

TEST REPORT



CTK Co., Ltd.

5 Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si,
Gyeonggi-do, Republic of Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

REPORT No.:
CTK-2024-00264
Page (1) / (15) pages

1. Applicant

- Name : Hanwha Vision Co., Ltd
- Address : 6 Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488 KOREA
- Date of Receipt : DEC 21, 2023

2. Manufacturer

- Name : INDUS VISION Co., Ltd.

3. Use of Report :

For customer submission

4. Test sample / Model :

Explosion Proof Camera / TNO-C8083E

5. Date(s) of test :

JAN 16, 2024 ~ JAN 23, 2024

6. Test Standard (Method) used :

IEC 60529:1989 +A1:1999+A2:2013

7. Testing Environment :

Temperature: (25 ±10) °C, Humidity: (50 ±25) %R.H.
Pressure: (96 ±10) kPa

8. Test Results :

Clause 4. Refer to the test results

9. Location of Test :

☒ Permanent Testing Lab ☐ On Site Testing
(5 Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si,
Gyeonggi-do, Republic of Korea)

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
This report cannot be reproduced or copied without the written consent of CTK

Approval	Tested by		Technical Manager	
	Name: MinGi Moon	(Signature)	Name: HoHyun Lee	(Signature)

Remark. This report is not related to KOLAS accreditation and relevant regulation.

JAN 26, 2024

CTK Co., Ltd.



Table of contents

1. Testing Laboratory	3
1.1 Testing laboratory information	3
1.2 Testing laboratory accreditation status	3
2. Product description and Equipment information	4
2.1 Product description	4
2.2 Equipment information	4
2.3 Pre-test product images	5
2.4 Testing equipment images	6
2.5 Product Appearance	7
3. Test conditions and methods	8
3.1 Test duration	8
3.2 Test conditions	8
3.3 Testing Image	10
4. Test result	11
4.1 Test Result Table	11
4.2 Post-Test Product Images	12

 CTK Co., Ltd. The Prime Leader of Global Regulatory Compliance	CTK Co., Ltd. 5 Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea Tel: +82-31-339-9970 Fax: +82-31-624-9501	REPORT No.: CTK-2024-00264 Page (3) / (15) pages	
--	---	--	--

1. Testing Laboratory

1.1 Testing laboratory information

Lab. Name	CTK Co., Ltd.
Address	5 Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea
Tel.	+82-31-339-9970
Fax.	+82-31-624-9501
E-Mail	ctk@e-ctk.com
Website	e-ctk.com

1.2 Testing laboratory accreditation status

Country	Classification	Accreditation Number	Logo
International	KOLAS	TESTING NO. KT119	

 CTK Co., Ltd. The Prime Leader of Global Regulatory Compliance	CTK Co., Ltd. 5 Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea Tel: +82-31-339-9970 Fax: +82-31-624-9501	REPORT No.: CTK-2024-00264 Page (4) / (15) pages	
--	---	--	--

2. Product description and Equipment information

2.1 Product description

Product Name	Model Name	Quantity	Comment
Explosion Proof Camera	TNO-C8083E	1 EA	-

2.2 Equipment information

Testing equipment	Model Name	Manufacturer	Manufacturing Number	Calibration Date
Stop Watch	NONE	Casio	612Q01R-1	2024-02-21
Aneroid Barometer	BAROMEX	SATO	84682	2024-02-02
Thermo/Humidity meter	Smart600	ZOGLAB	SMART1706010741A	2024-04-03
Push Pull Gage	FB30K	Imada	83805	2024-02-03
Test wire (1.0 mm)	TRP-02	ED&D	S1-J15	-
Dust Chamber	NONE	JFM	S3-IP36	2024-03-27
Area flow meter	Z-6504	NURITECH	04	2024-02-12
Waterproof test apparatus	IPX3-6	Kingpo	S3-IP37	-
Steel measuring meter	10 m	KOMELON	S3-D01	2024-11-11

