



High Power Output  
Low LCOE



Maximum Power  
495W+



# TWMND

N-type Half-cell  
Monofacial Black Frame Module (60)

## 60HS475-495W



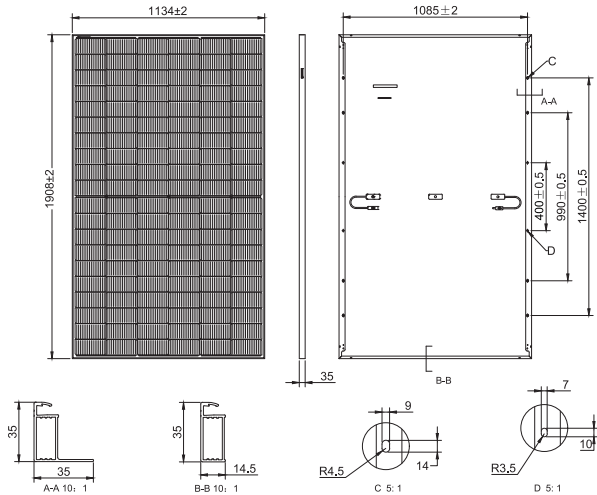
[en.tongwei.com.cn](http://en.tongwei.com.cn)



Learn More



**DRAWINGS (Unit: mm)**



**ELECTRICAL CHARACTERISTICS (STC)**

Module Type: TWMND-60HSXXX	475	480	485	490	495
Maximum Power: Pmax [W]	475	480	485	490	495
Open Circuit Voltage: Voc [V]	43.51	43.68	43.85	44.02	44.19
Short Circuit Current: Isc [A]	13.60	13.65	13.70	13.75	13.82
Voltage at Maximum Power: Vmp [V]	36.96	37.13	37.30	37.47	37.65
Current at Maximum Power: Imp [A]	12.85	12.93	13.00	13.07	13.15
Module Efficiency: η [%]	22.0	22.2	22.4	22.6	22.9

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

**ELECTRICAL CHARACTERISTICS (NMOT)**

Maximum Power: Pmax [W]	359.5	363.3	367.0	370.8	374.6
Open Circuit Voltage: Voc [V]	41.38	41.54	41.71	41.87	42.03
Short Circuit Current: Isc [A]	10.71	10.74	10.78	10.82	10.88
Voltage at Maximum Power: Vmp [V]	35.58	35.74	35.90	36.07	36.24
Current at Maximum Power: Imp [A]	10.09	10.15	10.20	10.26	10.32

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

**TEMPERATURE PARAMETERS**

Temperature Coefficient (Pmax)	-0.28%/°C
Temperature Coefficient (Voc)	-0.24%/°C
Temperature Coefficient (Isc)	+0.046%/°C
NMOT	45±2°C

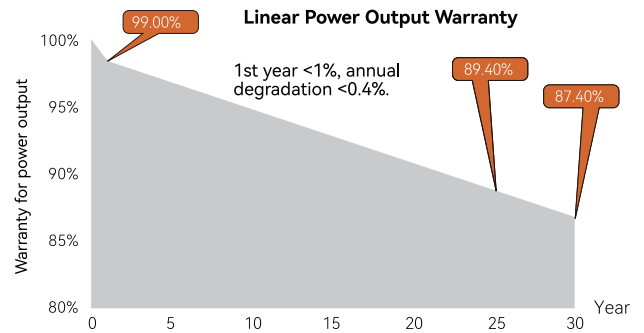
**MAXIMUM RATINGS**

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

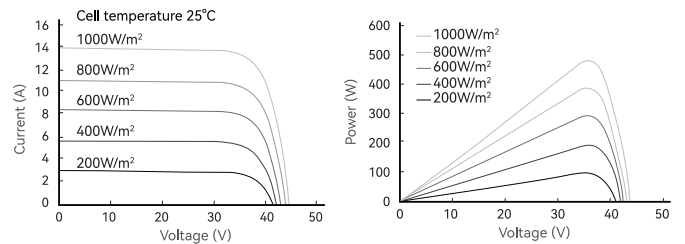
**MECHANICAL PARAMETERS**

Cells	TNC (N Type Monocrystalline Cell)
Cell Orientation	120[6×20]
Dimension	1908±2×1134±2×35mm
Weight	23.2kg
Front Glass	3.2mm high transmittance, AR 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	31pcs per pallet, 744pcs 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)

