

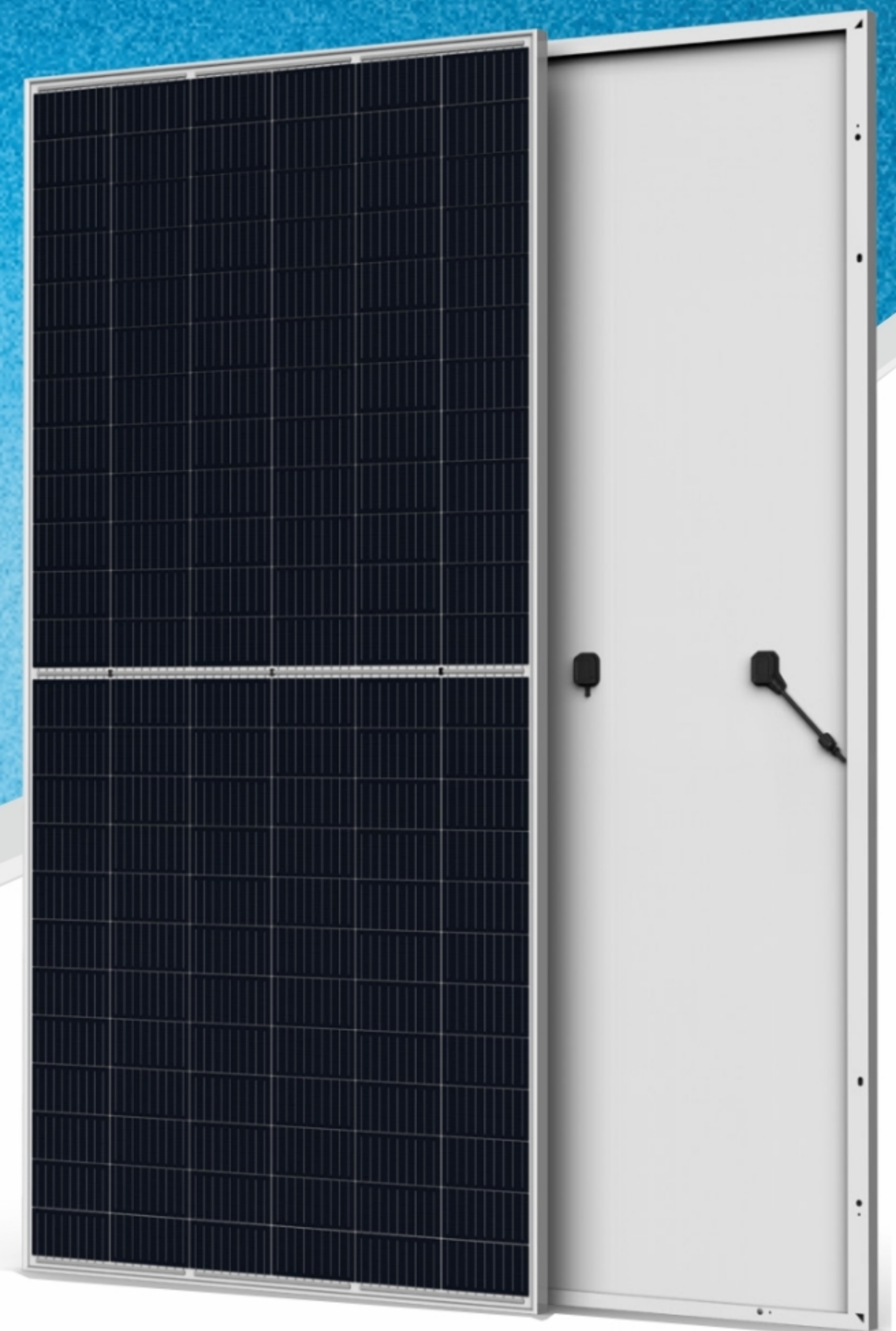


# TUNGHSU

## 158.75 series

## Mono solar modules

## 144 cells single-glass 9-busbar half-cut modules



# 390-415W

### ► Tunghsu components with high efficiency and high reliability

- \* Advanced production equipment, highly automated process control, world-class production technology
- \* The company has a product research and development laboratory that meets the new ISO/IEC international standards
- \* Excellent weak light performance, resistant to salt spray and ammonia corrosion.
- Passing the certification test of the PV standards.
- \* Certified by international quality management and environmental management system
- \* Application grade: A, Safe grade: II, Fireproofing grade: C

