

Vertex N

N-type TOPCon bifacial backsheet
Monocrystalline module

PRODUCT: TSM-NE19RC
POWER RANGE: 595-620W

620W

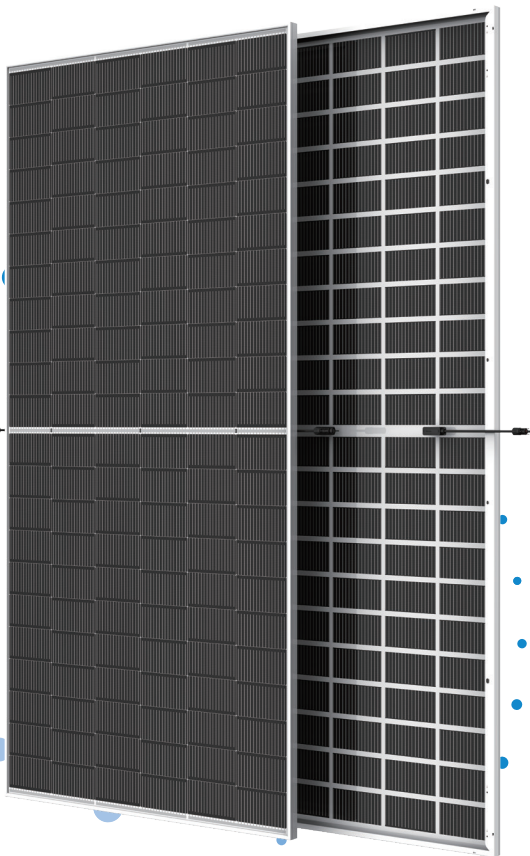
MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

23.0%

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 up to 620W

- Up to 23.0% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



High reliability

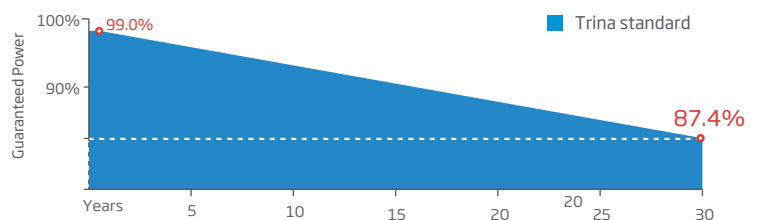
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



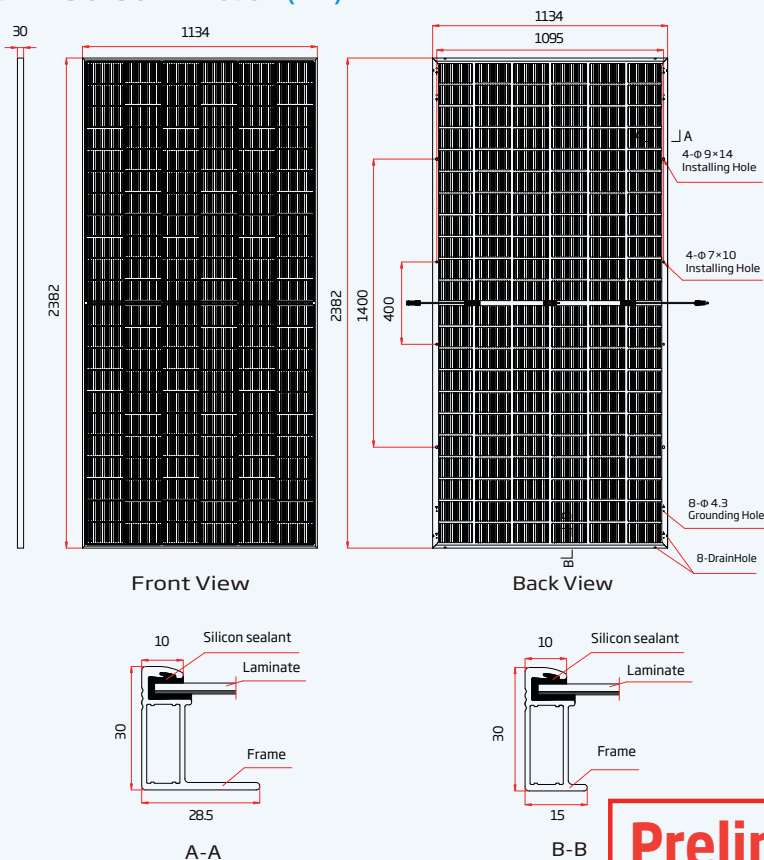
High energy yield

- 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 (-0.29%/°C)

