

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-2024-02381
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1. Applicant

- Name : Hanwha Vision Co., Ltd
- Address : 6 Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488 KOREA
- Date of Receipt : 08 06, 2024

2. Manufacturer

- Name : Hanwha Vision Co., Ltd

3. Use of Report :

Quality control

4. Test sample / Model :

Barcode Reader / TNS-9060IBC

5. Date(s) of test :

08 08, 2024~ 08 09, 2024

6. Test Standard (Method) used :

IEC/EN 60068-2-6:2007, Refer to IEC/EN 60068-2-27:2008, Reference NEMA TS 2.2.9

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,
144, Dongbu-ro, 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	Technical Manager
	Name: Min-Gi Moon (Signature)	Name: HoHyun Lee (Signature)

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


08 23, 2024

CTK Co., Ltd.



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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	

2. Product description and Equipment information

2.1 Product description

Product Name	Model Name	Quantity	Comment
Barcode Reader	TNS-9060IBC	2 EA	

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Manufacturer's name

Name and address of factory (ies)	1) HANWHA VISION VIETNAM COMPANY LIMITED Lot O-2, Que Vo Industrial Zone extended area, Nam Son ward, Bac Ninh city, Bac Ninh province, Vietnam 2) D-TECH CO.,LTD. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do, Korea (Suwon Industrial Complex)
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Model description

Basic Model:	TNS-9060IBC
Series model:	
Model differences:	Use of the same external shape and materials (case, finishing material, PCB, cable, etc.), differences in SW.

2.2 Equipment information

Testing equipment	Model Name	Manufacturer	Manufacturing Number	Calibration Date
VIBRATION TESTING SYSTEM	GT1000M	FAMTECH	D1803072	N/A
VIBRATION TESTING SYSTEM	GT1000M	FAMTECH	D1803072-1	N/A
VIBRATION TESTING SYSTEM	LT1010	FAMTECH	D2012335	N/A
Acceleration sensor	8703A250M5	KISTLER	5722241	2024-08-17

2.3 Pre-test product images

[Packaging]



Top



Bottom



Front



Back



Left side



Right side

[Unpackaged]



Top



Bottom



Front



Back



Left side



Right side

2.4 Testing equipment images



LT1010



GT1000M



GT1000M



8703A250M5

3. Test conditions and methods

3.1 Test duration, Environmental conditions, and Location

3.1.1 Test Date : 08 08, 2024~ 08 09, 2024

3.1.2 Measured Environmental Conditions

Item	Temperature (°C)	Humidity (% R.H.)	Pressure (kPa)
Measurement	25.3	45.2	89.1

3.2 Test conditions

3.2.1 Shock Test #1 (Refer to IEC/EN 60068-2-27:2008)

- Sample status : Packaging
- Applied waveform : Half sine
- Acceleration(G) : 80
- Amplitude(ms) : 11
- Applied axis : X, Y, Z axis
- Test time : Total 24 Cycles (4 cycles per axis)
- Evaluations Criteria
 - Check appearance deformation before/after the test
 - Check normal operation after the test

3.2.2 Shock Test #2 (Refer to IEC/EN 60068-2-27:2008)

- Sample status : unpackaged / not in operation
- Number of samples : 1 EA
- Applied waveform : Half sine
- Acceleration(G) : 30
- Amplitude (ms) : 11
- Applied axis : \pm X, Y, Z axis
- Test time (item) : All 18(Each axis 3)
- Evaluations Criteria
 - Confirmation of visual changes and normal operation before and after testing.

