

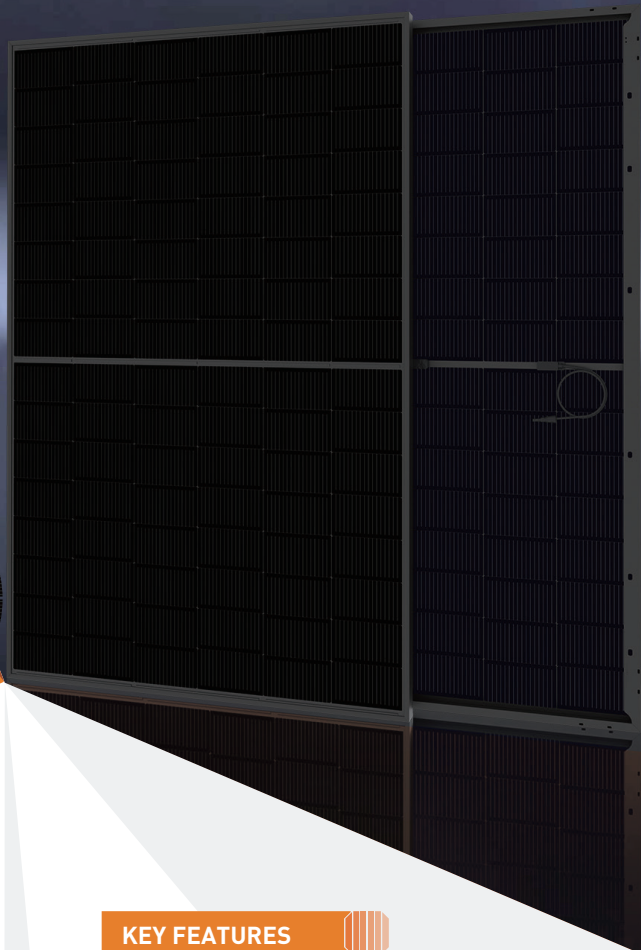
Talesun

BIPRO

TM3G48M **96-cell**

440 - 465W

16BB Half-cut N-type
Full Black

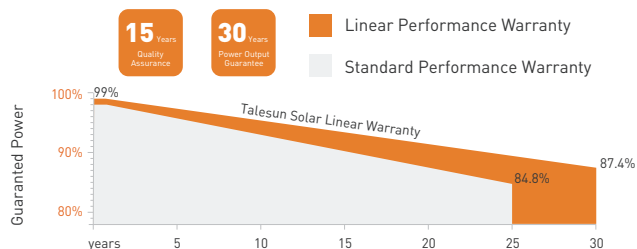


SYSTEM & PRODUCT CERTIFICATES

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



PERFORMANCE WARRANTY



KEY FEATURES



16BB Half-cut Cell Technology

Lower LID/LeTID degradation and better low light performance
Attenuation $\leq 1\%$ (1st year) / $\leq 0.4\%$ (Linear)



Industry Leading High Yield

Bifacial N-type cell technology,
Dual-sided power generation gain from back side depending on albedo, significantly reduce LCOE



Excellent Anti-PID Performance

192 hours Anti-PID test



Wider Application

No water-permeability and high wear-resistance,
can be widely used in high-humid, windy and dusty area



IP68 Junction Box

High waterproof level

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* GL-EN-Version 2026.04.22

ELECTRICAL CHARACTERISTICS

Testing Condition	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power (Pmax/W)	440	334	445	338	450	341	455	345	460	348	465	351
Operating Voltage (Vmpp/V)	29.52	27.70	29.79	28.00	30.09	28.20	30.34	28.40	30.59	28.60	30.84	28.80
Operating Current (Impp/A)	14.91	12.05	14.94	12.09	14.96	12.12	15.00	12.15	15.04	12.17	15.08	12.20
Open-Circuit Voltage (Voc/V)	35.20	33.40	35.42	33.60	35.64	33.80	35.85	34.00	36.06	34.20	36.27	34.40
Short-Circuit Current (Isc/A)	15.80	12.74	15.83	12.76	15.86	12.79	15.90	12.82	15.94	12.85	15.98	12.88
Module Efficiency [%]	22.02		22.27		22.52		22.77		23.02		23.27	

STC: Irradiance 1000W/m², Spectra at AM1.5, Module Temperature 25 °C. Power output tolerance: 0~+5W, Test uncertainty for Pmax: ±3%
NMOT: Irradiance 800W/m², Spectra at AM1.5, Ambient Temperature 20 °C, Wind speed 1m/s

REAR SIDE POWER GAIN(REFERENCE TO 460W FRONT)

Pmax gain	5%	10%	15%	20%	25%
Pmax/W	483	506	529	552	575
Vmpp/V	30.59	30.59	30.59	30.59	30.59
Impp/A	15.79	16.54	17.30	18.05	18.80
Voc/V	36.06	36.06	36.06	36.06	36.06
Isc/A	16.74	17.53	18.33	19.13	19.93

MECHANICAL CHARACTERISTICS

Cell Type	N-type Mono-Crystallin (16Busbar)
No. of Cells	96pcs in series (6*16)
Module Dimensions	1762*1134*30mm (69.37*44.65*1.18inches)
Weight	24.7kg (54.45lbs.)
Front Glass	2.0mm AR Coating Semi-tempered Glass
Back Glass	2.0mm Semi-tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68, 3 Bypass Diodes
Output Cables	4mm² (IEC), 12AWG(UL) 350mm(+),250mm(-) or Customized Length
Connectors	MC4/MC4-EV02A/Others

APPLICATION CONDITIONS

Maximum System Voltage	1500V/DC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse	35A
Safety Protection Class	Class II
Mechanical Load*	Front side 5400Pa, Back side 2400Pa
Refer. Bifaciality Factor	80%±5%

*Refer to the installation manual for details

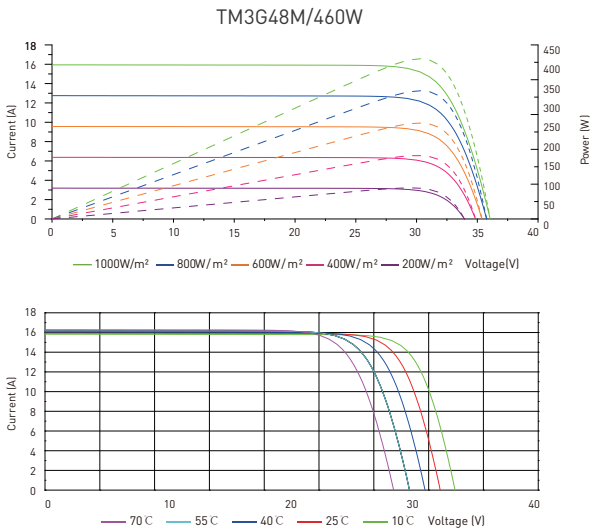
TEMPERATURE CHARACTERISTICS

Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.24%/°C
Temperature Coefficient of Isc	+0.043%/°C
Nominal Module Operating Temperature(NMOT)	43±2°C

PACKING CONFIGURATION

Pieces Per Pallet	37	36(USA)
Pieces Per Container(40'HQ)	962	720

Electrical Performance



TECHNICAL DRAWINGS

