

# TEST REPORT

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

**FOR:**  
**Paradox Security Systems Ltd.**

**EUT:**  
**Passive Infrared (PIR) motion Detector**

**Model:**  
**1) NV75M**  
**2) NV75MX**

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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
NV75M	575-4004-991	V1.0
NV75MX	575-4004-991	V1.0

**Condition of the equipment** Test samples

**Receipt date** 5-Jun-16

## 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:** 28194  
**Location:** Hermon Laboratories Ltd. Harakevet Industrial Zone, Binyamina 30500, Israel  
**Test started:** 6-Jun-16  
**Test completed:** 17-Jul-16  
**Test specification(s):** EN 50131-2-2:2008, EN 50131-1:2006+A1:2009

## 5 EUT description

### 5.1 General information

The EUTs are 16 meter motion PIR detectors with Anti-Mask and Pet immunity technology for indoor use. The both detectors are security Grade 3, environmental Class II, fixed alarm system components. The detectors have options to be installed on wall bracket, way that reduces the detector's security Grade to Grade 2.

NV75M and NV75MX are wired detectors that powered by 9-16VDC from control panel. They provide the same features and layout but different by connection and configuration mode:  
1) NV75M - Relay mode, where configuration done locally by dip switches.  
2) NV75MX - Digiplex mode, where configuration done remotely by bus connection through keypad.

The EUTs are presented in Photographs 5.1.1 to 5.1.12

**Table 5.1.1 Models description**

#	Model	Description	Remark
1	NV75M	Wired PIR detector Environmental Class II Security Grade:	See Photographs 5.1.1 to 5.1.12
2	NV75MX	Grade 3 when mounting without bracket Grade 2 for bracket mounting option	

**Photograph 5.1.1, 5.1.2 - NV75M and NV75MX Front View**



**Photograph 5.1.3 - NV75M and NV75MX Rear View**



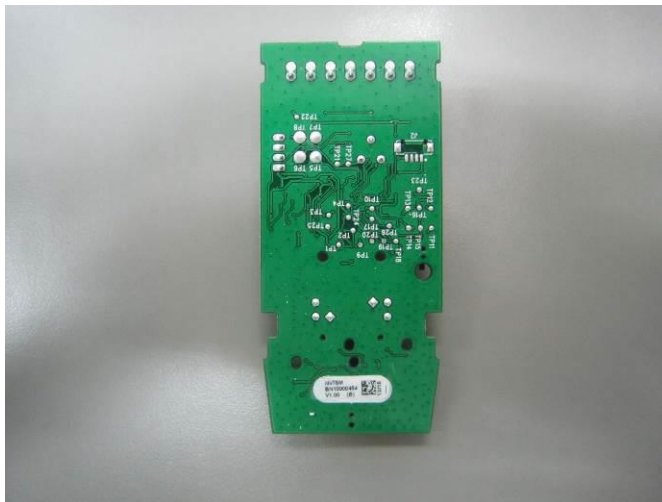
**Photograph 5.1.4 - NV75M and NV75MX bracket mounting View**



Photograph 5.1.5, 5.1.6 - NV75M Internal View



Photograph 5.1.7, 5.1.8 - NV75M PCB View

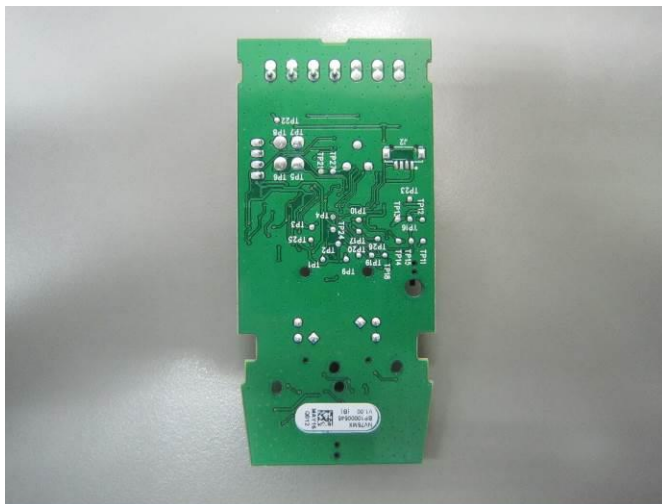


Photograph 5.1.9, 5.1.10 - NV75MX Internal View





Photograph 5.1.11, 5.1.12 - NV75MX PCB View



Photograph 5.1.13, 5.1.14 - EUTs labels

1) NV75M



2) NV75MX



## 5.2 EUT acceptance criteria

Wherever specified by the EN50131-2-2 standard, 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 standard requirements.

## 5.3 EUT visual inspection and functional check

Whenever specified by EN50131-2-2 Standard 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.

