



CSG bbbM2 (bbb=220 W-240 W)

Typical Electrical Characteristics

Solar cells	Poly-Crystalline Silicon 156 × 156mm 60pcs(6 × 10)—2 bus bars				
Max-power	220Wp	225Wp	230Wp	235Wp	240Wp
Power Tolerance	0 to +3%				
Voltage at Pmax(Vmp)	30.0 V	30.1V	30.3 V	30.4 V	30.7 V
Current at Pmax(Imp)	7.33 A	7.48 A	7.60A	7.73 A	7.81 A
Open-Circuit Voltage(Voc)	36.6 V	36.8 V	37.0V	37.2 V	37.4 V
Short-Circuit Current(Isc)	7.98 A	8.10 A	8.20 A	8.32 A	8.45 A
Max-System Voltage(VDC)	1000 V(IEC),600V (UL)				
Cell Efficiency	15.3%	15.6%	16.0%	16.3%	16.6%
Module Efficiency	13.5%	13.8%	14.1%	14.4%	14.7%
No.of Bypass Diodes(pcs.)	3				
Max.Series Fuse(A)	15A				
Temperature Coefficient of pmax	-0.48%/°C				
Temperature Coefficient of Voc	-0.34%/°C				
Temperature Coefficient of Isc	0.02%/°C				
Nominal Operating Cell Temperature	47 ± 2 °C				



Mechanical Characteristics

Cable type,Diameter and Length	Φ=4mm ² ,L=900mm
Type of Connector	Compatible type MC4
Dimension A × B × C	1640 × 992 × 45mm (64.57 × 39.06 × 1.77inch)
Weight	19.6kg (43.1lb)
No.of Draining Holes In Frame	16
Construction	Glass:High Transmission,Low Iron, Tempered Glass 3.2mm Encapsulation:EVA Back side:Tedlar,white
Junction Box	IP 65 Rated
Frame	Clear anodized aluminum alloy type 6063T5 frame

Qualification Test Parameters

Dielectric Insulation Voltage	3000 VDC max
Operating Temperature	-40°C to +85°C
Max load	5400 Pa
Hailstone impact	25 mm (1 inch) at 23 m/s (52mph)

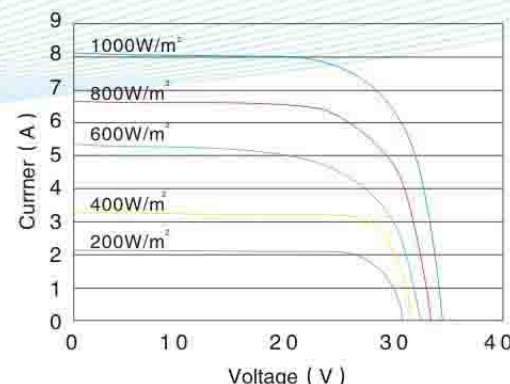
Packaging Configuration

Packaging Configuration	22 pcs./box	2 pcs./box	
Quantity/Pallet	1 box/pallet	18 box/pallet	20 box/pallet
Loading Capacity	616pcs./40' HQ	216pcs./20' GP	560pcs./40' HQ

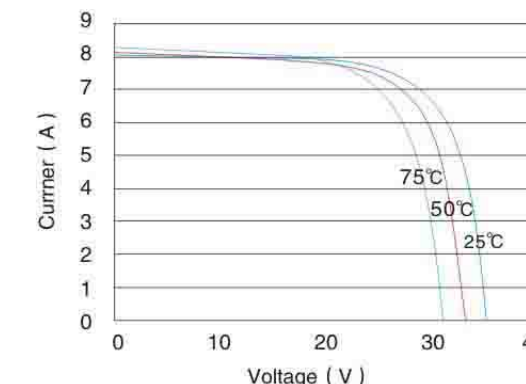
*STC Conditions (1000W/m²; 1.5AM and 25°C Cell temperature)

I-V Curves

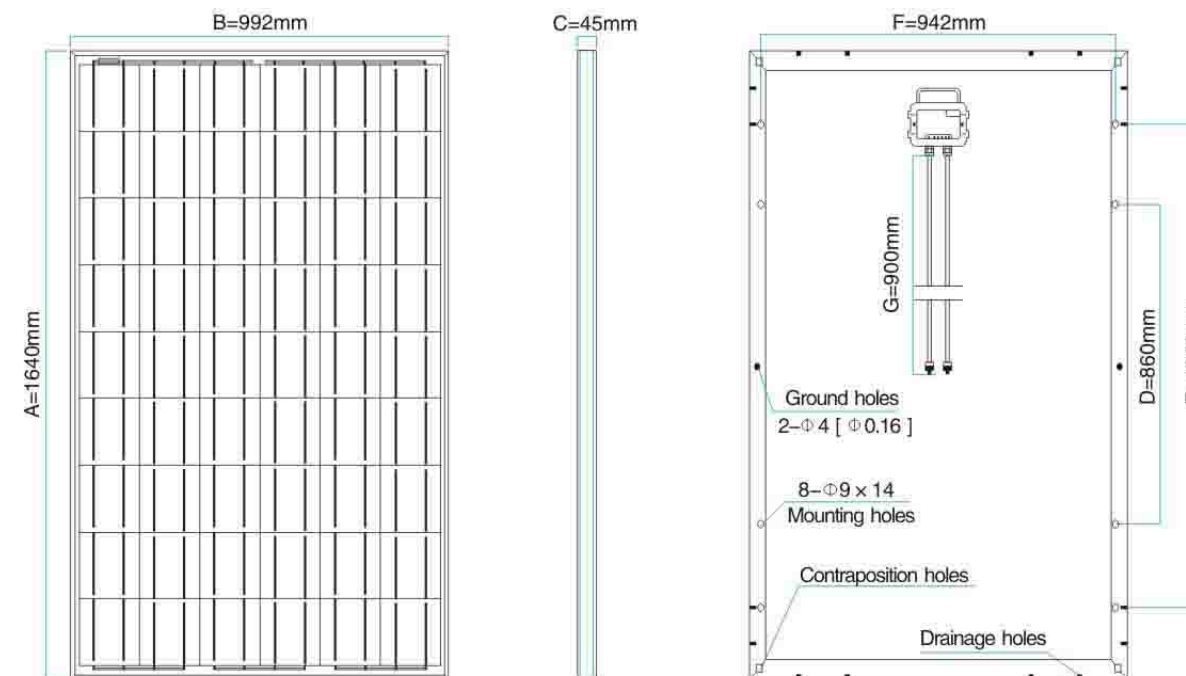
I-V Curves of PV module CSG 230W at different light power



I-V Curves of PV module CSG 230W at various cell temperatures



Dimensions



Dimensions A × B × C	1640 × 992 × 45mm (64.57 × 39.06 × 1.77inch)
Installation Hole D × E × F	860 × 1360mm × 942mm (33.86 × 53.54 × 37.09inch)
Cable Length G	900mm (35.43inch)

High Efficiency Polycrystalline Solar Modules

WARRANTY

- ▶ Product: 5 years
- ▶ Power production: 90% 10years
80% 25years

