13 BLACKBURN ROAD, WEST HAMPSTEAD

PLANNING NOISE REPORT

Acoustics Report A1541 R01

31st March 2020

Report for:	Beadmans 5 – 11 Worship Street London EC2A 2BH FAO: Huw Davies
Prepared by: Patryk Rowiński BSc (Hons) AMIOA Acoustic Consultant	Checked by: David O'Neill BEng CEng MSc MIOA Director
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Contents

1 Introduction

Ion Acoustics is appointed by the Loftus Family via Beadmans to carry out a noise and vibration assessment for a proposed development of a site at 13 Blackburn Road, West Hampstead. The site is presently occupied by a residential building along the south boundary, and an unoccupied warehouse building in the north of the site. The proposal is to redevelop the site with two residential blocks in the southern part of the site, as well as a single office block in the northern part.

This report has been prepared to determine the impact of the existing noise climate and rail vibration on the proposed buildings and associated external amenity areas. It also determines background noise levels and plant noise emissions limits for the new scheme. The site is affected by railway noise from the north and south, and to a lesser extent road traffic noise from the nearby highway network. Noise related to activity at the Builder Depot builders' merchants on the south side of Blackburn Road also contributes to the noise climate during their opening hours. To determine existing noise and vibration levels in the area, a baseline survey has been conducted over the period 22nd – 29th November 2019. This report describes:

- Appropriate noise and vibration limits;
- The methodology and results of the noise and vibration survey carried out at the site;
- Derivation of noise levels affecting the proposed residences;
- Calculation of building envelope sound insulation requirements for the residences and offices, with recommendations on forms of construction;
- Background noise levels and plant noise emissions limits.

2 Scheme Details

2.1 Site Location

Figure 1 shows the development site, the surrounding area, and the measurement positions used during the noise survey. The site is located in West Hampstead, on a parcel of land between an Overground and freight railway line to the north, and an over ground section of the Jubilee Underground line to the south, with the Chiltern Railway line further beyond to the south. In-between the site and the railway to the south is a builders' merchant. A recently completed student accommodation complex lies immediately to the east of the site. To the northwest are warehouses, with an existing planning permission for their redevelopment into six townhouses. To the west are existing Victorian houses.

Figure 1 – Aerial photo of site (highlighted in green) with the measurement locations displayed © Google Maps

2.2 Proposed Scheme

The ground floor layout of the proposed scheme is shown in Figure 2. The scheme comprises two residential blocks in the south part of the site facing Blackburn Road, and an office block in the north part immediately overlooking the Overground and freight railway and only around 7m from the railway. The east and west residential blocks are seven and six storeys high respectively. The office building in the north part of the site is nine storeys high and is immediately adjacent to the railway line to the north.

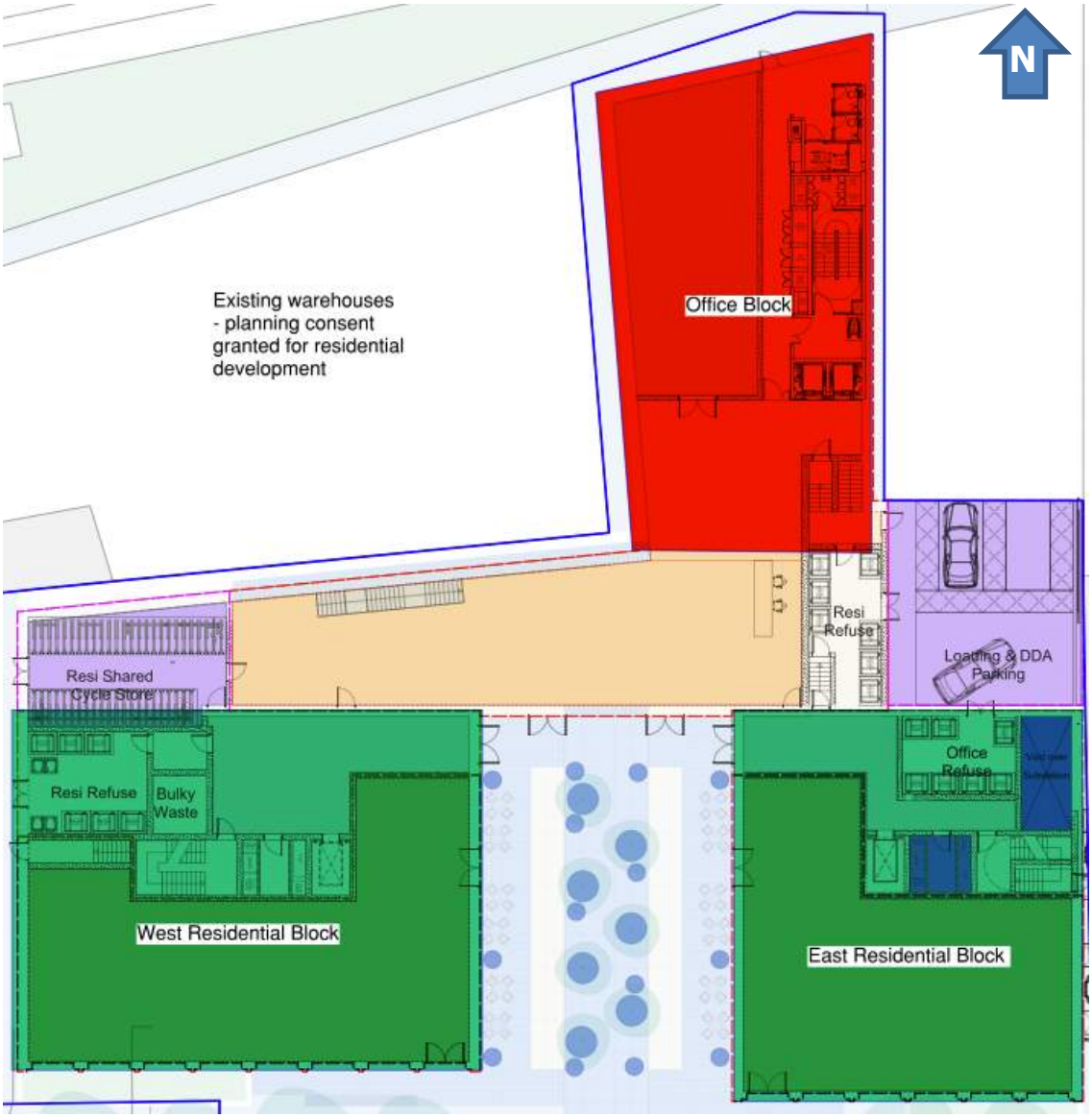


Figure 2 – Plan showing proposed ground floor layout

3 Local Planning Policy

3.1 Camden Local Plan (2017)

This planning document was adopted in 2017, and makes reference to noise in regard to new residential development. In Section 6 the following points are made regarding the protection of amenity:

6.19 Noise and vibration can have a major effect on amenity. The World Health Organisation (WHO) for example states that excessive noise can seriously harm human health, disturb sleep and have cardiovascular and behavioural effects.

Camden's high density and mixed-use nature means that disturbance from noise and vibration is a particularly important issue in the borough.

6.20 Where uses sensitive to noise are proposed close to an existing source of noise or when development that is likely to generate noise is proposed, the Council will require an acoustic report to accompany the application. Further detail can be found in Policy A4 Noise and vibration and our supplementary planning document Camden Planning Guidance on amenity.

It is clear from the above that the impact on amenity from noise should be carefully considered within Camden, and requirements for doing so are now written into the Local Plan as such, with Policy A4 referring the Noise and Vibration exclusively.

Policy A4 Noise and vibration

The Council will seek to ensure that noise and vibration is controlled and managed.

Development should have regard to Camden's Noise and Vibration Thresholds (Appendix 3). We will not grant planning permission for:

a. development likely to generate unacceptable noise and vibration impacts; or

b. development sensitive to noise in locations which experience high levels of noise, unless appropriate attenuation measures can be provided and will not harm the continued operation of existing uses.

We will only grant permission for noise generating development, including any plant and machinery, if it can be operated without causing harm to amenity. We will also seek to minimise the impact on local amenity from deliveries and from the demolition and construction phases of development.

Camden's Noise and Vibration Thresholds are discussed in the following section.

With regard to accessing the impact of noise and vibration the local plan goes onto provide further guidance:

6.89 Where uses sensitive to noise and vibration are proposed close to an existing source of noise or when development is likely to generate noise is proposed, the Council will require an acoustic report to accompany the application. In assessing applications, we will have regard to noise and vibration thresholds, set out in Appendix 3, and other relevant national and regional policy and guidance and British Standards. Further guidance on the application of these standards will be provided in supplementary planning document Camden Planning Guidance on amenity.

*6.90 Noise sensitive development includes **housing**, schools and hospitals as well as **offices**, workshops and open spaces (…)*

Ion emphasis is shown above, highlighting the relevance of the guidance to both aspects of this scheme, not just the housing. The following specifics are required to be provided in Acoustic reports:

6.95 Where uses sensitive to noise and vibration are proposed close to an existing source of noise or when development that is likely to generate noise is proposed, the Council will require an acoustic report to accompany the application. Supplementary planning document Camden Planning Guidance on amenity provides further detail of the key information expected to be reported in acoustic reports.

6.96 Camden noise thresholds (see Appendix 3) reflect observed effect levels outlined in National Planning Practice Guidance and will be explained further in the Camden Planning Guidance on amenity supplementary planning document. The thresholds set noise levels for:

- *noise sensitive development in areas of existing noise; and*
- *noise generating development in areas sensitive to noise.*

The Camden Planning Guidance referred to in 6.95 is discussed further in Section 3.2.

Appendix 3 of the Camden Local plan, as referenced above, contains guidance on noise and vibration threshold values. Within Appendix 3 design criteria are provided for proposed developments sensitive to noise and vibration, as is the case for the development on Blackburn Road, and these discrete grouped criteria summarise the degree of detailed consideration to be given to noise in a planning application. The groups are defined below, as in Appendix 3 of the Camden Local Plan:

The design criteria outlined below are defined in the corresponding noise tables. The values will vary depending on the context, type of noise and sensitivity of the receptor:

- *Green – where noise is considered to be at an acceptable level.*
- *Amber – where noise is observed to have an adverse effect level, but which may be considered acceptable when assessed in the context of other merits of the development.*
- *Red – where noise is observed to have a significant adverse effect.*

Guidance on what noise levels are determined to relate to which group is shown below:

Special consideration will need to be given to noise sensitive developments that are proposed in areas which are, or expected to become, subject to levels of noise likely to have an adverse effect. The threshold of acceptability of the noise will primarily depend on two factors: the intended use of the noise sensitive development and the source of the noise experienced, or likely to be experienced.

Table B: Noise levels applicable to noise sensitive residential development proposed in areas of existing noise

Dominant Noise Source	Assessment Location	Design Period	LOAEL (Green)	LOAEL to SOAEL (Amber)	SOAEL (Red)
Anonymous noise such as general environmental noise, road traffic and rail traffic ~	Noise at 1 metre from noise sensitive façade/free field	Day	<50dB$L_{Aeq,16hr}$*	50dB to 72dB$L_{Aeq,6hr}$*	>72dB$L_{Aeq,16hr}$*
		Night	<45dB$L_{Aeq,8hr}$ <40 dB$L_{Aeq,8hr}$**	45dB to 62dB$L_{Aeq,8hr}$* >40dBL_{night}**	>62dB$L_{Aeq,8hrs}$*
	Inside a bedroom	Day	<35dB$L_{Aeq,16hr}$	35dB to 45dB$L_{Aeq,16hr}$	>45dB$L_{Aeq,16hr}$
		Night	<30dB$L_{Aeq,8hr}$ 42dB$L_{Amax,fast}$	30dB to 40dB$L_{Aeq,16hr}$ 40dB to 73dB$L_{Amax,fast}$	>40dB$L_{Aeq,8hr}$ >73dB$L_{Amax,fast}$
	Outdoor living space (free field)	Day	<50dB$L_{Aeq,16hr}$	50dB to 55dB$L_{Aeq,6hr}$	>55dB$L_{Aeq,16hr}$
Non-anonymous noise	See guidance note on non-anonymous noise				

*LAeq, T values specified for outside a bedroom window are façade levels
**Lnight values specified for outside a bedroom window are free field levels

Figure 3 – Table B from the Camden Local Plan Appendix 3

Guidance is also given within Appendix 3 on criteria applicable for mechanical plant equipment, within assessments carried out in accordance with BS 4142:2014:

A relevant standard or guidance document should be referenced when determining values for LOAEL and SOAEL for non-anonymous noise. Where appropriate and within the scope of the document it is expected that British Standard 4142:2014 'Methods for rating and assessing industrial and commercial sound' (BS 4142) will be used. For such cases a 'Rating Level' of 10 dB below background (15dB if tonal components are present) should be considered as the design criterion).

Table C: Noise levels applicable to proposed industrial and commercial developments (including plant and machinery)

Existing Noise sensitive receptor	Assessment Location	Design Period	LOAEL (Green)	LOAEL to SOAEL (Amber)	SOAL (Red)
Dwellings**	Garden used for main amenity (free field) and Outside living or dining or bedroom window (façade)	Day	'Rating level' 10dB* below background	'Rating level' between 9dB below and 5dB above background	'Rating level' greater than 5dB above background
Dwellings**	Outside bedroom window (façade)	Night	'Rating level' 10dB* below background and no events exceeding 57dBL_{Amax}	'Rating level' between 9dB below and 5dB above background or noise events between 57dB and 88dB L_{Amax}	'Rating level' greater than 5dB above background and/or events exceeding 88dBL_{Amax}

*10dB should be increased to 15dB if the noise contains audible tonal elements. (day and night). However, if it can be demonstrated that there is no significant difference in the character of the residual background noise and the specific noise from the proposed development then this reduction may not be required. In addition, a frequency analysis (to include, the use of Noise Rating (NR) curves or other criteria curves) for the assessment of tonal or low frequency noise may be required.

**levels given are for dwellings, however, levels are use specific and different levels will apply dependent on the use of the premises.

Figure 4 – Table C from Appendix 3 of the Camden Local Plan

Criteria for maximum permissible exposure to vibration for various types of development is also provided in the Camden Local Plan, and reproduced in Figure 5.

Table A: Vibration levels from uses such as railways, roads, leisure and entertainment premises and/or plant or machinery at which planning permission will not normally be granted

Vibration description and location of measurement	Period	Time	Vibration Levels (Vibration Dose Values)
Vibration inside critical areas such as a hospital operating theatre	Day, evening and night	00:00-24:00	0.1 VDV ms-1.75
Vibration inside dwellings	Day and evening	07:00-23:00	0.2 to 0.4 VDV ms-1.75
Vibration inside dwellings	Night	23:00-07:00	0.13 VDV ms-1.75
Vibration inside offices	Day, evening and night	00:00-24:00	0.4 VDV ms-1.75
Vibration inside workshops	Day, evening and night	00:00-24:00	0.8 VDV ms-1.75

Figure 5 – Table A from the Camden Local Plan Appendix 3

3.2 Camden Planning Guidance Amenity (March 2018)

This is a formal supplementary planning document, which is therefore a 'material consideration' in planning decisions and is referred to in the Camden Plan. It is therefore important to note than compliance with this document isn't mandatory, however doing so would demonstrate good practice and is in line with Camden's standard planning requirements. Section 6 of this document refers to noise and vibration, and the key messages are as follows:

KEY MESSAGES:

- *The Council will assess the impact of noise and vibration through the consideration of acoustic reports submitted by applicants.*
- *Noise mitigation (where appropriate) is expected to be incorporated into developments at the design stage.*
- *The Council will secure mitigation measures through planning condition or legal agreement where necessary.*
- *The Council will adopt the 'agent of change' principle.*

With relevance to the undertaking of baseline noise surveys the following guidance is provided:

Assessments should be carried out and produced by a suitably qualified and competent consultant and conform to the standards in BS7445 1-3:2003 Description and measurement of environmental noise (or any later replacement guidance).

Along with the following minimum information requested to be present in the report:

- *description of the proposal;*
- *description of the site and surroundings, a site map showing noise and vibration sources and measurement locations;*
- *background noise levels measured over a minimum of 24 hours;*
- *details of instruments and methodology used for noise measurements (including reasons for settings and descriptors used, calibration details);*
- *details of the plant or other source of noise and vibration both on plan and elevations and manufacturers specifications;*
- *noise or vibration output from proposed plant or other source of noise and vibration, including:*
    - *noise or vibration levels;*
    - *frequency of the output; and*
    - *length of time of the output.*
- *features of the noise or vibration e.g. impulses, distinguishable continuous tone, irregular bursts;*
- *specification of the plant, supporting structure, fixtures and finishes;*
- *location of noise sensitive uses and neighbouring windows;*

- *details of measures to mitigate noise and vibration;*
- *details of any associated work including acoustic enclosures and/or screening;*
- *cumulative noise levels; and;*
- *hours/days of operation.*

4 National Planning Guidance

4.1 Residential Schemes

4.1.1 National Planning Policy Framework (NPPF)

In March 2012 the National Planning Policy Framework (NPPF) replaced a number of Planning Policy Statements with a single document that is intended to promote sustainable development. The document has been revised since release, and the most up to date version is currently dated February 2019[1]. The document is generally not prescriptive and does not provide noise criteria. Instead, it places the onus on local authorities to develop their own local plans and policies.

"170 Planning policies and decisions should contribute to and enhance the natural and local environment by: …….

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability……."

The document further states that:

"180. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason…"

4.1.2 Noise Policy Statement for England (NPSE)

The Noise Policy Statement for England (NPSE) sets out the Government's policy on environmental, neighbourhood and neighbour noise for England. The policy sets out three aims:

- *"avoid significant adverse impacts on health and quality of life;*
- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life."*

[1] https://www.gov.uk/government/publications/national-planning-policy-framework--2

The NPSE introduces the following terms, which are also used in the NPPF Planning Practice Guidance:

> ***"NOEL – No Observed Effect Level***
> *This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.*
>
> ***LOAEL – Lowest Observed Adverse Effect Level***
> *This is the level above which adverse effects on health and quality of life can be detected.*
>
> ***SOAEL – Significant Observed Adverse Effect Level***
> *This is the level above which significant adverse effects on health and quality of life occur."*

However, neither the NPSE, nor the NPPF Planning Practice Guidance, define numeric criteria for the NOEL, LOAEL or SOAEL[2]. Instead, it is recommended in the NPSE that the limits of each effect level should be defined for each situation and location. The WHO "Guideline for Community Noise" and BS 8233:2014 recommend internal noise design targets for habitable rooms for the avoidance of negative health effects and to promote quality of life.

4.1.3 Planning Practice Guidance – Noise (Web Publication)

The planning practice guidance website[3] provides advice on the application of the NPPF and NPSE. The noise page *"Advises on how planning can manage potential noise impacts in new development".*

Where residential development is planned close to sources of noise, the guidance gives examples of mitigation which may be included at the design stage: *"including noise barriers; and, optimising the sound insulation provided by the building envelope".*

The guidance also gives some further advice on interpretation of SOAEL as the level at which noise is noticeable and disruptive and where:

> *"the noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficult in getting back to sleep…"*

4.1.4 ProPG: Planning & Noise

The Professional Practice Guidance on Planning and Noise (May 2017) provides guidance on transport noise affecting new residential developments. The guidance was prepared by a working group formed from members of the Institute of Acoustics (IoA), the Association of Noise Consultants (ANC) and the Chartered Institute of Environmental Health (CIEH). It has no formal planning status but nevertheless represents good industry practice. It is specifically for assessing noise from sites where transportation noise sources dominate. The guidance promotes a two-stage assessment approach:

Stage 1 – Initial Site Noise Risk Assessment; and,

[2] Possible options for SOAEL and LOAEL thresholds were given in an AECOM report for Defra December 2015 http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=18157&FromSearch=Y&Publisher=1&SearchText=soael&SortString=ProjectCode&SortOrder=Asc&Paging=10

[3] https://www.gov.uk/government/collections/planning-practice-guidance

Stage 2 – Full assessment and systematic appraisal of four key elements.

The stage 1 initial risk assessment provides an indication of the likely risk of adverse effects from noise assuming in the first instance that no mitigation were included within the proposals. The risk assessment is based on measured or predicted noise levels during a "typical worst case" 24-hour period. Figure 1 of the document (adapted below as Figure 4) presents the Stage 1 assessment and indicates that higher noise levels result in increased noise risk without mitigation. Figure 6 does not directly relate noise levels to specific risk categories although the ProPG states that a negligible noise risk broadly correlates to noise levels not exceeding 50dB $L_{Aeq, 16hr}$ (daytime) and 40dB $L_{Aeq, 8hr}$ (night).

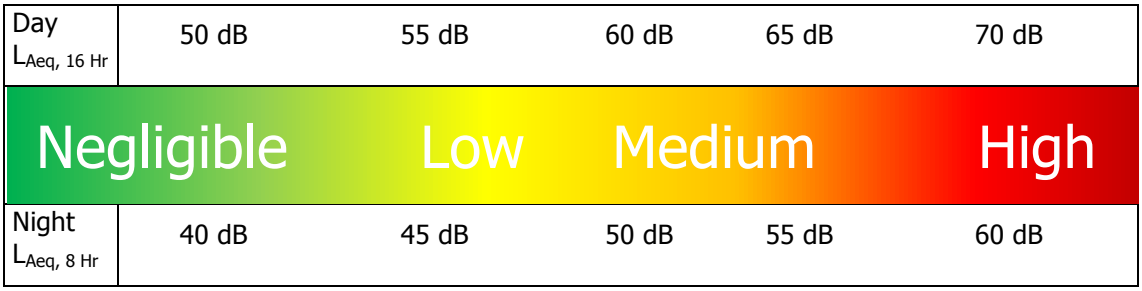


Figure 6 – ProPG Stage 1 Noise Risk Assessment (adapted from ProPG Figure 1)

Where the initial noise assessment indicates a higher risk of adverse noise effects, a stage 2 assessment is required. The stage 2 assessment is more involved than the stage 1 and requires systematic consideration of four elements:

Element 1 – Good Acoustic Design Process

The acoustic design of a building and any mitigation should be considered at an early stage of the design process. Following a good acoustic design process is considered a part of achieving a good design as required by the NPSE and NPPF. Guidance on the requirements for providing an Acoustic Design Statement (ADS) is given in Figure 3 of the ProPG.

Element 2 – Internal Noise Level Guidelines

Guidance on internal noise levels can be found in BS8233:2014 Guidance on sound insulation and noise reduction for buildings. Figure 2 of the ProPG summarises the guidance from BS8233 but with a number of additions. The internal noise criteria presented in Figure 2 of ProPG and the relevant notes are presented in Table 1 below.

Element 3 – External Amenity Area Noise Assessment

The guidance of the ProPG reflects and extends on the advice of BS8233 and PPG Noise. The guidance in the ProPG presents five points for consideration, the first being *"If the external amenity spaces are an intrinsic part of the overall design, the acoustic environment of those spaces should be considered so that they can be enjoyed as intended".*

Element 4 – Assessment of Other Relevant Issues

"Other relevant issues" within the context of the ProPG include relevant national and local policy, which may have a bearing on the development.

Regarding developments located in higher risk areas, ProPG says:

"This risk may be reduced by following a good acoustic design process that is demonstrated in a detailed ADS"

It goes on to explain what is meant by Good Acoustic Design:

"Good acoustic design is not just compliance with recommended internal and external noise exposure standards. Good acoustic design should provide an integrated solution whereby the optimum acoustic outcome is achieved, without design compromises that will adversely affect living conditions and the quality of life of the inhabitants or other sustainable design objectives and requirements.

"Using fixed unopenable glazing for sound insulation purposes is generally unsatisfactory and should be avoided; occupants generally prefer the ability to have control over the internal environment using openable windows, even if the acoustic conditions would be considered unsatisfactory when open. Solely relying on sound insulation of the building envelope to achieve acceptable acoustic conditions in new residential development, when other methods could reduce the need for this approach, is not regarded as good acoustic design. Any reliance upon building envelope insulation with closed windows should be justified in supporting documents."

4.1.5 Internal Noise Criteria – BS8233: 2014

Noise limits for developments of a residential nature are usually set in terms of two noise parameters: the ambient level L_{Aeq} and the maximum level, L_{AFmax}. The L_{AFmax} is the highest noise level in a given period and is determined by individual events such as a vehicle pass-bys. An L_{AFmax} limit is usually only applied at night, when sleep disturbance is most likely to be an issue. The L_{Aeq} is defined as the steady-state noise level that has the same energy as the actual time-varying noise over the same time period. It is effectively the average noise level.

Appropriate internal noise levels are recommended in BS 8233:2014 (shown in Table 1 below) and in the World Health Organisation (WHO) Guidance "Guidelines for Community Noise", 1999.

Table 1: Indoor Ambient Noise Levels from BS 8233: 2014 for Residential

Activity	Location	Day (07:00 to 23:00)	Night (23:00 to 07:00)
Resting	Living rooms	35 dB $L_{Aeq, 16\ hour}$	
Dining	Dining room/area	40 dB $L_{Aeq, 16\ hour}$	
Sleeping - night Resting - day	Bedrooms	35 dB $L_{Aeq, 16\ hour}$	30 dB $L_{Aeq, 8\ hour}$

WHO Guidelines propose internal limits of L_{Aeq} 35dB for living/dining rooms and L_{Aeq} 30dB / 45 dB L_{AFmax} inside a bedroom at night.

The internal noise criteria in BS 8233:2014 are followed by a number of notes. Those relevant to this scheme are reproduced below:

"Note 3: These levels are based on annual average data and do not have to be achieved in all circumstances. For example it is normal to exclude occasional events, such as fireworks night on New Year's Eve."

"Note 4: Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$

depending on the character and number of events per night. Sporadic noise events could require separate values."

"Note 5: If relying on closed windows to meet the guide values, there needs to be appropriate alternative ventilation that does not compromise the façade insulation or the resulting noise level."

"Note 6: Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions achieved."

Notably BS 8233:2014 does not contain and quantitative limits for the assessment of L_{AFmax} values, however guidance within ProPG (2017) added to the criteria references within BS 8233:2014, including a quantitative limit for the assessment of L_{AFmax} values. The guidance within ProPG regarding L_{AFmax} values is as follows:

NOTE 4 Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$, depending on the character and number of events per night. Sporadic noise events could require separate values.

In most circumstances in noise sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45dB $L_{Amax,F}$ more than 10 times a night. However, where it is not reasonably practicable to achieve this guideline then the judgement of acceptability will depend not only on the maximum noise levels but also on factors such as the source, number, distribution, predictability and regularity of noise events.

4.2 Guidance – Offices

The office aspect of the development will be required to achieve certain minimum acoustic performance requirements suitable for its proposed use as offices; guidance on this from BS8233 and British Council for Offices (BCfO) is considered, along with precedent from experience.

4.2.1 Internal Noise Levels

Internal noise limits are proposed in BS 8233: 2014 and BCfO guidance. These noise limits against are given in Table 2. The BS 8233 limits apply to the combination of external noise and internal services noise, whereas those from BCfO are identified separately.

Table 2: Internal Noise Standards for Offices

Room Type	Internal Ambient Noise Level	Internal Maximum Limits L_{AFmax} dB[2]
Executive/ Cellular Office / Meeting Rooms	L_{Aeq} 35 – 40dB[1] NR 35 (≈41 dB L_{Aeq})[2] NR 35[3]	50dB[2] 45dB[4]
Open Plan Office	L_{Aeq} 45 – 50dB[1] NR 40 (≈46 dB L_{Aeq})[2] Open plan office: NR 40[3] Speculative office: NR 38[3]	55dB[2] 50dB[4]

Notes
1 – Internal design range taken from BS 8233:2014 for the combination of external and services noise.
2 – Internal NR L_{eq} and $L_{Amax,F}$ levels taken from BCfO for "noise intrusion levels" from external noise.
3 – Internal NR building services limits taken from BCfO
4 – Internal L_{AFmax} limits from BCfO: "*vibration transfer from intermittent sources, such as underground trains, to internal areas should not lead to re-radiated noise levels*" exceeding these values.

The speculative office values are intended for offices where it is possible that future subdivision to form more sensitive cellular spaces may take place. It is assumed for this project that the noise limits on the worst affected façade (facing the railway to the north) will be only required to achieve the open plan office limits (NR40/L_{Aeq} 45 dB). The plant noise limit will be NR38. When combined, the overall noise levels would not be higher than the BS8233 range of L_{Aeq} 45-50dB.

4.2.2 Noise from Ground-borne Vibration

BCfO recommends that noise generated from groundborne vibration (often called re-radiated noise) should be limited to:

- Open Plan Offices - $L_{Amax,F}$ 50 dB
- Meeting rooms and cellular offices - L_{AFmax} 45 dB.

These values are 5dB lower than the recommended limit for general maxima from airborne sound (i.e. road and rail noise from the exterior).

4.3 Summary of Criteria

The various criteria against which the scheme will be assessed is summarised in Table 3.