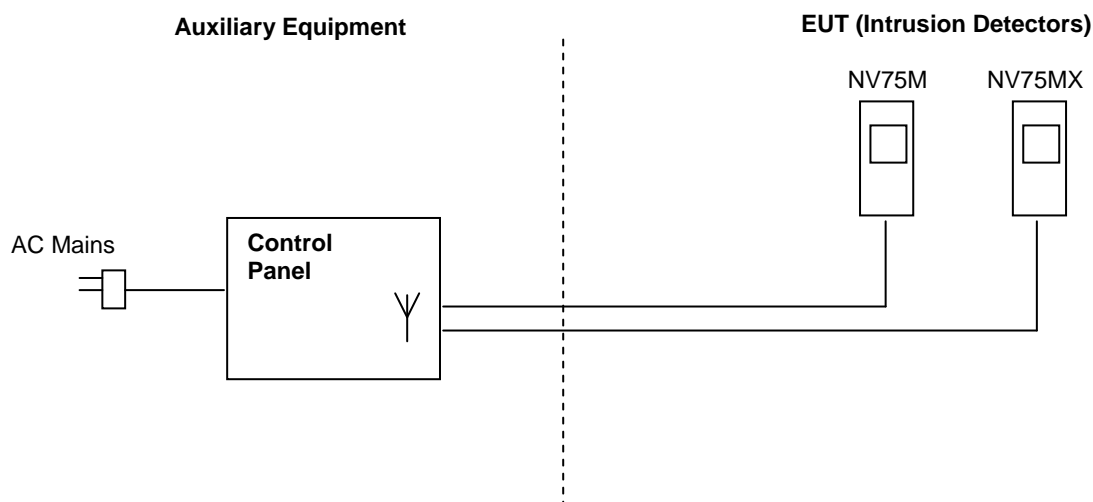
PIR set on high sensitivity:

Detection range 16m, 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
<b>EN50131-2-2</b>	
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 6.7.1, 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	Note 1
Section 6.9, Environmental classification and conditions	Note 2
Section 6.10, Labels and documentation test	Pass

Note 1: See separate report: PAREMC\_EN.28194\_EN50131-2-2

Note 2: See separate report: PARENV\_EN.28194

The EUTs were tested according to EN50131-2-2:2008 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
July 17, 2016	PARIAS_EN 50131-2-2.28194	Mr. Ilan Benihass, Certification Engineer 	Mr. Mihaeli Feldmann, Environmental Group Manager 	Mr. Michael Freilicher, 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	
NV75M		EN 50131-2-2				3	
NV75MX		EN 50131-2-2				3	

I. EN 50131-2-2 reference		Result				Remarks and/or document reference
Section	Requirement	C	NC	NA	NT	
<b>4</b>	<b>Functional Requirements</b>					
<b>4.1</b>	<b>Event Processing</b>	✓				
<b>4.2</b>	<b>Detection</b>					
<b>4.2.1</b>	Detection performance	✓				See 6.3.3 below
<b>4.2.2</b>	Indication of detection	✓				Intrusion indicator provided. NV75M = indicator can be locally enabled or disabled by DIP SWITCH and remotely by access level 2 at control panel. NV75MX = indicator can be remotely enabled or disabled by access level 2 at control panel.
<b>4.2.3</b>	Significant reduction of range			✓		Only for Grade 4 detectors
<b>4.3</b>	<b>Operational requirements</b>					
<b>4.3.1</b>	Time interval between intrusion signals or messages	✓				See 6.4 below
<b>4.3.2</b>	Switch on delay	✓				See 6.4 below
<b>4.3.3</b>	Self-tests	✓				See 6.5 below
<b>4.3.3.1</b>	Local self-test	✓				The self-test check starts at detector's warm-up and then each 24 hours.
<b>4.3.3.2</b>	Remote self-test			✓		Only for Grade 4 detectors
<b>4.4</b>	<b>Immunity to incorrect operation</b>					
<b>4.4.1</b>	Immunity to air flow	✓				See 6.6.1 below
<b>4.4.2</b>	Immunity to visible and near infrared radiation	✓				See 6.6.2 below
<b>4.5</b>	<b>Tamper security</b>					
<b>4.5.1</b>	Resistance to and detection of unauthorized access to components and means of adjustment	✓				See 6.7.1 below
<b>4.5.2</b>	Detection of removal from the mounting surface	✓				See 6.7.2 below
<b>4.5.3</b>	Resistance to, or detection of, re-orientation	✓				See 6.7.3 below
<b>4.5.4</b>	Immunity to magnetic field interference	✓				See 6.7.4 below
<b>4.5.5</b>	Detection of masking	✓				See 6.7.5 below
<b>4.6</b>	<b>Electrical requirements</b>					
<b>4.6.1</b>	Detector current consumption	✓				See 6.8 below

