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-2026-00739

1.	**Applicant**	
	◦ Name :	Hanwha Vision Co., Ltd
	◦ Address :	6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488 KOREA
	◦ Date of Receipt :	Feb. 04, 2026
2.	**Manufacturer**	
	◦ Name :	Hanwha Vision Co., Ltd
3.	**Use of Report :**	For submission to customer
4.	**Test sample / Model :**	NETWORK CAMERA / XNO-A9014R
5.	**Date(s) of test :**	Feb. 23, 2026 ~ Mar. 16, 2026
6.	**Test Standard (Method) used :**	EN 60068-2-1, EN 60068-2-2, EN 60068-2-14, EN 60068-2-6, EN 60068-2-27, EN 60068-2-78, IEC 60068-2-1, IEC 60068-2-2, , IEC 60068-2-14, IEC 60068-2-6, IEC 60068-2-27, IEC 60068-2-78
7.	**Testing Environment :**	Temperature: (25 ± 10) ℃, Humidity: (50 ± 25) % R.H. Pressure: (96 ± 10) kPa
8.	**Test Results :**	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.
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Approval	Tested by Name: HongBeom Jeon (Signature)	Technical Manager Name: HoHyun Lee (Signature)

Remark. This report is not related to ISO/IEC 17025, KOLAS accreditation and relevant regulation.

Mar. 19, 2026

CTK Co., Ltd.

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1. Testing laboratory

1.1 Testing laboratory information

Lab. Name	CTK Co., Ltd.
Representative	Young Joseph Seungwon
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	all.youngin@element.com
Website	www.elementkorea.kr

1.2 Testing laboratory accreditation status

Country	Classification	Accreditation Number	Logo
International	KOLAS	TESTING NO. KT119	

※ CTK Co., Ltd. is an independent third-party testing laboratory and is not affiliated with the manufacturer (Hanwha Vision Co., Ltd.) or any of its parent or subsidiary companies.

2. Sample description and equipment information

2.1 Sample description

Sample Name	Model Name	S/N	Date of Manufacture	Quantity	Comment
Network Camera	XNO-A9014R	ZX4C70GL10000RJ	2026.01	1 EA	-

2.2 Model description

Basic Model .....:	XNO-A9014R
Series model ..... .:	XNO-A8014R, XNO-A6014R
Model differences .....:	Differences between the base model and the image sensor.

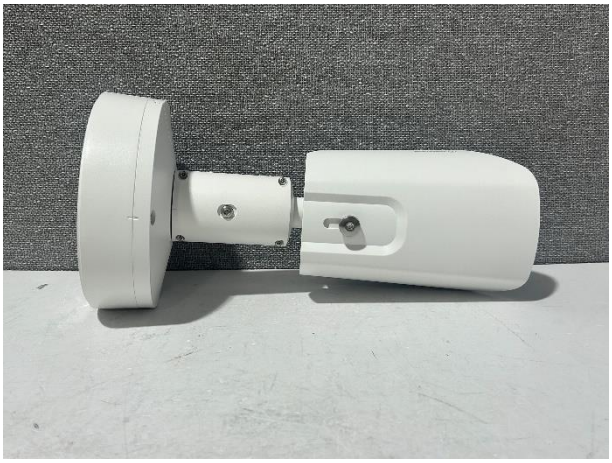
2.3 Equipment information

Testing equipment	Model Name	Manufacturer	Manufacturing Number	Next Cal. Date
Temperature & Humidity Chamber	ARS-0390-AE	ESPEC	4120200057	Aug. 21, 2026
Temperature & Humidity Chamber	1410146	perform	1410646	Sep. 15, 2026
Vibration Testing System	LT1010	FAMTECH	D2012335	-
Vibration Testing System	GT1000M	FAMTECH	D1803072-1	-
Acceleration sensor	8703A250M5	KISTLER	5722241	Jun. 05, 2026

※ All test equipment used for this testing was calibrated in accordance with the manufacturer's requirements, and the calibration ranges cover the measurement values recorded in this report.

2.4 Pre-test sample images

2.4.1 Test sample



Top



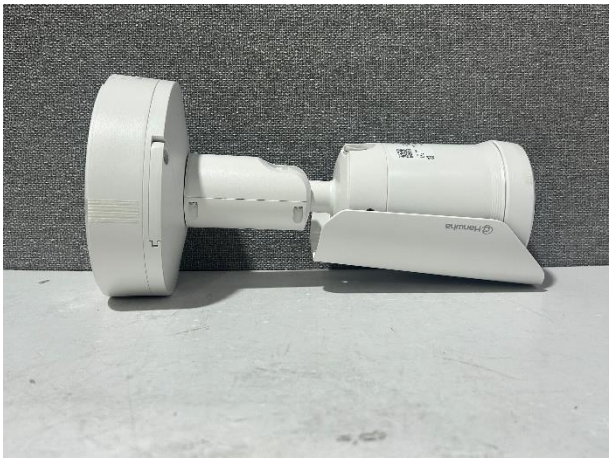
Bottom



Front



Rear



Lest side



Right side

2.5 Testing equipment images

2.5.1 Test equipment



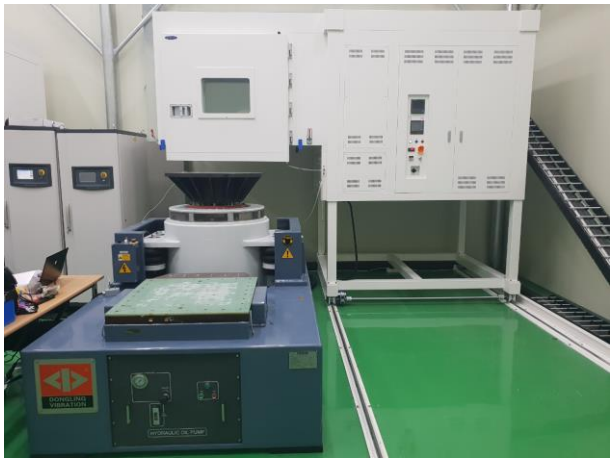
Temperature & Humidity Chamber



Temperature & Humidity Chamber



Vibration Testing System



Vibration Testing System



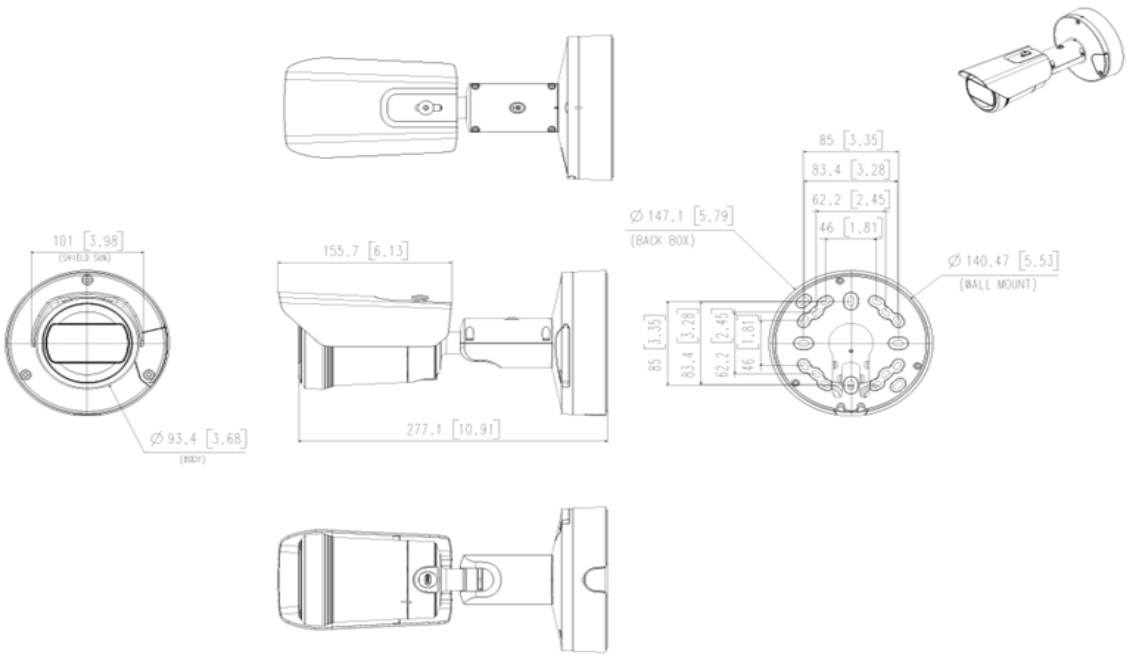
8703A250M5



8703A250M5

2.6 Sample appearance

Enclosure dimensions [unit: mm]



3. Cold test (EN 60068-2-1, IEC 60068-2-1)

3.1 Test date and environmental conditions

3.1.1 Test date: Mar 10, 2026. ~ Mar 11, 2026

3.1.2 Measured Environmental Conditions

Item	Temperature (℃)	Humidity (% R.H.)	Pressure (kPa)
Measurement	23.5	29.8	98.6

3.2 Test conditions and methods

3.2.1 Preconditioning temperature: 25 °C

3.2.2 Sample status: Operation

3.2.3 Test temperature: -33 °C

3.2.4 Test time: 16 h

3.2.5 Recovery Temperature: 25 °C

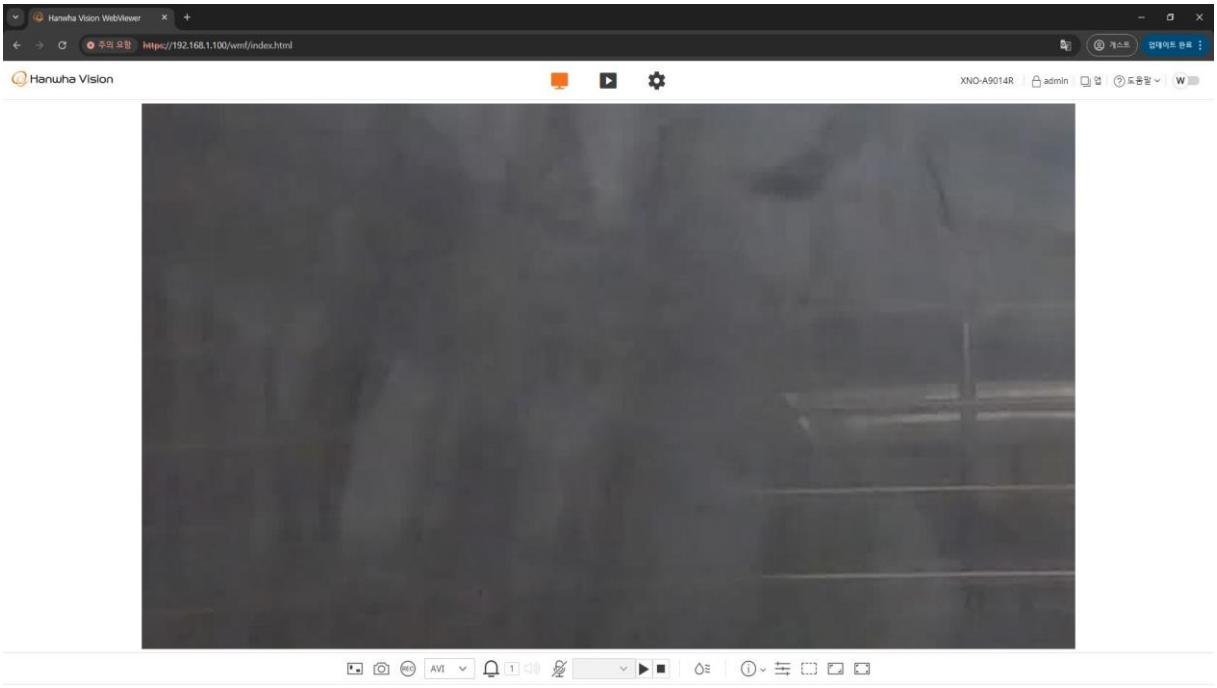
3.2.6 Evaluation items

1) The test sample shall be checked to determine that it is functionally operable in all modes of its prescribed operation

