



TWMPD-60HS445-465W

P-type Half-cell Monofacial Module (60)

PRODUCT FEATURES



High Power Output
Low LCOE



Maximum Power
465W+



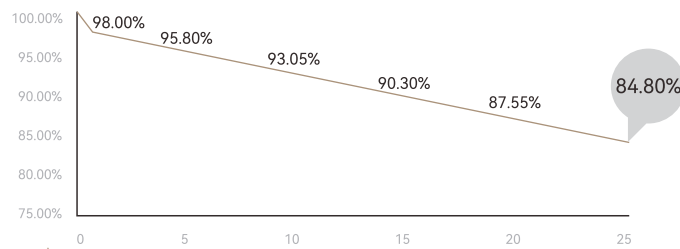
High
Reliability



Low
LID

POWER WARRANTY

1st year <2%, 0.55% power degradation per year from 2 to 25 years



12-year Warranty for Materials



25-year Warranty for Linear Power Output

MANAGEMENT SYSTEM AND PRODUCT CERTIFICATION

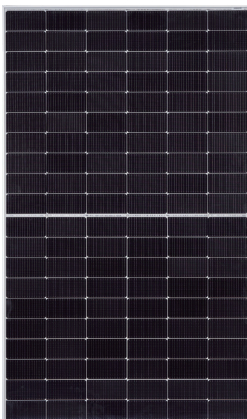
ISO9001: 2015/Quality Management System

ISO14001: 2015/Environment Management System

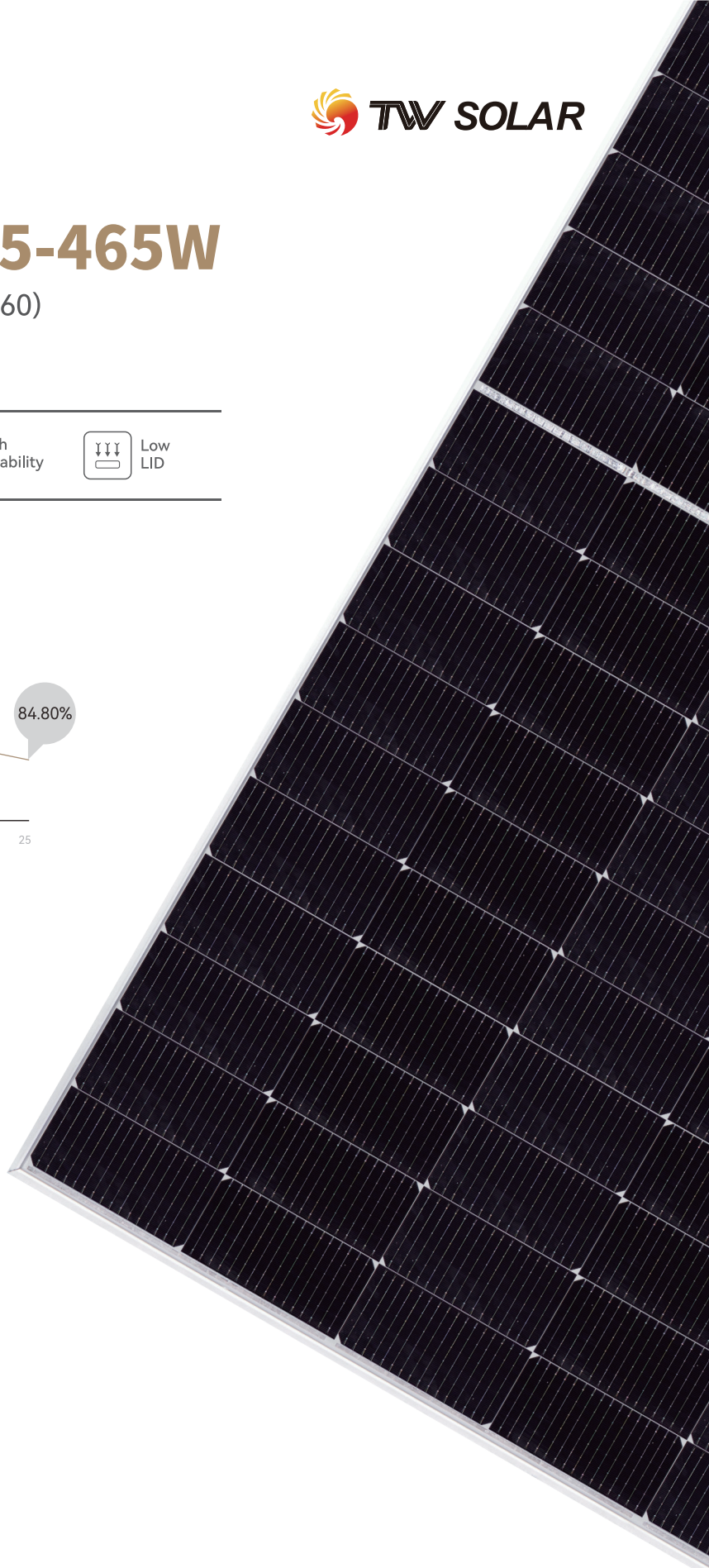
ISO45001: 2018/Occupational Health and Safety Management System