I. EN 50131-2-2 reference		Result				Remarks and/or document reference
Section	Requirement	C	NC	NA	NT	
4.6.2	Slow input voltage change and voltage range limits	✓				
4.6.3	Input voltage ripple	✓				
4.6.4	Input voltage step change	✓				
4.7	<b>Environmental classification and conditions</b>					
4.7.1	Environmental classification	✓				See 6.9 below
4.7.2	Immunity to environmental conditions	✓				See 6.9 below
5	<b>Marking, identification and documentation</b>					
5.1	Marking and/or identification	✓				See 6.10 below
5.2	Documentation	✓				See 6.10 below
6	<b>Testing</b>					
6.1	<b>General test conditions</b>					Temperature: 15 - 35 °C; Relative humidity: 25 - 75%; Air pressure: 86 - 106kPa.
6.2	<b>Basic detection test (BDT)</b>					Close-in walk test performed as required for each individual test
6.3	<b>Walk testing</b>					SWT characteristics: 1.78m , 73 Kg, for SWT temperature differential see Chapter 7.1
6.3.3	<b>Detection across and within the detection boundary</b>					
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-test	✓				See Chapter 7.3
6.6	<b>Immunity to incorrect operation</b>					
6.6.1	Immunity to air flow	✓				See Chapter 7.4
6.6.2	Immunity to visible and near infrared radiation	✓				See Chapter 7.5
6.7	<b>Tamper security</b>					
6.7.1	Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes	✓				See Chapter 7.6
6.7.2	Detection of removal from the mounting surface	✓				See Chapter 7.7
6.7.3	Resistance to or detection of re-orientation of adjustable mountings	✓				See Chapter 7.8
6.7.4	Immunity to magnetic field interference	✓				See Chapter 7.9
6.7.5	Detection of detector masking	✓				See Chapter 7.10
6.7.6	Immunity to false masking signals	✓				See Chapter 7.11

I. EN 50131-2-2 reference		Result				Remarks and/or document reference
Section	Requirement	C	NC	NA	NT	
<b>6.8</b>	<b>Electrical tests</b>					
<b>6.8.1</b>	Detector current consumption	✓				Wired detectors. See separate HL TR: PAREMC_EN.28194_EN50131-2-2
<b>6.8.2</b>	Slow input voltage change and voltage range limits	✓				
<b>6.8.3</b>	Input voltage ripple	✓				
<b>6.8.4</b>	Input voltage step change	✓				
<b>6.8.5</b>	Total loss of supply	✓				
<b>6.9</b>	<b>Environmental tests operational</b>					
	Dry Heat	✓				See separate HL TR: PARENV_EN.28194
	Cold	✓				
	Damp heat (steady state)			✓		
	Damp Heat (cyclic)	✓				
	Water Ingress			✓		
	Mechanical Shock	✓				
	Vibration	✓				
	Impact	✓				
	EMC	✓				See separate HL TR: PAREMC_EN.28251
	<b>Environmental tests endurance</b>					
	Damp heat (steady state)	✓				See separate HL TR: PARENV_EN.28194
	Damp Heat (cyclic)			✓		
	SO <sub>2</sub> Corrosion					See Separate Report
	Vibration	✓				See separate HL TR: PARENV_EN.28194
<b>6.10</b>	<b>Marking, identification and documentation</b>					
<b>6.10.1</b>	Marking and/or identification	✓				See Chapter 7.12
<b>6.10.2</b>	Documentation	✓				

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

Table 7.2 - EN50131-1 Compliance General Matrix

II. EN 50131-1 reference		Result				Remarks and/or document reference
Section	Requirement	C	NC	NA	NT	
4	System functions			✓		Security <b>Grade 3</b> , Environmental <b>Class II</b>
5	System components	✓				
6	Security grading	✓				
7	Environmental Classification	✓				
8	<b>Functional requirements</b>					
8.1	<b>Detection of intruders, triggering, tampering and the recognition of faults</b>					
8.1.1	Intruder detection	✓				See Stable 7.1 above
8.1.2	Hold-up device-triggering			✓		
8.1.3	Tamper Detection	✓				
8.1.4	Recognition of faults	✓				
8.2	<b>Other Functions</b>					
8.2.1	Masking	✓				See Stable 7.1 above
8.2.2	Movement detector range reduction			✓		For Grade 4 detectors
8.3	<b>Operation</b>					
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	<b>Processing</b>					
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	<b>Indications</b>					
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			✓		

II. EN 50131-1 reference		Result				Remarks and/or document reference
Section	Requirement	C	NC	NA	NT	
8.6	Notification			✓		Not applicable for detectors
8.7	<b>Tamper Security</b>					
8.7.1	Tamper protection	✓				See Table 7.1 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	<b>Interconnections</b>					
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	<b>I&amp;HAS timing performance</b>					
8.9.1	Intruder detection, tampering and recognition of faults			✓		Not applicable for detectors
8.9.2	Processing			✓		
8.10	Event Recording			✓		
9	<b>Power Supply</b>					
9.1	Types of power supply			✓		Wired detectors, no dedicated power supplies
9.2	Requirements			✓		
10	<b>Operational reliability</b>					
10.1	I&HAS components	✓				
11	<b>Functional reliability</b>	✓				
12	<b>Environmental requirements</b>	✓				See separate HL TR: PARENV_EN.28194
12.1	Electromagnetic compatibility	✓				See separate HL TR: PAREMC_EN.28251
13	<b>Electrical safety</b>				✓	Not tested by HL
14	<b>Documentation</b>	✓				See Chapter 7.12
15	<b>Marking / Identification</b>	✓				