3.3 Test Setup and During test sample images

3.3.1 Evidence of test setting





3.4 Test result

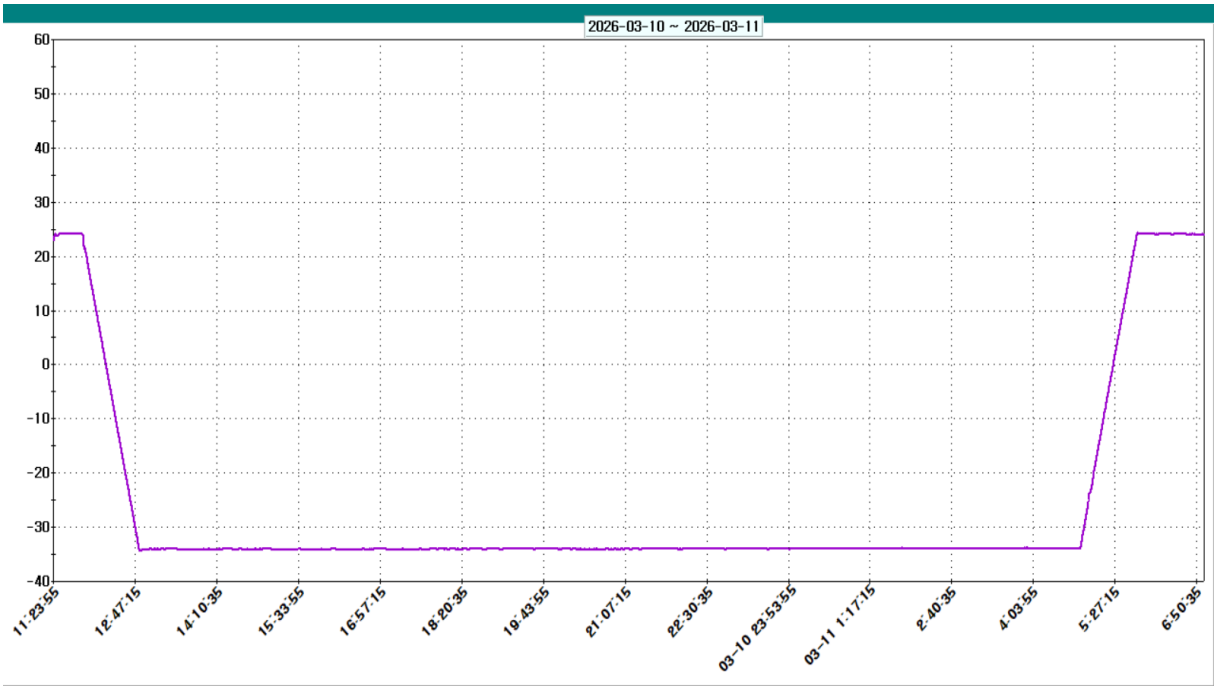
3.4.1 Test result table

Evaluation Criteria	Test Results	Comment
Functional operation	**Pass**	-
Mechanical inspection	**Pass**	-

※ Refer to the sample operation after the completion of testing in section 3.6.

3.5 Test Data

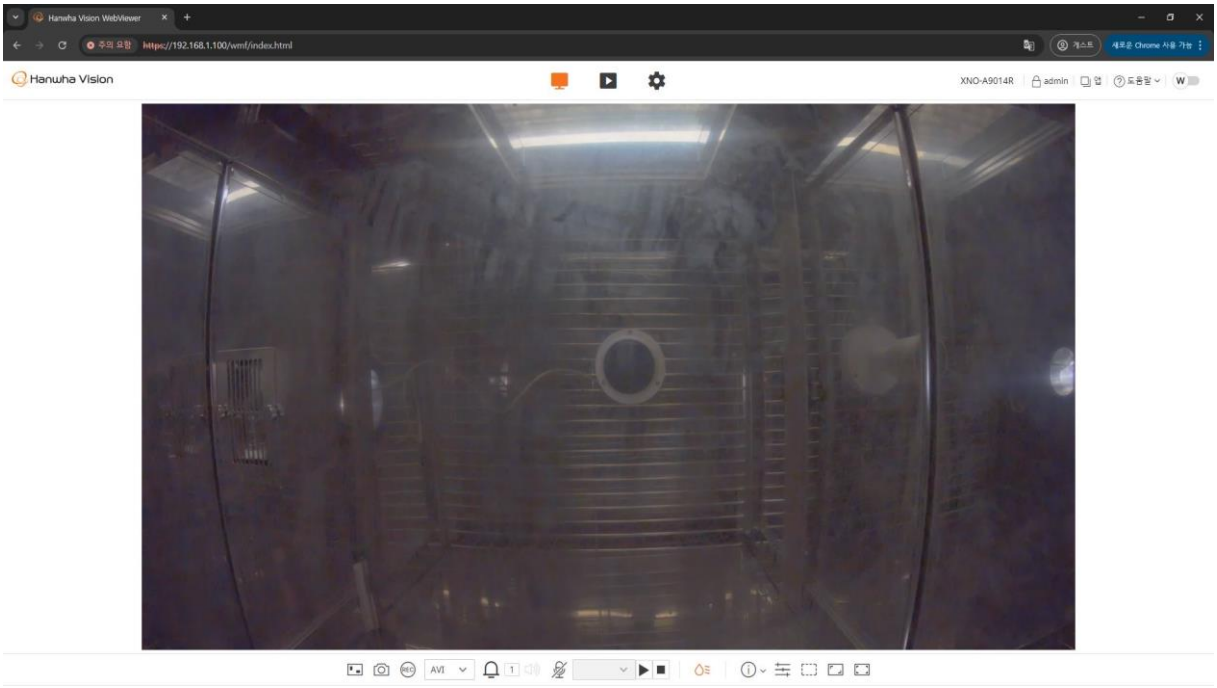
3.5.1 Test data and graph



Temperature Data

3.6 Post-test operation and function

3.6.1 Test sample operation and function



4. Dry heat test (EN 60068-2-2, IEC 60068-2-2)

4.1 Test date and environmental conditions

4.1.1 Test date: Mar. 11, 2026 ~ Mar. 15, 2026

4.1.2 Measured Environmental Conditions

Item	Temperature (℃)	Humidity (% R.H.)	Pressure (kPa)
Measurement	23.6	30.6	96.8

4.2 Test conditions and methods

4.2.1 Preconditioning temperature: 25 °C

4.2.2 Sample status: Operation

4.2.3 Test temperature: 60 °C

4.2.4 Test time: 96 h

4.2.5 Recovery Temperature: 25 °C

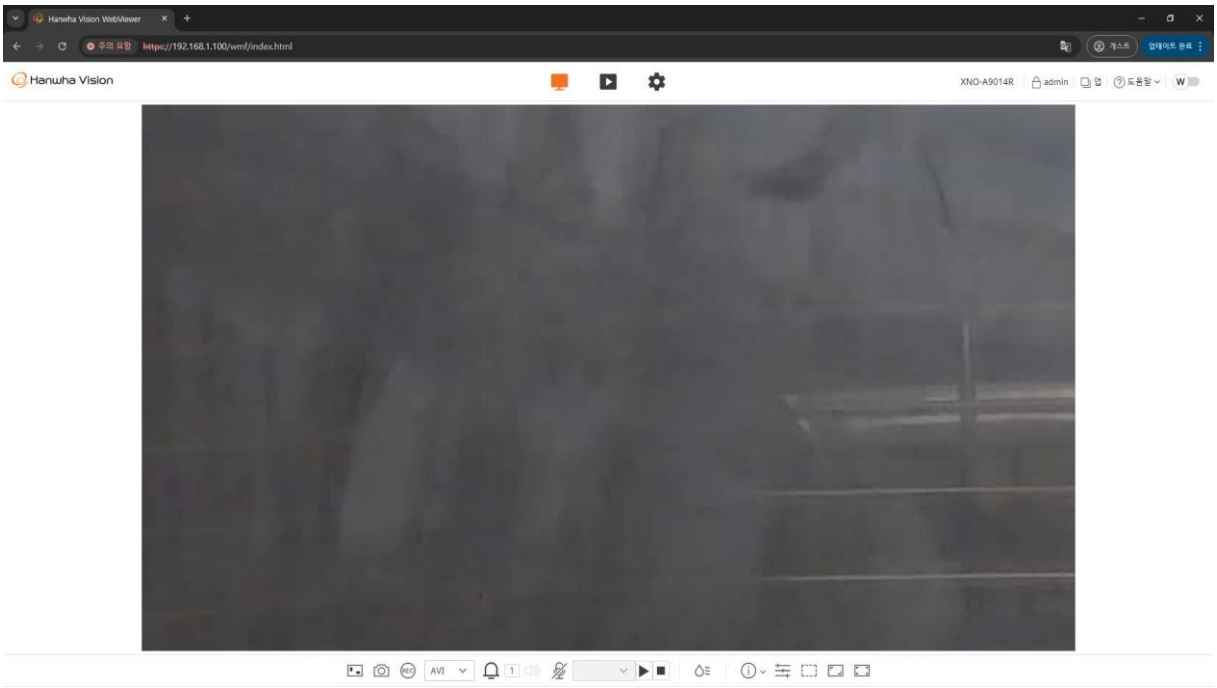
4.2.6 Evaluation items

1) The test sample shall be checked to determine that it is functionally operable in all modes of its prescribed operation

