

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:	DC Power Supply
Model:	HPCFL-400Px (where x maybe maximum 50 characters, any alphanumeric character, hyphen or blank, which denotes control number)
Rating:	Input: 100-240 Vac, 3.8 A - 1.6 A, 50 / 60 Hz Output: CH1: 3.3 Vdc, 8 A (maximum 10 A, peak 20 A) CH2: 5 Vdc, 8 A (maximum 10 A, peak 20 A) CH3: 12 Vdc, 8 A (maximum 14 A, peak 30 A) CH4: -12 Vdc, 0.2 A (maximum 0.2 A, peak 0.5 A) CH5: 5VSB, 1.0 A (maximum 1.0 A, peak 2.0 A) Total Wattage: 170 W maximum (CH1+CH2: 83 W maximum, CH3: 168 W maximum, CH4: 2.4 W maximum, CH5: 5 W maximum) Peak Wattage: 400W maximum (CH1+CH2: 120 W maximum, CH3: 360 W maximum, CH4: 6 W maximum, CH5: 10 W maximum) Peak: maximum 5 seconds Interval: 45 seconds
Applicant Name and Address:	NIPRON CO LTD 2-57 OHAMA-CHO AMAGASAKI-SHI HYOGO-KEN 660-0095 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.

Issue Date: 2013-09-05
2015-10-05

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Report Reference #

E161936-A85-UL

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: Yoshifusa Koyanagi

Reviewed by: Satoru Ohnishi



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 product is building-in type power supply.

Model Differences

N/A

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : N/A
- Operating condition : continuous
- Access location : N/A
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10% / -10% (-15% to -10% with output derating)
- Tested for IT power systems : Yes
- IT testing, phase-phase voltage (V) : 230 Vac (for Norway only)
- Class of equipment : Class I (earthed)
- Considered current rating of protective device as part of the building installation (A) : 20 A
- 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 0.65 kg
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C for 100% Load / 60°C for 80% Load
- The product is intended for use on the following power systems: TN
- LEDs provided in the product are considered low power devices: Yes

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: Earthing Continuity / Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: 378 Vrms / 616 Vpk
- The following secondary output circuits are SELV: CH1: 3.3 Vdc, CH2: 5 Vdc, CH3: 12 Vdc, CH4: - 12 Vdc, and CH5: 5VSB
- The following secondary output circuits are at hazardous energy levels: CH3: 12 Vdc
- 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
- 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): Transformer (T11) (Class B) and Transformer (T12) (Class B)
- The following end-product enclosures are required: Electrical / Fire
- In case power supply is powered by Capacitor Pack when AC mains supply is power-off, caution for risk of electrical shock shall be provided in servicing instructions in end-product.
- LEDs in Capacitor Pack shall not be accessible to the user.
- Fuses (F1, F2) provided in live and neutral lines. Warning to service personnel: "CAUTION: Double pole/neutral fusing" shall be determined in end-product.

Additional Information

Maximum Normal Load (Test Conditions): See Enclosure Id. 7-07 (Test Conditions) for details.

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Model	Model Number
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.

Special Instructions to UL Representative

N/A

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
HPCFL-400Px (where x maybe maximum 50 characters, any alphanumeric character, hyphen or blank, which denotes control number)	Transformers (T11, T12)	N/A	PRI to SEC	300 0	4243	1

Earthing Continuity Test Exemptions - This test is not required for the following models:

N/A

Electric Strength Test Exemptions - This test is not required for the following models:

N/A

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

Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
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