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



<b>Test specification:</b>		<b>Walk test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.3 Walk test	
<b>Test mode:</b>		Compliance	<b>Verdict:</b> PASS
<b>Test Date:</b>		5/7/2016	
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.5 °C	<b>Air Pressure:</b> 1003hPa	<b>Relative Humidity:</b> 46 %
<b>Remarks:</b>			

## 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 laid 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.	<b>Pass</b>

#### Reference numbers of test equipment used:

HL 2774	HL 3460	HL 3214	HL 2948	HL 3716
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Full description is given in Appendix A.



HERMON LABORATORIES

Report ID: PARIAS\_EN 50131-2-2.28194

Date of Issue: 17-Jul-16

<b>Test specification:</b>		<b>Walk test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.3 Walk test	
<b>Test mode:</b>	Compliance	<b>Verdict:</b> PASS	
<b>Test Date:</b>	5/7/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.5 °C	<b>Air Pressure:</b> 1003hPa	<b>Relative Humidity:</b> 46 %
<b>Remarks:</b>			

Table 7.1.2 SWT temperature differential

Body zone	Significance: weighting factor	Body temp [°C]	Body background: temp difference	Dtr.	Average Dtr.
Head	2	27.8	4.3	8.6	3.2
Upper torso side	4	26.1	2.6	10.4	
Hand at body side	4	26.8	3.3	13.2	
Legs at knee	2	27.7	4.2	8.4	
Feet	1	24.6	1.1	1.1	
SUM	13				
The 10 temperature points of the background measurements [°C]	Average [°C]	SWT characteristics	Floor and backgrounds emissivity		
24	23.5	73 kg, 1.78 m	>85%		
24					
22.7					
22.1					
23.4					
24.3					
24					
22.8					
23.8					
23.5					

<b>Test specification:</b>		<b>Walk test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.3 Walk test	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	5/7/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.5 °C	<b>Air Pressure:</b> 1003hPa	<b>Relative Humidity:</b> 46 %
<b>Remarks:</b>			

**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
NV75M	Figure 7.1.1	Pass	5.7.16	Installation height = 2.1 m PIR on high sensitivity, Single Edge, Creep on, PET immunity off
NV75MX	Figure 7.1.1	Pass	5.7.16	

**Table 7.1.4 Detection within the boundary**

SWT speed 0.2 m/s for Grade 3; upright				
Detector Model	Detection pattern and tested points (marked in red)	Verdict	Date	Settings/Remarks
NV75M	Figure 7.1.1	Pass	5.7.16	Installation height = 2.1 m PIR on high sensitivity, Single Edge, Creep on, PET immunity off
NV75MX	Figure 7.1.1	Pass	5.7.16	

**Table 7.1.5 Detection at high velocity**

SWT speed 2.5 m/s for Grade 3; upright				
Detector Model	Detection pattern and tested points	Verdict	Date	Settings/Remarks
NV75M	Figure 7.1.1	Pass	5.7.16	Installation height = 2.1 m PIR on high sensitivity, Single Edge, Creep on, PET immunity off
NV75MX	Figure 7.1.1	Pass	5.7.16	



<b>Test specification:</b>		<b>Walk test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.3 Walk test	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	5/7/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.5 °C	<b>Air Pressure:</b> 1003hPa	<b>Relative Humidity:</b> 46 %
<b>Remarks:</b>			