4.3 Testing images

4.3.1 Evidence of test setting





4.4 Test result

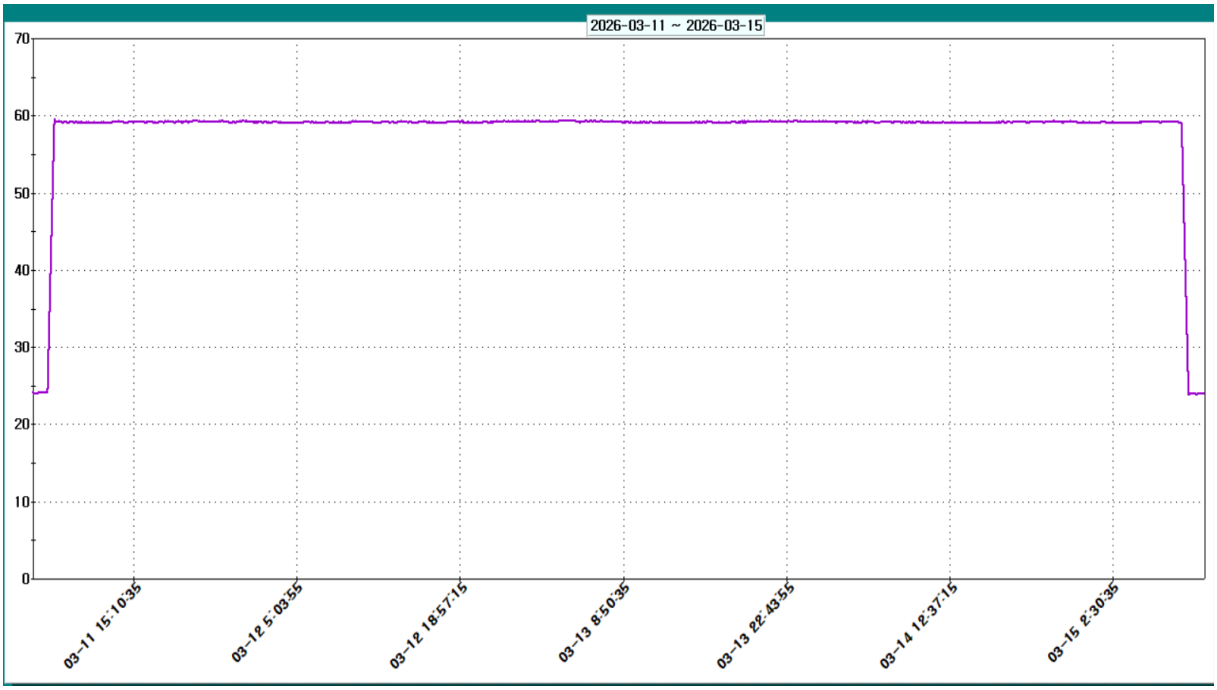
4.4.1 Test result table

Evaluation Criteria	Test Results	Comment
Functional operation	**Pass**	-
Mechanical inspection	**Pass**	-

※ Refer to the sample operation after the completion of testing in section 4.6.

4.5 Test Data

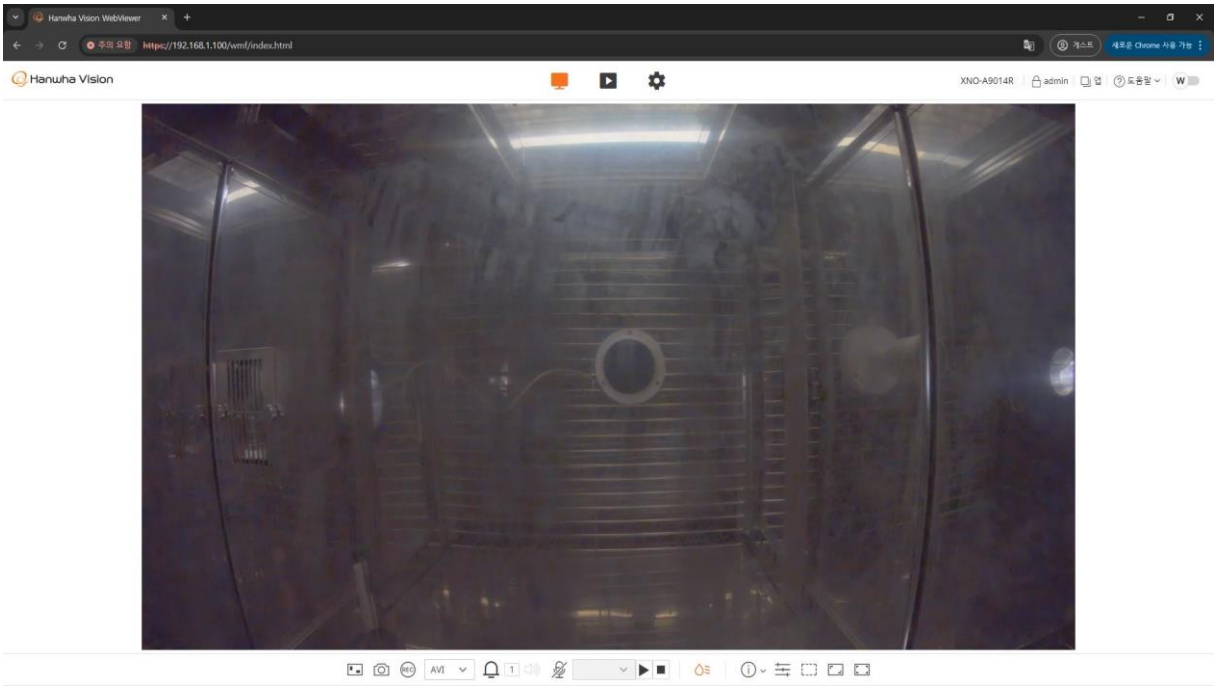
4.5.1 Test data and graph



Temperature Data

4.6 Post-test operation and function

4.6.1 Test sample operation and function



5. Change of temperature test (EN 60068-2-14, IEC 60068-2-14)

5.1 Test date and environmental condition

5.1.1 Test date: Mar. 15, 2026 ~ Mar. 16, 2026

5.1.2 Measured Environmental Conditions

Item	Temperature (℃)	Humidity (% R.H.)	Pressure (kPa)
Measurement	23.4	30.6	98.5

5.2 Test conditions and methods

5.2.1 Sample status: operation

5.2.2 Test temperature: -33 °C, 55 °C

5.2.3 Evaluation items

1) The test sample shall be checked to determine that it is functionally operable in all modes of its prescribed operation

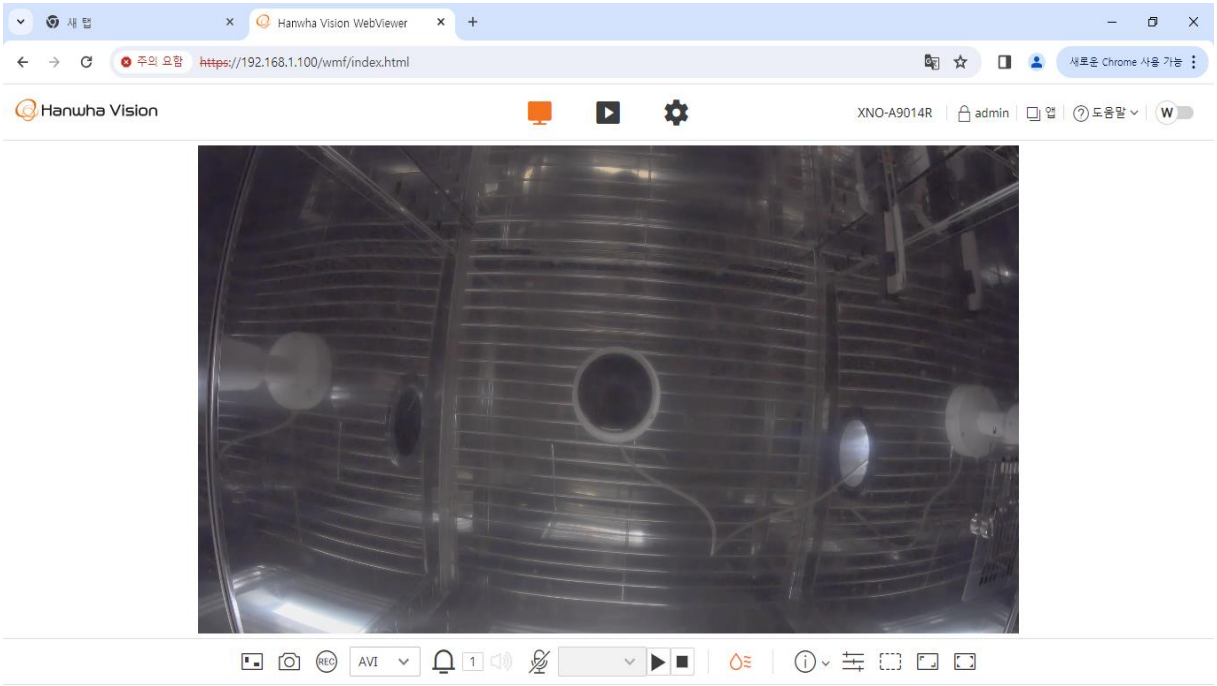
5.2.4 Test method

Temp	Temperature change rate(℃/min)	t_1(idle time)	Cycles
High	5 ℃/min	3 h	3
Low	1 ℃/min	3 h	3