Front



Rear



Electrical Characteristics (STC)

Module Type: TWMPD-60HSXXX

Maximum Power: Pmax [W]	445	450	455	460	465
Open Circuit Voltage: Voc [V]	41.04	41.21	41.38	41.55	41.72
Short Circuit Current: Isc [A]	13.79	13.84	13.89	13.94	13.99
Voltage at Maximum Power: Vmp [V]	33.67	33.83	33.99	34.15	34.31
Current at Maximum Power: Imp [A]	13.22	13.30	13.39	13.47	13.55
Module Efficiency: η [%]	20.6	20.8	21.0	21.3	21.5

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass1.5, Measuring Tolerance: $\pm 3\%$

Electrical Characteristics (NMOT)

Maximum Power: Pmax [W]	336.7	340.5	344.3	348.1	351.9
Open Circuit Voltage: Voc [V]	38.93	39.11	39.30	39.49	39.68
Short Circuit Current: Isc [A]	10.88	10.91	10.95	10.97	11.01
Voltage at Maximum Power: Vmp [V]	32.15	32.37	32.59	32.81	33.02
Current at Maximum Power: Imp [A]	10.47	10.52	10.56	10.61	10.65

NMOT: Irradiance 800W/m², Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s

Mechanical Parameters

Cells	TPC
Cell Orientation	120[6X20]
Dimension	1908 \pm 2 X1134 \pm 2X35mm
Weight	24.2kg
Front Glass	3.2mm high transmittance, AR coated tempered glass
Backsheet	White
Frame	Anodized aluminum alloy frame
Junction Box	IP68, 3 diodes
Output Cable	4.0mm ²
Cable Length	+1200mm, -1200mm, length can be customized
Wind/Snow Load	2400Pa/5400Pa
Packaging	31pcs per pallet, 744pcs per 40'HC

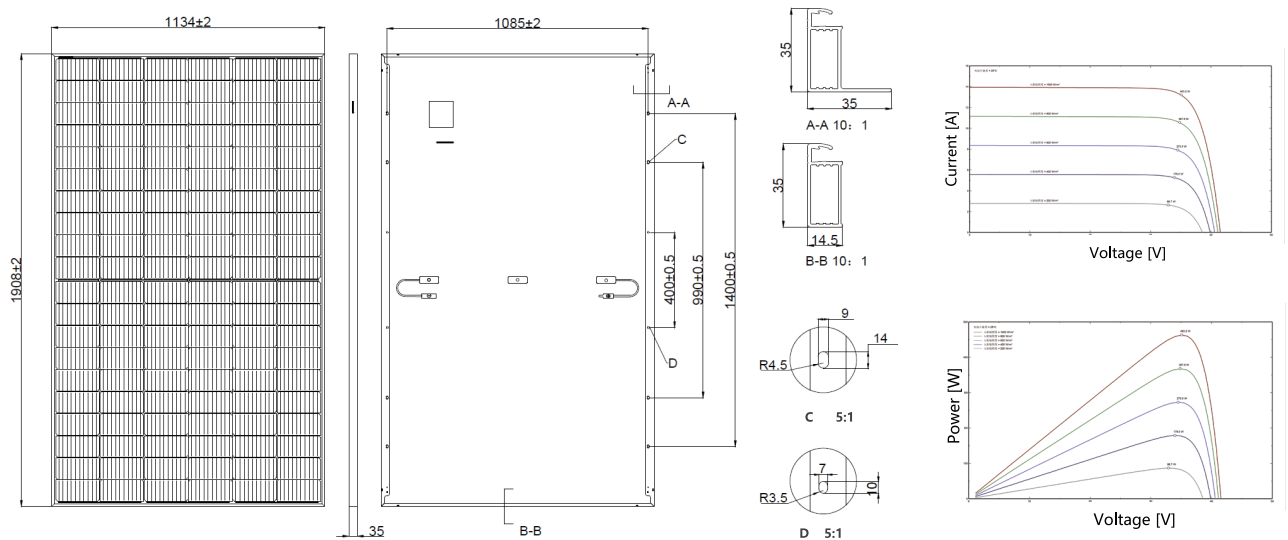
Operating Parameters

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

Temperature Ratings

Temperature Coefficient (Pmax)	-0.34%/°C
Temperature Coefficient (Voc)	-0.27%/°C
Temperature Coefficient (Isc)	+0.045%/°C
NMOT	45 \pm 2°C

Drawings (Unit: mm)



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