Ref. Certif. No.

US-24060-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Component Switching Power Supply
Name and address of the applicant Nom et adresse du demandeur	XP POWER L L C Suite 150 1241 E DYER RD Santa Ana, CA 92705 USA
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER L L C Suite 150 1241 E DYER RD Santa Ana, CA 92705 USA
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP Power LLC 990 Benecia Ave, Sunnyvale CA 94085 USA ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	Input Rated: ~ 100-240 Vac, 50/60 Hz, 16.5 A Output Rated: See Test Report for details.
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	SMT
Model / Type Ref. Ref. De type	HPU1K5PSXX-M See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 60601-1:2006/ A1:2013. National Differences specified in the CB Test Report. ☐ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60601-1(ed.3), IEC 60601-1(ed.3);am1
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	4786488107-20111229 issued on 2014-09-16

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2014-10-13

Signature:

Jolanta M. Wroblewska

Ref. Certif. No.

US-24060-UL

Model Details:
HPU1K5PSXX-M (where XX can be any number 12-48, may also be followed by suffix SF)

Factories:
XP Power (Kunshan) Limited
230, Bin Jiang Nan Road, Zhang Pu Town, Kunshan, Jiangsu 215300
China

Additional information (if necessary)
Information complémentaire (si nécessaire)

- ☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
- ☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
- ☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
- ☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2014-10-13

Signature:

Jolanta M. Wroblewska

Test Report issued under the responsibility of:

IEC 60601-1
Medical electrical equipment
Part 1: General requirements for basic safety and essential performance

Report Reference No.....:	4786488107-20111229
Date of issue.....:	2014-09-16
Total number of pages.....:	169
CB Testing Laboratory.....:	UL Camas
Address.....:	2600 NW Lake Rd., Camas, WA 98607, USA
Applicant's name.....:	XP Power LLC
Address.....:	Suite 150, 1241 E Dyer Road, Santa Ana, CA 92705 USA
Test specification:	
Standard.....:	IEC 60601-1: 2005 + CORR. 1:2006 + CORR. 2:2007 + AM1:2012 (or IEC 60601-1: 2012 reprint)
Test procedure.....:	CB Scheme
Non-standard test method……..:	
Test Report Form No.....:	IEC60601_1J
Test Report Form Originator.....:	UL(US)
Master TRF.....:	2014-07

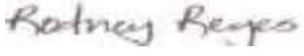
If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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.

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 .....:	Component Switching Power Supply
Trade Mark .....:	
Manufacturer.....:	XP Power LLC, Suite 150, 1241 E Dyer Road, Santa Ana, CA 92705 USA
Model/Type reference.....:	HPU1K5PSXX-M (where XX can be any number 12-48, may also be followed by suffix SF).
Ratings.....:	Input Rated: ~ 100-240 Vac, 50/60 Hz, 16.5 A Output Rated: See Model Differences for details.

Testing procedure and testing location:			
☐	**CB Testing Laboratory:**		
Testing location/ address ..... :			
☐	**Associated CB Testing Laboratory:**		
Testing location/ address ..... :			
Tested by (name + signature)..... :			
Approved by (name + signature) ..... :			
☐	**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 ..... :		XP Power LLC, 1241 E. Dyer Rd #150, Santa Ana, CA 92705, USA	
Tested by (name + signature)..... :		Rodney Reyes	
Approved by (name + signature) ..... :		Tac Pham	

Supervised by (name + signature)..... :	Timothy L. Gambrell	

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

National Differences (9 pages)

Enclosure (59 pages)

Summary of testing:

Unless otherwise indicated, all tests were conducted at XP Power LLC, 1241 E. Dyer Rd #150, Santa Ana, CA 92705, USA

All testing conducted under the Applicant's IEC 60601-1, 3rd Ed under CB Test Report 11CA52741 and CB Certificate US-18302-UL. The tests conducted per 3rd ed of IEC 60601-1 were considered representative of the corresponding tests required by IEC 60601-1: 2012, 3rd Edition with Am. 1

Tests performed (name of test and test clause):	**Testing location:**
Input Test (4.11) Humidity Preconditioning Treatment (5.7) Limitation of Voltage, Current or Energy (8.4.3, 8.4.4) Leakage Current (8.7) Working Voltage Measurement (8.5.4) Dielectric Voltage Withstand (8.8.3) Temperature Test (11.1) Abnormal Operation and Single Fault Conditions (13.2) Mains Transformers (short and overload) (15.5, 13.2.3)	XP Power LLC, 1241 E. Dyer Rd #150, Santa Ana, CA 92705, USA

Summary of compliance with National Differences

List of countries addressed:

US, CAN, AUSTRIA, REPUBLIC OF KOREA, SWEDEN and UNITED KINGDOM

☒ The product fulfils the requirements of IEC 60601-1:2012, Edition 3 with Am. 1

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.