5.3 Testing images

5.3.1 Evidence of test setting





5.4 Test result

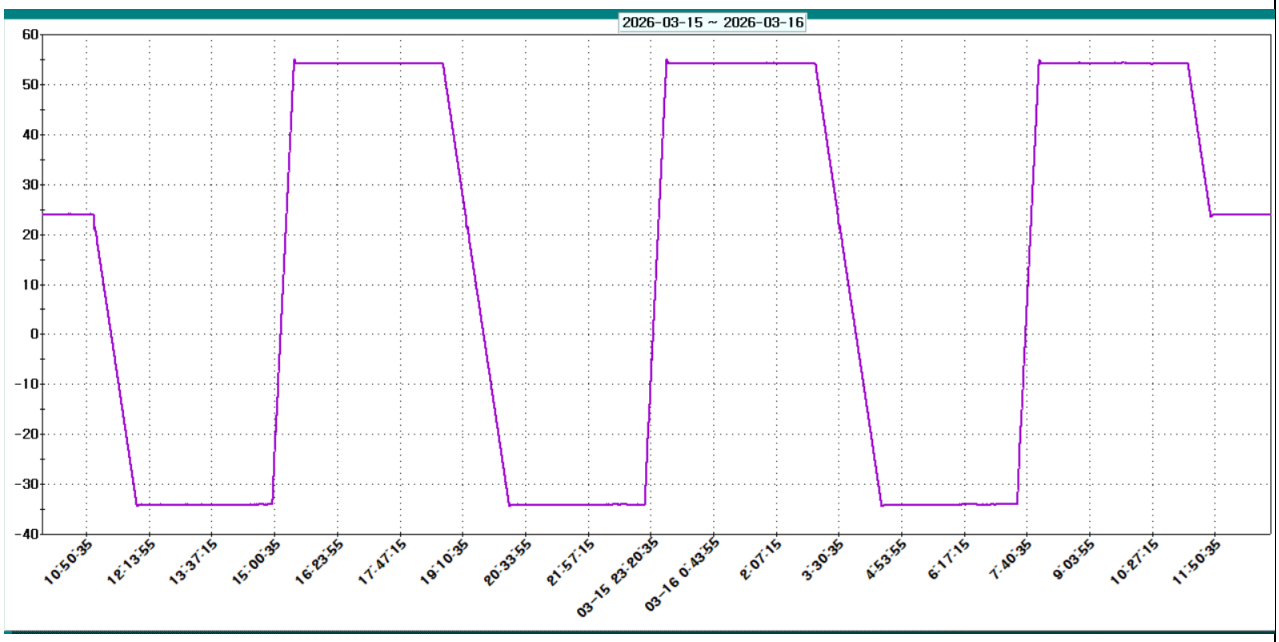
5.4.1 Test results table

Evaluation Criteria	Test Results	Comment
Functional operation	**Pass**	-
Mechanical inspection	**Pass**	-

※ Refer to the sample operation after the completion of testing in section 5.6.

5.5 Test Data

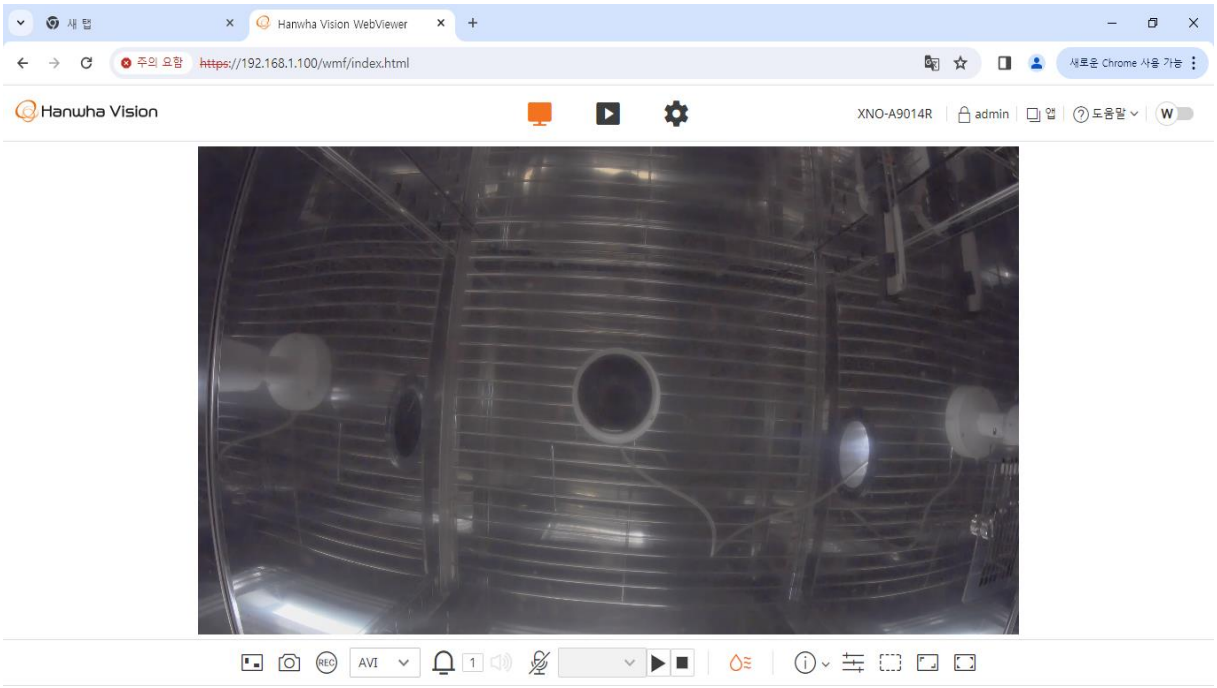
5.5.1 Test data and graph



Temperature Data

5.6 Post-test operation and function

5.6.1 Test sample operation and function



6. Vibration Test (EN 60068-2-6, IEC 60068-2-6)

6.1 Test date and environmental conditions

6.1.1 Test date: Feb. 23, 2026 ~ Mar. 10, 2026

6.1.2 Measured Environmental Conditions

Item	Temperature (℃)	Humidity (% R.H.)	Pressure (kPa)
Measurement	22.3	29.8	98.9

6.2 Test conditions and methods

6.2.1 Sample status: Operation

6.2.2 Applied waveform: Sine

6.2.3 Frequency (Hz): (5 ~ 200) Hz

6.2.4 Acceleration(G): 1 G

6.2.5 Sweep rate: 1 oct/min

6.2.6 Applicable axis: X, Y, Z

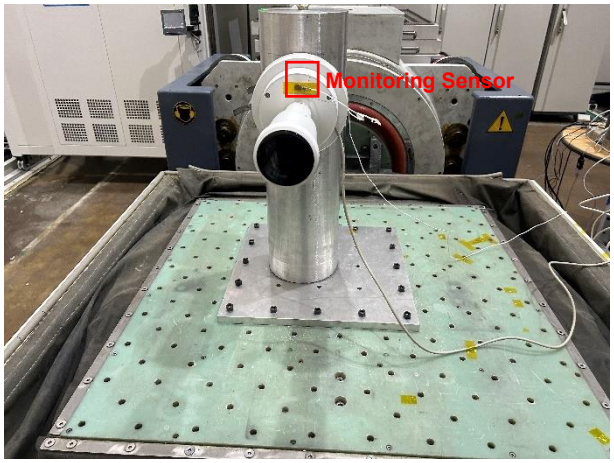
6.2.7 Test time: Total 30 minutes (10 min. per each axis)

6.2.8 Evaluation items

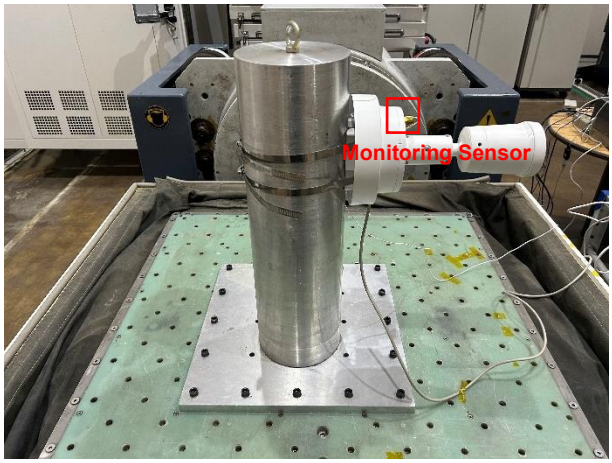
1) The test sample shall be checked to determine that it is functionally operable in all modes of its prescribed operation

6.3 Test Setup and During test sample images

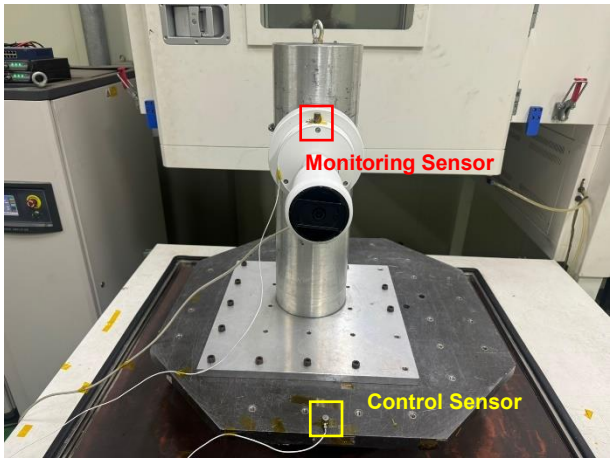
6.3.1 Evidence of test setting



X axis



Y axis



Z axis

※ **The control sensors for the X and Y axes are mounted on the vibration plate.**

6.4 Test result

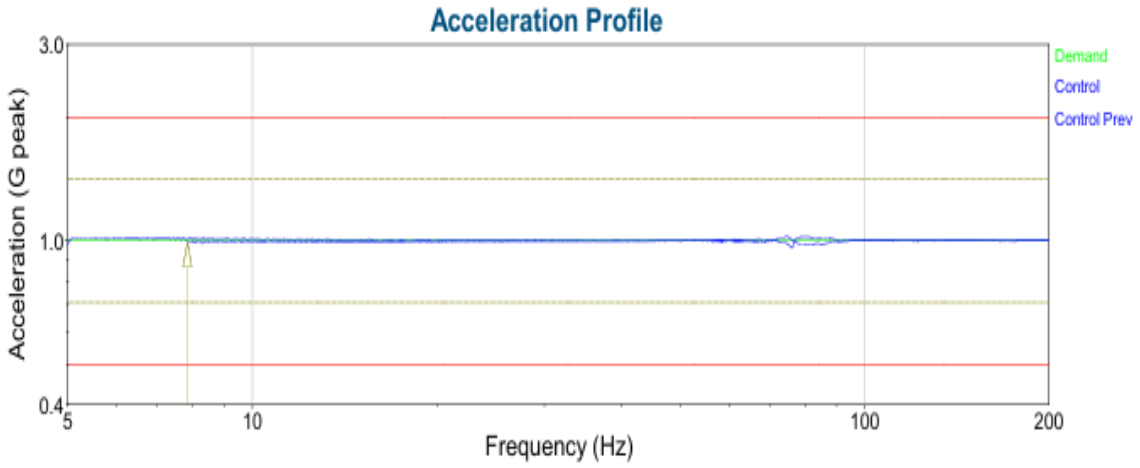
6.4.1 Test results table

Evaluation Criteria	Test Results	Comment
Functional operation	**Pass**	-
Mechanical inspection	**Pass**	-

※ Refer to the sample operation after the completion of testing in section 6.6.

