



Noise Results and Findings

The results of the second round of acoustical tests of the dryer blower prototype silencers can be seen in **Table 1**. The magnitude of noise reduction attributable to the prototype silencers ranged from 1.1 to 4.5 dBNR depending on measurement position. The positions yielding the most noise reduction were those in line with the tunnel exit side of the blowers. The least noise reduction was found in line with the tunnel entrance side. This asymmetry could be attributable to the acoustical directivity of the blowers.

Figures 2 thru 10 show the A-weighted broadband and third-octave band results with and without the silencers for each measurement position. The noise reduction is the difference between the two plotted curves.

All results presented in the table and figures are shown in A-weighted decibels (dBA) so that visual results would correlate better with how humans would perceive the given sounds over the full audio spectrum. Presenting the results in A-weighted decibels also allows for easier identification of the louder frequency bands that would benefit the most from subsequent noise control efforts.

**Table 1. Sonny's Dryer Blower Silencers
Acoustical Test Results (Round 2)**

Sonny's Car Wash Blower and Silencer Noise Measurement Tests 10/3/18						
Prestige Car Wash - 4921 N. University Drive, Lauderhill, FL 33351						
Site No.	Distance to Blowers* (feet)	Noise Measurement Site Location	Traffic Noise Influence**	Noise Level No Silencers dBA Leq	Noise Level With Silencers dBA Leq	Approx. Noise Reduction dBNR
M0	8	Inside tunnel near blowers towards exit	No	99.7	96.9	2.8
M1	22	Tunnel exit portal (east)	No	96.3	92.8	3.6
M2	51	Outside tunnel in direct line from exit	Slightly	84.8	80.3	4.5
M3	95	Outside tunnel in direct line from exit	Yes	78.4	74.1	4.3
M4	68	Tunnel entrance portal (west)	No	88.3	87.1	1.1
M5	110	Building facade adjacent property to south	Yes	65.7	63.2	2.5
M6	83	Northern property line	Yes	69.7	66.7	3.1
M7	99	Outside tunnel in direct line from entrance	No	77.7	76.5	1.2
M8	10	Inside office/waiting room area	No	67.9	66.1	1.7

*Blowers are located approximately 22 feet inside the car wash tunnel exit and approximately 68 feet inside the tunnel entrance.

**Traffic noise from N. University Drive NB & SB movements did have an impact on some noise measurements that were farther away from the blower noise.