

Vertex N

N-type i-TOPCon BACKSHEET
MONOCRYSTALLINE MODULE

PRODUCT: TSM-XXXNE19R

POWER RANGE: 595-625W

625W

MAXIMUM POWER OUTPUT

0~+5W

BINNING TOLERANCE

23.1%

MAXIMUM EFFICIENCY



High customer value

- Standardized module size with flagship module power, 30W higher compared with conventional technology
- Low Voltage design with higher string power, effectively reducing BOS (Balance of System) and LCOE (Levelized Cost of Energy) by 1%~5%
- Suitable for all scenario, especially C&I, residential, and ground applications
- Higher container space utilization effectively reduces the freight cost
- Excellent compatibility with existing mainstream system components



High power up to 625W

- Up to 23.1% module efficiency, on 210 innovative platform
- Patented i-TOPCon technology with continuous efficiency improvement, including contact resistance reduction, rear reflection enhancement and edge quality repairment



High reliability

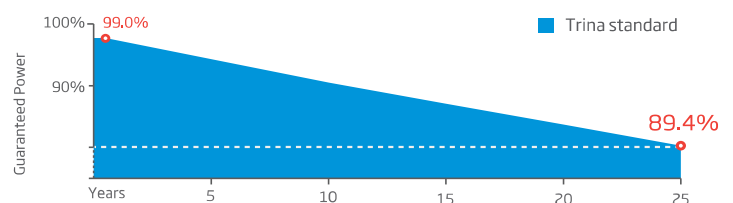
- Minimized micro-cracks with innovative non-destructive cutting technology and high-density packaging
- Reduced risks of hot-spot with half-cut technology
- Fire class C
- Sustainable in harsh environments and extreme weather conditions



High energy yield

- Excellent low irradiation performance, validated by 3rd party
- Lower temperature coefficient (-0.29%/°C)

Trina Solar's Backsheet Performance Warranty



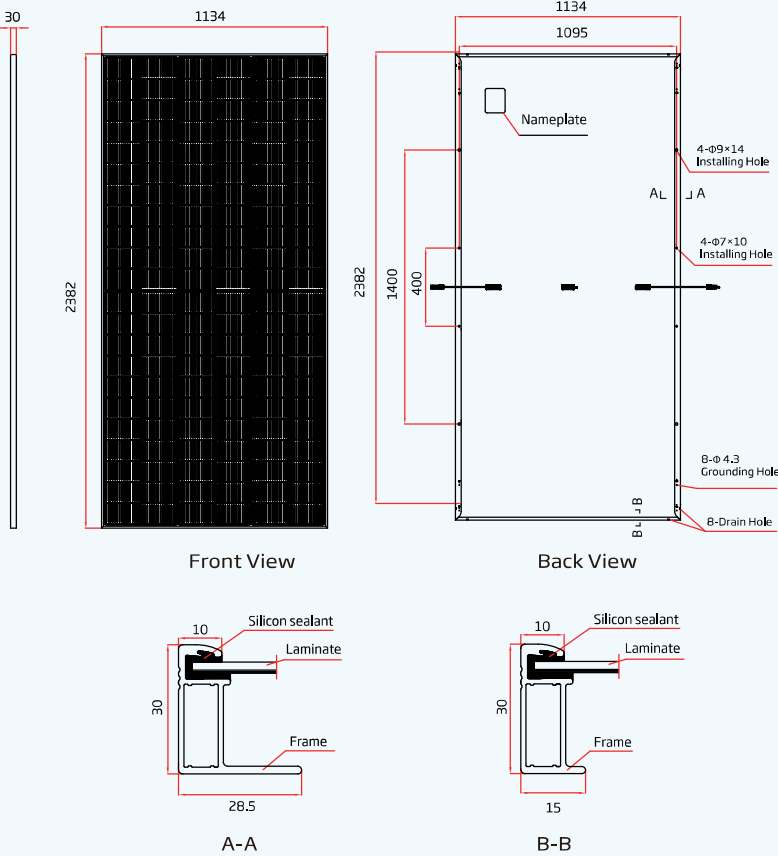
Comprehensive Products and System Certificates



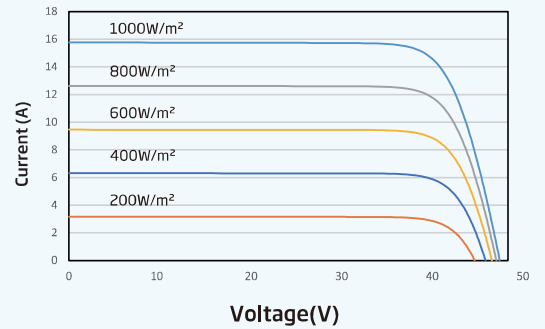
IEC61215/IEC61730
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
ISO45001: Occupational Health and Safety Management System

Trinasolar

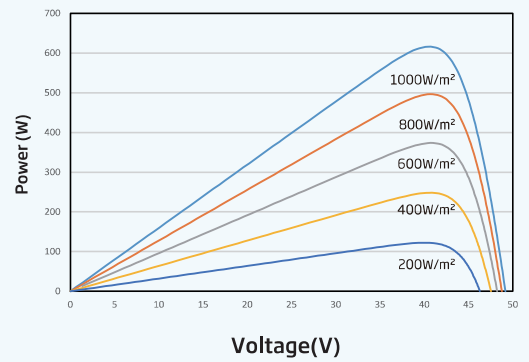
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(610W)



P-V CURVES OF PV MODULE(610 W)



ELECTRICAL DATA (STC) TSM-XXXNE19R(XXX=595-625)

Peak Power Watts-P _{MAX} (Wp)*	595	600	605	610	615	620	625
BinningTolerance-P _{MAX} (W)	0 ~ +5						
Maximum Power Voltage-V _{MPP} (V)	40,0	40,3	40,5	40,8	41,1	41,4	41,6
Maximum Power Current-I _{MPP} (A)	14,89	14,91	14,94	14,96	14,98	14,99	15,00
Open Circuit Voltage-V _{OC} (V)	48,1	48,4	48,7	49,0	49,3	49,6	49,8
Short Circuit Current-I _{SC} (A)	15,76	15,80	15,83	15,86	15,89	15,91	15,93
Module Efficiency η_m (%)	22,0	22,2	22,4	22,6	22,8	23,0	23,1

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

ELECTRICAL DATA (NOCT)

Maximum Power-P _{MAX} (Wp)	454	459	462	466	470	474	477
Maximum Power Voltage-V _{MPP} (V)	37,6	37,9	38,1	38,3	38,6	38,8	39,0
Maximum Power Current-I _{MPP} (A)	12,07	12,11	12,13	12,16	12,19	12,20	12,21
Open Circuit Voltage-V _{OC} (V)	45,7	46,0	46,2	46,5	46,8	47,1	47,3
Short Circuit Current-I _{SC} (A)	12,69	12,73	12,75	12,78	12,80	12,82	12,84

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

MECHANICAL DATA

Solar Cells	N-type i-TOPCon Monocrystalline
No. of cells	132 cells
Module Dimensions	2382×1134×30 mm (93,78×44,65×1,18 inches)
Weight	27,9kg (61,51 lb)
Glass	3,2 mm (0,13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
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	Stabuli MC4 EV02

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
25 year Power Warranty
1% first year degradation
0,4% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 36 pieces
Modules per 40' container: 720 pieces