

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2019-05-09 (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)
Complementary CCN:	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Product:	Power Supply
Model:	mUZP-120-12xxx-yx-x, mUZP-120-24xxx-yx-x, mUZPT-120-12xxx-yx-x, mUZPT-120-15xxx-yx-x, mUZPT-120-24xxx-yx-x, UZP-120-12xxx-yx-x, UZP-120-24xxx-yx-x and PS3715 (where x may be maximum 10 numbers, any alphanumeric character, hyphen or blank; where y is J0L or JB0 or JBH)
Rating:	<mUZP-120-12xxx-J0Lx-x, mUZP-120-12xxx-JB0x-x, mUZPT-120-12xxx-J0Lx-x, mUZPT-120-12xxx-JB0x-x, UZP-120-12xxx-J0Lx-x, UZP-120-12xxx-JB0x-x> Input: 100-240V~, 1.87A, 50-60Hz, Output: 12Vdc, 8.4A <mUZP-120-12xxx-JBHx-x, mUZPT-120-12xxx-JBHx-x, UZP-120-12xxx-JBHx-x> Input: 100-240V~, 1.83A, 50-60Hz, Output: 12Vdc, 10A <mUZP-120-24xxx-J0Lx-x, mUZP-120-24xxx-JB0x-x, mUZPT-120-24xxx-J0Lx-x, mUZPT-120-24xxx-JB0x-x, UZP-120-24xxx-J0Lx-x, UZP-120-24xxx-JB0x-x)> Input: 100-240V~, 1.82A, 50-60Hz, Output: 24Vdc, 5A <mUZP-120-24xxx-JBHx-x, mUZPT-120-24xxx-JBHx-x, UZP-120-24xxx-JBHx-x> Input: 100-240V~, 1.78A, 50-60Hz, Output: 24Vdc, 5A <mUZPT-120-15xxx-J0Lx-x, mUZPT-120-15xxx-JB0x-x> Input: 100-240V~, 1.87A, 50-60Hz, Output: 15Vdc, 6.7A

	<p><mUZPT-120-15xxx-JBHx-x> Input: 100-240V~, 1.83A, 50-60Hz, Output: 15Vdc, 8A</p> <p><PS3715> Input: 100-240V~, 0.55A, 50-60Hz, Output: 12.6Vdc, 3.49A</p>
Applicant Name and Address:	<p>NIPRON CO LTD 2-57 OHAMA-CHO AMAGASAKI-SHI HYOGO-KEN 660-0095 JAPAN</p>

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: Nao Maede / Project Handler Reviewed By: Takeshi Yamatani / 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 equipment is component type power supply.

This power supply has two component layouts, 3431P1 and 3507P1. See Enclosure Id. 05-01 to 05-02 for details. (Fuse type 215 and ZNR2 may be provided for 3507P1 only.)

Model Differences

Model UZP-120-24 is the basic model in this Test Report.

Model UZP-120-12 is identical to Model UZP-120-24 except for electrical rating, and Transformer (T1).

Models mUZP-120-12 and mUZP-120-24 are identical to Models UZP-120-12 and UZP-120-24 except for model designation.

Models mUZPT-120-12 and mUZPT-120-24 are identical to Models UZP-120-12 and UZP-120-24 except for Transformer (T1).

Model mUZPT-120-15 is identical to Models mUZPT-120-24 except for electrical rating and Transformer (T1).

Model PS3715 is identical to Model UZP-120-12 except for electrical rating, Chassis and Cover provided and optional battery provided.

(Model PS3715 is provided optional battery, is not provided optional Chassis and Cover, Model UZP-120-12 is provided optional Chassis and Cover. is not provided optional battery.)

Suffix x denotes control numbers which do not affect safety. (Where x may be maximum 10 numbers, any alphanumeric character, hyphen or blank)

Suffix y denotes rectifier of secondary circuit as follows.

J0L, JB0: Diode

JBH: FET

(Input current rating is different for each model.)

