

## 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.

### Roll Down Foam Earplugs

Device	NRR*	CSA Class	Octave Band Attenuation Data (dB)											
			Frequency (Hz)	125	250	500	1000	2000	3150	4000	6300	8000		
			Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation
E•A-R™ Classic™	29 dB	AL	Mean Attenuation	37.4	40.9	44.8	43.8	36.3	41.9	42.6	46.1	47.3		
			Standard Deviation	5.7	5.0	3.3	3.6	4.9	3.0	3.1	3.5	2.7		
E•A-R™ Classic™ Small	29 dB	AL	Mean Attenuation	32.9	37.5	41.4	40.0	36.4	43.9	45.2	48.2	48.1		
			Standard Deviation	4.2	4.4	4.2	4.3	4.0	3.0	2.5	2.6	4.4		
E•A-R™ Classic™ Plus	33 dB	AL	Mean Attenuation	37.7	43.0	47.0	43.7	38.2	44.5	45.4	49.1	48.4		
			Standard Deviation	4.9	4.7	3.3	3.4	3.6	2.9	3.6	4.4	4.4		
E•A-R™ Classic™ Plus Metal Detectable	33 dB	AL	Mean Attenuation	37.7	43.0	47.0	43.7	38.2	44.5	45.4	49.1	48.4		
			Standard Deviation	4.9	4.7	3.3	3.4	3.6	2.8	3.6	4.4	4.4		
E•A-R™ Classic Soft™	31 dB	AL	Mean Attenuation	35.7	41.5	46.2	42.4	37.7	42.5	44.7	47.2	46.4		
			Standard Deviation	7.4	8.5	6.2	5.3	2.4	3.7	3.5	5.4	4.5		
E•A-R™ E-Z-Fit™	28 dB	AL	Mean Attenuation	35.6	36.9	39.0	37.5	36.1	42.3	44.9	47.7	48.7		
			Standard Deviation	5.8	5.0	4.6	5.9	3.0	2.6	3.3	3.4	4.5		
E•A-R™ TaperFit™ 2 (2 size earplug)	32 dB	AL	Mean Attenuation	36.4	39.1	41.7	40.7	38.1	44.5	45.9	48.4	48.1		
			Standard Deviation	3.6	2.9	3.4	3.5	2.8	2.0	2.3	3.2	3.7		
3M™ 1100 and 1110	29 dB	AL	Mean Attenuation	33.9	37.7	39.8	38.5	37.0	41.9	42.7	45.5	44.6		
			Standard Deviation	4.7	5.5	5.6	4.8	3.1	3.8	3.4	4.0	3.4		
E•A-Rsoft™ Yellow Neons™ (2 size earplug)	33 dB	AL	Mean Attenuation	38.4	40.3	43.2	41.8	38.6	45.0	45.7	49.6	47.3		
			Standard Deviation	4.8	4.8	5.0	4.0	2.6	3.3	3.3	4.0	3.5		
E•A-Rsoft™ Yellow Neon™ Blasts (2 size earplug)	33 dB	AL	Mean Attenuation	38.4	40.3	43.2	41.8	38.6	45.0	45.7	49.6	47.3		
			Standard Deviation	4.8	4.8	5.0	4.0	2.6	3.3	3.3	4.0	3.5		
E•A-Rsoft™ SuperFit™ (2 size earplug)	33 dB	AL	Mean Attenuation	38.4	40.3	43.2	41.8	38.6	45.0	45.7	49.6	47.3		
			Standard Deviation	4.8	4.8	5.0	4.0	2.6	3.3	3.3	4.0	3.5		
E•A-Rsoft™ Yellow Neons™ Metal Detectable Regular size only	32 dB	AL	Mean Attenuation	36.1	37.4	39.7	38.6	38.5	44.6	45.4	47.4	48.0		
			Standard Deviation	3.6	4.9	4.3	3.1	2.7	3.2	4.1	3.2	3.2		
3M™ Nitro™	32 dB	AL	Mean Attenuation	36.1	37.4	39.7	38.6	38.5	44.6	45.4	47.4	48.0		
			Standard Deviation	3.6	4.9	4.3	3.1	2.7	3.2	4.1	3.2	3.2		
3M™ Tattoo™	32 dB	AL	Mean Attenuation	36.1	37.4	39.7	38.6	38.5	44.6	45.4	47.4	48.0		
			Standard Deviation	3.6	4.9	4.3	3.1	2.7	3.2	4.1	3.2	3.2		
E•A-Rsoft™ Grippers™	31 dB	AL	Mean Attenuation	38.9	38.7	42.9	41.9	39.2	45.6	47.4	50.9	48.2		
			Standard Deviation	4.6	5.4	5.7	5.3	3.4	3.8	3.8	5.3	5.2		
E•A-Rsoft™ FX™	33 dB	AL	Mean Attenuation	40.8	40.8	43.6	41.8	37.9	45.2	47.6	49.0	46.8		
			Standard Deviation	2.9	3.5	4.0	3.8	2.6	2.8	3.5	3.8	4.3		