Table 3: Summary of Assessment Criteria

Development Type	Criterion Type	Room Type	Daytime Limit	Night Time Limit
Residential	Internal Noise	Bedroom	$L_{Aeq,16h}$ 35dB	$L_{Aeq,8h}$ 30dB L_{AFmax} 45dB exceeded fewer than 10 times
		Living Room	$L_{Aeq,16h}$ 35dB	--
	External Noise	Ext. Amenity Area	$L_{Aeq,16h}$ 55dB	--
	Vibration	Any	0.2 – 0.4 VDV $ms^{1.75}$	0.1 – 0.2 VDV $ms^{1.75}$
Office	Internal Noise	Executive / Cellular Office / Meeting Rooms	L_{Aeq} 35 – 40dB Services NR 35 L_{AFmax} 50dB	--
		Open Plan / Speculative Office	L_{Aeq} 45 – 50dB Services, open plan NR 40 Services, Speculative NR 38 L_{AFmax} 55dB	--
	Vibration	All	0.4 VDV $ms^{1.75}$	--
		Executive / Cellular Office / Meeting Rooms	L_{AFmax} 45dB re-radiated noise	--
		Open Plan / Speculative Office	L_{AFmax} 50dB re-radiated noise	--

5 Noise and Vibration Survey

A baseline noise and vibration survey was carried out over the period Friday 22nd – Friday 29th November 2019 to determine noise and vibration levels at the site. Measurements were made over seven consecutive days at the locations indicated in Figure 1. These are described in detail below.

All sound level meters were calibrated with a Brüel & Kjær Type 4231 calibrator, with no significant drift noted. All equipment used was within its respective calibration periods, with calibration certificates available on request. The equipment was unattended except for set-up and collection.

5.1 Location MU1 – Overlooking Blackburn Road

Location MU1 is broadly equivalent to the southern façade of the residential blocks. The sound level meter was located on a roof equivalent to 4th floor level in order to have as clear a line of sight to the railway to the south as possible, as the proposed development will be even taller than currently.

A Rion NL52 sound level meter was used at this location, set up to log various noise indices (L_{Aeq}, L_{AFmax}, L_{A90}, L_{A01}, L_{A10}) in consecutive 10-minute periods as well as spectral sound levels. The microphone was mounted on a pole approximately 1.4m above the roof level, and 19.5m

away from the far side kerb of Blackburn Road. There was no line of sight to the nearside kerb of Blackburn Road due to the lower roof level obstructing it. The station platform was some 50m south of the measurement location. The location itself is shown in Figure 7.

Figure 7 – Noise Survey Measurement Location MU1 (looking west towards Blackburn Road and West Hampstead Underground Station)

5.2 Location MU2 – Car Park

This location was chosen as representative of the rear of existing residences at Blackburn Road and the proposed dwellings to the north, with the aim of measuring underlying background sound levels representative of those found at the nearest sensitive receptors for the purpose of deriving plant noise limits. The microphone was completely shielded from Blackburn Road to emulate the rears of nearby residential properties and would be representative of the lowest levels given this shielding.

A Larson Davis LD820 sound level meter was used here, set up to log various noise indices (L_{Aeq}, L_{AFmax}, L_{A90}, L_{A01}, L_{A10}) in consecutive 15-minute periods, in accordance with the principles set out in BS7445. The microphone was tripod mounted at a height of approximately 1.5m above local ground level, and 1m away from the nearest vertical reflecting surface. Hence the noise levels measured are façade noise levels, typically taken to be 3dB higher than free field noise levels. 3dB may be subtracted from the measured noise levels to correct them to free field, which has been done in this case. The measurement location is shown in Figure 8.

Figure 8 – Noise Survey Measurement Location MU2 (looking west)

5.3 Location MU3 – Overlooking Railway to North

The monitor located here was measuring predominantly noise levels generated by the railway lines to the north of the site. The nearest railway was approximately 43m away from the microphone. While the site does extend further north than this, it was not possible to access the closer rooftop.

A Rion NL52 sound level meter was used at this location, set up to log various noise indices (L_{Aeq}, L_{AFmax}, L_{A90}, L_{A01}, L_{A10}) in consecutive 10-minute periods as well as spectral levels. The microphone was mounted on a tripod at approximately 1.5m above the local roof level, and more than 3.5m from any vertical reflecting surfaces, therefore measuring free field noise levels. The measurement location is shown in Figure 9.

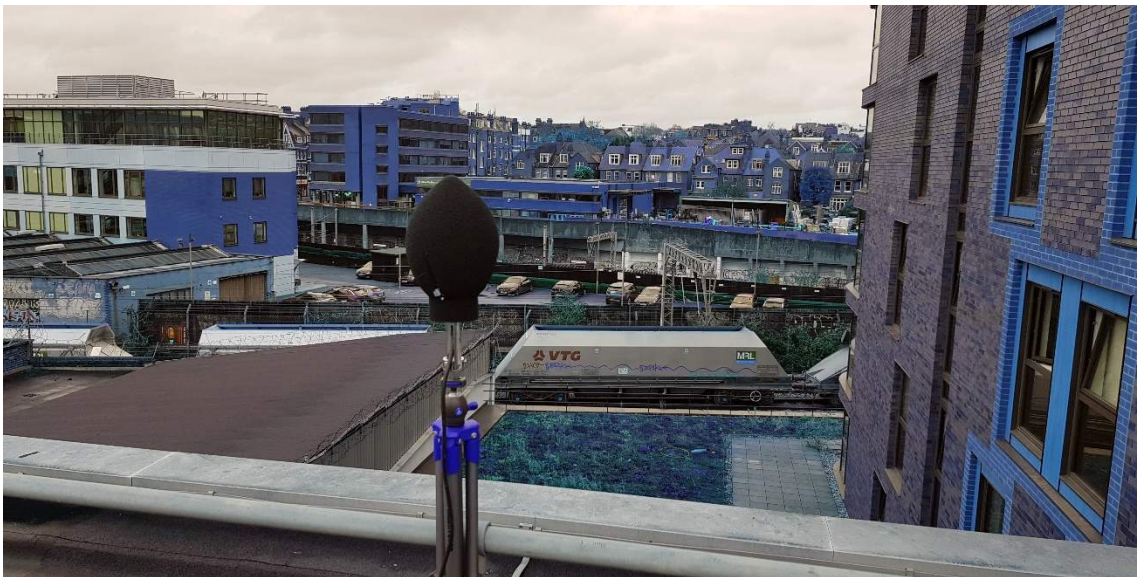


Figure 9 – Noise Survey Measurement Location MU3 (looking north showing freight train)

5.4 Location V1 – Warehouse Abutting Railway to the North

A Rion XV-2P tri-axial groundborne vibration meter with a PV-83C tri-axial transducer was used for the survey. The equipment was set up to log various vibration data (velocity, displacement, acceleration, VDV) at 1-second and 1-hour intervals. The meter was combined with a tri-axial accelerometer mounted on a mounting plate compliant with DIN 45669. The accelerometer was positioned on a concrete slab that was a part of the building structure. Figure 10 shows the location, close to the northern wall nearest to the railway.

Figure 10 – Vibration Measurement Location V1

5.5 Weather Conditions

A weather station was set up to allow for the exclusion of data measured in unsuitable conditions, however no data has been logged due to a hardware failure. Consequently weather data has been obtained from online weather service Weather Underground[4], measured at a nearby weather monitoring station on Hampstead Heath. This indicates that weather conditions during the survey period were variable. All days had at least one 5-minute period where some rain was recorded, with the Tuesday 26th – Wednesday 27th period being the rainiest. Wind speeds were also exceeding the 5m/s limit stipulated in BS7445 on several occasions. The wind direction changed over the course of the week, from Easterly at the start of the survey, through Southerly and finishing on Northerly. Temperatures varied between 2°C and 13°C. Noise levels measured during unsuitable weather conditions with either rain or high wind speeds have been excluded from the assessment analysis.

[4] www.wunderground.com

6 Noise and Vibration Survey Results

6.1 Noise Levels Measured at MU1 – South

Noise levels measured at location MU1 are summarised in Table 4 in terms of the typical L_{Aeq} and L_{AFmax} noise levels. The data is tabulated in Appendix A.

Table 4: Noise Levels Measured at Location MU1

Day	Day Period	Typical* L_{Aeq} (dB)	Typical** L_{AFmax} (dB)
Friday 22nd – Saturday 23rd	Daytime (11:50 – 23:00, 07:00 – 11:50)	60.6	--
	Night time (23:00 – 07:00)	55.4	77.0
Saturday 23rd – Sunday 24th	Daytime (11:50 – 23:00, 07:00 – 11:50)	58.0	--
	Night time (23:00 – 07:00)	52.4	66.3
Sunday 24th – Monday 25th	Daytime (11:50 – 23:00, 07:00 – 11:50)	59.3	--
	Night time (23:00 – 07:00)	54.0	72.5
Monday 25th – Tuesday 26th	Daytime (11:50 – 23:00, 07:00 – 11:50)	61.0	--
	Night time (23:00 – 07:00)	56.2	77.0
Tuesday 26th – Wednesday 27th	Daytime (11:50 – 23:00, 07:00 – 11:50)	60.7	--
	Night time (23:00 – 07:00)	56.4	74.1
Wednesday 27th – Thursday 28th	Daytime (11:50 – 23:00, 07:00 – 11:50)	60.5	--
	Night time (23:00 – 07:00)	55.8	75.9
Thursday 28th – Friday 29th	Daytime (11:50 – 23:00, 07:00 – 11:50)	60.9	--
	Night time (23:00 – 07:00)	55.1	75.4
Weekday Typical#	Daytime (07:00 – 23:00)	60.7	--
	Night time (23:00 – 07:00)	55.8	75.9

*Logarithmic average
**10th highest, based on 30 second samples
#L_{Aeq} logarithmic average, L_{AFmax} arithmetic average

The noise levels measured at this location are fairly stable over the whole survey period, including the weekend. This may be due to the freight trains, which run on a line further north, operating on a pattern similar to weekdays. Weekend noise levels are however slightly lower due to fewer train movements, as well as Builder Depot being closed. The typical noise levels

presented above would place the site in LOAEL to SOAEL (Amber) category for both daytime and night time noise according to Camden's planning guidance. In terms of ProPG classification, the site would be in the Medium category for daytime noise, and Medium-High for night time noise. The noise levels are therefore only moderate for an urban environment and would not be considered especially high.

6.2 Noise Levels Measured at MU2 – Car Park

Noise levels measured at location MU2 are summarised in Table 5 in terms of the typical L_{Aeq} and L_{A90} noise levels. The data is tabulated in Appendix A.

Table 5: Noise Levels Measured at Location MU2

Day	Day Period	Typical L_{Aeq} (dB)	Typical L_{A90} (dB)
Friday 22nd – Saturday 23rd	Daytime (11:15– 23:00, 07:00 – 11:15)	51.0	47
	Night time (23:00 – 07:00)	46.2	44
Saturday 23rd – Sunday 24th	Daytime (11:15– 23:00, 07:00 – 11:15)	52.6	46
	Night time (23:00 – 07:00)	43.9	43
Sunday 24th – Monday 25th	Daytime (11:15– 23:00, 07:00 – 11:15)	47.3	44
	Night time (23:00 – 07:00)	44.6	44
Monday 25th – Tuesday 26th	Daytime (11:15– 23:00, 07:00 – 11:15)	49.7	46
	Night time (23:00 – 07:00)	45.5	42
Tuesday 26th – Wednesday 27th	Daytime (11:15– 23:00, 07:00 – 11:15)	48.4	46
	Night time (23:00 – 07:00)	44.9	42
Wednesday 27th – Thursday 28th	Daytime (11:15– 23:00, 07:00 – 11:15)	47.9	45
	Night time (23:00 – 07:00)	47.8	42
Thursday 28th – Friday 29th	Daytime (11:15– 23:00, 07:00 – 11:15)	49.2	45
	Night time (23:00 – 07:00)	44.6	41
Weekday Typical	Daytime (07:00 – 23:00)	49.4	45
	Night time (23:00 – 07:00)	46.0	42

Table 5 presents background sound levels (L_{A90}) instead of maxima values as the noise levels measured this location will be primarily used to derive noise limits for any plant that will service

the proposed scheme. The measured noise levels are fairly consistent over the survey period, with background sound levels varying only by up to 3dB, indicating a stable noise environment.

6.3 Noise Levels Measured at MU3 – North

Noise levels measured at location MU3 are summarised in Table 6 in terms of the typical L_{Aeq} and L_{AFmax} noise levels. The data is tabulated in Appendix A.

Table 6: Noise Levels Measured at Location MU3

Day	Day Period	Typical L_{Aeq} (dB)	Typical L_{AFmax} (dB)
Friday 22nd – Saturday 23rd	Daytime (12:20 – 23:00, 07:00 – 12:20)	58.3	--
	Night time (23:00 – 07:00)	55.8	73.2
Saturday 23rd – Sunday 24th	Daytime (12:20 – 23:00, 07:00 – 12:20)	55.9	--
	Night time (23:00 – 07:00)	49.5	71.8
Sunday 24th – Monday 25th	Daytime (12:20 – 23:00, 07:00 – 12:20)	56.3	--
	Night time (23:00 – 07:00)	53.1	72.5
Monday 25th – Tuesday 26th	Daytime (12:20 – 23:00, 07:00 – 12:20)	58.1	--
	Night time (23:00 – 07:00)	56.4	73.7
Tuesday 26th – Wednesday 27th	Daytime (12:20 – 23:00, 07:00 – 12:20)	57.7	--
	Night time (23:00 – 07:00)	55.0	74.4
Wednesday 27th – Thursday 28th	Daytime (12:20 – 23:00, 07:00 – 12:20)	57.9	--
	Night time (23:00 – 07:00)	55.4	75.2
Thursday 28th – Friday 29th	Daytime (12:20 – 23:00, 07:00 – 12:20)	58.7	--
	Night time (23:00 – 07:00)	55.3	71.5
Weekday Typical	Daytime (07:00 – 23:00)	58.2	--
	Night time (23:00 – 07:00)	55.6	73.6

The noise levels measured at this location are fairly stable over the whole survey period, with the outliers being the Saturday 23rd – Sunday 24th and Sunday 24th – Monday 25th periods, when the measured noise levels were 3dB – 5dB lower than on most other days. This is likely a result of fewer railway movements over the weekend. These noise levels would classify this location at the lower end of the LOAEL to SOAEL (Amber) category in line with Camden's

planning guidance for both daytime and night time noise. In terms of ProPG, this part of the site would be classified in the Low-Medium category for daytime noise, and Medium for night time noise. The noise levels presented above are considered representative of the residential blocks, and will be corrected for distance and angle of view in case of the office building in the north part of the site. Again, these levels are no especially high for an urban site.

6.4 Noise Survey Summary

The middle of the site is exposed to moderately high noise levels from both the north and the south, but not excessive; although the closer facades to the railways will be exposed to higher levels, particularly the office to the north. The noise levels drop during the night but not significantly, with night time trains making a contribution on both sides of the site. The site is classified in the LOAEL to SOAEL (Amber) category in line with Camden's guidance on noise, which is defined as

> *"Where noise is observed to have an adverse effect level, but which may be considered acceptable when assessed in the context of other merits of the development."*

This broadly correlates with the ProPG classification of the site based on noise levels measured, which requires a Stage 2 full assessment of the building envelope sound insulation to ensure appropriate indoor noise conditions can be met. Typically for a site experiencing these noise levels it is possible to develop residential schemes, but mitigation against noise is required. Therefore, an assessment of the requirements for building envelope sound insulation and ventilation has been made to demonstrate that suitable living conditions can be achieved.

Note that noise levels used for the office building are derived from data measured at MU3, which have been corrected to account for the difference in distance between the proposed building façade and the measurement location, which was considerably further away. Therefore, in case of the office building's railway facing façades, the noise levels used in the calculations are significantly higher than those reported below.

The typical noise levels measured during the survey are summarised in Table 8.

Table 8: External Noise Levels at the Unattended Measurement Positions

Location	Period	Duration hh:mm:ss	Free Field Level, L_{Aeq}, dB	L_{AFmax}, dB, 10 exceedances of level	Typical L_{A90} (dB)
Location MU1	Daytime (07:00 to 23:00)	16:00:00	60.7	--	--
	Night-time (23:00 to 07:00)	08:00:00	55.8	75.9	--
Location MU2	Daytime (07:00 to 23:00)	16:00:00	49.4	--	45
	Night-time (23:00 to 07:00)	08:00:00	46.0	--	42
Location MU3	Daytime (07:00 to 23:00)	16:00:00	58.2	77.0*	--
	Night-time (23:00 to 07:00)	08:00:00	55.6	73.6	--

*Average +1 Standard Deviation rather than 10th highest as not for residential

7 Vibration

7.1 Levels Measured at V1

Table 9 presents the 24-hour Vibration Dose Values (VDV) measured on site. The location was in the northernmost part of the warehouse, as close as possible to the railway on the site. This is representative of the approximate most exposed location of the proposed office building.

Table 9: Vibration Results

Date	Times	VDV Limit ($ms^{-1.75}$)	VDV per axis ($ms^{-1.75}$)		
			X	Y	Z
Friday 22nd – Saturday 23rd	11:00 - 11:00	0.4	0.07044	0.07029	0.06183
Saturday 23rd – Sunday 24th	11:00 - 11:00	0.4	0.02717	0.02634	0.04215
Sunday 24th – Monday 25th	11:00 - 11:00	0.4	0.03585	0.03331	0.04874
Monday 25th – Tuesday 26th	11:00 - 11:00	0.4	0.06417	0.06300	0.05842
Tuesday 26th – Wednesday 27th	11:00 - 11:00	0.4	0.05739	0.05611	0.05832
Wednesday 27th – Thursday 28th	11:00 - 11:00	0.4	0.07385	0.07158	0.06026
Thursday 28th – Friday 29th	11:00 - 11:00	0.4	0.05130	0.04946	0.05740

7.2 Vibration Assessment

All the VDV levels measured are comfortably compliant with the Camden vibration limits, and vibration will therefore not be considered further.

8 IMMI Modelling

8.1 Noise Modelling

To predict noise levels across the site, the noise environment was modelled using noise modelling software (IMMI[5]) based on the source noise levels measured during the survey to calibrate the model. The model is prepared for the proposed scheme so that noise levels can be calculated at individual façades on the new scheme. These have subsequently been used to input into the building façade sound insulation calculations. An example noise contour is shown in Figure 11.

[5] www.immi.eu

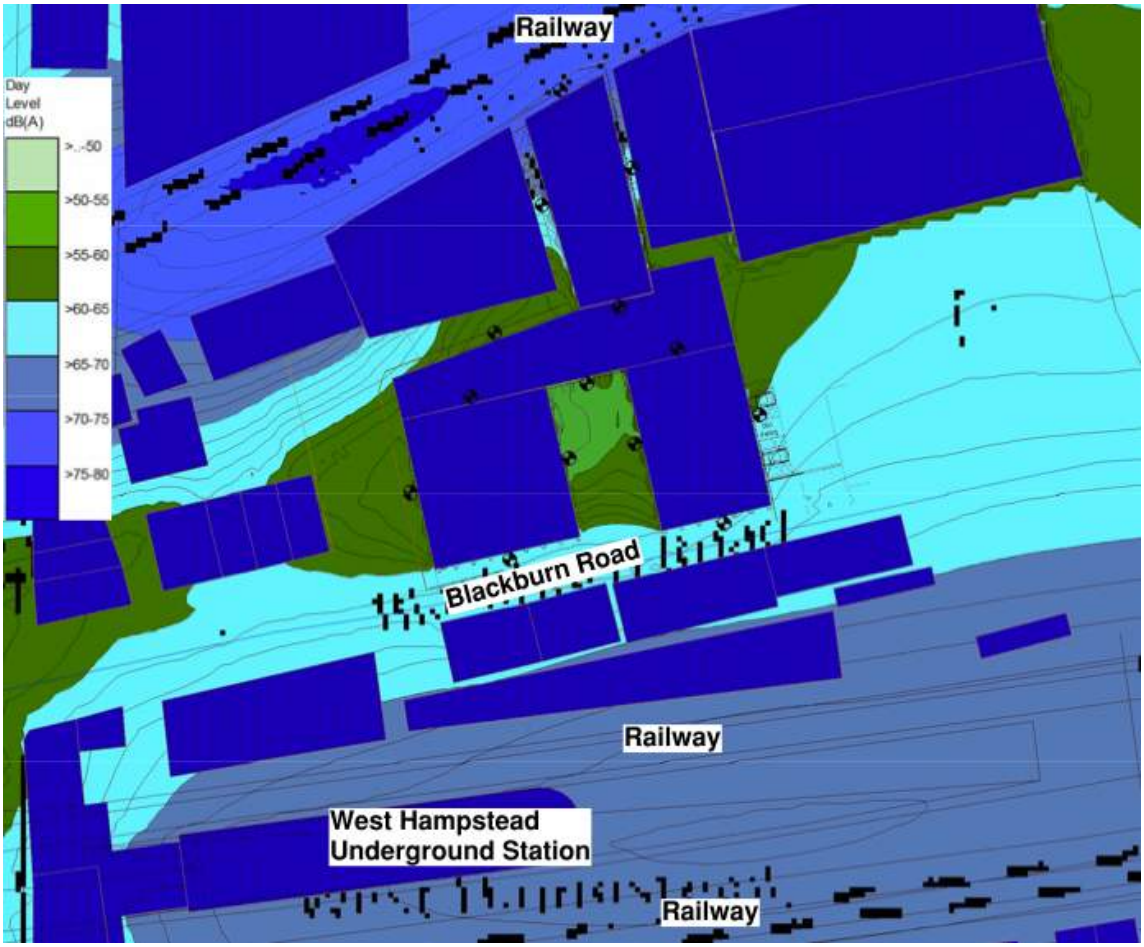


Figure 11 – Daytime Noise Contour for the 3rd Floor Level

8.2 Predicted Noise Levels at Key Locations

Tables 10 and 11 give the noise levels predicted at the key facades of the residences to the south. Values of noise levels predicted for the offices are given in Table 12 along with the façade specification.

Table 10: Noise Levels for Building Envelope Calculations, East Residential Block

Block	Façade	Period	L_{Aeq}, dB	L_{AFmax}, dB
East	North	Daytime (07:00 to 23:00)	53 – 58	--
		Night-time (23:00 to 07:00)	50 – 56	76 – 77
	East	Daytime (07:00 to 23:00)	58 – 60	--
		Night-time (23:00 to 07:00)	53 – 55	74 – 76
	South	Daytime (07:00 to 23:00)	61 – 63	--
		Night-time (23:00 to 07:00)	56 – 58	76 – 77
	West	Daytime (07:00 to 23:00)	53 – 58	--
		Night-time (23:00 to 07:00)	49 – 55	74 – 75

Table 11: Noise Levels for Building Envelope Calculations, West Residential Block

Block	Façade	Period	L_{Aeq}, dB	L_{AFmax}, dB
West	North	Daytime (07:00 to 23:00)	50 – 61	--
		Night-time (23:00 to 07:00)	48 – 60	76 – 77
	East	Daytime (07:00 to 23:00)	52 – 56	--
		Night-time (23:00 to 07:00)	49 – 52	74 – 75
	South	Daytime (07:00 to 23:00)	60 – 62	--
		Night-time (23:00 to 07:00)	55 – 56	75 – 77
	West	Daytime (07:00 to 23:00)	56 – 60	--
		Night-time (23:00 to 07:00)	52 – 57	74 – 76

9 Building Envelope Sound Insulation Calculations

Sound insulation calculations for habitable rooms have been prepared in accordance with BS EN 12354-3 to determine the extent of the sound insulation required to control noise levels in offices and in residential bedrooms and living rooms to meet the noise limits discussed earlier in the report. Examples of these calculations are provided in Appendix B.

The window specification is given in terms of the sound reduction index R_w as determined in an acoustics laboratory. Other specifications of glazing could provide sufficient attenuation, however calculations should be undertaken to ensure that adequate sound insulation is provided by any alternate product types.

It is noted that the sound insulation requirements apply to the whole element. For example, for windows, it applies to the full window including the frame and not just the glass configuration. Due to high noise levels on the loudest façades, mechanical ventilation will be necessary to provide sufficient attenuation against external noise.

Details of proposed building façade wall construction are not finalised at this stage and assumptions are made in order to demonstrate that suitable performance can be achieved. It is assumed a steel frame construction with a light infill will be used, and an example build-up has been modelled in sound insulation prediction software Insul[6]. This will likely have a render, rain screen or other cladding and we have assumed to provide reasonable sound insulation performance that it will have a mass board on the outer layer. The construction is as follows:

- Render or other lightweight finish on
- 10mm cementitious board (or other mass layer such as brick slips, concrete PC panels etc);
- Steel frame;
- Internal lining frame, creating a 280mm cavity;
- 200mm mineral wool insulation in cavity;
- 2x 15mm dense (min. 840kg/m^3) plasterboard internal lining.

[6] www.insul.co.nz

This type of build-up is calculated to provide sound insulation in excess of R_w 60dB. The generated datasheet is provided in Appendix C. If, alternatively, a masonry cavity construction were used, then that would also provide adequate performance.

9.1 Office Building

Current floorplans for the office building indicate open plan offices only, therefore the assessment is carried out against requirements for open plan offices as given in Table 3. If any of the spaces are to be subdivided into cellular or executive offices, the glazing requirements may increase as a consequence of more onerous internal noise limits and smaller room volumes. To avoid excessively high glazing requirements as a consequence of potential subdivisions, it is recommended that any non-open plan offices are located in the southern half of any floor, and ideally on the southern façade, where the noise levels are lowest. The noise levels from the railway are predicted as quite high and are such that the noise limits cannot be achieved with open window ventilation, and it is therefore assumed that the office will be mechanically ventilated with a closed façade. The building façade sound insulation requirements are given in Table 12.

The office is close to the railway to the north and has relatively high levels of noise, which result in quite high performance requirements for the worst affected facades.

Table 12: Specifications of Façade Elements for the Office Building

Floor	Facade	Predicted Noise Level (L_{Aeq} / L_{AFmax}) dB	Window R_w #	Wall* R_w
Ground	North	**76 / 93**	**39dB** E.g. 6/10/8.8 Laminated Double Glazing	**60dB**
First	North	**75 / 92**	**40dB** E.g. 6.4/12/10.4 Laminated Double Glazing	
Second	North	**74 / 90**	**40dB** E.g. 6.4/12/10.4 Laminated Double Glazing	
Third	North	**73 / 88**	**38dB** E.g. 4/14/6.6 Laminated Double Glazing	
Fourth	North	**72 / 86**	**35dB** E.g. 4/14/6 Double Glazing	
Fifth	North	**71 / 85**	**35dB** E.g. 4/14/6 Double Glazing	
Sixth	North	**71 / 84**	**38dB** E.g. 8.8/12/4 Laminated Double Glazing	
	West	**68 / 84**	**35dB** E.g. 4/14/6 Double Glazing	
Seventh	North	**70 / 82**	**38dB** E.g. 8.8/12/4 Laminated Double Glazing	
	West	**67 / 82**	**35dB** E.g. 4/14/6 Double Glazing	
Eighth	North	**69 / 81**	**38dB** E.g. 8.8/12/4 Laminated Double Glazing	
	West	**66 / 81**	**35dB** E.g. 4/14/6 Double Glazing	
All	South	**55 / 72 (highest)**	**32dB** E.g. 4/16/4 Double Glazing	

#Example only, due to differences in sound insulation spectrally each proposed window configuration would need to be assessed
* Based on Insul calculated example steel frame & light infill construction. Minimum performance of 24dB at 63Hz also required

The L_{AFmax} values given above have all, except for that for the south façade, been derived from the 77.0dB value given in Table 8 which was observed to come from train movements to the north and has been distance corrected to the proposed office location. It is noted that they are very high, which is due to the proximity to the railway. We have reviewed these levels against other railway measurements we have made on a different site at a similar distance from the tracks which also indicated similar levels of over 90dBA.

9.2 Residential Buildings

The two apartment blocks contain a mix of dwellings ranging from studios to three-bedroom flats. There is some variation in glazed areas between various rooms, however even the smallest windows are still fairly large, which results in a baseline of moderately high glazing requirements for all bedrooms. The building façade sound insulation requirements for the east and west residential buildings are provided in Tables 12 and 13 respectively.

Table 12: Specifications of Façade Elements for the East Residential Building

Block	Floor	Primary Facade	Room	Window R_w#	Wall* R_w
East	1 – 6	South	Bedrooms	**39dB** E.g. 6/10/8.8 Laminated Double Glazing	**60dB**
	1 – 6	West	Bedrooms	**35dB** E.g. 4/14/6 Laminated Double Glazing	
	1 – 3	East	Bedrooms	**40dB** E.g. 6.4/12/10.4 Laminated Double Glazing	
	4 – 6	East	Bedrooms	**39dB** E.g. 6/10/8.8 Laminated Double Glazing	
	1 – 6	North	Bedrooms (not studio)	**39dB** E.g. 6/10/8.8 Laminated Double Glazing	
	1 – 6	North	Studios	**42dB** E.g. 8.4/12/10.8 Laminated Double Glazing	
	1 – 6	South	Living Rooms	**38dB** E.g. 8.8/12/4 Laminated Double Glazing	
	1 – 6	West	Living Rooms	**32dB** E.g. 4/16/4 Double Glazing	
	1 – 6	North	Living Rooms	**35dB** E.g. 4/14/6 Double Glazing	

#Example only, due to differences in sound insulation spectrally each proposed window configuration would need to be assessed

* Based on Insul calculated example steel frame & light infill construction. Minimum performance of 24dB at 63Hz also required

While for the office building the façade requirements decreased quite significantly with height, this is not the case for the residential buildings. This is due to the much larger distance between the railway and the building façades, so a change in height has a very small effect on the overall difference in distance from the noise source. Additionally, at lower levels, noise from road traffic and activity on Blackburn Road makes a contribution.

The high glazing requirement for the studios is a consequence of a large façade area, more than half of which is made up of glazing.

