

URBANMINE INC.

Ambient Noise Monitoring Report #1

72 Rothwell Road, Winnipeg, Manitoba

Table of Contents

1.0	Introdu	ction 1
	1.1	Background1
	1.2	Applicable Noise Limit1
2.0	Facility	Description 3
	2.1	Operating Hours of Facility4
3.0	Ambien	t Noise Monitoring Program 5
	3.1	Methodology5
	3.2	Noise Monitoring Locations5
	3.2.1	Monitoring Location 16
	3.2.2	Monitoring Location 27
	3.2.3	Monitoring Location 37
	3.3	Facility Operations8
	3.4	Facility Noise Mitigation Measures8
4.0	Results	and Discussions 9
5.0	Conclus	ion 12
6.0	Closure	13



Figures

Figure 1 – Facility Overview	3
Figure 2 – Ambient Noise Monitoring Locations	6

Tables

Table 1 – Overall Measured Sound Level Equivalent Levels (dBA)9

Appendices

A Certificates of Calibration

B Wind Rose and Weather Data

C Measurement Data

References



Introduction

Background 1.1

1.0

Dillon Consulting Limited (Dillon) was retained by Urbanmine Inc. (Urbanmine) to complete an ambient noise monitoring program for the facility located at 72 Rothwell Road in the City of Winnipeg, Manitoba. The ambient noise monitoring program consisted of continuous long-term noise monitoring at nearby representative receptors over a seven (7) day period. The monitoring program was completed as per the requirements of the Environment Act Licence (EAL) No. 3199R, issued to the facility by Manitoba Environment, Climate and Parks (MECP, formerly known as Manitoba Conservation and Climate). This report summarizes the noise monitoring results.

The Facility is located within a M3-zoned (Industrial, Heavy) area and immediately adjacent to rail and hydro right-of-ways (on the east side) owned by Canadian Pacific Railway Limited (CP Rail), Canadian National Railway (CN Rail) and Manitoba Hydro (Hydro). There are large industrial/commercial establishments to the north, south and west of the Facility. The Facility is approximately 300 m from Kenaston Boulevard. The closest residential area to the Facility is the Linden Woods Community, located east of the right-of-way corridor.

As per the requirements stipulated in Clause 37 and 38 of the EAL, the Facility is required to submit a noise pollution monitoring plan for Director's approval within 60 days of the issuance of the revised licence and subsequent to approval of the plan, complete the ambient noise monitoring and prepare a report for submission to MECP. As per the Director's letter of September 17, 2021, noise monitoring is to be undertaken every six (6) months, commencing fall of 2021 and until all proposed mitigation measures are fully implemented. Subsequently, the ambient noise monitoring is to be completed on an annual basis.

This report is prepared based on the ambient noise monitoring that was conducted from September 29 to October 6, 2021. This is the first noise monitoring report being submitted to MECP, with several of the noise mitigation measures (as per the September 2020 Noise Impact Study Report) fully implemented at the facility. Based on the 'every six (6) month' timeline indicated in Director's letter, the next noise monitoring will be completed in spring of 2022. Additional noise mitigation measures are expected to have been fully implemented at the facility for the spring 2022 ambient noise monitoring program.

Applicable Noise Limit

With the implementation of the noise mitigation measures identified in this report, the Facility is to comply with the maximum desirable daytime noise guideline level of 55 dBA, as stipulated in the MECP's



1.2

(formerly Province of Manitoba, Environment) Guidelines for Sound Pollution for residential areas, issued September 21, 1992, for all sources assessed in this report.



Facility Description

2.0

Urbanmine has been operating a ferrous and non-ferrous metal processing facility in Winnipeg, Manitoba since 2009. The facility operates as a transfer depot, where recyclable materials are received and sorted, then processed and shipped to other facilities for further processing and refining.

Figure 1 illustrates an overview of the Facility, on-site structures and the surrounding areas (note: the relatively newer ferrous building is not shown in the currently available Google aerial view).



Figure 1 - Facility Overview

As part of their expansion, Urbanmine has made several modifications to the Facility to process ferrous metals indoors using various sizing and sorting equipment. The new ferrous process (ferrous line) starts with sorting of materials as it is received. Then the material gets processed through an outdoor rotary shear. The sheared materials are then transported via a conveyor to inside of the new ferrous building for processing through a vertical grinder for further size reduction. The grinded material is transported via a conveyor to a sorting area where magnetic separators and Eddy-current separators are utilized to separate the ferrous and non-ferrous materials. Ferrous materials are then organized by size at a sorting shaker table and stored in bunkers on the north side of the ferrous building. The building is equipped



with dust collection system throughout the building. The dust collection system consists of extensive duct work that leads into a cyclone and filter baghouse located immediately south of the ferrous building. The ferrous line was commissioned in early fall of 2021.

The Facility will also have a non-ferrous processing line which will be located in the existing building and will consist of similar material shearing and grinding equipment as the ferrous line but notably smaller in size and power. The non-ferrous line will include: an outdoor rotary shear, indoor grinder and sorting shaker tables. The non-ferrous line is expected to be commissioned in spring/summer of 2022.

As a result of the new ferrous and non-ferrous processing lines the Briquetter line, the Pacific/Canton shearing process and the car crusher have been decommissioned.

The dominant noise sources at the facility include the operation of outdoor shears, mobile equipment including grapple crane, cyclone and baghouse, conveyors, vertical grinder (ring mill), multi-purpose loader, air compressor, shaker tables, material (scrap metal) handling/drop, granulator, building exhaust and hydraulic system cooling fans.

The Facility typically operate weekdays from 7:00 a.m. to 7:00 p.m., as per Clause 23 of their EAL.

Operating Hours of Facility

2.1

The Facility typically operates weekdays from 7:00 a.m. to 7:00 p.m. On rare occasions, due to unusual circumstances or operational conditions, the Facility may need to operate for extended hours (i.e., 6:00 a.m. to 9:00 p.m.) Monday through Saturday.

During the ambient noise monitoring period (September 29 to October 6, 2021), the Facility operated between 8:00 a.m. and 5:00 p.m., during weekdays only, with equipment warm up starting at 7:00 a.m.



Ambient Noise Monitoring Program

Methodology 3.1

3.0

The noise pollution monitoring program consists of ambient noise monitoring at the closest boundary of representative noise-sensitive receptors (i.e., residential dwellings east of the facility), as identified in the Acoustic Assessment Report (Dillon's September 2020 report). The noise monitoring locations are discussed in sub-section 4.2.

The noise measurement methodology is based on CAN/CSA-ISO 1996-1 and the Ontario Ministry of the Environment, Conservation and Parks (MECP) (Formerly MOE) noise publication document NPC-103. The ambient noise monitoring program was carried out over seven (7) days to ensure variability in ambient noise levels due to change in on-site activities and traffic noise is captured in the measurements. The monitoring program commenced on Wednesday, September 29, 2021 and ended on Wednesday, October 6, 2021.

The ambient noise data gathered included: A-weighted sound level equivalent (Leg-A) as well as L90, Lmax and Lmin. Monitoring program was undertaken when the facility was operating under a normal mode of operation, with key dominant noise sources being in operation between 8:00 a.m. and 5:00 p.m.

The ambient noise monitoring program was completed using two (2) Rion NL-52 Type I sound level analyzers with digital audio recording and 1/1, 1/3 octave filters, as well as one (1) Rion NL-22 Type II noise level meter. In addition to being calibrated in the laboratory, each instrument was field calibrated on-site, before and after each measurement period. Certificates of Calibration, including instrument serial numbers are provided in Appendix A.

Noise Monitoring Locations 3.2

For the ambient noise monitoring program, three (3) monitoring locations closest to the Facility's dominant noise sources were selected. The selected receptors and the associated monitoring locations are illustrated in Figure 2 and discussed below.



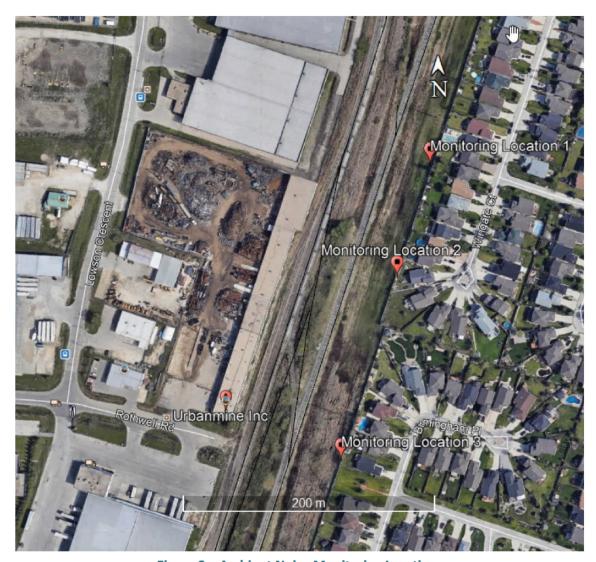


Figure 2 - Ambient Noise Monitoring Locations

Brief description of the monitoring locations and instrumentation setup are provided below.

3.2.1 **Monitoring Location 1**

A RION NL-52 type I sound level analyzer unit equipped with an environmental enclosure and an external battery was setup along the right-of-way near the backyard fence of the receptor location 1, with the microphone being in direct light of sight of the facility. The microphone was attached to a pole and was set at approximately 1.5 metres (m) above the ground. For this receptor location, the dominant noise sources in the yard were shielded by the Facility's warehouse building and the





connecting noise barrier wall along the north property boundary of the facility. The unit was setup to gather A-weighted sound level equivalent (LeqA) as well as Lmax, Lmin and the 90th percentiles (L90). The instrument was also programmed to audio record sound for levels exceeding 55 dBA (note: the threshold of 55 dBA is based on MECP's daytime guideline criterion).