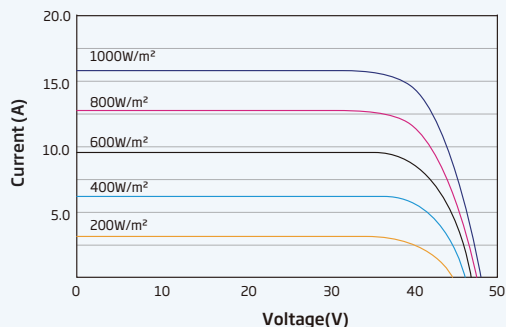
Trina Solar's Bifacial Backsheet Performance Warranty



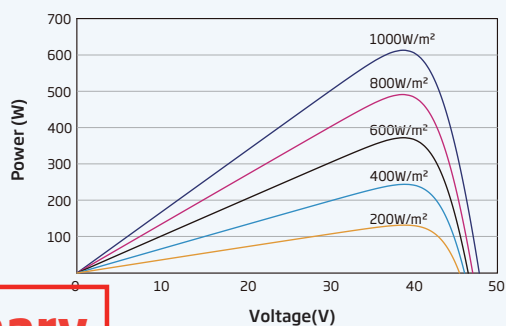
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(605W)



P-V CURVES OF PV MODULE(605 W)



Preliminary

MECHANICAL DATA

| | |
|----------------------|--|
| Solar Cells | N-type TOPCon Monocrystalline |
| No. of cells | 132cells |
| Module Dimensions | 2382×1134×30mm (85.51×51.30×1.30 inches) |
| Weight | 27.9 kg (61.5 lb) |
| Front Glass | 3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass |
| Encapsulant material | POE/EVA |
| Back Sheet | Transparent white mesh 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) Length can be customized |
| Connector | MC4 EVO2 / TS4 Plus / TS4* |

*Please refer to regional datasheet for specified connector.

ELECTRICAL DATA (STC & NOCT)

| Testing Condition | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT |
|--------------------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Peak Power Watts- P_{MAX} (Wp)* | 595 | 454 | 600 | 459 | 605 | 462 | 610 | 466 | 615 | 470 | 620 | 474 |
| Power Tolerance- P_{MAX} (W) | 0 ~ +5 | | | | | | | | | | | |
| Maximum Power Voltage- V_{MPP} (V) | 40.0 | 37.6 | 40.3 | 37.9 | 40.5 | 38.1 | 40.8 | 38.3 | 41.1 | 38.6 | 41.4 | 38.8 |
| Maximum Power Current- I_{MPP} (A) | 14.89 | 12.07 | 14.91 | 12.11 | 14.94 | 12.13 | 14.96 | 12.16 | 14.98 | 12.19 | 14.99 | 12.20 |
| Open Circuit Voltage- V_{OC} (V) | 48.1 | 45.7 | 48.4 | 46.0 | 48.7 | 46.2 | 49.0 | 46.5 | 49.3 | 46.8 | 49.6 | 47.1 |
| Short Circuit Current- I_{SC} (A) | 15.76 | 12.69 | 15.80 | 12.73 | 15.83 | 12.75 | 15.86 | 12.78 | 15.89 | 12.80 | 15.91 | 12.82 |
| Module Efficiency η_m (%) | 22.0 | | 22.2 | | 22.4 | | 22.6 | | 22.8 | | 23.0 | |

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s. *Measuring tolerance: ±3%.

Electrical characteristics with different power bin (reference to 5% & 10% backside power gain)

| Backside Power Gain | 5% | 10% | 5% | 10% | 5% | 10% | 5% | 10% | 5% | 10% | 5% | 10% |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Total Equivalent power - P_{MAX} (Wp) | 625 | 655 | 630 | 660 | 635 | 666 | 641 | 671 | 646 | 677 | 651 | 682 |
| Maximum Power Voltage- V_{MPP} (V) | 40.0 | 40.0 | 40.3 | 40.3 | 40.5 | 40.5 | 40.8 | 40.8 | 41.1 | 41.1 | 41.4 | 41.4 |
| Maximum Power Current- I_{MPP} (A) | 15.63 | 16.38 | 15.66 | 16.40 | 15.69 | 16.43 | 15.71 | 16.46 | 15.73 | 16.48 | 15.74 | 16.49 |
| Open Circuit Voltage- V_{OC} (V) | 48.1 | 48.1 | 48.4 | 48.4 | 48.7 | 48.7 | 49.0 | 49.0 | 49.3 | 49.3 | 49.6 | 49.6 |
| Short Circuit Current- I_{SC} (A) | 16.55 | 17.34 | 16.59 | 17.38 | 16.62 | 17.41 | 16.65 | 17.45 | 16.68 | 17.48 | 16.71 | 17.50 |

Power Bifaciality: 80±5%.

TEMPERATURE RATINGS

| | |
|---|-------------|
| NOCT (Nominal Operating Cell Temperature) | 43°C (±2°C) |
| Temperature Coefficient of P_{MAX} | -0.29%/°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) |
| Max Series Fuse Rating | 30A |

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: 720 pieces