2.3 Pre-test product images



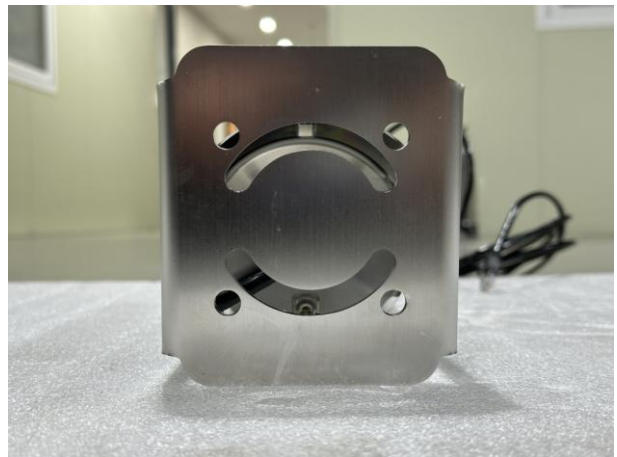
Top



Bottom



Front



Rear



Left side



Right side

2.4 Testing equipment images



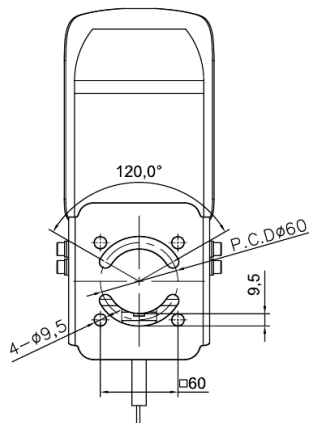
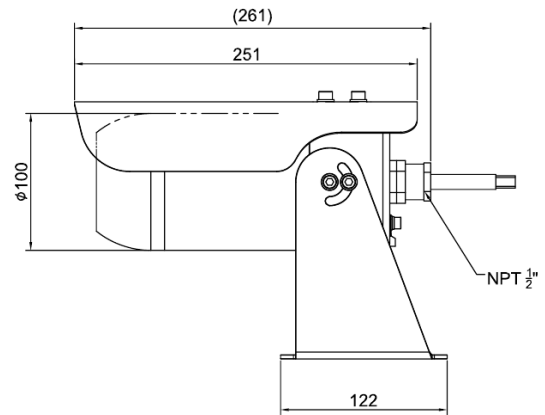
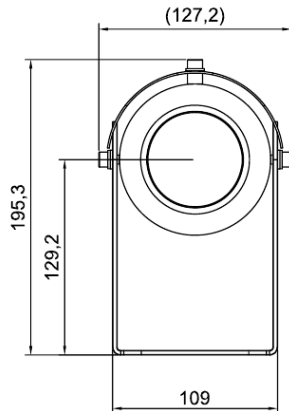
Dust Chamber



Waterproof test apparatus (IPX6)

2.5 Product Appearance

Enclosure Dimensions [Unit : mm]



3. Test conditions and methods

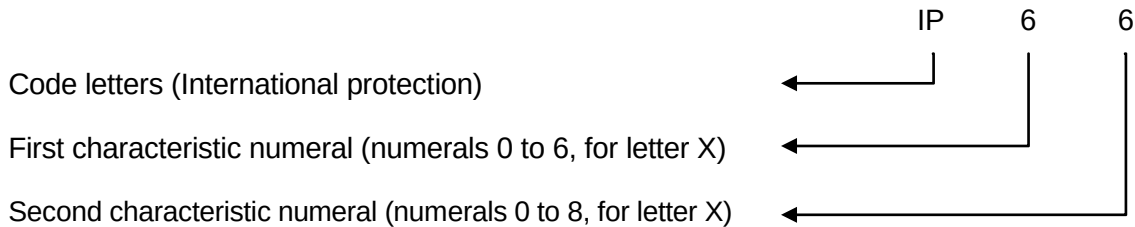
3.1 Test duration

3.1.1 Test Date : Jan 16, 2024 ~ Jan 23, 2024

3.2 Test conditions

3.2.1 Test standard: **IEC 60529:1989 +A1:1999+A2:2013**

3.2.2 Arrangement of the IP code



3.2.2.1 Degree of protection against access to hazardous parts indicated by the first characteristic numeral

First characteristic numeral	Degree of protection	Application
6	Protected against access to hazardous parts with a wire. The access probe of 1.0 mmØ, shall not penetrate. Test force: 1 N ± 10 %	☒