3.2.2 **Monitoring Location 2**

A RION NL-52 Type I sound level analyzer unit equipped with an environmental enclosure and an external battery was setup at the fenceline of a representative residential dwelling, with the microphone being in direct light of sight of the facility. The microphone was attached to a wooden

column within the backyard at approximately 2.5 m above the ground. For this receptor the dominant noise sources in the yard were shielded by the facility's warehouse building. The unit was setup to gather A-weighted sound level equivalent (LeqA) as well as Lmax, Lmin and the 90th percentile. The device was also programmed to audio record sound for when instantaneous noise levels exceed 55 dBA. During the monitoring program the Facility was operating only during daytime hours. In addition to hourly data, data was logged for one (1) second intervals in order



to capture short duration peak noise events, and correlate with audio recordings to determine dominant noise source(s) that contributed to peak noise levels.

3.2.3 **Monitoring Location 3**

A RION NL-22 Type II noise meter equipped with an environmental enclosure and an external battery was setup along the right-of-way, near the backyard fence at the monitoring location 3. The microphone

was installed on a pole, approximately 1.5 m above the ground and was situated to have direct line-of-sight to the facility. This unit was setup at a receptor boundary that is further away from key dominant noise sources at the facility than the monitoring locations 1 and 2. It was setup for confirmatory measurement purposes. The data was used to compare with the other two (2) monitoring locations to determine if background noise levels (i.e., when the facility is not operating) and noise impact from the facility is similar along this segment of the right-



of-way. The noise meter was set to gather A-weighted sound level equivalent (LegA) as well as Lmax, Lmin and the 90th percentile values (L90) on an eight (8) hour basis.



Facility Operations

3.3

3.4

The facility operated under its normal mode of operation during the ambient noise monitoring period. Key dominant noise sources (including mobile equipment) operated during facility's normal hours of operation (weekdays, from 8:00 a.m. to 5:00 p.m.).

Facility Noise Mitigation Measures

The September 2020 Acoustic Assessment Report for the Facility lists a series of noise mitigation measures that are to be implemented in order to ensure compliance with applicable noise criterion of 55 dBA (daytime). The noise mitigation measures and whether they were implemented during the ambient noise monitoring program are discussed below:

- Acoustic barriers situated atop of the facility building measure to be 108 m in length and an additional height of 6 m, resulting in a total height of 12 m, or an awning such that the west edge of the awning will meet the total height of 12 m above grade. This mitigation measure was not implemented at the time of conducting the ambient noise monitoring;
- A barrier along the north property boundary measure to be 45 m in length and a height of 9 m. This mitigation measure was implemented at the time of conducting the ambient noise monitoring;
- An L-shaped of approximately 12 m in total length and a height of 5.5 m that is situated immediately adjacent to the Sierra Shear, on the north and east sides of the shear. This mitigation measure was implemented at the time of conducting the ambient noise monitoring;
- Noise sources within on-site buildings (i.e., the warehouse building and the new ferrous building) are attenuated by the building enclosures and closed doors when the facility is in operation. This mitigation measure (buildings with closed doors) was implemented at the time of conducting the ambient noise monitoring; and,
- A 26 m long asymmetrical U-Shaped noise barrier wall of 7 m high to be located east of the new ferrous outdoor rotary shear. This mitigation measure was partially implemented at the time of conducting the ambient noise monitoring.



Results and Discussions

4.0

The measured daytime ambient noise level metrics (i.e., Leq, Lmax and Lmin) for hours that the facility was operating (8:00 a.m. to 5:00 p.m.) and when it was not operating (5:00 p.m. to 9:00 p.m.) are presented in Table 1 for comparison purposes. The data is presented on daily basis for the five (5) weekdays that the facility was operating so that potential impact of the weather and potential operational variations at facility can be better characterized. Hourly weather data from Winnipeg International Airport for the duration of the noise monitoring period is provided in Appendix B. The measurement data is provided in Appendix E.

Table 1 – Overall Measured Sound Level Equivalent Levels (dBA)

		Measured Hourly Sound Pressure Levels (dBA) - Daytime									
M	onitoring Location	Fa	cility Operati	ng	Facility Not Operating						
ID	Date	Leq (Avg)	Lmax	Lmin	Leq (Avg)	Lmax	Lmin				
	September 29.	53.5	71.4	45.9	51.4	65.1	43.9				
	September 30.	54.9	74.7	45.4	50.8	67.3	39.4				
	October 1.	52.3	68.7	43.0	46.4	61.2	41.0				
L1	October 2 Saturaday	N/A	N/A	N/A	N/A	N/A	N/A				
	October 3 Sunday	N/A	N/A	N/A	N/A	N/A	N/A				
	October 4.	50.2	67.1	37.8	48.6	68.	39.3				
	October 5.	56.0	73.7	46.9	50.0	60.0	44.4				
	September 29.	50.0	64.3	44.9	49.4	59.3	43.5				
	September 30.	52.7	67.0	44.8	48.0	62.0	40.7				
	October 1.	49.2	64.6	41.6	46.4	57.7	39.3				
L2	October 2 Saturaday	N/A	N/A	N/A	N/A	N/A	N/A				
	October 3 Sunday	N/A	N/A	N/A	N/A	N/A	N/A				
	October 4.	48.1	62.9	38.7	47.8	61.0	41.0				
	October 5.	52.1	68.8	46.4	49.7	58.6	45.7				



Since the operation of the facility only occurs during daytime hours, the data analysis presented herein pertains to daytime only. The measured daytime ambient noise levels are indicative of typical urban centres with average hourly Leg noise levels for daytime ranging from high 40s dBA to low-mid 50s dBA. While the average hourly Leq noise levels are measured to be higher when the facility is operational, the daytime criterion (hourly) of 55 dBA is only exceeded on October 5, with an average Leg of 56 dBA. The operational log for October 5 indicates maintenance activities on fixing pre-mac with Bano outdoor shear for the ferrous plant coming online at about 2:00 p.m. The measured noise data seems to indicate consistently higher noise levels on October 5 in comparison to other working days. Review of the corresponding meteorological data indicates an average wind speed of 36 kilometres per hour (km/h) and consistently high winds (wind speed range: 25 to 48 km/h) throughout the day [Note: all ranges presented are hourly Leq]. While wind can impact noise propagation over long distances, resulting in higher noise impact downwind of a source than upwind, it can also result in higher ambient noise levels as air movement around structures and over surfaces and generates wind-induced noise. With October 5 being generally a windy day, a higher ambient noise level due to wind-induced noise is likely. It is also noted that audio recordings for October 5 indicate audible noise (short duration peak noise impact) at the monitoring locations associated with scrap metal handling/drop. Other unrelated noise sources captured during the hours of operations at the facility include: train passby, vehicle passby, ambulance passby and chirping birds.

Wind roses for the monitoring days are presented in Appendix B. The wind directions are predominately north-south, however, during the monitoring days, there were times that the wind was blowing easterly, towards the nearby residences / noise monitoring locations. When comparing the hourly Leg values measured at the monitoring locations, a distinct increase in noise impact is not observed when the wind is blowing towards the receptors.

The Lmax measurement was gathered to capture short-duration high noise events. The results indicate that the Lmax noise levels are higher when the facility is operational. Audio recordings confirm that the short duration high noise events are associated with handling scrap metal. The general hum associated with equipment operation is not notably audible at the monitoring locations. High peak noise levels also occur when the facility is not operating and are typically attributed to rail shunting activities and sirens (as per the audio recordings), however, both the associated noise level and the frequency of occurrence are lower in comparison to when the facility is operating. The peak noise levels are on average between 1 and 13 dB higher when the facility is operational. Handling of scrap metal can result in impulsive noise which may result in higher level of annoyance.

The measured daytime Lmin values range from high 30s dBA to mid 40's dBA. This confirms that while there are short-duration high noise events, there are periods of time during working days that the ambient noise levels are relatively low. There is no clear trend when comparing the Lmin values for when the facility is operating and when it is not.



The facility rarely operates during weekends. During this ambient noise monitoring program, the facility did not operate. The average ambient noise levels (daytime) during the weekend (hourly LeqA) ranged between 39 dBA and 57 dBA (average approximately 47 dBA).

The noise monitoring data gathered at monitoring location 3 is in line with the values measured at the other two (2) monitoring locations. Location 3 is further away from onsite noise sources and therefore lower noise impact was expected. The measured noise levels are in line with the expected lower noise impact. For future ambient noise monitoring, monitoring at two (2) receptor locations (i.e., L1 and L2) is considered to be sufficient.



Conclusion

5.0

Dillon was retained by Urbanmine to complete an ambient noise monitoring program for the facility located at 72 Rothwell Road in the City of Winnipeg, Manitoba. The ambient noise monitoring program consisted of continuous long-term noise monitoring at nearby representative receptors over a seven (7) day period. The monitoring program was completed as per the requirements of the EAL No. 3199R, issued to the facility by MECP. This report summarizes the noise monitoring results.

As per the requirements stipulated in Clause 37 and 38 of the EAL, the Facility is required to complete an ambient noise monitoring program following director's approval of the ambient noise monitoring plan. According to the direction provided by MECP, noise monitoring is to be undertaken every six (6) months, commencing fall of 2021 and until all proposed mitigation measures are fully implemented. Subsequently, the ambient noise monitoring is to be completed on an annual basis.

The measured daytime ambient noise levels (Leq) are indicative of typical urban centres with average hourly Leq noise levels for daytime ranging from high 40s dBA to low-mid 50s dBA. While the average hourly Leg noise levels are measured to be higher when the facility is operational, the daytime criterion (hourly) of 55 dBA is only exceeded on October 5 (at 56 dBA). Steady high winds throughout the day and audible scrap metal handling noise at both monitoring locations are likely the reasons for the recorded higher noise levels. Other unrelated noise sources captured during the hours of operations at the facility include: train passby, vehicle passby, ambulance passby and chirping bird, all of which occurred less frequently than scrap metal handling.

Based on the measured noise levels at the monitoring locations and metrological data analyzed for this study, a distinct increase in noise impact is not observed when the wind is blowing easterly towards the residential areas east of the facility.

