



**TWMND**  
 N-type Half-cell  
 Monofacial Black Frame Module (54)  
**54HS420-440W**

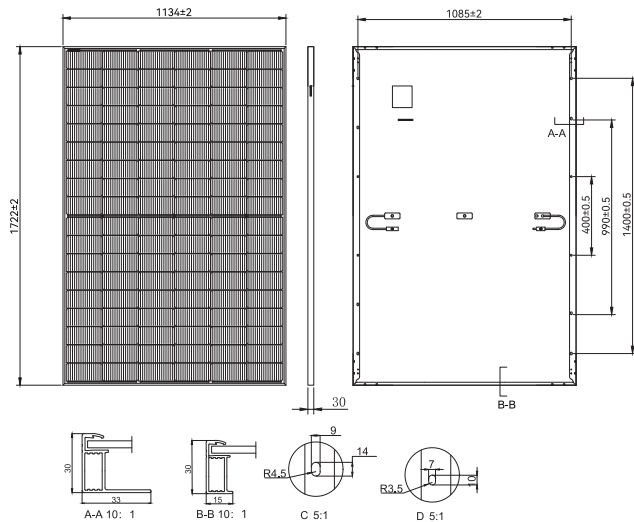


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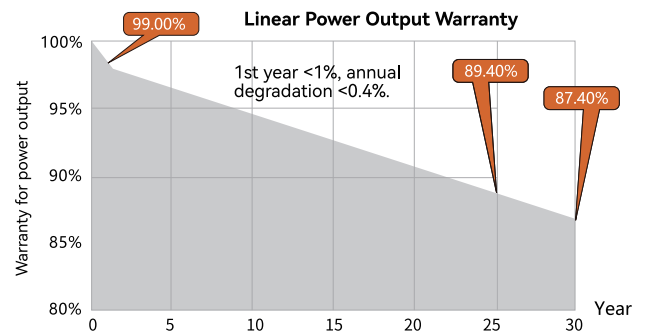
**DRAWINGS (Unit: mm)**



**MECHANICAL PARAMETERS**

Cells	TNC (N Type Monocrystalline Cell)
Cell Orientation	108[6X18]
Dimension	1722±2X1134±2X30mm
Weight	20.5kg
Front Glass	3.2mm high transmittance, AR coated tempered glass
Backsheet	White
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**



**ELECTRICAL CHARACTERISTICS (STC)**

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

**ELECTRICAL CHARACTERISTICS (NMOT)**

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

\* STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass 1.5, Measuring Tolerance: ±3%  
\* NMOT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Air Mass 1.5, Wind Speed 1m/s

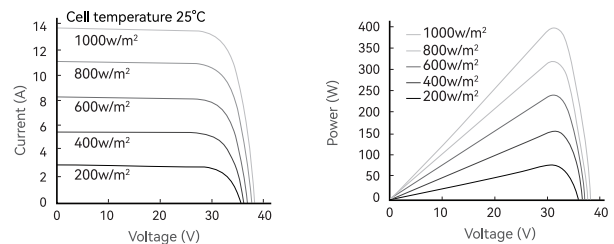
**TEMPERATURE PARAMETERS**

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

**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 50001:2011 / energy management system
- IEC TS 62941—2016 / PV industry quality management system
- IEC 61215/61730, IEC 62804(PID), IEC 61701(Salt), IEC 62716 (Ammonia), IEC 60068-2-68(Sand)

