IEC IECEE CB SCHEME

Ref. Certif. No.

SG PSB-OF-04005

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

CB TEST CERTIFICATE

Product	Switching power supply unit
Name and address of the applicant	**XP Power LLC.** 15641 Red Hill Avenue, Suite 100 Tustin CA 92780 USA
Name and address of the manufacturer	XP Power Limited 401 Commonwealth Drive, Haw Par Technocentre, Lobby B, #02-02, Singapore 149598, SINGAPORE
Name and address of the factory	XP Power LLC. 990 Benecia Avenue, Sunnyvale CA 94085, USA XP Power (Kunshan) Limited 230 Bin Jiang Nan Road, Zhang Pu Town, Jiang Su Province, 215300 Kunshan City, PEOPLE'S REPUBLIC OF CHINA XP Power (Vietnam) Co. Ltd LOT D-4Q-CN, My Phuoc 3 Industrial Park, Ben Cat District, Binh Duong Province, VIETNAM XP Power plc 16 Horseshoe Park, Pangbourne, Reading, RG8 7JW, UNITED KINGDOM
Ratings and principal characteristics	Input: 100 – 240 V~, 2.4A, 50/60Hz, Class I See attachment for Output Ratings
Trade mark	XP
Model/type Ref.	ALM200PSXX-ZZ##V (where XX can be 12, 15, 19, 24, 48 designating output voltage, and -ZZ can be blank or "-A", "-6", "-6A" designating AC inlet type and V can be any alphanumeric or blank designating casing colour). Models may have an additional ## identifier which can be any alphanumeric or blank designating marketing purpose only.
Additional information (if necessary)	EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013. See test report for national differences.
A sample of the product was tested and found to be in conformity with	IEC 60950-1:2005 IEC 60950-1:2005/AMD1:2009 IEC 60950-1:2005/AMD2:2013
as shown in the Test Report Ref. No. which forms part of this certificate	7191187900-EEC18/01-NCH

This CB Test Certificate is issued by the National Certification Body

CBS 057396 0529 Rev. 00

Date, 2018-11-26

(KIM HOCK TEO)

TÜV SÜD

PSB Singapore

TÜV SÜD PSB Pte Ltd • 1 Science Park Drive • Singapore 118221

Trade mark (image)

Output Ratings:
ALM200PS12: 12 Vdc, 16.7 A
ALM200PS15: 15 Vdc, 13.4 A
ALM200PS19: 19 Vdc, 10.6 A
ALM200PS24: 24 Vdc, 8.4 A
ALM200PS48: 48 Vdc, 4.2 A

CBS 057396 0529 Rev. 00

Date, 2018-11-26

(KIM HOCK TEO)

Test Report issued under the responsibility of:
NCB TÜV SÜD PSB Pte Ltd
1 Science Park Drive,
Singapore 118221

PSB Singapore

TEST REPORT

IEC 60950-1

Information technology equipment – Safety – Part 1: General requirements

Report Number ..... :	7191187900-EEC18/01-NCH
Date of issue ..... :	15 November 2018
Total number of pages	95
Applicant's name ..... :	XP Power LLC
Address ..... :	15641 Red Hill Ave., Suite 100, Tustin, CA 92780 USA
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1F
Test Report Form(s) Originator .... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

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..... :	Switching Power Supply Unit
Trade Mark..... :	
Manufacturer..... :	XP Power Limited 401 Commonwealth Drive, Haw Par Technocentre, Lobby B, #02-02, Singapore 149598
Model/Type reference..... :	ALM200PSXX-ZZ##V (where XX can be 12, 15, 19, 24, 48 designating output voltage, and -ZZ can be blank or "-A", "-6", "-6A" designating AC inlet type and V can be any alphanumeric or blank designating casing colour). Models may have an additional ## identifier which can be any alphanumeric or blank designating marketing purpose only.
Ratings..... :	Input: 100 – 240 V~, 2.4A, 50/60Hz, Class I Output: ALM200PS12: 12 Vdc, 16.7 A ALM200PS15: 15 Vdc, 13.4 A ALM200PS19: 19 Vdc, 10.6 A ALM200PS24: 24 Vdc, 8.4 A ALM200PS48: 48 Vdc, 4.2 A

Testing procedure and testing location:			
☒	**CB Testing Laboratory:**	TÜV SÜD PSB Pte Ltd	
Testing location/ address.....:		1 Science Park Drive, Singapore 118221	
☐	**Associated CB Testing Laboratory:**		
Testing location/ address.....:			
Tested by (name + signature) .....:		Ng Chin Heng	
Approved by (name + signature) .....:		Luke Lu Chung-Hsien	
☐	**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) .....:			
Witnessed by (name + signature) .....:			
Approved by (name + signature) .....:			
Supervised by (name + signature).....:			

