

TO WHOM IT MAY CONCERN

Bosch Security Systems  
 1706 Hempstead Road  
 Lancaster  
 Pennsylvania, 17601  
 USA  
 30 Aug 2017

## Product Test report

Product name: **BOSCH AUTODOME IP 5000i IR**

Model number and description:

NDP-5502-Z30L Outdoor pendant PTZ dome camera integrated IR illumination, 30x zoom, 1080p HD

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. Please note that for some tests, test conditions exceed the range that Bosch recommends for effective continuous operation of the camera.

Data subject to change without notice.

### ENVIRONMENTAL TEST

<b>EN50130-5:2011 Alarm systems Part 5: Environmental test methods</b>	<b>Specific Test description (Temperatures stated are outside of the camera housing)</b>	<b>Comments</b>	<b>Passed</b>
Dry heat Operational IEC60068-2-2:2007	Temp. +60°C, duration 16 hours.		Yes
Dry heat endurance IEC60068-2-2:2007	Temp. +60°C, duration 21 days.		Yes
Cold operational IEC60068-2-1:2007	-40°C, duration 16 hours		Yes
Cold Endurance and Cold Start Test	-40 °C, duration 96 hours perform cold start at end of test		Yes
Damp heat, steady state endurance IEC60068-2-78:2012	Temp. 40°C, Relative humidity 93%, duration 21 days		Yes
Damp heat, cyclic operational IEC60068-2-30:2005	16h @ 60C/95%RH to 16h @ 35C/85%, 5 Cycles total		Yes
IEC 60529 Ingress Protection Rating (IP66)	Dust tight (no dust ingress; complete protection against contact). Water Test duration: at least 3 minutes Water volume: 100 liters/min Pressure: 100 kN/m <sup>2</sup> at distance of 3m		Yes
Shock operational IEC60068-2-27:2009	Half sine wave 11 ms, 10g, 6 number of shocks, 3 pulses per direction.		Yes

Vibration sinusoidal operational IEC60068-2-6:2008	Freq. Range 10-150Hz, 5m/s <sup>2</sup> , 3 axes, sweep rate 1 octave/min 1 sweep/axis		Yes
Vibration sinusoidal endurance IEC60068-2-6:2008	Freq. Range 10-150Hz, 10m/s <sup>2</sup> , 3 axes, sweep rate 1 octave/min 20 sweep/axis		Yes
Simulated solar radiation Surface degradation IEC 60068-2-5:1999	Temperature 40°C, duration 10 days Irradiance 1120 W/m <sup>2</sup>		Yes
Sulphur Dioxide SO <sub>2</sub> endurance EN 60068-2-42:2003	Temperature 25°C, SO <sub>2</sub> concentration 25ppm, Relative humidity 93%, 21days		Yes
Salt mist, cyclic endurance EN60068-2-52:1996	T25°C, 93%RH, 5±0.1%NaCl, PH6.5-7.2, 2 hours salt mist, 166 hours damp heat, 4 cycle		Yes
Wind speed	150 mph winds without structural damage or loss of video or PTZ function (simulation calculation)		Yes

#### **ADDITIONAL ENVIRONMENTAL – FUNCTIONAL BOSCH TESTS**

<b>Environmental test methods</b>	<b>Specific Test description</b>	<b>Comments</b>	<b>Passed</b>
MTBF calculation of used components	MTBF > 120,000 hours		Yes
Design Maturity Test	Outdoor Life test - external environmental conditions		Yes
HALT (Highly Accelerating Life Test)	overstress test to Fail		Yes
Sound level	<45dB		Yes
Transportation Vibration Test	ISTA-3A		Yes
Transportation Drop test	12 edges, 8 corner, 6 faces, height: 1 meter		Yes

#### **Approvals Safety, EMC and Environmental**

<b>EMC Europe</b>	<b>Description</b>	<b>Comments</b>	<b>Passed</b>
EN 55032:2012/AC:2013	Electromagnetic compatibility of multimedia equipment - Emission Requirements (CISPR 32:2015)		Yes
EN 50130-4:2011/A1:2014	Part 4: Electromagnetic compatibility - Product family standard: Immunity requirements for components of fire, intruder and social alarm systems.		Yes

EN 61000-3-2:2014	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
<b>EMC USA</b>			<b>Passed</b>
CFR 47 FCC part 15	Conducted + Radiated Emission based on VERIFICATION procedure		Yes
<b>Safety Europe</b>			
EN 60950-1:2006/ A1:2010/ A11:2009/ A12:2011/ A2:2013	Information technology equipment — Safety — Part 1: General requirements		Yes
IEC62471:2006	Photobiological safety of lamps and lamp systems		Yes
<b>Safety USA + Canada</b>			
UL 60950-1 (2 <sup>nd</sup> edition, 2014-10-14) CAN/CSA-C22.2 No. 60950-1-07, 2 <sup>nd</sup> edition, 2014-10	UL listing + cUL listing. First edition dated April 1, 2003. Information technology equipment — Safety — Part 1: General requirements		Yes
<b>Environmental</b>			
Prohibited and declarable substances in products, components, materials and preparations.	Manufacturer's declaration database based on N 2580-1.		Yes
Restriction of Hazardous Substances	RoHS compliant		Yes
UL 60950-22 EN / IEC 60950-22 (1 <sup>st</sup> edition)	Information technology equipment - Safety - Part 22: Equipment to be installed outdoors		Yes

### **Functional and specification test**

<b>Functional tests description</b>		<b>Comments</b>	<b>Passed</b>
Camera Performance	Refer to AUTODOME IP 5000i IR datasheet		Yes

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