

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	NETWORK CAMERA
Model:	XNF-A9014RV, XNF-A8014RV
Rating:	12 Vdc, 1.67 A or PoE (53 Vdc), 0.37 A
Applicant Name and Address:	HANWHA VISION CO LTD 6, PANGYO-RO 319BEON-GIL, BUNDANG-GU SEONGNAM-SI GYEONGGI-DO 13488 KOREA

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared By: Lawrence Lee / Project Handler Reviewed By: SeungTae Kim / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

- A. Authorization - The Authorization page may include additional Factory Identification Code markings.
- B. Generic Inspection Instructions -
- i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
 - ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
 - iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

NETWORK CAMERA is designed for indoor or outdoor use, wall or ceiling use with mounting brackets.

It is commercial equipment supplied by DC or UL listed PoE (Power over Ethernet) input and installed by service personnel.

Model Differences

XNF-A9014RV is basic model.

XNF-A8014RV is identical to basic model except model designation and SW.

Test Item Particulars

Product group	end product
Classification of use by	Ordinary person
Supply Connection	not mains connected: ES1
Supply tolerance	None
Supply connection – type	Not directly connected to the mains
Considered current rating of protective device ...	N/A
Equipment mobility	wall/ceiling-mounted
Over voltage category (OVC)	OVC I
Class of equipment	Class III
Special installation location	Outdoor location
Pollution degree (PD)	PD 2
Manufacturer's specified Tma (°C)	55 Outdoor: minimum -40
IP protection class	IP 66
Power systems	not AC mains
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	1.02

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 55 °C

- The product is intended for use on the following power systems : No direct connection
- Considered current rating of protective device as part of the building installation (A) : N/A
- Mains supply tolerance (%) or absolute mains supply : No direct connection
- The Risk Group of a lamp or lamp system (including LEDs) is : Exempt
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- The outdoor equipment/enclosure was evaluated for use in an ambient range of : -40 °C to 55 °C

Additional Information

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- Maximum Normal Load: Continuous operation. (Operate the camera through networked equipment with IR LED ON).

Additional Standards

The product fulfills the requirements of: N/A

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized Company's name, Trade Name, File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	Input Ratings (voltage, current)
Outdoor enclosure type	"Rainproof", IP66
Hard Copy	A. IMPORTANT or ATTENTION or similar wording B. Please check 'Manuals' from our website, before connecting to the supply. C. Company website URL (https://www.~~) or QR code.
(Website) Manual - 1	This product is intended to be supplied by a UL Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from 12 Vdc, 1.67 A or PoE (53 Vdc), 0.37 A.
(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with 802.3bt/802.3at shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL 60950-1 or PS2 as defined in UL 62368-1.
SCC requirement	If the signal words DANGER, WARNING, and CAUTION are included, a French manual is provided.

Special Instructions to UL Representative

N/A

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
N/A	N/A	N/A	N/A	N/A	N/A	N/A
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	All model					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	All model					
BD1.4	Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test.					
	All model					

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
N/A	N/A	N/A	N/A	N/A	N/A

4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
Enclosure – Lens dome cover (Plastic)	MITSUBISHI ENGINEERING- PLASTICS CORP	S-2000V+(f1)	Min. 2.0 mm thickness, rated Min. V-2, 115 deg. C	QMFZ2	UL (E41179)	
Enclosure – LED cover, transparent (Plastic)	SABIC JAPAN L L C	143R(f1)	Min. 2.0 mm thickness, rated Min. HB, 125 deg. C	QMFZ2	UL (E207780)	
Enclosure – LED cover, Black glossy (Plastic)	SABIC JAPAN L L C	EXL1434T(GG)(f1)(N1)(BK47)	Min. 2.0 mm thickness, rated Min. HB, 120 deg. C	QMFZ2	UL (E207780)	
Enclosure –Black cover (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	Tested in equipment	
Internal plastic part (Plastic)	LOTTE CHEMICAL CORPORATION	HN-1068(f1)	Min. 1.5 mm thickness, rated Min. V-0, 130 deg. C	QMFZ2	UL (E115797)	
Enclosure - Bottom cover (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	Tested in equipment	
Mounting bracket (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	Tested in equipment	
Thermal pad	KOMOTECH	KGP-1(a)	Min. 2.0 mm thickness, rated V-0, 150 deg. C	QMFZ2	UL (E245303)	
Thermal pad - Alternate	Interchangeable	Interchangeable	Min. 2.0 mm thickness, rated V-0, 150 deg. C	QMFZ2	UL	
Transformer (T1)	SHENZHEN GROUP-TEK ELECTRONICS	PDT25297SR	41 uH, 130 deg. C, See enclosure for more detail.	-	Tested in equipment	

