Appendix D

Noise Analysis Supportive Files

Appendix D-1

Noise Prediction Roadway Network Figure



Appendix D-2

Noise Measurement Locations Figure





Noise Measurement Photo Log & Equipment Calibration Certificates

NJTA Newark Bay - OPS T3820 NB-HCE Hudson County Extension Improvements - Project Area 1 Noise Measurement Photos



Site # 1: Behind 150 Firmenich Way - View Facing South



Site # 2A: Marist High School - View Facing North

NJTA Newark Bay - OPS T3820 NB-HCE Hudson County Extension Improvements - Project Area 1 Noise Measurement Photos (Cont.)



Site # 2B: 35 Sunset Drive - View Facing Northwest



Site # 2C: Bayonne Tower Pool - View Facing Northwest

NJTA Newark Bay - OPS T3820 NB-HCE Hudson County Extension Improvements - Project Area 1 Noise Measurement Photos (Cont.)



Site # 2D: 1261 JFK Boulevard - View Facing North



Site # 3: Mercer Park - View Facing South

NJTA Newark Bay - OPS T3820 NB-HCE Hudson County Extension Improvements - Project Area 1 Noise Measurement Photos (Cont.)



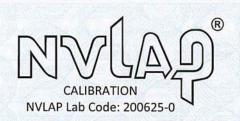
Site # 4: 114 Merritt Street - View Facing East



Site # 5: W 58th Street - View Facing South

Scantek, Inc.

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46146

Instrument:

Acoustical Calibrator

Model:

CAL200

Manufacturer:

Larson Davis

Serial number:

11291

Class (IEC 60942):

Barometer type: Barometer s/n:

Customer:

Tel/Fax:

Paul Carpenter Associates, Inc. 973-822-8221 x21 / 973-833-9221

Address:

Status:

In tolerance:

Out of tolerance:

See comments:

7 Columbia Turnpike, Suite 101, Florham Park, NJ 07932

Date Calibrated: 3/10/2021 Cal Due: 3/10/2022

Contains non-accredited tests: Yes X No

Received

X

Sent

X

Tested in accordance with the following procedures and standards: Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	C/N	Cal. Date	Traceability evidence	77111114465	
instrument - Manufacturer	Description	S/N	Cal. Date	Cal. Lab / Accreditation	Cal. Due	
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021	
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022	
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021	
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022	
140-Norsonic	Real Time Analyzer	1403978	Mar 20, 2020	Scantek, Inc. / NVLAP	Mar 20, 2021	
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	J-1/2	
4192-Brüel&Kjær	Microphone	2854675	Jan 15, 2021	Scantek, Inc. / NVLAP	Jan 15, 2022	
1203-Norsonic	Preamplifier	21270	Jan 15, 2021	Scantek, Inc./ NVLAP	Jan 15, 2022	

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by:	Ronnie Buchanan	Authorized signatory:	/ William D Gallagher
Signature	Ronnie Burhanan	Signature	weller pullar
Date	3/10/2021	Date	3/12/2021

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory. This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.

Document stored as: Y:\Calibration Lab\Cal 2021\LDCAL200_11291_M1.doc

CLAUSES¹ FROM STANDARDS REFERENCED IN PROCEDURES:	MET ²	NOT MET	COMMENTS
Manufacturer specifications			
Manufacturer specifications: Sound pressure level	X		
Manufacturer specifications: Frequency	X		No. of the last of
Manufacturer specifications: Total harmonic distortion	X		
Current standards			
ANSI S1.40:2006 B.3 / IEC 60942: 2003 B.2 - Preliminary inspection	X		P. L. Land
ANSI S1.40:2006 B.4.4 / IEC 60942: 2003 B.3.4 - Sound pressure level	X		
ANSI S1.40:2006 A.5.4 / IEC 60942: 2003 A.4.4 - Sound pressure level stability			
ANSI S1.40:2006 B.4.5 / IEC 60942: 2003 B.3.5 - Frequency	X		
ANSI S1.40:2006 B.4.6 / IEC 60942: 2003 B.3.6 - Total harmonic distortion	X		

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- 2 The tests marked with (*) are not covered by the current NVLAP accreditation.

Main measured parameters 3:

Measured ⁴ /Acceptable ⁵ Tone frequency (Hz):	Measured ⁴ /Acceptable ⁵ Total Harmonic Distortion (%):	Measured ⁴ /Acceptable Level ⁵ (dB):
$1000.16 \pm 1.0/1000.0 \pm 10.0$	0.37 ± 0.10/ < 3	93.94 ± 0.12/94.0 ± 0.4
1000.17 ± 1.0/1000.0 ± 10.0	0.46 ± 0.10/ < 3	113.93 ± 0.12/114.0 ± 0.4

- ³ The stated level is valid at measurement conditions.
- 4 The above expanded uncertainties for frequency and distortion are calculated with a coverage factor k=2; for level k=2.00
- 5 Acceptable parameters values are from the current standards

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.1 ± 0.0	101.06 ± 0.000	43.1 ± 0.0

Tests made with following attachments to instrument:

Calibrator ½" Adaptor Type:	
Other:	

Adjustments: Unit was not adjusted.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Measured Data: in Acoustical Calibrator Test Report # 46146 of two pages.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.

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Scantek, Inc.

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46147

Instrument:

Acoustical Calibrator

Model:

CAL200

Manufacturer:

Larson Davis

Serial number:

11811

Class (IEC 60942):

Barometer type:

Barometer s/n:

Customer:

Tel/Fax:

Paul Carpenter Associates, Inc. 973-822-8221 x21 / 973-833-9221 Address:

Status:

In tolerance:

Out of tolerance:

See comments:

7 Columbia Turnpike, Suite 101,

Contains non-accredited tests: Yes X No

Date Calibrated: 3/10/2021 Cal Due: 3/10/2022

Received

X

X

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards: Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
mstrument - Manufacturer	Description	3/N	Cal. Date	Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022
140-Norsonic	Real Time Analyzer	1403978	Mar 20, 2020	Scantek, Inc. / NVLAP	Mar 20, 2021
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	
4192-Brüel&Kjær	Microphone	2854675	Jan 15, 2021	Scantek, Inc. / NVLAP	Jan 15, 2022
1203-Norsonic	Preamplifier	21270	Jan 15, 2021	Scantek, Inc./ NVLAP	Jan 15, 2022

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by:	Ronnie Buchanan	Authorized signatory:	/William D. Gallagher
Signature	Romio Buchanon	Signature	Willer W Balley
Date	3/10/2021	Date	3/12/22/

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory. This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.

Document stored as: Y:\Calibration Lab\Cal 2021\LDCAL200_11811_M1.doc

CLAUSES¹ FROM STANDARDS REFERENCED IN PROCEDURES:	MET ²	NOT MET	COMMENTS
Manufacturer specifications			
Manufacturer specifications: Sound pressure level	X		
Manufacturer specifications: Frequency	X	Marie Eur	THE PARTY
Manufacturer specifications: Total harmonic distortion	X	100	
Current standards			To be a second
ANSI S1.40:2006 B.3 / IEC 60942: 2003 B.2 - Preliminary inspection	X	BOTTON - PVI	The state of the s
ANSI S1.40:2006 B.4.4 / IEC 60942: 2003 B.3.4 - Sound pressure level	X	THE R. P. LEWIS CO., LANSING, MICH.	
ANSI S1.40:2006 A.5.4 / IEC 60942: 2003 A.4.4 - Sound pressure level stability			DO THE WAY
ANSI S1.40:2006 B.4.5 / IEC 60942: 2003 B.3.5 - Frequency	X	Carrie View	I DOMESTIC OF
ANSI S1.40:2006 B.4.6 / IEC 60942: 2003 B.3.6 - Total harmonic distortion	X	(A)	THE REAL PROPERTY.

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- 2 The tests marked with (*) are not covered by the current NVLAP accreditation.

Main measured parameters 3:

Measured ⁴ /Acceptable ⁵ Tone frequency (Hz):	Measured ⁴ /Acceptable ⁵ Total Harmonic Distortion (%):	Measured ⁴ /Acceptable Level ⁵ (dB):
$1000.21 \pm 1.0/1000.0 \pm 10.0$	0.23 ± 0.10/ < 3	93.90 ± 0.12/94.0 ± 0.4
$1000.20 \pm 1.0/1000.0 \pm 10.0$	0.33 ± 0.10/ < 3	113.90 ± 0.12/114.0 ± 0.4

- ³ The stated level is valid at measurement conditions.
- 4 The above expanded uncertainties for frequency and distortion are calculated with a coverage factor k=2; for level k=2.00
- 5 Acceptable parameters values are from the current standards

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.1 ± 0.0	101.06 ± 0.000	43.1 ± 0.0

Tests made with following attachments to instrument:

Calibrator ½" Adaptor Type:	The second second
Other:	

Adjustments: Unit was not adjusted.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Measured Data: in Acoustical Calibrator Test Report # 46147 of two pages.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.

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ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46652

Instrument:

Acoustical Calibrator

Date Calibrated: 7/9/2021 Cal Due: 7/9/2022

Model:

CAL200

Manufacturer:

Larson Davis

Received Sent X

Serial number:

12145

In tolerance: X Out of tolerance:

Class (IEC 60942):

See comments:

Contains non-accredited tests: __Yes X No

Barometer type: Barometer s/n:

Customer:

Paul Carpenter Associates, Inc.

Address:

Status:

7 Columbia Turnpike, Suite 101,

Tel/Fax: 973-822-8221 x21 / 973-833-9221

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due	
mati unient - Manufacturei	Description	3/14	Cal. Date	Cal. Lab / Accreditation		
483B-Norsonic	SME Cal Unit	31052	Oct 31, 2020	Scantek, Inc./ NVLAP	Oct 31, 2021	
DS-360-SRS	Function Generator	33584	Oct 23, 2019	ACR Env./ A2LA	Oct 23, 2021	
34401A-Agilent Technologies	Digital Voltmeter	MY47011118	Feb 4, 2021	ACR Env. / A2LA	Feb 4, 2022	
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2020	ACR Env./ A2LA	Dec 7, 2021	
140-Norsonic	Real Time Analyzer	1406423	Nov 3, 2020	Scantek / NVLAP	Nov 3, 2021	
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.		
4134-Brüel&Kjær	Microphone	173368	Oct 26, 2020	Scantek, Inc. / NVLAP	Oct 26, 2021	
1203-Norsonic	Preamplifier	14059	March 3, 2021	Scantek, Inc./ NVLAP	March 3, 2022	

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by:	/ Lydon Dawkins	Authorized signatory:	/ William Gallagher
Signature	Judon Davekin	Signature	Willer Bally
Date	7/9/2021	Date	7/12/2021

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory. This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.

Document stored as: Y:\Calibration Lab\Cal 2021\LDCAL200_12145_M1.doc

CLAUSES¹ FROM STANDARDS REFERENCED IN PROCEDURES:	MET ²	NOT MET	COMMENTS
Manufacturer specifications	LINE COLUMN	A PARTY OF THE PARTY	
Manufacturer specifications: Sound pressure level	X		
Manufacturer specifications: Frequency	X	TOUR THE	C PICKET-MOT
Manufacturer specifications: Total harmonic distortion	X	Service .	la l
Current standards	TO SERVICE STREET		
ANSI S1.40:2006 B.3 / IEC 60942: 2003 B.2 - Preliminary inspection	X		
ANSI S1.40:2006 B.4.4 / IEC 60942: 2003 B.3.4 - Sound pressure level	X	V-1	
ANSI S1.40:2006 A.5.4 / IEC 60942: 2003 A.4.4 - Sound pressure level stability			INC. CANCELLO INC.
ANSI S1.40:2006 B.4.5 / IEC 60942: 2003 B.3.5 - Frequency	X		
ANSI S1.40:2006 B.4.6 / IEC 60942: 2003 B.3.6 - Total harmonic distortion	X		

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- 2 The tests marked with (*) are not covered by the current NVLAP accreditation.

