TO WHOM IT MAY CONCERN

Bosch Security Systems
Torenallee 49
5617 BA Eindhoven
The Netherlands

Product Test Report BT-SC 2018-E-054

Products

FLEXIDOME micro 3100i indoor

F.01U.408.377	NUV-3702-F02	Micro dome 2MP HDR 137°
F.01U.408.378	NUV-3702-F04	Micro dome 2MP HDR 106°
F.01U.408.379	NUV-3702-F06	Micro dome 2MP HDR 58°
F.01U.408.380	NUV-3703-F02	Micro dome 5MP HDR 131°
F.01U.408.381	NUV-3703-F04	Micro dome 5MP HDR 101°
F.01U.408.383	NUV-3703-F06	Micro dome 5MP HDR 56°
F.01U.408.398	NUV-3703-F02H	Micro dome 2MP HDR 106° HDMI
F.01U.408.399	NUV-3702-F04H	Micro dome 2MP HDR 131° HDMI

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.

EMC approvals

EMC EU	Description
EN 55032:2015 +A11:2020 (Class A)	Information Technology Equipment- Radio disturbance characteristics Limits and Methods of measurement. Class A
EN 55035: 2017 +A11: 2020	Electromagnetic compatibility of multimedia equipment - Immunity requirements
IEC 61000-4-2: 2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test
IEC 61000-4-3: 2020 (Ed. 4.0)	Electromagnetic Compatibility (EMC) - Part 4-3 : Testing And Measurement Techniques - Radiated, Radio-Frequency, Electromagnetic Field Immunity Test
IEC 61000-4-4: 2012	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test

IEC 61000-4-5: 2014 + A1: 2017	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test
IEC 61000-4-6: 2013 + COR1: 2015	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields
IEC 61000-4-8: 2009	Electromagnetic Compatibility (EMC) - Part 4-8: Testing And Measurement Techniques - Power Frequency Magnetic Field Immunity Test
EMC US	
FCC 47 CFR Part 15 Subpart B Class A ICES-003 Issue 7-2020	Telecommunication Chapter I - FEDERAL COMMUNICATIONS COMMISSION, Subchapter B – Unintentional Radiators, Part 15 - RADIO FREQUENCY DEVICES Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard
EMC Australia	
AS/NZS CISPR 32: 2015 + A1: 2020, Class A	Electromagnetic compatibility of multimedia equipment - Emission requirements
EMC Japan	
VCCI-CISPR 32: 2016, Class A	EMC certification for Japan.
EMC United Kingdom	
UKCA, Class A	Declaration of Conformity for UKCA

Safety approvals

Safety EU	
EN IEC 62368-1:2020/A11:2020	Audio/video, information and communication technology equipment - Part 1: Safety requirements.
Safety USA + Canada	
UL 62368-1, 3rd Ed, 2021-10-22 CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, 2021-10-22	Audio/video, information and communication technology equipment - Part 1: Safety requirements.

Environmental approvals

Directive or standard	Description
RoHS EU, 2011/65/EU EN 50581:2012	Restriction of the use of certain hazardous substances (RoHS)
EN IEC 63000	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
WEEE EU, 2012/19/EU	Waste Electrical and Electronic Equipment (WEEE)
Packaging EU, 94/62/EC (amended by 2014/12/EC)	Packaging and packaging waste
N2580-1 (Bosch standard)	Central directive Bosch-Norm N 2580-1: "Prohibition and declaration of substances" Bosch-Norm N 2580-1 regulates prohibited substances and those rated declarable in materials, and it is part of the requirements for materials.
N33 6 (Bosch standard)	Design for Environment (DfE): Design and manufacturing rules.

Management system

Directive or standard	Description
ISO 9001:2015	Quality management systems – Requirements Scope: Development, Production, Installation and Sales.
ISO 14001:2015	Environmental management systems – Requirements with guidance for use Scope: Development, Production, Sales and After Sales.

Reliability tests

Dry heat (Operational) (EN 60068-2-2:2007)	Temperature +45°C, Duration 16 hours.
Cold operation (Operational) (EN 60068-2-1:2007)	Temperature -5°C, Duration 16 hours.
Cold start (EN 60068-2-1:2007)	Temperature -5°C, Duration 4 hours.
Damp heat, cyclic (Operational) (EN 60068-2-30:2005)	Temperature +25°C to +40°C, Relative Humidity 93%, 2 cycles.
Shock (Operational) (EN 60068-2-27:2009)	Halve sine wave pulse, duration 6ms, 3 pulses per direction, 6 directions.

Vibration sinusoidal (Operational) (EN 60068-2-6:2008)	Frequency Range 10~150Hz, 5 m/s², 3 axes, Sweep rate 1 octave/min, 1 sweep/axis.
Vibration sinusoidal (Endurance) (EN 60068-2-6:2008)	Frequency Range 10~150Hz, 10 m/s², 3 axes, Sweep rate 1 octave/min, 20 sweep/axis.

Additional Reliability tests

Environmental test methods	**Specific Test description**
MTBF calculation of used components	Based on Telcordia Issue 4 Theoretical MTBF is about 700000 hours.
HALT (Highly Accelerating Life Test)	Overstress test to Fail, Operational, Lower Of Limitation = -80°C, High Of Limitation = +100°C, Vibration OL > 17.5Grms Combined Environment Stress: Temperature -80°C to +90°C, 3 Grms to 9 Grms.
Cold start test	At ambient temperature -5°C.
Transport tests acc. AV18-Q0681 ISTA-2A: 2011	
1. Conditioning	Pre-conditioning: Temp. +25°C ±3°C, 55% ±20% RH, Duration 6 hours. Conditioning: Temp. +38°C, 85%RH, Duration 72 hours. Temp. +60°C, 30%RH, Duration 6 hours.
2. Compression	Weight & Load Spender: Increase the load unit it reaches the test load. Maintain the force for a designated duration, then release the force. Test load (AR): 217 kg. Test duration: 1 press
3. First vibration test	Frequency: random, 1~200 Hz. 3 axes * each axis continue 30 minutes
4. Drop test after 1st vibration test	Height depending of weight of product. Drop height (mm): 970; drop times: 10

Image performance	Specific Test description
IEC 62676-5	Video surveillance systems for use in security applications - Part 5: Data specifications and image quality performance for camera devices

ONVIF

Conformance	Specific Test description
EN 50132-5-2	Alarm systems - CCTV surveillance systems for use in security applications - Part 5-2: IP Video Transmission Protocols
EN 62676-2	Video surveillance systems for use in security applications

Data subject to change without notice.
Eindhoven, December 2023