

Odin Metrology, Inc.

Calibration of Sound & Vibration Instruments
3537 Old Conejo Rd, Suite 108
Thousand Oaks, CA 91320

CERTIFICATE OF CALIBRATION

No.: OM2024-7

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CALIBRATION OF ACCELEROMETER:

Manufacturer: Dytran Type: 3023B2T SN: 19318 ID: N/A
Date of Calibration: 05 Mar 2025 Due Date: 05 Mar 2026 Technician: HL

CLIENT: PO# N/A

Odin Metrology
Thousand Oaks, CA 91320

ENVIRONMENT CALIBRATION CONDITIONS:

Temp.: 23 °C Pressure: 987.97 hPa Relative Humidity: 37 %

PROCEDURE:

This calibration is performed with a reference frequency of 100 Hz at a level of 2g RMS on Brüel & Kjær transducer calibration system type 3629 with calibration software version 3.0.1.239. This calibration system operates in conformance to ANSI/NCSL Z540-1 (1994), ISO 17025, and ISO 9001:2015. NQA certification no: 11252. Calibrated with Odin Metrology procedure OM11018-Accelerometer-3629, last revised Jan. 29, 2024.

STATEMENT:

Best uncertainty of measurement with 95% confidence level at Reference Frequency is 1.30%

CALIBRATION DESCRIPTION:

Excitation Angle: 0 Coherence: Passed
System verified: Valid Instruments valid: Valid

Tolerances

Axis	Tolerance at ref.freq.	Magnitude tolerances	Phase tolerances
X	Passed	Passed	Passed
Y	Passed	Passed	Passed
Z	Passed	Passed	Passed

Resistances

Axis	R _{in} [Ohm]	R _{out} [Ohm]
X	N/A	N/A
Y	N/A	N/A
Z	N/A	N/A

Quality Representative:



Harold Lynch, Service Manager

INSTRUMENTS: Traceable to NIST 484662/492700
Brüel & Kjaer Absolute Calibration Traceable #: **CAS-659510-V2R8N4-602**

Instrument	Manufacturer	Type	SN	Date of last calibration
Analyzer	Brüel & Kjaer	3160-A-042	3160-106770	4 Dec 2024
Reference transducer	Brüel & Kjaer	8305	1655945	18 Apr 2024
	Brüel & Kjaer	8305	1483343	18 Apr 2024
Reference transducer conditioner	Brüel & Kjaer	2647-A	2769824	20 Jan 2025
DUT conditioner	Brüel & Kjaer	2647-A	2769824	20 Jan 2025
Working standard	Brüel & Kjaer	4371	1432734	20 Jan 2025
Working standard conditioner	Brüel & Kjaer	2647-A	2769823	20 Jan 2025
Exciter	Brüel & Kjaer	4808	1434770	15 Jan 2024

CALIBRATION RESULTS:DC measurement:

Axis	Tolerances	Bias [V]
X	Passed	0
Y	Passed	0
Z	Passed	0

Reference values:

Axis	Frequency [Hz]	Sensitivity [mV/g]	Phase [°]
X	100	4.8549	-179.47
Y	100	5.0101	0.07
Z	100	5.0142	0.26

Detailed results:

CERTIFICATE OF CALIBRATION

No.: **OM2024-7**

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Axis X

Frequency [Hz]	Level RMS [g]	Sensitivity [mV/g]	Amplitude Deviation: [%]	Phase [° re 180°]
5	1.92	4.7844	-1.45	1.46
6.3	1.92	4.7695	-1.76	0.97
8	1.92	4.8041	-1.04	1.95
10	1.92	4.8213	-0.69	1.69
12.5	1.92	4.8085	-0.96	1.36
16	1.92	4.8011	-1.11	1.27
20	1.92	4.8268	-0.58	1.05
25	1.92	4.8207	-0.7	0.82
31.6	1.92	4.8262	-0.59	0.73
40	1.92	4.8351	-0.41	0.62
50	1.92	4.8345	-0.42	0.52
63	1.92	4.8358	-0.39	0.46
80	1.92	4.8377	-0.35	0.42
100	1.92	4.8549	0	0.53
125	1.92	4.8521	-0.06	0.31
160	1.92	4.855	0	0.23
200	1.92	4.8484	-0.13	0.19
250	1.92	4.8517	-0.07	0.25
316	1.92	4.8641	0.19	0.15
400	1.92	4.8431	-0.24	-0.02
500	1.97	4.8721	0.35	0.27
630	1.97	4.8766	0.45	0.02
800	1.97	4.8808	0.53	-0.06
1000	1.97	4.8781	0.48	-0.31
1250	1.97	4.8871	0.66	-0.36
1600	1.97	4.8914	0.75	-0.51
2000	1.97	4.9134	1.21	-0.65
2500	1.97	4.9262	1.47	-1.07
3150	1.97	4.929	1.53	-1.3
4000	1.97	4.9526	2.01	-2.02
5000	1.97	5.0121	3.24	-2.32

