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TEST REPORT

ACCORDING TO:
EN 50131-2-2:2008
EN 50131-2-4:2008
EN 50131-1:2006+A1:2009

FOR:
Paradox Security Systems Ltd.

EUT:
Passive Infrared Red (PIR) motion Detector

Model:
1) NV75MR (433/868 MHz)
2) NV75MW

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1 Applicant information

Client name:	Paradox Security Systems Ltd.
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Telephone:	450-491-7444
Fax:	450-491-1095
E-mail:	nimrodh@paradox.com
Contact name:	Mr. Nimrod Herman

2 Equipment under test attributes

Model Name	HW Version	SW Version
NV75MR	575-5005-991	V1.00
NV75MW	575-6006-993	V1.00

Condition of the equipment	Test samples
Receipt date	23-Jan-17

3 Manufacturer information

Manufacturer name:	Paradox Security Systems Ltd.
Address:	780 INDUSTRIAL BLVD ST-EUSTACHE, QC, CANADA J7R 5V3
Telephone:	450-491-7444
Fax:	450-491-1095
E-Mail:	nimrodh@paradox.com
Contact name:	Mr. Nimrod Herman

4 Test details

Project ID:	28739
Location:	Hermon Laboratories Ltd. Harakevet Industrial Zone, Binyamina 30500, Israel
Test started:	23-Jan-17
Test completed:	8-Mar-17
Test specification(s):	EN 50131-2-2:2008, EN 50131-2-4:2008, EN 50131-1:2006+A1:2009

5 EUT description

5.1 General information

The EUTs, NV75MR 16 meter wireless motion PIR detector and NV75MW 15 meter wired PIR + Microwave motion detector, are fixed alarm system components with Anti-Mask and Pet immunity technologies for indoor use.

NV75MR classified as security Grade 2, environmental Class II, Type C power supply and fixed equipment.
NV75MW classified as security Grade 3, environmental Class II and fixed equipment.
The detectors have options to be installed on wall bracket, way that reduces the detector's security Grade to Grade 2.

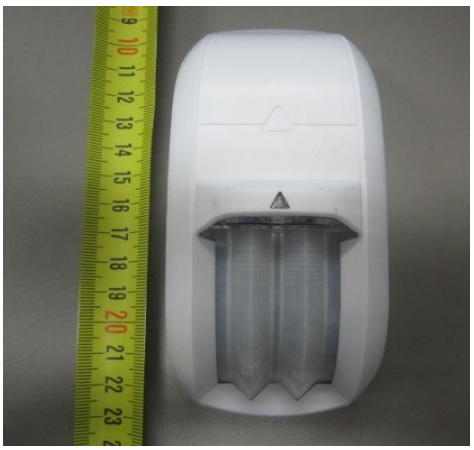
NV75MR – Wireless detector that powered by 3Vdc from two 1.5Vdc internal batteries connected at serial.
NV75MW - Wired detector that powered by 9-16VDC from control panel.

The EUTs are presented in Photographs 5.1.1 to 5.1.11

Table 5.1.1 Models description

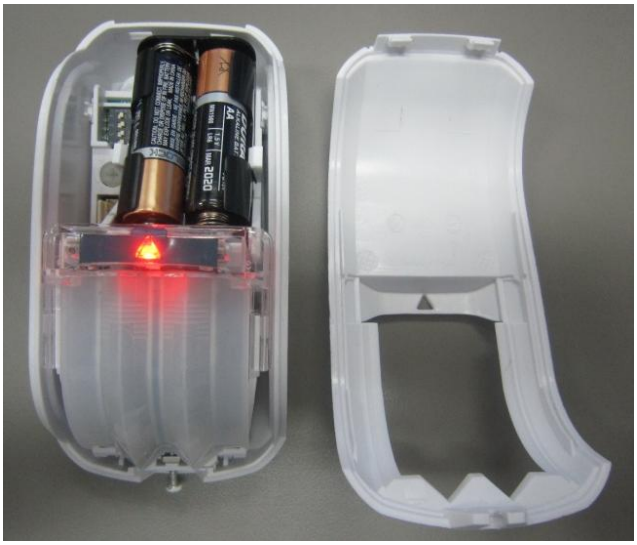
#	Model	Description	Remark
1	NV75MR	Wireless PIR detector Environmental Class II Security Grade:2	See Photographs 5.1.1 to 5.1.11
2	NV75MW	Wired PIR&MW detector Environmental Class II Security Grade: Grade 3 when mounting without bracket Grade 2 for bracket mounting option	

Photograph 5.1.1, 5.1.2 - NV75MR Front View

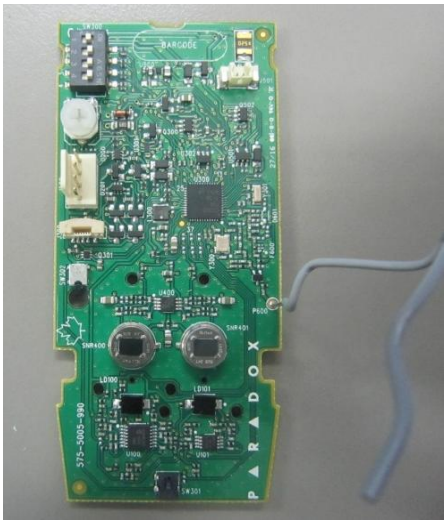


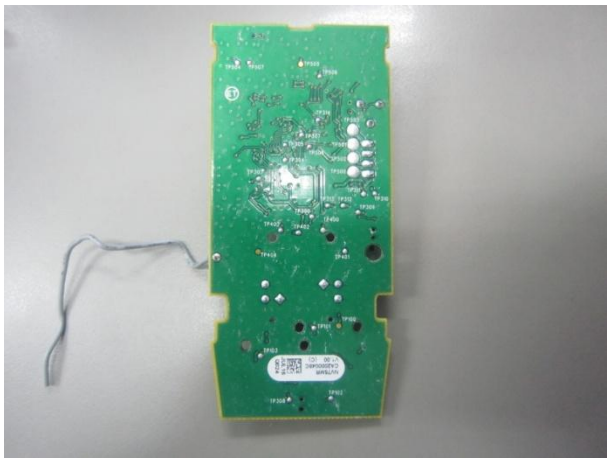


Photograph 5.1.3 - NV75MR- Internal view



Photograph 5.1.4, 5.1.5 - NV75MR PCB view





Photograph 5.1.6 - NV75MR and NV75MW bracket mounting View



Photograph 5.1.7, 5.1.8 - NV75MW Front View

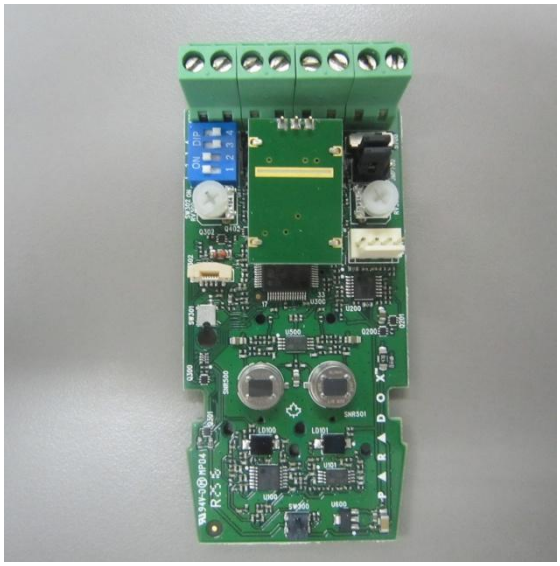


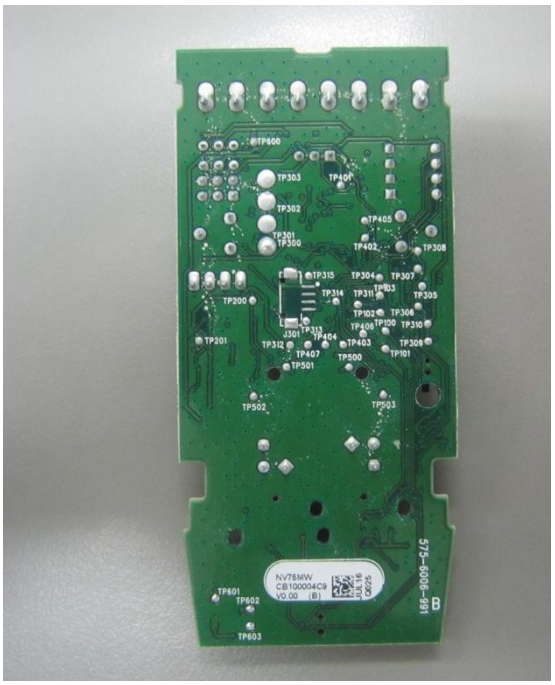


Photograph 5.1.9 - NV75MW- Internal view



Photograph 5.1.10, 5.1.11 - NV75MW PCB view



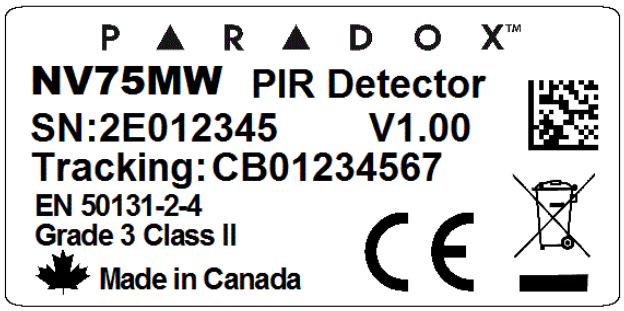


Photograph 5.1.12, 5.1.13 - EUTs labels

1) NV75MR



2) NV75MW



5.2 EUT acceptance criteria

Wherever specified by the EN50131-2-2 and EN50131-2-4 standards, the EUT shall pass the Basic Detection Tests. The EUT should comply with standard tamper requirements, no false alarms/unwanted signals are accepted during Immunity tests, and all walk tests should be passed.
The EUT should fulfill all EN50131-2-2 and EN50131-2-4 standards requirements.

