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 sections.

► **Thick, durable scratch resistant back sheet**
The thick back sheet provides extra insulation and increased resistance to protect your module against rough handling. Made of white polyester, it ensures longer term performance and increased 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 factory certification ensures that our manufacturing facilities use proven manufacturing and quality control processes.

Certified to IEC 61215 and 61730

Certified to UL1703 and ULC1703 Certified for use in Class 1, Division 2 Hazardous locations

Conforms with European Directive 2006/95/EC
### Electrical characteristics

**190J / 200J**

- **(1) STC 1000W/m²**
  - Maximum power ($P_{max}$): 190W / 200W
  - Voltage at $P_{max}$ ($V_{mpp}$): 38.0V / 38.0V
  - Current at $P_{max}$ ($I_{mpp}$): 5.0A / 5.3A
  - Short circuit current ($I_{sc}$): 5.5A / 5.8A
  - Open circuit voltage ($V_{oc}$): 45.3V / 45.3V
  - Module efficiency: 15.2% / 16.0%
  - Tolerance ($P_{max}$) ±5%

- **(2) NOCT 800W/m²**
  - Maximum power ($P_{max}$): 137W / 144W
  - Voltage at $P_{max}$ ($V_{mpp}$): 34.0V / 34.0V
  - Current at $P_{max}$ ($I_{mpp}$): 4.0A / 4.2A
  - Short circuit current ($I_{sc}$): 4.5A / 4.7A
  - Open circuit voltage ($V_{oc}$): 41.0V / 41.0V
  - Module efficiency: 14.4% / 15.2%
  - Tolerance (at 200W/m²) ±5%

- Nominal voltage: 24V
- Efficiency reduction: <5% reduction at 200W/m²
- Efficiency: 14.4% / 15.2%
- Limiting reverse current: 5.50 / 5.80
- 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

- Application class (according to IEC 61730:2007): Class C
- Nominal system voltage: 600V (U.S. NEC) / 1000V (IEC 61730:2007)

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### Mechanical characteristics

- **Solar cells**: 72 crystalline 5" silicon cells (125 x 125mm) in series
- **Front cover**: High transmission 3.2mm (1/8th in) glass
- **Encapsulant**: EVA
- **Back cover**: White polyester
- **Frame**: Silver anodized aluminum (Universal II)
- **Junction box**: IP65 with 4 terminal screw connection block; accepts PG 13.5, M20 13mm (½") conduit, or cable fittings accepting 6-12mm diameter cable. Terminals accept 2.5-10mm² (8-14 AWG) wire
- **Dimensions**: 1587 x 790 x 50mm / 62.5 x 31.1 x 2in
- **Weight**: 15.4kg / 33.95lbs

All dimensional tolerances within ±1% unless otherwise stated.

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### Warranty*

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

* Refer to warranty document for terms and conditions.

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### Certification

- Certified according to the extended version of the IEC 61215 (ed.2), EN 61215:2005-08 (Crystalline silicon terrestrial photovoltaic modules - Design qualification and type approval).
- Listed to UL 1703 & ULC ORD-C1703 Standard for Safety by Intertek ETL. Class C Fire Rating.

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For more information, call 855-43-SOLAR or visit www.amerescosolar.com.