Labels provided are considered representative of the entire series.

GENERAL INFORMATION

Test item particulars (see also Clause 6):

Classification of installation and use ..... :	Building-in
Device type (component/sub-assembly/ equipment/ system) :	Component power supply
Intended use (Including type of patient, application location) :	To supply regulated power
Mode of operation .....:	Continuous
Supply connection	To be determined in the end product
Accessories and detachable parts included.....:	N/A
Other options include .....:	N/A

Testing

Date of receipt of test item(s) .....:	2008-12-01, 2009-07-28, 2011-08-10
Dates tests performed .....:	2008-12-02 to 2009-05-20, 2009-09-14 to 2010-02-04, 2011-08-09 to 2011-11-23

Possible test case verdicts:

- test case does not apply to the test object .....:	N/A
- test object does meet the requirement.....:	Pass (P)
- test object was not evaluated for the requirement ..... :	N/E (collateral standards only)
- test object does not meet the requirement.....:	Fail (F)

Abbreviations used in the report:

- normal condition.....: N.C.	- single fault condition.....: S.F.C.
- means of Operator protection .....: MOOP	- means of Patient protection ....: MOPP

General remarks:

"(See Attachment #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
The tests 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 testing laboratory.
List of test equipment must be kept on file and available for review.
Additional test data and/or information provided in the attachments to this report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:2012

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..... :

☒ **Yes**

☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)..... :	XP Power LLC, 990 Benecia Ave, Sunnyvale CA 94085, USA XP Power (Kunshan) Limited., 230, Bin Jiang Nan Road, Zhang Pu Town, Kunshan, Jiangsu 215300 China

General product information:

Product Description
Model covered in this report is a component power supply intended for use in Medical Electrical Equipment. The need for the additional testing and evaluation shall be determined in the end product evaluation. This is a Class I, open frame power supply intended for building-in.

Model Differences
The power supplies in the series are differentiated by the output voltage and current ratings, number of turns of primary/secondary windings in the Transformers (T2 (Power)) and minor differences in the secondary circuit components and PWB layout.

See below for Model Ratings Table for 50°C below:

Model No.	V1 Output			
	Voltage (Vdc)	Input Rated (Vac)	Max. Current (A)	Max. Power (W)
HPU1K5PS12-M	10.1 to 13.5	100-240	100	1200
HPU1K5PS15-M	13.6 to 17	100-240	80.0	1200
HPU1K5PS18-M	17.1 to 21	100-240	66.6	1200
HPU1K5PS24-M	21.1 to 26	100-180	50.0	1200
HPU1K5PS24-M	21.1 to 26	180-240	62.5	1500
HPU1K5PS28-M	26.1 to 31	100-180	42.80	1200
HPU1K5PS28-M	26.1 to 31	180-240	53.57	1500
HPU1K5PS33-M	31.1 to 33	100-180	36.36	1200
HPU1K5PS33-M	31.1 to 33	180-240	45.45	1500
HPU1K5PS36-M	33.1 to 42	100-180	33.3	1200
HPU1K5PS36-M	33.1 to 42	180-240	41.6	1500
HPU1K5PS48-M	42.1 to 54	100-180	25.0	1200
HPU1K5PS48-M	42.1 to 54	180-240	31.25	1500

See Enclosure-Miscellaneous for details for output de-rating table for higher ambient.

Units provided with SF suffix only provided with one fuse in the line side.

Additional Information

No additional testing was deemed necessary to evaluate the models covered under this Report to IEC 60601-1:2012, Edition 3 with Am.1 based on previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams, etc. conducted under separate CB Scheme investigation to IEC 60601-1, 3rd ed issued under CBTR No. 11CA52741 and CBTC No. US-18302-UL.

Nameplate marking provided is considered representative of the series.

For licenses older than 3 years, manufacturer to provide updated licenses upon NCB's request.