5.3 EUT visual inspection and functional check

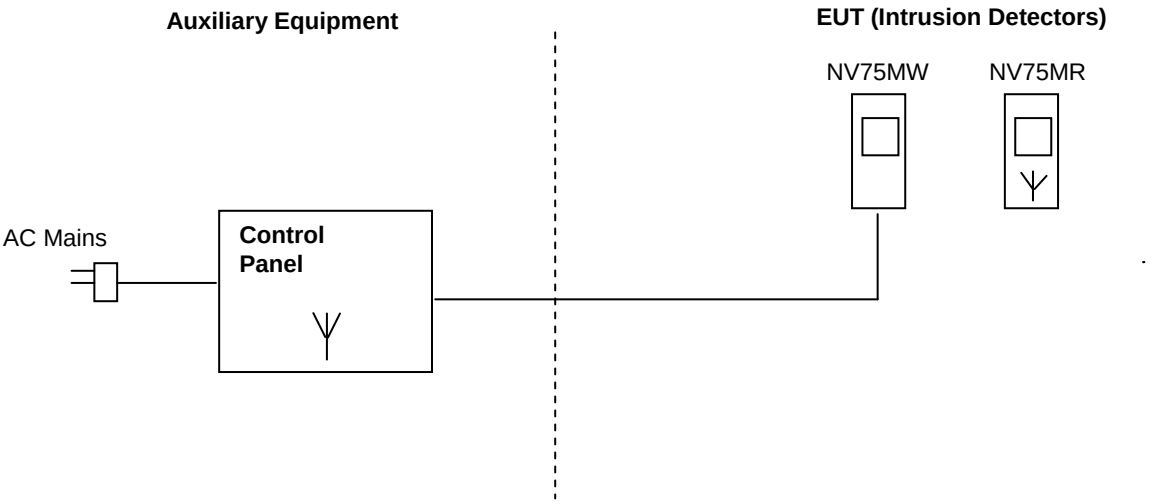
Whenever specified by EN50131-2-2 and EN50131-2-4 Standards the Basic detection test (BDT) was carried out also the post tests visual inspections.

5.4 Setup and settings

The test configuration is presented in Figure 5.4.1.
PIR and MW set on high sensitivity:
Detection range 16m (for NV75MR) and 15m (for NV75MW), Edge mode (EDGE = SINGLE), PET off (PET IMMUNE = OFF), CREEP on.

The used mounting height for Walk test was 2.1 m.
The led and tamper features were activated.

Figure 5.4.1 Setup configuration



6 Tests summary

Test	Status
EN50131-2-2	**NV75MR**
Section 6.3, Walk test	Pass
Section 6.4, Switch on delay and interval between signals test	Pass
Section 6.5, Self-test	N/A*
Section 6.6.1, Immunity to air flow test	Pass
Section 6.6.2, Immunity to visible and near infrared radiation test	Pass
Section 6.7.1, Prevention of unauthorized access to the inside of detector test	Pass
Section 6.7.2, Detection of removal from the mounting surface test	Pass
Section 6.7.3, Resistance to or detection of re-orientation of adjustable mountings test	Pass
Section 6.7.4, Resistance to magnetic field interference test	Pass
Section 6.7.5, Detection of detector masking test	N/A*
Section 6.7.6, Immunity to false masking signal test	N/A*
Section 6.8, Electrical tests	N/A**
Section 6.9, Environmental classification and conditions	Note1
Section 6.10, Labels and documentation test	Pass

Test	Status
EN50131-2-4	**NV75MW**
Section 6.3, Walk test	Pass
Section 6.4, Switch on delay and interval between signals test	Pass
Section 6.5, Self-test	Pass
Section 6.6.1, Immunity to air flow test	Pass
Section 6.6.2, Immunity to visible and near infrared radiation test	Pass
Section 6.6.3, Immunity to microwave signal interference by fluorescent lights test	Pass
Section 6.7.1, Prevention of unauthorized access to the inside of detector test	Pass
Section 6.7.2, Detection of removal from the mounting surface test	Pass
Section 6.7.3, Resistance to or detection of re-orientation of adjustable mountings test	Pass
Section 6.7.4, Resistance to magnetic field interference test	Pass
Section 6.7.5, Detection of detector masking test	Pass
Section 6.7.6, Immunity to false masking signal test	Pass
Section 6.8, Electrical tests	Note2
Section 6.9, Environmental classification and conditions	Note1
Section 6.10, Labels and documentation test	Pass

* Not mandatory for Grade 2
** Wireless detector

Note1: See separate report: PARENV_EN.28739
Note2: See separate report: PAREMC_EN.28739_EN 50131-2-4

The EUT (NV75MR) was tested according to EN 50131-2-2:2008 and EN 50131-1:2006+A1:2009 standards for Security Grade 2, Environmental Class II and found to be in compliance with the standard requirements.

The EUT (NV75MW) was tested according to EN 50131-2-4:2008 and EN 50131-1:2006+A1:2009 standards for Security Grade 3, Environmental Class II and found to be in compliance with the standard requirements.

Revision History Table:					
Date	**File No.**	**Prepared**	**Reviewed**	**Approved**	**Amendment Description**
March 14, 2017	PARIAS_EN 50131-2-2_EN.50131-2-4.28739	Mr. Alex Zober, Test Engineer 	Mr. Ilan Benihas, Safety Team leader 	Mr. Michael Brun, Safety Group Manager 	Original report

7 Tests results

Table 7.1 - EN 50131-2-2 Compliance General Matrix

The results apply to all EUTs bellow according to their technology type and security grade

Model	Applicable Standard	Security Grade
NV75MR	EN 50131-2-2	2

I. EN 50131-2-2 reference		Result				Remarks and/or document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
4	**Functional Requirements**					
4.1	**Event Processing**	✓				Comply
4.2	**Detection**					
4.2.1	Detection performance	✓				See 6.3.3 below
4.2.2	Indication of detection	✓				Intrusion indicator provided. NV75MR = Indicator can be locally enabled or disabled by DIP SWITCH.
4.2.3	Significant reduction of range			✓		Only for Grade 4 detectors
4.3	**Operational requirements**					
4.3.1	Time interval between intrusion signals or messages	✓				See 6.4 below
4.3.2	Switch on delay	✓				See 6.4 below
4.3.3	Self-tests			✓		Only For Grade 3 and 4 detectors
4.3.3.1	Local self-test			✓		As above
4.3.3.2	Remote self-test			✓		As above
4.4	**Immunity to incorrect operation**					
4.4.1	Immunity to air flow	✓				See 6.6.1 below
4.4.2	Immunity to visible and near infrared radiation	✓				See 6.6.2 below
4.5	**Tamper security**					
4.5.1	Resistance to and detection of unauthorized access to components and means of adjustment	✓				See 6.7.1 below
4.5.2	Detection of removal from the mounting surface	✓				See 6.7.2 below
4.5.3	Resistance to, or detection of, re-orientation	✓				See 6.7.3 below
4.5.4	Immunity to magnetic field interference	✓				See 6.7.4 below
4.5.5	Detection of masking			✓		Only for Grade 3 and 4 detectors
4.6	**Electrical requirements**					
4.6.1	Detector current consumption			✓		Wireless detectors – Type C power supply. See separate EN 50131-6 HL report: PARIAS_EN 50131-6_TypeC.28739
4.6.2	Slow input voltage change and voltage range limits			✓		
4.6.3	Input voltage ripple			✓		

