



High Power Output
Low LCOE



Maximum Power
520W



TWMNH

N-type Half-cell
Bifacial Black Frame Module (54)

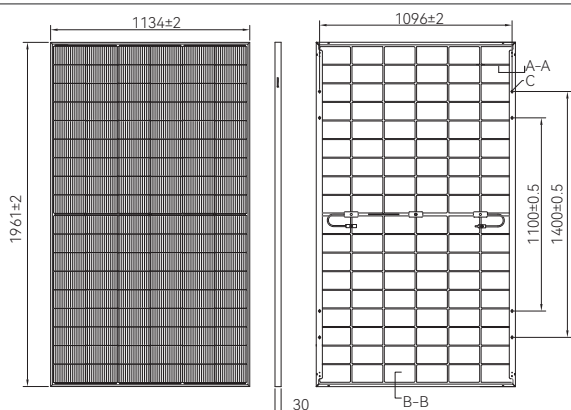
54HD500-520W

Tongwei Co.,Ltd.
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Drawings (Unit: mm)



Electrical characteristics (STC)

Module type:	TWMNH-54 HD500	TWMNH-54 HD505	TWMNH-54 HD510	TWMNH-54 HD515	TWMNH-54 HD520
Maximum Power: P _{max} [W]	500	505	510	515	520
Open Circuit Voltage: Voc [V]	40.06	40.24	40.42	40.60	40.80
Short Circuit Current: Isc [A]	15.89	15.92	15.95	15.98	16.05
Voltage at Maximum Power: V _{mp} [V]	33.70	33.94	34.19	34.43	34.67
Current at Maximum Power: Imp [A]	14.84	14.88	14.92	14.96	15.00
Module Efficiency: η [%]	22.5	22.7	22.9	23.2	23.4

* STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5, Power measurement tolerance: ±3%

Electrical characteristics (BNPI)

Maximum Power: P _{max} [W]	552.0	557.6	563.1	568.8	574.1
Open Circuit Voltage: Voc [V]	40.06	40.24	40.42	40.60	40.80
Short Circuit Current: Isc [A]	17.54	17.57	17.61	17.64	17.72
Voltage at Maximum Power: V _{mp} [V]	33.70	33.94	34.19	34.43	34.67
Current at Maximum Power: Imp [A]	16.38	16.43	16.47	16.52	16.56

* BNPI: Front side irradiance 1000W/m², Rear side irradiance 135W/m², Cell Temperature=25°C, AM=1.5, Power measurement tolerance: ±3%

Electrical characteristics with different rear side power gain

5%	Maximum Power: P _{max} [W]	525	530	535	540	546
	Module Efficiency: η [%]	23.6	23.8	24.1	24.3	24.6
15%	Maximum Power: P _{max} [W]	575	580	586	592	598
	Module Efficiency: η [%]	25.9	26.1	26.4	26.6	26.9
25%	Maximum Power: P _{max} [W]	625	631	637	643	650
	Module Efficiency: η [%]	28.1	28.4	28.6	28.9	29.2

Temperature rating

Temperature Coefficient of P _{max}	-0.28%/°C
Temperature Coefficient of Voc	-0.24%/°C
Temperature Coefficient of Isc	+0.046%/°C

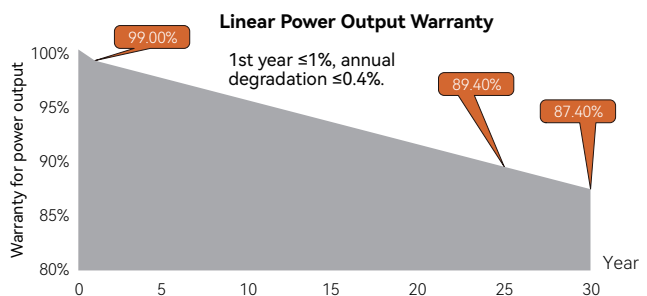
Operating parameters

Operating Temperature	-40°C~+70°C
Module [T ₉₈] max	70°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	30A
Power Selection Tolerance	0~+3%
Bifaciality coefficient of P _{max}	80±5%
Bifaciality coefficient of Voc	98±5%
Bifaciality coefficient of Isc	80±5%
Fire Class Rating	Class C

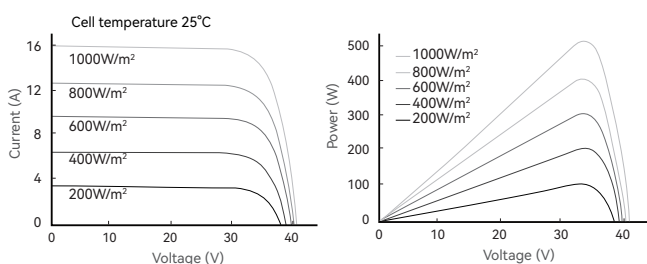
Mechanical parameters

Cell Type	TNC (N Type Monocrystalline Cell)
Cell Orientation	108[6×18]
Dimensions	1961±2×1134±2×30mm
Weight	26.5kg
Front Glass	2.0mm AR coating semi tempered glass
Rear Glass	2.0mm semi tempered glass
Frame	Anodized aluminum alloy black frame
Junction Box	IP68, 3diodes
Cable	4.0mm ²
Cable length	+1200mm, -1200mm, length can be customized
Connector	TW-PVCON-01(Tongwei Solar) PV-KST4-EVO2/xy_UR, PV-KBT4-EVO2/xy_UR(Staubli) PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy(Staubli) PV-ZH202B(Zhejiang Zhonghuan Sunter)
Max static test load	Front side 5400Pa, Rear side 2400Pa
Per pallet	36pcs
Packaging	864pcs per 40'HC

Warranty



I-V Curve



Certifications

Quality Management System and Product Certification

ISO 9001: 2015 / Quality management systems
ISO 14001: 2015 / Environmental management systems
ISO 45001: 2018 / Occupational health and safety management systems
ISO 50001: 2018 / Energy management systems
IEC 62941: 2019 / Quality system for PV module manufacturing
IEC 61215(2021) / IEC 61730(2023)



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