NOTE In the case of the first characteristic numerals 3, 4, 5 and 6, protection against access to hazardous parts is satisfied if adequate clearance is kept. The adequate clearance should be specified by the relevant product committee in accordance with 12.3.
Due to the simultaneous requirement specified in table 2, the definition “shall not penetrate” is given in table 1.

3.2.2.2 Degree of protection against solid foreign objects indicated by the first characteristic numeral

First characteristic numeral	Degree of protection	Application
6	In Dust Testing Equipment, the test sample has to have no ingress of dust after testing atmospheric pressure present condition for 8 hr. (Talcum powder have to go through the measured sieve by Φ 50 μm wire that are spacing 75 μm in squared, per volume and union Talcum powder have to be 2 kg/m³) Products in volume: 2 510 cm³ → 2.51 L Target intake volume (Products in volume 80): 200.8 L Suction volume (Max product in volume 60): 150.6 LPH → 2.51 LPM Actual Suction volume: 2.51 L Suction pressure (Up to 2 kPa): 1.33 kPa Test time (Up to 8 time): 8 hr	☒
¹⁾ The full diameter of the object probe shall not pass through an opening of the enclosure. Due to the simultaneous requirement specified in table 2, the definition “shall not penetrate” is given in table 1.		

3.2.2.3 Degree of protection against water indicated by the second characteristic numeral

Second characteristic numeral	Degrees of protection	Application
6	The product must not be harmed in any direction even strong jet water. Water jet hose nozzle Fig.6, Nozzle 12.5 mm diameter Water flow rate: 100 l/min $\pm$ 5 % : 100 LPM Distance: 2.5 m to 3 m: 3 m Duration of test: 1 min/m² at least 3 min: 3 min	☒

