



TUNGHSU

star series



M6 (166mm)

435W/440W/445W/450W/455W

144 CELLS MBB HALF-CELL MONO PV MODULE

SINGLE GLASS REGULAR TYPE

435-455W

Tungshu 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 output power



Higher power generation



Highly reliability due to stringent quality control



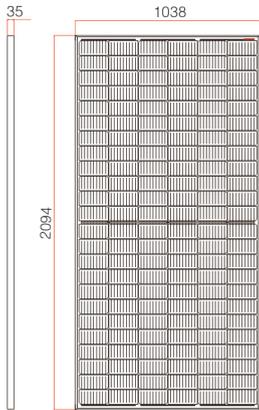
Certified to withstand the most challenging environmental conditions

Industry-leading linear warranty

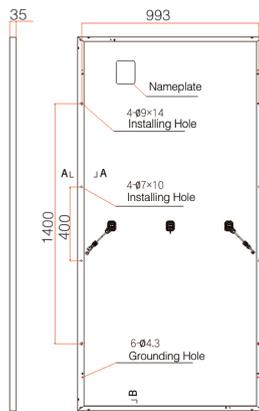
+15 Year Product Warranty +25Year Linear Power Warranty



DIMENSIONS OF PV MODULE(mm)

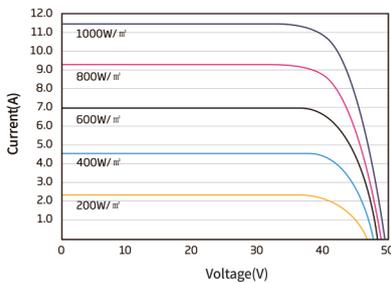


Front View

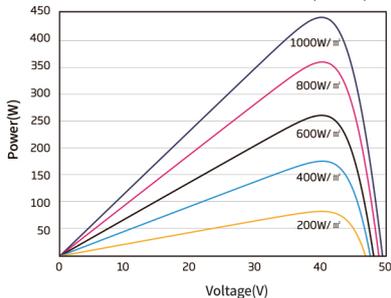


Back View

I-V CURVES OF PV MODULE(445W)



P-V CURVES OF PV MODULE(445W)



ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)	435	440	445	450	455
Power Output Tolerance- P_{MAX} (W)	0 ~ +5				
Maximum Power Voltage- V_{MPP} (V)	40.5	40.7	40.8	41.0	41.2
Maximum Power Current- I_{MPP} (A)	10.74	10.82	10.90	10.98	11.05
Open Circuit Voltage- V_{OC} (V)	49.0	49.2	49.4	49.6	49.8
Short Circuit Current- I_{SC} (A)	11.31	11.39	11.46	11.53	11.61
Module Efficiency η_m (%)	20.0	20.2	20.5	20.7	20.9

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

ELECTRICAL DATA (NOCT)

Maximum Power- P_{MAX} (Wp)	329	333	336	340	344
Maximum Power Voltage- V_{MPP} (V)	38.2	38.4	38.5	38.7	38.9
Maximum Power Current- I_{MPP} (A)	8.61	8.68	8.73	8.80	8.86
Open Circuit Voltage- V_{OC} (V)	46.3	46.4	46.6	46.8	47.0
Short Circuit Current- I_{SC} (A)	9.11	9.17	9.23	9.28	9.35

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	144cells(6x24)
Module Dimensions	2094x1038x35mm(82.44x 40.87 x 1.38 inches)
Weight	23.5kg(51.80 lb)
Glass	3.2mm (0.13 inches), High Transmission, Strengthened Coated Glass
Encapsulant Material	POE/EVA
Backsheet	White
Frame	35 mm (1.38 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	4.0mm ² , 350mm photovoltaic special cable, or customized
Connector	MC4、QC4

TEMPERATURE RATING

NOCT(Nominal Operating Cell Temperature)	41°C (±3°C)
Temperature Coefficient of P_{MAX}	- 0.36%/°C
Temperature Coefficient of V_{OC}	- 0.26%/°C
Temperature Coefficient of I_{SC}	0.04%/°C

LIMIT PARAMETERS

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1500V 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: 31 pieces
Modules per 40' container:682 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.

