

# REDSOLAR

## M10-MBB TOPCon Mono Bifacial Module

(120Half Cells)



12 years Product warranty



30 years Linear power warranty

Integrated Solar Manufacturing & Technology Since 1964



**470- 490W** /Output power

**22.63%** /Maximum efficiency

**0~+5W** /Power tolerance



### PID Resistant

Strict selection of encapsulation materials eliminates PID risk.



### Better Performance

30-year linear warranty, 1% decline in the first year an average annual decline of 0.40% over the first 30 years, increased return on investment No Boron-oxygen LID (Light Induced Degradation).



### High Returns

The n-type module has lower annual attenuation, better photoelectric conversion efficiency and temperature coefficient benefit, bifaciality can reach 80%.



### Multi Busbar Technology

Better light utilization and current collection ability, effectively improve the power output and reliability.

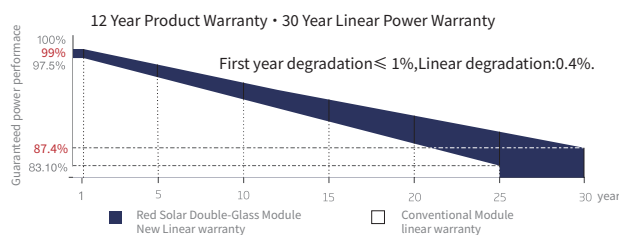
### Comprehensive product certification

- IEC 61215 IEC61730
- IEC TS 62804 (PID Resistant)
- IEC 62716 (Ammonia Corrosion)
- IEC 61701 (Salt Spray Corrosion)

- IEC TS 62941 (PV quality Management System)
- ISO9001:2015 (Quality Management System)
- ISO14001 (Environmental Management System)
- OHSAS18001 (Occupational Health and Safety Management System)



### Excellent Power Guarantee



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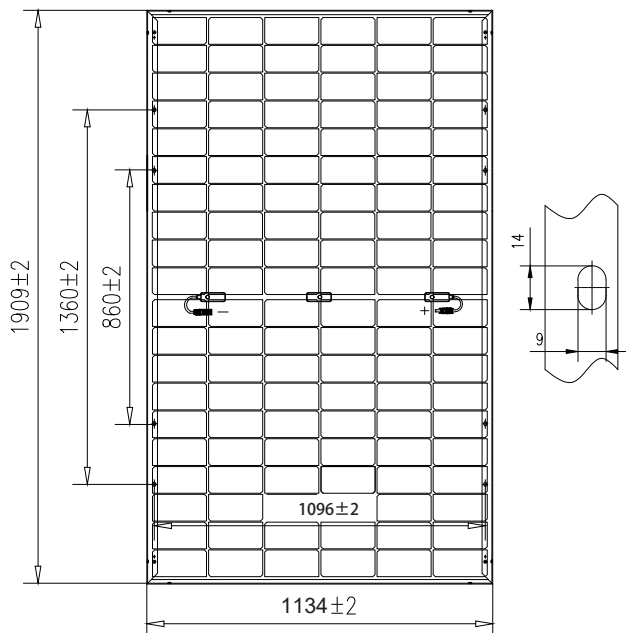
### Model of PV Module

