



NOVA ELECTRIC



POPULAR OPTIONS

- SNMP Communications
- Ruggedization Against Shock, Vibration, and Humidity
- MS Connector Mates
- Chassis Slide Guides
- Internal Transfer Switch
- High IP Protection for Front / Rear Panels (Typically IP32,) Including Louvers on all Intake and Exhaust, as well as Fully Gasketed Breakers, Switches, and Indicators.
- Custom Markings
- Environmental Stress Screening Services

CONTACT

100 School Street,
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(201) 385-0500

novaelectric.com
info@novaelectric.com

Galaxy Lightweight Series 270 VDC Nominal Pure Sine Wave Rack Mount DC-AC Inverters



These units are suitable for applications such as:

- *Airborne Applications*
- *Military Vehicle Applications*
- *Ground Support*
- *Mobile Systems*
- *UAVs and Drones*
- *Tactical Systems*
- *Naval Applications*
- *Communications*

The Leader In Rugged Power Conversion Technology Since 1966

Rev A-October-18-2019



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GENERAL OVERVIEW

Nova's Lightweight Galaxy-Series DC-AC Inverters are high-reliability power sources specifically designed for demanding applications in high shock, vibration, humidity, and EMI environments in compliance to MIL-STD-461, MIL-S-901, MIL-STD-167, MIL-STD-810, MIL-STD-740, and DOD-STD-1399. These models utilize field-proven technology, offering maximum reliability for severe environment and high reliability applications such as:

- Military Applications: Including Submarine, HMMWV, UAV, Shipboard, Aircraft, Mobile Power Units, Shelters, Transportable Systems, Tactical Systems, Ground Support, and more.
- Heavy-Duty Industrial Applications
- Demanding Commercial Applications
- Communications Systems

SPECIFICATIONS

Electrical

INPUT VOLTAGE	270 VDC Nominal, 180-355 VDC Operating Range (Other Ranges Available)
OUTPUT VOLTAGE	120, 208, or 230 VAC (Specify)
FREQUENCY	50 / 60 / 400 Hz. Available
VOLTAGE REGULATION	± 2% NL to FL
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	85% @ Full Load Typical
CONNECTIONS	MS Connector (Mates Opt.)

Environmental

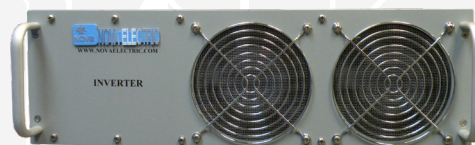
OPERATING TEMP.	-20° to +55°C (Extended Ranges Optional)
STORAGE TEMP. RANGE	-40° to +71°C (Extended Ranges Optional)
HUMIDITY	to 95% RH Non-Condensing – Designed to meet MIL-STD-810 optionally. All boards conformal coated with Acrylic MIL-I-46058 Type R.
ELEVATION	Operating: 15,000 Ft. (4,572 m) Non-Operating: 40,000 Ft. (12,192 m)
SHOCK	20g, 11 ms Half Sinewave Designed to meet MIL-STD-810
AUDIBLE NOISE	Less than 55 dbA at 5 ft.
MTBF	100,000+ Hours per Field Data @ +25C Ambient Ground-Fixed
MTTR	30 Minutes by Qualified Personnel

Protective Features

OVERLOAD
THERMAL
INPUT UNDERVOLTAGE
INPUT OVERVOLTAGE PROTECTED
AC OUTPUT CIRCUIT BREAKER
AUDIBLE ALARM WITH FRONT PANEL MOUNTED SILENCE SWITCH

Alarms & Diagnostics

SNMP V1.0	CAT-5 Connector
MAJOR ALARM	Logic Fault, Overtemperature, Overload
MINOR ALARM	Utility Off
RS 232 VIA DB9 CONNECTOR	Available - Optional
ALARM CONTACTS	Available - Optional
STATUS	Red / Green
INVERTER OFF	Red
LOGIC FAULT	Red
OVER TEMPERATURE	Red
LOAD ON UTILITY	Red Optional with Transfer Switch



Inverter Front View



Inverter Rear View

The Leader In Rugged Power Conversion Technology Since 1966

PARTIAL 60 Hz SINGLE PHASE OUTPUT MODEL SELECTION

MODEL	OUTPUT VAC	OUTPUT FREQ. (Hz)	CONT. OUTPUT POWER	WEIGHT (LB)	SIZE (HxWxL)
GL2K60-270	120	60	2 KVA	55	5.25" x 19" x 24"
GL3K60-270	120	60	3 KVA	57	5.25" x 19" x 24"
GL4K60-270	120	60	4 KVA	60	5.25" x 19" x 24"
GL5K60-270	120	60	5 KVA	60	5.25" x 19" x 24"

