 BOSCH Security Systems 850 Greenfield Road Lancaster, PA 17601	Product Tests Report	
		10 May 2012
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Product Tests Report

Product name: BOSCH AutoDome Series 600 Cameras

Model numbers and description:

VG5-613-CCS AutoDome 600 Series 28x PAL In-ceiling Camera
 VG5-613-ECS AutoDome 600 Series 28 PAL Outdoor Pendant Camera
 VG5-613-PCS AutoDome 600 Series 28x PAL Indoor Pendant Camera
 VG5-614-ECS AutoDome 600 Series 36x PAL Outdoor Pendant Camera
 VG5-614-PCS AutoDome 600 Series 36x PAL Indoor Pendant Camera
 VG5-623-CTS AutoDome 600 Series 28x NTSC In-ceiling Camera
 VG5-623-ECS AutoDome 600 Series 28x NTSC Outdoor Pendant Camera
 VG5-623-PCS AutoDome 600 Series 28x NTSC Indoor Pendant Camera
 VG5-624-ECS AutoDome 600 Series 36x NTSC Outdoor Pendant Camera
 VG5-624-PCS AutoDome 600 Series 36x NTSC Indoor Pendant Camera


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.

Data subject to change without notice.

ENVIRONMENTAL TEST

BS EN 50130-5:1999 Alarm systems Part 5: Environmental test methods	Specific Test Description	Comments	Passed
Dry heat Operational IEC 60068-2-2:1974 +A1:1993+ A2:1994	Temp. +55 °C, duration 48 hours		Yes
Dry heat endurance IEC 60068-2-2:1974 +A1:1993+ A2:1994	Temp. +65 °C, duration 4 hours		Yes
Cold Operational IEC 60068-2-1:1990 +A1:1993+ A2:1994	Temp. -45 °C, duration 48 hours		Yes
Cold Endurance IEC 60068-2-1:1990 +A1:1993+ A2:1994	Temp -45 °C, Duration 4 hours		Yes
Cold Start	Temp -45 °C	Requires 20 min warm-up followed by power cycle	Yes
Humidity, Operational Damp heat, steady state operational IEC 60068-2-2:1988	+55°C/95% RH for 6 hr, 35°C/85% RH for 16 hr, Repeat for 5 cycles total.		Yes
IEC 60529 Ingress Protection Rating (IP66) Degrees of protection provided by enclosures (IP Code) [Dust, water ingress (operational)]	Dust protected. Water Test duration: at least 3 minutes Water volume: 100 litres per minute Pressure: 100 kN/m ² at distance of 3m Dust tight. Water Test duration: 5 minutes Water volume: 10 litres per minute Pressure: 80–100 kN/m ²	IP66 (pendant mount) IP54 (in-ceiling mount)	Yes
NEMA 4X	Watertight (weatherproof). Must exclude at least 65 GPM of water from 1-in. nozzle delivered from a distance not less than 10 ft for 5 min. UL50 test: • hose down	NEMA 4X (except impact test for acrylic bubbles)	Yes

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BS EN 50130-5:1999 Alarm systems Part 5: Environmental test methods	Specific Test Description	Comments	Passed
	<ul style="list-style-type: none"> • protective coating • corrosive resistance • Icing • Gasket => aging test • Gasket test 		
External Mechanical Impact (IK Code) IK08 Rating ["Vandalism-proof test"] IEC 62262:2002-02	Energy 10J, 1.7kg steel mass, 25 mm spherical radius, drop height .2 m 5 drops per side, impact 5 sides, 25 total impacts Bubble can withstand impacts equivalent to a 4.5 kg (10 lb) weight dropped from a height of 3 m (10 ft).	Fully functional after all impacts and cycling power In-ceiling models only.	Yes
Impact operational IEC 60068-2-75:1997	Impact energy 1.0 Joule, 3 impacts per point		Yes
Wind speed (150mph wind tunnel test)	Wind Tunnel Test 150mph for 1.0 hours.		Yes
Sound level	<50 dB		Yes
Transportation Test	ISTA – Vibration 14,200 vibratory shocks – 2 axis		Yes
Transportation Test	ISTA – 36 inches (0.9 m) free fall drop 6 axes @ 1 drop / axis		Yes

ADDITIONAL ENVIRONMENTAL – FUNCTIONAL BOSCH TESTS


Environmental test methods	Specific Test Description	Comments	Passed
MTBF calculation of used components Based on: for electronics, Siemens SN29500, or MIL-HDBK-217.	WRR < 3.5% MTBF > 100,000 hrs		Yes
Design Maturity Test	Outdoor Life test - external environmental conditions		Yes
HALT (Highly Accelerating Life Test)	Step vibration g's up 5g every 10 minutes up to 45g Step temperature 5°C every 10 minutes to 100°C. Step temperature 5°C every 10 minutes to -70°C.		Yes
FMEA (Failure Mode and Effect Analysis)			Yes
Temperature of Hot spots on components	With thermocouples at T = 20°C & T = 50°C, to Bosch Derating Guidelines		Yes

Approvals Safety, EMC and Environmental

Specific Approval	Description	Comments	Passed
EMC Europe			
EN 55022:2006+ A1:2007, Class A	Information Technology Equipment-		Yes

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Specific Approval	Description	Comments	Passed
	Radio disturbance characteristics Limits and Methods of measurement. Class A		
EN 50130-4:1995, +A1:1998, +A2:2003	Part 4: Electromagnetic compatibility - Product family standard: Immunity requirements for components of fire, intruder and social alarm systems.		Yes
EN 61000-3-2:2000, EN 61000-3-2:2006	Mains harmonics Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)		Yes
EN 61000-3-3:1995, +A1:2001 +A2:2005	Voltage fluctuations Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection.		Yes
EN 50121-4:2006			Yes
EMC USA			Passed
CFR 47 FCC part 15 Class A	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
Lightning protection EN 61000-4-5:1995	Levels ±0.5, 1, 2 and 4kV common mode. ± 0.5, 1 and 2kV differential mode. To ALL input / output - and supply-wiring.		Yes
Safety Europe			
EN 60950-1:2006, EN 60950-1, 2 nd Edition, 2007-03-27	Information technology equipment – Safety – Part 1: General requirements		Yes
Safety USA + Canada			
UL 60950-1 (2 nd edition dated March 27, 2007) CAN/CSA-C22.2 No.E60950-1 (CSA C22.2 No. 60950-1-07, 2 nd Edition, 2007-03)	UL listing + cUL listing. First edition dated April 1, 2003. Information technology equipment – Safety – Part 1: General requirements		Yes
Environmental			
Restriction of Hazardous Substances	ROHS complaint		Yes
Prohibited and declarable substances in products, components, materials and preparations.	Manufacturer's declaration database based on N 2580-1		Yes

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Functional and specification test

Functional tests description		Comments	Passed
Camera Performance		Refer to AutoDome 600 Series datasheet.	Yes

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