]
Module Dimensions	1910*1134*30mm
Weight	24.0kg
Glass	3.2mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EVA/POE
Backsheet	White
Frame	Anodized Aluminium Alloy
J-Box	IP68
Output Cable	4.0mm <sup>2</sup>
(Including Connector)	Length Portrait:300/300mm (can be customized)
Connector	MC4 Compatible

## Temperature Ratings

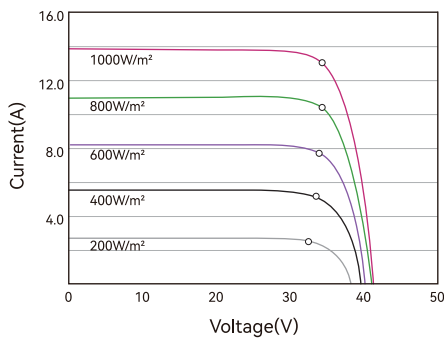
NMOT (Nominal operating cell temperature)	45°C(±2°C)	Operational Temperature	-40°C~+85°C
Temperature Coefficient of Pmax	-0.350%/°C	Maximum System Voltage	1500V DC (IEC)
Temperature Coefficient of Voc	-0.289%/°C	Maximum Series Fuse Rating	25A
Temperature Coefficient of Isc	+0.045%/°C	Bifacility	/

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

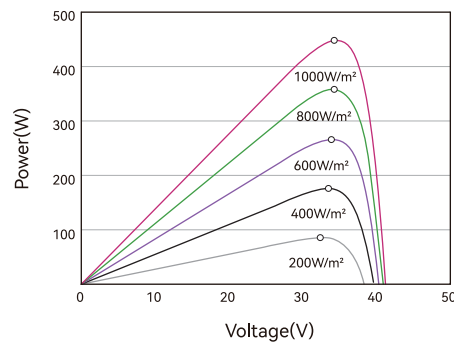
## Packaging

Pcs per Pallet: 36
Pcs per 40' HC: 864

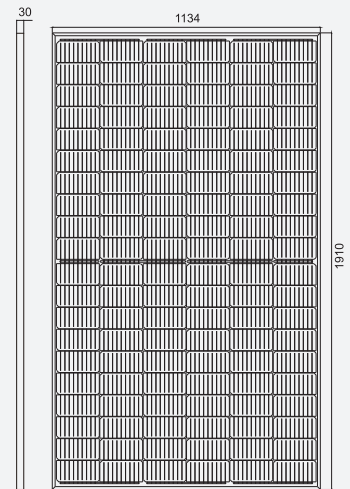
## I-V Curves of PV Module (450W)



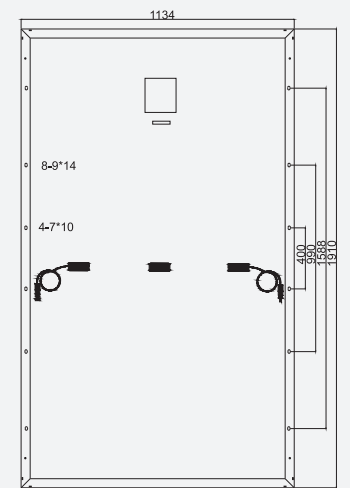
## P-V Curves of PV Module (450W)



## Dimensions (Unit: mm)



Front View



Back View