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Hearing Protective Device Test Report Number Q8733A Revision 4

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NVLAP®
TESTING
NVLAP LAB CODE 100427-0

Technician: Eileen Kline

Date of Revision 4: 2/28/25 (correct typos)
Date of Revision 3: 2/7/25 (add models)
Date of Revision 2: 4/17/2024 (to update company info)
Date of Revision 1: 4/12/2024
Date of Report: 4/2/2024
Date of testing: 2/24/2024-1/28/2025
Date of Sample Receipt: 2/12/2024 & 1/9/2025

Attenuation measurements have been performed according to the European Standards EN352-1:2020 on the Ningbo GY Safety Technology Co., Ltd. HQ630-E0, HQ630-E1, HQ-GE530, and PS89CW-CCC-UNQ noise-cancelling earmuffs (test ID Q8733A). The specified threshold measurement data were obtained using sixteen normally-hearing listeners. These listeners were selected as specified in EN352-1:2020. Please note that all test subjects are adults and may not be representative of intended user.

The measurements were made in a room designed for this purpose. All acoustic characteristics of the room meet the requirements outlined in EN352-1:2020. The ambient noise levels in this room are below the limits specified in EN352-1:2020, and open ear thresholds are used on a continuing basis to monitor the background noise levels. An automatic recording attenuator was used to record both open and occluded ear thresholds.

Each of the sixteen subjects was tested at each of seven test frequencies. The attached Tables show mean and standard deviation attenuation values in decibels (dB) for each test signal. The results presented in this report pertain to the samples tested only.

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Use these laboratory-derived attenuation data for comparison purposes only. The amount of protection afforded in field use is often significantly lower depending on how the protectors are fitted and worn.