I. EN 50131-2-2 reference		Result				Remarks and/or document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
4.6.4	Input voltage step change			✓		
4.7	**Environmental classification and conditions**					
4.7.1	Environmental classification	✓				See 6.9 below
4.7.2	Immunity to environmental conditions	✓				See 6.9 below
5	**Marking, identification and documentation**					
5.1	Marking and/or identification	✓				See 6.10 below
5.2	Documentation	✓				See 6.10 below
6	**Testing**					
6.1	**General test conditions**					Temperature: -35 to -50 °C; Relative humidity: up to 95%; Air pressure: 86 - 106kPa.
6.2	**Basic detection test (BDT)**					Close-in walk test performed as required for each individual test
6.3	**Walk testing**					SWT characteristics: 1.84m , 80 Kg, for SWT temperature differential see Chapter 7.1
6.3.3	**Detection across and within the detection boundary**					
6.3.3.1	Verify detection across the boundary	✓				See Chapter 7.1
6.3.3.2	Verify detection within the boundary	✓				
6.3.4	Verify the High velocity detection performance	✓				
6.3.5	Verify the intermittent movement detection performance			✓		Only for Grade 3 and 4 detectors
6.3.6	Verify the close-in detection performance	✓				See Chapter 7.1
6.3.7	Verify the significant reduction of specified range			✓		Only for Grade 4 detectors
6.4	Switch-on delay, time interval between signals and indication of detection	✓				See Chapter 7.2
6.5	Self-tests			✓		Only For Grade 3 and 4 detectors
6.6	**Immunity to incorrect operation**					
6.6.1	Immunity to air flow	✓				See Chapter 7.4
6.6.2	Immunity to visible and near infrared radiation	✓				See Chapter 7.6
6.7	**Tamper security**					
6.7.1	Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes`	✓				See Chapter 7.7
6.7.2	Detection of removal from the mounting surface	✓				See Chapter 7.8
6.7.3	Resistance to re-orientation of adjustable mountings	✓				See Chapter 7.9
6.7.4	Resistance to magnetic field interference	✓				See Chapter 7.10
6.7.5	Detection of detector masking			✓		Only for Grade 3 and 4 detectors
6.7.6	Immunity to false masking signals			✓		Only for Grade 3 and 4 detectors
6.8	**Electrical tests**					

I. EN 50131-2-2 reference		**Result**				**Remarks and/or document reference**
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
6.8.1	Detector current consumption			✓		Wireless detectors – Type C power supply See Separate EN 50131-6 HL report: PARIAS_EN 50131-6_TypeC.28739
6.8.2	Slow input voltage change and voltage range limits			✓		
6.8.3	Input voltage ripple			✓		
6.8.4	Input voltage step change			✓		
6.8.5	Total loss of supply			✓		
6.9	**Environmental tests operational**					
	Dry Heat	✓				See separate HL TR: PARENV_EN.28739
	Cold	✓				
	Damp heat (steady state)			✓		
	Damp Heat (cyclic)	✓				
	Water Ingress			✓		
	Mechanical Shock	✓				
	Vibration	✓				
	Impact	✓				
	EMC	✓				See separate HL TR PAREMC_28739
	Environmental tests endurance					
	Damp heat (steady state)	✓				See separate HL TR: PARENV_EN.28739
	Damp Heat (cyclic)			✓		
	SO_2 Corrosion					Separate TR
	Vibration	✓				See separate HL TR: PARENV_EN.28739
6.10	**Marking, identification and documentation**					
6.10.1	Marking and/or identification	✓				See Chapter 7.13
6.10.2	Documentation	✓				

C= conform; NC= not conform; NA = not applicable; NT = not tested

Table 7.2 - EN 50131-2-4 Compliance General Matrix:

The results apply to all EUTs bellow according to their technology type and security grade

Model	Applicable Standard	Security Grade
NV75MW	EN 50131-2-4	3

II. EN 50131-2-4 reference		Result				Remarks and/or document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
4	**Functional Requirements**					
4.1	**Indication signals or massages**	✓				Comply
4.2	**Detection**					
4.2.1	Detection performance	✓				See 6.3.3 below
4.2.2	Indication of detection	✓				Intrusion indicator provided. Intrusion indicator can be enabled and disabled locally by DIP switches SW-2 and SW-3 and remotely.
4.2.3	Significant reduction of range			✓		Only for Grade 4 detectors
4.3	**Operational requirements**					
4.3.1	Time interval between intrusion signals or messages	✓				See 6.4 below
4.3.2	Switch on delay	✓				See 6.4 below
4.3.3	Self-tests	✓				See 6.5 below
4.3.3.1	Local self-test	✓				The self-test check starts at detector's warm-up and then each 24 hours.
4.3.3.2	Remote self-test			✓		Only for Grade 4 detectors
4.4	**Immunity to incorrect operation**					
4.4.1	Immunity to air flow	✓				See 6.6.1 below
4.4.2	Immunity to visible and near infrared radiation	✓				See 6.6.2 below
4.4.3	Immunity to microwave signal interference by fluorescent lights	✓				See 6.6.3 below
4.5	**Tamper security**					
4.5.1	Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes	✓				See 6.7.1 below
4.5.2	Detection of removal from the mounting surface	✓				See 6.7.2 below
4.5.3	Resistance to, or detection of, re-orientation	✓				See 6.7.3 below
4.5.4	Immunity to magnetic field interference	✓				See 6.7.4 below
4.5.5	Detection of masking	✓				See 6.7.5 below
4.6	**Electrical requirements**					
4.6.1	Detector current consumption	✓				See 6.8 below
4.6.2	Slow input voltage change and voltage range limits	✓				
4.6.3	Input voltage ripple	✓				

II. EN 50131-2-4 reference		Result				Remarks and/or document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
4.6.4	Input voltage step change	✓				
4.7	**Environmental classification and conditions**					
4.7.1	Environmental classification	✓				See 6.9 below
4.7.2	Immunity to environmental conditions	✓				See 6.9 below
5	**Marking, identification and documentation**					
5.1	Marking and/or identification	✓				See 6.10 below
5.2	Documentation	✓				See 6.10 below
6	**Testing**					
6.1	**General test conditions**					Temperature: -35 to 50 °C; Relative humidity: 95%; Air pressure: 86 - 106kPa.
6.2	**Basic detection test (BDT)**					Close-in walk test performed as required for each individual test
6.3	**Walk testing**					SWT characteristics: 1.84m , 80 Kg, for SWT temperature differential see Chapter 7.1
6.3.3	**Detection across and within the detection boundary**					
6.3.3.1	Verify detection across the boundary	✓				See Chapter 7.1
6.3.3.2	Verify detection within the boundary	✓				
6.3.4	Verify the High velocity detection performance	✓				
6.3.5	Verify the intermittent movement detection performance	✓				
6.3.6	Verify the close-in detection performance	✓				
6.3.7	Verify the significant reduction of specified range			✓		Only for Grade 4 detectors
6.4	Switch-on delay, time interval between signals and indication of detection	✓				See Chapter 7.2
6.5	Self-tests	✓				See Chapter 7.3
6.6	**Immunity of individual technologies to incorrect operation**					
6.6.1	Immunity to air flow	✓				See Chapter 7.4
6.6.2	Immunity to visible and near infrared radiation	✓				See Chapter 7.6
6.6.3	Immunity to microwave signal interference by fluorescent lights	✓				See Chapter 7.5
6.7	**Tamper security**					
6.7.1	Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes	✓				See Chapter 7.7
6.7.2	Detection of removal from the mounting surface	✓				See Chapter 7.8
6.7.3	Resistance to re-orientation of adjustable mountings	✓				See Chapter 7.9
6.7.4	Resistance to magnetic field interference	✓				See Chapter 7.10
6.7.5	Detection of detector masking	✓				See Chapter 7.11
6.7.6	Immunity to false masking signals	✓				See Chapter 7.12

II. EN 50131-2-4 reference		Result				Remarks and/or document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
6.8	**Electrical tests**					
6.8.1	Detector current consumption	✓				See separate HL TR PAREMC_EN.28739_EN 50131-2-4
6.8.2	Slow input voltage change and voltage range limits	✓				
6.8.3	Input voltage ripple	✓				
6.8.4	Input voltage step change	✓				
6.8.5	Total loss of supply	✓				
6.9	**Environmental tests operational**					
	Dry Heat	✓				See separate HL TR: PARENV_EN.28739
	Cold	✓				
	Damp heat (steady state)			✓		
	Damp Heat (cyclic)	✓				
	Water Ingress			✓		
	Mechanical Shock	✓				
	Vibration	✓				
	Impact	✓				
	EMC	✓				See separate HL TR PAREMC_28739
	Environmental tests endurance					
	Damp heat (steady state)	✓				See separate HL TR: PARENV_EN.28739
	Damp Heat (cyclic)			✓		
	SO_2 Corrosion					Separate TR
	Vibration	✓				See separate HL TR: PARENV_EN.28739
6.10	**Marking, identification and documentation**					
6.10.1	Marking and/or identification	✓				See Chapter 7.13
6.10.2	Documentation	✓				

