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
Model:	73-959-0001, 73-958-0001
Rating:	For model 73-959-0001 Input Rating: 3~, 3W+PE, AC380 - 480V, 50/60Hz, 41A or AC 208 - 240V, 50/60Hz, 75A Output Rating: Section A: PFC1 Vbus: DC +400V, 5.35A; Section A: PFC2 Vbus: DC +400V, 5.35A; Section A: PFC3 Vbus: DC +400V, 5.35A; Section A: PFC4 Vbus: DC +400V, 5.35A; Section A: PFC5 Vbus: DC +400V, 5.35A; Section A: PFC6 Vbus: DC +400V, 5.35A; Section B: PFC1 Vbus: DC +400V, 5.35A; Section B: PFC2 Vbus: DC +400V, 5.35A; Section B: PFC3 Vbus: DC +400V, 5.35A; Section B: PFC4 Vbus: DC +400V, 5.35A; Section B: PFC5 Vbus: DC +400V, 5.35A; Section B: PFC6 Vbus: DC +400V, 5.35A; +5Vsb, 1.0A Maximum output power is 25685 Watts For model 73-958-0001 Input Rating: 380-480V, 21A, 3~, 3W+PE, 50/60Hz or 200-240V, 40A, 3~, 3W+PE, 50/60Hz or AC 200-240, 68A, 1~, 50/60Hz Output Rating: PFC1 Vbus: DC +400V, 5.35A; PFC2 Vbus: DC +400V, 5.35A; PFC3 Vbus: DC +400V, 5.35A; PFC4 Vbus: DC +400V, 5.35A; PFC5 Vbus: DC +400V, 5.35A; PFC6 Vbus: DC +400V, 5.35A; +5Vsb, 1.0A Maximum output power is 12845W

Applicant Name and Address:	ASTEC INTERNATIONAL LTD 16TH FLOOR, LU PLAZA 2 WING YIP STREET, KWUN TONG, KOWLOON, HONGKONG

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: Tony Yeung / Projet Handler Reviewed by: Brian Wong / Project 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

This is a Class I, permanently connected switching Power Supply, intended for Information Technology Equipment provided with input block terminal for AC mains supply connection. The equipment is provided with Basic insulation between Primary and Earth chassis, Reinforced Insulation between Primary and Secondary. Additional Basic Insulation is maintained between Primary and Mid circuits as well as between Secondary and Mid circuits.

Model Differences

Model 73-959-0001 is similar to Model 73-958-0001 except Auxiliary fuse, number of cage slots, assemble position (Model 73-959-0001 assembled vertically and Model 73-958-0001 assembled horizontally)

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : permanent connection
- Operating condition : continuous
- Access location : restricted access location
- 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) : N/A
- Class of equipment : Class I (earthed)
- Considered current rating of protective device as part of the building installation (A) : 100A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : up to 5000m
- Altitude of test laboratory (m) : <500m
- Mass of equipment (kg) : >18
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: Maximum ambient temperature around the power supply must not exceed 50°C. ,

- The means of connection to the mains supply is: Permanently connected (field wired)
- The product is intended for use on the following power systems: TN, TT
- 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 power supply in this equipment was: Investigated to IEC 60950-1. As part of the investigation of this product, the power supply and its test report were reviewed and found to comply with IEC 60950-1.
- The power supply was evaluated for use at an altitude of up to 5000m above sea level and complies with the creepage and clearance requirements at that height with an Altitude factor of 1.48.
- The Electric Strength test is based upon the Marketing request and design of power supply which is worst than UL 60950-1 standard.

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 Production-Line tests are conducted for this product: Electric Strength
- The following secondary output circuits are SELV: 5Vsb Output
- The following secondary output circuits are at hazardous energy levels: DC 400V output
- The following secondary output circuits are at non-hazardous energy levels: 5Vsb
- The power supply terminals and/or connectors are: Not investigated for field wiring
- The maximum investigated branch circuit rating is: 100 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: 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): T500 and T501 (Class F) designated 155-10C
- The following end-product enclosures are required: Fire, Electrical, Mechanical
- The equipment is suitable for direct connection to: AC mains supply
- Power supply chassis is to be permanently connected to protective earthing in the end system before the equipment is energized. The earth wire, that has to be connected to earthing point marked with PE symbol on power supply, must have an annular eyelet and has to be adequately locked against accidental loosening.
- The power supply was not evaluated for system mounting. When installed in end system, proper evaluation should be considered.