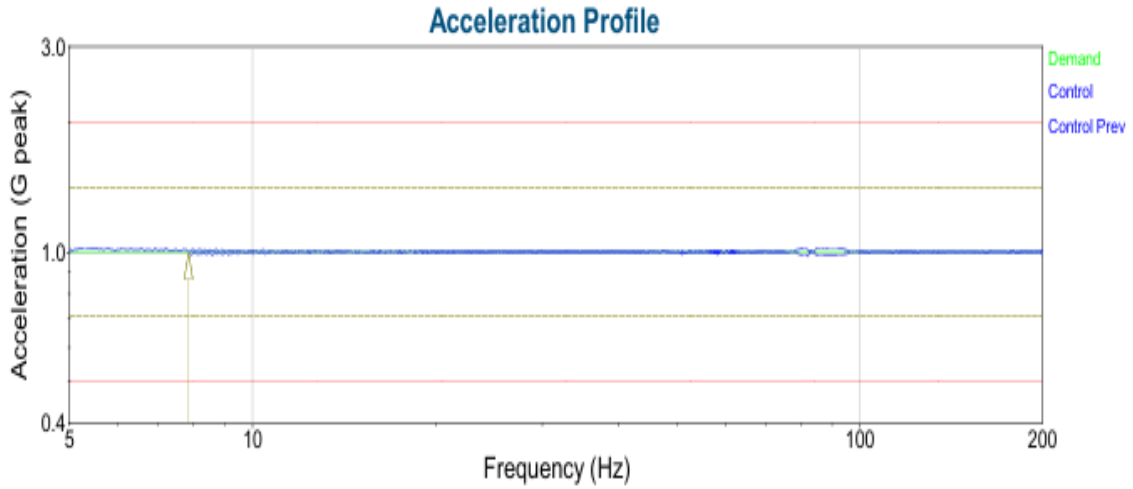
6.5 Test Data

6.5.1 Test Data (X, Y Axes)



2 23, 2026 11:18:03	Level 1) 100 %	Output: 0.2729 Volts peak	한화비전 60068-2
Demand: 1 G	Level Time: 0:10:00	Frequency: 7.841 Hz	
Control: 0.9895 G	Total Time: 0:10:13	End of Timed Test	

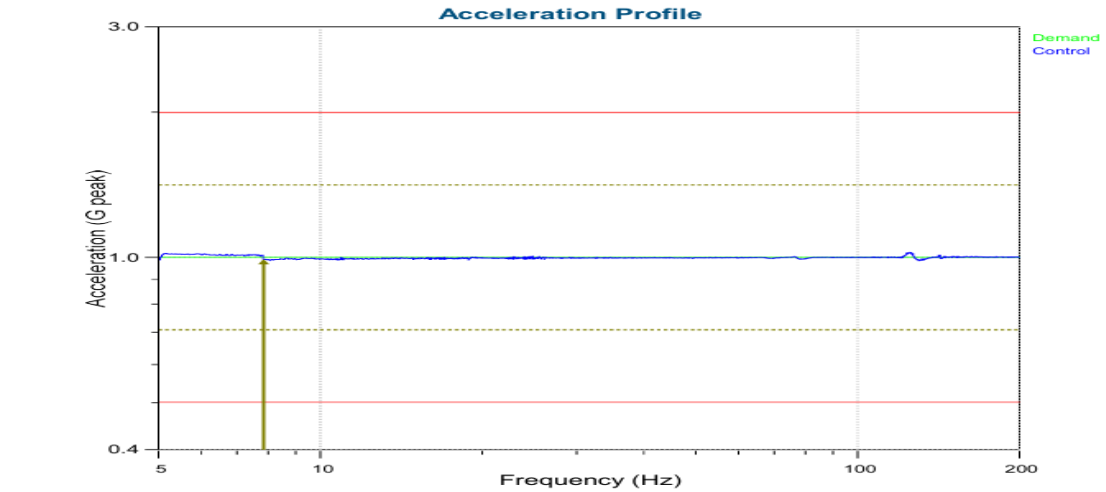
Vibration Test (X Axis)



2 23, 2026 13:46:03	Level 1) 100 %	Output: 0.2749 Volts peak	한화비전 60068-2
Demand: 1 G	Level Time: 0:10:00	Frequency: 30Hz	
Control: 0.993 G	Total Time: 0:10:12	End of Timed Test	

Vibration Test (Y Axis)

6.5.2 Test data (Z Axis)



3 10, 2026 14:08:16 Level 1) 100 % Output: 0.5259 Volts peak 환 화 비 전 60068-2

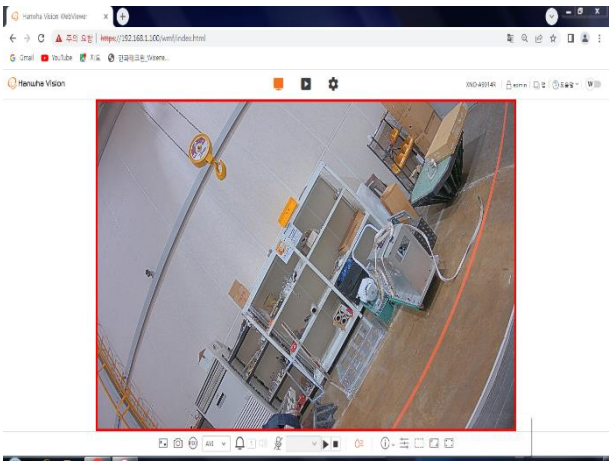
Demand: 1 G Level Time: 0:10:00 Frequency: 7.846 Hz

Control: 0.9899 G Total Time: 0:10:13 End of Timed Test

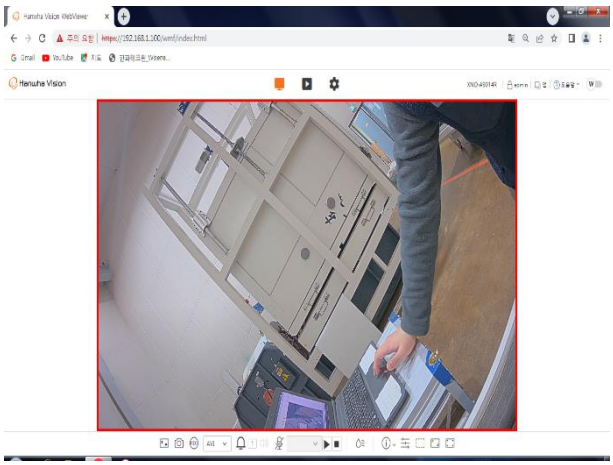
Vibration Test (Z Axis)

6.6 Post-test operation and function

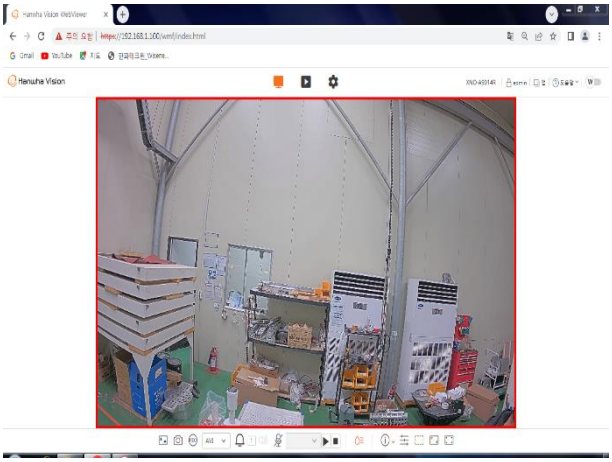
6.6.1 Test sample operation and function



X axis



Y axis



Z axis

7. Shock Test (EN 60068-2-27, IEC 60068-2-27)

7.1 Test date and environmental conditions

7.1.1 Test date: Feb. 23, 2026 ~ Mar. 10, 2026

7.1.2 Measured Environmental Conditions

Item	Temperature (℃)	Humidity (% R.H.)	Pressure (kPa)
Measurement	22.3	29.8	98.9

7.2 Test conditions and methods

7.2.1 Sample status: Operation

7.2.2 Acceleration(m/s^2): 100 m/s^2

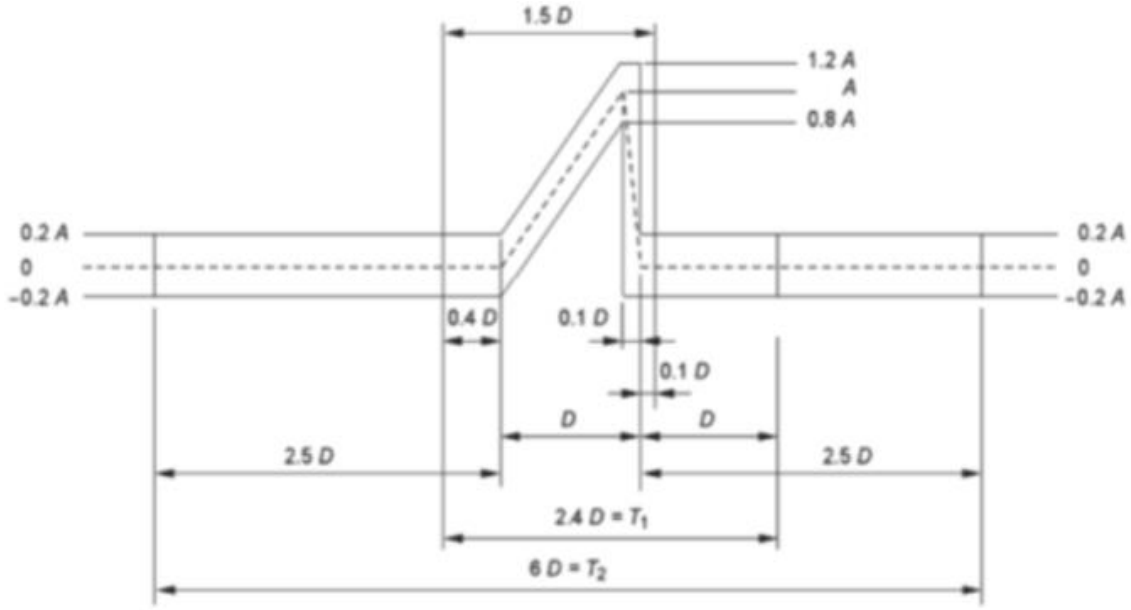
7.2.3 Applicable axis: X, Y, Z

7.2.4 Number of impacts: 10 per direction (total 60)

7.2.5 Evaluation items

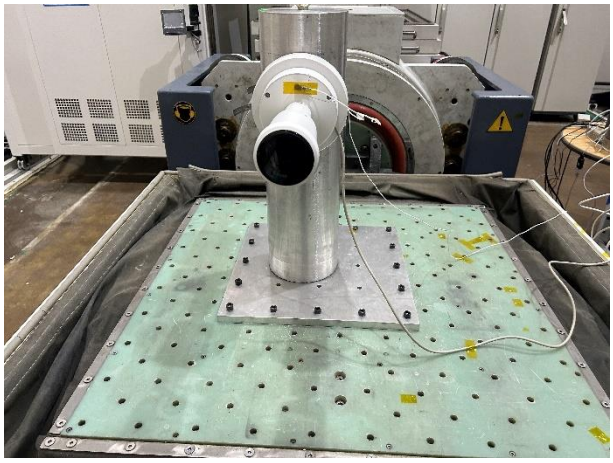
1) The test sample shall be checked to determine that it is functionally operable in all modes of its prescribed operation