NOTE: The Noise Reduction Rating (NRR) shown for 2 size products are based on laboratory testing of regular and large sizes of the earplug.

### Push-to-Fit Earplugs

Device	NRR*	CSA Class	Octave Band Attenuation Data (dB)											
			Frequency (Hz)	125	250	500	1000	2000	3150	4000	6300	8000		
			Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation
E•A-R™ EXPRESS™ Pod Plugs™	25 dB	AL	Mean Attenuation	31.6	32.1	32.2	36.9	35.7	37.0	35.7	38.7	40.5		
			Standard Deviation	4.3	4.6	4.8	4.0	3.3	3.3	4.2	5.1	3.4		
E•A-R™ EXPRESS™ Pod Plugs™ Metal Detectable	25 dB	AL	Mean Attenuation	31.6	32.1	32.2	36.9	35.7	37.0	35.7	38.7	40.5		
			Standard Deviation	4.3	4.6	4.8	4.0	3.3	3.3	4.2	5.1	3.4		
E•A-R™ Push-Ins™	28 dB	AL	Mean Attenuation	37.8	37.2	39.8	38.8	35.0	40.0	37.7	38.7	41.1		
			Standard Deviation	4.9	5.0	4.8	3.4	3.0	3.5	3.6	4.3	4.1		
E•A-R™ Push-Ins™ Metal Detectable	28 dB	AL	Mean Attenuation	37.8	37.2	39.8	38.8	35.0	40.0	37.7	38.7	41.1		
			Standard Deviation	4.9	5.0	4.8	3.4	3.0	3.5	3.6	4.3	4.1		
E•A-R™ Push-Ins™ with Grip Rings	30 dB	AL	Mean Attenuation	40.2	39.4	41.0	41.0	37.4	41.1	44.0	48.3	47.3		
			Standard Deviation	5.8	4.4	4.0	4.8	3.0	5.3	4.5	3.5	3.6		
E•A-R™ Push-Ins™ SoftTouch™	31 dB	AL	Mean Attenuation	37.1	38.3	40.1	40.1	38.5	46.7	48.1	46.4	47.2		
			Standard Deviation	5.2	5.8	3.3	4.3	3.4	3.8	2.5	3.6	3.1		
3M™ E•A-R™ Skull Screws™	32 dB	AL	Mean Attenuation	38.2	37.7	39.9	40.2	38.1	45.0	46.9	48.3	45.6		
			Standard Deviation	3.1	3.1	3.0	4.3	2.6	4.0	3.9	5.1	4.8		
3M™ Pistonz™	29 dB	AL	Mean Attenuation	37.2	37.7	39.5	40.1	34.3	42.3	41.4	46.2	46.1		
			Standard Deviation	5.4	5.2	5.0	3.4	2.8	2.9	3.3	4.7	3.4		
3M™ No-Touch™	29 dB	AL	Mean Attenuation	36.9	36.7	39.4	40.4	35.9	42.9	45.5	48.8	45.9		
			Standard Deviation	4.9	4.8	4.5	5.9	2.5	3.6	4.0	4.9	4.3		

NOTE: The Noise Reduction Rating (NRR) shown for 2 size products are based on laboratory testing of regular and large sizes of the earplug.

