Multi



N-type i-TOPCon bifacial dual glass

Monocrystalline module

PRODUCT: TSM-NEG19RC.20

POWER RANGE: 590-620W

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
- More energy harvest with cutting-edge N-type i-TOPCon technology
- Designed for compatibility with existing mainstream system components
- Higher container space utilization effectively reduces the freight cost



High power up to 620 W

- •Up to 23.0% module efficiency with high density interconnect technology
- •SMBB (Super multi-busbar) technology for better light trapping effect, lower series resistance and improved current collection



High reliability

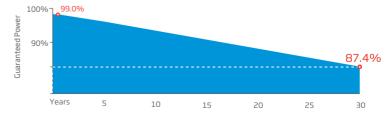
- Minimized micro-cracks with innovative non-destructive cutting
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- Lower degradation: 1% first year, 0.4% annually thereafter
- Lower temperature coefficient (-0.29%/°C)
- Up to 30% additional power gain from back side depending on albedo

Trina Solar's Vertex Bifacial Dual Glass Performance Warranty



Comprehensive Products and System Certificates IEC61215/IEC61730/IEC61701/IEC62716/UL61730







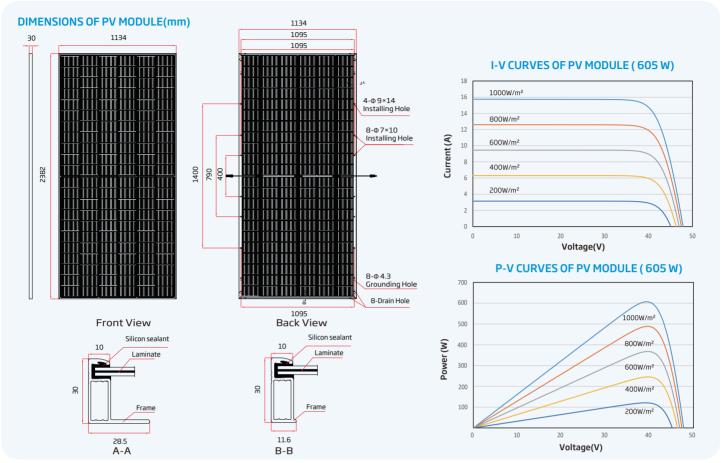




ISO14064: Greenhouse Gases Emissions Verification ISO45001: Occupational Health and Safety Management System







MECHANICAL DATA

ELECTRICAL DATA (STC & NOCT)

Solar Cells	N-type Monocrystalline
No. of cells	132 cells
Module Dimensions	2382×1134×30 mm (93.78×44.65×1.18 inches)
Weight	33.7kg (74.3 lb)
Front Glass	$2.0mm(0.08in ches), {\it High Transmission}, {\it AR Coated Heat Strengthened Glass}$
Encapsulant material	POE/EVA
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)

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 EV02 / TS4 PLUS / TS4*

Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power Watts-PMAX (Wp)*	590	450	595	454	600	459	605	462	610	466	615	470	620	474
Power Tolerance-PMAX (W)							0) ~ +5						
Maximum Power Voltage-VMPP (V)	39.7	37.4	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-IMPP (A)	14.86	12.05	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-Voc (V)	47.8	45.4	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-Isc (A)	15.72	12.67	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 (%)	2:	1.8	22	.0	27	2.2	22	2.4	2	2.6	2	2.8	23	.0

STC: Irrdiance 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%	5%	10%
Total Equivalent power -PMAX (Wp)	620	649	625 655	630	660	635	666	641	671	646	677	651	682
Maximum Power Voltage-VMPP (V)	39.7	39.7	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-IMPP (A)	15.60	16.35	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-Voc (V)	47.8	47.8	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-Isc (A)	16.51	17.29	16.55 17.34	16.59	17.38	16.62	17.41	16.65	17.45	16.68	17.48	16.71	17.50

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Гетрегаture Coefficient of Рмах	-0.29%/°C
Temperature Coefficient of Voc	-0.24%/°C
Temperature Coefficient of Isc	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85° C
Maximum System Voltage	1500V DC (IEC)
	1500V DC (UL)
Max Series Fuse Rating	35A

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

