



Top 10 of Most Competitive Chinese Public Listed Companies.  
Top 10 of World's Biggest Glass Makers by PLIMSOLL.  
CCTV Finance & Economics 50 Indexes Listed Company.  
Top 500 of Asian Brand Assessment System.

We are a full member of PV Cycle Association. This association has established a voluntary take-back and recycling program for end-of-life solar modules in 25 years.

30 years manufacturing experience. A complete solar PV industrial chain, covering poly-silicon, ingot, wafer, solar glass, solar cell and solar module. Manufacturing with standard ISO 9001:2008&ISO 14001:2004 to ensure CSG's solar modules with excellent raw materials and exquisite process.

Utilizing green power of Three Gorges Dam in Yangzi river instead of coal, with the first closed-loop polysilicon plant, CSG devotes to making green energy by green energy.

Modules certified by TUV and ETL testing organization in the extreme conditions (temperature, load & impact) with good performance.

The good weak light performance (morning, evening and cloudy day) has been tested and approved by professional third-party.

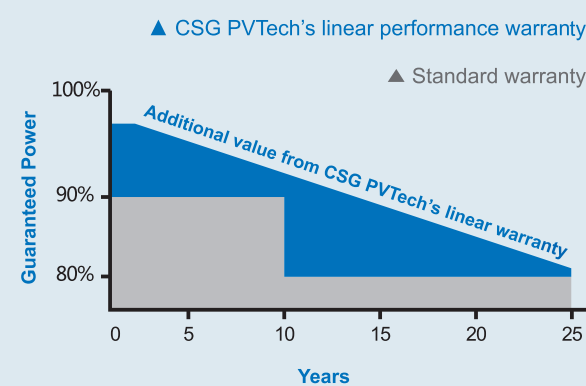
Guarantee from 0 to +6W as power tolerance, customers can obtain 5.8% power more than conventional output.

100% EL test before and after lamination, and finished products EL test, providing higher quality assurance.

Pass the Salt-mist Corrosion Test, Fire test, Ammonia Resistance Test, Potential Induced Degradation(PID) Test and Carbon Footprint assessment in TUV.



High Efficiency  
Polycrystalline Solar Module



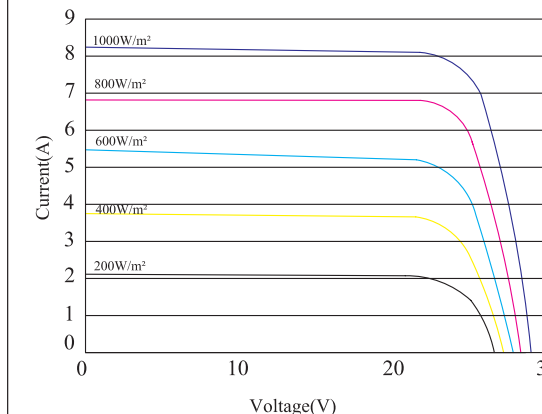
For a period of twenty-five (25) years commencing on the Warranty Start Date, loss of power output of the nominal power output measured at Standard Test Conditions (STC) for the Product(s) shall not exceed:

1. For Polycrystalline Products: 2% in the first year, thereafter 0.67% per year, ending with 82% in the 25th year after the Warranty Start Date.
2. For Monocrystalline Products: 3% in the first year, thereafter 0.67% per year, ending with 81% in the 25th year after the Warranty Start Date.

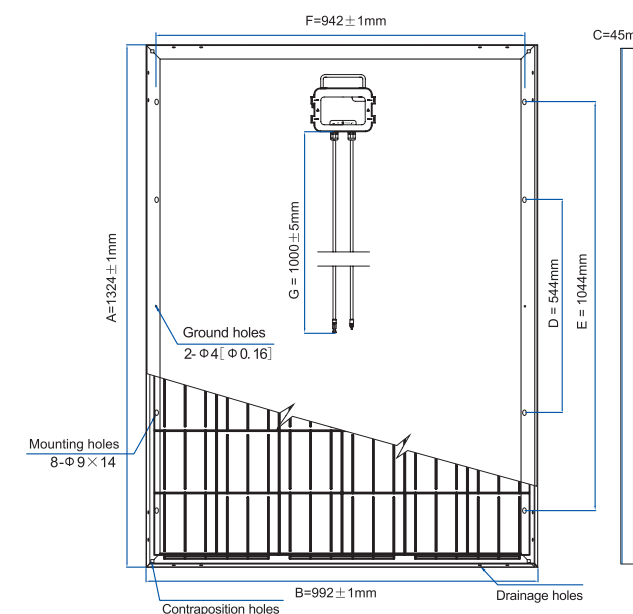
The Warranty Start Date shall be defined as the date of the Bill of Lading date.