C= conform; NC= not conform; NA = not applicable; NT = not tested

Table 7.3 - EN50131-1 Compliance General Matrix

III. EN 50131-1 reference		Result				Remarks and/or document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
4	**System functions**			✓		NV75MR: Security **Grade 2** , Environmental **Class II** NV75MW: Security **Grade 3** , Environmental **Class II**
5	**System components**	✓				
6	**Security grading**	✓				
7	**Environmental Classification**	✓				
8	**Functional requirements**					
8.1	**Detection of intruders, triggering, tampering and the recognition of faults**					
8.1.1	Intruder detection	✓				See table 7.1 & 7.2 above
8.1.2	Hold-up device-triggering			✓		
8.1.3	Tamper Detection	✓				
8.1.4	Recognition of faults	✓				
8.2	**Other Functions**					
8.2.1	Masking	✓				See table 7.1 & 7.2 above
8.2.2	Movement detector range reduction			✓		For Grade 4 detectors
8.3	**Operation**					
8.3.1	Access levels			✓		Not applicable for detectors
8.3.2	Authorization			✓		
8.3.3	Setting and Unsetting			✓		
8.3.4	Setting			✓		
8.3.5	Prevention of setting			✓		
8.3.6	Overriding prevention of setting			✓		
8.3.7	Set state			✓		
8.3.8	Unsetting			✓		
8.3.9	Restoring			✓		
8.3.10	Inhibit			✓		
8.3.11	Isolate			✓		
8.3.12	Test			✓		
8.3.13	Other Functions			✓		
8.4	**Processing**					
8.4.1	Intruder signals or messages			✓		Not applicable for detectors
8.4.2	Hold-up signals or messages			✓		
8.4.3	Tamper signals or messages			✓		
8.4.4	Fault signal or messages			✓		
8.4.5	Masking signals or messages			✓		
8.4.6	Reduction of range signals or messages			✓		
8.5	**Indications**					
8.5.1	General			✓		Not applicable for detectors
8.5.2	Availability of indications			✓		
8.5.3	Canceling indication			✓		
8.5.4	Indication-Intrusion detectors			✓		
8.6	**Notification**			✓		Not applicable for detectors

III. EN 50131-1 reference		Result				Remarks and/or document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
8.7	**Tamper Security**					
8.7.1	Tamper protection	✓				See table 7.1 & 7.2 above
8.7.2	Tamper detection	✓				
8.7.3	Monitoring of substitution			✓		Not applicable for detectors
8.7.4	Monitoring of substitution- timing requirements			✓		
8.8	**Interconnections**					
8.8.1	General			✓		Not applicable for detectors
8.8.2	Availability of interconnections			✓		
8.8.3	Monitoring of interconnections			✓		
8.8.4	Verification			✓		
8.8.5	Security of communication			✓		
8.8.6	Signals or messages to be generated			✓		
8.9	**I&HAS timing performance**					
8.9.1	Intruder detection, tampering and recognition of faults			✓		Not applicable for detectors
8.9.2	Processing			✓		
8.10	Event Recording			✓		
9	**Power Supply**					
9.1	Types of power supply	✓				For NV75MR see separate HL TR PARIAS_EN 50131-6_TypeC.28739
9.2	Requirements	✓				
10	**Operational reliability**					
10.1	I&HAS components	✓				
11	**Functional reliability**	✓				
12	**Environmental requirements**	✓				See separate HL TR: PARENV_EN.28739
12.1	Electromagnetic compatibility	✓				See separate HL TR: PAREMC_EN.28739
13	**Electrical safety**	✓				See separate HL TR: PARSAF_EN.28739
14	**Documentation**	✓				See Chapter 7.13
15	**Marking / Identification**	✓				

C= conform; NC= not conform; NA = not applicable; NT = not tested

Test specification:	**Walk test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.3 Walk test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/2017		
Atmospheric conditions during the test:	**Temperature:** 23.5 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

7.1 Walk test procedure and results

7.1.1 Test purpose

To prove the detector detection performance within the manufacturer declared detection area and with SWT different speeds and attitudes as required by EN50131-2-2 standard.

7.1.2 Test procedure

7.1.2.1 The test area was lied out according to manufacturer detection pattern and standard requirement as presented in Figure 7.1.1.

7.1.2.2 The SWT temperature differential was calculated after performing the required temperature measurements on the test hall (background and floor) and on SWT as presented in Table 7.1.2.

7.1.2.3 The detector was mounted at the height as specified by manufacturer and presented in Table 7.1.3, Table 7.1.4, Table 7.1.5, Table 7.1.6. and Table 7.1.7.

7.1.2.4 The walk tests for each relevant detector setting or combination of settings were performed as presented in Table 7.1.3 to Table 7.1.7 and the results documented.

7.1.3 Test results

Table 7.1.1 Test results

Observation	Verdict
As presented in Table 7.1.3, Table 7.1.4, Table 7.1.5, Table 7.1.6 and Table 7.1.7. All the walk tests at the required SWT velocities and attitudes were passed.	**Pass**

Reference numbers of test equipment used:

HL 2774	HL 3460	HL 3214	HL 2948	HL 3716

Full description is given in Appendix A.

Test specification:	**Walk test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.3 Walk test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/2017		
Atmospheric conditions during the test:	**Temperature:** 23.5 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

Table 7.1.2 SWT temperature differential

Body zone	Significance: weighting factor	Body temp [^{0}C]	Body background: temp difference	Dtr.	Average Dtr.
Head	**2**	22.6	**3.2**	6.4	**3.87**
Upper torso side	**4**	23.9	**4.5**	18	
Hand at body side	**4**	23	**3.6**	14.4	
Legs at knee	**2**	23.8	**4.4**	8.8	
Feet	**1**	23.2	**2.8**	2.8	
SUM	**13**				

The 10 temperature points of the background measurements [^{0}C]	Average [^{0}C]	SWT characteristics	Floor and backgrounds emissivity
20	19.4	73 kg, 1.78 m	>85%
20.1			
20.2			
20			
20.1			
18.5			
18.8			
18.4			
18.5			
19.3			

Test specification:	**Walk test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.3 Walk test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/2017		
Atmospheric conditions during the test:	**Temperature:** 23.5 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

Table 7.1.3 Boundary detection

SWT speed 1 m/s; upright				
Detector Model	**Detection pattern and tested points (marked in blue)**	**Verdict**	**Date**	**Settings/Remarks**
NV75MR	Figure 7.1.1	Pass	8.2.17	Installation height = 2.1 m Tested as the following: PIR sensitivity potentiometer on 7m(Low sensitivity), 9m,11m, 13m, 16m(High sensitivity) Single Edge, Creep on, PET immunity off
NV75MW	Figure 7.1.1	Pass	8.2.17	Installation height = 2.1 m Tested as the following: PIR and MW sensitivity potentiometers on 7m(Low sensitivity), 9m,11m, 13m, 16m(High sensitivity) Single Edge, Creep on, PET immunity off

Table 7.1.4 Detection within the boundary

SWT speed 0.3 m/s for Grade 2 and 0.2 m/s for Grade 3 detectors; upright				
Detector Model	**Detection pattern and tested points (marked in red)**	**Verdict**	**Date**	**Settings/Remarks**
NV75MR	Figure 7.1.1	Pass	8.2.17	Installation height = 2.1 m Tested as the following: PIR sensitivity potentiometer on 7m(Low sensitivity), 9m,11m, 13m, 16m(High sensitivity) Single Edge, Creep on, PET immunity off
NV75MW	Figure 7.1.1	Pass	8.2.17	Installation height = 2.1 m Tested as the following: PIR and MW sensitivity potentiometers on 7m(Low sensitivity), 9m,11m, 13m, 16m(High sensitivity) Single Edge, Creep on, PET immunity off

Test specification:	**Walk test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.3 Walk test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/2017		
Atmospheric conditions during the test:	**Temperature:** 23.5 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

Table 7.1.5 Detection at high velocity

SWT speed 2 m/s for Grade 2 and 2.5 m/s for Grade 3 detectors; upright				
Detector Model	**Detection pattern and tested points**	**Verdict**	**Date**	**Settings/Remarks**
NV75MR	Figure 7.1.1	Pass	8.2.17	Installation height = 2.1 m Tested as the following: PIR sensitivity potentiometer on 7m(Low sensitivity), 9m,11m, 13m, 16m(High sensitivity) Single Edge, Creep on, PET immunity off
NV75MW	Figure 7.1.1	Pass	8.2.17	Installation height = 2.1 m Tested as the following: PIR and MW sensitivity potentiometers on 7m(Low sensitivity), 9m,11m, 13m, 16m(High sensitivity) Single Edge, Creep on, PET immunity off

