

DUOMAX^M

TSM-DEG15H.20(II)



144 HALF-CUT
MONOCRYSTALLINE CELLS

380-410W
POWER OUTPUT RANGE

20.0%
MAXIMUM EFFICIENCY

0/+5W
POSITIVE POWER TOLERANCE

Founded in 1997, Trina Solar is the world's leading comprehensive solutions provider for solar energy. We believe close cooperation with our partners is critical to success. Trina Solar now distributes its PV products to over 60 countries all over the world. Trina Solar is able to provide exceptional service to each customer in each market and supplement our innovative, reliable products with the backing of Trina Solar as a strong, bankable partner. We are committed to building strategic, mutually beneficial collaboration with installers, developers, distributors and other partners.

Comprehensive Product And System Certificates

IEC61215/IEC61730/UL1703
IEC61701 Salt Mist Corrosion
IEC62716 Ammonia Corrosion
IEC60068 Blowing Sand
ISO9001; ISO14001; OHSAS18001



Increased value

- Reduced BOS costs with higher power bins and 1,500V system voltage
- 30 year linear performance warranty
- 0.5 % annual degradation



Half-cut cell design brings higher efficiency

- Optimized power output under inter-row shading conditions
- Integrated LRF for increased performance
- Low thermal coefficients for higher energy yield at elevated operating temperatures
- Reduced interconnection losses



Highly reliable due to stringent quality control

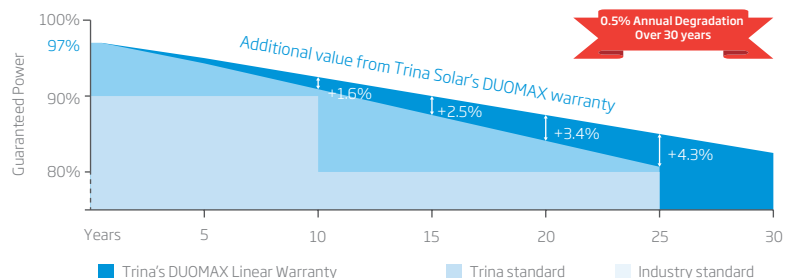
- Over 30 in-house tests (UV, TC, HF, and many more)
- In-house testing goes well beyond certification requirements
- PID resistant
- 2x 100% inline EL inspection



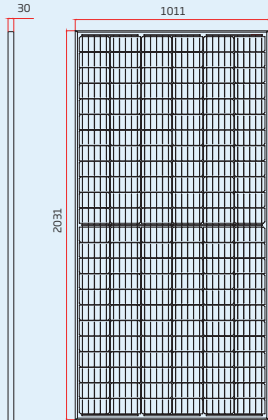
Certified to withstand challenging environmental conditions

- Salt Mist Corrosion
- Ammonia Corrosion
- Blowing Sand

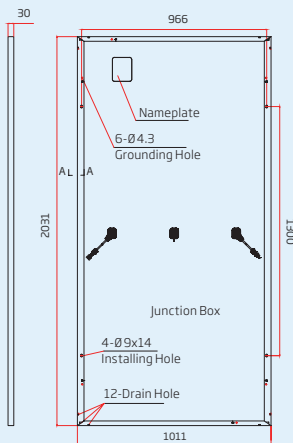
Trina Solar's DUOMAX Linear Performance Warranty



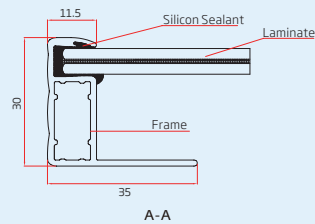
DIMENSIONS OF PV MODULE TSM-DEG15H.20(II) (unit: mm)



Front View

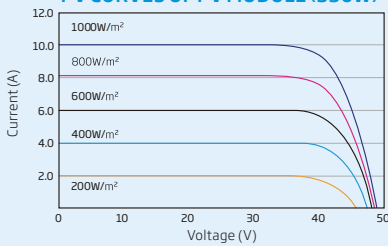


Back View

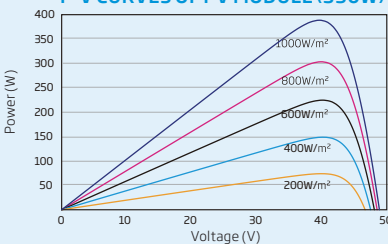


A-A

I-V CURVES OF PV MODULE (390W)



P-V CURVES OF PV MODULE (390W)



