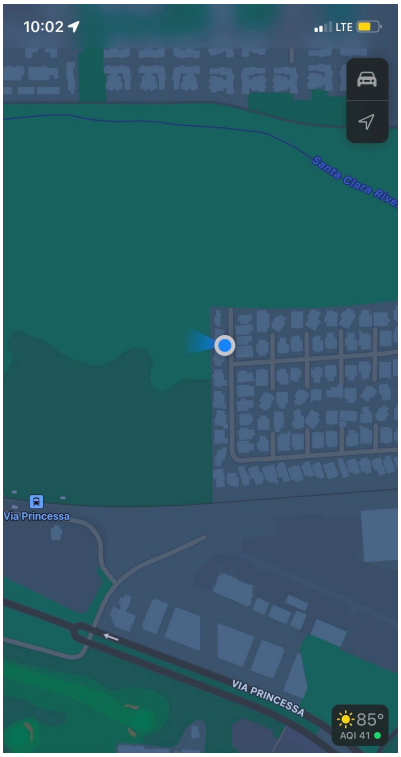
Site Number: NM-1			
Recorded By: Darshan Shivaiah, Dennis Dinh			
Job Number: 192626			
Date: 7/19/2023			
Time: 10:00 a.m.			
Location: In front of Building 199 of Cordova Estates			
Source of Ambient Noise: Vehicles Passing By, Passenger Train Passing By (500 feet away)			
Source of Peak Noise: Vehicles Passing By			
Noise Data			
Leq (dB)	**Lmax(dB)**	**Lmin (dB)**	**Peak (dB)**
50.7	69.0	36.1	79.6

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**03/10/2022**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**03/10/2022**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**03/10/2022**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**03/10/2022**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	3 mph	85	29.96

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		07/19/2023 10:00:09
End Time:		07/19/2023 10:10:09
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.15

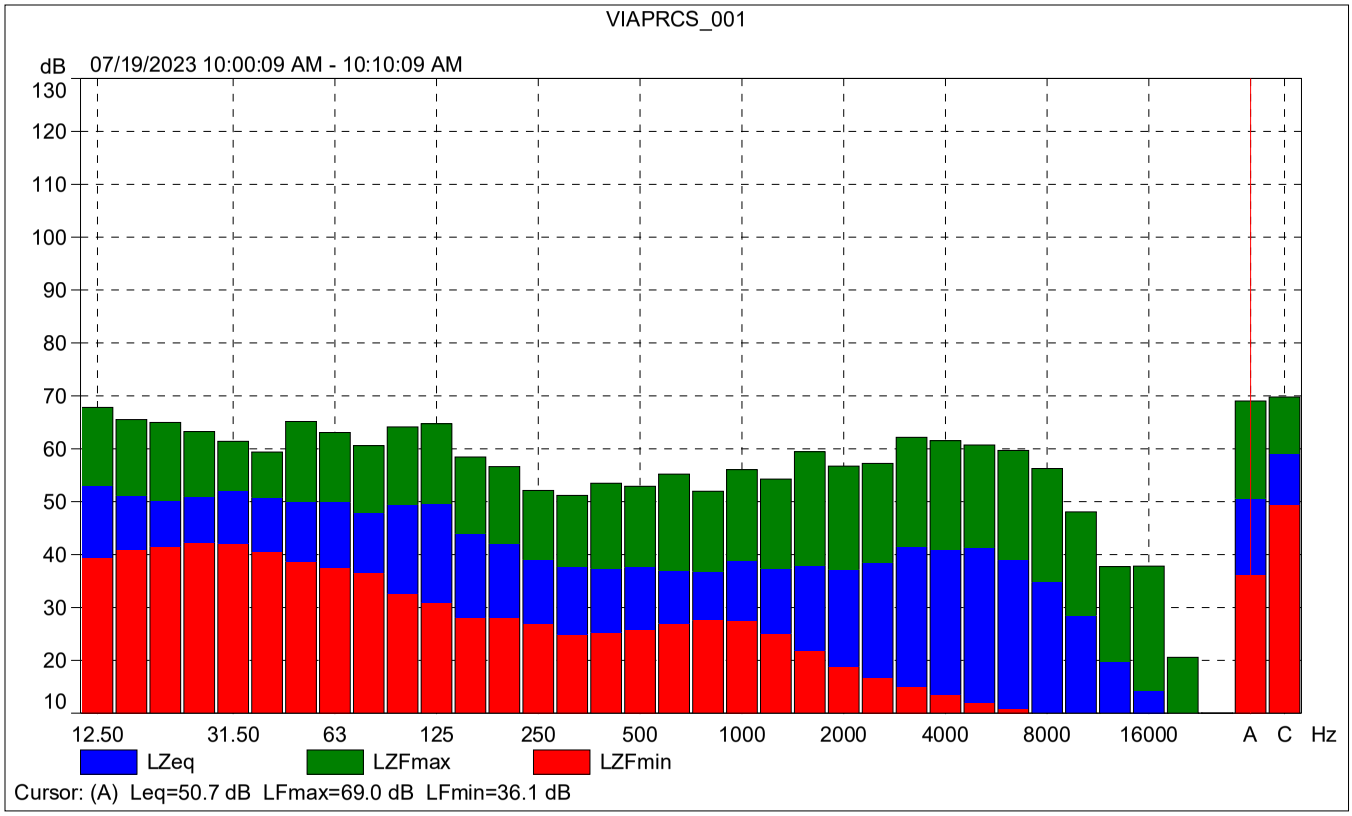
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

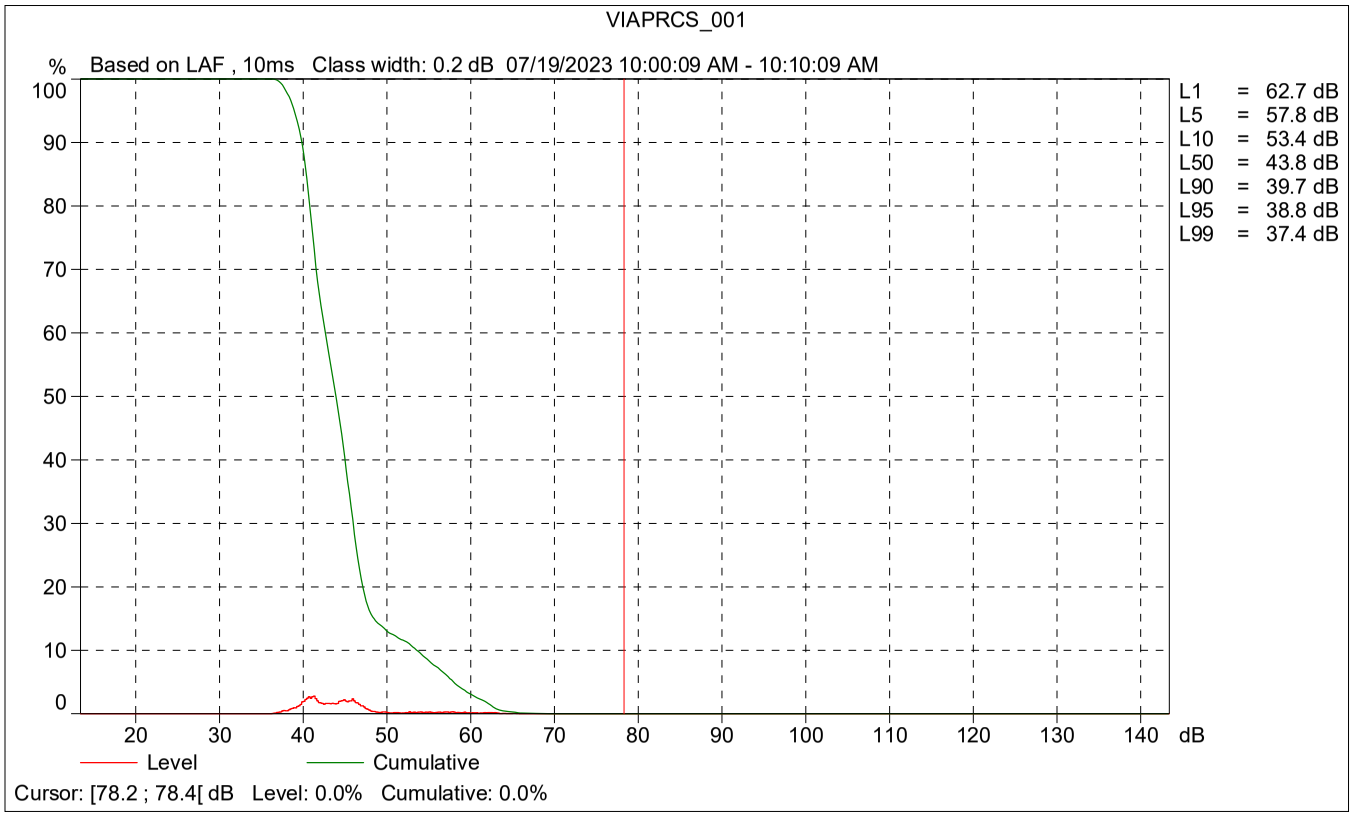
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

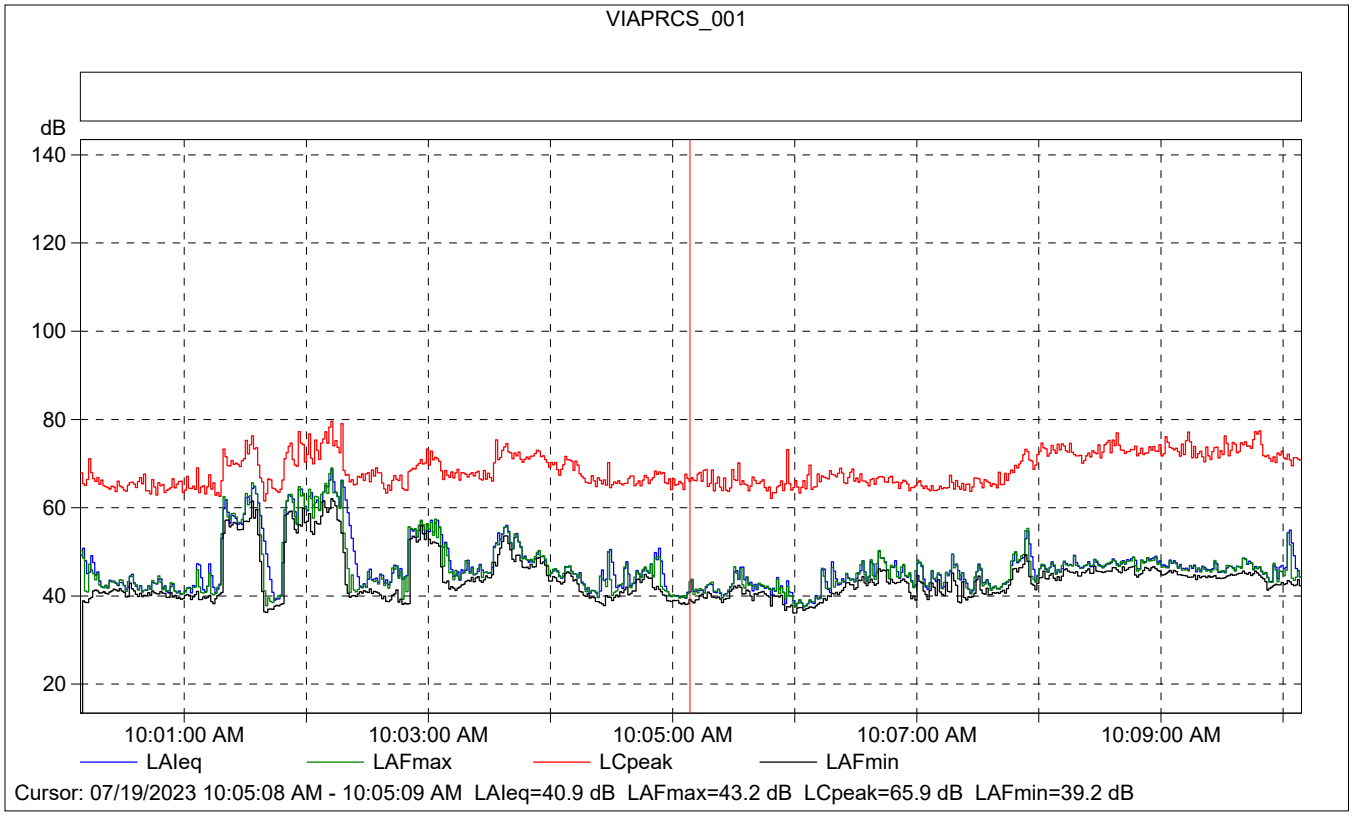
Calibration Time:		07/19/2023 09:57:36
Calibration Type:		External reference
Sensitivity:		43.4735380113125 mV/Pa

