

TO WHOM IT MAY CONCERN

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

Product Test report

Product name: **BOSCH DINION IP 4000 HD cameras**
BOSCH DINION IP 5000 HD cameras
BOSCH DINION IP 5000 MP Camera

Model numbers: **NBN-50051-C / NBN-50051-V3**
NBN-50022-C / NBN-50022-V3
NBN-40012-C / NBN-40012-V3

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 II Indoor, fixed equipment	Passed
1) till 7) is Introduction		
8) Dry heat Operational IEC60068-2- 2:1974 +A1:1993+ A2:1994	Temp. +50°C, duration 16 hrs.	Yes
9) Dry heat endurance IEC60068-2-2:1974 +A1:1993+ A2:1994	No test for class II. Tested on +85°C, duration 48hrs.	Yes
10) Cold operational IEC60068-2-1:1990 +A1:1993+ A2:1994	Temp. -10°C, duration 16hrs. Tested on -35°C, duration 48hrs.	Yes
11) Temperature change operational IEC60068-2- 14:1984 +A1:1986	No test for class II. However tested operational 3 cycles -30°C to +60°C, fast changes, 2h stabilising, 2 chamber method.	Yes
12) Damp heat, steady state operational IEC60068- 2-2:1988	No test for class II and covered by 14)	Yes
13) Damp heat, steady state endurance IEC60068- 2-3:1969+A1:1984	Temp. 25°C - +40°C, Relative humidity 93%, duration 21 days	Yes
14) Damp heat, cyclic operational IEC60068-2- 30:1980+A1:1985	Temp. +20 ~ +40°C, 2 cycles	Yes
15) Damp heat, cyclic endurance IEC60068-2- 30:1980+A1:1985	No test for class II Temp. +40 °C, 21 days	Yes
16) Water ingress (operational)	No test for class II.	N.A.
17) Sulphur Dioxide SO ₂ endurance IEC60068-2- 42:1982	Sulphur Dioxide 25 ppm, Temperature 25°C, Humidity 93%, Duration 4 days Not tested	N.T.

18) Salt mist, cyclic endurance IEC60068-2-52:1996	No test for class II.	N.A.
19) Shock operational IEC60068-2-27:1987	Half sine wave 6 ms, A =980m/s ² , 6 number of shocks, 3 pulses per direction.	Yes
20) Impact operational IEC60068-2-75:1997	Impact energy 0.5 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/s ² , 3 axes, sweep rate 1 octave/m 1 sweep/axis. Covered by 23).	Yes
23) Vibration sinusoidal endurance IEC60068-2-6:1995	Freq. Range 10-150Hz, 10m/s ² , 3 axes, sweep rate 1 octave/min 20 sweep/axis. Tested under operation status.	Yes
24) Simulated solar radiation Temperature rise operational	No test for class II.	N.A.
25) Simulated solar radiation Surface degradation	No test for class II.	N.A.
26) Dust tightness endurance	Optical path is tested to IP5X and no ingress of dust.	Yes

ADDITIONAL ENVIRONMENTAL – FUNCTIONAL BOSCH TESTS

Environmental test methods	Specific Test description	Passed
MTBF calculation of used components	Siemens SN 29500, theoretically MTBF = 965,596hrs	Yes
FMEA	BOSCH template FMEA	Yes
HALT (Highly Accelerating Life Test)	overstress test to Fail	Yes
Typeplate test (IEC 60950-1 par. 1.7.11)	Rubbing water+ Petroleum spirit for 15s	Yes
Hot spots on components.	With Infra red scanner at room temperature Tamb. 20 ±5 °C	Yes
Temperature of Hot spots components	With thermocouples at room temperature Tamb. 20 ±5 °C	Yes
Cold start test	At -40°C	Yes
Transport tests acc. AV18-Q0681		
1. Vibration test	Freq. 7Hz, 5.3 mm(= 1.05g), 30 min each side, 3 directions	Yes
2. Drop test after vibration test 10 drops.	Height depending of weight of product.	Yes

Approvals Safety, EMC and Environmental

EMC Europe	Description	Passed
EN 55022: Class B	Information Technology Equipment- Radio disturbance characteristics Limits and Methods of measurement.	Yes
EN 50130-4	Part 4: Electromagnetic compatibility - Product family standard: Immunity requirements for components of fire, intruder and social alarm systems.	Yes
EN 50121-4.	Railway EMC Part4: Emission and immunity of the signaling and telecommunications apparatus.	Yes
EMC USA		Passed
CFR 47 FCC part 15 Class B	Conducted + Radiated Emission based on VERIFICATION procedure	Yes
Australian AS/NZS CISPR 22 equal to CISPR 22	Product market with BOSCH supplier code N663	Yes
Safety Europe		
EN 60950-1	Information technology equipment — Safety — Part 1: General requirements	Yes
Safety USA + Canada		
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		
Prohibited and declarable substances in products, components, materials and preparations.	Manufacturer's declaration database based on N 2580-1.	Yes
Restriction of hazardous substance	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, September 2014