**Product Tests Report**

Product name: DINION IP Thermal 8000

Model number and description:



The above-mentioned Bosch Security Systems product has been tested in accordance and was 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**

| **Directive or standard**  | **Description**  | **Passed** |
| --- | --- | --- |
| Dry heat Operational IEC 60068-2-2:1974 +A1:1993+ A2:1994 | Temp. 70°C, duration 16 hours | Yes |
| Dry heat StorageIEC 60068-2-2:1974 +A1:1993+ A2:1994 | Temp. +70 °C, duration 21 days | Yes |
| Cold operational IEC 60068-2-1:1990 +A1:1993+ A2:1994 | Temp. -55 °C, duration 16 hours | Yes |
| Cold start test | For 24VAC test under -50degree, 4 hours can PASS normally.  | Yes |
| Humidity, operationalDamp heat, steady state operational IEC 60068-2-2:1988 | 55°C / 93 %RH, 25°C / 93% RH for 24 hours. Repeat for 6 cycle total. | Yes |
| IEC 60529 Ingress Protection Rating Degrees of protection provided by enclosures (IP Code) [Dust, water ingress (operational)] | IPX6: protected against strong jets of water IP6X: totally protected against dust | Yes |
| UL Type rating (similar to NEMA 4X) | 1.Hosedown test: 240L per minutes for 5 minutes2.Additional corrosion test: 200 hours | Yes |
| Salt MistIEC60068-2-52 | 35 °C, 5% NaCl for 2 hours,40 °C, 93%RH for 166 hours,Total 4 cycles | Yes |
| External Mechanical Impact (IK Code)IK10 Rating [“Vandalism-proof test”]IEC 60068-2-75 | Energy 20J, 2 kg steel mass test slug, 50 mm striking radius, drop height 1 m1 drop per position, impact 7 positions, 7 total impactsExcludes window. | Yes |
| VibrationIEC 60068-2-6:2007 | Freq. Range 10-150Hz, 10m/s², 3 axes, sweep rate 1 octave/min, 20 sweep cycles/axis | Yes |
| Shock operational IEC 60068-2-27:1987 | Half Sine Impulse, 6ms, 40g | Yes |
| SolarIEC 60068-2-5: 1975 | 1) Temperature:40 °C;2) Radiation power :1120W/m2;3) Test time: 240h | Yes |
| Wind load test  | 1.Stability: 56mph for 1 minutes2.Hold position: 74mph for 1 minutes3.Robustness: 120mph for 10 minutes, 150mph for 10 minutes, repeat for 2 cycle | Yes |
| Transportation Tests (ISTA Procedure 2A) | 1.Atmospheric preconditioning: 23°C / 50%RH for 24 hours2.Compression test: 2365N for 1 minutes3.Vibration test: 60minutes, overall Grms level : 1.154. Drop test: 1 corner, 3 edges, 6 faces | Yes |
| NEMA TS2 – Sine wave vibration | Waveform: Sine WaveFrequency Range: ( 5 ~ 30 ) HzDuration: 2.0 mm （2 ~ 13.2）HzAcceleration 0.5GSweep Type LogarithmicSweep Rate 0.5 Oct / minVibration Axial: X, Y, Z | Yes |
| NEMA TS-2- Shock | Waveform: Half Sine WaveAcceleration: 0.5GDuration: 15msShock Axial: X, Y, ZSingle Axis Time: Each face took 3 timesTotal Time: 18 times | Yes |

**ADDITIONAL ENVIRONMENTAL – FUNCTIONAL BOSCH TESTS**

| **Environmental test methods** | **Specific Test Description** | **Passed** |
| --- | --- | --- |
| HALT (Highly Accelerated Life Test) | HALT LOL/UOL Temperature Test:1 - Step temperature down from -20 °C by 10°C every 15 minutes (minimum) until operational failure and/or destruct failure.2 - Step temperature up from +50 °C by 10 °C every 15 minutes (minimum) until operational failure and/or destruct failure.HALT Vibration Test:1 - The DUT is initially vibrated at acceleration level of 5g (rms) for minimum period of at least 15 minutes. After 15 minutes exposure, the DUT is tested operationally and results are recorded. The operating vibration level is then increased by 5g (rms) and the process is repeated for the next step in the test. This sequence is repeated until the DUT fails operational testing or the test level reaches 50g (rms).  | Yes |

**Approvals Safety, EMC and Environmental**

| **Specific Approval** | **Passed** |
| --- | --- |
| **EMC Europe according EMC directive 2004/108/EC** | **Passed** |
| EN 55022:2010, +AC: 2011 **(EN 55032, March-2017)** | Yes |
| EN 50130-4:2011 | Yes |
| EN 50121-4:2006, +AC: 2008 | Yes |
| EN 55024: 2010 (EN 55035 in 2016) | Yes |
| **EMC USA according FCC** | **Passed** |
| **CFR (Code of Federal Regulations)****Title 47: Telecommunications. Part 15 Radio Frequency Devices. Class B. 2012-10-1.** | Yes |
| **EMC Japan** | **Passed** |
| VCCI Class B | Yes |
| **Safety Europe according Low voltage directive 2006/95/EC** | **Passed** |
| EN 60950-1: 2006, + A11: 2009, + A1: 2010, + A12: 2011, + A2: 2013 | Yes |
| **Safety USA according UL Listing** | **Passed** |
| UL 60950-1UL 60950-22CAN/CSA-C22.2 No. 60950-1-07CSA 60950-22 (outdoor only)\*update version EN 62368, June-2019) | Yes |

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| --- | --- | --- |
| **Environmental** |  | **Passed** |
| 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 |

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