CERTIFICATE OF COMPLIANCE

Certificate Number	20181008-E139109
Report Reference	E139109-A6039-UL
Issue Date	2018-OCTOBER-08
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 See Addendum Page
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	See Addendum Page
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

CERTIFICATE OF COMPLIANCE

Certificate Number	20181008-E139109
Report Reference	E139109-A6039-UL
Issue Date	2018-OCTOBER-08

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

Models/Product

Switching Power Supplies

CLC125USXX, (where the "XX" can be any number between 12 to 48 indicating main output voltage), may also be followed by suffixes, (3X5), -D, and C), CLC125US12-XB0154A, and CLC125US12-XB0289

Standards,

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)

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:	Switching Power Supplies
Model:	CLC125USXX, (where the "XX" can be any number between 12 to 48 indicating main output voltage), may also be followed by suffixes, (3X5), -D, and C), CLC125US12-XB0154A, and CLC125US12-XB0289
Rating:	Input: 100-240 Vac, 50/60Hz, 2.5 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: Dean Baker / Project Handler Reviewed By: Gregory Ray / 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

All models in the Model CLC125USXX 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 at 50°C Table Below:
Model CLC125US12: Output Rated: 10.1 Vdc to 13.5 Vdc, 10.4 A max. (125 W max.)
Model CLC125US15: Output Rated: 13.6 Vdc to 17 Vdc, 8.33 A max. (125 W max.)
Model CLC125US18: Output Rated: 17.1 Vdc to 21 Vdc, 6.94 A max. (125 W max.)
Model CLC125US24: Output Rated: 21.1 Vdc to 26 Vdc, 5.2 A max. (125 W max.)
Model CLC125US28: Output Rated: 26.1 Vdc to 31 Vdc, 4.46 A max. (125 W max.)
Model CLC125US33: Output Rated: 31.1 Vdc to 33 Vdc, 3.78 A max. (125 W max.)
Model CLC125US36: Output Rated: 33.1 Vdc to 42 Vdc, 3.47 A max. (125 W max.)
Model CLC125US48: Output Rated: 42.1 Vdc to 54 Vdc, 2.6 A max. (125 W max.)

See Enclosure - Miscellaneous for details on de-rated outputs based upon higher ambients.

Units provided with suffix "C" provided with cover.
Units provide with suffix "(3X5)" provided with components mounted on larger printed wiring board.
Units provided with suffix "-D" provided with secondary diode, CR3.

Models CLC125US12-XB0289 and CLC125US12-XB0154A are identical to CLC125US12 except for minor differences in the circuit which do not affect safety.

Test Item Particulars

Classification of use by	Skilled person
Supply Connection	AC Mains ES1

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; equipment
Equipment mobility	for building-in
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient	50 (See De-rating Curve, for details) °C
IP protection class	IPX0
Power Systems	TN IT - 230 V L-L
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	17 m
Mass of equipment (kg)	0.175

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 (See De-rating Curve, for, details)
-
- The product is intended for use on the following power systems : IT
- 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.
- 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 product-line tests are conducted for this product : Electric Strength
- Earthing Continuity
-
- The end-product Electric Strength Test is to be based upon a maximum working voltage of : 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 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 : 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 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 L1, L2, L3 are Class F (155).
- The equipment is suitable for direct connection to : AC mains supply
-
- The power supply was evaluated to be used at altitudes up to : 5000 m
- The power supply terminal block is suitable for field wiring. Additional review may be required as part of the end product evaluation.
- 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.
- Consideration to repeating the Touch Current test should be given in the end-product evaluation.
- The printed wiring boards employed by this supply are rated minimum 130°C.
- The power supply terminals and/or connectors are suitable for factory wiring only.
- The maximum continuous power supply output (Watts) relied on forced air cooling from: a 10 cfm fan blowing from input to output.
- 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

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

Limited tests were conducted under this investigation based on testing previously conducted under CBTR Ref. No. E139109-A54-CB-1, CB certificate number US-25003-A1-UL to IEC 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013. All required tests were carried out under the previous investigation except where specifically noted.

See below for list of testing conducted to IEC 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013:

Guide Information Page - Maximum Output Voltage, Current, and Volt Ampere Measurement (1.2.2.1)
Input: Single-Phase (1.6.2)
Energy Hazard Measurements (2.1.1.5, 2.1.2, 1.2.8.10)
Capacitance Discharge (2.1.1.7)
SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1)
Limited Current Measurements (2.4.1, 2.4.2)
Humidity (2.9.1, 2.9.2, 5.2.2)
Determination of Working Voltage; Working Voltage Measurement (2.10.2)
Thin Sheet Material Tests (2.10.5.9, 2.10.5.10, 2.10.5.6)
Transformer and Wire /Insulation Electric Strength (2.10.5.13)
Heating (4.5.1, 1.4.12, 1.4.13)
Ball Pressure (4.5.5, 4.5)
Touch Current (Single-Phase; TN/TT System) (5.1, Annex D)
Electric Strength (5.2.2)
Component Failure (5.3.1, 5.3.4, 5.3.7)
Abnormal Operation Tests (5.3.1-5.3.9)
Transformer Abnormal Operation Test (5.3.3, 5.3.7b, Annex C.1)
Power Supply Output Short-Circuit/Overload Test (5.3.7)

This report references component licenses documentation or certificates that are older than 3 years or issued to previous IEC/EN Standard editions. It has been 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: The product fulfills the requirements of: EN 62368-1:2014 + A11:2017, CSA CAN/CSA-C22.2 NO. 62368-1 2nd Ed, Issued December 1, 2014, UL 62368-1 2ND Ed, Issued December 1, 2014

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. Component ID: "FS1", "FS2". Servicing instructions shall include information related to proper fuse replacement as well as cautionary statement indicating that fusing is provided in the neutral and that connection to mains shall be removed to de-energize the phase conductors.
Special Instructions to UL Representative	