Table 7.1.6 Close in detection performance

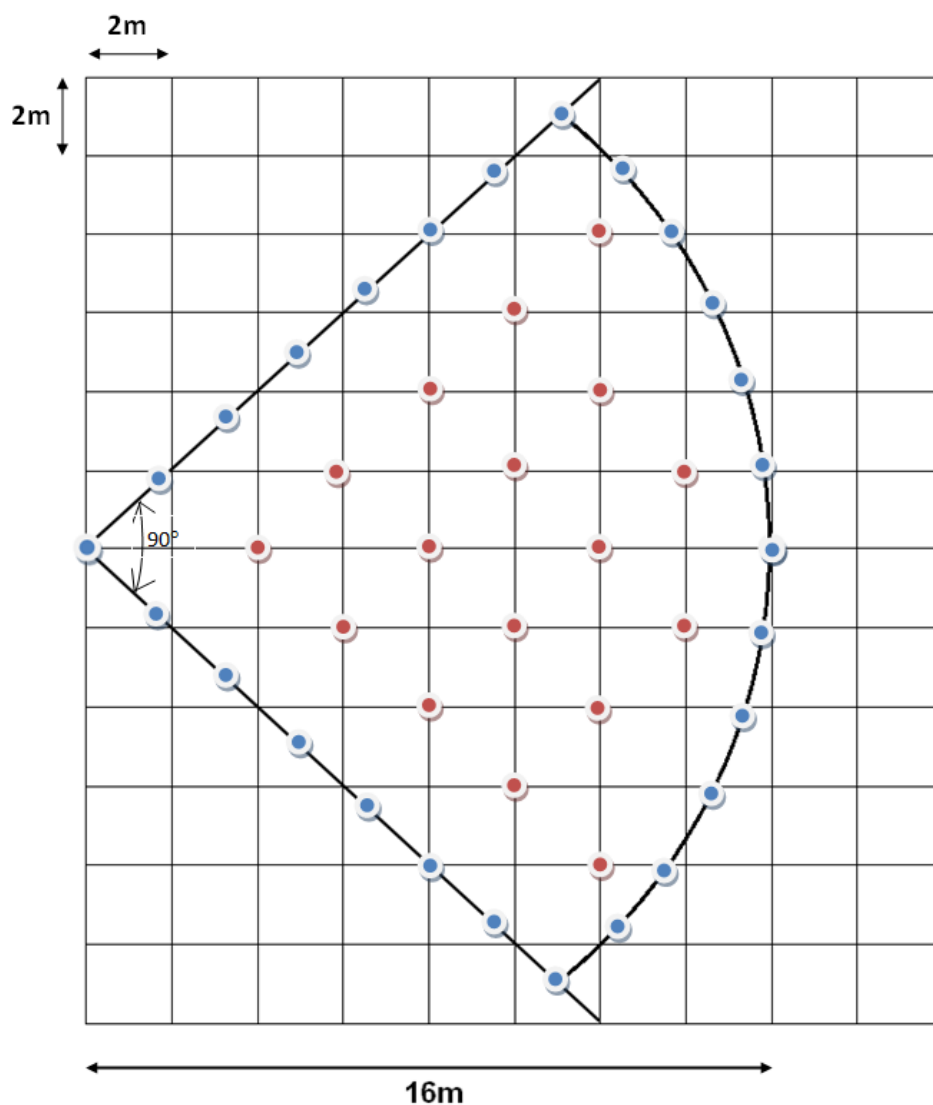
SWT speed 0.3 m/s; crawling; 0.5 m distance for Grade 3 detector				
Detector Model	Detection pattern and tested points	Verdict	Date	Settings/Remarks
NV75M	Figure 7.1.1	Pass	5.7.16	Installation height = 2.1 m PIR on high sensitivity, Single Edge, Creep on, PET immunity off
NV75MX	Figure 7.1.1	Pass	5.7.16	

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
NV75M	Figure 7.1.1	Pass	5.7.16	Installation height = 2.1 m PIR on high sensitivity, Single Edge, Creep on, PET immunity off
NV75MX	Figure 7.1.1	Pass	5.7.16	

<b>Test specification:</b>		<b>Walk test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.3 Walk test	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	5/7/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.5 °C	<b>Air Pressure:</b> 1003hPa	<b>Relative Humidity:</b> 46 %
<b>Remarks:</b>			

Figure 7.1.1 Detection area and the tested points for NV75M and NV75MX



<b>Test specification:</b>		<b>Switch on delay and interval between signals test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.4 Switch on delay and interval between signals	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	8/6/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 24.1 °C	<b>Air Pressure:</b> 1003hPa	<b>Relative Humidity:</b> 40 %
<b>Remarks:</b>			

## 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.	<b>Pass</b>

#### Reference numbers of test equipment used:

HL 2774	HL 3460	HL 4882
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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 wired detectors
NV75M	35 s	*4 s	<180 s	<15 s
NV75MX	35 s	*4 s	<180 s	<15 s
<b>Remarks</b>	*2 successive successful BDT were performed at 180s interval			



<b>Test specification:</b>		<b>Self-test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.5 Self-test	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	27/6/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.4 °C	<b>Air Pressure:</b> 1008hPa	<b>Relative Humidity:</b> 58 %
<b>Remarks:</b>			

### 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.	<b>Pass</b>

**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	NV75M	No	No PIR short (BDT)	<b>Pass</b>
	NV75MX			
Local self-test fail	NV75M	Yes	PIR short, Trouble Signal	<b>Pass</b>
	NV75MX			

**Reference numbers of test equipment used:**

HL 2774	HL 3460
---------	---------

Full description is given in Appendix A.



<b>Test specification:</b>		<b>Air flow immunity test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.6.1 Immunity to air flow	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	27/6/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.4 °C	<b>Air Pressure:</b> 1008hPa	<b>Relative Humidity:</b> 58 %
<b>Remarks:</b>			

## 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.	<b>Pass</b>

### Reference numbers of test equipment used:

HL 2774	HL 3460	HL 1420	HL 3628	HL 1594
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Full description is given in Appendix A.