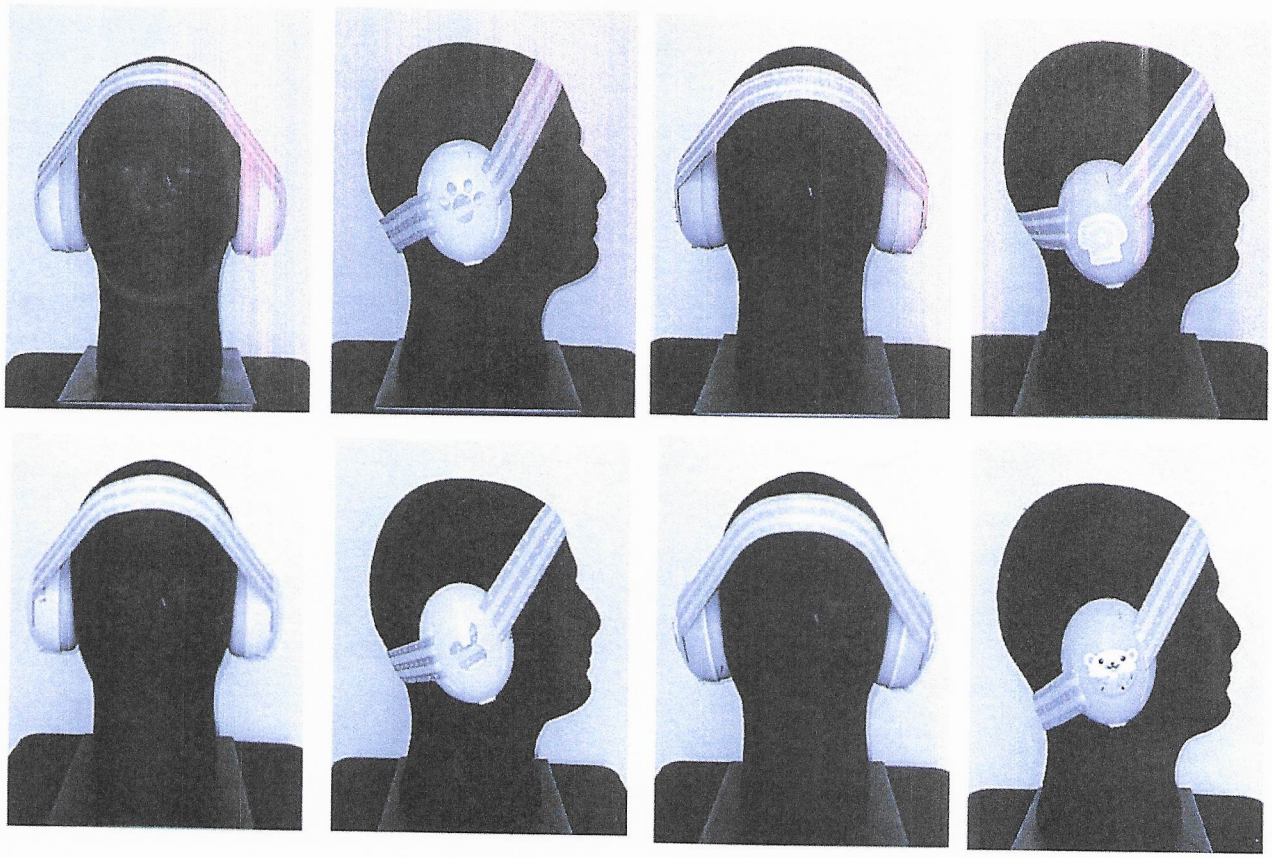
Jackie DiFrancesco, AuD, PhD

2/28/25
Date (Rev4 2/28/25)

Product information

Manufacturer	N[redacted]td.
Model	HQ630-E0, HQ630-E1, HQ-GE530, PS89CW-CCC-UNQ
Test ID number	Q8733A
Date of receipt	2/12/2024
Dates of testing	2/12/2024-1/28/2025
Type of product	earmuffs
Wearing position	elastic band

Photograph



4.1 Sizing

The earmuff passes small and medium size ranges.

4.2 Materials Pass

4.2.2 Construction

Cushion replacement?	Yes
Earmuff liner replacement?	Yes
Cleaning	Pass

4.2.2 cont. Unpack, Weigh, Condition all samples (grams)

sample 1	113.0
sample 2	114.0
sample 3	113.0
sample 4	113.0
sample 5	113.0
sample 6	113.0
sample 7	113.0
sample 8	113.0
sample 9	113.0
sample 10	114.0
Mean	113.2

4.3.2 Adjustability: The "X" indicates where the ear-muff fulfills the requirement.

	H 115 W 125 S	H 115 W 145 S/M	H 130 W 125 S/M	H 130 W 145 S/M/L	H 130 W 155 M/L	H 140 W 145 M/L	H 140 W 155 L
sample 1	X	X	X				
sample 2	X	X	X				
sample 3	X	X	X				
sample 4	X	X	X				
sample 5	X	X	X				
sample 6	X	X	X				

4.3.3 Cup Rotation: The "X" indicates where the ear-muff fulfills the requirement.

	H 122 W 135 S	H 130 W 145 M	H 135 W 150 L
sample 1	X	X	
sample 2	X	X	
sample 3	X	X	
sample 4	X	X	
sample 5	X	X	
sample 6	X	X	

4.3.4 Headband Force (Newton)

	Small	Pass/Fail	Med	Pass/Fail
sample 1	7.0		10.2	
sample 2	6.9		9.3	
sample 3	7.2		10.2	
sample 4	6.7		9.8	
sample 5	6.6		9.3	
sample 6	7.3		10.2	
Mean	6.9	P	9.9	P

Limit: 14.0 N

4.3.5 Cushion Pressure (Pascal)

	Small	Pass/Fail	Med	Pass/Fail
sample 1	2804.8		4044.0	
sample 2	3309.4		3941.6	
sample 3	3174.6		4263.0	
sample 4	2822.3		3852.9	
sample 5	2738.9		3812.9	
sample 6	3112.0		4109.0	
Mean	2993.7	P	4003.9	P