The monitoring results indicate that the max noise levels (Lmax) are higher when the facility is operational. Audio recordings confirm that the short duration high noise events associated with handling scrap metal are audible at noise monitoring locations.

This report has been prepared based on the ambient noise monitoring that was conducted from September 29 to October 6, 2021. This is the first noise monitoring report being submitted to MECP, with several of the noise mitigation measures (as per the September 2020 Noise Impact Study Report) fully implemented at the facility. Based on the 'every six (6) month' timeline indicated in Director's letter, the next noise monitoring will be completed in spring of 2022. Additional noise mitigation measures are expected to have been fully implemented at the facility for the spring 2022 ambient noise monitoring program and thus an improved noise impact is expected.



Closure

Dillon Consulting Limited (Dillon) was retained Urbanmine Inc. to prepare an Acoustic Assessment Report (AAR) for the Urbanmine Inc. facility located at 72 Rothwell Road in the City of Winnipeg. The report has been prepared for submission to the Manitoba Environment, Climate and Parks (MECP). The material in the report reflects Dillon's judgment in light of the information available to Dillon at the time of this report preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We trust that the report is to your satisfaction. Please do not hesitate to contact the undersigned if you have any further questions on this report.

Respectfully Submitted,

DILLON CONSULTING LIMITED



Zac Moorhead Environmental Scientist

AAI:bg

Our file: 21-1712



Amir A. Iravani, Ph.D., P.Eng. Associate



Appendix A

Certificates of Calibration



CERTIFICATE of CALIBRATION

Make: RION Co. Ltd Reference #: 163146

Model: NL-22 Customer: Dillon Consulting Limited

Halifax, NS

Descr.: Sound Level Meter Type 2

Serial #: 00773200 P. Order: Visa

Asset #: DCL-01

Cal. status: Received out of spec's, adjustments made.

Level cal.done.

Navair Technologies certifies that the above listed instrument was calibrated on date noted and was released from this laboratory performing in accordance with the specifications set forth by the manufacturer.

Unless otherwise noted in the calibration report a 4:1 accuracy ratio was maintained for this calibration.

Our calibration system complies with the requirements of ISO-9001-2015 and is registered under certificate CA96/269, working standards used for calibration are certified by or traceable to the National Research Council of Canada or the National Institute of Standards and Technology.

Calibrated: Nov 10, 2020 By:

Cal. Due: Nov 10, 2022 T. Beilin

Temperature : 23 °C \pm 2 °C Relative Humidity : 30% to 70%

Standards used: J-216 J-512

Navair Technologies

REPAIR AND CALIBRATION TRACEABLE TO NRC AND NIST

6375 Dixie Rd. Mississauga, ON, L5T 2E7

Phone: 800-668-7440 Fax: 905 565 8325

http://www.navair.com e-Mail: service @ navair.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. : 00219972

Date of Calibration: March, 10, 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.



Supplied Accessories

< 1 / 1 >

Model

NL-52

Product Name

Sound Level Meter, Class 1

Ensure all the items below are in the package.

If there is a missing part, please contact your supplier.

Туре	Description	Quantity	Note
NL-52	Main unit	1	
NL-42-025	Storage case	1	
WS-10	Windscreen	1	
NL-42-033	Windscreen fall prevention rubber	1	attached to the main unit
VM-63-017	Hand strap	1	
LR6	Size AA alkaline batteries	4	¥1
41	CD-ROM (Instruction manual, Serial interface manual, Technical notes, Program option manual)	1	
	Description for IEC 61672-1	1	2
- 1	SD memory card (512 MByte)	1	only when NX-42EX is pre- installed
	Inspection certificate	1	This sheet
1 -	Document for China RoHS	1	only to China

Inspection Certificate

INSPECTOR



We hereby certify that this product has been tested and calibrated at our factory according to RION specifications and that the product satisfies all relevant requirements.

RION CO., LTD. 3-20-41 Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan

Sound and Vibration Measuring Instrument Section Product information and software downloads can be found on our web-site:

https://rion-sv.com/

Please check it out.



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. : 00219971

Date of Calibration: March, 10, 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.



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LR6	Size AA alkaline batteries	4	
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	Description for IEC 61672-1	1	
	SD memory card (512 MByte)	1	only when NX-42EX is pre- installed
	Inspection certificate	1	This sheet
	Document for China RoHS	1	only to China

Inspection Certificate

INSPECTOR



We hereby certify that this product has been tested and calibrated at our factory according to RION specifications and that the product satisfies all relevant requirements.

RION CO., LTD. 3-20-41 Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan

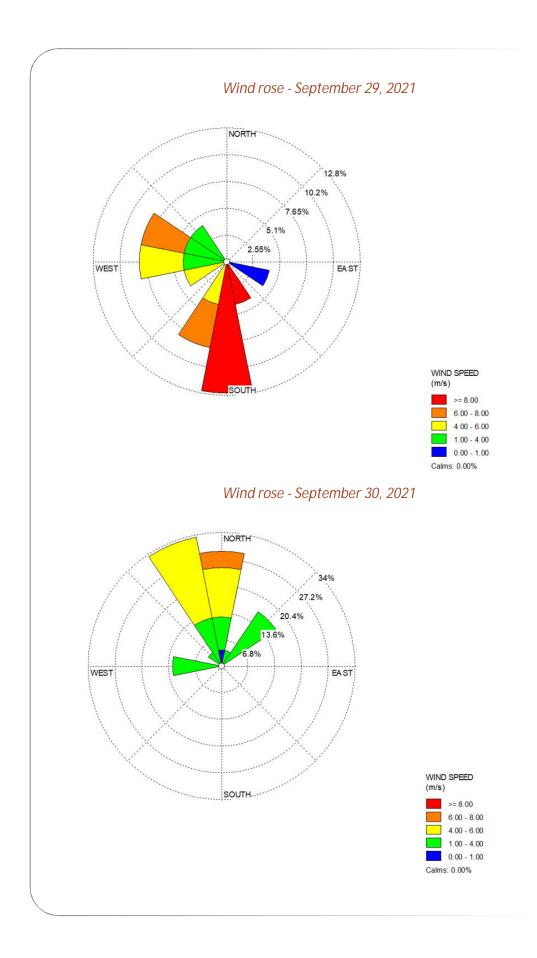
Sound and Vibration Measuring Instrument Section Product information and software downloads can be found on our web-site:

https://rion-sv.com/ Please check it out.

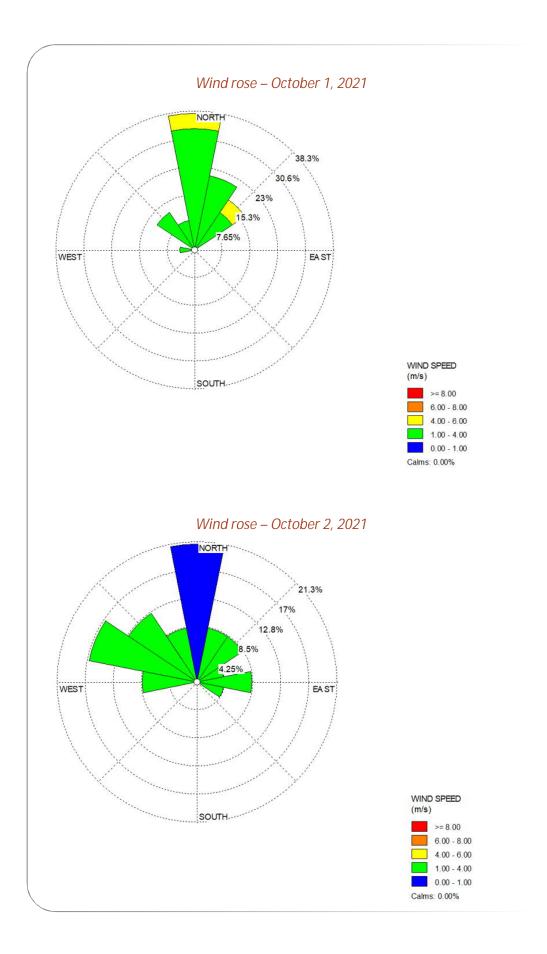
Appendix B

Wind Rose and Weather Data



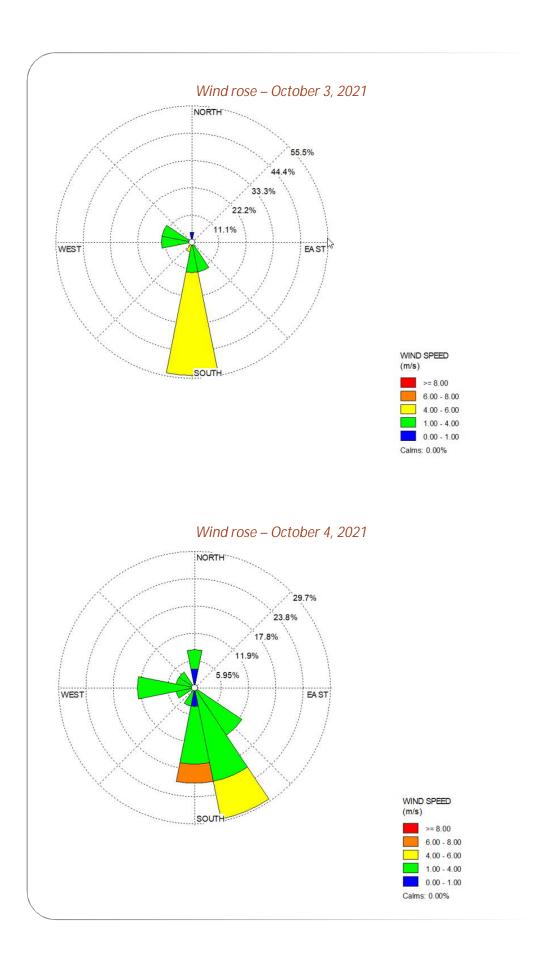








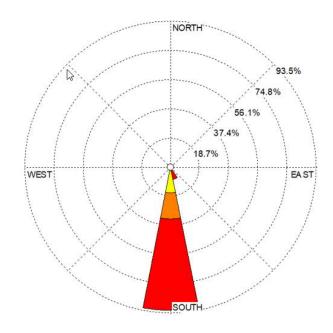




Urbanmine Inc.



