

THE

# DUOMAX N

N-type i-TOPCon bifacial dual glass  
Monocrystalline module

PRODUCT: TSM-NEG18C.20

PRODUCT RANGE: 570-590W

**590W**

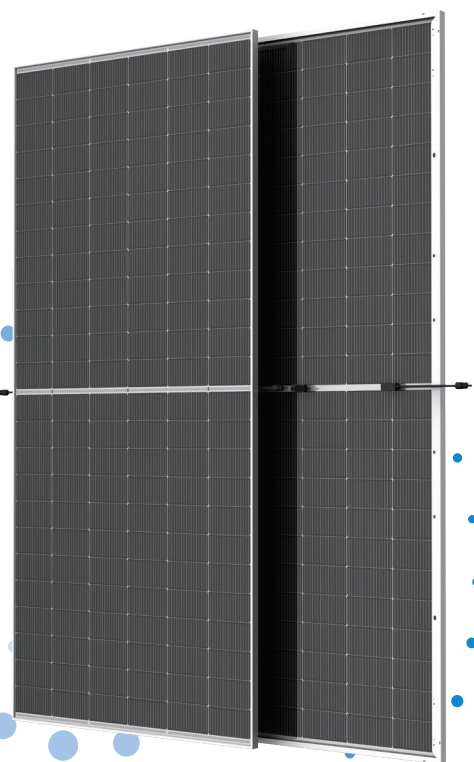
MAXIMUM POWER OUTPUT

**0~+5W**

POSITIVE POWER TOLERANCE

**22.8%**

MAXIMUM EFFICIENCY



### High power up to 590W

- Up to 22.8% 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

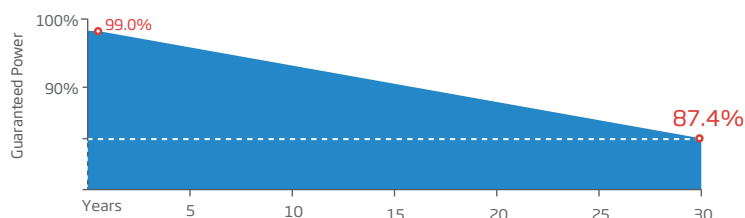
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive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



### High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.29%/°C) and operating temperature
- Up to 25% additional power gain from back side depending on albedo

### Trina Solar's Bifacial Dual Glass Performance Warranty



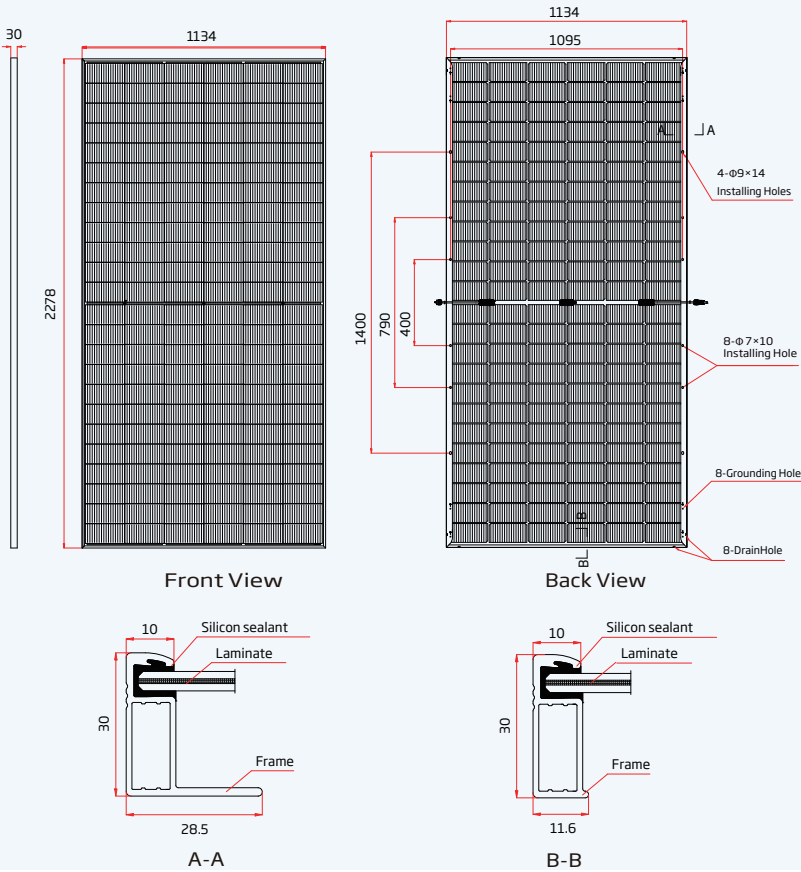
### Comprehensive Products and System Certificates



