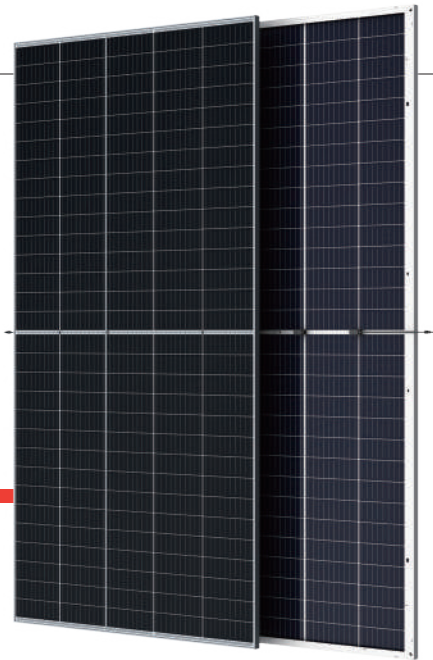


THE Vertex



Iris Hellas
Technology Innovations
www.irishellas.com

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE



500W+

MAXIMUM POWER OUTPUT

21.0%

MAXIMUM EFFICIENCY

0~+5W

POSITIVE POWER TOLERANCE

PRODUCTS

TSM-DEG18MC.20(II)

POWER RANGE

475-505W



High customer value

- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance of System) cost, shorter payback time
- Lowest guaranteed first year and annual degradation; extended 30-year warranty
- Designed for compatibility with existing mainstream system components
- Higher return on Investment



High power up to 505W

- Large area cells based on 210mm silicon wafers and 1/3-cut cell technology
- Up to 21.0% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



High reliability

- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load
- Certificated to fire class A



High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.35%) and operating temperature
- Up to 25% additional power gain from back side depending on albedo

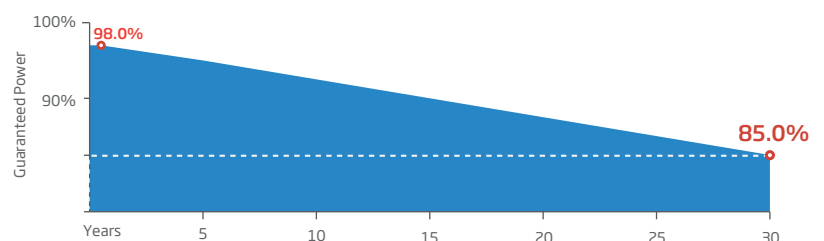
Founded in 1997, Trina Solar is the world's leading total solution provider for solar energy. With local presence around the globe, Trina Solar is able to provide exceptional service to each customer in each market and deliver our innovative, reliable products with the backing of Trina as a strong, bankable 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.

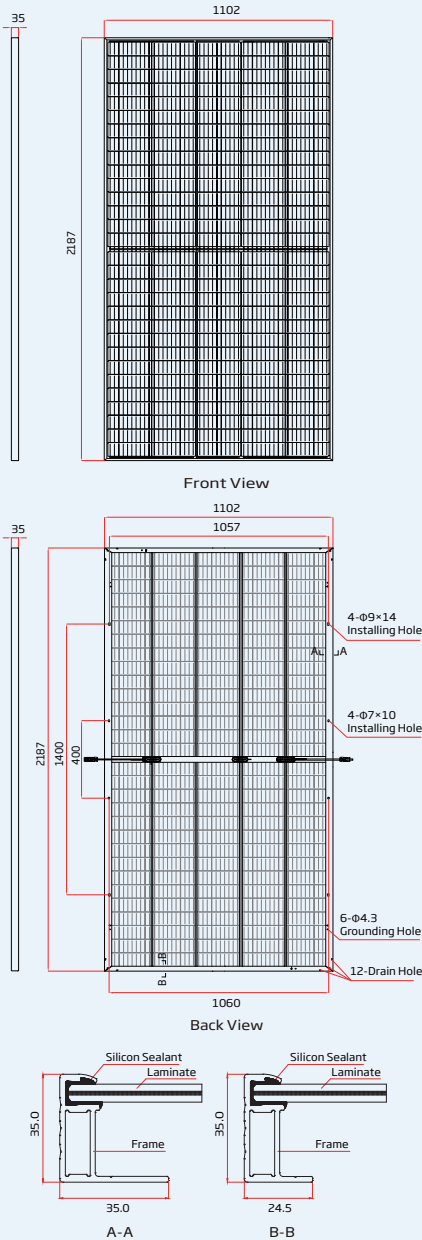
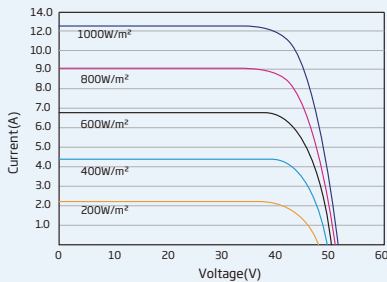
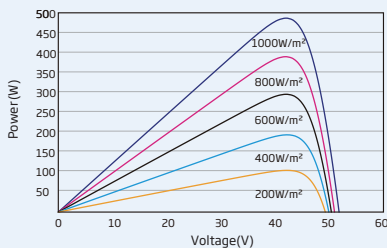
Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716/UL1703
 ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse Gases Emissions Verification
 ISO45001: Occupational Health and Safety Management System