7.2.6 Profile

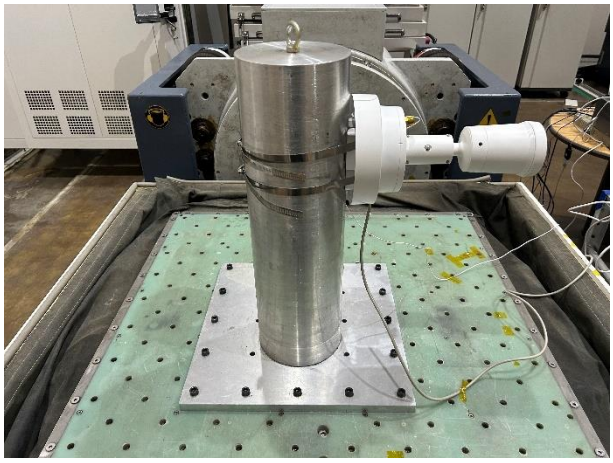


7.3 Test Setup and During test sample images

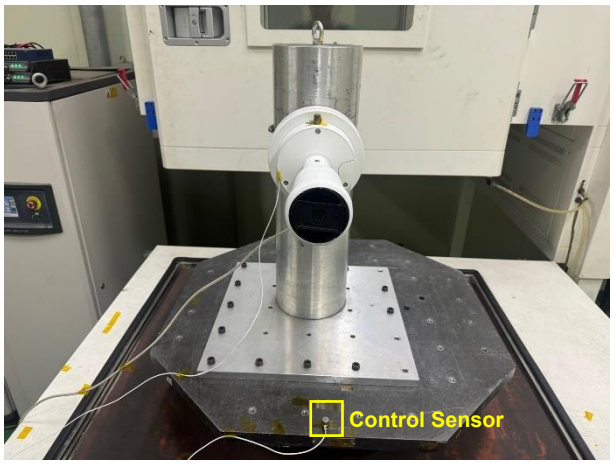
7.3.1 Evidence of test setting



X axis



Y axis



Z axis

※ The control sensors for the X and Y axes are mounted on the vibration plate.

7.4 Test result

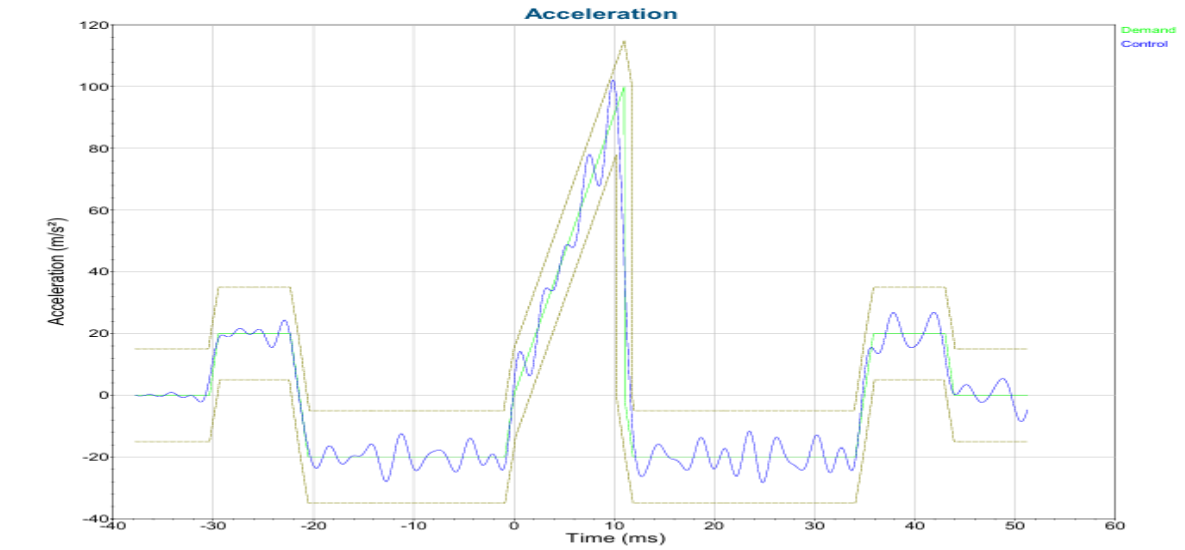
7.4.1 Test results table

Evaluation Criteria	Test Results	Comment
Functional operation	**Pass**	-
Mechanical inspection	**Pass**	-

※ Refer to the sample operation after the completion of testing in section 6.6.

7.5 Test Data

7.5.1 Mechanical shock data (±X Axis)

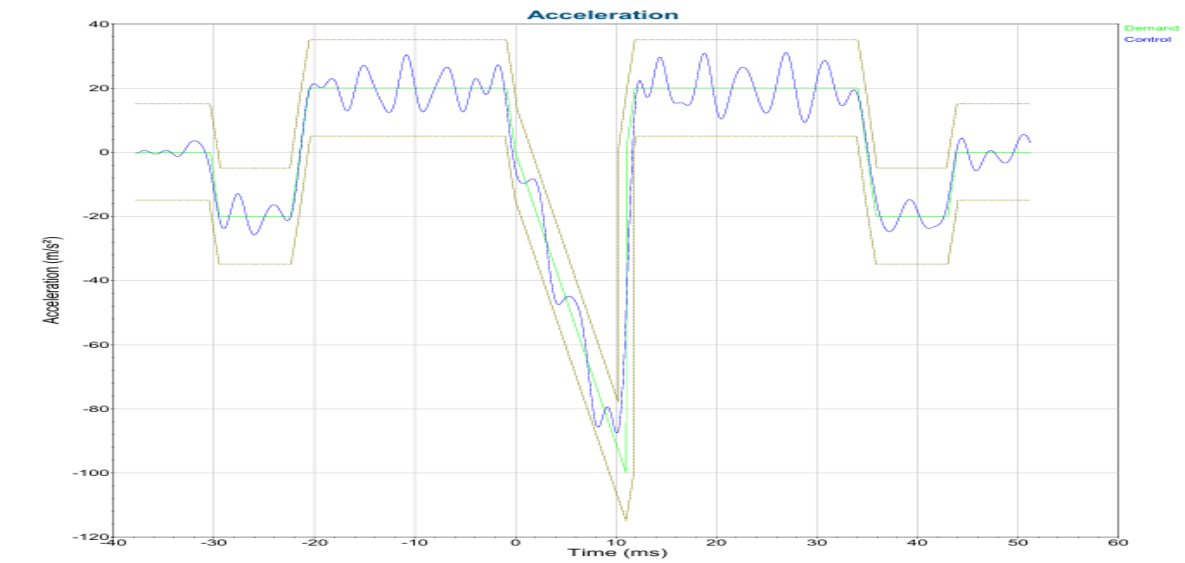


2 23, 2026 13:27:53 Level 1) 100 % Output: 0.5853 Volts peak 한화비전 60068-2-27

Demand: 100 m/s²

Control: 102.1 m/s² Pulse: 10 of 10 Running

Mechanical Chock data +X Axis



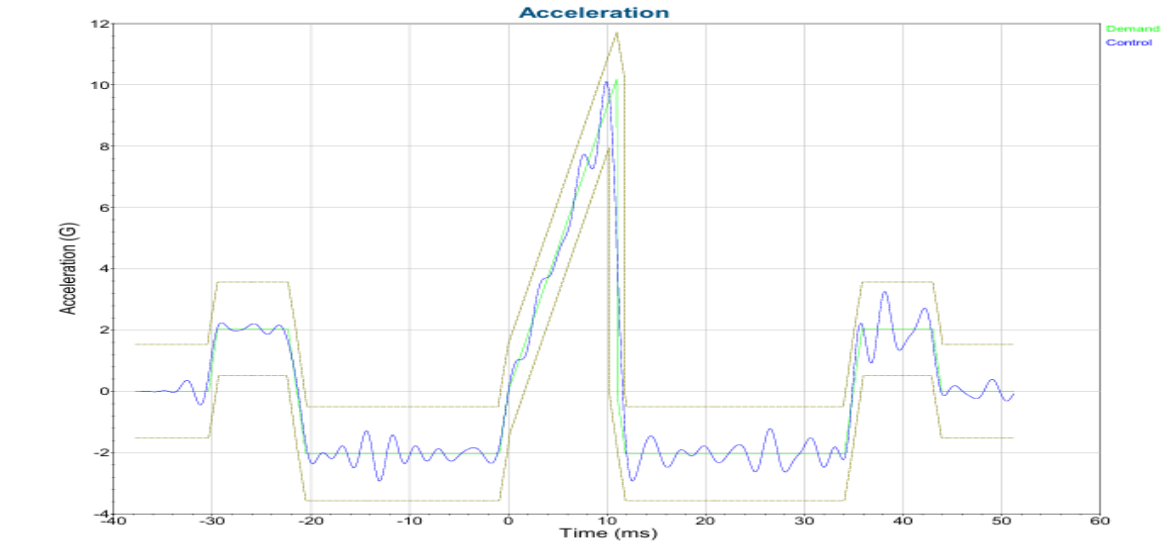
2 23, 2026 13:28:51 Level 2) 100 % Output: 0.5254 Volts peak 한화비전 60068-2-27

