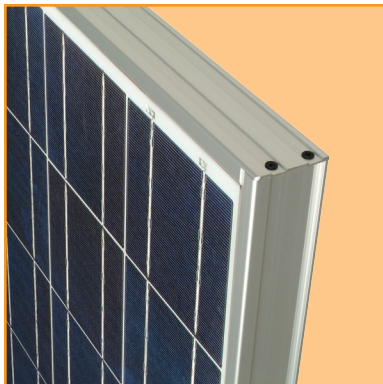


# 224 WATT

NEXT GENERATION. BREAKTHROUGH PERFORMANCE.

## **POLY-CRYSTALLINE SILICON PHOTOVOLTAIC MODULE WITH 224W MAXIMUM POWER**

This poly-crystalline 224 watt module features 13.74% module efficiency for an outstanding balance of size and weight to power and performance. Reengineered frame includes a contoured edge to improve water management, reducing surface moisture and debris. The new back support bars allow better performance under mechanical load. Using breakthrough technology, perfected by nearly 50 years of Sharp's research and development, the ND-224U1F modules incorporate an advanced surface texturing process to increase light absorption and improve efficiency. Common applications include commercial and residential grid-tied roof systems as well as ground-mounted arrays. Designed to withstand rigorous operating conditions, Sharp's ND-224U1F modules offer high power output per square foot of solar array.



*Improved Frame Technology*



*Sharp multi-purpose modules offer outstanding performance for a variety of applications.*

## **FEATURES**

- High-power module (224W) using 156mm square polycrystalline silicon solar cells with 13.74% module conversion efficiency
- Sharp's advanced surface texturing process increases light absorption and efficiency while providing a more subdued, "natural" look
- Bypass diodes minimize the power drop caused by shade
- Water white tempered glass, EVA resin, and a weatherproof film, plus aluminum frame for extended outdoor use
- UL Listings: UL1703, cUL
- Sharp modules are manufactured in ISO 9001 certified facilities
- 25-year limited warranty on power output (see dealer for details)

### ELECTRICAL CHARACTERISTICS

|                              |                             |
|------------------------------|-----------------------------|
| Cell                         | Poly-crystalline silicon    |
| No. of Cells and Connections | 60 in series                |
| Open Circuit Voltage (Voc)   | 36.6V                       |
| Maximum Power Voltage (Vpm)  | 29.28V                      |
| Short Circuit Current (Isc)  | 8.33A                       |
| Maximum Power Current (Ipm)  | 7.66A                       |
| Rated Power (Pm)*            | 224W (+10% / -5%)           |
| Module Efficiency            | 13.74%                      |
| Maximum System Voltage       | 600V                        |
| Series Fuse Rating           | 15A                         |
| Type of Output Terminal      | Lead Wire with MC Connector |

\* (STC) Standard Test Conditions: 25°C, 1 kW/m<sup>2</sup>, AM 1.5

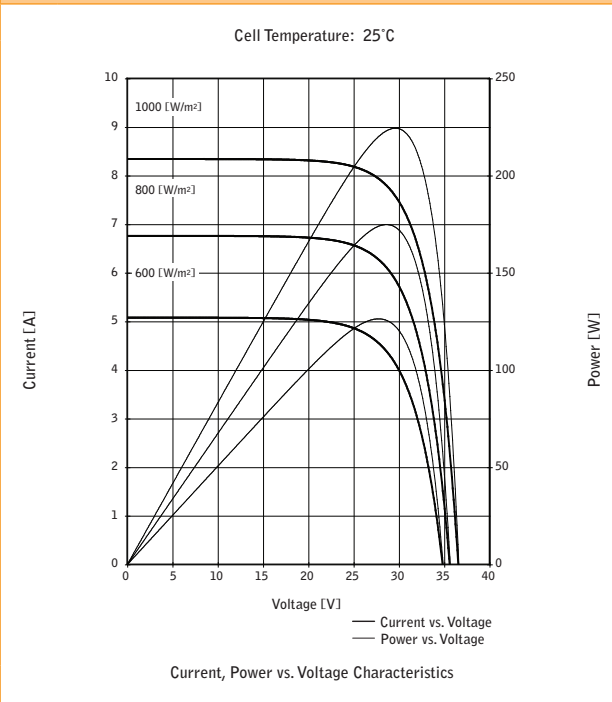
### MECHANICAL CHARACTERISTICS

|                              |  |
|------------------------------|--|
| Dimensions (A x B x C below) | 39.1" x 64.6" x 1.8"<br>(994mm x 1640mm x 46mm)      |
| Weight                       | 44 lbs / 20 kg                                       |
| Size of Carton               | 65.16" x 39.76" x 4.25"<br>(1655mm x 1010mm x 108mm) |
| Carton Quantity              | 2 pcs per carton                                     |
| Pallet Quantity              | 30 pcs per pallet                                    |

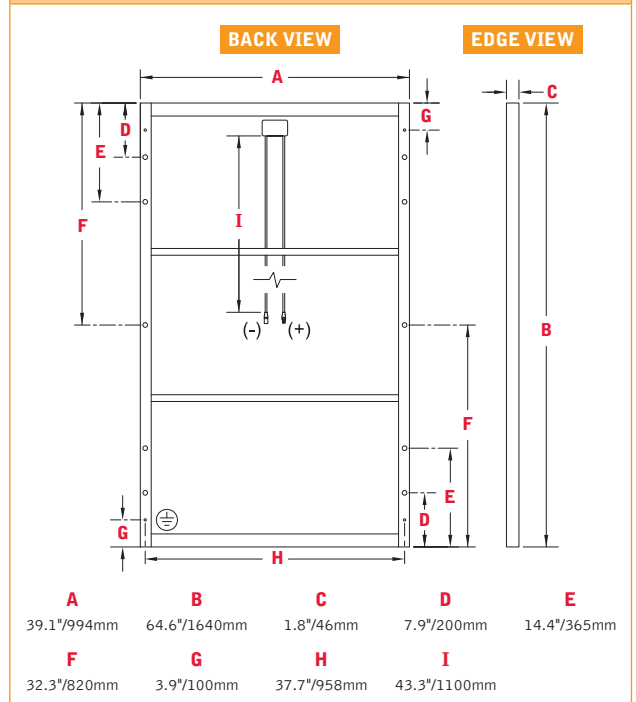
### ABSOLUTE MAXIMUM RATINGS

|   |                             |
|---|-----------------------------|
| Operating Temperature (min to max, °F/°C) | -40 to 194°F / -40 to +90°C |
| Storage Temperature (min to max, °F/°C)   | -40 to 194°F / -40 to +90°C |

### IV CURVES



### DIMENSIONS



Design and specifications are subject to change without notice.

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