### ► Comprehensive Products And System Certificates

IEC61215/IEC61730/UL1703/IEC61701/IEC62716  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management System  
 ISO 45001: Occupation Health and Safety Management System  
 GB/T 23001-2017: Management system with Integration of Information Technology and Industrialization



### High power output

Combined with MBB technology, maximum power of 415w  
 Reduce BOS cost with higher power bin and 1000V system voltage



### Half-cell design brings higher efficiency

Half-cell layout (144 monocrystalline)  
 Low thermal coefficients for greater energy production at high operating temperature  
 Low cell connection power loss due to half-cell layout (144 monocrystalline)



### Highly reliable due to stringent quality control

In-house testing goes well beyond certification requirements  
 (UV, TC, HF, PID resistant and many more)

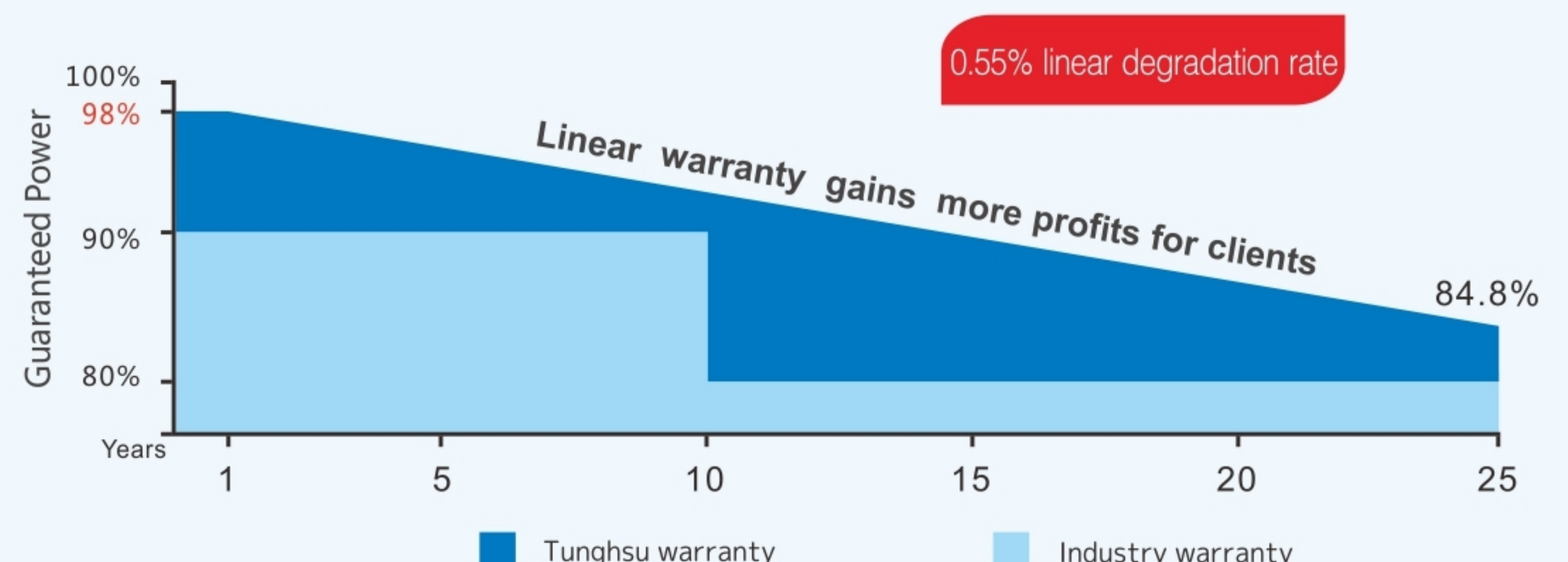


### Certified to withstand the most challenging environmental conditions

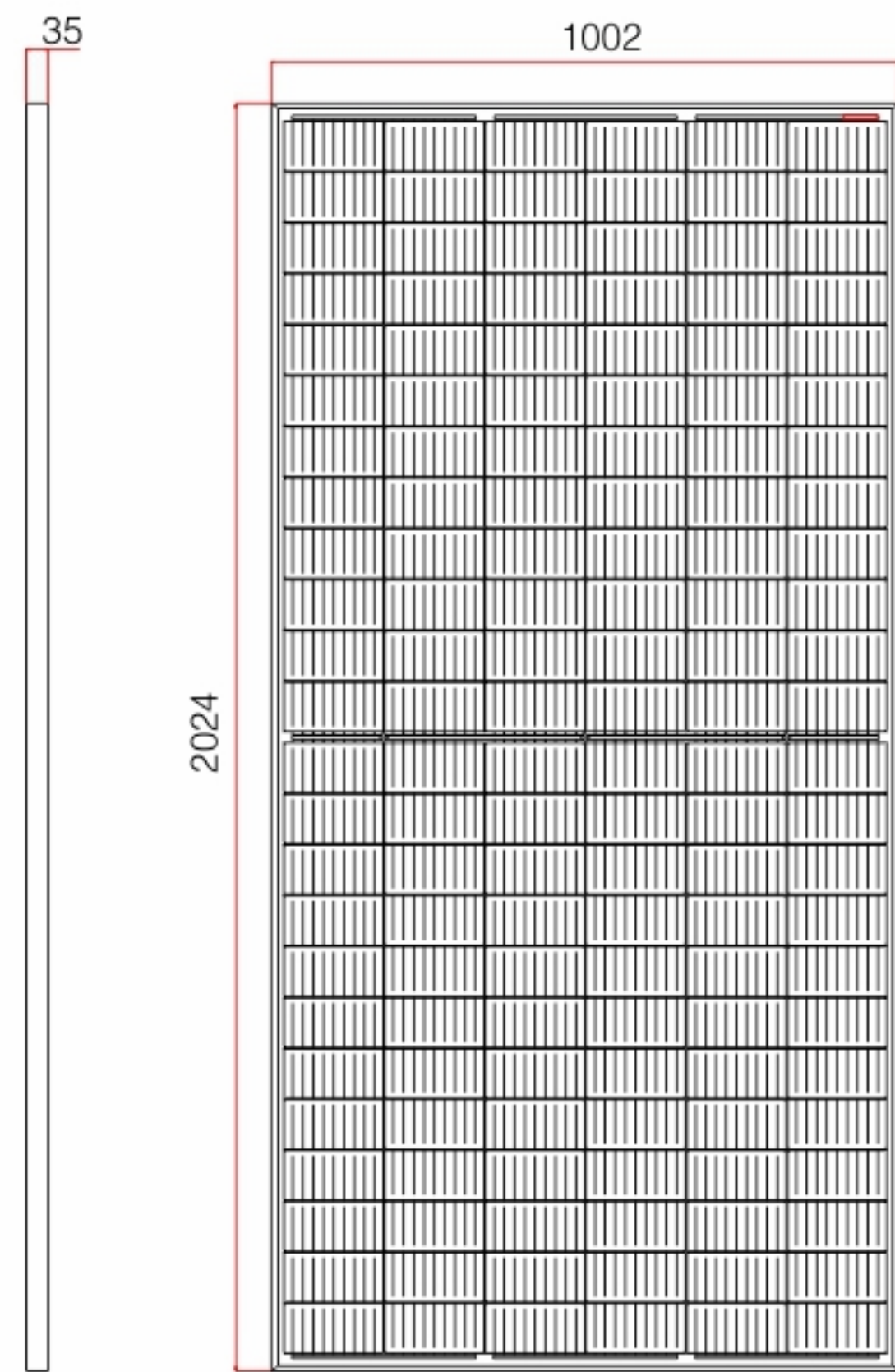
2400 Pa wind load  
 5400 Pa snow load

### Industry-leading linear warranty

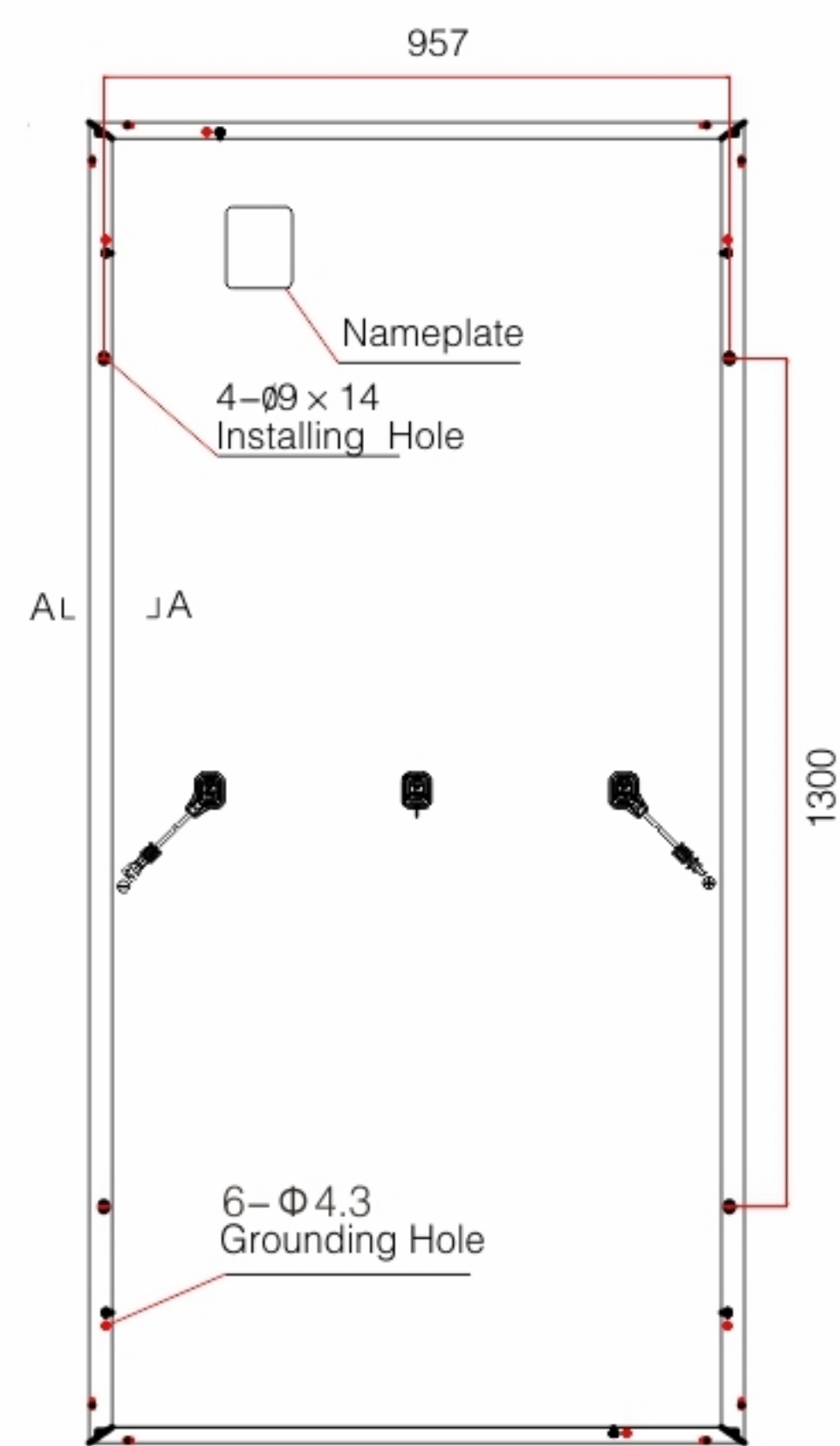
+15 Year Product Warranty +25Year Linear Power Warranty



