CERTIFICATE OF COMPLIANCE

Certificate Number	E139109
Report Reference	E139109-A6092-UL
Issue Date	2020-JULY-14
Issued to:	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780
This certificate confirms that representative samples of	COMPONENT - POWER SUPPLIES FOR USE WITH AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT See next page
	Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.
Standard(s) for Safety:	UL 62368-1, (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, -(Audio/video, information and communication technology equipment Part 1: Safety requirements)
Additional Information:	See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Recognized Component Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

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This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Models

Power supply for building-in, switch mode type

SMP350PSxx (where xx can be any number between 12 and 48 may also be provided with additional suffix "SF")

Bruce Mahrenholz, Director North American Certification Program

UL LLC

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed-(Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Component Recognition
CCN:	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	Power supply for building-in, switch mode type
Model:	SMP350PSxx (where xx can be any number between 12 and 48 may also be provided with additional suffix "SF")
Rating:	Input: 100-240 Vac, 50/60Hz, 4.9A Max. Output: See Model Differences for details.
Applicant Name and Address:	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780 UNITED STATES

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared By: Robert Leon / Project Handler Reviewed By: Walid Beytoughan / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.

ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.

iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The models covered in this Test Report are component AC-DC power supplies intended for use in Information Technology Equipment. Open frame switching power supplies intended for building-in.

Model Differences

All models in the Model SMP350PSXX series are identical with exception to model designation, Transformer (T1) and secondary components/circuitry that allow for different output voltage ratings.

Model output ratings as follows.

Model SMP350PS12: Output Rated: 10.1 Vdc - 13.5 Vdc, 25 A Max., 300 W Max.

Model SMP350PS15: Output Rated: 13.6 Vdc - 17 Vdc, 22.0 A Max., 330 W Max.

Model SMP350PS18: Output Rated: 17.1 Vdc - 21 Vdc, 19.4 A Max., 350 W Max.

Model SMP350PS24: Output Rated: 21.1 Vdc - 26 Vdc, 14.6 A Max., 350 W Max.

Model SMP350PS28: Output Rated: 26.1 Vdc - 31 Vdc, 12.5 A Max., 350 W Max.

Model SMP350PS33: Output Rated: 31.1 Vdc - 33 Vdc, 10.6 A Max., 350 W Max.

Model SMP350PS36: Output Rated: 33.1 Vdc - 42 Vdc, 9.70 A Max., 350 W Max.

Model SMP350PS48: Output Rated: 42.1 Vdc - 54 Vdc, 7.30 A Max., 350 W Max.

Provided with additional suffix "SF" to indicate single pole fusing.

Test Item Particulars

Classification of use by	Skilled person
Supply Connection	External Circuit - not Mains connected ES3
Supply % Tolerance	+10%/-10%
Supply Connection – Type	pluggable equipment type A - 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)	The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C for 100% load at forced air cooling condition and 70°C for 50%load.
IP protection class	IPX0
Power Systems	TN
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	17 m
Mass of equipment (kg)	0.4

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. 70°C at 50% rated load.
- The product is intended for use on the following power systems : TN / IT
- Mains supply tolerance (%) or absolute mains supply values : For building-in. To be evaluated in end-product.
- The equipment disconnect device is considered to be : For building-in. To be evaluated in end-product.
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : Load side of C21 (Pri to Sec bridging capacitor).
- - The internal wiring is certified Appliance Wiring Material rated VW-1 and/or FT-1 which were considered equivalent to the tests of IEC60332-1-2 and IEC60332-1-3. The final acceptability of the internal wiring may be determined under the discretion of the receiving NCB.

Engineering Conditions of Acceptability

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. 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 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 when the power supply is used in a Class I end product. The power supply will be considered Class II only when protection against electric shock does not rely on Basic Insulation and provides a minimum of 5 mm creepage and 4 mm clearance distance (mounted above chassis/accessible metal parts on Insulating posts etc). Class II units have no reliance upon protective earthing.
- An investigation of the protective bonding terminals has : not been conducted
- The following end-product enclosures are required : Mechanical, Fire, Electrical
- 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) : L4 and T1 Class F (155).
- The equipment is suitable for direct connection to : AC mains supply, connection to be evaluated in end product installation.
- - 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.
- - In accordance with IEC60664-1, Table A2, required clearances were adjusted by multiplying the clearance at sea level by a factor of 1.48 for operating at an altitude of 5000 m. The correction factor is based on barometric pressure of 70 kPa 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 and are not explicitly addressed in UL/IEC 62368-1.
- - The end-product Electric Strength Test is to be based upon a Mains Transient Voltage of 2500Vdc for Basic and 4000Vdc for Reinforced
- - The following secondary output circuits are ES1: All outputs
- - The power supply terminals and/or connectors are: Suitable for factory wiring only
- - The fan provided in this sub-assembly is provided with a fan guard that is integral to the chassis to reduce the risk of operator contact with the stator.

Additional Information

This report is a reissue of CB Test Report Ref. No. E139109-D8-CB-1, CB Test Certificate US-29968-UL. Based on the previously conducted testing and a review of product technical documentation including photos, schematics, wiring diagrams and similar documentation it has been determined that the product continues to comply with the standard.

As part of this reissue the following changes were made to the Report:
1. Added alternate fan (Sunonwealth, type MF40201VX)
2. Updated Test Report Form.
3. Added alternate Label, 3M, type 7818.
4. Added alternate Capacitors (C28,C45) Vishay and TDK Corp
5. Added alternate Bridging Capacitors (C20,C21) Vishay, TDK Corp and Success Electronics Co Ltd
6. Added alternate Y-Capacitors (C38) Vishay, TDK Corp and Success Electronics Co Ltd
7. Added alternate Y-Capacitors (C2, C3) Vishay, TDK Corp and Success Electronics Co Ltd
8. Added alternate X-Capacitors (C1, C55) Panasonic Corp

The switching power supply series covered by this Test Report used Double/Reinforced Insulation between Primary and Secondary circuits.

This report includes licenses for components that are more than 3 years old. Recognizing NCBs may challenge certification documents more than three years old. Additional documentation, testing, and evaluation may be required when submitting this product to a National Certification Body (NCB) for obtaining certification at the national level.

Marking Plate Labels are representative of all models.

Additional Standards

The product fulfills the requirements of: EN 62368-1:2014 + A11:2017

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized companys name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number

Special Instructions to UL Representative

Enclosed electrical schematics, trace layouts, component layouts, transformer diagrams, inductor diagrams, and enclosure diagrams are for engineering use only and may only be used by the field representative for reference. Verify that Transformer (T1) is subjected to 100% Production Line Electric Strength Test between Primary/Secondary, minimum 3000 Vac or 4200 Vdc.

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	**Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.**					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
All	T1	N/A	Primary to Secondary	3000	4200	1
All	N/A	N/A	Primary to Chassis	1770	2500	1
BD1.2	**Earthing Continuity Test Exemptions – This test is not required for the following models:**					
	-					
BD1.3	**Electric Strength Test Exemptions – This test is not required for the following models:**					
	-					
BD1.4	**Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test.**					
	None					

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
-	-	-	-	-	-