

Helios-Class Solar Array - Model H-7 Technical Specifications

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Overview

The Helios-7 is a high-efficiency, utility-scale photovoltaic array designed for extreme environments. It incorporates our new Passivated Emitter and Rear Cell (PERC) technology combined with a proprietary self-cleaning hydrophobic coating for minimal maintenance.

Electrical Specifications

- **Nominal Power (P_{max}):** 650 W
- **Power Tolerance:** 0/+5 W
- **Maximum Power Voltage (V_{mp}):** 49.5 V
- **Maximum Power Current (I_{mp}):** 13.13 A
- **Open Circuit Voltage (V_{oc}):** 59.7 V
- **Short Circuit Current (I_{sc}):** 13.98 A
- **Maximum System Voltage:** 1500 V (UL/IEC)
- **Module Efficiency:** 22.8%

Mechanical Specifications

- **Dimensions:** 2278 × 1134 × 35 mm (89.7 × 44.6 × 1.38 in)
- **Weight:** 28.6 kg (63.1 lbs)
- **Solar Cells:** Monocrystalline PERC (182 mm)
- **Cell Configuration:** 144 cells (6 x 24)
- **Front Glass:** 3.2 mm, Anti-Reflection Coated, High-Transmission Tempered Glass
- **Frame:** Anodized Aluminium Alloy, Black
- **Junction Box:** IP68 Rated

Environmental and Durability Ratings

- **Operating Temperature:** -40°C to +85°C
- **Wind Load (Max):** 2400 Pa
- **Snow Load (Max):** 5400 Pa

- **Hail Resistance:** Certified for 25mm hailstones at 23 m/s.
- **Hydrophobic Coating:** Proprietary nano-coating reduces soiling losses by up to 30%.

Warranty

- **Product Warranty:** 15-year limited product warranty.
- **Power Output Warranty:** 25-year linear power output warranty. Guarantees no less than 85% of nominal power output after 25 years.