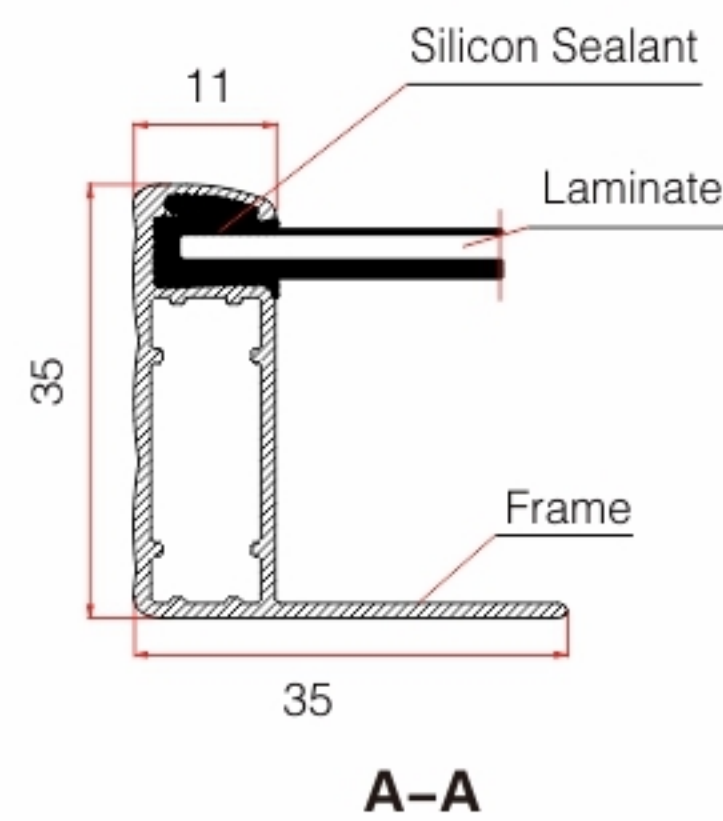
## DIMENSIONS OF PV MODULE(mm)



