

Laboratory Attenuation Data for 3M™ Hearing Protection Products (Tested in Accordance with ANSI S3.19-1974)

*3M recommends fit testing of hearing protectors. If the NRR is used to estimate typical workplace protection, 3M recommends that the NRR be reduced by 50% or in accordance with applicable regulations.

3M™ E-A-R™ Earmuffs

Device	NRR*	CSA Class	Octave Band Attenuation Data (dB)									
			Frequency (Hz)	125	250	500	1000	2000	3150	4000	6300	8000
Model 1000	20 dB	B	Mean Attenuation	11.7	16.2	26.5	31.6	32.5	35.0	38.1	41.8	41.8
Over the Head Position			Standard Deviation	3.3	2.7	2.7	2.6	3.0	2.8	2.5	4.7	3.8
Model 1000	22 dB	B	Mean Attenuation	14.8	17.1	27.7	35.2	34.0	36.8	39.1	44.0	43.3
Behind the Head Position			Standard Deviation	3.2	3.1	2.3	3.5	3.0	3.2	3.3	3.0	3.1
Model 1000	22 dB	A	Mean Attenuation	14.4	18.4	28.0	34.8	34.3	36.5	38.8	43.7	43.2
Under the Chin Position			Standard Deviation	3.7	3.4	2.5	2.8	3.4	2.6	2.9	2.9	3.0
Model 2000H	21 dB	B	Mean Attenuation	13.0	17.7	25.6	30.1	32.8	35.9	33.5	36.4	37.2
Hard Hat Attached			Standard Deviation	3.6	2.7	2.4	2.5	3.4	2.4	2.0	3.3	3.7
Model 3000	25 dB	A	Mean Attenuation	16.5	21.8	33.8	40.4	35.1	36.2	38.4	38.3	39.7
Over the Head Position			Standard Deviation	2.5	2.7	3.0	3.9	3.4	3.4	3.2	2.2	2.8
Model 3000	26 dB	AL	Mean Attenuation	21.2	22.3	33.1	41.2	34.7	36.1	38.3	37.9	38.7
Behind the Head Position			Standard Deviation	2.4	2.9	2.3	2.7	3.2	2.7	1.9	2.7	4.2
Model 3000	26 dB	AL	Mean Attenuation	20.5	22.7	32.6	41.2	34.6	37.3	38.9	37.3	39.5
Under the Chin Position			Standard Deviation	4.3	2.6	2.6	2.9	3.5	2.5	2.9	2.1	4.0

