

	Test Report issued under the responsibility of: UL Japan, Inc.	
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TEST REPORT IEC 60950-1 Information technology equipment - Safety - Part 1: General requirements	
Report Reference No	E209547-A85-CB-2
Date of issue	2010-12-03
Total number of pages	24
CB Testing Laboratory	UL Japan, Inc.
Address	4383-326 Asama-cho, Ise-shi, Mie, 516-0021, Japan
Applicant's name	NEC DISPLAY SOLUTIONS LTD
Address	686-1 NISHI-OI OI-MACHI ASHIGARAKAMI-GUN KANAGAWA 258-8533 JAPAN
Test specification:	
Standard	IEC 60950-1:2005 (Second Edition)
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	IEC60950_1A
Test Report Form originator	SGS Fimko Ltd
Master TRF	2009-09
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Test item description	DLP Projector
Trade Mark	NEC
Manufacturer	NEC DISPLAY SOLUTIONS LTD 686-1 NISHI-OI OI-MACHI ASHIGARAKAMI-GUN KANAGAWA 258-8533 JAPAN
Model/Type reference	NP110, NP110+, NP115, NP115+, NP210, NP210+, NP215, NP215+, NP216, NP216+, NP-V230, NP-V230+, NP-V230X, NP- V230X+, NP-V260, NP-V260+, NP-V260R, NP-V260W, NP-V260W+, NP-V260X, NP-V260X+, NP-V300W, NP-V300W+, NP-V300X and NP-V300X+ (Models NP110, NP115, NP210, NP215, NP216, NP-V230, NP- V230X, NP-V260, NP-V260R, NP-V260W, NP-V260X, NP-V300W, NP-V300X maybe followed by an optional suffix to denote shipping area.)
Rating	100-240 Vac, 50/60 Hz, 2.6 - 1.2 A (for Models NP110, NP115, NP210, NP215, NP216, NP-V230, NP-V230X, NP-V260, NP-V260W, NP-V260X, NP-V260R) 100-240 Vac, 50/60 Hz, 3.0-1.4 A (for Models NP-V300W, NP- V300X) 200-240 Vac, 50/60 Hz, 1.4 A (for Models NP110+, NP115+, NP210+, NP215+, NP216+, NP-V230+, NP-V230X+, NP-V260+, NP- V260W+, NP-V260X+) 200-240 Vac, 50/60 Hz, 1.6 A (for Model NP-V300X+, NP-V300W+)

Testing procedure and testing location:	
☒ CB Testing Laboratory	
Testing location / address..... :	UL Japan, Inc. 4383-326 Asama-cho, Ise-shi, Mie, 516-0021, Japan
☐ Associated CB Test Laboratory	
Testing location / address..... :	
Tested by (name + signature)	Haruhiko Ishii
Approved by (+ signature)	Yoshio Kitamura
 	
☐ Testing Procedure: TMP	
Tested by (name + signature)	
Approved by (+ signature)	
Testing location / address..... :	
☐ Testing Procedure: WMT	
Tested by (name + signature)	
Witnessed by (+ signature)..... :	
Approved by (+ signature)	
Testing location / address..... :	
☐ Testing Procedure: SMT	
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	
Testing location / address..... :	
☐ Testing Procedure: RMT	
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	
Testing location / address..... :	

List of Attachments

National Differences (0 pages)

Enclosures (0 pages)

Summary of Testing:

No tests were conducted

Summary of Compliance with National Differences:

List of countries addressed: CN, DE, EU, JP, SG

Issue Date: 2010-12-03
Correction 1 2011-06-03

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Report Reference #

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Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :

Equipment mobility	movable (table top) or fixed (ceiling mount)
Connection to the mains	pluggable A
Operating condition	continuous
Access location	operator accessible
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	Class I (earthed) or Class 0I (for Japanese models)
Considered current rating (A)	20 A (Branch circuit)
Pollution degree (PD)	PD 2
IP protection class	IP X0
Altitude of operation (m)	Up to 3600 m
Altitude of test laboratory (m)	approximately 10 to 20 m
Mass of equipment (kg)	approximately 2.5 kg and approximately 2.8 kg (with Projector Mounting Adapter of Ceiling Mount Kit)

Possible test case verdicts:

- test case does not apply to the test object	N / A
- test object does meet the requirement	P(Pass)
- test object does not meet the requirement	F(Fail)

Testing:

Date(s) of receipt of test item	N/A
Date(s) of Performance of tests	N/A

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Manufacturer's Declaration per SubClause 6.25 of IEC 60950-1:

The application for obtaining a CB Test Certificate includes more than one factory and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided

Not
Applicable

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies): SUZHOU SHIN-EI SANGYO CO LTD

158-106, 108 HUASHAN RD
NEW DISTRICT
SUZHOU,
JIANGSU 215011 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2011-06-03 to include the following changes/additions:
This report is only valid in conjunction with CB Test Report Ref. No. E209547-A85-CB-2, including revision
CB Test Report Ref. No. E209547-A85-CB-2 (Amendment 1).

Correction 1 is to cover the following:

Correction in table 1.5.1.

