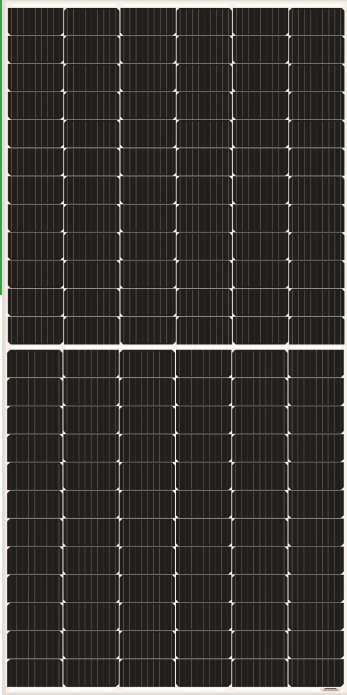




# AS-7M144-HC

## 525W~550W

### MONOCRYSTALLINE MODULE

#### ADVANCED PERFORMANCE & PROVEN ADVANTAGES

- High module conversion efficiency up to 21.28% by using innovative Half-cell design and Multi-busbar(MBB) cell technology.
- Low temperature coefficient and excellent performance under high temperature and low light conditions.
- Robust aluminum frame ensures the modules to withstand wind loads up to 2400Pa and snow loads up to 5400Pa.
- High reliability against extreme environmental conditions (passing salt mist, ammonia and hail tests).
- Potential induced degradation (PID) resistance.

#### CERTIFICATIONS

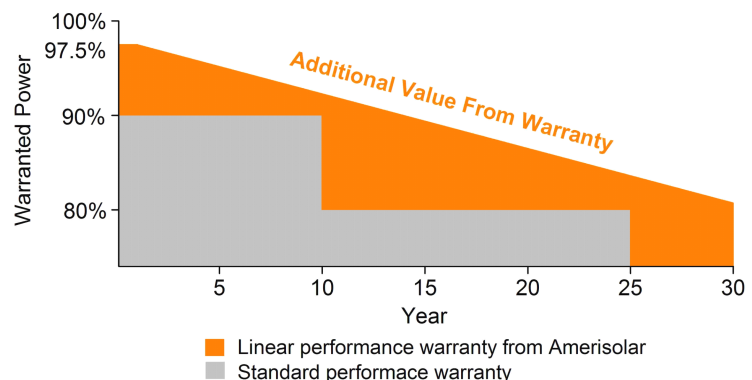
- IEC 61215, IEC 61730, CE
- ISO 9001:2015: Quality management system
- ISO 14001:2015: Environmental management system
- ISO 45001:2018: Occupational health and safety management system



#### SPECIAL WARRANTY

- 20 years product warranty
- 30 years linear power output warranty

**Passionately**  
**committed to**  
**delivering innovative**  
**energy solution**



|                                             |                                                     |        |        |        |        |        |
|---------------------------------------------|-----------------------------------------------------|--------|--------|--------|--------|--------|
| Maximum Power (P <sub>max</sub> )           | 525W                                                | 530W   | 535W   | 540W   | 545W   | 550W   |
| Open Circuit Voltage (V <sub>OC</sub> )     | 49.0V                                               | 49.2V  | 49.4V  | 49.6V  | 49.8V  | 50.0V  |
| Short Circuit Current (I <sub>SC</sub> )    | 13.74A                                              | 13.78A | 13.82A | 13.86A | 13.90A | 13.94A |
| Voltage at Maximum Power (V <sub>mp</sub> ) | 40.8V                                               | 41.0V  | 41.2V  | 41.4V  | 41.6V  | 41.8V  |
| Current at Maximum Power (I <sub>mp</sub> ) | 12.88A                                              | 12.93A | 12.99A | 13.05A | 13.11A | 13.16A |
| Module Efficiency (%)                       | 20.31                                               | 20.51  | 20.70  | 20.89  | 21.09  | 21.28  |
| Operating Temperature                       | -40°C to +85°C                                      |        |        |        |        |        |
| Maximum System Voltage                      | 1000V DC/1500V DC                                   |        |        |        |        |        |
| Fire Resistance Rating                      | Type 1(in accordance with UL1703)/Class C(IEC61730) |        |        |        |        |        |
| Maximum Series Fuse Rating                  | 25A                                                 |        |        |        |        |        |

