



1g Dynamics Limited
5 Dunsbridge Business Park
Shepreth, Royston, Herts
SG8 6RA, United Kingdom

Job Reference: VSN: 15499 : Issue 1

Date of Testing: 04/09/25

Date of Received Parts: N/A

Customer: Bowman Stor

Customer Contact: Richard Potts

Test Ref: Shaker Hire

Test Setup

Note: Any equipment used supplied by customer, is used for reference only within 1g dynamics test report.

DUT Mounted as per recommended installation

1. Equipment used to conduct testing:

- Accelerometer Ref: 1G042, 1G048, 1G018
- Controller: 1G052
- Shaker System: 1G059
- Chamber: N/A
- Data Loggers Used: N/A
- Torque Wrench used: 1G060

2. Test Programme and duration requested

Note: 1g to define the standard or reference to current scope when carrying out testing

The testing requested entailed performing a 10-minute functionality test at the start of each axis, testing the product once at the 5-minute mark and a second time at the end of the random vibration. Following this was a 5-hour endurance test. after the completion of the endurance test, Shock testing was conducted which included 3 positive shocks and 3 negative shocks at levels determined by the customer. This would then be repeated in each axis until the completion of testing.

- Based on IEC 61373-2010 Cat 1 Class B, In accordance with IEC 60068-2-27:2008 & IEC 60068-2-64.



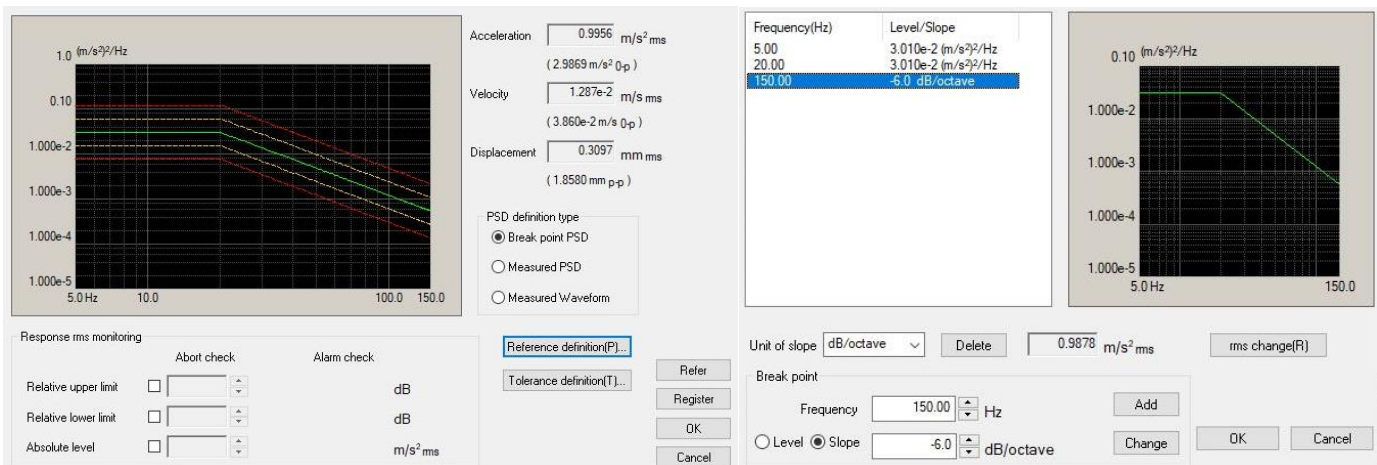
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3. Test Parameter / details

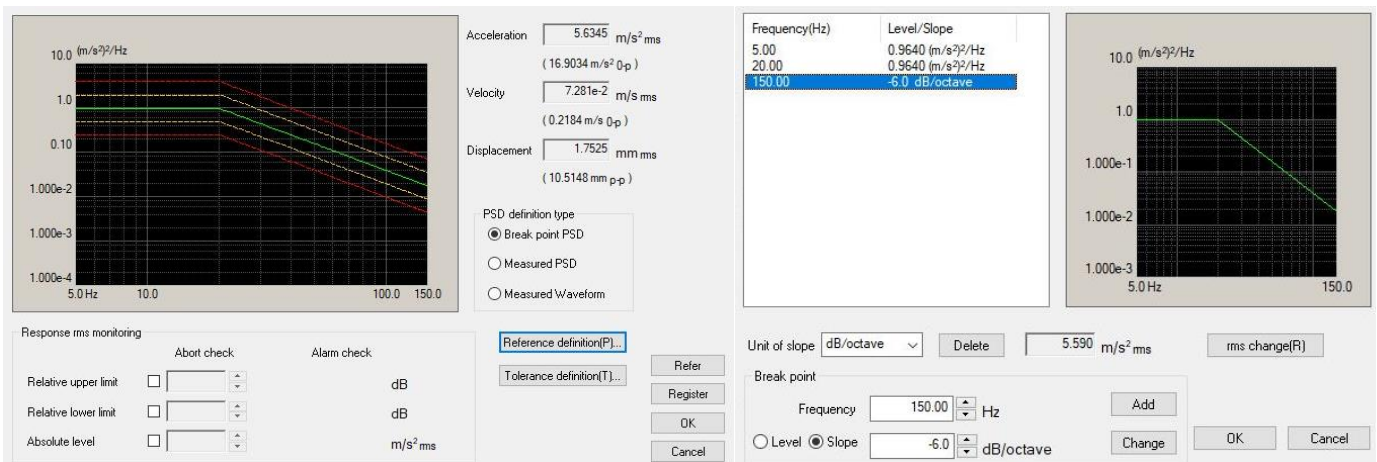
Random vibration:

Z axis:

Functionality test:



Endurance test:



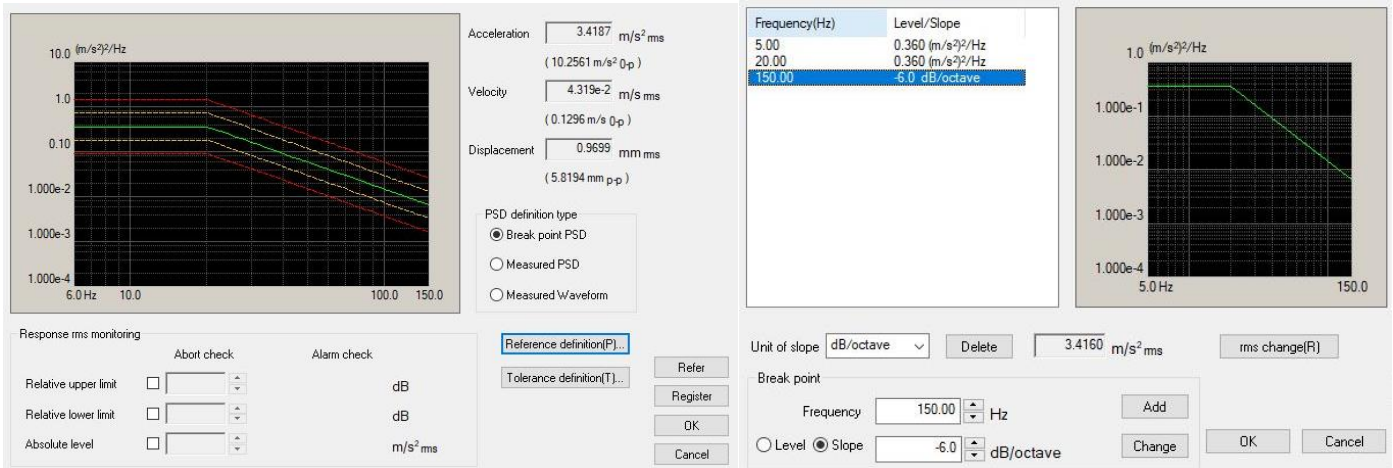


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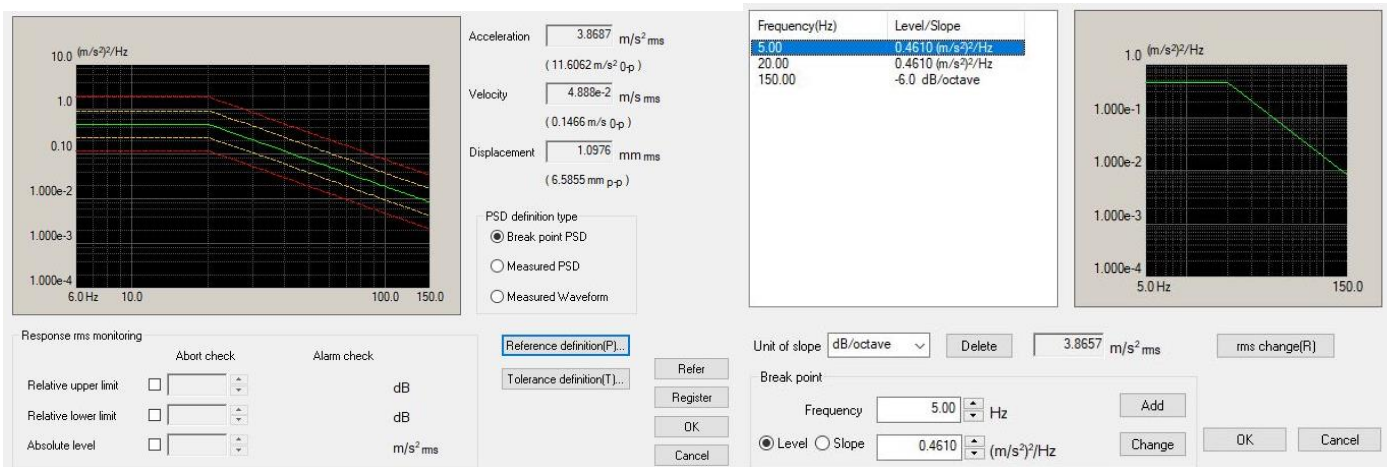
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X axis:

Functionality test:



Endurance test:

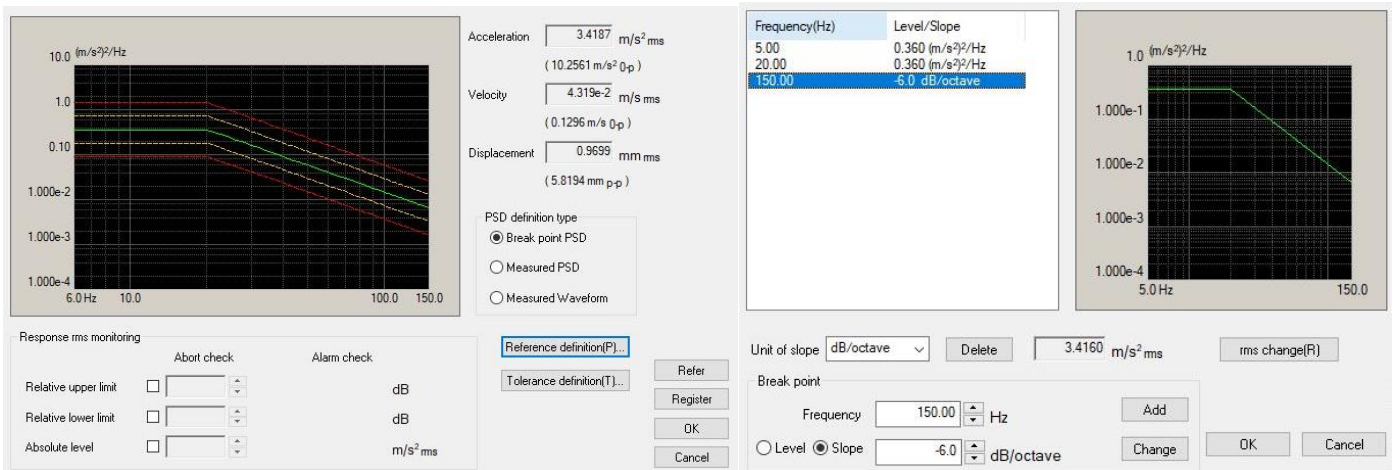




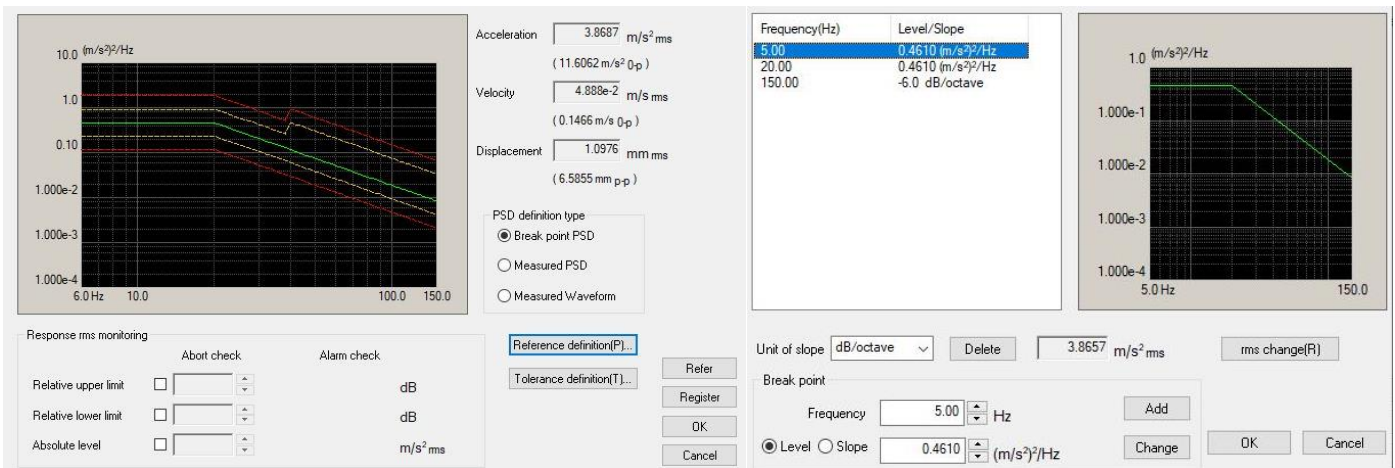
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Y axis:

Functionality test:



Endurance test:

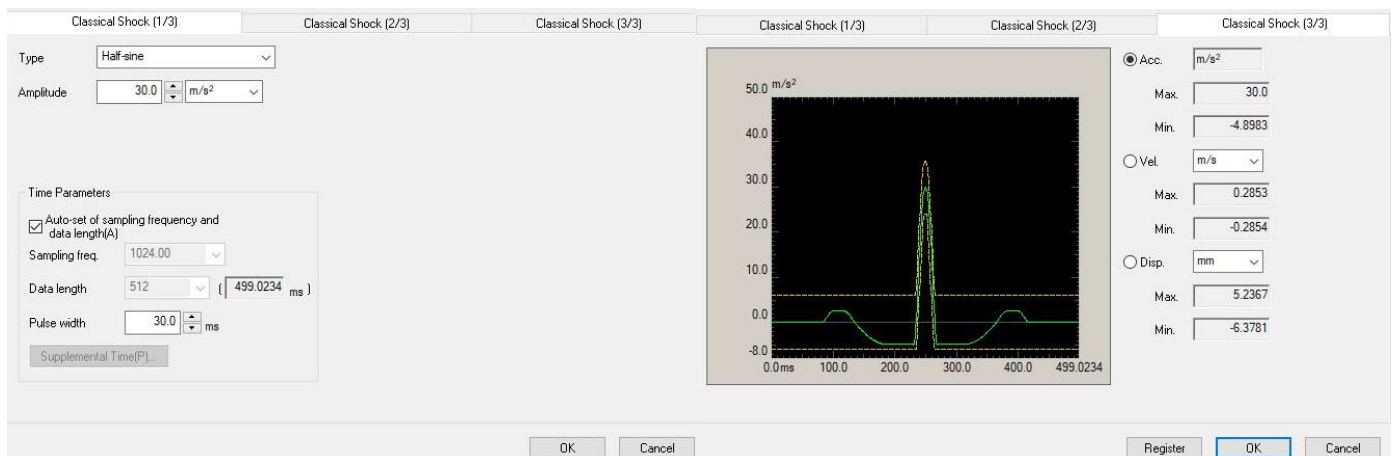




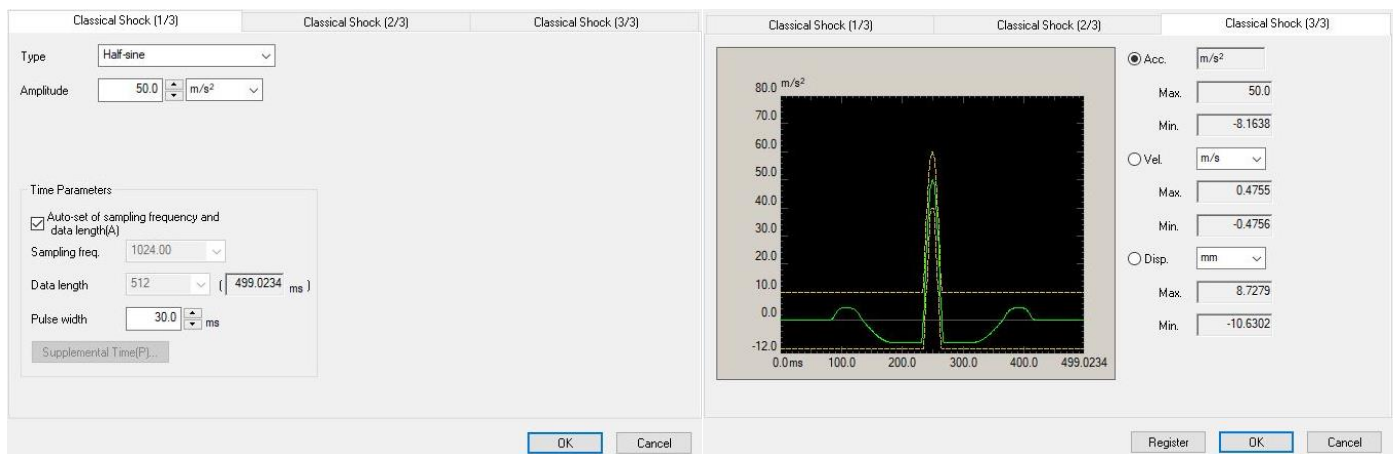
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Shock testing:

Z axis:



X and Y axis:



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Doc TH04 Rev: 06 Issue Date: 09/09/2024

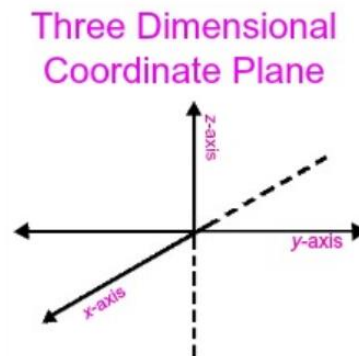
Test Report Reference: VSN:15499

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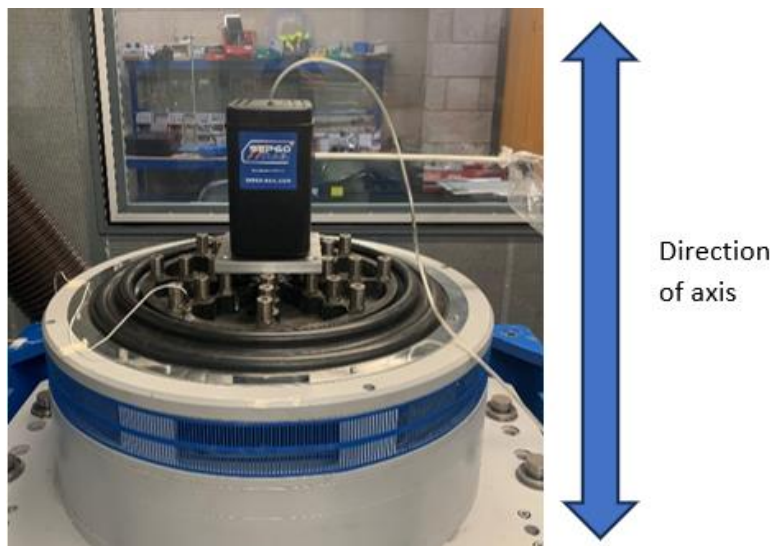
4. Test Coordinate Plane:



5. Test results and information collected (*Results are only related to the item or items tested and not indicative of the type or Batch*). Any deviation from 1g scope shall be noted with * for reference only and is not UKAS approved and outside of scope *

Please include Pre-Vibration Sine sweep on Fixture pre any vibration testing to determine performance of setup.

