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:	CME30A-zzxxxxxxx; CUS30M-zzxxxxxxx (zz = 12, 15, 18, 24, 36 or 48; xxxxxxx = /, A, U, ADJ, M, CO, SF, P, other alphanumeric character, symbol or blank)
Rating:	See Enclosure Id. 7-01 (Electrical Ratings for all models).
Applicant Name and Address:	TDK-LAMBDA CORP NAGAOKA TECHNICAL CENTER R&D DIV 2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195 JAPAN

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: Hiroyuki Morikawa Reviewed by: Tetsuo Iwasaki

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 component type switching mode power supply series intended for use in class I or II construction of information technology equipment.
- For earthed construction (Class I), the equipment need to be reliably earthed and professionally installed and fixed with metal screws.
- For non-earthed construction (Class II), no earthing connection is required. The equipment need to be fixed so, that it is insulated from any unearthed accessible conductive part by reinforced insulation.

Output Rating:
12 V (10.8 - 13.2 V), maximum 2.5 A (Maximum 30.0 W) (for CUS30M-12, CME30A-12)
15 V (13.5 - 16.5 V), maximum 2.0 A (Maximum 30.0 W) (for CUS30M-15, CME30A-15)
18 V (16.2 - 19.8 V), maximum 1.7 A (Maximum 30.6 W) (for CUS30M-18, CME30A-18)
24 V (21.6 - 26.4 V), maximum 1.25 A (Maximum 30.0 W) (for CUS30M-24, CME30A-24)
36 V (32.4 - 39.6 V), maximum 0.84 A (Maximum 30.24 W) (for CUS30M-36, CME30A-36)
48 V (43.2 - 52.8 V), maximum 0.63 A (Maximum 30.24 W) (for CUS30M-48, CME30A-48)

Model Differences

Model CUS30M-zzxxxxxxx is basic model.

Model CME30A-zzxxxxxxx is identical to Model CUS30M-zzxxxxxxx except for model name.

Suffix "zz" of all models denotes output voltage. (zz = 12,15,18, 24, 36 or 48)

Suffix "xxxxxxx" of all models denotes as follows. (xxxxxxx = /, A, U, ADJ, M, CO, SF, P, other alphanumeric character, symbol or blank)
/: Separator of model name letters, not related specification of EUT
A: Provided with chassis and cover
U: Provided with U shape chassis
ADJ: Provided with output adjust
M: Provided with Molex connector
CO: Provided with PWB coating
SF: Provided without Fuse (F1B)
P: Provided with solderable copper pins in place of connectors
Other alphanumeric character, symbol or blank: For market purposes, no construction differences and no safety impact.

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : not directly connected to the mains
- Operating condition : continuous
- Access location : N/A
- 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 : Not classified
- Considered current rating of protective device as part of the building installation (A) : 20
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : Up to 5000
- Altitude of test laboratory (m) : Approximately 50
- Mass of equipment (kg) : Approximately 0.19 kg (with chassis and cover); Approximately 0.06 kg (without chassis and cover)
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 70°C (Refer to Enclosure id. 7-02 (Derating specifications) for details.)
- The product is intended for use on the following power systems: TN

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 end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-Earthed Dead Metal: 250 Vrms, 420 Vpk (only for earthed construction), Primary-SELV: 250 Vrms, 504 Vpk
- The following secondary output circuits are SELV: All models' output.
- The following secondary output circuits are at non-hazardous energy levels: All models' output.
- The power supply terminals and/or connectors are: Not investigated for field wiring
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is: Required (only for earthed construction), Not required (for others)
- An investigation of the protective bonding terminals has: Not 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): T1 (Class B), L1, L2 (PWB: 130°C)
- The following end-product enclosures are required: Fire, Electrical
- X-Capacitor (C1) may have variation in capacitance up to 0.22 µF. Therefore, consideration shall be given in controlling the capacitance value in the end-product application with respect to capacitance discharge issue.
- Y-Capacitors (C2, C3, C4, C5) may have variations in capacitance up to 1000 (for C2, C3) / 1500 (for C4, C5) pF. Therefore, consideration shall be given in controlling the capacitance values in end

product application with respect to Touch Current issue.

Additional Information

The Clearances and Creepage Distances have additionally been assessed for suitability up to 5,000 m altitude.

This Test Report was based on the CB Test Certificate (Ref. Certif. Nos. JPTUV-082335 dated 2017-08-09, JPTUV-082335-M1 dated 2018-12-12) and Test Report (Ref. Nos. 50088660 001 dated 2017-08-08, 50088660 002 dated 2018-12-12), which were prepared by TÜV Rheinland Japan Ltd. and submitted by the CB Scheme.
The test results and clause verdicts of the above noted report were reviewed and found to comply with the applicable Standard IEC 60950-1:2005 (Second Edition) + Am 1:2009 +Am 2:2013. As a result the clause verdicts and test results for this report were noted as N/A and have been referred to the TÜV Rheinland Japan Ltd. Test Reports for details. All test data have been retained in UL's files.

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number