Wind rose – October 5, 2021







Winnipeg International Airport -Hourly Meteorlogy Data



	Temperature	Humidity	Wind Direction	Wind Speed	Pressure
Date/Time (LST)	(°C)	(%)	(10s deg)	(km/h)	(kPa)
2021-09-29 12:00	28.2	46	17	31	97.98
2021-09-29 13:00	30	43	15	32	97.95
2021-09-29 14:00	31.4	39	19	30	97.97
2021-09-29 15:00	30.1	41	18	33	98.01
2021-09-29 16:00	29.8	42	20	25	98.06
2021-09-29 17:00	28.8	45	20	19	98.13
2021-09-29 18:00	26.6	44	28	21	98.2
2021-09-29 19:00	21.8	54	26	13	98.27
2021-09-29 20:00	19.9	62	11	3	98.33
2021-09-29 21:00	20.4	60	24	16	98.45
2021-09-29 22:00	19.7	61	31	12	98.51
2021-09-29 23:00	18.9	66	30	22	98.65
2021-09-30 0:00	17.3	72	30	10	98.65
2021-09-30 1:00	15.8	79	34	9	98.66
2021-09-30 2:00	14.8	81	2	7	98.69
2021-09-30 3:00	13.7	87	27	4	98.78
2021-09-30 4:00	14.4	88	26	14	98.91
2021-09-30 5:00	14.1	87	28	13	98.96
2021-09-30 6:00	13.9	90	31	12	98.97
2021-09-30 7:00	13.9	92	33	8	99.01
2021-09-30 8:00	15.1	88	34	15	99.03
2021-09-30 9:00	17.8	75	35	23	99.07
2021-09-30 10:00	18.7	71	35	18	99.09
2021-09-30 11:00	19.4	70	36	15	99.13
2021-09-30 12:00	21.6	61	34	21	99.13
2021-09-30 13:00	21.7	62	33	16	99.12
2021-09-30 14:00	22.3	57	35	16	99.11
2021-09-30 15:00	22.6	59	34	21	99.12
2021-09-30 16:00	22.1	59	34	19	99.13
2021-09-30 17:00	20	66	4	13	99.15
2021-09-30 18:00	17.9	75	4	12	99.19
2021-09-30 19:00	16	82	4	14	99.21
2021-09-30 20:00	14.2	88	5	8	99.2
2021-09-30 21:00	10.4	95	34	9	99.23
2021-09-30 22:00	9.6	99	35	10	99.2
2021-09-30 23:00	10.7	100	1	4	99.19
2021-10-01 0:00	10.7	100	36	2	99.21
2021-10-01 1:00	8.2	100	36	10	99.2
2021-10-01 2:00	7.3	100	34	9	99.21
2021-10-01 3:00	6.1	100	35	9	99.19
2021-10-01 4:00	6.7	100	1	6	99.2
2021-10-01 5:00	8.1	100	2	9	99.22

Urbanmine Inc. Winnipeg, Manitoba			national Airport - teorlogy Data		DILLON
2021-10-01 6:00	7.3	100	2	7	99.21
2021-10-01 7:00	9.6	100	1	9	99.19
2021-10-01 8:00	11.3	100	4	7	99.17
2021-10-01 9:00	12	100	4	11	99.15
2021-10-01 10:00	13.1	100	5	16	99.14
2021-10-01 11:00	14.1	100	5	7	99.16
2021-10-01 12:00	16.3	85	3	5	99.11
2021-10-01 13:00	18.9	68	33	13	99.03
2021-10-01 14:00	20.2	59	2	12	98.99
2021-10-01 15:00	19.2	60	1	17	98.98
2021-10-01 16:00	18.2	57	36	13	98.99
2021-10-01 17:00	16.8	70	36	8	98.97
2021-10-01 18:00	14.8	77	1	8	98.96
2021-10-01 19:00	13.1	85	2	6	98.96
2021-10-01 20:00	11.1 11	90 91	36	4 9	98.96
2021-10-01 21:00 2021-10-01 22:00	9.1	91 94	27 32	9	98.98 98.94
2021-10-01 22:00	9. i 10.4	100	32 31	10	98.95
2021-10-01 23:00	7.8	100	32	10	98.92
2021-10-02 0:00	7.0	100	32	10	98.92
2021-10-02 2:00	5.9	100	32	8	98.89
2021-10-02 3:00	5.2	100	31	5	98.9
2021-10-02 4:00	6.4	100	30	5	98.89
2021-10-02 5:00	4	100	29	10	98.9
2021-10-02 6:00	3.4	100	28	5	98.9
2021-10-02 7:00	3.4	100	28	4	98.89
2021-10-02 8:00	7.2	100	36	2	98.87
2021-10-02 9:00	11.8	100	5	4	98.86
2021-10-02 10:00	16.4	71	36	2	98.85
2021-10-02 11:00	17.9	63	11	5	98.8
2021-10-02 12:00	20	47	36	1	98.76
2021-10-02 13:00	21.3	44	36	3	98.69
2021-10-02 14:00	21.9	40	2	7	98.63
2021-10-02 15:00	22.4	39	9	7	98.6
2021-10-02 16:00	22.6	36	3	9	98.57
2021-10-02 17:00	20.8	47	7	8	98.56
2021-10-02 18:00 2021-10-02 19:00	17.9 11.8	54 70	10 30	5 14	98.57 98.59
2021-10-02 19:00	11.0	70 65	5 5	4	98.61
2021-10-02 20:00	11.2	70	34	6	98.63
2021-10-02 21:00	9.8	73	0	1	98.65
2021-10-02-23:00	10.6	73 72	33	5	98.62
2021-10-03 0:00	9	80	29	8	98.62
2021-10-03 1:00	6.6	87	36	2	98.62
2021-10-03 2:00	5.4	94	29	13	98.64

Urbanmine Inc. Winnipeg, Manitoba		Winnipeg Internation	•		DILLON CONSULTING
2021-10-03 3:00	5.5	100	28	7	98.61
2021-10-03 4:00	8.1	100	30	6	98.61
2021-10-03 5:00	5.2	100	29	6	98.62
2021-10-03 6:00	4.2	100	26	5	98.61
2021-10-03 7:00	3.2	100	26	8	98.64
2021-10-03 8:00	8	100	16	4	98.64
2021-10-03 9:00	11.3	84	15	5	98.64
2021-10-03 10:00	15.3	66	16	7	98.66
2021-10-03 11:00	17.7	57	19	8	98.63
2021-10-03 12:00	19.8	49	17	14	98.53
2021-10-03 13:00	21.8	39	18	14	98.47
2021-10-03 14:00	23.2	35	19	21	98.38
2021-10-03 15:00	23.9	30	18	20	98.33
2021-10-03 16:00	23.9	30	19	19	98.3
2021-10-03 17:00	23.1	30	19	18	98.29
2021-10-03 18:00	18.1	43	17	16	98.29
2021-10-03 19:00	16.5	47	17	16	98.3
2021-10-03 20:00	16	49	17	17	98.32
2021-10-03 21:00	17.5	43	18	21	98.35
2021-10-03 22:00	15.9	48	18	20	98.35
2021-10-03 23:00	14	54	19	16	98.39
2021-10-04 0:00	14.1	55 43	20	17 8	98.42
2021-10-04 1:00 2021-10-04 2:00	12.2 8.4	62 74	20 17	8 7	98.46 98.51
2021-10-04 2:00	0.4 7.7	81	25	4	98.54
2021-10-04 4:00	5.5	90	26	7	98.58
2021-10-04 5:00	4.2	91	28	11	98.64
2021-10-04 6:00	3.8	90	31	9	98.71
2021-10-04 7:00	3.6	96	28	9	98.79
2021-10-04 8:00	8.3	85	29	5	98.86
2021-10-04 9:00	14.1	64	35	5	98.91
2021-10-04 10:00	17.8	52	36	2	98.95
2021-10-04 11:00	20.6	43	17	4	98.96
2021-10-04 12:00	23.1	30	18	3	98.95
2021-10-04 13:00	24	28	15	4	98.9
2021-10-04 14:00	25.1	21	16	7	98.88
2021-10-04 15:00	25.2	23	13	7	98.87
2021-10-04 16:00	25.4	26	13	7	98.86
2021-10-04 17:00	23.5	30	15	8	98.86
2021-10-04 18:00	19.2	37	14	11	98.85
2021-10-04 19:00	19.2	35	15	12	98.88
2021-10-04 20:00	16.8	41	17	11	98.89
2021-10-04 21:00	15.7	44	15	16	98.9
2021-10-04 22:00	14.8	46	15	14	98.93
2021-10-04 23:00	13	52	16	15	98.93

