

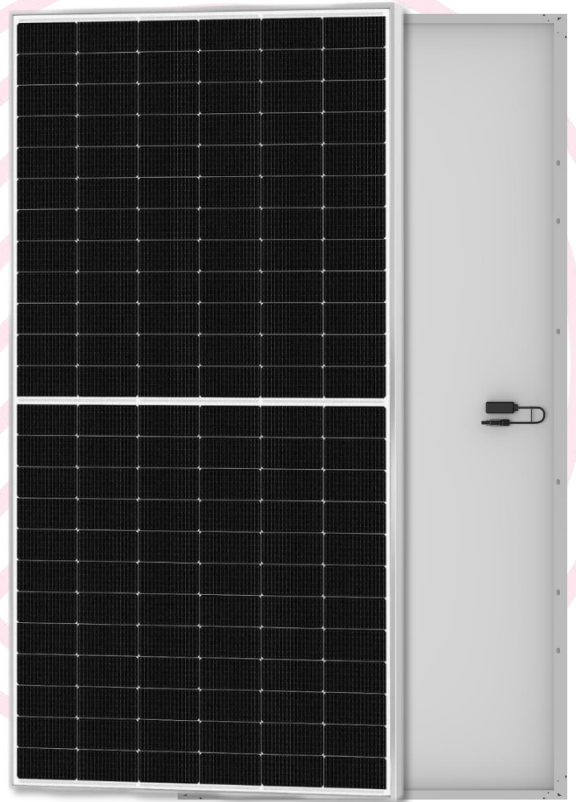
## TOPCon N type Mono-crystalline 630-650Watt

0~+5W POWER TOLERANCE

High efficiency TOPCon N - type solar module



16/18BB



### Module characteristics



**Strong Mechanical Strength**  
Passes the wind load test of 2400Pa and the snow load test of 5400Pa.



**Low attenuation rate**  
N-type, good reliability and lower LID/LETID attenuation rate.



**PID resistance**  
The attenuation probability of PID phenomenon is minimized through solar cell production technology optimization and raw material control.



**Harsh environmental adaptation**  
Robust design for demanding climate conditions.

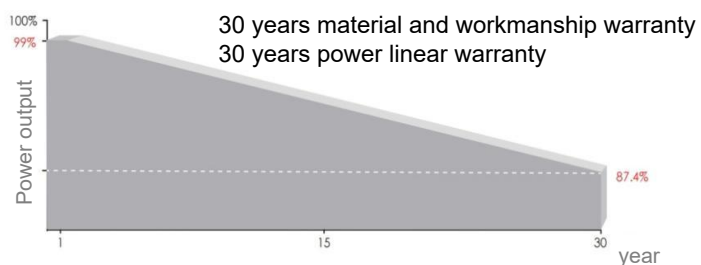


**Multiple busbar and Half cell technique**  
More light utilization and current collection capabilities, effectively improving product power output and reliability.



### Long and reliable quality assurance

IEC61215(2016), IEC61730(2016)  
ISO9001:2015: Quality management system  
ISO14001:2015: Environmental management system  
ISO45001:2018: Occupational health and safety management system



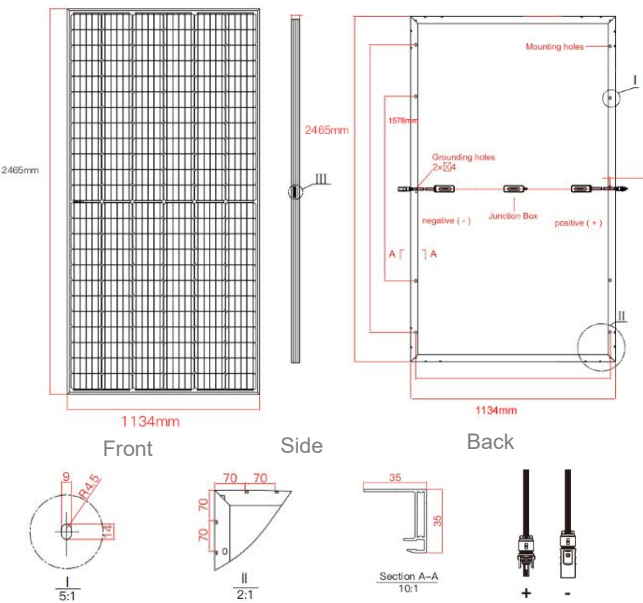
Linear attenuation of 0.4% per year from the 2nd to 30th year.