|                                       |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|
| Maximum Power ( $P_{\max}$ )          | 391W   | 395W   | 399W   | 403W   | 407W   | 411W   |
| Open Circuit Voltage ( $V_{OC}$ )     | 45.1V  | 45.3V  | 45.5V  | 45.7V  | 45.9V  | 46.1V  |
| Short Circuit Current ( $I_{SC}$ )    | 11.13A | 11.16A | 11.19A | 11.22A | 11.25A | 11.28A |
| Voltage at Maximum Power ( $V_{mp}$ ) | 37.1V  | 37.3V  | 37.5V  | 37.7V  | 37.9V  | 38.1V  |
| Current at Maximum Power ( $I_{mp}$ ) | 10.54A | 10.59A | 10.64A | 10.69A | 10.74A | 10.79A |

|                   |                                                                                                                 |
|-------------------|-----------------------------------------------------------------------------------------------------------------|
| Cell type         | Monocrystalline PERC 182*91mm                                                                                   |
| Number of cells   | 144 (6x24)                                                                                                      |
| Module dimensions | 2279x1134x35mm (89.72x44.65x1.38inches)                                                                         |
| Weight            | 29kg (63.9lbs)                                                                                                  |
| Front cover       | 3.2mm (0.13inches) tempered glass with AR coating                                                               |
| Frame             | Anodized aluminum alloy                                                                                         |
| Junction box      | IP68, 3 diodes                                                                                                  |
| Cable             | 4mm <sup>2</sup> (0.006inches <sup>2</sup> ), Portrait: 300mm (11.81inches);<br>Landscape: 1300mm (51.18inches) |
| Connector         | MC4 or MC4 compatible                                                                                           |

|                                              |           |
|----------------------------------------------|-----------|
| Nominal Operating Cell Temperature (NOCT)    | 43°C±2°C  |
| Temperature Coefficients of P <sub>max</sub> | -0.36%/°C |
| Temperature Coefficients of V <sub>OC</sub>  | -0.28%/°C |
| Temperature Coefficients of I <sub>SC</sub>  | 0.05%/°C  |

|                                   |              |
|-----------------------------------|--------------|
| Standard packaging                | 31pcs/pallet |
| Module quantity per 20' container | 155pcs       |
| Module quantity per 40' container | 620pcs (HQ)  |

[illegible]

Figure 1 is a graph showing the current-voltage (I-V) and power-voltage (P-V) characteristics of a solar cell under different irradiance levels. The x-axis represents Voltage (V) from 0 to 50. The left y-axis represents Current (A) from 0 to 14, and the right y-axis represents Power (W) from 0 to 600. Five curves are shown for irradiances of 1000 W/m² (red), 800 W/m² (green), 600 W/m² (blue), 400 W/m² (cyan), and 200 W/m² (magenta). Each curve has a solid line for current and a dashed line for power. The current increases linearly with voltage in the linear region and then drops sharply near the open-circuit voltage. The power curve shows a peak at the maximum power point (MPP).

Figure 10 is a graph showing the current-voltage (I-V) characteristics of the proposed device at different temperatures: -25°C, 0°C, 25°C, 50°C, and 75°C. The x-axis represents Voltage (V) from 0 to 60, and the y-axis represents Current (A) from 0 to 16. All curves show a constant current of approximately 14 A until a certain voltage, after which the current drops sharply. The drop-off voltage increases with temperature.

| Temperature (°C) | Approximate Voltage at Current Drop (V) |
|------------------|-----------------------------------------|
| -25              | ~35                                     |
| 0                | ~45                                     |
| 25               | ~48                                     |
| 50               | ~52                                     |
| 75               | ~55                                     |

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