**Specifications subject to change without notice.*

PARTIAL 50 Hz SINGLE PHASE OUTPUT MODEL SELECTION

MODEL	OUTPUT VAC	OUTPUT FREQ. (Hz)	CONT. OUTPUT POWER	WEIGHT (LB)	SIZE (HxWxL)
GL2K50-270(220)	220	50	2 KVA	55	5.25" x 19" x 24"
GL3K50-270(220)	220	50	3 KVA	57	5.25" x 19" x 24"
GL4K50-270(220)	220	50	4 KVA	60	5.25" x 19" x 24"
GL5K50-270(220)	220	50	5 KVA	60	5.25" x 19" x 24"

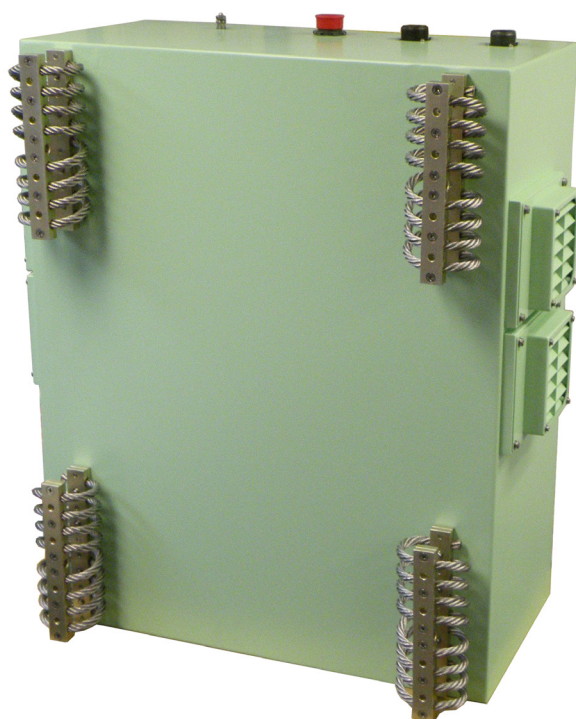
**Specifications subject to change without notice.*

PARTIAL 400 Hz SINGLE PHASE OUTPUT MODEL SELECTION

MODEL	OUTPUT VAC	OUTPUT FREQ. (Hz)	CONT. OUTPUT POWER	WEIGHT (LB)	SIZE (HxWxL)
GL2K400-270	115	400	2 KVA	55	5.25" x 19" x 24"
GL3K400-270	115	400	3 KVA	57	5.25" x 19" x 24"
GL4K400-270	115	400	4 KVA	60	5.25" x 19" x 24"
GL5K400-270	115	400	5 KVA	60	5.25" x 19" x 24"

**Specifications subject to change without notice.*

ALL MODELS HEREIN ALSO AVAILABLE IN 30"H X 24"W X 12"D BULKHEAD MOUNT CABINET SHOWN WITH OPTIONAL SHOCK MOUNTS -- CONSULT FACTORY FOR DETAILS.



SYSTEM COMPLIANCE

MIL-STD-740-1: Airborne Sound Measurements for Shipboard Equipment

MIL-STD-740-2: Structureborne Vibratory Acceleration Measurements

Additional Ruggedization to meet MIL-S-901, MIL-STD-167, MIL-STD-810, and DOD-STD-1399: 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.

MIL-S-901D for Grade A, Class II, Type B Equipment (mounted in shock-isolated rack attenuating to 20g/11ms max)

MIL-STD-167-1 for Type I Equipment

MIL-STD-810:

- Air Temperature per MIL-STD-810F Method 502.4, Procedure II
- Steady State Temperature per MIL-STD-810F, Method 501.4, Procedure I (Constant Temperature) and Method 502.4, Procedure I
- Temperature Shock per MIL-STD-810F, Method 503.4, Procedure II, Cyclic.
- Thermal Shock testing per MIL-STD-810G, Method 503.5, Procedure I-D
- Operating Temperature Shock per MIL-STD-810B Method 503 0 to 71°C
- High Temperature Storage per MIL-STD-810G, Method 501.5, Procedure I
- Low Temperature Storage testing per MIL-STD-810G, Method 502.5, Procedure I
- High Temperature Operating per MIL-STD-810G, Method 501.5, Procedure II
- Low Temperature Operating per MIL-STD-810G, Method 502.5, Procedure II
- Operational Humidity per MIL-STD-810F Method 507.4.
- Humidity per MIL-STD-810G, Method 507.5, Procedure I
- Storage and Transportation Humidity per MIL-STD-810F, Method 507.4
- Salt Fog Atmosphere per MIL-STD-810F Method 509.4
- Altitude per MIL-STD-810F, Method 500.4, Procedure I, Storage/Air Transport.
- Operating and Non-Operating Altitude Testing per MIL-STD-810G, Method 500.5, Procedure II
- Rapid Decompression per MIL-STD-810F, Method 500.4, Procedure III
- Transit Shock per MIL-STD-810F, Method 516, Procedures IV, V and VI