3M™ PELTOR™ Earmuffs

Device	NRR*	CSA Class	Octave Band Attenuation Data (dB)									
			Frequency (Hz)	125	250	500	1000	2000	3150	4000	6300	8000
Optime™ 105 - H10A	30 dB	AL	Mean Attenuation	21.0	26.0	36.6	40.6	38.0	41.8	42.7	41.7	41.3
Over the Head Position			Standard Deviation	1.9	2.3	2.3	2.4	2.5	2.7	1.8	2.1	2.5
Optime™ 105 - H10B	29 dB	AL	Mean Attenuation	21.0	26.4	37.1	40.0	36.9	40.4	42.1	41.6	42.2
Behind the Head Position			Standard Deviation	2.7	2.6	3.0	3.6	2.4	3.4	2.8	2.9	2.5
Optime™ 105 - H10P3	27 dB	AL	Mean Attenuation	20.7	25.5	36.2	38.3	35.7	39.3	41.3	42.1	41.3
Hard Hat Attached			Standard Deviation	3.0	3.3	3.9	3.4	2.9	3.5	3.4	2.5	3.1
Optime™ 101 - H7A	27 dB	A	Mean Attenuation	15.5	24.5	35.3	40.0	36.9	39.9	37.5	37.7	38.1
Over the Head Position			Standard Deviation	3.0	2.0	2.4	2.8	2.6	2.8	3.2	2.7	3.9
Optime™ 101 - H7B	26 dB	A	Mean Attenuation	16.8	23.5	34.8	39.7	36.5	35.8	36.2	40.1	40.1
Behind the Head Position			Standard Deviation	3.4	2.6	2.1	2.6	2.3	2.2	2.4	2.4	3.0
Optime™ 101 - H7P3*	24 dB	A	Mean Attenuation	15.3	21.8	33.7	40.0	36.2	35.5	34.7	37.2	35.5
Hard Hat Attached			Standard Deviation	2.6	2.5	2.6	3.3	3.8	3.0	2.7	3.1	3.2
Optime™ 98 - H9A	25 dB	A	Mean Attenuation	15.5	22.0	33.7	39.7	36.5	42.7	40.1	39.8	40.6
Over the Head Position			Standard Deviation	2.7	3.5	2.6	2.4	2.6	2.6	2.8	2.7	2.5
Food Industry Earmuff - H9A-02	26 dB	A	Mean Attenuation	15.1	21.7	31.2	38.6	35.6	40.5	43.0	40.9	41.8
Over the Head Position			Standard Deviation	2.8	1.9	2.7	2.0	3.0	3.5	3.2	2.0	2.7
Optime™ 98 - H9P3*	23 dB	A	Mean Attenuation	14.8	20.2	30.5	38.7	36.4	38.9	36.3	39.4	38.3
Hard Hat Attached			Standard Deviation	2.5	3.1	3.4	2.6	3.0	2.9	3.0	3.7	2.9
Optime™ 95 - H8A	21 dB	B	Mean Attenuation	12.4	15.0	26.2	35.2	35.2	30.9	33.3	36.0	37.5
Over the Head Position			Standard Deviation	2.6	1.8	2.6	3.2	2.5	3.0	2.0	4.5	3.2
Optime™ 95 - H8B	21 dB	B	Mean Attenuation	13.2	14.2	25.1	34.2	35.4	30.4	35.1	37.0	38.5
Behind the Head Position			Standard Deviation	2.9	1.6	2.6	2.6	3.0	2.8	2.1	4.0	2.8
Optime™ 95 - H8F	21 dB	B	Mean Attenuation	12.4	15.0	26.2	35.2	35.2	30.9	33.3	36.0	37.5
Over the Head Position			Standard Deviation	2.6	1.8	2.5	3.2	2.5	3.0	2.0	4.5	3.2
Optime™ 95 - H9P3E	21 dB	B	Mean Attenuation	12.3	17.2	27.8	32.8	33.9	36.5	36.0	36.5	36.8
Hard Hat Attached			Standard Deviation	2.7	3.0	2.5	2.8	2.9	4.1	3.0	4.3	4.6
H31A	24 dB	A	Mean Attenuation	13.2	20.4	30.8	35.8	37.0	41.3	37.1	34.1	35.5
Over the Head Position			Standard Deviation	2.6	2.5	2.7	2.6	3.2	2.5	2.5	2.9	2.2
H31P3*	23 dB	A	Mean Attenuation	12.2	18.9	29.7	34.8	37.2	37.0	35.8	35.0	37.4
Hard Hat Attached			Standard Deviation	2.1	2.6	2.3	2.7	3.6	2.9	2.4	4.0	3.9
H505B Welding Helmet Earmuff	17 dB	B	Mean Attenuation	12.7	13.2	22.9	21.6	31.9	40.2	39.5	37.6	38.6
Behind the Head Position			Standard Deviation	5.5	2.1	2.6	2.3	2.5	3.4	3.5	3.6	3.5
X1A	22 dB	A	Mean Attenuation	16.0	18.3	27.7	37.6	35.1	42.2	41.4	39.4	39.3
Over the Head Position			Standard Deviation	5.2	3.1	3.0	3.5	2.8	2.8	2.6	2.6	3.8
X1P3E	21 dB	B	Mean Attenuation	13.8	17.3	27.4	35.6	34.5	41.8	40.1	36.8	36.1
Hard Hat Attached			Standard Deviation	4.5	3.2	2.9	2.8	2.9	2.9	2.9	3.7	4.1
X2A	24 dB	A	Mean Attenuation	14.9	21.6	31.8	41.0	36.7	38.1	38.5	39.0	39.0
Over the Head Position			Standard Deviation	4.2	3.3	2.3	2.5	3.0	2.4	2.0	2.8	3.4
X2P3E	24 dB	A	Mean Attenuation	15.2	21.3	32.6	39.2	35.9	37.7	37.1	38.6	37.3
Hard Hat Attached			Standard Deviation	4.2	3.1	2.8	3.2	3.3	2.8	2.1	2.5	3.0
X3A	28 dB	AL	Mean Attenuation	23.4	27.7	29.4	42.5	38.8	39.3	42.3	39.5	39.5
Over the Head Position			Standard Deviation	3.0	2.1	3.1	2.6	2.7	4.0	3.3	2.6	2.8
X3P3E	25 dB	AL	Mean Attenuation	19.6	24.1	29.7	39.1	35.7	39.2	40.3	37.1	35.4
Hard Hat Attached			Standard Deviation	3.3	3.1	2.5	3.9	3.1	4.7	3.5	4.4	4.9
X4A	27 dB	AL	Mean Attenuation	20.5	24.1	32.8	40.7	37.6	44.5	45.4	42.4	42.3
Over the Head Position			Standard Deviation	4.6	3.4	1.9	2.8	2.9	3.1	2.5	3.1	3.0
X4P3E	25 dB	A	Mean Attenuation	18.1	21.6	32.4	40.1	36.5	44.2	46.2	43.7	43.3
Hard Hat Attached			Standard Deviation	4.9	2.6	2.0	2.3	3.2	3.9	2.7	2.4	3.0
X5A	31 dB	AL	Mean Attenuation	23.9	30.5	41.1	43.0	38.0	43.1	44.0	41.1	40.3
Over the Head Position			Standard Deviation	4.1	2.2	2.8	2.9	2.7	2.9	2.4	2.6	2.2
X5P3E	31 dB	AL	Mean Attenuation	21.6	29.3	41.0	42.4	37.5	41.7	42.5	40.6	40.5
Hard Hat Attached			Standard Deviation	3.2	2.5	2.8	3.1	2.2	2.3	2.5	2.9	2.6

