CERTIFICATE OF COMPLIANCE

Certificate Number	20180830-E139109
Report Reference	E139109-A6030-UL
Issue Date	2018-AUGUST-30
Issued to:	XP POWER L L C 15641 RED HILL AVE, SUITE 100 TUSTIN CA 92780
This is to certify 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 Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	See Addendum
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

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Certificate Number	20180830-E139109
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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.

AC-DC Power Supply –
CLC175USXX, (where the "XX" can be any number between 12 to 48 indicating main output voltage), may be provided with additional "-A" suffix.

Standard(s) for Safety:
UL 62368-1 & CAN/CSA C22.2 No. 62368-1-14, Audio/video, information and communication technology equipment Part 1: Safety requirements

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:	AC-DC Power Supply
Model:	CLC175USXX, (where the "XX" can be any number between 12 to 48 indicating main output voltage), may be provided with additional "-A" suffix.
Rating:	Input: 100-240 Vac, 50/60Hz, 3.1 A Output: See Model Differences
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: Rodney Reyes / Testor 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.

Model Differences

The power supplies in the series are differentiated by the output voltage and current ratings, number of turns of secondary winding in the Isolation Transformers (T1) and minor differences in the secondary circuit components and PWB layout.

Model CLC175US12-XA0505A is identical to CLC175US12

Models provided with suffix "-A" provided with additional standby transformer T2.

Output Ratings:

CLC175US12: Output Rated: 10.1 Vdc to 13.5 Vdc, 13.9A

CLC175US15: Output Rated: 13.6 Vdc to 17 Vdc, 11.1A

CLC175US18: Output Rated: 17.1 Vdc to 21 Vdc, 9.27A

CLC175US24: Output Rated: 21.1 Vdc to 26 Vdc, 6.9A

CLC175US28: Output Rated: 26.1 Vdc to 31 Vdc, 6.25A

CLC175US33: Output Rated: 31.1 Vdc to 33 Vdc, 5.05A

CLC175US36: Output Rated: 33.1 Vdc to 42 Vdc, 4.63A

CLC175US48: Output Rated: 42.1 Vdc to 54 Vdc, 3.5A

Test Item Particulars

Classification of use by	Skilled person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	mating connector mating connector

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 OVC II
Class of equipment	Not Classified
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient	50°C (See De-rating Curve, for details) °C
IP protection class	IPX0
Power Systems	TN
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	17 m
Mass of equipment (kg)	1.2kg

Technical Considerations

- 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 : For building-in, to be determined in the end use installation.
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 50°C (See De-rating Curve, for
- details) --
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-
- 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.
- 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.

Engineer 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 output circuits are at ES1 energy levels : All
- The following output circuits are at PS3 energy levels : All
- The maximum investigated branch circuit rating is : 20A
- The investigated Pollution Degree is : 2
-
- Proper bonding to the end-product main protective earthing termination is : Required
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- The following end-product enclosures are required : Mechanical, 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) : T1 and L2, L3, L4 are Class F (155).
- The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing : PWB is rated 130°C
-
- The maximum continuous power supply output (Watts) relied on forced air cooling from : a 10 cfm fan located 2.5 cm away blowing from input to output.
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- The power supply was evaluated to be used at altitudes up to : 5,000 m
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- The following product-line tests are conducted for this product : Electric Strength
-
- The end-product Electric Strength Test is to be based upon a Mains Transient Voltage of 2500Vpk. Consideration shall be given to repeating the Electric Strength Tests at 2500Vdc for basic insulation and at 4000Vdc for reinforced insulation in the end-product.
- The power supply terminals and/or connectors are suitable for factory wiring only.
- 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. When installed in a Class II product an Electric Strength Test for Reinforced Insulation at 4000Vdc will be required between any dead metal and the primary circuits in the end use installation.
- Clearances were evaluated for 5000m altitude. Additional consideration maybe necessary in the end-use product if installed at a higher altitude.
- Consideration to repeating the Touch Current test should be given in the end-product evaluation.
- The power supplies in this report have been subjected to Capacitance discharge testing. Additionally all associated component safeguards have been assessed to the applicable requirement in Annex G.10. Additional testing should not be needed if directly connected to mains e.g. using an appliance inlet, wiring terminals, etc.

Additional Information

Tests were previously conducted under CB Scheme CBTR E139109-A75-CB-1, CB certificate number US-26777-UL.

Nameplate Markings are representatives for all models described in this report.

Correction 1- Added CBTF stage 3 testing location.
Note: Rodney Reyes is the testor for XP Power.