

TO WHOM IT MAY CONCERN

Bosch Security Systems
Torenallee 49
5617 BA Eindhoven
The Netherlands

Product Test Report

BT-SC 2018-E-054

Products**DINION 3100i (IR)**

NBE-3702-AL	F.01U.414.799	Bullet 2MP 3.3-10.2mm IP66 IK10 IR
NBE-3703-AL	F.01U.414.800	Bullet 5MP 3.3-10.2mm IP66 IK10 IR
NBE-3702-AL-GOV	F.01U.419.797	Bullet 2MP 3.3-10.2mm IP66 IK10 IR GOV
NBE-3703-AL-GOV	F.01U.419.746	Bullet 5MP 3.3-10.2mm IP66 IK10 IR GOV

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 and Safety approvals

EMC EU, 2014/30/EU (EMCD)	Description
EN 55032:2015 +A11:2020	Information Technology Equipment- Radio disturbance characteristics Limits and Methods of measurement. Class A
EMC Canada	
ICES-003 Class A	Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard
EMC US	
CFR 47 FCC part 15 Class A	Telecommunication Chapter I - FEDERAL COMMUNICATIONS COMMISSION, Subchapter B – Unintentional Radiators, Part 15 - RADIO FREQUENCY DEVICES
EMC Australia and New Zealand	
AS/NZS CISPR 32 equal to CISPR 32	Electromagnetic compatibility of multimedia equipment - Emission requirements.
EMC Japan	
VCCI: VCCI-CISPR 32: 2016	CISPER 32. EMC certification for Japan.
EMC United Kingdom	
UKCA	UKCA DoC

Safety approvals

Safety EU, 2014/35/EU (LVD)	
EN IEC 62368-1:2020/A11:2020	Audio/video, information and communication technology equipment - Part 1: Safety requirements
	Information technology equipment - Safety - Part 22: Equipment installed outdoors
Safety USA	
UL 62368-1	Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements)
Safety Canada	
CSA/UL 62368-1:2019	Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements)
	Information Technology Equipment - Safety - Part 22: Equipment to be Installed Outdoors
IR lighting (IR model only)	
IEC 62471	Photobiological safety of lamps and lamp systems

Environmental approvals

Directive or standard	Description
RoHS EU, 2011/65/EU and 2015/863/EU	Directive of the European Parliament and of the Council as regards the list of restricted substances
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 <u>Scope:</u> Development, Production, Installation and Sales.
ISO 14001:2015	Environmental management systems – Requirements with guidance for use <u>Scope:</u> Development, Production, Sales and After Sales.

Reliability tests

Cold operation (Operational) (EN 60068-2-1:2007)	Temperature -40°C, Duration 16 hours.
Dry heat (Operational) (EN 60068-2-2:2007)	Temperature +70°C, Duration 16 hours
Dry heat (Endurance) (EN 60068-2-2:2007)	Temperature +70°C, Duration 21 days
Vibration sinusoidal (Operational) (IEC 60068-2-6:2007)	Frequency Range 10~150Hz, 5 m/s ² , 3 axes, Sweep rate 1 octave/min, 1 sweep/axis.
Vibration sinusoidal (Endurance) (IEC 60068-2-6:2007)	Frequency Range 10~150Hz, 10 m/s ² , 3 axes, Sweep rate 1 octave/min, 20 sweep/axis.
Damp heat, cyclic (Operational) (EN 60068-2-30:2005)	Temperature +25°C to +55°C, Relative Humidity 93%, 2 cycles.
Damp heat, cyclic (Endurance) (EN 60068-2-30:2005)	Temperature +25 to +55°C, Relative Humidity 93%, 6 cycles
Shock (Operational) (IEC 60068-2-27:2008)	Halve sine wave pulse, duration 6ms, 3 shocks per direction, 6 directions
Impact (Operational) EN 62262 Edition 1.1:2021 (IK10)	2002 Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK 10)
Water/Dust protection IEC 60529 Edition 2.2:2013 (IP66)	Degrees of protection provided by enclosures (IP66)

Additional Reliability tests

Environmental test methods	Specific Test description
MTBF (Mean Time Between Failures) calculation of used components	Based on: Telcordia Issue 4, or FIT figures manufacturer. Theoretical MTBF is about 604,000h.
HALT (Highly Accelerating Life Test)	Overstress test to Fail, Operational, Lower Of Limitation = -40°C, High Of Limitation = +100°C, Vibration OL > 12.5Grms Combined Environment Stress: Temperature -30°C to +90°C, with 3 to 10 Grms for each cycle.
Cold start test	At ambient temperature -20°C.
Transport tests acc. AV18-Q0681 ISTA-2A: 2011	
1. Conditioning	Pre-conditioning: Temp. +25(±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	Top to Bottom, Test Load for Apply and Release, Duration 1 press. Calculated test load = 725.32 lbs
3. vibration test	Frequency 240CPM, Duration 60 min. ; Number of Impact (cycle): 14,200 cycles
4. Drop test after vibration test	Height depending of weight of product Drop height: 970 mm; 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, Apr 2024.