



NOVA ELECTRIC



MIL-QUALIFIED

- MIL-STD-1399 Section 300B
- MIL-STD-461G
- Environmental Optional

POPULAR OPTIONS

- Power Distribution Units
- MS Connector Mates and Multiple Output Outlets
- Chassis Slide Guides
- Rugged Transit Cases And Custom Enclosures
- Additional Run Time
- 400 Hz Input And/ Or Output
- CAD Free Connectors
- Non-PVC Wiring
- High IP Protection For Front/ Rear Panels
- AUX DC Outputs
- Environmental Stress Screening Services
- Shock Pins & Receptacles

CONTACT

100 School Street,
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Galaxy Series Ultra Lightweight 2-3 KVA Rugged True Online Naval UPS With Three-Phase PFC Input



GENERAL OVERVIEW

Nova's Ultra Lightweight Galaxy-Series rugged, True Online UPS systems are high-reliability power sources specifically designed for demanding Naval applications in high shock, vibration, humidity, and EMI environments in compliance to MIL-STD-1399 and MIL-STD-461. These UPS models offer maximum field-proven reliability for severe environment and high-reliability Naval applications, as well as other military platforms including Ground vehicles, UAVs, Aircraft, Mobile Power Units, Shelters, Transportable Systems, Tactical Systems, Ground Support, and more. These units are also suitable for heavy-duty industrial and demanding commercial applications.

The standard input is 115 VAC, 60 Hz, three-phase Delta shipboard power, and the standard output is 120 VAC, 60 Hz, single-phase, with up to 3 KVA / 3 KW continuous output power. Separate rack mount battery packs featuring premium Cyclon battery cells provide run time as required, from several minutes to several hours or more. These Cyclon cells are sealed, maintenance-free, and feature -40° to +80°C operating range and a useful life of 8-12 years @ +25°C ambient.

As you'd expect from Nova Electric, variations of this proven design have repeatedly passed formal qualification testing on a variety of military platforms including shipboard, vehicular, and airborne. Models shown on this page have been formally tested to MIL-STD-1399 Section 300B and MIL-STD-461G. Compliance with other MIL-STDs such as MIL-S-901, MIL-STD-810, and MIL-STD-167 is available optionally, either through formal testing at accredited third-party laboratories or via similarity to other previously qualified models.

Many communication platforms are supported, including RS232, SNMP, RS485, and CANbus. A multitude of options are available for nearly any application, as shown herein.

Nova Electric's Ultra Lightweight UPS are deployed in countless high-profile military programs aboard Naval ships and submarines, and on satellite trailers, mobile shelters, military ground vehicles, and aircraft, with a field-proven MTBF exceeding 100,000 hours. These units are the first choice for the world's leading defense contractors including Lockheed Martin, Boeing, Raytheon, General Dynamics, DRS, BAE, all branches of the US Armed Forces, and US-allied forces worldwide. Please contact us today for more information.

The Leader In Rugged Power Conversion Technology Since 1966

Specifications subject to change without notice. Some optional equipment shown.

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Specifications Electrical

INPUT VOLTAGE	115 VAC, Three-Phase Delta
AC OUTPUT VOLTAGE	120, 208, 220, 230 or 240 VAC (Specify)
FREQUENCY	50 / 60 / 400 Hz. Available
VOLTAGE REGULATION	± 2% NL to FL
OUTPUT FREQUENCY REGULATION	± 0.5% NL to FL
HARMONIC DISTORTION	5% THD, 3% Typical
INPUT POWER FACTOR	0.95 or Better @ Half-Full Load
EFFICIENCY AT FULL LOAD	80-85% @ Full Load Typical (Batteries Charged)
OVERLOAD	110% Load For 10 Minutes 115% Load For 5 Minutes 120% Load For 2 Minutes
CONNECTIONS	MS Connector (Mates Optional)

Nominal Dimensions

- UPS Dimensions:
7" High x 19" Wide x 24" Deep
- External Battery Dimensions:
5.25" high x 19" wide x 24" deep

*Note: Additional battery packs available on all models
if increased run time is required – up to 24 hours.*

Environmental

- UPS Operating Temp.: -20° to +55°C
(Extended Ranges Optional)
- UPS Storage Temperature Range:
-40° to +71°C
(Electronics Only – Batteries are -40° to +80°C)
- Humidity: 95% Non-Condensing Per
MIL-STD-810. All Boards Conformal Coated
With Acrylic MIL-I-46058 Type R.
- Elevation:
15,000 Ft. (4,572m) Operating;
40,000 ft. (12,192m) Non-Operating
(Higher Optional)

*(For batteries, please follow battery manufacturer
instructions regarding recommended elevation parameters.)*

- Shock: 20g, 11 mS Half Sinewave –
Designed To Meet MIL-STD-810
- Audible Noise: Less Than 55 dbA at 5 ft.
- Batteries: Premium Sealed, Maintenance
Free Cyclon Cells have -40 to +80°C
Operating Range and Useful Life of 8-12
Years @ +25°C Ambient.

