Vertex S

BACKSHEET MONOCRYSTALLINE MODULE

PRODUCT: TSM-DE09.08

PRODUCT RANGE: 390-405W

405W+	0~+5W	21.1%
MAXIMUM POWER OUTPUT	POSITIVE POWER TOLERANCE	MAXIMUM EFFICIENCY



Small in size, big on power

- Small form factor. Generate a huge amount of energy even 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 collection
- Reduce installation cost with higher power bin and efficiency
- Boost performance in warm weather with lower temperature coefficient (-0.34%) and operating temperature

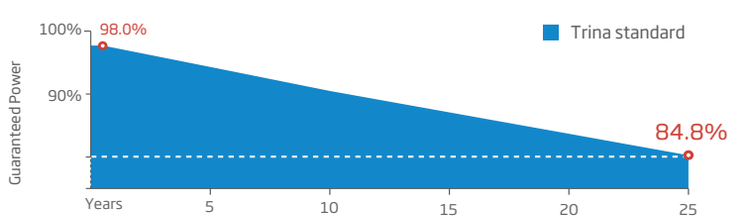
Universal solution for residential and C&I rooftops

- Designed for compatibility with existing mainstream optimizers, inverters and mounting systems
- Perfect size and low weight. Easy for handling. Economy for transporting
- Diverse installation solutions. Flexible for system deployment

High Reliability

- 15 year product warranty
- 25 year performance warranty with lowest degradation;
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 6000 Pa positive load and 4000 Pa negative load

Trina Solar's Backsheet Performance Warranty



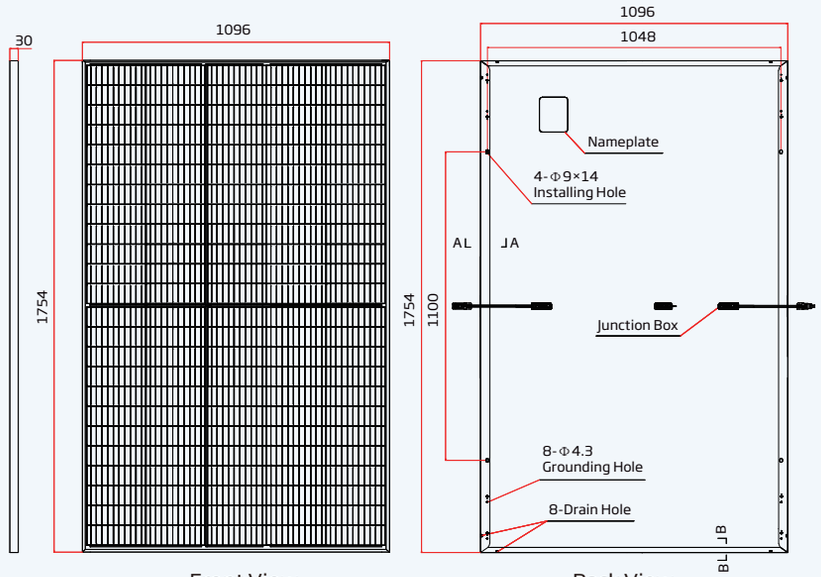
Comprehensive Products and System Certificates

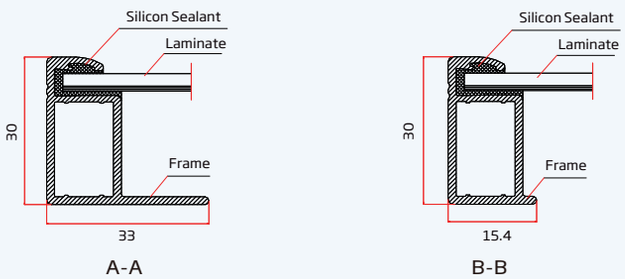
IEC61215/IEC61730/IEC61701/IEC62716/UL61730
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
ISO45001: Occupational Health and Safety Management System

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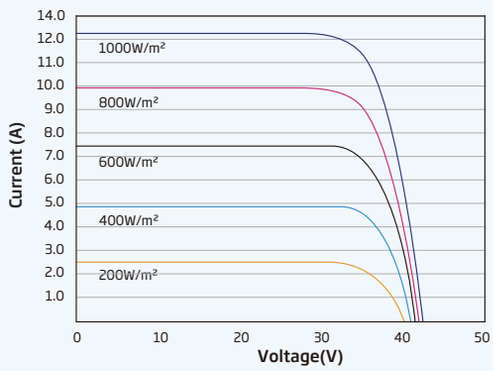
Vertex S BACKSHEET MONOCRYSTALLINE MODULE

DIMENSIONS OF PV MODULE(mm)

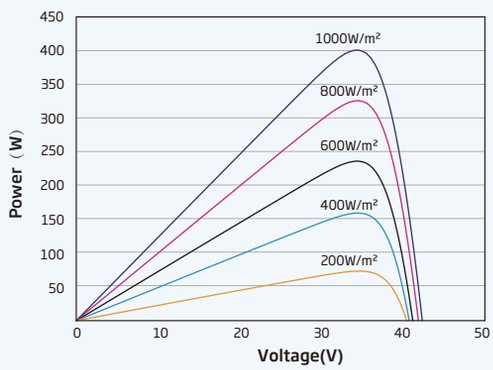




I-V CURVES OF PV MODULE(400 W)