Main measured parameters 3:

Measured ⁴ /Acceptable ⁵ Tone frequency (Hz):	Measured⁴/Acceptable⁵ Total Harmonic Distortion (%):	Measured ⁴ /Acceptable Level ⁵ (dB):
1000.01 ± 1.0/1000.0 ± 10.0	0.24 ± 0.10/ < 3	93.97 ± 0.12/94.0 ± 0.4
1000.01 ± 1.0/1000.0 ± 10.0	0.33 ± 0.10/ < 3	113.95 ± 0.12/114.0 ± 0.4

- ³ The stated level is valid at measurement conditions.
- 4 The above expanded uncertainties for frequency and distortion are calculated with a coverage factor k=2; for level k=2.00
- ⁵ Acceptable parameters values are from the current standards

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.7 ± 1.2	99.59 ± 0.000	49.5 ± 2.2

Tests made with following attachments to instrument:

rests made that removing accadiments to instrument.			
Calibrator ½" Adaptor Type:	THE PROPERTY OF	U.G. 314	Marian acida
Other:	THE PARTY OF THE	ner mainder 1 2 mm o	The steam

Adjustments: Unit was not adjusted.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Measured Data: in Acoustical Calibrator Test Report # 46652 of two pages.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

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Scantek, Inc. CALIBRATION LABORATORY

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46145

Instrument:

Acoustical Calibrator

Model:

CAL200

Manufacturer:

Larson Davis 7100

Serial number: Class (IEC 60942):

Barometer type:

Barometer s/n:

Customer:

Tel/Fax:

Paul Carpenter Associates, Inc. 973-822-8221 x21 / 973-833-9221 Address:

Status:

In tolerance:

Out of tolerance:

See comments:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Contains non-accredited tests: Yes X No

Date Calibrated: 3/10/2021 Cal Due: 3/10/2022

Received

X

Sent

X

Tested in accordance with the following procedures and standards: Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

	David Maria	C/N	Cal Data	Traceability evidence	Cal. Due	
Instrument - Manufacturer	Description	S/N	Cal. Date	Cal. Lab / Accreditation	Cal. Due	
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021	
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022	
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021	
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022	
140-Norsonic	Real Time Analyzer	1403978	Mar 20, 2020	Scantek, Inc. / NVLAP	Mar 20, 2021	
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.		
4192-Brüel&Kjær	Microphone	2854675	Jan 15, 2021	Scantek, Inc. / NVLAP	Jan 15, 2022	
1203-Norsonic	Preamplifier	21270	Jan 15, 2021	Scantek, Inc./ NVLAP	Jan 15, 2022	

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by:	Ronnie Buchanan	Authorized signatory:	William D. Gallagher,
Signature	Ronnie Buchanon	Signature	Willer Bullet
Date	3/10/2021	Date	3/12/2021

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory. This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.

Document stored as: Y:\Calibration Lab\Cal 2021\LDCAL200_7100_M1.doc

CLAUSES¹ FROM STANDARDS REFERENCED IN PROCEDURES:	MET ²	NOT MET	COMMENTS
Manufacturer specifications	THE STATE		
Manufacturer specifications: Sound pressure level	X	Direct street	
Manufacturer specifications: Frequency	X	Section 200	or a trade of Series 1
Manufacturer specifications: Total harmonic distortion	X		
Current standards			A PROPERTY OF THE PARTY OF THE
ANSI S1.40:2006 B.3 / IEC 60942: 2003 B.2 - Preliminary inspection	X		William District
ANSI S1.40:2006 B.4.4 / IEC 60942: 2003 B.3.4 - Sound pressure level	X		MI PLEASE TO
ANSI S1.40:2006 A.5.4 / IEC 60942: 2003 A.4.4 - Sound pressure level stability		12 11 10 5	
ANSI \$1.40:2006 B.4.5 / IEC 60942: 2003 B.3.5 - Frequency	X	mke TX	
ANSI S1.40:2006 B.4.6 / IEC 60942: 2003 B.3.6 - Total harmonic distortion	X	973	

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- 2 The tests marked with (*) are not covered by the current NVLAP accreditation.

Main measured parameters 3:

Measured ⁴ /Acceptable ⁵ Tone frequency (Hz):	Measured ⁴ /Acceptable ⁵ Total Harmonic Distortion (%):	Measured ⁴ /Acceptable Level ⁵ (dB):
1000.14 ± 1.0/1000.0 ± 10.0	0.33 ± 0.10/ < 3	93.89 ± 0.12/94.0 ± 0.4
1000.13 ± 1.0/1000.0 ± 10.0	0.35 ± 0.10/ < 3	113.91 ± 0.12/114.0 ± 0.4

- ³ The stated level is valid at measurement conditions.
- 4 The above expanded uncertainties for frequency and distortion are calculated with a coverage factor k=2; for level k=2.00
- 5 Acceptable parameters values are from the current standards

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.2 ± 0.0	101.06 ± 0.000	41.0 ± 0.0

Tests made with following attachments to instrument:

Calibrator ½" Adaptor Type:	
Other:	

Adjustments: Unit was not adjusted.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.

Compliance with any standard cannot be claimed based solely on the periodic tests.

Measured Data: in Acoustical Calibrator Test Report # 46145 of two pages.

Place of Calibration: Scantek, Inc.

6430 Dobbin Road, Suite C Columbia, MD 21045 USA Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

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ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.47188

Instrument:

Acoustical Calibrator

Model:

CAL200

Larson Davis

Manufacturer:

10494

Serial number:

Class (IEC 60942):

Barometer type: Barometer s/n:

Customer: Tel/Fax:

Paul Carpenter Associates, Inc.

973-822-8221 x21 / 973-833-

9221

Date Calibrated: 11/29/2021 Cal Due: 11/29/2022

Received

X

Status:

In tolerance:

Out of tolerance:

See comments:

Contains non-accredited tests: __Yes X No

Florham Park, NJ 07932

Sent

X

Address: 7 Columbia Turnpike, Suite 101,

Tested in accordance with the following procedures and standards: Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	s/N	Cal. Date	Traceability evidence	Cal. Due
instrument - ivialiuracturer	Description	3/14	Cal. Date	Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31052	Nov 8, 2021	Scantek, Inc./ NVLAP	Nov 8, 2022
DS-360-SRS	Function Generator	88077	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022
34401A-Agilent Technologies	Digital Voltmeter	MY47011118	Feb 4, 2021	ACR Env. / A2LA	Feb 4, 2022
PTU300-Vaisala	EnvironmentalMonitor	P5011262	Sept 10, 2021	ACR Env./ A2LA	Sept 10, 2022
140-Norsonic	Real Time Analyzer	1406423	Nov 8, 2021	Scantek / NVLAP	Nov 8, 2022
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	
4134-Brüel&Kjær	Microphone	173368	Nov 8, 2021	Scantek, Inc. / NVLAP	Nov 8, 2022
1203-Norsonic	Preamplifier	14059	March 3, 2021	Scantek, Inc./ NVLAP	March 3, 2022

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by:	Bailey Partoza	Authorized signatory:	/ William Gallagher
Signature	mes	Signature	Willin Ballyl
Date	11/29/21	Date	12/2/2021

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory. This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.

Document stored as: Y:\Calibration Lab\Cal 2021\LDCAL200_10494_M2.doc

CLAUSES¹ FROM STANDARDS REFERENCED IN PROCEDURES:	MET ²	NOT MET	COMMENTS
Manufacturer specifications	CHE DOME	1000 - 11	
Manufacturer specifications: Sound pressure level	×		
Manufacturer specifications: Frequency	X		
Manufacturer specifications: Total harmonic distortion	X	72.5	
Current standards			
ANSI S1.40:2006 B.3 / IEC 60942: 2003 B.2 - Preliminary inspection	X		
ANSI S1.40:2006 B.4.4 / IEC 60942: 2003 B.3.4 - Sound pressure level	X		
ANSI S1.40:2006 A.5.4 / IEC 60942: 2003 A.4.4 - Sound pressure level stability			SERVICE TO THE REAL
ANSI S1.40:2006 B.4.5 / IEC 60942: 2003 B.3.5 - Frequency	X		
ANSI S1.40:2006 B.4.6 / IEC 60942: 2003 B.3.6 - Total harmonic distortion	X		

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- 2 The tests marked with (*) are not covered by the current NVLAP accreditation.

Main measured parameters 3:

Measured ⁴ /Acceptable ⁵ Tone frequency (Hz):	Measured ⁴ /Acceptable ⁵ Total Harmonic Distortion (%):	Measured ⁴ /Acceptable Level ⁵ (dB):
$1000.24 \pm 1.0/1000.0 \pm 10.0$	$0.34 \pm 0.10 / < 3$	113.97 ± 0.12/114.0 ± 0.4
$1000.26 \pm 1.0/1000.0 \pm 10.0$	$0.31 \pm 0.10 / < 3$	93.98 ± 0.12/94.0 ± 0.4

- 3 The stated level is valid at measurement conditions.
- 4 The above expanded uncertainties for frequency and distortion are calculated with a coverage factor k=2; for level k=2.00
- 5 Acceptable parameters values are from the current standards

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.5 ± 1.0	100.17 ± 0.000	43.3 ± 2.0

Tests made with following attachments to instrument:

rests made with following attachments to mistru	nent:
Calibrator ½" Adaptor Type:	
Other:	

Adjustments: Unit was not adjusted.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger. The measurement results are reported as Pass / Fail simple acceptance; measured values are in the tolerance interval.

Measured Data: in Acoustical Calibrator Test Report # 47188 of two pages.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

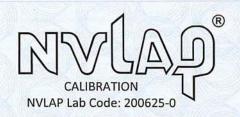
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ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.47187

Instrument:

Model:

Acoustical Calibrator

Larson Davis

CAL200

Manufacturer:

Serial number: 11126

1

Class (IEC 60942):

Barometer type: Barometer s/n:

Customer: Tel/Fax:

Paul Carpenter Associates, Inc.

973-822-8221 x21 / 973-833-

9221

Date Calibrated: 11/29/2021 Cal Due: 11/29/2022

Received

X

Address:

In tolerance:

Out of tolerance: See comments:

Contains non-accredited tests: __Yes X No

Sent

X

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	C/N	Cal. Date	Traceability evidence		
instrument - Manufacturer	Description	S/N	Cai. Date	Cal. Lab / Accreditation	Cal. Due	
483B-Norsonic	SME Cal Unit	31052	Nov 8, 2021	Scantek, Inc./ NVLAP	Nov 8, 2022	
DS-360-SRS	Function Generator	88077	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022	
34401A-Agilent Technologies	Digital Voltmeter	MY47011118	Feb 4, 2021	ACR Env. / A2LA	Feb 4, 2022	
PTU300-Vaisala	EnvironmentalMonitor	P5011262	Sept 10, 2021	ACR Env./ A2LA	Sept 10, 2022	
140-Norsonic	Real Time Analyzer	1406423	Nov 8, 2021	Scantek / NVLAP	Nov 8, 2022	
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.		
4134-Brüel&Kjær	Microphone	173368	Nov 8, 2021	Scantek, Inc. / NVLAP	Nov 8, 2022	
1203-Norsonic	Preamplifier	14059	March 3, 2021	Scantek, Inc./ NVLAP	March 3, 2022	

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by:	Bailey Partoza	Authorized signatory:	/ William Gallagher
Signature	WINT	Signature	Willia D Brilla
Date	11/29/21	Date	12/7/2021

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CLAUSES¹ FROM STANDARDS REFERENCED IN PROCEDURES:	MET ²	NOT MET	COMMENTS
Manufacturer specifications	200		
Manufacturer specifications: Sound pressure level	X		
Manufacturer specifications: Frequency	X	E 20 8 17 1	
Manufacturer specifications: Total harmonic distortion	X	WEST TO STATE	
Current standards			
ANSI S1.40:2006 B.3 / IEC 60942: 2003 B.2 - Preliminary inspection	X		
ANSI S1.40:2006 B.4.4 / IEC 60942: 2003 B.3.4 - Sound pressure level	X		
ANSI S1.40:2006 A.5.4 / IEC 60942: 2003 A.4.4 - Sound pressure level stability	-	1-0	12 NO all No. of Part 19
ANSI \$1.40:2006 B.4.5 / IEC 60942: 2003 B.3.5 - Frequency	X		
ANSI \$1.40:2006 B.4.6 / IEC 60942: 2003 B.3.6 - Total harmonic distortion	X		

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- 2 The tests marked with (*) are not covered by the current NVLAP accreditation.

Main measured parameters 3:

Measured ⁴ /Acceptable ⁵ Tone frequency (Hz):	Measured ⁴ /Acceptable ⁵ Total Harmonic Distortion (%):	Measured ⁴ /Acceptable Level ⁵ (dB):
$1000.18 \pm 1.0/1000.0 \pm 10.0$	0.37 ± 0.10/ < 3	113.96 ± 0.12/114.0 ± 0.4
$1000.19 \pm 1.0/1000.0 \pm 10.0$	0.31 ± 0.10/ < 3	93.97 ± 0.12/94.0 ± 0.4

- 3 The stated level is valid at measurement conditions.
- 4 The above expanded uncertainties for frequency and distortion are calculated with a coverage factor k=2; for level k=2.00
- ⁵ Acceptable parameters values are from the current standards

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.5 ± 1.0	100.17 ± 0.000	43.3 ± 2.0

Tests made with following attachments to instrument:

Calibrator ½" Adaptor Type:	
Other:	

Adjustments: Unit was not adjusted.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger. The measurement results are reported as Pass / Fail simple acceptance; measured values are in the tolerance interval.

Measured Data: in Acoustical Calibrator Test Report # 47187 of one page.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

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3-20-41 Higashimotomachi Kokubunji Tokyo 185-8533 Phone:042(359)7888, Facsimile:042(359)7442

Certificate of Calibration

Name : Sound Level Meter, Class 1

Model : NL-52 S/No. : 00219946

Date of Calibration: March, 08, 2021

We hereby certify that the above product was tested and calibrated according to the prescribed Rion procedures, and that it fulfills specification requirements.

