

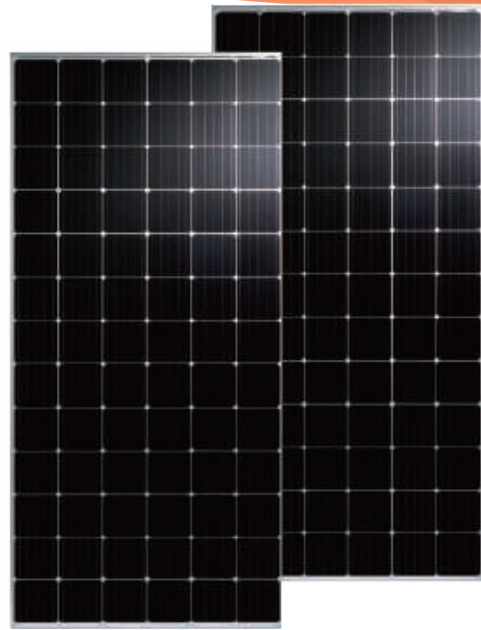


# HIPRO

TP678M **78-cell**

**410 ~ 430W**

mono perc



## KEY FEATURES

Anti  
PID

### Excellent Anti-PID performance

2 times of industry standard Anti-PID test by TUV SUD



### IP68 junction box

The highest waterproof level



### Lower temperature coefficients

Enhance power generation

## SYSTEM & PRODUCT CERTIFICATES

- IEC 61215 / IEC 61730 / UL 1703
- ISO 9001 : 2015 Quality Management System
- ISO 14001 : 2015 Environment Management System
- ISO 45001 : 2018 Occupational Health and Safety Management Systems

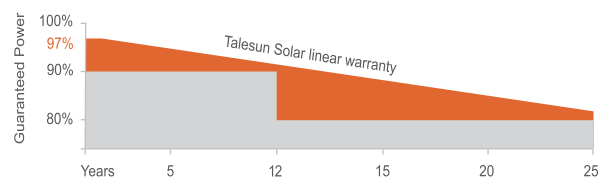


## PERFORMANCE WARRANTY

12 years  
Quality assurance

25 years  
Power output guarantee

Talesun standard  
Industry standard



[www.talesun.com](http://www.talesun.com)

**TALESUN**

Annual Module Capacity Globally : 8GW  
China : 7GW  
Thailand : 1GW

Talesun Solar is one of the world's largest integrated clean energy providers, who develops, manufactures and delivers highly reliable and cost-effective solar modules and integrated PV energy solutions for every application and market, for homes, businesses and utility power plants. It was ranked as one of the top 10 module suppliers in 2018, and was also listed as global TIER1 module supplier by BNEF since 2015.

## ELECTRICAL PARAMETERS

### Performance at STC (Power Tolerance 0 ~ +3%)

Maximum Power(Pmax/W)	410	415	420	425	430
Operating Voltage(Vmpp/V)	42.7	42.9	43.1	43.3	43.5
Operating Current(Imp/A)	9.61	9.68	9.75	9.82	9.89
Open-Circuit Voltage(Voc/V)	52.2	52.4	52.6	52.8	53.0
Short-Circuit Current(Isc/A)	10.17	10.24	10.31	10.38	10.45
Module Efficiency $\eta$ (%)	19.1	19.3	19.6	19.8	20.1

### Performance at NMOT

Maximum Power(Pmax/W)	306.1	309.8	313.5	317.2	320.9
Operating Voltage(Vmpp/V)	39.8	39.9	40.1	40.3	40.5
Operating Current(Imp/A)	7.70	7.76	7.81	7.87	7.93
Open-Circuit Voltage(Voc/V)	48.6	48.8	49.0	49.1	49.3
Short-Circuit Current(Isc/A)	8.21	8.27	8.32	8.38	8.44

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5 NMOT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Air Mass AM1.5, Wind Speed 1m/s

## MECHANICAL SPECIFICATION

Cell Type	Mono-Crystalline Silicon (5Busbar)
Cell Dimensions	158.75×158.75mm(6inches)
Cell Arrangement	78(6*13)
Weight	24.5kg(54.0lbs)
Module Dimensions	2140*1002*35mm (84.25*39.45*1.38inches)
Cable Length	900mm(35.43inches)
Cable Cross Section Size	4mm <sup>2</sup> (0.006inches <sup>2</sup> )
Front Glass	3.2mm High Transmission, Tempered Glass
No.of Bypass Diodes	3/6
Packing Configuration (1)	30pcs/carton
Packing Configuration (2)	30+4pcs/carton, 1carton/pallet
Frame	Anodized Aluminium Alloy
Junction Box	IP68

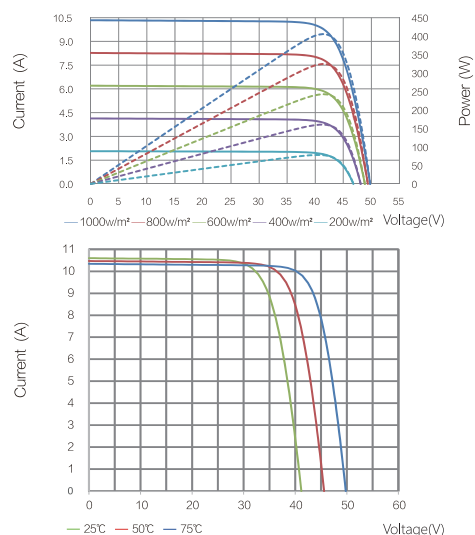
## OPERATING CONDITIONS

Maximum System Voltage	1000V/DC(IEC)/1500V/DC(IEC)
Operating Temp	-40°C~+85°C
Maximum Series Fuse	20A
Static Loading	5400Pa
Conductivity at Ground	≤ 0.1Ω
Safety Class	II
Resistance	≥100MΩ
Connector	MC4 Compatible

## TEMPERATURE COEFFICIENT

Temperature Coefficient Pmax	-0.39%/°C
Temperature Coefficient Voc	-0.30%/°C
Temperature Coefficient Isc	+0.05%/°C
NMOT	43±2°C

## I-V CURVE



## TECHNICAL DRAWINGS