- Correction of the object/part or Description:

<From> Speaker Box

<To> Speaker Box for Models NP-V230, NP-V230X, NP-V260, NP-V260R, NP-V260W, NP-V260X, NP-V300W, NP-V300X

Product Description

The product is a DLP Projector for general office use.

The product is considered to be movable (tabletop) or fixed (with ceiling mount kit). The product is secured to ceiling by service personnel only.

Lamp and Lamp Cover are intended to be opened by operator for Lamp replacement.

Accessories:

- Ceiling Mount Kit
- RGB Cable and Audio/Video Cable
- Remote Controller

Model Differences

Model NP215 is the basic model described in this Test Report.

(Brightness: 2500 ANSI Lumens, Native Resolution: XGA (1024 x 768), Lamp Assembly: NP13LP, Ballast Power Supply: EUC 185d W/S41, Switching Power Supply: ZSNE834I (*1), LAN Connector: Provided)

Model NP210 is identical to Model NP215, except for model designation, brightness and LAN Connector.
(Brightness: 2200 ANSI Lumens, Native Resolution: XGA (1024 x 768), LAN Connector: Not provided)

Model NP110 is identical to Model NP210, except for model designation and native resolution.
(Brightness: 2200 ANSI Lumens, Native Resolution: SVGA (800 x 600))

Model NP115 is identical to Model NP110, except for model designation and brightness.
(Brightness: 2500 ANSI Lumens)

Model NP216 is identical to Model NP215, except for model designation, addition of output connectors, secondary circuit that related to output connectors and shape of Power Supply Case.
(Brightness: 2500 ANSI Lumens, Native Resolution: XGA (1024 x 768), Lamp Assembly: NP13LP, Ballast

Power Supply: EUC 185d W/S41, Switching Power Supply: ZSNE834I, COMPUTER 2 IN, AUDIO IN, AUDIO IN (L, R), AUDIO OUT: Provided)

Model NP-V230 is identical to Model NP215, except for model designation, brightness, native resolution, switching power supply, shape of bottom case and LAN Connector.
(Brightness: 2300 ANSI Lumens, Native Resolution: SVGA (800 x 600), Switching Power Supply: ZSNE022I (*1), LAN Connector: Not provided.)

Model NP-V230X is identical to Model NP-V230, except for model designation and native resolution.
(Native Resolution: XGA (1024 x 768))

Model NP-V260 is identical to Model NP-V230, except for model designation and brightness.
(Brightness: 2600 ANSI Lumens)

Model NP-V260R is identical to Model NP-V260, except for model designation, addition of HDMI Connector and secondary circuit that related to HDMI Connector.
(HDMI: Provided)

Model NP-V260X is identical to NP216, except for model designation, brightness, switching power supply, shape of bottom case, addition of HDMI Connector and secondary circuit that related to HDMI Connector.
(Brightness: 2600 ANSI Lumens, Native Resolution: XGA (1024 x 768), Switching Power Supply: ZSNE022I (*1), HDMI: Provided)

Model NP-V260W is identical to NP-V216X, except for model designation and native resolution.
(Native Resolution: WXGA (1280 x 800))

Model NP-V300X is identical to NP216, except for model designation, brightness, shape of bottom case, input rating, setting of fan speed, Lamp Assembly, ballast power supply, switching power supply, addition of HDMI Connector and secondary circuit that related to HDMI Connector.
(Brightness: 3000 ANSI Lumens, Native Resolution: XGA (1024 x 768), Lamp Assembly: NP-18LP, Ballast Power Supply: EUC 230d N/S00, Switching Power Supply: ZSNE023I (*1), HDMI Connector: Provided.)

Model NP-V300W is identical to NP-V300X, except for model designation, native resolution.
(Native Resolution: WXGA (1280 x 800))

Models NP215+, NP210+, NP110+, NP115+, NP216+, NP-V230+, NP-V230X+, NP-V260+, NP-V260W+, NP-V260X+, NP-V300W+, NP-V300X+ are identical to Model Models NP215, NP210, NP110, NP115, NP216, NP-V230, NP-V230X, NP-V260, NP-V260W, NP-V260X, NP-V300W, NP-V300X respectively, except for model designation, electrical rating and shipping area (China).

Models NP110, NP115, NP210, NP215, NP216, NP-V230, NP-V230X, NP-V260, NP-V260R, NP-V260W, NP-V260X, NP-V300W, NP-V300X maybe followed by an optional suffix to denote shipping area.

(*1) Differences of internal switching power supply are as follows;
Model ZSNE022I is identical to Model ZSNE834I except for model designation.
Model ZSNE023I is identical to Model ZSNE834I except for primary output power.
For difference of primary output power, following components are different from them of Model ZSNE834I.
Fuse (F001), Inductors (L002, L101) and FETs (Q101, Q102, Q103) (Model ZSNE023I: Type TK12A50D, Model ZSNE834I: Type 2SK3561).

