UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (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
Model:	MENT1220VWXYZ, where V represents the generational differences which may be any letter from A thru Z; W represents the output voltage which may be any number from 12, 15, 18 or any number from 24 thru 48; X represents the output cable and connector which may be any two alphanumeric digits; Y represents the AC inlet connector which may be the letter F, N, or Q; F for C14 type AC inlet (Class I), N for C8 type AC inlet (Class II), Q for C18 type AC inlet (Class II); and Z represents non-safety related customer options which may be any two alphanumeric digits. MENT1220A2400F05
Rating:	Input: 100-240 V~, 50-60 Hz, 2.5-1.2 A Output: See additional Information for output ratings.
Applicant Name and Address:	SL POWER ELECTRONICS CORP BLDG A 6050 KING DR VENTURA CA 93003 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.

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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

Switching Power Supply

Model Differences

The models differ in output ratings which requires different turns and gage in transformers T301 & T302 and secondary circuitry component values to accommodate the rated output. Other differences are output cable/connector, AC inlet options for Class I and Class II and non-safety related customer options. In addition, the output + or - may be connected to ground/heatsink for Model MENT1220VWXFZ.

Model MENT1220A2400F05 (Class I unit) is identical to Models MENT1220VWXFZ (Class I), except is has an AC switch, and a different appliance inlet.

Technical Considerations

- Equipment mobility : transportable
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : operator accessible
- 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) and Class II (double insulated).
- Considered current rating of protective device as part of the building installation (A) : 20
- Pollution degree (PD) : PD 2
- IP protection class : IPX1: All Models, except Model MENT1220A2400F05. IPXO: Model MENT1220A2400F05 only.
- Altitude of operation (m) : up to 2000
- Altitude of test laboratory (m) : 42.7

- Mass of equipment (kg) : 1.3
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°C
- The product was investigated to the following additional standards: IEC 60950-1:2005 + A1:2009, EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011, CSA C22.2 No. 60950-1-07 + A1:2011, CSA C22.2 No. 60950-1-07, (which includes all European national differences, including those specified in this test report).
- The means of connection to the mains supply is: Detachable power cord
- The product is intended for use on the following power systems: IT, TN and TT
- The equipment disconnect device is considered to be: Appliance inlet
- The following are available from the Applicant upon request: Schematic Diagrams
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 °C

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 secondary output circuits are SELV: All
- The following secondary output circuits are at hazardous energy levels: All
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 2
- 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): T301 and T302 (Class B)

Additional Information

This report is a reissue and standard upgrade of CBTR Ref. No. E136791-A19-CB-2, CB Test Certificate Ref. No. US-15993-A2-UL issued on 2011-08-25. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, has been determined that the product continues to comply with the standard.

No tests conducted under this investigation due to reissue of CB Test Report Ref. No. E136791-A19-CB-2. All required tests were carried out under the original investigation.

Output ratings:

Output: 48 V maximum,
15 A maximum,
220 W optional,
or see below for standard output models.

MENT1220V12XYZ: 12 V dc/15 A
MENT1220V15XYZ: 15 V dc/13 A
MENT1220V18XYZ: 18 V dc/11.7 A
MENT1220V24XYZ: 24 V dc/9.2 A
MENT1220V28XYZ: 28 V dc/7.9 A
MENT1220V32XYZ: 32 V dc/6.9 A

MENT1220V48XYZ: 48 V dc/4.6 A
MENT1220A2400F05: 24 Vdc/9.2 A

Nameplate markings are considered representative of all other models.

Additional Standards

The product fulfills the requirements of: IEC 60950-1:2005 + A1:2009, EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011, CSA C22.2 No. 60950-1-07 + A1:2011, CSA C22.2 No. 60950-1-07

Markings and instructions

Clause Title	Marking or Instruction Details
Class II symbol	For Models MENT1220VWXNZ, MENT1220VWXQZ only.
Other Symbols	IPX1
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
1.7.1 Power rating - Class II symbol	Symbol for Class II construction
1.7.6 Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.

Special Instructions to UL Representative

Transformer (T302) - Inspect the transformer listed in Production-Line Testing Requirements per AA1.1- (C). When the tests are conducted at other location, Inspect test record and specification sheet provided by the component manufacturer. Verify the specification sheet indicates 100% routine test specified in Production-Line Testing Requirements is conducted at the component manufacturer. The test record noted above shall be submitted to the manufacturer from transformer manufacturer. The test record can be in the form of a actual test record. A stamp or sticker on the transformer or other method verifying the routine test is being completed on 100% production is also acceptable.

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	Transformers T301 and T302	-	Between Primary and Secondary Windings.	3000	-	1

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

Class II Models MENT1220VWXNZ & MENT1220VWXQZ

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					