 <b>BOSCH</b> <b>Security Systems</b> 850 Greenfield Road Lancaster, PA 17601	<b>Product Tests Report</b>	
	TO WHOM IT MAY CONCERN	10 May 2012 Page: 1 of 4

## Product Tests Report

Product name: BOSCH AutoDome Series 700 IP Cameras

Model numbers and description:


VG5-713-ECE2 AutoDome 700 Series 28x PAL IP Pendant Camera  
 VG5-714-ECE2 AutoDome 700 Series 36x PAL IP Pendant Camera  
 VG5-723-ECE2 AutoDome 700 Series 28x NTSC IP Pendant Camera  
 VG5-724-ECE2 AutoDome 700 Series 36x NTSC IP Pendant Camera  
 VG5-713-CCE2 AutoDome 700 Series 28x PAL IP In-ceiling Camera  
 VG5-723-CCE2 AutoDome 700 Series 28x NTSC IP In-ceiling 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 Storage 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 Start	Temp -45 °C	Requires 20 min warm-up followed by power cycle	Yes
Cold Endurance IEC 60068-2-1:1990 +A1:1993+ A2:1994	Temp -45 °C, Duration 4 hours		Yes
Temperature Stress	-60 to + 80C and back to -60C with 2.5 min ramp and 15 min dwell at extremes – 5 cycles		Yes
Humidity, operational Damp heat, steady state operational IEC 60068-2-2:1988	55C / 95 %RH for 6 hr, 35°C/85% RH for 16 hr, repeat for 5 cycles total.		Yes
Condensation Temperature Test Profile	Ramp from 5°C to -20°C in 5 hours, hold at -20°C	No condensation observed	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 <sup>2</sup> at distance of 3m  Dust tight. Water Test duration: 5 minutes Water volume: 10 litres per minute Pressure: 80–100 kN/m <sup>2</sup>	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	NEMA 4X (pendant mount only) (except impact test	Yes

 <b>BOSCH</b> <b>Security Systems</b> 850 Greenfield Road Lancaster, PA 17601	<b>Product Tests Report</b>	
	TO WHOM IT MAY CONCERN	10 May 2012 Page: 2 of 4

BS EN 50130-5:1999 Alarm systems Part 5: Environmental test methods	Specific Test Description	Comments	Passed
	ft for 5 min. UL50 test: <ul style="list-style-type: none"> <li>• hose down</li> <li>• protective coating</li> <li>• corrosive resistance</li> <li>• Icing</li> <li>• Gasket =&gt; aging test</li> <li>• Gasket test</li> </ul>	for acrylic bubbles)	
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	Yes
Vibration sinusoidal operational IEC 60068-2-6:1995 Test Fc: 10 m/s <sup>2</sup> (1.0 g)	Freq. Range 10-150Hz, 10m/s <sup>2</sup> , 3 axes, sweep rate 1 octave/m 1 sweep/axis, (1.0g)		Yes
Vibration sinusoidal endurance IEC 60068-2-6:1995 Test Fc: 10 m/s <sup>2</sup> (1.0 g)	Freq. Range 10-150Hz, 10m/s <sup>2</sup> , 3 axes, sweep rate 1 octave/min 20 sweep/axis		Yes
Shock operational IEC 60068-2-27:1987 Test Ea: Shock, 150 m/s <sup>2</sup> (15.0 g)	Half sine wave 11 ms, 15g, 6 number of shocks, 3 pulses per direction		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.	<i>Pending</i>	
Sound level	<50 dB		Yes
Transportation Tests (ITSA Procedure 1A)	ISTA – Vibration 14,200 vibratory shocks – 2 axis		Yes
Transportation Tests (ITSA Procedure 1A)	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 > 81,480 hrs (In-ceiling models) MTBF > 80,838 hours (Outdoor models) Or MTBF > 100,000 hours		Yes
Design Maturity Test	Outdoor Life test – external environmental conditions		Yes
HALT (Highly Accelerating Life Test)	-60 to +80C and back to -60C with 15 min hold		Yes

 <b>BOSCH</b> <b>Security Systems</b> 850 Greenfield Road Lancaster, PA 17601	<b>Product Tests Report</b>	
	TO WHOM IT MAY CONCERN	10 May 2012  Page: 3 of 4

Environmental test methods	Specific Test Description	Comments	Passed
	at each extreme vibration stress of 8g, 16g, 24g, 32g, and 40g		
FMEA (Failure Mode and Effect Analysis)			Yes
Temperature of Hot spots on components	With thermocouples at T = 20°C, 55°C, using Bosch Derating Guidelines		Yes

#### Approvals Safety, EMC and Environmental

Specific Approval	Description	Comments	Passed
<b>EMC Europe</b>			
EN 55022:2006+ A1:2007, Class A	Information Technology Equipment- Radio disturbance characteristics Limits and Methods of measurement. Class A		Yes
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
<b>EMC USA</b>			
CFR 47 FCC part 15 Class A	Conducted + Radiated Emission based on VERIFICATION procedure		Yes
<b>Australian</b> AS/NZS CISPR 22 equal to CISPR 22	Product market with BOSCH supplier code N663		Yes
Mains Voltage Tolerance Test (Brown out supply voltage test)	Camera fully operational down to 105V (230 V PSU) and 55V (120V PSU). Below this voltage, the camera is not operational. Camera must be power-cycled for the camera block to reset.		Yes
Lightning protection EN 61000-4-5:1995	Levels ±0.5, 1, 2 and 4kV common mode. ± 0.5, 1 and 2kV differential		Yes

 <b>BOSCH</b> <b>Security Systems</b> 850 Greenfield Road Lancaster, PA 17601	<b>Product Tests Report</b>	
	TO WHOM IT MAY CONCERN	10 May 2012  Page: 4 of 4

Specific Approval	Description	Comments	Passed
	mode. To ALL input / output - and supply-wiring.		
<b>Safety Europe</b>			
EN 60950-1:2006, EN 60950-1, 2 <sup>nd</sup> Edition, 2007-03-27	Information technology equipment – Safety – Part 1: General requirements		Yes
<b>Safety USA + Canada</b>			
UL 60950-1 (2 <sup>nd</sup> edition dated March 27, 2007) CAN/CSA-C22.2 No.E60950-1 (CSA C22.2 No. 60950-1-07, 2 <sup>nd</sup> Edition, 2007-03)	UL listing + cUL listing. First edition dated April 1, 2003. Information technology equipment – Safety – Part 1: General requirements		Yes
<b>Environmental</b>			
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

**Functional and specification test**

Functional tests description		Comments	Passed
Camera Performance	Refer to AutoDome 700 Series datasheet.		Yes

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