VIAPRCS_001

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	50.7	69.0	36.1
Time	10:00:09 AM	10:10:09 AM	0:10:00				
Date	07/19/2023	07/19/2023					

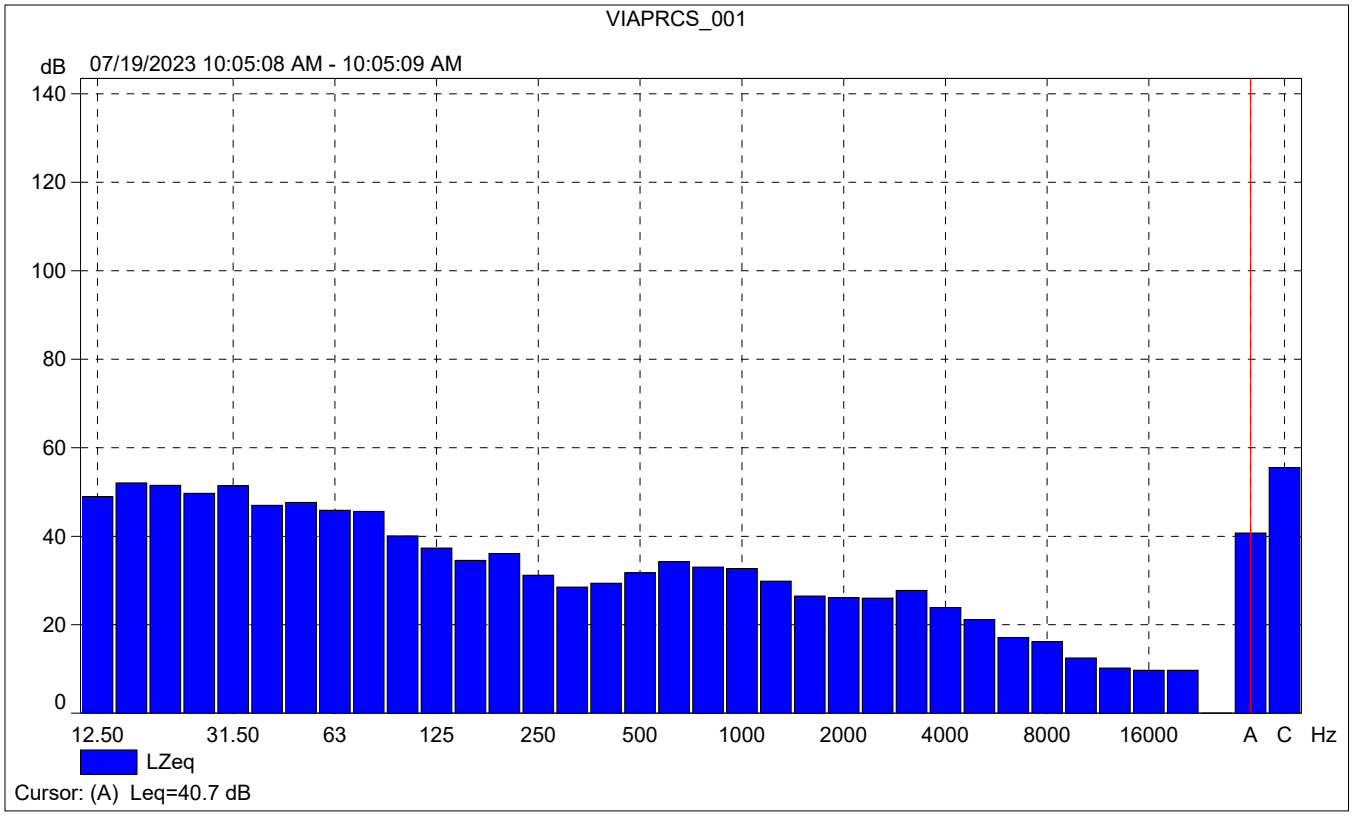

VIAPRCS_001
dB
07/19/2023 10:00:09 AM - 10:10:09 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=50.7 dB LFmax=69.0 dB LFmin=36.1 dB

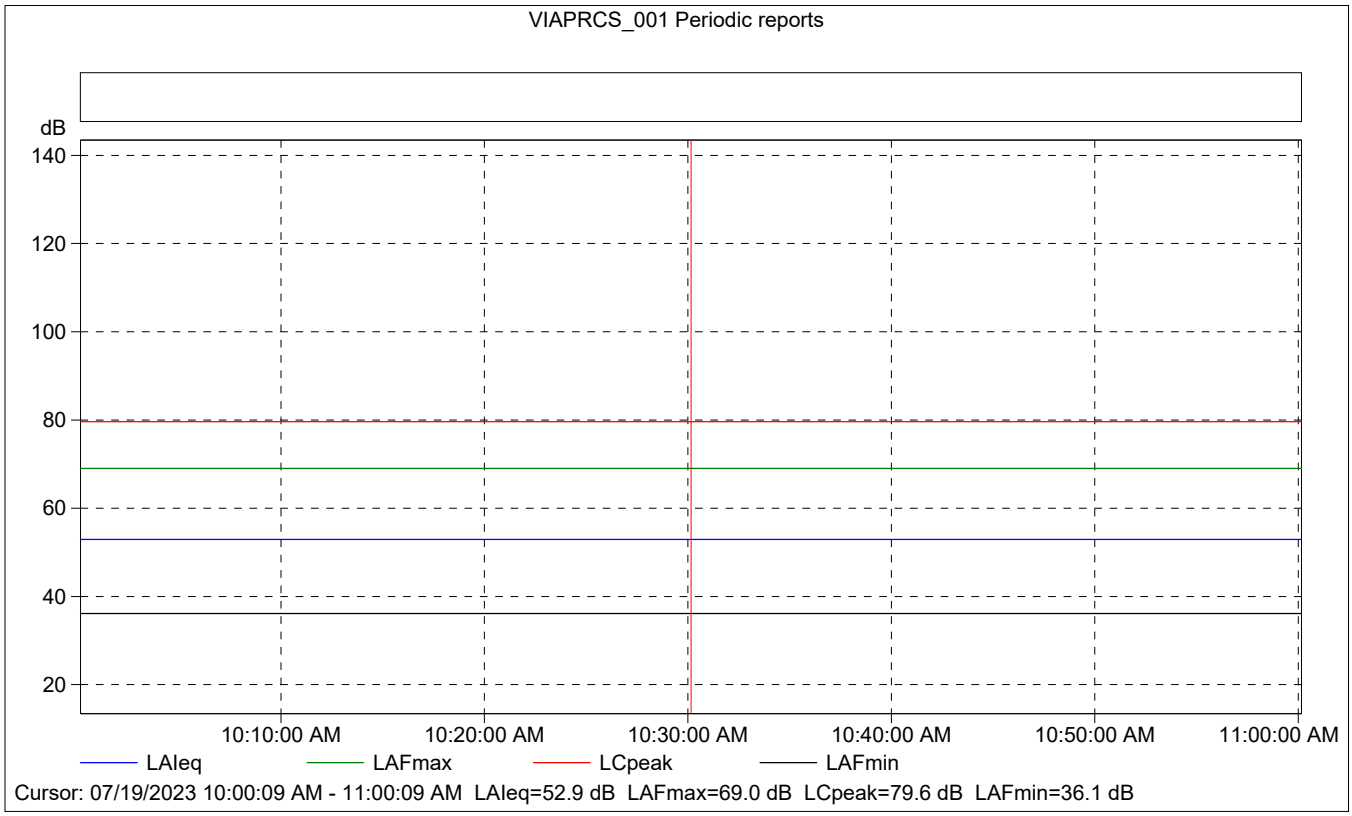

VIAPRCS_001
%
Based on LAF , 10ms Class width: 0.2 dB 07/19/2023 10:00:09 AM - 10:10:09 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 62.7 dB
L5 = 57.8 dB
L10 = 53.4 dB
L50 = 43.8 dB
L90 = 39.7 dB
L95 = 38.8 dB
L99 = 37.4 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%



VIAPRCS_001

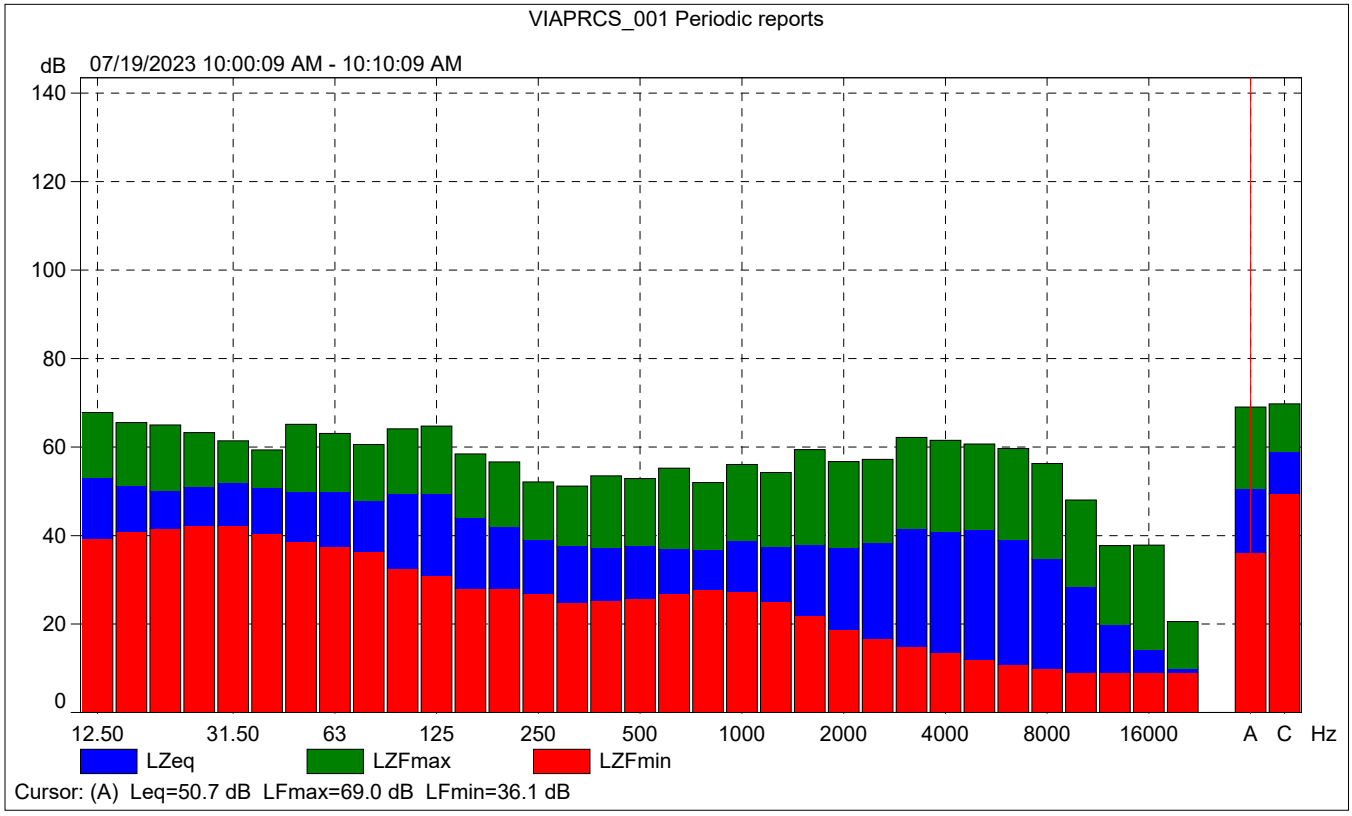
	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	40.9	43.2	39.2
Time	10:05:08 AM	0:00:01				
Date	07/19/2023					