The measuring equipment and reference devices used for testing and calibrating this unit are managed under the Rion traceability system and are traceable according to official Japanese standards and official standards of countries belonging to the International Committee of Weights and Measures.

RION CO., LTD.

Manager, Quality Control Department



ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46655

Instrument:

Sound Level Meter

Model:

NL52

Manufacturer:

Rion

Serial number:

01032443

Tested with:

Microphone UC-59 s/n 05827

Preamplifier NH25 s/n 32471

Type (class):

Customer:

Paul Carpenter Associates, Inc.

Tel/Fax:

973-822-8221 x21 / 973-833-9221

Date Calibrated:7/9/2021

Cal Due: 7/9/2022

Status:

Received X

Sent

X

In tolerance:

Out of tolerance: See comments:

Contains non-accredited tests: __Yes X No

Calibration service: Basic X Standard

Address:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015 SLM & Dosimeters - Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	C/N	Cal. Date	Traceability evidence	ce
mistrument - Manufacturer	Description	S/N	Cal. Date	Cal. Lab / Accreditation	Cal. Due
483B-Norsonic	SME Cal Unit	31052	Oct 31, 2020	Scantek, Inc./ NVLAP	Oct 31, 2021
DS-360-SRS	Function Generator	33584	Oct 23, 2019	ACR Env./ A2LA	Oct 23, 2021
34401A-Agilent Technologies	Digital Voltmeter	MY47011118	Feb 4, 2021	ACR Env. / A2LA	Feb 4, 2022
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2020	ACR Env./ A2LA	Dec 7, 2021
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	
1251-Norsonic	Calibrator	30878	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.2	99.63	42.7

Calibrated by:	/ Lydon Dawkins	Authorized signatory:	/ William Gallagher ,
Signature	Judon Daupius	Signature	Willes Heller
Date	7/9/2021	Date	2/12/2021

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CLAUSES FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB
INDICATION AT THE CALIBRATION CHECK FREQUENCY - IEC61672-3 ED.2 CLAUSE 10	Passed	0.15
SELF-GENERATED NOISE - IEC 61672-3 ED.2 CLAUSE 11	Passed	0.30
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.2.0 CLAUSE 14	Passed	0.20
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.2 CLAUSE 16	Passed	0.25
TONEBURST RESPONSE - IEC 61672-3 ED.2.0 CLAUSE 18	Passed	0.30
PEAK C SOUND LEVEL - IEC 61672-3 ED.2.0 CLAUSE 19	Passed	0.35
OVERLOAD INDICATION - IEC 61672-3 ED.2.0 CLAUSE 20	Passed	0.25
HIGH LEVEL STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 21	Passed	0.1
LONG TERM STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 15	Passed	0.1
COMBINED ELECTRICAL AND ACOUSTICAL TEST - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	See test report

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- ² Parameters are certified at actual environmental conditions.
- 3 The tests marked with (*) are not covered by the current NVLAP accreditation.

Comments: The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organization responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2, to demonstrate that the model of sound level meter fully conforms to the requirements in the IEC 61672-2, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger. Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Rion UC-59 s/n 05827	for acoustical test
Preamplifier: Rion NH25 s/n 32471	for all tests
Other: line adaptor ADP005 (18pF) for	electrical tests
Accompanying acoustical calibrator:	Larson Davis CAL200 s/n 12145
Windscreen: none	Send to make a first the first of the send

Measured Data: in Test Report # 46655 of 7 + 1 pages.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

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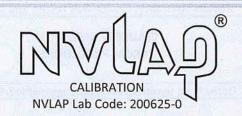
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Page 2 of 2



ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46656

Instrument:

Microphone

Model:

Tel/Fax:

UC-59

Manufacturer:

Rion 05827

Serial number:

Composed of:

Paul Carpenter Associates, Inc.

Customer:

973-822-8221 x21/973-833-9221

Date Calibrated: 7/9/2021 Status:

Cal Due: 7/9/2022

Received X

Out of tolerance:

X

Sent

See comments:

In tolerance:

Contains non-accredited tests: __Yes X No

Address:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Measurement Microphones, Scantek, Inc., Rev. 2/25/2015

Instrumentation used for calibration: N-1504 Norsonic Test System:

Instrument - Manufacturer	Docarintian	C/N	Cal. Date	Traceability evidence	C-I D
instrument - Manufacturer	Description	S/N	Cal. Date	Cal. Lab / Accreditation	Cal. Due
483B-Norsonic	SME Cal Unit	31052	Oct 31, 2020	Scantek, Inc./ NVLAP	Oct 31, 2021
DS-360-SRS	Function Generator	33584	Oct 23, 2019	ACR Env./ A2LA	Oct 23, 2021
34401A-Agilent Technologies	Digital Voltmeter	MY47011118	Feb 4, 2021	ACR Env. / A2LA	Feb 4, 2022
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2020	ACR Env./ A2LA	Dec 7, 2021
PC Program 1017 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	
1253-Norsonic	Calibrator	28326	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021
1203-Norsonic	Preamplifier	14059	March 3, 2021	Scantek, Inc./ NVLAP	March 3, 2022
4180-Brüel&Kjær	Microphone	2246115	Oct 1, 2019	DPLA / DANAK	Oct 1, 2021

Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)

Calibrated by:	/ Lydon Dawkins	Authorized signatory:	/ William Gallagher /
Signature	Lydon Days Réus	Signature	Wellew Tally
Date	7/9/2021	Date	7/12/2021

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CLAUSES / METHODS ¹ FROM PROCEDURES		MET ^{2,3}	NOT MET	NOT TESTED	MEASUREMENT EXPANDED UNCERTAINTY (coverage factor 2)
Open circuit sens	tivity (insert voltage method, 250 Hz)	X			See below
	Actuator response	X		iisi	63 – 200Hz: 0.3 dB 200 – 8000 Hz: 0.2 dB 8 – 10 kHz: 0.5 dB 10 – 20 kHz: 0.7 dB 20 – 50 kHz: 0.9 dB 50 – 100 kHz: 1.2 dB
Frequency response	FF/Diffuse field responses	х		unuil	63 – 200Hz: 0.3 dB 200 – 4000 Hz: 0.2 dB 4 – 10 kHz: 0.6 dB 10 – 20 kHz: 0.9 dB 20 – 50 kHz: 2.2 dB 50 – 100 kHz: 4.4 dB
oil 3(3e)	Scantek, Inc. acoustical method			х	31.5 – 125 Hz: 0.16 dB 250, 1000 Hz: 0.12 dB 2 – 8 kHz: 0.8 dB 12.5 – 16 kHz: 2.4 dB

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

Note: The free field/diffuse field characteristics were calculated based on the measured actuator response and adjustment coefficients as provided by the manufacturer. The uncertainties reported for these characteristics may include assumed uncertainty components for the adjustment coefficients.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.6 ± 1.2	99.61 ± 0.020	43.5 ± 2.4

Main measured parameters:

Tone frequency (Hz)	Measured ⁴ /Acceptable Open circuit sensitivity (dB re 1V/Pa)	Sensitivity (mV/Pa)
250	-26.27 ± 0.12/ -27.0 ±2.0	48.58

⁴ The reported expanded uncertainty is calculated with a coverage factor k=2.00

Tests made with following attachments to instrument and auxiliary devices:

Protection grid mounted for sensitivity measurements

Actuator type: G.R.A.S. RA0014

Measured Data: Found on Microphone Test Report # 46656 of one page.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C

Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

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² Parameters are certified at actual environmental conditions.

³ The tests marked with (*) are not covered by the current NVLAP accreditation.

Scantek, Inc. CALIBRATION LABORATORY

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46137

Instrument:

Sound Level Meter

Status:

Date Calibrated:3/11/2021 Cal Due: 3/11/2022

Model:

NL52

Sent

Manufacturer:

Rion

In tolerance: Out of tolerance: X

Serial number:

01243608

See comments:

Contains non-accredited tests: Yes X No

Received

X

Tested with:

Microphone UC-59 s/n 07650 Preamplifier NH25 s/n 43637

Calibration service: __ Basic X Standard

Type (class):

Address:

Customer:

Paul Carpenter Associates, Inc.

7 Columbia Turnpike, Suite 101, Florham Park, NJ 07932

Tel/Fax:

973-822-8221 x21 / 973-833-9221

Tested in accordance with the following procedures and standards:

Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015 SLM & Dosimeters - Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	C/N	Cal Data	Traceability evidence	
instrument - Manufacturer	Description	S/N	Cal. Date	Cal. Lab / Accreditation	Cal. Due
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	
1251-Norsonic	Calibrator	30878	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
21.6	101.03	45.5

Calibrated by:	Ronnie Buchanan	Authorized signatory:	/William D. Gallagher
Signature	Rossie Buchanan	Signature	Willerk Billy
Date	3/11/2021	Date	3/12/20210

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CLAUSES FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - IEC61672-3 ED.2 CLAUSE 10	Passed	0.15
SELF-GENERATED NOISE - IEC 61672-3 ED.2 CLAUSE 11	Passed	0.30
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.2.0 CLAUSE 14	Passed	0.20
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.2 CLAUSE 16	Passed	0.25
TONEBURST RESPONSE - IEC 61672-3 ED.2.0 CLAUSE 18	Passed	0.30
PEAK C SOUND LEVEL - IEC 61672-3 ED.2.0 CLAUSE 19	Passed	0.35
OVERLOAD INDICATION - IEC 61672-3 ED.2.0 CLAUSE 20	Passed	0.25
HIGH LEVEL STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 21	Passed	0.1
LONG TERM STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 15	Passed	0.1
FILTER TEST 1/10CTAVE: RELATIVE ATTENUATION - IEC 61260, CLAUSE 4.4 & #5.3	Passed	0.25
FILTER TEST 1/3OCTAVE: RELATIVE ATTENUATION - IEC 61260, CLAUSE 4.4 & #5.3	Passed	0.25
COMBINED ELECTRICAL AND ACOUSTICAL TEST - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	See test report

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- 2 Parameters are certified at actual environmental conditions.
- 3 The tests marked with (*) are not covered by the current NVLAP accreditation.

Comments: The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organization responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2, to demonstrate that the model of sound level meter fully conforms to the requirements in the IEC 61672-2, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger. Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

rests made with the following attach	
Microphone: Rion UC-59 s/n 07650	for acoustical test
Preamplifier: Rion NH25 s/n 43637	for all tests
Other: line adaptor ADP005 (18pF) for	electrical tests
Accompanying acoustical calibrator:	Larson Davis CAL200 s/n 11811
Windscreen: none	Constitution to secure to the second section of the sectio

Measured Data: in Test Report # 4

46137 of 9+1 pages.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

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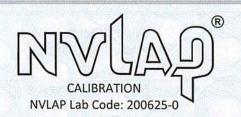
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Page 2 of 2

Scantek, Inc.

CALIBRATION LABORATORY

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46138

Instrument:

Microphone

Model:

UC-59

Manufacturer:

Serial number:

Composed of:

Customer:

Tel/Fax:

Rion

07650

Paul Carpenter Associates, Inc. 973-822-8221 x21/973-833-9221

Date Calibrated: 3/10/2021 Cal Due: 3/10/2022

Status:

Received Sent X

In tolerance:

Out of tolerance: See comments:

Contains non-accredited tests: __Yes X No

Address:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Measurement Microphones, Scantek, Inc., Rev. 2/25/2015

Instrumentation used for calibration: N-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
mstrument - Manufacturer			Cal. Date	Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022
PC Program 1017 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	KIND O
1253-Norsonic	Calibrator	28326	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021
1203-Norsonic	Preamplifier	21270	Jan 15, 2021	Scantek, Inc./ NVLAP	Jan 15, 2022
4180-Brüel&Kjær	Microphone	2246115	Oct 1, 2019	DPLA / DANAK	Oct 24, 2021

Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)

Calibrated by:	_Ronnie Buchanan	Authorized signatory:	William DoGallagher
Signature	Romie Bochanan	Signature	Willen I Hellagh
Date	3/10/2021	Date	3/12/2021

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Document stored as: Y:\Calibration Lab\Mic 2021\Rion59_07650_M1.doc

CLAUSES / METHODS¹ FROM PROCEDURES Open circuit sensitivity (insert voltage method, 250 Hz)		MET ^{2,3}	NOT MET	NOT TESTED	MEASUREMENT EXPANDED UNCERTAINTY (coverage factor 2)
		X			See below
	Actuator response	X	T.M.		63 – 200Hz: 0.3 dB 200 – 8000 Hz: 0.2 dB 8 – 10 kHz: 0.5 dB 10 – 20 kHz: 0.7 dB 20 – 50 kHz: 0.9 dB 50 – 100 kHz: 1.2 dB
Frequency response	FF/Diffuse field responses	х			63 – 200Hz: 0.3 dB 200 – 4000 Hz: 0.2 dB 4 – 10 kHz: 0.6 dB 10 – 20 kHz: 0.9 dB 20 – 50 kHz: 2.2 dB 50 – 100 kHz: 4.4 dB
	Scantek, Inc. acoustical method			x	31.5 – 125 Hz: 0.16 dB 250, 1000 Hz: 0.12 dB 2 – 8 kHz: 0.8 dB 12.5 – 16 kHz: 2.4 dB

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

Note: The free field/diffuse field characteristics were calculated based on the measured actuator response and adjustment coefficients as provided by the manufacturer. The uncertainties reported for these characteristics may include assumed uncertainty components for the adjustment coefficients.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.1 ± 0.0	101.06 ± 0.000	43.1 ± 0.0

Main measured parameters:

Tone frequency (Hz)	Measured ⁴ /Acceptable Open circuit sensitivity (dB re 1V/Pa)	Sensitivity (mV/Pa)
250	-27.16 ± 0.12/ -27.0 ±2.0	43.83

⁴ The reported expanded uncertainty is calculated with a coverage factor k=2.00

Tests made with following attachments to instrument and auxiliary devices:

Protection grid mounted for sensitivity measurements Actuator type: G.R.A.S. RA0014

Measured Data: Found on Microphone Test Report # 46138 of one page.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

callab@scantekinc.com Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

Ph/Fax: 410-290-7726/ -9167

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² Parameters are certified at actual environmental conditions.

