









Test Report issued under the responsibility of:



TEST REPORT IEC 62368-1 Audio/video, information and communication technology equipment Part 1: Safety requirements	
Report Number	E346017-A6011-CB-1
Date of issue	2023-06-13
Total number of pages	92
Name of Testing Laboratory preparing the Report	UL International-Singapore Pte Ltd 20 Kian Teck Lane, Singapore 627854, Singapore
Applicant's name	XP POWER LTD
Address	19 TAI SENG AVENUE #07-01 SINGAPORE 534054 SINGAPORE
Test specification:	
Standard	IEC 62368-1:2014
Test procedure	CB Scheme
Non-standard test method	N/A
TRF template used	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No.	IEC62368_1D
Test Report Form(s) Originator	UL(US)
Master TRF	Dated 2022-04-14
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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:	
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Test Item description	Built-in Power Supply	
Trade Mark(s)		
Manufacturer	XP POWER LTD 19 Tai Seng Avenue, #07-01, Singapore 534054 Singapore	
Model/Type reference	VFB150PSXXYYYYYYYY, where XX can be 12, 15, 24, 48 and Y is blank, - or any alpha numeric character	
Ratings	<p>Input: 100-240 Vac, 50/60Hz, 2.1 A</p> <p>Output:</p> <p>Model Name (convection cooled)</p> <p>VFB150PS12: 12 Vdc, 8.3 A VFB150PS15: 15 Vdc, 6.7 A VFB150PS24: 24 Vdc, 4.17 A VFB150PS48: 48 Vdc, 2.08 A</p> <p>Model Name (force cooling)</p> <p>VFB150PS12: 12 Vdc, 12.5 A VFB150PS15: 15 Vdc, 10 A VFB150PS24: 24 Vdc, 6.25 A VFB150PS48: 48 Vdc, 3.13 A</p>	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	
Testing location/ address	UL International-Singapore Pte Ltd, 20 Kian Teck Lane, Singapore 627854, Singapore	
Tested by (name, function, signature)	Raymond Chia / Project Handler	
Approved by (name, function, signature)	Paul Wan / Reviewer	
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature)		
<input checked="" type="checkbox"/>	Testing procedure: CTF Stage 2:	

Testing location/ address..... :		XP POWER LTD 19 Tai Seng Avenue, #07-01, Singapore 534054 Singapore	
Tested by (name, function, signature)..... :		Chee Siang Chin / Tester	
Witnessed by (name, function, signature) :		Raymond / Project Handler	
Approved by (name, function, signature)..... :		Paul Wan / Reviewer	
<input type="checkbox"/>	Testing procedure: CTF Stage 3:		
<input type="checkbox"/>	Testing procedure: CTF Stage 4:		
Testing location/ address..... :			
Tested by (name, function, signature)..... :			
Witnessed by (name, function, signature) :			
Approved by (name, function, signature)..... :			
Supervised by (name, function, signature) ... :			

List of Attachments (including a total number of pages in each attachment):	
National Differences (31 pages) Enclosures (19 pages)	
Summary of testing:	
Tests performed (name of test and test clause):	Testing Location:
5.2.2.1-5.2.2.6 – CLASSIFICATION OF ELECTRICAL ENERGY SOURCES 5.4.1.3 – TEST FOR HYGROSCOPIC MATERIALS 5.4.1.8 – DETERMINATION OF WORKING VOLTAGE 5.4.1.10.3 – BALL PRESSURE TEST 5.4.4.6.2 – SEPARABLE THIN SHEET MATERIAL 5.4.9.1 – ELECTRIC STRENGTH TEST – TYPE TESTING OF SOLID INSULATION B.4 – SIMULATED SINGLE FAULT CONDITIONS T.2, 5.4.2.6, 5.4.3.2, G.15.3.6 – STEADY FORCE TEST, 10 N	CBTL: UL International-Singapore Pte Ltd 20 Kian Teck Lane, Singapore 627854, Singapore
Tests performed (name of test and test clause):	Testing Location:
5.5.2.2 – SAFEGUARDS AGAINST CAPACITOR DISCHARGE AFTER DISCONNECTION OF A CONNECTOR B.2.5 – INPUT TEST: SINGLE PHASE B.2.6, 5.4.1.4, 6.3, 9.2, B.1.6 – NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT B.3 – SIMULATED ABNORMAL OPERATING CONDITIONS G.5.3.3 – TRANSFORMER OVERLOAD	CTF Stage 2: XP POWER LTD 19 Tai Seng Avenue, #07-01, Singapore 534054 Singapore
Summary of compliance with National Differences:	
List of countries addressed: Australia / New Zealand, EU Group and National Differences, Japan, USA / Canada	
<input checked="" type="checkbox"/> The product fulfils the requirements of: EN 62368-1:2014 + A11:2017, BS EN 62368-1:2014 + A11:2017, UL 62368-1 2nd Edition, Issued December 1, 2014, CSA CAN/CSA-C22.2 No. 62368-1 2nd Edition, Issued December 1, 2014, AS/NZS 62368.1:2018, J62368-1 (2020),	