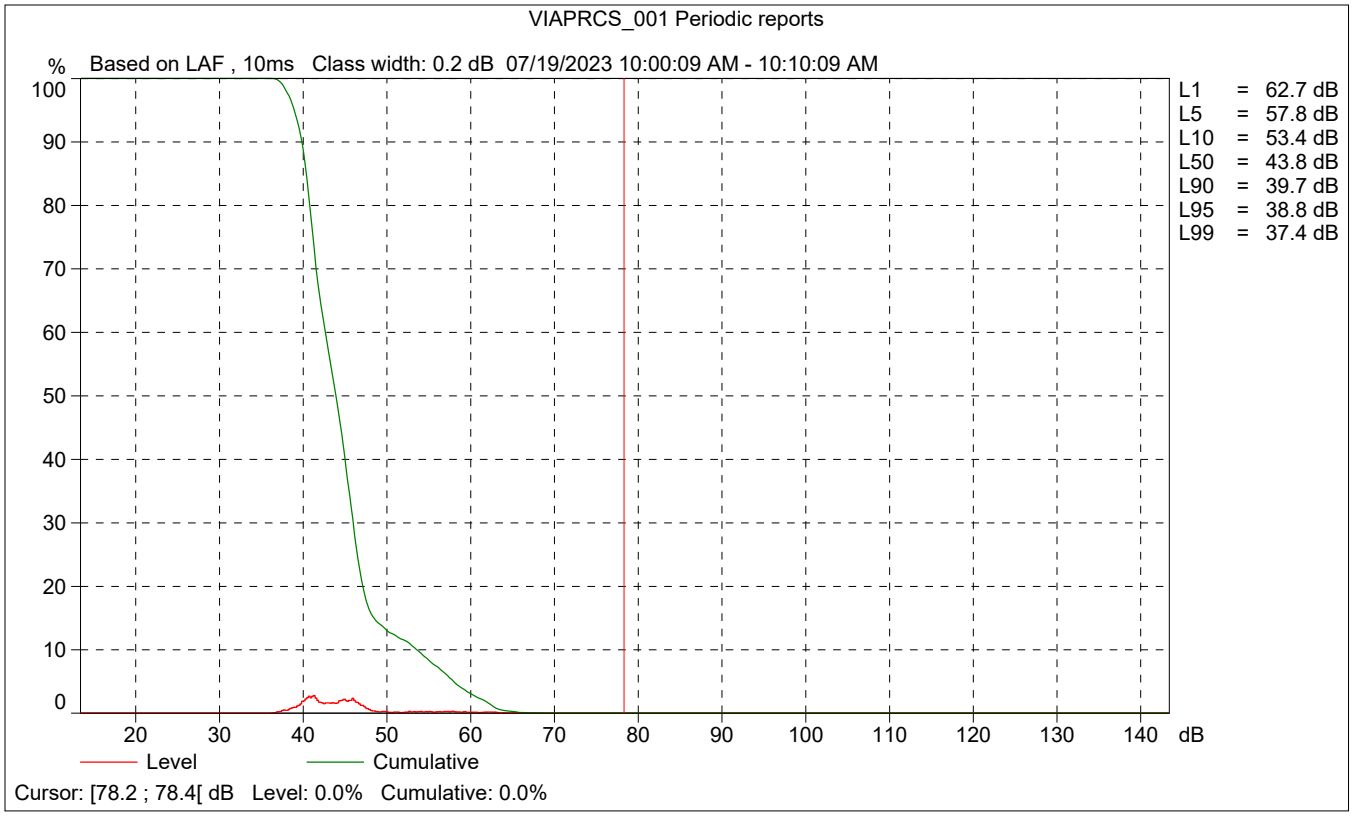

VIAPRCS_001
dB
07/19/2023 10:05:08 AM - 10:05:09 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=40.7 dB


VIAPRCS_001 Periodic reports
dB
140
120
100
80
60
40
20
10:10:00 AM
10:20:00 AM
10:30:00 AM
10:40:00 AM
10:50:00 AM
11:00:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 07/19/2023 10:00:09 AM - 11:00:09 AM LAIeq=52.9 dB LAFmax=69.0 dB LCpeak=79.6 dB LAFmin=36.1 dB

VIAPRCS_001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	52.9	69.0	36.1
Time	10:00:09 AM	0:10:00				
Date	07/19/2023					



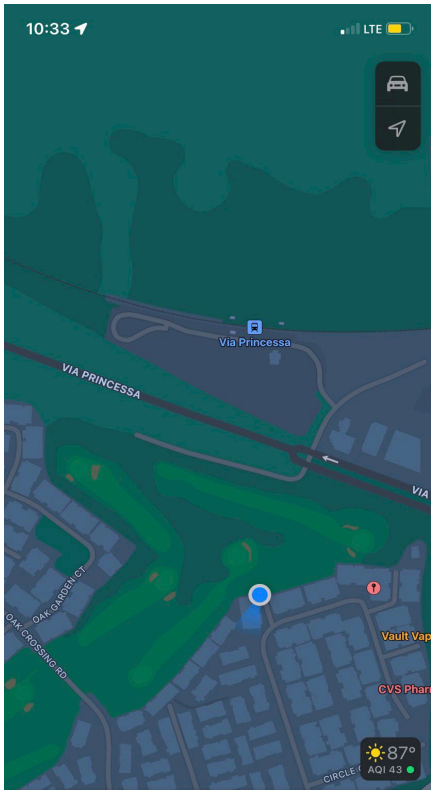

VIAPRCS_001 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 07/19/2023 10:00:09 AM - 10:10:09 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 62.7 dB
L5 = 57.8 dB
L10 = 53.4 dB
L50 = 43.8 dB
L90 = 39.7 dB
L95 = 38.8 dB
L99 = 37.4 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%

Site Number: NM-2			
Recorded By: Darshan Shivaiah, Dennis Dinh			
Job Number: 192626			
Date: 7/19/2023			
Time: 10:32 a.m.			
Location: On the sidewalk, in front of 18931 Circle of the Oaks			
Source of Ambient Noise: Vehicles Passing By, Pedestrian Talking, Trash Collector			
Source of Peak Noise: Trash Collector			
Noise Data			
Leq (dB)	**Lmax(dB)**	**Lmin (dB)**	**Peak (dB)**
54.9	67.8	42.3	88.5

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**03/10/2022**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**03/10/2022**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**03/10/2022**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**03/10/2022**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	3 mph	85	29.96

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		07/19/2023 10:30:55
End Time:		07/19/2023 10:40:55
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.15

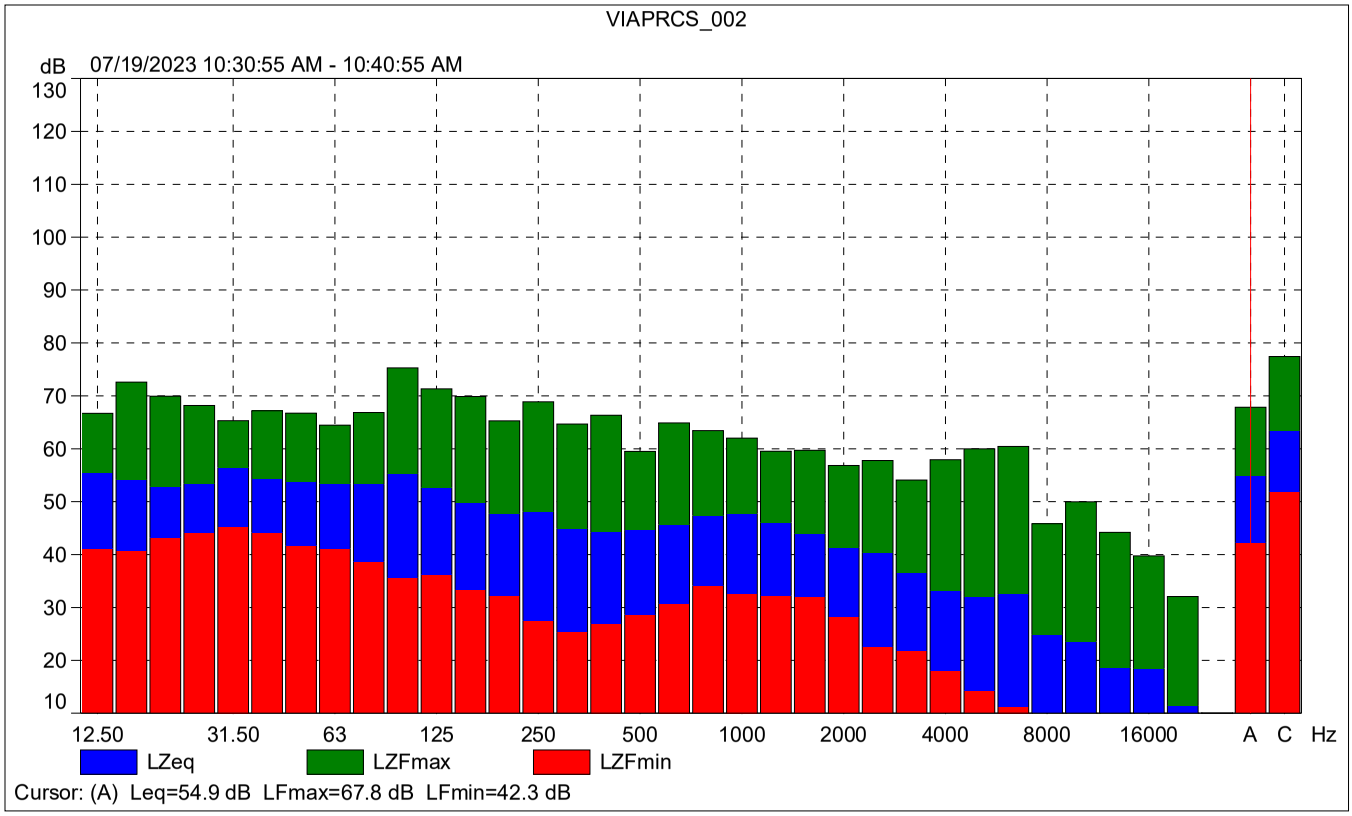
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