Table 13: Specifications of Façade Elements for the West Residential Building

Block	Floor	Primary Facade	Room	Window R_w#	Wall* R_w
West	1 – 4	South	Studios (excl. middle)	**40dB** E.g. 6.4/12/10.4 Laminated Double Glazing	**60dB**
	1 – 4	South	Middle Studios	**39dB** E.g. 6/10/8.8 Laminated Double Glazing	
	1 – 4	East	Studios	**39dB** E.g. 6/10/8.8 Laminated Double Glazing	
	1 – 4	West	Bedrooms	**35dB** E.g. 4/14/6 Double Glazing	
	1 – 4	North	Single bedrooms	**39dB** E.g. 6/10/8.8 Laminated Double Glazing	
	1 – 4	North	Double bedrooms	**35dB** E.g. 4/14/6 Double Glazing	
	1 – 4	All	Living Rooms	**35dB** E.g. 4/14/6 Double Glazing	
	5	All	Single bedrooms	**39dB** E.g. 6/10/8.8 Laminated Double Glazing	
	5	East / West	Double Bedrooms	**38dB** E.g. 8.8/12/4 Laminated Double Glazing	
	5	North	Double Bedrooms	**40dB** E.g. 6.4/12/10.4 Laminated Double Glazing	
	5	South	Living Rooms	**35dB** E.g. 4/14/6 Double Glazing	

#Example only, due to differences in sound insulation spectrally each proposed window configuration would need to be assessed
* Based on Insul calculated example steel frame & light infill construction. Minimum performance of 24dB at 63Hz also required

Here again the high glazing requirements for some studios are a consequence of very large glazed areas making up a significant part of a large exposed façade, with other requirements remaining fairly moderate.

The windows may remain openable at the occupier's discretion to provide purge ventilation, however they should not be assumed to provide the main mode of ventilation, as the resultant noise levels would exceed the internal noise limits discussed in previous sections.

Due to the recommendation of mechanical ventilation an overheating assessment is not undertaken and no guidance on trickle ventilator attenuation is provided, as it is assumed that the ventilation system may be configured to provide overheating control at the occupier's discretion.

10 Plant Noise Limits

Background sound levels measured at MU2 are used to derive noise limits in line with Camden Council's guidance. The noise limits, which will apply to the cumulative noise emissions of all external plant, are derived in Table 14. These limits would apply outside the rear of the closest dwellings (in the free field, i.e. with no façade correction).

Table 14: Plant Noise Limit Derivation: rears of dwellings

Day Period	Typical L_{A90}, dB	Camden Council Criterion (re. L_{A90}), dB	Therefore Noise Limit, L_{Ar} dB
Day 07:00 – 23:00	45	-10	35
Night 23:00 – 07:00	42	-10	32

It is noted that the outer facades of any dwellings facing north or south towards the railways would be exposed to higher levels and if these become key receptors, higher noise limits can be derived from the measurements at MU1 and MU3 instead.

11 Summary

Ion Acoustics has undertaken a noise and vibration assessment for a proposed mixed use development of land at 13 Blackburn Road, West Hampstead. This assessment has considered the potential noise impact from road traffic and railway noise on the proposed buildings. A noise survey measuring the existing noise levels on site was conducted, along with a vibration monitoring exercise measuring vibration from a railway line running along the north site boundary. The measurement results have been used in the proposed building envelope sound insulation calculations. The results indicate that improved façade sound insulation are required to attenuate the noise from the road and railway. Noise limits for any future plant have also been derived.

However, the assessments and calculations presented within this report indicate that, with suitable consideration of the relevant façades, appropriate internal noise levels can be achieved. Hence, subject to appropriate planning conditions, the development could be granted planning permission in respect of noise.

Location MU1

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
22/11/19 11:50	64.0	80.3	52.3	22/11/19 19:50	60.0	72.6	50.3	23/11/19 03:50	52.7	64.1	43.4
22/11/19 12:00	62.0	80.6	52.2	22/11/19 20:00	60.2	76.7	50.4	23/11/19 04:00	53.0	67.4	42.6
22/11/19 12:10	61.9	72.4	54.2	22/11/19 20:10	58.3	70.2	48.9	23/11/19 04:10	50.9	64.0	42.2
22/11/19 12:20	62.5	77.4	52.4	22/11/19 20:20	58.9	68.7	50.9	23/11/19 04:20	50.4	64.6	41.2
22/11/19 12:30	61.5	75.4	53.4	22/11/19 20:30	59.5	79.7	49.4	23/11/19 04:30	48.2	62.2	39.8
22/11/19 12:40	59.9	76.9	52.7	22/11/19 20:40	60.9	73.1	49.8	23/11/19 04:40	52.8	70.7	40.6
22/11/19 12:50	61.0	73.0	52.8	22/11/19 20:50	59.2	69.1	49.3	23/11/19 04:50	50.4	71.1	40.3
22/11/19 13:00	61.6	73.6	53.9	22/11/19 21:00	61.1	73.0	50.3	23/11/19 05:00	53.9	69.3	41.9
22/11/19 13:10	64.5	79.8	51.0	22/11/19 21:10	61.6	78.9	52.8	23/11/19 05:10	49.5	64.9	40.3
22/11/19 13:20	60.6	75.5	52.7	22/11/19 21:20	60.5	71.3	50.4	23/11/19 05:20	52.4	78.3	41.2
22/11/19 13:30	60.4	72.5	50.6	22/11/19 21:30	58.7	75.6	50.2	23/11/19 05:30	58.3	77.8	42.0
22/11/19 13:40	60.9	74.3	54.0	22/11/19 21:40	59.1	71.1	50.1	23/11/19 05:40	52.3	71.1	41.8
22/11/19 13:50	60.6	76.9	52.7	22/11/19 21:50	57.9	70.5	48.7	23/11/19 05:50	60.1	81.8	42.0
22/11/19 14:00	63.8	78.7	52.3	22/11/19 22:00	60.1	71.6	49.8	23/11/19 06:00	52.8	65.1	43.2
22/11/19 14:10	62.2	78.7	51.6	22/11/19 22:10	58.4	71.7	49.2	23/11/19 06:10	56.0	71.2	43.2
22/11/19 14:20	62.2	81.0	51.1	22/11/19 22:20	59.2	69.6	48.1	23/11/19 06:20	55.5	73.2	44.5
22/11/19 14:30	60.3	73.2	50.4	22/11/19 22:30	60.1	73.4	47.5	23/11/19 06:30	53.9	66.9	45.3
22/11/19 14:40	60.8	74.0	52.4	22/11/19 22:40	59.5	71.8	48.2	23/11/19 06:40	55.4	68.2	46.0
22/11/19 14:50	60.2	73.6	52.7	22/11/19 22:50	57.5	69.0	49.3	23/11/19 06:50	56.0	69.8	46.0
22/11/19 15:00	60.8	73.7	51.5	22/11/19 23:00	59.3	72.3	49.4	23/11/19 07:00	56.0	76.8	43.9
22/11/19 15:10	62.6	73.9	52.2	22/11/19 23:10	59.0	71.8	49.3	23/11/19 07:10	56.5	71.9	46.0
22/11/19 15:20	61.0	74.7	51.8	22/11/19 23:20	59.2	76.3	48.6	23/11/19 07:20	55.0	67.1	46.8
22/11/19 15:30	62.3	75.0	52.2	22/11/19 23:30	57.9	70.8	48.9	23/11/19 07:30	58.3	76.6	46.3
22/11/19 15:40	61.6	75.8	52.3	22/11/19 23:40	58.6	73.6	47.6	23/11/19 07:40	58.0	72.1	47.7
22/11/19 15:50	60.3	71.5	52.6	22/11/19 23:50	58.5	73.2	46.9	23/11/19 07:50	55.7	69.1	46.7
22/11/19 16:00	61.7	74.9	52.7	23/11/19 00:00	56.3	72.2	46.2	23/11/19 08:00	56.7	70.9	46.5
22/11/19 16:10	62.2	78.6	51.5	23/11/19 00:10	61.3	72.2	48.2	23/11/19 08:10	63.4	88.6	47.1
22/11/19 16:20	62.0	79.1	52.5	23/11/19 00:20	59.1	75.1	46.0	23/11/19 08:20	55.7	71.9	46.7
22/11/19 16:30	61.7	82.8	53.1	23/11/19 00:30	58.3	79.3	44.9	23/11/19 08:30	57.6	72.1	48.0
22/11/19 16:40	60.7	71.7	52.5	23/11/19 00:40	58.2	75.0	45.2	23/11/19 08:40	57.6	75.6	47.8
22/11/19 16:50	60.9	74.3	51.2	23/11/19 00:50	55.5	70.0	44.8	23/11/19 08:50	58.8	75.3	47.9
22/11/19 17:00	62.1	84.1	51.4	23/11/19 01:00	49.4	66.5	44.3	23/11/19 09:00	57.7	71.7	48.6
22/11/19 17:10	60.5	74.3	51.4	23/11/19 01:10	49.8	66.0	43.8	23/11/19 09:10	57.7	70.2	48.1
22/11/19 17:20	64.2	82.8	51.3	23/11/19 01:20	56.0	75.7	44.2	23/11/19 09:20	55.2	67.6	47.6
22/11/19 17:30	60.7	72.8	51.9	23/11/19 01:30	45.7	54.9	43.4	23/11/19 09:30	59.0	72.2	50.0
22/11/19 17:40	60.4	76.6	52.2	23/11/19 01:40	53.1	65.7	43.3	23/11/19 09:40	59.3	71.8	48.8
22/11/19 17:50	60.7	72.2	51.9	23/11/19 01:50	49.8	62.1	44.1	23/11/19 09:50	61.1	81.9	50.1
22/11/19 18:00	62.6	76.9	53.1	23/11/19 02:00	52.3	70.6	43.3	23/11/19 10:00	58.1	77.4	50.1
22/11/19 18:10	61.0	73.9	52.0	23/11/19 02:10	49.1	64.4	42.8	23/11/19 10:10	63.7	74.2	53.2
22/11/19 18:20	64.3	79.7	51.9	23/11/19 02:20	52.6	64.1	43.1	23/11/19 10:20	58.8	73.2	50.2
22/11/19 18:30	59.9	77.1	50.5	23/11/19 02:30	50.4	62.5	43.2	23/11/19 10:30	57.3	68.1	49.7
22/11/19 18:40	59.8	73.4	52.8	23/11/19 02:40	49.5	60.8	43.1	23/11/19 10:40	58.9	77.7	49.6
22/11/19 18:50	60.6	71.1	51.1	23/11/19 02:50	53.2	71.0	43.5	23/11/19 10:50	58.3	74.1	48.9
22/11/19 19:00	60.1	77.3	51.3	23/11/19 03:00	50.3	64.7	43.1	23/11/19 11:00	58.8	72.4	49.4
22/11/19 19:10	58.7	75.0	49.8	23/11/19 03:10	50.9	64.1	44.2	23/11/19 11:10	62.7	78.2	49.1
22/11/19 19:20	59.6	68.9	53.2	23/11/19 03:20	52.6	73.0	44.5	23/11/19 11:20	57.2	78.8	48.5
22/11/19 19:30	61.1	76.3	51.8	23/11/19 03:30	52.3	65.5	44.0	23/11/19 11:30	58.0	71.6	48.3
22/11/19 19:40	60.2	73.3	49.6	23/11/19 03:40	54.2	73.0	43.7	23/11/19 11:40	60.1	75.7	50.3

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
23/11/19 11:50	56.3	67.3	49.1	23/11/19 19:50	59.0	74.8	47.8	24/11/19 03:50	49.8	64.1	42.4
23/11/19 12:00	58.7	73.8	48.9	23/11/19 20:00	57.9	71.7	49.2	24/11/19 04:00	49.7	63.9	41.5
23/11/19 12:10	60.6	74.7	48.7	23/11/19 20:10	58.8	72.9	48.4	24/11/19 04:10	48.9	64.1	41.2
23/11/19 12:20	58.0	74.9	49.1	23/11/19 20:20	56.6	70.3	47.6	24/11/19 04:20	49.1	63.2	40.4
23/11/19 12:30	59.2	72.9	50.2	23/11/19 20:30	56.5	68.1	47.6	24/11/19 04:30	47.4	63.0	40.1
23/11/19 12:40	58.6	73.1	48.9	23/11/19 20:40	58.6	73.6	48.0	24/11/19 04:40	50.6	69.0	39.1
23/11/19 12:50	56.7	71.5	48.6	23/11/19 20:50	59.1	72.4	48.5	24/11/19 04:50	49.5	64.3	39.5
23/11/19 13:00	57.1	77.4	48.7	23/11/19 21:00	58.2	71.4	48.2	24/11/19 05:00	47.6	63.5	37.9
23/11/19 13:10	59.2	72.4	49.5	23/11/19 21:10	60.3	74.8	48.9	24/11/19 05:10	42.3	54.4	38.6
23/11/19 13:20	57.8	73.2	47.8	23/11/19 21:20	56.5	66.5	47.9	24/11/19 05:20	50.5	65.6	39.1
23/11/19 13:30	58.2	69.2	48.8	23/11/19 21:30	57.4	70.9	47.3	24/11/19 05:30	48.4	69.2	39.0
23/11/19 13:40	58.9	71.1	49.7	23/11/19 21:40	57.6	78.5	48.5	24/11/19 05:40	54.3	69.0	41.9
23/11/19 13:50	60.8	77.4	48.7	23/11/19 21:50	61.0	73.6	51.1	24/11/19 05:50	49.7	66.6	39.1
23/11/19 14:00	56.9	70.7	48.2	23/11/19 22:00	59.1	76.1	48.9	24/11/19 06:00	46.5	66.4	40.8
23/11/19 14:10	58.9	72.1	48.9	23/11/19 22:10	59.6	78.2	46.4	24/11/19 06:10	44.7	58.8	39.3
23/11/19 14:20	58.9	79.6	49.7	23/11/19 22:20	59.9	72.9	48.2	24/11/19 06:20	48.8	64.0	39.8
23/11/19 14:30	57.8	73.1	48.2	23/11/19 22:30	58.6	74.1	49.2	24/11/19 06:30	48.9	62.7	41.9
23/11/19 14:40	58.9	72.0	48.1	23/11/19 22:40	58.0	78.7	47.4	24/11/19 06:40	51.2	64.1	41.8
23/11/19 14:50	56.2	70.1	48.1	23/11/19 22:50	56.1	68.0	47.8	24/11/19 06:50	49.0	64.9	38.4
23/11/19 15:00	61.6	79.9	48.7	23/11/19 23:00	57.4	72.3	48.9	24/11/19 07:00	45.8	55.8	42.4
23/11/19 15:10	58.9	72.3	49.9	23/11/19 23:10	56.2	71.9	48.6	24/11/19 07:10	50.9	63.5	42.1
23/11/19 15:20	56.8	69.4	49.7	23/11/19 23:20	58.1	71.3	48.1	24/11/19 07:20	53.2	67.8	38.4
23/11/19 15:30	59.7	76.0	49.9	23/11/19 23:30	58.4	73.0	47.9	24/11/19 07:30	54.7	74.1	42.4
23/11/19 15:40	58.6	72.3	49.0	23/11/19 23:40	54.3	68.5	46.5	24/11/19 07:40	54.5	70.2	40.1
23/11/19 15:50	58.6	74.4	51.0	23/11/19 23:50	56.3	72.6	47.3	24/11/19 07:50	54.4	71.1	43.3
23/11/19 16:00	59.4	75.9	48.1	24/11/19 00:00	55.6	76.8	46.5	24/11/19 08:00	54.3	68.0	44.3
23/11/19 16:10	59.9	77.5	49.4	24/11/19 00:10	59.0	74.7	46.1	24/11/19 08:10	54.5	66.1	45.3
23/11/19 16:20	56.8	68.8	49.4	24/11/19 00:20	52.8	68.8	45.4	24/11/19 08:20	57.1	79.6	44.6
23/11/19 16:30	57.6	71.4	48.8	24/11/19 00:30	51.9	64.7	45.2	24/11/19 08:30	55.0	71.5	43.4
23/11/19 16:40	58.3	70.7	48.8	24/11/19 00:40	53.4	68.4	46.2	24/11/19 08:40	56.6	72.8	44.2
23/11/19 16:50	56.4	75.3	48.5	24/11/19 00:50	51.0	73.9	45.8	24/11/19 08:50	55.6	78.9	44.0
23/11/19 17:00	58.4	81.6	49.8	24/11/19 01:00	50.7	66.7	45.5	24/11/19 09:00	55.7	70.0	44.4
23/11/19 17:10	61.1	80.9	49.8	24/11/19 01:10	51.7	64.2	44.5	24/11/19 09:10	58.5	74.3	45.9
23/11/19 17:20	57.5	68.4	49.4	24/11/19 01:20	51.8	70.6	45.4	24/11/19 09:20	54.0	70.9	44.7
23/11/19 17:30	57.9	73.9	47.7	24/11/19 01:30	52.1	66.2	45.2	24/11/19 09:30	56.5	70.6	45.3
23/11/19 17:40	58.2	72.1	49.0	24/11/19 01:40	50.3	64.5	44.2	24/11/19 09:40	58.0	72.2	45.3
23/11/19 17:50	58.3	73.6	48.5	24/11/19 01:50	50.7	66.2	42.8	24/11/19 09:50	54.8	65.4	46.5
23/11/19 18:00	57.4	68.7	49.6	24/11/19 02:00	50.6	64.9	43.4	24/11/19 10:00	57.1	70.5	48.3
23/11/19 18:10	60.5	77.0	48.6	24/11/19 02:10	50.5	64.7	43.7	24/11/19 10:10	57.7	69.9	47.1
23/11/19 18:20	56.0	67.0	47.9	24/11/19 02:20	48.7	68.9	42.7	24/11/19 10:20	58.6	74.0	48.7
23/11/19 18:30	56.6	70.8	47.8	24/11/19 02:30	49.9	65.0	42.2	24/11/19 10:30	58.7	74.9	48.1
23/11/19 18:40	59.1	73.9	49.6	24/11/19 02:40	48.1	64.4	41.2	24/11/19 10:40	57.0	69.7	47.7
23/11/19 18:50	56.5	71.3	48.2	24/11/19 02:50	49.6	64.3	41.2	24/11/19 10:50	54.9	67.4	46.8
23/11/19 19:00	57.3	71.7	48.2	24/11/19 03:00	49.7	63.5	41.5	24/11/19 11:00	57.5	71.4	47.9
23/11/19 19:10	59.8	72.5	50.2	24/11/19 03:10	50.2	64.8	42.5	24/11/19 11:10	59.5	80.8	49.2
23/11/19 19:20	56.1	72.0	47.1	24/11/19 03:20	48.6	65.3	42.2	24/11/19 11:20	57.2	78.6	49.3
23/11/19 19:30	58.1	70.1	49.4	24/11/19 03:30	50.3	69.3	41.7	24/11/19 11:30	60.6	79.3	47.2
23/11/19 19:40	58.3	70.1	48.2	24/11/19 03:40	44.9	62.5	41.2	24/11/19 11:40	58.4	72.8	47.7

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
24/11/19 11:50	56.0	69.7	48.0	24/11/19 19:50	56.4	72.0	47.0	25/11/19 03:50	43.3	61.2	39.8
24/11/19 12:00	56.3	70.3	47.7	24/11/19 20:00	57.8	74.4	47.2	25/11/19 04:00	46.7	64.8	39.9
24/11/19 12:10	56.9	71.8	47.6	24/11/19 20:10	58.2	70.6	47.5	25/11/19 04:10	48.1	63.4	39.9
24/11/19 12:20	56.2	67.5	48.6	24/11/19 20:20	55.0	66.1	47.5	25/11/19 04:20	43.9	53.6	40.5
24/11/19 12:30	57.6	80.4	48.1	24/11/19 20:30	57.4	70.9	48.1	25/11/19 04:30	49.6	67.2	41.0
24/11/19 12:40	57.6	72.8	48.5	24/11/19 20:40	58.4	70.3	47.9	25/11/19 04:40	51.7	68.1	41.3
24/11/19 12:50	56.6	73.6	47.5	24/11/19 20:50	57.6	71.1	49.2	25/11/19 04:50	44.4	56.3	40.9
24/11/19 13:00	57.5	77.0	47.7	24/11/19 21:00	59.4	75.1	47.5	25/11/19 05:00	54.3	72.5	42.6
24/11/19 13:10	57.4	72.2	47.5	24/11/19 21:10	56.8	70.5	45.9	25/11/19 05:10	58.0	77.9	42.6
24/11/19 13:20	56.1	67.3	48.6	24/11/19 21:20	57.0	79.9	46.5	25/11/19 05:20	53.7	68.5	42.6
24/11/19 13:30	57.2	68.6	48.4	24/11/19 21:30	57.0	70.2	46.5	25/11/19 05:30	54.9	69.3	43.0
24/11/19 13:40	57.3	71.0	47.5	24/11/19 21:40	58.4	71.2	46.0	25/11/19 05:40	53.0	68.7	42.7
24/11/19 13:50	59.1	74.6	48.1	24/11/19 21:50	55.4	68.1	46.9	25/11/19 05:50	56.9	71.4	44.6
24/11/19 14:00	58.0	75.4	47.6	24/11/19 22:00	56.6	69.2	45.9	25/11/19 06:00	56.6	73.1	47.4
24/11/19 14:10	59.9	84.3	48.9	24/11/19 22:10	57.7	71.2	46.5	25/11/19 06:10	57.9	69.8	47.1
24/11/19 14:20	57.1	69.4	48.9	24/11/19 22:20	55.3	67.2	46.9	25/11/19 06:20	60.3	79.8	47.5
24/11/19 14:30	58.0	72.2	48.9	24/11/19 22:30	54.6	68.6	44.9	25/11/19 06:30	57.9	71.2	48.9
24/11/19 14:40	58.4	71.9	48.4	24/11/19 22:40	59.4	71.7	48.0	25/11/19 06:40	59.6	75.0	48.9
24/11/19 14:50	58.4	71.3	49.4	24/11/19 22:50	55.3	70.7	46.1	25/11/19 06:50	60.8	73.6	51.5
24/11/19 15:00	59.4	76.6	49.4	24/11/19 23:00	57.0	74.1	45.5	25/11/19 07:00	60.7	72.2	52.8
24/11/19 15:10	58.7	73.3	48.4	24/11/19 23:10	54.5	69.1	44.8	25/11/19 07:10	60.3	74.0	50.2
24/11/19 15:20	57.9	73.2	48.2	24/11/19 23:20	56.9	76.7	44.8	25/11/19 07:20	60.7	71.6	52.5
24/11/19 15:30	57.9	72.4	48.4	24/11/19 23:30	56.3	69.6	46.1	25/11/19 07:30	61.1	73.6	51.6
24/11/19 15:40	58.2	71.1	49.5	24/11/19 23:40	56.1	70.8	45.4	25/11/19 07:40	61.0	74.8	52.8
24/11/19 15:50	60.4	78.8	49.5	24/11/19 23:50	58.7	78.2	43.9	25/11/19 07:50	62.3	78.3	53.6
24/11/19 16:00	58.4	72.5	48.7	25/11/19 00:00	54.4	72.3	43.5	25/11/19 08:00	60.9	77.0	50.6
24/11/19 16:10	57.5	71.6	47.8	25/11/19 00:10	54.2	70.7	43.3	25/11/19 08:10	60.6	71.5	51.0
24/11/19 16:20	56.2	67.1	47.9	25/11/19 00:20	46.3	65.0	42.4	25/11/19 08:20	61.2	77.6	52.3
24/11/19 16:30	57.7	73.2	48.8	25/11/19 00:30	48.1	66.1	42.0	25/11/19 08:30	60.4	72.2	50.6
24/11/19 16:40	58.1	71.3	50.0	25/11/19 00:40	46.3	57.2	42.2	25/11/19 08:40	63.0	79.9	53.6
24/11/19 16:50	56.6	69.7	48.6	25/11/19 00:50	44.5	57.4	41.6	25/11/19 08:50	61.0	74.7	52.7
24/11/19 17:00	57.2	70.6	47.6	25/11/19 01:00	45.6	59.2	41.7	25/11/19 09:00	60.9	71.9	52.0
24/11/19 17:10	58.1	70.3	49.1	25/11/19 01:10	48.4	68.3	41.5	25/11/19 09:10	61.6	71.5	53.4
24/11/19 17:20	54.6	67.5	47.5	25/11/19 01:20	49.0	69.0	41.3	25/11/19 09:20	60.3	78.5	52.2
24/11/19 17:30	58.0	74.5	48.0	25/11/19 01:30	49.0	64.5	41.4	25/11/19 09:30	62.2	75.8	51.6
24/11/19 17:40	59.2	72.5	47.9	25/11/19 01:40	54.5	72.5	41.4	25/11/19 09:40	60.3	70.6	53.2
24/11/19 17:50	58.5	75.0	47.9	25/11/19 01:50	42.4	52.3	39.9	25/11/19 09:50	60.5	77.2	52.1
24/11/19 18:00	59.0	72.8	49.1	25/11/19 02:00	48.7	70.1	39.7	25/11/19 10:00	60.9	75.3	52.3
24/11/19 18:10	61.1	77.5	47.0	25/11/19 02:10	43.3	56.9	40.3	25/11/19 10:10	61.8	74.9	51.7
24/11/19 18:20	56.6	71.9	47.0	25/11/19 02:20	43.3	56.6	40.1	25/11/19 10:20	60.3	78.7	52.0
24/11/19 18:30	58.4	70.8	48.7	25/11/19 02:30	43.2	56.3	40.3	25/11/19 10:30	62.2	73.6	52.3
24/11/19 18:40	57.2	71.4	47.3	25/11/19 02:40	47.6	64.7	40.7	25/11/19 10:40	62.4	74.8	53.3
24/11/19 18:50	57.1	69.4	48.2	25/11/19 02:50	44.9	61.5	40.6	25/11/19 10:50	65.5	82.5	55.7
24/11/19 19:00	57.3	74.0	48.2	25/11/19 03:00	44.3	60.3	40.3	25/11/19 11:00	62.0	75.9	53.4
24/11/19 19:10	58.8	72.5	48.6	25/11/19 03:10	48.6	68.6	40.5	25/11/19 11:10	63.3	80.8	52.9
24/11/19 19:20	56.4	68.2	48.2	25/11/19 03:20	44.8	63.6	38.8	25/11/19 11:20	60.3	71.4	51.3
24/11/19 19:30	58.1	72.7	48.9	25/11/19 03:30	41.4	54.9	39.1	25/11/19 11:30	63.1	81.7	52.4
24/11/19 19:40	57.9	70.1	48.5	25/11/19 03:40	44.3	59.9	38.9	25/11/19 11:40	60.4	70.1	51.2

