Nishati™

Portable • Rugged • Effective

Solar Power

Nishati Expedition™ 450 Portable Solar Array

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^3)
- 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 Search GSA Advantage for 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^2	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)	H4CFC4D
Compliance Certification of all Connectors	IP67
Size and Geometry	
Hard Case Outside Volume	4.99 ft^3
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^2
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

• Increasing Mission Effectiveness •

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