When submitting this Test Report to other Certification Body, the manufacturer is responsible for providing

any additional information that the Body may need in order to issue its Mark, including testing for compliance with the applicable collateral standards.
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Technical Considerations

- The product was investigated to the following additional standards: ANSI/AAMI ES60601-1:2005/C1:2009 +AM1(R2012) (includes National Differences for USA); CAN/CSA-C22.2 No. 60601-1:14 (includes National Differences for Canada), EN 60601-1:2006+A1 (2013), IEC 60601-1: 2012, 3rd Edition with Am. 1

- The product was not investigated to the following standards or clauses:: Electromagnetic Compatibility (IEC 60601-1-2), Clause 14, Programmable Electronic Systems, Biocompatibility (ISO 10993-1)

- Scope of Power Supply evaluation defers the following clauses to the be determined as part of the end product: Clause 7.5 (Safety Signs), Clause 7.9 (Accompanying Documents), Clause 9 (ME Hazard), Clause 10 (Radiation), Clause 14 (PEMS), Clause 16 (ME Systems)

- Scope of Power Supply evaluation excludes the following:
  Patient applied parts clauses: 4.6, 7.2.10, 8.3, 8.5.2, 8.5.5, 8.7.4.7-8.7.4.9, 8.9.1.15
  Battery related clauses: 7.3.3, 15.4.3
  Hand Control related clauses: 8.10.4
  Oxygen related clauses: 11.2.2
  Fluids related clauses: 11.6.2 – 11.6.4
  Sterilization clause: 11.6.7
  Biocompatibility Clause: 11.7 (ISO 10993)
  Motor related clauses: 13.2.13.3, 13.4
  Heating Elements related clause: 13.2

- The product is evaluated only to the following hazards: Casualty, Fire, Shock

- The degree of protection against harmful ingress of water is: Ordinary

- Software is relied upon for meeting safety requirements related to mechanical, fire and shock: No

- The power supply was evaluated for use in 50°C ambient at Full Rated Output and 50% of the Rated Output in 70°C ambient.

Risk Controls/ Engineering Condition of Acceptability

- The component shall be considered for compliance with the Marking (clause 7) and Separation (clause 8) requirements as part of the end use application evaluation.
- The power supply was evaluated for use in 50°C ambient at Full Rated Output and 50% of the Rated Output in 70°C ambient. (See De-rating Curve, Enclosure 7-01 for details)
- Consideration shall be given to measuring the temperature on power electronic components and transformer windings when the power supply is installed in the end-use equipment. The end use product shall ensure that the power supply is used within its ratings.
- Repeat of leakage current testing and consideration of non-frequency weighted leakage test shall be considered in the end product application.
- This power supply was evaluated with Two MOPP between Primary and Secondary; One MOPP primary and Earth.
- This power supply has been evaluated as a continuous operation, ordinary equipment and has not been evaluated for use in the presence of a flammable anaesthetic mixture with air, oxygen, or nitrous oxide. The output circuits have not been evaluated for direct patient connection (Type B, BF or CF).
- The end product shall ensure that the requirements related to accompanying documents, clause 7.9, are

met.

- The available voltage for the secondary outputs does not exceed 42.4 Vac peak or 60 Vdc, under normal and single fault conditions.
- The secondary output circuits exceed 240 VA.
- The output connectors are suitable for factory wiring only.
- The maximum investigated branch circuit rating is: 20 A
- The Electric Strength Test conducted on this power supply was based upon a maximum working voltage of: Primary-Earthed Dead Metal: 231 Vrms, 494 Vpk; Primary-SEC: 261 Vrms, 444 Vpk.
- Proper bonding to the end-product main protective earthing termination is required. Protective earthing testing shall be conducted in the end product application
- 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): T1, T2, T3, T4, L1-L4, L6, L7 and L8 (Class F, 155°C)
- Printed Wiring Board rated 130°C.
- The need for Marking Durability and Marking Legibility Testing shall be considered as part of the end product installation.
- Fire/ Mechanical/ Electrical Enclosure to be provided as part of the end product.
- Models provided with suffix SF only provided with one line side fuse. Consideration should be made in the end-use product to determine the need of double pole fusing.

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Ref. Certif. No.

US-21115-A1-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Switching Power Supply Series
Name and address of the applicant Nom et adresse du demandeur	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Name and address of the manufacturer Nom et adresse du fabricant	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	XP POWER L L C 990 BENECIA AVE US SUNNYVALE CA 94085 UNITED STATES ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	Input: 100-240 Vac, 50/60 Hz, 16.5 A Output: See test report for details.
Trademark (if any) Marque de fabrique (si elle existe)	XP
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	SMT
Model / Type Ref. Ref. De type	HPU1K5PSXX See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 60950-1:2006 /A11:2009 /A1:2010 /A12:2011 ; National Differences specified in the CB Test Report. ☒ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E139109-A25-CB-2 issued on 2014-05-21

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☒ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☐ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2014-05-21
Original Issue Date: 2013-03-15

Signature:

Jolanta M. Wroblewska

Model Details:
HPU1K5PSXX , where XX can be any number 12-48 indicating output voltage. May also be provided with additional suffix "SF" indicating Single Fuse or "-M".