Winnipeg International Airport -Hourly Meteorlogy Data



2021-10-05 0:00	16.8	43	17	22	98.95
2021-10-05 1:00	16	46	18	21	98.97
2021-10-05 2:00	15.1	50	18	22	98.99
2021-10-05 3:00	14.3	53	18	21	98.98
2021-10-05 4:00	14.7	52	18	25	98.96
2021-10-05 5:00	14.1	55	17	24	98.97
2021-10-05 6:00	14	56	17	19	98.94
2021-10-05 7:00	14.5	55	17	21	98.95
2021-10-05 8:00	15.9	52	17	25	98.97
2021-10-05 9:00	18.5	48	17	31	98.98
2021-10-05 10:00	21.4	43	16	31	98.96
2021-10-05 11:00	25	36	16	31	98.93
2021-10-05 12:00	27.3	29	17	36	98.86
2021-10-05 13:00	28.8	27	18	41	98.78
2021-10-05 14:00	29.5	25	17	40	98.69
2021-10-05 15:00	29.4	25	17	36	98.65
2021-10-05 16:00	28.7	25	18	48	98.57
2021-10-05 17:00	27.2	29	17	36	98.57
2021-10-05 18:00	25.6	31	17	33	98.58
2021-10-05 19:00	24.5	34	17	35	98.65
2021-10-05 20:00	23.4	37	17	36	98.61
2021-10-05 21:00	22.8	39	18	40	98.62
2021-10-05 22:00	21.6	42	18	34	98.63
2021-10-05 23:00	20.6	45	18	39	98.63
2021-10-06 0:00	19.5	49	18	34	98.62
2021-10-06 1:00	18.6	52	18	35	98.64
2021-10-06 2:00	17.6	56	18	31	98.64
2021-10-06 3:00	16.8	60	18	29	98.64
2021-10-06 4:00	16.1	64	18	31	98.67
2021-10-06 5:00	15.4	67	18	27	98.67
2021-10-06 6:00	14.9	69	18	27	98.68
2021-10-06 7:00	15	69	18	31	98.7
2021-10-06 8:00	15.9	66	18	25	98.72
2021-10-06 9:00	17.7	61	19	33	98.71
2021-10-06 10:00	20.1	55	18	29	98.7
2021-10-06 11:00	22.3	47	18	34	98.68
2021-10-06 12:00	24.9	42	18	29	98.66

Appendix C

Measurement Data





Address Start Time Measurement Time	Leq	LE	Lmax	Lmin	Ly	LN1	LN2	LN3	LN4	LN5
1 2021-09-29 13:18 00d 01:00:00.0	56.6	92.2	74.4	45.2	103.6	56.8	54.4	50.1	47.8	47.4
2 2021-09-29 14:18 00d 01:00:00.0	55.5	91.1	78.7	46.2	101.8	57.7	56.1	52.4	49.1	48.2
3 2021-09-29 15:18 00d 01:00:00.0	54.9	90.5	69.6	48.8	107.5	58.5	57.1	53.7	51.3	50.8
4 2021-09-29 16:18 00d 01:00:00.0	51	86.6	69.1	44.8	103.9	54.8	53.1	49.5	47.7	47.2
5 2021-09-29 17:18 00d 01:00:00.0	49.6	85.2	65.4	44.6	102.4	51.9	51	48.8	46.8	46.3
6 2021-09-29 18:18 00d 01:00:00.0	51.2	86.8	62.7	44.1	88.4	54	53.3	50.9	48.1	47
7 2021-09-29 19:18 00d 01:00:00.0	52.5	88.1	65.7	46.7	85.4	55.5	54.9	51.8	49.1	48.3
8 2021-09-29 20:18 00d 01:00:00.0	51.2	86.8	73.4	43.3	93	53	51.9	49.3	46.7	46
9 2021-09-29 21:18 00d 01:00:00.0	50.6	86.2	58.7	41.3	100.1	54.8	53.7	49.4	45.4	44.4
10 2021-09-29 22:18 00d 01:00:00.0	50.6	86.2	67.4	44.4	111.2	53.6	52.9	49.7	47	46.3
11 2021-09-29 23:18 00d 01:00:00.0	50	85.6	65.8	42.4	105.6	53.3	52.4	48.9	46.3	45.7
12 2021-09-30 0:18 00d 01:00:00.0	46.6	82.2	63.5	40.5	96.7	49.9	48.6	45.4	42.7	42.2
13 2021-09-30 1:18 00d 01:00:00.0	46.5	82.1	61.8	39.1	91.8	51.1	49.1	44.7	41.7	41
14 2021-09-30 2:18 00d 01:00:00.0	45.6	81.2	60.1	38	83.7	50.3	49.3	43.6	40.1	39.5
15 2021-09-30 3:18 00d 01:00:00.0	44	79.6	56.8	36.5	87	47.9	46.8	42.9	39.7	38.9
16 2021-09-30 4:18 00d 01:00:00.0	47.7	83.3	60.1	38.2	87.9	51.7	50.4	46.5	42.3	41.3
17 2021-09-30 5:18 00d 01:00:00.0	53.1	88.7	66.6	44.4	82.6	55.5	54.9	52.8	49.1	48.3
18 2021-09-30 6:18 00d 01:00:00.0	54.8	90.4	61.9	51.3	93.3	56.6	56.1	54.5	53.2	52.8
19 2021-09-30 7:18 00d 01:00:00.0	56.8	92.4	68.9	50.8	94	59.7	58.7	56.2	53.9	53
20 2021-09-30 8:18 00d 01:00:00.0	55.4	91	71.6	49.9	97.1	58	56.9	54.1	52.1	51.6
21 2021-09-30 9:18 00d 01:00:00.0	54.5	90.1	74.2	47.8	100	56.9	55.3	52.4	50.4	49.9
22 2021-09-30 10:18 00d 01:00:00.0	56.7	92.3	76.5	45.3	104.4	55	53.9	49.9	47.3	46.8
23 2021-09-30 11:18 00d 01:00:00.0	56.5	92.1	82.4	45.7	99.1	56.1	53.9	50.1	48	47.4
24 2021-09-30 12:18 00d 01:00:00.0	68.1	103.7	97.5	46.5	116.7	74.4	58.9	51.9	49.1	48.4
25 2021-09-30 13:18 00d 01:00:00.0	48.9	84.5	60.6	43.7	101.6	52.2	51	48.1	46	45.5
26 2021-09-30 14:18 00d 01:00:00.0	57.4	93	79.9	43.9	103.5	57.7	54.7	50	46.8	45.9
27 2021-09-30 15:18 00d 01:00:00.0	55.7	91.3	78.1	46.2	102.4	56.9	55	51.8	49.4	48.9
28 2021-09-30 16:18 00d 01:00:00.0	49.4	85	61.1	44.6	101.8	51.9	51.1	48.7	46.8	46.4
29 2021-09-30 17:18 00d 01:00:00.0	46.5	82.1	65	40.8	101.3	49.3	48.5	45.3	42.5	42
30 2021-09-30 18:18 00d 01:00:00.0	48.8	84.4	67.9	39.6	95.7	53.1	50.6	45.7	42.3	41.6
31 2021-09-30 19:18 00d 01:00:00.0	66	101.6	80.5	39.7	106.7	75	73.6	46.3	43.4	42.7
32 2021-09-30 20:18 00d 01:00:00.0	43.5	79.1	59.6	38.9	80.9	46.8	45.7	42.3	40.6	40.2
33 2021-09-30 21:18 00d 01:00:00.0	45	80.6	61	39.3	84.2	47.7	45.9	42.6	40.8	40.4
34 2021-09-30 22:18 00d 01:00:00.0	46.9	82.5	67.2	39.7	82.8	50.1	48.9	45.4	42.8	42.2
35 2021-09-30 23:18 00d 01:00:00.0	44.3	79.9	51.9	39.5	80.8	47.1	46.4	43.8	41.5	41
36 2021-10-01 0:18 00d 01:00:00.0	53.2	88.8	78.7	40.5	95.8	55.8	51.2	45.6	42.1	41.5
37 2021-10-01 1:18 00d 01:00:00.0	47.2	82.8	62.2	39.8	83.4	51.1	49.8	45.7	42.6	42
38 2021-10-01 2:18 00d 01:00:00.0	47.3	82.9	59.7	39.5	89.1	52.2	50.1	46	41.8	41.1
39 2021-10-01 3:18 00d 01:00:00.0	53.4	89	74.5	39.9	95.1	58.2	53.4	46.9	43.4	42.6
40 2021-10-01 4:18 00d 01:00:00.0	45.5	81.1	58.2	40.2	77.7	49	47.9	44.6	42.3	41.9
41 2021-10-01 5:18 00d 01:00:00.0	50	85.6	57.5	41.6	83.4	53.4	52.1	49.9	45.2	44.3
42 2021-10-01 6:18 00d 01:00:00.0	52	87.6	56.1	49.7	86.1	53.7	53.3	51.9	50.8	50.5
43 2021-10-01 7:18 00d 01:00:00.0	51.6	87.2	61	46.1	86.2	54.3	53.6	51.2	48.4	47.8
44 2021-10-01 8:18 00d 01:00:00.0	62.3	97.9	78.3	43.9	106.1	72.5	55	48.3	46.7	46.2
45 2021-10-01 9:18 00d 01:00:00.0	51.1	86.7	66.5	44.1		54.7		49.4		46
46 2021-10-01 10:18 00d 00:15:31.6	52.8	82.5	71.1	47.6	97.1		53.4			49
1 2021-10-01 10:37 00d 01:00:00.0	56.3	91.9	77.1	42.5	105.5	56.5	53.7	47.7	45.1	44.5



