Test Report issued under the responsibility of:

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number .....:	E135494-A6072-CB-1
Date of issue .....:	2023-06-19
Total number of pages .....:	106
Name of Testing Laboratory preparing the Report .....:	UL VS Limited Unit 1-3 Horizon, Wade Road, Kingsland Business Park, Basingstoke RG24 8AH, United Kingdom
Applicant's name.....:	**TDK-LAMBDA UK LTD**
Address .....:	**KINGSLEY AVE** **ILFRACOMBE** **EX34 8ES UNITED KINGDOM**
Test specification:	
Standard .....:	IEC 62368-1: 2018
Test procedure.....:	CB Scheme
Non-standard test method.....:	N/A
TRF template used .....:	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No.....:	IEC62368_1E
Test Report Form(s) Originator...:	UL(US)
Master TRF .....:	Dated 2022-04-14

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

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 CB Testing Laboratory.
The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test Item Description .....:	AC-DC Switch Mode Power Supply
Trade Mark(s) .....:	TDK-Lambda
Manufacturer.....:	TDK-LAMBDA UK LTD KINGSLEY AVE ILFRACOMBE EX34 8ES UNITED KINGDOM
Model/Type reference .....:	NV175 Series or NV-175 Series Model NVx may be prefixed by NS # followed by / or - (where # may be any number of characters indicating non- safety related model differences). May be prefixed by SP followed by /or – (SP represents a sales code). Where x is 1, followed by NVx-abcde-f-g-h-ijk (see Model Differences for details) NV1-1G000 (see Model Differences for details)
Ratings .....:	NV175 Series; NV-175 Series: 100-240Vac (Nominal), 90-264V (Full Tolerance), 45-440Hz, 3Arms NV175 Series; NV-175 Series: 133-318Vdc (Nominal), 120-350Vdc (Full Tolerance), 2.2Adc NV1-1G000 only: 88.9-240Vac (Nominal), 80-264Vac (Full Tolerance), 45-440Hz, 3Arms (See Model Differences for details)

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**		
Testing location/ address .....:		UL VS Limited, Unit 1-3 Horizon, Wade Road, Kingsland Business Park, Basingstoke RG24 8AH, United Kingdom	
Tested by (name, function, signature).....:		Daniel Wong / Project Handler	
Approved by (name, function, signature) ..:		Jan J. Jensen / Reviewer	

☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :			
Tested by (name, function, signature)..... :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :			
Tested by (name, function, signature)..... :			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature) .. :			
☒	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :		TDK-Lambda, Kingsley Avenue, Ilfracombe, Devon, EX34 8ES, United Kingdom.	
Tested by (name, function, signature)..... :		Matt Carter, Nick Marsh / Tester	See the original CBTR for signatures
Witnessed by (name, function, signature) . :		Dennis Butcher / Witness Engineer	See the original CBTR for signatures
Approved by (name, function, signature) .. :		Oreste Buzzetti / Reviewer	See the original CBTR for signatures
Supervised by (name, function, signature) :		Hubert Koszewski / Project Handler	See the original CBTR for signatures

List of Attachments (including a total number of pages in each attachment):

National Differences (38 pages)
Enclosures (226 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing Location:** **CTF Stage 3: TDK-Lambda, Kingsley Avenue, Ilfracombe, Devon, EX34 8ES, United Kingdom.**
4.4.3.2, T.3 – STEADY FORCE TEST, 30 N FOR SAFEGUARD THAT ACTS AS FIRE ENCLOSURE/BARRIER ONLY	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
4.4.3.2, T.5 – STEADY FORCE TEST, 250 N	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
4.4.3.4, T.6 - IMPACT TEST	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
5.2.2.1-5.2.2.6 – CLASSIFICATION OF ELECTRICAL ENERGY SOURCES	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
5.4.1.8 – DETERMINATION OF WORKING VOLTAGE	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
5.4.4.6.2 – SEPARABLE THIN SHEET MATERIAL	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
5.4.9.1 – ELECTRIC STRENGTH TEST – TYPE TESTING OF SOLID INSULATION	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
5.5.2.2 – CAPACITOR DISCHARGE AFTER DISCONNECTION OF A CONNECTOR	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
5.6.6.2 – RESISTANCE OF THE PROTECTIVE BONDING SYSTEM	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK

	LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
5.7.5 – TOUCH CURRENT MEASUREMENT – EARTHED ACCESSIBLE CONDUCTIVE PARTS – SINGLE-PHASE EQUIPMENT ON TN OR TT SYSTEM	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
B.2.5 – INPUT TEST: SINGLE PHASE	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
B.2.6, 5.4.1.4, 6.3, 9.3, B.1.5 – NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
B.3 – SIMULATED ABNORMAL OPERATING CONDITIONS	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
B.4 – SIMULATED SINGLE FAULT CONDITIONS	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
G.5.3.3 – TRANSFORMER OVERLOAD	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
G.5.4.6 – LOCKED-ROTOR OVERLOAD TEST FOR DC MOTORS	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
R.1-R.4 - LIMITED SHORT CIRCUIT TEST	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM
T.2, 5.4.2.6, 5.4.3.2, G.15.2.6 – STEADY FORCE TEST, 10 N	Test data accepted based on CBTR Ref. No. E135494-A6003-CB-1, CBTC Ref. No. DK-79117-UL issued on 2018-12-12. Test was conducted at TDK LAMBDA UK LTD, KINGSLEY AVENUE, ILFRACOMBE, DEVON, EX34 8ES, UNITED KINGDOM

Summary of compliance with National Differences (List of countries addressed):

Australia / New Zealand, EU Group and National Differences, Singapore, USA / Canada

Special National Conditions for Singapore. (IEC Standard is used instead of National Standard).

☒ **The product fulfils the requirements of** AS/NZS 62368.1:2022,

EN IEC 62368-1:2020+A11:2020, BS EN IEC 62368-1:2020 + A11:2020,

United Kingdom (per customer's request shown separately),

CSA/UL 62368-1:2019

Use of uncertainty of measurement for decisions on conformity (decision rule) :

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

☐ Other:… (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE. IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

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

Test item particulars:	
Product group	built-in component
Classification of use by	Skilled person
Supply Connection	AC Mains DC Mains
Supply tolerance	+10%/-10%
Supply connection – type	mating connector
Considered current rating of protective device	20 A; Location: building
Equipment mobility	for building-in
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Special installation location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified Tma (°C)	50°C, 65°C (Output power decreased linearly by 2.5%/°C above 50°C).
IP protection class	IPX0
Power systems	TN
Altitude during operation (m)	3000 m (standard) or 5000 m (for –H and –HR options) m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.6kg
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 of receipt of test item .....:	2018-08-06 to 2018-10-29
Date (s) of performance of tests .....:	2018-08-08 to 2018-10-29
General remarks:	
"(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 ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	

The application for obtaining a CB Test Certificate includes more than one factory location 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 ..... :	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	TDK-LAMBDA UK LTD KINGSLEY AVE ILFRACOMBE EX34 8ES UNITED KINGDOM Panyu Trio Microtronics Co Ltd SHIJI INDUSTRIAL ESTATE DONGYONG NANSHA GUANGZHOU GUANGDONG 511453 CHINA Trio-Tronics (Thailand) Ltd 7/295 Mu. 6 Map Yang Phon Sub-District Pluak Daeng District Rayong Province THAILAND

General product information and other remarks:

Product Description

NV175 or NV-175 series are switch mode power supplies for building into host equipment.

Model Differences

NV175 or NV-175 models as described below:

Units may be marked with a TDK Product Code: K1x or Q1x where x may be any number of letters and/or numbers 0 to 9, to identify models with customer specific requirements, for example fixed BOM.

No differences between NV175 series and NV-175 series except for marketing purpose.

Differences between NV1-1G000 and base model NV175 series:

NV1-1G000 is a customer specific open frame model with specific input ratings. (see Model and Ratings section for details)

Unit Configuration (Description) Code may be prefixed by NS # followed by / or - (where # may be any number of characters indicating non- safety related model differences). May be prefixed by SP followed by /or – (SP represents a sales code).

Unit Configuration Code:

(z) NVx-abcde-f-g-h-ijk

where:

(z)= Blank for standard product
NS # followed by / or - (# may be any number of characters indicating non- safety related model differences) or SP followed by /or – (SP represents a sales code).
x = 1 for 175
a = Number of Outputs : 1, 2, 3 or 4
b = Channel 1 Output Voltage†: 5, T, F, E or G
c = Channel 2 Output Voltage†: 1 , 2, 3, 5, 5L, 7, F or 0
d = Channel 3 Output Voltage†: 3L, 5L, 7, TL, FL, T, F, G followed by Y for negative output or 0
e = Channel 4 Output Voltage†: 3H, 5H, 7, T, F, TH, FH, 0H (fan only channel 4 output) followed by V for variable output followed by P for positive output or 0
f = Global Option : N for 5V version, N1 for 12V version, N2 for 13.5V version, N3 for 5V version with ATX compatibility, N4 for 12V version with ATX compatibility, N5 for 13.5V version with ATX, N6 for 12-13.5V version, N7 for 12-13.5V version with ATX or nothing for no Global Option present
g = U for U chassis, C for U chassis and cover, F for U chassis and cover with fan, I for U chassis and cover with fan and IEC inlet or nothing for Open Frame
h = Blank is the standard upright output connector, R is for the right angle output connector, H is for high altitude, HR is for high altitude with right angle output connector, M is for IEC60601-1, MR is for IEC60601-1 spacings with right angle connector
ijk = Three numbers from 0 to 9 which denotes various output voltages and currents within the specified ranges of each output for a particular unit or blank for standard output settings

† Table1: Output Voltage Cross Reference

Designation	Output Voltage
0	Omit output
A	1.5
1	1.8
B	2
2	2.7
3	3.3
5	5
7	7
T	12
F	15
E	18
G	24

Output channels and Global Options ratings are in accordance with the following table subject to variations and limitations of use below:

Output Channel	Designation	Vout	Adj. Range	Output Current
CH1	5	5	5 – 5.5	25A
	T	12	12 – 15.5	15A
	F	15	12 – 15.5	15A
	E	18	16 – 20	10A
	G	24	24 – 28.5	7.5A
CH2	1	1.8	0.9 – 3.8	15A

	2	2.7	2.5 – 3.8	15A
	3	3.3	2.5 – 3.8	15A
CH2 (CH1 12V)	5	5	3.3 – 5.5	10A
CH2 (CH1 15V)	5	5	3.3 – 5.5	10A
CH2 (CH1 24V)	5L	5	Fixed	2A
	5	5	3.3 – 5.5	8A
	7	7	5.5 – 8	5.5A
	F	15	12 – 15.5	6A
CH3	7	+/-7	7 – 8	5A
	T	+/-12	12 – 15	5A
	F	+/-15	12 – 15	5A
	G	+/-24	18 – 24.5	2.5A
	3L	+/-3.3	Fixed	2A
	5L	+/-5	Fixed	2A
	TL	+/-12	Fixed	2A
	FL	+/-15	Fixed	2A
CH4	3H	+/-3.3	Fixed	2A
	5H	+/-5	Fixed	2A
	7	+/-7	7 – 8	1A
	T	+/-12	Fixed	1A
	F	+/-15	Fixed	1A
	TH	+/-12	Fixed	2A
	FH	+/-15	Fixed	2A
	THV	+/-12	12 – 15	2A
	FHV	+/-15	12 – 15	2A
CH4 (fan	OH	-	-	-
output) Global	N	5	Fixed	2A
Option	N1	12	Fixed	1A
	N2	13.5	Fixed	1A
	N3	5 (ATX)	Fixed	2A
	N4	12 (ATX)	Fixed	1A
	N5	13.5 (ATX)	Fixed	1A
	N6	12	12 – 13.5*	1A
	N7	12 (ATX)	12 – 13.5*	1A

Channels 1 and 2 combined output currents must not exceed 25A

*Can only be set at the factory.

Variations and limitations of use:

All NV175 or NV-175 PSUs can output 180W except 5V channel 1 models which can output 175W. These power ratings are for channels 1 to 4. The global option output can be run in addition to the channel 1 to 4 maximum power outputs.

Units with channel 1 T and G outputs (no other channels fitted) have a peak power output of 200W including the global option with the following duty cycles:

In any 5 minutes 30% at 200W followed by 70% at 171W (average 180W)
In any 5 minutes 20% at 200W followed by 80% at 175W (average 180W)

Options -H and -HR meet spacings for 5000m.

Options -M and -MR meet IEC60601-1 Edition 2 Reinforced spacing's with the following limitations (interpolated creepage spacings):

Channel 1 cannot be 5V model (T1 and T2 with foils)
Channel 2 cannot be fitted
Cannot be global option variants

Fan versions:

Channel 1 with G output, 25V maximum with 5V channel 2 maximum output current of 7A.
Channel 1 with G output, 25V maximum with 7V channel 2 maximum output current of 5.5A.
Channel 1 with G output, 5L channel 2 maximum output current 1.8A.
Channel 2 with T and F outputs, channel 2 maximum output current of 9A.
Channel 4 maximum output current of 1.5A

Model NV1-1G000 (with or without global option or -M/-MR option) may also be run with Channel 1 output voltage range 22.5V to 28V with maximum current of 7.5A and maximum power of 180W

Model NV1-1G000 (with or without -M option) may also be run at 80Vac to 264Vac input, output: 24V to 28V at 6.25A maximum current and 150W maximum power.

The products listed in the following table are typical examples:

Model	CH1	CH2	CH3	CH4	Global Option
NV1-453FF	5V/25A	3.3V/15A	15V/5A	15V/1A	-
NV1-4G5FFH-N3	24V/7.5A	5V/8A	15V/5A	15V/2A	5V/2A
NV1-350TT-N	5V/25A	-	12V/5A	12V/1A	5V/2A
NV1-453TT-N1	5V/25A	-	12V/5A	12V/1A	12V/1A
NV1-250T0-N2	5V/25A	-	12V/5A	-	13.5V/1A

Custom Models:

All ratings as per standard models unless otherwise stated.

Model: NS-LAM/NV1-453TTH-N2-H-C (K10035)
Rated to 4600m altitude
Input voltage range from 90Vac to 264Vac

Model: NS-LAMF/NV1-4G5TTH-F (K10066)
5L low current channel 2 fitted.
Channel 2 rated: 5V, 1.4A

Additional Information

- Model label provided is representative of all series

- No testing was conducted under this report. All required tests were carried out under the original investigation evaluated per IEC/UL 62368-1:2014 (2nd edition) in CB report E135494-A6003-CB-1, cert no. DK-79117-UL, latest issued date on 2018-12-12. The test sample received dates and the test dates are from the original report. Per the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard. Refer to Section “Test performed” covering all conducted performance tests in those reports.

Cooling for units with customer supplied air (open frame, U and C options)

The following method must be used for determining the safe operation of PSUs.

The components listed in the following table must not exceed the temperatures given. To determine the component temperatures the heating tests must be conducted in accordance with the requirements of the standard in question. Consideration should also be given to the requirements of other safety standards. Test requirements include: PSU to be fitted in its end-use equipment and operated under the most adverse conditions permitted in the end-use equipment handbook/specification and which will result in the highest temperatures in the PSU. To determine the most adverse conditions consideration should be given to the end use equipment maximum operating ambient, the PSU loading and input voltage, ventilation, end use equipment orientation, the position of doors & covers, etc. Temperatures should be monitored using type K fine wire thermocouples (secured with cyanoacrylate adhesive, or similar) placed on the hottest part of the component (out of any direct airflow) and the equipment should be run until all temperatures have stabilised.

Circuit Ref	Description Max.	Temperature (°C)
L3, L7	Common mode choke winding	140
C1, C4	X capacitors	100
C6, C12	Capacitors	105
L2	Boost choke winding	130
C7	Electrolytic capacitor	70 (105)
T1, T2	Transformer winding	130
XU3	Control board optocoupler	100
TX701	Global option transformer	90
L5	Channel 1 output choke	125
XL401	Channel 2 output choke	125
XL601	5L channel 2 output choke	125
XU601	5L channel 2 IC	115
XL501 or XL601	Channel 3 and 4 output choke	125
IC1*	Channel 4 voltage regulator	110
XQ406	Channel 2 highside FET (SMA 2)	115
XV504	Channel 3 highside FET (SMA 3)	115
XU601	Channel 4 IC (SMA 4)	115
Various	All other electrolytic capacitors	90 (105)

* 1A channel 4 only

Higher temperatures limits (in brackets) may be used but product life may be reduced.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 65°C (power and current de-rated 2.5% per °C from 50°C to 65°C)
- The product is intended for use on the following power systems : TN
- Considered current rating of protective device as part of the building installation (A) : 20
- Mains supply tolerance (%) or absolute mains supply : AC mains: +10%/-10%, DC mains: absolute mains supply.
- The equipment disconnect device is considered to be : N/A, to be provided in the 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 IEC 62368-1:2020+A11:2020, UL 62368-1 3rd Edition, Issued December 13, 2019, CAN/CSA C22.2 No. 62368-1:19, 3rd Edition

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- 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-SELV: 444 Vrms, 660 Vpk., Primary-Earthed Dead Metal: 423 Vrms, 608 Vpk
- The following output circuits are at ES1 energy levels : All outputs
- The following output circuits are at PS3 energy levels : All circuits
- 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 : been conducted
- The following end-product enclosures are required : Mechanical, Electrical, Fire
- 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, T2, TX701 (Class F) see critical component table for details of insulation systems used with an OBJY3 insulation system.
- The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing : Models without a fan require component temperatures monitored as detailed in the Additional Information
- The equipment is suitable for direct connection to : AC mains supply (IEC inlet models only)
- The power supply was evaluated to be used at altitudes up to : 3000 m standard or 5000 m for –H and –HR options
- The power supply terminals and/or connectors are: Not investigated for field wiring
- Orientations: Customer air models: All except horizontal with PWB uppermost. Fan models: All except horizontal with chassis base uppermost and vertical with input uppermost.
- End equipment required to be supplied via DC mains must utilise a conditioned power supply with a +/-10% tolerance. Additional evaluation must be considered in end application.