Front View

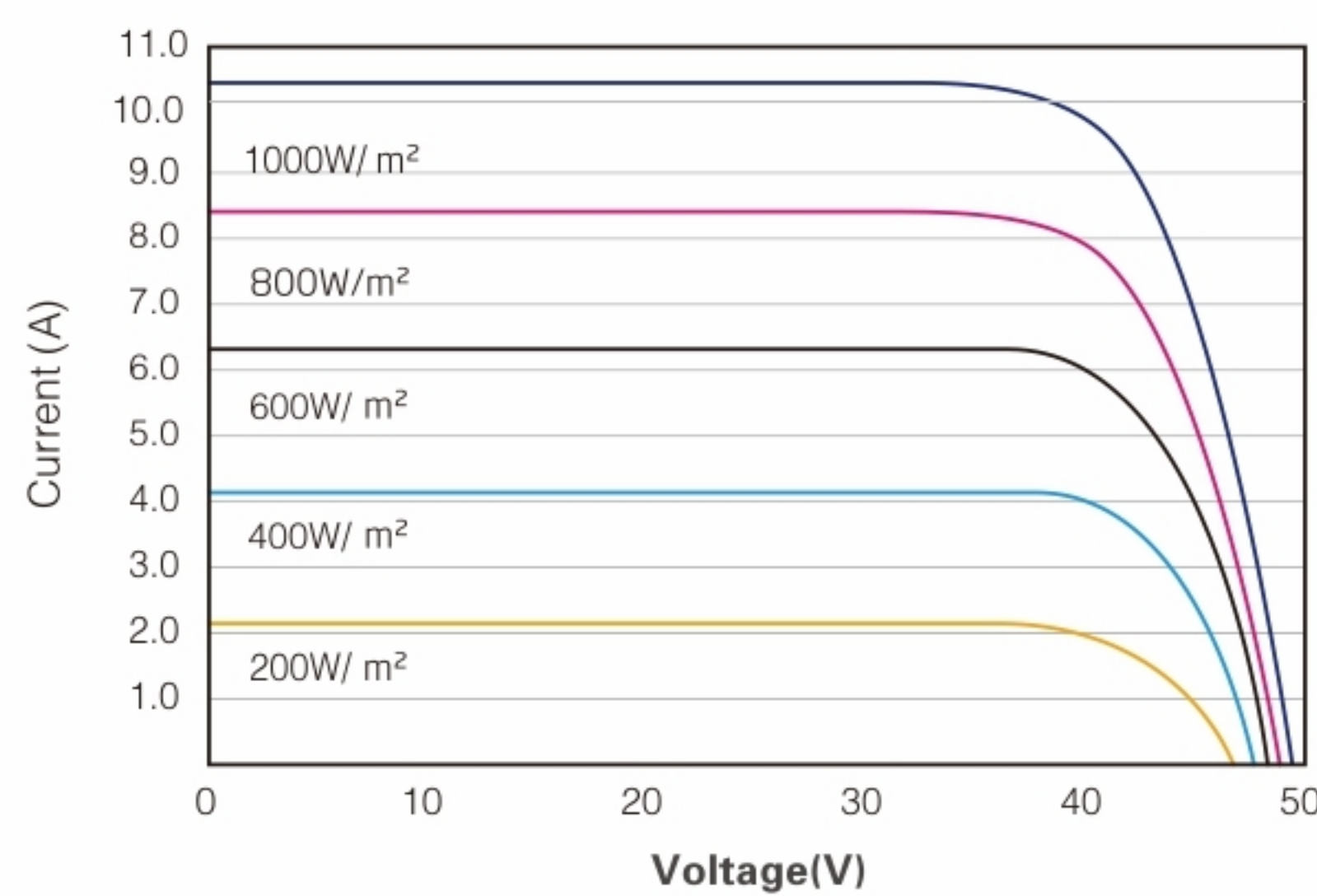


Back View

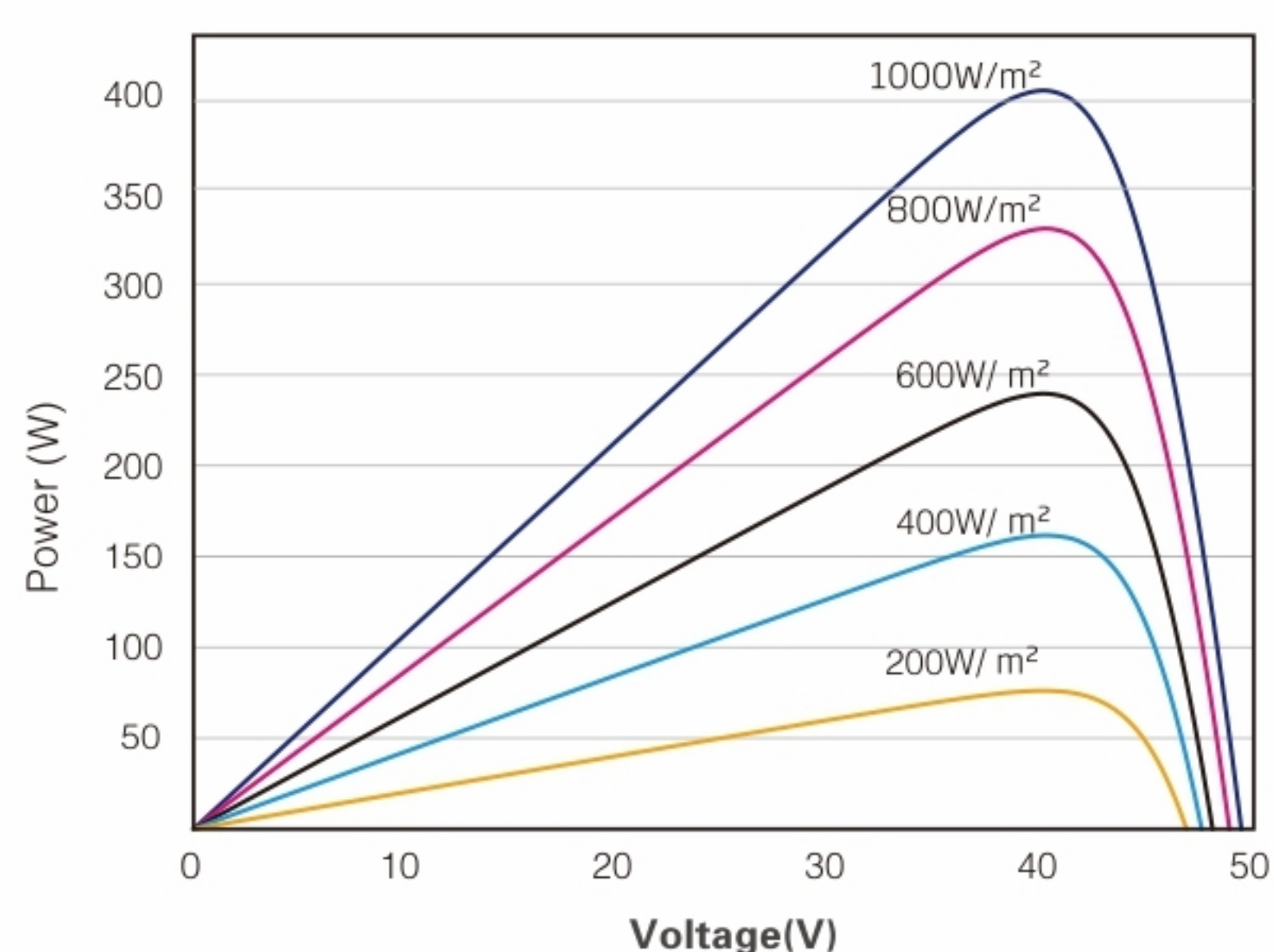


A-A

## I-V CURVES OF PV MODULE(410W)



## P-V CURVES OF PV MODULE(410W)



## ELECTRICAL DATA (STC)

Peak Power Watts- $P_{MAX}$ (Wp)	390	395	400	405	410	415
Power Output Tolerance- $P_{MAX}$ (W)	0 ~ +5					
Maximum Power Voltage- $V_{MPP}$ (V)	41.01	41.67	41.97	42.28	42.58	42.87
Maximum Power Current- $I_{MPP}$ (A)	9.48	9.51	9.53	9.58	9.63	9.68
Open Circuit Voltage- $V_{OC}$ (V)	49.12	49.90	50.27	50.63	50.99	51.34
Short Circuit Current- $I_{SC}$ (A)	10.45	10.46	10.47	10.48	10.49	10.50
Module Efficiency $\eta_m$ (%)	19.2	19.4	19.7	19.9	20.2	20.4

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.

## ELECTRICAL DATA (NOCT)

Maximum Power- $P_{MAX}$ (Wp)	294	298	302	305	309	313
Maximum Power Voltage- $V_{MPP}$ (V)	37.7	38.0	38.2	38.5	38.8	39.1
Maximum Power Current- $I_{MPP}$ (A)	7.81	7.85	7.89	7.92	7.97	8.02
Open Circuit Voltage- $V_{OC}$ (V)	45.6	45.8	46.0	46.2	46.4	46.6
Short Circuit Current- $I_{SC}$ (A)	8.27	8.30	8.33	8.36	8.39	8.42

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

## MECHANICAL DATA

Solar Cells	Monocrystalline(158.75 × 158.75mm)
Cell Orientation	144 cells (6 × 24)
Module Dimensions	2024 × 1002 × 35mm (79.69 × 39.45 × 1.38 inches)
Weight	22.5kg(49.6lb)
Glass	3.2mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EVA