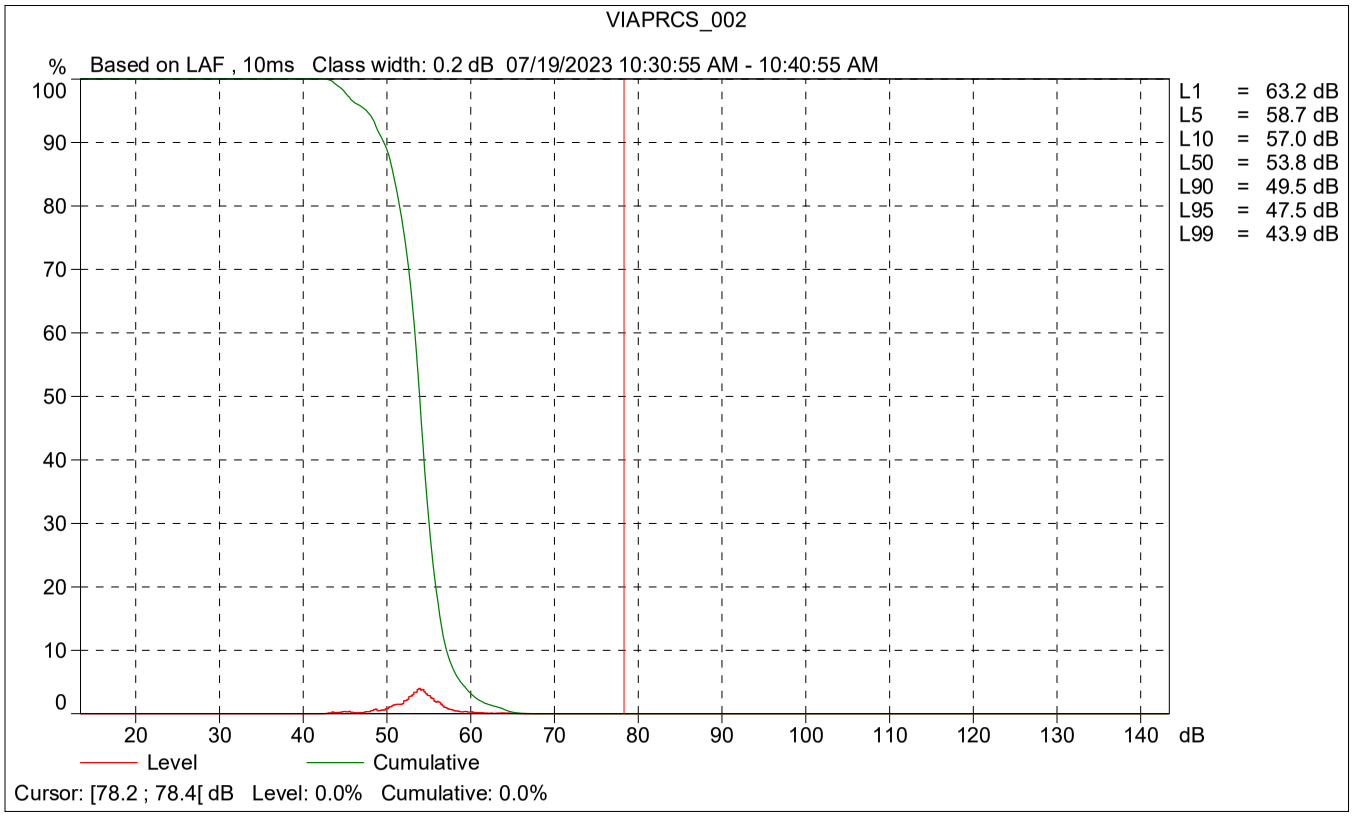
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

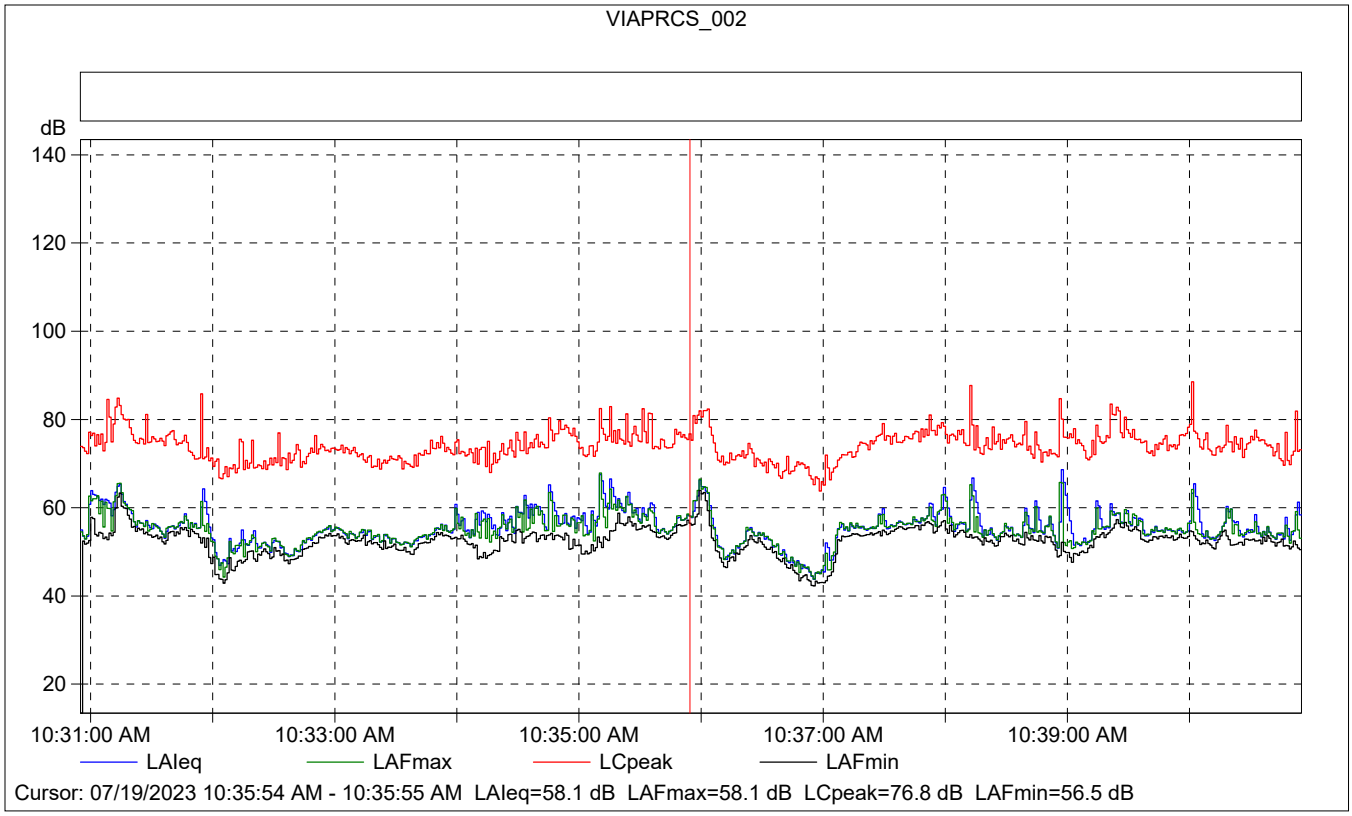
Calibration Time:		07/19/2023 09:57:36
Calibration Type:		External reference
Sensitivity:		43.4735380113125 mV/Pa

VIAPRCS_002

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	54.9	67.8	42.3
Time	10:30:55 AM	10:40:55 AM	0:10:00				
Date	07/19/2023	07/19/2023					

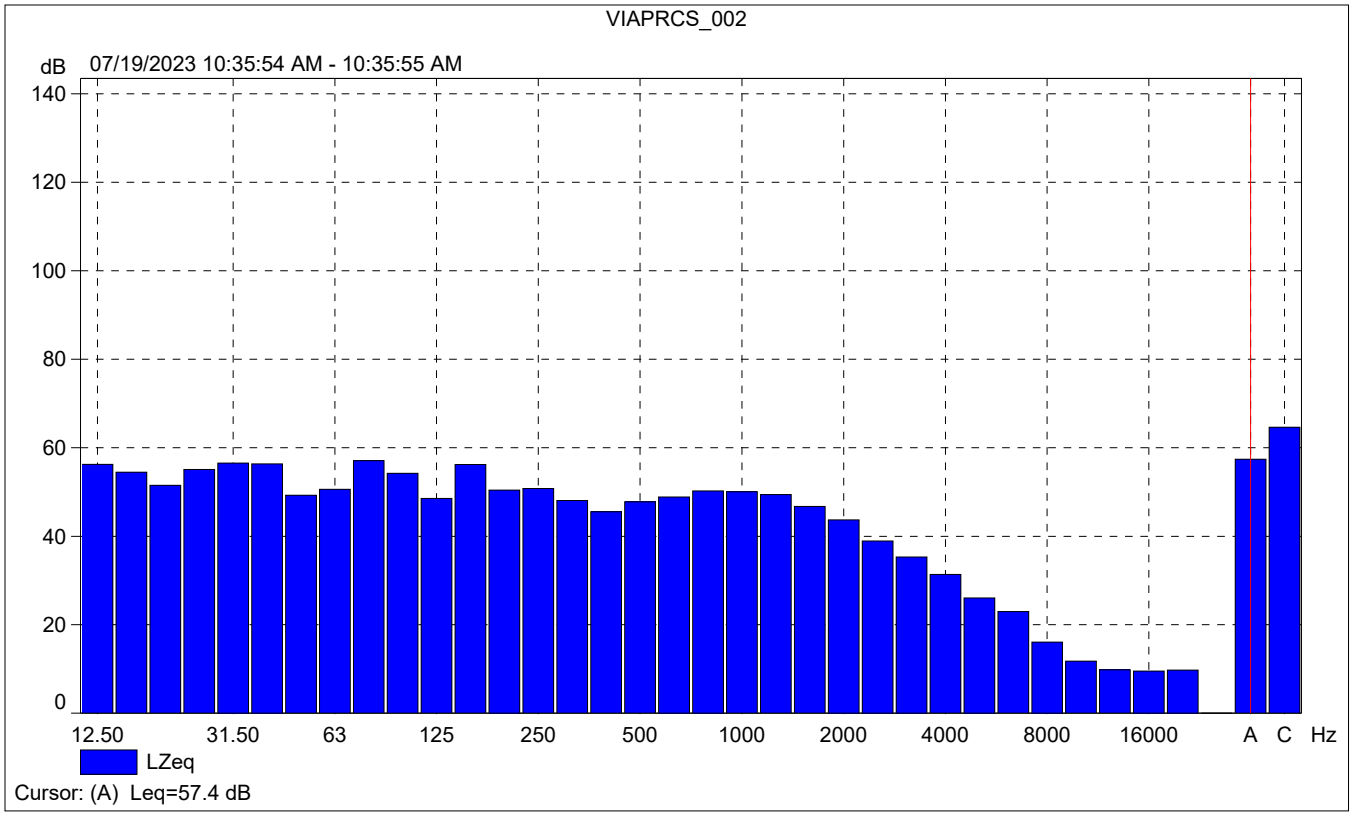

VIAPRCS_002
dB
07/19/2023 10:30:55 AM - 10:40:55 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=54.9 dB LFmax=67.8 dB LFmin=42.3 dB