Table 7.1.6 Close in detection performance

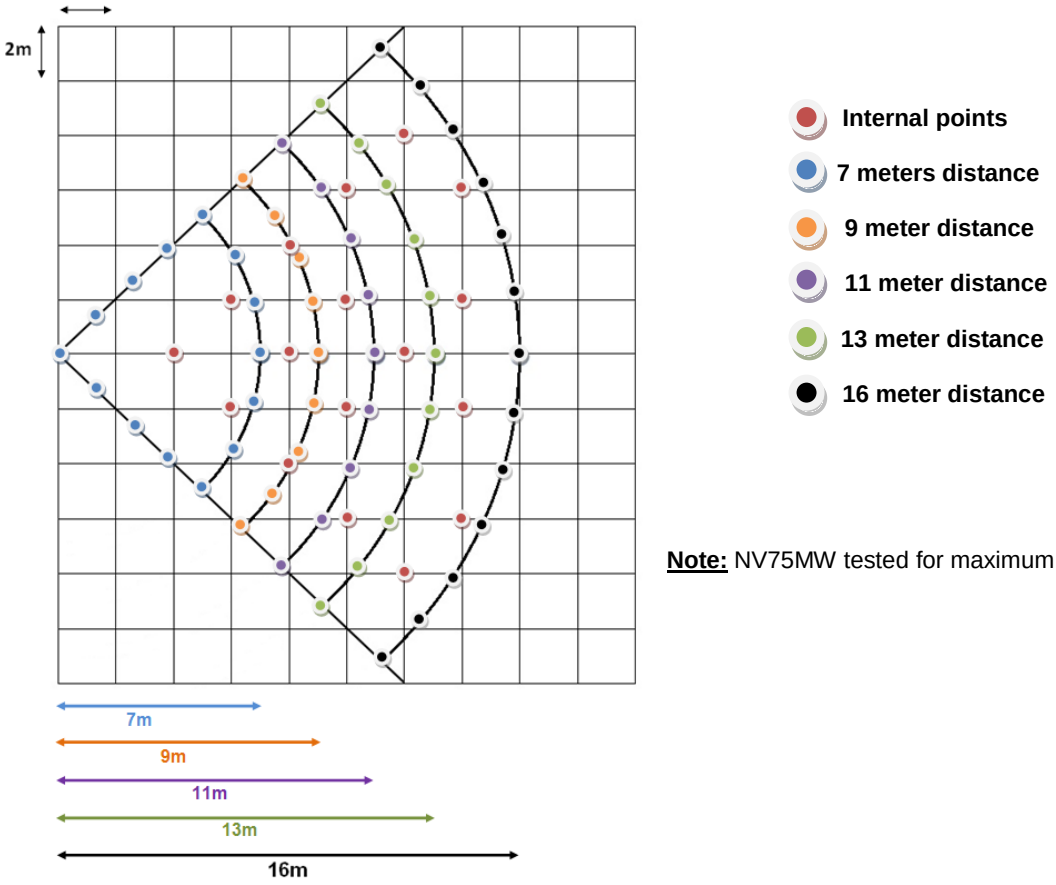
Table 7.1.6 Close in detection performance				
Detector Model	**Detection pattern and tested points**	**Verdict**	**Date**	**Settings/Remarks**
NV75MR	Figure 7.1.1	Pass	8.2.17	Installation height = 2.1 m Tested as the following: PIR sensitivity potentiometer on 7m(Low sensitivity), 9m,11m, 13m, 16m(High sensitivity) Single Edge, Creep on, PET immunity off
NV75MW	Figure 7.1.1	Pass	8.2.17	Installation height = 2.1 m Tested as the following: PIR and MW sensitivity potentiometers on 7m(Low sensitivity), 9m,11m, 13m, 16m(High sensitivity) Single Edge, Creep on, PET immunity off.

Test specification:	Walk test		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.3 Walk test		
Test mode:	Compliance	Verdict:	PASS
Test Date:	8/2/2017		
Atmospheric conditions during the test:	Temperature: 23.5 ºC	Air Pressure: 1010hPa	Relative Humidity: 46 %
Remarks:			

Table 7.1.7 intermittent movement detection performance

SWT speed 1 m/s for Grade 3; upright				
Detector Model	**Detection pattern and tested points**	**Verdict**	**Date**	**Settings/Remarks**
NV75MW	Figure 7.1.1	Pass	8.2.17	Installation height = 2.1 m Tested as the following: PIR and MW sensitivity potentiometers on 7m(Low sensitivity), 9m,11m, 13m, 16m(High sensitivity) Single Edge, Creep on, PET immunity off

Figure 7.1.1 Detection area and the tested points



Note: NV75MW tested for maximum 15m

Test specification:	**Switch on delay and interval between signals test procedure and results**		
Test procedure:	EN 50131-2-2 ,EN 50131-2-4 TEST METHOD: 6.4 Switch on delay and interval between signals test procedure and results		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/2017		
Atmospheric conditions during the test:	**Temperature:** 23.4 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

7.2 Switch on delay and interval between signals test procedure and results

7.2.1 Test purpose

To prove that within **180** s of the power supply reaching its nominal voltage the detector meets all functional requirements.
To prove according to timings specified in EN 50131-2-2 (for each security grade for wire free detectors, 15s for wired detectors) the detector ability to provide 2 successive intrusion signals in the required time interval.

7.2.2 Test procedure

7.2.2.1 The detector was switched on and time when the detector was ready and performing his detection function was recorded also if this switch on delay was less than 180 seconds.

7.2.2.2 The detector was switched on and after stabilization, the BDT was used in order to record the maximum interval between 2 successive intrusion signals.

7.2.2.3 The results were documented as presented in Table 7.2.1.

7.2.3 Test results

Table 7.2.1 Test results

Observation	Verdict
The stabilization time and interval between signals were found in accordance with standard requirements for all tested intrusion detectors, as presented in Table 7.2.2.	**Pass**

Reference numbers of test equipment used:

HL 2774	HL 3460	HL 4882

Full description is given in Appendix A.

Table 7.2.2 Test measurements and verdict criteria

EUT name	Stabilization time measurement	Interval between signals measurement	Stabilization time pass criteria	Interval between signals pass criteria for detectors
NV75MR	31 s	*3 s	<180 s	< 180s (wireless)
NV75MW	46 s	*3 s	<180 s	< 15s (wired)
Remarks	*2 successive successful BDT were performed at 180s interval			

Test specification:	**Self-test procedure and results**		
Test procedure:	EN 50131-2-4 TEST METHOD: 6.5 Self-test procedure and results		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/2017		
Atmospheric conditions during the test:	**Temperature:** 23.4 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

7.3 Self-test procedure and results

7.3.1 Test purpose

When security grade classification is more than Grade 2, to prove the detector ability to perform a self-test and within timing requirements to generate fault signals when the self-test is not passed

7.3.2 Test procedure

7.3.2.1 The detector was mounted in its operational configuration and switched on.
7.3.2.2 The local passed self-tests signals were checked.
7.3.2.3 A short of PIR and/or MW module was performed, fault signal generation was checked and recorded, as presented in Table 7.3.2.
7.3.2.4 The results were documented as presented in Table 7.3.1.

7.3.3 Test results

Table 7.3.1 Test results

Observation	Verdict
When the self-test was passed no signals (tamper, intrusion or trouble) were generated. When the self-test was not passed due to a simulated fault condition, a trouble signal was generated and no other signals (tamper and intrusion) were generated. Orange led blinking constant indication indicates the fault.	**Pass**

NOTE:
The self-test check starts at detector's warm-up and then each 24 hours.
Self-test duration is 1 sec.

Table 7.3.2 Test conditions

Event (*Self-test type*)	Unit name	Trouble Signal	Procedure/remark	Verdict
Local self- test pass	NV75MW	No	No PIR short (BDT)	**Pass**
Local self-test fail	NV75MW	Yes	PIR short, Trouble Signal	**Pass**

Reference numbers of test equipment used:

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**Air flow immunity test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.6.1 Immunity to air flow		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.4 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

7.4 Air flow immunity test procedure and results

7.4.1 Test purpose

To prove the detector capability not to generate false alarm signals when exposed to a heated airflow stream in front of the detector.

7.4.2 Test procedure

7.4.2.1 The detector was installed on its support at a distance of 1 m from the air source (variable speed fans) at a height of 1 m as presented in Photograph 7.4.1 and 7.4.2.

7.4.2.2 A thermocouple was mounted next to the detector window to monitor and assure that the air temperature in front of the detector reached 20 °C more than the ambient temperature.

7.4.2.3 The airflow speed was adjusted such as the ascending air speed at the detector window was 0.7 m/s.

7.4.2.4 The detector was set in the alarm mode. A BDT was performed in order to prove the detector ability to detect, and then the detector was rearmed.

7.4.2.5 The air temperature was increased from the ambient by 5°C/min to 20 °C more than the ambient temperature, within about 4 min.

7.4.2.6 The air temperature was stabilized and dwelled at 20 °C more than the ambient temperature for 4 min.

7.4.2.7 The heat was switched off and the temperature allowed to ramp down for 2-3 min, the ambient temperature was reached. This ambient temperature was maintained for 2 min.

7.4.2.8 Steps 5 to 7 were 4 times repeated while recording any false alarm. Test conditions are presented in Table 7.4.2.

7.4.2.9 The results were documented as presented in Table 7.4.1.

7.4.3 Test results

Table 7.4.1 Test results

Observation	Verdict
No false alarm noticed.	**Pass**

Reference numbers of test equipment used:

HL 2774	HL 3460	HL 1420	HL 3628	HL 1594

Full description is given in Appendix A.