Additional Information

This report is a revision of the application standard from IEC60950-1:2001 First Edition to IEC60950-1:2005 and addition of new Models NP-V230, NP-V230+, NP-V230X, NP-V230X+, NP-V260, NP-V260+, NP-V260R,

NP-V260W, NP-V260W+, NP-V260X, NP-V260X+, NP-V300W, NP-V300W+, NP-V300X and NP-V300X+ and deletion of Factory; TOSHIN TECHNOLOGY (SHENZHEN) CO LTD. Original CB Certificate No. is JPULA-02710.

The DLP Projector, Models NP110, NP115, NP210, NP215, NP216 were provided with Power Supply, Model ZSNE834I, which is evaluated with the equipment, and Ballast Power Supply, Model EUC 185d W/S41, which is Certified to IEC60950-1, Second Edition by KEMA Quality B.V.

Considered clearance of operated at up to 3,600 m sea level. The multiplication factors of table A.2 of IEC 60664-1 applied. 1.23 times of required clearance of operated at up to 2,000 m sea level.

Unless otherwise stated, all tests were conducted on representative Model NP215 under the following Maximum Normal Load Condition installed on tabletop.

- Continuous Projection of Color Bar
- Following Input Signal was used.
R.G.B Input Signal: Resolution 1024 x 768, Vertical Frequency 60 Hz
(Input Signal does not influence power consumption.)

Heating Test was conducted on Model NP216 under the following Maximum Normal Load Condition installed in Ceiling Mount Condition.

- Continuous Projection of Color Bar
- Following Input Signal was used.
R.G.B Input Signal: Resolution 1024 x 768, Vertical Frequency 60 Hz
(Input Signal does not influence power consumption.)

The DLP Projector, Models NP-V230, NP-V230X, NP-V260, NP-V260R, NP-V260X and NP-V260W were provided with Power Supply, Model ZSNE022I, which evaluated with the equipment, and Ballast Power Supply, Model EUC 185d W/S41, which is Certified to IEC60950-1, Second Edition by KEMA Quality B.V.

Input Test was conducted on representative Model NP-V260X under the following Maximum Normal Load Condition installed on tabletop.

- Continuous Projection of Color Bar
- Following Input Signal was used.
R.G.B Input Signal: Resolution 1024 x 768, Vertical Frequency 60 Hz
(Input Signal does not influence power consumption.)

Speeds of Fan Motors are changeable by ambient temperature. During the tests, the following operating fan-speed conditions were considered.

- Set intg at Ambie $\pm 26^{\circ}\text{C}$
Fan Motor for Lamp (Rear): 5200 rpm
Fan Motor for Lamp (Middle): 2300 rpm
- Set intg at Ambie $\pm 36^{\circ}\text{C}$
Fan Motor for Lamp (Rear): 5450 rpm
Fan Motor for Lamp (Middle): 3400 rpm
- Set intg at Ambie $\pm 40^{\circ}\text{C}$ (*1)
Fan Motor for Lamp (Rear): 4500 rpm
Fan Motor for Lamp (Middle): 3400 rpm
- Setting at Full Condition
Fan Motor for Lamp (Rear): 5650 rpm
Fan Motor for Lamp (Middle): 3400 rpm

(*1): During this setting condition, the DLP Projector was operated under eco-mode only.

The DLP Projector, Models NP-V300X and NP-V300W were provided with Power Supply, Model ZSNE023I, which evaluated with the equipment, and Ballast Power Supply, Model EUC 230d N/S00, which is Certified to IEC60950-1, Second Edition by KEMA Quality B.V.

Ballast Power Supply, Model EUC 230d N/S00 is evaluated under 2000 m sea level. Evaluation for 3600 m sea is conducted in this application. (see appended table 2.10.3 and 2.10.4)

Unless otherwise stated, only limited tests were conducted on representative Model NP-V300X under the following Maximum Normal Load Condition installed on tabletop.

- Continuous Projection of Color Bar

- Following Input Signal was used.

R.G.B Input Signal: Resolution 1024 x 768, Vertical Frequency 60 Hz

(Input Signal does not influence power consumption.)

Speeds of Fan Motors are changeable by ambient temperature. During the tests, the following operating fan-speed conditions were considered.

- Set intg at Ambie $\pm 26^{\circ}\text{C}$

Fan Motor for Lamp (Rear): 6200 rpm

Fan Motor for Lamp (Middle): 2500 rpm

- Set intg at Ambie $\pm 36^{\circ}\text{C}$

Fan Motor for Lamp (Rear): 6600 rpm

Fan Motor for Lamp (Middle): 3600 rpm

- Set intg at Ambie $\pm 40^{\circ}\text{C}$ (*1)

Fan Motor for Lamp (Rear): 4100 rpm

Fan Motor for Lamp (Middle): 3000 rpm

- Setting at Full Condition

Fan Motor for Lamp (Rear): 7200 rpm

Fan Motor for Lamp (Middle): 4400 rpm

(*1): During this setting condition, the DLP Projector was operated under eco-mode only.

