



BIPRO

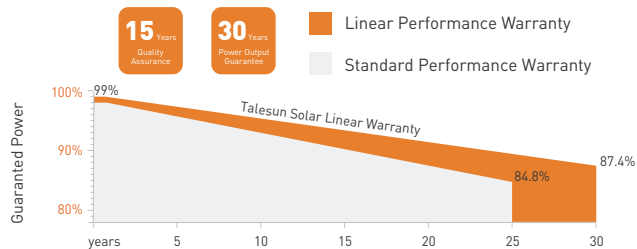
TM3G48M **96**-...

430 - 450W

16BB Half-cut N-type
Full Black



- 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



16BB ... Lower LID/LeTID degradation and better low light performance
Attenuation $\leq 1\%$ (1st year) / $\leq 0.4\%$ (Linear)



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



PID Anti ... 192 hours Anti-PID test



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



68 ... High waterproof level

Electrical Characteristics (STC)

Testing Condition	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power (Pmax/W)	430	327	435	330	440	334	445	338	450	342
Operating Voltage (Vmpp/V)	28.92	27.30	29.22	27.50	29.52	27.70	29.79	28.00	30.09	28.20
Operating Current (Impp/A)	14.87	11.97	14.89	12.00	14.91	12.05	14.94	12.09	14.96	12.12
Open-Circuit Voltage (Voc/V)	34.76	33.00	34.98	33.20	35.20	33.40	35.42	33.60	35.64	33.80
Short-Circuit Current (Isc/A)	15.72	12.67	15.76	12.71	15.80	12.74	15.83	12.76	15.86	12.79
Module Efficiency (%)	21.50		21.80		22.00		22.30		22.50	

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

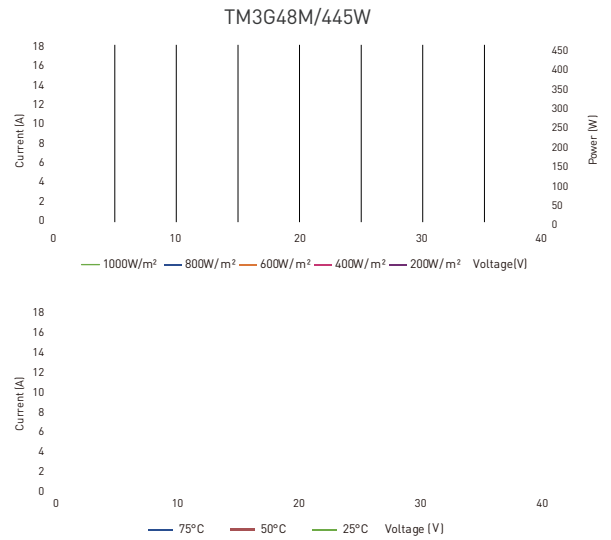
Electrical Characteristics (Pmax gain)

Pmax gain	5%	10%	15%	20%	25%
Pmax/W	467	490	512	534	556
Vmpp/V	29.79	29.79	29.79	29.79	29.79
Impp/A	15.69	16.43	17.18	17.93	18.68
Voc/V	35.42	35.42	35.42	35.42	35.42
Isc/A	16.62	17.41	18.20	19.00	19.79

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 Glazed Semi-tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68, 3 Bypass Diodes
Output Cables	4mm ² (IEC), 12AWG(UL) 350mm(+),250mm(-) or Customized Length
Connectors	T01/LJQ-3-CSY/MC4/MC4-EV02

Electrical Characteristics (Temperature Coefficients)



System Characteristics

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%

Temperature Coefficients

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

Physical Characteristics

Pieces Per Pallet	36	36(USA)
Pieces Per Container(40'HQ)	936	720



The specification and key features described in this datasheet may deviate slightly and are not guaranteed. Due to ongoing innovation, R&D enhancement, Suzhou Talesun Solar Technologies Co., Ltd. reserves the right to make any adjustment to the information described herein at any time without notice. Please always obtain the most recent version of the datasheet which shall be duly incorporated into the binding contract made by the parties governing all transactions related to the purchase and sale of the products described herein.