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
25/11/19 11:50	60.2	73.4	50.8	25/11/19 19:50	60.7	75.2	51.4	26/11/19 03:50	51.9	66.2	40.3
25/11/19 12:00	60.2	72.0	52.0	25/11/19 20:00	61.6	76.6	55.0	26/11/19 04:00	49.5	67.3	40.7
25/11/19 12:10	60.5	72.8	51.8	25/11/19 20:10	60.3	75.7	50.3	26/11/19 04:10	43.7	53.5	41.7
25/11/19 12:20	60.5	78.9	50.9	25/11/19 20:20	60.7	83.8	50.0	26/11/19 04:20	46.6	60.4	40.2
25/11/19 12:30	61.8	72.7	51.8	25/11/19 20:30	59.0	69.7	51.3	26/11/19 04:30	52.5	70.3	41.5
25/11/19 12:40	60.0	71.3	51.1	25/11/19 20:40	60.5	72.8	50.3	26/11/19 04:40	49.0	67.3	41.0
25/11/19 12:50	61.7	77.0	54.7	25/11/19 20:50	58.5	72.3	49.2	26/11/19 04:50	45.1	58.6	41.7
25/11/19 13:00	61.2	74.0	55.8	25/11/19 21:00	60.0	71.6	50.2	26/11/19 05:00	48.8	66.3	42.0
25/11/19 13:10	63.0	78.8	53.3	25/11/19 21:10	59.9	72.1	50.0	26/11/19 05:10	54.7	69.9	43.2
25/11/19 13:20	60.3	72.5	53.3	25/11/19 21:20	58.0	71.4	48.6	26/11/19 05:20	58.4	79.3	43.7
25/11/19 13:30	63.2	79.3	52.5	25/11/19 21:30	60.7	75.7	47.9	26/11/19 05:30	53.8	69.8	44.6
25/11/19 13:40	60.7	73.5	51.9	25/11/19 21:40	58.8	77.2	48.8	26/11/19 05:40	54.0	69.4	43.8
25/11/19 13:50	60.9	71.4	52.0	25/11/19 21:50	60.2	77.6	50.4	26/11/19 05:50	58.1	73.6	45.4
25/11/19 14:00	62.8	80.5	52.0	25/11/19 22:00	59.5	69.5	48.8	26/11/19 06:00	57.0	71.8	47.4
25/11/19 14:10	62.5	88.1	53.1	25/11/19 22:10	59.6	71.4	50.3	26/11/19 06:10	58.9	71.7	48.4
25/11/19 14:20	62.4	78.8	53.1	25/11/19 22:20	59.7	78.4	48.9	26/11/19 06:20	60.1	73.7	51.7
25/11/19 14:30	61.2	73.6	52.6	25/11/19 22:30	58.7	73.0	48.9	26/11/19 06:30	59.1	71.3	49.3
25/11/19 14:40	60.5	76.1	53.1	25/11/19 22:40	59.7	71.0	49.0	26/11/19 06:40	59.9	73.2	50.1
25/11/19 14:50	59.5	69.9	52.3	25/11/19 22:50	58.8	69.6	48.9	26/11/19 06:50	60.3	73.9	50.5
25/11/19 15:00	61.5	73.6	52.0	25/11/19 23:00	59.2	71.5	48.9	26/11/19 07:00	59.1	71.8	51.1
25/11/19 15:10	60.6	72.8	51.6	25/11/19 23:10	59.9	72.0	47.9	26/11/19 07:10	59.9	71.6	51.2
25/11/19 15:20	62.0	79.3	52.3	25/11/19 23:20	61.0	76.9	46.8	26/11/19 07:20	61.4	72.6	53.4
25/11/19 15:30	61.3	77.3	51.4	25/11/19 23:30	58.8	71.6	46.4	26/11/19 07:30	60.8	73.4	51.7
25/11/19 15:40	60.6	72.1	51.8	25/11/19 23:40	59.2	71.2	47.8	26/11/19 07:40	61.3	74.3	52.8
25/11/19 15:50	61.8	76.2	53.4	25/11/19 23:50	57.1	76.8	45.1	26/11/19 07:50	62.0	75.5	52.5
25/11/19 16:00	60.8	70.4	52.3	26/11/19 00:00	59.9	76.3	49.4	26/11/19 08:00	61.2	74.5	52.2
25/11/19 16:10	62.2	77.4	52.5	26/11/19 00:10	59.9	79.9	48.4	26/11/19 08:10	60.4	69.9	52.9
25/11/19 16:20	61.2	77.3	52.6	26/11/19 00:20	61.0	82.0	46.2	26/11/19 08:20	62.0	74.6	52.1
25/11/19 16:30	62.6	78.4	52.9	26/11/19 00:30	58.0	70.4	46.4	26/11/19 08:30	60.8	73.1	51.6
25/11/19 16:40	61.5	73.4	50.2	26/11/19 00:40	58.8	69.5	46.1	26/11/19 08:40	62.3	79.0	52.8
25/11/19 16:50	61.3	73.0	51.6	26/11/19 00:50	60.1	80.4	43.8	26/11/19 08:50	63.0	81.4	52.4
25/11/19 17:00	61.5	73.4	51.3	26/11/19 01:00	50.3	70.8	43.3	26/11/19 09:00	61.3	72.6	53.8
25/11/19 17:10	60.8	77.5	51.9	26/11/19 01:10	44.8	55.3	42.2	26/11/19 09:10	59.9	70.3	53.1
25/11/19 17:20	63.5	83.7	53.3	26/11/19 01:20	45.9	63.1	41.4	26/11/19 09:20	60.3	74.2	53.4
25/11/19 17:30	60.9	70.9	52.3	26/11/19 01:30	45.8	61.9	41.7	26/11/19 09:30	61.6	73.3	54.3
25/11/19 17:40	59.9	73.5	51.6	26/11/19 01:40	42.9	54.5	41.1	26/11/19 09:40	61.9	72.6	55.6
25/11/19 17:50	61.3	74.2	51.6	26/11/19 01:50	45.4	58.3	41.2	26/11/19 09:50	61.7	75.2	56.4
25/11/19 18:00	60.9	74.0	51.6	26/11/19 02:00	44.6	59.2	41.2	26/11/19 10:00	60.3	77.6	53.2
25/11/19 18:10	61.7	78.5	52.8	26/11/19 02:10	51.2	67.1	40.8	26/11/19 10:10	61.9	75.2	52.7
25/11/19 18:20	62.3	80.3	50.8	26/11/19 02:20	49.5	67.5	40.1	26/11/19 10:20	60.1	71.0	53.2
25/11/19 18:30	60.1	74.5	50.7	26/11/19 02:30	43.2	58.0	40.1	26/11/19 10:30	61.7	73.7	52.2
25/11/19 18:40	60.0	74.1	51.5	26/11/19 02:40	52.3	71.8	40.2	26/11/19 10:40	60.8	71.3	53.7
25/11/19 18:50	58.3	70.4	51.0	26/11/19 02:50	45.1	62.0	39.6	26/11/19 10:50	59.4	69.8	52.4
25/11/19 19:00	59.3	72.1	51.6	26/11/19 03:00	44.7	68.4	39.6	26/11/19 11:00	62.9	78.6	53.1
25/11/19 19:10	60.5	72.9	52.8	26/11/19 03:10	43.9	55.1	39.8	26/11/19 11:10	62.5	78.2	53.8
25/11/19 19:20	60.3	74.5	51.8	26/11/19 03:20	46.3	61.3	41.9	26/11/19 11:20	60.0	75.9	51.7
25/11/19 19:30	60.5	73.2	50.7	26/11/19 03:30	51.0	70.0	39.5	26/11/19 11:30	63.5	81.7	53.8
25/11/19 19:40	61.8	73.7	52.2	26/11/19 03:40	51.0	68.1	40.6	26/11/19 11:40	60.1	71.7	53.6

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
26/11/19 11:50	60.2	70.6	51.9	26/11/19 19:50	60.4	71.8	50.2	27/11/19 03:50	48.6	61.1	45.0
26/11/19 12:00	60.6	70.5	53.3	26/11/19 20:00	59.8	77.8	50.4	27/11/19 04:00	49.8	61.4	47.7
26/11/19 12:10	60.3	72.5	53.1	26/11/19 20:10	60.6	71.4	51.2	27/11/19 04:10	53.2	68.5	47.5
26/11/19 12:20	60.7	75.0	52.3	26/11/19 20:20	59.6	71.5	51.1	27/11/19 04:20	49.2	61.9	46.4
26/11/19 12:30	61.2	77.2	52.8	26/11/19 20:30	59.3	70.2	51.0	27/11/19 04:30	52.3	71.1	45.3
26/11/19 12:40	61.6	73.3	53.8	26/11/19 20:40	60.4	73.3	51.7	27/11/19 04:40	48.2	61.5	43.1
26/11/19 12:50	59.6	70.5	52.5	26/11/19 20:50	58.2	68.3	50.4	27/11/19 04:50	56.3	69.5	43.9
26/11/19 13:00	59.9	70.8	52.1	26/11/19 21:00	59.7	71.8	50.4	27/11/19 05:00	59.5	78.2	48.8
26/11/19 13:10	63.5	81.6	53.0	26/11/19 21:10	59.7	72.1	50.2	27/11/19 05:10	55.1	68.8	45.8
26/11/19 13:20	60.9	77.3	52.8	26/11/19 21:20	60.3	77.1	49.9	27/11/19 05:20	55.9	79.4	45.1
26/11/19 13:30	62.4	74.5	54.4	26/11/19 21:30	59.6	72.2	49.9	27/11/19 05:30	59.9	80.0	42.5
26/11/19 13:40	60.6	73.0	52.8	26/11/19 21:40	60.0	73.4	49.0	27/11/19 05:40	58.0	73.8	42.4
26/11/19 13:50	59.1	70.3	51.9	26/11/19 21:50	59.1	68.9	49.9	27/11/19 05:50	56.6	71.6	44.9
26/11/19 14:00	62.1	77.0	52.1	26/11/19 22:00	61.3	74.3	50.6	27/11/19 06:00	62.1	74.4	46.4
26/11/19 14:10	61.0	72.9	51.6	26/11/19 22:10	59.6	74.0	49.8	27/11/19 06:10	61.2	79.8	48.2
26/11/19 14:20	63.0	82.4	52.9	26/11/19 22:20	57.9	69.1	49.3	27/11/19 06:20	56.9	68.7	48.5
26/11/19 14:30	61.1	72.1	53.9	26/11/19 22:30	58.6	71.1	49.5	27/11/19 06:30	60.2	80.5	51.0
26/11/19 14:40	59.5	70.7	52.7	26/11/19 22:40	59.9	71.9	48.9	27/11/19 06:40	57.9	67.6	48.1
26/11/19 14:50	59.7	69.2	52.4	26/11/19 22:50	58.7	69.9	47.1	27/11/19 06:50	59.6	71.1	50.7
26/11/19 15:00	60.2	72.9	52.9	26/11/19 23:00	59.3	72.2	48.0	27/11/19 07:00	58.7	70.2	52.1
26/11/19 15:10	61.7	78.9	52.0	26/11/19 23:10	57.9	68.5	48.6	27/11/19 07:10	59.5	72.2	52.1
26/11/19 15:20	60.3	72.1	52.1	26/11/19 23:20	58.9	70.9	47.2	27/11/19 07:20	59.9	69.9	51.5
26/11/19 15:30	60.3	71.7	52.8	26/11/19 23:30	59.5	70.5	46.0	27/11/19 07:30	59.9	72.2	48.8
26/11/19 15:40	60.0	73.2	52.5	26/11/19 23:40	56.4	70.0	45.5	27/11/19 07:40	60.6	75.3	50.7
26/11/19 15:50	59.5	70.2	52.5	26/11/19 23:50	56.4	69.3	44.5	27/11/19 07:50	63.2	79.7	51.2
26/11/19 16:00	62.5	78.5	51.6	27/11/19 00:00	61.3	78.3	45.0	27/11/19 08:00	60.9	73.9	51.9
26/11/19 16:10	59.6	74.9	52.8	27/11/19 00:10	59.7	74.9	46.5	27/11/19 08:10	60.9	72.5	52.9
26/11/19 16:20	61.4	75.4	52.1	27/11/19 00:20	61.3	80.8	46.1	27/11/19 08:20	63.6	79.5	51.8
26/11/19 16:30	61.4	75.2	51.3	27/11/19 00:30	56.5	68.8	43.6	27/11/19 08:30	61.1	73.5	51.8
26/11/19 16:40	59.0	73.2	51.1	27/11/19 00:40	55.9	69.6	44.0	27/11/19 08:40	61.3	76.8	53.4
26/11/19 16:50	61.7	73.5	51.6	27/11/19 00:50	54.5	70.2	43.8	27/11/19 08:50	61.8	78.0	52.6
26/11/19 17:00	59.5	72.4	52.4	27/11/19 01:00	47.2	58.5	44.8	27/11/19 09:00	61.7	74.0	53.6
26/11/19 17:10	60.8	80.3	51.3	27/11/19 01:10	49.6	66.6	44.6	27/11/19 09:10	60.4	76.2	53.7
26/11/19 17:20	63.7	78.8	52.5	27/11/19 01:20	50.6	62.8	44.4	27/11/19 09:20	59.9	71.1	52.7
26/11/19 17:30	60.8	73.7	51.1	27/11/19 01:30	46.8	60.4	42.5	27/11/19 09:30	62.3	79.0	52.5
26/11/19 17:40	59.1	70.1	51.5	27/11/19 01:40	49.4	64.1	42.6	27/11/19 09:40	60.1	68.9	53.3
26/11/19 17:50	61.8	73.3	51.6	27/11/19 01:50	48.6	62.1	43.3	27/11/19 09:50	59.9	74.9	52.5
26/11/19 18:00	60.7	71.4	51.6	27/11/19 02:00	48.3	60.5	43.2	27/11/19 10:00	60.2	76.9	52.9
26/11/19 18:10	61.5	77.0	51.9	27/11/19 02:10	52.2	69.8	42.1	27/11/19 10:10	60.5	72.1	51.1
26/11/19 18:20	62.2	78.3	50.1	27/11/19 02:20	45.9	62.3	41.6	27/11/19 10:20	59.7	75.4	51.5
26/11/19 18:30	59.0	69.1	52.1	27/11/19 02:30	44.8	59.6	41.4	27/11/19 10:30	60.9	73.4	51.4
26/11/19 18:40	60.4	73.8	51.8	27/11/19 02:40	50.6	63.7	41.9	27/11/19 10:40	61.9	72.8	54.0
26/11/19 18:50	60.2	70.7	52.2	27/11/19 02:50	46.2	59.6	42.1	27/11/19 10:50	60.4	74.4	53.4
26/11/19 19:00	60.4	71.4	52.1	27/11/19 03:00	47.7	61.5	42.4	27/11/19 11:00	62.2	79.6	52.6
26/11/19 19:10	60.2	71.7	52.1	27/11/19 03:10	47.8	63.9	41.9	27/11/19 11:10	61.2	77.2	52.9
26/11/19 19:20	61.8	76.6	52.2	27/11/19 03:20	52.4	68.3	41.1	27/11/19 11:20	60.9	76.8	50.7
26/11/19 19:30	60.6	72.7	52.0	27/11/19 03:30	49.8	64.0	42.4	27/11/19 11:30	62.1	78.9	51.1
26/11/19 19:40	59.9	69.6	51.0	27/11/19 03:40	50.6	66.6	43.3	27/11/19 11:40	60.5	74.5	52.0

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
27/11/19 11:50	59.8	69.8	53.0	27/11/19 19:50	61.5	74.8	53.2	28/11/19 03:50	53.0	68.9	43.4
27/11/19 12:00	59.3	77.7	52.3	27/11/19 20:00	59.8	71.1	50.8	28/11/19 04:00	44.4	54.2	41.8
27/11/19 12:10	62.2	82.7	52.4	27/11/19 20:10	58.7	69.1	51.2	28/11/19 04:10	47.5	66.8	41.9
27/11/19 12:20	60.6	72.7	54.0	27/11/19 20:20	59.9	74.3	50.9	28/11/19 04:20	49.8	65.5	43.4
27/11/19 12:30	61.5	73.4	54.3	27/11/19 20:30	59.8	73.8	50.9	28/11/19 04:30	51.3	65.5	42.4
27/11/19 12:40	60.4	75.1	54.0	27/11/19 20:40	60.3	72.2	50.8	28/11/19 04:40	49.7	59.8	42.6
27/11/19 12:50	59.8	72.8	53.3	27/11/19 20:50	59.4	73.1	50.2	28/11/19 04:50	54.9	79.9	42.4
27/11/19 13:00	59.5	70.8	53.4	27/11/19 21:00	58.1	69.2	49.7	28/11/19 05:00	56.2	75.4	43.5
27/11/19 13:10	61.0	73.9	52.8	27/11/19 21:10	59.4	76.5	49.9	28/11/19 05:10	52.9	66.9	43.8
27/11/19 13:20	60.3	71.0	52.3	27/11/19 21:20	59.7	70.4	50.7	28/11/19 05:20	57.6	78.5	44.3
27/11/19 13:30	60.4	77.8	51.7	27/11/19 21:30	59.7	74.2	50.8	28/11/19 05:30	60.1	81.2	45.2
27/11/19 13:40	59.2	73.1	49.8	27/11/19 21:40	60.7	76.7	51.1	28/11/19 05:40	56.0	69.9	46.0
27/11/19 13:50	59.2	71.8	51.0	27/11/19 21:50	58.9	78.6	49.9	28/11/19 05:50	58.0	74.8	46.4
27/11/19 14:00	60.0	77.1	50.7	27/11/19 22:00	59.1	69.8	50.5	28/11/19 06:00	58.2	73.3	47.9
27/11/19 14:10	60.2	70.7	51.9	27/11/19 22:10	59.6	73.5	51.5	28/11/19 06:10	57.0	68.6	47.9
27/11/19 14:20	61.2	78.9	51.1	27/11/19 22:20	57.7	68.5	49.0	28/11/19 06:20	57.8	74.6	49.1
27/11/19 14:30	60.2	81.8	51.6	27/11/19 22:30	59.7	71.7	50.8	28/11/19 06:30	59.2	78.7	50.8
27/11/19 14:40	60.0	71.3	51.1	27/11/19 22:40	58.9	71.7	50.5	28/11/19 06:40	59.1	72.0	51.7
27/11/19 14:50	60.2	72.5	50.9	27/11/19 22:50	57.9	71.7	49.8	28/11/19 06:50	60.2	73.0	53.0
27/11/19 15:00	59.9	72.2	52.3	27/11/19 23:00	0.0	0.0	58.6	28/11/19 07:00	59.4	69.2	53.6
27/11/19 15:10	59.3	73.8	49.9	27/11/19 23:10	0.0	0.0	52.1	28/11/19 07:10	60.6	71.7	52.0
27/11/19 15:20	59.7	72.2	52.3	27/11/19 23:20	60.6	75.9	48.5	28/11/19 07:20	60.2	72.5	52.5
27/11/19 15:30	61.3	78.7	52.0	27/11/19 23:30	58.8	71.8	48.1	28/11/19 07:30	60.4	76.0	52.1
27/11/19 15:40	59.3	72.4	51.8	27/11/19 23:40	58.7	69.5	48.2	28/11/19 07:40	61.0	76.2	51.7
27/11/19 15:50	58.7	68.4	51.6	27/11/19 23:50	56.9	69.0	47.9	28/11/19 07:50	62.8	79.8	52.9
27/11/19 16:00	58.9	70.6	51.0	28/11/19 00:00	60.1	72.9	46.4	28/11/19 08:00	60.5	71.9	52.4
27/11/19 16:10	59.7	78.9	51.7	28/11/19 00:10	56.9	70.7	46.4	28/11/19 08:10	59.5	70.3	52.3
27/11/19 16:20	60.7	72.4	54.4	28/11/19 00:20	61.2	81.4	46.0	28/11/19 08:20	63.5	77.7	53.3
27/11/19 16:30	61.5	83.3	53.1	28/11/19 00:30	58.6	72.6	45.1	28/11/19 08:30	61.8	71.9	53.8
27/11/19 16:40	59.5	71.1	51.4	28/11/19 00:40	54.6	69.3	44.8	28/11/19 08:40	61.8	77.6	54.3
27/11/19 16:50	60.3	77.5	51.3	28/11/19 00:50	54.8	69.4	43.0	28/11/19 08:50	60.6	80.1	54.4
27/11/19 17:00	61.0	77.3	51.5	28/11/19 01:00	49.0	68.3	44.1	28/11/19 09:00	61.3	73.5	53.6
27/11/19 17:10	63.0	85.3	51.7	28/11/19 01:10	48.0	67.4	44.5	28/11/19 09:10	60.8	74.6	54.0
27/11/19 17:20	64.4	81.0	53.2	28/11/19 01:20	48.9	63.1	44.7	28/11/19 09:20	60.5	72.1	54.3
27/11/19 17:30	59.8	75.4	52.2	28/11/19 01:30	46.8	66.9	43.6	28/11/19 09:30	61.0	74.2	53.9
27/11/19 17:40	59.3	71.7	52.3	28/11/19 01:40	47.1	62.0	42.7	28/11/19 09:40	60.4	71.0	54.2
27/11/19 17:50	60.9	71.0	52.7	28/11/19 01:50	46.4	57.2	42.4	28/11/19 09:50	62.7	73.3	55.9
27/11/19 18:00	60.5	70.1	51.6	28/11/19 02:00	52.2	67.0	42.5	28/11/19 10:00	61.3	78.0	54.2
27/11/19 18:10	60.1	72.2	53.1	28/11/19 02:10	53.5	79.7	42.3	28/11/19 10:10	61.4	78.7	53.1
27/11/19 18:20	61.2	78.6	51.0	28/11/19 02:20	46.6	63.6	42.1	28/11/19 10:20	60.2	71.6	52.4
27/11/19 18:30	61.9	74.0	52.7	28/11/19 02:30	45.8	58.5	42.1	28/11/19 10:30	60.4	72.0	52.5
27/11/19 18:40	60.0	70.5	51.2	28/11/19 02:40	45.2	58.3	41.9	28/11/19 10:40	61.2	72.2	53.2
27/11/19 18:50	60.6	72.5	51.9	28/11/19 02:50	49.9	61.7	43.4	28/11/19 10:50	60.1	74.2	52.3
27/11/19 19:00	61.5	83.5	52.9	28/11/19 03:00	49.4	65.2	43.9	28/11/19 11:00	61.1	74.2	52.6
27/11/19 19:10	59.6	69.2	51.5	28/11/19 03:10	55.1	71.2	44.8	28/11/19 11:10	60.6	72.7	52.0
27/11/19 19:20	59.1	68.3	51.0	28/11/19 03:20	47.8	62.0	43.5	28/11/19 11:20	60.1	74.1	52.6
27/11/19 19:30	59.9	75.8	51.6	28/11/19 03:30	47.1	59.8	42.9	28/11/19 11:30	61.8	78.0	51.9
27/11/19 19:40	60.7	78.4	51.3	28/11/19 03:40	48.9	64.6	43.4	28/11/19 11:40	60.4	73.8	52.5

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
28/11/19 11:50	60.8	75.3	53.6	28/11/19 19:50	60.2	70.5	50.5	29/11/19 03:50	54.2	68.1	42.0
28/11/19 12:00	60.2	80.0	52.7	28/11/19 20:00	59.7	71.0	50.8	29/11/19 04:00	49.7	62.9	42.0
28/11/19 12:10	61.4	72.9	53.0	28/11/19 20:10	59.1	69.9	50.0	29/11/19 04:10	48.3	65.2	41.7
28/11/19 12:20	59.5	70.9	51.8	28/11/19 20:20	58.8	72.6	49.8	29/11/19 04:20	47.3	61.7	41.6
28/11/19 12:30	61.0	73.6	54.3	28/11/19 20:30	58.0	69.6	50.5	29/11/19 04:30	50.0	67.0	41.0
28/11/19 12:40	60.6	75.7	54.6	28/11/19 20:40	59.4	72.6	52.1	29/11/19 04:40	50.9	69.8	41.7
28/11/19 12:50	60.8	71.4	54.9	28/11/19 20:50	57.6	70.2	49.4	29/11/19 04:50	50.7	70.1	41.6
28/11/19 13:00	59.4	70.0	52.0	28/11/19 21:00	61.8	91.8	48.8	29/11/19 05:00	50.8	67.3	41.5
28/11/19 13:10	62.1	80.3	52.7	28/11/19 21:10	64.0	91.7	49.2	29/11/19 05:10	51.1	65.7	42.6
28/11/19 13:20	62.5	79.5	51.4	28/11/19 21:20	59.3	70.9	50.7	29/11/19 05:20	54.3	71.5	44.2
28/11/19 13:30	60.8	73.4	52.3	28/11/19 21:30	60.6	73.4	47.9	29/11/19 05:30	56.5	76.0	45.8
28/11/19 13:40	59.8	75.0	51.8	28/11/19 21:40	57.8	69.9	48.3	29/11/19 05:40	54.7	67.8	46.1
28/11/19 13:50	59.9	69.7	51.8	28/11/19 21:50	59.5	72.0	50.5	29/11/19 05:50	57.8	73.4	48.1
28/11/19 14:00	62.9	82.8	52.5	28/11/19 22:00	67.0	95.0	49.7	29/11/19 06:00	58.9	72.6	47.6
28/11/19 14:10	61.2	77.5	52.1	28/11/19 22:10	69.2	93.7	49.2	29/11/19 06:10	56.9	66.6	48.8
28/11/19 14:20	61.7	80.1	52.2	28/11/19 22:20	57.4	68.2	48.1	29/11/19 06:20	57.7	71.1	49.7
28/11/19 14:30	59.8	71.9	51.5	28/11/19 22:30	57.9	69.6	47.5	29/11/19 06:30	57.5	68.7	49.0
28/11/19 14:40	60.1	74.0	51.8	28/11/19 22:40	59.8	71.1	48.0	29/11/19 06:40	58.3	68.7	49.8
28/11/19 14:50	59.2	70.2	52.3	28/11/19 22:50	58.6	68.5	50.2	29/11/19 06:50	59.3	70.6	52.2
28/11/19 15:00	59.5	73.2	50.7	28/11/19 23:00	60.1	80.9	48.6	29/11/19 07:00	59.5	70.3	52.8
28/11/19 15:10	60.7	79.9	52.0	28/11/19 23:10	58.0	71.1	47.0	29/11/19 07:10	59.5	70.8	51.8
28/11/19 15:20	61.0	83.0	50.7	28/11/19 23:20	56.6	68.2	47.5	29/11/19 07:20	59.8	75.0	51.6
28/11/19 15:30	60.6	76.9	51.4	28/11/19 23:30	58.1	71.0	47.5	29/11/19 07:30	58.7	70.1	51.9
28/11/19 15:40	59.6	71.3	51.9	28/11/19 23:40	57.1	68.9	48.4	29/11/19 07:40	60.5	73.3	53.1
28/11/19 15:50	58.1	68.5	51.7	28/11/19 23:50	57.4	68.6	47.7	29/11/19 07:50	61.5	81.7	52.1
28/11/19 16:00	60.2	77.2	52.5	29/11/19 00:00	59.2	71.5	50.2	29/11/19 08:00	61.5	77.7	55.3
28/11/19 16:10	59.7	76.2	52.5	29/11/19 00:10	58.9	71.2	49.4	29/11/19 08:10	61.2	72.6	54.1
28/11/19 16:20	60.5	78.4	52.4	29/11/19 00:20	58.1	70.8	49.8	29/11/19 08:20	61.0	75.0	53.1
28/11/19 16:30	59.6	76.7	50.9	29/11/19 00:30	56.2	68.9	49.3	29/11/19 08:30	61.0	76.4	53.1
28/11/19 16:40	60.1	71.2	51.5	29/11/19 00:40	54.1	68.0	47.4	29/11/19 08:40	62.1	81.2	54.0
28/11/19 16:50	61.9	78.2	52.0	29/11/19 00:50	55.6	68.1	47.2	29/11/19 08:50	60.2	78.6	52.0
28/11/19 17:00	60.1	76.8	51.2	29/11/19 01:00	50.8	62.5	44.7	29/11/19 09:00	61.7	76.7	54.3
28/11/19 17:10	59.5	73.9	51.2	29/11/19 01:10	46.8	59.0	42.7	29/11/19 09:10	59.8	70.9	52.1
28/11/19 17:20	63.6	79.2	52.1	29/11/19 01:20	50.0	63.4	43.3	29/11/19 09:20	59.0	69.0	51.4
28/11/19 17:30	59.9	71.3	51.7	29/11/19 01:30	47.9	59.9	43.0	29/11/19 09:30	61.9	79.4	51.1
28/11/19 17:40	59.7	74.4	50.0	29/11/19 01:40	47.8	68.4	41.7	29/11/19 09:40	60.6	71.3	52.0
28/11/19 17:50	60.6	75.5	51.6	29/11/19 01:50	50.4	65.1	41.7	29/11/19 09:50	62.2	75.1	52.7
28/11/19 18:00	60.9	77.7	50.1	29/11/19 02:00	53.6	76.9	41.5	29/11/19 10:00	60.2	70.5	54.0
28/11/19 18:10	58.7	70.4	50.7	29/11/19 02:10	44.8	59.2	41.6	29/11/19 10:10	61.8	74.0	52.3
28/11/19 18:20	62.6	78.9	52.2	29/11/19 02:20	47.5	59.9	41.8	29/11/19 10:20	59.5	69.6	52.1
28/11/19 18:30	59.5	74.4	50.5	29/11/19 02:30	52.6	80.0	40.9	29/11/19 10:30	60.8	72.9	51.9
28/11/19 18:40	59.7	72.2	50.4	29/11/19 02:40	47.0	63.1	40.4	29/11/19 10:40	59.6	73.9	52.1
28/11/19 18:50	60.2	72.6	51.9	29/11/19 02:50	50.3	68.0	41.1	29/11/19 10:50	59.5	70.4	51.1
28/11/19 19:00	59.7	73.1	52.4	29/11/19 03:00	45.7	59.4	40.8	29/11/19 11:00	62.1	76.8	51.5
28/11/19 19:10	58.6	72.6	50.2	29/11/19 03:10	50.1	65.6	39.8	29/11/19 11:10	60.8	79.9	52.3
28/11/19 19:20	58.8	73.5	51.0	29/11/19 03:20	44.6	58.4	40.0	29/11/19 11:20	60.1	72.5	52.6
28/11/19 19:30	59.6	71.8	51.3	29/11/19 03:30	48.5	62.9	40.1	29/11/19 11:30	62.0	80.0	52.7
28/11/19 19:40	60.8	74.3	51.6	29/11/19 03:40	53.8	66.9	41.3	29/11/19 11:40	59.6	72.3	51.0

Location MU2

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
22/11/19 11:15	52.1	76.7	45.1	22/11/19 23:15	47.6	58.3	43.9	23/11/19 11:15	49.4	65.6	43.4
22/11/19 11:30	50.6	62.3	45.2	22/11/19 23:30	48.0	64.8	44.5	23/11/19 11:30	48.4	60.3	43.6
22/11/19 11:45	51.5	66.7	44.5	22/11/19 23:45	47.2	56.2	44.1	23/11/19 11:45	48.2	63.6	43.8
22/11/19 12:00	53.2	71.3	45.0	23/11/19 00:00	48.9	65.4	42.6	23/11/19 12:00	49.3	62.2	43.4
22/11/19 12:15	53.3	73.5	45.2	23/11/19 00:15	48.1	60.3	42.1	23/11/19 12:15	48.5	61.0	43.4
22/11/19 12:30	48.9	58.6	44.8	23/11/19 00:30	47.8	59.3	41.3	23/11/19 12:30	48.3	62.2	43.3
22/11/19 12:45	50.8	72.9	45.3	23/11/19 00:45	48.3	66.1	43.4	23/11/19 12:45	50.0	67.2	43.0
22/11/19 13:00	50.4	64.6	44.5	23/11/19 01:00	43.9	52.3	42.6	23/11/19 13:00	49.5	64.5	43.4
22/11/19 13:15	57.5	80.2	44.6	23/11/19 01:15	46.8	59.6	40.9	23/11/19 13:15	49.5	67.9	42.7
22/11/19 13:30	49.9	66.3	44.1	23/11/19 01:30	42.9	51.8	40.4	23/11/19 13:30	50.1	64.7	43.4
22/11/19 13:45	52.0	71.0	44.0	23/11/19 01:45	44.1	54.8	41.1	23/11/19 13:45	54.5	74.7	44.3
22/11/19 14:00	55.6	77.2	44.2	23/11/19 02:00	43.4	64.1	40.3	23/11/19 14:00	47.8	62.1	44.3
22/11/19 14:15	49.0	64.7	43.6	23/11/19 02:15	43.4	57.9	40.4	23/11/19 14:15	49.5	65.6	43.5
22/11/19 14:30	50.2	70.9	45.0	23/11/19 02:30	44.4	56.3	42.0	23/11/19 14:30	49.1	62.2	43.6
22/11/19 14:45	50.1	68.7	44.9	23/11/19 02:45	44.2	60.0	41.4	23/11/19 14:45	46.7	55.9	43.4
22/11/19 15:00	51.5	71.3	44.6	23/11/19 03:00	44.5	75.7	40.4	23/11/19 15:00	54.7	79.6	44.2
22/11/19 15:15	52.0	70.9	44.4	23/11/19 03:15	44.9	60.6	42.3	23/11/19 15:15	48.7	65.7	44.5
22/11/19 15:30	54.5	75.1	44.7	23/11/19 03:30	46.1	61.0	42.2	23/11/19 15:30	51.9	72.7	44.8
22/11/19 15:45	51.0	69.8	45.3	23/11/19 03:45	45.3	57.4	42.0	23/11/19 15:45	48.9	62.5	44.1
22/11/19 16:00	51.4	69.6	44.4	23/11/19 04:00	45.8	59.9	40.4	23/11/19 16:00	53.3	73.2	43.6
22/11/19 16:15	54.3	75.1	45.5	23/11/19 04:15	43.4	60.7	40.3	23/11/19 16:15	49.3	66.4	44.0
22/11/19 16:30	50.7	69.9	45.8	23/11/19 04:30	42.7	51.2	40.5	23/11/19 16:30	49.3	63.6	44.2
22/11/19 16:45	50.6	68.7	44.7	23/11/19 04:45	46.5	62.2	40.9	23/11/19 16:45	49.5	65.7	43.9
22/11/19 17:00	50.1	66.3	45.0	23/11/19 05:00	45.3	58.5	41.6	23/11/19 17:00	48.8	64.4	44.2
22/11/19 17:15	50.6	68.2	45.1	23/11/19 05:15	45.4	59.3	41.6	23/11/19 17:15	49.1	62.1	44.3
22/11/19 17:30	49.6	68.2	45.4	23/11/19 05:30	44.9	56.4	41.8	23/11/19 17:30	47.4	57.5	43.9
22/11/19 17:45	50.2	60.8	45.6	23/11/19 05:45	45.8	55.5	42.4	23/11/19 17:45	47.3	57.9	44.0
22/11/19 18:00	55.5	73.6	46.1	23/11/19 06:00	46.4	61.0	42.7	23/11/19 18:00	48.4	64.8	44.3
22/11/19 18:15	51.3	67.8	45.4	23/11/19 06:15	46.1	55.2	43.6	23/11/19 18:15	46.8	56.2	43.3
22/11/19 18:30	51.3	73.7	45.2	23/11/19 06:30	45.7	55.2	43.4	23/11/19 18:30	47.2	59.5	43.2
22/11/19 18:45	49.4	61.3	44.9	23/11/19 06:45	48.8	67.1	43.5	23/11/19 18:45	48.5	64.2	43.4
22/11/19 19:00	48.8	57.7	44.4	23/11/19 07:00	47.0	61.2	43.7	23/11/19 19:00	46.8	57.8	43.3
22/11/19 19:15	50.4	64.7	44.4	23/11/19 07:15	46.9	57.3	43.6	23/11/19 19:15	49.5	72.3	43.2
22/11/19 19:30	51.5	69.9	44.7	23/11/19 07:30	47.7	60.8	43.6	23/11/19 19:30	47.8	60.0	43.4
22/11/19 19:45	48.9	58.7	43.9	23/11/19 07:45	46.9	56.2	44.1	23/11/19 19:45	51.4	70.2	43.0
22/11/19 20:00	48.0	60.2	43.4	23/11/19 08:00	47.9	68.5	43.5	23/11/19 20:00	47.3	59.3	43.3
22/11/19 20:15	48.3	56.8	44.3	23/11/19 08:15	47.3	64.6	43.7	23/11/19 20:15	47.2	60.8	43.5
22/11/19 20:30	48.9	60.9	44.4	23/11/19 08:30	47.1	60.4	43.8	23/11/19 20:30	46.9	58.7	43.3
22/11/19 20:45	48.3	57.6	44.2	23/11/19 08:45	47.8	60.9	44.0	23/11/19 20:45	50.5	66.8	44.5
22/11/19 21:00	50.0	65.9	44.7	23/11/19 09:00	47.0	60.4	44.1	23/11/19 21:00	49.2	62.6	45.0
22/11/19 21:15	50.8	68.9	44.5	23/11/19 09:15	47.3	63.3	43.5	23/11/19 21:15	49.3	60.7	44.5
22/11/19 21:30	48.5	58.7	45.1	23/11/19 09:30	48.4	60.2	44.3	23/11/19 21:30	47.6	59.4	44.1
22/11/19 21:45	49.3	66.8	43.7	23/11/19 09:45	51.4	73.9	44.4	23/11/19 21:45	61.8	81.2	47.9
22/11/19 22:00	48.4	59.0	43.7	23/11/19 10:00	52.2	72.1	45.0	23/11/19 22:00	63.1	85.8	53.9
22/11/19 22:15	49.5	65.0	43.2	23/11/19 10:15	51.3	64.3	44.7	23/11/19 22:15	61.9	77.8	52.3
22/11/19 22:30	49.3	71.9	43.1	23/11/19 10:30	48.3	62.6	44.6	23/11/19 22:30	63.6	81.9	48.7
22/11/19 22:45	49.2	66.2	43.9	23/11/19 10:45	47.7	55.9	44.8	23/11/19 22:45	47.8	65.2	43.4
22/11/19 23:00	49.7	64.8	44.6	23/11/19 11:00	55.4	74.5	43.9	23/11/19 23:00	46.8	56.6	43.1

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
23/11/19 23:15	46.0	59.5	42.9	24/11/19 11:15	45.6	56.6	42.3	24/11/19 23:15	47.4	68.5	41.4
23/11/19 23:30	46.8	60.6	42.9	24/11/19 11:30	45.1	56.1	41.5	24/11/19 23:30	44.9	54.1	41.8
23/11/19 23:45	45.3	60.7	42.0	24/11/19 11:45	45.9	58.7	41.8	24/11/19 23:45	46.1	62.0	42.0
24/11/19 00:00	45.0	65.5	40.2	24/11/19 12:00	45.2	56.0	41.6	25/11/19 00:00	44.7	57.3	41.6
24/11/19 00:15	45.4	64.4	39.7	24/11/19 12:15	46.2	58.6	42.2	25/11/19 00:15	43.2	51.7	41.4
24/11/19 00:30	44.5	55.1	40.1	24/11/19 12:30	45.3	63.1	41.8	25/11/19 00:30	43.1	52.2	41.6
24/11/19 00:45	45.3	63.4	39.9	24/11/19 12:45	47.1	61.5	41.6	25/11/19 00:45	42.7	49.2	41.4
24/11/19 01:00	45.1	60.5	40.7	24/11/19 13:00	46.4	61.1	41.5	25/11/19 01:00	43.1	53.0	41.3
24/11/19 01:15	44.5	57.9	39.9	24/11/19 13:15	45.5	59.6	41.4	25/11/19 01:15	44.2	58.7	41.5
24/11/19 01:30	43.6	59.7	39.1	24/11/19 13:30	45.3	55.8	41.4	25/11/19 01:30	46.2	60.4	41.6
24/11/19 01:45	42.9	58.4	38.4	24/11/19 13:45	46.8	63.5	41.4	25/11/19 01:45	42.6	52.8	41.3
24/11/19 02:00	43.4	59.4	38.3	24/11/19 14:00	46.6	61.5	41.6	25/11/19 02:00	43.9	59.1	41.2
24/11/19 02:15	41.3	54.8	37.8	24/11/19 14:15	46.4	59.8	42.2	25/11/19 02:15	43.5	48.1	41.6
24/11/19 02:30	42.6	59.4	40.8	24/11/19 14:30	46.2	59.3	41.9	25/11/19 02:30	44.4	56.5	41.3
24/11/19 02:45	42.2	52.8	40.2	24/11/19 14:45	46.5	58.8	42.1	25/11/19 02:45	43.2	48.6	41.3
24/11/19 03:00	42.9	52.2	40.7	24/11/19 15:00	46.9	58.6	42.1	25/11/19 03:00	43.2	57.1	41.4
24/11/19 03:15	43.4	53.7	41.3	24/11/19 15:15	45.9	62.1	41.6	25/11/19 03:15	41.9	51.3	39.3
24/11/19 03:30	42.4	54.8	40.0	24/11/19 15:30	46.6	68.5	41.9	25/11/19 03:30	40.8	52.0	39.0
24/11/19 03:45	43.5	59.2	40.6	24/11/19 15:45	46.9	69.4	41.8	25/11/19 03:45	41.1	51.2	39.2
24/11/19 04:00	43.4	52.2	41.8	24/11/19 16:00	45.8	57.1	41.4	25/11/19 04:00	43.4	58.0	39.4
24/11/19 04:15	43.2	52.9	40.5	24/11/19 16:15	45.6	60.7	41.1	25/11/19 04:15	41.4	49.0	39.6
24/11/19 04:30	42.5	54.2	40.0	24/11/19 16:30	46.3	64.2	42.3	25/11/19 04:30	45.5	60.6	39.8
24/11/19 04:45	42.8	55.8	39.8	24/11/19 16:45	46.3	63.9	41.8	25/11/19 04:45	41.7	54.3	39.9
24/11/19 05:00	41.5	54.9	39.4	24/11/19 17:00	45.6	55.5	41.3	25/11/19 05:00	44.8	58.6	40.4
24/11/19 05:15	41.9	52.7	39.3	24/11/19 17:15	46.5	70.1	41.5	25/11/19 05:15	44.8	60.2	40.8
24/11/19 05:30	43.5	59.9	40.2	24/11/19 17:30	45.6	59.9	41.0	25/11/19 05:30	44.2	54.8	40.8
24/11/19 05:45	43.2	58.1	40.4	24/11/19 17:45	46.4	66.7	41.1	25/11/19 05:45	45.3	60.6	41.4
24/11/19 06:00	42.9	52.6	40.6	24/11/19 18:00	49.4	64.0	41.7	25/11/19 06:00	46.1	59.0	43.0
24/11/19 06:15	42.3	53.3	40.1	24/11/19 18:15	45.0	56.0	40.6	25/11/19 06:15	46.5	55.0	43.2
24/11/19 06:30	43.7	52.2	42.1	24/11/19 18:30	46.4	61.2	41.6	25/11/19 06:30	46.8	55.8	43.8
24/11/19 06:45	42.9	52.3	40.4	24/11/19 18:45	45.3	58.7	41.3	25/11/19 06:45	48.6	57.1	44.7
24/11/19 07:00	42.5	52.3	40.3	24/11/19 19:00	46.0	57.7	41.5	25/11/19 07:00	49.7	62.1	45.2
24/11/19 07:15	42.9	54.2	40.3	24/11/19 19:15	46.1	59.4	41.9	25/11/19 07:15	48.8	61.3	44.6
24/11/19 07:30	43.1	56.6	40.6	24/11/19 19:30	46.4	63.4	41.9	25/11/19 07:30	49.0	59.3	44.5
24/11/19 07:45	43.7	57.3	40.5	24/11/19 19:45	45.4	55.4	41.3	25/11/19 07:45	49.4	62.9	45.1
24/11/19 08:00	44.0	53.5	41.1	24/11/19 20:00	46.3	59.4	41.7	25/11/19 08:00	48.5	60.0	44.3
24/11/19 08:15	44.2	56.7	41.1	24/11/19 20:15	45.4	56.9	41.6	25/11/19 08:15	48.2	59.4	44.1
24/11/19 08:30	44.3	56.2	41.0	24/11/19 20:30	46.3	56.5	41.8	25/11/19 08:30	50.4	69.7	44.3
24/11/19 08:45	43.9	57.3	40.9	24/11/19 20:45	46.8	60.1	42.0	25/11/19 08:45	49.0	71.2	44.1
24/11/19 09:00	45.0	55.3	40.9	24/11/19 21:00	46.2	60.2	41.3	25/11/19 09:00	48.3	57.7	43.8
24/11/19 09:15	45.2	63.9	41.3	24/11/19 21:15	46.0	60.5	41.4	25/11/19 09:15	48.8	65.0	43.5
24/11/19 09:30	44.7	55.3	40.9	24/11/19 21:30	45.8	61.0	41.1	25/11/19 09:30	48.6	63.4	43.3
24/11/19 09:45	44.7	52.9	41.2	24/11/19 21:45	45.1	58.4	41.4	25/11/19 09:45	47.5	60.9	43.0
24/11/19 10:00	45.5	55.1	41.7	24/11/19 22:00	45.5	61.6	41.1	25/11/19 10:00	51.0	69.7	43.4
24/11/19 10:15	46.0	55.0	41.7	24/11/19 22:15	45.3	56.7	41.1	25/11/19 10:15	48.3	63.2	43.1
24/11/19 10:30	45.9	60.2	41.6	24/11/19 22:30	44.8	57.0	40.7	25/11/19 10:30	47.8	57.1	42.4
24/11/19 10:45	44.9	56.0	41.6	24/11/19 22:45	47.8	62.1	41.2	25/11/19 10:45	52.6	72.0	44.1
24/11/19 11:00	47.0	64.6	42.5	24/11/19 23:00	45.0	54.7	42.1	25/11/19 11:00	49.4	63.7	43.6

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
25/11/19 11:15	48.2	58.1	43.0	25/11/19 23:15	47.1	63.8	39.5	26/11/19 11:15	48.6	63.3	44.6
25/11/19 11:30	48.4	60.3	43.0	25/11/19 23:30	44.9	57.8	38.9	26/11/19 11:30	49.4	69.9	45.1
25/11/19 11:45	48.3	66.3	43.3	25/11/19 23:45	45.0	53.8	38.9	26/11/19 11:45	47.5	58.1	44.2
25/11/19 12:00	48.2	65.3	43.1	26/11/19 00:00	46.8	66.5	42.6	26/11/19 12:00	47.8	57.5	44.2
25/11/19 12:15	47.4	58.8	42.5	26/11/19 00:15	45.5	56.4	40.7	26/11/19 12:15	48.2	65.3	43.9
25/11/19 12:30	48.2	61.0	43.1	26/11/19 00:30	45.9	57.8	40.4	26/11/19 12:30	48.9	60.3	44.4
25/11/19 12:45	48.8	63.8	43.4	26/11/19 00:45	51.4	69.3	39.9	26/11/19 12:45	47.5	55.6	43.8
25/11/19 13:00	49.1	66.0	44.0	26/11/19 01:00	42.9	57.1	41.1	26/11/19 13:00	49.0	65.8	43.8
25/11/19 13:15	47.9	60.0	43.3	26/11/19 01:15	40.8	49.1	38.4	26/11/19 13:15	48.9	61.9	44.1
25/11/19 13:30	51.7	69.5	42.9	26/11/19 01:30	41.5	50.4	40.4	26/11/19 13:30	53.9	79.6	44.5
25/11/19 13:45	51.3	67.9	43.3	26/11/19 01:45	41.5	48.0	40.5	26/11/19 13:45	48.0	59.1	43.8
25/11/19 14:00	50.6	65.5	44.1	26/11/19 02:00	41.6	52.6	40.2	26/11/19 14:00	48.3	67.3	43.4
25/11/19 14:15	48.9	68.3	43.4	26/11/19 02:15	45.2	60.8	38.0	26/11/19 14:15	48.7	66.3	44.3
25/11/19 14:30	49.8	65.5	43.6	26/11/19 02:30	41.0	57.3	37.9	26/11/19 14:30	48.3	58.3	44.5
25/11/19 14:45	49.1	65.9	43.3	26/11/19 02:45	39.7	52.6	37.9	26/11/19 14:45	47.6	57.8	43.9
25/11/19 15:00	51.5	69.0	43.6	26/11/19 03:00	39.2	52.6	37.9	26/11/19 15:00	48.0	60.0	44.1
25/11/19 15:15	51.6	69.7	43.8	26/11/19 03:15	42.2	47.1	39.8	26/11/19 15:15	48.0	58.8	44.3
25/11/19 15:30	50.6	66.3	43.0	26/11/19 03:30	44.0	62.3	38.4	26/11/19 15:30	47.8	62.2	44.3
25/11/19 15:45	52.9	72.6	43.6	26/11/19 03:45	45.8	59.5	38.4	26/11/19 15:45	47.6	55.1	44.1
25/11/19 16:00	50.4	67.4	44.0	26/11/19 04:00	43.1	57.4	38.7	26/11/19 16:00	48.6	64.1	43.5
25/11/19 16:15	52.7	75.3	43.1	26/11/19 04:15	41.5	53.2	38.3	26/11/19 16:15	48.2	59.7	43.1
25/11/19 16:30	53.3	73.1	42.9	26/11/19 04:30	44.9	58.5	38.7	26/11/19 16:30	47.6	58.9	42.8
25/11/19 16:45	51.3	68.5	42.5	26/11/19 04:45	41.2	56.2	38.7	26/11/19 16:45	47.2	56.4	43.0
25/11/19 17:00	51.0	69.0	42.3	26/11/19 05:00	41.6	61.5	39.1	26/11/19 17:00	47.0	54.8	43.8
25/11/19 17:15	51.7	66.4	42.8	26/11/19 05:15	45.8	62.4	39.6	26/11/19 17:15	49.3	67.9	43.3
25/11/19 17:30	49.0	62.5	42.6	26/11/19 05:30	42.2	52.7	39.4	26/11/19 17:30	47.1	59.6	43.0
25/11/19 17:45	48.6	64.3	42.9	26/11/19 05:45	44.5	60.7	39.9	26/11/19 17:45	49.0	70.4	43.5
25/11/19 18:00	49.6	70.6	42.7	26/11/19 06:00	50.0	68.9	41.5	26/11/19 18:00	48.4	58.7	43.6
25/11/19 18:15	49.2	66.8	42.3	26/11/19 06:15	49.1	71.2	42.8	26/11/19 18:15	50.2	68.2	43.3
25/11/19 18:30	47.4	62.8	42.4	26/11/19 06:30	46.8	56.1	42.3	26/11/19 18:30	47.7	55.9	43.9
25/11/19 18:45	47.8	66.3	42.7	26/11/19 06:45	47.2	55.6	43.1	26/11/19 18:45	50.8	73.8	44.3
25/11/19 19:00	47.3	56.6	43.0	26/11/19 07:00	47.6	57.4	43.5	26/11/19 19:00	48.5	61.0	44.1
25/11/19 19:15	47.6	66.1	42.9	26/11/19 07:15	48.5	62.9	44.2	26/11/19 19:15	50.0	67.3	43.9
25/11/19 19:30	47.7	60.0	42.6	26/11/19 07:30	48.1	62.0	43.9	26/11/19 19:30	48.1	58.9	44.1
25/11/19 19:45	48.3	60.0	43.0	26/11/19 07:45	48.8	62.7	44.2	26/11/19 19:45	47.4	55.8	43.2
25/11/19 20:00	49.0	66.4	44.4	26/11/19 08:00	49.8	72.0	44.0	26/11/19 20:00	47.8	56.4	43.8
25/11/19 20:15	46.8	61.8	42.4	26/11/19 08:15	48.1	57.9	44.2	26/11/19 20:15	47.6	59.5	43.2
25/11/19 20:30	47.0	56.9	42.6	26/11/19 08:30	49.9	67.1	43.7	26/11/19 20:30	47.3	57.7	43.3
25/11/19 20:45	45.9	54.6	41.8	26/11/19 08:45	49.6	70.0	44.4	26/11/19 20:45	47.8	62.1	43.2
25/11/19 21:00	46.1	58.1	40.8	26/11/19 09:00	48.7	58.5	45.2	26/11/19 21:00	48.2	61.4	43.2
25/11/19 21:15	46.1	64.6	40.4	26/11/19 09:15	48.1	61.4	44.8	26/11/19 21:15	47.9	60.7	43.1
25/11/19 21:30	46.5	63.0	39.8	26/11/19 09:30	52.5	71.6	46.3	26/11/19 21:30	47.0	62.1	42.6
25/11/19 21:45	47.4	61.6	41.8	26/11/19 09:45	55.9	62.5	53.8	26/11/19 21:45	46.9	55.3	42.6
25/11/19 22:00	47.4	60.8	42.1	26/11/19 10:00	48.8	59.3	44.3	26/11/19 22:00	48.5	61.7	43.1
25/11/19 22:15	49.3	71.1	42.3	26/11/19 10:15	52.7	70.0	45.3	26/11/19 22:15	46.0	55.2	42.3
25/11/19 22:30	46.5	56.3	41.4	26/11/19 10:30	50.4	66.0	44.8	26/11/19 22:30	46.8	55.6	43.2
25/11/19 22:45	46.8	55.5	41.3	26/11/19 10:45	48.0	56.9	45.0	26/11/19 22:45	46.6	58.4	42.4
25/11/19 23:00	48.7	62.0	41.3	26/11/19 11:00	49.7	65.0	45.2	26/11/19 23:00	47.1	58.8	42.5

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
26/11/19 23:15	46.2	54.8	41.9	27/11/19 11:15	47.4	64.8	41.3	27/11/19 23:15	51.8	63.2	41.5
26/11/19 23:30	45.4	56.5	39.7	27/11/19 11:30	47.0	58.7	41.6	27/11/19 23:30	46.8	63.4	41.3
26/11/19 23:45	43.8	52.5	39.3	27/11/19 11:45	47.5	69.2	42.2	27/11/19 23:45	45.3	53.9	40.8
27/11/19 00:00	45.9	56.9	39.7	27/11/19 12:00	47.2	58.4	42.5	28/11/19 00:00	45.9	57.6	40.4
27/11/19 00:15	46.2	64.6	41.4	27/11/19 12:15	50.0	63.2	43.3	28/11/19 00:15	44.8	55.1	40.3
27/11/19 00:30	44.6	57.5	38.4	27/11/19 12:30	50.4	59.4	45.9	28/11/19 00:30	45.9	58.3	40.0
27/11/19 00:45	43.1	62.0	38.3	27/11/19 12:45	50.5	69.5	45.3	28/11/19 00:45	42.8	60.2	38.7
27/11/19 01:00	41.0	52.6	39.2	27/11/19 13:00	48.5	60.2	44.1	28/11/19 01:00	41.3	54.9	39.1
27/11/19 01:15	41.1	52.6	39.0	27/11/19 13:15	47.4	57.3	43.5	28/11/19 01:15	40.6	49.4	39.0
27/11/19 01:30	40.3	52.0	38.3	27/11/19 13:30	46.9	57.9	42.1	28/11/19 01:30	40.9	62.9	38.8
27/11/19 01:45	40.3	50.8	38.4	27/11/19 13:45	47.0	62.5	41.3	28/11/19 01:45	40.6	54.9	38.5
27/11/19 02:00	45.4	62.8	39.1	27/11/19 14:00	47.0	59.4	40.9	28/11/19 02:00	44.8	60.3	38.6
27/11/19 02:15	39.8	49.6	38.3	27/11/19 14:15	46.9	67.5	41.5	28/11/19 02:15	41.4	56.4	38.5
27/11/19 02:30	40.9	54.3	38.2	27/11/19 14:30	47.0	67.5	41.5	28/11/19 02:30	40.5	50.8	38.2
27/11/19 02:45	40.6	56.0	38.3	27/11/19 14:45	49.9	64.0	41.3	28/11/19 02:45	40.9	49.2	38.4
27/11/19 03:00	41.0	55.9	39.0	27/11/19 15:00	45.6	54.0	41.1	28/11/19 03:00	42.7	55.7	39.9
27/11/19 03:15	45.2	58.9	39.0	27/11/19 15:15	47.9	67.2	41.3	28/11/19 03:15	46.7	60.4	42.0
27/11/19 03:30	41.5	52.6	39.3	27/11/19 15:30	47.2	59.8	42.1	28/11/19 03:30	42.7	53.6	41.4
27/11/19 03:45	43.9	57.9	40.5	27/11/19 15:45	45.5	54.4	42.1	28/11/19 03:45	46.5	61.6	41.4
27/11/19 04:00	45.4	61.0	42.2	27/11/19 16:00	45.5	53.0	42.1	28/11/19 04:00	42.5	57.8	40.9
27/11/19 04:15	44.1	58.8	42.2	27/11/19 16:15	46.9	62.9	43.2	28/11/19 04:15	44.0	57.7	41.2
27/11/19 04:30	45.0	62.5	39.9	27/11/19 16:30	46.7	63.1	42.9	28/11/19 04:30	44.8	57.8	41.1
27/11/19 04:45	47.0	62.9	39.4	27/11/19 16:45	46.8	67.6	42.3	28/11/19 04:45	43.7	58.9	40.7
27/11/19 05:00	46.4	60.0	41.4	27/11/19 17:00	47.9	69.8	42.1	28/11/19 05:00	45.4	60.6	42.6
27/11/19 05:15	44.8	59.4	40.3	27/11/19 17:15	51.4	75.3	42.5	28/11/19 05:15	44.7	53.7	43.0
27/11/19 05:30	42.5	54.5	39.1	27/11/19 17:30	46.3	59.0	42.6	28/11/19 05:30	46.5	58.9	43.1
27/11/19 05:45	46.7	59.2	39.9	27/11/19 17:45	47.8	61.6	43.0	28/11/19 05:45	46.4	61.0	42.3
27/11/19 06:00	49.2	62.5	40.8	27/11/19 18:00	47.1	58.5	43.4	28/11/19 06:00	47.5	65.2	42.3
27/11/19 06:15	44.4	54.6	40.3	27/11/19 18:15	47.8	66.9	43.2	28/11/19 06:15	45.9	61.8	42.8
27/11/19 06:30	47.6	66.2	40.8	27/11/19 18:30	48.7	65.5	43.7	28/11/19 06:30	47.4	65.5	43.8
27/11/19 06:45	47.9	61.5	42.1	27/11/19 18:45	48.2	62.4	43.4	28/11/19 06:45	47.3	56.2	44.3
27/11/19 07:00	46.7	56.4	42.6	27/11/19 19:00	48.2	67.7	44.1	28/11/19 07:00	47.7	59.4	44.3
27/11/19 07:15	47.6	56.9	42.8	27/11/19 19:15	46.8	55.5	43.3	28/11/19 07:15	47.8	57.2	44.0
27/11/19 07:30	47.0	62.5	41.4	27/11/19 19:30	47.5	55.7	43.5	28/11/19 07:30	47.4	58.5	43.8
27/11/19 07:45	48.8	67.0	42.3	27/11/19 19:45	47.9	57.4	44.1	28/11/19 07:45	48.7	66.2	44.1
27/11/19 08:00	47.7	59.2	42.8	27/11/19 20:00	46.7	61.1	42.4	28/11/19 08:00	47.9	61.2	44.3
27/11/19 08:15	49.8	66.5	42.2	27/11/19 20:15	46.8	57.6	42.7	28/11/19 08:15	50.2	73.0	44.2
27/11/19 08:30	48.3	64.4	42.3	27/11/19 20:30	47.0	59.2	42.3	28/11/19 08:30	49.4	64.0	44.8
27/11/19 08:45	48.2	64.7	43.1	27/11/19 20:45	46.7	60.0	42.5	28/11/19 08:45	47.5	65.3	44.0
27/11/19 09:00	47.8	57.9	43.1	27/11/19 21:00	46.0	60.7	41.8	28/11/19 09:00	48.3	60.7	43.7
27/11/19 09:15	47.0	58.2	42.7	27/11/19 21:15	46.6	59.2	42.5	28/11/19 09:15	47.0	61.2	43.3
27/11/19 09:30	51.5	74.7	42.9	27/11/19 21:30	48.4	66.7	42.4	28/11/19 09:30	50.6	73.9	43.6
27/11/19 09:45	47.3	59.6	43.3	27/11/19 21:45	47.1	59.7	42.2	28/11/19 09:45	50.4	66.2	44.5
27/11/19 10:00	49.8	71.0	42.5	27/11/19 22:00	46.8	54.8	42.2	28/11/19 10:00	48.6	68.7	43.1
27/11/19 10:15	47.4	55.4	42.9	27/11/19 22:15	45.9	61.1	41.5	28/11/19 10:15	48.5	62.1	43.0
27/11/19 10:30	48.0	58.1	43.0	27/11/19 22:30	46.6	57.3	42.2	28/11/19 10:30	48.4	62.6	43.1
27/11/19 10:45	49.3	61.4	43.4	27/11/19 22:45	47.0	57.8	42.1	28/11/19 10:45	49.2	78.2	43.0
27/11/19 11:00	48.2	60.5	43.0	27/11/19 23:00	59.3	62.2	52.8	28/11/19 11:00	47.5	59.1	43.2

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
28/11/19 11:15	47.3	60.5	42.7	28/11/19 23:30	45.1	61.5	40.7
28/11/19 11:30	47.9	62.3	43.1	28/11/19 23:45	44.9	56.8	41.3
28/11/19 11:45	48.8	65.7	43.4	29/11/19 00:00	46.0	57.6	42.4
28/11/19 12:00	47.8	65.3	43.2	29/11/19 00:15	46.2	56.6	43.3
28/11/19 12:15	48.3	66.3	43.0	29/11/19 00:30	45.0	52.5	42.3
28/11/19 12:30	47.7	61.6	43.6	29/11/19 00:45	44.1	57.3	41.0
28/11/19 12:45	47.9	64.4	44.0	29/11/19 01:00	41.6	56.8	38.7
28/11/19 13:00	47.4	65.9	42.5	29/11/19 01:15	40.8	53.6	38.5
28/11/19 13:15	48.8	66.9	42.5	29/11/19 01:30	40.2	53.2	38.2
28/11/19 13:30	47.8	62.2	42.4	29/11/19 01:45	41.0	57.8	38.3
28/11/19 13:45	48.6	68.0	42.4	29/11/19 02:00	46.4	69.1	38.1
28/11/19 14:00	49.5	62.7	43.5	29/11/19 02:15	41.0	52.4	38.3
28/11/19 14:15	48.0	57.5	43.9	29/11/19 02:30	40.8	62.5	37.9
28/11/19 14:30	47.6	65.4	41.9	29/11/19 02:45	42.0	63.2	37.6
28/11/19 14:45	49.3	66.0	42.8	29/11/19 03:00	39.0	52.3	36.9
28/11/19 15:00	46.4	57.9	41.7	29/11/19 03:15	42.9	59.5	36.8
28/11/19 15:15	47.1	61.0	41.7	29/11/19 03:30	45.5	59.0	36.9
28/11/19 15:30	47.4	61.0	43.0	29/11/19 03:45	47.4	61.9	37.2
28/11/19 15:45	46.5	60.5	42.4	29/11/19 04:00	43.5	57.7	37.2
28/11/19 16:00	47.3	55.6	43.2	29/11/19 04:15	40.4	53.8	37.5
28/11/19 16:15	46.5	62.3	42.5	29/11/19 04:30	45.5	61.3	37.4
28/11/19 16:30	46.5	58.1	41.7	29/11/19 04:45	42.9	61.6	37.4
28/11/19 16:45	47.4	65.2	42.2	29/11/19 05:00	40.8	57.3	38.0
28/11/19 17:00	46.4	57.0	41.5	29/11/19 05:15	42.5	55.9	38.9
28/11/19 17:15	48.5	65.2	41.5	29/11/19 05:30	43.9	58.4	40.0
28/11/19 17:30	47.0	68.2	41.9	29/11/19 05:45	44.6	57.8	41.1
28/11/19 17:45	47.2	61.2	41.8	29/11/19 06:00	49.5	66.0	41.5
28/11/19 18:00	48.8	69.8	41.5	29/11/19 06:15	45.8	55.4	41.7
28/11/19 18:15	48.9	66.9	43.2	29/11/19 06:30	46.2	56.8	42.5
28/11/19 18:30	49.9	75.7	42.3	29/11/19 06:45	47.2	62.5	43.7
28/11/19 18:45	48.3	62.1	43.3	29/11/19 07:00	48.1	60.4	44.4
28/11/19 19:00	50.6	72.1	44.3	29/11/19 07:15	47.9	58.6	43.9
28/11/19 19:15	47.6	65.6	43.7	29/11/19 07:30	47.3	59.6	44.0
28/11/19 19:30	50.2	62.8	44.1	29/11/19 07:45	48.9	62.3	44.2
28/11/19 19:45	49.3	64.6	43.2	29/11/19 08:00	49.8	60.6	45.7
28/11/19 20:00	48.5	64.8	43.5	29/11/19 08:15	49.4	63.6	44.8
28/11/19 20:15	47.4	62.3	43.2	29/11/19 08:30	52.3	73.0	46.3
28/11/19 20:30	48.5	63.0	43.2	29/11/19 08:45	48.7	65.5	43.8
28/11/19 20:45	46.9	63.8	43.0	29/11/19 09:00	49.9	60.3	45.6
28/11/19 21:00	54.5	85.0	42.7	29/11/19 09:15	46.9	57.8	43.3
28/11/19 21:15	50.9	80.4	42.2	29/11/19 09:30	48.2	64.8	42.8
28/11/19 21:30	51.1	73.0	41.3	29/11/19 09:45	50.1	64.1	43.4
28/11/19 21:45	49.0	66.3	41.5	29/11/19 10:00	48.5	60.4	43.3
28/11/19 22:00	58.1	87.5	41.8	29/11/19 10:15	49.8	65.4	43.0
28/11/19 22:15	44.7	53.8	40.7	29/11/19 10:30	48.1	58.8	42.9
28/11/19 22:30	49.9	68.0	40.2	29/11/19 10:45	47.7	61.0	42.1
28/11/19 22:45	46.5	57.3	41.1	29/11/19 11:00	49.1	63.0	42.3
28/11/19 23:00	47.2	61.3	40.5	29/11/19 11:15	48.2	70.3	43.0
28/11/19 23:15	44.2	58.5	40.3				

Location MU3

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
22/11/19 12:20	60.8	76.2	50.7	22/11/19 20:20	54.4	68.0	49.5	23/11/19 04:20	47.8	58.1	44.6
22/11/19 12:30	59.8	76.8	50.8	22/11/19 20:30	56.0	69.6	49.1	23/11/19 04:30	46.1	55.0	44.2
22/11/19 12:40	57.1	69.8	51.1	22/11/19 20:40	57.3	71.9	49.5	23/11/19 04:40	58.2	78.9	44.6
22/11/19 12:50	58.4	72.4	51.9	22/11/19 20:50	55.9	69.4	49.2	23/11/19 04:50	57.8	79.3	44.3
22/11/19 13:00	57.9	73.9	50.8	22/11/19 21:00	58.5	74.5	49.3	23/11/19 05:00	56.5	73.1	44.9
22/11/19 13:10	63.3	82.1	50.4	22/11/19 21:10	57.3	71.5	51.1	23/11/19 05:10	50.9	70.3	44.3
22/11/19 13:20	60.5	77.4	51.2	22/11/19 21:20	58.7	74.6	50.0	23/11/19 05:20	56.5	71.7	44.6
22/11/19 13:30	59.2	73.0	50.6	22/11/19 21:30	56.8	76.2	50.0	23/11/19 05:30	52.3	70.7	44.7
22/11/19 13:40	57.8	69.2	51.5	22/11/19 21:40	56.4	69.1	49.7	23/11/19 05:40	53.6	71.3	44.8
22/11/19 13:50	59.7	74.4	50.8	22/11/19 21:50	58.7	73.9	49.9	23/11/19 05:50	53.7	69.5	45.1
22/11/19 14:00	64.0	83.6	50.8	22/11/19 22:00	59.6	75.2	49.2	23/11/19 06:00	56.1	71.7	45.1
22/11/19 14:10	57.3	71.7	50.5	22/11/19 22:10	55.6	69.6	49.2	23/11/19 06:10	51.9	67.1	45.3
22/11/19 14:20	57.1	69.5	50.0	22/11/19 22:20	57.1	71.7	48.5	23/11/19 06:20	53.6	68.0	45.6
22/11/19 14:30	59.3	75.1	49.8	22/11/19 22:30	56.5	70.9	48.2	23/11/19 06:30	53.5	72.5	46.0
22/11/19 14:40	58.5	83.0	51.3	22/11/19 22:40	55.9	69.4	48.6	23/11/19 06:40	52.7	69.2	46.0
22/11/19 14:50	59.6	73.1	50.5	22/11/19 22:50	59.5	74.6	48.9	23/11/19 06:50	54.1	68.7	46.6
22/11/19 15:00	58.8	77.1	50.4	22/11/19 23:00	58.2	74.0	48.8	23/11/19 07:00	52.8	70.2	45.9
22/11/19 15:10	59.7	74.3	50.8	22/11/19 23:10	58.7	77.9	49.1	23/11/19 07:10	55.3	71.3	46.4
22/11/19 15:20	62.3	83.3	50.6	22/11/19 23:20	54.0	66.0	49.1	23/11/19 07:20	55.8	72.6	47.6
22/11/19 15:30	61.3	79.3	50.6	22/11/19 23:30	55.3	70.6	49.5	23/11/19 07:30	58.4	76.7	46.8
22/11/19 15:40	59.8	78.4	50.3	22/11/19 23:40	53.0	67.7	48.0	23/11/19 07:40	54.0	70.7	47.3
22/11/19 15:50	58.3	73.8	50.9	22/11/19 23:50	52.5	64.1	47.6	23/11/19 07:50	52.8	69.0	46.9
22/11/19 16:00	60.1	74.9	50.5	23/11/19 00:00	53.1	74.2	47.5	23/11/19 08:00	55.8	71.7	47.1
22/11/19 16:10	58.0	73.3	49.9	23/11/19 00:10	56.8	78.7	48.5	23/11/19 08:10	56.4	78.7	47.8
22/11/19 16:20	61.1	79.3	50.5	23/11/19 00:20	62.1	83.3	46.9	23/11/19 08:20	55.9	73.4	47.2
22/11/19 16:30	58.4	72.9	50.8	23/11/19 00:30	61.2	77.9	47.0	23/11/19 08:30	55.0	72.7	47.4
22/11/19 16:40	59.4	78.2	50.5	23/11/19 00:40	61.3	83.5	47.2	23/11/19 08:40	55.4	71.8	47.5
22/11/19 16:50	56.3	69.2	50.2	23/11/19 00:50	54.3	72.1	47.0	23/11/19 08:50	55.5	69.0	47.9
22/11/19 17:00	58.3	72.9	50.4	23/11/19 01:00	48.1	58.8	46.3	23/11/19 09:00	55.8	69.8	48.0
22/11/19 17:10	57.4	71.2	50.1	23/11/19 01:10	48.3	57.6	46.4	23/11/19 09:10	55.5	73.2	47.8
22/11/19 17:20	60.4	74.6	50.5	23/11/19 01:20	61.2	76.9	47.0	23/11/19 09:20	54.0	70.6	47.8
22/11/19 17:30	58.7	73.1	50.7	23/11/19 01:30	47.7	56.6	46.4	23/11/19 09:30	57.7	72.4	49.1
22/11/19 17:40	57.2	72.2	50.4	23/11/19 01:40	48.2	55.9	46.2	23/11/19 09:40	57.6	73.0	48.7
22/11/19 17:50	58.4	73.3	50.4	23/11/19 01:50	48.8	61.9	46.2	23/11/19 09:50	56.6	69.0	49.1
22/11/19 18:00	60.6	77.9	51.0	23/11/19 02:00	48.2	59.4	45.9	23/11/19 10:00	57.1	77.7	49.1
22/11/19 18:10	57.2	69.1	49.9	23/11/19 02:10	47.9	60.4	46.0	23/11/19 10:10	55.9	68.8	50.6
22/11/19 18:20	58.9	72.6	50.6	23/11/19 02:20	49.0	56.7	46.1	23/11/19 10:20	56.8	74.1	48.9
22/11/19 18:30	57.7	75.8	49.9	23/11/19 02:30	55.5	72.9	46.2	23/11/19 10:30	56.3	74.3	49.2
22/11/19 18:40	58.0	78.3	50.4	23/11/19 02:40	48.5	55.9	45.9	23/11/19 10:40	55.3	68.1	48.8
22/11/19 18:50	60.6	79.3	49.6	23/11/19 02:50	52.0	75.3	46.0	23/11/19 10:50	55.3	68.7	48.4
22/11/19 19:00	57.9	70.2	49.3	23/11/19 03:00	47.6	55.3	45.9	23/11/19 11:00	58.8	74.2	48.8
22/11/19 19:10	57.2	74.4	49.3	23/11/19 03:10	47.6	54.1	46.2	23/11/19 11:10	61.0	78.4	48.9
22/11/19 19:20	61.2	79.7	51.2	23/11/19 03:20	58.7	84.0	46.5	23/11/19 11:20	56.3	71.7	48.4
22/11/19 19:30	61.0	80.3	50.1	23/11/19 03:30	53.2	67.0	46.5	23/11/19 11:30	57.8	75.3	48.7
22/11/19 19:40	60.7	76.9	49.3	23/11/19 03:40	60.3	84.0	45.8	23/11/19 11:40	55.9	67.1	49.2
22/11/19 19:50	57.7	72.4	49.6	23/11/19 03:50	57.1	74.2	45.2	23/11/19 11:50	55.3	71.3	49.0
22/11/19 20:00	56.9	71.8	49.7	23/11/19 04:00	59.9	77.0	44.8	23/11/19 12:00	58.3	70.3	48.4
22/11/19 20:10	55.2	68.9	49.0	23/11/19 04:10	47.1	56.4	44.8	23/11/19 12:10	58.1	72.0	48.5

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
23/11/19 12:20	55.6	74.1	48.6	23/11/19 20:20	55.7	74.4	48.1	24/11/19 04:20	47.1	55.5	44.6
23/11/19 12:30	56.8	71.8	48.8	23/11/19 20:30	54.4	69.1	48.0	24/11/19 04:30	46.5	57.0	44.4
23/11/19 12:40	58.3	74.3	48.4	23/11/19 20:40	54.8	69.2	47.8	24/11/19 04:40	46.8	57.9	44.2
23/11/19 12:50	55.2	71.9	48.6	23/11/19 20:50	56.6	73.1	48.4	24/11/19 04:50	46.6	56.7	44.0
23/11/19 13:00	55.4	70.0	48.4	23/11/19 21:00	57.3	69.5	48.3	24/11/19 05:00	45.4	55.0	43.7
23/11/19 13:10	56.9	68.2	48.5	23/11/19 21:10	55.8	70.1	48.7	24/11/19 05:10	45.2	49.8	43.8
23/11/19 13:20	58.5	73.2	47.7	23/11/19 21:20	55.8	70.2	48.3	24/11/19 05:20	46.4	55.3	43.9
23/11/19 13:30	57.8	74.0	48.5	23/11/19 21:30	56.6	74.2	48.1	24/11/19 05:30	45.6	58.5	43.9
23/11/19 13:40	58.3	74.1	49.2	23/11/19 21:40	54.1	68.6	48.5	24/11/19 05:40	47.5	58.8	44.5
23/11/19 13:50	61.1	79.9	48.4	23/11/19 21:50	60.5	74.0	49.6	24/11/19 05:50	46.1	57.1	43.9
23/11/19 14:00	55.9	70.9	48.3	23/11/19 22:00	57.0	74.8	48.2	24/11/19 06:00	45.8	59.3	44.1
23/11/19 14:10	54.6	68.6	48.4	23/11/19 22:10	55.2	70.5	47.5	24/11/19 06:10	45.6	51.2	44.0
23/11/19 14:20	58.4	71.9	49.0	23/11/19 22:20	57.4	72.4	48.0	24/11/19 06:20	46.9	56.8	44.2
23/11/19 14:30	56.4	73.8	48.3	23/11/19 22:30	57.4	72.4	48.4	24/11/19 06:30	46.8	59.1	44.4
23/11/19 14:40	57.9	73.9	48.4	23/11/19 22:40	53.8	69.5	48.1	24/11/19 06:40	47.3	57.3	44.4
23/11/19 14:50	56.2	69.3	48.5	23/11/19 22:50	54.3	70.1	48.1	24/11/19 06:50	46.4	54.2	43.9
23/11/19 15:00	60.5	82.6	49.0	23/11/19 23:00	54.5	70.6	48.6	24/11/19 07:00	47.5	52.1	44.4
23/11/19 15:10	56.1	71.9	49.2	23/11/19 23:10	53.1	67.9	48.9	24/11/19 07:10	48.2	59.4	44.7
23/11/19 15:20	56.7	73.8	49.4	23/11/19 23:20	52.5	66.3	48.5	24/11/19 07:20	48.2	61.1	43.8
23/11/19 15:30	59.5	75.9	49.6	23/11/19 23:30	54.5	68.2	48.9	24/11/19 07:30	47.7	61.0	44.5
23/11/19 15:40	56.3	71.8	48.7	23/11/19 23:40	51.9	66.4	48.0	24/11/19 07:40	49.4	61.8	44.5
23/11/19 15:50	56.9	73.3	49.7	23/11/19 23:50	50.7	61.3	48.0	24/11/19 07:50	48.8	60.9	45.2
23/11/19 16:00	59.5	78.0	48.2	24/11/19 00:00	52.3	65.0	47.9	24/11/19 08:00	49.9	62.1	45.5
23/11/19 16:10	58.3	76.2	48.5	24/11/19 00:10	52.4	63.9	47.8	24/11/19 08:10	50.3	66.0	45.9
23/11/19 16:20	54.9	68.2	48.6	24/11/19 00:20	50.5	62.5	47.6	24/11/19 08:20	50.6	63.7	45.6
23/11/19 16:30	57.3	74.2	48.8	24/11/19 00:30	51.0	60.6	47.9	24/11/19 08:30	49.4	62.3	45.2
23/11/19 16:40	55.6	68.4	48.3	24/11/19 00:40	53.0	66.8	48.4	24/11/19 08:40	50.8	66.3	45.7
23/11/19 16:50	56.4	82.8	48.1	24/11/19 00:50	49.8	60.8	47.9	24/11/19 08:50	48.9	60.6	45.7
23/11/19 17:00	55.2	68.3	48.9	24/11/19 01:00	50.4	66.7	47.7	24/11/19 09:00	54.2	72.3	46.1
23/11/19 17:10	58.8	73.4	49.1	24/11/19 01:10	51.2	67.8	48.1	24/11/19 09:10	52.6	63.8	46.2
23/11/19 17:20	56.2	70.6	49.0	24/11/19 01:20	52.0	64.2	48.6	24/11/19 09:20	52.4	71.9	45.8
23/11/19 17:30	53.4	65.4	48.2	24/11/19 01:30	50.1	60.6	48.0	24/11/19 09:30	54.0	70.0	46.2
23/11/19 17:40	57.6	75.0	48.5	24/11/19 01:40	50.3	67.2	47.5	24/11/19 09:40	51.7	62.9	46.3
23/11/19 17:50	53.6	66.9	48.3	24/11/19 01:50	49.7	61.9	46.9	24/11/19 09:50	52.7	65.9	47.4
23/11/19 18:00	54.2	66.6	48.5	24/11/19 02:00	49.3	63.8	47.2	24/11/19 10:00	55.1	74.0	47.7
23/11/19 18:10	56.4	72.4	48.6	24/11/19 02:10	48.7	59.3	46.9	24/11/19 10:10	53.2	67.6	47.4
23/11/19 18:20	56.0	73.3	48.3	24/11/19 02:20	48.2	58.0	46.4	24/11/19 10:20	53.9	68.4	48.3
23/11/19 18:30	55.1	68.2	48.0	24/11/19 02:30	47.8	56.3	46.3	24/11/19 10:30	55.0	69.6	47.8
23/11/19 18:40	57.8	82.4	48.4	24/11/19 02:40	47.9	66.3	46.1	24/11/19 10:40	52.6	69.6	47.4
23/11/19 18:50	56.4	72.0	47.9	24/11/19 02:50	47.5	62.3	46.0	24/11/19 10:50	51.5	66.2	47.1
23/11/19 19:00	55.1	67.9	48.2	24/11/19 03:00	46.8	60.9	44.9	24/11/19 11:00	54.1	66.6	47.6
23/11/19 19:10	57.7	72.5	48.7	24/11/19 03:10	46.8	55.6	45.0	24/11/19 11:10	57.6	75.2	47.8
23/11/19 19:20	54.1	68.3	48.0	24/11/19 03:20	46.7	60.2	45.0	24/11/19 11:20	54.7	71.7	48.6
23/11/19 19:30	57.4	71.9	48.8	24/11/19 03:30	46.7	57.5	45.0	24/11/19 11:30	54.0	67.8	48.0
23/11/19 19:40	54.8	68.6	48.1	24/11/19 03:40	46.7	66.5	44.6	24/11/19 11:40	53.8	68.2	48.2
23/11/19 19:50	58.4	76.0	47.8	24/11/19 03:50	47.6	60.7	45.4	24/11/19 11:50	54.8	71.4	48.5
23/11/19 20:00	56.9	74.4	48.4	24/11/19 04:00	47.0	58.3	44.6	24/11/19 12:00	53.0	69.5	48.1
23/11/19 20:10	54.6	69.6	48.4	24/11/19 04:10	46.4	60.0	44.4	24/11/19 12:10	53.6	70.5	48.4

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
24/11/19 12:20	53.9	68.9	48.7	24/11/19 20:20	54.2	68.8	48.3	25/11/19 04:20	47.0	58.3	44.4
24/11/19 12:30	53.6	67.6	48.5	24/11/19 20:30	54.0	68.2	48.5	25/11/19 04:30	58.2	76.2	44.8
24/11/19 12:40	56.0	73.6	48.4	24/11/19 20:40	55.5	72.6	48.5	25/11/19 04:40	51.0	70.5	44.7
24/11/19 12:50	55.6	73.6	47.9	24/11/19 20:50	53.7	69.1	48.9	25/11/19 04:50	46.8	58.0	44.5
24/11/19 13:00	53.9	69.4	47.8	24/11/19 21:00	53.9	67.2	47.9	25/11/19 05:00	57.3	75.4	45.3
24/11/19 13:10	55.0	73.6	47.8	24/11/19 21:10	52.3	63.7	47.3	25/11/19 05:10	53.1	70.3	45.3
24/11/19 13:20	53.5	67.3	47.9	24/11/19 21:20	55.6	74.6	47.4	25/11/19 05:20	52.0	69.6	45.5
24/11/19 13:30	53.5	72.1	48.3	24/11/19 21:30	53.7	68.5	47.9	25/11/19 05:30	54.6	72.3	45.5
24/11/19 13:40	53.8	68.1	48.2	24/11/19 21:40	53.7	68.5	47.6	25/11/19 05:40	52.3	69.1	45.4
24/11/19 13:50	54.7	69.5	47.9	24/11/19 21:50	51.5	61.5	47.8	25/11/19 05:50	52.8	68.0	46.2
24/11/19 14:00	56.6	78.0	48.0	24/11/19 22:00	55.8	76.0	47.8	25/11/19 06:00	54.3	70.7	46.7
24/11/19 14:10	54.8	69.3	48.7	24/11/19 22:10	52.3	64.2	47.4	25/11/19 06:10	54.8	69.0	46.9
24/11/19 14:20	56.1	70.7	48.4	24/11/19 22:20	52.0	64.1	47.0	25/11/19 06:20	54.7	72.2	47.8
24/11/19 14:30	55.6	73.9	48.4	24/11/19 22:30	53.1	70.0	46.9	25/11/19 06:30	54.0	70.1	49.1
24/11/19 14:40	52.6	63.8	49.0	24/11/19 22:40	62.7	79.9	48.0	25/11/19 06:40	55.4	71.2	49.0
24/11/19 14:50	56.1	71.7	49.2	24/11/19 22:50	55.1	78.4	47.3	25/11/19 06:50	56.4	69.8	49.8
24/11/19 15:00	58.4	72.8	49.2	24/11/19 23:00	52.9	66.2	46.8	25/11/19 07:00	57.3	72.6	50.4
24/11/19 15:10	57.2	73.9	48.6	24/11/19 23:10	51.7	68.0	46.9	25/11/19 07:10	60.1	80.0	49.8
24/11/19 15:20	55.0	76.6	48.2	24/11/19 23:20	51.4	68.8	47.0	25/11/19 07:20	57.1	72.9	50.2
24/11/19 15:30	54.5	69.9	48.9	24/11/19 23:30	51.7	63.4	47.4	25/11/19 07:30	57.0	74.2	50.0
24/11/19 15:40	55.8	72.5	48.5	24/11/19 23:40	56.9	80.1	47.0	25/11/19 07:40	56.7	68.9	50.8
24/11/19 15:50	54.7	69.6	48.9	24/11/19 23:50	51.2	66.9	46.5	25/11/19 07:50	57.3	70.4	50.6
24/11/19 16:00	56.2	73.0	48.6	25/11/19 00:00	49.7	64.2	46.1	25/11/19 08:00	57.9	71.7	50.1
24/11/19 16:10	53.5	67.1	49.0	25/11/19 00:10	49.8	65.2	45.6	25/11/19 08:10	57.3	70.3	49.9
24/11/19 16:20	54.7	69.0	49.0	25/11/19 00:20	47.1	58.0	45.6	25/11/19 08:20	57.0	71.6	50.3
24/11/19 16:30	53.1	68.6	48.5	25/11/19 00:30	47.1	57.8	45.6	25/11/19 08:30	57.2	78.7	49.8
24/11/19 16:40	55.0	72.7	48.9	25/11/19 00:40	47.2	56.3	45.5	25/11/19 08:40	59.7	74.9	50.7
24/11/19 16:50	54.9	69.8	48.4	25/11/19 00:50	46.9	60.2	45.3	25/11/19 08:50	58.2	73.0	49.9
24/11/19 17:00	53.4	67.1	47.9	25/11/19 01:00	48.8	68.6	45.3	25/11/19 09:00	58.6	73.2	50.1
24/11/19 17:10	55.8	72.5	48.9	25/11/19 01:10	58.2	84.3	45.6	25/11/19 09:10	56.4	70.3	50.8
24/11/19 17:20	54.3	68.1	48.7	25/11/19 01:20	47.9	58.2	45.5	25/11/19 09:20	57.2	79.1	50.1
24/11/19 17:30	54.5	67.7	48.7	25/11/19 01:30	46.7	61.0	45.4	25/11/19 09:30	59.1	75.5	50.2
24/11/19 17:40	55.1	69.0	47.8	25/11/19 01:40	58.5	79.9	45.3	25/11/19 09:40	57.1	69.9	50.6
24/11/19 17:50	53.2	67.6	47.8	25/11/19 01:50	45.5	57.6	43.7	25/11/19 09:50	55.8	68.8	49.7
24/11/19 18:00	54.8	71.3	48.5	25/11/19 02:00	58.5	83.8	43.7	25/11/19 10:00	59.1	77.4	50.0
24/11/19 18:10	59.6	75.4	47.8	25/11/19 02:10	45.2	49.4	43.9	25/11/19 10:10	58.6	72.3	50.0
24/11/19 18:20	55.0	71.2	47.9	25/11/19 02:20	46.3	56.1	43.9	25/11/19 10:20	57.3	78.3	50.3
24/11/19 18:30	53.9	67.9	48.8	25/11/19 02:30	45.3	51.1	43.9	25/11/19 10:30	59.7	76.9	49.7
24/11/19 18:40	55.9	74.0	48.2	25/11/19 02:40	55.7	75.2	44.0	25/11/19 10:40	57.3	72.7	50.5
24/11/19 18:50	54.5	68.0	48.0	25/11/19 02:50	48.7	66.2	44.1	25/11/19 10:50	59.0	75.5	50.9
24/11/19 19:00	55.6	73.4	48.2	25/11/19 03:00	48.6	68.0	43.9	25/11/19 11:00	57.7	71.1	50.3
24/11/19 19:10	56.7	75.0	48.5	25/11/19 03:10	45.4	51.5	44.2	25/11/19 11:10	58.2	73.0	50.2
24/11/19 19:20	52.3	65.4	48.4	25/11/19 03:20	48.0	65.0	43.8	25/11/19 11:20	57.2	70.4	50.4
24/11/19 19:30	55.0	67.8	49.0	25/11/19 03:30	44.8	50.3	43.8	25/11/19 11:30	57.8	71.5	50.7
24/11/19 19:40	53.7	67.8	48.5	25/11/19 03:40	44.9	55.1	43.8	25/11/19 11:40	56.7	69.2	50.3
24/11/19 19:50	54.4	70.6	48.1	25/11/19 03:50	46.4	60.5	44.0	25/11/19 11:50	58.2	78.1	49.9
24/11/19 20:00	57.1	75.1	48.2	25/11/19 04:00	45.6	52.7	44.0	25/11/19 12:00	57.7	70.5	50.5
24/11/19 20:10	55.0	70.1	48.6	25/11/19 04:10	57.4	76.5	44.2	25/11/19 12:10	57.2	71.2	50.7

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
25/11/19 12:20	55.7	68.6	49.9	25/11/19 20:20	55.9	73.8	49.9	26/11/19 04:20	53.2	69.6	44.4
25/11/19 12:30	58.1	74.0	50.5	25/11/19 20:30	56.9	71.2	50.2	26/11/19 04:30	58.8	76.3	45.2
25/11/19 12:40	56.9	70.0	50.4	25/11/19 20:40	55.5	70.9	49.8	26/11/19 04:40	56.9	74.9	44.7
25/11/19 12:50	58.7	75.8	51.6	25/11/19 20:50	56.1	68.8	49.6	26/11/19 04:50	47.1	58.1	44.9
25/11/19 13:00	56.3	67.6	51.2	25/11/19 21:00	55.6	68.3	50.2	26/11/19 05:00	47.1	57.6	45.1
25/11/19 13:10	57.7	74.4	51.3	25/11/19 21:10	56.2	68.6	50.0	26/11/19 05:10	53.0	68.7	45.7
25/11/19 13:20	58.4	74.9	51.7	25/11/19 21:20	55.1	71.4	49.0	26/11/19 05:20	59.9	78.7	46.0
25/11/19 13:30	58.8	73.9	51.3	25/11/19 21:30	56.1	77.6	48.8	26/11/19 05:30	49.8	59.5	46.3
25/11/19 13:40	58.4	74.2	51.4	25/11/19 21:40	54.5	66.8	49.3	26/11/19 05:40	51.1	64.7	46.1
25/11/19 13:50	58.1	72.6	51.3	25/11/19 21:50	63.8	84.6	49.9	26/11/19 05:50	54.1	68.6	47.5
25/11/19 14:00	61.8	83.4	51.7	25/11/19 22:00	58.9	76.2	49.3	26/11/19 06:00	56.0	72.9	49.1
25/11/19 14:10	57.4	70.9	51.4	25/11/19 22:10	57.3	69.6	50.2	26/11/19 06:10	54.6	68.7	48.6
25/11/19 14:20	56.9	75.5	51.8	25/11/19 22:20	57.5	71.5	49.3	26/11/19 06:20	56.1	76.3	50.1
25/11/19 14:30	59.2	77.3	51.4	25/11/19 22:30	54.0	69.7	49.1	26/11/19 06:30	54.6	68.9	49.2
25/11/19 14:40	57.3	69.3	51.8	25/11/19 22:40	57.0	72.6	49.3	26/11/19 06:40	57.7	71.1	49.6
25/11/19 14:50	58.7	75.7	51.0	25/11/19 22:50	55.0	67.8	48.8	26/11/19 06:50	55.5	66.9	50.7
25/11/19 15:00	58.7	74.7	51.2	25/11/19 23:00	53.3	64.2	48.9	26/11/19 07:00	56.2	71.6	50.7
25/11/19 15:10	58.0	72.9	50.9	25/11/19 23:10	62.8	80.8	48.9	26/11/19 07:10	60.4	75.5	51.0
25/11/19 15:20	63.1	84.8	51.1	25/11/19 23:20	59.2	78.8	48.3	26/11/19 07:20	56.9	70.7	51.1
25/11/19 15:30	60.2	75.5	50.6	25/11/19 23:30	54.2	68.0	48.1	26/11/19 07:30	56.6	68.6	50.9
25/11/19 15:40	55.7	67.3	50.7	25/11/19 23:40	55.0	68.9	48.0	26/11/19 07:40	55.6	73.8	51.0
25/11/19 15:50	59.7	76.7	51.3	25/11/19 23:50	51.9	63.5	46.9	26/11/19 07:50	57.4	70.0	50.9
25/11/19 16:00	58.5	71.7	51.1	26/11/19 00:00	53.0	63.4	49.2	26/11/19 08:00	57.0	67.9	50.7
25/11/19 16:10	59.1	75.9	50.8	26/11/19 00:10	54.7	74.6	48.4	26/11/19 08:10	55.1	65.8	51.0
25/11/19 16:20	58.1	73.0	51.0	26/11/19 00:20	53.4	66.2	47.1	26/11/19 08:20	56.5	68.6	51.4
25/11/19 16:30	60.8	75.9	51.2	26/11/19 00:30	58.6	77.0	47.3	26/11/19 08:30	58.0	72.9	51.1
25/11/19 16:40	59.1	72.3	50.6	26/11/19 00:40	52.1	61.4	47.8	26/11/19 08:40	58.2	74.7	51.4
25/11/19 16:50	56.9	69.3	50.7	26/11/19 00:50	66.1	86.4	46.9	26/11/19 08:50	58.7	74.9	51.3
25/11/19 17:00	59.8	74.7	51.4	26/11/19 01:00	51.8	67.0	46.5	26/11/19 09:00	57.8	73.1	51.9
25/11/19 17:10	58.2	72.7	50.9	26/11/19 01:10	46.4	52.0	45.0	26/11/19 09:10	56.5	67.0	51.2
25/11/19 17:20	60.5	75.0	51.6	26/11/19 01:20	47.9	60.1	45.0	26/11/19 09:20	58.6	86.7	51.0
25/11/19 17:30	58.1	72.5	51.2	26/11/19 01:30	46.2	53.0	44.7	26/11/19 09:30	57.7	70.4	51.7
25/11/19 17:40	57.3	71.0	50.9	26/11/19 01:40	45.5	50.7	44.3	26/11/19 09:40	57.6	74.2	52.6
25/11/19 17:50	58.3	71.1	51.9	26/11/19 01:50	47.9	62.6	44.4	26/11/19 09:50	57.9	68.7	52.7
25/11/19 18:00	61.1	77.2	50.7	26/11/19 02:00	45.8	52.9	44.4	26/11/19 10:00	58.1	74.9	51.2
25/11/19 18:10	56.9	72.6	50.6	26/11/19 02:10	60.2	77.7	44.3	26/11/19 10:10	60.7	75.5	50.9
25/11/19 18:20	57.9	74.5	50.2	26/11/19 02:20	57.7	75.9	44.6	26/11/19 10:20	56.0	67.7	51.4
25/11/19 18:30	58.3	73.9	50.4	26/11/19 02:30	45.8	52.0	44.3	26/11/19 10:30	56.9	68.5	51.2
25/11/19 18:40	54.7	67.9	50.1	26/11/19 02:40	56.8	76.2	44.3	26/11/19 10:40	56.0	66.0	52.0
25/11/19 18:50	58.2	73.2	50.1	26/11/19 02:50	47.7	59.7	44.3	26/11/19 10:50	56.2	73.1	51.6
25/11/19 19:00	57.7	74.9	50.5	26/11/19 03:00	45.6	59.5	44.2	26/11/19 11:00	57.2	69.8	52.1
25/11/19 19:10	56.9	69.8	50.7	26/11/19 03:10	45.7	53.2	44.2	26/11/19 11:10	58.3	72.7	52.6
25/11/19 19:20	55.9	68.4	50.4	26/11/19 03:20	50.0	66.5	44.5	26/11/19 11:20	56.0	66.9	51.4
25/11/19 19:30	55.9	69.1	50.0	26/11/19 03:30	59.6	79.1	44.2	26/11/19 11:30	57.9	73.3	52.3
25/11/19 19:40	59.6	75.3	50.9	26/11/19 03:40	57.6	76.3	44.4	26/11/19 11:40	57.8	71.9	51.6
25/11/19 19:50	56.1	68.2	50.3	26/11/19 03:50	60.9	77.7	44.4	26/11/19 11:50	55.8	67.3	51.4
25/11/19 20:00	59.7	73.5	56.2	26/11/19 04:00	57.0	78.2	44.5	26/11/19 12:00	57.7	71.4	52.0
25/11/19 20:10	57.3	74.1	49.8	26/11/19 04:10	45.8	49.8	44.6	26/11/19 12:10	58.4	75.8	51.3

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
26/11/19 12:20	59.0	71.5	51.6	26/11/19 20:20	55.1	66.9	50.3	27/11/19 04:20	49.3	65.9	46.6
26/11/19 12:30	58.2	68.6	52.2	26/11/19 20:30	56.0	68.5	50.2	27/11/19 04:30	59.2	79.0	46.0
26/11/19 12:40	58.7	70.1	51.9	26/11/19 20:40	55.8	69.9	50.4	27/11/19 04:40	52.2	67.6	45.1
26/11/19 12:50	56.6	69.6	51.4	26/11/19 20:50	55.6	68.9	49.7	27/11/19 04:50	63.1	80.8	45.7
26/11/19 13:00	59.1	74.7	52.1	26/11/19 21:00	55.9	68.9	50.0	27/11/19 05:00	51.6	70.8	48.6
26/11/19 13:10	59.9	73.5	51.5	26/11/19 21:10	56.7	70.6	49.7	27/11/19 05:10	53.0	68.7	46.6
26/11/19 13:20	57.6	72.9	51.6	26/11/19 21:20	56.3	71.7	49.6	27/11/19 05:20	50.7	67.3	46.4
26/11/19 13:30	59.4	76.2	52.0	26/11/19 21:30	56.7	67.9	49.9	27/11/19 05:30	50.3	61.8	44.9
26/11/19 13:40	56.4	68.4	51.5	26/11/19 21:40	55.1	68.6	49.3	27/11/19 05:40	52.0	65.5	45.1
26/11/19 13:50	55.9	67.7	51.4	26/11/19 21:50	55.7	68.9	49.9	27/11/19 05:50	52.2	67.1	46.3
26/11/19 14:00	59.2	81.1	51.6	26/11/19 22:00	60.1	78.8	49.5	27/11/19 06:00	61.1	81.9	47.0
26/11/19 14:10	59.4	72.5	51.5	26/11/19 22:10	57.2	73.8	49.8	27/11/19 06:10	55.0	69.3	48.0
26/11/19 14:20	57.2	71.1	52.1	26/11/19 22:20	55.4	68.6	49.6	27/11/19 06:20	53.8	67.6	46.7
26/11/19 14:30	58.0	72.1	52.8	26/11/19 22:30	55.4	70.0	49.6	27/11/19 06:30	54.8	70.4	48.0
26/11/19 14:40	57.9	75.4	52.0	26/11/19 22:40	55.9	68.1	49.4	27/11/19 06:40	54.6	67.0	48.2
26/11/19 14:50	57.4	72.1	51.6	26/11/19 22:50	58.1	75.8	48.3	27/11/19 06:50	55.7	69.1	49.2
26/11/19 15:00	57.0	77.2	51.9	26/11/19 23:00	58.7	76.6	48.5	27/11/19 07:00	57.0	72.8	50.0
26/11/19 15:10	57.9	75.8	52.0	26/11/19 23:10	55.1	69.6	48.5	27/11/19 07:10	55.2	70.6	50.0
26/11/19 15:20	58.1	74.6	51.1	26/11/19 23:20	52.3	61.1	47.5	27/11/19 07:20	57.4	69.1	50.2
26/11/19 15:30	57.5	75.4	51.9	26/11/19 23:30	54.5	69.6	47.2	27/11/19 07:30	55.7	69.4	48.7
26/11/19 15:40	56.9	68.0	51.9	26/11/19 23:40	53.3	63.5	47.7	27/11/19 07:40	56.9	69.2	49.7
26/11/19 15:50	56.4	73.1	51.4	26/11/19 23:50	51.4	60.9	47.3	27/11/19 07:50	57.6	73.5	50.1
26/11/19 16:00	57.8	73.1	51.2	27/11/19 00:00	54.2	64.3	47.6	27/11/19 08:00	57.6	72.6	50.2
26/11/19 16:10	57.6	76.7	51.7	27/11/19 00:10	53.5	64.0	46.8	27/11/19 08:10	56.3	67.4	50.7
26/11/19 16:20	60.5	75.1	50.9	27/11/19 00:20	54.0	67.1	46.7	27/11/19 08:20	58.7	73.0	50.6
26/11/19 16:30	59.6	80.6	50.7	27/11/19 00:30	57.6	75.3	45.8	27/11/19 08:30	58.7	75.1	50.9
26/11/19 16:40	54.9	65.1	50.4	27/11/19 00:40	54.6	70.7	46.0	27/11/19 08:40	57.2	73.0	51.4
26/11/19 16:50	56.5	68.3	51.0	27/11/19 00:50	49.3	60.6	46.1	27/11/19 08:50	56.4	72.1	50.9
26/11/19 17:00	57.1	70.2	51.2	27/11/19 01:00	48.5	57.6	46.8	27/11/19 09:00	58.4	72.8	51.6
26/11/19 17:10	56.9	71.7	50.9	27/11/19 01:10	49.0	65.4	46.4	27/11/19 09:10	55.7	70.8	50.6
26/11/19 17:20	59.6	74.6	51.0	27/11/19 01:20	48.5	59.3	46.0	27/11/19 09:20	56.0	71.2	50.4
26/11/19 17:30	56.5	68.3	50.5	27/11/19 01:30	46.6	53.7	45.0	27/11/19 09:30	58.8	75.9	50.5
26/11/19 17:40	56.7	69.9	50.8	27/11/19 01:40	47.5	62.8	45.2	27/11/19 09:40	56.6	70.2	51.4
26/11/19 17:50	57.8	70.2	50.7	27/11/19 01:50	47.1	56.5	45.1	27/11/19 09:50	55.7	75.8	50.5
26/11/19 18:00	60.1	75.4	51.2	27/11/19 02:00	47.0	61.1	44.9	27/11/19 10:00	60.1	75.5	51.3
26/11/19 18:10	59.1	73.2	51.0	27/11/19 02:10	60.9	81.1	44.2	27/11/19 10:10	55.9	75.4	50.2
26/11/19 18:20	57.8	73.5	50.6	27/11/19 02:20	46.3	58.1	44.0	27/11/19 10:20	57.7	68.0	50.2
26/11/19 18:30	58.3	71.7	51.2	27/11/19 02:30	45.5	55.5	44.0	27/11/19 10:30	57.1	73.6	50.1
26/11/19 18:40	57.1	71.0	50.7	27/11/19 02:40	53.6	70.0	44.1	27/11/19 10:40	60.0	75.8	50.9
26/11/19 18:50	55.7	71.8	51.2	27/11/19 02:50	46.6	60.7	44.2	27/11/19 10:50	61.7	78.7	50.1
26/11/19 19:00	59.9	73.4	51.4	27/11/19 03:00	45.7	53.3	44.1	27/11/19 11:00	55.6	66.6	50.0
26/11/19 19:10	60.7	78.5	51.3	27/11/19 03:10	56.0	74.1	43.9	27/11/19 11:10	57.3	70.7	50.8
26/11/19 19:20	55.8	69.5	50.8	27/11/19 03:20	59.3	78.3	43.7	27/11/19 11:20	55.9	70.8	49.2
26/11/19 19:30	58.0	69.8	51.1	27/11/19 03:30	50.2	69.8	44.1	27/11/19 11:30	55.9	69.5	49.3
26/11/19 19:40	59.2	74.4	50.7	27/11/19 03:40	55.8	75.7	44.7	27/11/19 11:40	58.5	84.0	49.9
26/11/19 19:50	55.9	68.5	50.6	27/11/19 03:50	50.5	69.6	45.8	27/11/19 11:50	57.7	78.9	49.2
26/11/19 20:00	57.0	72.5	50.3	27/11/19 04:00	49.1	58.6	47.6	27/11/19 12:00	58.2	76.9	49.8
26/11/19 20:10	57.2	72.0	50.8	27/11/19 04:10	58.3	79.5	47.7	27/11/19 12:10	56.9	76.1	50.0

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
27/11/19 12:20	58.1	70.4	51.0	27/11/19 20:20	57.7	79.4	50.2	28/11/19 04:20	56.0	76.0	45.8
27/11/19 12:30	56.9	73.7	51.5	27/11/19 20:30	57.8	70.1	50.3	28/11/19 04:30	58.3	75.2	45.7
27/11/19 12:40	56.4	67.5	52.2	27/11/19 20:40	56.1	71.5	50.1	28/11/19 04:40	49.4	61.7	45.8
27/11/19 12:50	56.4	66.5	51.0	27/11/19 20:50	56.4	71.2	50.3	28/11/19 04:50	55.5	76.0	45.7
27/11/19 13:00	55.6	67.6	50.9	27/11/19 21:00	55.5	70.6	50.1	28/11/19 05:00	49.1	58.6	45.7
27/11/19 13:10	56.1	70.5	50.8	27/11/19 21:10	56.7	72.3	49.9	28/11/19 05:10	53.8	70.1	46.0
27/11/19 13:20	57.7	72.6	50.7	27/11/19 21:20	54.2	64.7	50.3	28/11/19 05:20	50.1	64.8	46.6
27/11/19 13:30	59.0	73.0	49.9	27/11/19 21:30	58.1	72.1	50.8	28/11/19 05:30	53.2	69.6	46.9
27/11/19 13:40	56.2	71.8	49.3	27/11/19 21:40	61.4	79.1	50.2	28/11/19 05:40	58.5	76.7	47.3
27/11/19 13:50	58.2	76.9	50.0	27/11/19 21:50	57.3	71.0	50.3	28/11/19 05:50	57.9	75.9	48.2
27/11/19 14:00	56.9	73.5	49.1	27/11/19 22:00	58.7	77.7	50.3	28/11/19 06:00	62.0	82.0	48.4
27/11/19 14:10	56.2	71.3	49.8	27/11/19 22:10	56.1	70.0	50.3	28/11/19 06:10	54.1	69.2	48.6
27/11/19 14:20	60.0	83.3	49.4	27/11/19 22:20	54.6	69.4	49.5	28/11/19 06:20	54.6	65.8	49.3
27/11/19 14:30	56.0	75.0	50.4	27/11/19 22:30	55.7	69.3	50.2	28/11/19 06:30	55.8	67.7	50.9
27/11/19 14:40	59.7	72.8	49.9	27/11/19 22:40	60.4	76.4	50.5	28/11/19 06:40	54.6	66.4	50.7
27/11/19 14:50	65.6	84.7	50.1	27/11/19 22:50	56.1	71.3	50.2	28/11/19 06:50	56.3	66.9	51.5
27/11/19 15:00	57.1	70.9	50.5	27/11/19 23:00	59.0	71.7	53.9	28/11/19 07:00	57.3	70.7	52.0
27/11/19 15:10	56.7	79.2	49.6	27/11/19 23:10	56.4	71.3	50.7	28/11/19 07:10	57.7	70.8	51.2
27/11/19 15:20	58.6	75.1	50.7	27/11/19 23:20	58.9	74.0	48.9	28/11/19 07:20	57.0	73.0	51.7
27/11/19 15:30	59.0	74.5	50.5	27/11/19 23:30	54.5	68.5	48.9	28/11/19 07:30	55.6	70.4	51.0
27/11/19 15:40	55.5	68.4	50.6	27/11/19 23:40	58.0	75.5	49.1	28/11/19 07:40	56.1	65.7	51.4
27/11/19 15:50	54.4	67.9	50.5	27/11/19 23:50	52.8	62.8	48.9	28/11/19 07:50	57.9	73.7	51.7
27/11/19 16:00	56.5	71.4	50.0	28/11/19 00:00	54.5	64.5	48.1	28/11/19 08:00	57.5	71.7	51.6
27/11/19 16:10	55.8	70.4	51.0	28/11/19 00:10	52.5	64.4	48.3	28/11/19 08:10	55.9	67.5	51.6
27/11/19 16:20	57.0	74.2	51.2	28/11/19 00:20	54.1	65.9	47.8	28/11/19 08:20	59.3	76.0	52.2
27/11/19 16:30	56.9	70.5	51.4	28/11/19 00:30	59.4	76.6	47.9	28/11/19 08:30	58.0	69.4	52.6
27/11/19 16:40	57.7	72.9	51.1	28/11/19 00:40	51.8	63.2	47.1	28/11/19 08:40	57.8	73.7	52.2
27/11/19 16:50	55.3	72.1	50.6	28/11/19 00:50	49.2	60.0	46.1	28/11/19 08:50	57.7	80.4	51.6
27/11/19 17:00	57.1	71.1	50.6	28/11/19 01:00	48.9	64.0	46.6	28/11/19 09:00	58.2	72.9	51.4
27/11/19 17:10	57.4	71.5	50.6	28/11/19 01:10	48.1	59.6	46.9	28/11/19 09:10	56.4	69.8	51.6
27/11/19 17:20	60.3	74.2	51.8	28/11/19 01:20	49.7	62.5	46.7	28/11/19 09:20	56.9	68.4	51.2
27/11/19 17:30	55.8	68.4	50.8	28/11/19 01:30	50.6	72.4	46.5	28/11/19 09:30	58.5	74.2	52.0
27/11/19 17:40	58.7	73.1	51.0	28/11/19 01:40	47.3	56.7	45.8	28/11/19 09:40	56.2	71.3	51.5
27/11/19 17:50	61.0	75.4	52.3	28/11/19 01:50	47.6	57.3	45.8	28/11/19 09:50	60.5	76.8	52.4
27/11/19 18:00	56.9	69.5	51.0	28/11/19 02:00	60.4	77.9	45.2	28/11/19 10:00	60.2	84.8	51.0
27/11/19 18:10	57.0	68.4	51.4	28/11/19 02:10	48.5	68.9	45.5	28/11/19 10:10	57.8	79.8	50.9
27/11/19 18:20	57.4	74.6	51.1	28/11/19 02:20	47.4	54.8	45.5	28/11/19 10:20	56.6	69.1	51.1
27/11/19 18:30	59.7	73.9	51.5	28/11/19 02:30	46.6	54.5	45.2	28/11/19 10:30	57.4	74.0	50.9
27/11/19 18:40	56.4	69.3	50.8	28/11/19 02:40	47.8	63.0	45.5	28/11/19 10:40	55.9	69.0	50.8
27/11/19 18:50	61.2	79.9	51.2	28/11/19 02:50	48.2	58.2	45.8	28/11/19 10:50	60.0	81.4	50.8
27/11/19 19:00	58.4	76.4	51.3	28/11/19 03:00	52.7	72.6	45.5	28/11/19 11:00	57.0	71.3	51.5
27/11/19 19:10	56.0	67.0	51.0	28/11/19 03:10	60.5	76.0	46.1	28/11/19 11:10	56.5	71.8	50.8
27/11/19 19:20	55.8	68.4	50.6	28/11/19 03:20	50.9	66.4	45.5	28/11/19 11:20	57.3	76.0	50.8
27/11/19 19:30	57.7	73.0	51.2	28/11/19 03:30	46.4	51.4	45.2	28/11/19 11:30	58.0	72.2	51.4
27/11/19 19:40	58.8	75.6	51.6	28/11/19 03:40	56.4	73.3	45.5	28/11/19 11:40	57.9	71.3	51.0
27/11/19 19:50	57.2	69.5	50.8	28/11/19 03:50	60.9	77.9	45.9	28/11/19 11:50	59.5	75.4	51.6
27/11/19 20:00	59.0	74.2	50.5	28/11/19 04:00	46.3	51.0	45.2	28/11/19 12:00	56.7	74.2	51.1
27/11/19 20:10	54.3	66.7	50.5	28/11/19 04:10	46.7	52.6	45.2	28/11/19 12:10	59.8	74.2	51.2

Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB	Time	L_{Aeq} dB	$L_{Amax,F}$ dB	L_{AF90} dB
28/11/19 12:20	56.6	69.6	51.1	28/11/19 20:20	56.5	73.9	49.4	29/11/19 04:20	49.0	66.6	45.0
28/11/19 12:30	58.7	79.7	51.3	28/11/19 20:30	57.7	73.1	49.8	29/11/19 04:30	57.8	75.9	44.6
28/11/19 12:40	55.9	69.6	51.4	28/11/19 20:40	56.7	70.6	50.1	29/11/19 04:40	58.1	77.5	44.8
28/11/19 12:50	57.3	71.4	51.5	28/11/19 20:50	55.8	68.8	49.1	29/11/19 04:50	57.4	79.3	45.3
28/11/19 13:00	56.4	70.5	50.5	28/11/19 21:00	60.2	89.6	48.5	29/11/19 05:00	48.9	67.3	45.1
28/11/19 13:10	60.7	85.2	51.0	28/11/19 21:10	62.2	86.5	49.4	29/11/19 05:10	53.0	72.1	45.5
28/11/19 13:20	58.3	77.7	51.1	28/11/19 21:20	57.0	75.9	49.2	29/11/19 05:20	49.3	57.3	46.6
28/11/19 13:30	58.5	74.7	51.2	28/11/19 21:30	61.9	78.9	48.4	29/11/19 05:30	51.4	66.3	47.2
28/11/19 13:40	56.6	76.7	50.7	28/11/19 21:40	53.4	68.7	48.0	29/11/19 05:40	55.2	70.3	47.8
28/11/19 13:50	62.2	77.4	51.3	28/11/19 21:50	58.2	73.3	48.9	29/11/19 05:50	53.0	67.1	48.4
28/11/19 14:00	62.2	84.4	50.8	28/11/19 22:00	66.6	92.4	49.6	29/11/19 06:00	62.3	82.9	48.4
28/11/19 14:10	56.3	69.6	50.6	28/11/19 22:10	68.7	94.8	47.8	29/11/19 06:10	55.4	69.9	48.9
28/11/19 14:20	56.9	72.9	51.0	28/11/19 22:20	55.0	68.4	48.2	29/11/19 06:20	56.2	72.8	48.6
28/11/19 14:30	59.0	74.6	50.3	28/11/19 22:30	55.9	74.5	48.0	29/11/19 06:30	54.2	69.9	49.2
28/11/19 14:40	57.3	70.1	50.8	28/11/19 22:40	55.9	70.5	48.3	29/11/19 06:40	55.1	70.3	49.4
28/11/19 14:50	55.6	68.6	50.9	28/11/19 22:50	58.1	72.8	48.9	29/11/19 06:50	55.6	70.1	50.0
28/11/19 15:00	56.2	68.8	50.1	28/11/19 23:00	56.0	70.4	48.2	29/11/19 07:00	57.5	72.1	50.9
28/11/19 15:10	57.0	72.0	50.6	28/11/19 23:10	55.1	72.7	48.7	29/11/19 07:10	55.3	67.4	50.0
28/11/19 15:20	60.2	83.9	49.9	28/11/19 23:20	52.0	66.6	48.5	29/11/19 07:20	57.5	76.5	50.8
28/11/19 15:30	58.2	75.0	50.8	28/11/19 23:30	53.7	68.7	48.5	29/11/19 07:30	56.2	69.4	50.5
28/11/19 15:40	58.6	73.9	50.9	28/11/19 23:40	54.2	66.2	49.1	29/11/19 07:40	55.3	68.8	50.7
28/11/19 15:50	55.3	66.8	50.6	28/11/19 23:50	52.4	64.8	48.4	29/11/19 07:50	56.9	72.2	50.4
28/11/19 16:00	57.5	70.4	50.7	29/11/19 00:00	53.4	69.9	49.9	29/11/19 08:00	58.1	70.2	51.0
28/11/19 16:10	56.1	71.3	50.6	29/11/19 00:10	53.4	67.4	49.0	29/11/19 08:10	55.9	68.8	51.0
28/11/19 16:20	55.8	67.8	51.0	29/11/19 00:20	53.4	67.2	48.6	29/11/19 08:20	56.7	71.5	50.8
28/11/19 16:30	56.4	70.3	50.2	29/11/19 00:30	53.8	64.2	48.2	29/11/19 08:30	59.2	77.0	51.2
28/11/19 16:40	56.3	70.1	49.7	29/11/19 00:40	51.2	65.9	46.9	29/11/19 08:40	58.6	74.9	50.9
28/11/19 16:50	56.1	71.5	50.1	29/11/19 00:50	53.8	70.5	46.5	29/11/19 08:50	56.5	72.3	50.5
28/11/19 17:00	57.0	70.0	50.0	29/11/19 01:00	48.5	54.8	46.3	29/11/19 09:00	59.5	74.5	50.9
28/11/19 17:10	55.7	70.0	49.9	29/11/19 01:10	48.2	53.1	46.5	29/11/19 09:10	56.0	70.6	50.3
28/11/19 17:20	59.8	75.7	50.1	29/11/19 01:20	50.5	64.0	46.4	29/11/19 09:20	56.1	71.0	50.0
28/11/19 17:30	56.3	68.6	50.1	29/11/19 01:30	47.9	57.1	46.6	29/11/19 09:30	57.8	72.3	49.5
28/11/19 17:40	57.8	73.1	49.6	29/11/19 01:40	47.8	56.8	46.0	29/11/19 09:40	57.8	74.3	50.0
28/11/19 17:50	59.5	77.0	50.2	29/11/19 01:50	48.1	59.2	46.2	29/11/19 09:50	56.6	71.5	50.1
28/11/19 18:00	60.1	79.9	49.3	29/11/19 02:00	62.3	88.5	46.3	29/11/19 10:00	59.5	73.9	50.3
28/11/19 18:10	54.8	70.1	49.2	29/11/19 02:10	47.5	55.3	46.0	29/11/19 10:10	55.9	68.0	49.9
28/11/19 18:20	58.0	75.2	50.0	29/11/19 02:20	53.8	69.7	46.3	29/11/19 10:20	57.6	74.7	49.5
28/11/19 18:30	56.8	70.0	49.2	29/11/19 02:30	47.6	68.6	44.2	29/11/19 10:30	60.0	76.7	49.9
28/11/19 18:40	57.5	72.5	49.1	29/11/19 02:40	46.1	55.5	44.3	29/11/19 10:40	56.4	73.7	49.3
28/11/19 18:50	60.5	77.3	49.6	29/11/19 02:50	48.8	62.3	44.3	29/11/19 10:50	55.9	70.2	49.1
28/11/19 19:00	58.6	69.1	50.3	29/11/19 03:00	46.2	56.1	44.3	29/11/19 11:00	57.7	72.0	49.4
28/11/19 19:10	56.7	73.0	49.3	29/11/19 03:10	57.7	76.2	44.1	29/11/19 11:10	59.1	77.9	49.2
28/11/19 19:20	55.0	72.4	49.4	29/11/19 03:20	47.7	60.8	44.4	29/11/19 11:20	56.6	70.2	49.4
28/11/19 19:30	56.7	72.3	49.9	29/11/19 03:30	55.4	80.8	44.8	29/11/19 11:30	57.9	73.6	49.5
28/11/19 19:40	62.5	78.4	50.0	29/11/19 03:40	61.4	75.4	44.5	29/11/19 11:40	57.9	76.1	48.6
28/11/19 19:50	55.5	69.3	49.5	29/11/19 03:50	61.9	77.1	45.2	29/11/19 11:50	57.9	74.0	49.0
28/11/19 20:00	58.2	73.3	49.2	29/11/19 04:00	57.1	72.3	44.2				
28/11/19 20:10	55.9	72.5	48.9	29/11/19 04:10	46.6	55.8	44.6				