According to the manufacturer illustrations and documents, the Lamp used in the DLP Projector only has a relatively small percentage of UV radiation compared to the entire spectrum of radiation emitted by the Lamp. Also, due to both design of Lamp and assembly in DLP Projector including use of Air Filter (checked construction and manufacturer's documents), the levels of UV radiation (exposed to the person near the DLP Projector) are considered to be relatively low. And during the servicing, the service personnel should not operate the DLP Projector without covers. Therefore, this DLP Projector is not considered to be equipped with Lamp, which produces significant UV radiation according to sub-clauses 4.3.13.3 and 4.3.13.4.

The following National Differences to IEC 60950, Third Edition were also evaluated and the results were attached with this Test Report as an enclosure: Japanese Standard, J60950 (H19) See Enclosure#: 7-01 for details.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°C

- The means of connection to the mains supply is: Pluggable A, Detachable power cord
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: Appliance Inlet (Tabletop) or Plug of Detachable Power Supply Cord (Ceiling Mount)
- The product was investigated to the following additional standards: EN 60950-1:2006+ A11:2009 (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): VCCS+6.5 Vdc after Fuse (F2601) and VCCS+15 Vdc after Fuse (F2602)
- The following secondary external connectors are signal level only: MONITOR OUT, COMPUTER (1) IN, VIDEO IN, S-VIDEO IN, AUDIO IN, PC CONTROL, and LAN (for Models NP110, NP115, NP210, NP215), MONITOR OUT, COMPUTER 1 IN, COMPUTER 2 IN, VIDEO IN, S-VIDEO IN, AUDIO IN, AUDIO IN (L, R), AUDIO OUT, PC CONTROL, and LAN (for Model NP216), MONITOR OUT, COMPUTER (1) IN, VIDEO IN, S-VIDEO IN, AUDIO IN and PC CONTROL (for Models NP-V230, NP-V230X, NP-V260), MONITOR OUT, COMPUTER 1 IN, COMPUTER 2 IN, VIDEO IN, S-VIDEO IN, AUDIO IN, AUDIO IN (L, R), AUDIO OUT, PC CONTROL, LAN (for Models NP-V260W, NP-V260X, NP-V300W, NP-V300X) and HDMI INPUT (for Models NP-V260R, NP-V260W, NP-V260X, NP-V300W, NP-V300X) --
- Considered "clearance of operated at up to 3,600 m sea level". --

