UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Power Supplies for Information Technology Equipment Including Electrical Business Equipment
CCN:	QQGQ, QQGQ7
Product:	Other
Model:	GEN5000W Series
Rating:	Input: 1. Three phase units (option 1): 190-240V; 3wire+PE, 50/60Hz, 18A; 2. Three phase units (option 2): 380-415V; 3wire+PE, 50/60Hz, 9.5A; Output: From 0-8VDC/600A up to 0-600VDC/8.5A, 5000 Watt max.
Applicant Name and Address:	NEMIC-LAMBDA LTD INDUSTRIAL ZONE P O BOX 500 20101 KARMIEL ISRAEL

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of Underwriters Laboratories Inc. ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

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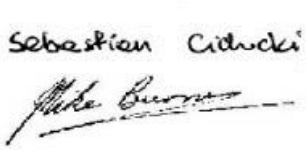

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.

ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.

iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The GEN5000W series is a family of power supplies having rated output from 0-8VDC/0-600A up to 0-600VDC/0-8.5A with total output power 5000 Watt maximum or less.

The units have Hazardous Energy Level output and intended to be installed in RAL.
All units may be adjusted by operator to 105% of the rated output voltage.
Units with output rated up to (and including) 40VDC considered as SELV output units.
Units with output rated 60VDC and more considered as Secondary Hazardous voltage output units.
The units consist of a steel box-type frame enclosure and aluminum cover.
The following common parts installed (or may be installed-optional parts) inside of enclosure:

common parts:
-Input board with soldered input connector (for190-240V input-IA653 or for 380-415V input-IA654)
-Power factor control (PFC) board (for 190-240V input-IA651 or for 380-415V input-IA655)
BIAS board (IA620)
-Two DC/DC converter boards connected in parallel(IA658 for output 8V-100V or IA652 for output 150V-600V)
-Control board(IA673)
-Output filter assembly(IA656 for output 8-100V or IA671 for output 150-600V)
-Display assembly(IA621 and indication voltage and current outputs)
-Fans assembly (board IA622 and three fans)

optional parts:
-Isolated analog control board (IA631)
-GPIB board (IA630)
-LAN board (IA672)

The units are suitable for maximum ambient operating temperature 50ºC at maximum load.
The units are suitable for maximum operational altitude up to 3000m.

Model Differences

The GEN5000W series is a family of power supplies having:
Two possible configuration of the Input board:
-3 phase, for units rated 190-240VAC
-3 phase, for units rated 380-415VAC

Technical Considerations

- Equipment mobility : movable
- Connection to the mains : pluggable A or B
- Operating condition : continuous
- Access location : restricted access location
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10%
- Tested for IT power systems : Yes
- IT testing, phase-phase voltage (V) : 230V
- Class of equipment : Class I (earthed)
- Considered current rating (A) : 20
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : 3000
- Altitude of test laboratory (m) : <2000
- Mass of equipment (kg) : 15
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50 °C
- The means of connection to the mains supply is: Pluggable A or B
- The product is intended for use on the following power systems: TN
- The following are available from the Applicant upon request: Specific data sheets for LED indicators that are class I and operate at wavelength in the 400-710 nm range.

- The product is suitable for use up to 3000 m altitude.

Additional Information

1. Input boards
The input board are constructed of UL Recognized input connector intended for factory and field wiring connection, EMI filter, inrush current protection and diode rectifier.
There are two types of input boards:
-3 phase, for units rated 190-240VAC
-3 phase, for units rated 380-415VAC
Input board provide the DC voltage for PFC (Power Factor Control) board

2. Power factor control (PFC) board
The PFC board includes Power Factor Correction circuit
There are two types of PFC board:
-For 3 phase units rated 190-240VAC
-For 3 phase units rated 380-415VAC
The PFC board provides 380VDC voltage for DC/DC converter boards and BIAS board

3. DC/DC boards
The DC/DC board includes DC/DC converter
There are two types of DC/DC board:
-For units having output voltage from 8VDC up to (and including) 100VDC
-For units having output voltage from 150VDC up to (and including) 600VDC
In each unit two DC/DC boards are assembled in parallel to provide full output power 5000W (Each board 2500W)
Each type of the DC/DC converter is the same besides the mains transformer construction and winding ratio.

4. BIAS
The BIAS board is same for all models.
The BIAS board includes auxiliary switching power supply providing DC voltage for internal circuits.
BIAS power supply provides three output circuits. One output is connected to SELV control (RS232) circuits. The other two outputs are connected to control circuits. Control circuits are regarded as SELV for units up to 40V output and Secondary Hazardous for all other power supply models.
Bias board provides reinforced insulation between the SELV output and the other two output which may be connected to Hazardous circuits in the non SELV output models

5. Control board
The control board is same for all models.
The control board includes control and adjust circuits for maintenance of functioning of DC/DC boards. The control board provides reinforced insulation between RS232/RS485 I/O circuits and the different power supply
modules.

6. Output filter assembly
The output filter assembly includes output filter and output current sense (shunt)
There are two types of output filter assembly:
-For units having output voltage from 8VDC up to (and including) 100VDC
-For units having output voltage from150VDC up to (and including) 600VDC
The first type of output filter assembly has bus-bar type of output terminals.
The second type of output filter assembly has UL Recognized connector intended for field wiring connection.

7. Display assembly
The display assembly is same for all models

The display assembly include digital display and components for management of the power supply

8. Fans assembly
The fans assembly is same for all units
The fans assembly consists of fans bracket, three same fans and fans distribution board

The original report has been reissued due to upgrade from UL 60950-1 1st ed. to UL 60950-1 2-nd ed. This report is a reissue of CBTR Ref. No.: E226085-A2-CB-4 , CB Test Certificate Ref. No.US/9970C/UL. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, has been determined that the product continues to comply with the standard

The original report has been reissued due to upgrade from UL 60950-1 1st ed. to UL 60950-1 2-nd ed. Based upon previous evaluation under the CB scheme - Test Certificate and Report Ref. No. 30783346.003 dated 11-Oct-10 prepared by TUV Rheinland of North America, Inc. 1279 Quarry Lane, Ste. A, Pleasanton, CA 94566 - Access To Energized Parts Test considered necessary - hazardous output voltage could be accessible to the user.

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.
Warning to service personnel	"CAUTION: Double pole/neutral fusing"

Special Instructions to UL Representative

N/A

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
N/A						

Earthing Continuity Test Exemptions - This test is not required for the following models:

Electric Strength Test Exemptions - This test is not required for the following models:

Electric Strength Test Component Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:

Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
N/A					