Limit: 4500 Pascal

4.3.6 Resistance to damage when dropped:

	Cracked	Detached
sample 1	no	no
sample 2	no	no
sample 3	no	no
sample 4	no	no
sample 5	no	no
sample 6	no	no

4.3.7 Resistance to damage when dropped at low temperature
Optional: not performed.

4.3.8 Headband Flexing

	Changes	Damage
sample 1	no	no
sample 2	no	no
sample 3	no	no
sample 4	no	no
sample 5	no	no
sample 6	no	no

4.3.8 cont. Change in Headband Force (Newton)

	Initial	Post Conditioning		% Change	Pass/Fail
sample 1	10.2	10.2		0.0	P
sample 2	9.3	9.3		0.0	P
sample 3	10.2	9.8		4.3	P
sample 4	9.8	9.3		4.5	P
sample 5	9.3	9.3		0.0	P
sample 6	10.2	9.8		4.3	P
			Mean	2.2	P

Limit: Max = 14N, Max change = 15%

4.3.9 Insertion Loss

Pass. See Appendix B for data.

Limit: SD < 7.0 dB in any 1/3 OB or < 4 dB in four or more adjacent 1/3 OB

4.3.10 Resistance to leakage:

This test was not performed since the cushions are not liquid filled.

4.3.11 Ignitability:

Pass: Samples 4 & 5 were tested for ignitability. None of their parts ignites when touched to the metal rod. The earmuffs and their parts only smoked slightly.

4.3.12 Minimum Attenuation:

Pass See Appendix A for data.

	H	M	L
Limit	12	11	9

Mean-2* SD>0 for all test frequencies

Sections 5 and 6, Marking and Info Provided by Manufacturer

Not assessed.

Products were provided without packaging.

It is the manufacturer's responsibility to adhere to the requirements of these sections.

Estimates of uncertainty

Weight	+-	.3 g	
Headband force	+-	.1 lb	.45 N
Cushion Pressure	+-	250 P	
Insertion Loss	+-	2 dB	
REAT attenuation	+-	3 dB	

Appendix A. Attenuation Data

Individual and Summary Attenuation Data for Hearing Protective Devices

Test Method: EN352-1:2020 Position: Headband

Manufacturer: [redacted]td. Date: 4/1/24

Model: HQ630-E0, HQ630-E1, HQ-GE530, PS89CW-CCC-UNQ Test ID # Q8733A

	Attenuation in dB FREQUENCY IN HERTZ							
SUBJECT	63	125	250	500	1000	2000	4000	8000
1	22	19	19	26	27	32	33	32
2	21	21	21	26	33	31	39	41
3	12	14	14	18	28	33	39	42
4	18	17	17	23	35	27	33	30
5	18	13	11	19	30	29	34	32
6	13	16	15	16	26	26	30	32
7	19	18	13	16	28	27	33	33
8	20	13	17	25	34	32	39	41
9	22	17	20	27	33	35	35	33
10	14	15	14	20	27	28	34	36
11	13	13	14	18	29	27	32	32
12	17	11	15	24	32	29	38	29
13	19	20	18	25	34	34	37	40
14	22	15	13	23	35	32	36	39
15	15	18	21	20	27	25	36	31
16	16	17	18	21	30	30	34	37
MEANS	17.6	16.1	16.1	21.6	30.5	29.8	34.9	35.0
STD. DEV.	3.5	2.9	3.2	3.7	3.2	3.1	2.7	4.3
MEAN - SD	14.1	13.2	12.9	17.9	27.3	26.8	32.3	30.7

SNR_m = 27.4

SNR_s = 2.6

SNR (dB) = 25

H84 (dB) =	29 dB	H_m =	31.4	H_s =	2.6
M84 (dB) =	22 dB	M_m =	24.9	M_s =	2.8
L84 (dB) =	16 dB	L_m =	19.2	L_s =	2.9

