



90W Photovoltaic modules 90J-V

This line of modules is the direct result of over three decades of design, manufacturing and use. Attending to every detail in the design and manufacture of our products, our process controls and testing methods have optimized module life and electrical energy production.

Ameresco Solar's off-grid module line offers the following features and benefits:

► **Built to last**

From mountaintops to off-shore platforms, on weather stations in the bitter cold of Antarctica and on telephone signal repeaters in the hot Australian outback, the technology has been proven in the harshest environments.



► **Accessible junction box for off-grid connections**

J-type junction box has accessible terminals for easier module interconnections in off-grid applications, and it allows fitting cable glands for various cross-sections.



► **Thick, durable scratch resistant back sheet**

The thick back sheet provides extra insulation and increased resistance to protect your module against rough handling. The white polyester material lasts longer and increases energy production.



► **High reliability**

Cell interconnections and diode placement use well-established industry practice and are field-proven to provide excellent reliability.

► **Quality and certifications**

ISO 9001

ISO 9001 factory certification ensures that our manufacturing facilities use proven manufacturing and quality control processes.



Certified to UL1703 3rd Edition and ULC 1703-01
Certified for use in Class I, Division 2, Groups ABCD
Hazardous locations

Electrical characteristics

	(1) STC 1000W/m ²	(2) NOCT 800W/m ²
Maximum power (P _{max})	90W	65W
Voltage at P _{max} (V _{mpp})	18.9V	16.9V
Current at P _{max} (I _{mpp})	4.76A	3.82A
Short circuit current (I _{sc})	5.04A	4.12A
Open circuit voltage (V _{oc})	22.3V	20.2V
Module efficiency	13.1% / 13.9%	
Tolerance (P _{max})	-0/+3%	
Nominal voltage	12V	
Efficiency reduction at 200W/m ²	<5% reduction (efficiency 13.2%)	
Limiting reverse current	5.04A	
Temperature coefficient of I _{sc}	0.105%/°C	
Temperature coefficient of V _{oc}	-0.360%/°C	
Temperature coefficient of (P _{max})	-0.45%/°C	
(3) NOCT	47±2°C	
Maximum series fuse rating	20A	

Maximum system voltage **600V (U.S. NEC)**

- Values at Standard Test Conditions (STC): 1000W/m² irradiance, AM1.5 solar spectrum and 25°C module temperature
- Values at 800W/m² irradiance, Nominal Operation Cell Temperature (NOCT) and AM1.5 solar spectrum
- Nominal Operation Cell Temperature: Module operation temperature at 800W/m² irradiance, 20°C air temperature, 1m/s wind speed

Mechanical characteristics

Solar cells	36 crystalline silicon cells in series
Front cover	High transmission 3.2mm (1/8th in) glass
Encapsulant	EVA
Back cover	White polyester
Frame	Silver anodized aluminum
Diodes	Two Schottky bypass diodes included
Junction box	IP65 with 4 terminal screw connection block; accepts PG 13.5, M20 13mm (1/2") conduit, or cable fittings accepting 6-12mm diameter cable. Terminals accept 2.5-10mm ² (8-14 AWG) wire
Dimensions	1204 x 537 x 50mm / 47.4 x 21.1 x 2in
Weight	7.7kg / 17lbs

All dimensional tolerances within ±1% unless otherwise stated.

Warranty*

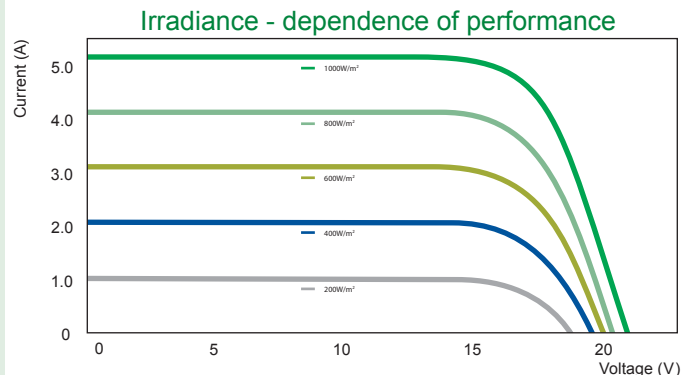
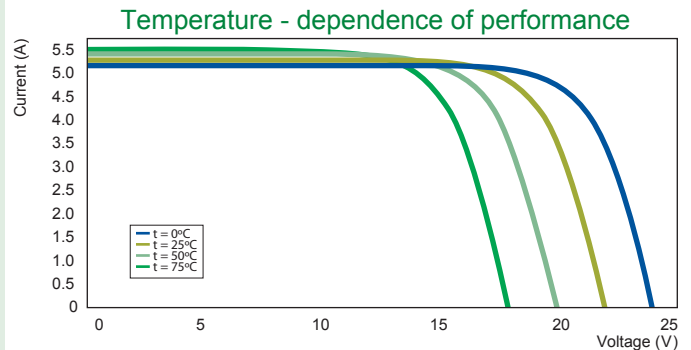
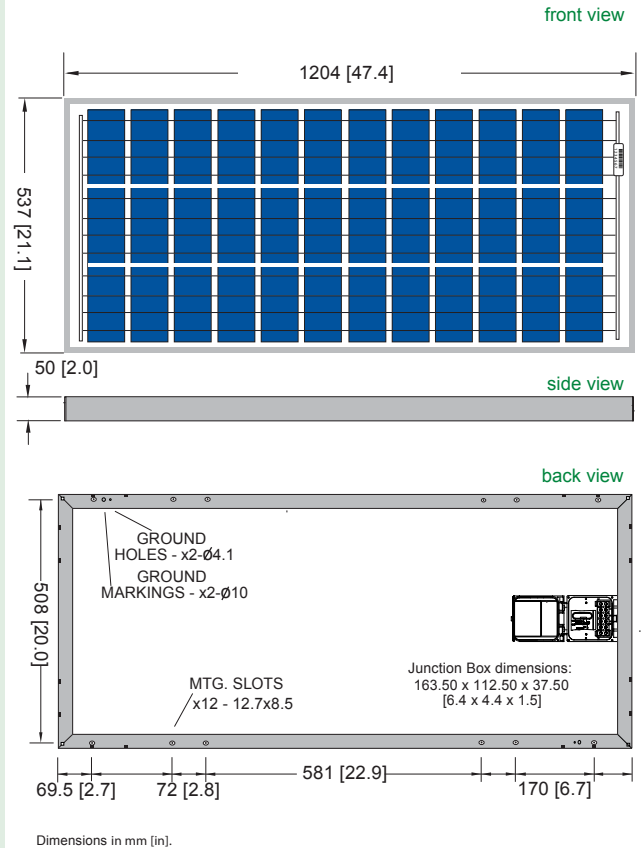
- ▶ Free from defects in materials and workmanship for 2 years
- ▶ 90% min. power output over 12 years
- ▶ Optional 25 years available

* Refer to limited warranty certificate for terms and conditions.

Certification

Listed to UL1703 3rd Edition & ULC ORD-C1703-01 Standard for Safety by CSA Module Fire Performance Type 4 (for USA) or Class C fire rating (for Canada)

Approved by CSA according to CAN/CSA C22.2 No. 213-17 and UL 12.12.01-Ninth Edition for use in Class I, Division 2, Groups ABCD Hazardous (Classified) Locations



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