



BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

PRODUCT: TSM-DEG19C.20

PRODUCT RANGE: 525-550W

550W+

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21.0%

MAXIMUM EFFICIENCY



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;
- Designed for compatibility with existing mainstream system components
- Higher return on Investment



High power Mono Perc up to 550W

- 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

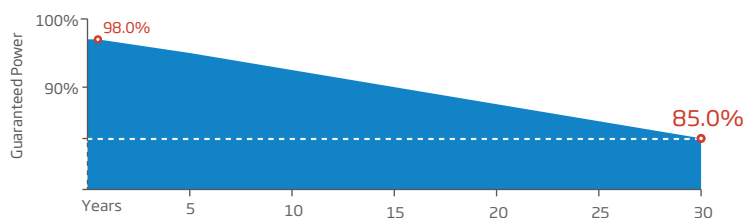


High energy yield

- 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 (-0.34%) and operating temperature
- Up to 25% additional power gain from back side depending on albedo



Trina Solar's Vertex Bifacial Dual Glass Performance Warranty



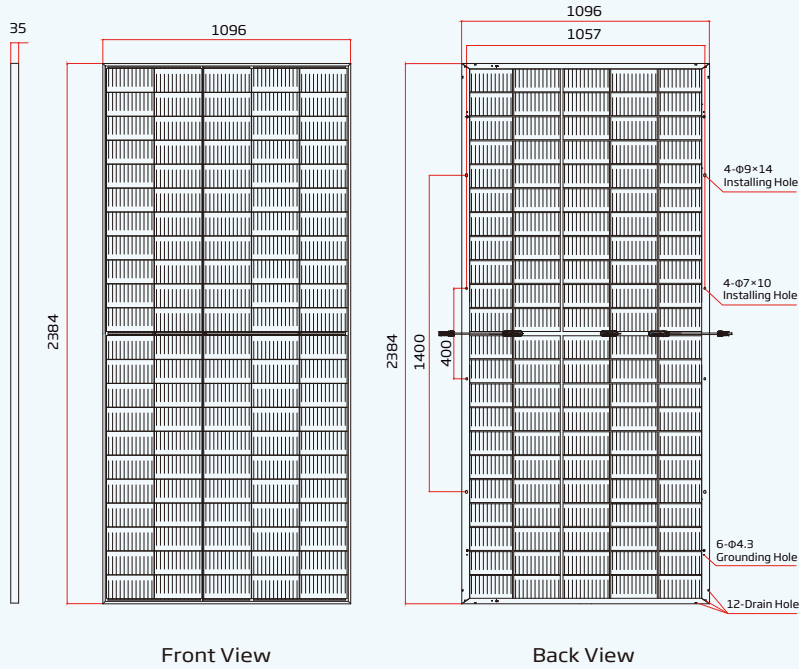
Comprehensive Products and System Certificates



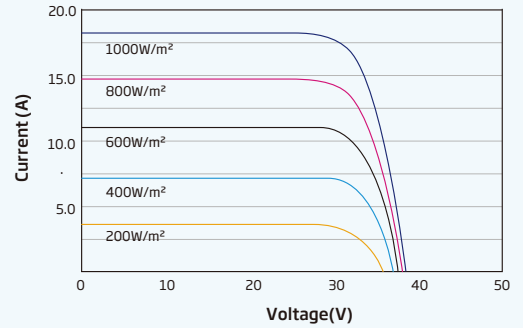
IEC61215/IEC61730/IEC61701/IEC62716/UL61730
 ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse Gases Emissions Verification
 ISO45001: Occupational Health and Safety Management System



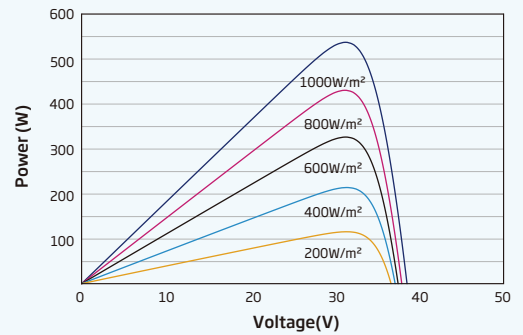
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(540 W)



P-V CURVES OF PV MODULE(540 W)



ELECTRICAL DATA (STC)

Peak Power Watts - P_{MAX} (Wp)*	525	530	535	540	545	550
Power Tolerance - P_{MAX} (W)	0 ~ +5					
Maximum Power Voltage - V_{MPP} (V)	30.8	31.0	31.2	31.4	31.6	31.8
Maximum Power Current - I_{MPP} (A)	17.04	17.11	17.16	17.21	17.24	17.29
Open Circuit Voltage - V_{OC} (V)	37.1	37.3	37.5	37.7	37.9	38.1
Short Circuit Current - I_{SC} (A)	18.14	18.19	18.24	18.30	18.35	18.39
Module Efficiency η_m (%)	20.1	20.3	20.5	20.7	20.9	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)	562	567	573	578	583	589
Maximum Power Voltage - V_{MPP} (V)	30.8	31.0	31.2	31.4	31.6	31.8
Maximum Power Current - I_{MPP} (A)	18.23	18.31	18.36	18.41	18.45	18.50
Open Circuit Voltage - V_{OC} (V)	37.1	37.3	37.5	37.7	37.9	38.1
Short Circuit Current - I_{SC} (A)	19.41	19.46	19.52	19.58	19.63	19.68
Irradiance ratio (rear/front)	10%					

Power Bifaciality: 70 \pm 5%.

ELECTRICAL DATA (NOCT)

Maximum Power - P_{MAX} (Wp)	398	401	405	409	413	416
Maximum Power Voltage - V_{MPP} (V)	28.6	28.8	29.0	29.2	29.4	29.5
Maximum Power Current - I_{MPP} (A)	13.88	13.93	13.97	14.02	14.08	14.10
Open Circuit Voltage - V_{OC} (V)	35.0	35.1	35.3	35.5	35.7	35.9
Short Circuit Current - I_{SC} (A)	14.62	14.66	14.70	14.75	14.79	14.82

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

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	110 cells
Module Dimensions	2384 \times 1096 \times 35 mm (93.86 \times 43.15 \times 1.38 inches)
Weight	32.6 kg (71.9 lb)
Front Glass	2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
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: 1400/1400 mm(55.12/55.12 inches)
Connector	TS4

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (\pm 2°C)
Temperature Coefficient of P_{MAX}	-0.34%/°C
Temperature Coefficient of V_{OC}	-0.25%/°C
Temperature Coefficient of I_{SC}	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40 \sim +85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	35A

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)

PACKAGING CONFIGURATION

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