QPS Evaluation Services Inc.

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TESTING - CERTIFICATION - FIELD EVALUATION
Energy Efficiency Verification - CB Scheme - IECEx Scheme
CE Marking - ATEX

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Test Report issued under the responsibility of:

QPS Evaluation Services Inc.

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

Report Number ..... :	CB1123-2R2
Date of issue ..... :	2021-07-19 Amendment No. 1: January 28, 2022 (Modification 1)
Total number of pages ..... :	11
Applicant's name ..... :	Nanoptix Inc.
Address ..... :	699 Champlain Street, Dieppe, New Brunswick, E1A 1P6, Canada
Test specification:	
Standard..... :	IEC 62368-1:2014 (Second Edition)
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC62368_1B
Test Report Form(s) Originator..... :	UL(US)
Master TRF ..... :	2014-03

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Test Item description ..... :	Thermal Printer - Component & Desktop	
Trade Mark ..... :	NANOPTIX	
Manufacturer ..... :	Nanoptix Inc.	
Model/Type reference ..... :	950011, 950020, 950021, 103665, 950005, 950050,950051, 950100, 100769, 950023, 950024, 950026, 950028, 950029, 950054 and 950055.	
Ratings ..... :	24VDC, 2.4A, Class III	
Testing procedure and testing location:		
☒ CB Testing Laboratory:	QPS Evaluation Services Inc.	
Testing location/ address .....:	81 Kelfield St, Unit 8, Toronto, Ontario, M9W 5A3 Canada	
☐ Associated CB Testing Laboratory:		
Testing location/ address .....:		
Tested by (name + signature) .....:	S. Das	
Approved by (name + signature) .....:	Paul Morton	Paul Morton
☐ Testing procedure: TMP/CTF Stage 1		
Testing location/ address ..... :		
Tested by (name + signature) .....:		
Approved by (name + signature) .....:		
☐ Testing procedure: WMT/CTF Stage 2		
Testing location/ address .....:		
Tested by (name + signature) .....:		
Witnessed by (name + signature).....:		
Approved by (name + signature) .....:		
☐ Testing procedure: SMT/CTF Stage 3 or 4		
Testing location/ address .....:		
Tested by (name + signature) .....:		
Approved by (name + signature) .....:		
Supervised by (name + signature) .....:		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

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

Document No.	Documents included / attached to this report (description)	Page No.
1	National Deviations	28
2	Photos	20
3	Schematic	1

Summary of testing:

Tests performed (name of test and test clause):

CB1123-2 (Original report):

Test Clause	Name of Test
B.2.5	INPUT TEST
6.3, 9.2	HEATING TEST
B.3	SIMULATED ABNORMAL OPERATING CONDITIONS
B.4	SINGLE FAULT CONDITION
F.3.10	PERMANENCE OF MARKING
6.2.2	PS MEASUREMENT FOR CLASSIFICATION

CB1123-2R1:

Test Clause	Name of Test
B.2.5	INPUT TEST
6.3, 9.2	HEATING TEST

CB1123-2R2:

Test Clause	Name of Test
N/A	N/A

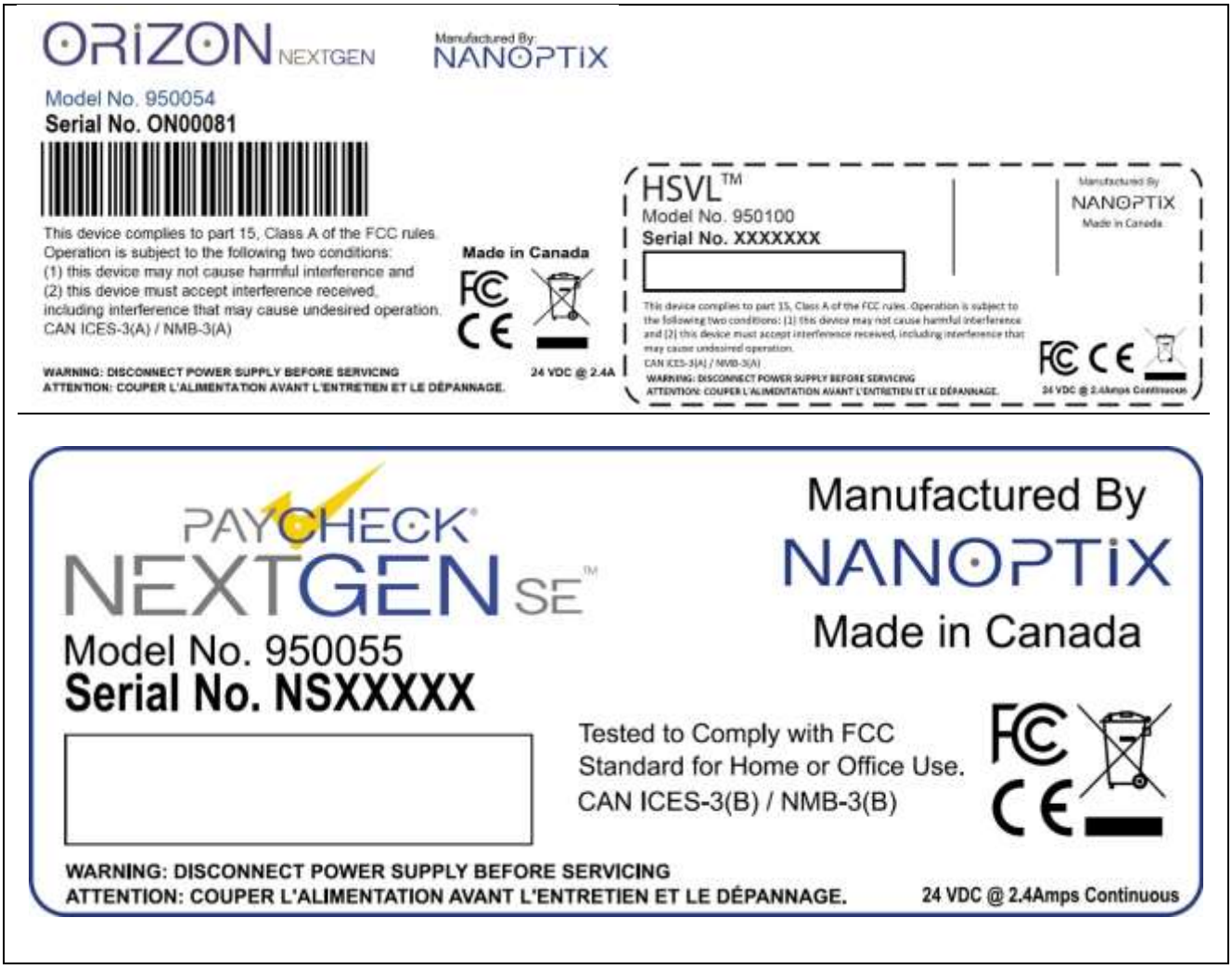
Testing location:

QPS Evaluation Services Inc.

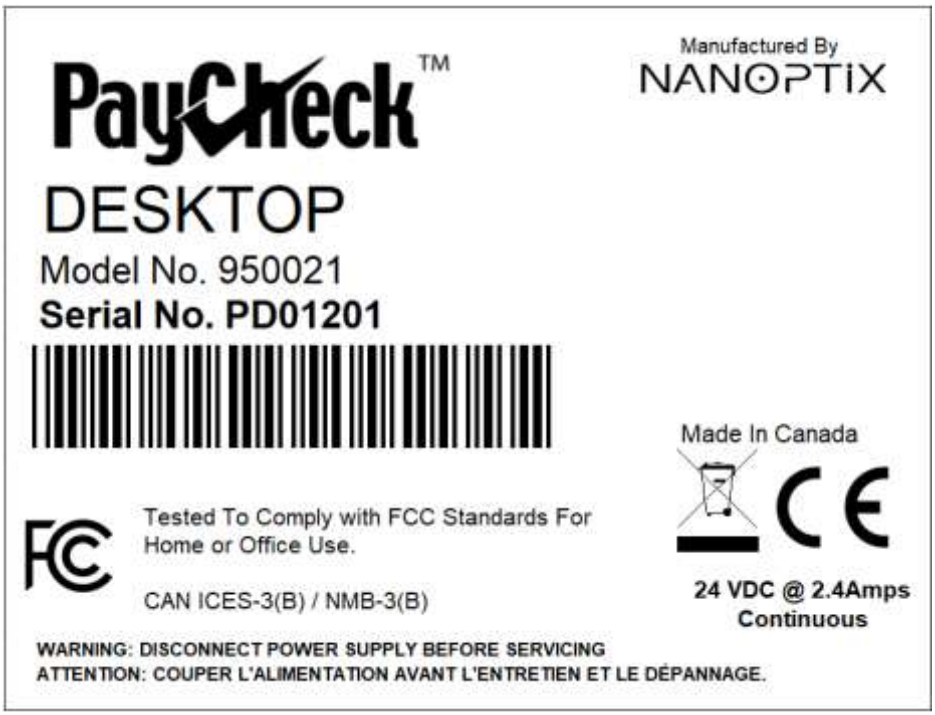
81 Kelfield St, Unit 8

Toronto, Ontario M9W 5A3

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict



TESTING:	
Date of receipt of test item ..... :	2020-08-07, 2020-09-18, 2020-10-05. 2021-06-08 (for CB1123-2R1)
Date (s) of performance of tests ..... :	2020-08-07, 2020-08-28, 2020-09-21, 2020-09-25, 2020-10-07, 2020-10-08 2021-07-16 (for CB1123-2R1)
Date of receipt of test item ..... :	2021-11-11 (for CB1123-2R2)
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.	

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Clause	Requirement + Test	Result - Remark	Verdict

Name and address of factory (ies) ..... :	Same as the applicant

GENERAL PRODUCT INFORMATION:

Product Description –

Powered by an approved external Limited Power Source (LPS) Power Supply - (cULus file number E190414) ITE Power Adaptor, Model FSP060-RTAAN2, by FSP Group Inc. or equivalent power supply marked "LPS",

- P/N 950011, 950020, 103665, 950005, 950050, 950100, 950024, 950026, 950028, 950029, 950054 are component-type Thermal Printers to be used in an application where end product enclosure is provided
- P/N 100769, 950023, 950051, 950021 are provided with an enclosure can be used in the end application with or without an enclosure.
- P/N 950055: Derived from P/N 950050, deleting HDMI output, Ethernet interface, 2USB ports and Netplex serial Communication interface features (along with the corresponding parts in the PWB).

Report History:
CB1123-2 - Initial CB Report and Certificate.

CB1123-2R1 - This report as described below:

This test report includes all data and remarks from report CB1123-2, and documents updates to include evaluation of the following.

- Added a new test table (B.2.5 & 6.3).
- Added alternate Printer Assembly component (MHTAS010) for the following models (P/N): P/N 950020, 103665, 950005, 950023, 100769.
- Give interchangeable option for Enclosure, shell & cover material of the following models (P/N): 950023, 100769, 950024, 950026, 950028, 950029, 950054.
- Updated flame class for Plastic Enclosure of model 950051 from V-0 to HB. Changing flame class in PS2 circuit does not affect the safety or compromise safeguard and based on original evaluation fire enclosure is not required. In addition, the printer inside of this polymeric enclosure already has a metal plate underneath the PCB and print mechanism. HB flame class rated plastic enclosure is accepted.

CB1123-2R2 - This report is revised from and based on CB1123-2R1, only to add new P/N 950055 (derived from P/N 950050, as noted below) and reinstate P/N 950021 (similar to P/N 950051); hence, no additional testing is deemed necessary to be conducted and only these revised (11) pages + Attachment 2 (Photos; 19 pages) are hereby being issued. Hence, this CB Test Report is valid only in conjunction with CB1123-2R1 (2021-07-19).

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Clause	Requirement + Test	Result - Remark	Verdict

Model Differences

All thermal printers have similar electrical design with a printer mechanism and control circuit board, moreover,

- P/N 950020, 103665, 950005 has same printer mechanism and control circuit board but with different mechanical arrangement.
- P/N 950011 is similar to P/N 103665 except printer mechanism, chassis and additional enclosure.
- P/N 950050 is similar to P/N 950020 in mechanical design but with different printer mechanism
- P/N 950051, 950021 are identical to P/N 950050, except with an enclosure.
- P/N 950024, 950026, 950028, 950029, use same printer mechanism and control circuit board but with different mechanical arrangement
- P/N 950054 use same printer mechanism but a different control circuit board as in P/N 950024, 950026, 950028, 950029.
- P/N 103665 is identical to P/N 950005, the only difference is the P/N for marketing purpose only
- P/N 100769 is identical to P/N 950023, the only difference is the P/N for marketing purpose only
- P/N 950055 is derived from P/N 950050, deleting HDMI output, Ethernet interface, 2USB ports and Netplex serial Communication interface features (along with the corresponding parts, in the PWB).

Rated Ambient temperature

P/N 950011, 950020, 950021, 103665, 950005, 950051, 950100, 950023, 950024, 950026, 950028, 950029, 950054 and100769: 50°C.

P/N 950050 and 950055: 60°C.

Weights of Printers

P/N	Weight (kg)
103665/950005	1.215
950020	1.5
950021	3.09
950011	5.5
950050	0.67
950051	1.35
950100	0.59
100769/950023	0.55
950024	2.06
950026	1.90
950028	0.985
950029	1.85
950054	1.111
950055	0.67

