

## TSM60-4-135M-145M

**60CELL**

Mono PERC Module

**135M-145Wp**

Power Output Range

**1000VDC**

Maximum System Voltage

**18.4%**

Maximum Efficiency

## KEY SALIENT FEATURES



Global, Tier 1 manufacturer brand, with independently certified state-of-the-art automated manufacturing



Industry leading lowest thermal co-efficient of power



Excellent low irradiance performance



Excellent PID resistance



Dual stage 100% EL Inspection warranting defect-free product



Module Imp binning radically reduces string mismatch losses



Excellent wind load 2400Pa & snow load 5400Pa under certain installation method



Comprehensive product and system certification

- ◆ IEC61215:2016; IEC61730-1/-2:2016;
- ◆ ISO 9001:2015 Quality Management System
- ◆ ISO 14001:2015 Environmental Management System
- ◆ ISO 45001:2018 Occupational Health and Safety Management System

## About Twinsel

Founded in 2002, Twinsel is a leading, excellent manufacturer of solar modules and solar off-grid systems. In 2022 its annual production capacity of solar modules reaches 2GW, Twinsel is committed to providing our customers with a wide range of services from consulting, scouting the site, design construction, financing to smart transportation. Our dream is to turn the desert into an oasis and the night into light, Bring our customers better price, more stable quality and better use experience.

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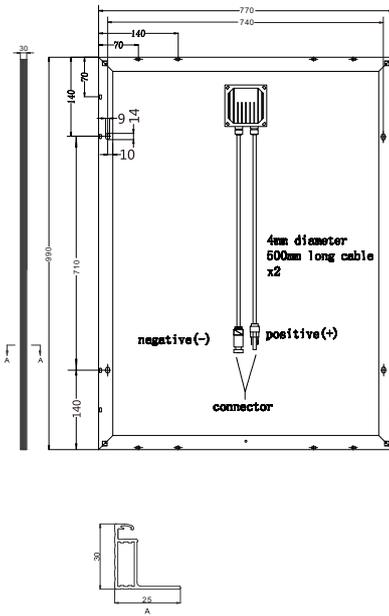
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## LINEAR PERFORMANCE WARRANTY

12 Year Product Warranty / 25 year Linear Power Warranty



### Dimensions of PV Module Unit: mm



### ELECTRICAL DATA(STC)

| Model Number                  | TSM60-4-135M | TSM60-4-140M | TSM60-4-145M |
|-------------------------------|--------------|--------------|--------------|
| Rated Power in Watts-Pmax(Wp) | 135          | 140          | 145          |
| Open Circuit Voltage-Voc(V)   | 21.45        | 21.8         | 22.15        |
| Short Circuit Current-Isc(A)  | 7.78         | 7.9          | 8.02         |
| Maximum Power Voltage-Vmpp(V) | 18.31        | 18.66        | 19.01        |
| Maximum Power Current-Impp(A) | 7.39         | 7.51         | 7.63         |
| Module Efficiency(%)★         | 17.7         | 18.4         | 19           |

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5 according to EN 60904-3.

★Module Efficiency(%):Round-off to the nearest number

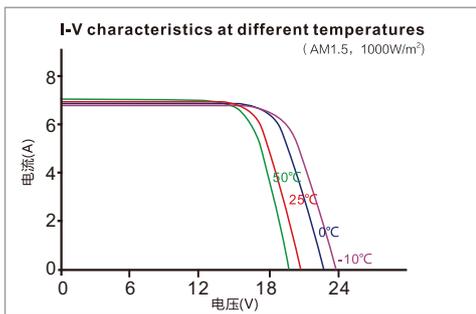
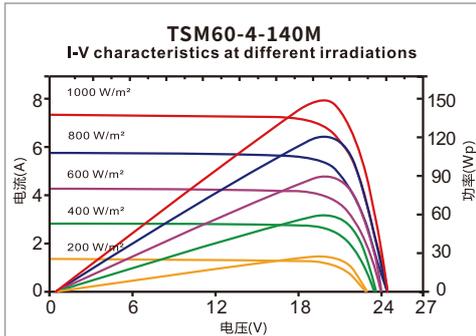
### ELECTRICAL DATA(NMOT)

| Model Number                  | TSM60-4-135M | TSM60-4-140M | TSM60-4-145M |
|-------------------------------|--------------|--------------|--------------|
| Maximum Power Pmax(Wp)        | 102.3        | 106.1        | 110          |
| Open Circuit Voltage-Voc(V)   | 19.95        | 20.27        | 20.6         |
| Short Circuit Current-Isc(A)  | 6.38         | 6.48         | 6.58         |
| Maximum Power Voltage-Vmpp(V) | 17.01        | 17.32        | 17.64        |
| Maximum Power Current-Impp(A) | 6.02         | 6.13         | 6.24         |

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

### MECHANICAL DATA

|                    |   |
|--------------------|---|
| Solar cells        | Monocrystalline   |
| Cell configuration | 60 cells (4x15)   |
| Module dimensions  | 990x770x30mm  |
| Cables             | 4.0mm <sup>2</sup> (12AWG), Positive (+), Negative (-) 500mm (Connector Included) |
| Substrate          | White Back-sheet  |
| Connector          | Twinsel PV-SY02, IP68   |
| J-Box              | SY012, IP68, 1000VDC, 2 Schottky bypass diodes                                    |
| Weight             | 7.5kg   |
| Frame              | Anodized Aluminium Alloy type 6005-2T6  |



### TEMPERATURE&MAXIMUM RATINGS

|  |               |
|--|---------------|
| Nominal Module Operating Temperature(NMOT) | 44°C ±2°C     |
| Temperature Coefficient of Voc             | -0.25%/°C     |
| Temperature Coefficient of Isc             | 0.04%/°C      |
| Temperature Coefficient of Pmax            | -0.34%/°C     |
| Operational Temperature                    | -40°C ~ +85°C |
| Maximum System Voltage                     | 1000VDC       |
| Max Series Fuse Rating                     | 15A           |
| Limiting Reverse Current                   | 15A           |

### PACKAGING CONFIGURATION

|                                       | 40ft(HQ)Aluminum Frame |
|---------------------------------------|------------------------|
| Number of modules per container       | 2134                   |
| Number of modules per pallet          | 2                      |
| Number of modules per container       | 1067                   |
| Packaging box dimensions(L×W×H) in mm | 1010x80x795            |
| Box gross weight [kg]                 | 16                     |

Our Partners: