



120 Montague Road South Brisbane, QLD 4101

Noise Impact Assessment

Project No.	P02640
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E-LAB Consulting

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Document QA and Revisions

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Disclaimer:

This document provides preliminary acoustic and vibration design details that are intended to be discussed prior to integration within the design. A mechanical services review had not been conducted at the time this design brief was prepared. The acoustic performances designated within this document shall be reviewed and refined based on client feedback and cost planning discussions.

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1 INTRODUCTION

1.1 Document Purpose

This report presents the Noise Impact Assessment (NIA) for the proposed residential development located at 120-122 Montague Road, South Brisbane, QLD 4101. The assessment has been prepared to support the development application and provide acoustic advice relevant to the proposed development, surrounding measurements, and applicable planning requirements.

The purpose of this report is to address the following acoustic considerations:

- Noise intrusion impacts to the development:
 - Traffic noise from Montague Road
 - Industrial noise from industrial premises across Montague Road (assessed as still operational).
- Potential environmental noise emissions from the development:
 - Noise emissions from mechanical plant associated with the project building to surrounding noise sensitive receivers
 - Common areas / outdoor recreation areas
 - Loading dock and refuse noise emissions

1.2 Relevant Documents

The acoustic criteria and recommendations presented in this report have been developed with reference to the following documents, where applicable:

- BCC City Plan 2014
- Queensland Development Code Mandatory Part 4.4 – Buildings in a Transport Noise Corridor
- Queensland Environmental Protection (Noise) Policy 2019
- National Construction Code of Australia 2022 (NCC)
- AS/NZS 2107:2016: Acoustics – Recommended design sound levels and reverberation times for building interiors (AS/NZS 2107:2016)

Recommendations are provided where required to support suitable acoustic amenity for future occupants and minimise potential impacts on surrounding receivers.



1.3 EDQ PPDA Noise Requirements

The subject site is located in Precinct 3 (Montague Road) and recognised as a Provisional Priority Development Area (PPDA) as part of the Economic Development Queensland (EDQ) Land Activation Program (SEQ Tranche 1).

The scheme provides noise emission requirements as follows:

4.1.4.5 Noise

Development is designed, sited and constructed to:

- a. Mitigate exposure of occupants to noise impacts from:
 - i. Industrial noise sources
 - ii. Airport and aviation facilities
 - iii. Designated transport corridors, and
- b. Achieve minimum acoustic environmental values for indoor and outdoor areas.

The above PPDA noise emission requirements have been addressed in the followed Sections of this report.

Table 1: EDQ PPDA Noise Requirement and Applicable Section

EDQ PPDA NOISE REQUIREMENT	APPLICABLE SECTION
a. Mitigate exposure of occupants to noise impacts from:	
Industrial noise sources	Refer to Section 5.3 for Noise Intrusion Assessment Refer to Section 6.3 for Preliminary Façade Recommendations
Airport and aviation facilities	The site and nearby surround area are not located within an Australian Noise Exposure Forecast (ANEF). As such aircraft noise impacts on site are not anticipated to be significant.
Designated transport corridors	Similarly, the site is not located within a designated road traffic or rail noise corridor.
b. Achieve minimum acoustic environmental values for indoor and outdoor areas	Refer to Section 5 for Noise Impact Assessment Refer to Section 6 for Acoustic Recommendations

2 SITE DESCRIPTION AND PROPOSED DEVELOPMENT

2.1 Site Description

To ensure the development has minimal impact on the surrounding environment a desktop survey was conducted. The survey identified the following locations of the proposed development and surrounding noise-sensitive receivers (NSRs) as shown in Figure 1.

Figure 1: Acoustic site plan demonstrating the subject site and surrounding NSRs.



The Brisbane City Council (BCC) City Plan 2014 zoning maps indicate that the site is located within a PC1 Principal Centre (City Centre) zone. Property details of the site have been reproduced in Table 1 using the BCC City Plan 2014.

Table 2: Property Details

PROPERTY DETAILS	DESCRIPTION
Property Address	114, 120-122 Montague Rd & 39A Boundary Street, South Brisbane QLD 4101
Planning Scheme	Brisbane City Council City Plan 2014
Property Holding Details	Lot 50 on RP885764, Lot 52 on RP10840, Lot 1 on RP95549
Site Area	9044m ²
Zone Name	PC1 Principal Centre (City Centre)
Local Area Plan	South Brisbane Riverside Neighbourhood Plan (Kurilpa Precinct NP-004)
Relevant Assessment Legislation	PPDA – Economic Development Queensland

2.2 Site Acoustic Considerations

An analysis of the BCC City Plan 2014 Interactive Mapping indicated that the site and surrounding area are not located within a transport noise (road and rail) corridor. The site is also not within the Aircraft Noise Exposure Forecast (ANEF) contours and is therefore not significantly impacted by aircraft noise.

Based on the site survey, the ambient acoustic environment can be characterised by:

- Inner-city ambient noise
- Road traffic noise
- Mechanical plant noise
- Nearby industrial noise
- Pedestrian noise

Upon reviewing the design documentation prepared for the Development Application, the acoustic considerations for the proposed development include:

- Noise intrusion impacts:
 - Road traffic noise
 - Mechanical plant from surrounding buildings
 - Industrial noise (including processing, transport and mechanical)
- Potential onsite noise emission sources:
 - Mechanical plant and equipment noise
 - Centre uses such as cafes and outdoor rooftop recreational areas
 - Loading dock and refuse activities

2.3 Nearest Sensitive Noise Receivers

A description of the nearest noise sensitive receivers is provided in Table 2.

Table 3: Description of nearest noise sensitive receivers

NSR ID	ADDRESS	DESCRIPTION	APPROXIMATE DISTANCE SEPARATION (M)
RC1	20 Brereton St, South Brisbane QLD 4101	Single-storey home	93
RC2	15-19 Brereton St, South Brisbane QLD 4101	Future Multiple Dwelling Building	7
RC3	5 Oxford St, South Brisbane QLD 4101	Bowman Johnson - Hostel	51
RC4	45 Boundary St, South Brisbane QLD 4101	Canvas - Apartment Building	71
RC5	1 Cordelia St, South Brisbane QLD 4101	Brisbane One Apartments by CLLIX - Apartments	146
RC6	23 Bouquet St, South Brisbane QLD 4101	Spice - Apartments	303

Note – The distance separation values noted above are indicative and used as estimates only. E-Lab takes no responsibility for the accuracy of the separation of the nearest NSRs. Where noise emissions from the subject site are compliant with NSR1-NSR6, we anticipate that compliance would be achieved at all other noise sensitive receivers.



3 EXISTING NOISE LEVELS

Noise logging was conducted between the 27th of April 2026 to 6th of May 2026 at two specific locations on the property to measure possible external noise impacts onto the property. The main objective of the noise monitoring is to establish the ambient noise levels, traffic noise, and determine the noise criteria to meet the required BCC and QDC guidelines.

The noise monitoring locations are illustrated in Figure 2 with each location using a different noise monitoring device. The noise monitoring locations selected in consideration with the following:

- Appropriate angle of view to significant roads
- Accurate representation of noise impacts at the approximate locations of the proposed development façade line
- Equipment security and pedestrian safety

The noise measurement instrumentation used consisted of:

- **Unattended noise logger 1 (Cordelia Street):** Larson Davis model 831 class 1 sound level meter, serial number: 0003488

Figure 2: Larson Davis model 831 used at unattended logger location 1



- **Unattended noise logger 2 (Montague Road):** NSRT mk3 class 1 sound level meter, serial number: AtP2pHW48309qLtySyJRID

Figure 3: NSRT mk3 used at unattended logger location 1



All instrumentation had current NATA laboratory calibration during the monitoring period. All devices were field calibrated prior-to and at the completion of logging, no drift was found during the calibration of the logger.

Figure 4: Noise Monitoring Locations

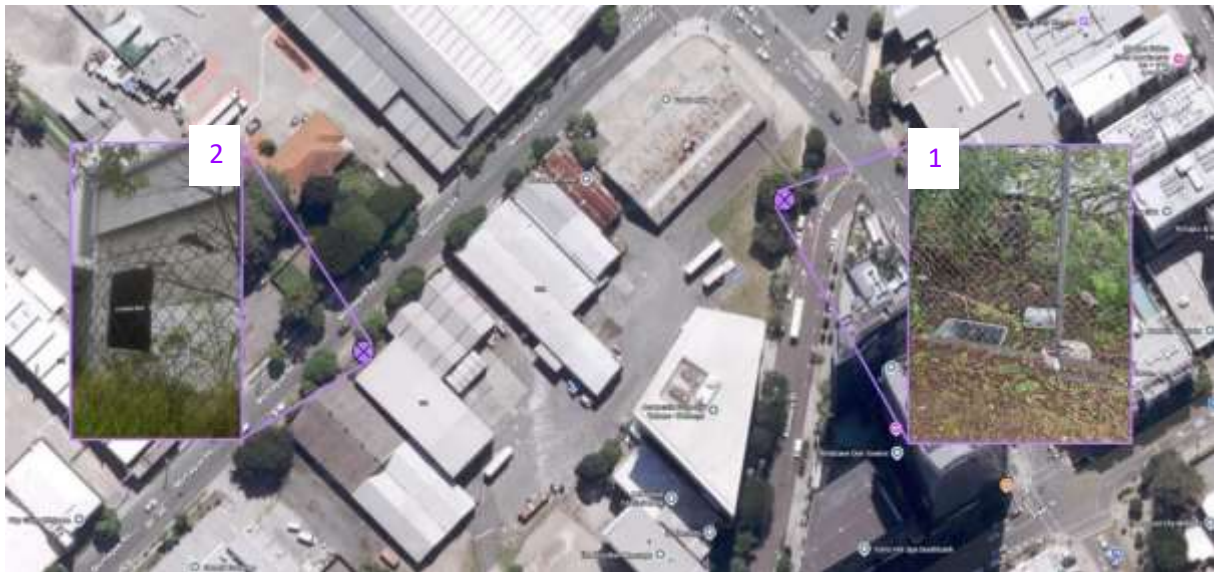


Figure 4 shows the monitoring locations in vicinity of the subject site boundary as well as nearest sensitive receivers. The monitoring locations are expected to be an accurate representation of the noise levels ambient environment.

During the logging period weather data was monitored and obtained from the Bureau of Meteorology (BOM) website for Brisbane (station ID040913). During the monitoring period significant rainfall was recorded on the 27th to 28th of April, 30th of April to 1st of May. To ensure accurate data collection the 4 days with observed significant rainfall were excluded from analysis.

3.1 Summary of Measured Noise Levels

3.1.1 Ambient Noise / Background Noise Levels at Nearest Noise Sensitive Receivers

Table 4 presents the representative ambient noise monitoring results from location 1 (near Cordelia Street). These levels will be used to derive project noise emission limits. It is noted that recorded noise data on days with significant rainfall have been filtered out.

Table 4: Unattended Noise Logger 1 (Cordelia Street)- Ambient Noise Summary / Background Noise Levels

PERIOD	AVERAGE WEEKDAY NOISE LEVEL IN dB(A)					
	L_{Amax}^1	L_{A01}^2	L_{A10}^3	L_{Aeq}^4	L_{A90}^5	RBL ⁶
Day	78	70	63	61	54	54
Evening	75	67	61	58	51	51
Night	72	65	57	55	48	46

¹ L_{Amax} is the average of the maximum A-weighted sound pressure levels occurring within the consecutive 15-minute samples

² L_{A01} is the A-weighted sound pressure level exceeded for 1% of the time

³ L_{A10} is the A-weighted sound pressure level exceeded for 10% of the time

⁴ L_{Aeq} is the equivalent or energetic-averaged A-weighted sound pressure level

⁵ L_{A90} is the A-weighted sound pressure level exceeded for 90% of the time

⁶ RBL is determined from the median of the daily assessment background levels (ABLs). The ABLs are determined from the 10th percentile of the hourly L_{A90} noise level measured during the day, evening and night-time periods

3.1.2 Montague Road Traffic and Industrial Noise Levels

Table 5 is a summary of the noise levels measured on the site boundary adjacent to Montague Road noted as “Unattended Noise Logger Location 2”, noting that recorded noise data on days with significant rainfall have been filtered out.

Table 5: Unattended Noise Logger 2 (Montague Road)- Road Traffic / Industrial Noise

PERIOD	AVERAGE NOISE LEVEL OVER 7-DAY MEASUREMENT PERIOD IN dB(A)					
	L_{Amax}^1	L_{A01}^2	L_{A10}^3	L_{Aeq}^4	L_{A90}^5	RBL ⁶
Day	83	75	70	68	59	58
Evening	82	73	69	66	58	58
Night	80	73	66	64	57	57

Furthermore, a summary of the acoustic descriptors which best represent the Montague road traffic noise and Visy industrial noise impacts onto the site are provided in Table 6.

Table 6: Montague Road Noise Logger 2 – Road Traffic and Industrial Noise Summary

DESCRIPTOR	TIME PERIOD	NOISE LEVEL dB(A)							
		WED	SAT	SUN	MON	TUES	WED	THURS	AVG.
		29.04	2.05	3.05	4.05	5.05	6.05	7.05	
$L_{A10,18hr}$	6am to 12am	70	70	69	69	70	70	70	70
$L_{A10,12hr}$	6am to 6pm	71	71	70	70	71	71	70	70
$L_{Aeq,15hr}$ (Day&Even.)	6am to 10pm	68	67	66	66	68	68	68	67
$L_{Aeq,9hr}$ (Night)	10pm to 7am	65	62	62	63	64	67	67	64
L_{Amax} (Night)	10pm to 7am	81	77	77	79	81	84	84	80

3.1.3 Attended Noise Measurements

Short-term measurements of 15 minute durations were conducted on the 26th May 2026 during the morning peaks between 7:30am to 8:30am. A summary of these noise measurements are provided in Table 7. Montague road traffic and thump from MRV over loose road grate nearby were observed to be the main contributors to the attended noise measurements.

Table 7: Summary of Attended Noise Measurements on 26th May 2026

15-MINUTE PERIOD	ACOUSTIC DESCRIPTOR			NOTES
	$L_{Aeq,15MIN}$	$L_{A10,15MIN}$	$L_{Amax,15MIN}$	
7:38am to 7:53am	70	73	81	Noise levels mostly influenced by Montague Road traffic (i.e. MRV pass-by's, street parking) and peak noise levels dominated by MRVs travelling over nearby road grate that seems to be loosely fixed.
7:54am to 8:09am	71	73	80	



4 PROJECT NOISE CRITERIA

This section presents the regulatory requirements and acoustic design criteria that apply for the proposed development. The applicable noise criteria for the proposed design are defined by Brisbane City Council requirements and Queensland state noise policies / legislation. A summary of the relevant noise criteria for the proposed development is presented in Table 8.

Table 8: Summary of Applicable Noise Policies and Guidelines

ASSESSMENT	APPLICABLE CRITERIA	NOISE SOURCES
Noise Intrusion from offsite sources	- Industrial Amenity - BCC City Plan Multiple Dwelling Code - Australian / New Zealand Standard 2107:2016	- Road traffic noise - Mechanical plant noise - Industrial noise
Noise emissions from onsite sources	- BCC City Plan 2014 NIAPSP – Centre or Mixed-Use Code - Industrial Amenity Overlay Code - BCC City Plan Multiple Dwelling Code - QLD Environmental Protection ACT 1994	- Mechanical plant noise - Centre uses such as cafes and outdoor rooftop recreational areas

4.1 Noise Intrusion Criteria

4.1.1 Industrial Amenity Overlay Code

The site is located within the industrial amenity investigation area as per the BCC City Plan 2014 interactive mapping. Table 9 demonstrates the specific performance outcomes required for development within the region with reference to the noise planning criteria in Table 10. After thorough assessment it was determined that these performance outcomes are the most stringent criteria related to the proposed development. The acoustic performance of the façade will be driven by this criterion as it demands the highest level of noise attenuation.

Table 9: Performance and Acceptable Outcomes for the Industrial Amenity Overlay Code (Table 8.2.13.3.A)

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES
Section A – If in the Industrial Amenity Investigation Area Sub-Category	
P03 Development is located, designed and constructed to achieve the noise (planning) criteria in Table 8.2.13.3.E to protect the development from adverse noise impacts. (A noise impact assessment report prepared with the Noise impact assessment planning scheme policy can assist in demonstrating the attainment of this performance outcome.)	A03 Development for a sensitive use is located no closer than: a) 150m to a medium impact industry A or sewage treatment plant; b) 250m to a medium impact industry B, waste transfer station or landfill; c) 500m to a high impact industry or special industry.

Table 10: Noise (planning) criteria for Industrial Amenity Overlay Code (BCC Plan 2014 Table 8.2.13.3.E)

LOCATION OF SENSITIVE USE AREAS	ADJUSTED EQUIVALENT CONTINUOUS SOUND PRESSURE LEVEL ($L_{Aeq,adj,T}$) TO BE ACHIEVED DURING DAY, EVENING AND NIGHT PERIODS			MAXIMUM SOUND PRESSURE LEVEL ($L_{Amax,adj}$) TO BE ACHIEVED DURING THE NIGHT-TIME PERIOD ¹
	Day 7am-6pm $L_{Aeq,adj,11hr}$	Evening 6pm-10pm $L_{Aeq,adj,4hr}$	Night 10pm-7am $L_{Aeq,adj,4hr}$	
Sleeping areas	35dB(A)	35dB(A)	30dB(A)	45dB(A)
Other habitable rooms	35dB(A)	35dB(A)	35dB(A)	-
Low frequency noise criteria for specified sources				
Noise intrusion into habitable rooms	60dB(C)	60dB(C)	Sleeping areas 55dB(C). Other habitable rooms 60dB(C)	N/A

¹ We understand the provided descriptor L_{imeade} is an arithmetic average of A-weighted maximum noise levels during the night period rather than the absolute maximum.

4.1.2 Steady State and Quasi Steady State Noise Sources

Intruding noise from external sources, including road traffic and mechanical plant, together with noise from mechanical services associated with the proposed development, should be controlled to achieve the recommended internal noise levels outlined in Table 1 of AS/NZS 2107:2016 Acoustics – *Recommended Design Sound Levels and Reverberation Times for Building Interiors*. These criteria provide the relevant design sound levels for assessing internal acoustic amenity within the proposed residential spaces.

The appropriate AS/NZs 2107:2016 design sound limits and reverberation times within the development are presented in Table 11.

Table 11: Internal Design Sound Levels and Reverberation Times from AS/NZ

SPACE TYPE	RECOMMENDED INTERNAL DESIGN SOUND LEVEL, LAEQ (DB(A))	NOTES
Bedrooms / sleeping areas	35-40	Nighttime, typically 22:00-07:00
Living areas	35-45	General residential use
Work / study areas	35-45	Where applicable
Apartment common areas	45-50	Where applicable

4.1.3 Multiple Dwelling Code

This development comprises of multiple residential dwellings, with the proposal involving three or more dwellings for separate households. These conditions are consistent with the City Plan 2014 definition of a multiple dwelling. On this basis the development is subject to assessment against the Brisbane City Council's Multiple Dwelling Code with E-LAB providing appropriate acoustic requirements to meet this.

The noise intrusion Performance and Acceptable outcomes in the BCC Multiple Dwelling Code are presented in Table 12.

Table 12: Table 9.3.14.3.A of the Multiple Dwelling Code – Noise Intrusion Criteria

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES
P021 Development in a zone in the centre zones category or the Mixed-use zone must: a. Be located, designed and constructed to protect bedrooms and other habitable rooms from exposure to noise arising from non-residential activities outside the building; b. Be designed and constructed to achieve a minimum reduction in sound pressure level between the exterior of the building and the bedrooms or indoor primary living areas of 30 dBA	A021 Development has a minimum acoustic performance of: a. Rw 35 for glazing (windows and doors) where total area of glazing is greater than $1.8m^2$. b. Rw 32 for glazing (windows and doors) where total area of glazing is less than or equal to $1.8m^2$.

4.2 Noise Emission Criteria

4.2.1 BCC NIAPSP – Centre or Mixed-use code

Table 13: NIAPSP Centre or Mixed-use Code Noise Emission Criteria

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES
P01 Development: - has hours of operation which are controlled so that use does not detrimentally impact on the amenity of adjoining residents; - does not result in noise emissions that exceed the noise (planning) criteria in Table 9.3.3.3.F, low frequency noise criteria in Table 9.3.3.3.G and night-time noise criteria in Table 9.3.3.3.H in a sensitive zone or a nearby sensitive use, except music noise where located in a Special entertainment precinct identified in a neighbourhood plan.	A01.1 Development: - For accommodation activities, dwelling unit or emergency services has unlimited hours of operation; - For a club, if licensed, bar, function facility, hotel or nightclub entertainment facility does not generate noise which is clearly audible and detectable, or impacts on the amenity of a resident, in a dwelling or other sensitive use; - For any other use: - Where in Principal Centre zone or Major Centre zone has unlimited hours of operation; - Where in the District Centre zone, Neighbourhood Centre zone or Mixed-Use zone: (A) Has hours of operation, including for delivery, which are limited to 6am to 10pm; or (B) Does not generate noise which is clearly audible and disturbing in a dwelling or other sensitive use; - Where in any other zone: (A) Has hours of operation, including for deliveries, which are limited to 6am to 8pm; or Does not generate noise which is clearly audible and disturbing in a dwelling or other sensitive use. A01.2 Development ensures mechanical plant or equipment is acoustically screened from an adjoining use.

Where the acceptable outcome is not achieved, the performance outcomes will be assessed against the criteria derived from the following sections.

The noise criteria at the nearby NSRs are derived on their zoning classification. E-Lab has reviewed the BCC Zoning maps and identified that the nearest surrounding noise sensitive receivers are all within the PC1 Principal Centre Zone.

4.2.1.1 BCC Noise Planning Criteria

Table 14: Noise (Planning) Criteria for NSRs (Ref. Table 9.3.3.3.F of the BCC City Plan 2014 NIAPSP)

CRITERIA LOCATION	INTRUSIVE NOISE CRITERIA ($L_{AEQ,ADJ,T}$) ⁷			ACOUSTIC AMENITY CRITERIA ($L_{AEQ,ADJ,T}$)		
	Day ⁸	Evening ⁹	Night ¹⁰	Day ⁴	Evening ⁵	Night ⁶
At a sensitive use in the Principal centre zone (Sensitive Receivers NSR 2 to 6)	59	56	51	60	55	50
Low-medium density residential zone boundary (NSR 1)	57	54	49	55	45	40

4.2.1.2 BCC Low Frequency Noise Criteria

The low frequency noise limits for the proposed development are presented in Table 13. The criteria applies to mechanical plant such as large exhaust fans, generators and the like.

Table 15: Low Frequency Noise Criteria for NSRs (Ref. Table 9.3.3.3.G of the BCC City Plan 2014 NIAPSP)

CRITERIA LOCATION	LOW FREQUENCY NOISE CRITERIA		
	Day	Evening	Night
	$L_{Ceq,adj,11h}(07-1800)$	$L_{Ceq,adj,4h}(07-1800)$	$L_{Ceq,adj,9h}(07-1800)$
At a sensitive use in the principal centre zone	75dB(C)	75dB(C)	70dB(C)
Low-medium density residential zone boundary	65dB(C)	65dB(C)	60dB(C)

4.2.1.3 BCC Maximum Event / Night-time Noise Criteria

The L_{Amax} noise assessment applies during the nighttime period and only to specified noise sources including:

- Impact noises;
- Hammering;
- Loading / unloading;
- Dropping items;
- Beepers, alarms, belts, phones, sirens;
- Power tools;
- Valve releases;
- Air brakes; and
- Door slamming

⁷ Calculated as RBL + 3dB(A) for low-medium density residential zones and as RBL + 5 dB(A) for the principal centre zone receivers

⁸ 07:00 to 18:00

⁹ 18:00 to 22:00

¹⁰ 22:00 to 07:00



The applicable maximum noise event criteria for the subject development is given in Table 16.

Table 16: Night-time Noise Criteria for NSRs (Ref. Table 9.3.3.3.H of the BCC City Plan 2014 NIAPSP)

CRITERIA LOCATION	AVERAGE OF THE HIGHEST 15 SINGLE L_{AMAX}	ABSOLUTE HIGHEST SINGLE L_{AMAX} EVENT
	$L_{Amax,adj,9h}$ (2200-0700)	$L_{Amax,adj,9h}$ (2200-0700)
External to a sensitive use located in a: - Principal centre zone - Low-medium density residential zone boundary (Note - $L_{Aeq,9hr} > 60$ dB(A))	65	70

4.2.2 Environmental Protection Act 1994

Section 440U and 440V of the Environmental Protection Act 1994 apply to premises for which there is air conditioning equipment and refrigeration equipment, respectively. The noise limits applicable to surrounding noise sensitive uses are as follows:

An occupier of premises must not use, or permit the use of, the equipment on any day:

- Before 7a.m., if it makes a noise of more than 3 dB(A) above the background level; or
- From 7a.m. to 10p.m., if it makes a noise of more than 5 dB(A) above the background level; or
- After 10p.m., if it makes a noise of more than 3 dB(A) above the background level.

The noise limits based on the above criteria are **59dB(A)**, **56dB(A)** and **49dB(A)** for the daytime, evening and night periods respectively.

4.2.3 BCC City Plan 2014 Multiple Dwelling Code (Mechanical Plant Noise Emissions)

The BCC Multiple Dwelling Code Performance Outcome PO22 requires the following, as per Table below.

Table 17: Multiple Dwelling Code – Noise Emission Criteria

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES
P022 Development that includes mechanical plant (including air-conditioning plant, heat pumps and swimming pool pumps) ensures it is located, designed and attenuated to achieve the following criteria: a. $L_{Aeq,adj,T}$ emitted from mechanical plant is not greater than the rating background level plus 3 at a sensitive use not associated with the development. Where T is ▪ Day (7am to 6pm): 11hr, ▪ Evening (6pm to 10pm): 4hr, ▪ Night (10pm to 7am): 9hr	A022 Development ensures mechanical plant is acoustically screened from nearby sensitive uses.

The proposed mechanical plant location is on the rooftop which would provide shielding from the nearest noise sensitive receivers. Where and if required the rooftop plant should be appropriately screened (pending the finalised mechanical services design).



4.3 Summary of Continuous Noise (Mechanical) Emission Criteria

Based on the measured RBLs noted in the previous section, the most stringent noise emission limits (considering all applicable noise emission criteria) are presented in Table 18 for continuous mechanical plant and equipment noise emitting from the subject development. The bolded noise limits are derived to be the most stringent in their respective time period and as such form the project noise emission limits (continuous noise sources).

Table 18: Summary of Noise Emission Limits for Continuous Noise / Mechanical Plant Noise

RECEIVER	APPLICABLE CRITERIA	NOISE LIMITS		
		DAY	EVENING	NIGHT
NSR 1	BCC City Plan 2016 Intrusive Noise	57	54	49
	BCC City Plan 2016 Acoustic Amenity	55	45	40
	EPA 1994	59	56	49
	BCC City Plan 2016 Multiple Dwelling Code	57	54	49
NSR 2-6	BCC City Plan 2016 Intrusive Noise & Multiple Dwelling Code	59	56	51
	BCC City Plan 2016 Acoustic Amenity	60	55	50
	EPA 1994	59	56	49
	BCC City Plan 2016 Multiple Dwelling Code	57	54	49

As can be seen from the table above, the acoustic amenity noise emission criteria are the most stringent at NSR 1. The most stringent criteria for NSR 2 to 6 are derived from the Multiple Dwelling Code

Refer to Table 15 and Table 16 for the low frequency noise and maximum event night-time noise criteria, respectively.

5 NOISE IMPACT ASSESSMENT

5.1 Noise Emissions

5.1.1 Mechanical Plant and Equipment Noise

At this stage of the proposed development, the design has not progressed enough for mechanical plant and equipment selections to be confirmed or finalised. During the design development stage of the project, the mitigation measures outlined in 6.1 should be considered when preparing the mechanical services, to ensure compliance with the external noise emissions criteria established in Section 4.1.3 of this report.

5.2 Common Areas (Cafés and L30 Rooftop Terraces)

The following common areas are proposed as part of the 120 Montague Rd:

- Level Podium P1 Café nook on Montague Rd side
- Level Podium Plaza Café on Oxford St side
- Indoor activation areas on Podium P2, Podium Plaza and Podium L1 (also on Montague Rd side)
 - It has been advised that these will be utilised for gallery events
- Lower and Upper Rooftop Terrace recreational areas (swimming pool, function, BBQ, dog leash area)

No significant impacts to the acoustic amenity of nearest noise sensitive receivers are generally expected from the common areas in the development, particularly with cafe nook and indoor activation areas due to quieter nature of these activities as well as significant building shielding.

A preliminary assessment of allowable noise levels from the outdoor areas has been undertaken against the most stringent night-time criteria, based conservatively on distance attenuation only. The resulting allowable average noise levels for the outdoor areas are as follows:

- Rooftop Terrace Function and BBQ areas – 86 dB(A)
- Podium Plaza Café – 89 dB(A)
- Off leash dog area - 84 dB(A)

These allowable levels are consistent with typical noise emissions observed in entertainment precincts. Accordingly, it is expected that noise generated by typical residential use of these common areas would not exceed these limits.

5.3 Noise Intrusions

5.3.1 Road traffic and industrial noise impacts on Montague Road Facade

Unattended and attended noise measurements in Section 3.1 were utilised for preliminary assessment of acoustic performances for façade glazing. The arithmetically averaged $L_{Amax,night}$ levels as well as L_{Aeq} levels across day, evening night periods were used in the façade noise break-in calculations for assessment against the industrial amenity overlay acoustic criteria.

A rudimentary calculation of façade glazing performance is provided Table 19 .

Table 19 : Worst-case façade glazing acoustic performance calculation

ITEM	CORRECTION	LEVEL / QUANTITY	
		Avg. L_{Amax}	L_{Aeq} , night
Measured Noise Level at Logger 2 Location	n/a	80	64
Predicted Incident Façade Noise Level	Minus 3dB for additional distance attenuation (between logger #2 and most affected habitable façade), and building shielding effects	77	61
Industrial Amenity Code Criteria (worst-case)	n/a	45 (Bedroom at night-time)	30 (Bedroom at night-time)
Resultant, Calculated R_w	+ 6dB conservative room correction to account for typical living room in residential building	38 (77-45+6)	37 (61-30+6)

We also note that current industrial 'Visy' site across from this subject site which is also included within Precinct 3 of the PPDA, with Economic Development Queensland (EQD) currently calling for private-sector expressions of interests.

Thereby, future ambient noise levels and noise impacts on to this subject site may vary. Where this is the case noise impacts and façade glazing requirements could be re-assessed.

6 PRELIMINARY NOISE MITIGATION MEASURES

6.1 Mechanical Services

Mitigation measures for the mechanical plant should be considered during the design development stage to ensure compliance with the outlined criteria at the nearest sensitive receiver catchments. These mitigation measures could include but not limited to the following:

- Positioning mechanical plant away from nearby receivers
- Acoustic attenuators fitted to duct work
- Screening around mechanical plant
- Acoustic insulation within duct work

It should be noted that the noise reduction requirements will likely be refined and reduced once the mechanical plant and equipment selections and designs have been progressed further during the detailed design of the proposed development. The mitigation measures proposed at this stage of the development are conservative in nature.

6.2 Carpark, Loading Dock and Refuse Activity

Carpark noise emissions shall be managed through a combination of the following acoustic measures:

- Selections of surface treatment to minimise wheel squeal/screech (e.g. non polished concrete, application of appropriate trafficable deck coatings)
- Trafficable grates and plates are to be fixed appropriately to avoid rattling and thudding noise when vehicles drive over

The refuse and loading facilities are recommended to be scheduled between 6am to 10pm (during Day and Evening periods) to avoid noise disturbances at nearest noise sensitive receivers during the night period. Otherwise, the short-term event noise limits given in Table 16 shall be complied with.

These recommended delivery and refuse time windows are in accordance with P01, A01.1 of the Centre or mixed-use code for a development within a Principal centre zone.

6.3 Building Envelope Recommendations

6.3.1 Glazed Façade Elements

Based on the assessment in Section 5.3 and to achieve the most stringent criteria (Industrial amenity overlay code), the following indicative glazing performance recommendations are provided in Table 20. The recommendations are considered conservative as future conditions (i.e. Visy to mixed use development) have not been factored in.

Table 20: Indicative Glazing Acoustic Performances

ORIENTATION	RECEIVER	INDICATIVE ACOUSTIC PERFORMANCE (WEIGHTED SOUND REDUCTION INDEX, R_w)	EXAMPLE GLASS LITES
Facades Facing Montague Road (Refer to Markup in Appendix D)	Habitable Areas	R_w 38	▪ Fixed / awning – 6mm float / 9mm airgap / 11.52 laminated IGU ▪ Sliding Doors – 6mm float / 9mm airgap / 10.76 laminated IGU
All Other Facades	Habitable Areas	R_w 35 for glazing area > $1.8m^2$ R_w 32 for glazing area $\leq 1.8m^2$	▪ R_w 35 – 6 float / 12 / 6 float or 10.38mm laminated ▪ R_w 32 – 6.38mm laminated

Note: The acoustic ratings for each of the glazing arrangements in Table 20 are indicative of the glazing assembly in its entirety (glass and frame).

The above acoustic recommendations for glazing are preliminary only and as such shall be confirmed/rationalised during detailed design once the architectural design is further progressed.

6.3.2 Non-Glazed Façade Elements

The solid/non-glazed elements of the façade shall be constructed to ensure the resulting internal noise levels within each space in the proposed development do not exceed the project internal noise limits outlined in Section 4.1

Masonry constructions such as concrete or core-filled blockwork will be satisfactory with no additional acoustic treatment required. Lightweight constructions are to have an indicative acoustic performance of no less than R_w 50 to ensure the resulting internal noise levels within each space in the proposed development do not exceed the project internal noise limits outlined in Section 4.1.

7 CONCLUSION

The Noise Impact Assessment had been prepared in support with a Development Application (DA) made to the Brisbane City Council for the proposed residential development at 120-122 Montague Rd, South Brisbane QLD 4101.

The following noise assessments were conducted as part of this noise impact assessment:

- Noise intrusion impacts to the development:
 - Traffic noise from Montague Road
 - Industrial noise from industrial premises across Montague Road.
- Potential environmental noise emissions from the development:
 - Noise emissions from mechanical plant associated with the project building to surrounding noise sensitive receivers
 - Centre uses such as cafes and outdoor rooftop recreational areas
 - Loading dock and refuse noise emissions

Mechanical plant on the site will be designed at the detailed design stage to comply with the applicable noise emission and noise intrusion criteria. Noise control measures for plant and equipment are expected to include, as required, a combination of enclosed plant rooms, silencers, lined ductwork, acoustic barriers, acoustic louvres, and the selection of low-noise plant. The proposed mechanical plant location is on the rooftop which would provide shielding from the nearest noise sensitive receivers. Where and if required the rooftop plant should be appropriately screened (pending the finalised mechanical services design).

Loading dock, refuse and carpark activity are anticipated to be controlled through mitigation measures provided in Section 6.2 such that risk of noise disturbance at nearest noise sensitive receivers is minimised.

The preliminary acoustic recommendations of the façade ratings are given in 6.3. The glazing/ façade acoustic requirements shall be refined during the detailed design once the architectural design progresses further.

It is the finding of this noise impact assessment that by considering the recommended acoustic measures, the proposed development is compliant with the relevant Council and EDQ PPDA noise requirements.

As such, it is not anticipated the proposed development would provide adverse noise impacts to the acoustic amenity of the nearby noise sensitive receivers.

Appendix A

Glossary of Acoustic Terms

Air-borne sound	The sound emitted directly from a source into the surrounding air, such as speech, television or music.
Ambient sound	Of an environment: the all-encompassing sound associated with that environment, being a composite of sounds from many sources, near and far. This is normally taken to be the L_{Aeq} value.
Background noise level	The average of the lowest levels of the noise levels measured in an affected area in the absence of noise from occupants and from unwanted external ambient noise sources. Usually, the L_{A90} value represents the background noise level.
dB(A)	Unit of acoustic measurement weighted to approximate the sensitivity of human hearing to sound frequency.
Decibel scale	The decibel scale is logarithmic in order to produce a better representation of the response of the human ear. Therefore, a 3 dB increase in the sound pressure level corresponds to a doubling in the sound energy. It is generally accepted that a 10 dB increase in the sound pressure level corresponds to a perceived doubling in loudness. Examples of decibel levels of common sounds are as follows: ▪ 0 dB(A) Threshold of human hearing ▪ 30 dB(A) A quiet country park ▪ 40 dB(A) Whisper in a library ▪ 50 dB(A) Open office space ▪ 70 dB(A) Inside a car on a freeway ▪ 80 dB(A) Outboard motor ▪ 90 dB(A) Heavy truck pass-by ▪ 100 dB(A) Jackhammer / Subway train ▪ 110 dB(A) Rock Concert ▪ 115 dB(A) Limit of sound permitted in industry ▪ 120 dB(A) 747 take off at 250 metres
Frequency	The repetition rate of the cycle measured in Hertz (Hz). The frequency corresponds to the pitch of the sound. A high frequency corresponds to a high-pitched sound and a low frequency to a low-pitched sound.
L_{90} , L_{10} , etc	A statistical measurement giving the sound pressure level which is exceeded for the given percentile of a measurement period (i.e. L_{90} is the level which is exceeded for 90 percent of a measurement period). L_{90} is commonly referred to as a basis for measuring the background sound level.
$L_{Aeq,T}$	The equivalent continuous A-weighted sound pressure level. The value of the A-weighted sound pressure level of a continuous steady sound that, within a measurement time interval T, has the same A-weighted sound energy as the actual time-varying sound.



L _{Amax}	The maximum sound pressure level measured over the measurement period.
L _{Amin}	The minimum sound pressure level measured over the measurement period.
Day	Referred to as the period between 7am and 6pm for Monday to Saturday and 8am to 6pm for Sundays and Public Holidays.
Evening	Referred to as the period between 6pm and 10pm for Monday to Sunday and Public Holidays.
Night	Referred to as the period between 10pm and 7am for Monday to Saturday and 10pm to 8am for Sundays and Public Holidays.
Assessment background level (ABL)	The overall background noise level on each day, evening and night periods for each day of the noise monitoring.
Rating background level (RBL)	The overall background level on each day, evening and night periods for the entire length of noise monitoring.
Reverberation	The persistence, after emission by the source has stopped, of a sound field in an enclosure.
Sound isolation	A reference to the degree of acoustical separation between two spaces. Sound isolation may refer to sound transmission loss of a partition or to noise reduction from any unwanted noise source. The term 'sound isolation' does not specify any grade or performance quality and requires the units to be specified for any contractual condition.
Sound pressure level, L _p , dB of a sound	A measurement obtained directly obtained using a microphone and sound level meter. Sound pressure level varies with distance from a source and with changes to the measuring environment. Sound pressure level equals 20 times the logarithm to the base 10 of the ratio of the R.M.S. sound pressure to the reference sound pressure of 20 micro-Pascals.



Appendix B Referenced Architectural Documentation

DWG NO	TITLE	REVISION	DATE
AR-DA-001	Cover Sheet and Development Summary	A	5.06.2026
AR-DA-010	Development Diagrams	A	5.06.2026
AR-DA-101	Site Context Plan - Proposed	A	5.06.2026
AR-DA-200	General Arrangement Plan -Podium – Level P1	A	5.06.2026
AR-DA-201	General Arrangement Plan -Podium – Level P2	A	5.06.2026
AR-DA-202	General Arrangement Plan – Podium - Plaza	A	5.06.2026
AR-DA-203	General Arrangement Plan – Podium – Level 1	A	5.06.2026
AR-DA-204	General Arrangement Plan – Podium – Level 2	A	5.06.2026
AR-DA-205	General Arrangement Plan – Podium – Level 3	A	5.06.2026
AR-DA-206	General Arrangement Plan – Tower – Level 4	A	5.06.2026
AR-DA-207	General Arrangement Plan – Tower – Level 5-26	A	5.06.2026
AR-DA-208	General Arrangement Plan – Tower – Level 27 Roof Terrace	A	5.06.2026
AR-DA-209	General Arrangement Plan – Tower – Rooftop Garden	A	5.06.2026
AR-DA-300	Overall Elevations - North West & South West	A	5.06.2026
AR-DA-301	Overall Elevations – North East & South East (Brereton St)	A	5.06.2026

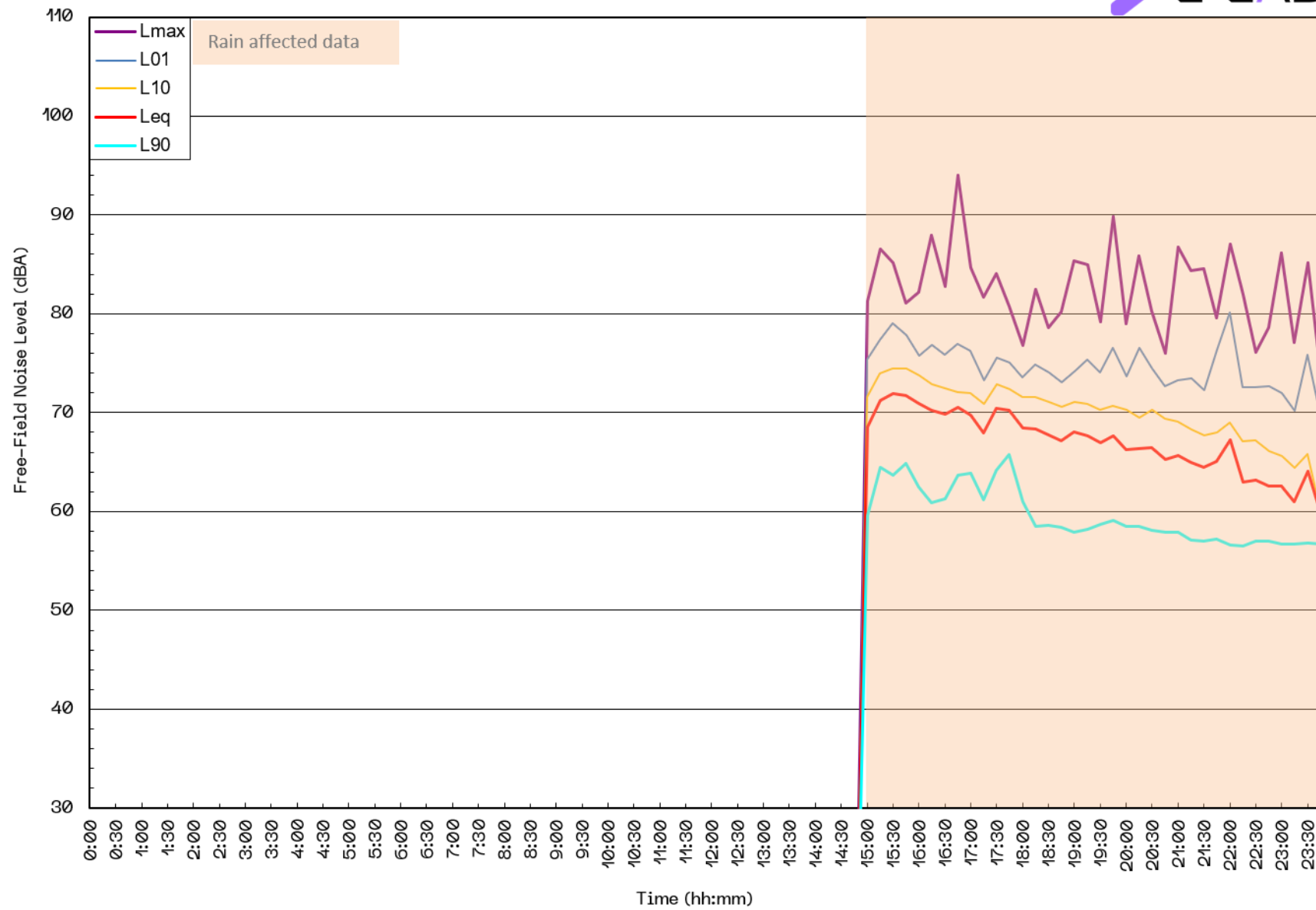


Appendix C **Noise Monitoring Graphs**

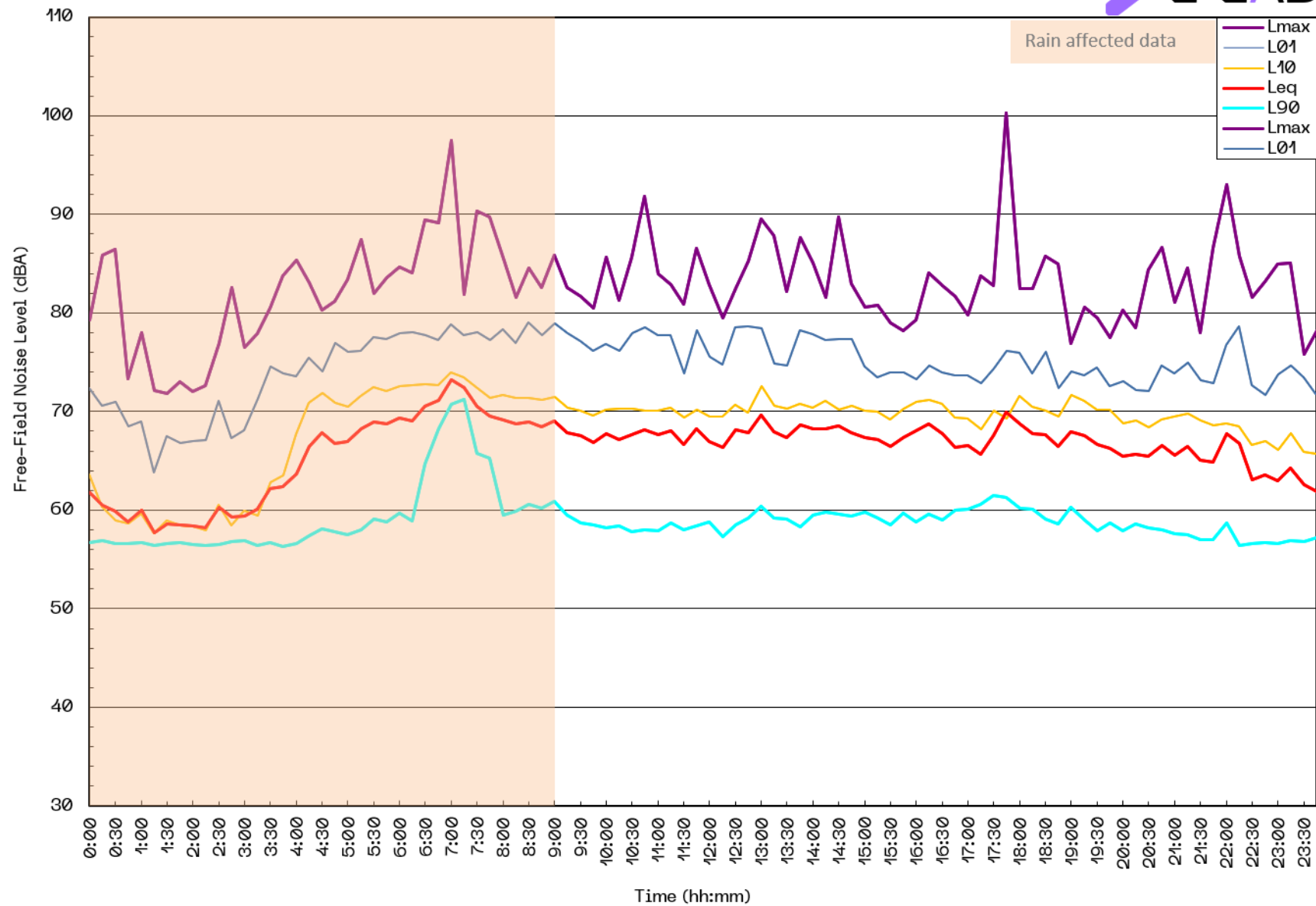
C.1 MONTAGUE ROAD NOISE LOGGER



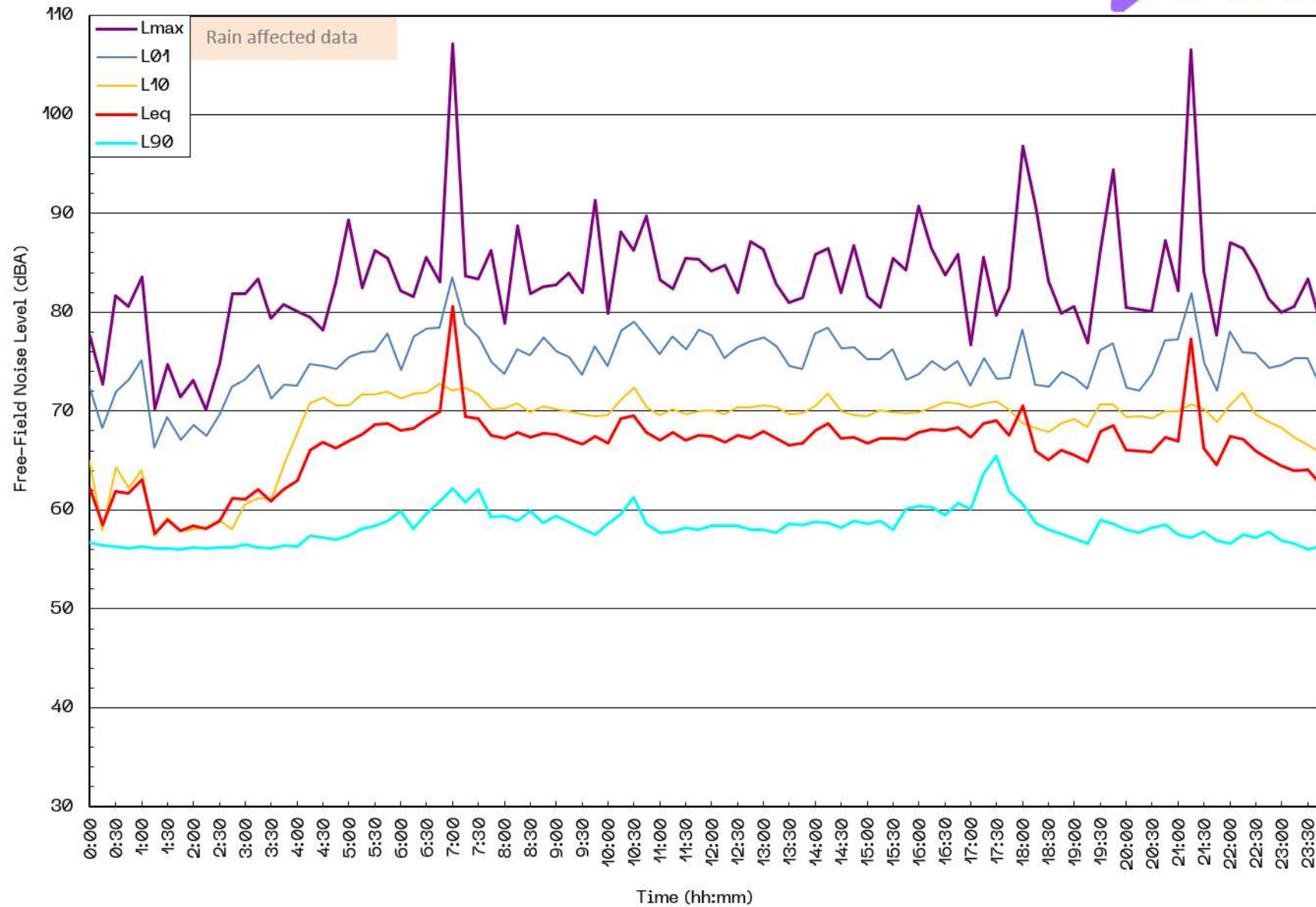
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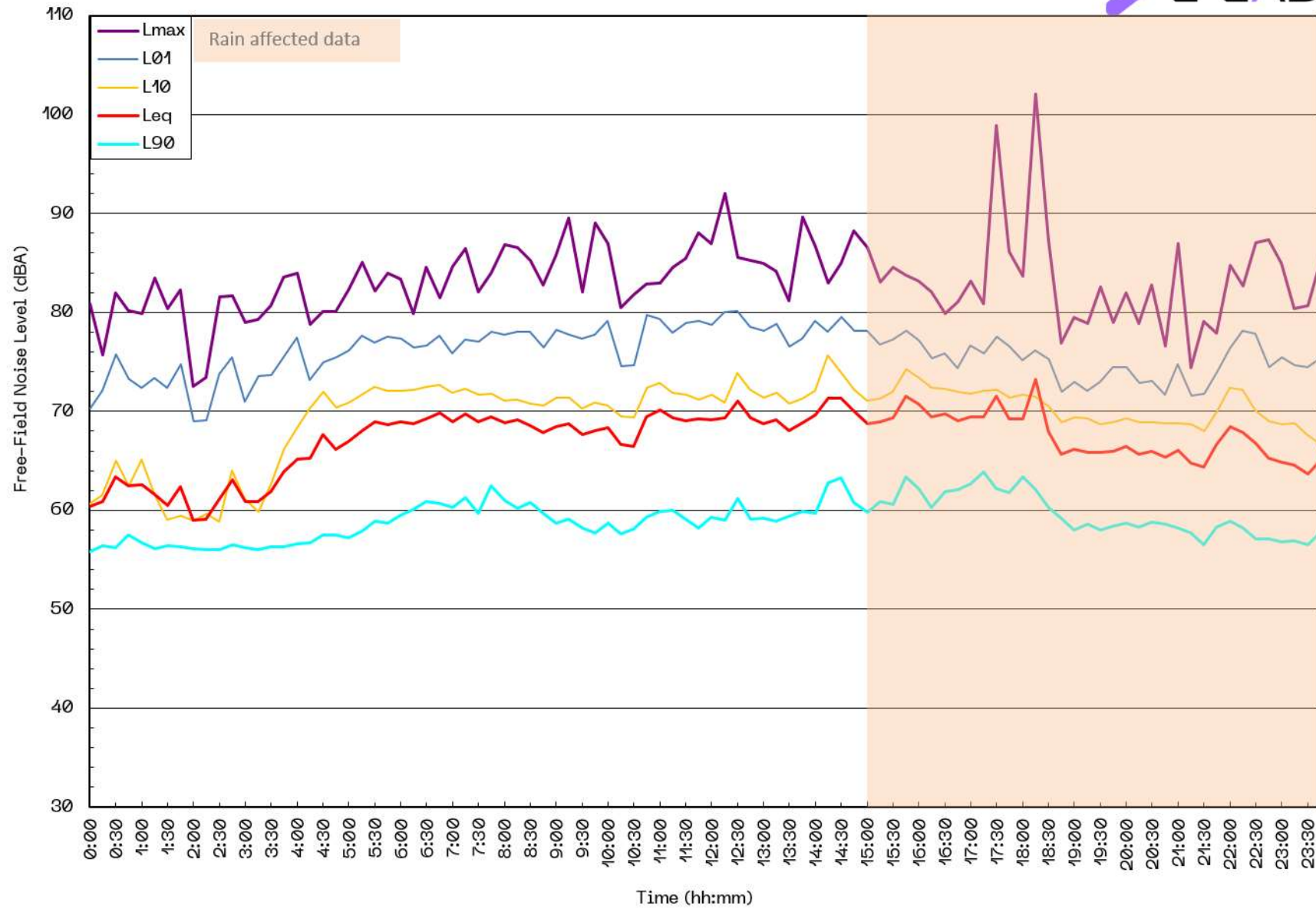
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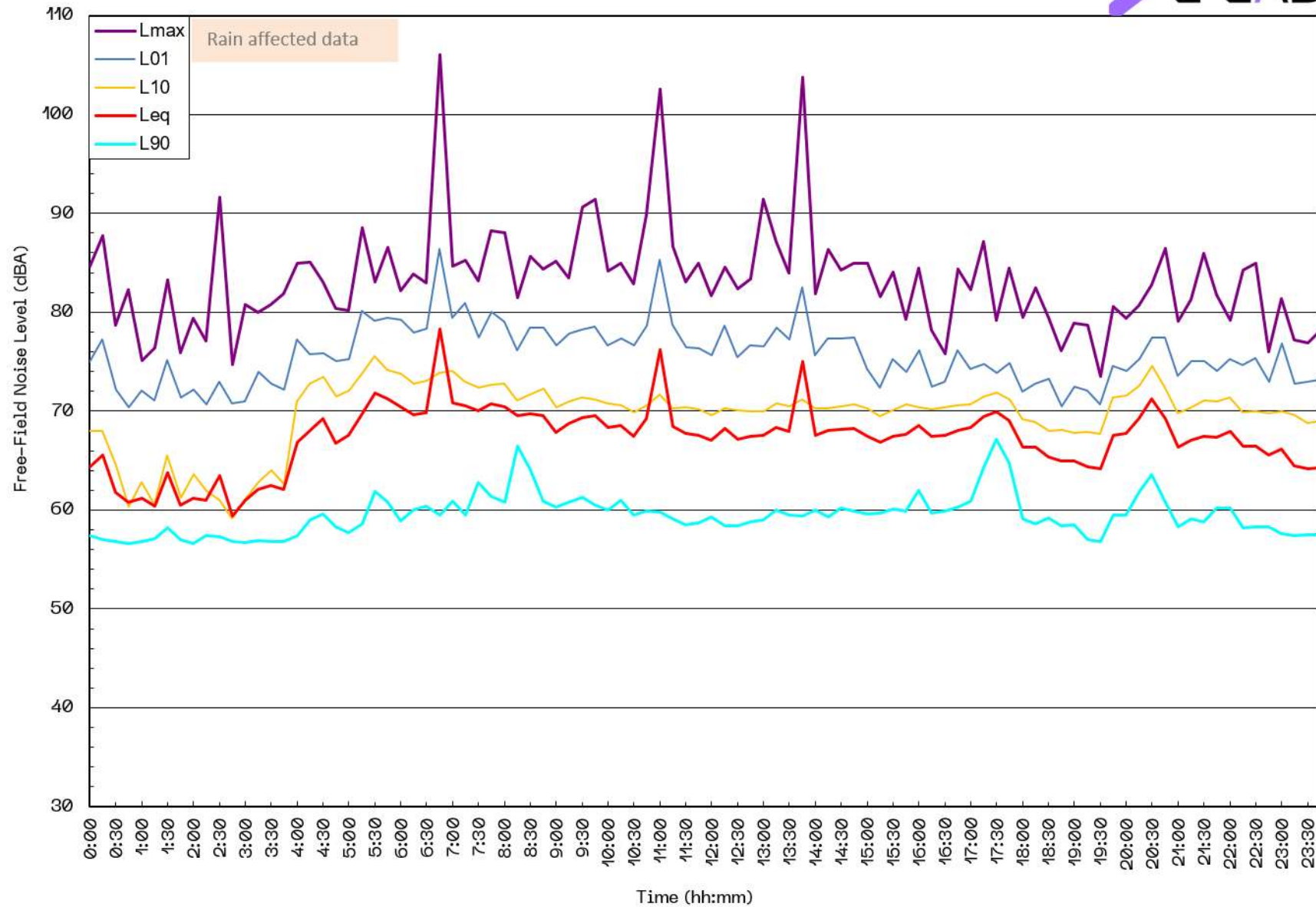