3.2.3 Shock(impact) Test (Refer to NEMA TS 2-2013 2.2.9)

- Sample status : unpackaged / not in operation
- Applied waveform : Half sine
- Acceleration(G) : 10
- Nominal duration (ms) : 11
- Applicable axis : X, Y, Z
- Number of impacts : 1 per direction (total 6)
- Evaluation items
 - Check for mechanical damage before and after testing



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3.2.4 Vibration(Sine) Test (IEC/EN 60068-2-6:2007)

- Sample status : unpackaged / not in operation
- Number of samples : 1 EA
- Applied waveform : Sine
- Frequency(Hz) : 10 ~ 50 / 50 ~ 500
- Acceleration : 0.4 mm / 2.0 g
- Sweep rate(Oct/min) : 1
- Applied axis : X, Y, Z axis
- Test time (h) : All 9(Each axis 3)
- Evaluations Criteria
 - Confirmation of visual changes before/after the test.

3.3 Testing Image



Shock Test #1 - X axis



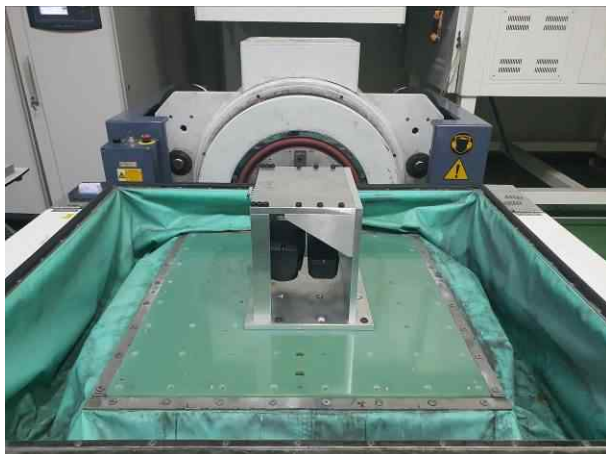
Shock Test #1 - Y axis



Shock Test #1 - Z axis



Shock Test #2 - X axis, Shock(impact) Test,
Vibration(Sine) Test Same configuration



Shock Test #2 - Y axis, Shock(impact) Test,
Vibration(Sine) Test Same configuration



Shock Test #2 - Z axis, Shock(impact) Test,
Vibration(Sine) Test Same configuration

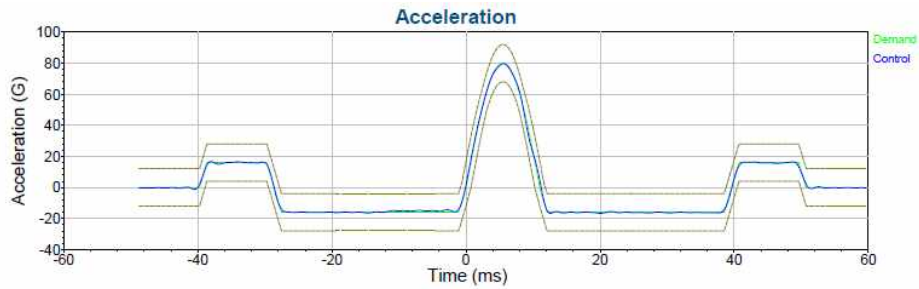
4. Test result

4.1 Test Result Table

Evaluation Criteria		Test Results	Comment
Shock Test #1	Before	Pass	
	After	Pass	
Shock Test #2	Before	Pass	
	After	Pass	
Shock(impact) Test	Before	Pass	
	After	Pass	
Vibration(Sine) Test	Before	Pass	
	After	Pass	

4.2 Data

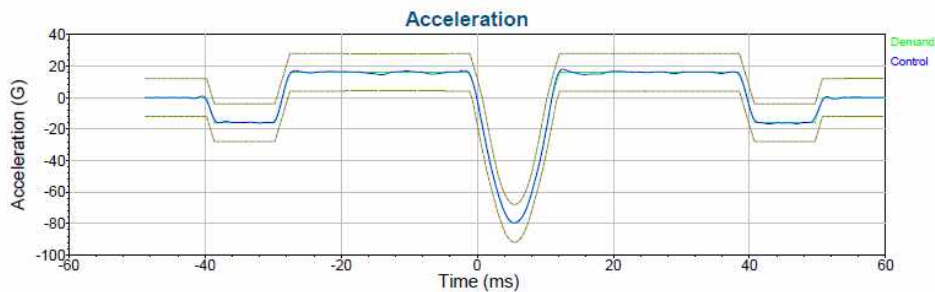
[Shock Test #1 (Refer to IEC/EN 60068-2-27:2008)]



