

June 4, 2021

Test ID Q6889A

CLEAR 360 Ventures, Inc.  
649 SW Whitmore Drive  
Port St. Lucie, Florida 34984

Peak impulse noise reduction has been measured according to ANSI S12.42-2010 on the CLEAR 360 Ventures, Inc. CLEAR 360 Pro electronic insert-type hearing protector (test ID Q6889A). Table 1 summarizes the peak reduction levels as measured with the GRAS 45CB test fixture. All measurements were made with the unit turned ON, volume set at maximum.

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. Note that these are fixture measurements using a cylindrical ear canal, and may not accurately represent fitting on human ears.

	dB Reduction	Allowable impulses per day
130 dB Overall Average PIL	25.0	1995
150 dB Overall Average PIL	41.5	1412
168 dB Overall Average PIL	54.2	416

Table 1. Bongiovi Acoustics Clear 360 Pro electronic insert-type hearing protector 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: Jan 2022

Calibration of B&K 4938 free field microphone (SN2612643), May 2022

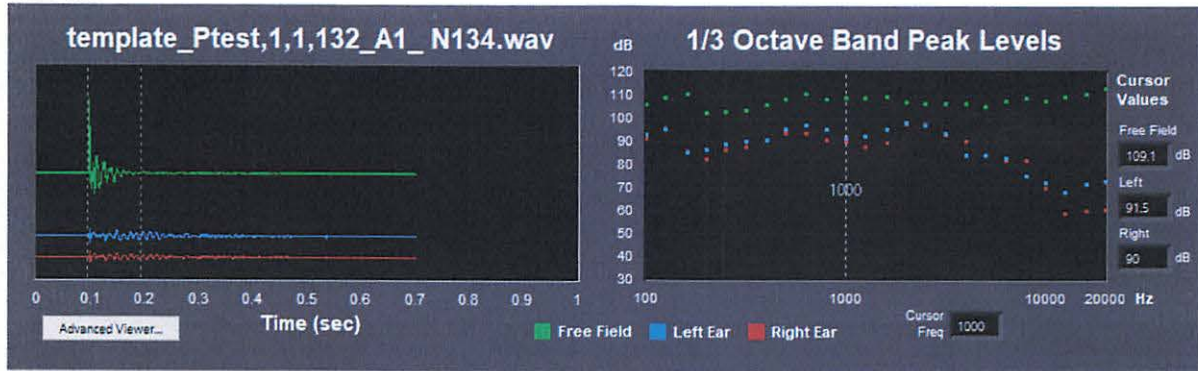
Peak insertion loss per trial (dB) and Estimated Unoccluded vs. Measured Occluded Peak Levels (dB)

Configuration		Wave Files		Results		Launch Wave Comparison	
Transfer Functions	Calibration Levels	Estimated v. Actual Peaks		Difference Verification	Test Levels	Peak Insertion Loss	Export
<b>Peak Insertion Loss [dB]</b>							
		132 dB		150 dB		168 dB	
		Left	Right	Left	Right	Left	Right
Protector 1, Trial 1		26.4	25.1	44.5	39.9	52.2	53.0
Protector 1, Trial 2		26.5	24.3	46.8	42.7	53.7	54.8
Protector 2, Trial 1		23.5	22.1	45.0	39.2	53.7	54.8
Protector 2, Trial 2		24.8	23.1	43.4	39.9	53.1	54.2
Protector 3, Trial 1		25.7	24.0	42.6	41.0	52.8	53.9
Protector 3, Trial 2		24.8	24.0	43.7	39.3	54.7	55.4
Protector 4, Trial 1		27.3	26.1	43.2	39.9	53.8	54.9
Protector 4, Trial 2		26.9	25.4	40.8	39.2	54.8	55.2
Protector 5, Trial 1		25.8	25.2	41.5	38.8	54.6	55.3
Protector 5, Trial 2		25.2	24.2	39.9	38.7	54.4	55.0
<b>Overall Average Peak Insertion Loss [dB]</b>							
		132 dB		150 dB		168 dB	
		25.0		41.5		54.2	

