

### 450-Watt Military-grade Portable Solar Array for Off-grid Solar & Hybrid Power

Ruggedized, lightweight solar array - packages into small volume & generates power in minutes

Four tri-fold solar panels & roll-able stand package into a single waterproof and rugged case

Designed to maximize solar energy capture, minimize size and weight, simplify use



#### Scalable, Compact, Rugged

- **Modular and scalable:** Use one or multiple arrays to deliver 450W to over 5kW of power to solar/hybrid/storage control systems that support 50W to 15kW continuous (24/7) power demands
- **Transportable:** Lightweight; small volume
- **Durable:** Glass-free; Mil-std 810G qualified; Revolutionary Merlin™ solar cell interconnect for superior energy capture and lifetime reliability
- **Non-reflective:** Maximize light capture, reduce visual signature

#### Features

- Power 450 watts
- 42 lbs. - solar array  
73.5 lbs. - in transport case
- Case dimensions: 47"x17"x10.8" (<5ft<sup>3</sup>)
- Deployed foot print <4 ft. x 10 ft.
- 50 mph wind rating using sandbags
- Set solar angles of 0°, 30°, and 45°
- Set up or pack-up in < 5 minutes

- Integrated Rack carrying handles along with optional soft case or back-pack for panels and accessories
- Spread load for tactical vehicle and aircraft transport
- Spread-load for man-pack:
  - Rack 14 lbs.
  - Panels + cable in soft case ~31 lbs.



Available directly from Nishati™ or through DLA (NSN 6117-01-641-0930)  
or on GSA Advantage (search Portable Array Module)

# Nishati Expedition™ 450

## Nishati Expedition 450 Technical Specification

### General Description

Nishati Expedition 450M Part Number	217651
Rated Power at 25°C, AM1.5, and 1000 Watts/m <sup>2</sup>	450 Watts
Four 114W Foldable Solar Arrays (24 cells each)	217286M
Total Weight (Roll-able Array, Solar Panels, Case, Etc.)	73.5 lbs.
Solar Panel Weight Total (7 lbs. per Solar Panel)	28 lbs.
Roll-able Stand Weight	14 lbs.
Deployment Time (Removal from case to fully deployed/connected)	< 5mins
Limited Warranty	2 Years

### Solar Panel Details

Total Number of Mono-Crystalline Silicon Solar Cells per Array	96
Array Nominal Output Voltage at Max Power Point (V <sub>mp</sub> )	51.39V
Array Nominal Output Current at Max Power Point (I <sub>mp</sub> )	8.77A
Array Open Circuit Voltage (V <sub>oc</sub> )	63.82V
Array Short Circuit Current (I <sub>sc</sub> )	9.04A
Maximum System Voltage	600VDC
Maximum System Current	15A
Bypass Diode	One per solar panel
Nominal Operating Temperature	45 +/- 2 °C
Solar Cell Temperature Coefficient : Power	- 0.375 %/°K
Solar Cell Temperature Coefficient : Voltage	- 0.2943 %/°K
Solar Cell Temperature Coefficient : Current	0.0405 %/°K

### Electrical Connections

Wire Harness Collector Cable Length	35'
Electrical Connector (ITT Cannon PN)	CA3106F20-23SB
Solar Panel Electrical Connector Male (Amphenol PN)	H4CMC4D
Solar Panel Electrical Connector Female (Amphenol PN)	H4CFC4D
Compliance Certification of all Connectors	IP67

### Size and Geometry

Hard Case Outside Volume	4.99 ft <sup>3</sup>
Hard Case Outside Dimensions	47.0" x 17.0" x 10.8"
Roll-able Stand Stowage Diameter	8"
Roll-able Stand Stowage Length	44"
Individual Solar Panel Stowed Dimensions (Panel + Connectors)	29" x 13.5" x 1.75"
Max Deployed Footprint @ 30° Deployed Angle	39.9 ft <sup>2</sup>
Deployment Angles	0°, 30°, 45°

### Environmental Resistance

Operating Temperature with Solar Loading	- 4 to 140 °F
Storage Temperature Limits (All Components in Hard Case)	- 25 to 160 °F
Wind Load Limit From Any Direction	50 MPH
Transit Drop Test at 48" and Loose Cargo per MIL-STD 810G	PASS



#	Components
1	Four, Tri-fold Solar Panels
2	Roll-able Stand with Canvas Cover and pre-roll for easy packaging
3	Rugged Transport Case
4	Wire Harness Collector Cable
5	12 Sandbags & 10 Tent Stakes
6	Solar Panel Leads with Easy Connect/ Disconnect Fittings



2200 E. Williams Field Rd. Ste 200  
Gilbert, AZ 85295  
571-999-3482

 Portable • Rugged • Effective

Website: [www.nishati-us.com](http://www.nishati-us.com)  
Patents: [www.nishati-us.com/patent](http://www.nishati-us.com/patent)  
E-mail inquiries: [Info@nishati-us.com](mailto:Info@nishati-us.com)