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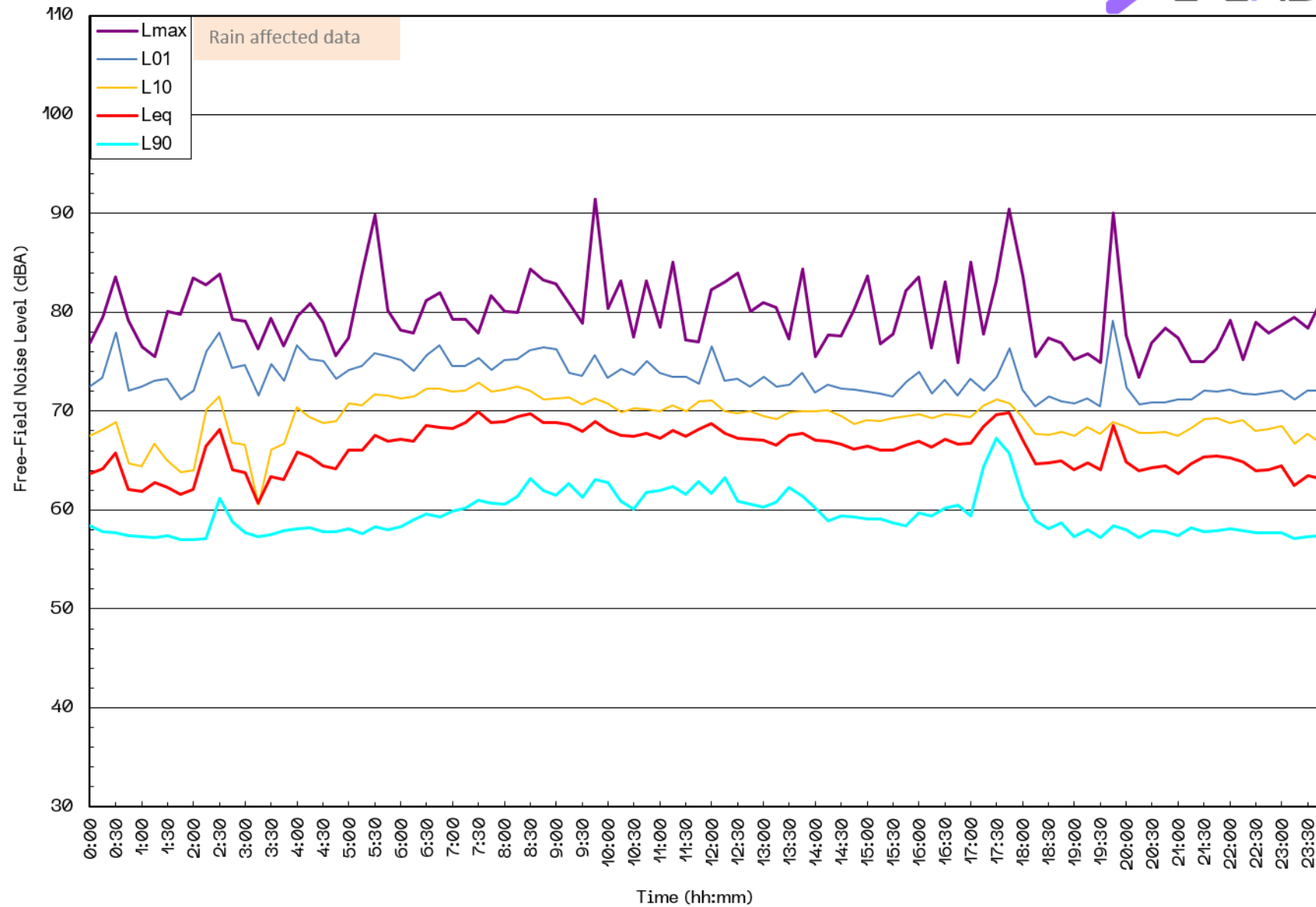
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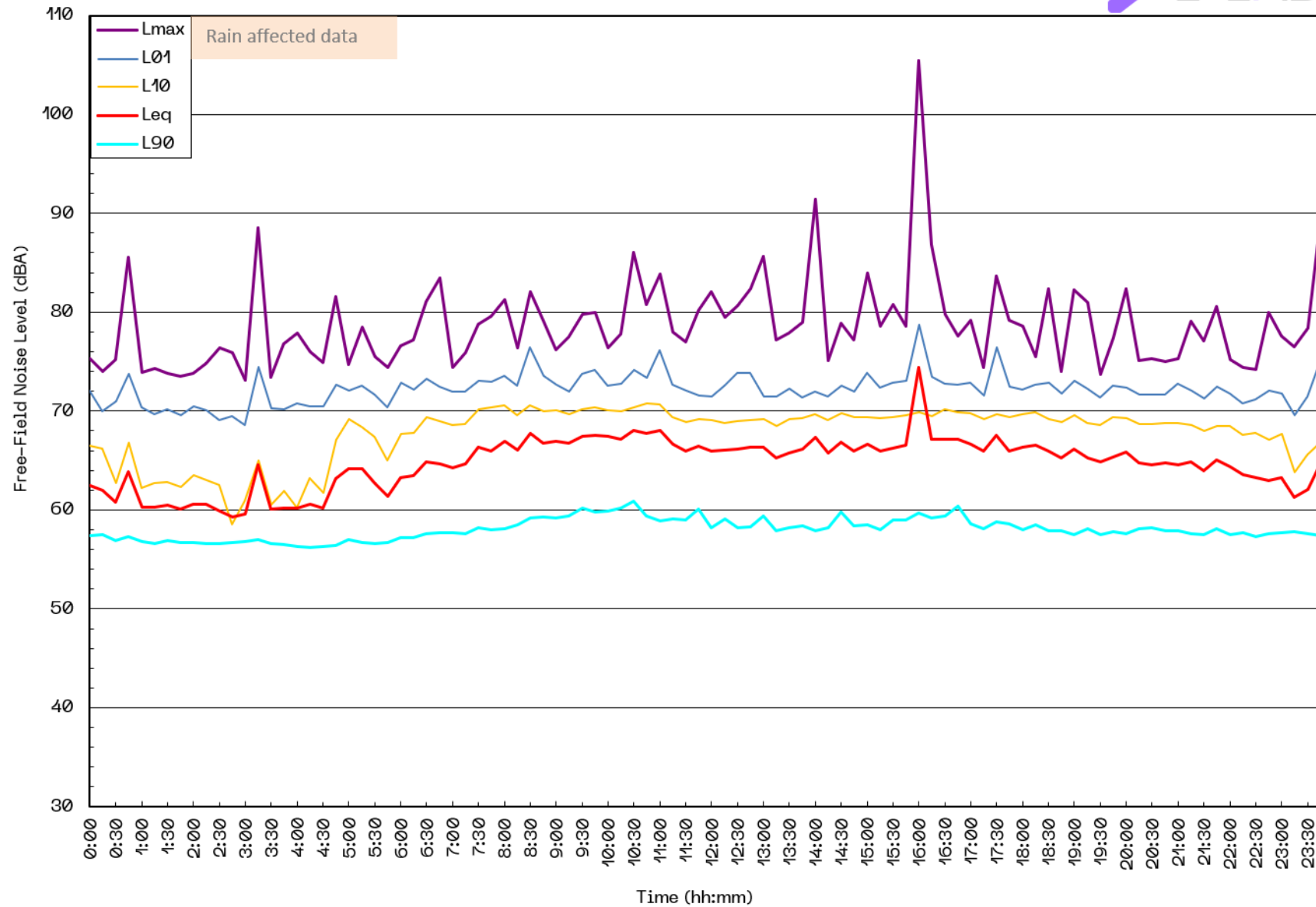
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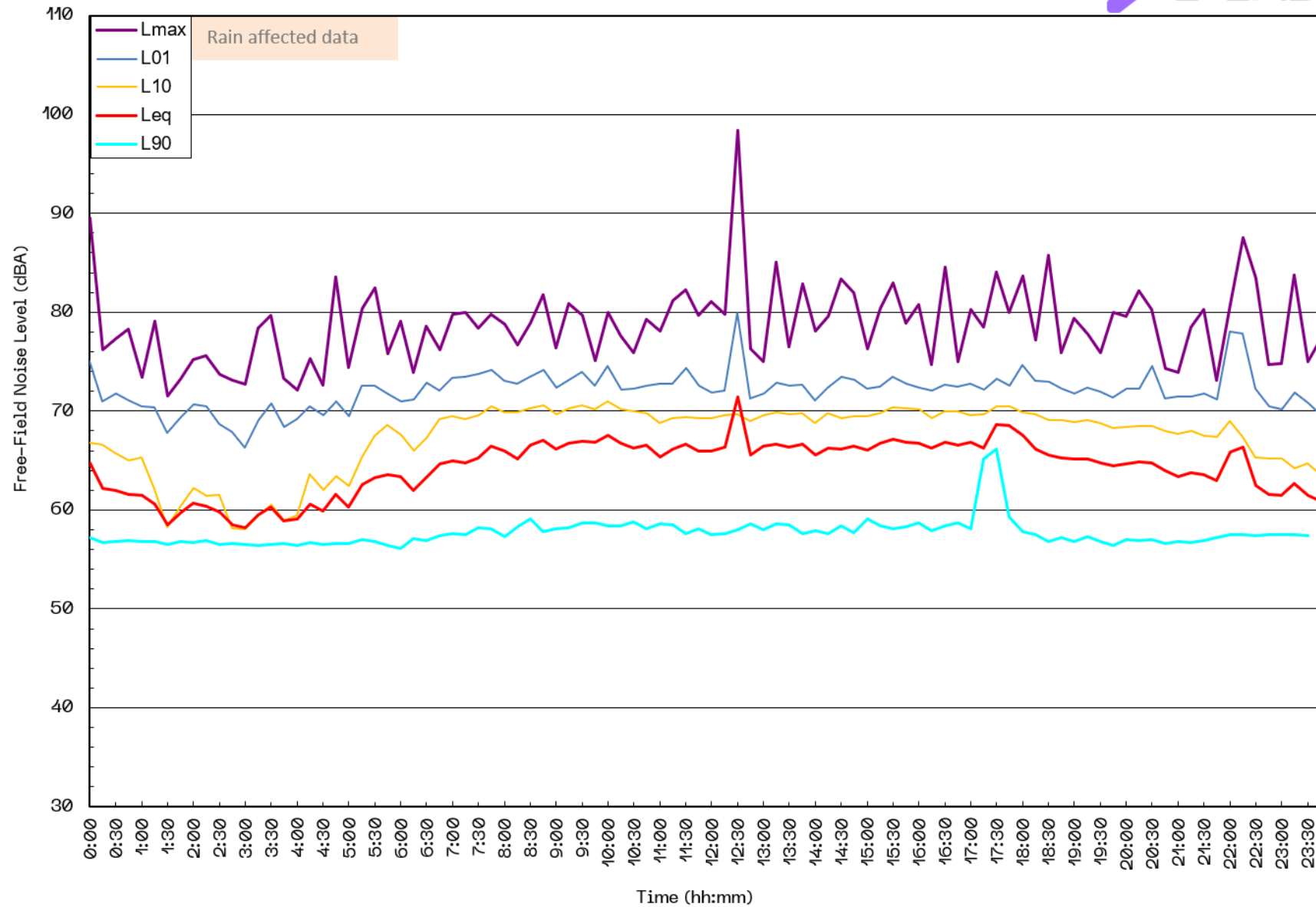
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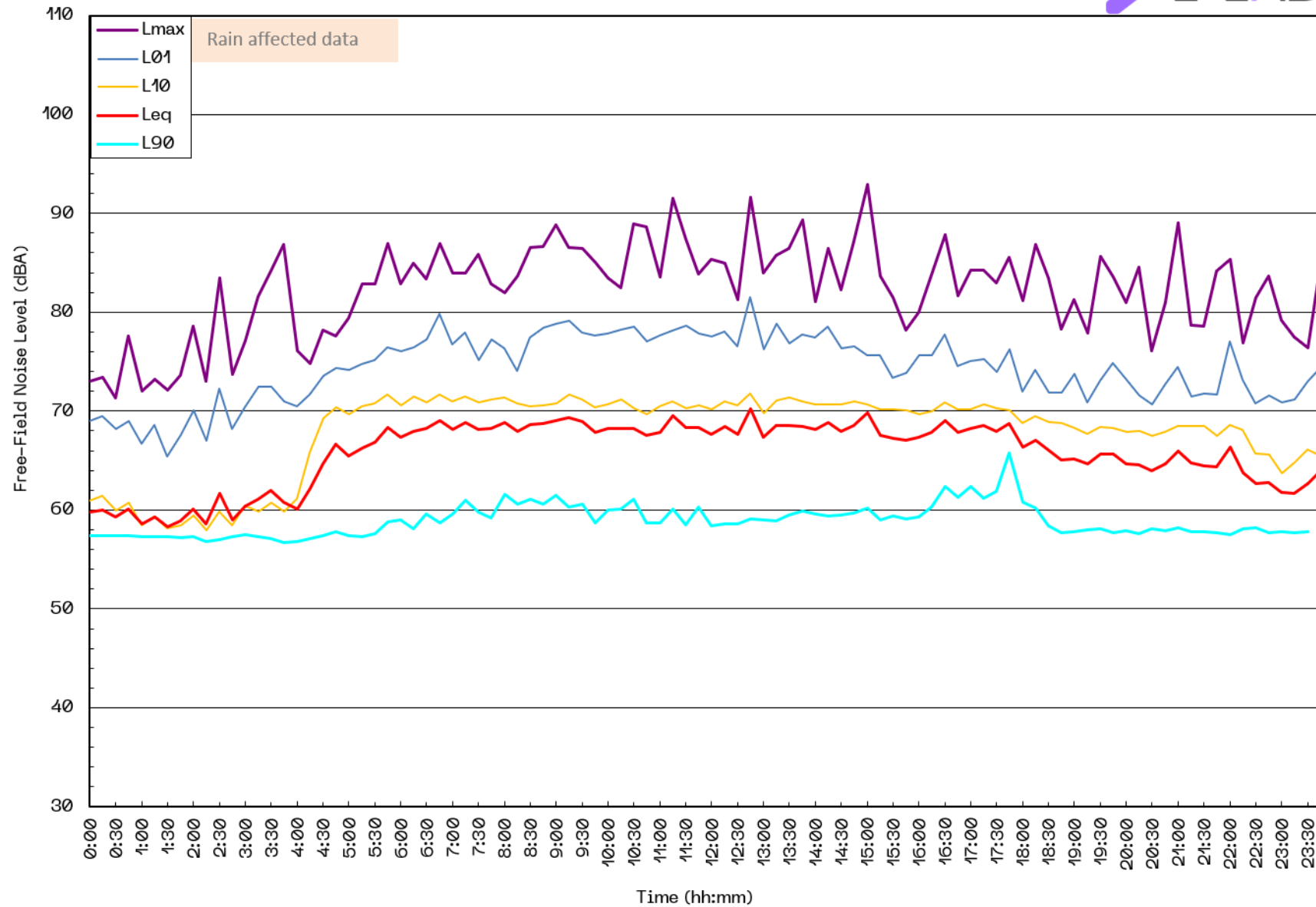