*Note: Run time shown using Premium Cyclon
batteries. For best results, batteries must be
kept at 25 degrees Celsius ambient tempera-
ture. Extreme low temperatures will result in
reduced run time, while extreme high tempera-
tures result in significantly reduced battery
lifespan.*

- MTBF: 100,000+ Hours Per Field Data @ +25°C
Ambient Ground-Fixed
- MTTR: 30 Minutes by Qualified Personnel

Standard Remote Contacts/ Communications

- SNMP V1.0 standard via CAT-5 Connector
(V2.0 or V3.0 Optional)
- Major Alarm Logic Fault, Low Battery, OT,
UPS Overloaded
- Minor Alarm: Utility Off
- RS 232 (Available-Optional) Via DB 9 Connector
- Alarm Contacts (Available-Optional)

Standard Front Panel Diagnostics

- Status (Red / Green)
- UPS Off (Red)
- Logic Fault (Red)
- Low Battery (Red)
- Over Temperature (Red)

PARTIAL RACK MOUNT MODEL SELECTION

120 VAC Output Models (400 Hz Input and/or Output Optional On All Models)

MODEL	KVA	KW	INPUT	INPUT AMPS	UPS LBS.	RUNTIME
GRSLPFC11-3K60- 115(D)-120-4U	3	3	115 VAC, 60 Hz, Three-Phase Delta	19.5A	60	15 min @ 3 KW using 1x 3U External Battery Pack
GRSLPFC11-2K60- 115(D)-120-4U	2	2	115 VAC, 60 Hz, Three-Phase Delta	14.5A	60	30 min @ 2 KW using 1x 3U External Battery Pack

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SYSTEM COMPLIANCE

Qualified To:

MIL-STD-1399 Section 300B: For Type I apparatus

- Voltage and Frequency Tolerance Test
- Voltage and Frequency Transient Tolerance and Recovery Test
- Voltage Spike Test
- Emergency Condition Test
- Grounding Test
- Voltage and Frequency Modulation Test
- Simulated Human Body Leakage Test for Personnel Safety

MIL-STD-461G:

- CE102, Conducted Emissions, Radio Frequency Potential, Power Leads
- CS114, Conducted Susceptibility, Bulk Cable Injection
- CS118, Personnel Borne Electrostatic Discharge
- RE102, Radiated Emissions, Electric Field
- RS103, Radiated Susceptibility, Electric Field

Internal EMI Reduction Package to meet MIL-STD-461:

The Ultra Lightweight UPS Systems shown herein are designed to comply with the requirements of MIL-STD-461G using shielded input, output, and data cables. Test data to other revisions of MIL-STD-461 is available for select models. (If the input and output cables are not shielded, additional filtering may be required for full compliance to MIL-STD-461.)

Please note: Not all models and choices of input voltages and output voltages shown in the model chart have been formally tested for each of the following MIL-STD-461G parameters shown. In such cases, Nova cannot guarantee full compliance without a formal testing program for your specific UPS configuration, available optionally. Please consult the factory for details.