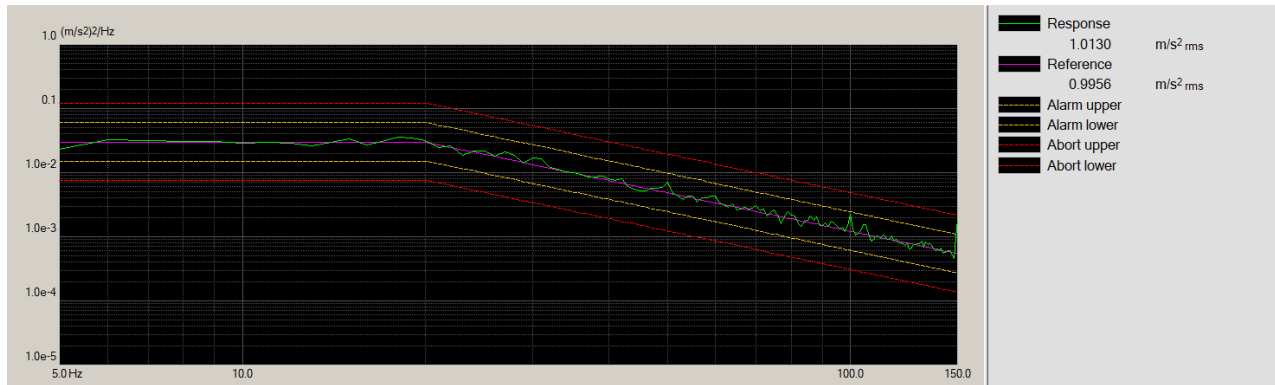
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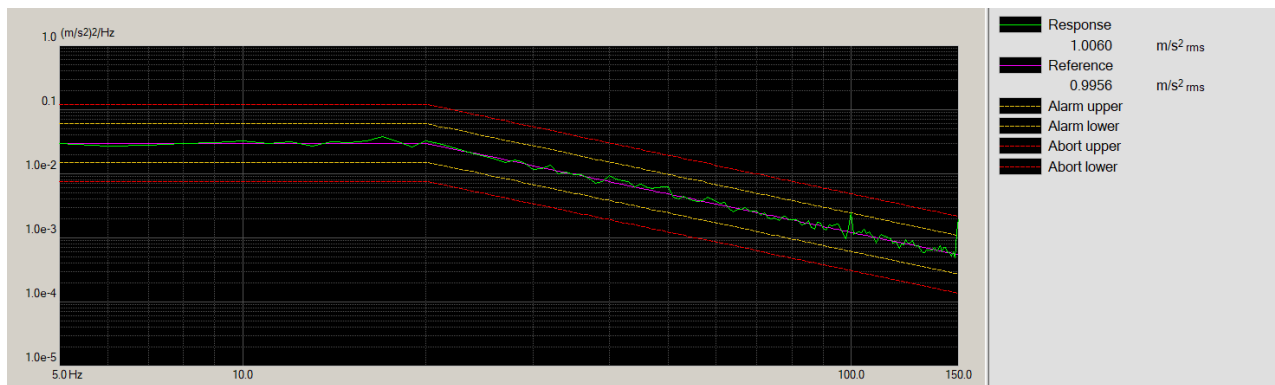


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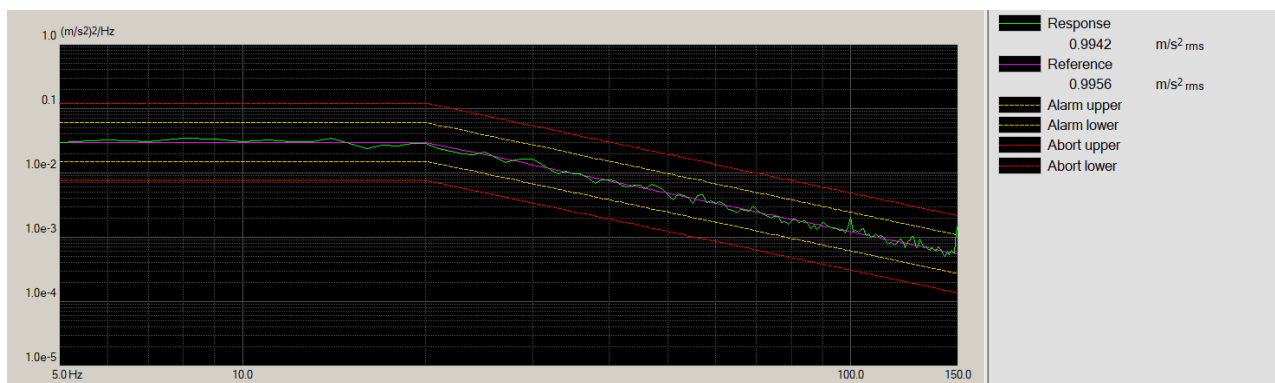
Functionality test:
Start of test:



5-minute mark:



End of test:



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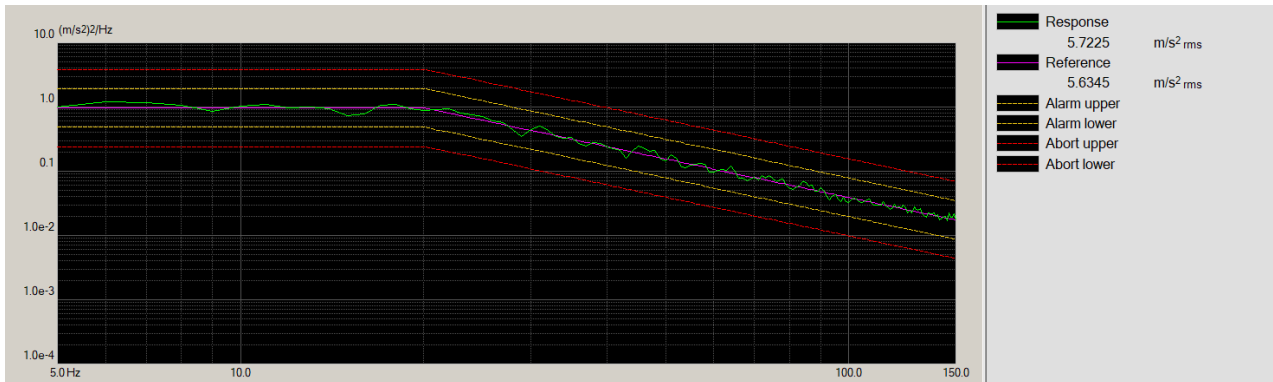
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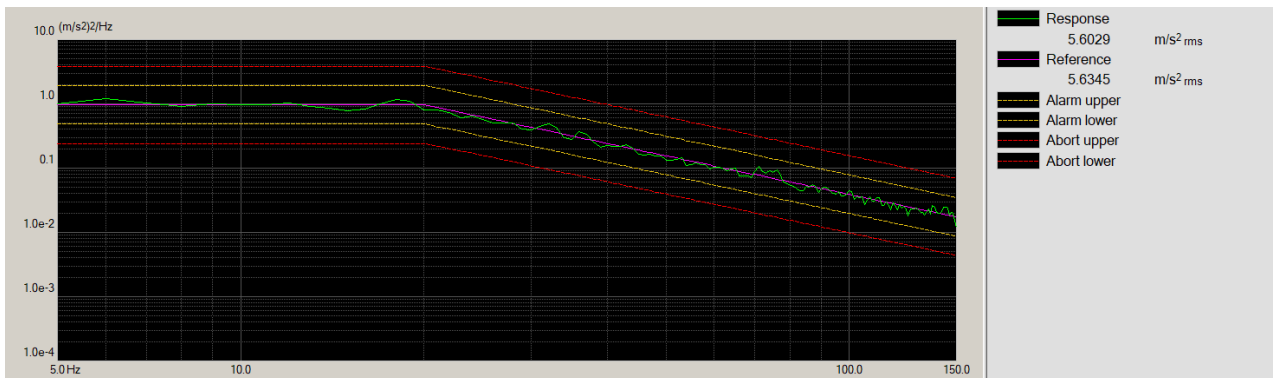
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Endurance testing:

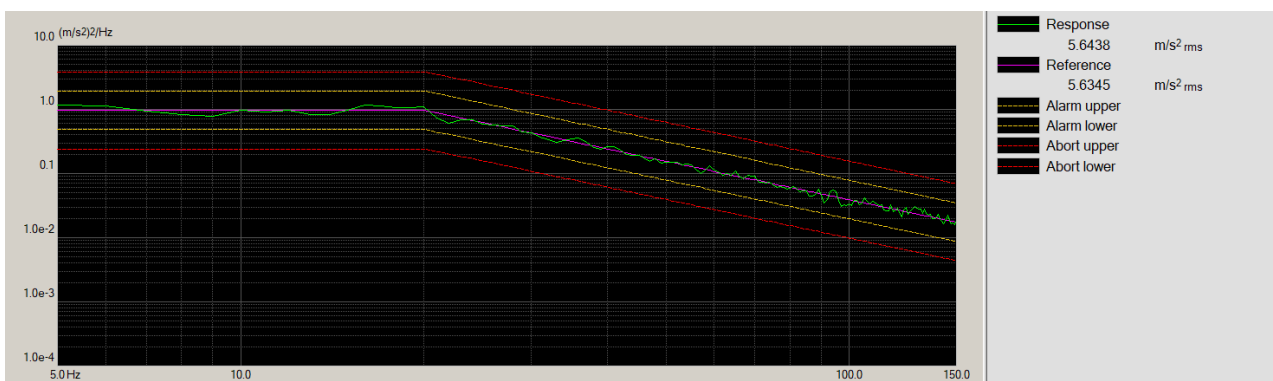
Start of test:



End of day testing:



End of test:



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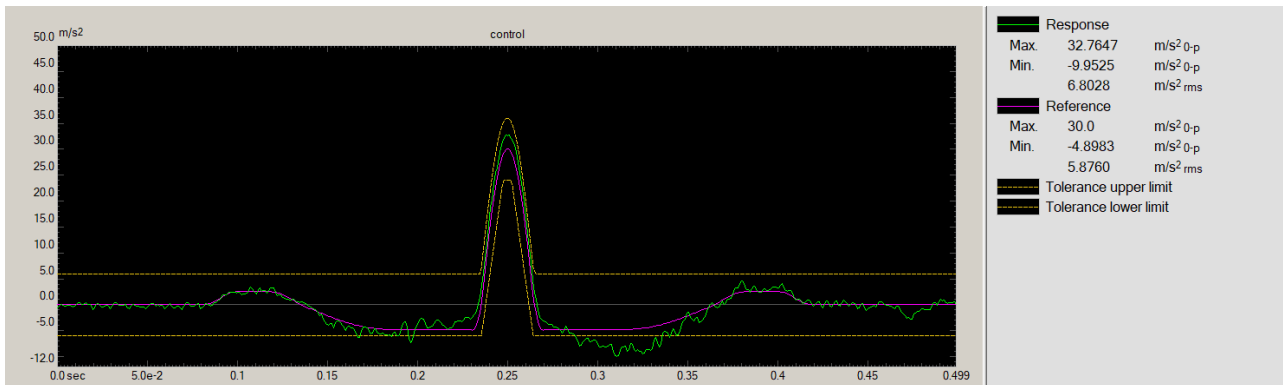


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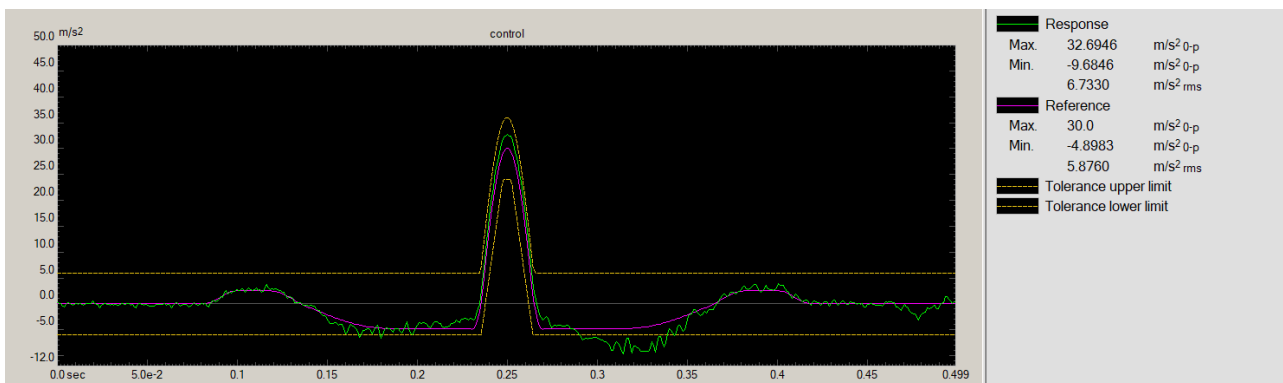
Shock testing:

Positive:

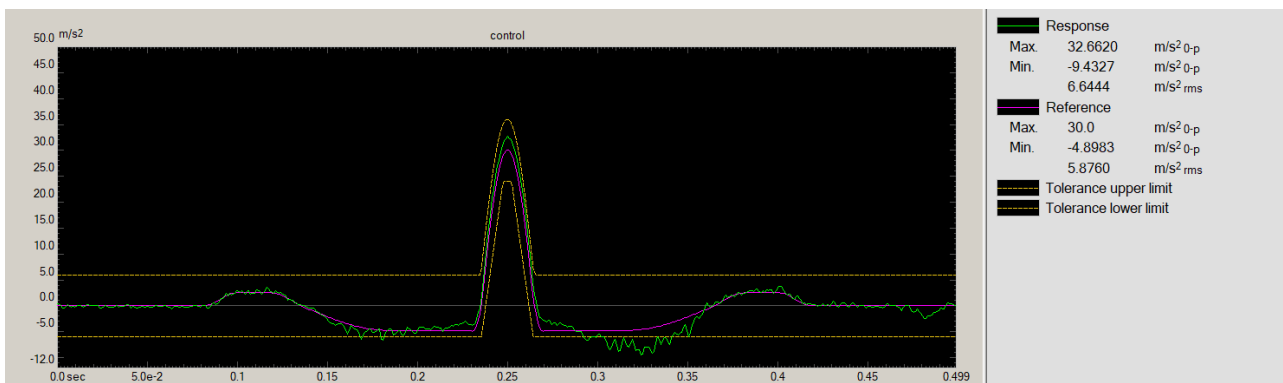
Shock 1:



Shock 2:



Shock 3:



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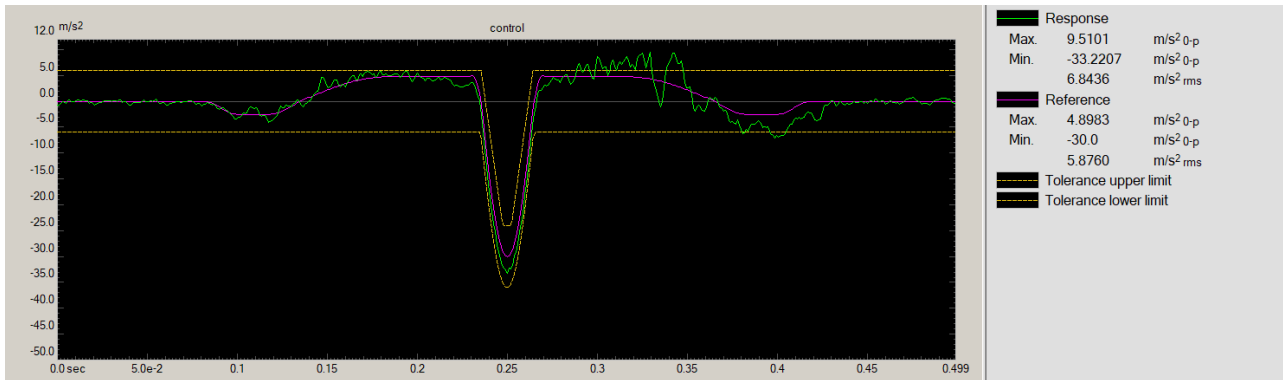
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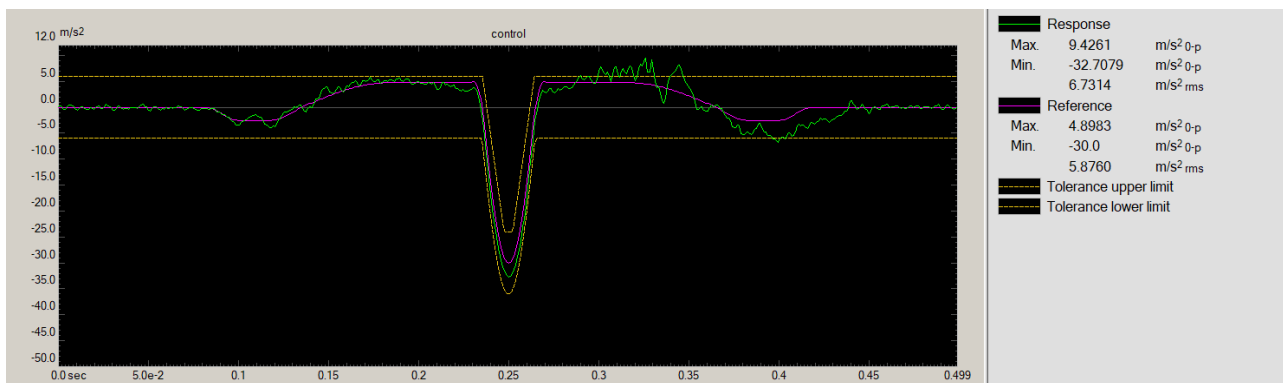
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Negative:

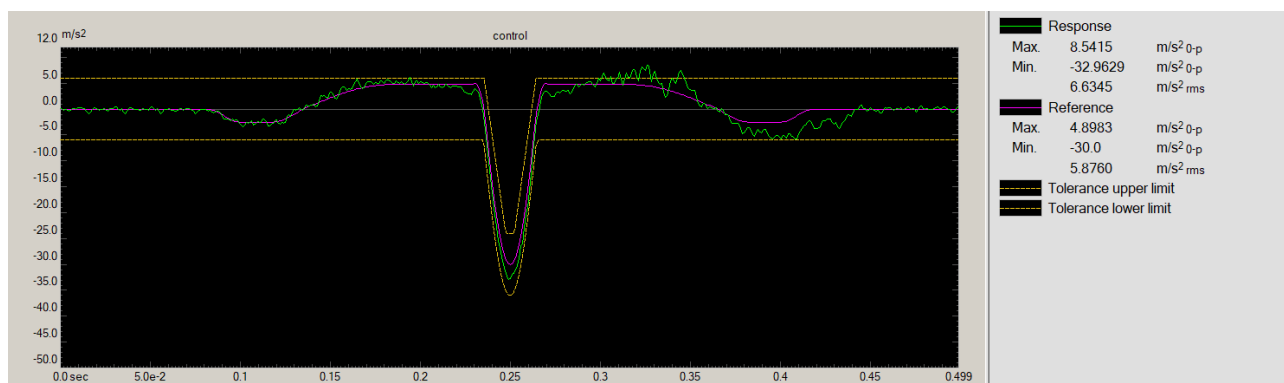
Shock 1:



Shock 2:



Shock 3:



After the completion of testing, no imperfections of cracks were found on the customers product. During the endurance testing the three-phase on the amp tripped causing a delay in the testing, this was soon fixed

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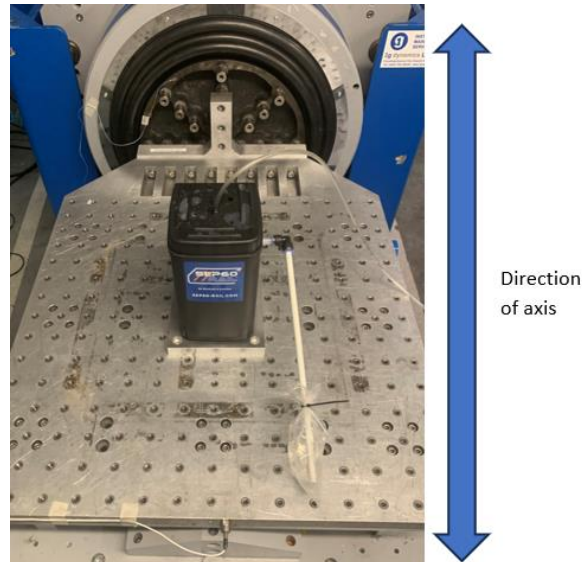
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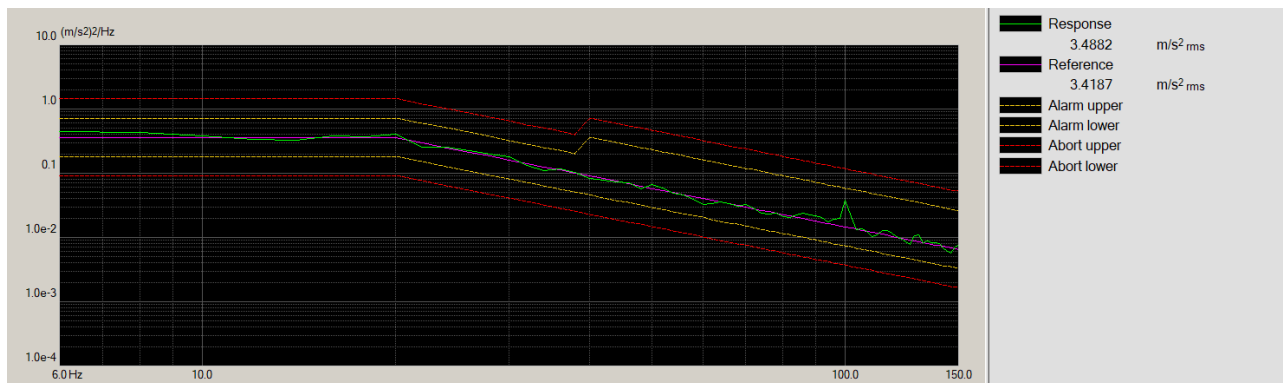
but caused the testing to run over to the next day. The jig was then unbolted from the armature and the shaker was rotated ready for the next axis of testing.

X axis:



Functionality test:

Start of test:

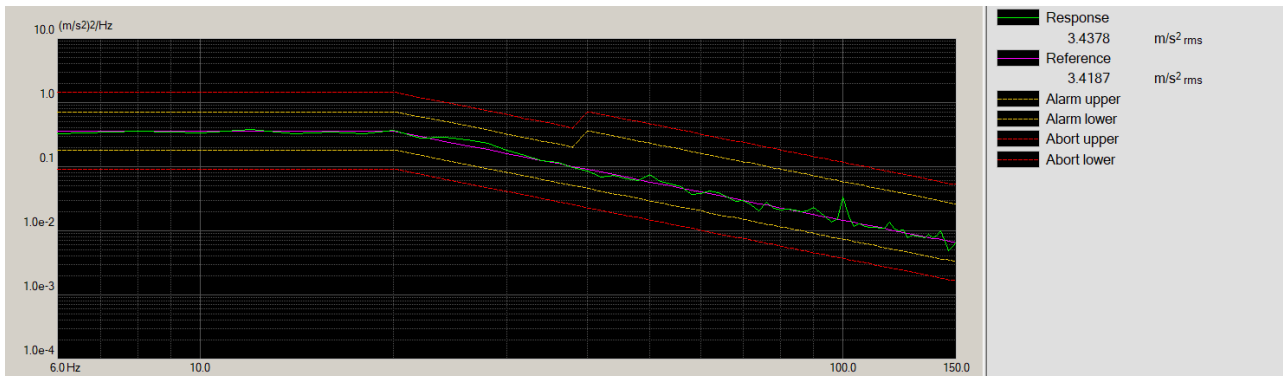


5-minute mark:

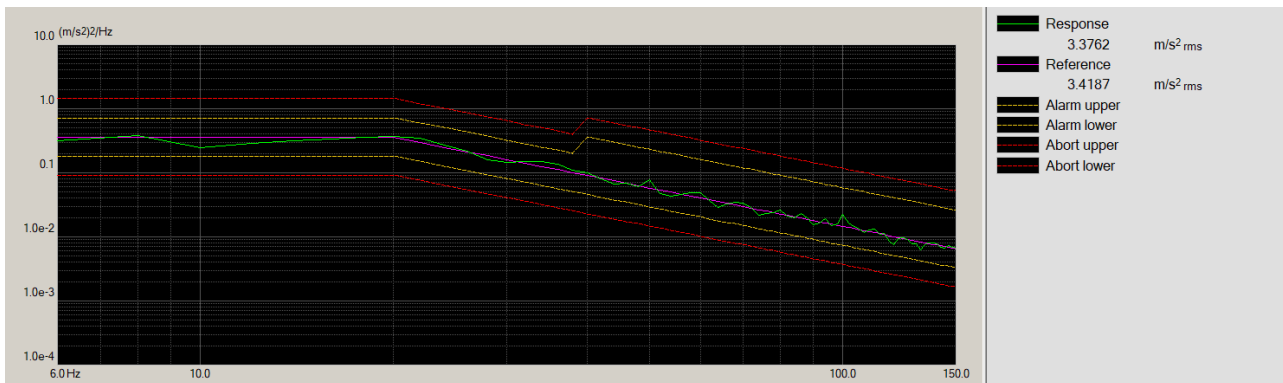


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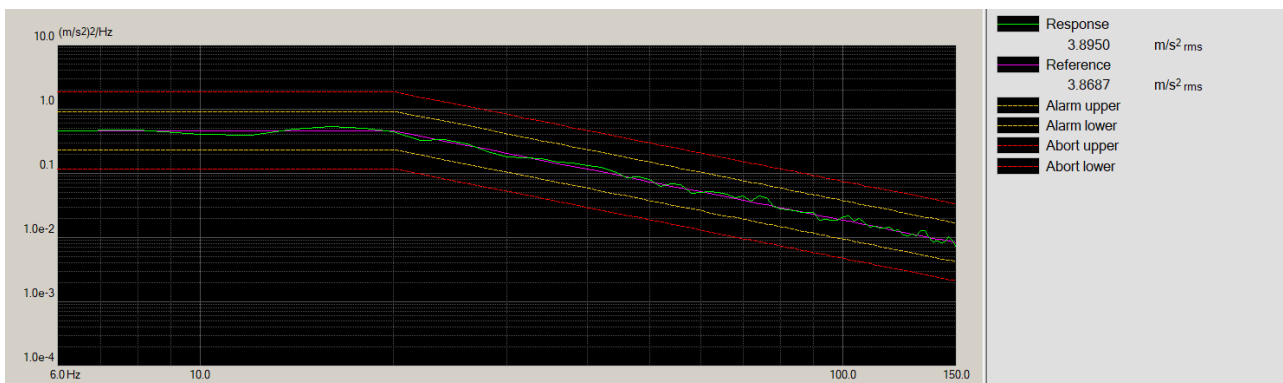


End of test:



Endurance testing:

Start of test:



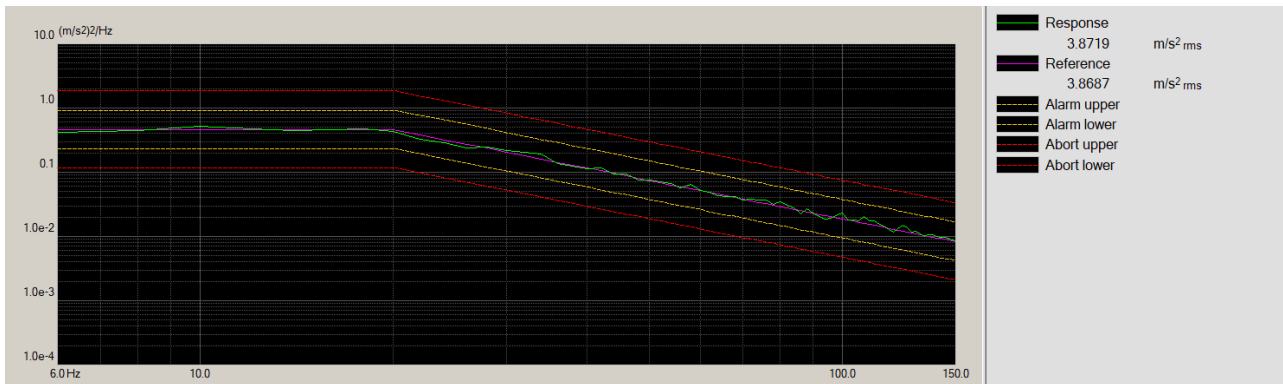
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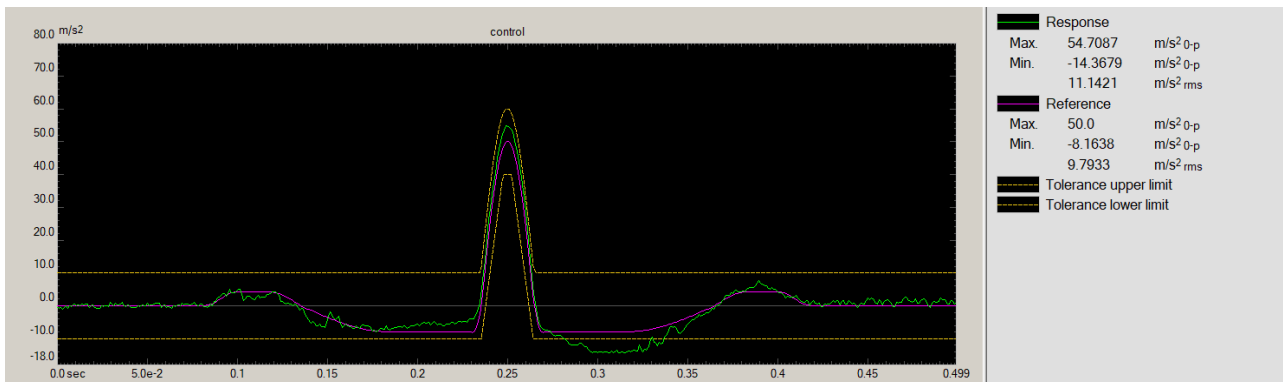
End of test:



Shock testing:

Positive:

Shock 1:

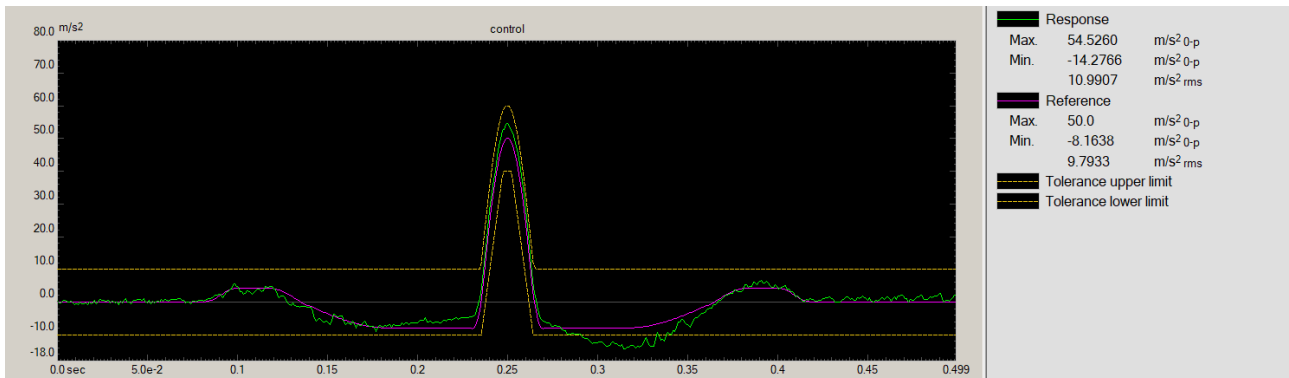


Shock 2:

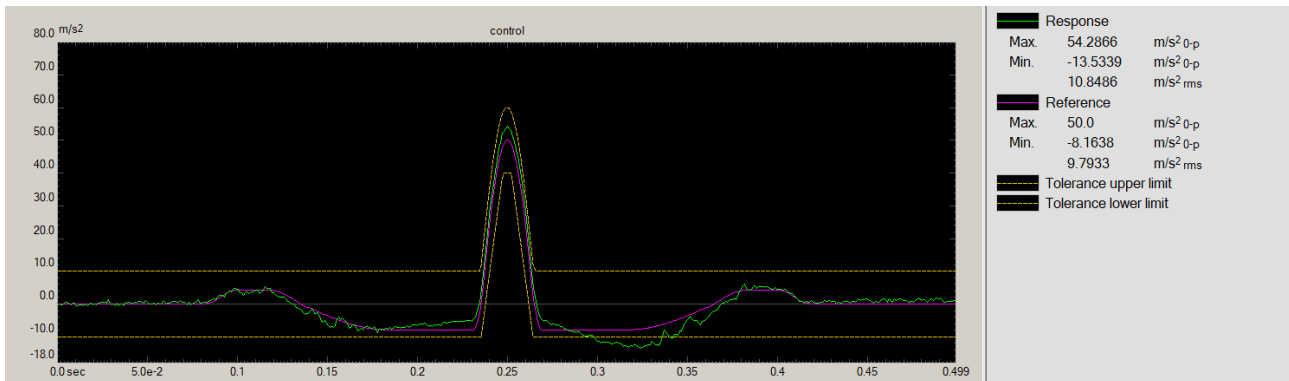


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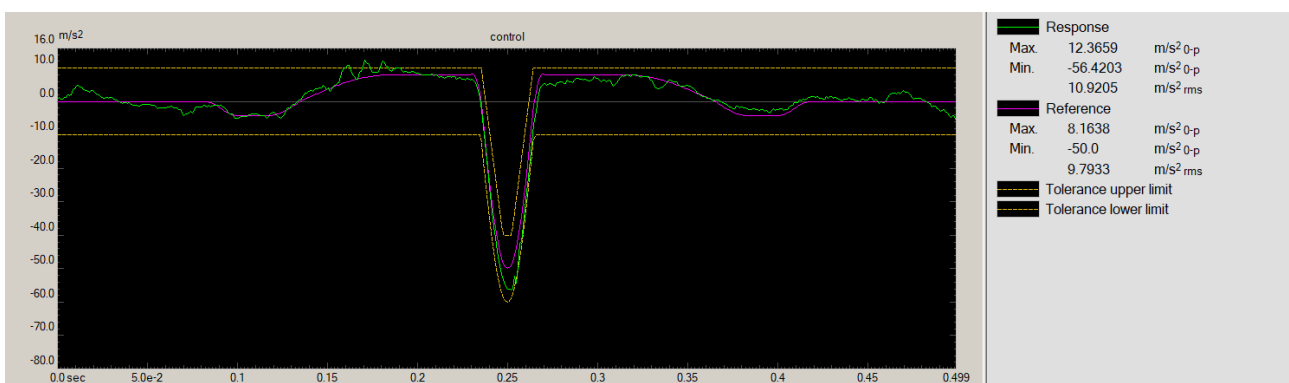


Shock 3:



Negative:

Shock 1:

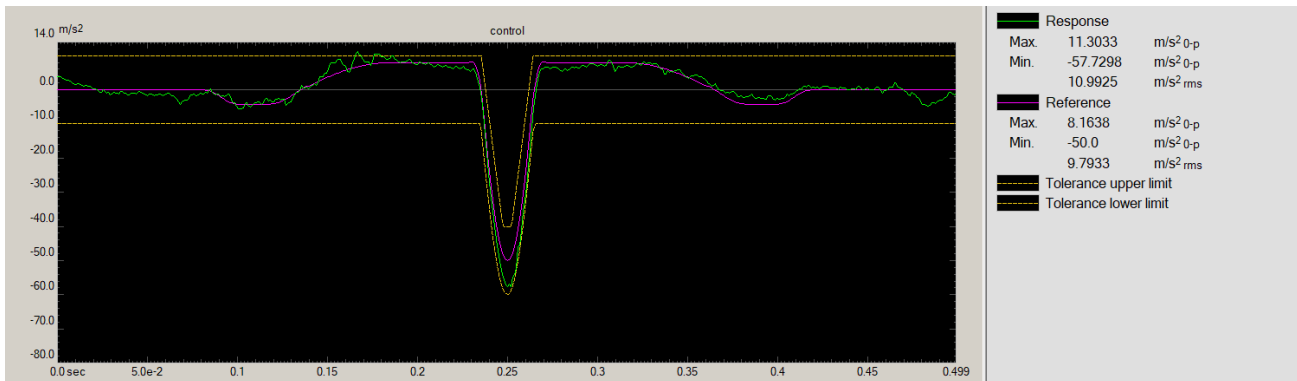


Shock 2:

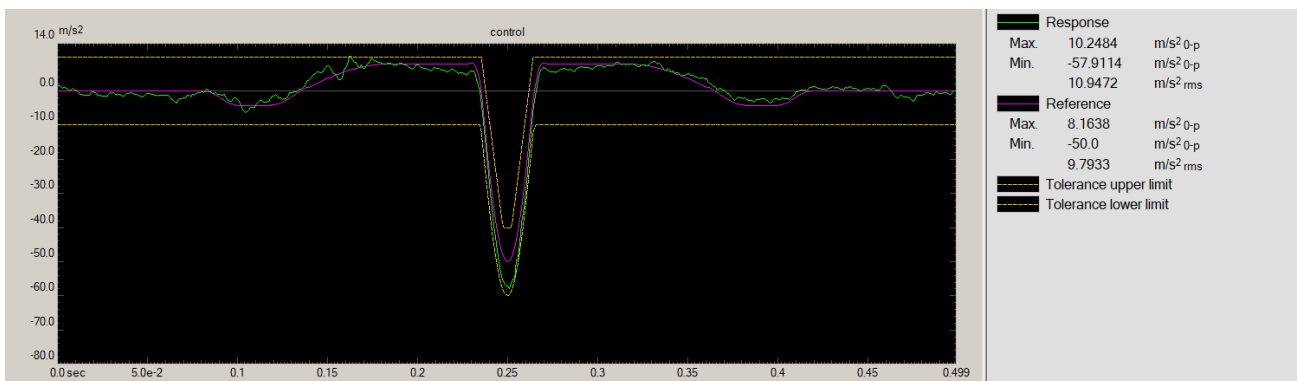


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Shock 3:

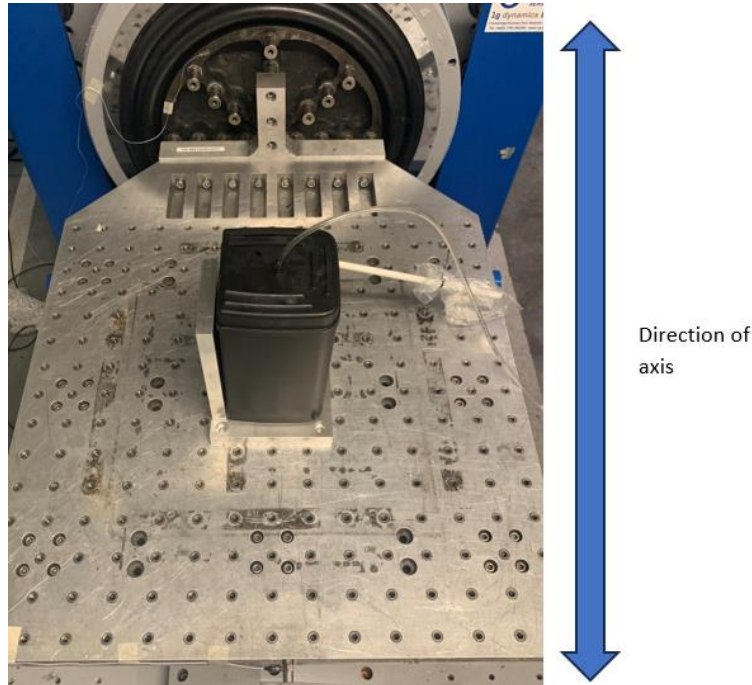


After test completion, no imperfections or cracks were found on the customer product. The functionality testing had some problems in horizontal due to the low acceleration levels, causing the accelerometers to pick up some background electrical noise from the shaker and tripping the test. The customer was contacted about this issue and the acceleration was increased so that the shaker could run the test. Testing was then continued until completion and the jig was rotated, ready for the next axis of testing.



