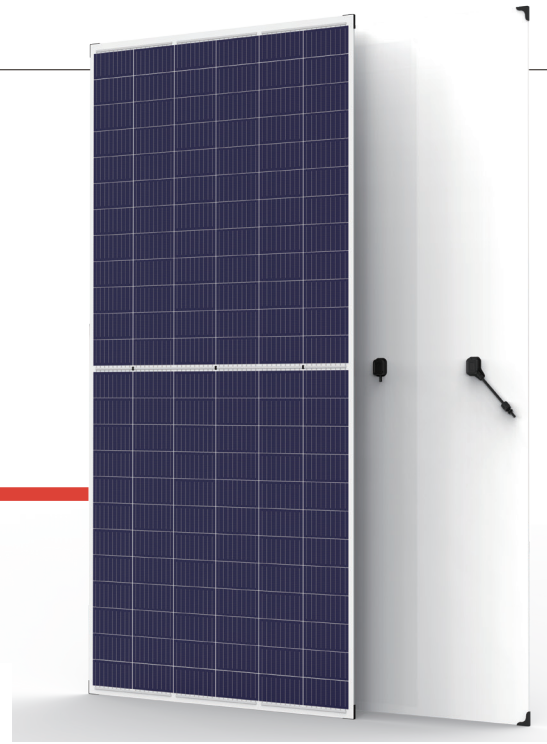


THE

# DUOMAX<sup>M</sup>

HALF-CELL DUAL GLASS 72 LAYOUT MODULE



**72 LAYOUT**  
MONOCRYSTALLINE MODULE

**390-415W**  
POWER OUTPUT RANGE

**20.4%**  
MAXIMUM EFFICIENCY

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

PRODUCTS | POWER RANGE  
TSM-DEG15M(II) | 390-415W



### High power output

- Combined with MBB technology, maximum 415W
- Reduce BOS cost with higher power bin and 1500V system voltage



### Half-cell design brings higher efficiency

- Half-Cell layout (144 monocrystalline)
- Low thermal coefficients for greater energy production at high operating temperature
- Low cell connection power loss due to half-cell layout (144 monocrystalline)
- Passivated Emitter and Rear Cell (PERC Technology)



### Highly reliable due to stringent quality control

- Over 30 in-house tests (UV, TC, HF etc)
- Internal test requirement of Trina more stringent than certification authority
- PID resistant
- 100% EL double inspection



### Certified to withstand the most challenging environmental conditions

- 2400 Pa negative load
- 5400 Pa positive load
- \* 2400/5400 is the measured load, and the safety factor is 1.5 times

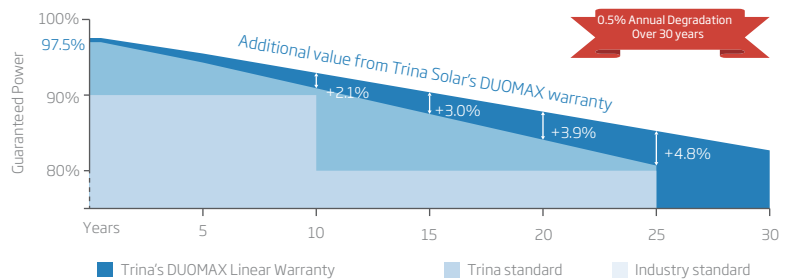
Founded in 1997, Trina Solar is the world's leading total solutions provider for solar energy. With local presence around the globe, Trina Solar is able to provide exceptional service to each customer in each market and deliver our innovative, reliable products with the backing of Trina as a strong, 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

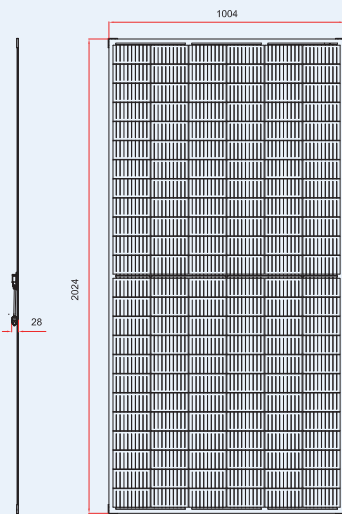
IEC61215/IEC61730/IEC61701/IEC62716  
ISO 9001: Quality Management System  
ISO 14001: Environmental Management System  
ISO14064: Greenhouse gases Emissions Verification  
OHSAS 18001: Occupation Health and Safety Management System



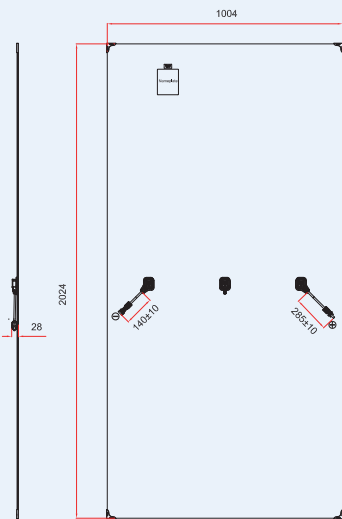
### Trina Solar's DUOMAX Linear Performance Warranty



## DIMENSIONS OF PV MODULE(mm)

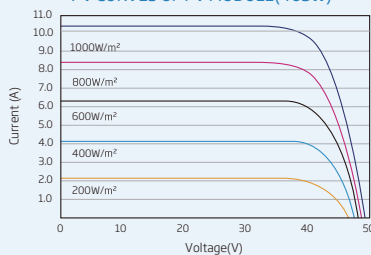


Front View

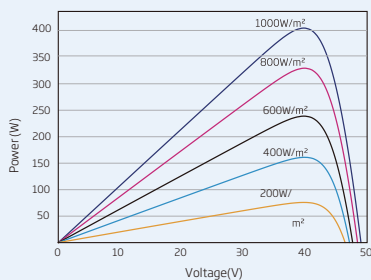


Back View

## I-V CURVES OF PV MODULE(405W)



## P-V CURVES OF PV MODULE(405W)



## ELECTRICAL DATA (STC)

Peak Power Watts- $P_{MAX}$ (Wp)*	390	395	400	405	410	415
Power Output Tolerance- $P_{MAX}$ (W)	0 ~ +5					
Maximum Power Voltage- $V_{MPP}$ (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	10.00	10.07	10.15
Open Circuit Voltage- $V_{OC}$ (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 $\eta_m$ (%)	19.2	19.4	19.7	19.9	20.2	20.4

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.  
\*Measuring tolerance:  $\pm 3\%$ .

## ELECTRICAL DATA (NMOT)

Maximum Power- $P_{MAX}$ (Wp)	294	298	302	305	309	313
Maximum Power Voltage- $V_{MPP}$ (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- $V_{OC}$ (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 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	2024 × 1004 × 6 mm (79.69 × 39.53 × 0.24 inches) 2028 × 1008 × 6 mm with edgbanding (79.84 × 39.69 × 0.24 inches) 2030 × 1010 × 7.6 mm with corner (79.92 × 39.76 × 0.24 inches)
Weight	29.2 kg (64.4 lb)
Front Glass	2.5 mm (0.10 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EVA
Back Glass	2.5 mm (0.10 inches), Heat Strengthened Glass
Frame	Frameless
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ), Portrait: N 140mm/P 285mm(5.51/11.22inches) Landscape: N 1400mm/P 1400mm(55.12/55.12inches)
Connector	MC4 EVO2 / TS4

## TEMPERATURE RATINGS

NMOT(Nominal Module Operating Temperature)	41°C ( $\pm 3$ °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) 1000V 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: 33 pieces
Modules per 40' container: 726 pieces

