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

Features
• Power 450 watts
• 42 lbs. - solar array
• 73.5 lbs. - in transport case
• Case dimensions: 47”x17”x10.8” (<5ft³)
• 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

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

Available directly from Nishati™ or through DLA (NSN 6117-01-641-0930) or on GSA Advantage (search Portable Array Module)
## Nishati Expedition 450 Technical Specification

### General Description
- **Nishati Expedition 450M Part Number**: 217651
- **Rated Power at 25°C, AM1.5, and 1000 Watts/m²**: 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_{mp})**: 51.39V
- **Array Nominal Output Current at Max Power Point (I_{mp})**: 8.77A
- **Array Open Circuit Voltage (V_{oc})**: 63.82V
- **Array Short Circuit Current (I_{sc})**: 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)**: H4CFD4D
- **Compliance Certification of all Connectors**: IP67

### Size and Geometry
- **Hard Case Outside Volume**: 4.99 ft³
- **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 ft²
- **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

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### Components

<table>
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<tr>
<th>#</th>
<th>Components</th>
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<tbody>
<tr>
<td>1</td>
<td>Four, Tri-fold Solar Panels</td>
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<td>2</td>
<td>Roll-able Stand with Canvas Cover and pre-roll for easy packaging</td>
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<tr>
<td>3</td>
<td>Rugged Transport Case</td>
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<tr>
<td>4</td>
<td>Wire Harness Collector Cable</td>
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<tr>
<td>5</td>
<td>12 Sandbags &amp; 10 Tent Stakes</td>
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<tr>
<td>6</td>
<td>Solar Panel Leads with Easy Connect/Disconnect Fittings</td>
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**Website**: [www.nishati-us.com](http://www.nishati-us.com)  
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