Additional Country Information:

United Kingdom (per customer's request shown separately)

Use of uncertainty of measurement for decisions on conformity (decision rule) :

No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

Other:... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

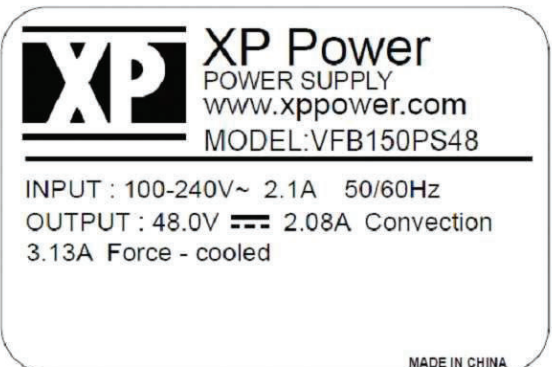
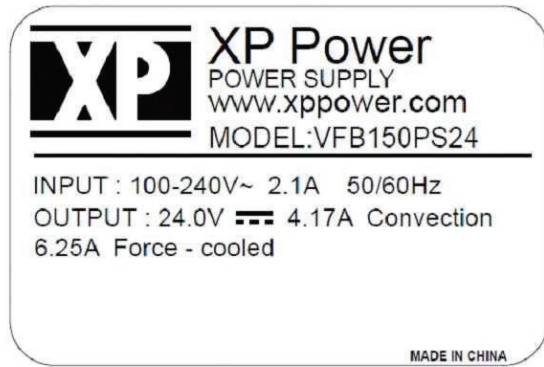
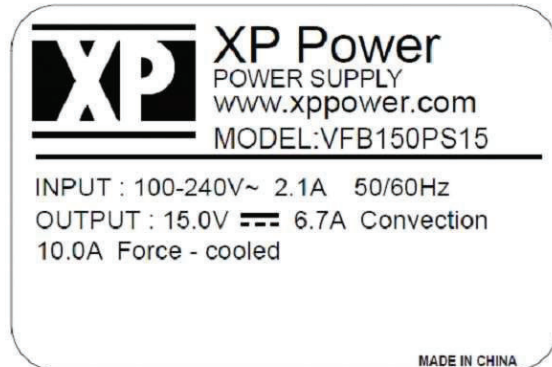
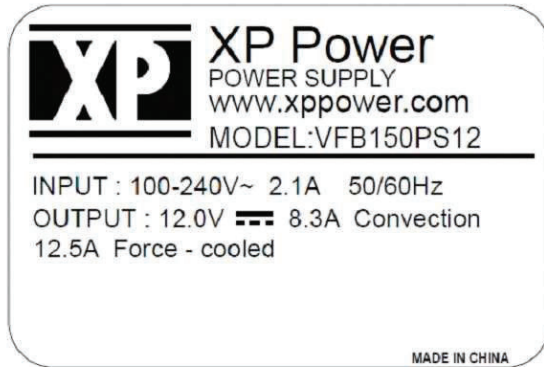
Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE. IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

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.