# Electrical Parameters

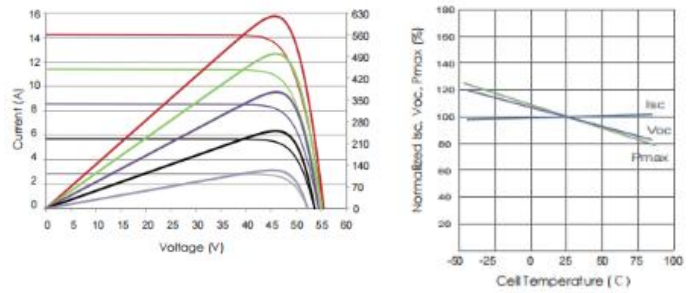
| Model Type                         | ESM-630T      |       | ESM-635T |       | ESM-640T |       | ESM-645T |       | ESM-650T |       |
|------------------------------------|---------------|-------|----------|-------|----------|-------|----------|-------|----------|-------|
|                                    | STC           | NOCT  | STC      | NOCT  | STC      | NOCT  | STC      | NOCT  | STC      | NOCT  |
| Maximum Power (Pmax)               | 630           | 473   | 635      | 477   | 640      | 481   | 645      | 485   | 650      | 489   |
| Open Circuit Voltage (Voc)         | 55.93         | 53.12 | 56.08    | 53.27 | 56.23    | 53.42 | 56.38    | 53.57 | 56.53    | 53.72 |
| Short Circuit Current (Isc)        | 14.37         | 11.60 | 14.44    | 11.67 | 14.51    | 11.74 | 14.58    | 11.81 | 14.65    | 11.89 |
| Maximum Power Voltage (Vmp)        | 46.06         | 42.83 | 46.18    | 42.95 | 46.28    | 43.05 | 46.38    | 43.15 | 46.48    | 43.25 |
| Maximum Power Current (Imp)        | 13.67         | 11.04 | 13.75    | 11.10 | 13.83    | 11.17 | 13.91    | 11.24 | 13.98    | 11.31 |
| Module Efficiency - $\eta_m$ (%)   | 22.53         |       | 22.71    |       | 22.89    |       | 23.07    |       | 23.25    |       |
| Operational Temperature            | -40°C ~ +85°C |       |          |       |          |       |          |       |          |       |
| Maximum System Voltage             | 1500VDC       |       |          |       |          |       |          |       |          |       |
| Maximum Series Fuse Rating         | 25A           |       |          |       |          |       |          |       |          |       |
| Power Tolerance                    | 0 ~ +5W       |       |          |       |          |       |          |       |          |       |
| Temperature Coefficient of Pmax    | -0.360%/°C    |       |          |       |          |       |          |       |          |       |
| Temperature Coefficient of Voc     | -0.260%/°C    |       |          |       |          |       |          |       |          |       |
| Temperature Coefficient of Isc     | +0.04%/°C     |       |          |       |          |       |          |       |          |       |
| Nominal Operating Cell Temperature | 45 ± 2°C      |       |          |       |          |       |          |       |          |       |
| Safety Class                       | Class II      |       |          |       |          |       |          |       |          |       |
| Max Load (Front/back)              | 5400Pa/2400Pa |       |          |       |          |       |          |       |          |       |

STC: Irradiance 1000W/m<sup>2</sup> Cell temperature 25°C Atmospheric quality = 1.5  
 NOCT: Irradiance 800W/m<sup>2</sup> Ambient temperature 20°C Atmospheric quality = 1.5 Wind speed 1m/S

## Mechanical Diagrams



## Curve



## Packing Details:

36pcs/pallet

40GP: 16 pallets/HQ, 572pcs/40'HQ

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## Specification

|                    |                                |
|--------------------|--------------------------------|
| Cell type          | N type mono crystalline 182mm  |
| Half-cell quantity | 156pcs (26×6)                  |
| Dimension          | 2465×1134×30mm                 |
| Weight             | 31kg±3%                        |
| Glass              | 3.2mm                          |
| Frame              | Silver Anodized Aluminum Alloy |
| Junction Box       | IP68                           |
| Cable              | 400mm (can be customized)      |