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January 8, 2024

Test ID Q8607A Revision 0

Sordin AB Rörläggarvägen 8 SE-331 53 Värnamo	TESTING NVLAP LAB CODE 100427-0 Technician Sandar Bregg

Peak impulse noise reduction has been measured according to ANSI S12.42-2010 on the Sordin Supreme X2 BT PVC Cushions (test ID Q8607A). Table 1 summarizes the peak reduction levels as measured with the GRAS 45CB test fixture. All measurements were made with the unit turned ON, maximum volume.

NIOSH has established criteria for safe human exposure to impulse noise. Exposure to one impulse of 140 dB (Peak) is considered a noise dose of 100%. Exposure to lower peak levels is less hazardous, therefore humans can be exposed to a greater number of impulses per day. Besides Peak reduction, Table 1 also includes the allowable number of impulses per day according to the NIOSH criteria, assuming that the impulse peak level is reduced by the dB reduction measured by the test fixture.

	dBP Reduction	Allowable impulses per day
130 dB Overall Average PIL	29.4	>5000
150 dB Overall Average PIL	36.5	446
168 dB Overall Average PIL	34.4	4

Table 1. Sordin Supreme X2 BT PVC Cushions peak impulse noise reduction levels in dB as measured according to ANSI S12.42-2010.

Number of hearing protector samples tested: 5
Number of hearing protector samples rejected: 0
Number of trials per sample: 2
Temperature: 70 F, Relative humidity: 60%

Calibration of 45CB test fixture (SN 146191), including ¼ inch GRAS 40BP (SN 97414 and 99886) microphones and couplers: February 2024
Calibration of B&K 4938 free field microphone (SN2612643), February 2024

Peak insertion loss per trial (dB) and Estimated Unoccluded vs. Measured Occluded Peak Levels (dB)

Peak Insertion Loss [dB]

	132 dB		150 dB		168 dB	
	Left	Right	Left	Right	Left	Right
Protector 1, Trial 1	28.6	28.3	35.7	37.1	38.4	32.4
Protector 1, Trial 2	29.5	29.5	37.9	33.9	28.0	35.6
Protector 2, Trial 1	26.7	29.4	38.5	35.5	39.5	35.6
Protector 2, Trial 2	28.0	29.3	39.0	36.7	37.9	34.2
Protector 3, Trial 1	28.0	27.9	37.1	35.2	36.0	30.4
Protector 3, Trial 2	28.7	30.0	36.1	33.3	35.3	27.9
Protector 4, Trial 1	28.9	29.4	37.7	33.7	38.6	35.3
Protector 4, Trial 2	29.6	32.3	37.7	34.4	29.7	34.7
Protector 5, Trial 1	30.1	31.1	39.5	36.2	27.9	35.8
Protector 5, Trial 2	31.2	30.7	38.5	36.0	39.2	34.9

Overall Average Peak Insertion Loss [dB]

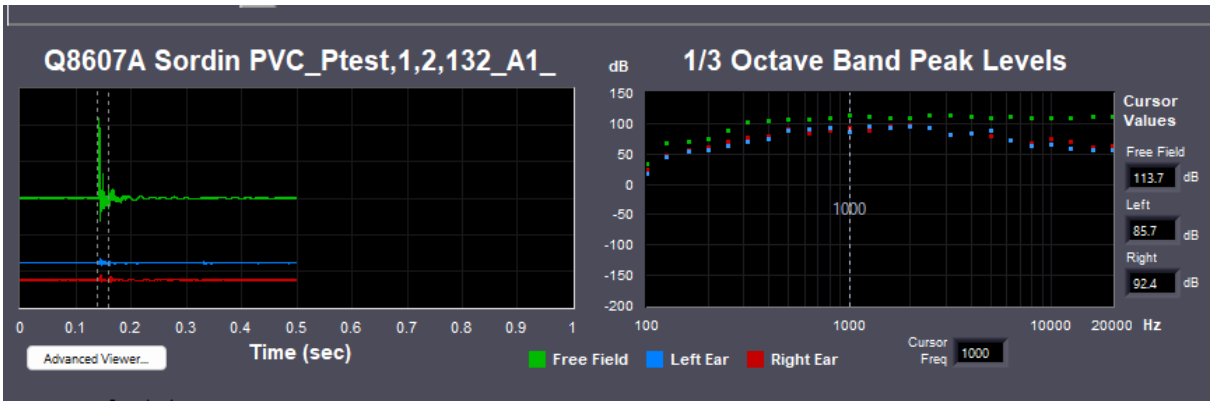
132 dB	150 dB	168 dB
29.4	36.5	34.4

Estimated Unoccluded vs. Measured Occluded Peak Levels [dB]