Test Item Particulars	
Equipment mobility	for building-in
Connection to the mains	not directly connected to the mains
Operating condition	continuous
Access location	for building-in
Over voltage category (OVC)	OVC II
Mains supply tolerance (%) or absolute mains supply values	+10% / -10% (-15% to -10% with output de-rating)
Tested for IT power systems	Yes (for Norway deviation only)
IT testing, phase-phase voltage (V)	230 V
Class of equipment	Class I (earthed)
Considered current rating of protective device as part of the building installation (A)	20 (for USA/Canada deviation), 16 (for others)
Pollution degree (PD)	PD 2
IP protection class	IP X0
Altitude of operation (m)	up to 5000 m
Altitude of test laboratory (m)	approximately 10 to 20 m
Mass of equipment (kg)	approximately 0.25
Technical Considerations	
<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 : See Enclosure Id. 07-10 and 07-15 (Maximum Normal Load Condition (Test Condition)) for details. • The product is intended for use on the following power systems : TN, IT (for Norway deviation only) • 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 following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : Output circuit after F1 on 3734P1 board (for Model PS3715) • The product was evaluated to be used in tropical climates. 	
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 end-product Electric Strength Test is to be based upon a maximum working voltage of : mUZP-120-12, UZP-120-12, PS3715: 248 Vrms, 430 Vpk; mUZP-120-24, UZP-120-24: 247 Vrms, 446 Vpk; , mUZPT-120-12: 246 Vrms, 434 Vpk; , mUZPT-120-15: 248 Vrms, 442 Vpk; , mUZPT-120-24: 247 Vrms, 458 Vpk;
- The following secondary output circuits are SELV : DC output of all models
- The following secondary output circuits are at hazardous energy levels : DC output of mUZPT-120-24
- The following secondary output circuits are at non-hazardous energy levels : DC output of all models except for mUZPT-120-24
- The power supply terminals and/or connectors are : Suitable for factory wiring only
- 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. Cover and Chassis shall be properly earthed in the end-product.
- 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), LF1, LF2, L3 (PWB: 130°C)
- The following end-product enclosures are required : Electrical, Fire
- The Heating Test shall be evaluated in the end-product.
- Unless otherwise specified, Resistor (R16) were by-passed for inactivate.
- The following output circuits are at ES1 energy levels : Secondary output
- The following output circuits are at PS2 energy levels : Output circuit after F1 on 3734P1 board (for Model PS3715)
- The following output circuits are at PS3 energy levels : Secondary output (for Model mUZP-120-12xxx-yx-x, mUZP-120-24xxx-yx-x, mUZPT-120-12xxx-yx-x, mUZPT-120-15xxx-yx-x, mUZPT-120-24xxx-yx-x, UZP-120-12xxx-yx-x and UZP-120-24xxx-yx-x)
- X-Capacitors may have variation in capacitance up to 1 uF maximum (C1). Therefore, consideration shall be given in controlling the capacitance value in end-product application with respect to capacitance discharge issue.
- Y-Capacitors may have variation in capacitance up to 1000 pF maximum (C18, C20). Therefore, consideration shall be given in controlling the capacitance value in end product application with respect to touch current issue.
- Peak current of Output is not evaluated in this report by applicant's request.
- Classification of PIS has not been conducted. Therefore, all electrical components and conductors including printed wirings were assumed to be arcing/resistive PIS.
- This component has been evaluated in 'control fire spread' method assuming appropriate fire enclosure is provided in end product. Unless the fire enclosure is made of non-combustible or V-0 material, the separation from the PIS shall be considered.

Additional Information

The battery (Model BK250SCH) used in the battery pack [Model 7BK250SCH] intended for use in a portable ITE product application has been evaluated for compliance with IEC62133-1: 2017. See CB Test Report No. E487385-4789582542-1, CB Test Cert. No.DK-103189-UL, issued by UL (for battery pack), CB Test Report No. 6030278.50, CB Test Cert. No.NL-52954, issued by DEKRA (for battery cell).

Maximum Normal Load Condition (Test Condition): See Enclosure Id. 07-10 and 07-15 for details.

(for CB)

In this Test Report, CENELEC mark license indicating compliance to EN standard was used to verify component compliance to IEC standard because the standards are technically equivalent.

UL Standards in table 1.5.1 have requirements that meet or exceed the relevant IEC requirements.

Copy of marking plate of represent models attached in the Copy of marking plate can be representative of other series of models because this copy of marking plate includes all required items and same items are described in the marking plate of other series models.

The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Additional Standards
 The product fulfills the requirements of:

Markings and Instructions	
Clause Title	Marking or Instruction Details
Power rating - Company identification	Listee's or Recognized companys name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.

Special Instructions to UL Representative
 Inspect the transformer(s) listed below per AA1.1 - C.
 When the tests are conducted at other location, inspect test record and specification sheet provided by the component manufacturer.

Verify the specification sheet indicates 100% routine test specified in below be conducted at the component manufacturer.

BD1.0						
TABLE: Production-Line Testing Requirements						
BD1.1						
Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.						
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
All models in this test report	Transformer (T1)	N/A	Primary to Secondary	3000	4242	1
BD1.2						
Earthing Continuity Test Exemptions – This test is not required for the following models:						
N/A						
BD1.3						
Electric Strength Test Exemptions – This test is not required for the following models:						
N/A						
BD1.4						
Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:						
N/A						

BE1.0					
Sample and Test Specifics for Follow-Up Tests at UL					
Model	Component	Material	Test	Sample (s)	Test Specifics
N/A	--	--	--	--	--

