

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:	Switching power supply for building-in IT equipment
Model:	DS495SPE-3-XXX where -XXX can be any alphanumeric character or blank that represents customer identity that does not affect safety.
Rating:	Input:100-240Vac, 50/60Hz,6.6A Output:+12V 41.25A Max, +12Vsb 3A Max, 495W Total output power not exceed 495W
Applicant Name and Address:	ASTECH INTERNATIONAL LTD 16TH FL LU PLAZA 2 WING YIP ST, KWUN TONG KOWLOON HONG KONG

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: Brian Wong / Project Handler

Reviewed by: Jeffery Chan / 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 equipment is a switching mode power supply, intended for building in as a component used in information technology equipment which employing with isolation transformers. Reinforced insulation is provided between primary and secondary. Basic insulation is provided between primary and protective earthing.

Model Differences

N/A

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : to be determined in end system
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10%
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : -
- 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 : IP X0
- Altitude of operation (m) : 5000
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : Approximate 1kg
- 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 product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: 55°C at full load; 65°C at derated load.
- The product is intended for use on the following power systems: TT TN
- The equipment disconnect device is considered to be: Appliance inlet
- The following were investigated as part of the protective earthing/bonding: Printed wiring board trace (refer to Enclosure - Schematics + PWB for layouts)
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- LEDs provided in the product are considered low power devices: Yes

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 subject product is a Class I equipment as defined in UL 60950-1, Second Edition, and shall be properly earth or bonded to earth in the end use. Additional evaluation is required if the power supply is intended for use other than Class I equipment.
- The power supply's enclosure meets the fire enclosure requirement except for the rear part where the output terminals are located, end system should provide fire enclosure to the power supply's rear panel (output side).
- The following Production-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: Primary-SELV: 394.7Vrms, 725Vpk Primary-Earthed Dead Metal: 393.7 Vrms, 689Vpk
- The following secondary output circuits are SELV: +12V and 12Vsb
- The following secondary output circuits are at hazardous energy levels: +12V
- The following secondary output circuits are at non-hazardous energy levels: +12Vsb
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 2
- An investigation of the protective bonding terminals has: 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): T100(Class F), T300(Class F), T900(Class F)
- The following end-product enclosures are required: Mechanical, Fire, Electrical
- The equipment is suitable for direct connection to: AC mains supply
- The fans included as part of this component are suitable for use in a user access area: Yes
- Forward airflow: 55 °C at 495W output power, 65 °C at 300W output power. Reverse airflow: 55 °C at 495W output power, 60 °C at 300W output power.