Axis Y

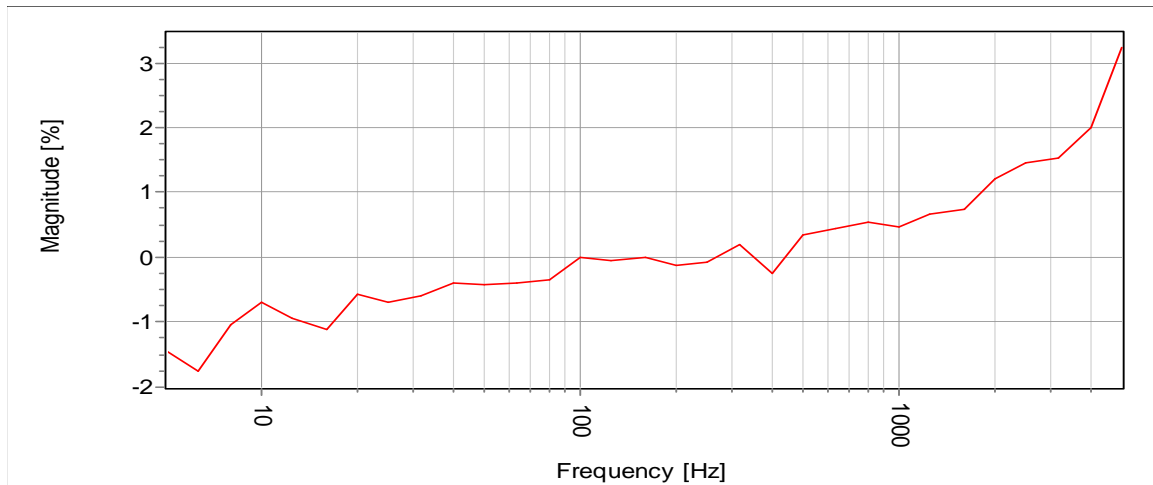
Frequency [Hz]	Level RMS [g]	Sensitivity [mV/g]	Amplitude Deviation: [%]	Phase [° re 180°]
5	1.92	5.4814	9.41	5.42
6.3	1.92	5.2144	4.08	2.79
8	1.92	5.1781	3.35	3.1
10	1.92	5.1295	2.38	1.98
12.5	1.92	5.0698	1.19	1.87
16	1.92	5.034	0.48	1.35
20	1.92	5.0332	0.46	1.14
25	1.92	5.0161	0.12	0.89
31.6	1.92	5.0158	0.11	0.75
40	1.92	5.0186	0.17	0.65
50	1.92	5.0155	0.11	0.54
63	1.92	5.0199	0.2	0.48
80	1.92	5.0228	0.25	0.4
100	1.92	5.0101	0	0.07
125	1.92	5.0133	0.06	0.28
160	1.92	5.017	0.14	0.29
200	1.92	5.0248	0.29	0.29
250	1.92	5.0238	0.27	0.05
316	1.92	5.0089	-0.02	0.54
400	1.92	5.056	0.92	0.19
500	1.97	5.023	0.26	-0.01
630	1.97	4.9956	-0.29	0.26
800	1.97	5.0744	1.28	0.12
1000	1.97	5.0627	1.05	-0.18
1250	1.97	5.0593	0.98	-0.37
1600	1.97	5.0434	0.66	-0.32
2000	1.97	5.0404	0.6	-0.46
2500	1.97	5.0478	0.75	0.09
3150	1.97	5.0781	1.36	2.34
4000	1.97	5.231	4.41	-0.4
5000	1.97	5.2967	5.72	-0.9