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3M™ PELTOR™ Communications Eartips

Device	NRR*	CSA Class	Octave Band Attenuation Data (dB)									
			Frequency (Hz)	125	250	500	1000	2000	3150	4000	6300	8000
ORA TAC - Classic™ Eartip	31 dB	AL	Mean Attenuation	37.3	38.1	42.6	40.8	36.7	42.6	43.5	48.1	45.9
			Standard Deviation	4.8	3.5	3.6	2.7	3.3	3.6	4.3	5.2	3.8
ORA TAC - Skull Screw™ Eartip	29 dB	AL	Mean Attenuation	38.0	36.8	39.2	44.8	37.7	43.1	42.6	46.4	45.2
			Standard Deviation	5.0	5.1	5.8	5.2	4.2	5.3	5.6	5.4	2.7
ORA TAC - UltraFit™ Eartip	20 dB	AL	Mean Attenuation	35.1	35.1	36.3	32.3	33.7	37.0	37.7	39.1	39.1
			Standard Deviation	9.3	7.3	8.1	6.5	5.5	7.4	6.5	6.9	5.6
ORA TAC - CCC-GRM-25 Eartip	26 dB	AL	Mean Attenuation	34.1	30.2	34.7	34.7	35.4	38.4	36.7	42.9	43.8
			Standard Deviation	3.4	4.1	3.7	3.9	3.7	4.0	4.3	4.1	4.2
TEP-100 Tactical Earplug - Skull Screw™ Eartip	30 dB	AL	Mean Attenuation	36.3	35.7	39.8	41.4	40.4	43.0	41.9	48.2	46.0
			Standard Deviation	5.3	5.5	5.5	4.2	3.4	4.6	3.5	4.6	4.2
TEP-100 Tactical Earplug - UltraFit™ Eartip (3 size product)	23 dB	AL	Mean Attenuation	36.2	33.7	34.7	32.0	34.5	37.4	35.6	38.0	37.5
			Standard Deviation	5.1	5.2	5.5	3.9	3.4	5.3	6.5	4.4	5.4
TEP-100 Tactical Earplug - CCC-GRM-25 Eartip	27 dB	AL	Mean Attenuation	34.5	30.6	36.3	35.2	35.5	38.6	37.6	44.6	45.7
			Standard Deviation	4.2	3.9	4.1	3.0	3.5	3.3	3.8	3.6	4.3
E-A-R buds™ - Skull Screw™ Eartip	29 dB	AL	Mean Attenuation	38.0	36.8	39.2	44.8	37.7	43.1	42.6	46.4	45.2
			Standard Deviation	5.0	5.1	5.8	5.2	4.2	5.3	5.6	5.4	2.7
E-A-R buds™ - UltraFit™ Eartip	20 dB	AL	Mean Attenuation	35.1	35.1	36.3	32.3	33.7	37.0	37.7	39.1	39.1
			Standard Deviation	9.3	7.3	8.1	6.5	5.5	7.4	6.5	6.9	5.6
E-A-R buds™ - CCC-GRM-25 Eartip	27 dB	AL	Mean Attenuation	34.5	30.6	36.3	35.2	35.5	38.6	37.6	44.6	45.7
			Standard Deviation	4.2	3.9	4.1	3.0	3.5	3.3	3.8	3.6	4.3

NOTE: The Noise Reduction Rating (NRR) shown for 3 size products are based on laboratory testing of the small, medium and large sizes of the eartip