

Vertex S

BACKSHEET MONOCRYSTALLINE MODULE

PRODUCT: TSM-DE09C.05
 PRODUCT RANGE: 380-405W

405W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21.1%

MAXIMUM EFFICIENCY



High value

- More productivity from same roof size.
- Outstanding visual appearance.
- Leading 210mm cell technology.



Small in size, big on power

- Small format module allow greater energy generation in limited space.
- Up to 405W, 21.1% module efficiency with high density interconnect technology.
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current.
- Reduce installation cost with higher power bin and efficiency.
- Boost performance in warm weather with lower temperature coefficient (-0.34%) and operating temperature.



Universal solution for residential and C&I rooftops

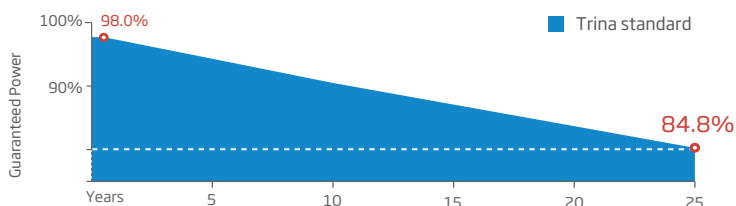
- Designed for compatibility with existing mainstream optimizers, inverters and mounting systems.
- Perfect size and low weight makes handling and transportation easier and more cost-effective.
- Diverse installation solutions for flexibility in system deployment



High Reliability

- 25 year product warranty.
- 25 year performance warranty with lowest degradation.
- Minimized micro-cracks with innovative non-destructive cutting technology.
- Ensured PID resistance through cell process and module material control.
- Mechanical performance up to +6000 Pa and -4000 Pa negative load

Trina Solar's Backsheet Performance Warranty



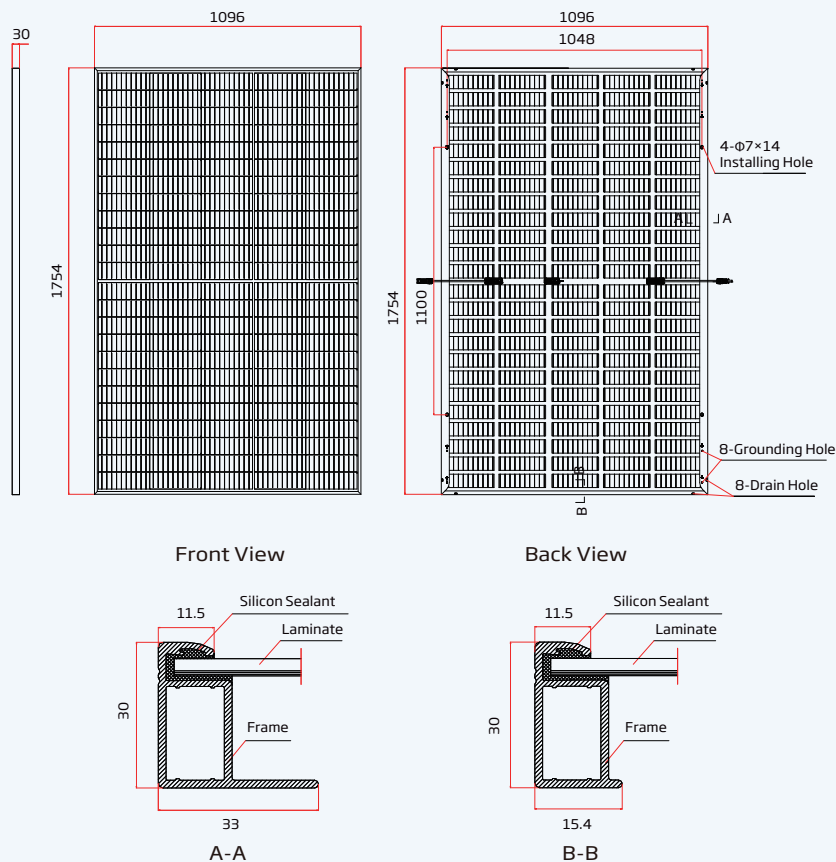
Comprehensive Products and System Certificates



