TOPCO SOLAR

# TPM7-UHLDD156

# 610-645W

## N-TYPE BIFACIAL DOUBLE GLASS PV MODULE

16BB

**Excellent Cells Efficiency**
- SMBB technology reduce the
- distance between busbars and finger grid line which is benefit to power increase

PID Anti

**Anti PID**
- Ensured PID resistance through the quality control of cell manufacturing process and raw materials

**Bifacial Technology**
- Up to 25% additional power gain from back side depending on albedo

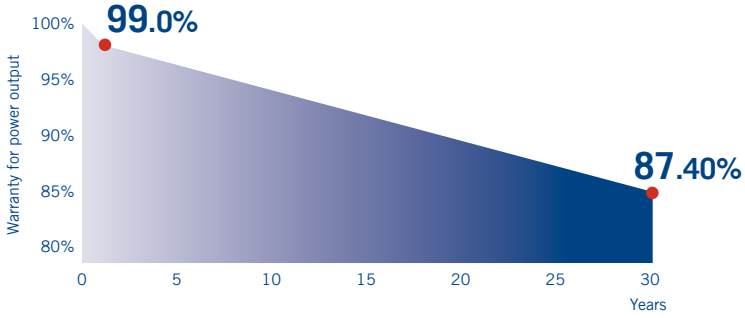
**Enhanced Weak Light Performance**
- Delivers higher power output under weak light conditions, such as haze, cloudy weather, and early morning

**Adapt To Harsh Outdoor Environment**
- Withstands extreme conditions including salt, ammonia, sand, high temperatures, and high humidity

### Linear Power Output Warranty

**12** 12-year warranty for materials

**30** 30-year warranty for linear power output




### Quality Management System and Product Certification

C SA US CE

IEC 61215/IEC 61730
ISO 14001: Environmental Management System
ISO 9001: Quality Management System
ISO45001: Occupational Health and Safety Management System

Version EN-20250211

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# N-TYPE BIFACIAL DOUBLE GLASS PV MODULE

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## Electrical Characteristics (STC)

| Module Type (TPM7-UHLDD156) | | 610 | 615 | 620 | 625 | 630 | 635 | 640 | 645 |
|---|---|---|---|---|---|---|---|---|---|
| Maximum Power Voltage Vmp | [V] | 45.7 | 45.9 | 46.1 | 46.3 | 46.5 | 46.7 | 46.9 | 47.1 |
| Maximum Power Current Imp | [A] | 13.35 | 13.4 | 13.45 | 13.5 | 13.55 | 13.6 | 13.65 | 13.7 |
| Open Circuit Voltage Voc | [V] | 55.1 | 55.3 | 55.5 | 55.7 | 55.9 | 56.1 | 56.3 | 56.5 |
| Short Circuit Current Isc | [A] | 14.11 | 14.16 | 14.21 | 14.26 | 14.31 | 14.36 | 14.41 | 14.46 |
| Module Efficiency | [%] | 21.82 | 22 | 22.18 | 22.36 | 22.54 | 22.72 | 22.9 | 23.07 |

## Electrical Characteristics (NMOT)

| Maximum Power Pmax | [Wp] | 462.3 | 466 | 469.7 | 473.3 | 477.1 | 480.8 | 484.5 | 488.3 |
|---|---|---|---|---|---|---|---|---|---|
| Maximum Power Voltage Vmpp | [V] | 42.8 | 43 | 43.2 | 43.4 | 43.6 | 43.7 | 43.9 | 44.1 |
| Maximum Power Current Impp | [A] | 10.8 | 10.84 | 10.87 | 10.91 | 10.95 | 10.99 | 11.03 | 11.07 |
| Open Circuit Voltage Voc | [V] | 52 | 52.2 | 52.4 | 52.6 | 52.8 | 53 | 53.1 | 53.3 |
| Short Circuit Current Isc | [A] | 11.39 | 11.43 | 11.47 | 11.51 | 11.55 | 11.59 | 11.63 | 11.67 |

## ELECTRICAL CHARACTERISTICS (REAR POWER GAIN)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 5% | Maximum Power:Pmax | [W] | 641 | 646 | 651 | 656 | 662 | 667 | 672 | 677 |
| | Module Effciency | [%] | 22.91 | 23.1 | 23.29 | 23.48 | 23.66 | 23.85 | 24.04 | 24.23 |
| 15% | Maximum Power:Pmax | [W] | 702 | 707 | 713 | 719 | 725 | 730 | 736 | 742 |
| | Module Effciency | [%] | 25.1 | 25.3 | 25.51 | 25.71 | 25.92 | 26.12 | 26.33 | 26.54 |
| 25% | Maximum Power:Pmax | [W] | 763 | 769 | 775 | 781 | 788 | 794 | 800 | 806 |
| | Module Effciency | [%] | 27.28 | 27.5 | 27.73 | 27.95 | 28.17 | 28.4 | 28.62 | 28.84 |

