

**For a Free Quote:**

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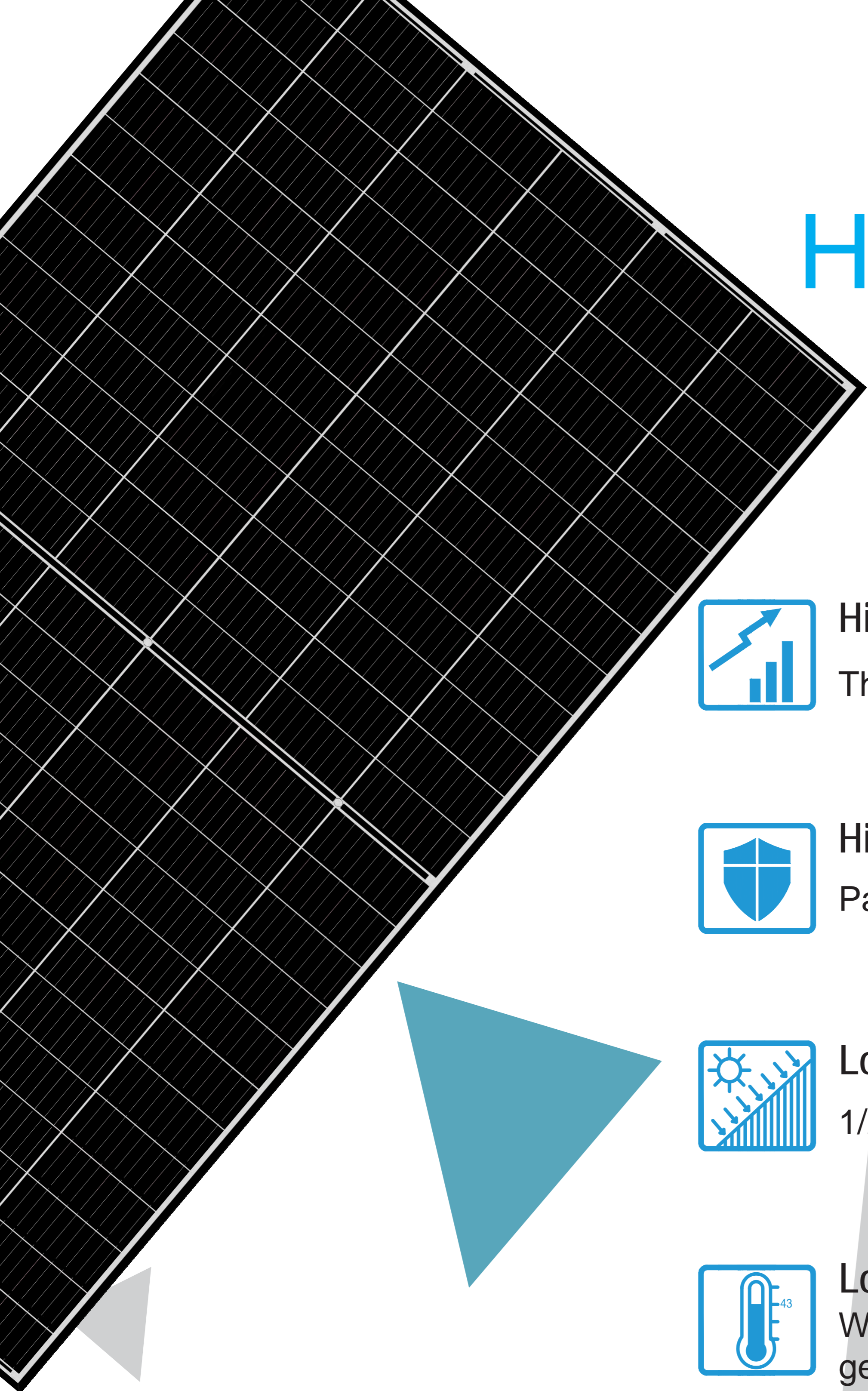
Email: [contact@energypal.com](mailto:contact@energypal.com)