Axis Z

Frequency [Hz]	Level RMS [g]	Sensitivity [mV/g]	Amplitude Deviation: [%]	Phase [° re 180°]
5	1.92	6.3211	26.07	2.99
6.3	1.92	5.7576	14.83	2.13
8	1.92	5.5028	9.74	1
10	1.92	5.2725	5.15	1.65
12.5	1.92	5.2085	3.88	1.16
16	1.92	5.1294	2.3	1.18
20	1.92	5.0632	0.98	1.05
25	1.92	5.0427	0.57	0.73
31.6	1.92	5.0406	0.53	0.52
40	1.92	5.0227	0.17	0.46
50	1.92	5.0053	-0.18	0.36
63	1.92	5.0011	-0.26	0.3
80	1.92	4.9956	-0.37	0.25
100	1.92	5.0142	0	0.26
125	1.92	5.003	-0.22	0.13
160	1.92	5.0066	-0.15	0.01
200	1.92	5.0102	-0.08	-0.09
250	1.92	5.0081	-0.12	-0.05
316	1.92	5.0437	0.59	-0.3
400	1.92	4.963	-1.02	-0.54
500	1.97	5.0173	0.06	-0.03
630	1.97	4.9606	-1.07	-3.78
800	1.97	4.8719	-2.84	-0.3
1000	1.97	4.8995	-2.29	-0.37
1250	1.97	4.9356	-1.57	-0.42
1600	1.97	4.9659	-0.96	-0.74
2000	1.97	5.014	0	-0.84
2500	1.97	5.0706	1.13	-2.64
3150	1.97	4.8063	-4.15	-4.67
4000	1.97	4.8407	-3.46	-3.12
5000	1.97	4.8619	-3.04	-2.85

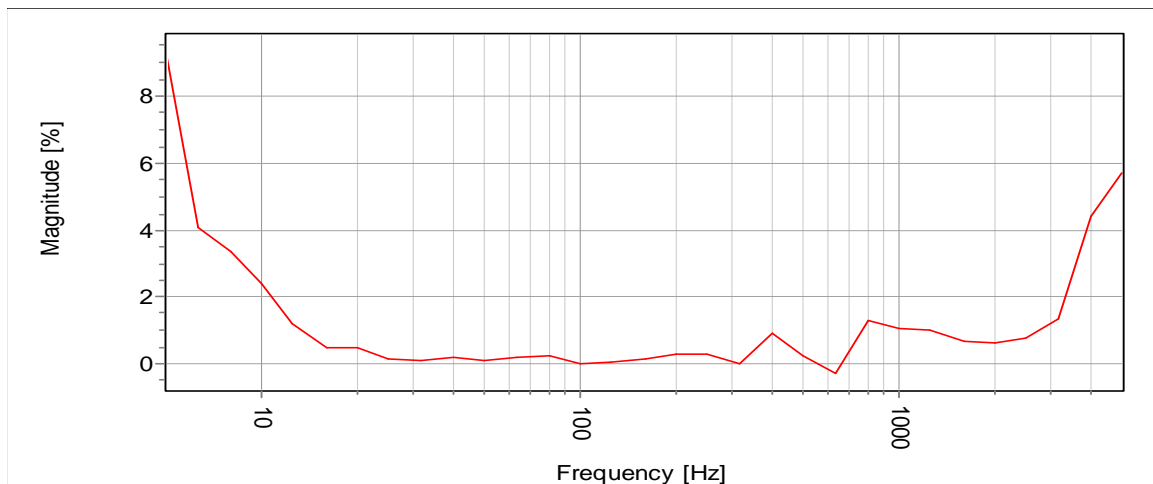
Axis X

Displayed frequency range: 5 - 5000 [Hz]



Axis Y

Displayed frequency range: 5 - 5000 [Hz]



Axis Z

Displayed frequency range: 5 - 5000 [Hz]