³ The tests marked with (*) are not covered by the current NVLAP accreditation.



ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46653

Instrument:

Model:

Tel/Fax:

Sound Level Meter

NL52

Manufacturer: Rion

Serial number: Tested with:

01243610

Microphone UC-59 s/n 06943

Preamplifier NH25 s/n 32470

Type (class): Customer:

Paul Carpenter Associates, Inc.

973-822-8221 x21 / 973-833-9221

Date Calibrated:7/9/2021

Cal Due: 7/9/2022

Status: In tolerance:

Address:

Received Sent X X

Out of tolerance:

See comments:

Contains non-accredited tests: Yes X No

Calibration service: Basic X Standard

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015 SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
			Cal. Date	Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31052	Oct 31, 2020	Scantek, Inc./ NVLAP	Oct 31, 2021
DS-360-SRS	Function Generator	33584	Oct 23, 2019	ACR Env./ A2LA	Oct 23, 2021
34401A-Agilent Technologies	Digital Voltmeter	MY47011118	Feb 4, 2021	ACR Env. / A2LA	Feb 4, 2022
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2020	ACR Env./ A2LA	Dec 7, 2021
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	Manager 197
1251-Norsonic	Calibrator	30878	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.2	99.63	42.7

Calibrated by:	/ Lydon Dawkins	Authorized signatory:	/ William Gallagher
Signature	Kydon Daysles	Signature	(Cillia) Gally
Date	7/9/2021	Date	7/12/2021

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CLAUSES FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - IEC61672-3 ED.2 CLAUSE 10	Passed	0.15
SELF-GENERATED NOISE - IEC 61672-3 ED.2 CLAUSE 11	Passed	0.30
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.2.0 CLAUSE 14	Passed	0.20
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.2 CLAUSE 16	Passed	0.25
TONEBURST RESPONSE - IEC 61672-3 ED.2.0 CLAUSE 18	Passed	0.30
PEAK C SOUND LEVEL - IEC 61672-3 ED.2.0 CLAUSE 19	Passed	0.35
OVERLOAD INDICATION - IEC 61672-3 ED.2.0 CLAUSE 20	Passed	0.25
HIGH LEVEL STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 21	Passed	0.1
LONG TERM STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 15	Passed	0.1
FILTER TEST 1/10CTAVE: RELATIVE ATTENUATION - IEC 61260, CLAUSE 4.4 & #5.3	Passed	0.25
FILTER TEST 1/3OCTAVE: RELATIVE ATTENUATION - IEC 61260, CLAUSE 4.4 & #5.3	Passed	0.25
COMBINED ELECTRICAL AND ACOUSTICAL TEST - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	See test report

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- ² Parameters are certified at actual environmental conditions.
- 3 The tests marked with (*) are not covered by the current NVLAP accreditation.

Comments: The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organization responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2, to demonstrate that the model of sound level meter fully conforms to the requirements in the IEC 61672-2, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger. Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Rion UC-59 s/n 06943 for acoustical test

Preamplifier: Rion NH25 s/n 32470 for all tests

Other: line adaptor ADP005 (18pF) for electrical tests

Accompanying acoustical calibrator: Larson Davis CAL200 s/n 12145

Windscreen: none

Measured Data: in Test Report # 46653 of 9 + 1 pages.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

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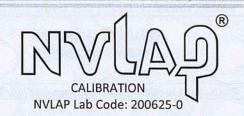
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ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46654

Instrument:

Microphone

Model:

UC-59

Manufacturer:

Rion

Serial number: Composed of:

06943

973-822-8221 x21/973-833-9221

Date Calibrated: 7/9/2021

Cal Due: 7/9/2022

Status:

Sent

Out of tolerance:

In tolerance:

See comments:

Contains non-accredited tests: __Yes X No

Customer: Tel/Fax:

Paul Carpenter Associates, Inc.

Address:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Measurement Microphones, Scantek, Inc., Rev. 2/25/2015

Instrumentation used for calibration: N-1504 Norsonic Test System:

Instrument - Manufacturer	Description	s/N	Cal. Date	Traceability evidence	Cal. Due
			Cai. Date	Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31052	Oct 31, 2020	Scantek, Inc./ NVLAP	Oct 31, 2021
DS-360-SRS	Function Generator	33584	Oct 23, 2019	ACR Env./ A2LA	Oct 23, 2021
34401A-Agilent Technologies	Digital Voltmeter	MY47011118	Feb 4, 2021	ACR Env. / A2LA	Feb 4, 2022
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2020	ACR Env./ A2LA	Dec 7, 2021`
PC Program 1017 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	
1253-Norsonic	Calibrator	28326	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021
1203-Norsonic	Preamplifier	14059	March 3, 2021	Scantek, Inc./ NVLAP	March 3, 2022
4180-Brüel&Kjær	Microphone	2246115	Oct 1, 2019	DPLA / DANAK	Oct 1, 2021

Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)

Calibrated by:	/ Lydon Dawkins	Authorized signatory:	/ William Gallagher /
Signature	Ludon Dankins	Signature	William Hollar
Date	7/9/2021	Date	7/12/2021

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Document stored as: Y:\Calibration Lab\Mic 2021\Rion59 06943 M2.doc

CLAUSES / METHODS¹ FROM PROCEDURES Open circuit sensitivity (insert voltage method, 250 Hz)		MET ^{2,3}	NOT MET	NOT TESTED	MEASUREMENT EXPANDED UNCERTAINTY (coverage factor 2)
		X			See below
	Actuator response	X	Lok	iisı	63 – 200Hz: 0.3 dB 200 – 8000 Hz: 0.2 dB 8 – 10 kHz: 0.5 dB 10 – 20 kHz: 0.7 dB 20 – 50 kHz: 0.9 dB 50 – 100 kHz: 1.2 dB
Frequency response	FF/Diffuse field responses	х		inio) (63 – 200Hz: 0.3 dB 200 – 4000 Hz: 0.2 dB 4 – 10 kHz: 0.6 dB 10 – 20 kHz: 0.9 dB 20 – 50 kHz: 2.2 dB 50 – 100 kHz: 4.4 dB
10 3.10	Scantek, Inc. acoustical method			x	31.5 – 125 Hz: 0.16 dB 250, 1000 Hz: 0.12 dB 2 – 8 kHz: 0.8 dB 12.5 – 16 kHz: 2.4 dB

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

Note: The free field/diffuse field characteristics were calculated based on the measured actuator response and adjustment coefficients as provided by the manufacturer. The uncertainties reported for these characteristics may include assumed uncertainty components for the adjustment coefficients.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.7 ± 1.0	99.61 ± 0.020	43.3 ± 2.0

Main measured parameters:

Tone frequency (Hz)	Measured ⁴ /Acceptable Open circuit sensitivity (dB re 1V/Pa)	Sensitivity (mV/Pa)
250	-25.39 ± 0.12/ -27.0 ±2.0	53.77

⁴ The reported expanded uncertainty is calculated with a coverage factor k=2.00

Tests made with following attachments to instrument and auxiliary devices:

Protection grid mounted for sensitivity measurements
Actuator type: G.R.A.S. RA0014

Measured Data: Found on Microphone Test Report # 46654 of one page.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

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Ph/Fax: 410-290-7726/ -9167

callab@scantekinc.com

² Parameters are certified at actual environmental conditions.

³ The tests marked with (*) are not covered by the current NVLAP accreditation.

Scantek, Inc. CALIBRATION LABORATORY

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46141

Instrument:

Model:

Sound Level Meter

NL52

Manufacturer:

Rion

Serial number:

01243611

Tested with:

Microphone UC-59 s/n 07653

Preamplifier NH25 s/n 43640

Type (class):

Customer: Tel/Fax:

Paul Carpenter Associates, Inc.

973-822-8221 x21 / 973-833-9221

Date Calibrated:3/11/2021 Cal Due: 3/11/2022

Status:

Received X

Sent

X

In tolerance: Out of tolerance:

See comments:

Contains non-accredited tests: Yes X No

Calibration service: ___ Basic X Standard

Address:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015 SLM & Dosimeters - Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	s/N	Cal. Date	Traceability evidence	Cal. Due
			Cal. Date	Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	
1251-Norsonic	Calibrator	30878	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
21.6	101.03	45.5

Calibrated by:	Ronnie Buchanan	Authorized signatory:	/ William D. Gallagher
Signature	Konnio Bichanan	Signature	Willey Ballyh
Date	3/11/2021	Date	3/12/2021

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Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - IEC61672-3 ED.2 CLAUSE 10	Passed	0.15
SELF-GENERATED NOISE - IEC 61672-3 ED.2 CLAUSE 11	Passed	0.30
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.2.0 CLAUSE 14	Passed	0.20
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.2 CLAUSE 16	Passed	0.25
TONEBURST RESPONSE - IEC 61672-3 ED.2.0 CLAUSE 18	Passed	0.30
PEAK C SOUND LEVEL - IEC 61672-3 ED.2.0 CLAUSE 19	Passed	0.35
OVERLOAD INDICATION - IEC 61672-3 ED.2.0 CLAUSE 20	Passed	0.25
HIGH LEVEL STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 21	Passed	0.1
LONG TERM STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 15	Passed	0.1
FILTER TEST 1/10CTAVE: RELATIVE ATTENUATION - IEC 61260, CLAUSE 4.4 & #5.3	Passed	0.25
FILTER TEST 1/3OCTAVE: RELATIVE ATTENUATION - IEC 61260, CLAUSE 4.4 & #5.3	Passed	0.25
COMBINED ELECTRICAL AND ACOUSTICAL TEST - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	See test report

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- 2 Parameters are certified at actual environmental conditions.
- 3 The tests marked with (*) are not covered by the current NVLAP accreditation.

Comments: The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organization responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2, to demonstrate that the model of sound level meter fully conforms to the requirements in the IEC 61672-2, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger. Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Rion UC-59 s/n 07653	for acoustical test
Preamplifier: Rion NH25 s/n 43640	for all tests
Other: line adaptor ADP005 (18pF) for	electrical tests
Accompanying acoustical calibrator:	Larson Davis CAL200 s/n 11811
Windscreen: none	A TATO SHE SHALL BE THE SUPERIOR

Measured Data: in Test Report # 46141 of 9+1 pages.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

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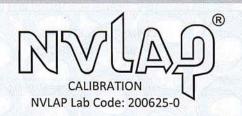
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Scantek, Inc.