# EnergyPal

## **Solar Panel Guide Specification Data Sheet**

**Solarwit  
72 cell /440W-450W(Utility)  
WH144P-445**

Also available on the web at  
[EnergyPal.com/solarwit-solar-panels/wh144p-445](http://EnergyPal.com/solarwit-solar-panels/wh144p-445)



# Half Cell Mono PERC

## WHM72H 430W-450W



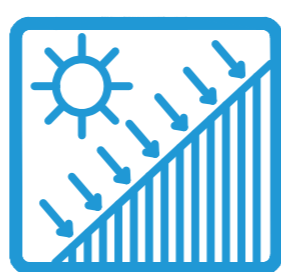
### High Conversion Efficiency

The leading module conversion efficiency, Up to 20.0%



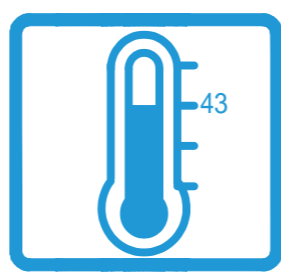
### High Reliability

Passed 3\*IEC standard test



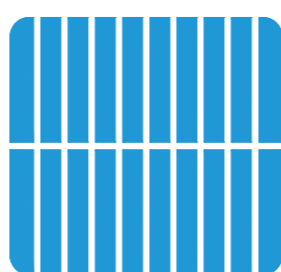
### Low Hot-spot Effect

1/2 current, reduce the hot spot temperature



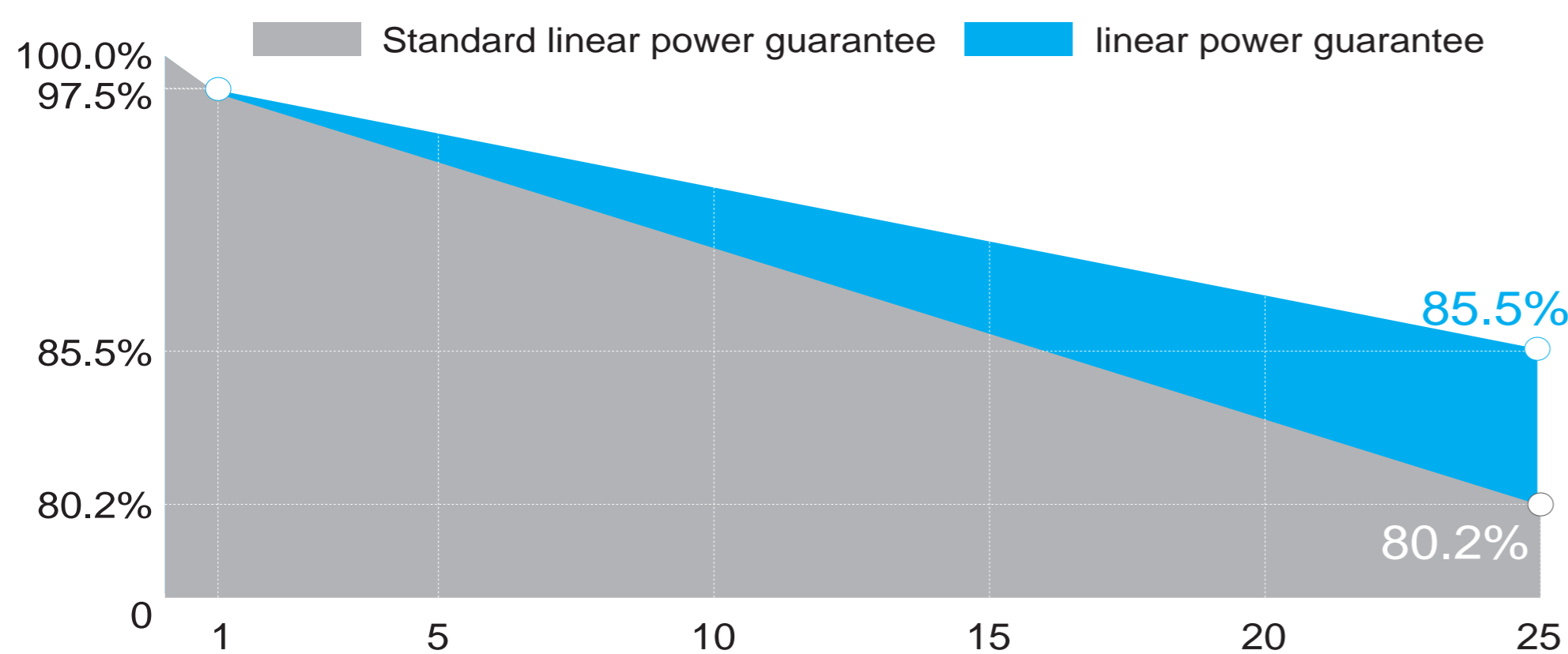
### Low Work Temperature

Work temperature less than 43°C, improve the power generation efficiency



### Half Cell, MBB Technology

Series-then-parallel cell connection design, high reliable welding technology



-2.50% First year power degradation

-0.50% Power degradation per year



Materials and workmanship warranty



Power linear warranty

### Product And Quality Certifications

- IEC 61215, IEC 61730
- ISO 9001:2015 Quality Management System
- ISO 14001:2015 Environmental Management System
- ISO 45001:2018 EHS Management System