Backsheet	White
Frame	40 mm (1.57 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm (0.006 inches), Portrait: N 140mm/P 285mm(5.51/11.22inches) Landscape: N 1400 mm /P 1400 mm (55.12/55.12 inches)
Connector	MC4、QC4

NOCT(Nominal Operating Cell Temperature) 41°C (± 3°C)

Temperature Coefficient of  $P_{MAX}$  - 0.37%/°C

Temperature Coefficient of  $V_{OC}$  - 0.29%/°C

Temperature Coefficient of  $I_{SC}$  0.05%/°C

Operational Temperature -40~+85°C

Maximum System Voltage 1000V DC (IEC)

Max Series Fuse Rating 20A

(DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection)

## WARRANTY

15 year Product Workmanship Warranty

25 year Linear Power Warranty

## PACKAGING CONFIGURATION

Modules per box: 27 pieces

Modules per 40' container: 594 pieces

Note: Read the safety and installation instructions before using the product.

Affirm: With technological progress and product updates, the technical parameters of Tunghsu Kangtu's later component products may deviate from the technical parameters contained in this specification. Tunghsu Kangtu has the right to adjust various technical parameters at any time without notifying the customer. The final interpretation right of this technical specification belongs to Anhui Tunghsu Kangtu Solar Technology Co., Ltd.



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