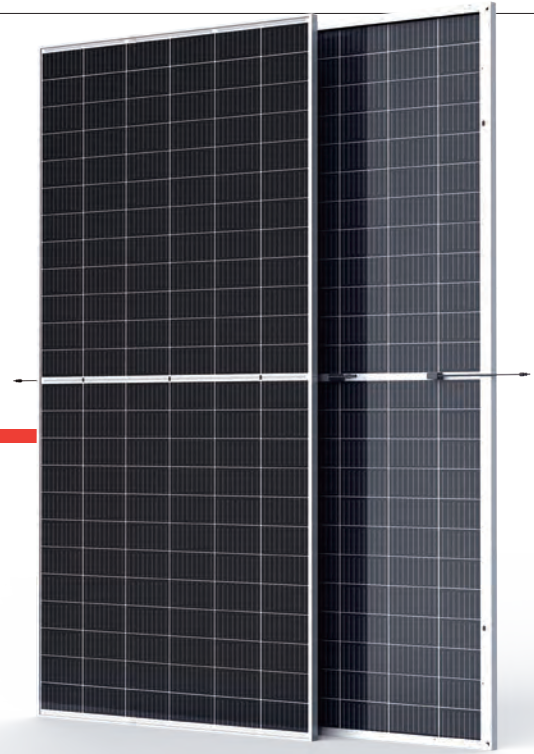


THE

# DUOMAX<sup>twin</sup>

BIFACIAL DUAL GLASS 144 CELL MULTI BUSBAR MODULE



**144-Cell**  
MONOCRYSTALLINE MODULE

**385-410W**  
POWER OUTPUT RANGE

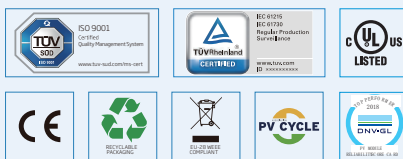
**20.0%**  
MAXIMUM EFFICIENCY

**0~+5W**  
POSITIVE POWER TOLERANCE

Founded in 1997, Trina Solar is the world's leading total solutions provider for solar energy. With local presence around the globe, Trina Solar is able to provide exceptional service to each customer in each market and deliver our innovative, reliable products with the backing of Trina as a strong, bankable brand. Trina Solar now distributes its PV products to over 100 countries all over the world. We are committed to building strategic, mutually beneficial collaborations with installers, developers, distributors and other partners in driving smart energy together.

### Comprehensive Products And System Certificates

IEC61215/IEC61730/IEC61701/IEC62716  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management System  
 ISO14064: Greenhouse gases Emissions Verification  
 OHSAS 18001: Occupation Health and Safety Management System



PRODUCTS	POWER RANGE
TSM-DEG15MC.20(II)	385-410W



### High power output

- Increased total power output through generation from front and back side
- Backside power gain up to 25% depending on albedo
- Unique J-box design and installation method to avoid shading on the back side
- Higher lifetime power using MBB and Half-cell technology



### Low LCOE

- Maximize limited space, savings in BOS and labour cost
- Higher power from same installation footprint as standard modules



### Wide application

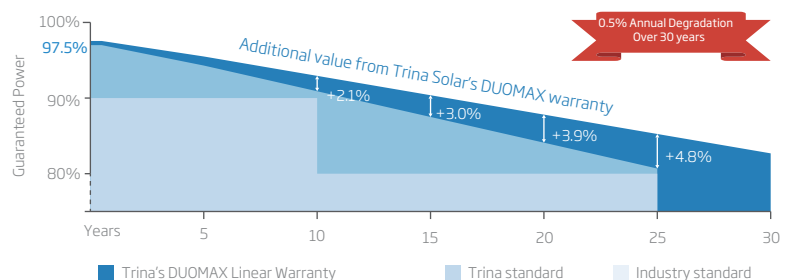
- Deployable for ground mounted utility, carports, and agricultural projects
- Special application like sound barriers on expressways
- Compatible with major tracker systems



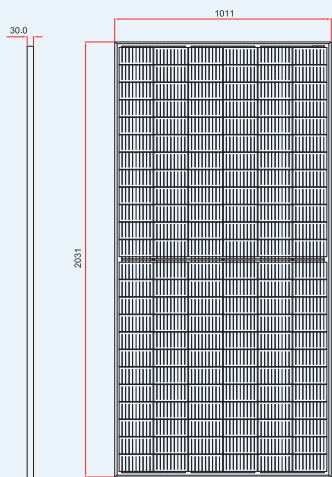
### Certified to perform in the most challenging environmental conditions

- Resistant to sand, acid, and alkali
- 2400 Pa negative load
- 2400 Pa positive load
- 2400/2400 is the measured load, and the safety factor is 1.5x

