



# TWMPD-54HS400-420W

P-type Half-cell Monofacial Black Frame Module (54)

## PRODUCT FEATURES



High Power Output  
Low LCOE



Maximum Power  
420W+



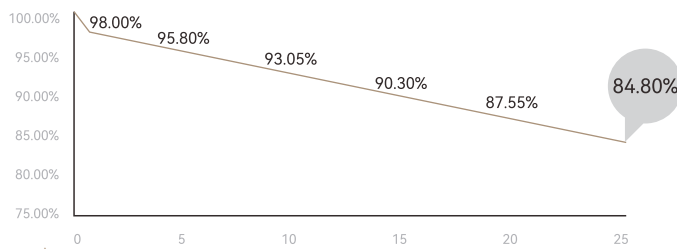
High  
Reliability



Low  
LID

## POWER WARRANTY

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



15-year Warranty for Materials



25-year Warranty for Linear Power Output

## MANAGEMENT SYSTEM AND PRODUCT CERTIFICATION

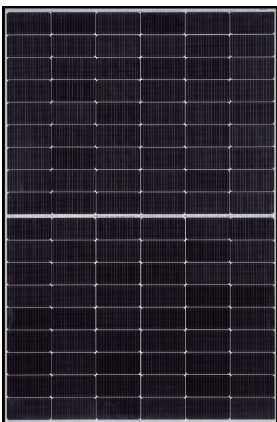
ISO9001: 2015/Quality Management System

ISO14001: 2015/Environment Management System

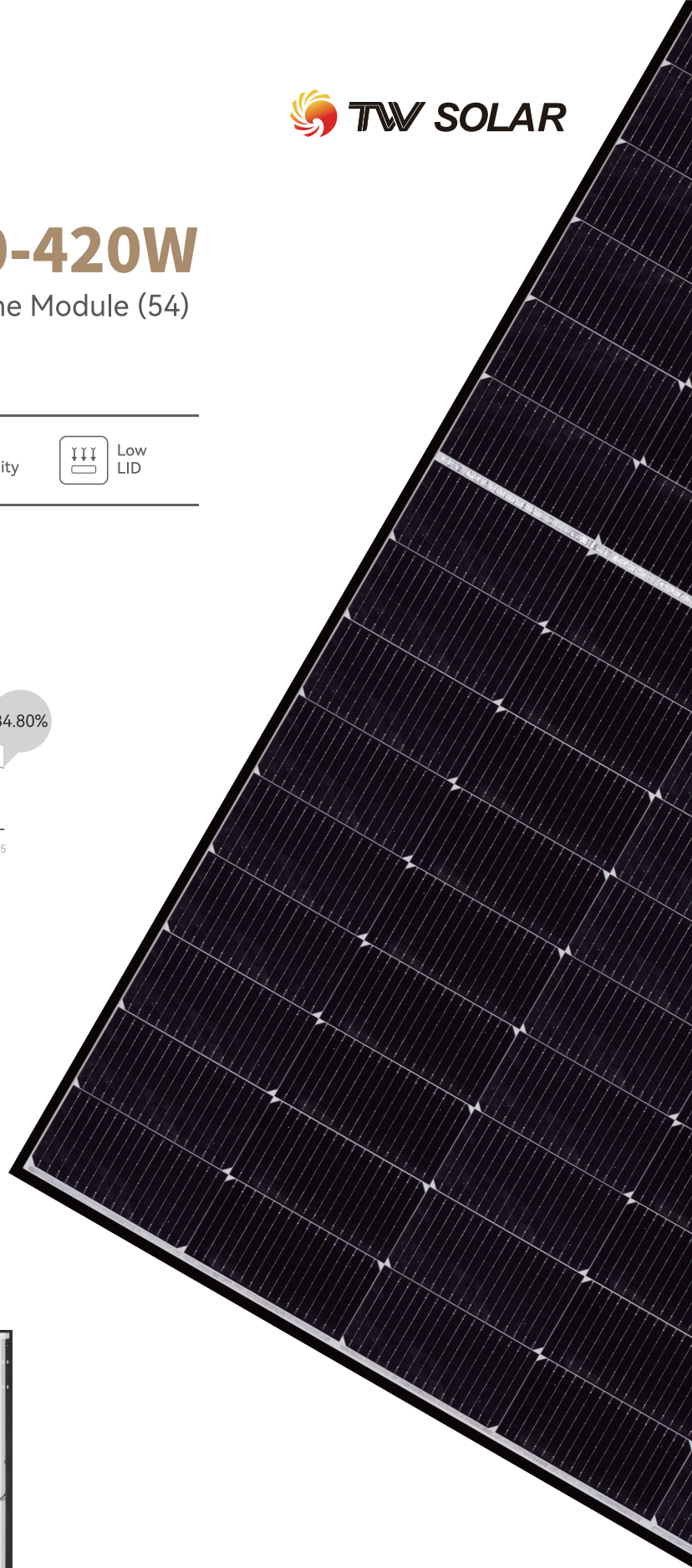
ISO45001: 2018/Occupational Health and Safety Management System



Front



Rear



## Electrical Characteristics (STC)

Module Type: TWMPD-54HSXXX

Maximum Power: Pmax [W]	400	405	410	415	420
Open Circuit Voltage: Voc [V]	37.08	37.23	37.38	37.53	37.68
Short Circuit Current: Isc [A]	13.77	13.87	13.92	13.95	13.98
Voltage at Maximum Power: Vmp [V]	30.58	30.73	30.88	31.03	31.18
Current at Maximum Power: Imp [A]	13.08	13.18	13.28	13.38	13.47
Module Efficiency: $\eta$ [%]	20.5	20.7	21.0	21.3	21.5

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

## Electrical Characteristics (NMOT)

Maximum Power: Pmax [W]	302.8	306.6	310.3	314.1	317.9
Open Circuit Voltage: Voc [V]	34.72	34.86	35.00	35.15	35.29
Short Circuit Current: Isc [A]	10.82	10.90	10.97	11.05	11.12
Voltage at Maximum Power: Vmp [V]	28.76	28.90	29.04	29.18	29.32
Current at Maximum Power: Imp [A]	10.52	10.60	10.68	10.76	10.84

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

## Mechanical Parameters

Cells	TPC
Cell Orientation	108[6X18]
Dimension	1722 $\pm$ 2 X1134 $\pm$ 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	+400mm, -200mm or $\pm$ 1200mm, length can be customized
Wind/Snow Load	2400Pa/5400Pa
Packaging	36pcs per pallet, 936pcs 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)