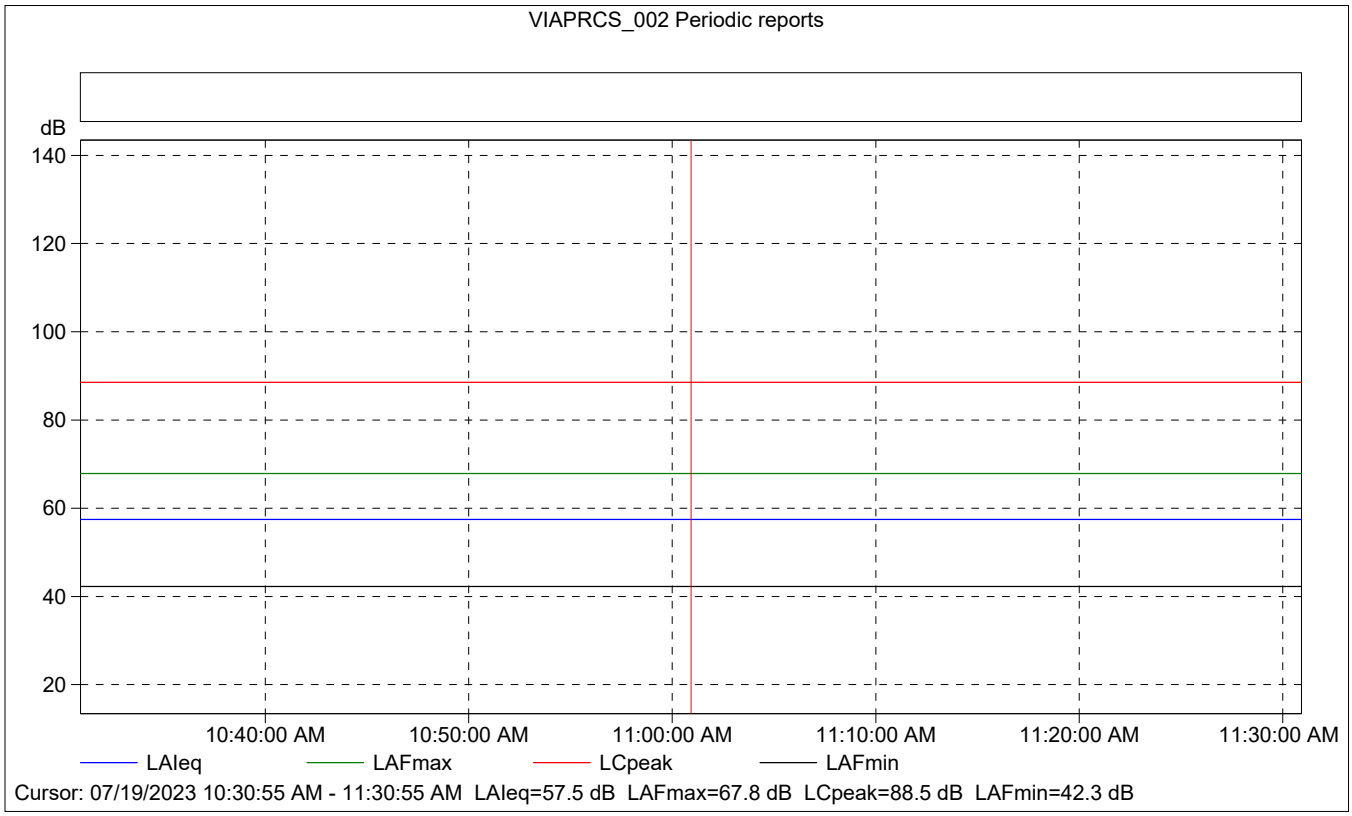

VIAPRCS_002
%
Based on LAF , 10ms Class width: 0.2 dB 07/19/2023 10:30:55 AM - 10:40:55 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 63.2 dB
L5 = 58.7 dB
L10 = 57.0 dB
L50 = 53.8 dB
L90 = 49.5 dB
L95 = 47.5 dB
L99 = 43.9 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%



VIAPRCS_002

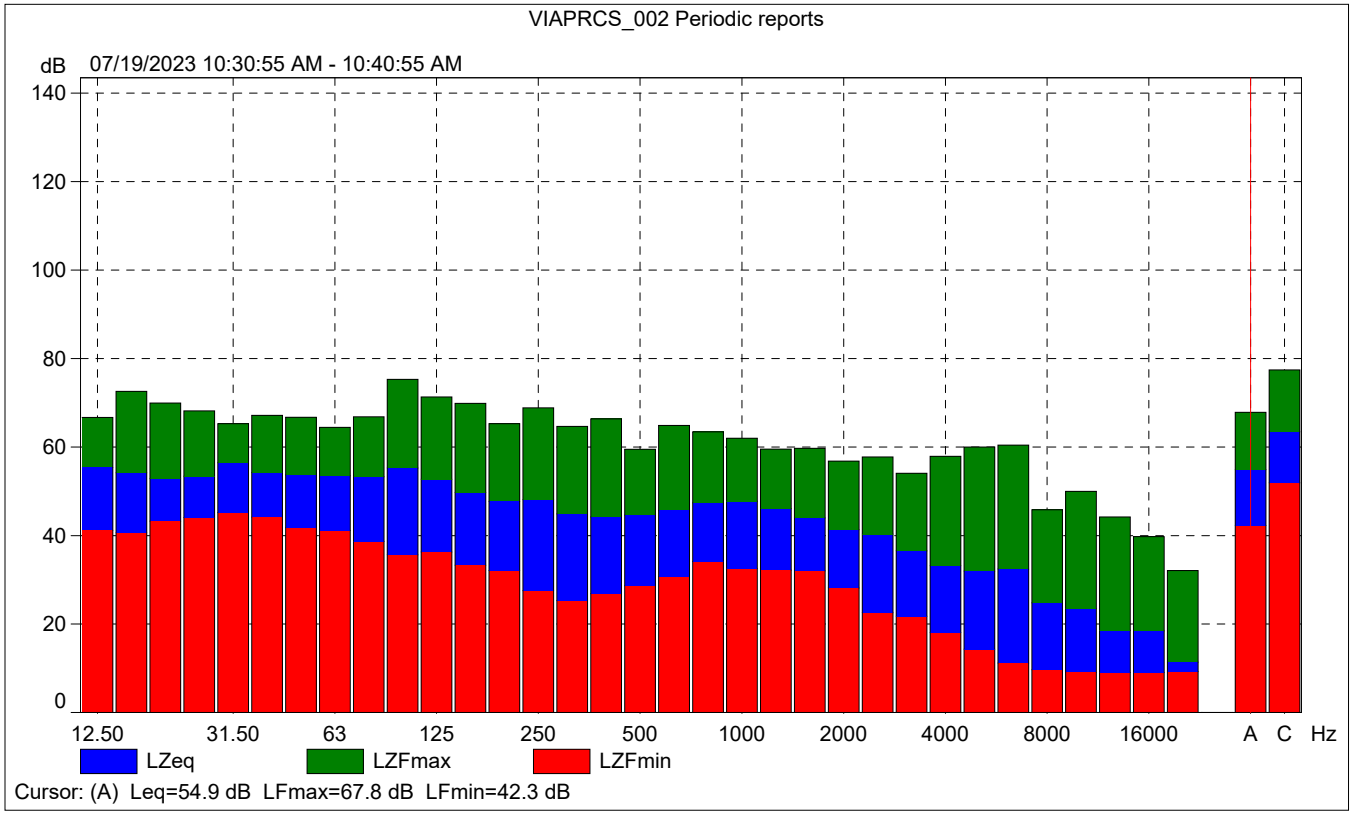
	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	58.1	58.1	56.5
Time	10:35:54 AM	0:00:01				
Date	07/19/2023					

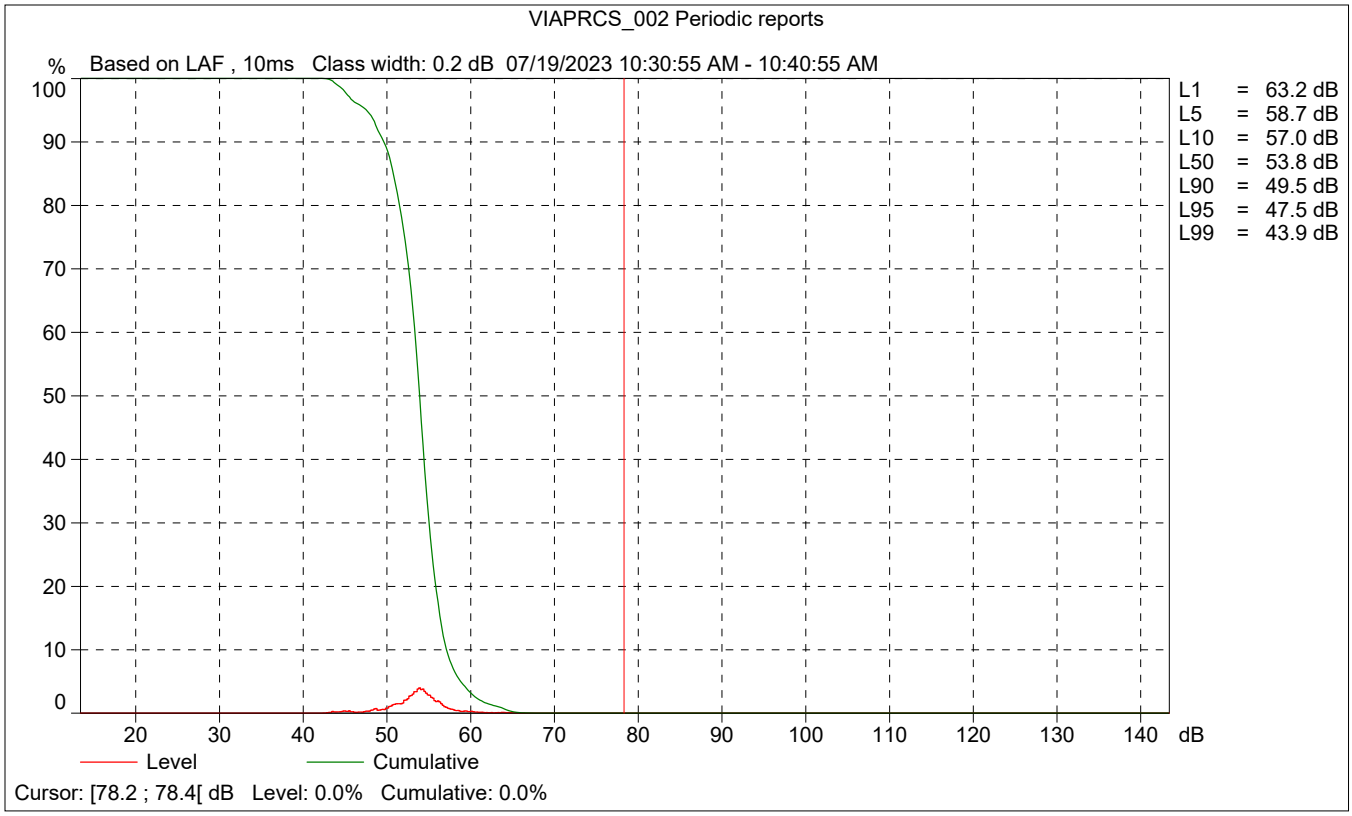

VIAPRCS_002
dB
07/19/2023 10:35:54 AM - 10:35:55 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=57.4 dB