Demand: 100 m/s²

Control: 87.6 m/s² Pulse: 10 of 10 End of Test

Mechanical Chock data -X Axis

7.5.2 Mechanical shock data (±Y Axis)

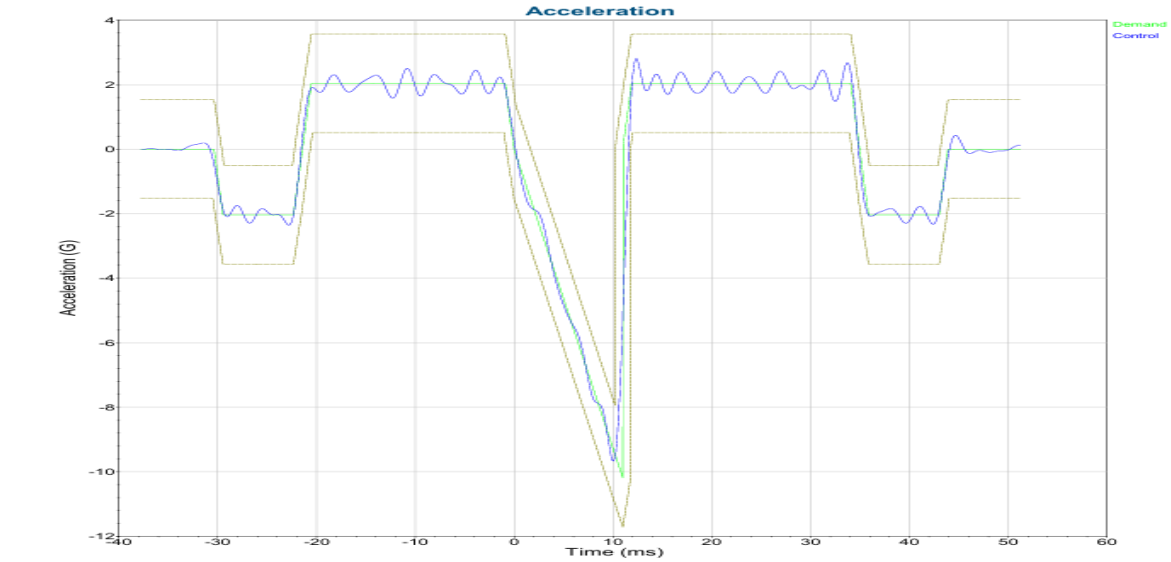


2 23, 2026 13:53:51 Level 1) 100 % Output: 0.5775 Volts peak 한화비전 60068-2-27

Demand: 10.2 G

Control: 10.11 G Pulse: 10 of 10 Running

Mechanical Chock data +Y Axis



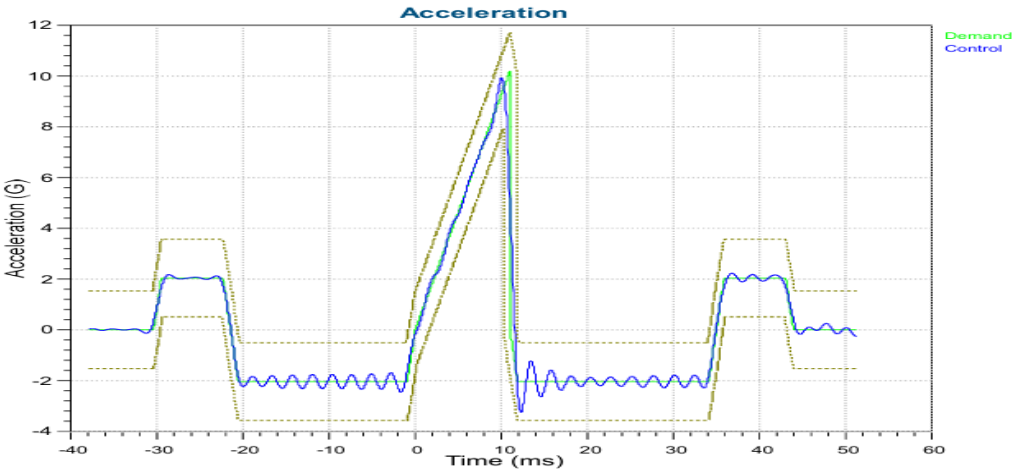
2 23, 2026 13:54:15 Level 2) 100 % Output: 0.542 Volts peak 한화비전 60068-2-27

Demand: 10.2 G

Control: 9.674 G Pulse: 10 of 10 End of Test

Mechanical Chock data -Y Axis

7.5.3 Mechanical shock data (±Z Axis)

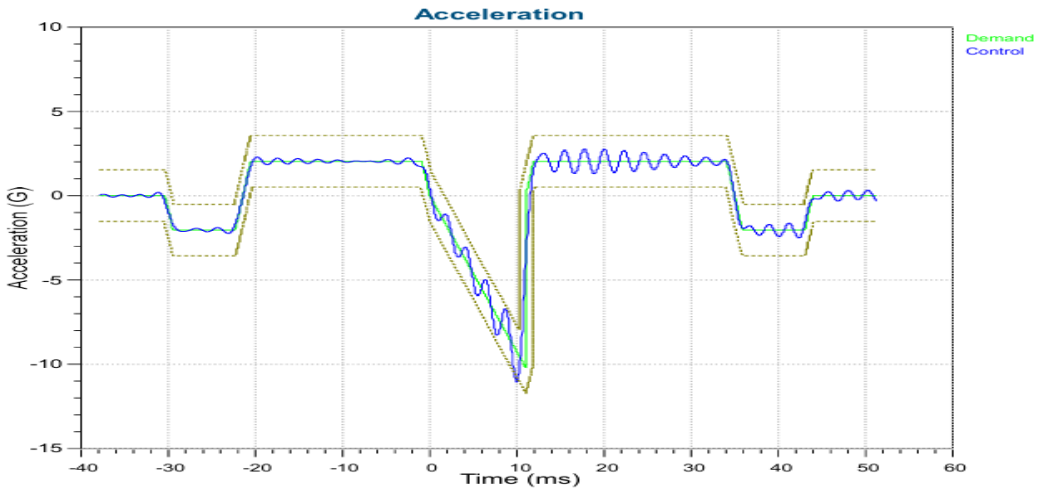


3 10, 2026 14:11:57Level 1) 100 % Output: 0.9978 Volts peak한 화 비 전 60068-2-

Demand: 10.2 G

Control: 9.929 G Pulse: 10 of 10 Running

Mechanical Chock data +Z Axis



3 10, 2026 14:21:30Level 1) 100 % Output: 1.109 Volts peak한 화 비 전 60068-2-

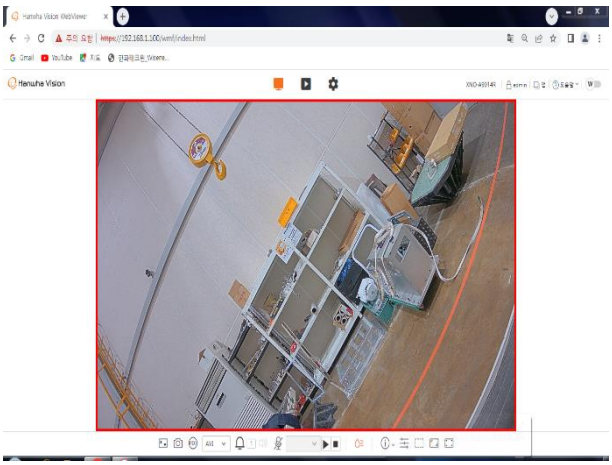
Demand: 10.2 G

Control: 11.07 G Pulse: 10 of 10 End of Test

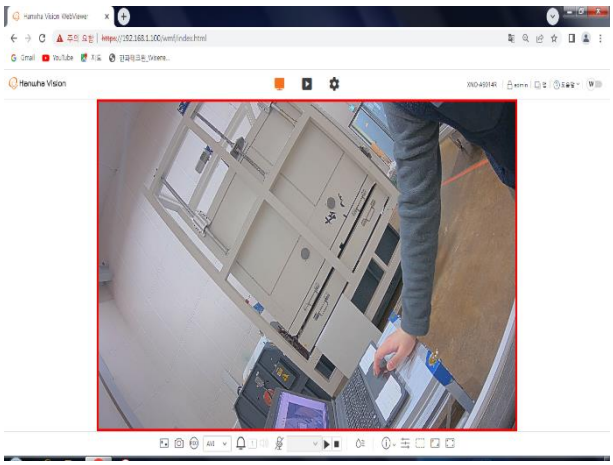
Mechanical Chock data -Z Axis

7.6 Post-test operation and function

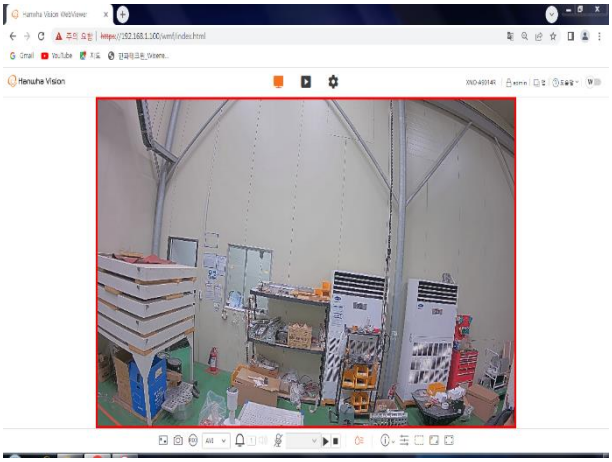
7.6.1 Test sample operation and function