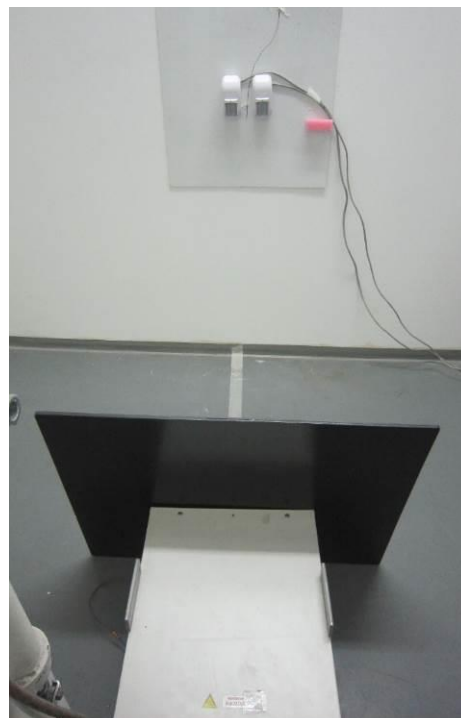


<b>Test specification:</b>		<b>Air flow immunity test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.6.1 Immunity to air flow	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	27/6/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.4 °C	<b>Air Pressure:</b> 1008hPa	<b>Relative Humidity:</b> 58 %
<b>Remarks:</b>			

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]
NV75M NV75MX	1	44 to 45	0.65 to 0.75
1 Cycle conditions	2 min ambient, 4-5 min from ambient to 44°C, 4 min 44°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		

Photograph 7.4.1, 7.4.2 Setup general view





<b>Test specification:</b>		<b>Immunity to visible and near infrared radiation test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.6.2 Immunity to visible and near infrared radiation	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	7/6/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.6 °C	<b>Air Pressure:</b> 1010hPa	<b>Relative Humidity:</b> 52 %
<b>Remarks:</b>			

## 7.5 Immunity to visible and near infrared radiation test procedure and results

### 7.5.1 Test purpose

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

### 7.5.2 Test procedure

**7.5.2.1** 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.

**7.5.2.2** 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 7.5.1 and 7.5.2.

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

**7.5.2.4** 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 7.5.2.

**7.5.2.5** A total of 10 scans were performed across the detector. The detector was monitored for false alarms and the results recorded in Table 7.5.1.

### 7.5.3 Test results

**Table 7.5.1 Test results**

Observation	Verdict
No false alarm noticed.	<b>Pass</b>

### Reference numbers of test equipment used:

HL 2774	HL 3460	HL 3651	HL 2985	HL 2936	HL 2178
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Full description is given in Appendix A.

<b>Test specification:</b>		<b>Immunity to visible and near infrared radiation test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.6.2 Immunity to visible and near infrared radiation	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	7/6/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.6 °C	<b>Air Pressure:</b> 1010hPa	<b>Relative Humidity:</b> 52 %
<b>Remarks:</b>			

Table 7.5.2 Test conditions

EUT name	Light intensity	Distance
	[lx]	Light source-detector [m]
NV75M NV75MX	2000	4.8
Settings/Remarks	PIR Sensitivity: High, Single Edge, PET off, Creep on	

Photograph 7.5.1, 7.5.2 Setup general view





<b>Test specification:</b>		<b>Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.7.1 Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes	
<b>Test mode:</b>	Compliance	<b>Verdict:</b> PASS	
<b>Test Date:</b>	30/6/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.8 °C	<b>Air Pressure:</b> 1009hPa	<b>Relative Humidity:</b> 55 %
<b>Remarks:</b>			

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

### 7.6.1 Test purpose

To prove that it is impossible to have access inside the detector using some common objects like presented in Table 7.6.2, and if the access is attained, a tamper signal is generated.

### 7.6.2 Test procedure

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

**7.6.2.2** 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 7.6.2.

**7.6.2.3** The results were documented as presented in Table 7.6.1.

### 7.6.3 Test results

**Table 7.6.1 Test results**

Observation	Verdict
<p>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 both models (NV75M and NV75MX):</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 7.6.2) <u>For model NV75M:</u> By access inside the detector upper cover, it's possible to gain access to DIP switch and sensitivity potentiometer, which not exist in NV75MX model, 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.</p>	Pass

### Reference numbers of test equipment used:

HL 2774	HL 3460	HL 4548	HL 2043
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Full description is given in Appendix A.

<b>Test specification:</b>		<b>Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.7.1 Resistance to and detection of unauthorized access to the inside of the detector through covers and existing holes	
<b>Test mode:</b>	Compliance	<b>Verdict:</b> PASS	
<b>Test Date:</b>	30/6/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.8 °C	<b>Air Pressure:</b> 1009hPa	<b>Relative Humidity:</b> 55 %
<b>Remarks:</b>			

**Table 7.6.2 Test conditions**

EUT	Object	Dimensions
NV75M NV75MX	Penknife	-
	Wire Probe	Thickness 1mm
	Screw driver	4x1mm Thickness
	Paper	-
	Steel probe	100 x 7 x 1mm
	Matches	-

**Note:** Tested for both detectors NV75M and NV75MX

**Photograph 7.6.1, 7.6.2 Setup general view**





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

## 7.7 Detection of removal from the mounting surface test procedure and results

### 7.7.1 Test purpose

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

### 7.7.2 Test procedure

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

**7.7.2.2** 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.

**7.7.2.3** The results were documented as presented in Table 7.7.1.

### 7.7.3 Test results

**Table 7.7.1 Test results**

Observation	Verdict
The back tamper signal recorded before access could be gained to it, see Table 7.7.2.	<b>Pass</b>

### Reference numbers of test equipment used

HL 2774	HL 3460	HL 1814
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Full description is given in Appendix A.

