CERTIFICATE OF COMPLIANCE

Certificate Number	20190211-E139109
Report Reference	E139109-A6073-UL
Issue Date	2019-FEBRUARY-11

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; COMPONENT - POWER SUPPLIES, INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL BUSINESS EQUIPMENT

See Addendum Page for Models

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.

Switching Power Supply, Model - CCL400PSXXYY (where XX = can be any number between 12 to 48 indicating main output voltage, "YY" can be SF or blank indicating Single Fuse), may also be provided with additional suffixes "-C", "-L".

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:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	Switching Power Supply
Model:	CCL400PSXXYY (where XX = can be any number between 12 to 48 indicating main output voltage, "YY" can be SF or blank indicating Single Fuse), may also be provided with additional suffixes "-C", "-L".
Rating:	Model CCL400PSXXYY Input: 100-240 Vac, 50/60 Hz, 5 A Output: See Model Differences for ratings.
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.

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 product is a component AC-DC power supply for building-in, open frame type provided with a metal chassis, incorporating primary and SELV components and a baseplate for conduction cooling

Model Differences

All models in the Model CCL400PSXX-YY Series are identical with exception to the Mains Transformer (T1) and minor secondary components that allow for different output voltage ratings. See below for Model Ratings:

Output Ratings:

CCL400PS12: 10.1Vdc to 13.5Vdc, 33.33A Max., (400 W Max); Stand-by 5V, 0.5A, (2.5W Max)

CCL400PS15: 13.6Vdc to 17Vdc, 26.66A Max. (400 W Max); Stand-by 5V, 0.5A, (2.5W Max)

CCL400PS18: 17.1Vdc to 21Vdc, 22.22A Max. (400 W Max); Stand-by 5V, 0.5A, (2.5W Max)

CCL400PS24: 21.1Vdc to 26Vdc, 16.67A Max. (400 W Max); Stand-by 5V, 0.5A, (2.5W Max)

CCL400PS28: 26.1Vdc to 31Vdc, 14.28A Max. (400 W Max); Stand-by 5V, 0.5A, (2.5W Max)

CCL400PS33: 31.1Vdc to 33Vdc, 12.12A Max. (400 W Max); Stand-by 5V, 0.5A, (2.5W Max)

CCL400PS36: 33.1Vdc to 42Vdc, 11.11A Max. (400 W Max); Stand-by 5V, 0.5A, (2.5W Max)

CCL400PS48: 42.1Vdc to 54Vdc, 8.33A Max. (400 W Max); Stand-by 5V, 0.5A, (2.5W Max)

See Miscellaneous enclosure Power Output Table for additional information regarding power output and the various configurations.

Units provided with suffix "-SF" provide with single fuse.

Units provided with suffix "-C" provided with cover.

Units provided with suffix "-L" provided with input leads.

Test Item Particulars

Classification of use by	Skilled person

Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	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	50°C for 100% load. 70°C for 50% load (See Enclosure-Miscellaneous: De-rating Curve for additional details) °C
IP protection class	IPX0
Power Systems	TN
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	40 m
Mass of equipment (kg)	1.5 kg kg

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% of Output Rating, 70°C at 50% of Output Rating.
- The product is intended for use on the following power systems : IT and TN
- The equipment disconnect device is considered to be : N/A - To be provided as an element of the end product.
- The power supply series covered by this report employ Double/Reinforced Insulation between Primary and Secondary circuits.
- The clearance distances have additionally been assessed for suitability up to 5000 m elevation (1.48 correction factor as per IEC 60664-1, Table A2).

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 following output circuits are at ES1 energy levels : All DC Outputs
- The following output circuits are at PS3 energy levels : All Outputs
- 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 following input terminals/connectors must be connected to the end-product supply neutral : CON1
- The following end-product enclosures are required : Electrical, Fire
- 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) : Transformers T1, T2, T3, T4 (Class F, 155°C)
- The power supply was evaluated to be used at altitudes up to : "5,000 m"
- Consideration shall be given to repeating the Prospective Touch Current and Voltage test in the end-product evaluation.
- Heatsinks are floating and considered live. They should not be accessible in the end-product.
- Heating test should be repeated in the end-use product.
- The equipment suitability for connection to AC Mains shall be determined in the end use product .
- Power Classification for the outputs were not conducted as part of this investigation. Manufacturer declares all outputs as PS3.
- When installed in a Class I end product, the power supply shall be mounted in a manner that provides, at a minimum, 2.3 mm Clearance between the primary side of power supply and protectively earthed accessible conductive parts.
- The fire enclosure shall be rated V-0 or V-1.
- If the fire enclosure is rated V-1, all mains components shall be separated by a minimum of 13 mm. All other components shall be separated by a minimum of 5 mm.
- 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.
- Reconducting the temperature test shall be considered when installed in the end product.

Additional Information

Limited tests were conducted under this investigation based on testing previously conducted under CBTR Ref. No. E139109-A142-CB-1, CBTC Ref. No. US-24489-UL and E139109-A142-CB-1-Amendment-1, CBTC Ref. No. US-24489-A1-UL to IEC 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013. Except as noted, all required tests were carried out under the previous investigation except where specifically noted.

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

Nameplate Marking label provided is considered representative of all models.

The nameplate markings provided are considered representative of the entire series and only the output ratings may vary.

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

This report references component licenses documentation or certificates that are older than 3 years or issued to previous IEC/EN Standard editions. It has being determined that all critical components comply with current safety requirements. Receiving NCB may request additional information. Acceptance of these licenses, certificates or relevant documentation is at the discretion of the Receiving NCB.

Additional Standards

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

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listees or Recognized companys name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"
Fuses – replaceable by skilled person	Unambiguous reference to service documentation for instructions for replacement of fuses replaceable only by service personnel
Class I equipment -Terminal for main protective earthing	Provided adjacent to the main protective earthing terminal  (IEC 60417-5019)
Terminals for external primary power supply conductors	Capital letter "N" located adjacent to a terminal intended exclusively for connection of the primary power neutral conductor

Special Instructions to UL Representative

N/A

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 Models	Transformer T1, T2, T3, T4	--	Primary Pins - Secondary Pins	3000	4200	1 sec
All Models	--	--	L/N - E Terminals	1800	2500	1 sec
BD1.2	**Earthing Continuity Test Exemptions – This test is not required for the following models:**					
	All 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.**					
	N/A					

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