3.3 Testing Image

3.3.1 Test Environment Set-up Images



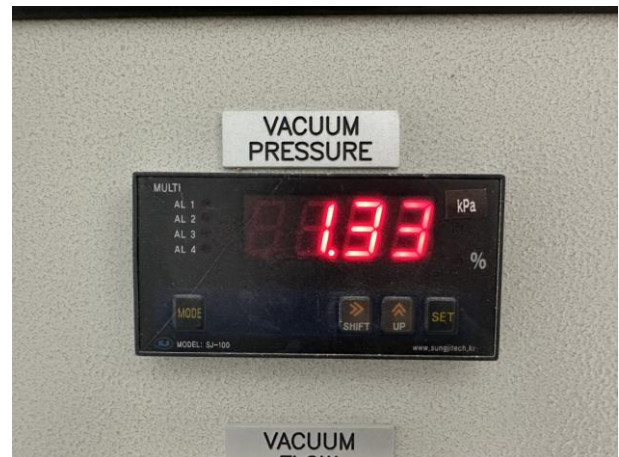
Dust test



Water test



Dust test monitor



Vacuum pressure

4. Test result

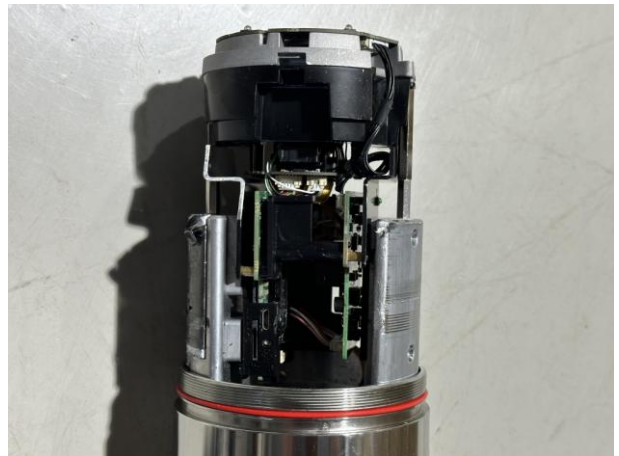
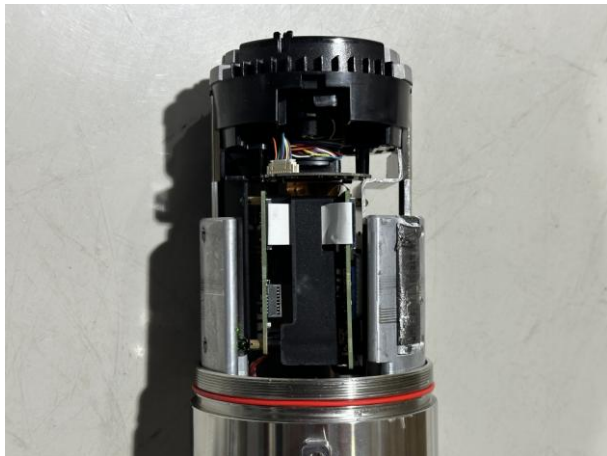
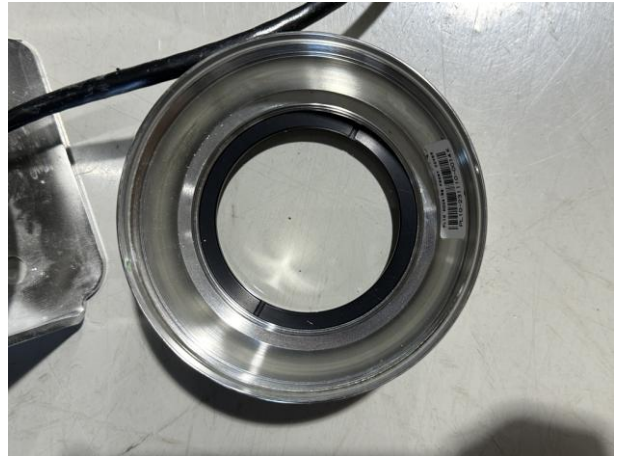
4.1 Test Result Table

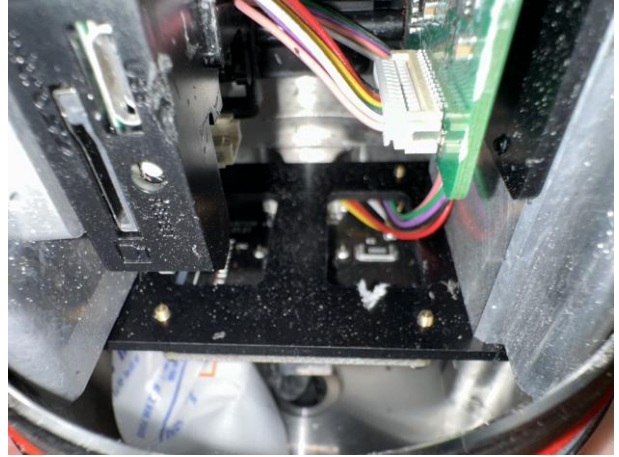
IP code	Evaluation Criteria	Test Results	Remark
IP 6X	No penetration of probe.	Normal	-
	No ingress of dust.	Normal	-
IP X6	No ingress of water.	Normal	-

※ Refer to the sample images after the test is completed. (Clause 4.3)