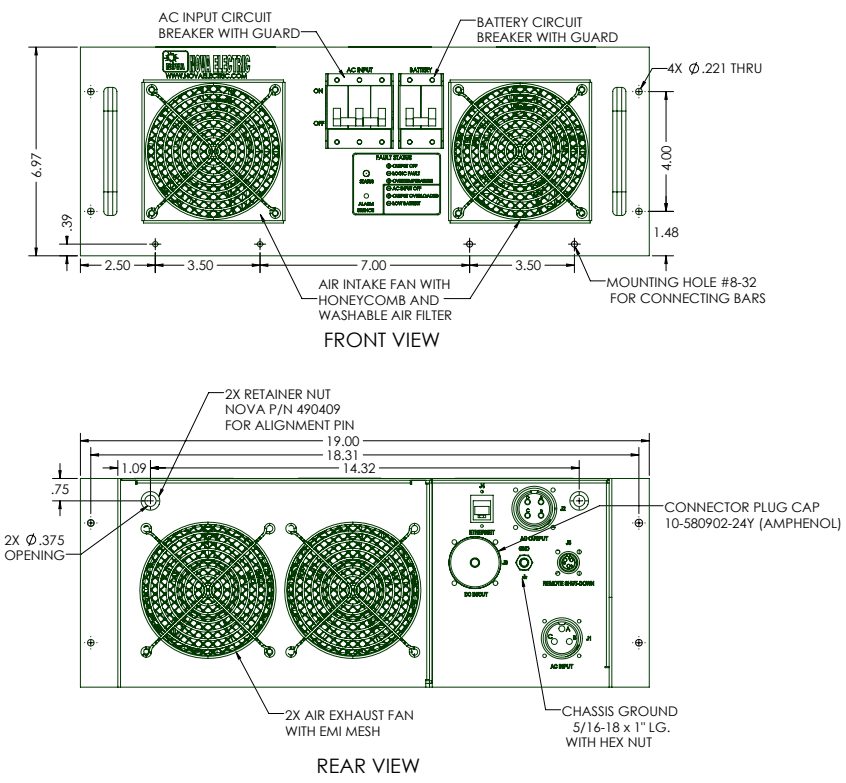
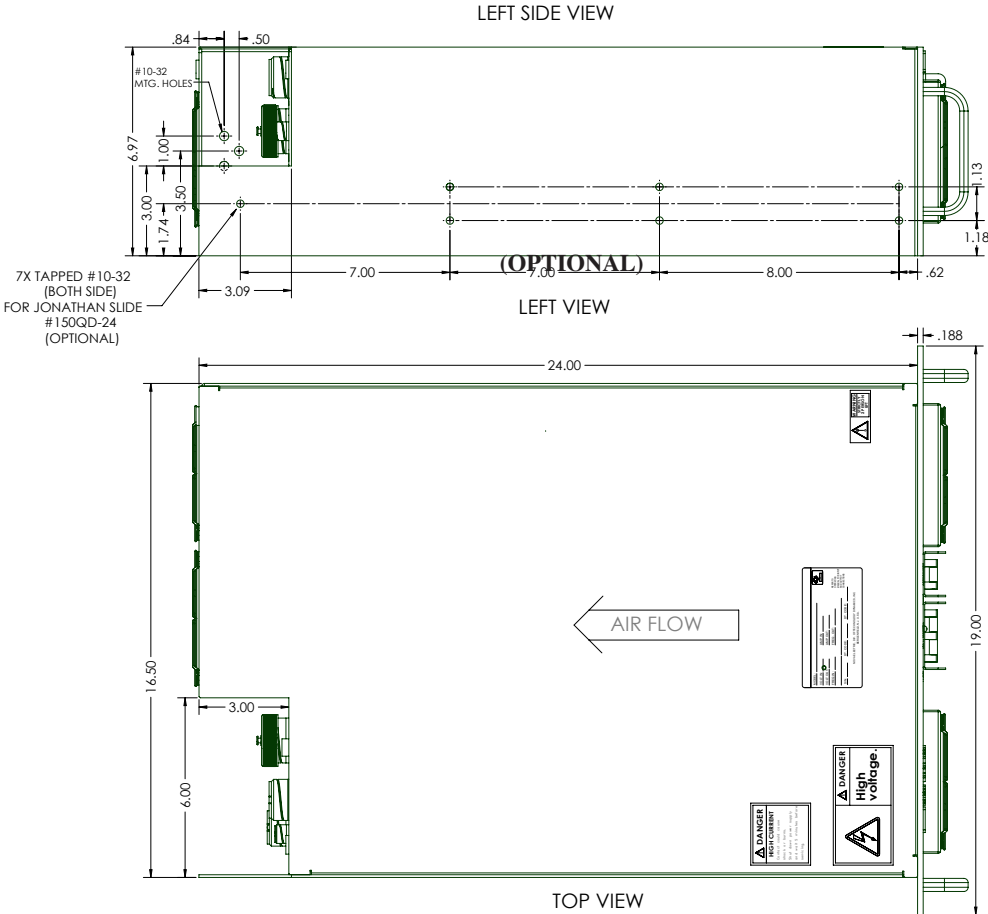
Additional Ruggedization:

The UPS System's construction is extremely robust, and ruggedized throughout. All components and modules within the unit are mounted using additional steel brackets and heavy-duty stainless-steel hardware, which is then further secured using Loctite and RTV where required. All boards are conformal-coated (Acrylic MIL-I-46058 Type R) for maximum resistance to potential condensation and fungus growth. Formal testing to MIL-S-901, MIL-STD-810, MIL-STD-167, and other environmental standards is optional.

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Some optional equipment shown. Specifications subject to change without notice.

