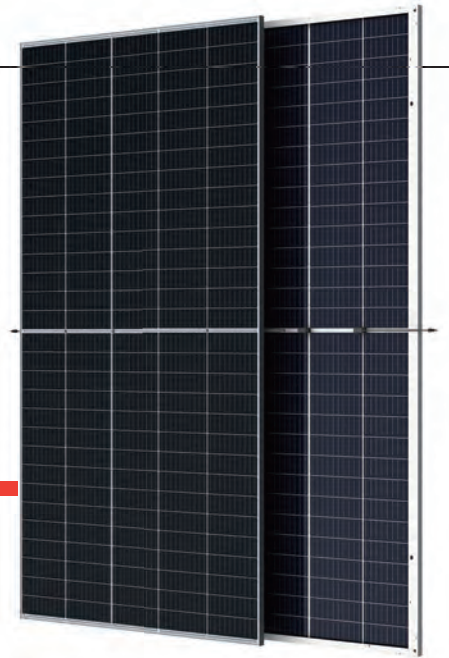


# THE Vertex

## BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE



### 500W+

MAXIMUM POWER OUTPUT

### 21.0%

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



### 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; 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



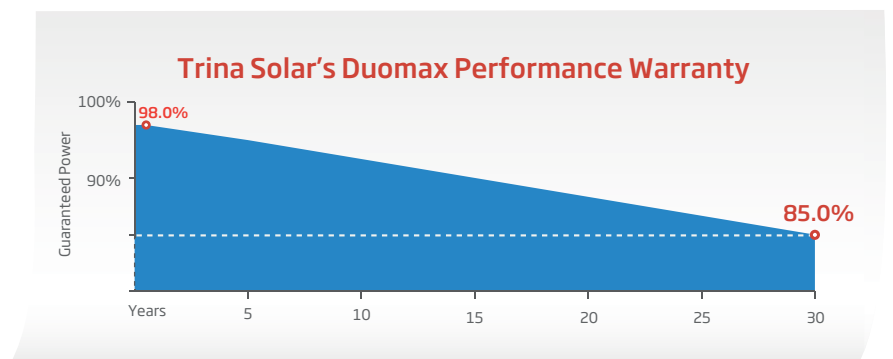
### High reliability

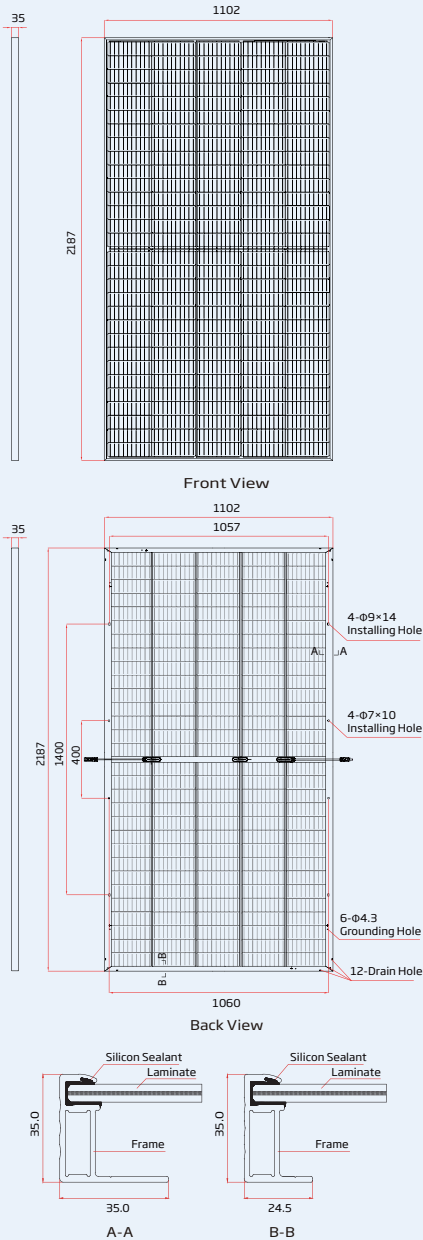
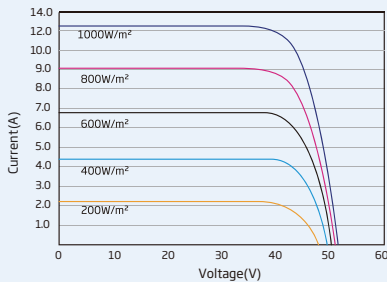
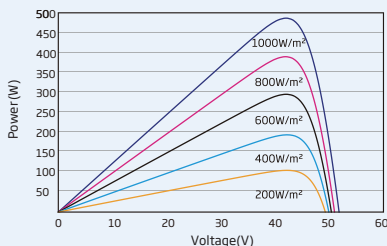
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to salt, ammonia and sand
- Preferred choice in harsh environments such as desert and high humidity areas



### High energy yield

- Excellent light absorption throughout the day (IAM) and low light performance, validated by 3rd party certifications
- Lower temperature coefficient (-0.35%) and operating temperature
- Up to 25% additional power gain from back side depending on albedo
- Optimized power output under inter-row shading conditions



**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 Output 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 $\eta_m$ (%)	19.7	19.9	20.1	20.3	20.5	20.7	21.0

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.  
 \*Measuring tolerance:  $\pm$ 3%.

**ELECTRICAL DATA (front side at irradiance 1000 W/m<sup>2</sup>, back side at 100 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5)**

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/m<sup>2</sup>, 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
Weight	30.1 kg
Front Glass	2.0 mm High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Back Glass	2.0 mm Heat Strengthened Glass (White Grid Glass)
Frame	35mm Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> Portrait: 280/280 mm Landscape: 2000/2000 mm
Connector	TS4

**TEMPERATURE RATINGS**

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

(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 degradation

(Please refer to product warranty for details)

**MAXIMUM RATINGS**

Operational Temperature	-40 to +85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	20A

**PACKAGING CONFIGURATION**

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