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
P/N 950011					
Printer Assembly	Fujitsu	FTP-639MCL354	DC 24 V	--	Tested with the equipment
PCB	Interchangeable	--	V-0, 105°C	UL 796	UR
P/N 950020, 103665, 950005					
Printer Assembly	Axiohm	MHTAGS24/C	DC 24 V	--	Tested with the equipment
Printer Assembly - Alternate component	Axiohm	MHTAS010	DC 24V	--	Tested with the equipment
PCB	Interchangeable	--	V-0, 105°C	UL 796	UR
Polymeric Drawer	Interchangeable	--	V-0	UL 746	cURus
P/N 950050, 950055					
Printer	TXCOM	AXIOHM MHTNGD24	25mm motor, thermal print head Rated Voltage: 24Vdc	UL 60950-1:2007 R12.11 CAN/CSA-C22.2 No.60950-1-07+A1:2011	TUV (CU72141773)
P/N 950051, 950021					
Printer Assembly	TXCOM	AXIOHM MHTNGD24	25mm motor, thermal print head	UL 60950-1:2007 R12.11 CAN/CSA-C22.2 No.60950-1-07+A1:2011	TUV (CU72141773)
Plastic enclosure for model 950051	Polymer Technology & Services LLC	ABS- FR3800-V	Acrylonitrile Butadiene Styrene (ABS), HB	CSA-C22.2 No. 0.17 UL 746C	cURus (E155285)
Plastic enclosure for model 950051	Interchangeable	--	Acrylonitrile Butadiene Styrene (ABS), HB	CSA-C22.2 No. 0.17 UL 746C	cURus

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
P/N 950100					
Printer Assembly	Seiko	CAP9347E-S640-E	24Vdc, 1.25A	IEC 60950-1	Tested with the equipment
DC Sepper Motor	Seiko	B420A	24Vdc, 0.50A	IE 60950-1	Tested with the equipment
P/N 950023, 100769					
Cover	Covestro Deutschland AG	Makrolon 2405+(z)	V-2	UL 746C	cURus (E41613)
Cover	Interchangeable	--	V-2	UL 746C	cURus
Shell (top, bottom)	Teijin Limited Resin and Plastic	TN-7500M(#)	V-1 minimum	UL 746C	cURus (E98529)
Shell (top, bottom)	Interchangeable	--	V-1 minimum	UL 746C	cURus
Printer Assembly	Axiohm	MHTPGS24H	DC 24 V	--	Tested with the equipment
Printer Assembly - Alternate component	Axiohm	MHTAS010	DC 24V	--	Tested with the equipment
DC stepping motor	Minebea Electronic Co Ltd. (NMB)	PM20L-020-AXH2	DC 24V, 100MΩ, 120°C	--	Tested with the equipment
PCB	Interchangeable	--	V-0, 105°C	UL796	UR
PN 950024, 950026, 950028, 950029					
Enclosure frame material for P/N 950028	E I DUPONT DE NEMOURS & CO INC	FR50	V-0	UL 746C	UR (E41938)
Enclosure frame material for P/N 950028	Interchangeable	--	V-0	UL 746C	UR
Cover, mount material for P/N 950028	TRINSEO (HONG KONG) LTD	Celec 5200HF	V-0	UL 746C	UR (E132010)
Cover, mount material for P/N 950028	Interchangeable	--	V-0	UL 746C	UR

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Printer Assembly	Seiko	CAPM347	Thermal printer mechanism 24VDC, 4.9A(peak)/144 dots; 9.9A(peak)/288 dots; 21.9A(peak)/640 dots Print speed 300mm/s	--	Tested with the equipment
Thermal Head	--	--	*Heat element matrix consist of 640 dots*	--	*Tested with the equipment*
Paper feed motor	--	*J05F9ZY2BC*	*PM type stepper motor, 3.7Ω/phase, Vp:21.6-26.4V* *600mA/phase*	--	*Tested with the equipment*
Paper motor	--	*J09C9ZE2BC*	*PM type stepper motor, 8.5Ω/phase, Vp:21.6-26.4V* *820mA/phase(at 1 phase)*	--	*Tested with the equipment*
PCB (control board 209008)	Interchangeable	--	V-0, 105°C	UL796	UR
Internal Wiring	Interchangeable	--	VW-1, 105°C	UL 758	UR
PN 950054					
Plastic material for presenter	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000	V-0	UL 746C	UR (E41613)
Plastic material for presenter	Interchangeable	--	V-0	UL 746C	UR
Enclosure for main frame	CHI MEI CORPORATION	PA-757	HB	UL 746C	UR (E56070)

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Enclosure for main frame	Interchangeable	--	HB	UL 746C	UR
Printer Assembly	Seiko	CAPM347	Thermal printer mechanism 24VDC, 4.9A(peak)/144 dots; 9.9A(peak)/288 dots; 21.9A(peak)/640 dots Print speed 300mm/s	--	Tested with the equipment
PCB for control board 209014 and presenter	Interchangeable	--	V-0, 105°C	UL796	UR
Internal Wiring	Interchangeable	--	VW-1, 105°C	UL 758	UR
Power adaptor	FSP Group	FSP060-RTAAN2	Input 100-240V, 1.5A, 50-60Hz Output 24VDC, 2.5A	UL/CSA 60950-1	cULus (E190414)

Supplementary information:

[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.