VIAPRCS_002 Periodic reports
dB
140
120
100
80
60
40
20
10:40:00 AM
10:50:00 AM
11:00:00 AM
11:10:00 AM
11:20:00 AM
11:30:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 07/19/2023 10:30:55 AM - 11:30:55 AM LAIeq=57.5 dB LAFmax=67.8 dB LCpeak=88.5 dB LAFmin=42.3 dB

VIAPRCS_002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	57.5	67.8	42.3
Time	10:30:55 AM	0:10:00				
Date	07/19/2023					



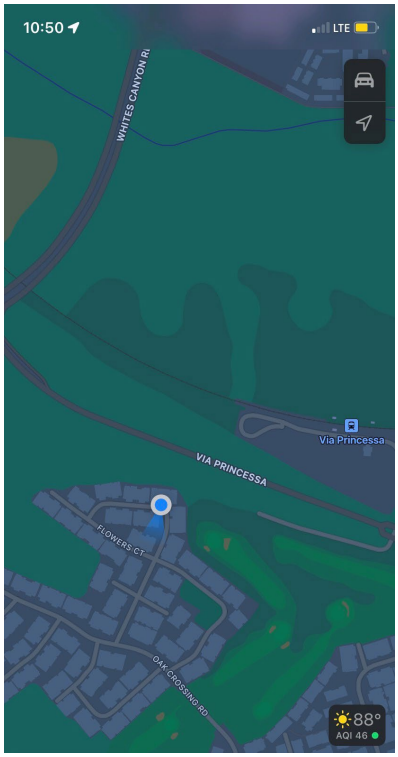

VIAPRCS_002 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 07/19/2023 10:30:55 AM - 10:40:55 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
Level
Cumulative
L1 = 63.2 dB
L5 = 58.7 dB
L10 = 57.0 dB
L50 = 53.8 dB
L90 = 49.5 dB
L95 = 47.5 dB
L99 = 43.9 dB
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%

Site Number: NM-3			
Recorded By: Darshan Shivaiah, Dennis Dinh			
Job Number: 192626			
Date: 7/19/2023			
Time: 10:48 a.m.			
Location: On the sidewalk, in front of 26846 Oak Branch Circle			
Source of Ambient Noise: Vehicles passing by			
Source of Peak Noise: Overhead Plane			
Noise Data			
Leq (dB)	**Lmax(dB)**	**Lmin (dB)**	**Peak (dB)**
48.3	63.1	39.4	78.7

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**03/10/2022**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**03/10/2022**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**03/10/2022**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**03/10/2022**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	3 mph	85	29.96

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		07/19/2023 10:48:15
End Time:		07/19/2023 10:58:15
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.15

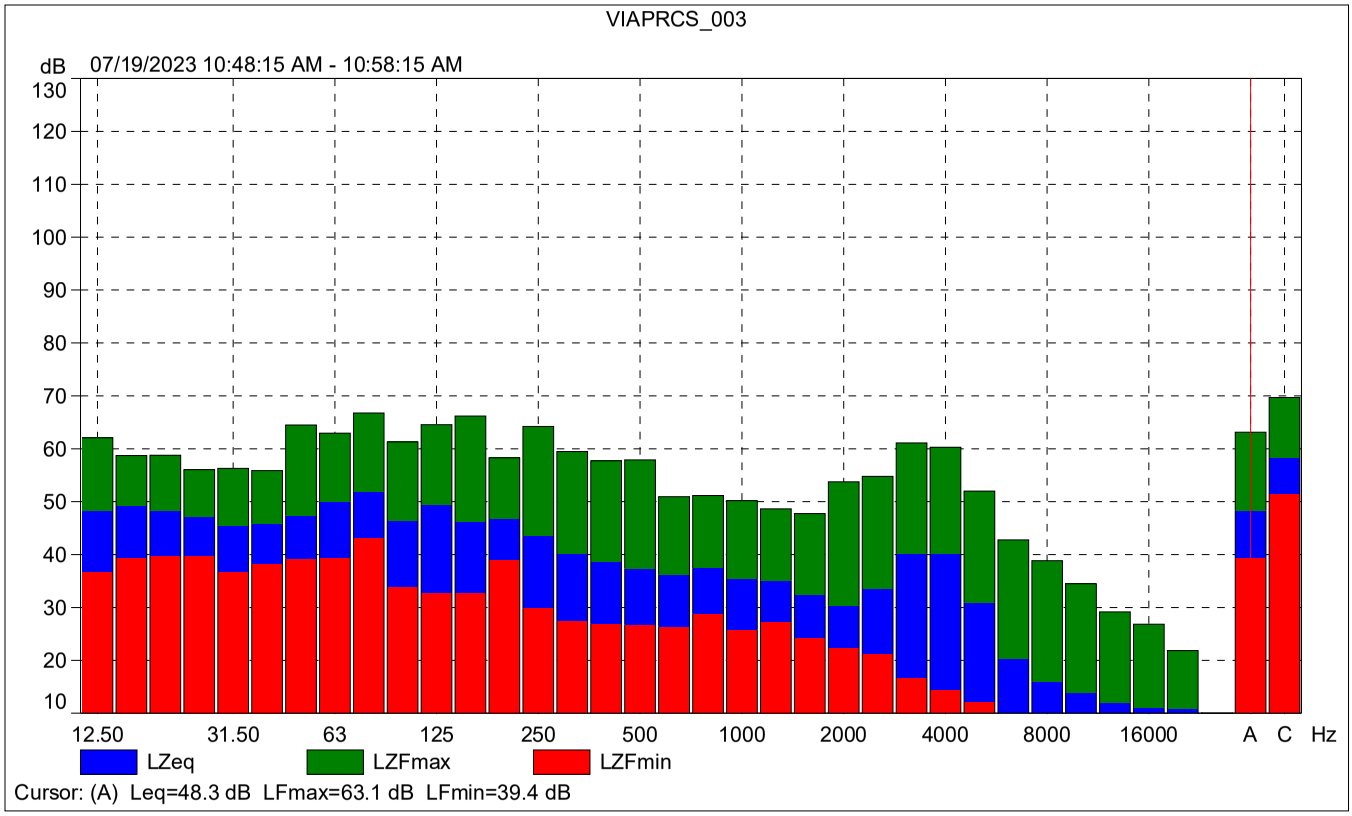
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

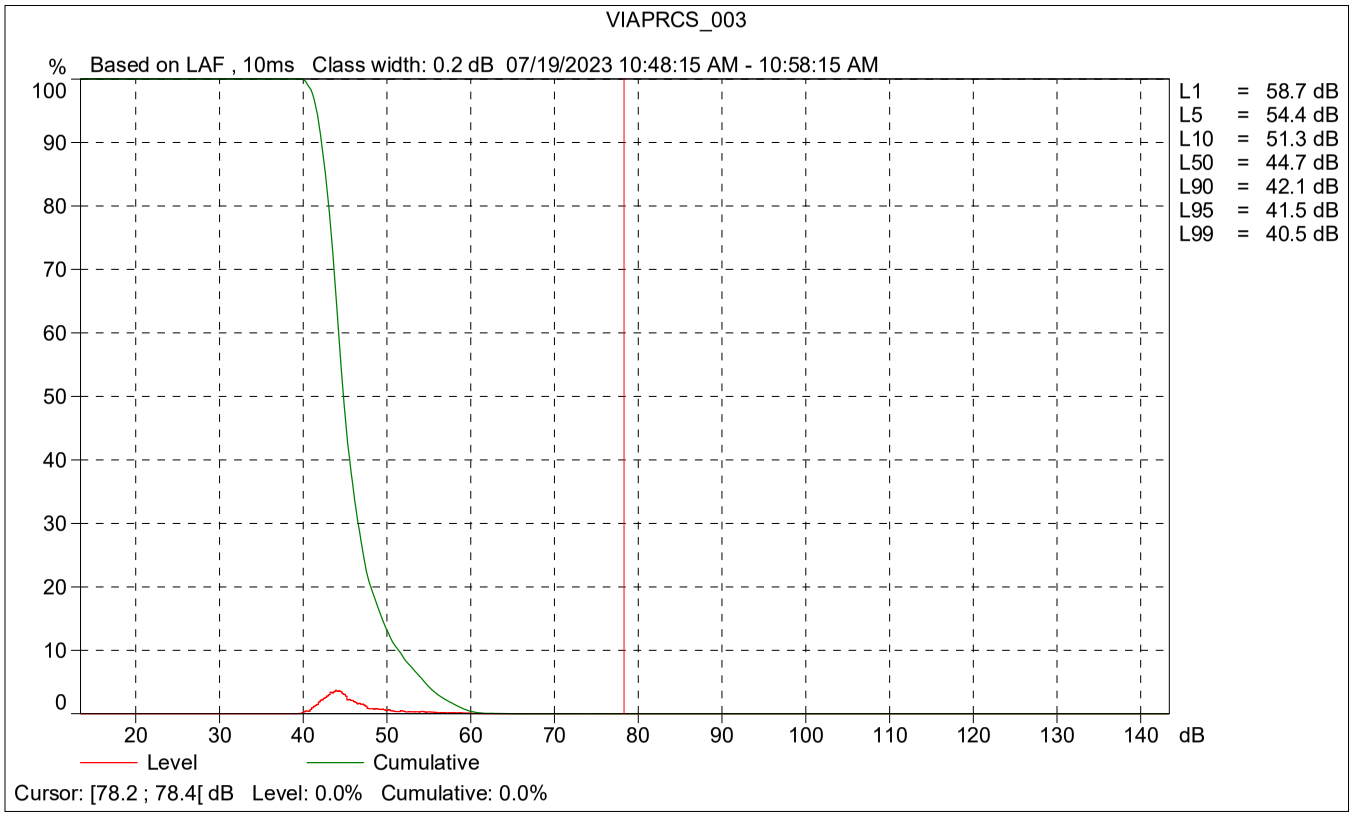
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