- IEC TS 62941:2016 Terrestrial photovoltaic (PV) modules. Guideline for increased confidence in PV module design qualification and type approval





# Half Cell Mono PERC WHM72H 430W-450W

## Electrical Parameters (STC\*)

Module Type	WH144P-450	WH144P-445	WH144P-440	WH144P-435	WH144P-430
Nominal Max. Power(Pmax/W)	450	445	440	435	430
Open Circuit Voltage(Voc/V)	50.20	49.99	49.79	49.59	49.41
Short Circuit Current(Isc/A)	11.20	11.14	11.08	11.02	10.96
Operating Voltage(Vmp/V)	41.82	41.62	41.43	41.23	41.03
Operating Current(Imp/A)	10.76	10.69	10.62	10.55	10.48
Module Efficiency(%)	20.5	20.3	20.0	19.8	19.6

STC\* (Standard Test Condition): Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM1.5

## Electrical Parameters (NMOT\*)

Module Type	WH144P-450	WH144P-445	WH144P-440	WH144P-435	WH144P-430
Nominal Max. Power(Pmax/W)	331	327	323	320	316
Open Circuit Voltage(Voc/V)	46.44	46.24	46.06	45.87	45.70
Short Circuit Current(Isc/A)	9.03	8.98	8.93	8.88	8.83
Operating Voltage(Vmp/V)	38.25	38.25	38.00	37.91	37.71
Operating Current(Imp/A)	8.55	8.55	8.50	8.44	8.38

NMOT\* (Nominal Module Operating Temperature): Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, AM1.5, Wind Speed 1m/s