TYPICAL 4U UPS OUTLINE DRAWING



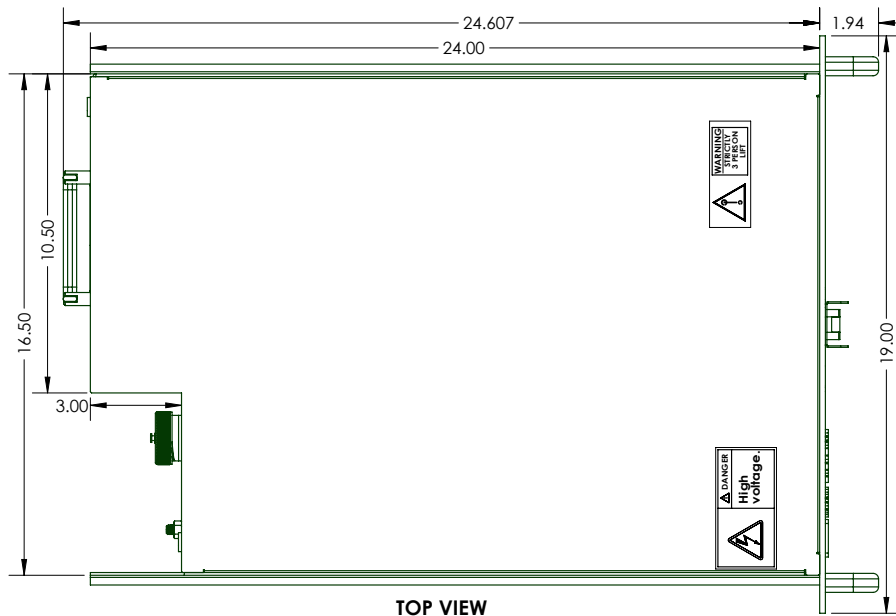
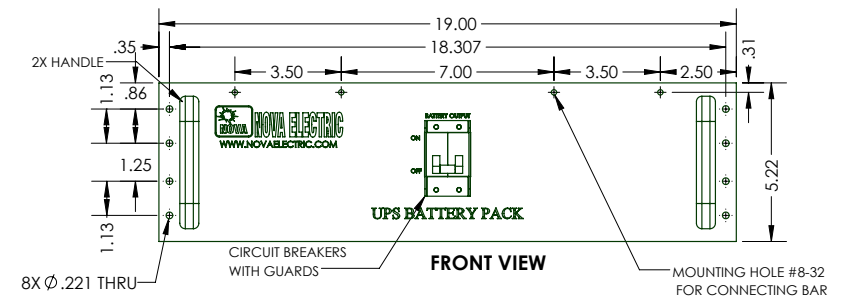
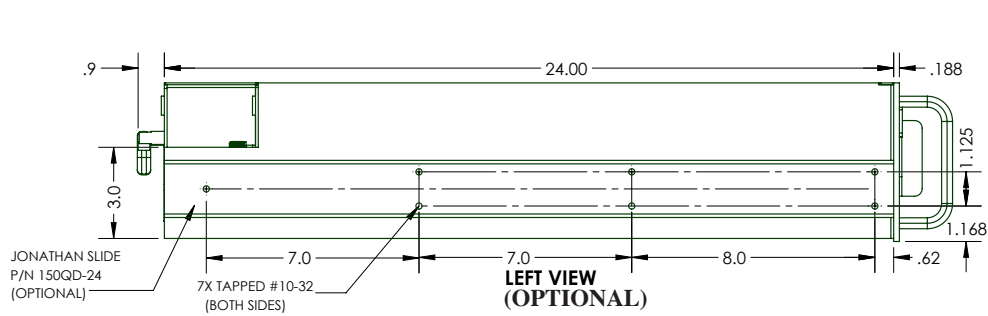
- NOTES:
- 1. ALL DIMENSIONS ARE IN INCHES.
 - 2. ALL UNDIMENSIONED PICTORIAL CONFIGURATIONS ARE FOR REFERENCE ONLY.
 - 3. FRONT AND REAR MARKING FOR REFERENCE ONLY.
 - 4. FRONT PANEL FINISH: ZINC CHROMATE PLATE, THEN PRIME & PAINT FRONT SURFACE AND ALL EDGES - #26251 LIGHT GRAY SEMI-GLOSS. ALL OTHER SURFACES ARE IRRIDATED (ALUMINUM).
 - 5. FRONT AND REAR PANEL SILKSCREEN IN BLACK EPOXY INK.
 - 6. MAXIMUM WEIGHT: 60 LBS.