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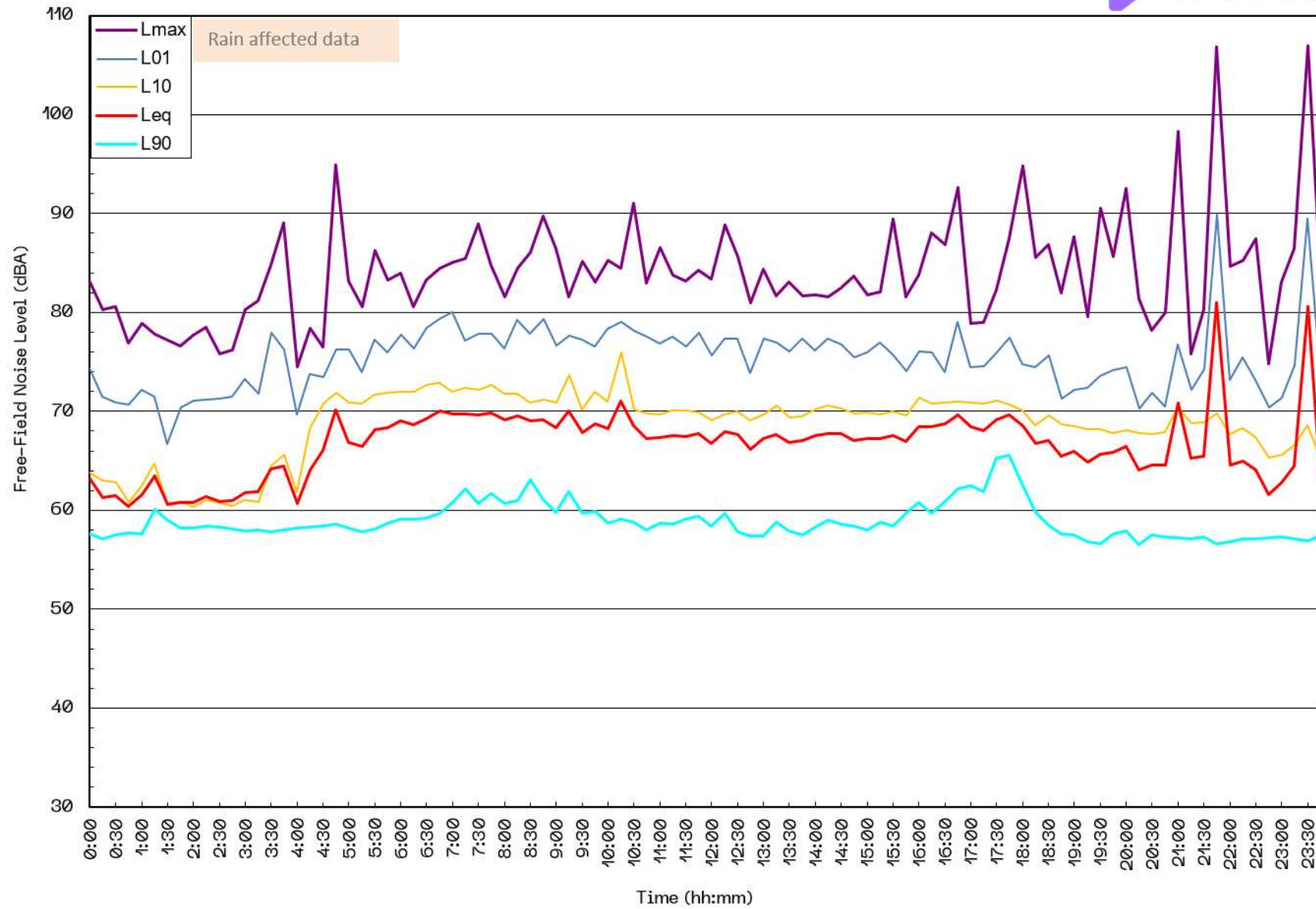
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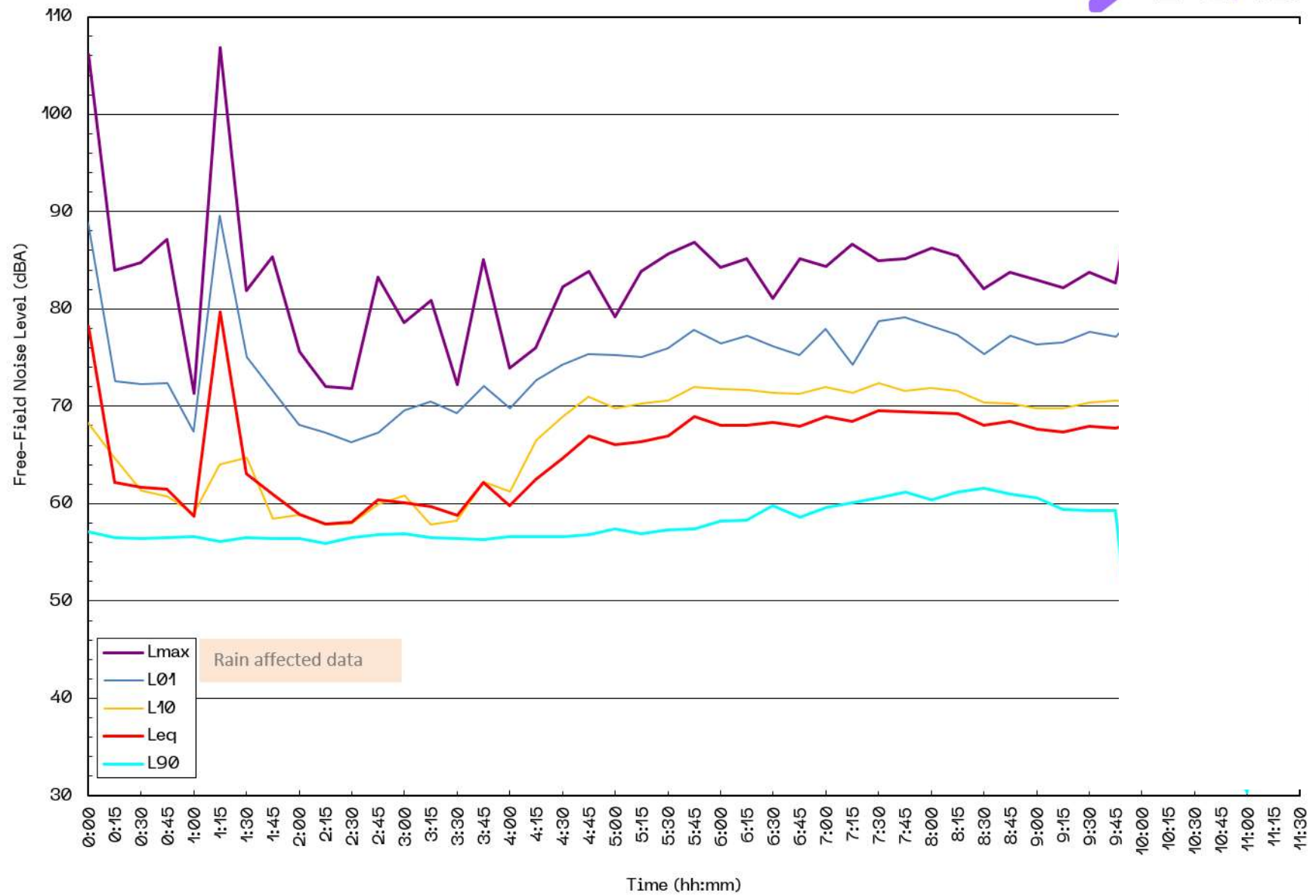
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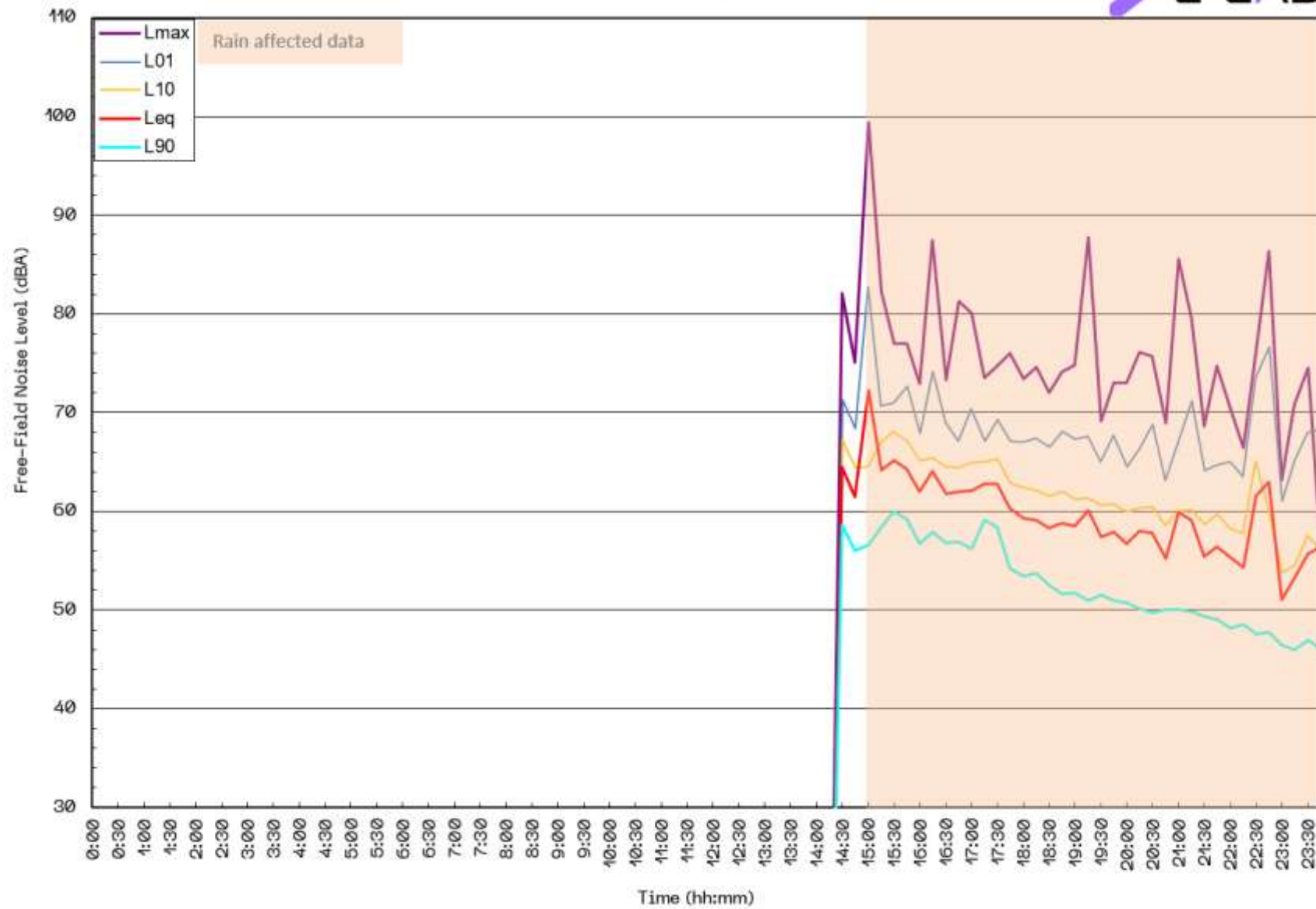
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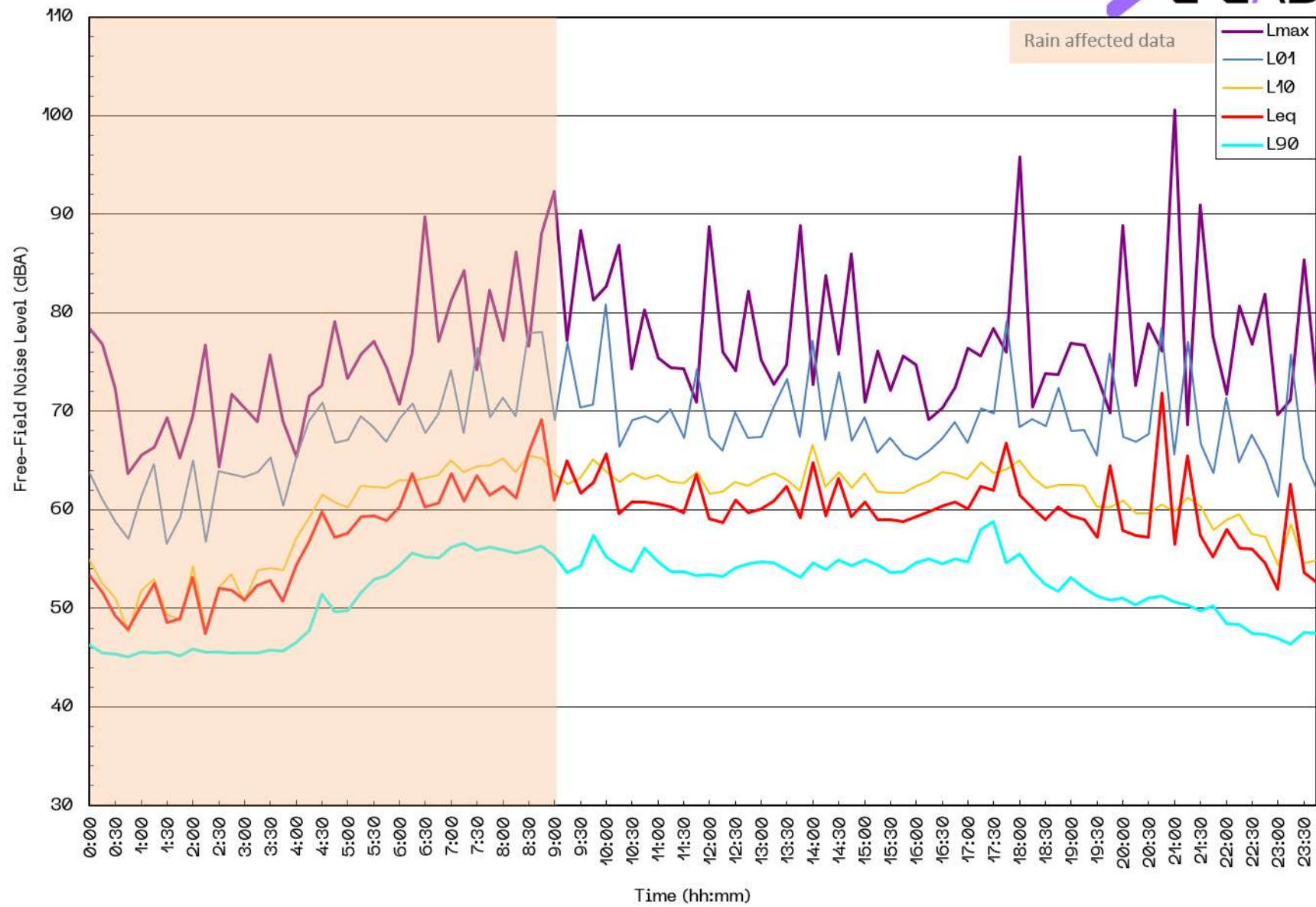
C.2 CORDELIA STREET NOISE LOGGER



