Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E317867-A86-CB-1
Date of issue ..... :	2015-04-24
Total number of pages ..... :	12
CB Testing Laboratory ..... :	UL Northbrook
Address ..... :	333 Pfingsten Road, Northbrook, IL, 60062-2096, USA
Applicant's name ..... :	XP POWER L L C
Address ..... :	15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1F
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

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.

General disclaimer

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.

Test item description ..... :	Switching Power Supply
Trade Mark ..... :	
Manufacturer ..... :	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 UNITED STATES
Model/Type reference ..... :	EPL225PSxx, (where the "xx" can be any number between 12 to 48 indicating main output voltage, may also be provided with suffix "SF".)
Ratings ..... :	Input: 100-240 Vac, 50/60Hz, 3A Max. Output: See Model Differences for details.

Testing procedure and testing location:		
[x]	**CB Testing Laboratory**	
	Testing location / address .....:	UL Northbrook 333 Pfingsten Road, Northbrook, IL, 60062-2096, USA
[ ]	**Associated CB Test Laboratory**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	Robert Leon
	Approved by (name + signature)....:	Dave Piecuch
[ ]	**Testing Procedure: TMP/CTF Stage 1**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
[ ]	**Testing Procedure: WMT/CTF Stage 2**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Witnessed by (name + signature) ..:	
	Approved by (name + signature)....:	
[ ]	**Testing Procedure: SMT/CTF Stage 3 or 4**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) .:	
[ ]	**Testing Procedure: RMT**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) .:	

List of Attachments

National Differences (0 pages)

Enclosures (0 pages)

Summary of Testing:

No tests were conducted

Summary of Compliance with National Differences:

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, BG, BY, CA, CH, CN, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IT, JP, KR, NL, NO, PL, PT, RO, SE, SG, SI, SK, UA, US

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	for building-in
Operating condition ..... :	continuous
Access location ..... :	for building-in
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) ..... :	230
Class of equipment ..... :	Class I
Considered current rating of protective device as part of the building installation (A) ..... :	20 A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IP X0
Altitude of operation (m) ..... :	5000
Altitude of test laboratory (m) ..... :	less than 2000 meters
Mass of equipment (kg) ..... :	0.1
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(s) of receipt of test item ..... :	N/A
Date(s) of Performance of tests ..... :	N/A

General remarks:

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

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

Manufacturer's Declaration per Sub Clause 4.2.5 of IECEE 02: Yes

The application for obtaining a CB Test Certificate includes more than one factory 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 .....

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies):
ABES TECHNOLOGY CO LTD
3 LANE 891, SEC 1 ZHANGSHUI RD
XIUSHUI HSIANG
CHANGHUA HSIEN
504 TAIWAN

XP POWER (KUNSHAN) LTD
230 BIN JIANG NAN RD
ZHANGPU TOWN
KUNSHAN
JIANGSU 215321 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2015-08-07 to include the following changes/additions:
Correction: Insulation Class from Class B to Class F.

Product Description

The models covered in this report are component AC-DC power supplies intended for use in Information Technology Equipment. They are open frame power supplies intended for building-in.

Model Differences

All models in the Model EPL225PSXX Series are identical with exception to the Mains Transformer (TR1) and minor secondary components that allow for different output voltage ratings.

