


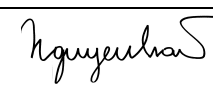


Test Report issued under the responsibility of:



<b>TEST REPORT</b>	
<b>IEC 60950-1</b>	
<b>Information technology equipment – Safety –</b>	
<b>Part 1: General requirements</b>	
<b>Report Number</b> .....	: 31382547.007
<b>Date of issue</b> .....	: 16 July 2015
<b>Total number of pages</b> .....	: 86 + Attachments
<b>Applicant's name</b> .....	: TDK-Lambda Americas Inc.
<b>Address</b> .....	: 401 Mile of Cars Way, Suite 325, National City, CA, 91950 USA
<b>Test specification:</b>	
<b>Standard</b> .....	: IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013 and EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013
<b>Test procedure</b> .....	: CB Scheme
<b>Non-standard test method</b> .....	: N/A
<b>Test Report Form No</b> .....	: IEC60950_1F
<b>Test Report Form(s) Originator</b> .....	: SGS Fimko Ltd
<b>Master TRF</b> .....	: Dated 2014-02
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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.	
<b>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.</b>	
<b>General disclaimer:</b>	
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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

<b>Test item description</b> .....	Switch Mode Power Supply
<b>Trade Mark</b> .....	<b><i>TDK-Lambda</i></b>
<b>Manufacturer</b> .....	Same as applicant
<b>Model/Type reference</b> .....	1) CPFE1000FI-12/xy, 2) CPFE1000FI-28/xy, 3) CPFE1000FI-48/xy with x = blank, /C, /P or /H; y = blank or /H where blank indicates "with U channel", C indicates "with Cover", P indicates "No U channel" and H indicates "with Conformal coating"
<b>Ratings</b> .....	Input: 1) 100–240 Vac, 50–60 Hz, 12 A; 2,3) 100–240 Vac, 50–60 Hz, 16 A Output: 1) 9.6–14.4 Vdc (12 Vdc), 60 A, 720 W, 2) 22.4–33.6 Vdc (28 Vdc), 36 A, 1008 W & 3) 38.4–57.6 Vdc (48 Vdc), 21 A, 1008 W

<b>Testing procedure and testing location:</b>		
<input checked="" type="checkbox"/>	<b>CB Testing Laboratory:</b>	TÜV Rheinland of North America, Inc.
<b>Testing location/ address</b> .....		1279 Quarry Lane, Suite A, Pleasanton, CA 94566
<input type="checkbox"/>	<b>Associated CB Testing Laboratory:</b>	
<b>Testing location/ address</b> .....		
<b>Tested by (name + signature)</b> .....		Duy Nguyen 
<b>Approved by (name + signature)</b> .....		Hai Nguyen 
<input type="checkbox"/>	<b>Testing procedure: TMP/CTF Stage 1:</b>	N/A
<b>Testing location/ address</b> .....		
<b>Tested by (name + signature)</b> .....		
<b>Approved by (name + signature)</b> .....		
<input type="checkbox"/>	<b>Testing procedure: WMT/CTF Stage 2:</b>	N/A
<b>Testing location/ address</b> .....		
<b>Tested by (name + signature)</b> .....		
<b>Witnessed by (name + signature)</b> .....		
<b>Approved by (name + signature)</b> .....		
<input type="checkbox"/>	<b>Testing procedure: SMT/CTF Stage 3 or 4:</b>	N/A
<b>Testing location/ address</b> .....		
<b>Tested by (name + signature)</b> .....		
<b>Witnessed by (name + signature)</b> .....		
<b>Approved by (name + signature)</b> .....		
<b>Supervised by (name + signature)</b> .....		

**List of Attachments (including a total number of pages in each attachment):**

Attachment No. 1: National and Group Differences (31 pages)

Attachment No. 2: Photographs (2 pages)

Attachment No. 3: CB certificate for Power Module (2 pages)

Attachment No. 4: Output Ratings (5 pages)

**Summary of testing:**
**Tests performed (name of test and test clause):**
31382547.001

Clause 1.6.2	Input Test
Clause 1.7.11	Durability of Marking Test
Clause 2.1.1.5 c)	1 Max Voltage, Current and VA Measurement Test
Clause 2.1.1.7	Capacitance Discharge Test
Clause 2.2	SELV Reliability Test
Clause 2.6.3	Earthing Test
Clause 2.10	Working Voltage Measurement Test
Clause 4.5	Temperature Test
Clause 5.1	Touch Current Measurement Test
Clause 5.2	Electric Strength Test
Clause 5.3	Abnormal

31382547.003

Clause 4.5	Temperature Test
Clause 5.2	Electric Strength Test

31382547.005

No Testing

31382547.007

No testing

**Testing location:**

 TDK-Lambda Americas Inc.  
 3055 Del Sol Blvd., San Diego, CA 92154 USA

**Summary of compliance with National Differences:**
**List of countries addressed**

EU Group Differences, EU Special National Conditions, United States, Canada


 The product fulfils the requirements of IEC 60950-1:2005 + Am 1:2009 + Am 2:2013; EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013

**Copy of marking plate:**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

**TDK-Lambda** MODEL No.: **CPFE1000Fi-12**


INPUT: 100-240 V (~), 12A, 50-60 HZ  
INPUT POWER : 1000W MAX.  
DC OUTPUT POWER: 720W MAX.  
9.6-14.4 VDC (---) @ 60A MAX.



