

Vertex N

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

PRODUCT: TSM-NEG19RC.20

PRODUCT RANGE: 570-600W

600W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

22.2%

MAXIMUM EFFICIENCY



High customer value

- Lower LCOE , reduced BOS cost, better ROI
- Lowest guaranteed first year and annual degradation
- Optimized compatibility with existing mainstream system components



High power up to 600W

- Up to 22.2% module efficiency
- High density interconnection provides improved power density
- MBB technology improves lighttrapping effect and currentcollection, while lowering series resistance



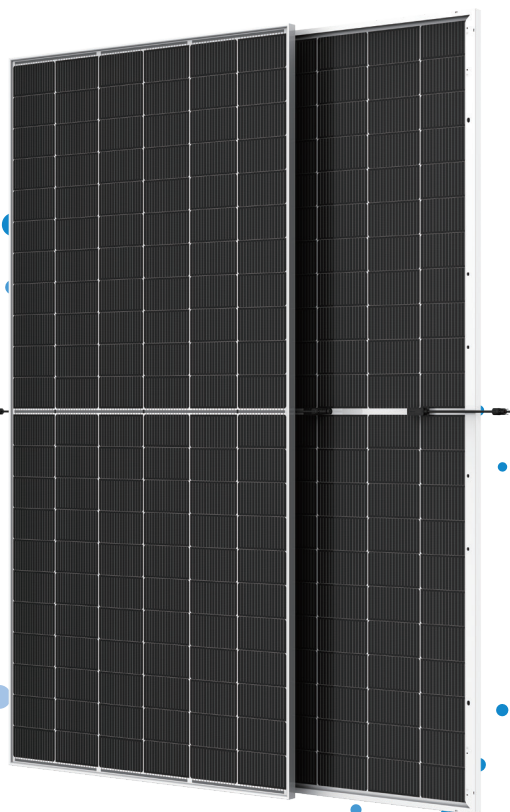
High reliability

- Minimized micro-cracks with innovative non-destructive cutting technology minimizes micro-cracking
- Ensured PID resistance through improved cell process and module material control
- Resistant to harsh environments
- Mechanical performance up to +5400/-2400 Pa

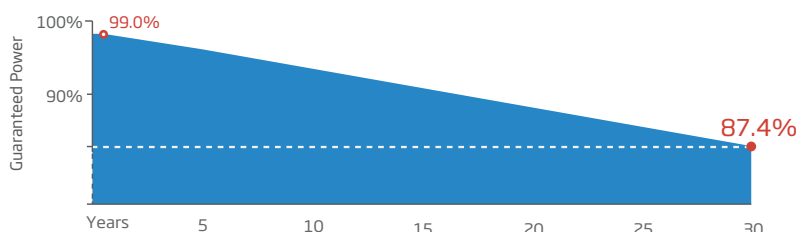


High energy yield

- Excellent IAM and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.30%) and operating temperature
- Up to 30% additional power gain from back side



Trina Solar's Vertex Bifacial Dual Glass Performance Warranty



Comprehensive Products and System Certificates



IEC61215/IEC61730/IEC61701/IEC62716/UL61730

ISO 9001: Quality Management System

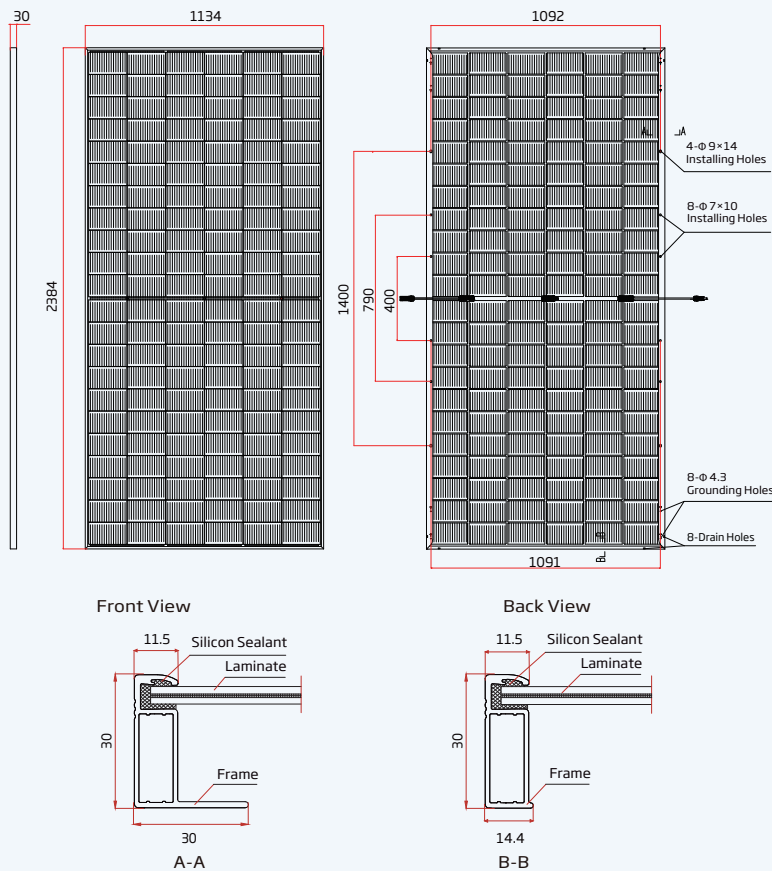
ISO 14001: Environmental Management System