P-V CURVES OF PV MODULE(400W)



ELECTRICAL DATA (STC)

Peak Power Watts-PMAX (Wp)*	390	395	400	405
Power Tolerance-PMAX (W)	0 ~ +5			
Maximum Power Voltage-VMPP (V)	33.8	34.0	34.2	34.4
Maximum Power Current-IMPP (A)	11.54	11.62	11.70	11.77
Open Circuit Voltage-VOC (V)	40.8	41.0	41.2	41.4
Short Circuit Current-ISC (A)	12.14	12.21	12.28	12.34
Module Efficiency η m (%)	20.3	20.5	20.8	21.1

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

ELECTRICAL DATA (NOCT)

Maximum Power-PMAX (Wp)	295	298	302	306
Maximum Power Voltage-VMPP (V)	31.8	32.0	32.2	32.5
Maximum Power Current-IMPP (A)	9.26	9.32	9.38	9.41
Open Circuit Voltage-VOC (V)	38.4	38.6	38.8	38.9
Short Circuit Current-ISC (A)	9.78	9.84	9.90	9.95

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	White
Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²), Portrait: 280/280 mm(11.02/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of PMAX	- 0.34%/°C
Temperature Coefficient of VOC	- 0.25%/°C
Temperature Coefficient of ISC	0.04%/°C

MAXIMUMRATINGS

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

WARRANTY

15 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 CONFIGUREATION

Modules per box: 36 pieces

Modules per 40' container: 936 pieces

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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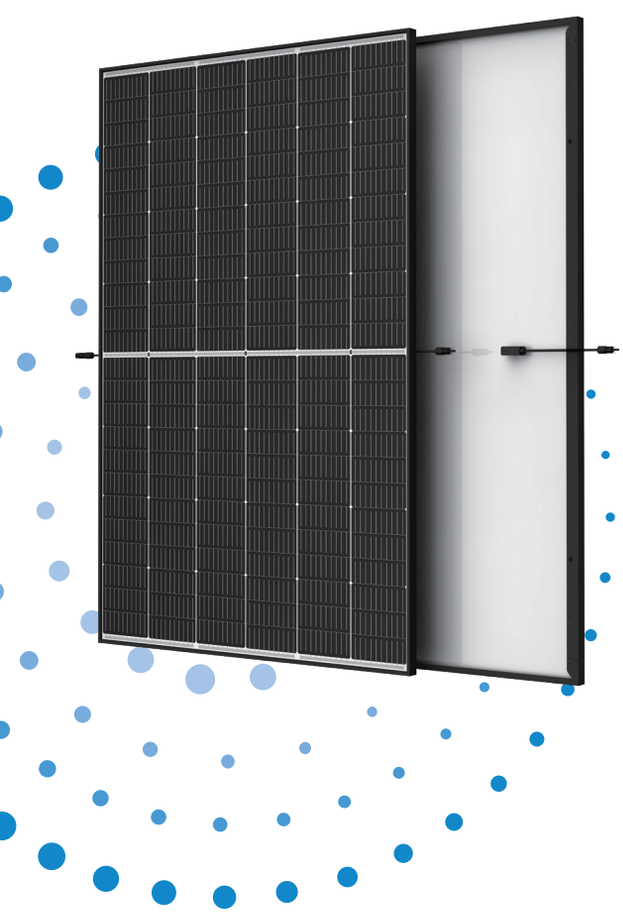
Vertex S

BACKSHEET MONOCRYSTALLINE MODULE

PRODUCT: TSM-DE09R.08

PRODUCT RANGE: 415-435W

435W	0~+5W	21.8%
MAXIMUM POWER OUTPUT	POSITIVE POWER TOLERANCE	MAXIMUM EFFICIENCY



Small in size, big on power

- Small form factor. Generate a huge amount of energy even in limited space.
- Up to 435W, 21.8% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection
- Reduce installation cost with higher power bin and efficieny
- Boost performance in warm weather lower temperature coefficient (-0.34%) and operating temperature

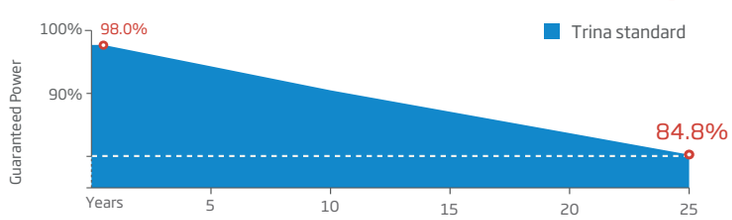
Universal solution for residential and C&I rooftops

- Designed for compatibility with existing mainstream optimizers, inverters and mounting systems
- Perfect size and low weight. Easy for handling. Economy for transporting
- Diverse installation solutions. Flexible for system deployment

High Reliability

- 15 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 positive load and 4000 Pa negative load