Note: The above markings are the minimum requirements required by the safety lab. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

TEST ITEM PARTICULARS:	
Classification of use by	Ordinary person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	mating connector For building-in
Considered current rating of protective device as part of building or equipment installation	20 A; building;
Equipment mobility	for building-in
Over voltage category (OVC)	OVC II
Class of equipment	Not classified
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer’s specified maximum operating ambient (°C)	See Technical Considerations section. °C
IP protection class	IPX0
Power Systems	TN
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.363
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..... :	2022-04-06
Date (s) of performance of tests..... :	2022-04-08 TO 2023-05-24
GENERAL REMARKS:	
<p>“(See Enclosure #)” refers to additional information appended to the report. “(See appended table)” refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
Manufacturer’s Declaration per sub-clause 4.2.5 of IEC 60335-1:	

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
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) :	CHANNEL WELL TECHNOLOGY (GUANGZHOU) CO LTD BLDG B EASTERN HI-TECH INDUSTRIAL BASE ZENGJIANG STR, ZENGCHENG GUANGZHOU GUANGDONG 511300 CHINA
GENERAL PRODUCT INFORMATION:	
Report Summary All applicable tests according to the referenced standard(s) have been carried out.	
Product Description The product is an AC/DC switching mode power supply with open-frame type, and it is intended for building-in from factory installation as a component of the end product.	
Model Differences All models with the Model VFB150PSXX series are identical with exception for output ratings and transformer secondary construction. Maximum Output Load conditions: Convectional Cooled at Tma=50°C : VFB150PS12: 12 Vdc, 8.4 A (*1) VFB150PS15: 15 Vdc, 6.7 A VFB150PS24: 24 Vdc, 4.17 A VFB150PS48: 48 Vdc, 2.08 A Convectional Cooled at Tma=70°C : VFB150PS12: 12 Vdc, 4.15 A VFB150PS15: 15 Vdc, 3.35 A VFB150PS24: 24 Vdc, 2.08 A VFB150PS48: 48 Vdc, 1.04 A Force Air Cooled at Tma=50°C : VFB150PS12: 12 Vdc, 12.5A VFB150PS15: 15 Vdc, 10 A VFB150PS24: 24 Vdc, 6.25 A VFB150PS48: 48 Vdc, 3.13 A Force Air Cooled at Tma=70°C :	

VFB150PS12: 12 Vdc, 6.25 A
VFB150PS15: 15 Vdc, 5 A
VFB150PS24: 24 Vdc, 3.13 A
VFB150PS48: 48 Vdc, 1.57 A

(*1): Rating 8.3A but test was perform at higher current at 8.4A per manufacturer's request.

Additional application considerations – (Considerations used to test a component or sub-assembly) -
N/A

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 100% loading; 70°C at 50% loading
- The product is intended for use on the following power systems : TN
- Considered current rating of protective device as part of the building installation (A) : 20
- Mains supply tolerance (%) or absolute mains supply values : +10%/-10%
- The equipment disconnect device is considered to be : determined in the end-product.

Engineering Conditions of Acceptability

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

- The following product-line tests are conducted for this product : Electric Strength
- The following output circuits are at ES1 energy levels : all outputs
- The following output circuits are at PS3 energy levels : All Output
- 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 (Class I)
- 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 : AC N
- The following end-product enclosures are required : Electrical, Fire, Mechanical
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJ2 insulation system with the indicated rating greater than Class A (105°C) : T1, class B
- The equipment is suitable for direct connection to : AC mains supply
- The power supply was evaluated to be used at altitudes up to : "5,000 m"
- When installed in a Class I end product, the power supply shall be mounted in a manner that provides the minimum required Clearance between the primary side of power supply and protectively earthed accessible conductive parts.
- A suitable main disconnect device shall be provided in the end product.
- The power supplies covered by this report have a fuse in the neutral of the primary circuit. The need for a marking to warn a service person of the hazards associated with double pole/neutral fusing shall be considered in the end product.
- Consideration to repeating the Touch Current and touch voltage test should be given in the end-product evaluation.