## I-V Curves

I-V Curves of PV module CSG 190W at different light power



## Dimensions



## Typical Electrical Characteristics

|                                    |   |       |       |       |       |       |
|------------------------------------|---|-------|-------|-------|-------|-------|
| Solar cells:                       | Poly-Crystalline 156X156mm<br>48pcs.(6×8) —3 bus bars |       |       |       |       |       |
| Max-power                          | 190Wp   | 195Wp | 200Wp | 205Wp | 210Wp | 215Wp |
| Power Tolerance                    | 0 to +6W  |       |       |       |       |       |
| Voltage at Pmax (Vmp)              | 24.3V   | 24.5V | 24.7V | 24.9V | 25.1V | 25.3V |
| Current at Pmax (Imp)              | 7.83A   | 7.95A | 8.10A | 8.23A | 8.37A | 8.50A |
| Open-Circuit Voltage (Voc)         | 29.7V   | 30.1V | 30.2V | 30.4V | 30.6V | 30.9V |
| Short-Circuit Current (Isc)        | 8.38A   | 8.49A | 8.76A | 8.91A | 9.05A | 9.20A |
| Max-System Voltage (VDC)           | 1000V(IEC), 600V(UL)                                  |       |       |       |       |       |
| Cell Efficiency                    | 16.4%   | 16.9% | 17.3% | 17.7% | 18.2% | 18.6% |
| Module Efficiency                  | 14.5%   | 14.8% | 15.2% | 15.6% | 16.0% | 16.4% |
| No. of Bypass Diodes (pcs.)        | 3   |       |       |       |       |       |
| Max. Series Fuse (A)               | 12A   |       |       |       |       |       |
| Temperature Coefficient of Pmax    | -0.45%/°C   |       |       |       |       |       |
| Temperature Coefficient of Voc     | -0.34%/°C   |       |       |       |       |       |
| Temperature Coefficient of Isc     | 0.05%/°C  |       |       |       |       |       |
| Nominal Operating Cell Temperature | 45±2°C  |       |       |       |       |       |

\*STC Conditions (1000W/m²; 1.5 AM and 25°C Cell temperature)

## Mechanical Characteristics

|   |   |
|---|---|
| Cable type, Cross-sectional area and Length | Φ=4mm², L=1000±5mm  |
| Type of Connector                           | Compatible type MC4   |
| Dimension A×B×C                             | 1324×992×45mm (52.13×39.06×1.77 inch)   |
| Weight                                      | 16.0kg (35.2lb)   |
| No. of Draining Holes In Frame              | 16  |
| Construction                                | Glass: High Transmission, Low Iron, Tempered<br>Glass 3.2mm<br>Encapsulation: EVA<br>Back side: White |
| Junction Box (protection degree)            | IP 67   |
| Frame                                       | Clear anodized aluminum alloy type 6063T5 frame   |

## Qualification Test Parameters

|                               |                                |
|-------------------------------|--------------------------------|
| Dielectric Insulation Voltage | 6000V DC max                   |
| Operating Temperature         | -40°C to +85°C                 |
| Max load                      | 5400Pa                         |
| Hailstone impact              | 25mm (1 inch) at 23m/s (52mph) |
| Tire safety class             | Class C                        |

## Packaging Configuration

|                              |                          |                |
|------------------------------|--------------------------|----------------|
| Packaging Configuration      | 22pcs./box and 2pcs./box |                |
| Quantity of Big Box/Pallet   | 1 box/pallet             | 1 boxes/pallet |
| Quantity of Small Box/Pallet | /                        | 9 boxes/pallet |
| Loading Capacity             | 704pcs./40'HQ            | 320pcs./20'GP  |

► Caution: Read Safety And Installation Instructions Before Using This Product

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