Trina Solar's VERTEX Bifacial Dual Glass Performance Warranty



DIMENSIONS OF PV MODULE(mm)

I-V CURVES OF PV MODULE(490 W)

P-V CURVES OF PV MODULE(490W)

ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)*	475	480	485	490	495	500	505
Power Tolerance- P_{MAX} (W)	0 ~ +5						
Maximum Power Voltage- V_{MPP} (V)	41.9	42.2	42.5	42.8	43.1	43.4	43.7
Maximum Power Current- I_{MPP} (A)	11.34	11.38	11.42	11.45	11.49	11.53	11.56
Open Circuit Voltage- V_{OC} (V)	50.5	50.7	50.9	51.1	51.3	51.5	51.7
Short Circuit Current- I_{SC} (A)	11.93	11.97	12.01	12.05	12.09	12.13	12.17
Module Efficiency η_m (%)	19.7	19.9	20.1	20.3	20.5	20.7	21.0

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

Electrical characteristics with different power bin (reference to 10% Irradiance ratio)

Total Equivalent power - P_{MAX} (Wp)	508	514	519	524	530	535	540
Maximum Power Voltage- V_{MPP} (V)	41.9	42.2	42.5	42.8	43.1	43.4	43.7
Maximum Power Current- I_{MPP} (A)	12.13	12.18	12.22	12.24	12.29	12.34	12.37
Open Circuit Voltage- V_{OC} (V)	50.5	50.7	50.9	51.1	51.3	51.5	51.7
Short Circuit Current- I_{SC} (A)	12.77	12.81	12.85	12.89	12.94	12.98	13.02
Irradiance ratio (rear/front)	10%						

ELECTRICAL DATA (NMOT)

Maximum Power- P_{MAX} (Wp)	360	363	367	371	374	378	382
Maximum Power Voltage- V_{MPP} (V)	39.5	39.8	40.0	40.2	40.5	40.8	41.0
Maximum Power Current- I_{MPP} (A)	9.09	9.13	9.18	9.21	9.25	9.28	9.33
Open Circuit Voltage- V_{OC} (V)	47.7	47.9	48.1	48.3	48.5	48.7	48.8
Short Circuit Current- I_{SC} (A)	9.61	9.64	9.67	9.70	9.73	9.77	9.80

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

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	150 cells
Module Dimensions	2187 \times 1102 \times 35 mm (86.10 \times 43.39 \times 1.38 inches)
Weight	30.1 kg (66.4 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: 280/280 mm(11.02/11.02 inches) Landscape: 2000/2000 mm(78.74/78.74 inches)
Connector	MC4 EVO2 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NMOT (Nominal Module Operating Temperature)	41°C (\pm 3°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
2% first year degradation
0.45% Annual Power Attenuation

(Please refer to product warranty for details)

MAXIMUM RATINGS

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

PACKAGING CONFIGURATION

Modules per box: 30 pieces
Modules per 40' container: 600 pieces