CETC-xxxT(GDF)/120

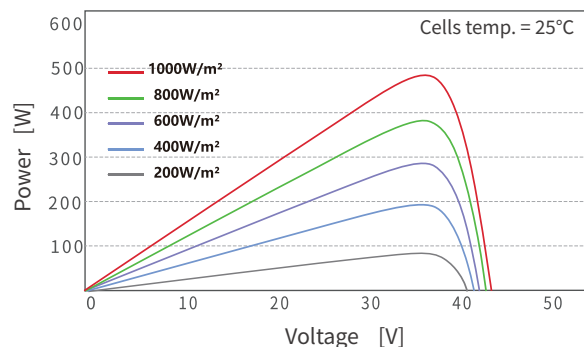
### Power Range

470-490

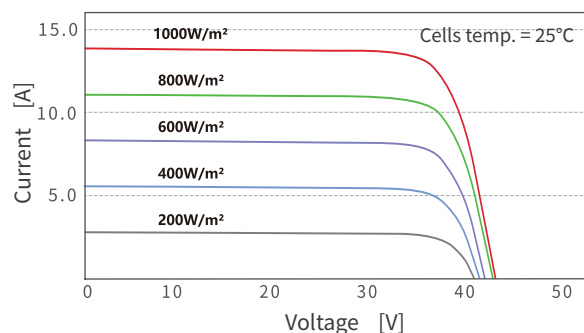
PV module dimensions (mm)



### P-V Curves of PV Module



### I-V Curves of PV Module



### Electrical Parameter(STC)

| Model                     | 470T                                              | 475T   | 480T   | 485T   | 490T   |
|---------------------------|---------------------------------------------------|--------|--------|--------|--------|
| Maximum power (W)         | 470                                               | 475    | 480    | 485    | 490    |
| Working point voltage (V) | 35.80                                             | 35.95  | 36.14  | 36.33  | 36.51  |
| Working point current (A) | 13.13                                             | 13.21  | 13.28  | 13.35  | 13.42  |
| Open circuit voltage (V)  | 42.33                                             | 42.46  | 42.69  | 42.72  | 42.82  |
| Short circuit current (A) | 14.25                                             | 14.32  | 14.37  | 14.44  | 14.49  |
| PV module efficiency      | 21.71%                                            | 21.94% | 22.17% | 22.40% | 22.63% |
| Standard test conditions  | AM1.5, Irradiance 1000w/m², Cell Temperature 25°C |        |        |        |        |

### RearSide Power gain

|     | Maximum Power  | 494Wp  | 499Wp  | 504Wp  | 509Wp  | 515Wp  |
|-----|----------------|--------|--------|--------|--------|--------|
| 5%  | Efficiency STC | 22.80% | 23.04% | 23.28% | 23.52% | 23.77% |
|     | Maximum Power  | 541Wp  | 546Wp  | 552Wp  | 558Wp  | 564Wp  |
| 15% | Efficiency STC | 24.97% | 25.23% | 25.50% | 25.76% | 26.03% |
|     | Maximum Power  | 588Wp  | 594Wp  | 600Wp  | 606Wp  | 613Wp  |
| 25% | Efficiency STC | 27.14% | 27.43% | 27.72% | 28.00% | 28.29% |

The Electrical performance parameters are neither just referred to one PV panel, nor are a part of the contract; They are only used as reference.

### Mechanical Parameters

|                          |                                                  |
|--------------------------|--------------------------------------------------|
| Module size              | 1909*1134*30mm                                   |
| Number of solar cells    | 120Cells (2*6*10)                                |
| Weight                   | 27Kg ±5%                                         |
| Junction Box             | IP68, 3 diodes                                   |
| Cables                   | 4mm², +:300mm/ -:200mm (Customizable)            |
| Front plate glass        | 2.0mm,Ultra white AR coated semi-toughened glass |
| Rear plate glass         | 2.0mm, semi-toughened glass                      |
| Static load on the front | 5400Pa                                           |
| Static load on the back  | 2400Pa                                           |

### Packaging&Transport

|                           |                              |
|---------------------------|------------------------------|
| 40'HQ container transport | 36 Pcs/box × 24 box =864 Pcs |
|---------------------------|------------------------------|

### Temperature Parameter

|                                                       |            |
|-------------------------------------------------------|------------|
| NMOT                                                  | 42±2°C     |
| Temperature coefficient of maximum power(Pmax)        | -0.29%/°C  |
| Temperature coefficient of open circuit voltage(Voc)  | -0.25%/°C  |
| Temperature coefficient of short circuit current(Isc) | +0.045%/°C |

### Maximum Ratings

|                            |           |
|----------------------------|-----------|
| Working temperature        | -40~+85°C |
| Maximum system voltage     | 1500VDC   |
| Maximum fuse rated current | 30A       |