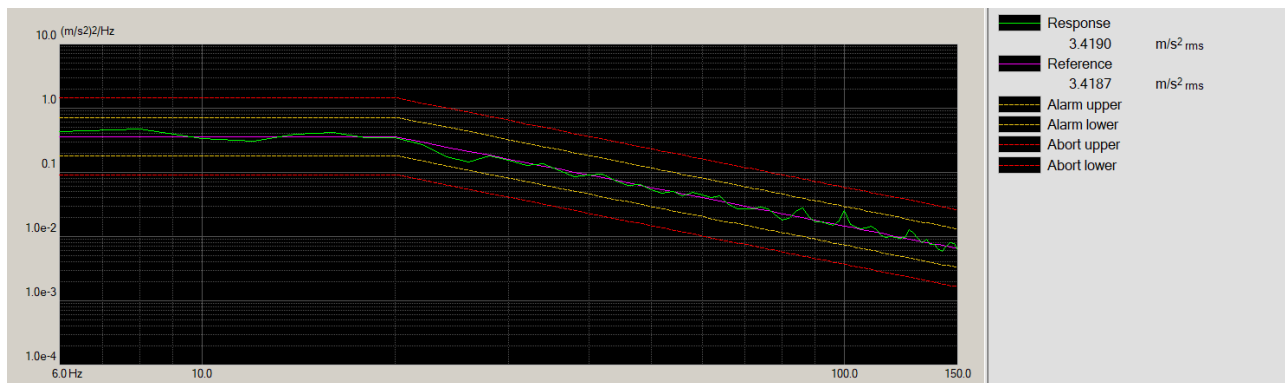
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Y axis:



Functionality test:

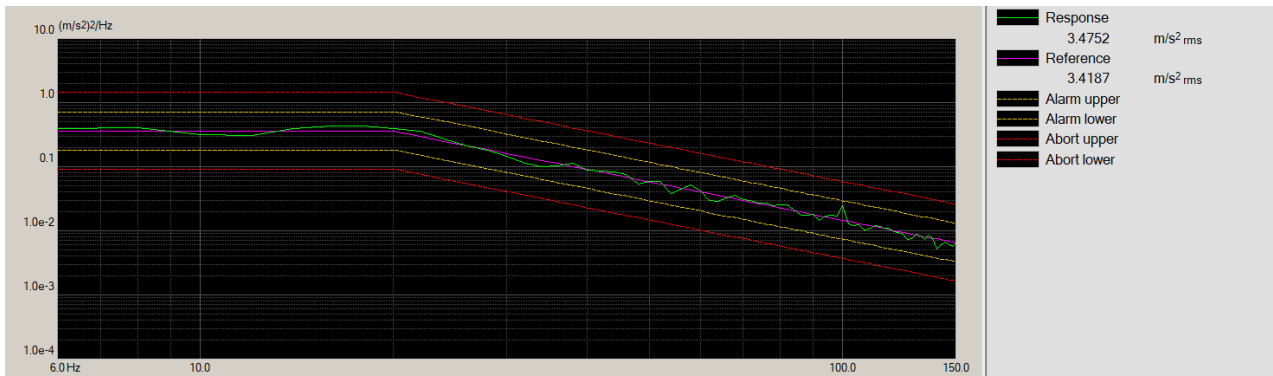
Start of test:



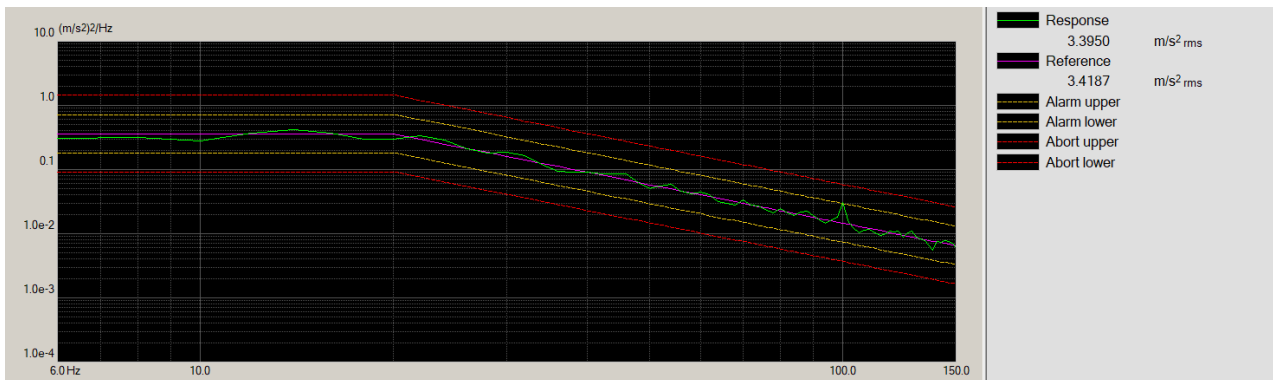
5-minute mark:



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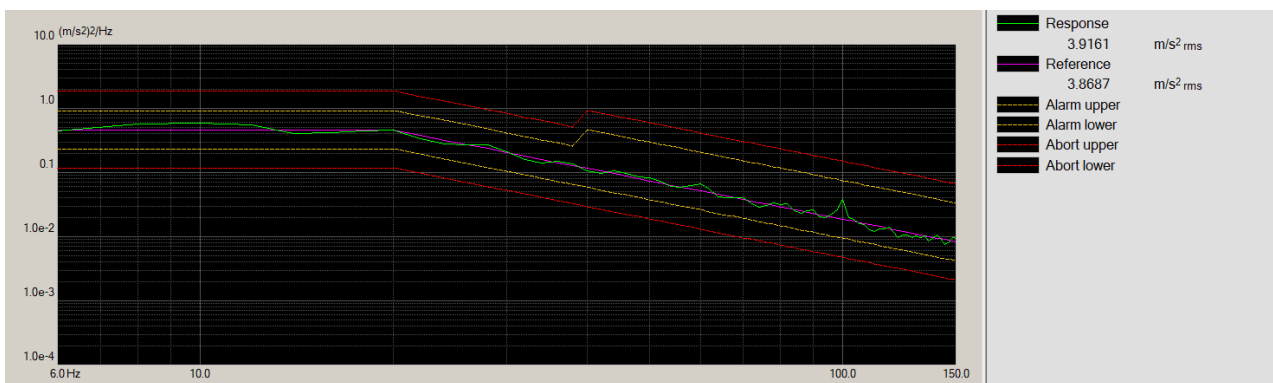


End of test:



Endurance test:

Start of test:



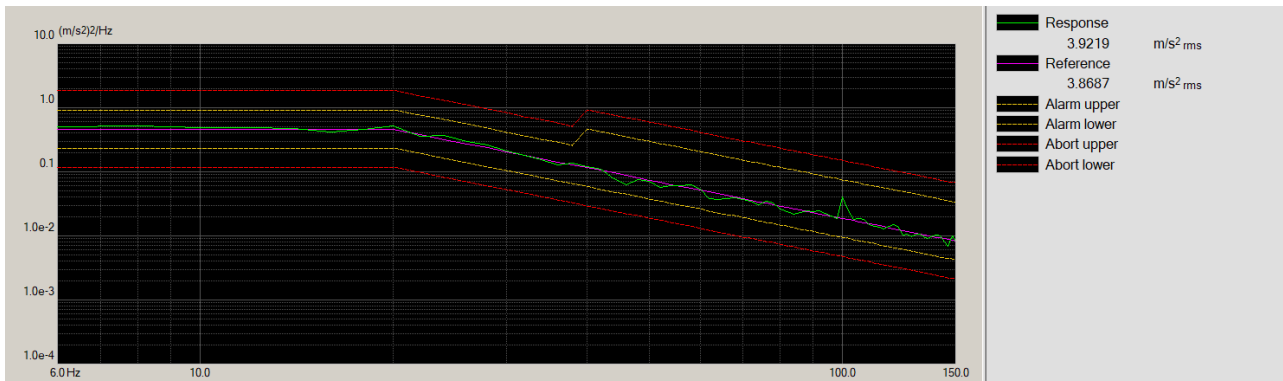
End of test:

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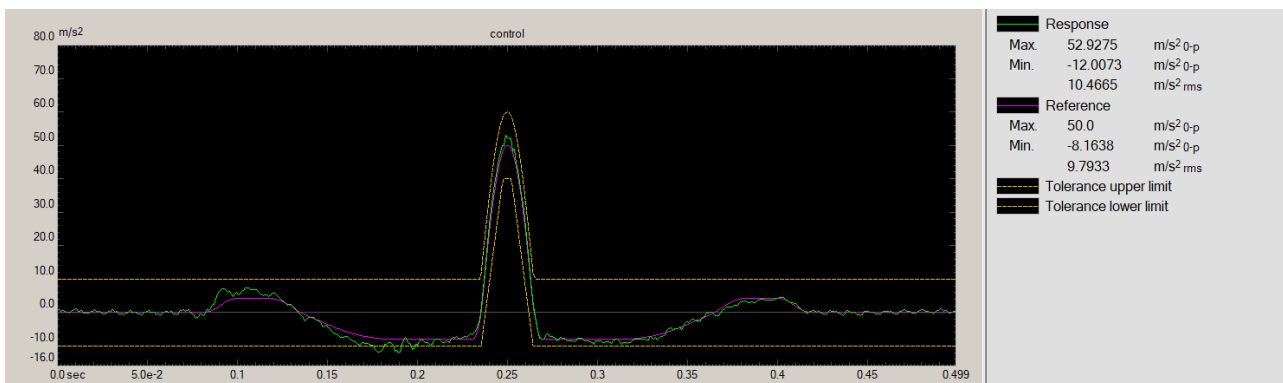
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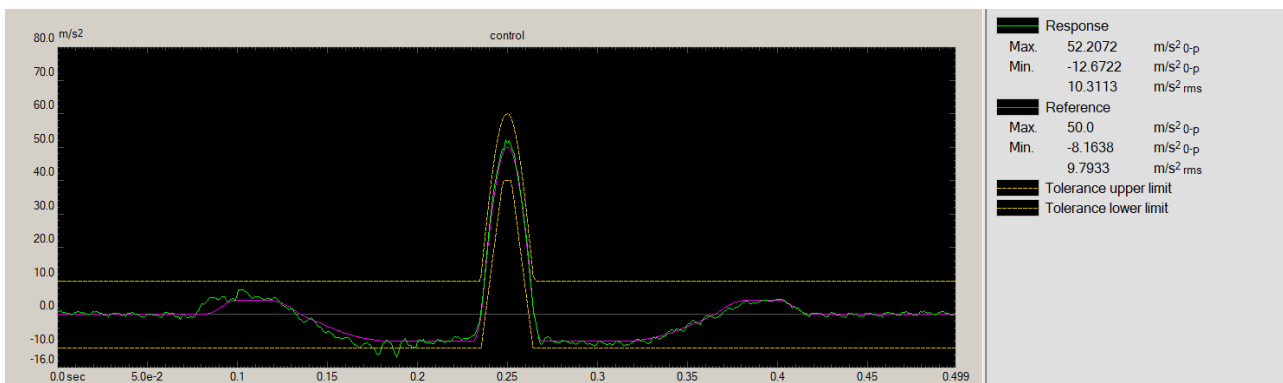
Shock testing:

Positive:

Shock 1:



Shock 2:



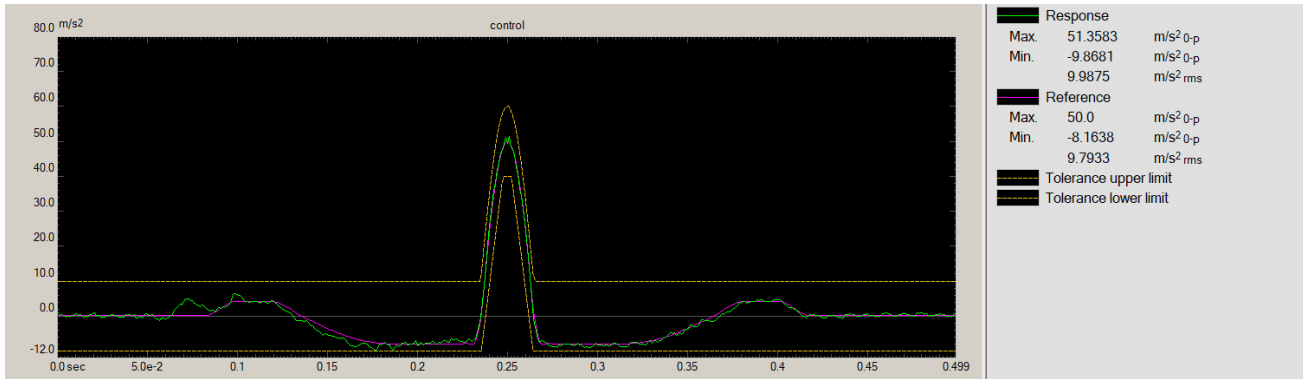
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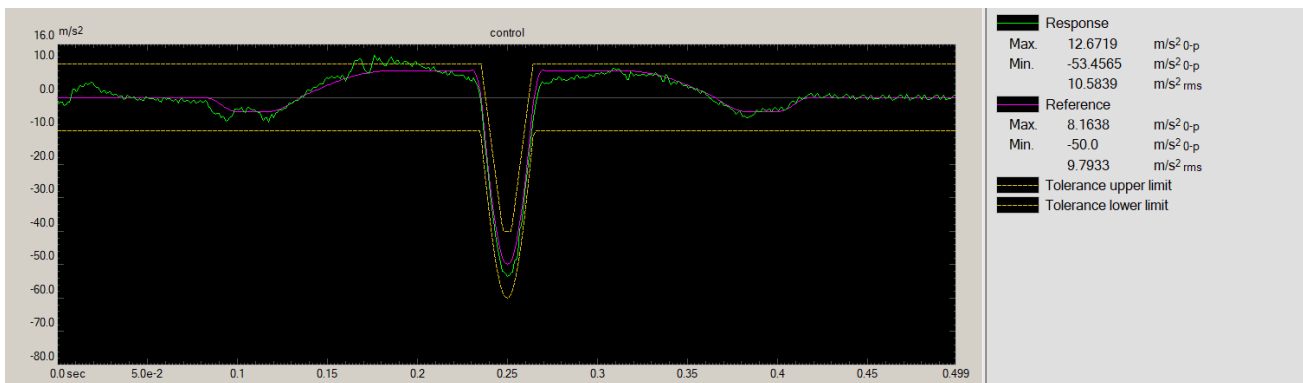
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Shock 3:

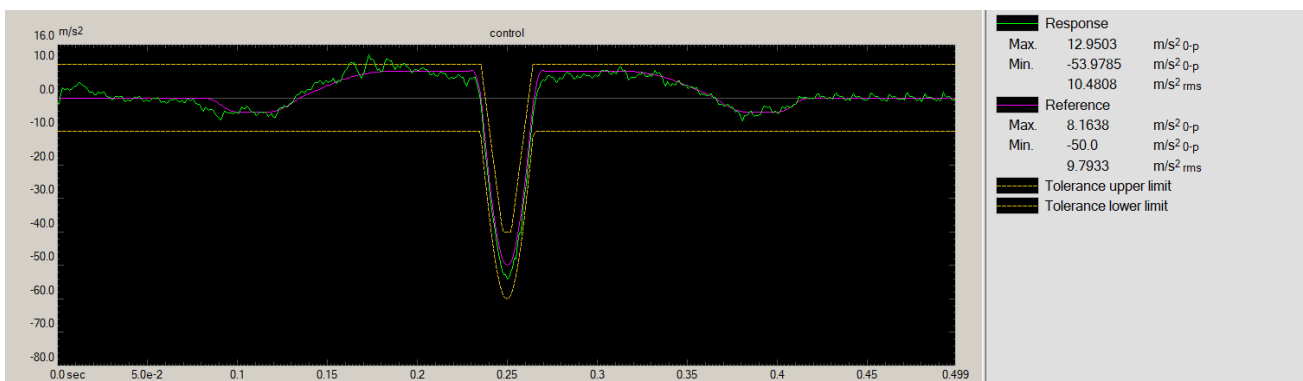


Negative:

Shock 1:



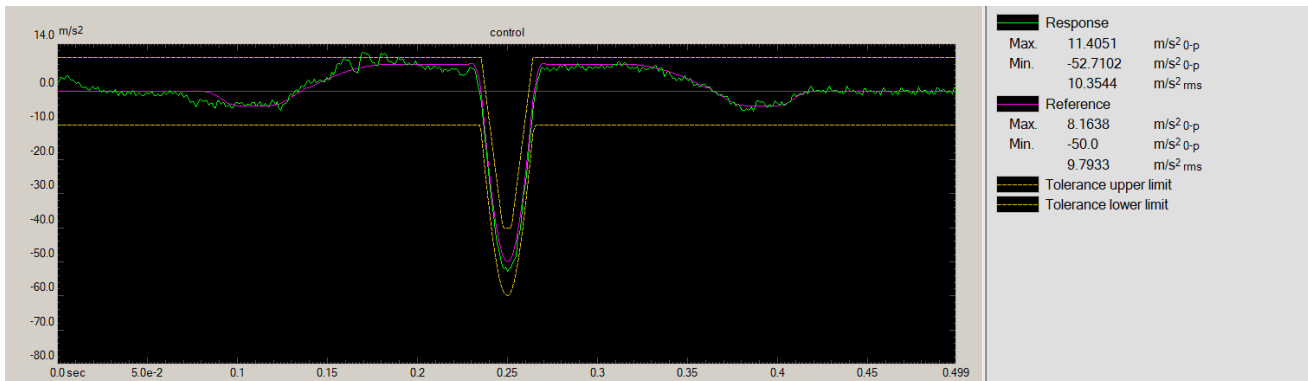
Shock 2:



Shock 3:



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After the testing had been completed, the customer product was inspected for any signs of cracks or imperfections. The product was unbolted from the test jig and prepared for collection by the customer the following day.

6. Additional information

Note: Include any equipment used, both 1g of customer based for reference. Also If required any up issue of report may be noted for traceability.

- During the functionality testing in the X axis, it was found that the accelerometer cable had become worn at some point during the test and caused the graph to display a high amount of noise. This cable was quickly replaced, and testing was restarted.
- After the mixture that the customers provided had ran out, a mixture of oil and water was used instead during the functionality test.
- Revision 2 report to include reference to IEC 60068-2-27 & -64:2008. Plus, reference to IEC 61373-2010 acceptance criteria.



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7. Conclusion: (Any opinions stated within the tests are outside of the scope of accreditation)

Test Sample supplied was subjected to the required specification IEC 61373-2010, Cat 1 Class b. During the testing the device was inspected prior to each test axis, this involved the product being functionally tested both with air and oil/water applied. During testing no visual deformation or mechanical issue occurred to affect the integrity of the device at any stage of the testing. Once the device was subjected to the full test sequence the device was still operational.

Device supplied Bowman Stor Ltd Z-83.5-57. See Axis Test photo to show correct mounting position.

Note: all pre and post check with each test axis was function test / operation, no values were obtained.

Testing Conducted by Signatory:

For 1g-Dynamics

Print Name: James Moore

Date: 11/9/2025

Testing Approved Signatory:

For 1g-Dynamics

Print Name: Colin Gates

Date: 11/9/25

