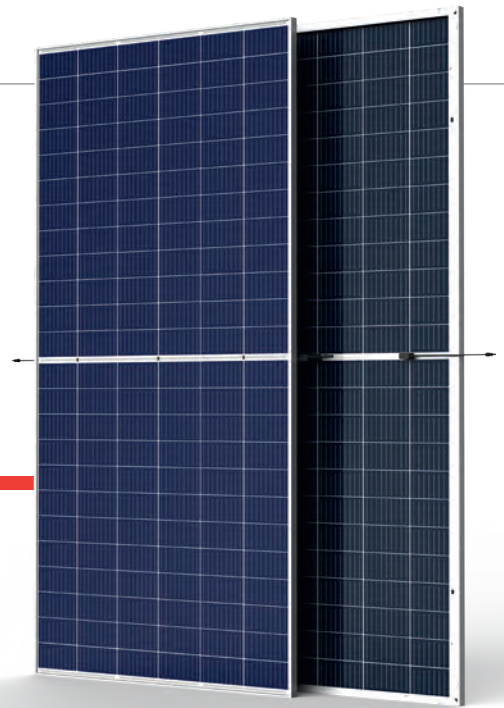


DUOMAX⁺ twin

TSM-DEG15MC.20(II)



144 HALF-CUT
MONOCRYSTALLINE CELLS

385-410W
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



High power output

- Bifacial mono PERC cells combined with multi busbar technology
- Half-cut cells with lower thermal coefficients and reduced interconnection losses
- Power gain up to 25% when mounted on tracker, depending on albedo



Optimized LCOE

- Maximum yield per space
- Savings in labour cost
- Best suited for tracking systems



Highly reliable due to stringent quality control

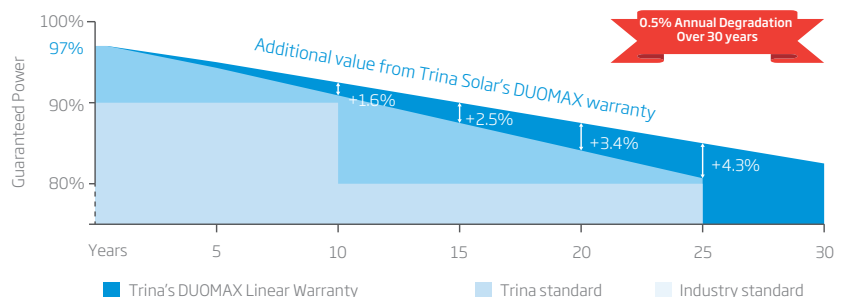
- Over 30 in-house tests (UV, TC, HF, and many more)
- In-house testing goes well beyond certification requirements
- PID resistant
- 2x 100% inline EL inspection



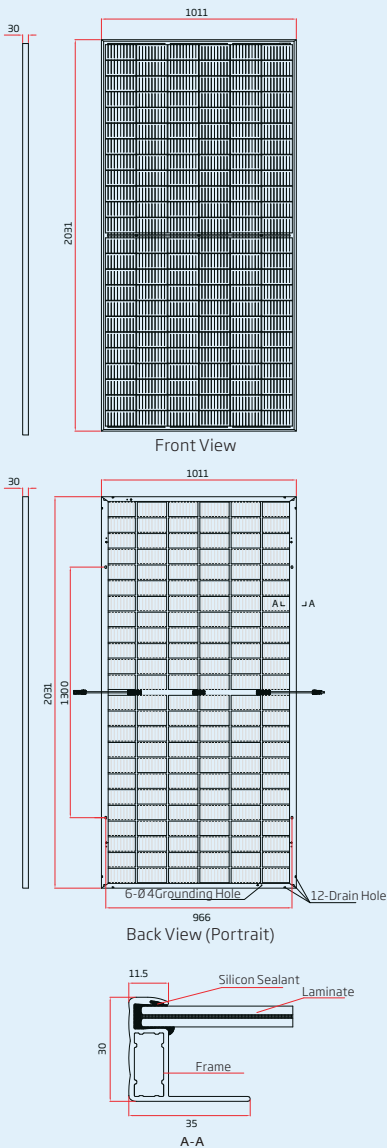
Certified to withstand challenging environmental conditions