**Table 7.7.2 Test conditions**

EUT	Steel Strip dimensions length x width x thickness [mm]	Observation	Verdict
NV75M NV75MX	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.	<b>Pass</b>

**Note:** Tested for both detectors NV75M and NV75MX.

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.



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

## 7.8 Resistance to reorientation test procedure and results

### 7.8.1 Test purpose

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

### 7.8.2 Test procedure

7.8.2.1 The detector was mounted per user guide instructions

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

7.8.2.3 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 7.8.1.

### 7.8.3 Test results

Table 7.8.1 Test results

EUT	Applied moment [Nm]	Angle of reorientation point [°]	Remarks
NV75M NV75MX	2	<5	When detectors installed with bracket, Security Grade of the detectors reduce to Grade 2.
Observation			Verdict
Reorientation angle, less than 5°. No tamper signal.			Pass

**Note:** Tested for both detectors NV75M and NV75MX.

### Reference numbers of test equipment used:

HL 2774	HL 3460	HL 3862	HL 3846	HL 3124	HL 3822
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Full description is given in Appendix A.



<b>Test specification:</b>		<b>Immunity to magnetic field interference test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.7.4 Immunity to magnetic field interference	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	8/6/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 24.1 °C	<b>Air Pressure:</b> 1003hPa	<b>Relative Humidity:</b> 40 %
<b>Remarks:</b>			

## 7.9 Immunity to magnetic field interference test procedure and results

### 7.9.1 Test purpose

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

### 7.9.2 Test procedure

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

**7.9.2.2** 180 seconds were allowed after switching on the detector.

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

**7.9.2.4** The correct generation of alarm, tamper and fault signals was verified. Test conditions are presented in Table 7.9.2.

**7.9.2.5** The test was repeated for the other magnet pole.

**7.9.2.6** The results were documented as presented in Table 7.9.1.

### 7.9.3 Test results

**Table 7.9.1 Test results**

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

### Reference numbers of test equipment used:

HL 2774	HL 3460	HL 3665
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Full description is given in Appendix A.

**Table 7.9.2 Test conditions**

EUT	MAGNET CHARACTERISTICS	Detector face # and description	Event	Verdict
NV75M NV75MX	Type 2 (1.24 T)	On any accessible detector's surface (2 magnet poles)	No tamper or intrusion detection inhibition (BDT passed)	<b>Pass</b>

**Note:** Tested for both detectors NV75M and NV75MX.



<b>Test specification:</b>		<b>Detection of detector masking test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.7.5 Detection of detector masking	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Test Date:</b>	6/7/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.6 °C	<b>Air Pressure:</b> 1004hPa	<b>Relative Humidity:</b> 51 %
<b>Remarks:</b>			

## 7.10 Detection of detector masking test procedure and results

### 7.10.1 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.

### 7.10.2 Test procedure

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

**7.10.2.2** The different materials were applied at the detector window with the speed and distance as presented in Table 7.10.2.

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

**7.10.2.4** The results were documented as presented in Table 7.10.1.

### 7.10.3 Test results

**Table 7.10.1 Test results**

Observation	Verdict
<p>For each different material appliance as presented in Table 7.10.2, the detector generated a masking signal (orange LED constant on) within the required standard and customer specified timing.</p> <p>Once a masking signal is generated a fault message in CP are presented, accordingly to standard requirements.</p> <p>The LED remained on as long as the masking material was present.</p> <p>To restore MASK signaling, masking material was removed and BDT performed.</p>	<b>Pass</b>

### Reference numbers of test equipment used:

HL 2774	HL 3460
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Full description is given in Appendix A.



<b>Test specification:</b>		<b>Detection of detector masking test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD: 6.7.5 Detection of detector masking	
<b>Test mode:</b>	Compliance	<b>Verdict:</b> PASS	
<b>Test Date:</b>	6/7/2016		
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 23.6 °C	<b>Air Pressure:</b> 1004hPa	<b>Relative Humidity:</b> 51 %
<b>Remarks:</b>			

Table 7.10.2 Test conditions

EUT name	Material	Verdict	Procedure/Remarks
NV75M NV75MX	Matt black paper sheet	Pass	Distance= 0 mm First slid within 1 s, second slid within 10 s
	2 mm thick aluminum sheet	Pass	Distance= 50 mm First slid within 1 s, second slid within 10 s
	3 mm Thick clear gloss acrylic sheet	Pass	
	White polystyrene foam sheet	Pass	*Applied from front
	Self-adhesive clear vinyl sheet*	Pass	Masking signal indicated by orange LED constant on, was recorded in less than 1 min.
	Spray polyurethane*	Pass	
	Clear gloss lacquer, brush applied*	Pass	The masking signal is removed by BDT performed and passed after test

**Note:** Tested for both detectors NV75M and NV75MX.



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

## 7.11 Immunity to false masking signal test procedure and results

### 7.11.1 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.

### 7.11.2 Test procedure

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

7.11.2.2 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 EN50131-2-2 in section 6.7.6.