8 08, 2024 14:36:02 Level 1) 100 %
Demand: 80 G
Control: 79.69 G Pulse: 4 of 4

Output: 3.64 Volts peak 20240808 60068-2-27
Running

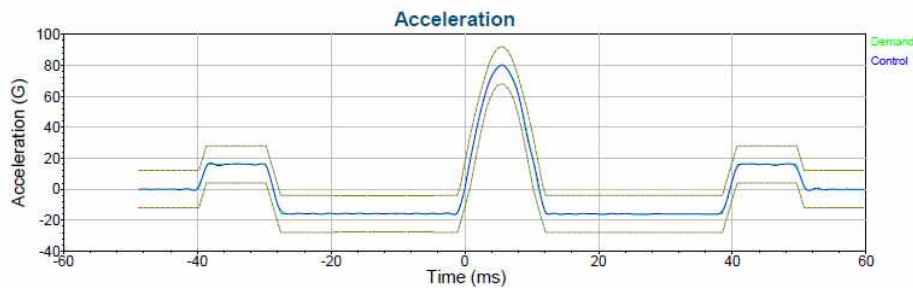
+X axis



8 08, 2024 14:36:17 Level 2) 100 %
Demand: 80 G
Control: 79.61 G Pulse: 4 of 4

Output: 3.678 Volts peak 20240808 60068-2-27
End of Test

-X axis

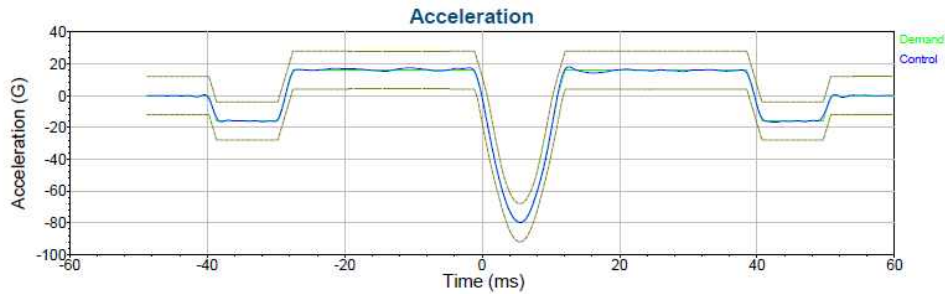


8 08, 2024 14:39:07 Level 1) 100 %
Demand: 80 G
Control: 80.12 G Pulse: 4 of 4

Output: 3.645 Volts peak 20240808 60068-2-27
Running

+Y axis

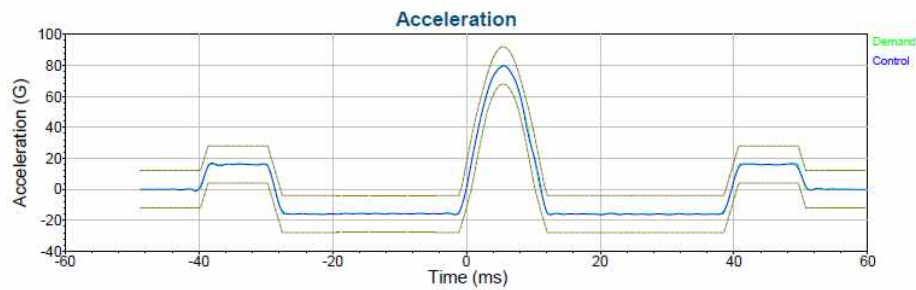
[Shock Test #1 (Refer to IEC/EN 60068-2-27:2008)]