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (edition/year)	mark(s) of conformity ¹⁾	
Power Supply for Models NP110, NP110+, NP115, NP115+, NP210, NP210+, NP215, NP215+, NP216, NP216+ or Models NP-V230, NP-V230+, NP-V230X, NP-V230X+, NP-V260, NP-V260+, NP-V260W, NP-V260W+, NP-V260X, NP-V260X+, NP-V260R	--	ZSNE834I for Models NP110, NP110+, NP115, NP115+, NP210, NP210+, NP215, NP215+, NP216, NP216+ ZSNE022I for Models NP-V230, NP-V230+, NP-V230X, NP-V230X+, NP-V260, NP-V260+, NP-V260W, NP-V260W+, NP-V260X, NP-V260X+, NP-V260R	Consisting of following items.	--	--	
Appliance Inlet (IL001)	Yamate Electric Co., Ltd.	AP-300-0-E	250 Vac, 10 A	IEC/EN60320-1	VDE	
Fuse (F001)	Skygate Co., Ltd.	SG5013	250 Vac, T5 AH	IEC/EN60127-2 K60127-2	SEMKO, KTL	
Varistor (X001)	Epcos OHG	SNF10K385E2K 1 (Marked "SNF10" and "K385K1" on the body.)	Line to Line, Maximum continuous 385 Vrms. (Test 2500 Vac)	IEC/EN61051-2	VDE	
Line to Line Capacitors (C001, C002)	Okaya Electric Industries Co., Ltd.	LE	310 Vac, 0.33 μ F, X2, 110°C 55/110/56/C or B	IEC/EN60384-14: 2005	SEMKO	
Line to Line Capacitor (C001) Alternate	Okaya Electric Industries Co., Ltd.	LE	275 Vac, 1.0 μ F, X2, 10 θ C, 55/100/56/C or B	IEC/EN60384-14: 2005	SEMKO	
Bleeding Resistors (R001, R002)	Various	Various	270 kohm (R001and R002 in series)	--	--	
Inductor (L002)	Ueno Co., Ltd.	ADR18SH-02150	2.0 A, minimum 15 mH	--	--	
Core Cover of Inductor (L002)	Mitsubishi Engineering-Plastics Corp.	5010N6	PBT, V-0, RTI (Electrical): 140°C, minimum 0.71 mm	UL94	UL	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (edition/year)	mark(s) of conformity ¹⁾	
			thickness			
Line to Earth Capacitors (C003, C004)	Murata Mfg. Co., Ltd.	KH	300 Vac, 680 pF, Y2, 25/125/21/C	IEC/EN60384-14, 2005	VDE	
Line to Earth Capacitors (C003, C004) - Alternate	TDK-EPC Corp.	CS	250 Vac, 680 pF, Y2, 25/085/21/B, 25/125/56/B	IEC/EN 60384-14, 2005	SEMKO	
Inductor (L003)	Ueno Co., Ltd.	ADR13S-03-030TA	3.0 A, minimum 3 mH	--	--	
Core Cover of Inductor (L003)	Wintech Polymer Ltd.	2092	PBT, V-0, RTI (Electrical): 130°C, minimum 0.38 mm thickness.	UL94	UL	
Base of Inductor (L003)	Mitsubishi Engineering-Plastics Corp.	5010N6	PBT, V-0, RTI (Electrical): 140°C, minimum 0.71 mm thickness.	UL94	UL	
Line to Line Capacitor (C005)	TDK-EPC Corp.	CS	400 Vac, 680 pF, X1, 25/085/21/B, 25/125/56/B	IEC/EN 60384-15, 2005	SEMKO	
Bridging Diode (D001)	Various	Various	Minimum 600 V, minimum 10 A.	--	--	
Thermistor (TH001)	Ishizuka Electronics Corp.	5D2-14L (Marked "5D2-14" on the body.)	Maximum 4.0 A, maximum 5.0 ohm.	--	--	
Inductor (L101)	Tabuchi Electric Co., Ltd.	C-L00-429	Open type construction. Core: Ferrite Overall 30 by 16 by 20 mm. Coil: Wound on Bobbin.	--	--	
Bobbin of Inductor (L101)	Various	Various	Phenolic, V-0, RTI 150°C, minimum 0.7 mm thickness.	UL94	UL	
Electrolytic Capacitors (C108)	Various	Various	150 µF, 420 V, 105°C	--	--	
FET (Q201)	Various	Various	Minimum 900 V, minimum 3 A, Rdson 3.7 ohm	--	--	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (edition/year)	mark(s) of conformity ¹⁾	
			TYP			
Transformer (T201)	Tabuchi Electric Co., Ltd.	N-T01-773	Core: Ferrite Overall 26 by 24.3 by 11.5 mm. See Enclosure #: 4-01 for details.	--	--	
Insulation System of Transformer (T201)	Tabuchi Electric Co., Ltd.	ZFS-B1	Class B.	UL1446	UL	
Bobbin of Transformer (T201)	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, RTI (Electrical): 150 °C, minimum 0.8 mm thickness	UL94	UL	
Alternate	Hitachi Chemical Co., Ltd.	CP-J-8800 or CP-J-8600	Phenolic, V-0, RTI (Electrical): 150 °C, minimum 0.8 mm thickness	UL94	UL	
Insulation Tape, Core Tape, Outer Wrap of Transformer (T201)	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd.	CT	Yellow color. CTI: 600 V, minimum 3 layers, each layer minimum 0.025 mm thick.	UL510	UL	
Insulation Tape, Core Tape, Outer Wrap of Transformer (T201) - Alternate	Teraoka Seisakusho Co., Ltd.	630F #25	CTI: 600 V, minimum 3 layers, each layer minimum 0.025 mm thick.	UL510	UL	
Insulation Tape, Core Tape, Outer Wrap of Transformer (T201) - Alternate	3M Company Electrical Markets Div. (EMD)	1350F-1	CTI: Minimum 400 V and less than 600 V, minimum 3 layers, each layer minimum 0.025 mm thick.	UL510	UL	
Margin Tape of Transformer (T201)	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd.	WF	CTI: 600 V Size: See Enclosure #4-01 for details.	UL510	UL	
Margin Tape of	Teraoka	673F 0.5	CTI: 600 V Size:	UL510	UL	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (edition/year)	mark(s) of conformity ¹⁾	
Transformer (T201) - Alternate	Seisakusho Co., Ltd.		See Enclosure #4-01 for details.			
Margin Tape of Transformer (T201) - Alternate	Nitto Denko Corp.	343B	CTI: 600 V Size: See Enclosure #4-01 for details.	UL510	UL	
Primary to Secondary Capacitor (C211)	Murata Mfg. Co., Ltd.	KX	300 Vac, 1500 pF, Y1, 25/125/21/C	IEC/EN 60384-14, 2005	VDE	
Primary to Secondary Capacitor (C211) - Alternate	TDK-EPC Corp.	CD	250 Vac, 1500 pF, Y1, 25/085/21/B, 25/125/56/B	IEC/EN 60384-14, 2005	SEMKO	
Photocouplers (PC201, PC202)	Renesas Electronics Corporation	PS2561A-1	Reinforced Insulation	IEC 60950-1, 2nd edition	SEMKO	
Photocouplers (PC201, PC202) - Alternate	Toshiba Corp., Semiconductor Co. Discrete Semiconductor Qual. & Rel. Eng. Dept, Discrete Semicond. Div.	TLP781	Reinforced Insulation	IEC/EN 60950-1, 1st edition	SEMKO	
Heatsink for Bridging Diode (D001), Diode (D101), FETs (Q101, Q102, Q201)	Various	Various	Fin Type. Approximately 22.5 by 86 by 16 mm. See Enclosure # 7-03 for details.	--	--	
Primary Wires connected to Appliance Inlet (IL001)	Various	Various	Style 1015, 600 Vac, 105°C, minimum 20 AWG. PVC Insulation: Minimum 0.4 mm thick. One end terminated to Board-In-Terminal. Other end terminated to Appliance Inlet (IL001).	UL758	UL	
Primary Wires	LTK Wiring Co.,	Style 1015	Style 1015, 600	UL758	UL	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (edition/year)	mark(s) of conformity ¹⁾	
connected to Primary Connector (CN101)	Ltd.		Vac, 105°C, minimum 22 AWG. PVC Insulation: Minimum 0.4 mm thick. One end terminated to Board-In-Terminal. Other end terminated to Primary Connector (CN101).			
Primary Connector (CN101)	Japan Solderless Terminal Mfg Co., Ltd.	VH	250 Vac, minimum 7 A, middle pin removed.	UL1977	UL	
Protective Bonding Wire	Various	Various	Style 1015, 600 V, 105°C, minimum 18 AWG. Green/yellow striped Conductor. One end mechanically secured to Earthing Terminal of Appliance Inlet. Other end secured to double crimped type ring-lug terminal.	UL758	UL	
Secondary Connectors	Various	Various	Minimum V-2.	UL498, UL1977, UL94	UL	
Power Supply for Models NP-V300W, NP-V300W+, NP-V300X and NP-V300X+	--	ZSNE023I	Same as Models ZSNE834I or ZSNE022I except for following items.	--	--	
Fuse (F001)	Skygate Co., Ltd.	SG5013	250 Vac, T 6.3 AH	IEC/EN60127-2 K60127-2	SEMKO, KTL	