7.11.2.3 The results were documented as presented in Table 7.11.1.

### 7.11.3 Test results

**Table 7.11.1 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.	<b>Pass</b>

**Note:** Tested for both detectors NV75M and NV75MX.

### Reference numbers of test equipment used:

HL 2774	HL 3460	HL 2948
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Full description is given in Appendix A.



<b>Test specification:</b>		<b>Labels and documentation test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD:6.10 Labels and documentation	
<b>Test mode:</b>		Compliance	<b>Verdict:</b> PASS
<b>Test Date:</b>		17/7/2016	
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 24.9°C	<b>Air Pressure:</b> 1007hPa	<b>Relative Humidity:</b> 46%
<b>Remarks:</b>			

## 7.12 Labels and documentation test procedure and results

### 7.12.1 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.

### 7.12.2 Test procedure

**7.12.2.1** The available last version of the user manual was read and compared with the product characteristics and standard requirements as summarized in Table 7.12.2.

**7.12.2.2** The results were documented as presented in Table 7.12.1.

### 7.12.3 Test results

**Table 7.12.1 Test results**

Observation	Verdict
Labels and documentation requirements fulfilled.	Pass



HERMON LABORATORIES

Report ID: PARIAS\_EN 50131-2-2.28194  
Date of Issue: 17-Jul-16

<b>Test specification:</b>		<b>Labels and documentation test</b>	
<b>Test procedure:</b>		EN 50131-2-2 TEST METHOD:6.10 Labels and documentation	
<b>Test mode:</b>		Compliance	<b>Verdict:</b> PASS
<b>Test Date:</b>		17/7/2016	
<b>Atmospheric conditions during the test:</b>	<b>Temperature:</b> 24.9°C	<b>Air Pressure:</b> 1007hPa	<b>Relative Humidity:</b> 46%
<b>Remarks:</b>			

Table 7.12.2 Marking and documentation requirements

EUTs: NV75M and NV75MX		Documents - NV75M-EI00.pdf				
Standard/ Section	Requirement	Verdict				Remark
		C	NC	NA	NT	
EN 50131-2-2/ 5.1 EN 50131-1/ 15  Marking/ Identification Labeling	Name of manufacturer	✓				See Photographs 5.1.13 and 5.1.14
	Type	✓				
	Date of manufacture batch # or serial#	✓				
	Security grade	✓				
	Environmental class	✓				
EN 50131-2-2/ 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	10-Feb-17
2948	Metronome, (40-208) beat/min.	Wittner GmbH	MS-1	2948	12-Aug-16
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	14-Jul-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	08-Oct-16
3651	Halogen lamp 12V VW H4 bulb	Hermon Laboratories	VW H4 (bulb)	001	19-Jan-17
2985	Glass panes support 0.5x0.5 m 2 glass panes of 4 mm, 10 mm air gap	Hermon Laboratories	GP500	2985	16-Sep-16
2936	Easy View Digital Light Meter	EXTECH INSTRUMENTS	EA30	050206405	03-Dec-16
2178	Digital Programmable Power Supply 80V/75A, DC	Xantrex	XDC 80-75	76235	11-Feb-17
4548	Tamper test tool set. EN50131-3:2009 STD	Hermon Laboratories	TTT-1	NA	20-Dec-16
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	03-Dec-16
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	19-Oct-16
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

<b>Testing laboratory and location</b>	<p>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.</p> <p>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.</p> <p>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</p> <p>Person for contact: Michael Freiliher, Product Safety Group Manager.</p>
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## 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<br>Part 1: System requirements                               |
| 2. | EN 50131-2-2 February, 2008 | Alarm systems-Intrusion and hold-up systems<br>Part 2-2: Intrusion detectors – Passive infrared detectors |

## 12 APPENDIX E Measurement uncertainties

Parameter	Uncertainty estimation at 95% confidence	
	Calculated	Limit
Air pressure	$\pm 0.8$ mBar	$\pm 4.1$ mBar
High temperature	$\pm 1.2^{\circ}\text{C}$	$\pm 2^{\circ}\text{C}$
Humidity	$\pm 2.86$ %	$\pm 5.0$ %
Air velocity	5 %	10 %
Distances measurement	$\pm 1.3\%$	$\pm 10\%$
Impact energy measurement	$\pm 6.1\%$	$\pm 10\%$
Illuminance	$\pm 5.6\%$	$\pm 10\%$

**END OF TEST REPORT**