Test Report issued under the responsibility of:

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TEST REPORT
IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1: 2006
Information technology equipment – Safety – Part 1: General requirements

Report Reference No. ..... :	30783346.003
Date of issue ..... :	October 11th, 2010
Total number of pages	121
CB/CCA Testing Laboratory ..... :	TUV Rheinland of North America, Inc.
Address ..... :	1279 Quarry Lane, Ste. A, Pleasanton, CA 94566
Applicant's name ..... :	Nemic-Lambda Ltd.
Address ..... :	Industrial Zone P.O.B 500, Karmiel 20101, Israel
Manufacturer's name ..... :	Nemic-Lambda Ltd.
Address ..... :	Industrial Zone P.O.B 500, Karmiel 20101, Israel
Factory's name ..... :	Nemic-Lambda Ltd.
Address ..... :	Industrial Zone P.O.B 500, Karmiel 20101, Israel
Test specification:	
Standard ..... :	☒ IEC 60950-1:2005 (2nd Edition) and/or ☐ EN 60950-1:2006+A11:2009
Test procedure ..... :	CB
Non-standard test method…….. :	N/A
Test Report Form No. ..... :	IECEN60950_1C
Test Report Form(s) Originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2007-06

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.
This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.
If this Test Report Form is used by non-CCA members, the CIG logo and the reference to the CCA Procedure shall be removed.
This report is not valid as a CCA Test Report unless signed by an approved CCA Testing Laboratory and appended to a CCA Test Certificate issued by an NCB in accordance with CCA

Test item description ..... :	Series of Programmable Power Supplies
Trade Mark ..... :	TDK-Lambda, TDK·Lambda
Manufacturer ..... :	Nemic-Lambda Ltd.
Model/Type reference ..... :	GEN5000W series

Ratings ..... :	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: 0-8VDC/600A to 0-600VDC/8.5A, 5000 Watt max.

Testing procedure and testing location:
☒ **CB/CCA Testing Laboratory**: TUV Rheinland of North America, Inc. Testing location / address ..... : 1279 Quarry Lane, Ste. A, Pleasanton, CA 94566 ☐ **Associated CB Laboratory:** Testing location/ address ..... : Tested by (name + signature) ..... : Uwe Meyer  Approved by (+ signature) ..... : Ricardo Felix 
☐ Testing procedure: TMP Tested by (name + signature) ..... : Approved by (+ signature) ..... : Testing location / address ..... :
☐ Testing procedure: WMT Tested by (name + signature) ..... : Witnessed by (+ signature) ..... : Approved by (+ signature) ..... : Testing location / address ..... :
☐ Testing procedure: SMT Tested by (name + signature) ..... : Approved by (+ signature) ..... : Supervised by (+ signature) ..... : Testing location / address ..... :
☐ Testing procedure: RMT Tested by (name + signature) ..... : Approved by (+ signature) ..... : Supervised by (+ signature) ..... : Testing location / address ..... :

Summary of testing:

Tests performed (name of test and test clause):

Clause 1.6.2	Power Input Measurements
Clause 1.7.11	Durability of Marking Test
Clause 2.1.1.1	Accessibility to Energized parts
Clause 2.1.1.7	Capacitor discharge test
Clause 2.2	SELV circuits – voltage measurements (normal and fault conditions)
Clause 2.6.3.4	Protective earthing trace earth fault current; Earthing test
Clause 2.10.2	Determination of working voltage
Clause 4.2	Mechanical strength test
Clause 4.4	Hazardous moving parts
Clause 4.5	Temperature rise measurements
Clause 5.1	Touch current measurements
Clause 5.2	Dielectric strength test
Clause 5.3	Abnormal operating and fault Conditions

testing during original evaluation according to report number 30783346.001, no further testing was deemed necessary for this upgrade of standard

Testing location:

TUV Rheinland of North America, Inc.
1279 Quarry Lane, Ste. A
Pleasanton, CA 94566

Summary of compliance with National Differences:

Comments:

Summary of compliance with National Differences (for explanation of codes see below):
EU Group Differences, EU Special National Conditions, EU A-Deviations, AT, AU, CA, CH, DE, DK, FI, FR, GB, IT, KR, NL, NO, PL, SE, SI, US.

and Group Differences as listed at the end of this test report

Explanation of Codes:

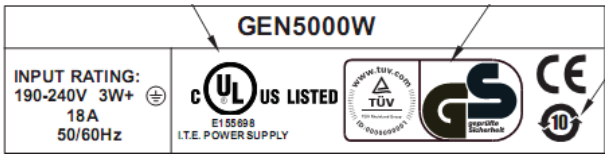
AT=Austria, CA-Canada, DE=Germany, DK=Denmark, FI=Finland, FR=France, GB=United Kingdom, IT=Italy, JP=Japan, KR=Korea, NL=The Netherlands, NO=Norway, PL=Poland, SE=Sweden, SI=Slovenia, US=United States

CB-Test Report History:

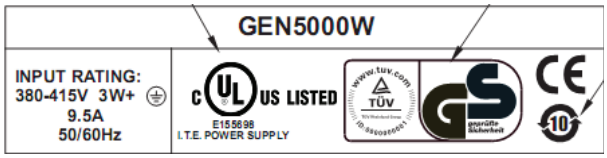
30783346.001	Original CB-Report
30783346.003	**New CB-report / this report for an upgrade of standard to list IEC 60950-1:2005**

