THE

DUOMAX twin

BIFACIAL DUAL GLASS 144 LAYOUT MODULE



144 LAYOUT
MONOCRYSTALLINE MODULE

395-420W
POWER OUTPUT RANGE

20.7%
MAXIMUM EFFICIENCY

0~+5W
POSITIVE POWER TOLERANCE

PRODUCTS	POWER RANGE
TSM-DEG15MC.20(II)	395-420W

High power

- Up to 420W front power and 20.7% module efficiency with half-cut and MBB (Multi Busbar) technology bringing more BOS savings
- Lower resistance of half-cut and good reflection effect of MBB ensure high power

High reliability

- Ensured PID resistance through cell process and module material control
- Resistant to salt, acid and ammonia
- Proven to be reliable in high temperature and humidity areas
- Minimizes micro-crack and snail trails
- Mechanical performance: Up to 5400 Pa positive load and 2400 Pa negative load

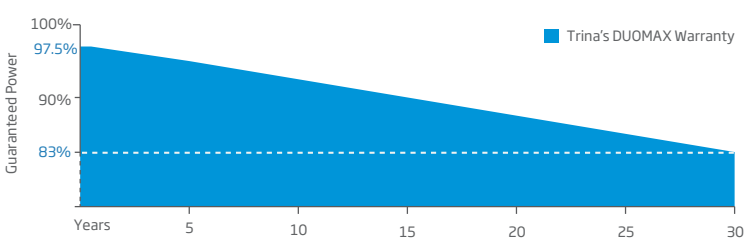
High energy generation

- Up to 25% additional power gain from back side depending on the albedo ;
- Excellent IAM and low light performance validated by 3rd party with cell process and module material optimization
- Better anti-shading performance and lower operating temperature

Easy to install

- Frame design makes module compatible with all racking and installation methods
- Easy to handle and install as normal framed module during transportation

Trina Solar's DUOMAX Performance Warranty



From the 2nd year to the 30th year, the average annual power decline will be no more than 0.5%.

Founded in 1997, Trina Solar is the world's leading total solution 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/UL61730
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
ISO45001: Occupation Health and Safety Management System

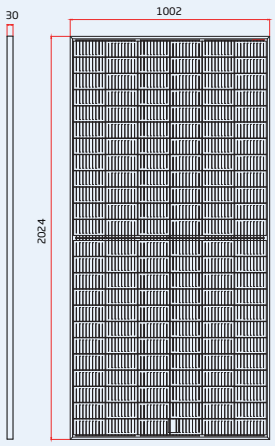
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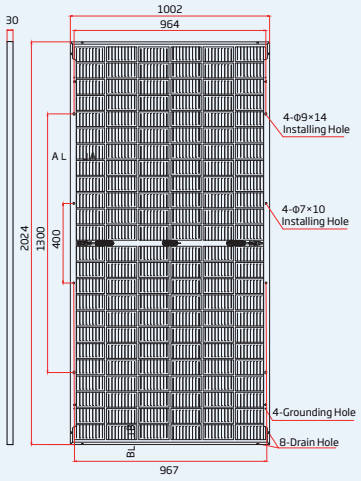
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144 LAYOUT MODULE

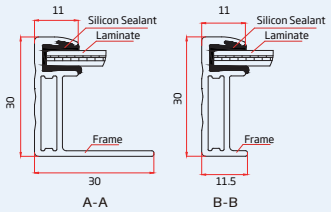
DIMENSIONS OF PV MODULE(mm)



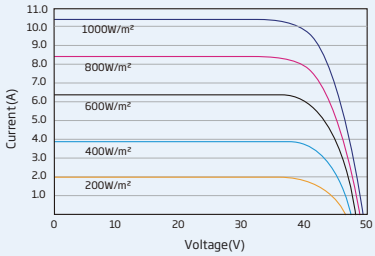
Front View



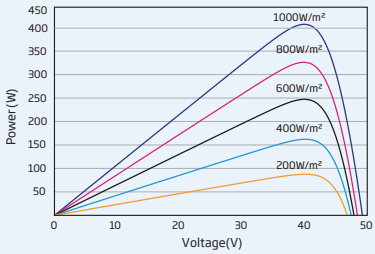
Back View



I-V CURVES OF PV MODULE(405 W)



P-V CURVES OF PV MODULE(405W)



ELECTRICAL DATA (STC)

Peak Power Watts-P_{MAX} (Wp)*	395	400	405	410	415	420
Power Tolerance-P_{MAX} (W)	0 ~ +5					
Maximum Power Voltage-V_{MPP} (V)	40.5	40.8	41.1	41.4	41.5	41.6
Maximum Power Current-I_{MPP} (A)	9.76	9.81	9.86	9.91	10.02	10.10
Open Circuit Voltage-V_{OC} (V)	48.7	48.9	49.1	49.3	49.4	49.5
Short Circuit Current-I_{SC} (A)	10.29	10.33	10.37	10.41	10.52	10.60
Module Efficiency η_m (%)	19.5	19.7	20.0	20.2	20.5	20.7

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

Electrical characteristics with different rear side power gain (reference to 405 Wp front)

Maximum Power-P_{MAX} (Wp)	425	446	466	486	506
Maximum Power Voltage-V_{MPP} (V)	41.1	41.1	41.1	41.1	41.1
Maximum Power Current-I_{MPP} (A)	10.35	10.85	11.34	11.83	12.33
Open Circuit Voltage-V_{OC} (V)	49.2	49.3	49.4	49.5	49.6
Short Circuit Current-I_{SC} (A)	10.89	11.41	11.93	12.44	12.96
Pmax gain	5%	10%	15%	20%	25%

Power Bifaciality:70±5%.

ELECTRICAL DATA (NOCT)

Maximum Power-P_{MAX} (Wp)	297	301	305	309	313	316
Maximum Power Voltage-V_{MPP} (V)	37.9	38.2	38.4	38.7	38.8	38.9
Maximum Power Current-I_{MPP} (A)	7.85	7.89	7.93	7.97	8.05	9.11
Open Circuit Voltage-V_{OC} (V)	45.8	46.0	46.2	46.4	46.5	46.6
Short Circuit Current-I_{SC} (A)	8.29	8.32	8.36	8.39	8.48	8.54

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

MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	144 cells (6 × 24)
Module Dimensions	2024× 1002 × 30 mm (79.69 × 39.45 × 1.18 inches)
Weight	26.0 kg (57.3 lb)
Front Glass	2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²), Portrait: 280/280 mm(11.02/11.02 inches), Landscape: 1900/1900 mm(74.80/74.80 inches)
Connector	MC4 EVO2 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P_{MAX}	- 0.34%/°C
Temperature Coefficient of V_{OC}	- 0.25%/°C
Temperature Coefficient of I_{SC}	0.04%/°C

MAXIMUM RATINGS

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

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

WARRANTY

12 year Product Workmanship Warranty

30 year Power Warranty

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 36 pieces

Modules per 40' container: 792 pieces

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CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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Version number: TSM_EN_2020_C

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