8 08, 2024 14:39:21 Level 2) 100 %
Demand: 80 G
Control: 79.82 G Pulse: 4 of 4

Output: 3.685 Volts peak 20240808 60068-2-27
End of Test

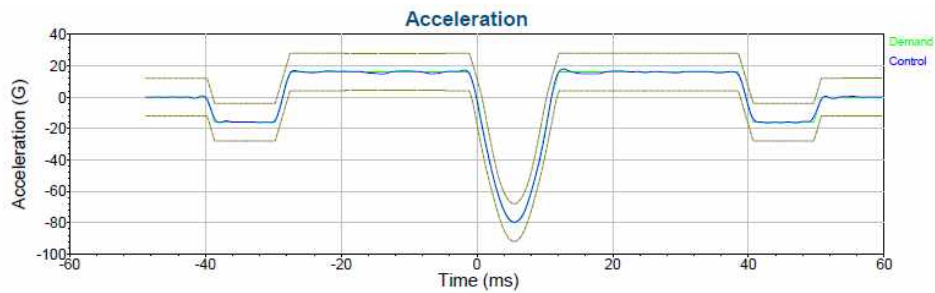
-Y axis



8 08, 2024 14:48:39 Level 1) 100 %
Demand: 80 G
Control: 79.65 G Pulse: 4 of 4

Output: 3.65 Volts peak 20240808 60068-2-27
Running

+Z axis

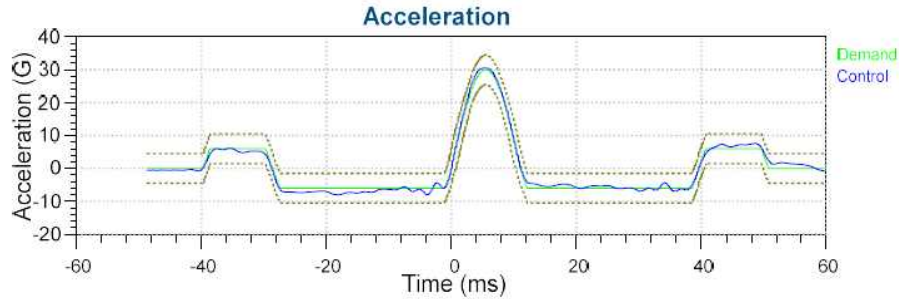


8 08, 2024 14:49:02 Level 2) 100 %
Demand: 80 G
Control: 79.68 G Pulse: 4 of 4

Output: 3.665 Volts peak 20240808 60068-2-27
End of Test

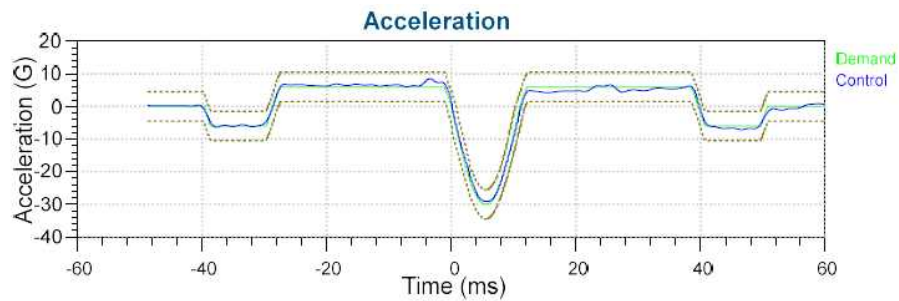
-Z axis

[Shock Test #2 (Refer to IEC/EN 60068-2-27:2008)]



