

THE

DUOMAX^{twin}

BIFACIAL DUAL GLASS 252 LAYOUT MODULE

252 LAYOUT

MONOCRYSTALLINE MODULE

475-490W

POWER OUTPUT RANGE

20.8%

MAXIMUM EFFICIENCY

0~+5W

POSITIVE POWER TOLERANCE

Founded in 1997, Trina Solar is the world's leading total solution provider for solar energy. With local presence around the globe, Trina Solar is able to provide exceptional service to each customer in each market and deliver our innovative, reliable products with the backing of Trina as a strong, bankable brand. Trina Solar now distributes its PV products to over 100 countries all over the world. We are committed to building strategic, mutually beneficial collaborations with installers, developers, distributors and other partners in driving smart energy together.

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



PRODUCTS

TSM-DEG15VC.20(II)

POWER RANGE

475-490W



High power

- Up to 490W front power and 20.8% module efficiency with half-cut and MBB (Multi Busbar) technology bringing more BOS savings



High reliability

- Ensured 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
- Certificated to fire class A
- Minimizes micro-crack and snail trails
- Mechanical performance: Up to 5400 Pa positive load and 2400 Pa negative load



High energy generation

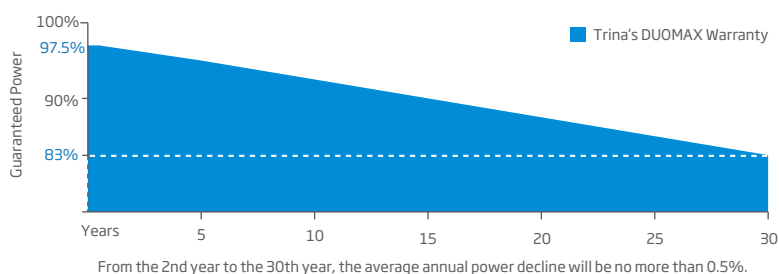
- Up to 25% additional power gain from back side depending on the albedo ;
- Excellent IAM and low light performance validated by 3rd party with cell process and module material optimization
- Better anti-shading performance and lower operating temperature



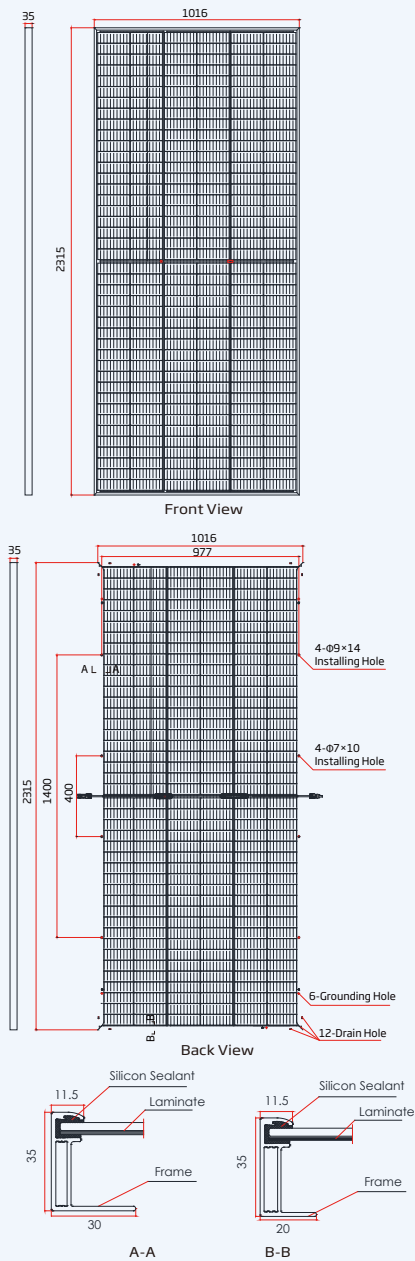
Easy to install

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

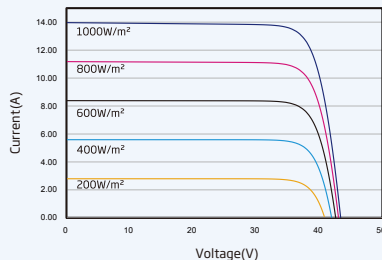
Trina Solar's DUOMAX Performance Warranty



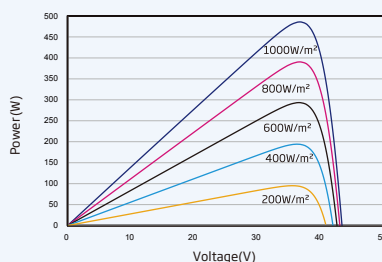
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(485 W)



P-V CURVES OF PV MODULE(485W)



ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)*	475	480	485	490
Power Tolerance- P_{MAX} (W)	0 ~ +5			
Maximum Power Voltage- V_{MPP} (V)	36.0	36.1	36.2	36.3
Maximum Power Current- I_{MPP} (A)	13.19	13.29	13.39	13.49
Open Circuit Voltage- V_{OC} (V)	43.2	43.3	43.4	43.5
Short Circuit Current- I_{SC} (A)	13.80	13.92	13.97	14.07
Module Efficiency η_m (%)	20.2	20.4	20.6	20.8

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5.

*Measuring tolerance: $\pm 3\%$.

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

Maximum Power- P_{MAX} (Wp)	509	558	582	606
Maximum Power Voltage- V_{MPP} (V)	36.2	36.2	36.2	36.2
Maximum Power Current- I_{MPP} (A)	14.06	15.40	16.07	16.74
Open Circuit Voltage- V_{OC} (V)	43.5	43.6	43.7	43.8
Short Circuit Current- I_{SC} (A)	14.67	16.07	16.76	17.46
Pmax gain	5%	15%	20%	25%

Power Bifaciality: 70 \pm 5%.

ELECTRICAL DATA (NMOT)

Maximum Power- P_{MAX} (Wp)	363	367	371	375
Maximum Power Voltage- V_{MPP} (V)	34.3	34.4	34.8	34.8
Maximum Power Current- I_{MPP} (A)	10.59	10.68	10.67	10.76
Open Circuit Voltage- V_{OC} (V)	41.1	41.2	41.2	41.3
Short Circuit Current- I_{SC} (A)	11.10	11.20	11.24	11.32

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

MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	252 cells (12 \times 21)
Module Dimensions	2315 \times 1016 \times 35 mm (91.14 \times 40 \times 1.38 inches)
Weight	30.5 kg (67.2 lb)
Front 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	35mm(1.38 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), Portrait: 600mm/P 600mm(23.62/23.62inches) Landscape: 2200 mm /P 2200 mm (86.61/86.61 inches)
Connector	MC4 EVO2 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NMOT (Nominal Module Operating Temperature)	41°C ($\pm 3^\circ\text{C}$)
Temperature Coefficient of P_{MAX}	- 0.35%/°C
Temperature Coefficient of V_{OC}	- 0.25%/°C
Temperature Coefficient of I_{SC}	0.04%/°C

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

WARRANTY

12 year Product Workmanship Warranty
30 year Power Warranty

(Please refer to product warranty for details)

MAXIMUM RATINGS

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

PACKAGING CONFIGURATION

Modules per box: 31 pieces
Modules per 40' container: 620 pieces