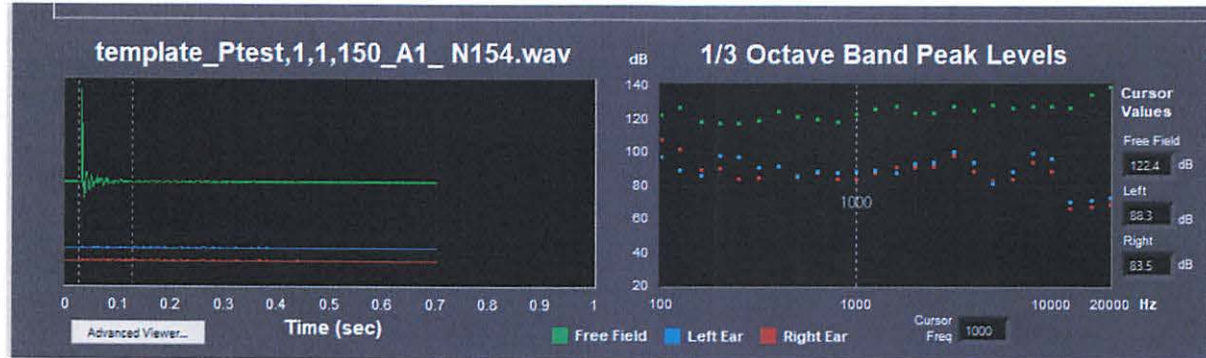
Configuration		Wave Files		Results		Launch Wave Comparison	
Transfer Functions	Calibration Levels	Estimated v. Actual Peaks		Difference Verification	Test Levels	Peak Insertion Loss	Export
<b>Estimated Unoccluded vs. Measured Occluded Peak Levels [dB]</b>							
		Left				Right	
		Estimated Unoccluded	Measured Occluded	Estimated Unoccluded	Measured Occluded		
Ptest,1,1,132		137.4	111.0	135.4	110.3		
Ptest,1,2,132		138.6	112.1	136.5	112.2		
Ptest,2,1,132		135.5	112.0	133.5	111.4		
Ptest,2,2,132		138.1	111.3	134.2	111.1		
Ptest,3,1,132		137.4	111.7	135.4	111.3		
Ptest,3,2,132		136.6	111.7	134.6	110.6		
Ptest,4,1,132		139.5	112.2	137.4	111.3		
Ptest,4,2,132		138.3	111.4	136.2	110.8		
Ptest,5,1,132		137.7	111.8	135.6	110.4		
Ptest,5,2,132		137.6	112.3	135.6	111.4		
Ptest,1,1,150		156.8	112.3	154.5	114.6		
Ptest,1,2,150		157.0	110.2	154.8	112.1		
Ptest,2,1,150		156.1	111.1	153.8	114.6		
Ptest,2,2,150		156.3	112.9	154.1	114.2		
Ptest,3,1,150		156.4	113.8	154.1	113.1		
Ptest,3,2,150		156.6	112.9	154.5	115.2		
Ptest,4,1,150		156.1	112.9	153.8	113.9		
Ptest,4,2,150		156.0	115.2	153.8	114.6		
Ptest,5,1,150		155.7	114.2	153.6	114.8		
Ptest,5,2,150		155.3	115.5	153.1	114.4		
Ptest,1,1,168		172.0	119.7	170.1	117.0		
Ptest,1,2,168		174.0	120.3	172.0	117.2		
Ptest,2,1,168		173.2	119.5	171.2	116.3		
Ptest,2,2,168		173.6	120.5	171.6	117.4		
Ptest,3,1,168		173.2	120.5	171.2	117.2		
Ptest,3,2,168		173.3	118.6	171.2	115.8		
Ptest,4,1,168		173.8	120.0	171.8	116.9		
Ptest,4,2,168		174.3	119.5	172.3	117.0		
Ptest,5,1,168		174.5	120.0	172.5	117.2		
Ptest,5,2,168		173.9	119.5	171.8	116.8		

Representative Impulse Frequency Response:

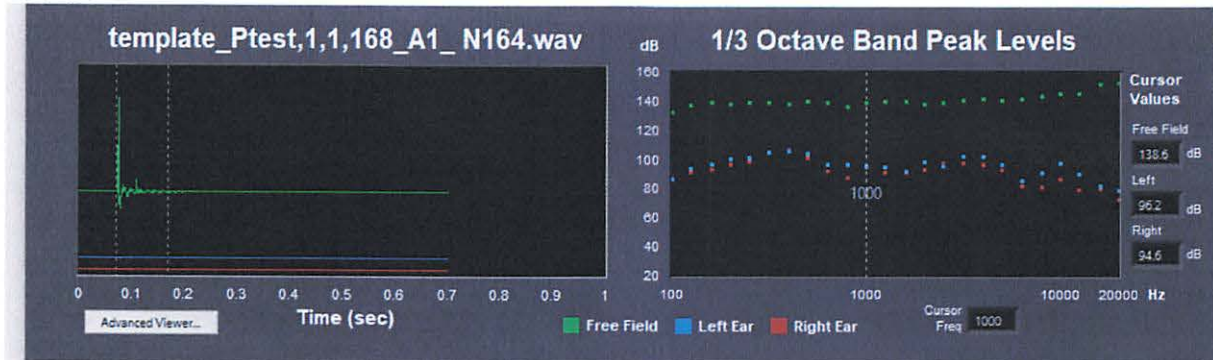
132 dB



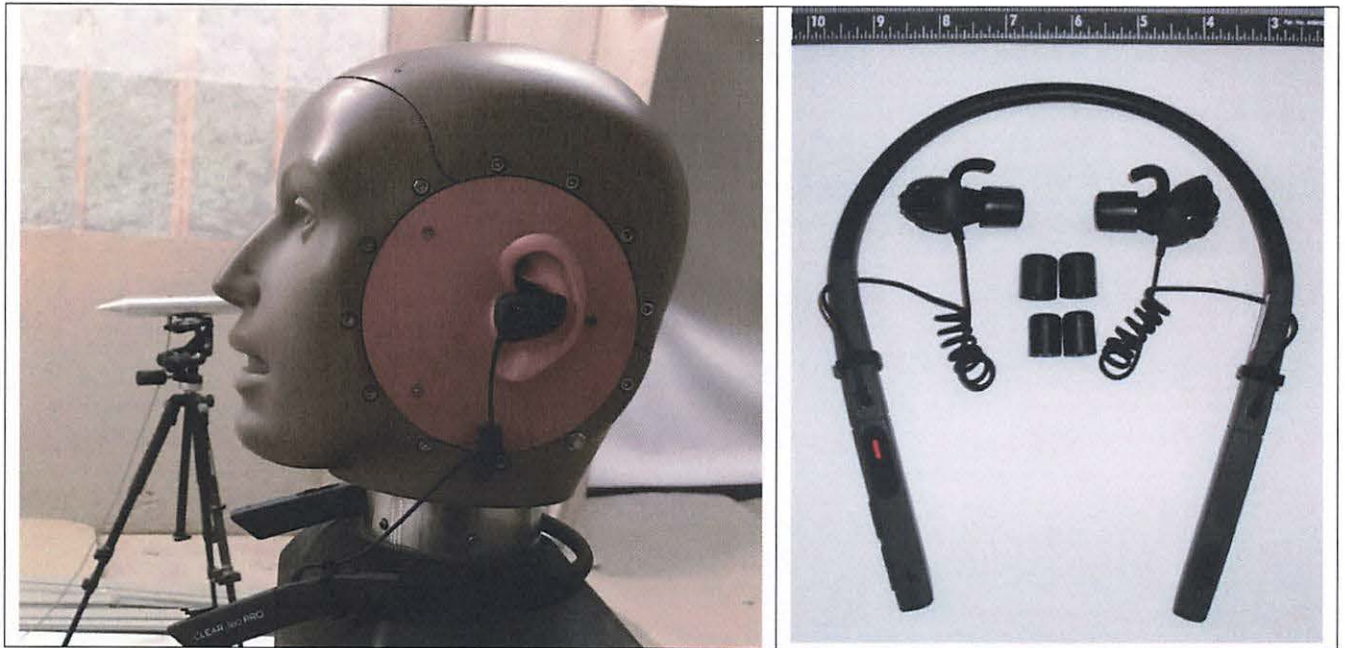
150 dB



168 dB



Test Item:



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