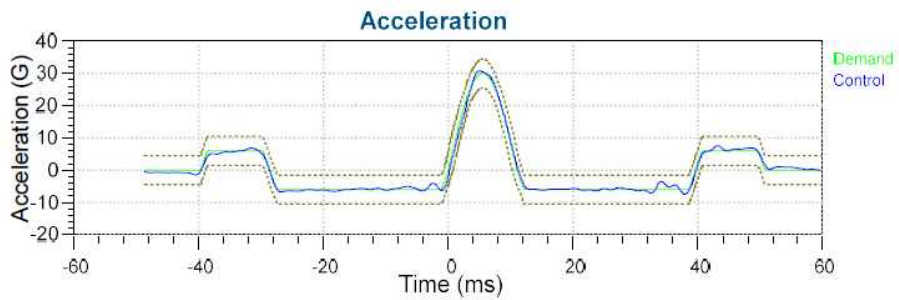
8 09, 2024 15:51:31 Level 1) 100 % Output: 2.178 Volts peak30g 11ms
Demand: 30 G
Control: 30.51 G Pulse: 3 of 3 Running

+X axis



8 09, 2024 15:51:41 Level 2) 100 % Output: 2.007 Volts peak30g 11ms
Demand: 30 G
Control: 29.1 G Pulse: 3 of 3 End of Test

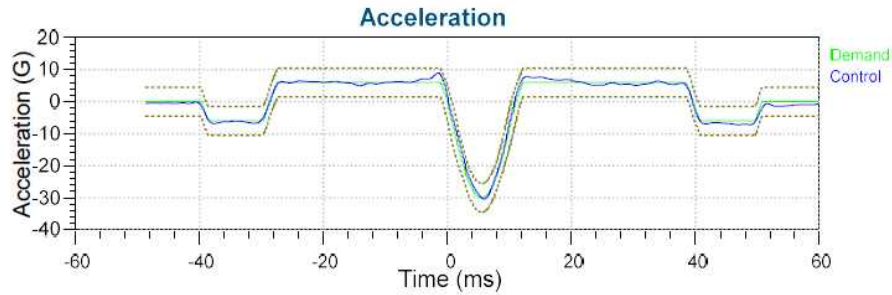
-X axis



8 10, 2024 11:18:39 Level 1) 100 % Output: 2.055 Volts peak30g 11ms
Demand: 30 G
Control: 30.79 G Pulse: 3 of 3 Running

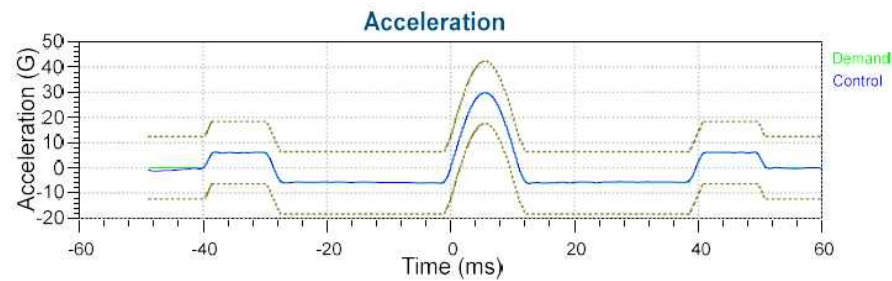
+Y axis

[Shock Test #2 (Refer to IEC/EN 60068-2-27:2008)]



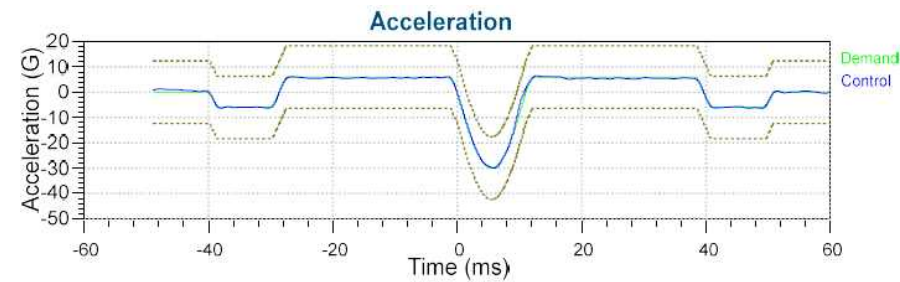
8 10, 2024 11:18:48 Level 2) 100 % Output: 2.055 Volts peak 30g 11ms
Demand: 30 G
Control: 30.39 G Pulse: 3 of 3 End of Test