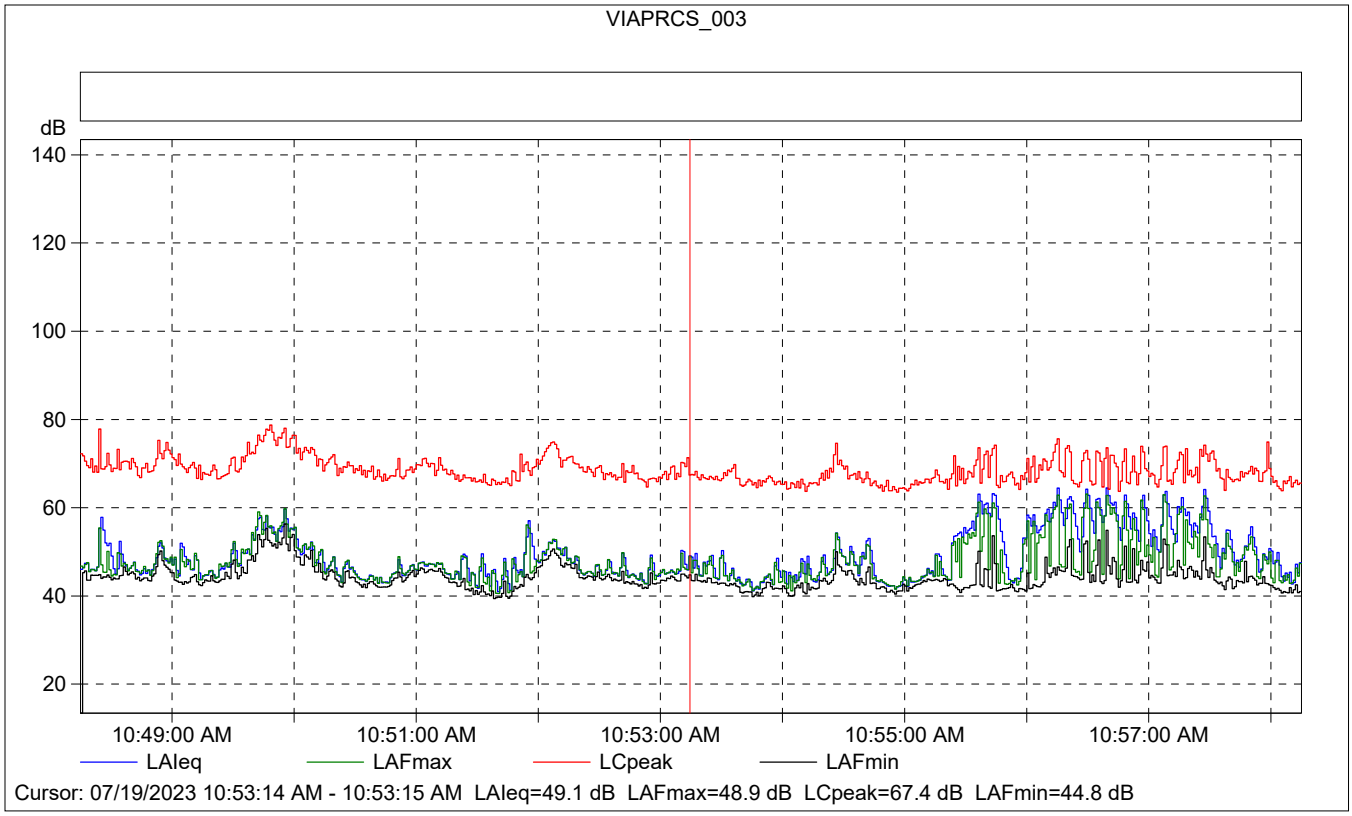
Calibration Time:		07/19/2023 09:57:36
Calibration Type:		External reference
Sensitivity:		43.4735380113125 mV/Pa

VIAPRCS_003

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	48.3	63.1	39.4
Time	10:48:15 AM	10:58:15 AM	0:10:00				
Date	07/19/2023	07/19/2023					

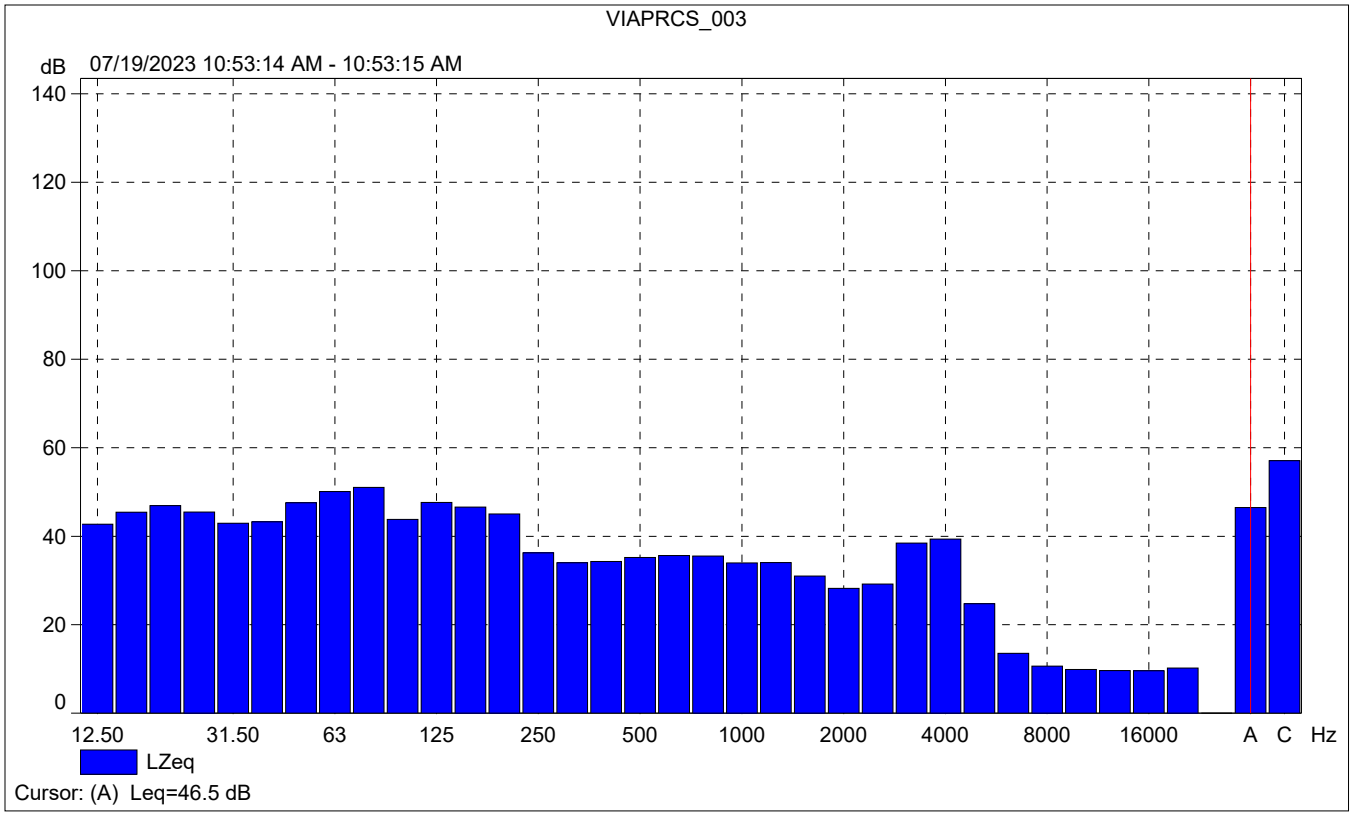

VIAPRCS_003
dB
07/19/2023 10:48:15 AM - 10:58:15 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=48.3 dB LFmax=63.1 dB LFmin=39.4 dB

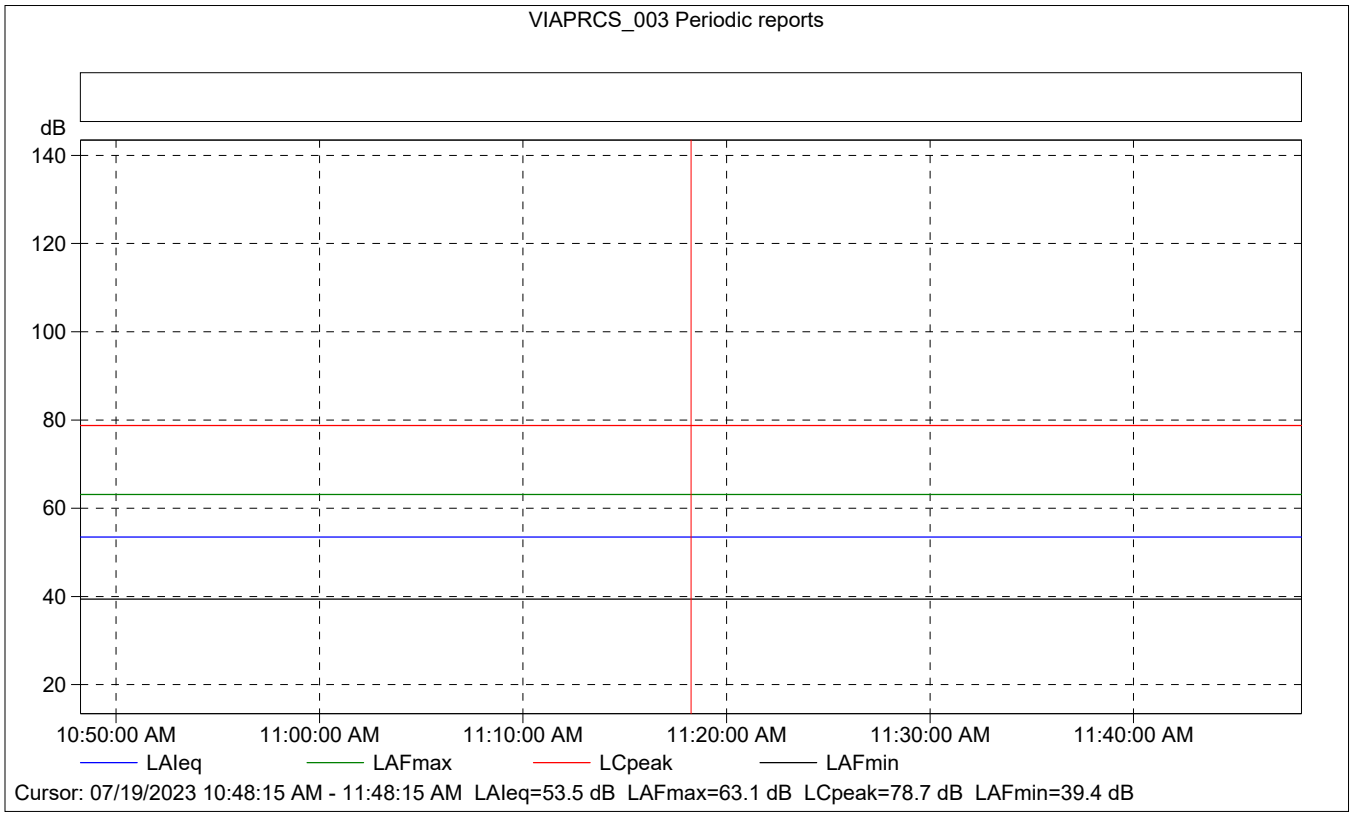

VIAPRCS_003
%
Based on LAF , 10ms Class width: 0.2 dB 07/19/2023 10:48:15 AM - 10:58:15 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 58.7 dB
L5 = 54.4 dB
L10 = 51.3 dB
L50 = 44.7 dB
L90 = 42.1 dB
L95 = 41.5 dB
L99 = 40.5 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%



