

THE DUOMAX TWIN

BIFACIAL DUAL GLASS 252 LAYOUT MODULE



252 LAYOUT
MONOCRYSTALLINE MODULE

465-485W
POWER OUTPUT RANGE

20.6%
MAXIMUM EFFICIENCY

0~+5W
POSITIVE POWER TOLERANCE

PRODUCTS
TSM-DEG15VC.20(II)

POWER RANGE
465-485W



High power output

- Up to 485W front power and 20.6% module efficiency with 1/3-cut and MBB (Multi Busbar) technology enable higher BOS savings
- Lower resistance and good reflection effect of MBB ensure higher power



High reliability

- Improved PID resistance through cell process and module material control
- Resistant to salt, acid, and ammonia
- Proven to be reliable in high temperature and humidity areas
- Mechanical performance: Up to 5400 Pa positive load and 2400 Pa negative load



High energy generation

- Up to 25% additional power gain from the back side depending on the albedo
- Excellent IAM and low light performance validated by 3rd party with cell process and module material optimization
- Better anti-shading performance and lower operating temperature



Easy to install

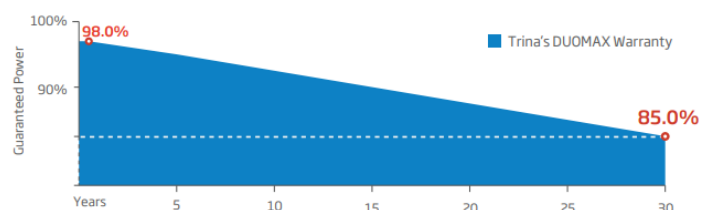
- Frame design makes module compatible with all racking and installation methods
- Easy to handle during transportation and install as normal framed module

Comprehensive Products and System Certificates

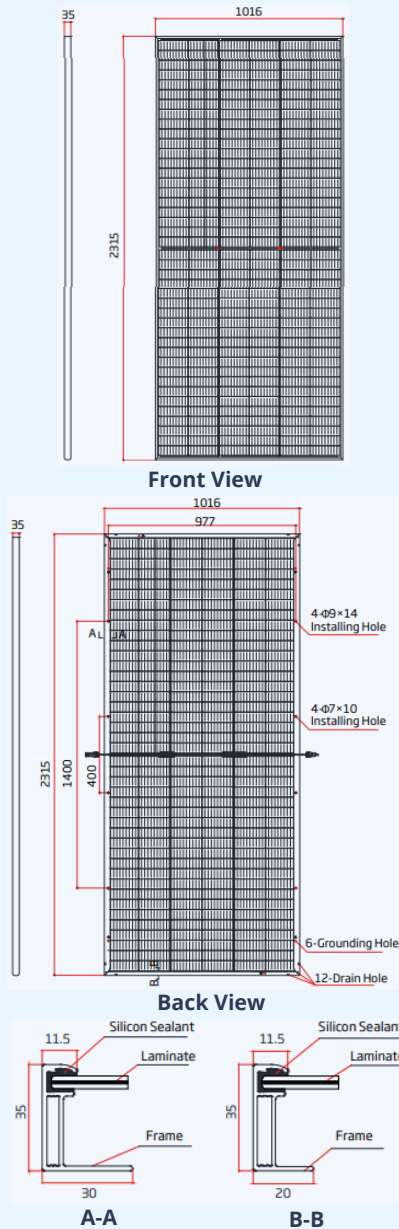
IEC61215/IEC61730/IEC61701/IEC62716/UL61730
ISO 9001: Quality Management System ISO 14001:
Environmental Management System ISO14064:
Greenhouse Gases Emissions Verification ISO45001:
Occupation Health and Safety Management System



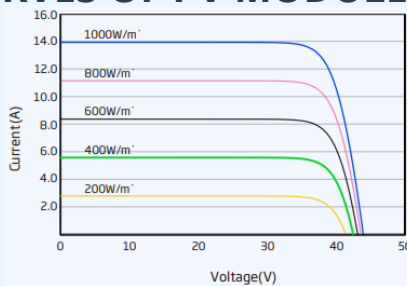
Trina Solar's DUOMAX Performance Warranty



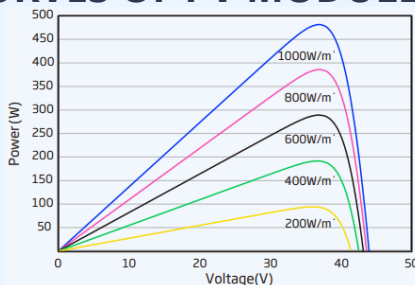
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(480W)



P-V CURVES OF PV MODULE(480W)



ELECTRICAL DATA (STC)

	465	470	475	480	485
Peak Power Watts-PMAX (Wp)*	465	470	475	480	485
Power Output Tolerance-PMAX (W)	0 ~ +5				
Maximum Power Voltage-VMPP (V)	35.8	35.9	36.0	36.1	36.2
Maximum Power Current-IMPP (A)	12.99	13.09	13.19	13.29	13.39
Open Circuit Voltage-VOC (V)	43.0	43.1	43.2	43.3	43.4
Short Circuit Current-ISC (A)	13.58	13.68	13.80	13.92	13.97
Module Efficiency η_m (%)	20.0	20.0	20.2	20.4	20.6

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measurement tolerance: ±3%.

Electrical characteristics with different rear side power gain (reference to 485 Wp front)

	509	534	558	582	606
Maximum Power-PMAX (Wp)	509	534	558	582	606
Maximum Power Voltage-VMPP (V)	36.2	36.2	36.2	36.2	36.2
Maximum Power Current-I MPP (A)	14.06	14.73	15.40	16.07	16.74
Open Circuit Voltage-VOC (V)	43.4	43.4	43.4	43.4	43.4
Short Circuit Current-ISC (A)	14.67	15.37	16.07	16.76	17.46
Pmax gain	5%	10%	15%	20%	25%

Power Bifaciality: 70±5%.

ELECTRICAL DATA (NMOT)

	350	354	358	361	365
Maximum Power-PMAX (Wp)	350	354	358	361	365
Maximum Power Voltage-VMPP (V)	33.6	33.7	33.8	33.8	34.1
Maximum Power Current-I MPP (A)	10.41	10.49	10.59	10.68	10.69
Open Circuit Voltage-VOC (V)	40.5	40.6	40.7	40.8	40.8
Short Circuit Current-ISC (A)	10.94	11.02	11.12	11.22	11.26

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

MECHANICAL DATA

Solar Cells	Monocrystalline PERC
Cell Orientation	252 cells (12 × 21)
Module Dimensions	2315 × 1016 × 35 mm (91.14 × 40 × 1.38 inches)
Weight	30.0 kg (66.1 lb)
Glass	2.0 mm (0.08 inches), High Transmission AR Coated Heat Strengthened Glass
Encapsulant Material	POE/EVA
Back Glass	2.0 mm (0.08 inches) Heat Strengthened Glass (White Grid Glass)
Frame	35 mm (1.38 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), Portrait: N 450 mm/P 450 mm (17.72/17.72 inches), Landscape: N 1400 mm /P 1400 mm (55.12/55.12 inches)
Connector	MC4 EVO2 / TS4

TEMPERATURE RATINGS

NMOT	43°C (±2°C)
Temperature Coefficient of PMAX	- 0.34%/°C
Temperature Coefficient of VOC	- 0.25%/°C
Temperature Coefficient of ISC	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	25A

WARRANTY

25 year Product Workmanship Warranty
30 year Linear Power Warranty

PACKAGING CONFIGURATION

Modules per box: 31 pieces
Modules per 40' container: 589 pieces