-Y axis



8 10, 2024 14:34:12 Level 1) 100 % Output: 2.12 Volts peak 30G_11ms
Demand: 30 G
Control: 29.73 G Pulse: 3 of 3 Running

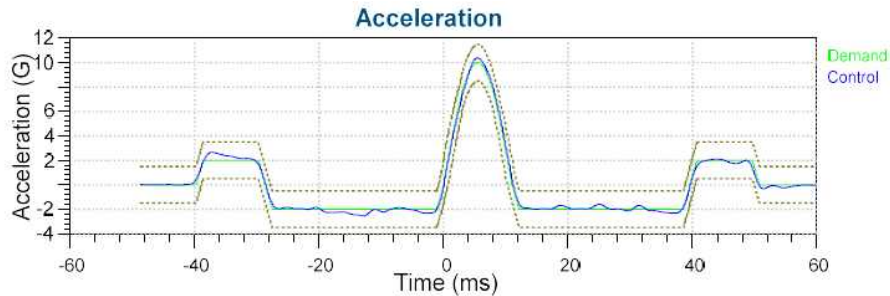
+Z axis



8 10, 2024 14:34:14 Level 2) 100 % Output: 2.12 Volts peak 30G_11ms
Demand: 30 G
Control: 29.98 G Pulse: 3 of 3 End of Test

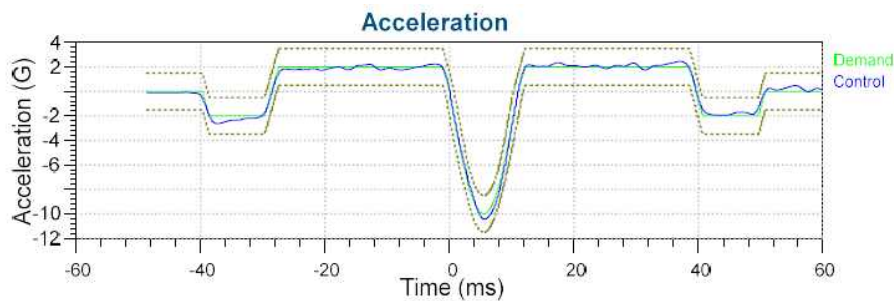
-Z axis

[Shock(impact) Test (Refer to NEMA TS 2-2013 2.2.9)]



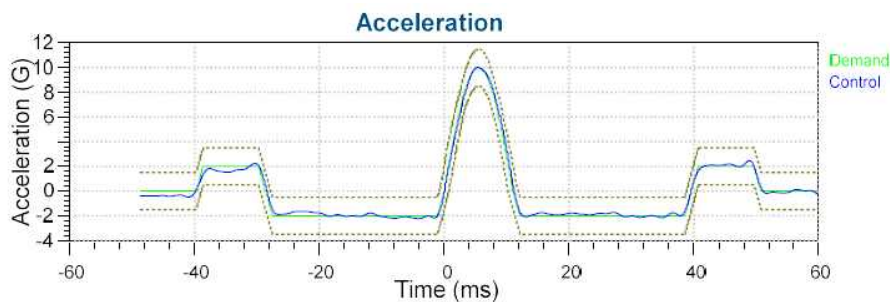
8 09, 2024 15:52:31 Level 1) 100 % Output: 0.6786 Volts peak NEMA TS-2 2.2.9
Demand: 10 G
Control: 10.39 G Pulse: 1 of 1 Running