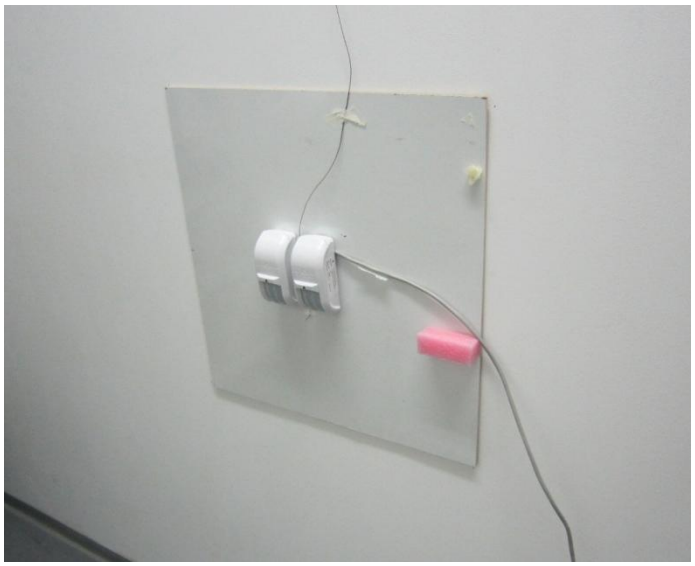
Test specification:	**Air flow immunity test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.6.1 Immunity to air flow		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.4 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

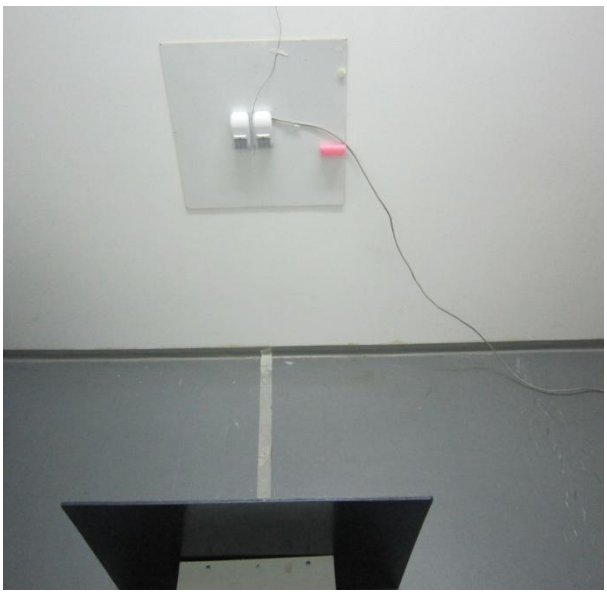
Table 7.4.2 Test conditions

EUT name	**Distance Fan- detector [m]**	**Air Temperature at detector window [°C]**	**Air speed at detector window [m/s]**
NV75MR NV75MW	1	42 to 43	0.65 to 0.75
1 Cycle conditions	2 min ambient, 4-5 min from ambient to 43°C, 4 min 43°C, 3-4 min return to ambient, Air speed constant 0.7 m/s (measured before and after test, detector status Armed)		
Settings/Remarks	High sensitivity, Single Edge, PET off, Creep on BDT passed before and after test No false alarm		

Note: For NV75MW provided special setup for PIR detection (MW disabled).

Photograph 7.4.1, 7.4.2 Setup general view





Test specification:	**Immunity to microwave signal interference by fluorescent lights test procedure and results**		
Test procedure:	EN 50131-2-4 TEST METHOD: 6.6.3 Immunity to microwave signal interference by fluorescent lights test procedure and results		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.6 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

7.5 Immunity to microwave signal interference by fluorescent lights test procedure and results

7.5.1 Test purpose

To prove the detector MW module ability to normally function in the vicinity of fluorescent light source without generating false alarms

7.5.2 Test procedure

7.5.2.1 The detector was installed on its support.

7.5.2.2 One 1.20m x 25 mm diameter 36/40 W fluorescent tube between 100 and 1000 hours usage having no metal reflectors or extraneous decoration was mounted on the ceiling 0.5m above, 2.0 m in front of and parallel with the detector axis.

7.5.2.3 The detector was set in the alarm mode and the room light was switched off.

7.5.2.4 The light was switched on for 60s and off for 30s while monitoring MW module (the yellow led) for false signals.

7.5.2.5 The switching on/off steps from was repeated four (4) times.

7.5.2.6 The steps above were repeated with the fluorescent tube rotated through 90^0 relative to detector axis.

7.5.2.7 The results were documented in Table 7.5.1.

7.5.3 Test results

Table 7.5.1Test results

Observation	Verdict
No false alarm or intrusion signals noticed.	**Pass**

Reference numbers of test equipment used:

HL 2774	HL 3629	HL 3460	HL 4882

Full description is given in Appendix A.

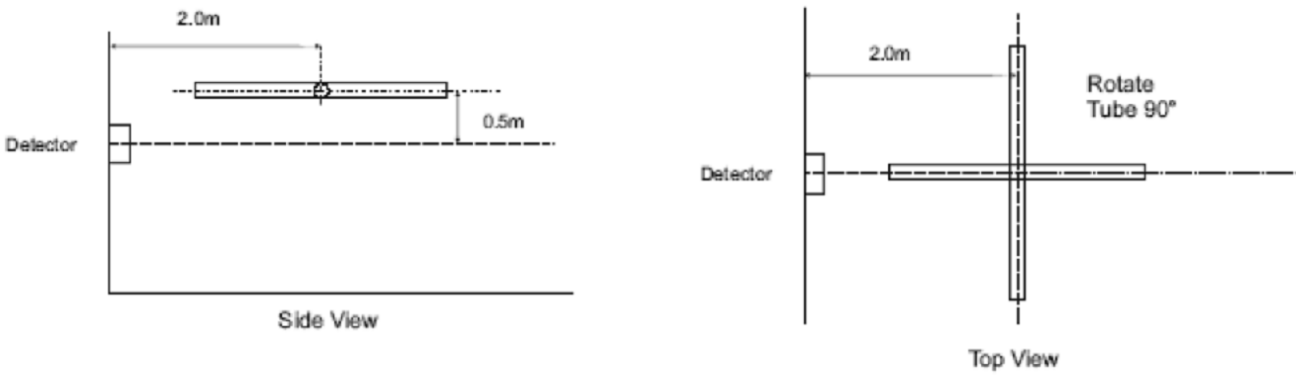
Test specification:	**Immunity to microwave signal interference by fluorescent lights test procedure and results**		
Test procedure:	EN 50131-2-4 TEST METHOD: 6.6.3 Immunity to microwave signal interference by fluorescent lights test procedure and results		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.6 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

Table 7.5.2 Test conditions

EUT name	Verdict	Distance Light source-position [m]	Fluorescent tube position relatively to detector axis	Test conditions/(events)
NV75MW	**Pass**	2m in front of detector 0.5m vertical distance above tube	Parallel	High sensitivity for PIR and MW. 1 Fluorescent tube 1.5m x 25 mm (Length x Diameter) 36W Daylight Light on 60s (no alarm) Light off 30s (no alarm) Repeated 5 times
			Perpendicular	

Note: Special setup for MW detection (PIR disabled) was provided by the client.

Diagram 7.5.1 Setup Sketch



Test specification:	**Immunity to visible and near infrared radiation test procedure and results**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.6.2 Immunity to visible and near infrared radiation test procedure and results		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.6 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

7.6 Immunity to visible and near infrared radiation test procedure and results

7.6.1 Test purpose

To prove the detector capability not to generate false alarm signals when exposed to visible and near infrared radiation.

7.6.2 Test procedure

7.6.2.1 The detector was installed on its support at a distance from the light source such as the illuminance measured with the calibrated light meter at the detector window was 2000 lux.

7.6.2.2 The light from the source was fallen on the detector through two clean 4 mm thick panes of glass, separated by 10 mm air gap. The test setup is presented in Photographs 7.6.1 and.

7.6.2.3 The detector was set in alarm mode, the room light was switched off and the halogen lamp was switched on.

7.6.2.4 The light source was scanned about a vertical axis such that the emitted light crossed the combined detector at a rate of about 0.5 m/s and cleared the other edge of the detector housing. Test conditions are presented in Table 7.6.2.

7.6.2.5 A total of 10 scans were performed across the detector. The detector was monitored for false alarms and the results recorded in Table 7.6.1.

7.6.3 Test results

Table 7.6.1 Test results

Observation	Verdict
No false alarm noticed.	**Pass**

Reference numbers of test equipment used:

HL 2774	HL 3460	HL 3651	HL 2985	HL 2936	HL 2178

Full description is given in Appendix A.

Test specification:	**Immunity to visible and near infrared radiation test procedure and results**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.6.2 Immunity to visible and near infrared radiation test procedure and results		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.6 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

Table 7.6.2 Test conditions

EUT name	**Light intensity** **[lx]**	**Distance** **Light source-detector** **[m]**
NV75MR NV75MW	2000	4.7
Settings/Remarks	PIR Sensitivity: High, Single Edge, PET off, Creep on	

Note: For NV75MW provided special setup for PIR detection (MW disabled).

Photograph 7.6.1 Setup general view



Test specification:	**Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.7.1 Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.8 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46%
Remarks:			

7.7 Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes test procedure and results

7.7.1 Test purpose

To prove that it is impossible to have access inside the detector using some common objects like presented in Table 7.7.2, and if the access is attained, a tamper signal is generated.