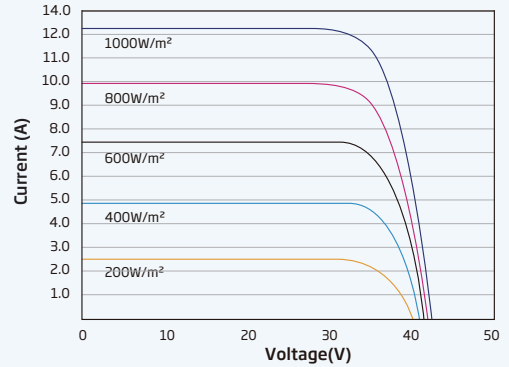
IEC61215/IEC61730/IEC61701/IEC62716/UL61730
 ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse Gases Emissions Verification
 ISO45001: Occupational Health and Safety Management System



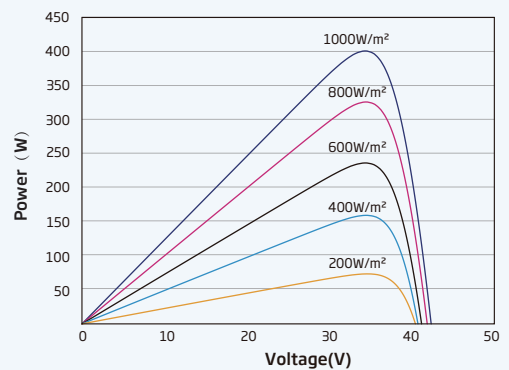
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(400W)



P-V CURVES OF PV MODULE(400W)



ELECTRICAL DATA (STC)

Peak Power Watts-P _{MAX} (Wp)*	380	385	390	395	400	405
Power Tolerance-P _{MAX} (W)	0 ~ +5					
Maximum Power Voltage-V _{MPP} (V)	33.4	33.6	33.8	34.0	34.2	34.4
Maximum Power Current-I _{MPP} (A)	11.38	11.46	11.54	11.62	11.70	11.77
Open Circuit Voltage-V _{OC} (V)	40.4	40.6	40.8	41.0	41.2	41.4
Short Circuit Current-I _{SC} (A)	12.00	12.07	12.14	12.21	12.28	12.34
Module Efficiency η _m (%)	19.8	20.0	20.3	20.5	20.8	21.1

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

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

Total Equivalent power -P _{MAX} (Wp)	401	406	411	417	422	427
Maximum Power Voltage-V _{MPP} (V)	33.4	33.6	33.8	34.0	34.2	34.4
Maximum Power Current-I _{MPP} (A)	12.01	12.08	12.16	12.26	12.34	12.41
Open Circuit Voltage-V _{OC} (V)	40.4	40.6	40.8	41.0	41.2	41.4
Short Circuit Current-I _{SC} (A)	12.65	12.71	12.78	12.88	12.95	13.02
Irradiance ratio (rear/front)	10%					

Power Bifaciality:55±10%.

ELECTRICAL DATA (NOCT)

Maximum Power-P _{MAX} (Wp)	286	290	294	298	301	305
Maximum Power Voltage-V _{MPP} (V)	31.3	31.5	31.8	32.0	32.2	32.5
Maximum Power Current-I _{MPP} (A)	9.14	9.19	9.25	9.30	9.37	9.40
Open Circuit Voltage-V _{OC} (V)	38.0	38.2	38.4	38.6	38.8	38.9
Short Circuit Current-I _{SC} (A)	9.67	9.73	9.78	9.84	9.90	9.94

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

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	120 cells
Module Dimensions	1754×1096×30 mm (69.06×43.15×1.18 inches)
Weight	21.0 kg (46.3 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Backsheet	Black Grid Transparent Backsheet
Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), Portrait: 350/280 mm(13.78/11.02 inches) Landscape: N 1100 mm /P 1100 mm (43.31/43.31 inches)
Connector	MC4 EV02 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±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~+85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	25A

WARRANTY

25 year Product Workmanship Warranty
25 year Power Warranty
2% first year degradation
0.55% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 36 pieces
Modules per 40' container: 828 pieces