

N-type i-TOPCon Ultra

DUAL GLASS MONOCRYSTALLINE MODULE

TSM-xxxNEG9RP.28Z 465-485W

485_W / MAXIMUM
POWER OUTPUT

24.3% / MAXIMUM
EFFICIENCY



Exceptional power & efficiency

- Up to 485 W output and 24.3% efficiency, powered by advanced N type i-TOPCon Ultra cell technology



Maximised system value

- Low-voltage, high-current architecture for maximum string lengths, simplifying system design and reducing BOS costs



Long-term value with flexible deployment

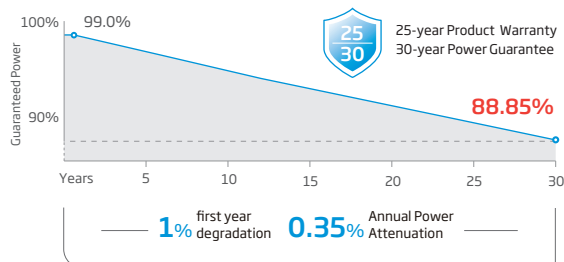
- Low annual degradation backed by up to 30 year power warranty and 25 year product warranty
- Mechanical performance up to 5400 Pa static test load, Front and 3600 Pa static test load, Back
- Fire class rating C, Safety Class II



Improved appearance & seamless frontside design

- No cell gaps for improved aesthetics, for diverse installations and flexible system deployment for both C&I and residential applications

Performance Warranty



(*Please refer to Limited Warranty Supplement that applies to the TSM-***NEG9RP.28Z. Products installed within Australia & New Zealand market.)

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

ISO14067: Product Carbon Footprint



ELECTRICAL DATA (STC) TSM-xxxNEG9RP.2BZ (xxx=465-485)

Peak Power Watts- $P_{MAX}(W_p)^*$	465	470	475	480	485
Power Selection (W)	0 ~ +5				
Maximum Power Voltage- $V_{MPP}(V)$	31.20	31.50	31.80	32.00	32.30
Maximum Power Current- $I_{MPP}(A)$	14.91	14.93	14.96	15.00	15.04
Open Circuit Voltage- $V_{oc}(V)$	37.10	37.30	37.50	37.70	37.90
Short Circuit Current- $I_{sc}(A)$	15.96	15.99	16.02	16.05	16.08
Module Efficiency $\eta_m(\%)$	23.3	23.5	23.8	24.0	24.3

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measuring tolerance: $P_{max} \pm 3\%$, $V_{oc} \pm 3\%$ and $I_{sc} \pm 4\%$

ELECTRICAL DATA (NOCT)

Peak Power Watts- $P_{MAX}(W_p)$	353	357	361	364	368
Maximum Power Voltage- $V_{MPP}(V)$	29.20	29.40	29.60	29.80	30.00
Maximum Power Current- $I_{MPP}(A)$	12.11	12.16	12.20	12.23	12.27
Open Circuit Voltage- $V_{oc}(V)$	35.20	35.40	35.60	35.80	36.00
Short Circuit Current- $I_{sc}(A)$	12.83	12.85	12.88	12.90	12.93

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

TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature) 43°C ($\pm 2^\circ\text{C}$)

Temperature Coefficient of P_{MAX} - 0.26% /°C

Temperature Coefficient of V_{oc} - 0.24% /°C

Temperature Coefficient of I_{sc} 0.04% /°C

Due to different testing methods, the actual performances might differ from the declared specifications.

APPLICATION CONDITIONS

Operating Temperature* -40~+70°C

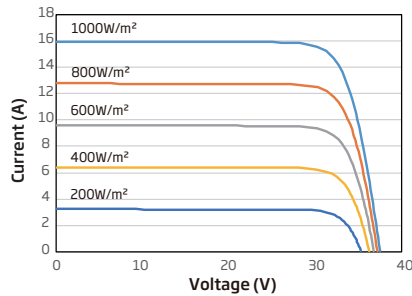
Maximum System Voltage 1500V DC (IEC)

Max Series Fuse Rating 30A

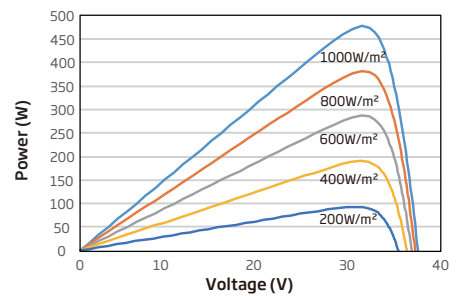
*PV module 98th percentile operating temperature : 70°C

CURVES OF PV MODULE (Cell Temperature (25±2)°C)

I-V CURVES OF PV MODULE (475W)

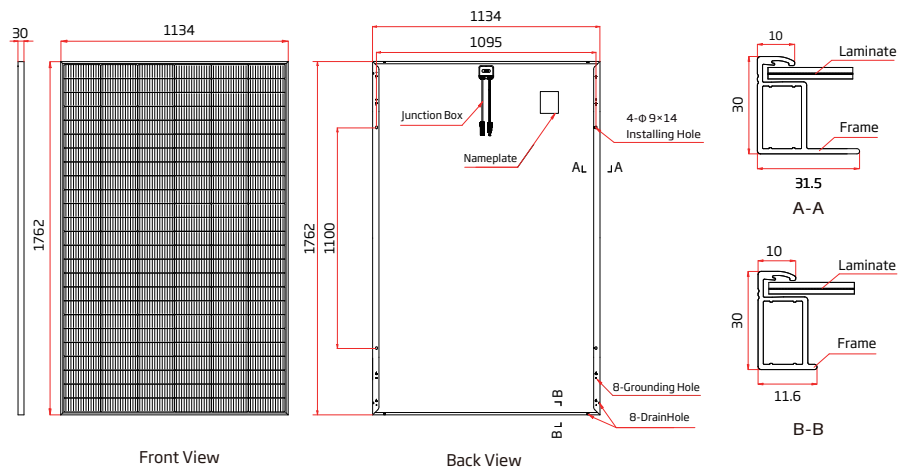


P-V CURVES OF PV MODULE (475W)



MECHANICAL DATA

Solar Cells	N-type i-TOPCon Monocrystalline
No. of cells	150 cells
Module Dimensions	1762×1134×30 mm (69.37×44.65×1.18 inches)
Weight	21.1 kg (46.52lb)
Front Glass	1.6 mm (0.06 inches) AR Coating Heat Strengthened Glass
Back Glass	1.6 mm (0.06 inches), Heat Strengthened Glass
Frame	30mm(1.18 inches) Anodized Aluminium Alloy, Black
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0/6.0mm ² (0.006/0.009 inches ²) Length :1100/1100 mm(43.31/43.31 inches)
Connector	Trinasolar, TS4-cd Stäubli Electrical Connectors AG PV-KST4-EVO2/xy_UR; PV-KBT4-EVO2/xy_UR
Packaging	Modules per box: 37 pieces Modules per 40' container: 962pieces



www.trinasolar.com

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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