ISO14064: Greenhouse Gases Emissions Verification

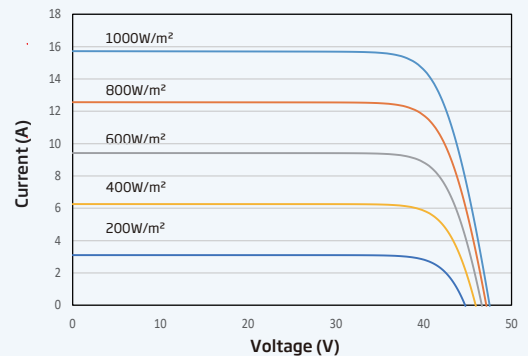
ISO45001: Occupational Health and Safety Management System



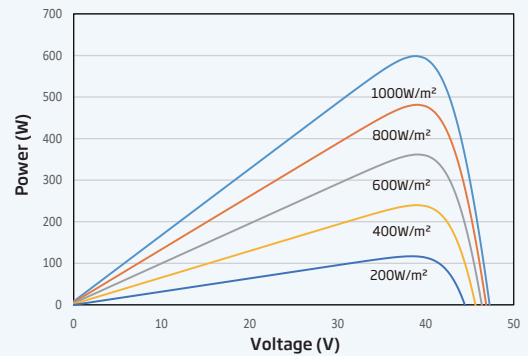
DIMENSIONS OF PV MODULE (mm)



I-V CURVES OF PV MODULE (600W)



P-V CURVES OF PV MODULE (600 W)



ELECTRICAL DATA (STC)

Peak Power Watts - P _{MAX} (Wp)*	570	575	580	585	590	595	600
Power Tolerance - P _{MAX} (W)	0 ~ +5						
Maximum Power Voltage - V _{MPP} (V)	38.6	38.9	39.2	39.5	39.7	40.0	40.3
Maximum Power Current - I _{MPP} (A)	14.75	14.78	14.79	14.82	14.86	14.89	14.91
Open Circuit Voltage - V _{OC} (V)	46.6	46.9	47.2	47.5	47.8	48.1	48.4
Short Circuit Current - I _{SC} (A)	15.61	15.63	15.65	15.68	15.72	15.76	15.80
Module Efficiency η_m (%)	21.1	21.3	21.5	21.6	21.8	22.0	22.2

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5.

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

Total Equivalent power - P _{MAX} (Wp)	616	621	626	632	637	643	648
Maximum Power Voltage - V _{MPP} (V)	38.6	38.9	39.2	39.5	39.7	40.0	40.3
Maximum Power Current - I _{MPP} (A)	15.93	15.96	15.97	16.01	16.05	16.08	16.10
Open Circuit Voltage - V _{OC} (V)	46.6	46.9	47.2	47.5	47.8	48.1	48.4
Short Circuit Current - I _{SC} (A)	16.86	16.88	16.90	16.93	16.98	17.02	17.06
Irradiance ratio (rear/front)	10%						

Power Bifaciality: 80±5%.

ELECTRICAL DATA (NOCT)

Maximum Power - P _{MAX} (Wp)	434	438	442	446	450	454	458
Maximum Power Voltage - V _{MPP} (V)	36.3	36.5	36.8	37.1	37.3	37.6	37.8
Maximum Power Current - I _{MPP} (A)	11.97	11.99	12.00	12.02	12.05	12.08	12.12
Open Circuit Voltage - V _{OC} (V)	44.2	44.5	44.7	45.0	45.3	45.6	45.9
Short Circuit Current - I _{SC} (A)	12.58	12.59	12.61	12.64	12.67	12.70	12.73

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

MECHANICAL DATA

Solar Cells	Monocrystalline 210Rmm N-type
No. of cells	132 cells
Module Dimensions	2384×1134×30 mm (93.86×44.65×1.18 in)
Weight	33.7 kg (74.3 lb)
Front Glass	2.0 mm (0.08 in), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	POE/EVA
Back Glass	2.0 mm (0.08 in), Heat Strengthened Glass (White Grid Glass)
Frame	30 mm (1.18 in) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0 mm ² (0.006 in ²) Portrait: 350/280 mm (13.78/11.02 in) Landscape: 1400/1400 mm (55.1/55.1 in) *
Connector	MC4 EVO2 / TS4 PLUS / TS4**

*Length can be customized
**Customer to choose connector type

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P _{MAX}	-0.30%/°C
Temperature Coefficient of V _{OC}	-0.24%/°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	30A*

*This is for customers engineering to decide

WARRANTY

12 Year Product Workmanship Warranty
30 Year Power Warranty
1% First year degradation
0.40% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 36 pieces
Modules per 40' container: 504 pieces
Pallets per 40' container: 14