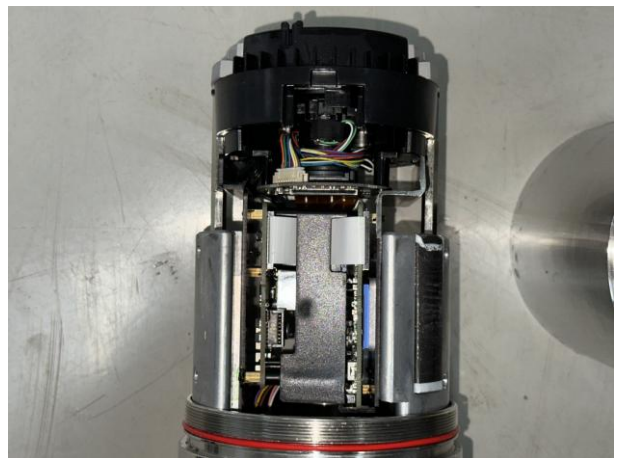
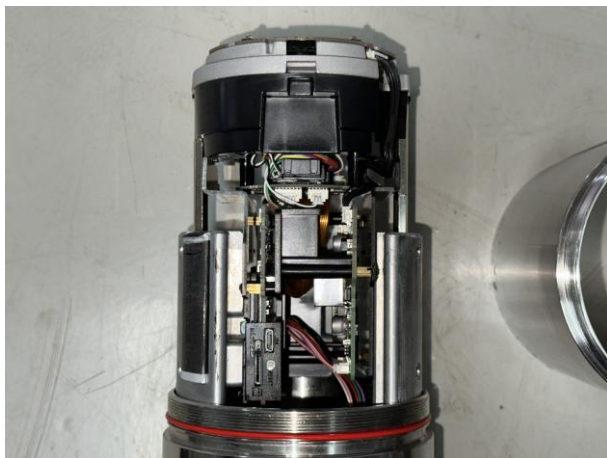
4.2 Post-Test Product Images

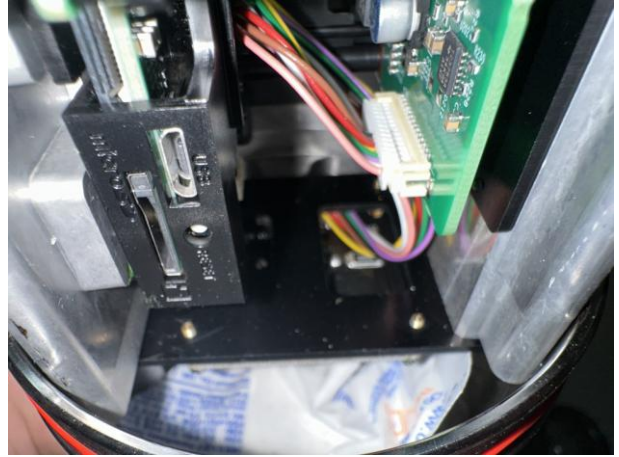
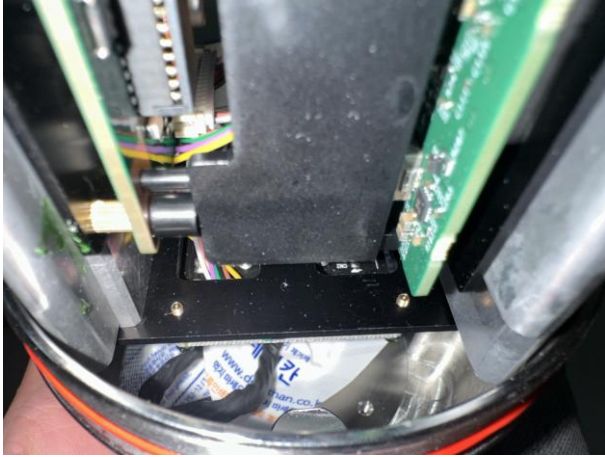
4.2.1 Product internal images after test [The First characteristic Numeral Test]





4.2.2 Product internal images after test [The Second characteristic Numeral Test]





- End -