## Mechanical Parameters

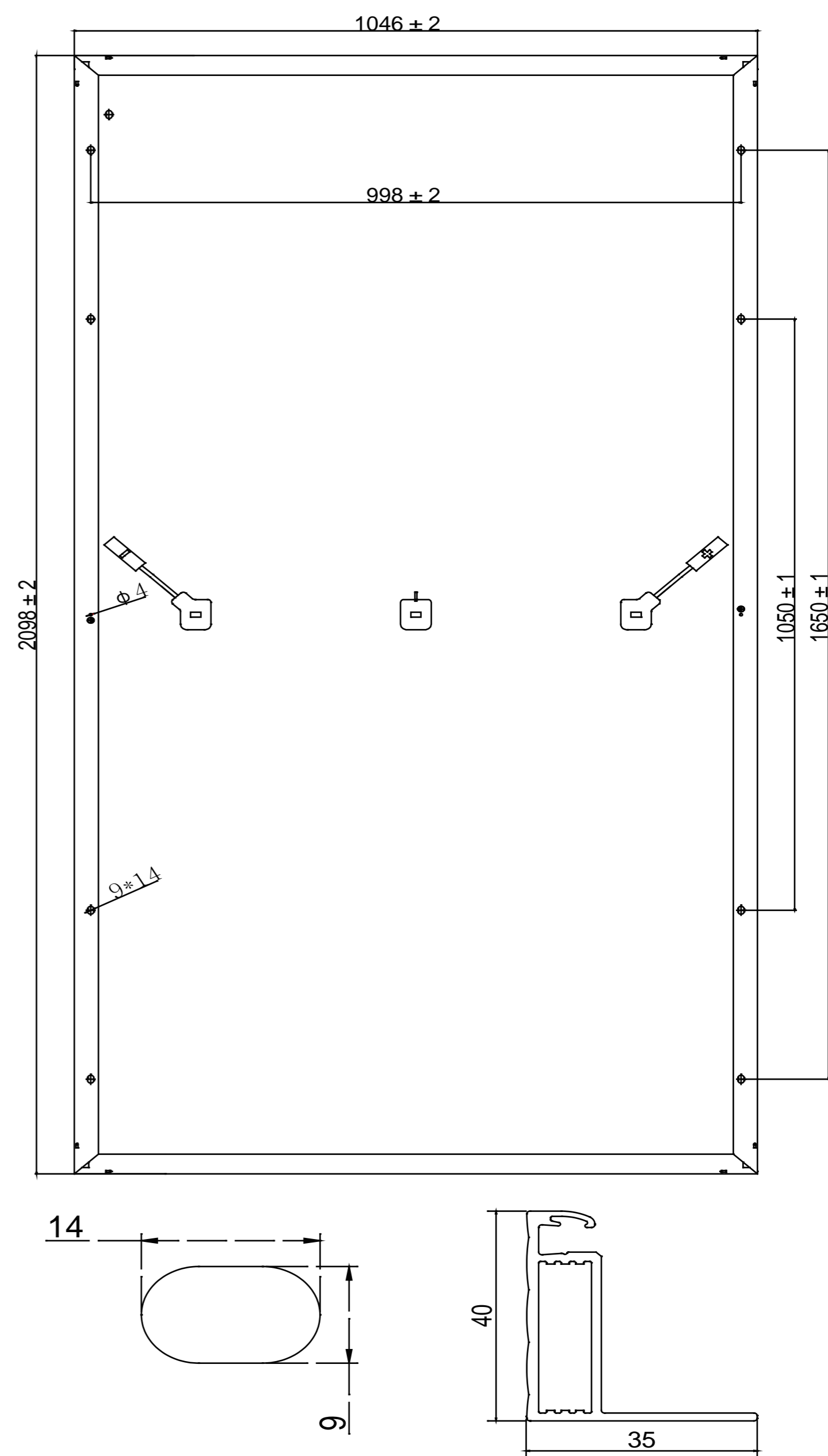
Cell size	Mono PERC 166.0x83.0mm
Module size	2098x1046x40mm(LxWxH)
Glass Thickness	3.2mm
Module Weight	24.2Kg
Output Cable	4mm <sup>2</sup> , cable length 300mm (can be customized)
Connector	MC4 compatible