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Clause	Requirement + Test	Result - Remark	Verdict

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object/part or Description	manufacturer/ trademark	type/model	technical data	standard (edition/year)	mark(s) of conformity ¹⁾	
Inductor (L002)	Ueno Co., Ltd.	ADR22SH-03140S	(3 A, minimum 14 mH)	--	--	
Core Cover of Inductor (L002)	Wintech Polymer Ltd.	2092	PBT, V-0, RTI (Electrical): 130°C, minimum 0.38 mm thickness.	UL94	UL	
Inductor (L101)	Tabuchi Electric Co., Ltd.	C-L00-439	Open type construction. Core: Ferrite Overall 32 mm by 21 mm by 22 mm. Coil: Wound on Bobbin.	--	--	
Bobbin of Inductor (L101)	Various	Various	Phenolic, V-0, RTI 150 °C, minimum 0.7 mm thickness	UL94	UL	
Electrolytic Capacitor (C108)	Various	Various	190µF, 420 V, 105°C	--	--	
Ballast Power Supply (Lamp Driver) for Models NP110, NP110+, NP115, NP115+, NP210, NP210+, NP215, NP215+, NP216, NP216+, NP-V230, NP-V230+, NP-V230X, NP-V230X+, NP-V260, NP-V260+, NP-V260W, NP-V260W+, NP-V260X, NP-V260X+, NP-V260R	Philips Lighting Electronics (Shanghai) Co., Ltd.	EUC 185d W/S41	Input: 280-400 Vdc, maximum 900 mA Output: 140 Vac (Maximum), 3.5 kVpk (Ignition)	IEC60950-1, 2nd edition	CB Certified by KEMA	
Ballast Power Supply (Lamp Driver) for Models NP-V300W, NP-	Philips Lighting Electronics (Shanghai) Co., Ltd.	EUC 230d N/S00	Input: 280-415Vdc, maximum 1300mA Output: 200Vac	IEC60950-1, 2nd edition	CB Certified by KEMA	

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V300W+, NP-V300X and NP-V300X+			(Maximum), 3.5kVpk (Ignition)			
Top Cover (Fire/Electrical)	Teijin Chemicals Plastic Compounds Shanghai Ltd.	MN-3600H (May be followed by optional suffix)	5V B RTI: 95°C, minimum 2.0 mm, less than 3.0 mm thick.	UL94	UL	
Bottom Cover (Fire/Electrical)	Teijin Chemicals Plastic Compounds Shanghai Ltd.	MN-3600H (May be followed by optional suffix)	5V B RTI: 95°C, minimum 2.0 mm, less than 3.0 mm thick.	UL94	UL	
Lamp Cover (Fire/Electrical)	Teijin Chemicals Plastic Compounds Shanghai Ltd.	MN-3600H (May be followed by optional suffix)	5V B RTI: 95°C, minimum 2.0 mm, less than 3.0 mm thick.	UL94	UL	
Power Supply Case	Teijin Chemicals Plastic Compounds Shanghai Ltd.	LN-1250G (May be followed by optional suffix)	V-0, RTI (EI atic): 1 2°C, minimum 1.5 mm thick. (UV Protection)	UL94, UL746C	UL	
Power Supply Case Alternate	Kingfa Sci & Tech Co., Ltd.	JH830	V-0, RTI: 80°C, minimum 1.5 mm thick.	UL94	UL	
Insulation Sheet covered Ballast Power Supply	Sun Delta Corp.	VS525	V-0, RTI (EI atic): 1 3°C, minimum 0.5 mm thick.	UL94	UL	
Holder of Ballast Power Supply	Teijin Chemicals Ltd.	LN-1250G (May be followed by optional suffix)	V-0, RTI (EI atic): 1 2°C, minimum 1.2 mm thick. (UV Protection)	UL94, UL746C	UL	
Holder of Ballast Power Supply - Alternate	Kingfa Sci & Tech Co., Ltd.	JH830	V-0, RTI: 80°C, minimum 1.2 mm thick.	UL94	UL	
Printed Wiring Board	Various	Various	Minimum V-1, minimum 105°C.	UL796	UL	
Fan Motor for Lamp (Rear) for Models NP110, NP110+, NP115, NP115+, NP210, NP210+, NP215, NP215+, NP216, NP216+, NP-	Nidec Corp.	T80T12MS10A7-52J72	DC Motor. 12 Vdc, 0.22 A	--	--	