SEE MANUAL FOR CONNECTIONS AND OTHER INPUT/OUTPUT DE-RATING INFORMATION

REV. **X1**


MADE IN  
XXXXXXX



CLV-XXXXXX-FFFF SWWY

**TDK-Lambda** MODEL No.: **CPFE1000Fi-28**


INPUT: 100-240 V (~), 16A, 50-60 HZ  
INPUT POWER : 1300W MAX.  
DC OUTPUT POWER: 1008W MAX.  
22.4-33.6 VDC (---) @ 36A MAX.



SEE MANUAL FOR CONNECTIONS AND OTHER INPUT/OUTPUT DE-RATING INFORMATION

REV. **X1**


MADE IN  
XXXXXXX



CLV-XXXXXX-FFFF SWWY

**TDK-Lambda** MODEL No.: **CPFE1000Fi-48**


INPUT: 100-240 V (~), 16A, 50-60 HZ  
INPUT POWER : 1300W MAX.  
DC OUTPUT POWER: 1008W MAX.  
38.4-57.6 VDC (---) @ 21A MAX.



SEE MANUAL FOR CONNECTIONS AND OTHER INPUT/OUTPUT DE-RATING INFORMATION

REV. **X1**

MADE IN  
XXXXXXX



CLV-XXXXXX-FFFF SWWY

<b>Test item particulars</b> .....	
<b>Equipment mobility</b> .....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
<b>Connection to the mains</b> .....	<input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains <input checked="" type="checkbox"/> for building in to be determined in end use
<b>Operating condition</b> .....	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
<b>Access location</b> .....	<input type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> for building in to be determined in end use
<b>Over voltage category (OVC)</b> .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
<b>Mains supply tolerance (%) or absolute mains supply values</b> .....	+/- 10%
<b>Tested for IT power systems</b> .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>IT testing, phase-phase voltage (V)</b> .....	
<b>Class of equipment</b> .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
<b>Considered current rating of protective device as part of the building installation (A)</b> .....	
<b>Pollution degree (PD)</b> .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
<b>IP protection class</b> .....	IPX0
<b>Altitude during operation (m)</b> .....	2000 m
<b>Altitude of test laboratory (m)</b> .....	2000 m
<b>Mass of equipment (kg)</b> .....	1.26

<b>Possible test case verdicts:</b>	
- 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)
<b>Testing</b> .....	
<b>Date of receipt of test item</b> .....	31382547.001 - 09/11/13 31382547.003- 07/18/2014 31382547.005- N/A 31382547.007- N/A
<b>Date (s) of performance of tests</b> .....	31382547.001 - 09/11/13 – 09/18/13 31382547.003- 07/18/2014 31382547.005- N/A 31382547.007- N/A

<b>General remarks:</b>	
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.  <b>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</b>	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60950-1:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies) .....</b> :	TDK-LAMBDA MALAYSIA SDN BHD PLO33 Kawasan Perindustrian Senai 81400 Senai, Malaysia
<b>General product information:</b>	
The equipment is an AC/DC power supply. The constructions of all the models are identical except for the output resistance values. Model Nomenclature: Where X maybe blank, /C, /P or /H; Y maybe blank or /H, where blank indicates "with U channel", C indicates "with Cover", P indicates "No U channel" and H indicates "with Conformal coating".	
<b>History of CB report:</b>	
<u>31382547.001</u> Original CB report	
<u>31382547.003</u> Amendment 1 to the original CB report 31382547.001. This test report also covers the following administrative changes: <ul style="list-style-type: none"> <li>• Updated of the temperature test data for models CPFE1000FI-28 and -48</li> <li>• Addition of Attachment No. 4: Output Ratings</li> </ul>	
<u>31382547.005</u> Amendment 2 to the CB report 31382547.001 to change the applicant address from "3055 Del Sol Boulevard, San Diego, CA 92154 USA" to "401 Mile of Cars Way, Suite 325, National City, CA, 91950 USA"	
<u>31382547.007</u>	

New CB report covers the upgrade of standard to IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013. No additional testing is deemed necessary.

Note: Gaps in the report numbering were reserved for TÜV internal use, not related to the technical contents of the CB report.

Conditions of Acceptability:

The units are considered to operate under the conditions of:

- Pollution Degree 2 environment
- Equipment Mobility: Component for building-in
- Class of Equipment: Class I

1. These products can be used in any orientation providing the baseplate temperature does not exceed 85°C. See output rating below.
2. The input and output connectors are not acceptable for use as field wiring terminals.
3. The baseplate must be properly bonded to the main protective earthing contact in the end use equipment.
4. Fire enclosure requirement must be addressed in the end use equipment.
5. Re-evaluation of the heating, dielectric and bonding tests need to be conducted in the end use equipment.
6. Suitability of enclosure shall be provided in the end use equipment. 7.
7. Short-circuit back-up protection in accordance with clause 2.7.3 shall be evaluated in the end-use equipment.

**Abbreviations used in the report:**

- normal conditions	<b>N.C.</b>	- single fault conditions	<b>S.F.C</b>
- functional insulation	<b>OP</b>	- basic insulation	<b>BI</b>
- double insulation	<b>DI</b>	- supplementary insulation	<b>SI</b>
- between parts of opposite polarity	<b>BOP</b>	- reinforced insulation	<b>RI</b>

**Indicate used abbreviations (if any)**