## Temperature Coefficients

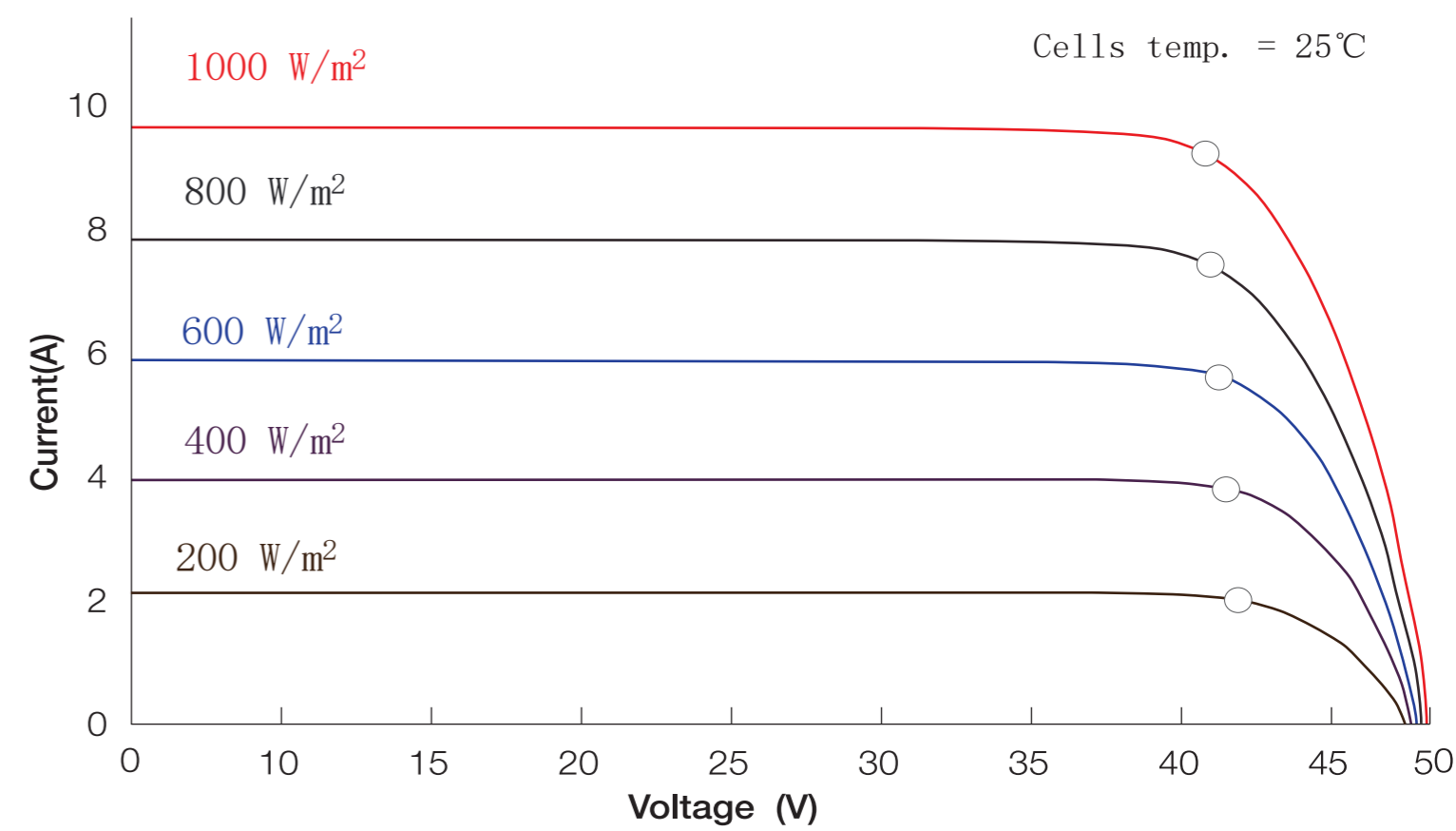
Short Circuit Current(Isc)	+0.048%/°C
Open Circuit Voltage(Voc)	-0.31%/°C
Nominal Max. Power(Pmax)	-0.38%/°C
NMOT	43±2°C

## Work Environmental Parameters

Max. System Voltage	DC1000V/DC1500V
Power Tolerance	0 ~ +5 W
Operating Temperature	-40°C ~ +85°C
Max. Fuse Rated Current	15A
Front Static Load	Snow load 5400Pa, Wind load 2400Pa
Application Classification	Class A
Packing Specification	26 pcs/Pallet, 210 pcs/ 20'HQ; 572 pcs/ 40'HQ;



## I-V curves under different irradiance degree



## I-V curves

