

Green World Energy
 440W/445W/450W/455W/460W
 GW78M-HFD
 MBB HALF-CELL MONO PV MODULE







QUALITY MAKER

COMPREHENSIVE CERTIFICATES

IEC61215 / IEC61730 / IEC61701 / IEC62716 / IEC62804
 ISO 9001: 2015 Quality management systems;
 ISO 14001: 2015 Environmental management systems;
 OHSAS 18001: 2007 Occupational health and safety management systems;



KEY SALIENT FEATURES

-  High output power
-  Better power generation under shadows
-  Strong anti-hot spot ability
-  Strong mechanical load capacity
-  Super strong frame
-  1500V system voltage

GREEN WORLD WORKS LLC

Founded in 2013, Green world is a manufacturer of high - performance photovoltaic products the company's business covers modules , photovoltaic power stations and EPC , Green World used extensively in ground mounted power plants , commercial & industrial rooftop PV systems and residential rooftop PV systems

LINEAR PERFORMANCE WARRANTY

- 12 Years Manufacturing Warranty
- 12 Years 90% Power Output
- 25 Years 80% Power Output



QUALIFICATIONS AND CERTIFICATES

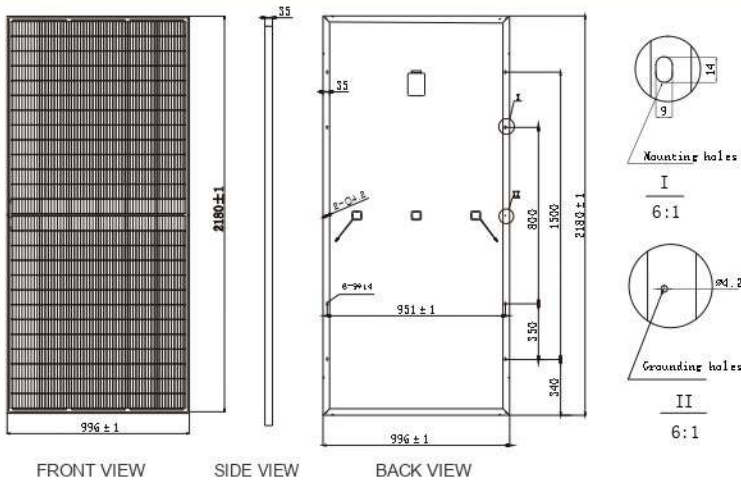


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GW 78M-HFD

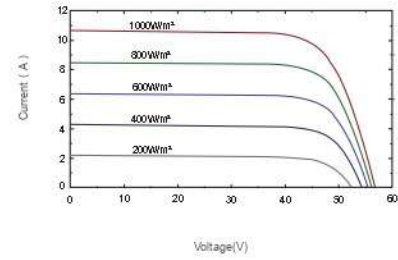
QUALITY MAKER

MECHANICAL DRAWINGS

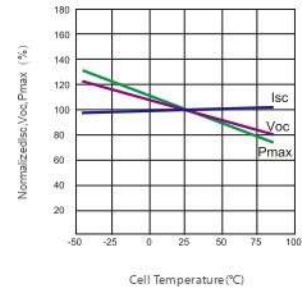


I-V CURVES

I-V Curves at GW445-78M-HFD at different Irradiance
Cell Temp : 25°C



Power voltage current curve at different temperature



MECHANICAL SPECIFICATION

| | |
|-------------------|---|
| Cell Type | Mono Crystalline 158.75x79.375mm |
| Number Of Cells | 156 (6x26) |
| Dimensions(AxBxC) | 2180x996x35mm |
| Weights | 24.5kg |
| Glass | 3.2mm Tempered Low Iron Glass |
| Aluminium Frame | Anodised Aluminium |
| Junction Box | Split Junction Box (IP68 ,three diode) |
| Connector | Mc4 Compatible |
| Output Cables | 4.0mm ² , +300mm, -300mm Customized Length |

PACKING CONFIGURATION

| | |
|-----------------------|--------|
| Container | 40' HQ |
| Pieces Per Pallet | 30 |
| Pallets Per Container | 20 |
| Pieces Per Container | 600 |

ELECTRICAL CHARACTERISTICS

| Module Type | 440W | | 445W | | 450W | | 455W | | 460W | |
|--|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT | STC | NOCT |
| Maximum Power At STC(Pmax) | 440W | 330.7W | 445W | 334.5W | 450W | 338.3W | 455W | 342.0W | 460W | 319.5W |
| Short Circuit Current(Isc) | 10.57A | 8.56A | 10.64A | 8.61A | 10.71A | 8.67A | 10.77A | 8.72A | 10.84A | 8.67A |
| Open Circuit Voltage(Voc) | 53.8V | 50.2V | 54.1V | 50.5V | 54.4V | 50.7V | 54.7V | 51.0V | 55.0V | 47.6V |
| Maximum Power Current(Imp) | 10.02A | 8.11A | 10.09A | 8.17A | 10.16A | 8.22A | 10.22A | 8.26A | 10.29A | 8.22A |
| Maximum Power Voltage(Vmpp) | 43.9V | 40.8V | 44.1V | 41.0V | 44.3V | 41.2V | 44.5V | 41.4V | 44.7V | 38.9V |
| Module Efficiency | 20.26% | | 20.49% | | 20.73% | | 20.96% | | 21.19% | |
| Power Tolerance | 0~+5W | | 0~+5W | | 0~+5W | | 0~+5W | | 0~+5W | |
| Maximum System Voltage | VDC 1500V | | | | | | | | | |
| Maximum Series Fuse | 20A | | | | | | | | | |
| Increased Snowload Acc.to Iec 61215 | 5400Pa | | | | | | | | | |
| Operating Temperature | -40~+85°C | | | | | | | | | |
| Number Of Bypass Diodes | 3 | | | | | | | | | |
| Nominal Operating Cell Temperature(Noct) | 45°C±2°C | | | | | | | | | |
| Temperature Coefficient Of Pmax | -0.36%/°C | | | | | | | | | |
| Temperature Coefficient Of Voc | -0.29%/°C | | | | | | | | | |
| Temperature Coefficient Of Isc | 0.05%/°C | | | | | | | | | |

STC: 1000W/m² irradiance, 25°C cell temperature, AM1.5. NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, wind speed 1m/s.



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