ELECTRICAL DATA @ STC

| | TSM-380 | TSM-385 | TSM-390 | TSM-395 | TSM-400 | TSM-405 | TSM-410 |
|---------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Peak Power Watts- P_{MAX} (Wp)* | 380 | 385 | 390 | 395 | 400 | 405 | 410 |
| Power Output Tolerance- P_{MAX} (W) | 0/+5 | 0/+5 | 0/+5 | 0/+5 | 0/+5 | 0/+5 | 0/+5 |
| Maximum Power Voltage- U_{MPP} (V) | 39.6 | 40.1 | 40.5 | 40.8 | 41.1 | 41.4 | 41.7 |
| Maximum Power Current- I_{MPP} (A) | 9.59 | 9.61 | 9.64 | 9.69 | 9.74 | 9.79 | 9.84 |
| Open Circuit Voltage- U_{OC} (V) | 48.1 | 48.5 | 49.7 | 50.1 | 50.4 | 50.8 | 51.2 |
| Short Circuit Current- I_{SC} (A) | 9.99 | 10.03 | 10.08 | 10.13 | 10.18 | 10.23 | 10.29 |
| Module Efficiency η_m (%) | 18.5 | 18.7 | 19.0 | 19.2 | 19.5 | 19.7 | 20.0 |

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

ELECTRICAL DATA @ NMOT

| | TSM-380 | TSM-385 | TSM-390 | TSM-395 | TSM-400 | TSM-405 | TSM-410 |
|--------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Maximum Power- P_{MAX} (Wp) | 287 | 291 | 295 | 298 | 302 | 306 | 310 |
| Maximum Power Voltage- U_{MPP} (V) | 37.4 | 37.9 | 38.4 | 38.7 | 38.9 | 39.1 | 39.3 |
| Maximum Power Current- I_{MPP} (A) | 7.66 | 7.66 | 7.68 | 7.71 | 7.76 | 7.81 | 7.86 |
| Open Circuit Voltage- U_{OC} (V) | 44.4 | 45.6 | 46.8 | 47.2 | 47.4 | 47.6 | 47.8 |
| Short Circuit Current- I_{SC} (A) | 8.05 | 8.09 | 8.13 | 8.17 | 8.21 | 8.25 | 8.29 |

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

MECHANICAL DATA

| | |
|----------------------|--|
| Solar Cells | Monocrystalline |
| Cell Orientation | 144 cells (6 x 24) |
| Module Dimensions | 2031 × 1011 × 25 mm |
| Weight | 26.3 kg |
| Glass | 2 mm, High Transmission, AR Coated Heat Strengthened Glass |
| Encapsulant Material | EVA |
| Back Glass | 2 mm, Heat Strengthened Glass |
| Frame | 30 mm Anodized Aluminium Alloy |
| J-Box | IP 68 rated |
| Cables | Photovoltaic Cable 4.0mm ² , Portrait: N 140mm/P 285mm, Landscape: N 1400 mm / P 1400 mm |
| Connector | TS4 |

TEMPERATURE RATINGS

| | |
|---|------------|
| NMOT (Nominal Module Operating Temperature) | 41°C (±3K) |
| Temperature Coefficient of P_{MAX} | -0.37%/K |
| Temperature Coefficient of U_{OC} | -0.29%/K |
| Temperature Coefficient of I_{SC} | 0.05%/K |

MAXIMUM RATINGS

| | |
|-------------------------|---------------------------------|
| Operational Temperature | -40 to +85°C |
| Maximum System Voltage | 1500V DC (IEC) 1500V DC (UL) |
| Max Series Fuse Rating | 20 A |
| Snow Load | 5400 Pa (3600 Pa*) |
| Wind Load | 2400 Pa (1600 Pa*) |

*design load with safety factor 1.5
(DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection)

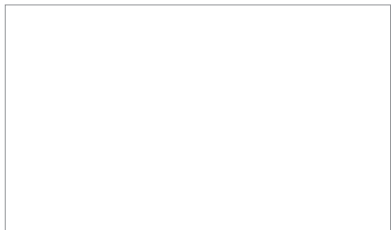
PACKAGING CONFIGURATION

| | |
|----------------------------|------------|
| Modules per box: | 32 pieces |
| Modules per 40' container: | 704 pieces |

WARRANTY

| |
|--------------------------------------|
| 10 year Product Workmanship Warranty |
| 30 year Linear Performance Warranty |

(Please refer to product warranty for details)



TSM_EN_2019_A