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

Attachment 1, EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC Common Modifications (20 pages)
Attachment 2, National Differences to IEC 60950-1:2005 for Australia and New Zealand (7 pages)
Attachment 3, National Differences to IEC 60950-1:2005 for Korea (1 page)
Attachment 4, National Differences to IEC 60950-1:2005 for China (6 pages)
Attachment 5, National Differences to IEC 60950-1:2005 + A1:2009 for Japan (14 pages)
Attachment 6, National Differences to IEC 60950-1:2005 + A1:2009 + A2:2013 for United States (5 pages)
Attachment 7, National Differences to IEC 60950-1:2005 + A1:2009 + A2:2013 for Canada (5 pages)
Attachment 8, Photographs (24 pages)
Attachment 9, Marking Labels (3 pages)
Attachment 10, Manufacturer's Identity Declaration Letter and Factory Declaration (2 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
All relevant clauses.	TÜV SÜD PSB Pte Ltd 1 Science Park Drive Singapore 118221

Summary of compliance with National Differences:
List of countries addressed

- All CENELEC members as listed in EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
- Australia (AU)
- New Zealand (NZ)
- Korea (KR)
- China (CN)
- Japan (JP)
- United States of America (US)
- Canada (CA)

☒ **The product fulfils the requirements of** IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013; EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013; AS/NZS 60950.1:2015; K60950-1; GB4943.1-2011; J60950-1 (H29); UL 60950-1-07(Second Edition) + A1: 2011 + A2: 2014; CAN/CSA-C22.2 No. 60950-1-07, Amd 1:2011, Amd 2:2014

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.

See Attachment 9

Test item particulars ..... :	
Equipment mobility ..... :	[] movable [] hand-held [X] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains ..... :	[X] pluggable equipment [X] type A [] type B [] permanent connection [X] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition ..... :	[X] continuous [] rated operating / resting time:
Access location ..... :	[X] operator accessible [] 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%
Tested for IT power systems ..... :	[X] Yes [] No
IT testing, phase-phase voltage (V) ..... :	230V for Norway
Class of equipment ..... :	[X] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) ..... :	16A (20A for USA and Canada)
Pollution degree (PD) ..... :	[] PD 1 [X] PD 2 [] PD 3
IP protection class ..... :	IP32
Altitude during operation (m) ..... :	<5000
Altitude of test laboratory (m) ..... :	<2000
Mass of equipment (kg) ..... :	Approximately 0.91kg

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 ..... :	19 June 2018
Date (s) of performance of tests ..... :	19 June 2018 to 05 November 2018

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 ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
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 Avenue Sunnyvale, CA 94085 USA XP Power (Kunshan) Ltd 230 Bin Jiang Nan Rd Zhang Pu Town, Jiangsu Province 215300 Kunshan City China XP Power (Vietnam) Co., Ltd. Lot D-4Q-CN, My Phuoc 3 Industrial Park 48000 Ben Cat District, Binh Duong Province Vietnam XP Power plc Horseshoe Park, Pangbourne Berks, Reading RG8 7JW United Kingdom

General product information:

Remark 1: The subject models are Class I switch mode power supply. All electrical components are mounted on PWB and housed within plastic enclosure which is secured by four screws at four corners.

Remark 2: The thermal pads as illustrated in page 24 of Attachment 8 are optional components and unless otherwise specified, all tests were performed with the thermal pads installed in the power supply, except that heating test as per clause 4.5 were performed with both constructions (with & without the top thermal pads).

Remark 3: The operating environment maximum temperature specified by the manufacturer is 40°C for full load condition and 60°C for load condition derating to 70W.

Remark 4: This equipment is evaluated for altitude up to 5000m above sea level, the correction factor for clearance is 1.48.

Remark 5: Unless otherwise specified, all tests were performed using the models ALM200PS48 and ALM200PS12 as representative of all models in this test report.

Remark 6: Model Differences:
All models within the series are identical with exception to transformer, T1 (difference in the number of turns in the primary & secondary winding of the transformer) and other minor changes to secondary circuit to accommodate different output voltages and current ratings.

Models may have an additional ZZ identifier which can be blank or "A", "6", "6A" to designate the type of input connector:
- blank designates a C14 input connector;
- "A" designates a C14 input connector with optional IEC cable retention;
- "6" designates a C6 input connector;
- "6A" designates a C6 input connector with optional IEC cable retention.

Models may have an additional ## identifier which may be any alphanumeric or blank designating marketing purposes only.

Models may have an additional V identifier which can be any alphanumeric or blank to represent the colour of the casing.

Remark 7: Power cord suitable for the application to be provided as part of the end product evaluation. The output connectors are not acceptable for field connections and only intended for connection to mating connectors of the end-use equipment or machine.

Abbreviations used in the report:

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

Indicate used abbreviations (if any)