Factories:
XP POWER (S) PTE LTD
LIPO BLDG, #05-01 621 ALJUNIED RD SINGAPORE 389834
SINGAPORE

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

Additional Information:
The original report was modified to include the following changes/additions:
Alternate component, revise Model description and rating.

Additional information (if necessary)
Information complémentaire (si nécessaire)

- [x] UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
- [ ] UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
- [ ] UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
- [ ] UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2014-05-21
Original Issue Date: 2013-03-15

Signature:

Jolanta M. Wroblewska

Test Report issued under the responsibility of:

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

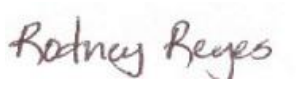
Report Reference No ..... :	E139109-A25-CB-2
Date of issue ..... :	2013-03-14
Total number of pages ..... :	26
CB Testing Laboratory ..... :	UL San Jose
Address ..... :	455 E. Trimble Rd., San Jose, CA, 95131-1230, USA
Applicant's name ..... :	XP POWER L L C
Address ..... :	SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Test specification:	
Standard ..... :	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1C
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	2012-08

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 Series
Trade Mark ..... :	
Manufacturer ..... :	XP POWER L L C SUITE 150 1241 E DYER RD SANTA ANA CA 92705 UNITED STATES
Model/Type reference ..... :	HPU1K5PSXX, where XX can be any number 12-48 indicating output voltage. May also be provided with additional suffix "SF" indicating Single Fuse or "-M".
Ratings ..... :	Input: 100-240 Vac, 50/60 Hz, 16.5 A Output: See Model Differences.

Testing procedure and testing location:			
[ ]	**CB Testing Laboratory**		
	Testing location / address..... :		
[ ]	**Associated CB Test Laboratory**		
	Testing location / address..... :		
	Tested by (name + signature) ..... :		
	Approved by (name + signature) ... :		
[ ]	**Testing Procedure: TMP/CTF Stage 1**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: WMT/CTF Stage 2**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[x]	**Testing Procedure: SMT/CTF Stage 3 or 4**		
	Tested by (name + signature) ..... :	Rodney Reyes	
	Approved by (+ signature) ..... :	Tac Pham	
	Supervised by (+ signature) ..... :	David Drewes	
	Testing location / address..... :	XP Power, LLC, Suite 150, 1241 E Dyer Rd, Santa Ana, CA 92705, USA	
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

List of Attachments

National Differences (8 pages)

Enclosures (0 pages)

Summary Of Testing

Unless otherwise indicated, all tests were conducted at XP Power, LLC, Suite 150, 1241 E Dyer Rd, Santa Ana, CA 92705, USA.

Tests performed (name of test and test clause)	Testing location / Comments
Heating (4.5.1, 1.4.12, 1.4.13)	
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, 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: CSA C22.2 No. 60950-1-07 + A1:2011, EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011, UL 60950-1 2nd Ed. Revised 2011-12-19, IEC 60950-1:2005 + A1:2009	

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 ..... :	+6%, -10%
Tested for IT power systems ..... :	Yes
IT testing, phase-phase voltage (V) ..... :	230
Class of equipment ..... :	Class I (earthed)
Considered current rating of protective device as part of the building installation (A) ..... :	20A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IP X0
Altitude of operation (m) ..... :	3048
Altitude of test laboratory (m) ..... :	less than 2000
Mass of equipment (kg) ..... :	3
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 ..... :	2014-01-03
Date(s) of Performance of tests ..... :	2014-01-13 to 2014-01-23
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):	XP POWER L L C 990 BENECIA AVE US SUNNYVALE CA 94085 UNITED STATES

XP POWER (S) PTE LTD
LIPO BLDG, #05-01
621 ALJUNIED RD
SINGAPORE 389834 SINGAPORE

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 2014-05-21 to include the following changes/additions:
1. Addition of alternate fan - Sunonwealth Electric Machine Industry Co Ltd, PF40281V2 Series
2. Addition of suffix "-M" for marketing purposes.
3. Revise output ratings in model differences to include output voltage ranges.
4. Addition of alternate capacitors and minor revisions to the CCL.