Trina Solar's Backsheet Performance Warranty



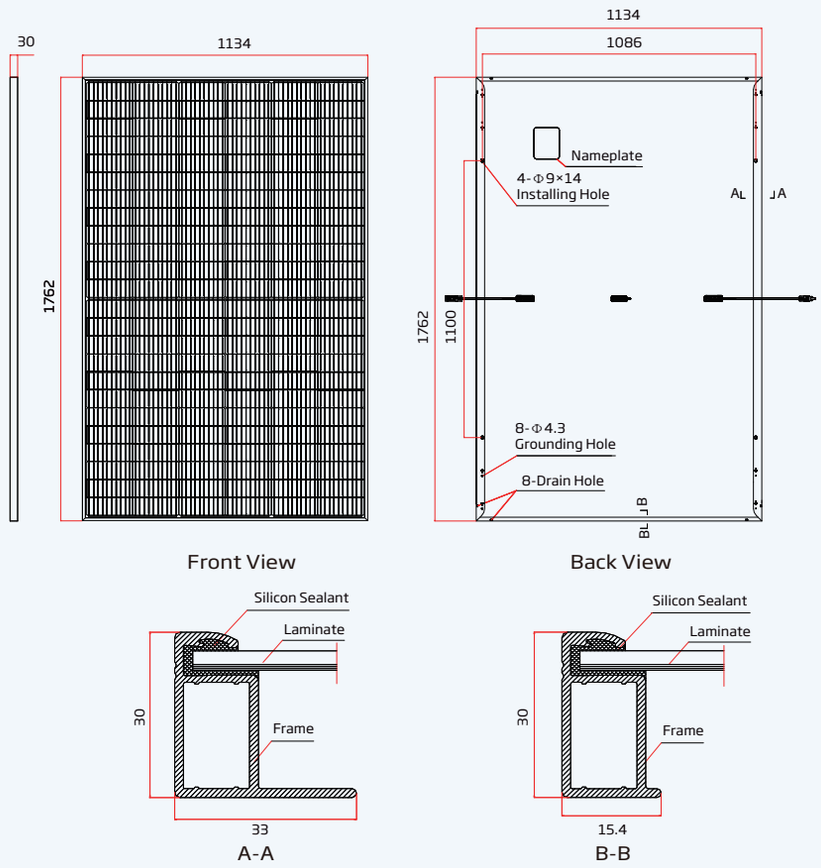
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ISO 9001: Quality Management System
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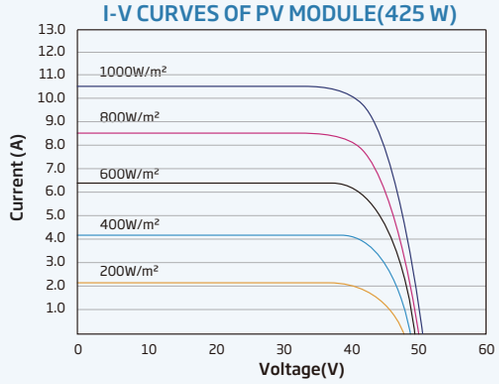
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Vertex S BACKSHEET MONOCRYSTALLINE MODULE

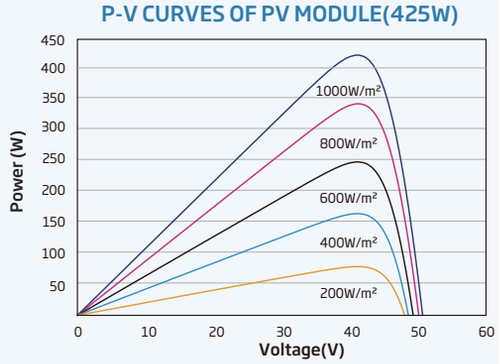
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(425 W)



P-V CURVES OF PV MODULE(425W)



ELECTRICAL DATA (STC)

Peak Power Watts-PMAX (Wp)*	415	420	425	430	435
Power Tolerance-PMAX (W)			0 ~ +5		
Maximum Power Voltage-VMPP (V)	41.7	42.0	42.2	42.3	42.5
Maximum Power Current-IMPP (A)	9.94	10.01	10.08	10.17	10.24
Open Circuit Voltage-VOC (V)	50.0	50.1	50.2	50.3	50.4
Short Circuit Current-ISC (A)	10.55	10.58	10.61	10.64	10.67
Module Efficiency η m (%)	20.8	21.0	21.3	21.5	21.8

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

ELECTRICAL DATA (NOCT)

Maximum Power-PMAX (Wp)	312	317	321	325	329
Maximum Power Voltage-VMPP (V)	38.7	39.2	39.5	39.7	40.0
Maximum Power Current-IMPP (A)	8.07	8.10	8.13	8.17	8.23
Open Circuit Voltage-VOC (V)	47.1	47.1	47.2	47.4	47.5
Short Circuit Current-ISC (A)	8.50	8.53	8.55	8.60	8.65

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

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	144 cells
Module Dimensions	1762×1134×30 mm (69.37×44.65×1.18 inches)
Weight	21.8 kg (48.1 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Backsheet	White
Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²), Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4*

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TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of PMAX	- 0.34%/°C
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Max Series Fuse Rating	20A

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