7.7.2 Test procedure

7.7.2.1 The detector was mounted on the wood plate using the mounting screws specified by the manufacturer.

7.7.2.2 Attempts to gain access to the detector internal components were made in order to prove that the internal tamper cannot be deactivated without a tamper signal generation. Test conditions are presented in Table 7.7.2.

7.7.2.3 The results were documented as presented in Table 7.7.1.

7.7.3 Test results

Table 7.7.1 Test results

Observation	Verdict
A tool (screwdriver) is required for normal access inside the detectors. When opening the detector by use of this tool, a tamper signal is generated. It's possible to gain access inside the detector cover without generating a tamper signal or message or causing visible damage, attained using the steel probe. <u>For models NV75MR and NV75MW:</u> By access inside the detector upper cover, it's not possible to gain further access to detector's components (the components are protected by supplementary internal cover, see Photograph 7.7.2 and 7.7.3) By access inside the detector upper cover, it's possible to gain access to DIP switch and sensitivity potentiometer, but in case changes are made, these changes are activated only by intentionally activating the tamper switch (i.e. by installer). <u>Conclusion:</u> No option to gain access to any components, means of adjustment and mounting screws, which, when interfered with, could adversely affect the operation of the detector, without generating a tamper signal or message or causing visible damage.	**Pass**

Reference numbers of test equipment used:

HL 2774	HL 3460	HL 4548	HL 2043

Full description is given in Appendix A.

Test specification:	**Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.7.1 Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.8 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46%
Remarks:			

Table 7.7.2 Test conditions

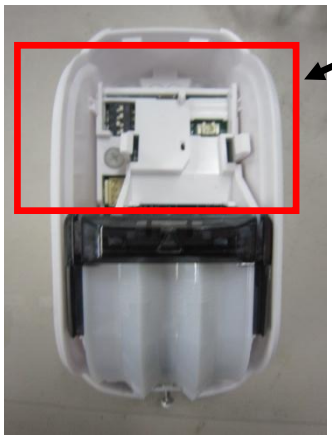
EUT	Object	Dimensions
NV75MR NV75MW	Penknife	-
	Wire Probe	Thickness 1mm
	Screw driver	4x1mm Thickness
	Paper	-
	Steel probe	100 x 7 x 1mm
	Matches	-

Note: Tested for both detectors NV75MR and NV75MW

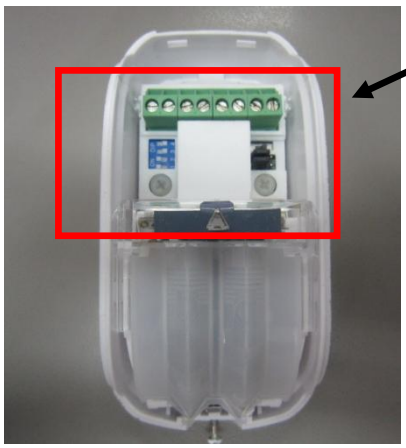
Photograph 7.7.1, 7.7.2, 7.7.3 Setup general view



NV75MR



NV75MW



Test specification:	**Detection of removal from the mounting surface test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.7.2 Detection of removal from the mounting surface		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/6/2016		
Atmospheric conditions during the test:	**Temperature:** 24.1 ºC	**Air Pressure:** 1003hPa	**Relative Humidity:** 40%
Remarks:			

7.8 Detection of removal from the mounting surface test procedure and results

7.8.1 Test purpose

To prove the detector ability to generate a tamper signal when without opening it, the detector is removed from the mounting surface.

7.8.2 Test procedure

7.8.2.1 The detector was placed on the mounting position using only the back tamper device screw.

7.8.2.2 The detector was switched on and slowly raised from the surface while attempting to reach and neutralize the back tamper with a steel strip before the tamper is activated.

7.8.2.3 The results were documented as presented in Table 7.8.1.

7.8.3 Test results

Table 7.8.1 Test results

Observation	Verdict
The back tamper signal recorded before access could be gained to it, see Table 7.8.2.	**Pass**

Reference numbers of test equipment used

HL 2774	HL 3460	HL 1814

Full description is given in Appendix A.

Table 7.8.2 Test conditions

EUT	Steel Strip dimensions length x width x thickness [mm]	Observation	Verdict
NV75MR NV75MW	300 x 10 x 1	The back tamper device activated before access could be gained to it using a strip of steel 1 mm thick, 10 mm wide.	**Pass**

Note: Tested for both detectors NV75MR and NV75MW.
Not tested for bracket installation: When detectors are installed with bracket, Security Grade of the detectors is reduced to Grade 2 and the present test is not applicable for Grade 2.

Test specification:	**Resistance to reorientation test**		
Test procedure:	TEST SPECIFICATION: EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.7.3 Resistance to reorientation		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	6/7/2016		
Atmospheric conditions during the test:	**Temperature:** 23.6 ºC	**Air Pressure:** 1004hPa	**Relative Humidity:** 51 %
Remarks:			

7.9 Resistance to reorientation test procedure and results

7.9.1 Test purpose

To prove the detector resistance to attempts to re orientate it when is mounted using adjustable bracket.

7.9.2 Test procedure

7.9.2.1 The detector was mounted per user guide instructions

7.9.2.2 The detector was switched on and a torque of 2 Nm (according to Security Grade 2 classification) was applied.

7.9.2.3 The angle of detector rotation was checked not to be more than 5°, also if a tamper signal generation was noticed. The test results are presented in Table 7.9.1.

7.9.3 Test results

Table 7.9.1 Test results

EUT	Applied moment [Nm]	Angle of reorientation point [°]	Remarks
NV75MR NV75MW	2	<5	For NV75MW - When detector installed with bracket, Security Grade of the detector reduce to Grade 2.

Observation	Verdict
Reorientation angle, less than 5°. No tamper signal.	**Pass**

Note: Tested for both detectors NV75MR and NV75MW.

Reference numbers of test equipment used:

HL 2774	HL 3460	HL 3862	HL 3846	HL 3124	HL 3822

Full description is given in Appendix A.

Test specification:	**Immunity to magnetic field interference test procedure and results**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.7.4 Immunity to magnetic field interference test procedure and results		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.6 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

7.10 Immunity to magnetic field interference test procedure and results

7.10.1 Test purpose

To prove the detector ability to withstand the magnetic field interference without any degradation of intrusion or tampering detection.

7.10.2 Test procedure

7.10.2.1 The detector was mounted in its operating configuration as specified by the manufacturer.

7.10.2.2 180 seconds were allowed after switching on the detector.

7.10.2.3 A single pole of the standard magnet was placed on each accessible surface of the detector.

7.10.2.4 The correct generation of alarm, tamper and fault signals was verified. Test conditions are presented in Table 7.10.2.

7.10.2.5 The test was repeated for the other magnet pole.

7.10.2.6 The results were documented as presented in Table 7.10.1.

7.10.3 Test results

Table 7.10.1 Test results

Observation	Verdict
No influence of the magnetic field interferences with the normal detector functioning as regarding tamper and detection (BDT) was noticed.	**Pass**

Reference numbers of test equipment used:

HL 2774	HL 3460	HL 3662	HL 3665

Full description is given in Appendix A.

Table 7.10.2 Test conditions

EUT	MAGNET CHARACTERISTICS	Detector face # and description	Event	Verdict
NV75MR	Type 1 (1.12 T) for Grade 2	On any accessible detector's surface (2 magnet poles)	No tamper or intrusion detection inhibition (BDT passed)	**Pass**
NV75MW	Type 2 (1.24 T) for Grade 3			**Pass**

Test specification:	Detection of detector masking test procedure and results		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.7.5 Detection of detector masking test procedure and results		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.6 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

7.11 Detection of detector masking test procedure and results

7.11.1 Test purpose

When security grade classification is more than Grade 2, to check the detector ability to generate a fault signal when different materials obstruct the detector window

7.11.2 Test procedure

7.11.2.1 The detector was mounted in its operating configuration and switched on.

7.11.2.2 The different materials were applied at the detector window with the speed and distance as presented in Table 7.11.2.

7.11.2.3 The fault signal generation within the timing from standard and stated in manufacturer manual was checked.

7.11.2.4 The results were documented as presented in Table 7.11.1.

7.11.3 Test results

Table 7.11.1 Test results

Observation	Verdict
For each different material appliance as presented in Table 7.11.2, the detector generated a masking signal (orange LED constant on) within the required standard and customer specified timing. Once a masking signal is generated a fault massage in CP are presented, accordingly to standard requirements. The LED remained on as long as the masking material was present. To restore MASK signaling, masking material was removed and BDT performed.	**Pass**

Reference numbers of test equipment used:

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	Detection of detector masking test procedure and results		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.7.5 Detection of detector masking test procedure and results		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.6 ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46 %
Remarks:			

Table 7.11.2 Test conditions

EUT name	Material	Verdict	Procedure/Remarks
NV75MW	Matt black paper sheet	**Pass**	Distance= 0 mm First slid within 1 s, second slid within 10 s Distance= 50 mm First slid within 1 s, second slid within 10 s *Applied from front Masking signal indicated by orange LED constant on, was recorded in less than 1 min. The masking signal is removed by BDT performed and passed after test
	2 mm thick aluminum sheet	**Pass**	
	3 mm Thick clear gloss acrylic sheet	**Pass**	
	White polystyrene foam sheet	**Pass**	
	Self-adhesive clear vinyl sheet	**Pass**	
	Spray polyurethane	**Pass**	
	Clear gloss lacquer, brush applied	**Pass**	

Test specification:	**Immunity to false masking signal test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD: 6.7.6 Immunity to false masking signal		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/7/2016		
Atmospheric conditions during the test:	**Temperature:** 23.5 ºC	**Air Pressure:** 1003hPa	**Relative Humidity:** 46 %
Remarks:			

7.12 Immunity to false masking signal test procedure and results

7.12.1 Test purpose

When security grade classification is more than Grade 2, to check the detector immunity to false masking signals when SWT walk across the detector

7.12.2 Test procedure

7.12.2.1 The detector was mounted in its operating configuration and switched on.

7.12.2.2 Immunity to false masking signals was checked by performing a SWT at 1 m distance in front of detector with SWT speed of 1 m/s as required by EN50131-2-4 in section 6.7.6.