CALIBRATION LABORATORY

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46142

Instrument:

Microphone

Status:

Date Calibrated: 3/11/2021 Cal Due: 3/11/2022

Model:

UC-59

Received Sent

Manufacturer:

Rion

In tolerance:

Serial number:

07653

Out of tolerance: See comments:

Composed of:

Contains non-accredited tests: __Yes X No

Customer: Tel/Fax:

Paul Carpenter Associates, Inc. 973-822-8221 x21/973-833-9221 Address:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Measurement Microphones, Scantek, Inc., Rev. 2/25/2015

Instrumentation used for calibration: N-1504 Norsonic Test System:

Instrument - Manufacturer	Description	C/N	Cal. Date	Traceability evidence	6-1-0
instrument - Manufacturer	Description	S/N	Cal. Date	Cal. Lab / Accreditation	Cal. Due
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022
PC Program 1017 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	
1253-Norsonic	Calibrator	28326	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021
1203-Norsonic	Preamplifier	21270	Jan 15, 2021	Scantek, Inc./ NVLAP	Jan 15, 2022
4180-Brüel&Kjær	Microphone	2246115	Oct 1, 2019	DPLA / DANAK	Oct 24, 2021

Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)

Calibrated by:	Ronnie Buchanan	Authorized signatory:	/ William D. Gallagher
Signature	Ronnie Buchanan	Signature	Wellenk Ballah
Date	3/11/2021	Date	3/12/2021

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Document stored as: Y:\Calibration Lab\Mic 2021\Rion59_07653_M1.doc

Results summary: Device was tested and complies with following clauses of mentioned specifications:

CLAUSES / METHODS ¹ FROM PROCEDURES		MET ^{2,3}	NOT MET	NOT TESTED	MEASUREMENT EXPANDED UNCERTAINTY (coverage factor 2)
Open circuit sen	sitivity (insert voltage method, 250 Hz)	X			See below
	Actuator response	х			63 – 200Hz: 0.3 dB 200 – 8000 Hz: 0.2 dB 8 – 10 kHz: 0.5 dB 10 – 20 kHz: 0.7 dB 20 – 50 kHz: 0.9 dB 50 – 100 kHz: 1.2 dB
Frequency response	FF/Diffuse field responses	х			63 – 200Hz: 0.3 dB 200 – 4000 Hz: 0.2 dB 4 – 10 kHz: 0.6 dB 10 – 20 kHz: 0.9 dB 20 – 50 kHz: 2.2 dB 50 – 100 kHz: 4.4 dB
10.0	Scantek, Inc. acoustical method			х	31.5 – 125 Hz: 0.16 dB 250, 1000 Hz: 0.12 dB 2 – 8 kHz: 0.8 dB 12.5 – 16 kHz: 2.4 dB

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

Note: The free field/diffuse field characteristics were calculated based on the measured actuator response and adjustment coefficients as provided by the manufacturer. The uncertainties reported for these characteristics may include assumed uncertainty components for the adjustment coefficients.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
21.6 ± 0.0	101.03 ± 0.000	45.5 ± 0.0

Main measured parameters:

Tone frequency (Hz)	Measured ⁴ /Acceptable Open circuit sensitivity (dB re 1V/Pa)	Sensitivity (mV/Pa)
250	-28.00 ± 0.12/ -27.0 ±2.0	39.83

⁴ The reported expanded uncertainty is calculated with a coverage factor k=2.00

Tests made with following attachments to instrument and auxiliary devices:

Protection grid mounted for sensitivity measurements Actuator type: G.R.A.S. RA0014

Measured Data: Found on Microphone Test Report # 46142 of one page.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C

Ph/Fax: 410-290-7726/ -9167 Columbia, MD 21045 USA callab@scantekinc.com

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Document stored as: Y:\Calibration Lab\Mic 2021\Rion59_07653_M1.doc

² Parameters are certified at actual environmental conditions.

³ The tests marked with (*) are not covered by the current NVLAP accreditation.

Scantek, Inc. CALIBRATION LABORATORY

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46143

Instrument:

Sound Level Meter

Model:

NL52

Manufacturer:

Rion

Serial number: Tested with:

01254347

Microphone UC-59 s/n 08808

Preamplifier NH25 s/n 54429

Type (class):

Customer:

Paul Carpenter Associates, Inc.

Tel/Fax:

973-822-8221 x21 / 973-833-9221

Date Calibrated:3/11/2021 Cal Due: 3/11/2022

Status:

In tolerance:

Received Sent X X

Out of tolerance:

See comments:

Contains non-accredited tests: Yes X No

Calibration service: ___ Basic X Standard

Address:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015 SLM & Dosimeters - Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	C/N	Cal Date Traceability evidence		
mistrument - Manufacturer	ument - Manufacturer Description S/N Cal. Date Ca		Cal. Lab / Accreditation	Cal. Due	
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	
1251-Norsonic	Calibrator	30878	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
21.7	100.62	46.2

Calibrated by:	Ronnie Buchanan	Authorized signatory:	/ William D. Gallagher
Signature	Romie Buchanan	Signature	Willer Gellah
Date	3/11/2021	Date	3/12/2021

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Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES 1 FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - IEC61672-3 ED.2 CLAUSE 10	Passed	0.15
SELF-GENERATED NOISE - IEC 61672-3 ED.2 CLAUSE 11	Passed	0.30
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.2.0 CLAUSE 14	Passed	0.20
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.2 CLAUSE 16	Passed	0.25
TONEBURST RESPONSE - IEC 61672-3 ED.2.0 CLAUSE 18	Passed	0.30
PEAK C SOUND LEVEL - IEC 61672-3 ED.2.0 CLAUSE 19	Passed	0.35
OVERLOAD INDICATION - IEC 61672-3 ED.2.0 CLAUSE 20	Passed	0.25
HIGH LEVEL STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 21	Passed	0.1
LONG TERM STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 15	Passed	
FILTER TEST 1/10CTAVE: RELATIVE ATTENUATION - IEC 61260, CLAUSE 4.4 & #5.3	Passed	0.1
FILTER TEST 1/3OCTAVE: RELATIVE ATTENUATION - IEC 61260, CLAUSE 4.4 & #5.3	Passed	0.25
COMBINED ELECTRICAL AND ACOUSTICAL TEST - IEC 61672-3 ED.2.0 CLAUSE 13		0.25
1 The seal to City 199	Passed	See test report

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

Comments: The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organization responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2, to demonstrate that the model of sound level meter fully conforms to the requirements in the IEC 61672-2, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger. Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

for acoustical test	
electrical tests	
The second secon	SALES AND ADDRESS OF THE PARTY
	for acoustical test or all tests electrical tests Larson Davis CAL200 s/n 11811

Measured Data: in Test Report #

46143 of 9+1 pages.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

Page 2 of 2

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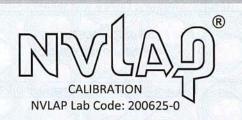
² Parameters are certified at actual environmental conditions.

³ The tests marked with (*) are not covered by the current NVLAP accreditation.

Scantek, Inc.

CALIBRATION LABORATORY

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46144

Instrument:

Microphone

Model: UC-59

Rion

Manufacturer: Serial number: Composed of:

08808

Contains non-accredited tests: __Yes X No

Status:

In tolerance:

Out of tolerance:

See comments:

Address:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Date Calibrated: 3/11/2021 Cal Due: 3/11/2022

Received

Sent

X

Customer: Tel/Fax:

Paul Carpenter Associates, Inc. 973-822-8221 x21/973-833-9221

Tested in accordance with the following procedures and standards:

Calibration of Measurement Microphones, Scantek, Inc., Rev. 2/25/2015

Instrumentation used for calibration: N-1504 Norsonic Test System:

Instrument - Manufacturer	Description	C/N	Cal. Date	Traceability evidence	Call Dura	
instrument - Manufacturer	Description	S/N	Cal. Date	Cal. Lab / Accreditation	Cal. Due	
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021	
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022	
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021	
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022	
PC Program 1017 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.		
1253-Norsonic	Calibrator	28326	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021	
1203-Norsonic	Preamplifier	21270	Jan 15, 2021	Scantek, Inc./ NVLAP	Jan 15, 2022	
4180-Brüel&Kjær	Microphone	2246115	Oct 1, 2019	DPLA / DANAK	Oct 24, 2021	

Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)

Calibrated by:	Ronnie Buchanan	Authorized signatory:	William D. Gallagher
Signature	Ronnie Bichanan	Signature	Celler Seller
Date	3/11/2021	Date	3/12/2021

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Document stored as: Y:\Calibration Lab\Mic 2021\Rion59_08808_M1.doc

Results summary: Device was tested and complies with following clauses of mentioned specifications:

CLAUSES / METHODS ¹ FROM PROCEDURES		MET ^{2,3}	NOT MET	NOT TESTED	MEASUREMENT EXPANDED UNCERTAINTY (coverage factor 2)
Open circuit sensit	ivity (insert voltage method, 250 Hz)	X			See below
		THE PARTY OF			63 – 200Hz: 0.3 dB 200 – 8000 Hz: 0.2 dB
	Actuator response	x			8 – 10 kHz: 0.5 dB 10 – 20 kHz: 0.7 dB
				100	20 – 50 kHz: 0.9 dB 50 – 100 kHz: 1.2 dB
Frequency response	FF/Diffuse field responses	х		TO THE	63 – 200Hz: 0.3 dB 200 – 4000 Hz: 0.2 dB 4 – 10 kHz: 0.6 dB 10 – 20 kHz: 0.9 dB 20 – 50 kHz: 2.2 dB 50 – 100 kHz: 4.4 dB
- 1.5e	Scantek, Inc. acoustical method			х	31.5 – 125 Hz: 0.16 dB 250, 1000 Hz: 0.12 dB 2 – 8 kHz: 0.8 dB 12.5 – 16 kHz: 2.4 dB

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

Note: The free field/diffuse field characteristics were calculated based on the measured actuator response and adjustment coefficients as provided by the manufacturer. The uncertainties reported for these characteristics may include assumed uncertainty components for the adjustment coefficients.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
21.6 ± 0.0	101.03 ± 0.000	45.5 ± 0.0

Main measured parameters:

Tone frequency (Hz)	Measured ⁴ /Acceptable Open circuit sensitivity (dB re 1V/Pa)	Sensitivity (mV/Pa)
250	-26.58 ± 0.12/ -27.0 ±2.0	46.88

⁴ The reported expanded uncertainty is calculated with a coverage factor k=2.00

Tests made with following attachments to instrument and auxiliary devices:

Protection grid mounted for sensitivity measurements Actuator type: G.R.A.S. RA0014

Measured Data: Found on Microphone Test Report # 46144 of one page.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C

Ph/Fax: 410-290-7726/ -9167 Columbia, MD 21045 USA callab@scantekinc.com

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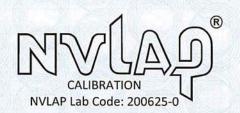
Document stored as: Y:\Calibration Lab\Mic 2021\Rion59_08808_M1.doc

² Parameters are certified at actual environmental conditions.

³ The tests marked with (*) are not covered by the current NVLAP accreditation.

Scantek, Inc. CALIBRATION LABORATORY

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46139

Instrument:

Sound Level Meter

Model:

NL52

Manufacturer:

Rion

Serial number:

01254349

Tested with:

Microphone UC-59 s/n 08810

Preamplifier NH25 s/n 54431

Type (class):

Customer:

Paul Carpenter Associates, Inc.

Tel/Fax:

973-822-8221 x21 / 973-833-9221

Date Calibrated:3/11/2021 Cal Due: 3/11/2022

Status:

Received Sent X

In tolerance: Out of tolerance:

See comments:

Contains non-accredited tests: Yes X No

Calibration service: Basic X Standard

Address:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015 SLM & Dosimeters - Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal Data	Traceability evidence	
Instrument - Manufacturer	Description		Cal. Date	Cal. Lab / Accreditation	Cal. Due
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	
1251-Norsonic	Calibrator	30878	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
21.6	101.03	45.5

Calibrated by:	Ronnie Buchanan	Authorized signatory:	/ William D. Gallagher
Signature	Konnie Buchan	Signature	arber Mallah
Date	3/11/2021	Date	3/12/2021

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Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT ^{2,3}	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - IEC61672-3 ED.2 CLAUSE 10	Passed	0.15
SELF-GENERATED NOISE - IEC 61672-3 ED.2 CLAUSE 11	Passed	0.30
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.2.0 CLAUSE 14	Passed	0.20
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.2 CLAUSE 16	Passed	0.25
TONEBURST RESPONSE - IEC 61672-3 ED.2.0 CLAUSE 18	Passed	0.30
PEAK C SOUND LEVEL - IEC 61672-3 ED.2.0 CLAUSE 19	Passed	0.35
OVERLOAD INDICATION - IEC 61672-3 ED.2.0 CLAUSE 20	Passed	0.25
HIGH LEVEL STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 21	Passed	0.1
LONG TERM STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 15	Passed	0.1
FILTER TEST 1/10CTAVE: RELATIVE ATTENUATION - IEC 61260, CLAUSE 4.4 & #5.3	Passed	0.25
FILTER TEST 1/3OCTAVE: RELATIVE ATTENUATION - IEC 61260, CLAUSE 4.4 & #5.3	Passed	0.25
COMBINED ELECTRICAL AND ACOUSTICAL TEST - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	See test report

- 1 The results of this calibration apply only to the instrument type with serial number identified in this report.
- 2 Parameters are certified at actual environmental conditions.
- 3 The tests marked with (*) are not covered by the current NVLAP accreditation.

Comments: The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organization responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2, to demonstrate that the model of sound level meter fully conforms to the requirements in the IEC 61672-2, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger. Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Rion UC-59 s/n 08810	for acoustical test	
Preamplifier: Rion NH25 s/n 54431	for all tests	The Armen of the Control of the Cont
Other: line adaptor ADP005 (18pF) for	electrical tests	- SALES WORKS AND
Accompanying acoustical calibrator:	Larson Davis CAL200 s/n 11811	THE PARTY OF THE P
Windscreen: none		No. 1 and a service of the latest states

Measured Data: in Test Report # 46139 of 9+1 pages.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

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Scantek, Inc.