- Transportation Vibration per MIL-STD-810F, Method 514.5, Procedure II for loose cargo transportation
- Transportation Vibration per MIL-STD-810G, Method 514-6, Procedure I, Category 20
- Vibration per MIL-STD-810B Method 514.6, Category 12, Procedure I
- Transit Drop per MIL-STD-810F, Method 516.5, Procedure IV
- Transit Drop per MIL-STD-810G, Method 516.6, Procedure IV
- Bench Handling per MIL-STD-810F, Method 516.5, Procedure VI
- Bench Handling per MIL-STD-810G, Method 516.6, Procedure VI

DOD-STD-1399 Section 301A Table V – Design Limits for Ship Motion

Internal EMI Reduction Package to meet MIL-STD-461: The design of this unit is specifically focused on reducing EMI emissions. The UPS contains substantial internal filtering to minimize EMI emissions. Inputs which may be susceptible to transients are protected by several methods. The compact rack mount chassis is specifically treated with low surface resistivity finishes on the interior. All aluminum parts are treated with clear irridite. The steel parts are treated with zinc plate, followed by a clear chromate. Paint method via ANSI-61 gray is designed to assure excellent bonding of mating sheet metal parts. All input and output ventilation filters include metal honeycomb-style or mesh filters.

MIL-STD-461E: CE101, CE102, CS101, CS114, CS116, RE102, RS101, and RS103.

OPTIONAL Compliance to RTCA/DO-160G:

Rapid Decompression: Section 4 Cabin Pressure (8K) to Max Operating Alt (35K) in 15 sec; Hold for 10 min

Crash Safety Sustained: Section 7, Cat B – Up = 3.0g – Down = 6.0g – Fwd = 9.0g – Aft = 1.5g – Side = 4.0g

Explosive Atmosphere: Non-Ignition Test Sec. 9.6.2, Cat E

Humidity: Section 6, paragraph 6.3.1 (Category A)

