



High Power Output  
Low LCOE

Maximum Power  
440W+

# TWMND

N-type Half-cell  
Monofacial Full-black Module (54)

## 54HB415-440W

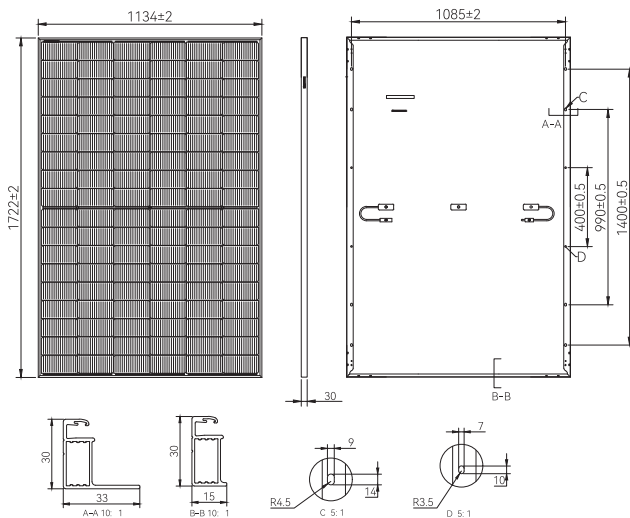


en.tongwei.com.cn  
\* ANZ only



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**DRAWINGS (Unit: mm)**



**ELECTRICAL CHARACTERISTICS (STC)**

Module Type: TWMND-54HBXXX						
Maximum Power: Pmax [W]	415	420	425	430	435	440
Open Circuit Voltage: Voc [V]	38.70	38.85	39.00	39.15	39.30	39.45
Short Circuit Current: Isc [A]	13.52	13.57	13.62	13.67	13.72	13.77
Voltage at Maximum Power: Vmp [V]	32.75	32.92	33.09	33.26	33.43	33.60
Current at Maximum Power: Imp [A]	12.67	12.76	12.85	12.93	13.01	13.10
Module Efficiency: η [%]	21.3	21.5	21.8	22.0	22.3	22.5

\* STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass1.5, Measuring Tolerance: ±3%

**ELECTRICAL CHARACTERISTICS (NMOT)**

Maximum Power: Pmax [W]	312.0	316.0	320.0	324.0	327.8	331.8
Open Circuit Voltage: Voc [V]	36.73	36.89	37.04	37.19	37.33	37.47
Short Circuit Current: Isc [A]	10.84	10.90	10.96	11.02	11.06	11.10
Voltage at Maximum Power: Vmp [V]	30.47	30.64	30.81	30.98	31.14	31.30
Current at Maximum Power: Imp [A]	10.24	10.31	10.39	10.46	10.52	10.60

\* NMOT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s

**TEMPERATURE PARAMETERS**

Temperature Coefficient (Pmax)	-0.30%/°C
Temperature Coefficient (Voc)	-0.25%/°C
Temperature Coefficient (Isc)	+0.046%/°C
NMOT	45±2°C

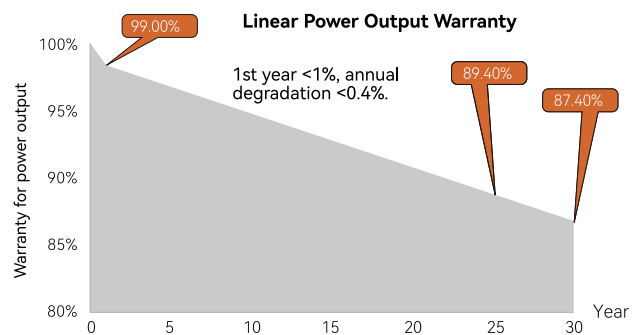
**MAXIMUM RATINGS**

Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	25A
Power Output Tolerance	0~+5W

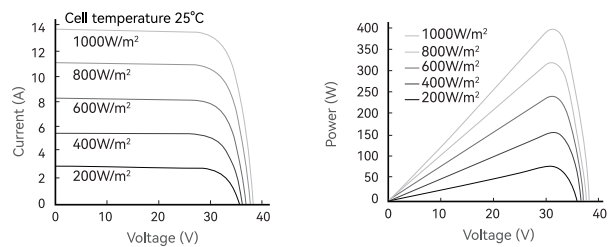
**MECHANICAL PARAMETERS**

Cells	TNC (N Type Monocrystalline Cell)
Cell Orientation	108[6×18]
Dimension	1722±2×1134±2×30mm
Weight	20.5kg
Front Glass	3.2mm high transmittance, AR coated tempered glass
Backsheet	Black inside and white outside/Black
Frame	Anodized aluminum alloy black frame
Junction Box	IP68, 3 diodes
Output Cable	4.0mm <sup>2</sup>
Cable Length	±1200mm, length can be customized
Wind/Snow Load	2400Pa/5400Pa
Packaging	36pcs per pallet, 936pcs per 40'HC

**WARRANTY**



**I-V CURVE**



**CERTIFICATIONS**

**Quality Management System and Product Certification**

- ISO 9001: 2015/Quality management system
- ISO 14001: 2015/Environmental management system
- ISO 45001: 2018/Occupation health safety management system
- ISO 50001: 2018/Energy management system
- IEC 62941: 2019/Quality system for PV module manufacturing
- IEC 61215/61730, IEC 62804(PID), IEC 61701(Salt), IEC 62716 (Ammonia), IEC 60068-2-68(Sand)