Table. 1/3 octave band insertion loss analysis of test ID Q8733A

	Frequency (Hertz) (dB)															
Sample	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000
1 L	7.4	14.4	22.4	28.3	33.9	41.3	43.3	41.2	30.5	34.2	35.1	32.8	34.0	41.0	39.1	34.1
1 R	6.2	13.8	20.9	25.1	31.4	34.6	42.9	42.9	33.6	30.0	35.1	30.5	29.3	33.0	42.6	41.2
2 L	8.9	14.5	22.1	27.4	29.7	33.2	38.7	36.4	31.0	31.5	33.2	30.8	31.8	32.6	33.1	32.8
2 R	6.7	13.8	18.2	20.7	25.8	28.9	36.0	36.0	33.3	30.8	31.7	29.7	27.3	27.6	32.8	30.1
3 L	7.9	14.0	21.6	27.6	30.2	34.1	38.9	37.1	31.6	30.8	32.6	32.7	34.0	33.7	35.6	35.2
3 R	6.2	13.8	20.6	26.0	29.9	31.2	40.2	38.0	32.2	30.2	32.4	29.1	29.7	31.8	34.8	32.0
4 L	6.5	12.9	18.3	23.4	26.0	30.2	33.4	34.2	31.1	32.3	33.8	30.9	30.4	34.0	35.8	33.2
4 R	6.5	13.8	20.8	26.5	30.7	32.0	40.5	38.9	31.6	29.7	33.9	30.4	29.2	32.3	36.1	33.8
5 L	7.7	14.8	22.1	27.9	30.7	34.2	39.6	37.5	32.5	31.5	32.6	31.8	32.4	34.7	35.9	34.8
5 R	6.0	13.7	20.5	26.1	30.5	32.4	41.0	38.7	31.1	31.1	33.5	30.3	29.3	31.8	35.1	32.3
6 L	7.8	14.0	21.4	27.3	30.6	34.6	39.9	37.7	32.4	31.5	31.9	30.8	31.0	34.5	37.1	37.0
6 R	5.9	13.3	19.9	25.4	30.1	33.4	41.4	38.6	30.4	31.5	33.4	30.0	28.9	30.6	34.0	31.9
7 L	7.7	15.3	22.5	28.0	31.7	36.0	40.3	37.8	32.7	32.1	34.1	31.9	32.1	35.5	36.4	34.7
7 R	6.3	15.4	21.3	26.3	29.7	31.1	39.2	39.4	35.1	29.5	32.7	30.4	30.5	34.0	35.3	29.8
8 L	7.4	14.9	21.9	27.2	30.6	34.4	39.0	37.9	32.0	32.0	34.0	32.2	32.2	34.3	35.9	35.5
8 R	6.1	13.2	17.7	21.9	26.2	29.6	35.4	35.5	32.6	32.1	32.9	26.3	26.1	29.6	32.8	32.4
9 L	7.4	15.1	22.0	27.6	31.3	35.9	40.5	37.2	31.4	31.8	33.3	32.2	32.3	34.3	35.1	31.6
9 R	6.9	14.7	19.6	24.1	28.2	31.3	35.6	35.4	34.7	30.3	32.9	28.8	27.6	30.6	34.0	33.2
10 L	8.8	16.9	23.4	28.7	31.8	35.2	36.9	35.6	31.2	32.8	33.8	32.1	33.4	35.5	35.9	35.1
10 R	5.4	13.6	19.4	23.6	27.9	31.8	39.8	38.7	34.3	29.6	32.1	27.6	27.2	30.9	32.0	31.1
Mean	7.0	14.3	20.8	26.0	29.8	33.3	39.1	37.7	32.3	31.3	33.3	30.6	30.4	33.1	35.5	33.6
SD	1.0	0.9	1.6	2.2	2.1	2.8	2.5	2.0	1.4	1.2	0.9	1.7	2.4	2.8	2.4	2.6