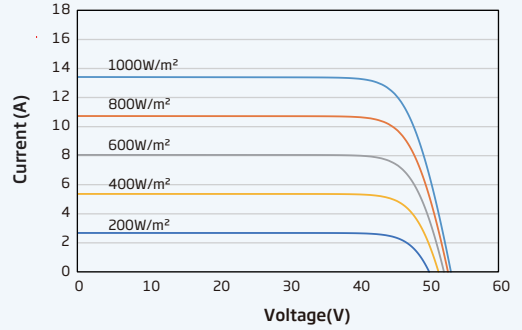
IEC61215/IEC61730/IEC61701/IEC62716  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management System  
 ISO14064: Greenhouse Gases Emissions Verification  
 ISO45001: Occupational Health and Safety Management System



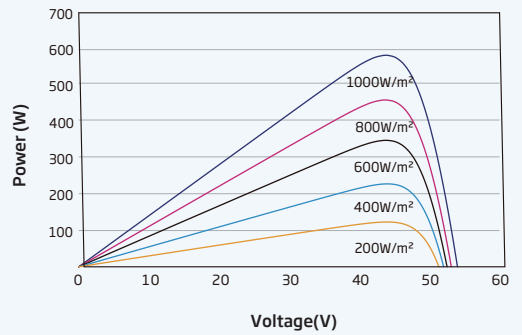
**DIMENSIONS OF PV MODULE(mm)**



**I-V CURVES OF PV MODULE(580W)**



**P-V CURVES OF PV MODULE(580 W)**



**MECHANICAL DATA**

Solar Cells	N-Type i-TOPCon Monocrystalline
No. of cells	144 cells
Module Dimensions	2278×1134×30 mm (89.69×44.65×1.18 inches)
Weight	31.9kg (70.3 lb)
Front Glass	2.0 mm (0.08 inches), High Transmission, 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 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ) 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
Peak Power Watts -P <sub>MAX</sub> (Wp)*	570	437	575	440	580	444	585	447	590	450
Power Tolerance-P <sub>MAX</sub> (W)	0 ~ +5									
Maximum Power Voltage-V <sub>MPP</sub> (V)	43.8	41.2	44.0	41.5	44.2	41.6	44.4	41.8	44.6	42.0
Maximum Power Current-I <sub>MPP</sub> (A)	13.02	10.59	13.07	10.62	13.13	10.67	13.18	10.69	13.23	10.71
Open Circuit Voltage-V <sub>OC</sub> (V)	51.8	49.3	52.0	49.5	52.2	49.7	52.4	49.9	52.6	50.2
Short Circuit Current-I <sub>SC</sub> (A)	13.66	11.19	13.71	11.22	13.77	11.27	13.82	11.33	13.87	11.35
Module Efficiency η <sub>m</sub> (%)	22.1		22.3		22.5		22.6		22.8	

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5. NOCT: Irradiance at 800W/m<sup>2</sup>, 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%
Total Equivalent power -P <sub>MAX</sub> (Wp)	599	627	604	633	609	638	614	644	620	649
Maximum Power Voltage-V <sub>MPP</sub> (V)	43.8	43.8	44.0	44.0	44.2	44.2	44.4	44.4	44.6	44.6
Maximum Power Current-I <sub>MPP</sub> (A)	13.67	14.32	13.72	14.38	13.79	14.44	13.84	14.50	13.89	14.55
Open Circuit Voltage-V <sub>OC</sub> (V)	51.8	51.8	52.0	52.0	52.2	52.2	52.4	52.4	52.6	52.6
Short Circuit Current-I <sub>SC</sub> (A)	14.34	15.03	14.40	15.08	14.46	15.15	14.51	15.20	14.56	15.26

Power Bifaciality: 80±5%.

**TEMPERATURE RATINGS**

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P <sub>MAX</sub>	-0.29%/°C
Temperature Coefficient of V <sub>OC</sub>	-0.24%/°C
Temperature Coefficient of I <sub>SC</sub>	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