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:	XND-A9085RV, XND-A8085RV, XND-A6085RV
Rating:	12 Vdc, 1.72 A or PoE (53 Vdc), 0.37 A (for model XND-A9085RV, XND-A8085RV) 12 Vdc, 1.68 A or PoE (53 Vdc), 0.36 A (for model XND-A6085RV)
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: Dennis Hong / Project Handler Reviewed By: Lawrence Lee / Reviewer

Copyright © 2019

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 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

XND-A9085RV is basic model.

XND-A8085RV is identical to basic model except model designation and lens.

XND-A6085RV is identical to basic model except model designation and lens and Rated current (more lower)

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	:	N/A
Pollution degree (PD)	:	PD 2
Manufacturer's specified Tma (°C)	:	50
IP protection class	:	IPX0
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)	:	1.49

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 50 °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 following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

Additional Information

4791950313
- Maximum Normal Load: Continuous operation. (Operate the camera through networked equipment with IR LED ON)

4792298038 (Revision)
1. Add alternate Lens module (IRIS) for XND-A6085RV. See Critical component list 4.1.2
2. Add alternate model name XND-A6085RV.
3. Add rated input of alternate model XND-A6085RV.
4. Add the photograph of Lens module for XND-A6085RV.

- 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)
Hard Copy	A. IMPORTANT or ATTENTION or similar wording B. Please check 'Manuals' from out website, before connecting to the supply. C. Company website URL (https://www.~~) or QR cord.
(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 12 Vdc, 1.21 A or PoE (53 Vdc), 0.27 A.

(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with 802.3af/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 models are not required					
BD1.3	**Electric Strength Test Exemptions – This test is not required for the following models:**					
	All models are not required					
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 cover (Plastic)	MITSUBISHI ENGINEERING-PLASTICS CORP	S-3000(&6)(f1)	Min. 1.8 mm thickness, rated Min. V-2, 125 deg.C, See enclosure for dimension	QMFZ2	UL (E41179)	03-01
Enclosure – bottom cover (Metal)	Interchangeable	Interchangeable	AluminumMin. 2.0 mm thickness, see enclosure for dimension.	-	-	03-02
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)	03-04
IR LED(LD3, LD6)	CYBRIGHT	XB-IR3838EU-I	Vf = 1.7 VIR = 10 uA	-	-	
IR LED(LD4, LD5)	LITEON OPTOELECTRONICS	LTE-R38386L-YE5-SS	Vf = 1.8 VIR = 10 uA	-	-	
IR LED(LD1, LD2, LD7, LD8)	CYBRIGHT	XB-IR3838S2-D30	Vf = 2.0 VIR = 10 uA	-	-	
Heater resister (22 EA, R1 to R23)	Interchangeable	Interchangeable	Total 0.7 watt	-	-	
Transformer (T1)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD	PDT25297SR	41 uH, 125 deg . C. See enclosure for more detail.	-	-	
Inductor (L5)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD	PCM1206-752S	7.5 mH125 deg.C	-	-	
Fuse (F1)	LITTELFUSE INC	1206L012WR	Rated 30 V, 125 mA	XGPU2	UL (E183209)	

Fuse (F2)	LITTELFUSE INC	449*	Rated 125 V, 3.5 A	JDYX2	UL (E10480)	
Opto coupler (LS1, LS2)	LITE-ON TECHNOLOGY CORP	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	ML414H	Lithium, Rechargeable, Max ChargingVoltage, 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 for XND-A9085RV	DongGuan YuTong Optical Technology Co ., Ltd.	YTW30033A01DB.IR-PIRIS-JZ-8MP+H151+IR1021	Zoom/Focus 4.2 V–5.0 V IRIS 2.6 V-3.5 V IR-Cut 3.5 V-7.0 V	-	Tested in equipment	
Lens module for XND-A8085RV	DongGuan YuTong Optical Technology Co ., Ltd.	YT0W2Z53DB.IR-PIRIS-JZ-5MP+H82+IR1021	Zoom/Focus 4.2 V–5.0 V IRIS 2.4 V-3.6 V IR-Cut 3.5 V-7.0 V	-	Tested in equipment	
Lens module (IRIS) for XND-A6085RV	NEW ASIA OPTICAL INDUSTRY CO.,LTD	N71DNDB-FP5	Zoom/Focus 4.0 V ± 10 % IR-Cut 4.0V±10%	-	Tested in equipment	
ZOOM/FOCUS Stepping Motor of Lens module for XND-A6085RV	TOKYO MICRO INC.	8S-501L99	5.0 V±0.5 V	-	Tested in equipment	
USB-C type port overcurrent protection IC (U26)	Texas Instruments Incorporated	TPD3S014DBVR	Rated 4.5-5.5 Vdc, 0.5 A, Current limit: 1.05 A	QVGK2	UL (E169910)	
FPWB	SI FLEX CO LTD	T1	Min. V-0	ZPXK2	UL (E218849)	

(Alternate)	Interchangeable	Interchangeable	Min. V-0	ZPXK2	UL	
PWB	HANNSTAR BOARD CORP	MV-4	Min. V-0, 130 deg. C	ZPMV2	UL (E89382)	
(Alternate)	Interchangeable	Interchangeable	Min. V-0, 130 deg. C	ZPMV2	UL	

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
Photographs	03-10	Heater Board
Photographs	03-11	Lens module for XND-A6085RV
Manuals	06-01	Manual
Miscellaneous	07-01	Transformer (T1) Specification
Miscellaneous	07-02	Line Filter (L5) Specifiation
Miscellaneous	07-03	Enclosure Diagram
Miscellaneous	07-04	Label