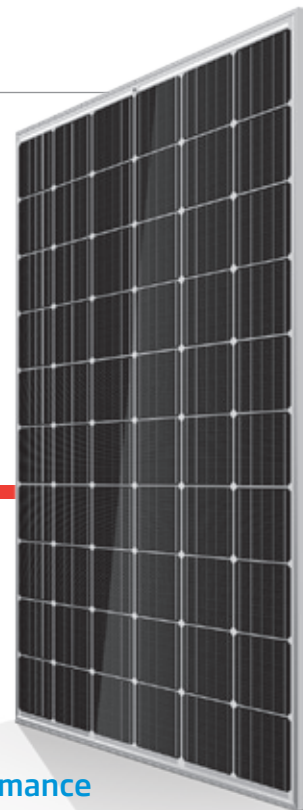


ALLMAX^M plus⁺

TSM-DE05A (II)

THE FRAMED 60-CELL MODULE (1500V)



60 CELL
MONOCRYSTALLINE MODULE

280-315W
POWER OUTPUT RANGE

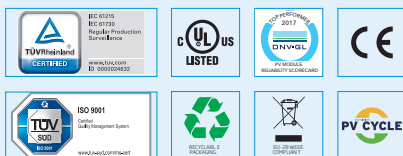
19.2%
MAXIMUM EFFICIENCY

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/IEC62716
 ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse Gas Emissions Verification
 OHSAS 18001: Occupational Health and Safety Management System



Excellent low light performance on cloudy days, mornings and evenings

- Advanced surface texturing
- Back surface field
- Selective emitter



Maximize Limited Space with high efficiency

- Up to 192 W/m² power density
- Low thermal coefficients for greater energy production at high operating temperatures



Good aesthetics for residential applications

- Dark mono cells



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
- All modules have to pass electroluminescence (EL) inspection
- PID resistant
- 1500 V UL/1500 V IEC certified

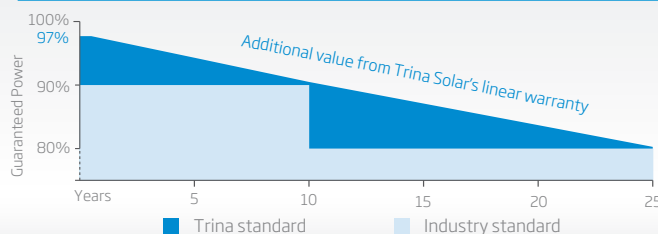


Certified to withstand challenging environmental conditions

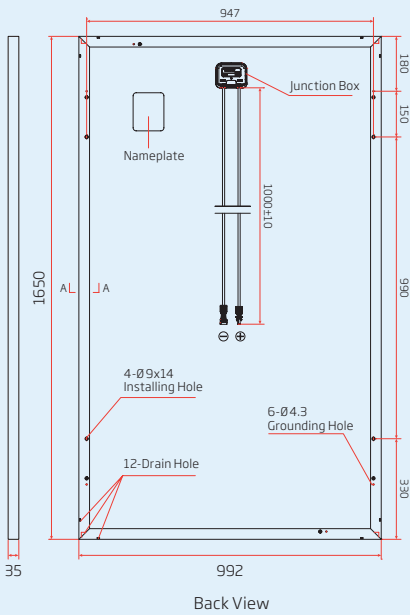
- 2400 Pa wind load
- 5400 Pa snow load
- 35 mm hail stones at 97 km/h
- Ammonia resistance
- Salt mist resistance
- Resistance to sand and dust abrasion

LINEAR PERFORMANCE WARRANTY

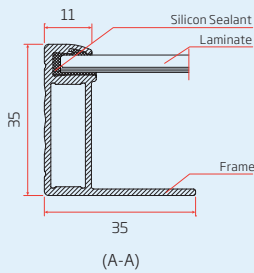
10 Year Product Warranty · 25 Year Linear Power Warranty



DIMENSIONS OF PV MODULE TSM-DE05A (II) (unit: mm)

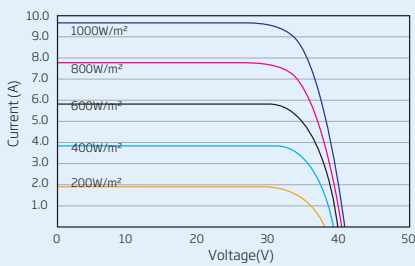


Back View

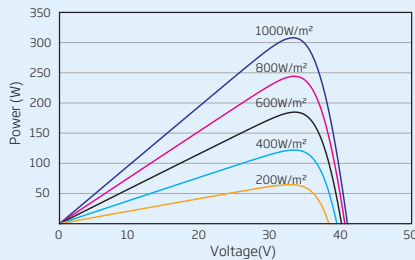


(A-A)

I-V CURVES OF PV MODULE (305W)



P-V CURVES OF PV MODULE (305W)



ELECTRICAL DATA @ STC	TSM-280	TSM-285	TSM-290	TSM-295	TSM-300	TSM-305	TSM-310	TSM-315
Peak Power Watts-P _{MAX} (Wp)*	280	285	290	295	300	305	310	315
Power Output Tolerance-P _{MAX} (W)	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5
Maximum Power Voltage-V _{MPP} (V)	31.7	31.8	32.2	32.5	32.6	32.9	33.1	33.3
Maximum Power Current-I _{MPP} (A)	8.84	8.97	9.01	9.08	9.19	9.28	9.37	9.46
Open Circuit Voltage-V _{OC} (V)	38.4	38.5	38.9	39.6	39.8	40.0	40.2	40.5
Short Circuit Current-I _{SC} (A)	9.42	9.51	9.66	9.68	9.77	9.85	9.94	10.0
Module Efficiency η _m (%)	17.1	17.4	17.7	18.0	18.3	18.6	18.9	19.2

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

ELECTRICAL DATA @ NOCT	TSM-280	TSM-285	TSM-290	TSM-295	TSM-300	TSM-305	TSM-310	TSM-315
Maximum Power-P _{MAX} (Wp)	209	212	216	220	223	227	231	235
Maximum Power Voltage-U _{MPP} (V)	29.4	29.5	29.9	30.1	30.2	30.5	30.7	30.9
Maximum Power Current-I _{MPP} (A)	7.10	7.21	7.24	7.30	7.38	7.46	7.53	7.60
Open Circuit Voltage-U _{OC} (V)	35.7	35.8	36.2	36.8	37.0	37.2	37.4	37.6
Short Circuit Current-I _{SC} (A)	7.61	7.68	7.80	7.82	7.89	7.95	8.03	8.10

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

MECHANICAL DATA

Solar Cells	Monocrystalline 156.75 × 156.75 mm
Cell Orientation	60 cells (6 x 10)
Module Dimensions	1650 × 992 × 35 mm
Weight	18.6 kg
Glass	3.2 mm, high transparency, AR coated and heat tempered solar glass
Backsheet	White
Frame	Silver Anodized Aluminium Alloy
J-Box	IP 67 or IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² , 1000 mm
Connector	MC4 EVO2/UTX/TS4

TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	44°C (±2K)
Temperature Coefficient of P _{MAX}	- 0.39%/K
Temperature Coefficient of V _{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*	15 A (Power ≤ 285 W) 20 A (Power ≥ 290 W)
Mechanical Load	5400 Pa
Wind Load	2400 Pa

* DO NOT connect fuse in combiner box with two or more strings in parallel connection

WARRANTY

10 year Product Workmanship Warranty

25 year Linear Performance Warranty

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box:	30 pieces
Modules per 40' container:	840 pieces