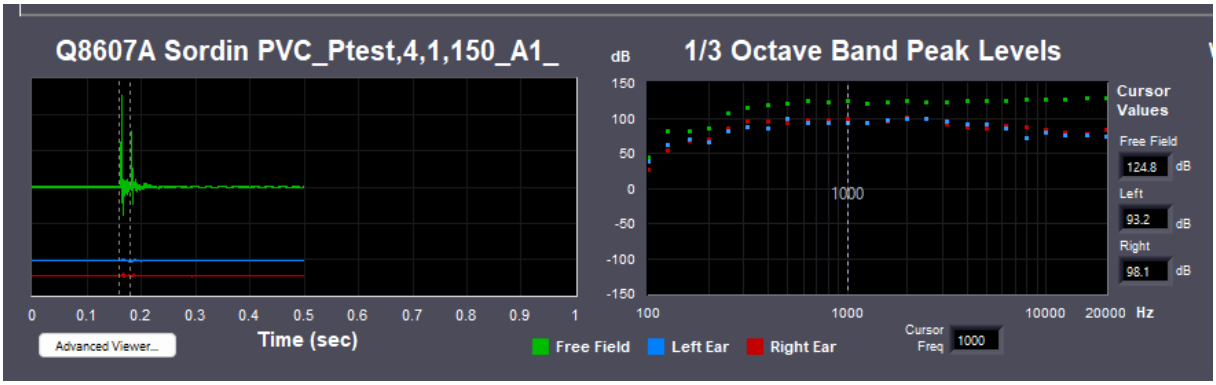
	Left		Right	
	Estimated Unoccluded	Measured Occluded	Estimated Unoccluded	Measured Occluded
Ptest,1,1,132	135.7	107.1	135.8	107.5
Ptest,1,2,132	137.3	107.8	137.4	107.9
Ptest,2,1,132	136.1	109.4	136.3	106.8
Ptest,2,2,132	135.8	107.8	135.9	106.6
Ptest,3,1,132	136.5	108.6	136.6	108.8
Ptest,3,2,132	136.6	107.9	136.7	106.7
Ptest,4,1,132	136.1	107.1	136.2	106.8
Ptest,4,2,132	138.2	108.6	138.3	106.1
Ptest,5,1,132	137.0	106.9	137.0	105.9
Ptest,5,2,132	136.9	105.6	137.0	106.3
Ptest,1,1,150	150.0	114.3	150.7	113.6
Ptest,1,2,150	150.4	112.4	151.1	117.2
Ptest,2,1,150	150.6	112.1	151.4	115.9
Ptest,2,2,150	150.1	111.1	150.9	114.1
Ptest,3,1,150	150.0	112.9	150.7	115.6
Ptest,3,2,150	150.6	114.5	151.2	118.0
Ptest,4,1,150	150.8	113.1	151.5	117.8
Ptest,4,2,150	150.5	112.7	151.2	116.8
Ptest,5,1,150	150.1	110.6	150.8	114.6
Ptest,5,2,150	150.4	111.9	151.1	115.1
Ptest,1,1,168	171.6	133.2	172.3	139.9
Ptest,1,2,168	170.8	142.7	171.4	135.8
Ptest,2,1,168	171.2	131.7	171.9	136.2
Ptest,2,2,168	171.7	133.8	172.3	138.1
Ptest,3,1,168	170.8	134.8	171.3	140.9
Ptest,3,2,168	170.9	135.6	171.6	143.7
Ptest,4,1,168	171.6	133.0	172.2	136.9
Ptest,4,2,168	171.3	141.6	172.0	137.3
Ptest,5,1,168	170.8	142.8	171.4	135.6
Ptest,5,2,168	172.2	133.0	172.9	138.0

Representative Impulse Frequency Response:

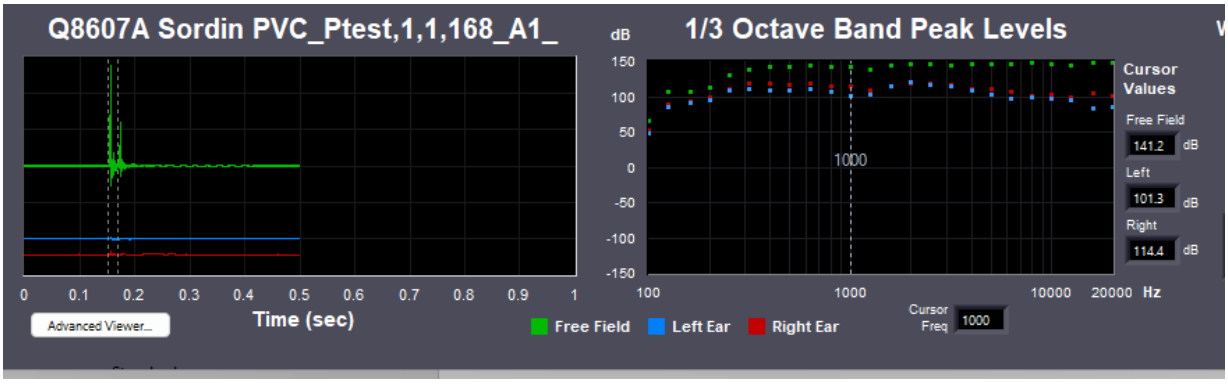
132 dB



150 dB



168 dB



Test Item:

Michael & Associates is accredited by the National Institute of Standards and Technology (NIST) National Laboratory Accreditation Program (NVLAP) for tests performed according to ANSI S3.19-1974, ANSI S12.6-2016, AS/NZ S1270:2002 and EN352 parts 1-8. These accreditation criteria encompass the requirements of international standard ISO 17025. This report may only be reproduced or transmitted electronically in its entirety. This report shall not be used to claim product approval, certification or endorsement by NIST, NVLAP or by any agency of the U.S. Government. All measurement equipment are calibrated with instrumentation traceable to the NIST. Accreditation documentation can be viewed at www.michaelassociates.com/data/documents/NVLAP-2023.pdf.

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