

TALLMAX^M

TSM-DE15M(II)

**144 HALF-CUT
MONOCRYSTALLINE CELLS**

**390-415W
POWER OUTPUT RANGE**

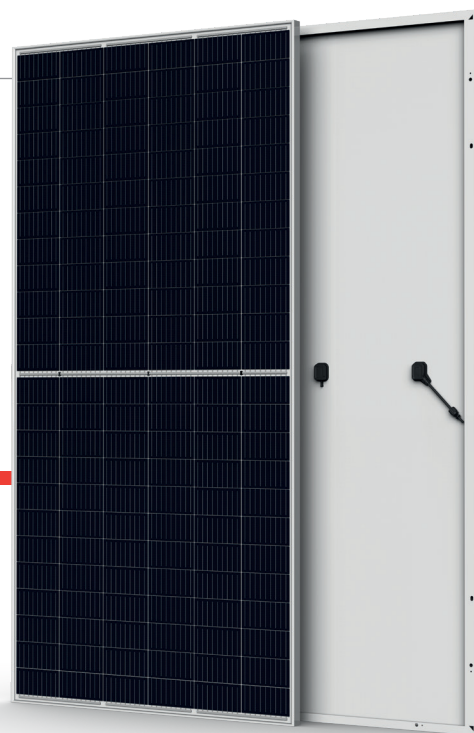
**20.4%
MAXIMUM EFFICIENCY**

**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



High power output

- Multi busbar technology combined with mono PERC cells
- Reduced BOS costs with higher power bins and 1,500V system voltage
- Consistently high bankability ratings by BNEF, banks and investors



Half-cut cell design brings higher efficiency

- Optimized power output under inter-row shading conditions
- 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

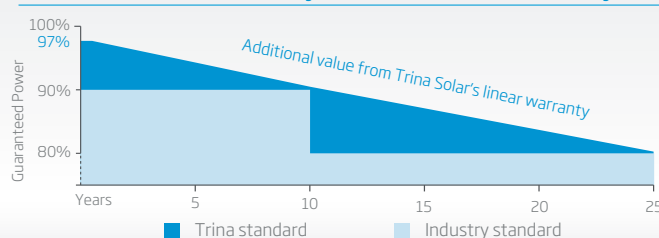


Certified to withstand challenging environmental conditions

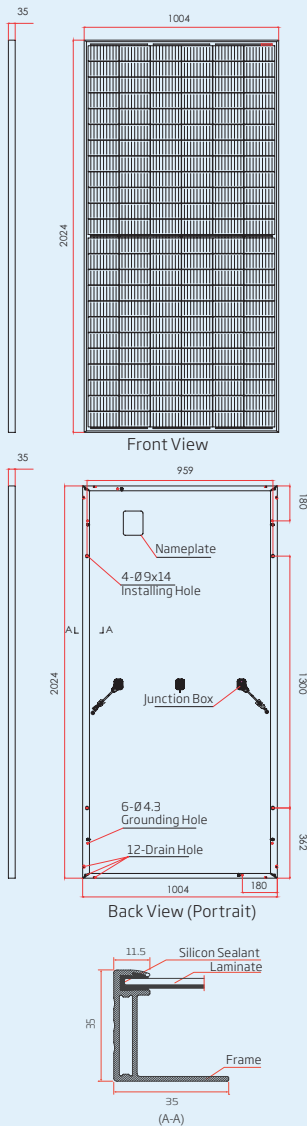
- Salt Mist Corrosion
- Ammonia Corrosion
- Blowing Sand

LINEAR PERFORMANCE WARRANTY

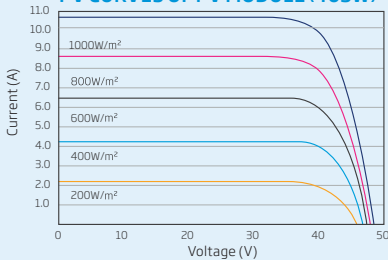
10 Year Product Warranty · 25 Year Linear Power Warranty



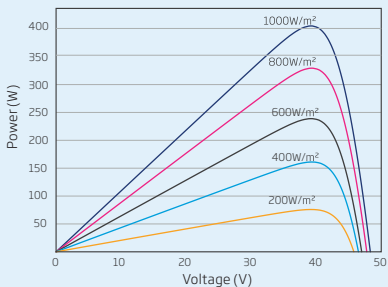
DIMENSIONS OF PV MODULE TSM-DE15M(II) (unit: mm)



I-V CURVES OF PV MODULE (405W)



P-V CURVES OF PV MODULE (405W)



ELECTRICAL DATA @ STC	TSM-390 DE15M(II)	TSM-395 DE15M(II)	TSM-400 DE15M(II)	TSM-405 DE15M(II)	TSM-410 DE15M(II)	TSM-415 DE15M(II)
Peak Power Watts-P _{MAX} (Wp)*	390	395	400	405	410	415
Power Output Tolerance-P _{MAX} (W)	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5
Maximum Power Voltage-U _{MPP} (V)	40.0	40.1	40.3	40.5	40.7	40.9
Maximum Power Current-I _{MPP} (A)	9.75	9.86	9.92	10.0	10.07	10.15
Open Circuit Voltage-U _{OC} (V)	48.5	48.7	49.0	49.2	49.4	49.6
Short Circuit Current-I _{SC} (A)	10.30	10.37	10.45	10.52	10.59	10.66
Module Efficiency η _m (%)	19.2	19.4	19.7	19.9	20.2	20.4

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

ELECTRICAL DATA @ NMOT	TSM-390 DE15M(II)	TSM-395 DE15M(II)	TSM-400 DE15M(II)	TSM-405 DE15M(II)	TSM-410 DE15M(II)	TSM-415 DE15M(II)
Maximum Power-P _{MAX} (Wp)	294	298	301	305	309	313
Maximum Power Voltage-U _{MPP} (V)	37.6	37.7	37.9	38.1	38.3	38.4
Maximum Power Current-I _{MPP} (A)	7.83	7.90	7.96	8.02	8.08	8.13
Open Circuit Voltage-U _{OC} (V)	45.6	45.8	46.1	46.3	46.5	46.7
Short Circuit Current-I _{SC} (A)	8.30	8.36	8.43	8.48	8.54	8.60

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	2024 × 1004 × 35 mm
Weight	22.8 kg
Glass	3.2 mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EVA
Backsheet	White
Frame	35 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)
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:	30 pieces
Modules per 40' container:	660 pieces

WARRANTY

10 year Product Workmanship Warranty
25 year Linear Performance Warranty

(Please refer to product warranty for details)