CALIBRATION LABORATORY

ISO 17025: 2017, ANSI/NCSL Z540:1994 Part 1 ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.46140

Instrument:

Microphone

Model:

UC-59

Manufacturer:

Rion

Serial number: Composed of:

08810

Paul Carpenter Associates, Inc.

Date Calibrated: 3/11/2021 Cal Due: 3/11/2022 In tolerance:

Status:

Received Sent X

Out of tolerance:

See comments:

Contains non-accredited tests: Yes X No

Customer: Tel/Fax:

973-822-8221 x21/973-833-9221

Address:

7 Columbia Turnpike, Suite 101,

Florham Park, NJ 07932

Tested in accordance with the following procedures and standards:

Calibration of Measurement Microphones, Scantek, Inc., Rev. 2/25/2015

Instrumentation used for calibration: N-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence		
mstrument - Manufacturer	Description	3/14	Cal. Date	Cal. Lab / Accreditation	Cal. Due	
483B-Norsonic	SME Cal Unit	31061	Jul 31, 2020	Scantek, Inc./ NVLAP	Jul 31, 2021	
DS-360-SRS	Function Generator	61646	Dec 3, 2020	ACR Env./ A2LA	Dec 3, 2022	
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Dec 04, 2020	ACR Env./ A2LA	Dec 04, 2021	
HM30-Thommen	Meteo Station	1040170/39633	Dec 7, 2021	ACR Env./ A2LA	Dec 7, 2022	
PC Program 1017 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.		
1253-Norsonic	Calibrator	28326	Oct 26, 2020	Scantek, Inc./ NVLAP	Oct 26, 2021	
1203-Norsonic	Preamplifier	21270	Jan 15, 2021	Scantek, Inc./ NVLAP	Jan 15, 2022	
4180-Brüel&Kjær	Microphone	2246115	Oct 1, 2019	DPLA / DANAK	Oct 24, 2021	

Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)

Calibrated by:	Ronnie Buchanan	Authorized signatory:	/ William D./Gallagher
Signature	Romie Buchanan	Signature	while Balla
Date	3/4/2021	Date	3/12/2021

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Document stored as: Y:\Calibration Lab\Mic 2021\Rion59 08810 M1.doc

Results summary: Device was tested and complies with following clauses of mentioned specifications:

CLAUSES / METHODS¹ FROM PROCEDURES Open circuit sensitivity (insert voltage method, 250 Hz)		MET ^{2,3}	NOT MET	NOT TESTED	MEASUREMENT EXPANDED UNCERTAINTY (coverage factor 2)
		X	Y A-B		See below
	Actuator response	X			63 – 200Hz: 0.3 dB 200 – 8000 Hz: 0.2 dB 8 – 10 kHz: 0.5 dB 10 – 20 kHz: 0.7 dB 20 – 50 kHz: 0.9 dB 50 – 100 kHz: 1.2 dB
Frequency response	FF/Diffuse field responses	x	63 – 200Hz: 0.3 dB 200 – 4000 Hz: 0.2 dB 4 – 10 kHz: 0.6 dB 10 – 20 kHz: 0.9 dB 20 – 50 kHz: 2.2 dB 50 – 100 kHz: 4.4 dB		
AT N.	Scantek, Inc. acoustical method			x	31.5 – 125 Hz: 0.16 dB 250, 1000 Hz: 0.12 dB 2 – 8 kHz: 0.8 dB 12.5 – 16 kHz: 2.4 dB

¹ The results of this calibration apply only to the instrument type with serial number identified in this report.

Note: The free field/diffuse field characteristics were calculated based on the measured actuator response and adjustment coefficients as provided by the manufacturer. The uncertainties reported for these characteristics may include assumed uncertainty components for the adjustment coefficients.

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)	
21.6 ± 0.0	101.03 ± 0.000	45.5 ± 0.0	

Main measured parameters:

Tone frequency (Hz)	Measured ⁴ /Acceptable Open circuit sensitivity (dB re 1V/Pa)	Sensitivity (mV/Pa)	
250	-26.46 ± 0.12/ -27.0 ±2.0	47.54	

⁴ The reported expanded uncertainty is calculated with a coverage factor k=2.00

Tests made with following attachments to instrument and auxiliary devices:

Protection grid mounted for sensitivity measurements

Actuator type: G.R.A.S. RA0014

Measured Data: Found on Microphone Test Report # 46140 of one page.

Place of Calibration: Scantek, Inc. 6430 Dobbin Road, Suite C

Columbia, MD 21045 USA

Ph/Fax: 410-290-7726/ -9167 callab@scantekinc.com

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Page 2 of 2

² Parameters are certified at actual environmental conditions.

³ The tests marked with (*) are not covered by the current NVLAP accreditation.



Certified Meteorological Data from Newark Liberty International Airport (EWR)

NJTA Newark Bay - OPS T3820 NB-HCE Hudson County Extension Improvements - Project Area 1 Peak Hour Noise Monitoring

Newark Airport Meteorological Observations (10/19/2021)

• • • • • • • • • • • • • • • • • • • •			
Date/Time	Hourly Precipitation	Hourly Relative Humidity	Hourly Wind Speed
2021-10-19T05:51:00	0	68	13
2021-10-19T06:51:00	0	69	13
2021-10-19T07:00:00	0	69	13
2021-10-19T07:51:00	0	61	13
2021-10-19T08:51:00	0	57	11
2021-10-19T09:51:00	0	51	9

Date/Time	Hourly Precipitation	Hourly Relative Humidity	Hourly Wind Speed
2021-10-19T13:51:00	0	30	18
2021-10-19T14:51:00	0	27	16
2021-10-19T15:51:00	0	28	17
2021-10-19T16:51:00	0	33	14
2021-10-19T17:51:00	0	39	10
2021-10-19T18:51:00	0	41	9

Newark Airport Meteorological Observations (11/17/2021)

Date/Time	Hourly Precipitation	Hourly Relative Humidity	Hourly Wind Speed
2021-11-17T05:51:00	0	73	3
2021-11-17T06:51:00	0	68	0
2021-11-17T07:00:00	0	68	0
2021-11-17T07:51:00	0	73	5
2021-11-17T08:51:00	0	63	0
2021-11-17T09:51:00	0	56	0

Date/Time	Hourly Precipitation	Hourly Relative Humidity	Hourly Wind Speed
2021-11-17T13:51:00	0	53	10
2021-11-17T14:51:00	0	60	9
2021-11-17T15:51:00	0	60	10
2021-11-17T16:51:00	0	65	7
2021-11-17T17:51:00	0	69	7
2021-11-17T18:51:00	0	74	0

NJTA Newark Bay - OPS T3820 NB-HCE Hudson County Extension Improvements - Project Area 1 Peak Hour Noise Monitoring (cont.)

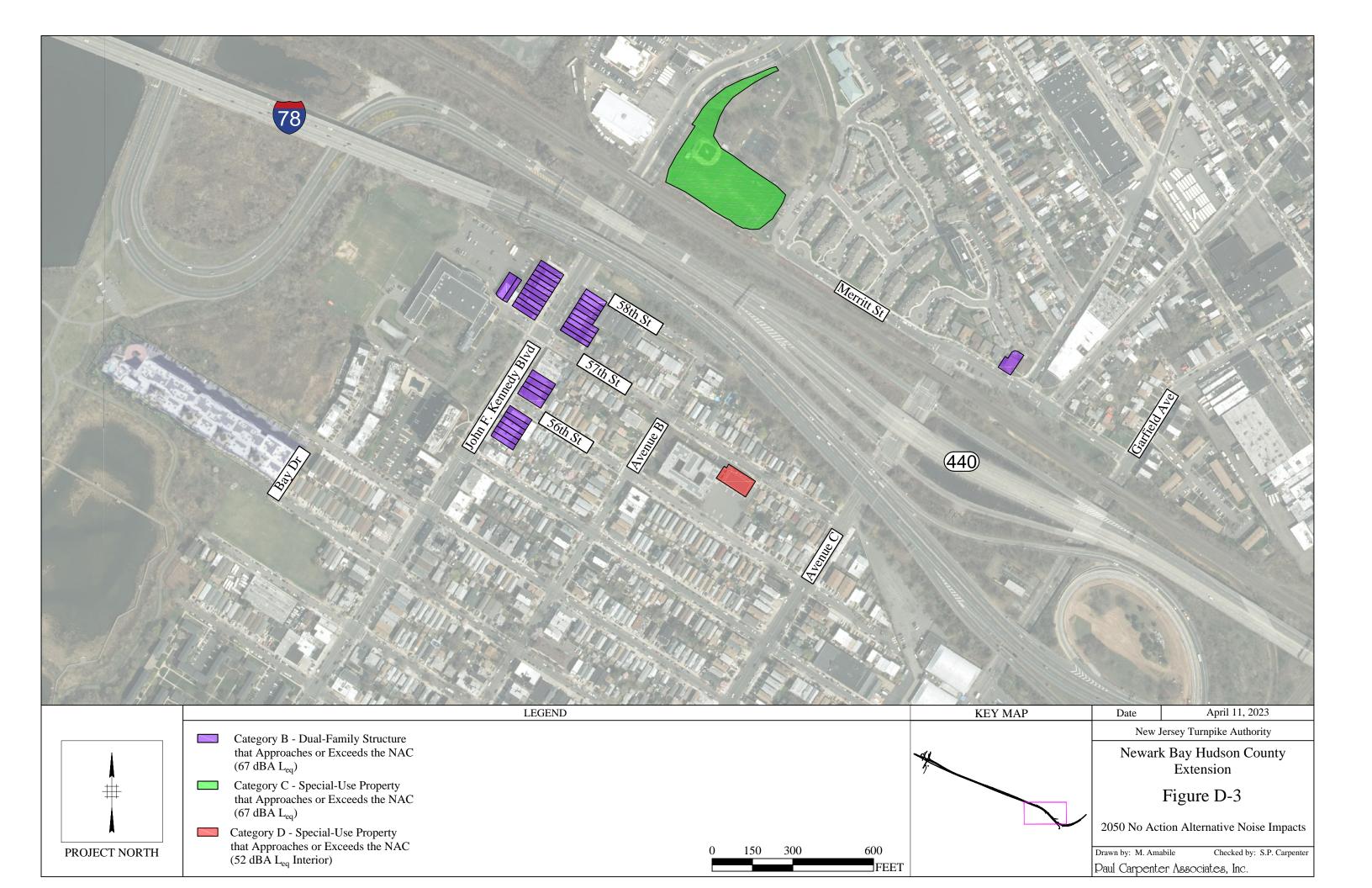
Newark Airport Meteorological Observations (03/16/2022)

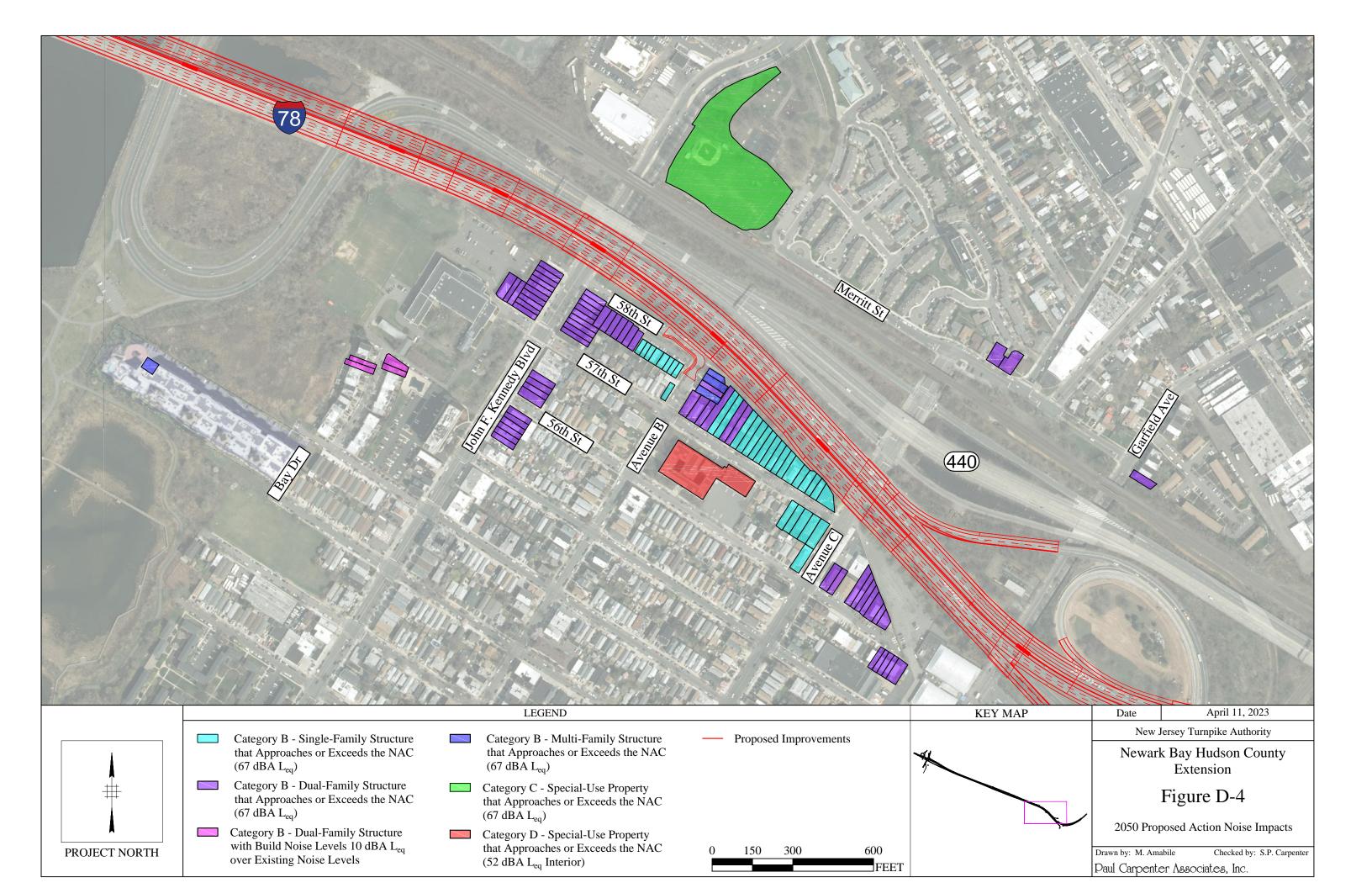
Date/Time	Hourly Precipitation	Hourly Relative Humidity	Hourly Wind Speed
2022-03-16T05:51:00	0	66	3
2022-03-16T06:51:00	0	61	5
2022-03-16T07:00:00	0	61	5
2022-03-16T07:51:00	0	53	5
2022-03-16T08:51:00	0	46	5
2022-03-16T09:51:00	0	44	6