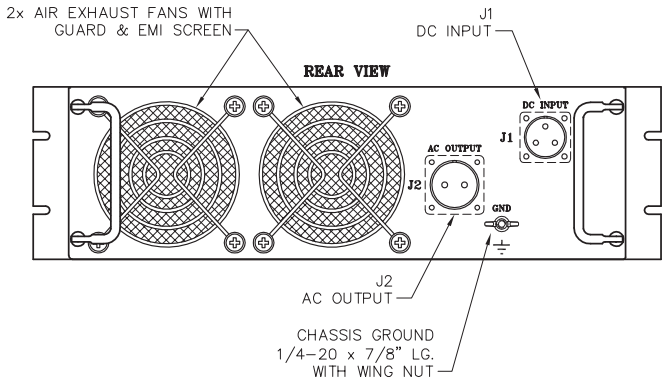
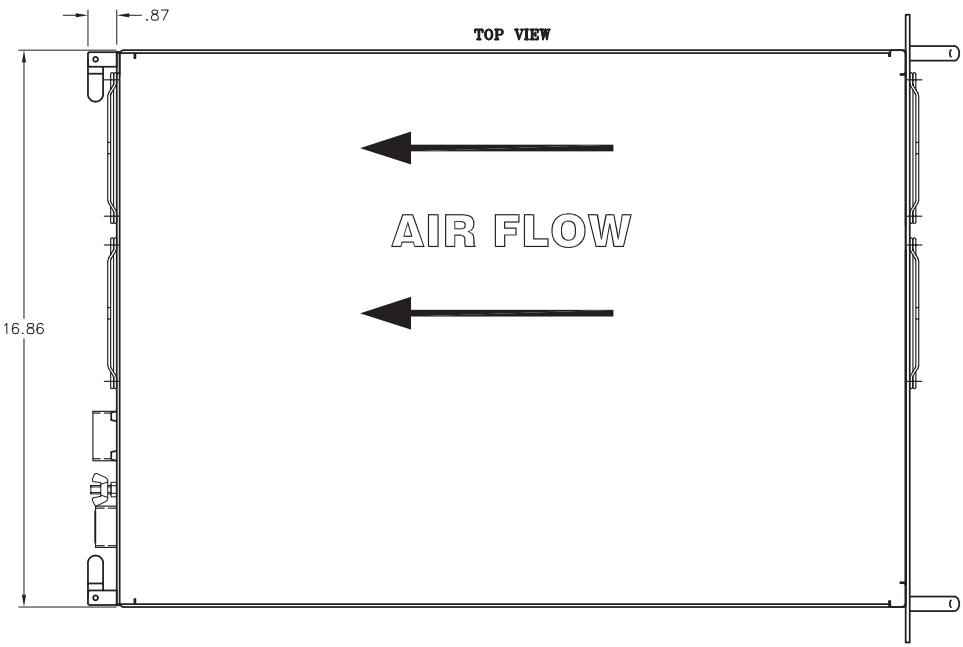
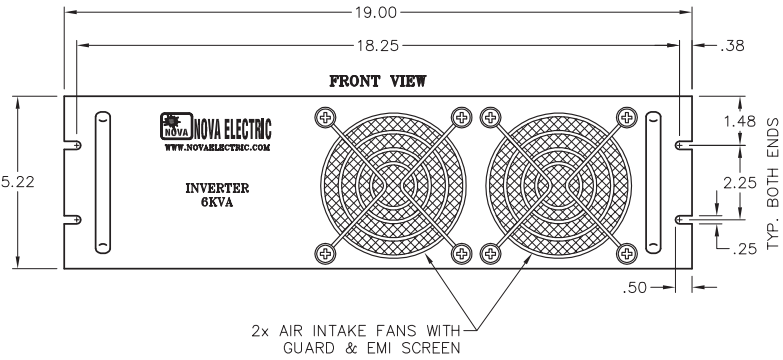
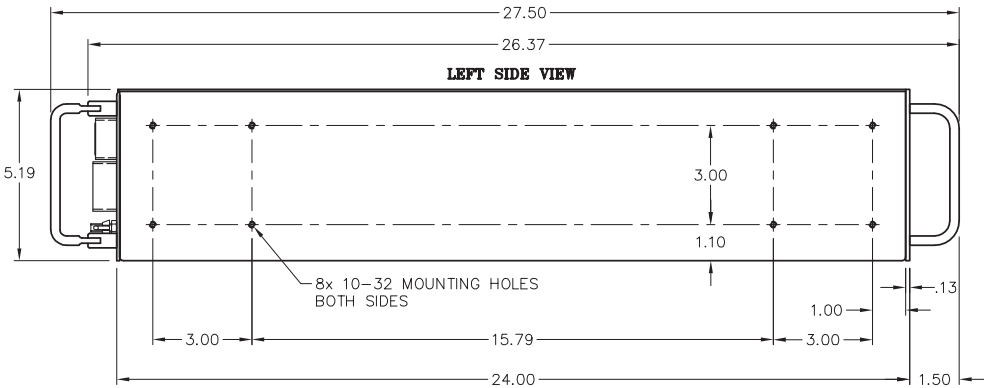
Random Vibration Testing: Section 8 (Category R, Fixed-Wing), paragraph 8.7.2, Figure 8-1: Aircraft Type 2, Test Category S, Zone 2, Curve B

Operational Shock Testing: Section 7 (Category B), paragraph 7.2, Standard operational, Peak value 6 g, Nominal duration 11 ms.

Certain models above have been tested and qualified to the above specifications. Consult the factory for details.



GALAXY LIGHTWEIGHT SERIES 270 VDC NOMINAL INPUT PURE SINE WAVE DC-AC INVERTERS - RACK MOUNT OUTLINE DRAWING



NOTES:

1. ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE SPECIFIED.
2. ALL UNDIMENSIONED PICTORIAL CONFIGURATIONS ARE FOR REFERENCE ONLY.
3. FRONT PANEL PAINTED ANSI #61 GRAY.
4. ALL FABRICATED PARTS ARE YELLOW IRRIDATED ALUMINUM.
5. UNIT THOROUGHLY RUGGEDIZED.

CONNECTOR PIN DESIGNATIONS

J1 DC INPUT		J2 AC OUTPUT	
PIN	DESCRIPTION	PIN	DESCRIPTION
A	POSITIVE (+)	A	LINE
B	NEGATIVE (-)	B	NEUTRAL
C	GROUND		

THIS DRAWING IN DESIGN AND DETAIL IS NOVA ELECTRIC PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

TOLERANCES UNLESS OTHERWISE SPECIFIED:
XXX = ± .02
.XXX = ± .005
ANGLE = ± 1/2°

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THIRD ANGLE PROJECTION

DRAWN: RL DATE: 06/19/12

CHECKED: BT DATE: 06/19/12

APPROVED: AL DATE: 06/19/12

NOVA ELECTRIC
A DIV. OF TECHNOLOGY DYNAMICS INC.
100 SCHOOL STREET
BERGENFIELD, N.J. 07821-2915

OUTLINE DRAWING,
GL270VDC 3U INVERTER

9981051

CAGE: 29019 | SHEET: 1 of 1 | REV





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 FREQUENCY CON-



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