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V230, NP-V230+, NP-V230X, NP-V230X+, NP-V260, NP-V260+, NP-V260W, NP-V260W+, NP-V260X, NP-V260X+, NP-V260R						
Fan Motor for Lamp (Rear) for Models NP-V300W, NP-V300W+, NP-V300X and NP-V300X+	Nidec Corp.	T80T12MS3A7-52J72	DC Motor, 12Vdc, 0.27 A	--	--	
Fan Blade/Fan Guard of Fan Motor for Lamp (Rear)	Various	Various	Minimum V-2.	UL94	UL	
Fan Motor for Lamp (Middle)	NMB Technologies Corporation	BM4520-04W-B39	DC Motor. 12 Vdc, 0.12 A	IEC/EN60950-1	VDE	
Color Wheel Motor for Models NP110, NP115, NP210, NP215, NP216	Nidec Corp.	URD20	12 Vdc, maximum 0.25 A	--	--	
Color Wheel Motor for Models NP-V230, NP-V230X, NP-V260, NP-V260X, NP-V260W, NP-V300W, NP-V300X	Nidec Corp.	URD20 VA6	12Vdc, maximum 0.3A	--	--	
Primary Wire between Ballast Power Supply and Lamp Connector (Socket)	Kurabe Industrial Co., Ltd.	UL3239O	Style 3239, VW-1, 6 kVdc, 150°C, minimum 20 AWG. Silicone Rubber Insulation:	UL758	UL	

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			Minimum 0.4 mm thick. One end terminated to Connector (X3) of Ballast Power Supply. Other end terminated to Connector (Socket) of Lamp.			
Material of Lamp Connector (Socket) for Models NP110, NP110+, NP115, NP115+, NP210, NP210+, NP215, NP215+, NP216, NP216+, NP-V230, NP-V230+, NP-V230X, NP-V230X+, NP-V260, NP-V260+, NP-V260W, NP-V260W+, NP-V260X, NP-V260X+, NP-V260R	Polyplastics Co., Ltd.	Vectra E130i	V-0, RTI: 240°C, minimum 0.75 mm thick.	UL94, UL746C	UL	
Material of Lamp Connector (Socket) for Models NP-V300W, NP-V300W+, NP-V300X and NP-V300X+	Polyplastics Co., Ltd.	Vectra E130i	V-0, RTI: 240°C, minimum 0.75 mm thick.	UL94, UL746C	UL	
Connector (Housing) of Primary Wire on Ballast Power Supply	Japan Solderless Terminal Mfg. Co., Ltd.	VHR-4N (VH series)	250 Vac, 300 Vdc, 7 A	UL1977	UL	
Connectors	Various	Various	Minimum V-2.	UL1977	UL	

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(SELV)						
Lamp Assembly for Models NP110, NP110+, NP115, NP115+, NP210, NP210+, NP215, NP215+, NP216, NP216+, NP-V230, NP-V230+, NP-V230X, NP-V230X+, NP-V260, NP-V260+, NP-V260W, NP-V260W+, NP-V260X, NP-V260X+, NP-V260R	--	NP13LP	(This type name described for user to replace Lamp.)	--	--	
Lamp Assembly for Models NP-V300W, NP-V300W+, NP-V300X and NP-V300X+	--	NP-18LP	(This type name described for user to replace Lamp.)	--	--	
Lamp in Lamp Assembly for Models NP110, NP110+, NP115, NP115+, NP210, NP210+, NP215, NP215+, NP216, NP216+, NP-V230, NP-V230+, NP-V230X, NP-V230X+, NP-V260, NP-V260+, NP-V260W, NP-V260W+, NP-V260X, NP-V260X+, NP-V260R	Philips Corp.	UHP 185W-160W 0.9 E20.9	Minimum 50 Vac, 189 W	--	--	
Lamp in Lamp	Philips Corp.	UHP 225W-	Minimum 49	--	--	