X axis



Y axis



Z axis

8. Damp heat Test (EN 60068-2-78, IEC 60068-2-78)

8.1 Test date and environmental conditions

8.1.1 Test date: Feb. 24, 2026 ~ Mar. 06, 2026

8.1.2 Measured Environmental Conditions

Item	Temperature (℃)	Humidity (% R.H.)	Pressure (kPa)
Measurement	23.3	54.6	95.9

8.2 Test conditions and methods

8.2.1 Preconditioning temperature: 25 °C

8.2.2 Sample status: Operation

8.2.3 Test temperature: 40 °C

8.2.4 Test humidity: 93 % R.H.

8.2.5 Test time: 240 h

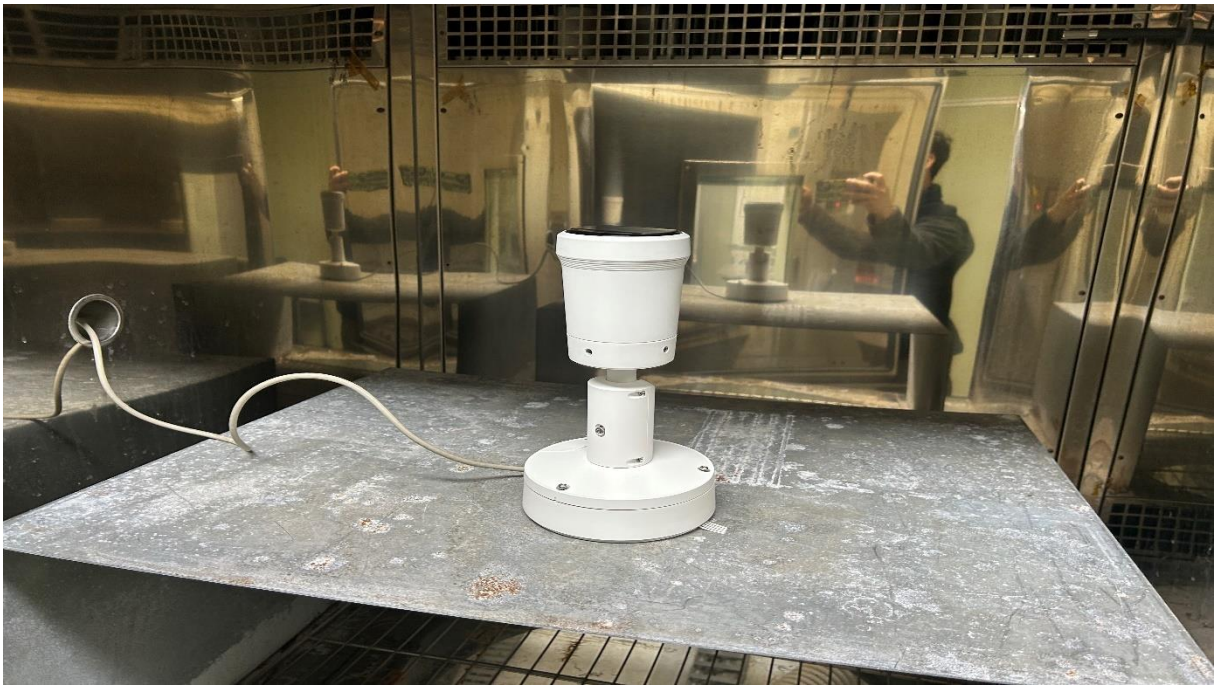
8.2.6 Recovery Temperature: 25 °C

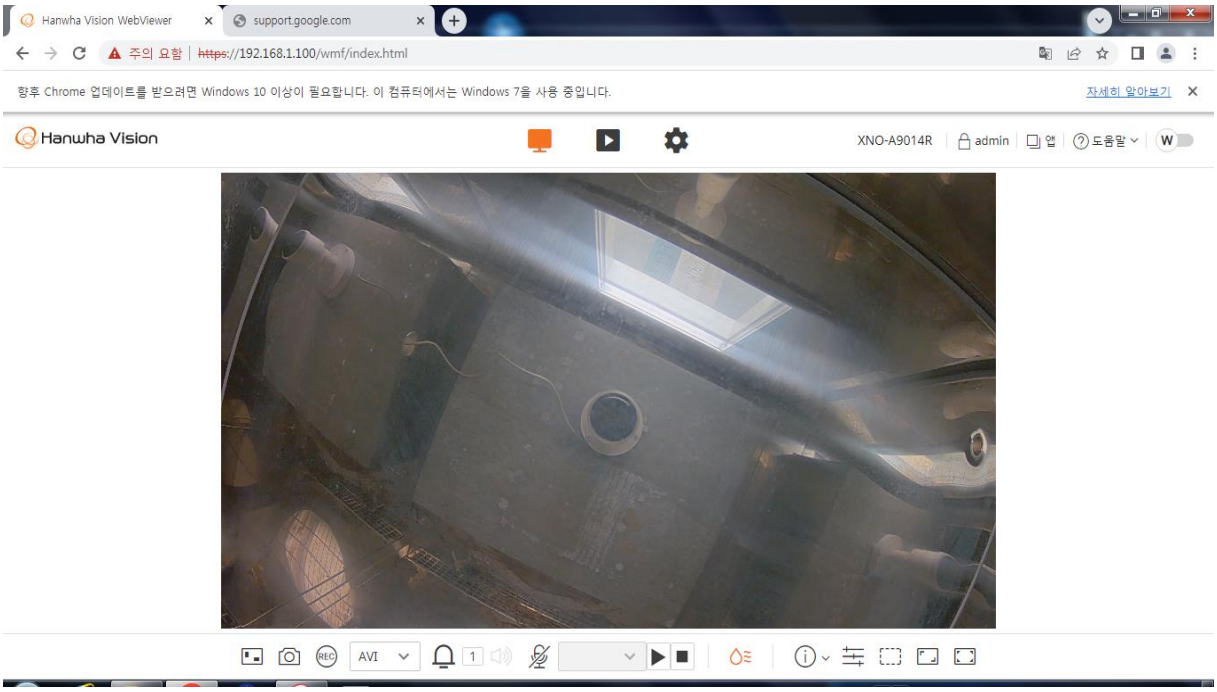
8.2.7 Evaluation items

2) The test sample shall be checked to determine that it is functionally operable in all modes of its prescribed operation

8.3 Test Setup and During test sample images

8.3.1 Evidence of test setting





8.4 Test result

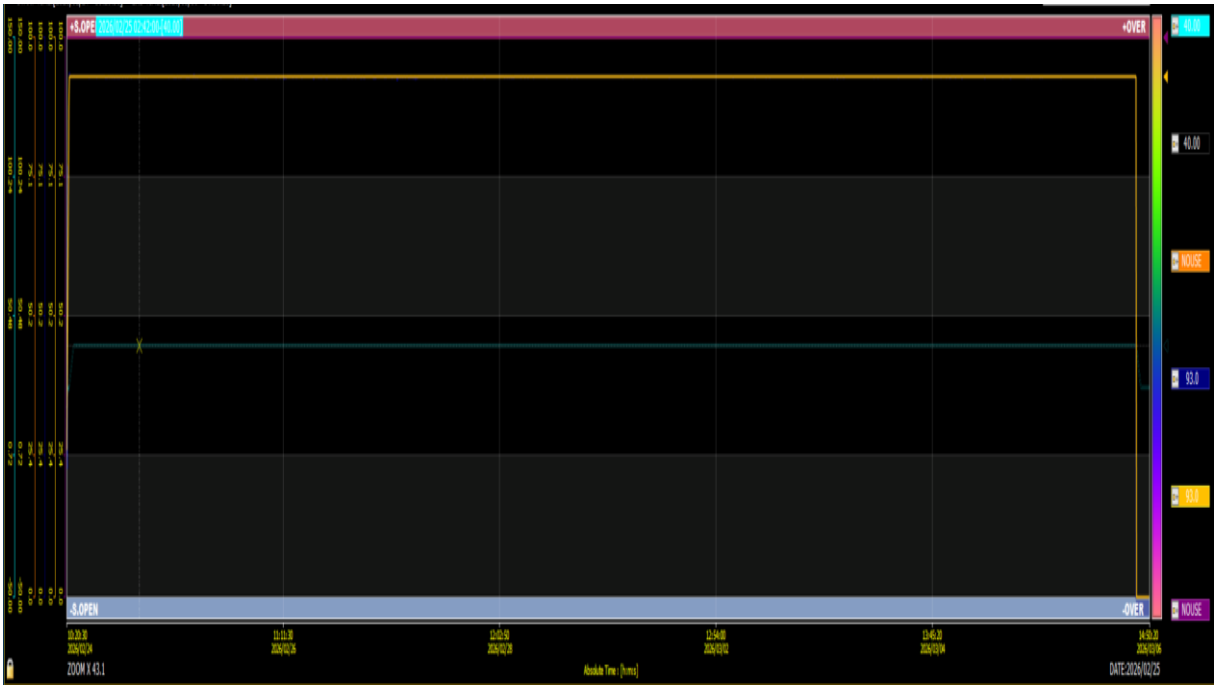
8.4.1 Test results table

Evaluation Criteria	Test Results	Comment
Functional operation	**Pass**	-
Mechanical inspection	**Pass**	-

※ Refer to the sample operation after the completion of testing in section 8.6.

8.5 Test Data

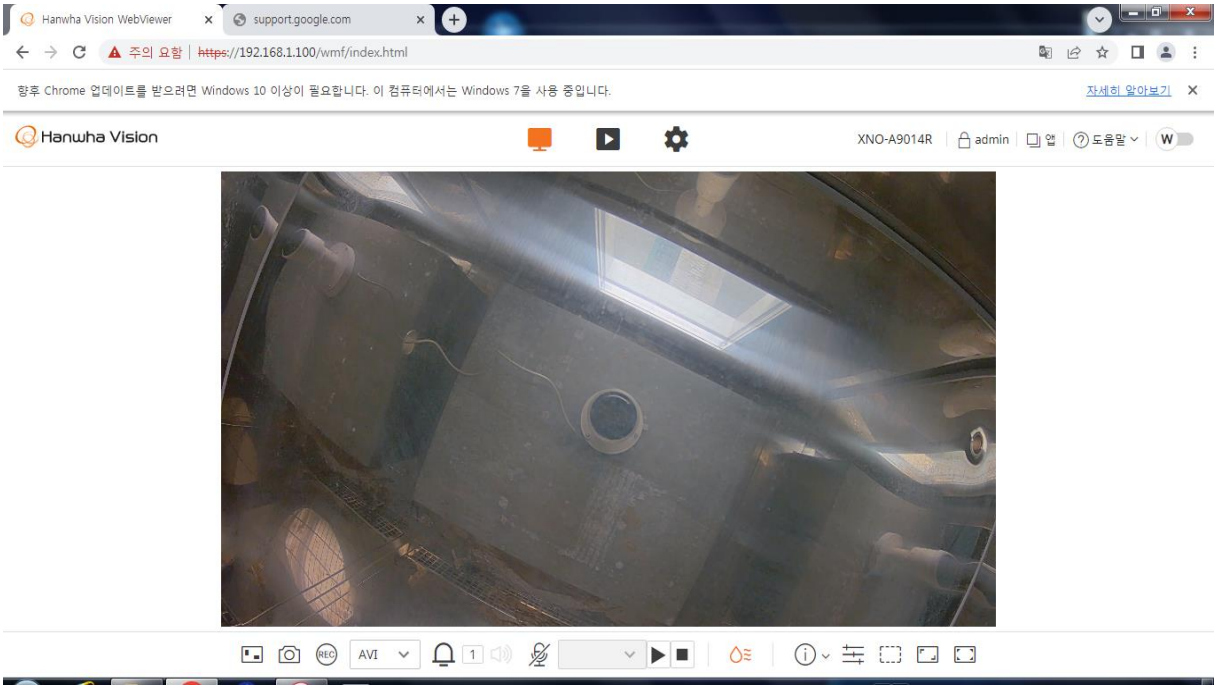
8.5.1 Test data and graph



Temperature Data

8.6 Post-test operation and function

8.6.1 Test sample operation and function



8.7 Post-test sample images

8.7.1 Test sample



Top



Bottom



Front



Rear



Left side



Right side

- End -