Copy of marking plate:

Three phase units (option 1)



Three phase units (option 2)



Test item particulars ..... :	
Equipment mobility ..... :	[x] movable [ ] hand-held [ ] transportable [ ] stationary [ ] for building-in [ ] direct plug-in
Connection to the mains ..... :	[ ] pluggable equipment [ ] type A [ ] type B [ ] permanent connection [ ] detachable power supply cord [ ] non-detachable power supply cord [ ] not directly connected to the mains *(NOTE: depends to the final installation)*
Operating condition ..... :	[x] continuous [ ] rated operating / resting time:
Access location ..... :	[ ] operator accessible [x] restricted access location
Over voltage category (OVC) ..... :	[ ] OVC I [x] OVC II [ ] OVC III [ ] OVC IV [ ] other:
Mains supply tolerance (%) or absolute mains supply values ..... :	+10/-10
Tested for IT power systems ..... :	[x] Yes (Norway only) [ ] No
IT testing, phase-phase voltage (V) ..... :	230VAC
Class of equipment ..... :	[x] Class I [ ] Class II [ ] Class III [ ] Not classified
Considered current rating (A) ..... :	Option 1 - 18A max.; Option 2 - 9.5A max.
Pollution degree (PD) ..... :	[ ] PD 1 [x] PD 2 [ ] PD 3
IP protection class ..... :	IP X0
Altitude during operation (m) ..... :	3000
Altitude of test laboratory (m) ..... :	
Mass of equipment (kg) ..... :	15 kg max.
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
Testing ..... :	
Date of receipt of test item ..... :	November 12, 2007 *[date of receipt of test item during original testing according to report number 30783346.001]*
Date(s) of performance of tests ..... :	November 13, 2007 *[date of performance of testing during original evaluation according to report number 30783346.001, no further testing was deemed necessary for this upgrade of standard]*

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.

Throughout this report a point is used as the decimal separator.

General product information:

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 are evaluated for use in TN, TT and IT (Norway only) power systems.
The units are Class I, evaluated for use in Installation Category II and Pollution Degree 2 environments.
The units have Hazardous Energy Level outputs 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 (but not including) 60VDC considered as SELV output units.
Units with output rated 60VDC and higher considered as Secondary Hazardous voltage output units.
The units consist of a steel box-type frame enclosure with 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)

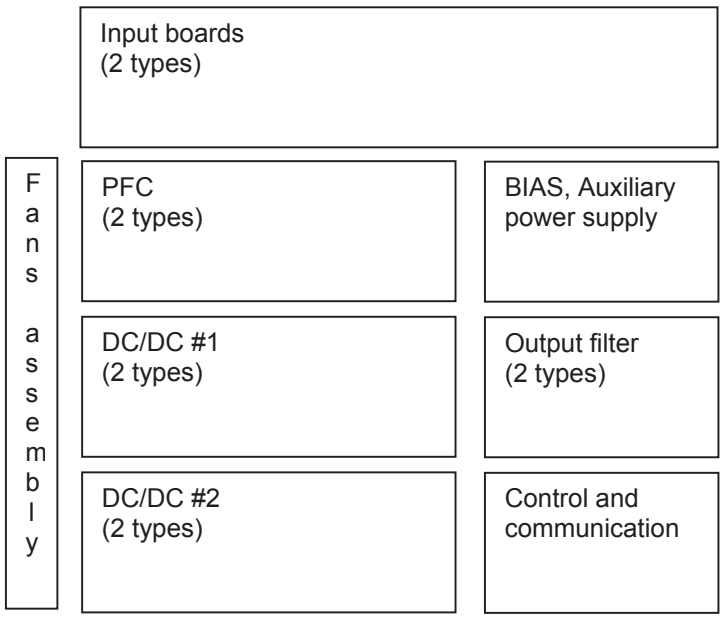
The input power connectors and output connectors are suitable for factory and field wiring.

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

Attachments:

Attachment 1: Photographs of Test Sample

Block Diagram (as they are laid out with in unit)



Component's description

1. Input boards

The input board is 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

The input board provides the DC voltage for the PFC (Power Factor Control) board

2. Power factor control (PFC) board

The PFC board includes a 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 the DC/DC converter boards and BIAS board

3. DC/DC boards

The DC/DC board includes a DC/DC converter

There are two types of DC/DC boards:

- 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 there are two DC/DC boards which 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 the same for all models.

The BIAS board includes an auxiliary switching power supply providing the DC voltage for the internal circuits. The BIAS power supply provides three output circuits. One output is connected to the SELV control (RS232) circuits. The other two outputs are connected to the control circuits. Control circuits are regarded as SELV for units up to 40V output and Secondary Hazardous for all other power supply models.
5. Control board The control board is the same for all models. The control board includes the control and adjusts circuits for maintenance of functioning of DC/DC boards.
6. Output filter assembly The output filter assembly includes an output filter and output current sense (shunt) There are two types of the output filter assembly: • For units having an output voltage from 8VDC up to (and including) 100VDC • For units having an 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 a UL Recognized connector intended for factory and field wiring.
7. Display assembly The display assembly is same for all models The display assembly includes a digital display and components for management of the power supply
8. Fans assembly The fans assembly is the same for all units The fans assembly consists of fans bracket, three identical fans and a fans distribution board