Date/Time	Hourly Precipitation	Hourly Relative Humidity	Hourly Wind Speed
2022-03-16T13:51:00	0	46	13
2022-03-16T14:51:00	0	47	13
2022-03-16T15:51:00	0	55	11
2022-03-16T16:51:00	0	55	11
2022-03-16T17:51:00	0	64	9
2022-03-16T18:51:00	0	64	6

Appendix D-5

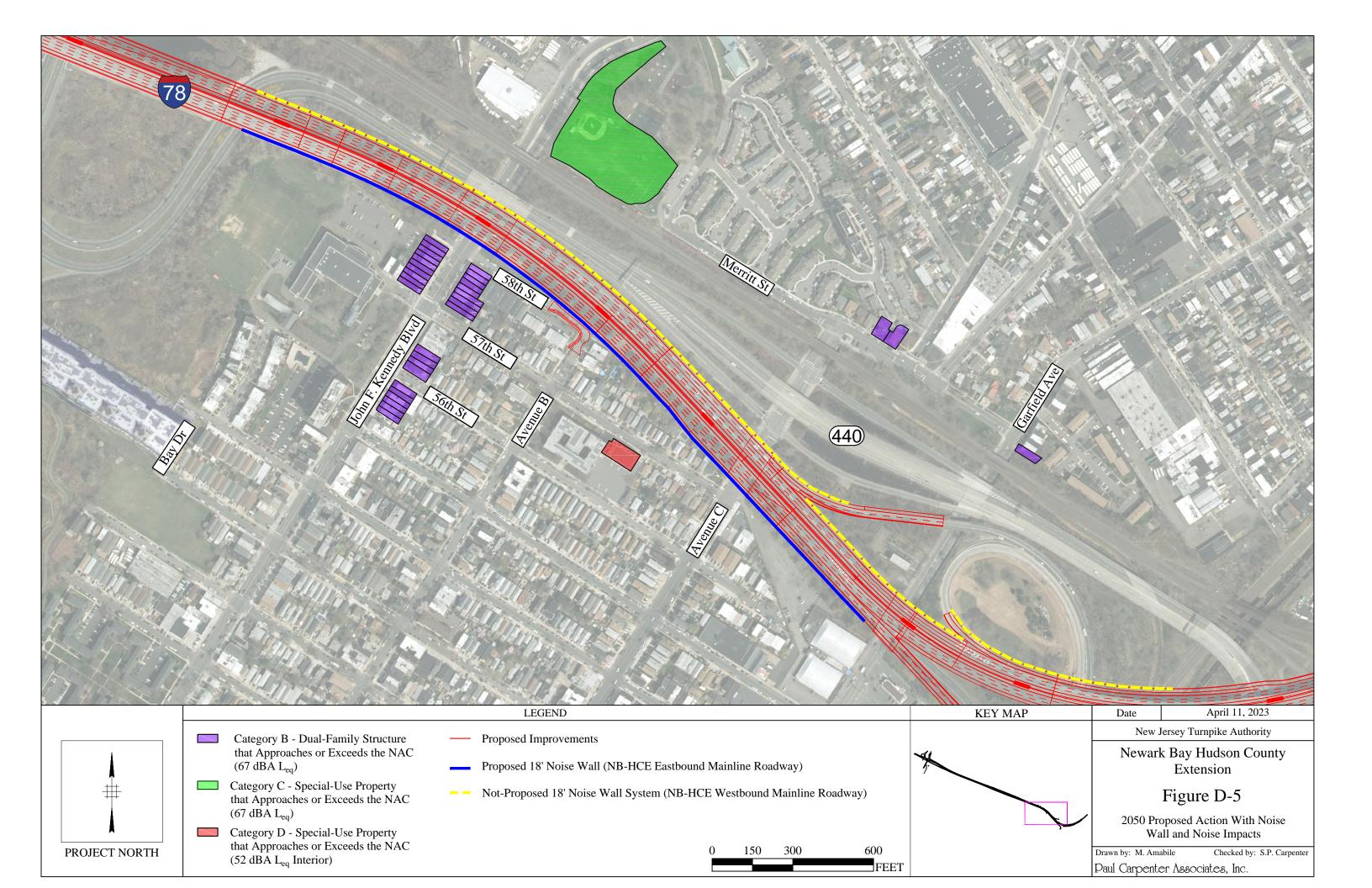
2050 No-Build & Build Noise Impact Figures





Appendix D-6

2050 Build With Noise Wall & Noise Impact Figure



Appendix D-7

NB-HCE Eastbound Noise Barrier Analysis Worksheet

Barrier Analysis: HCE South NW_18ft Extension

Barrier Analysis	
Primary Benefits	116
Supplemental Benefits	46
Total Benefits	139
Total Barrier Area (sf)	53,852
Cost per SF	\$70
Additional Costs	\$0
Total Cost	\$3,769,640
Total Budget	\$6,990,000
Cost Per Benefit	\$27,120
Cost Effective	YES
50% 1st Row Impacts Achieve 5 dBA?	YES (97%)
50% 1st Row Achieve 7 dBA NRDG?	YES (73%)
One Receptor Achieves 10 dBA NRDG?	YES

Barrier Insertion Loss	
Minimum Insertion Loss	0.5
Maximum Insertion Loss	16.3

#	of Barriers: 1				
	Barrier Information				
Barrier #	Barrier Name	Length (ft)	Height (ft)	Area (sf)	
1	Build Noise Wall - HCE South	2,990	18	53,852	

(Please note that all noise level values/calculations are rounded off. Therefore, there may be slight mathematical discrepancies.)

	Totals																
		T.	eceiver Inform	ation	1	1			85	186	79	116	46	77	62	\$ 6,990	0,000
Receiver ID	Receiver Address	NAC Activity Category	Existing Noise Level (dBA Leq)	Build No Noise Wall (dBA Leq)		Build With Noise Wall (dBA Leq)	Insertion Loss	Number of Dwelling Units	1st Row Receptors	Impacts	1st Row Impacts	Primary Benefits	Suppl. Benefits	No. 1st Row Impact Benefits	No. 1st Row Achieve NRDG	Budge	et
1	35 Sunset Ave	В	53	59	6	54	6	2					2			\$ 50	0,000
2	35 Sunset Ave	В	62	63	1	62	2	2					2			ć 50	2.000
3 4	33 Sunset Ave 33 Sunset Ave	B B	49 62	58 63	9	53 62	5 1	2					2			\$ 50	0,000
5	31 Sunset Ave	В	52	58	6	55	3	2									
<u>6</u> 7	31 Sunset Ave 29 Sunset Ave	B B	62 47	63 57	10	62 51	6	2		2		2				ć 100	2.000
8	29 Sunset Ave	В	62	62	10	61	1	2		2		2				\$ 100	0,000
9	27 Sunset Ave	В	47	56	10	51	6	2		2		2				\$ 100	0,000
10 11	27 Sunset Ave 25 Sunset Ave	B B	62 47	62 56	9	61 50	6	2					2			\$ 50	0,000
12	25 Sunset Ave	В	61	62	1	61	1										
13	23 Sunset Ave	В	47	55	9	50	6	2					2			\$ 50	0,000
14 15	23 Sunset Ave 21 Sunset Ave	B B	61 50	62 56	6	61 52	4	2									
16	21 Sunset Ave	В	61	62	1	61	1										
17 18	19 Sunset Ave 19 Sunset Ave	B B	47 61	55 62	8	49 61	6 1	2					2			\$ 50	0,000
19	17 Sunset Ave	В	46	54	8	48	6	2					2			\$ 50,	0,000
20	17 Sunset Ave	В	61	62	1	61	1										
37 38	36 Sunset Ave 36 Sunset Ave	B B	58 50	62 61	3 12	60 57	2	2		2							
39	34 Sunset Ave	В	57	60	3	58	2	2		2		2				\$ 100	0,000
40	34 Sunset Ave	В	48	59	11	53	6									4 50	
41 42	32 Sunset Ave 32 Sunset Ave	B B	55 48	59 57	4 9	56 52	2 6	2					2			\$ 50	0,000
43	30 Sunset Ave	В	54	58	4	55	3	2					2			\$ 50	0,000
44 45	30 Sunset Ave 28 Sunset Ave	B B	48 54	56 58	8	51 54	5	2					2			\$ 50	0,000
46	28 Sunset Ave	В	48	55	7	50	5	_					_			ŷ 50.	,000
47 48	26 Sunset Ave 26 Sunset Ave	B B	52 48	56 55	5	52 50	4 5	2					2			\$ 50	0,000
49	24 Sunset Ave	В	51	56	7 5	52	4	2					2			\$ 50,	0,000
50	24 Sunset Ave	В	47	54	7	49	5										
73 74	1225 JFK Blvd 1269 JFK Blvd	B B	56 67	61 73	5	58 68	3 5	144	2	2	2	2		2		\$ 100	0.000
75	1269 JFK Blvd	В	64	72	8	65	7										
76 77	1267A JFK Blvd 1267A JFK Blvd	B B	67 64	72 70	5 6	68 64	4 6	2		2							
78	1267B JFK Blvd	В	67	72	5	68	4	2		2							
79	1267B JFK Blvd 1265 JFK Blvd	B B	64 67	70 71	6 5	64 68	6	2		2							
80 81	1265 JFK Blvd	В	64	69	5	63	6	2		2							
82	1263 JFK Blvd	В	67	71	4	68	3	2		2							
83 84	1263 JFK Blvd 1261 JFK Blvd	B B	64 67	69 70	5	63 68	5	2		2							
85	1261 JFK Blvd	В	64	69	5	63	5										
86 87	1259 JFK Blvd 1259 JFK Blvd	B B	67 64	70 68	4 5	68 63	2 5	2		2							
88	1257 JFK Blvd	В	67	70	3	68	2	2		2							
89 90	1257 JFK Blvd 1255B JFK Blvd	B B	64 67	68 70	3	63 68	5	2		2							
90 91	1255B JFK Blvd	В	64	70 68	4	63	4	2		2							
92	1255 JFK Blvd	В	66	70	3	68	2	2		2							
93 94	1255 JFK Blvd 1270 JFK Blvd	B B	64 67	68 74	7	64 69	5	2	2	2	2	2		2		\$ 100	0,000
95	1268 A JFK Blvd	В	66	72	6	68	4	2		2							
96 97	1268 A JFK Blvd 1268 JFK Blvd	B B	59 66	71 71	12 5	59 68	12 4	2		2							
98	1268 JFK Blvd	В	56	68	12	56	12										
99 100	1266 JFK Blvd 1266 JFK Blvd	B B	66 54	71 66	5 12	68 54	3 12	2		2							
100	1264 JFK Blvd	В	66	71	5	68	3	2		2							
102	1264 JFK Blvd	В	53	64	11	53	11										
103 104	1262 JFK Blvd 1262 JFK Blvd	B B	66 53	70 63	4 10	68 53	3 10	2		2							
105	1260 JFK Blvd	В	66	70	4	67	2	2		2							
106 107	1260 JFK Blvd 1258 JFK Blvd	B B	53 66	63 69	9	54 67	9	2		2							
108	1258 JFK Blvd	В	54	62	8	55	7										
109	1256 A+B JFK Blvd	В	66	69	3	67	2	2		2							