## Mechanical Characteristics

| | |
|---|---|
| Solar cells | N-type Monocrystalline |
| Cells orientation | 156 (6x26) |
| Module dimension | 2465x1134x35 mm (With Frame) |
| Weight | 34.5+1.0 kg |
| Glass | 2.0 mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass |
| Junction box | IP 68,3 diodes |
| Cables | 4 mm² ,400 mm or Customized length |
| Connectors* | MC4-EVO2 |

## Application Conditions

| | |
|---|---|
| Maximum system voltage | 1500 V DC |
| Operating temperature | -40℃~+85℃ |
| Maximum series fuse | 30 A |
| Front Side Maximum Static Loading | Up to 4200Pa |
| Rear Side Maximum Static Loading | Up to 1800Pa |

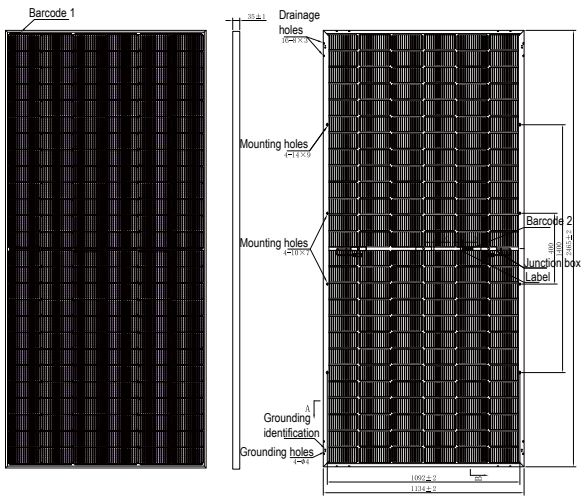
## Temperature Characteristics

| | |
|---|---|
| NMOT | 44℃ ±2℃ |
| Temperature coefficient of Pmax | (-0.30±0.03)%/℃ |
| Temperature coefficient of Voc | -0.25%/℃ |
| Temperature coefficient of Isc | 0.046%/℃ |
| Bifaciality | 80±10% |

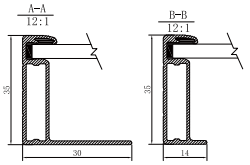
## Packing Configuration

| | |
|---|---|
| Piece/Box | 31 |
| Piece/Container(40'HQ) | 496 |

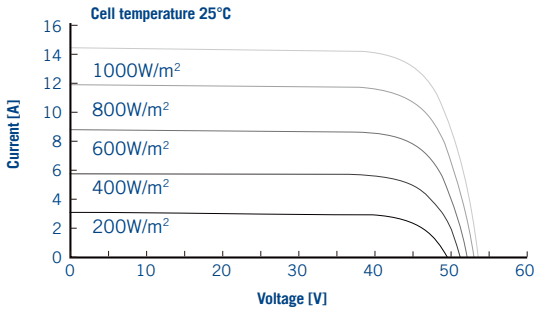
## Engineering Drawings



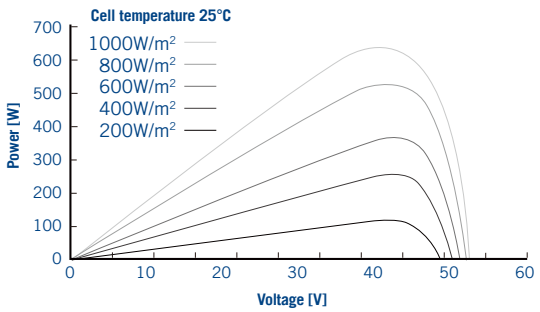

Unit: mm




## I-V CURVES OF PV MODULE (645W)




## P-V CURVES OF PV MODULE (645W)




**Declaration:** With the technical progress and product updates, there exists a deviation between the technical parameter of the Topco Solar's future products and the technical parameter in this specification, The Topco Solar reserves the right to adjust the technical parameter at any time without notifying the customers, Topco Solar reserves the final right of interpretation.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