CONNECTORS PIN DESIGNATION

J1 AC INPUT		J2 AC OUTPUT		J3 DC INPUT		J4 ETHERNET		J5 REMOTE SHUT DOWN	
GTC02R20-19P-025		GTC02R22-22S-025		GTC02R24-9S-025		RJ45		GTC02R10SL-3S-025	
PIN	DESCRIPTION	PIN	DESCRIPTION	PIN	DESCRIPTION	PIN	DESCRIPTION	PIN	DESCRIPTION
A	ØA	A	LINE	A	POS (+)	1	TX +	A	TO REMOTE CONTROL SWITCH
B	ØB	B	LINE	B	NEG (-)	2	TX -	B	TO REMOTE CONTROL SWITCH
C	ØC	C	NEUTRAL			3	RX +	C	NU
		D	NEUTRAL			6	RX -		

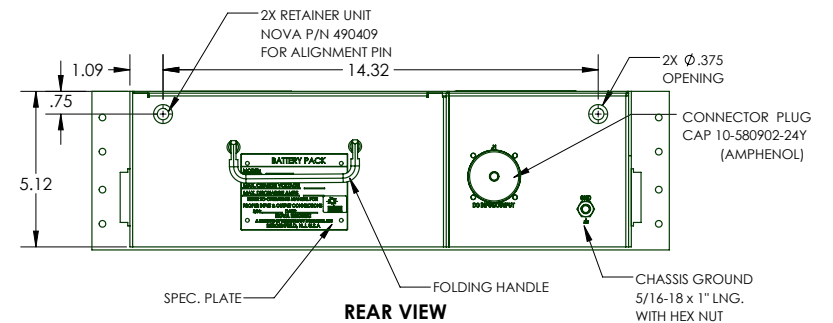


TYPICAL 3U BATTERY PACK OUTLINE DRAWING



NOTES:

1. ALL DIMENSIONS ARE IN INCHES.
2. ALL UNDIMENSIONED PICTORIAL CONFIGURATIONS ARE FOR REFERENCE ONLY.
3. FRONT AND REAR MARKING FOR REFERENCE ONLY.
4. FRONT PANEL FINISH: ZINC CHROMATE PLATE, THEN PRIME & PAINT FRONT SURFACE AND ALL EDGES - #26251 LIGHTGRAY SEMI-GLOSS. ALL OTHER SURFACES ARE IRRIDITED (ALUMINUM).
5. FRONT PANEL SILKSCREEN IN BLACK EPOXY INK.
6. APPROXIMATE WEIGHT: 126 LBS.





RUGGED AC POWER SYSTEMS



SELECT UNITS QUALIFIED TO MIL-STD-810, MIL-S-901, MIL-STD-1399, MIL-STD-461, MIL-STD-167, MIL-STD-740, RTCA/DO-160, AND MORE

RUGGED TRUE ONLINE UPS



500 W – 500+ KW

Rack Mount, Bulkhead Mount, and Freestanding

Single and Three Phase

50, 60, and 400 Hz.

PURE SINEWAVE DC-AC INVERTERS



100 W – 500+ KW

Rack Mount, Bulkhead Mount, and Freestanding

Single and Three Phase

50, 60, and 400 Hz.

SOLID-STATE FREQUENCY CONVERTERS



100 W – 500+ KW

Rack Mount, Bulkhead Mount, and Freestanding

Single and Three Phase

50, 60, and 400 Hz.

POWER DISTRIBUTION UNITS (PDUs)



Basic, Switched, Auto-Transfer Switching, and Metered Configurations

Rack Mount, Bulkhead Mount, and Freestanding

Single and Three Phase

CUSTOM EMI FILTERS



For MIL-STD-461 Compliance

Rack Mount, Bulkhead Mount, and Freestanding

Single and Three Phase

RUGGED PORTABLE TRANSFORMERS



100 W – 500+ KW

Rack Mount, Bulkhead Mount, and Freestanding

Single and Three Phase

EXTERNAL MAINTENANCE BYPASS SWITCHES (MBSSs)



Rack Mount, Bulkhead Mount, and Freestanding

Single and Three Phase

CUSTOM DESIGNS



Designed & Built to Spec

Integrated AC & DC Capabilities

Multiple Outputs

RELIABLE AC POWER WHEN AND WHERE YOU NEED IT SEVERE ENVIRONMENT PRODUCTS



• AIRBORNE

• SHIPBOARD

• MOBILE

• RACK MOUNT & FREESTANDING

• 50, 60, AND 400 Hz

• AIR & WATER COOLED

• SINGLE AND THREE PHASE

• LIGHTWEIGHT DESIGNS



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