

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:	AC-DC Power Supply
Model:	DRB480-24-1-xyz DRB480-48-1-xyz where x, y, z may be any letter or digit or blank, considered non safety relevant information, see model differences
Rating:	INPUT: 100-240VAC, 5.4A, 50/60Hz OUTPUT: DRB480-24-1-xyz: 24-26.4Vdc, 20-18.2A (max 480W) DRB480-48-1-xyz: 48-52.8 Vdc, 10-9.09A (max 480W)
Applicant Name and Address:	TDK-LAMBDA UK LTD KINGSLEY AVE ILFRACOMBE EX34 8ES UNITED KINGDOM

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: Mark John De Sagun / Project
Handler

Reviewed By: Dennis Butcher / 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

Device is AC/DC switch mode power supply for building-in on DIN rail.

Model Differences

suffix '-xyz' is optional and denotes customer-specific variant (like fixed voltage or no LED), and is deemed not safety relevant.

Model DRB480-48-1 is mechanically and electrically identical to model DRB480-24-1, except for:

-different output ratings

-different transformer TX1, output choke L5

-different FET on ASSY1

-passive elements in SELV circuit to accomodate different output ratings

-changed PWB layouts -- the safety relevant part (spacings, PE path) remain unchanged,

Primary side of all models is strictly identical.

Test Item Particulars

Classification of use by	Skilled person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	mating connector
Considered current rating of protective device as part of building or equipment installation	20 A; building;
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 (°C)	50 (at 480W max. output power); 70 (derate linearly down to 300W)
IP protection class	IPX0
Power Systems	TN TT
Altitude during operation (m)	3000 m
Altitude of test laboratory (m)	2000 m or less

Mass of equipment (kg)	1.18
<p>Technical Considerations</p> <ul style="list-style-type: none"> • The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 50°C (full load), 70°C (with derating) • The product is intended for use on the following power systems : TT, 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 : to be determined in End Product • 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 • The product was investigated to the following additional standard : EN 62368-1:2014 + A11:2017, CSA CAN/CSA-C22.2 NO. 62368-1 2nd Ed, Issued December 1, 2014 • Capacitors are rated for 230V due to the IT power system used in Norway. Further evaluation may be required in the end use product. • Multilayer PWB's accepted under CBTR Ref. No. E349607-A23 dated 2014-07-31 and letter report, see enclosure 8-08 of this report. See enclosure 7-03 for rationale for waived tests. <p>Engineering Conditions of Acceptability</p> <p>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:</p> <ul style="list-style-type: none"> • The following product-line tests are conducted for this product : Earthing Continuity, Electric Strength • The end-product Electric Strength Test is to be based upon a maximum working voltage of : Primary-Earthed Dead Metal: 326 Vrms, 584 Vpk, Primary-SELV: 264 Vrms, 550 Vpk • The following output circuits are at ES1 energy levels : Output of DRB480-24 series • The following output circuits are at ES2 energy levels : Output of DRB480-48 series • The following output circuits are at PS3 energy levels : All outputs • The maximum investigated branch circuit rating is : 20A • 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 input terminals/connectors must be connected to the end-product supply neutral : J7-2 • The following end-product enclosures are required : Mechanical, Fire, Electrical • 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) : Transformer T1 (class 155°C), Coil L4 (class 155°C), Coli L1 (class 155°C) • The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing : metal housing (85.8°C) - additional requirements for accessibility to be evaluated in end product. • The power supply was evaluated to be used at altitudes up to : 3000 m 	
<p>Additional Information</p> <p>DERATING INFORMATION: Max. Output power: 480W up to 50°C, derate linearly down to 300W at 70°C. See manual.</p> <p>Marking label is representative of entire variants.</p>	
<p>Additional Standards</p> <p>The product fulfills the requirements of: EN 62368-1:2014 + A11:2017, CSA CAN/CSA-C22.2 No. 62368-1 2nd</p>	