



High Power Output  
Low LCOE



Maximum Power  
635W+

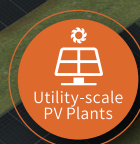


# TWMND

N-type Half-cell  
Bifacial Module (78)

## 78HD615-635W

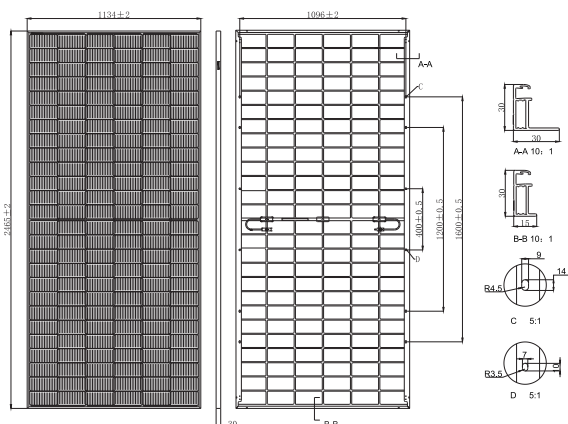
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## DRAWINGS (Unit: mm)



## ELECTRICAL CHARACTERISTICS (STC)

Module Type: TWMND-78HDXXX

Maximum Power: Pmax [W]	615	620	625	630	635
Open Circuit Voltage: Voc [V]	55.40	55.60	55.80	56.00	56.20
Short Circuit Current: Isc [A]	14.14	14.18	14.22	14.26	14.30
Voltage at Maximum Power: Vmp [V]	46.18	46.38	46.58	46.78	46.98
Current at Maximum Power: Imp [A]	13.32	13.37	13.42	13.47	13.52
Module Efficiency: $\eta$ [%]	22.0	22.2	22.4	22.5	22.7

## ELECTRICAL CHARACTERISTICS (NMOT)

Maximum Power: Pmax [W]	462.4	466.2	470.0	473.7	476.1
Open Circuit Voltage: Voc [V]	52.62	52.81	53.00	53.19	53.38
Short Circuit Current: Isc [A]	11.47	11.51	11.54	11.57	11.61
Voltage at Maximum Power: Vmp [V]	43.02	43.07	43.25	43.44	43.62
Current at Maximum Power: Imp [A]	10.72	10.79	10.83	10.87	10.91

\* STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass1.5, Measuring Tolerance: ±3%  
\* NMOT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s

## ELECTRICAL CHARACTERISTICS (Rear Power Gain)

5%	Maximum Power: Pmax[W]	645.8	651.0	656.3	661.5	666.8
	Module Efficiency: $\eta$ [%]	23.1	23.3	23.5	23.7	23.9
15%	Maximum Power: Pmax[W]	707.3	713.0	718.8	724.5	730.3
	Module Efficiency: $\eta$ [%]	25.3	25.5	25.7	25.9	26.1
25%	Maximum Power: Pmax[W]	768.8	775.0	781.3	787.5	793.8
	Module Efficiency: $\eta$ [%]	27.5	27.7	27.9	28.2	28.4

## TEMPERATURE PARAMETERS

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

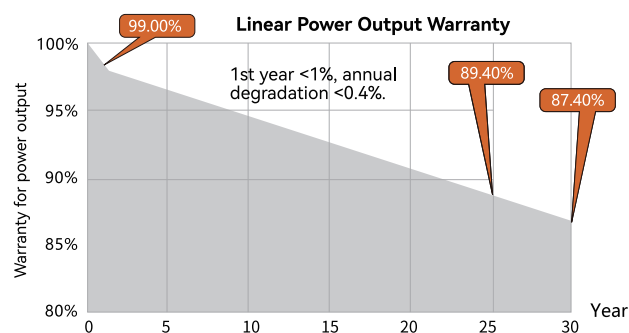
## MAXIMUM RATINGS

Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	30A
Power Output Tolerance	0~+5W
Maximum Bifaciality	80±5%

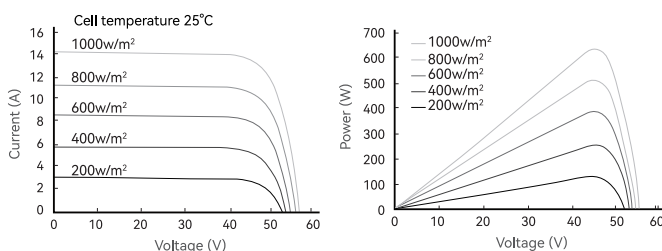
## MECHANICAL PARAMETERS

Cells	TNC (N Type Monocrystalline Cell)
Cell Orientation	156[6X26]
Dimension	2465±2X1134±2X30mm
Weight	34.6kg
Front Glass	2.0mm high transmittance, AR semi-tempered glass
Rear Glass	2.0mm semi-tempered glass
Frame	Anodized aluminum alloy frame
Junction Box	IP68, 3 diodes
Output Cable	4.0mm <sup>2</sup>
Cable Length	+400mm, -200mm, length can be customized
Wind/Snow Load	2400Pa/5400Pa
Packaging	36pcs per pallet, 576pcs 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 50001:2011 / 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)