	TECHNOLOGY CO., LTD					
Linefilter (L5)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD	PCM1206-752S	7.5 mH, 130 deg. C, See enclosure for more detail.	-	Tested in equipment	
Fuse (F2)	LITTELFUSE INC	449*	Rated 125 V, 3.5 A	JDYX2	UL (E10480)	
Opto-coupler (LS1, LS2)	LITE-ON Technology Corporation	LTV-217 (Type: LTV-217-C-G)	Isolation Voltage: 3750. Max. Operation Temperature: 110 deg. C	FPQU2	UL (E113898)	
Lithium Battery (BAT1)	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	MS421R	Lithium, Rechargeable, Max Charging Voltage, 3.4 V dc, Max Charging current: 300 mA	BBCV2	UL (MH15628)	
Lithium Battery Protection circuit	Interchangeable	Interchangeable	Diode (D2, 80 V, 250 mA) and Resistor (R194, 3.3 kohm) in series	-	Tested in equipment	
Lens module	Sunny Optics (zhongshan)Co.Ltd.	C7412B-25H	3.0-6.0 V	-	Tested in equipment	
Heatsink	Interchangeable	Interchangeable	Aluminum (Silver) Approx. overall size of 58.0 mm x 47.5 mm, Min. 2.0 mm thickness, See enclosure for dimension.	-	Tested in equipment	
FPWB	SI FLEX CO LTD	T1	Min. V-0	ZPXK2	UL (E218849)	
FPWB - Alternate	Interchangeable	Interchangeable	Min. V-0	ZPXK2	UL	
PWB	HANNSTAR BOARD CORP	MV-4	Min. V-0, 130 deg. C	ZPMV2	UL (E89382)	
PWB - Alternate	Interchangeable	Interchangeable	Min. V-0, 130 deg. C	ZPMV2	UL	

Gasket - BUSHING-CABLE SET	NAMYANG VINA	C-VMQ-60-GR	Gasket Test was conducted under E158873-A6034.	-	Tested in equipment	
Gasket - RUBBER-DOME -IR	Y&K	O-VMQ-50-BK	Gasket Test was conducted under E158873-A6034.	-	Tested in equipment	
Gasket - RUBBER-TOP	NAMYANG VINA	O-VMQ-30-BK	Gasket Test was conducted under E158873-A6034.	-	Tested in equipment	
Outdoor Label	Interchangeable	Interchangeable	Suitable for use on each type of surface to which applied, rated for minimum and maximum surface temperature specified, or Min. - 40 deg. C to Max. 55 deg. C if not specified.	PGDQ2 or PGJI2	UL	
IR LED (LD11, LD12, LD21, LD22, LD31, LD32)	OSRAM Opto Semiconductors. GmbH	SFH 4714A	Vf = Max. 2.3 V, IF = Max. 1.0 A	-	Tested in equipment	
IR LED (LD41, LD42, LD43, LD44)	OSRAM Opto Semiconductors. GmbH	SFH 4713A	Vf = Max. 2.3 V, IF = Max. 1.0 A	-	Tested in equipment	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	External View - 1
Photographs	03-02	External View - 2
Photographs	03-04	Internal View
Photographs	03-05	Lens Module
Photographs	03-06	Sensor Board
Photographs	03-07	Network Board - Top
Photographs	03-08	Network Board - Bottom
Photographs	03-09	LED Board
Manuals	06-01	Manual
Miscellaneous	07-01	Transformer (T1) Specification
Miscellaneous	07-02	Line Filter (L5) Specification
Miscellaneous	07-03	Enclosure Diagram
Miscellaneous	07-04	Heatsink Diagram
Miscellaneous	07-05	Label