Address Sta	art Time	Measurement Time	Leq	LE	Lmax	Lmin	Ly	LN1	LN2	LN3	LN4	LN5
2 20	021-10-01 11:37	00d 01:00:00.0	49.6	85.2	64.1	39.6	87.2	55	52.6	46.1	42.4	41.8
3 20	021-10-01 12:37	00d 01:00:00.0	48.7	84.3	62.1	42.3	94.2	51.9	51	47.6	45	44.3
4 20	021-10-01 13:37	00d 01:00:00.0	54.5	90.1	79.5	43.4	101.7	55.1	52.6	47.5	45.4	44.9
5 20	021-10-01 14:37	00d 01:00:00.0	50.3	85.9	64.9	41.6	98	53.3	51.5	48.4	46	45.3
6 20	021-10-01 15:37	00d 01:00:00.0	49.1	84.7	62.2	42.5	97.9	52.6	51.3	48	45.5	44.9
7 20	021-10-01 16:37	00d 01:00:00.0	48.2	83.8	61.2	42.5	98.8	50.9	49.9	47.5	45	44.4
8 20	021-10-01 17:37	00d 01:00:00.0	48	83.6	63	40.4	92	50.8	49.9	47	43.6	42.8
9 20	021-10-01 18:37	00d 01:00:00.0	47.2	82.8	59.3	41.5	83	50.4	49.4	46.5	43.9	43.2
1 20	021-10-04 10:13	00d 01:00:00.0	52.3	87.9	70.3	40.2	101.8	55.5	52.4	48	42.1	41.7
2 20	021-10-04 11:13	00d 01:00:00.0	60.9	96.5	78.3	37.9	105.4	70.8	57.4	45.2	40.4	39.8
3 20	021-10-04 12:13	00d 01:00:00.0	49.5	85.1	62.3	38.6	86.4	53.2	51.7	48.8	41.3	40.5
4 20	021-10-04 13:13	00d 01:00:00.0	42.4	78	55.3	36.7	97.2	46.5	44.7	40.9	38.8	38.4
5 20	021-10-04 14:13	00d 01:00:00.0	57.1	92.7	79.4	38.4	105.7	56.8	54.8	46.9	41.6	40.9
	021-10-04 15:13		47.1	82.7	65.2	36.5	89.3	53.5	50.9	42.3		38.9
	021-10-04 16:13		46	81.6	63.5	36.6	96.9	51	47.7	42		
	021-10-04 17:13		46.6	82.2	62.8	37.2	84	52.2		42.8		
	021-10-04 18:13		44.4	80	61.9	37.8	85.7	46.6		43	40.1	39.5
	021-10-04 19:13		47.6	83.2	63	40.2	88.6	51	49	46.5	44	43.3
	021-10-04 20:13		54.6	90.2	87	40.6	113.1	51.2		47.3		43.6
	021-10-04 21:13		47.8	83.4	60.8	38.6	84.2	50.9		47.1		42.4
	021-10-04 22:13		46.1	81.7	56.2	37	83.8	49		45.7		41.6
	021-10-04 23:13		46.9	82.5	59.1	36.5	88	50.9		45.6		
	2021-10-05 0:13		45.1	80.7	60.4		85.2	48.5		42.8		
	2021-10-05 1:13		44	79.6	61.6	35.8	85.4	47.9	46	41.5		
	2021-10-05 2:13		44.7	80.3	61.8	35.9	85.1	48.5		42.4		38.4
	2021-10-05 3:13		43.8	79.4	57.4	35.8	83.9	47.8		41.9		
	2021-10-05 4:13		47.2	82.8	61.5	36.7	86.1	51.4		45.2		
	2021-10-05 5:13		51.7	87.3	57.2	40.6	86.2		54.4	51.3		45.4
	2021-10-05 6:13		54.2	89.8	61.6	49.3	86.7		56	53.9		51
	2021-10-05 7:13		54.5	90.1	64.8	49.6	91.6	57		54.1		
	2021-10-05 8:13		53.7	89.3	63.8				55.5	53		
	2021-10-05 9:13		53.2			48.3			55.5			50
	021-10-05 10:13		60.3	95.9			104.5					
	021-10-05 11:13		54.1	89.7			102.6					
	021-10-05 12:13		58.7	94.3			106.5			52		
	021-10-05 13:13		61.5	97.1	80.8							
	021-10-05 14:13		58.4	94	78.8						51.7	
	021-10-05 15:13		55.5	91.1	67.3	49	103.9		57.8			51.5
	021-10-05 16:13		53.6	89.2			101.4				49	
	021-10-05 17:13		50.7	86.3					52.5	50		47.5
	021-10-05 18:13		50	85.6	57.2				51.8			47.1
	021-10-05 19:13		50.1	85.7			87				47.4	
	021-10-05 20:13		49.6	85.2		44.6	94.1		51.4			46.6
	021-10-05 21:13		50.1	85.7	60.3		98.3		52.1			
	021-10-05 22:13		49.1	84.7	61.5							45
	021-10-05 23:13		48.4	84		42.6	101.6					
39 2	2021-10-06 0:13	000 01:00:00.0	47.5	83.1	60.9	39.9	102.9	8.Uc	49./	40.2	43.2	42.4



Address	Start Time	Measurement Time	Leq	LE	Lmax	Lmin	Ly	LN1	LN2	LN3	LN4	LN5
40	2021-10-06 1:13	00d 01:00:00.0	52.9	88.5	73.7	37.8	96.3	58.2	50.8	44.8	41.4	40.5
41	2021-10-06 2:13	00d 01:00:00.0	63	98.6	78.8	39	99.2	70.4	68.3	50.8	42.5	41.6
42	2021-10-06 3:13	00d 01:00:00.0	58.2	93.8	74.9	37.6	96.6	66.1	62	43.5	40.2	39.6
43	2021-10-06 4:13	00d 01:00:00.0	46.4	82	59	38.1	89.6	50.6	48.9	44.5	41.1	40.2
44	2021-10-06 5:13	00d 01:00:00.0	57.3	92.9	75.8	41.4	95.6	63.1	58.3	51.8	47.9	46.7
45	2021-10-06 6:13	00d 01:00:00.0	54.5	90.1	64.6	48.3	86.6	57.1	56.5	54.1	51.5	50.8
46	2021-10-06 7:13	00d 01:00:00.0	56	91.6	66	51.1	91.8	58.4	57.6	55.5	53.7	53.3
47	2021-10-06 8:13	00d 01:00:00.0	62.9	98.5	80.1	49.4	107.4	71.8	60.9	54.7	52.1	51.5
48	2021-10-06 9:13	00d 01:00:00.0	57.6	93.2	72.2	49.2	105.2	60.4	58	54.6	52.5	51.9
49	2021-10-06 10:13	00d 00·11·44 0	56.7	85.2	64.8	52.2	105.5	59 4	58.6	56.1	54.3	53.7



Address	Start Time	Measurement Time	Leq	LE	Lmax	Lmin	Ly	LN1	LN2	LN3	LN4	LN5
1	2021-09-29 12:34	00d 01:00:00.0	49.8	85.4	69.3	45.5	105.2	52.2	51.2	48.8	47.3	46.9
2	2021-09-29 13:34	00d 01:00:00.0	49.4	85	60.7	44	100.1	51.8	50.5	48.1	46.3	45.8
3	2021-09-29 14:34	00d 01:00:00.0	51.8	87.4	72	44.9	96.1	53.5	52.6	50.1	47.9	47.2
4	2021-09-29 15:34	00d 01:00:00.0	50.7	86.3	58.9	45.7	98.2	53.5	52.6	50.3	48.2	47.7
5	2021-09-29 16:34	00d 01:00:00.0	49.3	84.9	62.6	44.8	91	51.8	50.8	48.6	46.8	46.4
6	2021-09-29 17:34	00d 01:00:00.0	49.2	84.8	62	44.5	90	51.7	50.8	48.7	46.9	46.4
7	2021-09-29 18:34	00d 01:00:00.0	50.6	86.2	58.6	45.9	87	52.9	52.3	50.2	48.3	47.7
8	2021-09-29 19:34	00d 01:00:00.0	49.6	85.2	61.2	43.9	83.9	52.2	51.6	49.2	46.4	45.7
9	2021-09-29 20:34	00d 01:00:00.0	48.1	83.7	62.8	41.9	90.3	51.5	50.2	47	44.5	43.7
10	2021-09-29 21:34	00d 01:00:00.0	49.1	84.7	54.6	42.3	98.9	52.2	51.4	48.5	45.3	44.6
11	2021-09-29 22:34	00d 01:00:00.0	48.4	84	57.5	41.3	106.2	52.1	50.7	47.7	44.6	43.7
12	2021-09-29 23:34	00d 01:00:00.0	46.4	82	63.2	38.4	103.1	49.7	48.5	45.1	42	41.2
13	2021-09-30 0:34	00d 01:00:00.0	44.9	80.5	64	36.9	94.6	48	46.5	42.8	40.2	39.6
14	2021-09-30 1:34	00d 01:00:00.0	44.9	80.5	56.5	37.1	83.3	49.2	47.8	43.4	39.6	38.8
15	2021-09-30 2:34	00d 01:00:00.0	41.4	77	49	35.5	78.9	45.8	44.5	40.3	37.6	36.9
16	2021-09-30 3:34	00d 01:00:00.0	42.3	77.9	51.5	35.9	83.2	46	45	41.4	37.7	37.2
17	2021-09-30 4:34	00d 01:00:00.0	46.2	81.8	63	37.2	87.7	49.8	48.6	45.2	41.1	40.1
18	2021-09-30 5:34	00d 01:00:00.0	50.4	86	68.2	44.4	84.6	52.8	52.1	49.4	47	46.4
19	2021-09-30 6:34	00d 01:00:00.0	52.8	88.4	65.8	47.3	95.4	56.1	54.9	51.8	49.5	48.8
20	2021-09-30 7:34	00d 01:00:00.0	55.4	91	72.6	49.5	94	58.8	57.4	54.2	52.1	51.6
21	2021-09-30 8:34	00d 01:00:00.0	55.8	91.4	69.4	49.7	91.9	59.2	57.9	54.6	52.3	51.6
22	2021-09-30 9:34	00d 01:00:00.0	55.4	91	68.1	48.9	99.6	59.2	57.9	54.4	51.3	50.8
23	2021-09-30 10:34	00d 01:00:00.0	52.7	88.3	64.4	44.7	96.4	56.6	55.2	50.4	47.5	46.9
24	2021-09-30 11:34	00d 01:00:00.0	53.2	88.8	68.2	45.4	96.9	57.1	55.3	51.8	49.1	48.3
25	2021-09-30 12:34	00d 01:00:00.0	56.6	92.2	81.4	42.2	100	63.3	56.8	50	46.1	44.8
26	2021-09-30 13:34	00d 01:00:00.0	50.6	86.2	69.1	44.5	93.5	54.5	52.6	48.9	47	46.4
27	2021-09-30 14:34	00d 01:00:00.0	54.3	89.9	69.9	45.4	99.7	58.9	56.6	51.9	48.7	48.1
28	2021-09-30 15:34	00d 01:00:00.0	52.9	88.5	65.2	45.4	97.2	56.8	55.2	51.5	48.9	48
29	2021-09-30 16:34	00d 01:00:00.0	48.3	83.9	59.4	42.2	98.5	51.1	50.2	47.7	45.5	44.9
30	2021-09-30 17:34	00d 01:00:00.0	47.2	82.8	54.6	39.5	94.1	50.1	49.4	46.7	44.4	43.8
31	2021-09-30 18:34	00d 01:00:00.0	47.5	83.1	66.4	41.7	89.2	48.6	48.1	46.3	44.5	43.9
	2021-09-30 19:34		54.7	90.3	69.1	42.9	97.8	63	62	46.7	45.2	44.8
33	2021-09-30 20:34			79.5	54.9		82.5	46		43.5	42	
34				81.3	57.4		80.8			44.6	42.8	42.4
35	2021-09-30 22:34			81.1	60.5		78.3			44.6	43	42.5
36	2021-09-30 23:34				63.4	39.1	87	47.8		43.4	41.5	41
37	2021-10-01 0:34		48.4	84	70.7	37.7	91.6			43.9	40.6	39.9
38	2021-10-01 1:34			79.4	58	38.5		47.5	46.4		40.3	40
39	2021-10-01 2:34		49.4	85	70.9	38.6		53.8	51	44.3	40.5	39.8
40	2021-10-01 3:34			79.2	50	38.2	82.4				40.6	
41	2021-10-01 4:34			80.7	51.6					44.2		
42	2021-10-01 5:34			82.8	53.5	42.2	81.2		49.6		44.1	43.7
43	2021-10-01 6:34			85.3	63.8	45.5	85.5		51.3		47.3	46.8
44	2021-10-01 7:34			84.9	67.8	43	96.2	53		47.7	45.1	44.5
45	2021-10-01 8:34				66.5	44.6	101.2		56.8		46.6	46
46	2021-10-01 9:34		50	83	62					47.9		
1	2021-10-01 10:10	00d 01:00:00.0	50.6	86.2	78.5	42.3	104.5	54.4	52.1	47.8	44.9	44.3