+X axis



8 09, 2024 15:52:31 Level 2) 100 % Output: 0.6749 Volts peak NEMA TS-2 2.2.9
Demand: 10 G
Control: 10.44 G Pulse: 1 of 1 End of Test

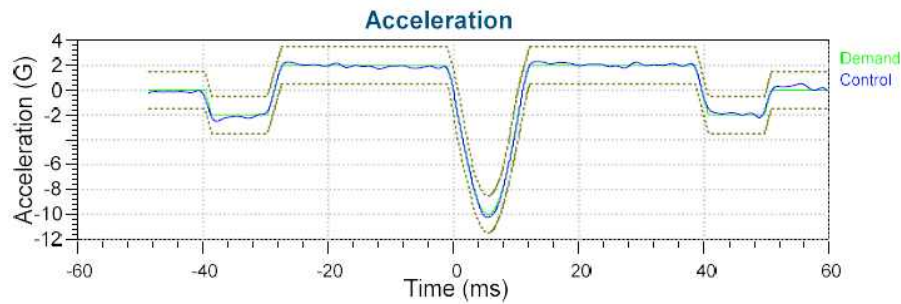
-X axis



8 10, 2024 11:18:11 Level 1) 100 % Output: 0.6729 Volts peak NEMA TS-2 2.2.9
Demand: 10 G
Control: 10 G Pulse: 1 of 1 Running

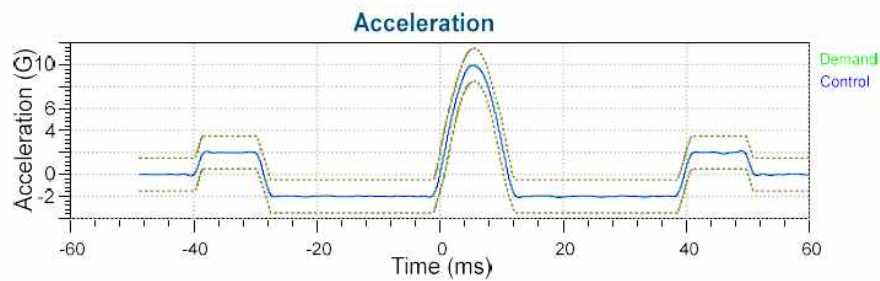
+Y axis

[Shock(impact) Test (Refer to NEMA TS 2-2013 2.2.9)]



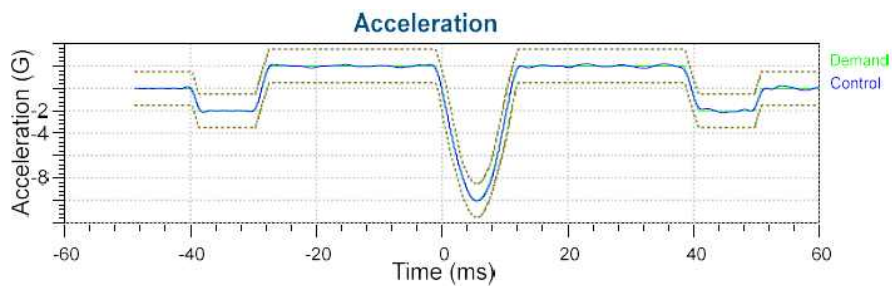
8 10, 2024 11:18:14 Level 2) 100 % Output: 0.6695 Volts peak NEMA TS-2 2.2.9
Demand: 10 G
Control: 10.25 G Pulse: 1 of 1 End of Test

-Y axis



8 10, 2024 14:33:14 Level 1) 100 % Output: 0.7002 Volts peak NEMA TS-2 2.2.9
Demand: 10 G
Control: 9.932 G Pulse: 1 of 1 Running

