





TEST REPORT
EN 50178
Electronic equipment for use in power installations

Report reference No: 100117936CRT-005a

Tested by
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Approved by
(printed name and signature): Steve Pasternack 

Date of issue: September 02, 2010

Testing Laboratory Name: Intertek Testing Services NA, Inc.

Address: 3933 U.S. Route 11, Cortland, NY 13045, USA

Testing location: CCATL SMT TMP

Address: 3933 U.S. Route 11, Cortland, NY 13045, USA

Applicant's Name: Direct Grid Technologies LLC

Address: 131 Heartland Blvd, Edgewood, NY 11717, USA

.....:

Test specification

Standard.....: EN 50178:1997

Test procedure: CCA

Non-standard test method: None

Test Report Form No. EN50178B

TRF originator: SGS Fimko Ltd

Master TRF: Dated 2002-01

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Test item description: Single Phase Utility Grid-Tie Inverter

Trademark: Direct Grid TECHNOLOGIES

Model and/or type reference: DGM-S460

Rating(s).....: DC input: 53-65 VDC, Max. 10.0 A
AC output: 230 VAC, 50/60Hz
Temperature range: -40 °C – +65 °C

Manufacturer: **Direct Grid Technologies LLC**
131 Heartland Blvd, Edgewood, NY 11717, USA

Sample Series#: 2010000033

Test items particulars:

Equipment mobility: Micro-inverter, to be fixed for permanent connection
 Tested for IT power systems: No
 IT testing, phase-phase voltage (V): N/A
 Class of equipment.....: Class I
 Mass of equipment (kg).....: 2.1 kg
 Accessory tested together with the unit: No
 Protection against ingress of water: IPX4

Test case verdicts

Test case does not apply to the test object ...: N/A
 Test item does meet the requirement: P(ass)
 Test item does not meet the requirement: F(ail)

Testing

Date of receipt of test item: August 12, 2010
 Date(s) of performance of test: August 12-31, 2010

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item(s) tested.

"(see remark #)" refers to a remark appended to the report.

"(see Annex #)" refers to an annex appended to the report.

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

Attachments: (to be provided and checked after testing, etc.)

1. Test package	14 pages
2. Photo Document	16 pages
3. Drawings and Schematics Diagram	10 pages
4. Installation and Operations Manual	22 pages
5. List of production test	4 pages
6. EMC test report	51 Pages
7. Other supporting document	20 Pages

Copy of marking plate and summary of testing (inverter and rectifier, to be provided):

Direct Grid TECHNOLOGIES **DGM-S460**

Single Phase Utility Grid-Tie Inverter Model Number: DGM-S460
 AC output: 230 VRMS, 50/60 Hz DC Input Power Tracking Voltage: 53-65 VDC
 Max. Output Current: 2A Max. Input Current: 10.0A
 Temp Range: -40 to 65°C Enclosure Rating: IPX4

GRID MAIN (L1) (L2) (GND) **PV INPUT** (-) (+)

WARNING: Only qualified personnel should install this device; no user serviceable parts inside; opening unit voids the warranty

Hot to the touch

CE
Complies with VDE 0126-1-1

The sample is tested for:

- 4.1: Electrical data measurement
- 4.3: Earth fault tests: in the supply mains and the output
- 5.2.5: Discharge of capacitors
- 5.2.11: Leakage current
- 7.1.6.2: Fault condition test
- 7.1.7: Temperature rise measurement
- 9.4.1: Visual Inspections
- 9.4.2: Climatic environmental tests (dry heat test and damp heat test)
- 9.4.3: Mechanical tests (topple test and vibration test)
- 9.4.4: Safety related mechanical tests (CI and Cr, Non-accessibility test, Enclosure IP44 test)
- 9.4.5: Safety related electrical (dielectric) tests (Impulse voltage tests, A.C. or d.c. voltage test, Partial discharge test)
- 9.4.6: Electrical environment tests (Emission of electromagnetic disturbance, Immunity from electromagnetic disturbance, Short-circuit withstand capability)
- 9.4.7: Performance test
- A.4.7: Acoustic noise measurement