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Assembly for Models NP-V300W, NP-V300W+, NP-V300X and NP-V300X+		170W 0.9 E20.9	Vac, 170 W (Eco), minimum 64 Vac, 224 W			
Lamp Lead between Lamp and Lamp Connector in Lamp Assembly	Kurabe Industrial Co., Ltd.	UL3239O	Style 3239, VW-1, 6 kVdc, 150°C, minimum 20 AWG. Silicone Rubber Insulation: Minimum 0.4 mm thick. One end terminated to Lamp Connector. Other end terminated to Terminal of Lamp.	UL758	UL	
Material of Lamp Connector (Plug) in Lamp Assembly	Polyplastics Co., Ltd.	Vectra E130i	V-0, RTI: 240°C, minimum 0.75 mm thick.	UL94, UL746C	UL	
Lamp Cartridge in Lamp Assembly	Toray Industries Inc.	A360MB	V-0, RTI: 220°C minimum 0.71 mm thick. (UV Protection)	UL94, UL746C	UL	
Thermal Protector near Lamp	Uchiya Thermostat Co. Ltd.	UP62G	125 V, 1 A, maximum 9 0C (Complied with 10,000 Cycles Test.)	IEC/EN60730-1	VDE	
Thermal Sensor for Fan Control	Murata Mfg. Co., Ltd.	NCP18XH103F03RB	Operating Temperature: -40-125°C, Resistance under 25°C: 10 kohm	UL1434	UL	
Secondary Fuse (F2601) (Protected VCCS+6.5 V Circuit)	Kamaya Electric Co., Ltd.	FCC16252	32 Vdc, 2.5 A	UL248-1, UL248-14	UL	
Secondary Fuse	Kamaya Electric	FCC16252	32 Vdc, 2.5 A	UL248-1,	UL	

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(F2602) (Protected VCCS+15.0 V Circuit)	Co., Ltd.			UL248-14		
Indicator on Top Cover	Various	Various	Minimum HB.	UL94	UL	
Button on Top Cover	Various	Various	Minimum HB.	UL94	UL	
Foot / Foot Lever / Cushion and Spacer for Foot / Lens Cap	Various	Various	Minimum HB.	UL94	UL	
Lamp Holder	Various	Various	Magnesium	--	--	
Fan Duct of Fan Motor for Lamp (Middle)	Various	Various	Minimum V-2.	UL94	UL	
Cover of Color Wheel Motor	Various	Various	Minimum V-2.	UL94	UL	
Lens Holder / Focus Ring / Zoom Ring	Various	Various	Minimum V-2.	UL94	UL	
Speaker Box for Models NP- V230, NP- V230X, NP- V260, NP- V260R, NP- V260W, NP- V260X, NP- V300W, NP- V300X	Various	Various	Minimum V-2.	UL94	UL	
Cushion (Internal)	Various	Various	Minimum V-2 or HF-2.	UL94	UL	
CUSHION_DUC T(PAB1U)	ROGERS CORP	HT-800	V-0, minimum 1.6 mm thick. (Complied with Annex A.2 Flame Test.)	UL94	UL	
Alternate - CUSHION_DUC T(PAB1U)	Various	Various	Minimum V-2 or HF-2. RTI = minimum 125°C	UL94	UL	
Power Supply Cord Set for Europe (Optional)	Hirakawa Hewtech Corp.	VM0307B / VM0303B	250 Vac, 10 A (H05VV-F, 0.75 mm2 x 3 cord used.)	IEC/EN60779	VDE	

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Power Supply Cord for Europe (Optional) - Alternate	--	--	--	--	--	
Plug	Volex (Asia) Pte. Ltd.	EU16CS3	250 Vac, 16 A	IEC60884-1	SEMKO	
Cord	Volex (Asia) Pte. Ltd.	H05VV-F	0.75 mm2 x 3	HD 21	SEMKO	
Connector	Volex (Asia) Pte. Ltd.	V1625	250 Vac, 10 A	EN60320-1	SEMKO	
Power Supply Cord for Japan (Optional)	--	--	--	--	--	
Plug	Volex Cable Assembly (Shenzhen)Co., Ltd.	JS15TS3	125 Vac, 7 A	JET1805-43001-1006	PSE	
Plug - Alternate	Volex Cable Assembly(Zhong San) Co., Ltd.	JS15TS3	125 Vac, 7 A	JET11957-43001-1006	PSE	
Cord	Shenzhen Baohing Electric Wire & Cable Mfg. Co., Ltd.	VCTF	0.75 mm2 x 3	JET2220-12009-1001	PSE	
Cord - Alternate	Shenzhen Tongyuan Industrial Co., Ltd.	VCTF	0.75 mm2 x 3	JET1985-12009-1002	PSE	
Cord - Alternate	TA Hsing Industries Ltd.	VCTF	0.75 mm2 x 3	JET5238-12009-1002	PSE	
Connector	Volex Cable Assembly (Zhong San) Co., Ltd. Volex (Asia) Pte. Ltd.	V1625	125 Vac, 7 A	JET1805-43004-1003	PSE	
Connector - Alternate	Volex Cable Assembly(Zhong San)Co., Ltd.	V1625	125 Vac, 7 A	JET11957-43004-1003	PSE	
Ceiling Mount Kit (Optional)	Yamagata Asahi Corp.	NP11CM	--	--	--	
RGB Cable and Audio/Video Cable (Optional)	Various	Various	VW-1 or FT-1, maximum 3.05 m long.	UL758	UL	
Cover of Remote Controller	Various	Various	Minimum HB at thickness and	UL94	UL	

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1.5.1	TABLE: list of critical components					Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (edition/year)	mark(s) of conformity ¹⁾	
(Optional)			color used.			
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.						