### Premolded Earplugs

Device	NRR*	CSA Class	Octave Band Attenuation Data (dB)											
			Frequency (Hz)	125	250	500	1000	2000	3150	4000	6300	8000		
			Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation
E•A-R™ UltraFit™	25 dB	AL	Mean Attenuation	28.5	30.0	32.9	33.5	34.9	40.4	41.9	42.7	44.6		
			Standard Deviation	4.7	4.6	4.6	4.0	3.6	5.4	5.1	3.3	4.1		
E•A-R™ UltraFit™ Metal Detectable	25 dB	AL	Mean Attenuation	28.5	30.0	32.9	33.5	34.9	40.4	41.9	42.7	44.6		
			Standard Deviation	4.7	4.6	4.6	4.0	3.6	5.4	5.1	3.3	4.1		
E•A-R™ UltraFit Plus™	26 dB	AL	Mean Attenuation	32.3	33.2	34.1	36.0	36.4	40.8	39.7	43.2	44.1		
			Standard Deviation	5.1	4.3	4.9	4.6	3.4	3.9	6.5	5.4	3.3		
3M™ Tri-Flange™	26 dB	AL	Mean Attenuation	32.3	33.2	34.1	36.0	36.4	40.8	39.7	43.2	44.1		
			Standard Deviation	5.1	4.3	4.9	4.6	3.4	3.9	5.5	5.4	3.3		
E•A-R™ UltraFit™ 27	27 dB	AL	Mean Attenuation	35.2	35.3	36.2	36.9	36.2	43.4	42.7	43.7	44.3		
			Standard Deviation	4.7	5.5	4.7	3.9	3.8	4.9	5.3	5.3	4.8		
E•A-R™ HiFi™	12 dB	C	Mean Attenuation	14.5	15.3	16.9	18.9	22.5	23.0	19.8	22.3	24.6		
			Standard Deviation	3.8	2.8	2.5	3.0	3.4	3.0	2.8	2.9	2.6		
E•A-R™ Arc Plug™ (dual end)	level dependent	-	Mean Attenuation	4.7	4.2	6.0	9.5	16.7	18.6	16.3	16.7	17.2		
			Standard Deviation	4.0	4.3	5.0	6.7	4.9	5.7	6.8	6.1	6.8		
E•A-R™ Arc Plug™ (dual end) steady state	22 dB	AL	Mean Attenuation	32.7	31.8	33.0	32.0	34.5	37.3	38.9	43.8	43.3		
			Standard Deviation	5.9	6.1	6.5	5.5	4.1	5.3	6.1	6.7	6.9		
3M™ Combat Arms™ Earplug (dual end) level dependent	0 dB	-	Mean Attenuation	4.7	4.2	6.0	9.5	16.7	18.6	16.3	16.7	17.2		
			Standard Deviation	4.0	4.3	5.0	6.7	4.9	5.7	6.8	6.1	6.8		
3M™ Combat Arms™ Earplug (dual end) steady state	22 dB	AL	Mean Attenuation	32.7	31.8	33.0	32.0	34.5	37.3	38.9	43.8	43.3		
			Standard Deviation	5.9	6.1	6.5	5.5	4.1	5.3	6.1	6.7	6.9		
3M™ Combat Arms™ Single Tip Earplug (3 size product) level dependent	7 dB	C	Mean Attenuation	4.1	4.5	11.0	18.7	24.9	29.8	25.8	18.7	26.5		
			Standard Deviation	2.7	2.8	3.9	3.2	3.3	2.7	3.3	3.6	3.3		
3M™ Combat Arms™ Single Tip Earplug (3 size product) steady state	23 dB	BL	Mean Attenuation	30.3	28.7	32.2	31.9	31.7	38.0	35.1	31.9	37.8		
			Standard Deviation	3.4	3.9	3.4	3.8	3.0	4.4	4.8	5.4	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 earplug.

### Banded Hearing Protectors

Device	NRR*	CSA Class	Octave Band Attenuation Data (dB)											
			Frequency (Hz)	125	250	500	1000	2000	3150	4000	6300	8000		
			Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation	Mean Attenuation	Standard Deviation
E•A-R™ Caboflex™ Under the Chin Position	20 dB	BL	Mean Attenuation	28.7	28.3	28.0	28.6	32.2	42.1	44.3	47.2	44.6		
			Standard Deviation	6.8	6.3	5.8	4.9	3.7	3.2	3.8	3.9	5.7		
E•A-R™ Caboflex™ Behind the Head Position	17 dB	BL	Mean Attenuation	25.8	24.9	25.8	27.3	31.7	40.7	42.1	43.0	41.5		
			Standard Deviation	7.6	7.5	6.1	5.5	4.0	4.3	3.7	4.0	6.1		
E•A-R Caps™ Under the Chin Position	17 dB	BL	Mean Attenuation	22.7	21.1	19.4	21.1	31.1	37.7					