7.12.2.3 The results were documented as presented in Table 7.12.1.

7.12.3 Test results

Table 7.12.1 Test results

Observation	Verdict
Following the SWT walk test at 1 m/s, 1m in front of detector (transversal) the EUTs proved immune to false masking signals.	**Pass**

Note: Tested for detector NV75MW.

Reference numbers of test equipment used:

HL 2774	HL 3460	HL 2948

Full description is given in Appendix A.

Test specification:	**Labels and documentation test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD:6.10 Labels and documentation		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.8ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46%
Remarks:			

7.13 Labels and documentation test procedure and results

7.13.1 Test purpose

To check and confirm that the customer user manual and labels are in accordance with EN 50131-1 and EN 50131-2-2 requirements

7.13.2 Test procedure

7.13.2.1 The available last version of the user manual was read and compared with the product characteristics and standard requirements as summarized in Table 7.13.2.

7.13.2.2 The results were documented as presented in Table 7.13.1.

7.13.3 Test results

Table 7.13.1 Test results

Observation	Verdict
Labels and documentation requirements fulfilled.	**Pass**

Test specification:	**Labels and documentation test**		
Test procedure:	EN 50131-2-2, EN 50131-2-4 TEST METHOD:6.10 Labels and documentation		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	8/2/17		
Atmospheric conditions during the test:	**Temperature:** 23.8ºC	**Air Pressure:** 1010hPa	**Relative Humidity:** 46%
Remarks:			

Table 7.13.2 Marking and documentation requirements

EUTs: NV75MR and NV75MW		**Documents - NV75MR-EI00_1.pdf and NV75MW-EI00-1.pdf**				
Standard/ Section	**Requirement**	**Verdict**				**Remark**
		C	**NC**	**NA**	**NT**	
EN 50131-2-2/ 5.1, 5.2 EN 50131-2-4/ 5.1 EN 50131-1/ 15 Marking/ Identification Labeling	Name of manufacturer	✓				See Photographs 5.1.12 and 5.1.13
	Type	✓				
	Date of manufacture batch # or serial#	✓				
	Security grade	✓				
	Environmental class	✓				
EN 50131-2-2/ 5.2 EN 50131-2-4/ 5.2 EN 50131-1/ 14.2 Documentation	A list of all options, Functions, inputs or messages, indication and relevant characteristics	✓				
	The manufacturer diagram of the detector, top elevation superimposed upon a scaled 2m squared grid of 0.5m resolution	✓				
	Recommended mounting height	✓				
	Effect of adjustable controls on the claimed detection boundary	✓				
	Any disallowed field adjustable control settings			✓		
	Label of alignments adjustments	✓				
	Warning to the customer not to block detector field of view	✓				
	Manufacturer quoted nominal operating voltage and maximum quiescent power consumption at that voltage	✓				
	Name of manufacturer	✓				
	Description of equipment	✓				
	Clear and concise documentation	✓				
	Standard to which component claims compliance	✓				
	Name or mark of the certification body			✓		
	Security grade	✓				
	Environmental class	✓				

C=compliant; NC= non-compliant; NA = not applicable; NT= not tested

8 APPENDIX A Test equipment and ancillaries used for tests

HL No	Description	Manufacturer	Model	Ser. No.	Due Cal./Check
2774	HygroThermometer, Min/Max Memory	Delta TRAK	13301	NA	19-Jun-17
3460	Precision Barometer, 870 - 1050 hPa	LUFFT Mess- und Regeltechnik GmbH	DKD-K-26701	100469	31-May-18
3214	Precision Infrared Thermometer	Fluke	Fluke-574	9394-014	13-Feb-18
2948	Metronome, (40-208) beat/min.	Wittner Gmbh	MS-1	2948	23-Aug-17
3716	Orientation Device, per. STD EN50131-2-2, EN50131-2-4	Hermon Laboratories	ODHL45	NA	02-Jun-17
4882	Digital Stopwatch	Bash-gal	Chronograph 1/100	NA	23-Aug-17
1420	Digital Thermo Anemometer	Dwyer Instruments	471	NA	19-Jun-17
3628	Hot air blower	Hermon Laboratories	BL-1	NA	21-Mar-17
1594	Data Logger Hydra Series II	Fluke	2635A	7710004	16-Jan-19
3651	Halogen lamp 12V VW H4 bulb	Hermon Laboratories	VW H4 (bulb)	001	31-Jan-18
2985	Glass panes support 0.5x0.5 m 2 glass panes of 4 mm, 10 mm air gap	Hermon Laboratories	GP500	2985	18-Sep-17
2936	Easy View Digital Light Meter	EXTECH INSTRUMENTS	EA30	050206405	18-Dec-17
2178	Digital Programmable Power Supply 80V/75A, DC	Xantrex	XDC 80-75	76235	27-Feb-18
4548	Tamper test tool set. EN50131-3:2009 STD	Hermon Laboratories	TTT-1	NA	18-Dec-17
2043	Test Wire 1mm / 100 mm, CEI / 60529 clause 12	Hermon Laboratories	IP 1(4)	2043	15-Nov-18
1814	Caliper, 150 mm	Mitutoyo	150	367	02-Jun-17
3862	Jaw Device, STD EN50131-2-2, EN50131-2-4 (procedure 6.7.3)	Hermon Laboratories	J-HL	NA	05-Dec-17
3846	Digital Protractor	Gain Express Holdings Ltd.	9017	NA	05-Jun-18
3124	Digital Force Gauges, Capacity 50.00 kg, Resolution 0.01 kg	SHIMPO	FGC-50B	G9506F004	06-Nov-17
3822	Tape-measure, 3 m	The Stanley works Israel Ltd	33-218	NA	29-Dec-17
3665	Magnet Test Set, N38 NdFeB Block Magnet 10*15*36 mm Ni Plated	Magnet & Sales	NIBL	A3-19777-1	14-Feb-17

9 APPENDIX B Test laboratory description

Testing laboratory and location	Tests were performed at Hermon Laboratories, which is a fully independent, private safety, EMC, telecommunication and environmental testing facility. Hermon Laboratories is accredited by American Association for Laboratory Accreditation (A2LA, USA) according to ISO GUIDE 17025 (certificate No. 839.01) and accredited as CBTL under responsibility of SII. The safety/Security laboratory has gained numerous certifications and accreditations from National Certification Bodies including UL, ETL, TUV, MET, SII, Telefication and others, and provides solution for global safety certification in various product categories. Address: P.O. Box 23, Binyamina 30500, Israel. Telephone: +972 4628 8001 Fax: +972 4628 8277 e-mail: mail@hermonlabs.com website: www.hermonlabs.com Person for contact: Michael Brun, Product Safety Group Manager.

10 APPENDIX C Abbreviations and acronyms

°C	degree Celsius
cm	centimeter
dB	decibel
EUT	equipment under test
g_n	acceleration due to gravity
HL	Hermon Laboratories
hPa	hectopascal
Hz	Hertz
kg	kilogram
m	meter
min	minute
ms	millisecond
oct	octave
pH	acidity scale
RMS	root mean square
RH	relative humidity
s	second

11 APPENDIX D Tests specifications

1.	EN 50131-1:2006+A1:2009	Alarm systems- Intrusion and hold-up systems Part 1: System requirements
2.	EN 50131-2-2 February, 2008	Alarm systems-Intrusion and hold-up systems Part 2-2: Intrusion detectors – Passive infrared detectors
3.	EN 50131-2-4 February, 2008	Alarm systems-Intrusion and hold-up systems Part 2-4: Requirements for combined passive infrared and microwave detectors

12 APPENDIX E Measurement uncertainties

Parameter	Uncertainty estimation at 95% confidence	
	Calculated	Limit
Air pressure	± 0.8 mBar	± 4.1 mBar
High temperature	± 1.2°C	± 2°C
Humidity	± 2.86 %	± 5.0 %
Air velocity	5 %	10 %
Distances measurement	± 1.3%	± 10%
Impact energy measurement	± 6.1%	± 10%
Illuminance	± 5.6%	± 10%

END OF TEST REPORT