- Salt Mist Corrosion
- Ammonia Corrosion
- Blowing Sand

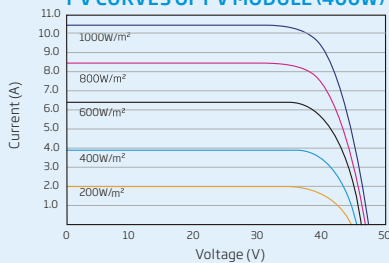
Trina Solar's DUOMAX Linear Performance Warranty



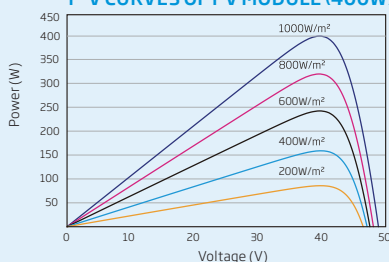
DIMENSIONS OF PV MODULE
TSM-DEG15MC.20(II) (unit: mm)



I-V CURVES OF PV MODULE (400W)



P-V CURVES OF PV MODULE (400W)



ELECTRICAL DATA @ STC	TSM-385	TSM-390	TSM-395	TSM-400	TSM-405	TSM-410
Peak Power Watts-P _{MAX} (Wp)*	385	390	395	400	405	410
Power Output Tolerance -P _{MAX} (W)	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5
Maximum Power Voltage-U _{MPP} (V)	41.1	41.4	41.7	42.0	42.3	42.6
Maximum Power Current-I _{MPP} (A)	9.37	9.43	9.48	9.53	9.58	9.63
Open Circuit Voltage-U _{OC} (V)	49.0	49.2	49.4	49.6	49.8	50.0
Short Circuit Current-I _{SC} (A)	10.03	10.08	10.12	10.16	10.21	10.25
Module Efficiency η _m (%)	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%

BI-FACIAL OUTPUT - BACK SIDE POWER GAIN

10%	Power Output (W)	424	429	435	440	446	451
	Module Efficiency (%)	20.6	20.9	21.2	21.4	21.7	22.0
15%	Power Output (W)	443	429	454	460	466	472
	Module Efficiency (%)	21.6	20.9	22.1	22.4	22.7	23.0
25%	Power Output (W)	481	488	494	500	506	513
	Module Efficiency (%)	23.4	23.7	24.1	24.4	24.6	25.0

ELECTRICAL DATA @ NMOT	TSM-385	TSM-390	TSM-395	TSM-400	TSM-405	TSM-410
Maximum Power-P _{MAX} (Wp)	290	294	298	302	305	309
Maximum Power Voltage-U _{MPP} (V)	38.8	39.1	39.3	39.6	39.9	40.2
Maximum Power Current-I _{MPP} (A)	7.48	7.53	7.57	7.61	7.65	7.69
Open Circuit Voltage-U _{OC} (V)	46.7	46.9	47.1	47.3	47.5	47.7
Short Circuit Current-I _{SC} (A)	8.09	8.13	8.16	8.19	8.23	8.27

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 x 1011 x 25mm
Weight	26.3 kg
Glass	2 mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	POE/EVA
Back Glass	2 mm, Heat Strengthened Glass (White Grid Glass)
Frame	25 mm Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Cable 4.0mm ² , Portrait: N 280 mm/P 280 mm, Landscape: N 1900 mm /P 1900 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

WARRANTY

10 year Product Workmanship Warranty
30 year Linear Performance Warranty

(Please refer to product warranty for details)

MAXIMUM RATINGS

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