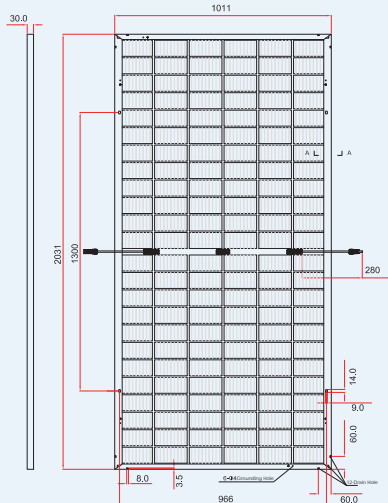
Trina Solar's DUOMAX Linear Performance Warranty



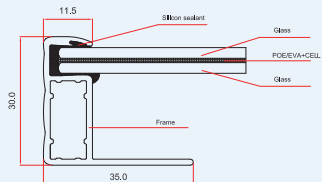
### DIMENSIONS OF PV MODULE (mm)



Front View

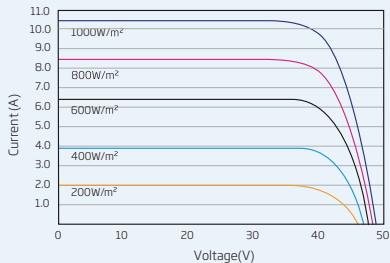


Back View

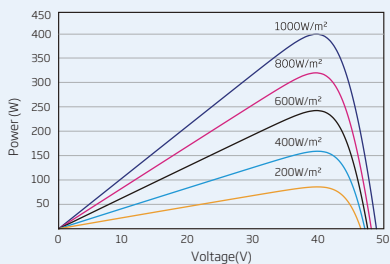


A - A

### I-V CURVES OF PV MODULE(400W)



### P-V CURVES OF PV MODULE(400W)



### ELECTRICAL DATA (STC)

Peak Power Watts- $P_{MAX}$ ( $W_p$ )*	385	390	395	400	405	410
Power Output Tolerance- $P_{MAX}$ (W)	0 ~ +5					
Maximum Power Voltage- $V_{MPP}$ (V)	39.9	40.2	40.5	40.8	41.1	41.4
Maximum Power Current- $I_{MPP}$ (A)	9.66	9.71	9.76	9.81	9.86	9.91
Open Circuit Voltage- $V_{OC}$ (V)	48.3	48.5	48.7	48.9	49.1	49.3
Short Circuit Current- $I_{SC}$ (A)	10.21	10.25	10.29	10.33	10.37	10.41
Module Efficiency $\eta$ (%)	18.7	19.0	19.2	19.5	19.7	20.0

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.

\*Measurement tolerance:  $\pm 3\%$ .

### BI-FACIAL OUTPUT - Backside 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	449	454	460	466	472
	Module Efficiency (%)	21.6	21.9	22.1	22.4	22.7	23.0
25%	Power Output (W)	481	488	494	500	506	513
	Module Efficiency (%)	23.4	23.8	24.1	24.4	24.6	25.0

### ELECTRICAL DATA (NMOT)

Maximum Power- $P_{MAX}$ ( $W_p$ )	290	294	298	302	305	309
Maximum Power Voltage- $V_{MPP}$ (V)	37.5	37.7	38.0	38.2	38.5	38.8
Maximum Power Current- $I_{MPP}$ (A)	7.77	7.81	7.85	7.89	7.92	7.97
Open Circuit Voltage- $V_{OC}$ (V)	45.4	45.6	45.8	46.0	46.2	46.4
Short Circuit Current- $I_{SC}$ (A)	8.24	8.27	8.30	8.33	8.36	8.39

NMOT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s.

### MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	144 cells (6 × 24)
Module Dimensions	2031 × 1011 × 30mm (79.96 × 39.80 × 1.18 inches)
Weight	31.4 kg (69.2 lb)
Front Glass	2.5 mm (0.10 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Back Glass	2.5 mm (0.10 inches), Heat Strengthened Glass (White Grid Glass)
Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ), Portrait: 280/280 mm(11.02/11.02 inches) Landscape: 1900/1900 mm(74.80/74.80inches)
Connector	Trina TS4

### TEMPERATURE RATINGS

NMOT (Nominal Module Operating Temperature)	41°C ( $\pm 3^\circ\text{C}$ )
Temperature Coefficient of $P_{MAX}$	-0.37%/°C
Temperature Coefficient of $V_{OC}$	-0.29%/°C
Temperature Coefficient of $I_{SC}$	0.05%/°C

(DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection)

### MAXIMUM RATINGS

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	20A

### WARRANTY

- 10 year Product Workmanship Warranty
- 30 year Linear Power Warranty

(Please refer to product warranty for details)

### PACKAGING CONFIGURATION

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

\*\* Back-side power gain varies depending upon the specific project albedo