Address	Start Time	Measurement Time	Leq	LE	Lmax	Lmin	Ly	LN1	LN2	LN3	LN4	LN5
2	2021-10-01 11:10	00d 01:00:00.0	46.4	82	59.7	38.3	84.6	50.9	48.9	44.6	41	40.2
3	2021-10-01 12:10	00d 01:00:00.0	45.7	81.3	61.6	38.8	89.9	50.1	47.8	43.5	41.1	40.4
4	2021-10-01 13:10	00d 01:00:00.0	49.3	84.9	64.4	40.1	97.1	54.2	51.7	46.4	43.4	42.7
5	2021-10-01 14:10	00d 01:00:00.0	47.9	83.5	61.2	40.7	105	51.9	50	46.5	44	43.5
6	2021-10-01 15:10	00d 01:00:00.0	50.6	86.2	65.8	43.8	98.5	54.9	53	48.8	46.4	45.8
7	2021-10-01 16:10	00d 01:00:00.0	49.6	85.2	63.7	43.4	98.7	53.8	51.8	47.8	45.7	45.2
8	2021-10-01 17:10	00d 01:00:00.0	48.1	83.7	62.5	40.5	87.4	50.4	49.6	47.3	45	43.9
9	2021-10-01 18:10	00d 01:00:00.0	46.8	82.4	61.6	39.5	86.1	49.6	49	46.3	43.4	42.5
10	2021-10-01 19:10	00d 01:00:00.0	46.5	82.1	62	40	85.4	48.7	48.1	46.2	43.8	43.2
11	2021-10-01 20:10	00d 01:00:00.0	45.6	81.2	53.2	38.9	77.3	48.1	47.5	45.3	43	42.4
12	2021-10-01 21:10	00d 01:00:00.0	46.6	82.2	53.8	38.7	78.9	50.1	49.4	45.8	42.1	41.3
13	2021-10-01 22:10	00d 01:00:00.0	47.5	83.1	58	42.5	83.9	50	49.4	47.1	44.7	44.2
14	2021-10-01 23:10	00d 01:00:00.0	49.1	84.7	70.9	42.2	81.9	50.9	49.8		44.6	43.9
15	2021-10-02 0:10	00d 01:00:00.0	46.1	81.7	54.3	39.7	78.8	49.3	48.4	45.4	42.9	42.2
16	2021-10-02 1:10		44.9	80.5	61.7	37.8	86.2	48.2	47.1	43.9	41	40.3
17	2021-10-02 2:10		45.2	80.8	60.5	37.4	79.3		47.9	44	40.7	40
18	2021-10-02 3:10	00d 01:00:00.0	43.6	79.2	53.8	35.9	76.1	48.1	46.5	42.2	39.2	38.4
19	2021-10-02 4:10		44.6	80.2	55	38	76.6	48.7	47.4	43.3	40.2	39.7
20	2021-10-02 5:10		47.7	83.3	57.9	37.6	78.8		50.3	46.5	43.3	42.6
21	2021-10-02 6:10		48.8	84.4	58.7	42.2	79.7	52	51.3	48.1	45.3	44.5
22	2021-10-02 7:10		53.6	89.2	70	44.1	84.3	56.7	54.8	51.2	48.3	47.3
23	2021-10-02 8:10		51.7	87.3	61.6	44.7	87.3	54.8	54	51.1	48	47.2
24	2021-10-02 9:10		46	81.6	59.2	37	87	50.1	49.1	43.5	38.8	38.4
25	2021-10-02 10:10		46.4	82	74.2		89.2	48.2	43.9	37.6	35.2	34.9
26	2021-10-02 11:10		39.3	74.9	55.3	33.5	83.2	44	41.1	36.5	35	34.7
27	2021-10-02 12:10		39	74.6	54.7	33.9	86	41.2	39.3	37.6	35.7	35.3
28	2021-10-02 13:10		51.9	87.5	69.9	34.7	100.8	57.4	47.8	38.7	36.6	36
29	2021-10-02 14:10		40.8	76.4	58.8	34.6	82.7	44.1	42.9	39.5	36.7	36
30	2021-10-02 15:10		45.4	81	59.5	35.2	88.4	52.9	49.3	39.6	37.5	36.7
31	2021-10-02 16:10		44.4	80	64.4	36	88.8		47.3	41.3	39.3	38.6
	2021-10-02 17:10				64.7		88			38.2		35
	2021-10-02 18:10			78.5	62.9					41.9		
	2021-10-02 19:10		46.1		67.8		88.4			44.1	41.8	
35	2021-10-02 20:10			85.8	59.2		78.4			48.6		45
36	2021-10-02 21:10		49.4	85	61	42.1	80.7			48.5	44.8	44
37	2021-10-02 22:10			84.2	56.9	40.5	84.5	51.9	51	48	44.8	
38	2021-10-02 23:10			84.3	60.1	41.5	78.4					44.6
39	2021-10-03 0:10			83.7	56.8	41.8	77.1	51.3		47.5		44.2
40	2021-10-03 1:10			82.8	56.5	39.5	78.5	51.2		46.1	42.6	42
41	2021-10-03 2:10			82.5	58.3	38.3	81.1	50.9		45.7	42.4	41.2
42	2021-10-03 3:10			81.1	64.7		87.1			43.5		39.5
43	2021-10-03 4:10		45.6		52.4	37.2	80.2		49 50	44 45 4		39.2
44	2021-10-03 5:10		47 50.1	82.6	55.5	37	75.7		50		41.8	40.9
45 46	2021-10-03 6:10			85.7	61 62.0	42.6		53.5				
46 47	2021-10-03 7:10			86.4	62.9		89.5		53.1	50.1		46.6
47 48	2021-10-03 8:10 2021-10-03 9:10			85.8 83.5	60.3 60.6		78.5		52.1	49.7 47.3		47 42 1
40	ZUZ 1-1U-U3 9. 1U	000 01.00.00.0	41.9	03.3	00.0	41.8	17.0	50.9	50.5	41.3	43.3	43. I