Address	Start Time	Measurement Time	X_VDV	Y_VDV	Z_VDV
1	22/11/19 11:00	00d 01:00:00.0	0.01655	0.01627	0.02591
2	22/11/19 12:00	00d 01:00:00.0	0.02097	0.01895	0.02394
3	22/11/19 13:00	00d 01:00:00.0	0.02691	0.02822	0.0244
4	22/11/19 14:00	00d 01:00:00.0	0.01899	0.01777	0.02475
5	22/11/19 15:00	00d 01:00:00.0	0.03453	0.03354	0.03162
6	22/11/19 16:00	00d 01:00:00.0	0.01564	0.015	0.02273
7	22/11/19 17:00	00d 01:00:00.0	0.01712	0.01682	0.02826
8	22/11/19 18:00	00d 01:00:00.0	0.02938	0.02654	0.028
9	22/11/19 19:00	00d 01:00:00.0	0.02703	0.02674	0.02869
10	22/11/19 20:00	00d 01:00:00.0	0.01464	0.01407	0.02125
11	22/11/19 21:00	00d 01:00:00.0	0.01394	0.0135	0.02096
12	22/11/19 22:00	00d 01:00:00.0	0.02015	0.01862	0.03078
13	22/11/19 23:00	00d 01:00:00.0	0.06026	0.06211	0.03842
14	23/11/19 00:00	00d 01:00:00.0	0.02978	0.02765	0.03844
15	23/11/19 01:00	00d 01:00:00.0	0.03922	0.03516	0.03142
16	23/11/19 02:00	00d 01:00:00.0	0.0117	0.01169	0.01952
17	23/11/19 03:00	00d 01:00:00.0	0.0238	0.02159	0.02989
18	23/11/19 04:00	00d 01:00:00.0	0.02325	0.01997	0.02469
19	23/11/19 05:00	00d 01:00:00.0	0.03534	0.03136	0.02854
20	23/11/19 06:00	00d 01:00:00.0	0.03745	0.03946	0.0269
21	23/11/19 07:00	00d 01:00:00.0	0.01258	0.01216	0.01985
22	23/11/19 08:00	00d 01:00:00.0	0.01285	0.0128	0.02152
23	23/11/19 09:00	00d 01:00:00.0	0.01382	0.01387	0.02203
24	23/11/19 10:00	00d 01:00:00.0	0.01225	0.01191	0.02037
25	23/11/19 11:00	00d 01:00:00.0	0.01305	0.0128	0.01998
26	23/11/19 12:00	00d 01:00:00.0	0.01294	0.01296	0.02015
27	23/11/19 13:00	00d 01:00:00.0	0.01286	0.01235	0.02247
28	23/11/19 14:00	00d 01:00:00.0	0.01559	0.01477	0.02236
29	23/11/19 15:00	00d 01:00:00.0	0.01269	0.01192	0.02104
30	23/11/19 16:00	00d 01:00:00.0	0.01268	0.01226	0.02018
31	23/11/19 17:00	00d 01:00:00.0	0.02056	0.01961	0.02991
32	23/11/19 18:00	00d 01:00:00.0	0.01272	0.0127	0.01991
33	23/11/19 19:00	00d 01:00:00.0	0.01236	0.01219	0.02009
34	23/11/19 20:00	00d 01:00:00.0	0.01236	0.01178	0.0207
35	23/11/19 21:00	00d 01:00:00.0	0.01208	0.01181	0.02004
36	23/11/19 22:00	00d 01:00:00.0	0.01143	0.01141	0.01897
37	23/11/19 23:00	00d 01:00:00.0	0.01185	0.01153	0.01779
38	24/11/19 00:00	00d 01:00:00.0	0.00817	0.00821	0.01231
39	24/11/19 01:00	00d 01:00:00.0	0.00677	0.00763	0.00446
40	24/11/19 02:00	00d 01:00:00.0	0.00366	0.00431	0.00312
41	24/11/19 03:00	00d 01:00:00.0	0.00337	0.00394	0.00297
42	24/11/19 04:00	00d 01:00:00.0	0.00388	0.00463	0.00354
43	24/11/19 05:00	00d 01:00:00.0	0.00364	0.00426	0.00481
44	24/11/19 06:00	00d 01:00:00.0	0.00364	0.00429	0.00425
45	24/11/19 07:00	00d 01:00:00.0	0.00456	0.00522	0.00488
46	24/11/19 08:00	00d 01:00:00.0	0.00829	0.00886	0.01427
47	24/11/19 09:00	00d 01:00:00.0	0.01065	0.01064	0.0182
48	24/11/19 10:00	00d 01:00:00.0	0.01104	0.01094	0.01759

Address	Start Time	Measurement Time	X_VDV	Y_VDV	Z_VDV
49	24/11/19 11:00	00d 01:00:00.0	0.01222	0.01186	0.02011
50	24/11/19 12:00	00d 01:00:00.0	0.01171	0.01153	0.01906
51	24/11/19 13:00	00d 01:00:00.0	0.01202	0.01173	0.02006
52	24/11/19 14:00	00d 01:00:00.0	0.01215	0.01246	0.02004
53	24/11/19 15:00	00d 01:00:00.0	0.01576	0.01507	0.02456
54	24/11/19 16:00	00d 01:00:00.0	0.01229	0.01231	0.01926
55	24/11/19 17:00	00d 01:00:00.0	0.01169	0.01173	0.01799
56	24/11/19 18:00	00d 01:00:00.0	0.01234	0.01176	0.01889
57	24/11/19 19:00	00d 01:00:00.0	0.01158	0.01138	0.01831
58	24/11/19 20:00	00d 01:00:00.0	0.01336	0.01264	0.02006
59	24/11/19 21:00	00d 01:00:00.0	0.01173	0.01116	0.01862
60	24/11/19 22:00	00d 01:00:00.0	0.01107	0.01082	0.01887
61	24/11/19 23:00	00d 01:00:00.0	0.00948	0.0093	0.01566
62	25/11/19 00:00	00d 01:00:00.0	0.0045	0.00473	0.01026
63	25/11/19 01:00	00d 01:00:00.0	0.02178	0.02006	0.03122
64	25/11/19 02:00	00d 01:00:00.0	0.00949	0.00858	0.01629
65	25/11/19 03:00	00d 01:00:00.0	0.00477	0.00544	0.00605
66	25/11/19 04:00	00d 01:00:00.0	0.02356	0.02257	0.03273
67	25/11/19 05:00	00d 01:00:00.0	0.02603	0.02184	0.02275
68	25/11/19 06:00	00d 01:00:00.0	0.01247	0.01227	0.01967
69	25/11/19 07:00	00d 01:00:00.0	0.02116	0.01989	0.02412
70	25/11/19 08:00	00d 01:00:00.0	0.01506	0.01555	0.02321
71	25/11/19 09:00	00d 01:00:00.0	0.01373	0.01346	0.02082
72	25/11/19 10:00	00d 01:00:00.0	0.0139	0.01339	0.02334
73	25/11/19 11:00	00d 01:00:00.0	0.01953	0.01843	0.02597
74	25/11/19 12:00	00d 01:00:00.0	0.01594	0.01574	0.02609
75	25/11/19 13:00	00d 01:00:00.0	0.02295	0.02004	0.02189
76	25/11/19 14:00	00d 01:00:00.0	0.01786	0.01701	0.02564
77	25/11/19 15:00	00d 01:00:00.0	0.05373	0.04901	0.03463
78	25/11/19 16:00	00d 01:00:00.0	0.03415	0.04345	0.01985
79	25/11/19 17:00	00d 01:00:00.0	0.01426	0.01423	0.02672
80	25/11/19 18:00	00d 01:00:00.0	0.01714	0.01687	0.02424
81	25/11/19 19:00	00d 01:00:00.0	0.0188	0.018	0.02391
82	25/11/19 20:00	00d 01:00:00.0	0.01309	0.0127	0.02132
83	25/11/19 21:00	00d 01:00:00.0	0.01505	0.01417	0.02165
84	25/11/19 22:00	00d 01:00:00.0	0.01784	0.01679	0.03083
85	25/11/19 23:00	00d 01:00:00.0	0.03358	0.03497	0.02992
86	26/11/19 00:00	00d 01:00:00.0	0.02673	0.02407	0.02845
87	26/11/19 01:00	00d 01:00:00.0	0.00695	0.00813	0.00521
88	26/11/19 02:00	00d 01:00:00.0	0.02284	0.01937	0.02033
89	26/11/19 03:00	00d 01:00:00.0	0.02603	0.02686	0.03258
90	26/11/19 04:00	00d 01:00:00.0	0.02715	0.0293	0.03167
91	26/11/19 05:00	00d 01:00:00.0	0.02263	0.02025	0.02583
92	26/11/19 06:00	00d 01:00:00.0	0.03914	0.03614	0.02944
93	26/11/19 07:00	00d 01:00:00.0	0.02443	0.02372	0.02427
94	26/11/19 08:00	00d 01:00:00.0	0.01618	0.01758	0.02065
95	26/11/19 09:00	00d 01:00:00.0	0.0147	0.01386	0.02143
96	26/11/19 10:00	00d 01:00:00.0	0.01749	0.01623	0.02268

Address	Start Time	Measurement Time	X_VDV	Y_VDV	Z_VDV
97	26/11/19 11:00	00d 01:00:00.0	0.01387	0.01289	0.02417
98	26/11/19 12:00	00d 01:00:00.0	0.02223	0.02067	0.02583
99	26/11/19 13:00	00d 01:00:00.0	0.01896	0.01782	0.02242
100	26/11/19 14:00	00d 01:00:00.0	0.02258	0.02297	0.02408
101	26/11/19 15:00	00d 01:00:00.0	0.01602	0.01575	0.02243
102	26/11/19 16:00	00d 01:00:00.0	0.01594	0.01467	0.0239
103	26/11/19 17:00	00d 01:00:00.0	0.01424	0.01395	0.02018
104	26/11/19 18:00	00d 01:00:00.0	0.01884	0.01736	0.02825
105	26/11/19 19:00	00d 01:00:00.0	0.02134	0.02065	0.02866
106	26/11/19 20:00	00d 01:00:00.0	0.01346	0.01324	0.02315
107	26/11/19 21:00	00d 01:00:00.0	0.01384	0.01327	0.02528
108	26/11/19 22:00	00d 01:00:00.0	0.04622	0.04767	0.03871
109	26/11/19 23:00	00d 01:00:00.0	0.01231	0.01178	0.02022
110	27/11/19 00:00	00d 01:00:00.0	0.01771	0.01736	0.02274
111	27/11/19 01:00	00d 01:00:00.0	0.00575	0.00597	0.00842
112	27/11/19 02:00	00d 01:00:00.0	0.02649	0.02432	0.02848
113	27/11/19 03:00	00d 01:00:00.0	0.02725	0.02411	0.02515
114	27/11/19 04:00	00d 01:00:00.0	0.03458	0.03176	0.03513
115	27/11/19 05:00	00d 01:00:00.0	0.01176	0.01071	0.01998
116	27/11/19 06:00	00d 01:00:00.0	0.03829	0.03557	0.02929
117	27/11/19 07:00	00d 01:00:00.0	0.01717	0.0159	0.024
118	27/11/19 08:00	00d 01:00:00.0	0.01434	0.01549	0.01906
119	27/11/19 09:00	00d 01:00:00.0	0.01407	0.01319	0.02236
120	27/11/19 10:00	00d 01:00:00.0	0.01813	0.01763	0.0274
121	27/11/19 11:00	00d 01:00:00.0	0.01383	0.0133	0.02733
122	27/11/19 12:00	00d 01:00:00.0	0.02008	0.01823	0.02486
123	27/11/19 13:00	00d 01:00:00.0	0.03566	0.03787	0.0295
124	27/11/19 14:00	00d 01:00:00.0	0.01617	0.01539	0.02438
125	27/11/19 15:00	00d 01:00:00.0	0.04549	0.04191	0.03862
126	27/11/19 16:00	00d 01:00:00.0	0.0163	0.01527	0.02301
127	27/11/19 17:00	00d 01:00:00.0	0.019	0.01843	0.02689
128	27/11/19 18:00	00d 01:00:00.0	0.01849	0.0164	0.02288
129	27/11/19 19:00	00d 01:00:00.0	0.0202	0.02073	0.02582
130	27/11/19 20:00	00d 01:00:00.0	0.01373	0.01297	0.0216
131	27/11/19 21:00	00d 01:00:00.0	0.0176	0.01745	0.02538
132	27/11/19 22:00	00d 01:00:00.0	0.05384	0.05148	0.03425
133	27/11/19 23:00	00d 01:00:00.0	0.04736	0.04314	0.02716
134	28/11/19 00:00	00d 01:00:00.0	0.01704	0.01595	0.02199
135	28/11/19 01:00	00d 01:00:00.0	0.00558	0.0049	0.00762
136	28/11/19 02:00	00d 01:00:00.0	0.01619	0.01387	0.01895
137	28/11/19 03:00	00d 01:00:00.0	0.04003	0.04057	0.03275
138	28/11/19 04:00	00d 01:00:00.0	0.04677	0.04426	0.03417
139	28/11/19 05:00	00d 01:00:00.0	0.01783	0.01729	0.0228
140	28/11/19 06:00	00d 01:00:00.0	0.03582	0.04134	0.03037
141	28/11/19 07:00	00d 01:00:00.0	0.01658	0.01493	0.02209
142	28/11/19 08:00	00d 01:00:00.0	0.01325	0.01299	0.01982
143	28/11/19 09:00	00d 01:00:00.0	0.0188	0.01818	0.02164
144	28/11/19 10:00	00d 01:00:00.0	0.01402	0.01311	0.02177

Address	Start Time	Measurement Time	X_VDV	Y_VDV	Z_VDV
145	28/11/19 11:00	00d 01:00:00.0	0.01896	0.01657	0.02325
146	28/11/19 12:00	00d 01:00:00.0	0.01688	0.01629	0.02263
147	28/11/19 13:00	00d 01:00:00.0	0.01668	0.01573	0.02616
148	28/11/19 14:00	00d 01:00:00.0	0.01446	0.01386	0.02237
149	28/11/19 15:00	00d 01:00:00.0	0.01751	0.0165	0.02473
150	28/11/19 16:00	00d 01:00:00.0	0.01649	0.01545	0.02231
151	28/11/19 17:00	00d 01:00:00.0	0.01591	0.01465	0.02911
152	28/11/19 18:00	00d 01:00:00.0	0.01696	0.01579	0.02255
153	28/11/19 19:00	00d 01:00:00.0	0.02103	0.01872	0.02866
154	28/11/19 20:00	00d 01:00:00.0	0.01363	0.01299	0.02224
155	28/11/19 21:00	00d 01:00:00.0	0.0142	0.01361	0.02379
156	28/11/19 22:00	00d 01:00:00.0	0.0348	0.03221	0.03646
157	28/11/19 23:00	00d 01:00:00.0	0.01079	0.01026	0.01689
158	29/11/19 00:00	00d 01:00:00.0	0.03286	0.02922	0.01889
159	29/11/19 01:00	00d 01:00:00.0	0.00489	0.00558	0.00786
160	29/11/19 02:00	00d 01:00:00.0	0.02055	0.02071	0.02175
161	29/11/19 03:00	00d 01:00:00.0	0.03243	0.03046	0.03366
162	29/11/19 04:00	00d 01:00:00.0	0.02283	0.02261	0.02977
163	29/11/19 05:00	00d 01:00:00.0	0.01372	0.01294	0.02423
164	29/11/19 06:00	00d 01:00:00.0	0.03534	0.03747	0.03139
165	29/11/19 07:00	00d 01:00:00.0	0.01296	0.01247	0.0206
166	29/11/19 08:00	00d 01:00:00.0	0.01478	0.01616	0.02004
167	29/11/19 09:00	00d 01:00:00.0	0.01551	0.01427	0.0221
168	29/11/19 10:00	00d 01:00:00.0	0.01652	0.01567	0.02758

Sound Insulation Prediction (v8.0.12)

- Key No. 1512

Margin of error is generally within Rw +/- 3 dB

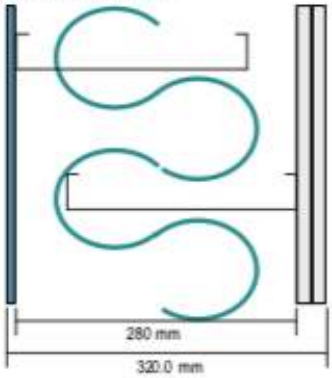
Job Name:

Notes:

Job No.: Page No.:

Date: 30 Mar 20 Initials:David

File Name: insul floor 2 fermacellLbd



Rw 65 dB
C -2 dB
C_{tr} -8 dB
D_{nTw} 67 dB

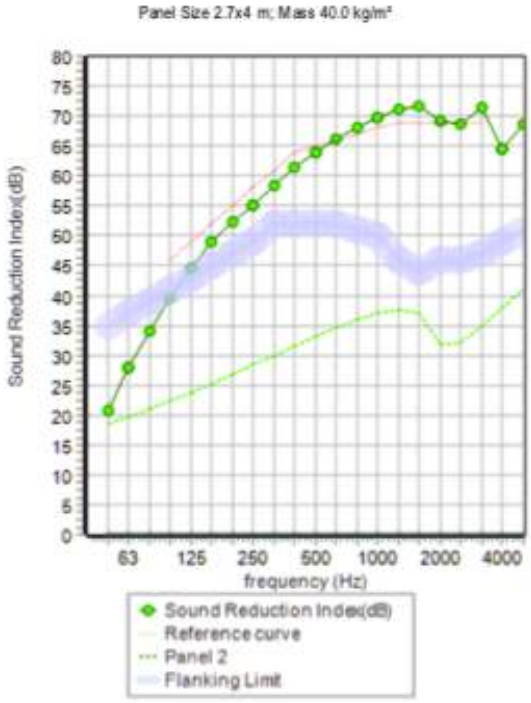
System description

Panel 1 : 1 x 10.0 mm RCM CemBoard (cement particle board) (ρ:1275 kg/m3,E:4.2GPa,η:0.01, ρs:12.8 kg/m², fc:3553 Hz)

Cavity : Staggered Steel stud: Stud spacing 600 mm , Infill Fibreglass (10kg/m3) Thickness 200 mm (ρ:10 kg/m3, Rf:4000 Pa.s/m2)
Panel 2 : 2 x 15.0 mm Gyproc SoundBloc 15mm (ρ:840 kg/m3,E:3.1GPa,η:0.01, ρs:12.6 kg/m², fc:2246 Hz)

Mass-air-mass resonant frequency =34 Hz

frequency (Hz)	R(dB)	R(dB)
50	21	
63	28	25
80	34	
100	40	
125	45	43
160	49	
200	52	
250	55	55
315	58	
400	61	
500	64	63
630	66	
800	68	
1000	70	69
1250	71	
1600	72	
2000	69	70
2500	69	
3150	71	
4000	65	67
5000	69	



2nd Floor Open Plan Office

Building Envelope Sound Insulation Calculation According to EN 12354-3										
	Land at 13 Blackburn Road		Date	30/03/20						
	Second Floor		Room	Open office overlooking railway						
Incident noise levels										
	Term	Label	Octave band centre frequency (Hz)							dB(A)
			63	125	250	500	1 k	2 k	4 k	
$L_{eq,ff}$	Measured L_{eq}	Day	3.4	2.2	-1.1	-3.0	-4.8	-8.3	-11.9	74.0
	Measured spectrum	L: Day: Adj Spectrum	77.4	76.2	72.9	71.0	69.2	65.7	62.1	74.0
		K	3	3	3	3	3	3	3	
$L_{max,ff}$	Measured L_{max}		-5.1	-4.2	-4.9	-5.4	-5.9	-6.5	-7.0	89.7
		M: : Adj Spectrum	84.6	85.5	84.8	84.3	83.8	83.2	82.7	89.6
		K	6	6	6	6	6	6	6	
Room Details										
	Term	Derivation	Value	Term			Derivation			Value
	V	Volume (m^3)	296.2	Sew			Sf - Swi			6.8
	RT	RT (secs)	1.0	Srr			Area of ceiling (m^2)			0.0
	Sf	Facade area (inc. window) (m^2)	26.2	S			Sf + Srr			26.2
			0.0	Ao			Ref Area for Dnew			10.0
	Swi	Window area (m^2)	19.5	Attenuation to roof						0.0
Sound Insulation Calculation elements										
	Term	Label/element	Octave band centre frequency (Hz)							Rw
			63	125	250	500	1 k	2 k	4 k	
Over heating	Level Difference	Mech Ovh Control	100	100	100	100	100	100	100	100
	Internal level	$L_{eq,overheating}$								#VALUE!
	Internal level	$L_{max,overheating}$								#VALUE!
vent openings	$D_{n,e}$	Mech Vent	100	100	100	100	100	100	100	101
	$A_0/S \times 10^{-Dn/10}$	B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		L_{eq} Internal SPL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		L_{max} Internal SPL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
window	R_{wi}	6.4/12/10.4 acoustic pvb double glazing	22	27	28	35	45	50	56	40
	$S_{wi}/S \times 10^{-Rw/10}$	C	0.005	0.001	0.001	0.000	0.000	0.000	0.000	
		L_{eq} Internal SPL	57.5	51.3	47.0	38.1	26.3	17.8	8.2	41.8
		L_{max} Internal SPL	64.7	60.6	58.9	51.4	40.9	35.3	28.8	53.5
Primary wall	R_{ew}	10mm CEM board, 280mm cavity, 200mm min fib, 2x 1	25	43	55	63	69	70	67	64
	$S_{ew}/S \times 10^{-Rew/10}$	D	0.001	0.000	0.000	0.000	0.000	0.000	0.000	
		L_{eq} Internal SPL	49.9	30.7	15.4	5.5	-2.3	-6.8	-7.4	24.4
		L_{max} Internal SPL	57.1	40.0	27.3	18.8	12.3	10.7	13.2	32.2
		None/Infinite								
Calculated Internal Noise Levels										
	10 Log (B+C+D+E)	F	-22.6	-28.3	-29.3	-36.3	-46.3	-51.3	-57.2	
	A (furnished)	Room Absorption	47	47	47	47	47	47	47	
	10 log (S/A)	G	-2.6	-2.6	-2.6	-2.6	-2.6	-2.6	-2.6	
L_{eq}	Calc Tolerance	T	3	3	3	3	3	3	3	
	Internal $L_{eq,2}$	L+F+G+K+T	58.2	51.4	47.0	38.1	26.3	17.8	8.4	41.9
L_{max}	Calc Tolerance	T								
	Internal $L_{max,2}$	M+F+G+K+T	65.4	60.6	58.9	51.4	40.9	35.3	28.9	53.6

East Block, 1F – 6F Living Room

Building Envelope Sound Insulation Calculation According to EN 12354-3										
	Land at 13 Blackburn Road		Date	30/03/20						
	East Residential Building		Room	Living Room, South Façade						
Incident noise levels										
	Term	Label	Octave band centre frequency (Hz)							dB(A)
			63	125	250	500	1 k	2 k	4 k	
$L_{eq,ff}$	Measured L_{eq}	Day	1.1	1.9	0.1	-3.1	-5.1	-8.9	-11.0	62.3
	Measured spectrum	L: Day: Adj Spectrum	63.4	64.2	62.4	59.2	57.2	53.4	51.3	62.3
		K	3	3	3	3	3	3	3	
$L_{max,ff}$	Measured L_{max}									
		M: : Adj Spectrum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3
		K	6	6	6	6	6	6	6	

Room Details						
Term	Derivation	Value	Term	Derivation	Value	
V	Volume (m^3)	66.6	Sew	Sf - Swi	13.3	
RT	RT (secs)	0.5	Srr	Area of ceiling (m^2)	0.0	
Sf	Facade area (inc. window) (m^2)	29.2	S	Sf + Srr	29.2	
		0.0	Ao	Ref Area for Dnew	10.0	
Swi	Window area (m^2)	15.9	Attenuation to roof		0.0	

Sound Insulation Calculation elements										
	Term	Label/element	Octave band centre frequency (Hz)							Rw
			63	125	250	500	1 k	2 k	4 k	
Over heating	Level Difference	Mech Ovh Control	100	100	100	100	100	100	100	100
	Internal level	$L_{eq,overheating}$								#VALUE!
	Internal level	$L_{max,overheating}$								
vent openings	$D_{n,e}$	Mech Vent	100	100	100	100	100	100	100	101
	$A_0/S \times 10^{-Dn/10}$	B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		L_{eq} Internal SPL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		L_{max} Internal SPL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
window	R_{wi}	Velfac G8 & G11 - 39dB Rw	25.8	24.7	25.6	37.7	40.5	41.4	47.9	38
	$S_{wi}/S \times 10^{-Rw/10}$	C	0.001	0.002	0.002	0.000	0.000	0.000	0.000	
		L_{eq} Internal SPL	42.3	44.2	41.5	26.2	21.4	16.7	8.1	34.9
		L_{max} Internal SPL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Primary wall	R_{ew}	10mm CEM board, 280mm cavity, 200mm min fib, 2x	25	43	55	63	69	70	67	64
	$S_{ew}/S \times 10^{-Rew/10}$	D	0.001	0.000	0.000	0.000	0.000	0.000	0.000	
		L_{eq} Internal SPL	42.3	25.1	11.3	0.1	-7.9	-12.7	-11.8	17.1
		L_{max} Internal SPL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		None/Infinite								

Calculated Internal Noise Levels									
	10 Log (B+C+D+E)	F	-25.4	-27.3	-28.2	-40.3	-43.1	-44.0	-50.5	
	A (furnished)	Room Absorption	21	21	21	21	21	21	21	
	10 log (S/A)	G	1.4	1.4	1.4	1.4	1.4	1.4	1.4	
L_{eq}	Calc Tolerance	T	3	3	3	3	3	3	3	
	Internal $L_{eq,2}$	L+F+G+K+T	45.3	44.3	41.5	26.2	21.4	16.7	8.2	34.9
L_{max}	Calc Tolerance	T								
	Internal $L_{max,2}$	M+F+G+K+T	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

West Block, 5F Single Bedroom

Building Envelope Sound Insulation Calculation According to EN 12354-3										
	Land at 13 Blackburn Road		Date	30/03/20						
	West Residential Building		Room	Residential						
Incident noise levels										
	Term	Label	Octave band centre frequency (Hz)							dB(A)
			63	125	250	500	1 k	2 k	4 k	
$L_{eq,fr}$	Measured L_{eq}	Night	1.7	-0.8	-0.6	-3.2	-4.9	-8.7	-10.3	57.4
	Measured spectrum	L: Night: Adj Spectrum	59.1	56.6	56.8	54.2	52.5	48.7	47.1	57.4
		K	3	3	3	3	3	3	3	
$L_{max,fr}$	Measured L_{max}	Night	2.3	0.8	-2.7	-5.1	-6.1	-7.8	-6.7	75.5
		M: Night: Adj Spectrum	77.8	76.3	72.8	70.4	69.4	67.7	68.8	75.5
		K	6	6	6	6	6	6	6	
Room Details										
	Term	Derivation	Value	Term			Derivation			Value
	V	Volume (m^3)	22.3	Sew			Sf - Swi			4.1
	RT	RT (secs)	0.5	Srr			Area of ceiling (m^2)			0.0
	Sf	Facade area (inc. window) (m^2)	7.8	S			Sf + Srr			7.8
			0.0	Ao			Ref Area for Dnew			10.0
	Swi	Window area (m^2)	3.8	Attenuation to roof						0.0
Sound Insulation Calculation elements										
	Term	Label/element	Octave band centre frequency (Hz)							Rw
			63	125	250	500	1 k	2 k	4 k	
Over heating	Level Difference	Mech Ovh Control	100	100	100	100	100	100	100	100
	Internal level	$L_{eq,overheating}$								#VALUE!
	Internal level	$L_{max,overheating}$								#VALUE!
vent openings	$D_{n,e}$	Mech Vent	100	100	100	100	100	100	100	101
	$A_0/S \times 10^{-Dn/10}$	B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		L_{eq} Internal SPL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		L_{max} Internal SPL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
window	R_{wi}	Velfac G8 & G11 - 39dB Rw	25.8	24.7	25.6	37.7	40.5	41.4	47.9	38
	$S_{wi}/S \times 10^{-Rw/10}$	C	0.001	0.002	0.001	0.000	0.000	0.000	0.000	
		L_{eq} Internal SPL	36.5	35.1	34.4	19.7	15.2	10.5	2.4	27.5
		L_{max} Internal SPL	55.3	54.9	50.5	36.0	32.2	29.6	24.2	44.6
Primary wall	R_{ew}	10mm CEM board, 280mm cavity, 200mm min fib, 2x	25	43	55	63	69	70	67	64
	$S_{ew}/S \times 10^{-Rew/10}$	D	0.002	0.000	0.000	0.000	0.000	0.000	0.000	
		L_{eq} Internal SPL	37.6	17.1	5.3	-5.3	-13.0	-17.8	-16.4	12.0
		L_{max} Internal SPL	56.4	36.9	21.4	11.0	4.0	1.3	5.4	30.8
		None/Infinite								
Calculated Internal Noise Levels										
	10 Log (B+C+D+E)	F	-25.4	-27.8	-28.8	-40.9	-43.7	-44.6	-51.0	
	A (furnished)	Room Absorption	7	7	7	7	7	7	7	
	10 log (S/A)	G	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
L_{eq}	Calc Tolerance	T	3	3	3	3	3	3	3	
	Internal $L_{eq,2}$	L+F+G+K+T	40.1	35.2	34.4	19.7	15.2	10.5	2.5	27.7
L_{max}	Calc Tolerance	T								
	Internal $L_{max,2}$	M+F+G+K+T	58.9	54.9	50.5	36.0	32.2	29.6	24.2	44.8