Receiver ID	Receiver Address	NAC Activity	Existing Noise Level	Build No Noise Wall	Existing to Build Noise Level	Build With Noise Wall	Insertion	Number of Dwelling	1st Row	Impacts	1st Row	Primary	Suppl.	No. 1st Row	No. 1st Row	Budget
necesses 15	incectives radioses	Category	(dBA Leq)	(dBA Leq)	Increase (dBA Leq)	(dBA Leq)	Loss	Units	Receptors	pucts	Impacts	Benefits	Benefits	Impact Benefits	Achieve NRDG	Suger
110	1256 A+B JFK Blvd	В	57	63	6	58	5	_		_						
112 113	1246 JFK Blvd 1246 JFK Blvd	B B	66 56	69 62	3 6	68 58	1 4	2		2						
114 115	1244 JFK Blvd 1244 JFK Blvd	B B	66 52	69 60	3 7	68 55	1 5	2		2						
116 117	1242 JFK Blvd 1242 JFK Blvd	B B	66 52	69 59	3 7	68 56	1 3	2		2						
118	1240 JFK Blvd	В	66	68	3	68	1	2		2						
119 120	1240 JFK Blvd 1238 JFK Blvd	B B	54 66	60	5	58 68	1	2		2						
121 122	1238 JFK Blvd 1236 JFK Blvd	B B	55 66	61 68	6 2	58 67	3	2		2						
123 124	1236 JFK Blvd 1234A JFK Blvd	B B	52	58	6	55	3	2								
125	1234A JFK Blvd	В	51	56	5	54	2			2						
126 127	1234 JFK Blvd 1234 JFK Blvd	B B	66 50	68 56	2 6	67 53	1 3	2		2						
128 129	1232 JFK Blvd 1232 JFK Blvd	B B	66 50	68 55	2 5	67 53	1 3	2		2						
130	1230 JFK Blvd	В	66	68	2	67	1	2		2						
131 150	1230 JFK Blvd 140 58th Street	B B	51 62	55 73	5 11	53 63	3 10	2	2	2	2	2		2	2	\$ 100,000
151 152	138 58th Street 136 58th Street	B B	61 61	73 73	11 12	63 62	10 10	2 2	2	2 2	2	2 2		2 2	2 2	\$ 100,000 \$ 100,000
153	134 58th Street	В	61	73	12	62	10	2	2	2	2	2		2	2	\$ 100,000
154 155	132 58th Street 130 58th Street	B B	61 61	73 73	12 12	62 62	10 10	2	2	2	2	2		2	2	\$ 100,000 \$ 100,000
156 157	128 58th Street 126 58th Street	B B	61 60	73 77	12 17	62 60	11 16	2	2	2	2	2		2	2	\$ 100,000 \$ 55,000
158	124 58th Street	В	61	77	16	61	16	1	1	1	1	1		1	1	\$ 55,000
159 160	122 58th Street 120 58th Street	B B	62 62	77 78	16 16	63 64	15 14	1	1	1	1	1		1	1	\$ 55,000 \$ 55,000
161 162	118 58th Street 116 58th Street	B B	63 63	78 78	15 15	64 64	14 14	1	1	1	1	1		1	1	\$ 55,000 \$ 55,000
163	114 58th Street	В	63	78	15	64	14	1	1	1	1	1		1	1	\$ 55,000
164 165	112 58th Street 360 Avenue B	B B	63 60	78 70	15 10	64 61	14 9	4	4	4	1 4	4		1 4	4	\$ 55,000 \$ 200,000
166 167	360 Avenue B 358 Avenue B	B B	61 59	71 70	10 11	59 60	12 10	4		4		4				\$ 200,000
168	358 Avenue B	В	60	72	12	59	12									
169 170	356 Avenue B 356 Avenue B	B B	57 60	69 71	12 11	64 60	6 11	2		2		2				\$ 100,000
171	354 Avenue B	В	60	69	9	64	5	3		3		3				\$ 150,000
172 173	354 Avenue B 139 57th Street	B B	59 55	71 61	11 6	59 56	11 5	1					1			\$ 25,000
174 175	137 57th Street 135 57th Street	B B	55 55	61 61	6	56 56	5	1					1			\$ 25,000 \$ 25,000
176 177	133 57th Street 131 57th Street	B B	55 55	61 61	6	56 56	5 5	1					1			\$ 25,000 \$ 25,000
178	129 57th Street	В	55	61	6	56	5	1					1			\$ 25,000
179 180	127 57th Street 125 57th Street	B B	55 56	62 62	7	56 56	5 6	1					1			\$ 25,000 \$ 25,000
181 182	123 57th Street 121 57th Street	B B	56 56	63 63	7	57 57	7	2 2					2			\$ 50,000 \$ 50,000
183	119 57th Street	В	57	65	8	57	8	1					1			\$ 25,000
184 185	111 57th Street 109 57th Street	B B	58 59	68 68	10 9	58 59	9	2		2		2				\$ 50,000 \$ 100,000
186 187	107 57th Street 105 57th Street	B B	59 60	69 70	10 10	59 61	10 10	2 2		2		2 2				\$ 100,000 \$ 100,000
188	103 57th Street	В	61	72	12	61	12	2	2	2	2	2		2	2	\$ 100,000
189 190	101 57th Street 99 57th Street	B B	61 61	73 72	12 11	61 61	12 12	1	1	1	1	1		1	1	\$ 50,000 \$ 50,000
191 192	95 57th Street 93 57th Street	B B	61 61	73 73	11 11	61 61	12 12	2 2	2	2	2	2 2		2 2	2	\$ 100,000 \$ 100,000
193	91 57th Street	В	62	73	11	61	12	1	1	1	1	1		1	1	\$ 50,000
194 195	89 57th Street 87 57th Street	B B	62 62	73 73	11 11	61 62	12 12	1	1	1	1	1		1	1	\$ 50,000 \$ 50,000
196 197	85 57th Street 83 57th Street	B B	62 62	73 73	11 11	62 62	12 11	1	1	1	1	1		1	1	\$ 50,000 \$ 50,000
198	81 57th Street	В	62	72	10	61	11	1	1	1	1	1		1	1	\$ 50,000
199 200	79 57th Street 77 57th Street	B B	62 62	71 71	9	61 61	10 10	1	1	1	1	1		1	1	\$ 50,000 \$ 50,000
201 202	75 57th Street 73 57th Street	B B	63 63	70 68	8	61 61	9	1	1	1	1	1		1	1	\$ 50,000 \$ 50,000
203	71 57th Street	В	63	67	4	60	7	1	1	1	1	1		1	1	\$ 50,000
204 205	69 57th Street 67 57th Street	B B	63 63	67 67	5	61 62	6	1	1	1	1	1		1		\$ 50,000 \$ 50,000
206 207	65 57th Street 63 57th Street	B B	63 64	67 67	4	61 60	6 7	1	1	1	1	1		1	1	\$ 50,000 \$ 50,000
208	80 57th Street	В	56	64	8	58	5	1		_	_		1		1	\$ 25,000
209 210	76 57th Street 74 57th Street	B B	56 57	65 65	8	59 59	6 5	1					1			\$ 25,000 \$ 25,000
211 212	72 57th Street 70 57th Street	B B	58 59	65 66	7	60 60	5 6	1		1		1	1			\$ 25,000 \$ 50,000
213	65 57th Street	В	60	67	7	61	7	1		1		1				\$ 50,000
214 215	66 57th Street 64 57th Street	B B	61 61	68 69	8	62 63	7	1		1		1				\$ 50,000 \$ 50,000
216 217	62 57th Street 141 57th Street	B B	63 55	70 63	7 9	64 56	6 8	1 3		1		1	3			\$ 50,000 \$ 75,000
218	79 56th Street	В	54	58	5	54	4	1					,			7 73,000
219 220	75 56th Street 73 56th Street	B B	53 53	58 58	5	54 55	4	1								

Receiver ID	Receiver Address	NAC Activity Category	Existing Noise Level (dBA Leq)	Build No Noise Wall (dBA Leq)	Level Increase (dBA Leq)	Build With Noise Wall (dBA Leq)	Insertion Loss	Number of Dwelling Units	1st Row Receptors	Impacts	1st Row Impacts	Primary Benefits	Suppl. Benefits	No. 1st Row Impact Benefits	No. 1st Row Achieve NRDG	Budi	iget
221	71 56th Street	В	54	59	5	55	3	1									
222	69 56th Street	В	55	59	5	56	3	1									
223	67 56th Street	В	55	60	5	56	3	1									
224	65 56th Street	В	57	61	4	58	3	1									
225	63 56th Street	В	59	63	4	60	3	1									
226	63 56th Street	В	62	67	5	63	4	1		1							
227	53 56th Street	В	57	61	3	59	2	2	2	2	2	2		2		\$ 10	00,000
228	53 56th Street	B B	61 57	67 60	7	62 58	6	2	2	2	2	2		2		ć 10	00.000
	51 56th Street				7			2	2	2	2	2		2		\$ 10	00,000
230	51 56th Street 49 56th Street	B B	60 54	67 58	3	61 55	6 3	2	2				2			\$ 5	50,000
231	49 56th Street	В	56	63	7	55 57	6	2	2				2			\$ 5	30,000
233	47 56th Street	В	54	57	3	55	3	2	2				2		2	\$ 5	50,000
234	47 56th Street	В	57	65	8	58	8						2			ر د	30,000
235	45 56th Street	В	52	56	4	52	3	2	2	2	2	2		2	2	\$ 10	00,000
236	45 56th Street	В	58	68	10	58	10	_		_	_					7 10	,000
237	43 56th Street	В	51	55	4	51	3	2	2	2	2	2		2	2	\$ 10	00,000
238	43 56th Street	В	59	69	10	59	10	_	_	_	_	_			_	7 10	,000
239	41 56th Street	В	51	54	4	51	4	2	2	2	2	2		2	2	\$ 10	00,000
240	41 56th Street	В	60	69	9	59	10	_	_	_	_	_		_	_	7 10	,0,000
241	39 56th Street	В	50	54	4	50	4	2	2	2	2	2		2	2	\$ 10	00,000
242	39 56th Street	В	61	69	9	59	10	_	_	_	_	_		_	_	,	,
243	37 56th Street	В	50	54	4	51	3	2	2	2	2	2		2	2	\$ 10	00,000
244	37 56th Street	В	61	69	8	60	9										
245	35 56th Street	В	50	54	4	51	3	2	2	2	2	2		2	2	\$ 10	00,000
246	35 56th Street	В	61	69	8	60	9										
247	33 56th Street	В	59	61	2	60	1	2	2	2	2	2		2	2	\$ 10	00,000
248	33 56th Street	В	60	68	8	60	8										
255	34 56th Street	В	60	65	5	61	4	2									
256	32 56th Street	В	60	66	5	61	5	2		2		2				\$ 10	00,000
257	30 56th Street	В	61	66	6	62	5	2		2		2				\$ 10	00,000
258	28 56th Street	В	61	66	6	62	5	2		2		2				\$ 10	00,000
259	26 56th Street	В	61	67	6	62	4	2		2							
260	24 56th Street	В	62	67	5	63	4	2		2							
494	101 W 56th Street	С	50	52	3	50	2	1									
1041	101 W 56th Street	С	53	60	7	56	4	1									
1045	101 W 56th Street	D	47	55	9	49	6	3		3		3					50,000
1046	101 W 56th Street	D	49	56	7	51	5	3		3		3				\$ 15	50,000
1047	101 W 56th Street	D	54	58	5	54	4	3		3							
1048-E1	101 W 56th Street	D	41	47	6	42	5	1									
1048-E2	101 W 56th Street	D	43	49	6 5	45 47	4	1		1							
1048-E3 1048-M1	101 W 56th Street	D D	46 43	51 48	6	47	5	1		1							
1048-M1 1048-M2	101 W 56th Street 101 W 56th Street	D	43	50	5	44	4	1									
1048-M2 1048-M3	101 W 56th Street	D	45	50	4	46	4	1		1							
1048-W1	101 W 56th Street	D	48	50	6	49	4	1		1							
1048-W1 1048-W2	101 W 56th Street	D	44	51	6	46	4	1		1							
1048-W2 1048-W3	101 W 56th Street	D	46	54	4	50	4	1		1							
1048-W3	159 W 57th St	В	65	70	5	64	6	2	2	2	2	2		2		\$ 10	00,000
1050	161 W 57th St	В	65	70	5	65	6	2	2	2	2	2		2			00,000
1050	163 W 57th St	В	66	71	5	65	6	2	2	2	2	2		2			00,000
340	190 W 54th Street	В	64	66	1	65	1	1	1	1	1					7 10	,
341	190 W 54th Street	В	65	66	1	65	1	1	1	1	1						
345	190 W 54th Street	В	64	65	2	64	1	1	1								
349	190 W 54th Street	В	64	65	2	64	1	1	1								