Address	Start Time	Measurement Time	Leq	LE	Lmax	Lmin	Ly	LN1	LN2	LN3	LN4	LN5
49	2021-10-03 10:10	00d 01:00:00.0	40.9		60.3	34	86.3	44.2	43.2	39.5	36.4	35.7
50	2021-10-03 11:10	00d 01:00:00.0	42.1	77.7	59.1	34.6	88.2	46.2	42.2	38.3	36.3	35.9
51	2021-10-03 12:10	00d 01:00:00.0	57.2	92.8	65.1	35.6	88.2	61.3	60.4	56.6	39.4	38.3
52	2021-10-03 13:10	00d 01:00:00.0	57.4	93	65.1	38.3	89.4	62.6	61.3	56.3	43	42
53	2021-10-03 14:10	00d 01:00:00.0	45.6	81.2	59.5	40.2	91.5	48	47	44.7	42.5	42
54	2021-10-03 15:10	00d 01:00:00.0	46.3	81.9	62.8	40.2	90.8	49.3	47.8	44.8	42.6	42.1
55	2021-10-03 16:10	00d 01:00:00.0	47.1	82.7	62.2	40	89.8	50.4	48.2	45.3	43.1	42.4
56	2021-10-03 17:10	00d 01:00:00.0	48.4	84	68.1	41.9	103.8	51.1	49.6	47.2	45.2	44.6
57	2021-10-03 18:10	00d 01:00:00.0	48.3	83.9	60.4	43.4	90.3	50.6	49.9	47.9	46	45.5
58	2021-10-03 19:10	00d 01:00:00.0	49.8	85.4	60.8	44.9	86.1	52.8	51.6	49	46.8	46.3
59	2021-10-03 20:10	00d 01:00:00.0	48.9	84.5	56.7	43.3	84	51.6	50.9	48.5	46	45.5
60	2021-10-03 21:10	00d 01:00:00.0	48.4	84	59.2	43.2	93.7	51.3	50.5	48	45.4	44.9
61	2021-10-03 22:10	00d 01:00:00.0	49.1	84.7	71.1	42.4	88.7	51.1	50.2	47.1	44.7	44.1
62	2021-10-03 23:10	00d 01:00:00.0	46.5	82.1	60.2	39.7	82.6	49.7	48.6	45.8	43	42.3
63	2021-10-04 0:10	00d 01:00:00.0	45.4	81	58.3	37.6	83.2	48.6	47.8	44.6	41.6	40.8
64	2021-10-04 1:10	00d 01:00:00.0	48.2	83.8	67.8	36.7	98.2	53.9	51.1	43.4	40.1	39.3
65	2021-10-04 2:10	00d 01:00:00.0	55.4	91	71.5	37.7	93.3	61.7	60.1	49.8	42.7	41.4
66	2021-10-04 3:10	00d 01:00:00.0	49.2	84.8	62	40.3	81.3	54	52.9	47.2	43.6	42.7
67	2021-10-04 4:10	00d 01:00:00.0	54.1	89.7	67.7	43.5	89.6	58	55.5	52.1	49.9	49
68	2021-10-04 5:10	00d 01:00:00.0	55.3	90.9	66.4	48.1	87.3	58.5	57.6	54.3	51.1	50.3
69	2021-10-04 6:10	00d 01:00:00.0	56.8	92.4	62.6	50.2	84	59.5	58.8	56.5	53.7	52.9
70	2021-10-04 7:10	00d 01:00:00.0	57.4	93	66.1	53.5	86.9	59.6	59.1	57.1	55.3	54.9
71	2021-10-04 8:10	00d 01:00:00.0	56.7	92.3	65.9	49.6	88.6	60.9	58.8	55.8	52.9	52
72	2021-10-04 9:10	00d 00:31:50.8	56.3	89.1	67.9	46.2	98.5	63.5	62.2	50.6	48.2	47.5
1	2021-10-04 9:47	00d 01:00:00.0	49.8	85.4	69.3	40.3	99.1	52.6	50.6	47.1	43.2	42.2
2	2021-10-04 10:47	00d 01:00:00.0	43.5	79.1	58.3	36	85.2	48.2	45.7	40.9	37.7	37.2
3	2021-10-04 11:47	00d 01:00:00.0	51.2	86.8	65.9	35	98.7	59.3	54.8	42.5	38.8	38.1
4	2021-10-04 12:47	00d 01:00:00.0	41.4	77	53.3	35.8	84.1	45.7	44	39.8	37.5	37.1
5	2021-10-04 13:47	00d 01:00:00.0	45.1	80.7	59.9	35.7	86.9	50.1	48.9	41.7	37.8	37.2
6	2021-10-04 14:47	00d 01:00:00.0	49.1	84.7	67.8	37.7	97.7	53.4	50.2	43.5	39.6	39
7	2021-10-04 15:47	00d 01:00:00.0	42.8	78.4	58.1	35.7	90.8	46.8	44.5	40.3	38.1	37.6
8	2021-10-04 16:47	00d 01:00:00.0	45.3	80.9	62.3	35.2	87.7	50.8	47.9	40.8	38.1	37.4
9	2021-10-04 17:47	00d 01:00:00.0	44.4	80	61.3	38.4	89.5	46.4	45.1	42.8	40.9	40.4
10	2021-10-04 18:47	00d 01:00:00.0	48.3	83.9	63.2	41.5	91.6	51.9	50.6	46.9	44.7	44.3
11	2021-10-04 19:47	00d 01:00:00.0	48.9	84.5	56.9	42.8	81.4	52.6	51.8	47.9	45	44.5
12	2021-10-04 20:47	00d 01:00:00.0	49.6	85.2	62.5	41.4	86.2	53.6	52.7	48.1	44.4	43.8
13	2021-10-04 21:47	00d 01:00:00.0	48.5	84.1	60.8	40.4	82	52.4	51.4	47	43.7	43.1
14	2021-10-04 22:47	00d 01:00:00.0	47.1	82.7	55.6	41	80.6	50.9	49.7	46.2	43.5	42.8
15	2021-10-04 23:47	00d 01:00:00.0	46	81.6	62.2	37.5	86.6	49.6	48.3	44.5	41.4	40.7
16	2021-10-05 0:47	00d 01:00:00.0	45.2	80.8	60.9	38.2	82.1	48.9	47	43.2	40.7	40.2
17	2021-10-05 1:47	00d 01:00:00.0	44.5	80.1	63	37.6	85.1	47.3	45.8	42.7	40.4	39.8
18	2021-10-05 2:47	00d 01:00:00.0	43.9	79.5	55.9	36.8	80.7	47.2	46.1	42.9	39.8	39.1
19	2021-10-05 3:47	00d 01:00:00.0	45.3	80.9	59.4	37.5	87.8	48.9	47.6	43.8	40.7	40
20	2021-10-05 4:47	00d 01:00:00.0	48.4	84	56.5	41.7	84.3	52	51.1	47.5	44	43.3
21	2021-10-05 5:47	00d 01:00:00.0	51.7	87.3	58.3	45.5	88.7	54.3	53.9	51.4	48.1	47.4
22	2021-10-05 6:47	00d 01:00:00.0	53.1	88.7	60.9	47.8	87.1	55.5	54.8	53	50.5	49.9
23	2021-10-05 7:47	00d 01:00:00.0	53.3	88.9	64.8	49.2	88.6	55.1	54.6	52.9	51.2	50.8



Address	Start Time	Measurement Time	Leq	LE	Lmax	Lmin	Ly	LN1	LN2	LN3	LN4	LN5
24	2021-10-05 8:47	00d 01:00:00.0	52.2	87.8	76.6	47.4	95.8	53.8	53.1	51.3	49.7	49.2
25	2021-10-05 9:47	00d 01:00:00.0	49.4	85	59	45.5	93.8	51.7	51	49	47.4	47
26	2021-10-05 10:47	00d 01:00:00.0	53	88.6	77.8	43.8	104.1	54.7	51	48.1	46.1	45.6
27	2021-10-05 11:47	00d 01:00:00.0	49.3	84.9	59.9	44.9	99.8	52.2	51.3	48.8	46.8	46.3
28	2021-10-05 12:47	00d 01:00:00.0	52.3	87.9	75.6	46.1	102.1	54.6	53	50.4	48.6	48.1
29	2021-10-05 13:47	00d 01:00:00.0	53.7	89.3	72	46.2	109.2	57.6	55.4	51.7	48.9	48.2
30	2021-10-05 14:47	00d 01:00:00.0	53.2	88.8	64.4	47.3	112.6	56.4	55.4	52.4	50.3	49.8
31	2021-10-05 15:47	00d 01:00:00.0	52.5	88.1	62.5	46.8	114.2	56	54.7	51.6	49.5	48.9
32	2021-10-05 16:47	00d 01:00:00.0	52.3	87.9	75.4	46.6	107	55.3	53.9	50.7	48.5	48.1
33	2021-10-05 17:47	00d 01:00:00.0	50.2	85.8	57.6	46	103.7	52.8	51.9	49.8	48.1	47.5
34	2021-10-05 18:47	00d 01:00:00.0	49.9	85.5	62.4	45.7	95.6	52.4	51.3	49.2	47.7	47.2
35	2021-10-05 19:47	00d 01:00:00.0	48.9	84.5	57.4	45.4	98	50.8	50.3	48.7	47.3	47
36	2021-10-05 20:47	00d 01:00:00.0	49.7	85.3	57.1	45.5	105.9	52.2	51.5	49.2	47.3	46.8
37	2021-10-05 21:47	00d 01:00:00.0	49.5	85.1	62.5	43.7	108.1	52.7	51.6	48.7	46.5	45.9
38	2021-10-05 22:47	00d 01:00:00.0	48.3	83.9	58.6	42.5	101.1	51.3	50.2	47.6	45.5	45.1
39	2021-10-05 23:47	00d 01:00:00.0	47.4	83	56.9	42.2	104.2	50.7	49.6	46.7	44.5	44
40	2021-10-06 0:47	00d 01:00:00.0	46.2	81.8	59.1	39.5	101.4	50.5	48.7	44.6	42.1	41.6
41	2021-10-06 1:47	00d 01:00:00.0	51.4	87	68.4	38.4	98.9	57.5	53.9	45.7	42	41.2
42	2021-10-06 2:47	00d 01:00:00.0	56	91.6	68	37.5	96.2	62.5	61.1	51.2	40.5	39.7
43	2021-10-06 3:47	00d 01:00:00.0	44.4	80	57.2	37.7	97.1	49.1	46.7	42.7	40.2	39.6
44	2021-10-06 4:47	00d 01:00:00.0	50.8	86.4	63.8	39.5	90.5	57.8	53	46.6	43	42.2
45	2021-10-06 5:47	00d 01:00:00.0	50.5	86.1	60.8	42.6	94.1	53.8	52.9	49.6	46.4	45.5
46	2021-10-06 6:47	00d 01:00:00.0	52.7	88.3	60.1	47.6	101.1	54.7	54.3	52.6	50.3	49.7
47	2021-10-06 7:47	00d 01:00:00.0	52.8	88.4	63.4	47.9	98.3	54.8	54.3	52.6	50.8	50.4
48	2021-10-06 8:47	00d 00:57:28.2	56.5	91.9	80.8	46.4	107.1	61.2	57	51.7	49.9	49.2

References

International Organization for Standardization, ISO 9613-2: Acoustics – Attenuation of Sound During Propagation Outdoors Part 2: General Method of Calculation, Geneva, Switzerland, 1996.

Noise Control for Buildings & Manufacturing Plants; Laymon Miller, 1981.