VIAPRCS_003

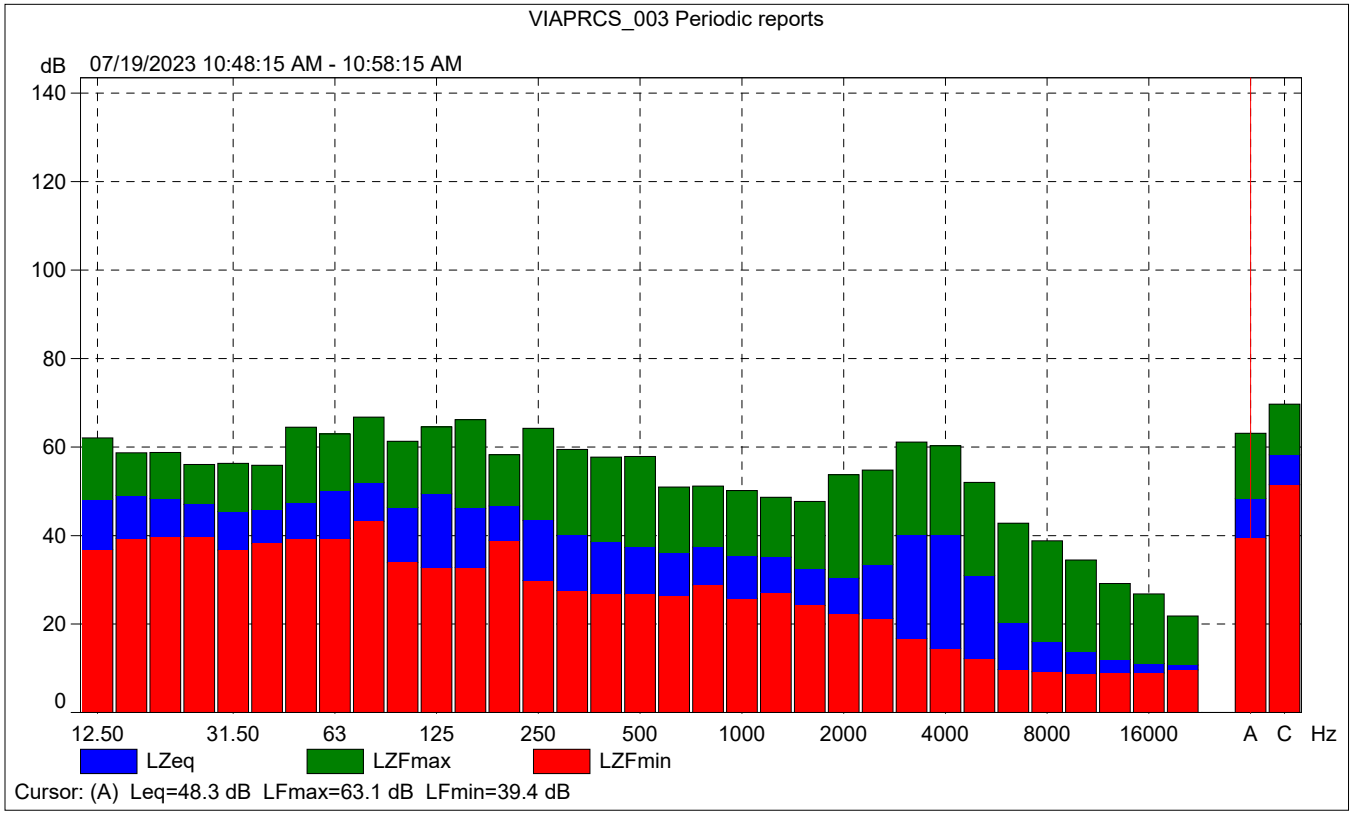
	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	49.1	48.9	44.8
Time	10:53:14 AM	0:00:01				
Date	07/19/2023					

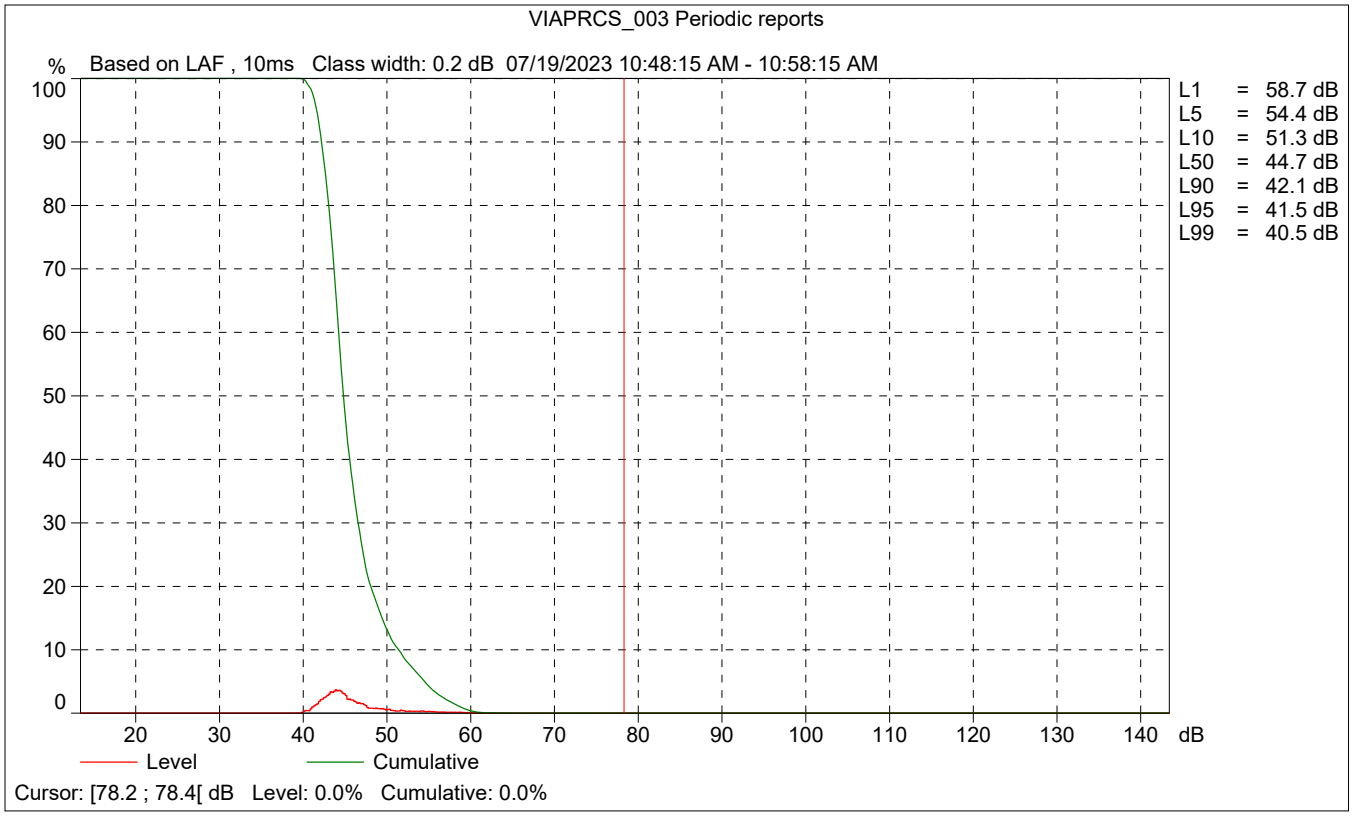

VIAPRCS_003
dB
07/19/2023 10:53:14 AM - 10:53:15 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=46.5 dB


VIAPRCS_003 Periodic reports
dB
140
120
100
80
60
40
20
10:50:00 AM
11:00:00 AM
11:10:00 AM
11:20:00 AM
11:30:00 AM
11:40:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 07/19/2023 10:48:15 AM - 11:48:15 AM LAIeq=53.5 dB LAFmax=63.1 dB LCpeak=78.7 dB LAFmin=39.4 dB

VIAPRCS_003 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	53.5	63.1	39.4
Time	10:48:15 AM	0:10:00				
Date	07/19/2023					




VIAPRCS_003 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 07/19/2023 10:48:15 AM - 10:58:15 AM
100
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20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 58.7 dB
L5 = 54.4 dB
L10 = 51.3 dB
L50 = 44.7 dB
L90 = 42.1 dB
L95 = 41.5 dB
L99 = 40.5 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%

Michael Baker INTERNATIONAL

We Make a Difference

MEMORANDUM

To: Leslie Frazier, P.E.
Engineer
Public Works- Capital Improvement Projects,
City of Santa Clarita, CA

From: Darshan Shivaiah, Michael Baker International

Date: January 31, 2023

Subject: Via Princessa Pickleball Court Project – Noise Technical Memorandum

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PURPOSE

The purpose of this technical memorandum is to evaluate potential long-term noise impacts resulting from operation of the proposed Via Princessa Pickleball Court Project (project), located in the City of Santa Clarita (City), California.

PROJECT DESCRIPTION

The proposed project is located along Via Princessa northeast of the intersection of Whites Canyon Road and Via Princessa. The project proposes to construct and operate Via Princessa Park, which in addition to recreational improvements would include a regional stormwater infiltration facility, on an approximately 26-acre area of vacant City-owned land. Of which, four pickleball courts located at the southwestern portion of the project site, near the park entrance.

REGULATORY SETTING

City of Santa Clarita Municipal Code

Chapter 11.44, *Noise Limits,* of the *Santa Clarita Municipal Code* sets forth all noise regulations controlling unnecessary, excessive, and annoying noise in the City. The following sections from the Municipal Code are applicable to the project:

Section 11.44.040 Noise Limits.

A. It shall be unlawful for any person within the City to produce or cause or allow to be produced noise

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which is received on property occupied by another person within the designated region, in excess of the following levels, except as expressly provided otherwise herein: (Table 1, *City of Santa Clarita Noise Standards*):

Table 1
City of Santa Clarita Noise Standards

Region	Sound Level in dB	
	Day (7 a.m. to 9 p.m.)	Night (9 p.m. to 7 a.m.)
Residential Zone	65	55
Source: City of Santa Clarita, *Santa Clarita Municipal Code Section 11.44.040.*		

B. Corrections to Noise Limits. The numerical limits given in subsection A (as shown in Table 1) of this section shall be adjusted by the following corrections, where the following noise conditions exist (Table 2, *Corrections to Noise Limits*):

Table 2
Corrections to Noise Limits

Noise Condition	Correction (in dB)
Repetitive impulsive noise	-5
Steady whine, screech, or hum	-5
The following corrections apply to day only:	
Noise occurring more than 5 but less than 15 minutes per hour	+5
Noise occurring more than 1 but less than 5 minutes per hour	+10
Noise occurring less than 1 minute per hour	+20
Source: City of Santa Clarita, *Santa Clarita Municipal Code Section 11.44.040.*	

EXISTING NOISE SETTING

Noise Sensitive Receptors

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

The nearest sensitive receptor to the project site is the residential uses located approximately 290 feet to the east of the proposed pickleball court.

NOISE MODELING

The primary noise source associated with the proposed project would consist of the impact of a pickleball racquet and ball, as well as players talking and/or shouting during pickleball games. Based on the *Golden Rain Foundation Pickleball Courts Relocation – Noise Technical Memorandum*, by Michael Baker

International, dated September 6, 2017, a single pickleball game generates noise levels of approximately 58.6 dBA L_{eq} at a distance of 30 feet.

To predict the anticipated noise levels and impacts associated with a worst-case scenario of four pickleball games occurring simultaneously, the SoundPLAN three-dimensional noise model was utilized. SoundPLAN allows computer simulations of noise situations, and creates noise contour maps using reference noise levels, topography, point and area noise sources, mobile noise sources, and intervening structures. Four area sources representing four pickleball courts were modeled at the project site based on a reference noise level of 58.6 dBA L_{eq} at 30 feet.

Noise Impacts

Exhibit 1, *Noise Levels* shows that the nearest residential uses to the east of the project site would experience maximum exterior noise levels of approximately 44.8 dBA from the pickleball activities. Exhibit 2, *Noise Contours* shows the noise contours for pickleball activities at the project site and would range from 43.0 to 44.8 dBA at the nearest sensitive receptor to the east of the project site. Furthermore, pickleball activity noise could be considered as repetitive impulse noise and based on the City of Santa Clarita Municipal Code Section 11.44.040 (B), exterior noise level standards shall be adjusted with a correction of minus five dB (-5 dB). As such, noise levels generated at the proposed project site as a result of pickleball activities would be below the City's allowable exterior noise thresholds of 60 dBA during daytime and 50 dBA during nighttime. A less than significant impact would occur in this regard, and noise mitigation is not required for the project.

Mitigation Measures: No mitigation is required.

Exhibit 1: Noise Levels

Exhibit 2: Noise Contours