TO WHOM IT MAY CONCERN

Bosch Security Systems
Torenallee 49
Eindhoven
5617 BA
The Netherlands
AT18-Q1616

Product Test report

Product name:

BOSCH TINYON IP 2000 PIR
BOSCH TINYON IP 2000 WI

Model numbers:

Material Number	CTN	Description	
F.01U.273.895	NPC-20012-F2WL	IP Micro 720P Wireless PIR	TINYON IP 2000 WI
F.01U.295.504	NPC-20012-F2WL-W	IP Micro 720P Wireless PIR White	TINYON IP 2000 WI
F.01U.288.705	NPC-20012-F2L	IP Micro 720P PIR	TINYON IP 2000 PIR
F.01U.295.505	NPC-20012-F2L-W	IP Micro 720P PIR White	TINYON IP 2000 PIR

The above mentioned Bosch Security Systems products have been tested in accordance and were found to comply with the tests listed below which were carried out during the development phase of the product.

ENVIRONMENTAL TEST

EN50130-5:1999 Alarm systems Part 5: Environmental test methods	**Specific Test description >>class IV fixed equipment>>**	**Passed**
1) till 7) is Introduction		
8) Dry heat Operational IEC60068-2- 2:1974 +A1:1993+ A2:1994	Temp. +60°C (140°F), duration 16 hours.	Yes
9) Dry heat endurance IEC60068-2-2:1974 +A1:1993+ A2:1994	Not test for class II product.	N.A.
10) Cold operational IEC60068-2-1:1990 +A1:1993+ A2:1994	Temp. -10°C (14°F), duration 16 hrs. Tested at more severe -20°C (-4°F).	Yes
11) Temperature change operational IEC60068-2-14:1984 +A1:1986	No test for class II product.	N.A.
12) Damp heat, steady state operational IEC60068-2-2:1988	No test for class II product but covered by 14).	N.A.
13) Damp heat, steady state endurance IEC60068-2-3:1969+A1:1984	Temp. +40°C (104°F), Relative humidity 93%, duration 21 days.	Yes
14) Damp heat, cyclic operational IEC60068-2-30:1980+A1:1985	Temp. +20°C ~ +40°C (68°F to 104°F), 2 cycles, 24hrs/cycle, Relative humidity 93%,	Yes
15) Damp heat, cyclic endurance IEC60068-2-30:1980+A1:1985	No test for class II product.	N.A.

16) Water ingress (operational)	No test for class II product. Test: IEC60529 IPX4	N.A.
17) Sulphur Dioxide SO_2 endurance IEC60068-2-42:1982	Sulphur Dioxide 25 ppm, Temperature 25°C, Humidity 93%, Duration 21 days	N.A.
18) Salt mist, cyclic endurance IEC60068-2-52:1996	Not test for class II product.	N.A.
19) Shock operational IEC60068-2-27:1987	Half sine wave 6 ms, A =1000-(200xM)m/s², 6 number of shocks, 3 pulses per direction.	Yes
20) Impact operational IEC60068-2-75:1997	Impact energy 1.0 Joule , 3 impacts per point	Yes
21) Free fall operational IEC60068-2-32:1975 +A1:1982+A2:1990	No test for Fixed equipment	N.A.
22) Vibration sinusoidal operational IEC60068-2-6:1995	Freq. Range 10-150Hz, 5m/s², 3 axes, sweep rate 1 octave/m 1 sweep/axis	Yes
23) Vibration sinusoidal endurance IEC60068-2-6:1995	Freq. Range 10-150Hz, 10m/s², 3 axes, sweep rate 1 octave/min 20 sweep/axis	Yes
24) Simulated solar radiation Temperature rise operational	No test for class II product.	N.A.
25) Simulated solar radiation Surface degradation	No test for class II product.	N.A.
26) Dust tightness endurance	This product is not a specific enclosure to protect ingress of dust. Optical path is tested to IP5X.	Yes

ADDITIONAL ENVIRONMENTAL – FUNCTIONAL BOSCH TESTS

Environmental test methods	**Specific Test description**	**Passed**
MTBF calculation of used components	Based on: Siemens SN 29500, or FIT figures manufacturer. MTBF(PIR model) = 365,139 hrs MTBF(WIFI model) = 388,476 hrs	Yes
FMEA (failure Mode and Effect Analysis)	Design and Process analyses based on Bosch template.	Yes
HALT (Highly Accelerating Life Test)	overstress test to Fail	Yes
Type plate test	Rubbing by hand with water+ 95% industrial alcohol, during 15s.	Yes
Hot spots on components.	With Infra red scanner at room temperature Tamb. 20 ±5 °C (±68°F).	Yes
Temperature of Hot spots components	With thermocouples at room temperature Tamb. 45 ±5 °C (±113°F).	Yes
Bump Non operating	IEC 60068-2-29 test Eb 10g, 16ms, 3 x 1000 times.	N.A.
Cold start test	At -20°C	Yes
Transport tests acc. AV18-Q0681		

1. ISTA-2A	Following with specification of ISTA-2A	Yes
2. Vibration test	Frequency (CPM):227 ; Duration of the Vibration: 63 min. ; Number of Impact (cycle): 14200	Yes
3. Drop test after vibration test 10 drops.	Height depending of weight of product. Drop height (in): 38; drop times: 10	Yes

Approvals Safety, EMC and Environmental

EMC Europe	**Description**	**Passed**
EN 55022:2010	Information Technology Equipment- Radio disturbance characteristics Limits and Methods of measurement. Class B	Yes
EN 50130-4:2011	Part 4: Electromagnetic compatibility - Product family standard: Immunity requirements for components of fire, intruder and social alarm systems.	Yes
EN 61000-3-2:2006+A1:2009+A2:2009.	Mains harmonics Part 3-2: Limits - Limits for harmonic current emissions	Yes
EN 61000-3-3:2013.	Voltage fluctuations Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems.	Yes
CE RF Directive 1999/5/EC	Only for TINYON IP 2000 WI	Yes
EMC USA		**Passed**
CFR 47 FCC part 15 Class B	Conducted + Radiated Emission based on VERIFICATION procedure	Yes
FCC part 15C (RF)	Only for TINYON IP 2000 WI	Yes
China SRRC (RF)	RF Certificate for China. Only for TINYON IP 2000 WI	Yes
Australian AS/NZS CISPR 22 equal to CISPR 22	Product market with BOSCH supplier code N663; Only for TINYON IP 2000 PIR	Yes
Japan VCCI: V-2/2012.04&V-3/2013.04	EMC certification for Japan. Only for TINYON IP 2000 PIR	Yes
Safety Europe		**Passed**
EN 60950-1:2006+All:2009+A1:2010+A12:2011 +A2:2013	Information technology equipment — Safety — Part 1: General requirements	Yes
Safety USA + Canada		**Passed**

UL 60950-1 CAN/CSA-C22.2 No.E60950-1	UL listing + cUL listing. First edition dated April 1, 2003. Information technology equipment — Safety — Part 1: General requirements	Yes
Environmental		**Passed**
Prohibited and declarable substances in products, components, materials and preparations.	Bosch internal environmental standard. Manufacturer's declaration database based on N 2580-1.	Yes
Restriction of Hazardous Substances	RoHS compliant.	Yes

The product is produced by a manufacturing organisation, which is certified on **ISO9001** and **ISO14001** standards.

Data subject to change without notice.
Eindhoven, November 2014.