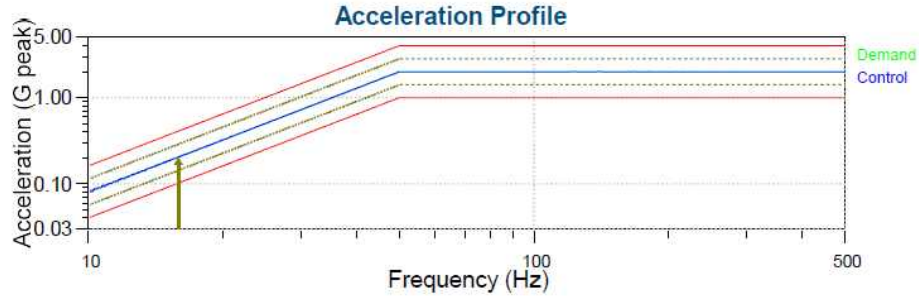
+Z axis



8 10, 2024 14:33:14 Level 2) 100 % Output: 0.7013 Volts peak NEMA TS-2 2.2.9
Demand: 10 G
Control: 10.06 G Pulse: 1 of 1 End of Test

-Z axis

[Vibration(Sine) Test (IEC/EN 60068-2-6:2007)]



8 09, 2024 18:53:35 Level 1) 100 %

Output: 0.0423 Volts peak 20240809 IEC 60068-2-6

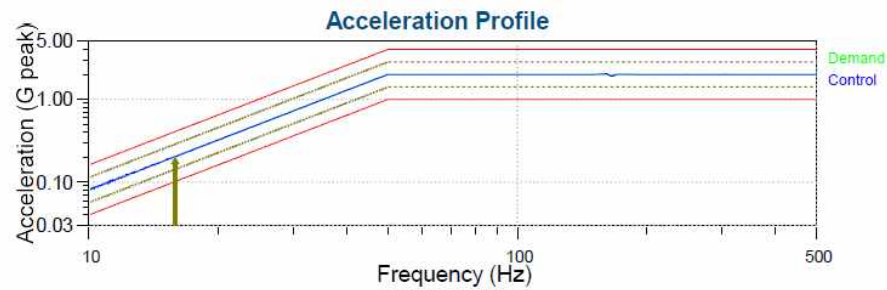
Demand: 0.2041 G Level Time: 3:00:00

Frequency: 15.92 Hz

Control: 0.2039 G Total Time: 3:00:07

End of Timed Test

X axis



8 10, 2024 14:19:03 Level 1) 100 %

Output: 0.04234 Volts peak 20240809 IEC 60068-2-6

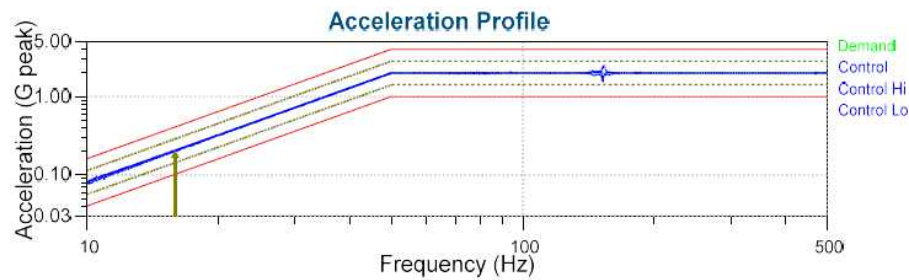
Demand: 0.2038 G Level Time: 3:00:00

Frequency: 15.91 Hz

Control: 0.2034 G Total Time: 3:00:07

End of Timed Test

Y axis



8 10, 2024 17:34:47 Level 1) 100 %

Output: 0.03685 Volts peak 20240809 IEC 60068-2-6

Demand: 0.2041 G Level Time: 3:00:00

Frequency: 15.92 Hz

Control: 0.2038 G Total Time: 3:00:06

End of Timed Test

Z axis

4.3 Post-Test Product Images

4.3.1 Verification of Normal Operation after testing



Packaging



unpackaged

- End -