Product Description

The product is a component AC-DC power supply for building-in, provided with an overall metal enclosure, incorporating primary and SELV components.

The main PWB is secured to the chassis bottom by multiple machine screws. An insulating sheet is installed between PWB and chassis, wrapped around the board assembly, covering the sides and extending over the top. The control PWB is mounted vertically on the side of the main PWB and secured by multi-pin soldering.

The unit is provided with 2 cooling fans mounted internally behind the rear panel acting as fan guard.

Model Differences

The power supplies in the series are differentiated by the output voltage and current ratings, number of turns of primary/secondary windings in the Transformers (T2 (Power)) and minor differences in the secondary circuit components and PWB layout.

See below for Model Ratings Table Below:

Model HPU1K5PS12: Output Rated: 10.1 Vdc to 13.5 Vdc, 100 A Max (1200 W)
Model HPU1K5PS15: Output Rated: 13.6 Vdc to 17 Vdc, 80 A Max (1200 W)
Model HPU1K5PS18: Output Rated: 17.1 Vdc to 21 Vdc, 66.7 A (1200 W)
Model HPU1K5PS24: Output Rated: 21.1 Vdc to 26 Vdc, 50 A (1200 W)
Model HPU1K5PS24: Output Rated: 21.1 Vdc to 26 Vdc, 62.5 A Max (1500 W for Input rated: 180-240 Vac)
Model HPU1K5PS28: Output Rated: 26.1 Vdc to 31 Vdc, 43 A (1200 W)
Model HPU1K5PS28: Output Rated: 26.1 Vdc to 31 Vdc, 53 A Max (1500 W for Input rated: 180-240 Vac)
Model HPU1K5PS33: Output Rated: 31.1 Vdc to 33 Vdc, 36.4 A (1200 W)
Model HPU1K5PS33: Output Rated: 31.1 Vdc to 33 Vdc, 45.5 A Max (1500 W for Input rated: 180-240 Vac)

Model HPU1K5PS36: Output Rated: 33.1 Vdc to 42 Vdc, 33.3 A (1200 W)
Model HPU1K5PS36: Output Rated: 33.1 Vdc to 42 Vdc, 41.7 A Max (1500 W for Input rated: 180-240 Vac)
Model HPU1K5PS48: Output Rated: 42.1 Vdc to 54 Vdc, 25 A (1200 W)
Model HPU1K5PS48: Output Rated: 42.1 Vdc to 54 Vdc, 31.25 A (1500 W for Input rated: 180-240 Vac)

Suffix "SF" indicates single fuse provided in the line side of the primary.
Suffix “-M” is identical to HPU1K5PSXX except for model designation for marketing purposes.

See Enclosure-Miscellaneous for details.

Additional Information

This report is a reissue of CBTR Ref. No. E139109-A25-CB-1, CB Test Certificate Ref. No. US/13910/UL. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, only limited testing was deemed necessary and has been determined that the product complies with the upgrade of the Second Edition of the Standard to Amendment 1.

The required clearance values have been assessed for suitability up to 3048 m elevation (1.15 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.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer’s specification of: Full-rated output load: 50°C. 75% of output load: 60°C. Half-rated output load: 70°C., ,
- The means of connection to the mains supply is: for building-in, to be determined in the end-product.,
- The product is intended for use on the following power systems: TN, IT
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).
- The clearance distances of the equipment have additionally been assessed for suitability up to 3048m elevation. --

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: Earthing Continuity, Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 235 Vrms, 494 Vpk, Primary-SELV: 254 Vrms, 644 Vpk,
- The following secondary output circuits are SELV: All outputs
- The following secondary output circuits are at hazardous energy levels: DC Output Buss
- The power supply terminals and/or connectors are: Suitable for factory wiring only
- The maximum investigated branch circuit rating is: 20 A

- 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 suitability of the protective bonding terminal shall be evaluated in the end system.,
- The following input terminals/connectors must be connected to the end-product supply neutral: AC-N, neutral terminal is provided as part of the input terminal block, however the unit is for building and compliance shall be determined in the end product. ,
- 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): L1, L2, L4, L5, L6, L7, L8, T1(Bias), T2(Power), T1 (Drive), T3 (Drive), T4 (Current). T5 (Current) are Class F (155°C),
- The following end-product enclosures are required: Electrical, Mechanical, Fire,
- The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing: L6 (124°C), T2 (123°C), L7 (113°C), L8 (115°C),
- Fans: The fan provided in this sub-assembly is not intended for operator access. Compliance shall be determined in the end product. ,
- The equipment may be 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. --

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)