

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:	Component DC-DC Power Supply
Model:	IQG Series See Model Matrix under Enclosure. May include optional "-R" appended to product model name to indicate ROHS compliance.
Rating:	Optional 36 - 75 VDC (Max) 15 A 8 - 12.4 VDC max; Max 50 A Max output Power 540 W
Applicant Name and Address:	TDK-LAMBDA AMERICAS INC SUITE 100 3320 MATRIX DR RICHARDSON TX 75082 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: Mengis Tesfay - Handler /
Project Handler

Reviewed By: Scott Shepler / 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

EUT is a DC-DC Converter which is considered to be a secondary, building-in component intended for use in Information Technology Equipment consisting of electronic components mounted on min. V-1 PWB. The modules will be offered in multiple input voltage and output voltage ranges. The input ranges from 36 - 75 Vdc input at 15 A max. The output voltage will be adjustable between 8V to 12.4 Vdc, max 50A.

Model Differences

All models within the series are similar except for input rating, output rating, and non-safety features variations.

Test Item Particulars

Classification of use by	Instructed person
Supply Connection	External Circuit - not Mains connected ES2
Supply % Tolerance	None. Declared range.
Supply Connection – Type	Not directly connected to Mains
Considered current rating of protective device as part of building or equipment installation	40 A. External fuse to be provided in the end product. A; equipment
Equipment mobility	for building-in
Over voltage category (OVC)	OVC II
Class of equipment	Not classified
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	85°C, per client's provided de-rating curve
IP protection class	IPX0
Power Systems	N/A
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.10

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of : See de-rating curve for more details
- The product is intended for use on the following power systems : No direct connection
- Considered current rating of protective device as part of the building installation (A) : External fast blow 40 A fuse to be provided in the end product.
- Mains supply tolerance (%) or absolute mains supply values : No direct connection
- The equipment disconnect device is considered to be : For building in
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- The product was investigated to the following additional standards : EN 62368-1:2014 + A11:2017

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 product-line tests are conducted for this product : Electric Strength
- The following output circuits are at ES1 energy levels : All
- The following output circuits are at PS3 energy levels : All
- The investigated Pollution Degree is : 2
- An investigation of the protective bonding terminals has : Not been conducted
- The following end-product enclosures are required : Electrical, Fire
- The maximum continuous power supply output (Watts) relied on forced air cooling from : Ranging from 5.2 to 70 CFM depending on ambient, and load. See Derating Curve
- The power supply was evaluated to be used at altitudes up to : "2,000 m"
- Test was conducted using fast blow external fuse rated 40 A. External fuse employed shall comply with IEC 60127.
- Heating Test need to re-conducted as part of an end product evaluation to ensure the max temperature of 125 C at PWB near T1 is not exceeded.

Additional Information

This report is based on CB report reference numbers 2520400-3336-0023, 2520400-3336-0023 (124227), 2520400-3336-0023/151890, 2520400-3336-0023/160105, 2520400-3336-0023/168899, 2520400-3336-0023/172854, 2520400-3336-0023/182394, 2520400-3336-0023/193814, 207809-CI3-1, 258199-TL1-1 and CB certificates DE1-40099, CB/DE1- 40099/M1, CB/DE1- 40099/A1, CB DE1-49345, CB DE1-49345 /A1, CB DE1-49345 /A2, CB DE1-49345/A3, CB DE1-49345/A3/M1, CB DE1-49345/A4/M1, CB DE1-49345/A5/M1 respectively which was previously evaluated to UL/CSA/IEC 60950-1, 2nd edition, + Amendment 1 + Amendment 2; and UL report E220248-A20.

Testing conducted in accordance with IEC 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013; UL 60950-1, 2nd Edition, 2014-10-14; and CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10, and was deemed equivalent to the test required by IEC62368-1, 2nd Edition, CAN/CSA-C22.2 NO. 62368-1 2nd Ed, Issued December 1, 2014, and UL 62368-1 2nd Ed, Issued December 1, 2014. Testing correlation explanation provided in Enclosure. All original sample and test dates are noted in the testing portion of this report. Only Electric Strength test (5.4.9) was conducted at UL RTP, 12 Laboratory Dr. RTP NC 27709.

Marking label provided represents all models in series. The label also may include an optional "-R" as a suffix to denote ROHS compliance. The list of test equipment is absent from the VDE CB reports and TDK is a UL current CTF Stage 2 Laboratory customer.

Additional Standards

The product fulfills the requirements of: EN 62368-1:2014 + A11:2017

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

Special Instructions to UL Representative