Output Ratings:
EPL225PS12: V1: 12Vdc, 12.5A Max., 150 W Max. (Convection Cooled) or
: 12Vdc, 18.75A Max., 225 W Max. (Forced Air Cooled)
V2: 12Vdc, 0.5A, (Forced Air Cooled Only)
EPL225PS15: V1: 15Vdc, 10A Max., 150 W Max. (Convection Cooled) or
: 15Vdc, 15A Max., 225 W Max. (Forced Air Cooled)
V2: 12Vdc, 0.5A, (Forced Air Cooled Only)
EPL225PS18: V1: 18Vdc, 8.33A Max., 150 W Max. (Convection Cooled) or
: 18Vdc, 12.5A Max., 225 W Max. (Forced Air Cooled)
V2: 12Vdc, 0.5A, (Forced Air Cooled Only)
EPL225PS24: V1: 24Vdc, 6.25A Max., 150 W Max. (Convection Cooled) or
: 24Vdc, 9.38A Max., 225 W Max. (Forced Air Cooled)
V2: 12Vdc, 0.5A, (Forced Air Cooled Only)
EPL225PS28: V1: 28Vdc, 5.36A Max., 150 W Max. (Convection Cooled) or
: 28Vdc, 8.04A Max., 225 W Max. (Forced Air Cooled)
V2: 12Vdc, 0.5A, (Forced Air Cooled Only)
EPL225PS36: V1: 36Vdc, 4.16A Max., 150 W Max. (Convection Cooled) or
: 36Vdc, 6.25A Max., 225 W Max. (Forced Air Cooled)
V2: 12Vdc, 0.5A, (Forced Air Cooled Only)
EPL225PS48: V1: 48Vdc, 3.1A Max., 150 W Max. (Convection Cooled) or
: 48Vdc, 4.69A Max., 225 W Max. (Forced Air Cooled)
V2: 12Vdc, 0.5A, (Forced Air Cooled Only)

Suffix "SF" indicates single fuse provided in the line side of the primary.

Additional Information

The required clearance values have been assessed for suitability up to 5000 m elevation (1.48 correction factor as per IEC 60664-1, Table A2).

The need for the additional testing and evaluation shall be determined in the end product investigation.

The nameplate markings provided as an Enclosure - Marking Plate are considered representative of the entire series.

The power supply series covered by this report employ Double/Reinforced Insulation between Primary and Secondary circuits.

Correction 1 - No testing was considered necessary due to the addition of Supplementary Information in the Table 4.5.5 that clarifies acceptance of the test data under SMT.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C at full rated load and 70°C at 50% rated load.
- The means of connection to the mains supply is: for building-in, to be determined in end-product.
- The product is intended for use on the following power systems: TN, IT
- The equipment disconnect device is considered to be: for building-in, to be determined in end-product.
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report).

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The following Production-Line tests are conducted for this product: Electric Strength, Earthing Continuity
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 280 Vrms, 484 Vpk, Primary-Earthed Dead Metal: 240 Vrms, 400 Vpk
- The following secondary output circuits are at hazardous energy levels: All
- The power supply terminals and/or connectors are: Not investigated for field wiring
- The maximum investigated branch circuit rating is: 20A
- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is: Required
- An investigation of the protective bonding terminals has: Not been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral: Input Connector (CN1) N terminal.
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): TR1 (Class F)
- The following end-product enclosures are required: Fire, Mechanical, Electrical
- Suitable disconnect device is to be provided in the end system. --
- Temperature, Leakage and Dielectric Strength testing shall be considered in the end system. --
- According to IEC60664-1, Table A2, required Clearances have been adjusted by multiplying the clearance at sea level by a factor of 1.48 for operating at an altitude of 5000 meters. The correction factor is based on barometric pressure of 70kPa and Overvoltage Category II. If the calculated Clearance exceeded the Creepage, the Creepage was adjusted to the value of clearance. No other

additional requirements were considered at this time as they are not explicitly addressed in UL 60950-1. --

- Printed Wiring Board rated 130°C. --
- The equipment is provided with a fuse in both the Line and Neutral of the primary circuit. The need for a marking warning service person of the hazards associated with neutral fusing shall be considered in the end-product. --
- Heatsinks are floating and considered live. They should not be accessible in the end-product. --
- Heating test was not conducted on unit with input/output leads. If unit is provided with input and/or output leads, then temperature on leads must be measured and cannot exceed 105°C. --

Abbreviations used in the report:

- normal condition	N.C.	- single fault condition	S.F.C
- operational insulation	OP	- basic insulation	BI
- basic insulation between parts of opposite polarity:	BOP	- supplementary insulation	SI
- double insulation	DI	- reinforced insulation	RI

Indicate used abbreviations (if any)