UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Component Recognition
CCN:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	Power supply for building-in
Model:	CCM250PSXXYY, where XX is 12 - 48, where YY is SF or blank
Rating:	Input: 100-240Vac, 47-63, Hz, 3.2A, 250W Output: Refer to 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 Reviewed by: Luis Martinez

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 evaluated is a switching power supply series for building-in to an end-use product.

Model Differences

All models within the series are identical with exception to the output rating, mains transformer windings, primary fusing, and minor secondary components.

Model CCM250PSXXYY has the following nomenclature:

XX = 12 - 48, denotes the rated output voltage.
YY = SF or blank, denotes either single pole fusing (SF) or double fusing (blank)

See below for the Output Rating of the various models.
Model CCM250PS12YY: 10.1 Vdc to 13.5 Vdc, 20.8 A Max (250W Max)
Model CCM250PS15YY: 13.5 Vdc to 17Vdc Vdc, 16.7 A Max (250W Max)
Model CCM250PS18YY: 17.1 Vdc to 21 Vdc, 13.89 A Max (250W Max)
Model CCM250PS24YY: 21.1 Vdc to 26 Vdc, 10.4 A Max (250W Max)
Model CCM250PS28YY: 26.1 Vdc to 31 Vdc, 8.9 A Max (250W Max)
Model CCM250PS33YY: 31.1 Vdc to 33 Vdc, 7.58 A Max (250W Max)
Model CCM250PS36YY: 33.1 Vdc to 42 Vdc, 6.9 A Max (250W Max)
Model CCM250PS48YY: 42.1 Vdc to 54 Vdc, 5.2 A Max (250W Max)

Auxiliary Output for all models (V2): -5 Vdc, 0.5 A

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : for building-in, to be determined in the end-use application
- Operating condition : continuous
- Access location : for building-in, to be determined in the end-use application
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -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 : IPX0
- Altitude of operation (m) : Up to 3048
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : 0.774 kg
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report).
- The means of connection to the mains supply is: For building in
- The product is intended for use on the following power systems: TN
- 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 70°C at 87.2% (218W) of Output Rating for Model CCM250PS28 with optional baseplate
- According to IEC60664-1, Table A2, required Clearances have been adjusted by multiplying the clearance at sea level by a factor of 1.15 for operating at an altitude of 3048 meters. The correction factor is based on barometric pressure of 70kPa and Overvoltage Category II. If the calculated Clearance exceeded the Creepage, the Creepage was adjusted to the value of clearance.

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:

- Temperature test was conducted with the unit mounted to a metal heat sink, 48 by 13 cm, min. 3.2 mm. Temperature test should be repeated in the end-use product.
- End product to determine the need for "Double Pole Fuse" Marking for units provided with double pole fusing.
- The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing: Power Supply Baseplate, 85°C (Optional for Model CCM250PS28)
- 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: 240 Vrms, 340 Vpk, Primary-SELV: 275 Vrms, 592 Vpk
- The following secondary output circuits are SELV: All outputs
- The following secondary output circuits are at hazardous energy levels: All
- 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 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-T5, L1, L3, L6, L7 (Class B)

- The following end-product enclosures are required: Mechanical, Fire, Electrical

Additional Information

This report is a Standard upgrade/reissue of CBTR Ref. No.: E139109-A110-CB-1, CB Test Certificate Ref. No. US-19700-UL and No. US-19700-A1-UL to IEC 60950-1:2005 (Second Edition); A1:2009 + A2:2013. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, only the construction review and the review of previous tests was deemed necessary. All required tests were carried out under the original investigation.

The unit was mounted 9 cm above a metal base plate, 48 by 13 cm, min. 3.2 mm thick.

Limited Testing of Power Supplies, Model CCM250PSXXYY Series was considered necessary based upon previous evaluation under the CB scheme. The CB Scheme Test Certificate and Report Ref. No. 116432/A dated 16-Dec-08 was prepared by NEMKO AS, Gaustadallèen 30, Blindern, Oslo, Norway.

Additional Standards

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013

Markings and instructions

Clause Title	Marking or Instruction Details
1.7.6 Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.
1.7.1 Power rating - Ratings	Ratings (voltage, frequency/dc, current)
1.7.1 Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
1.7.1 Power rating - Model	Model Number

Special Instructions to UL Representative

N/A

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All Models	Transformer (T4, T5)	-	Primary to Secondary	3000	4200	1

Earthing Continuity Test Exemptions - This test is not required for the following models:

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Electric Strength Test Exemptions - This test is not required for the following models:

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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:

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Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
N/A					