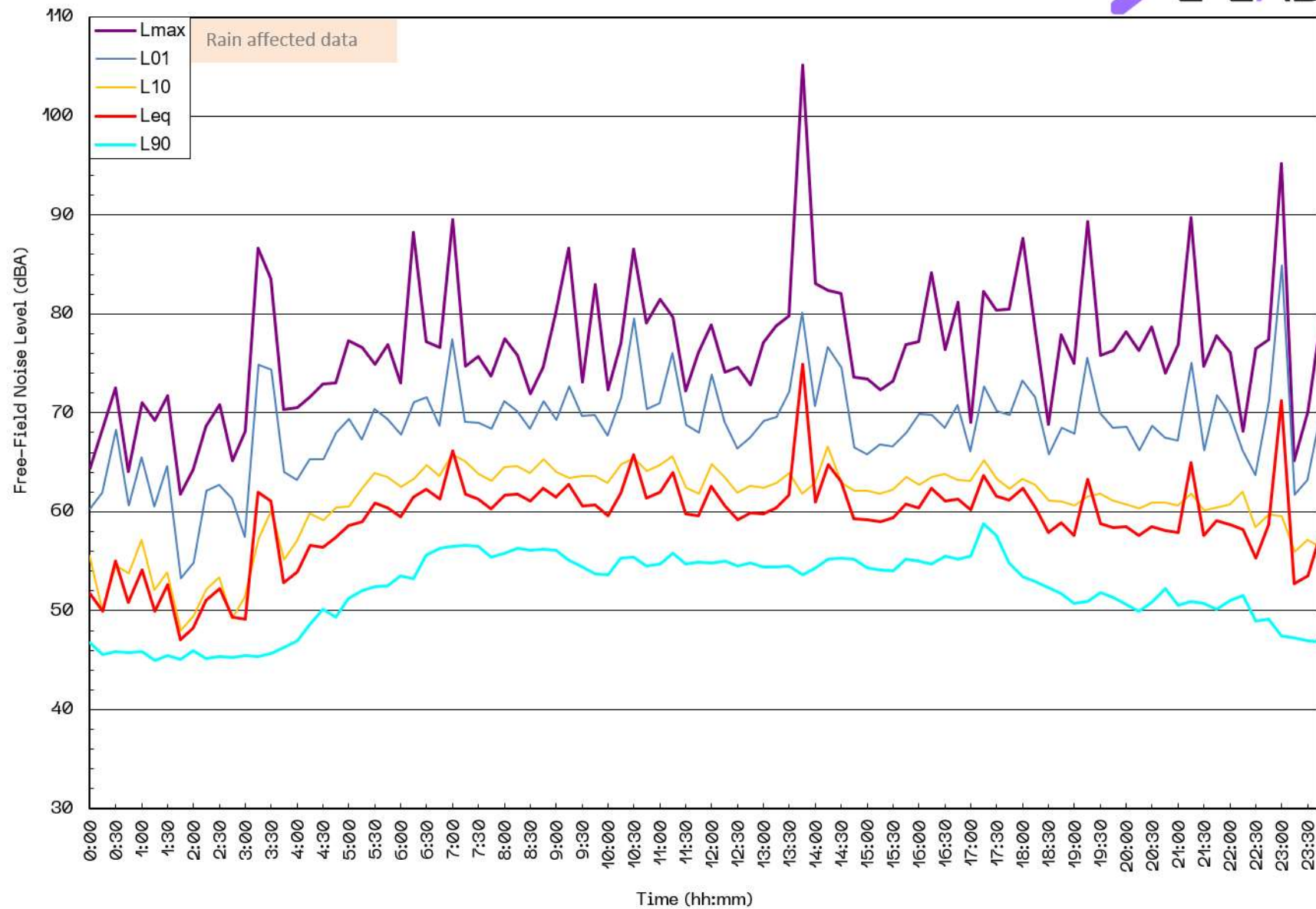
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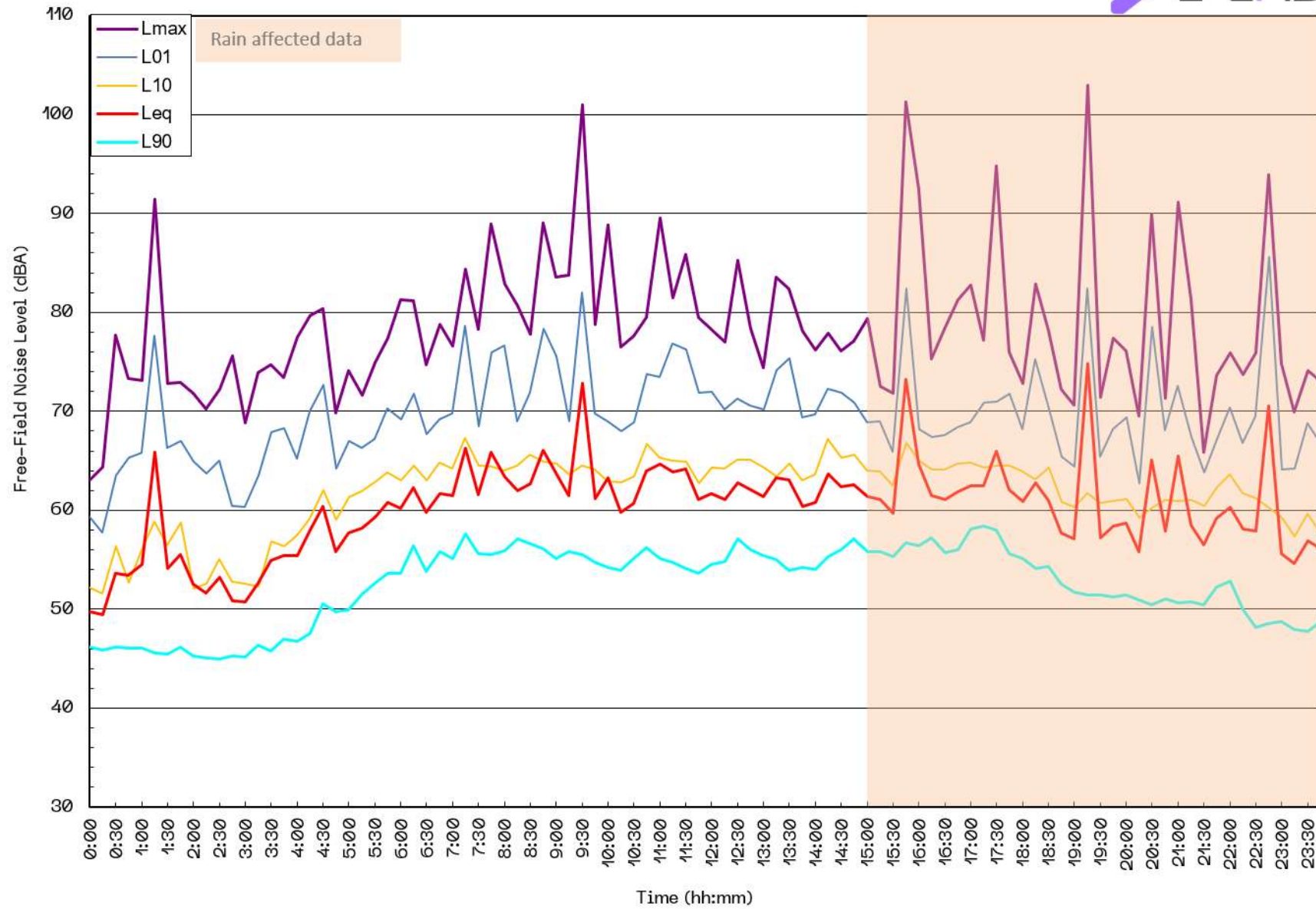
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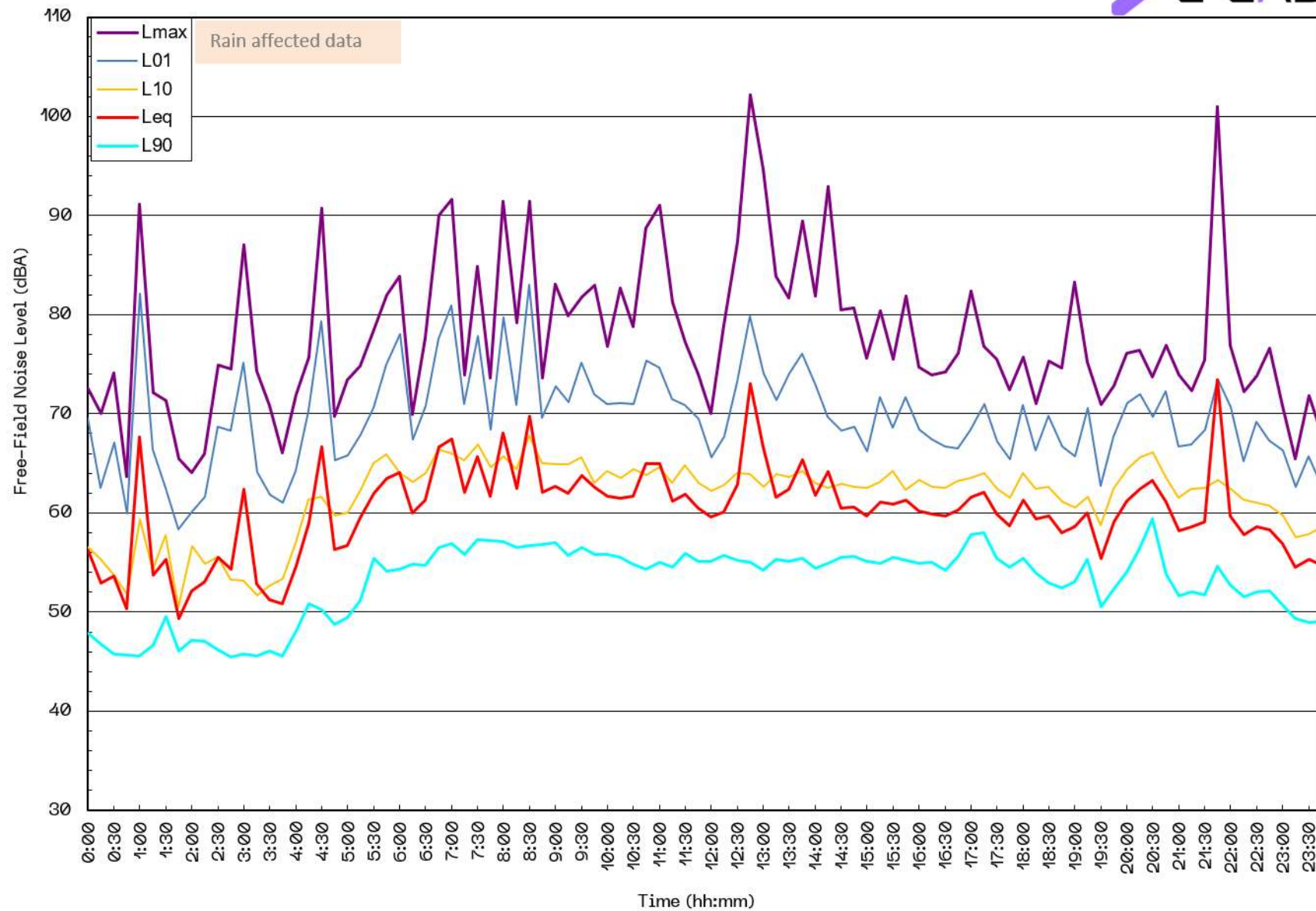
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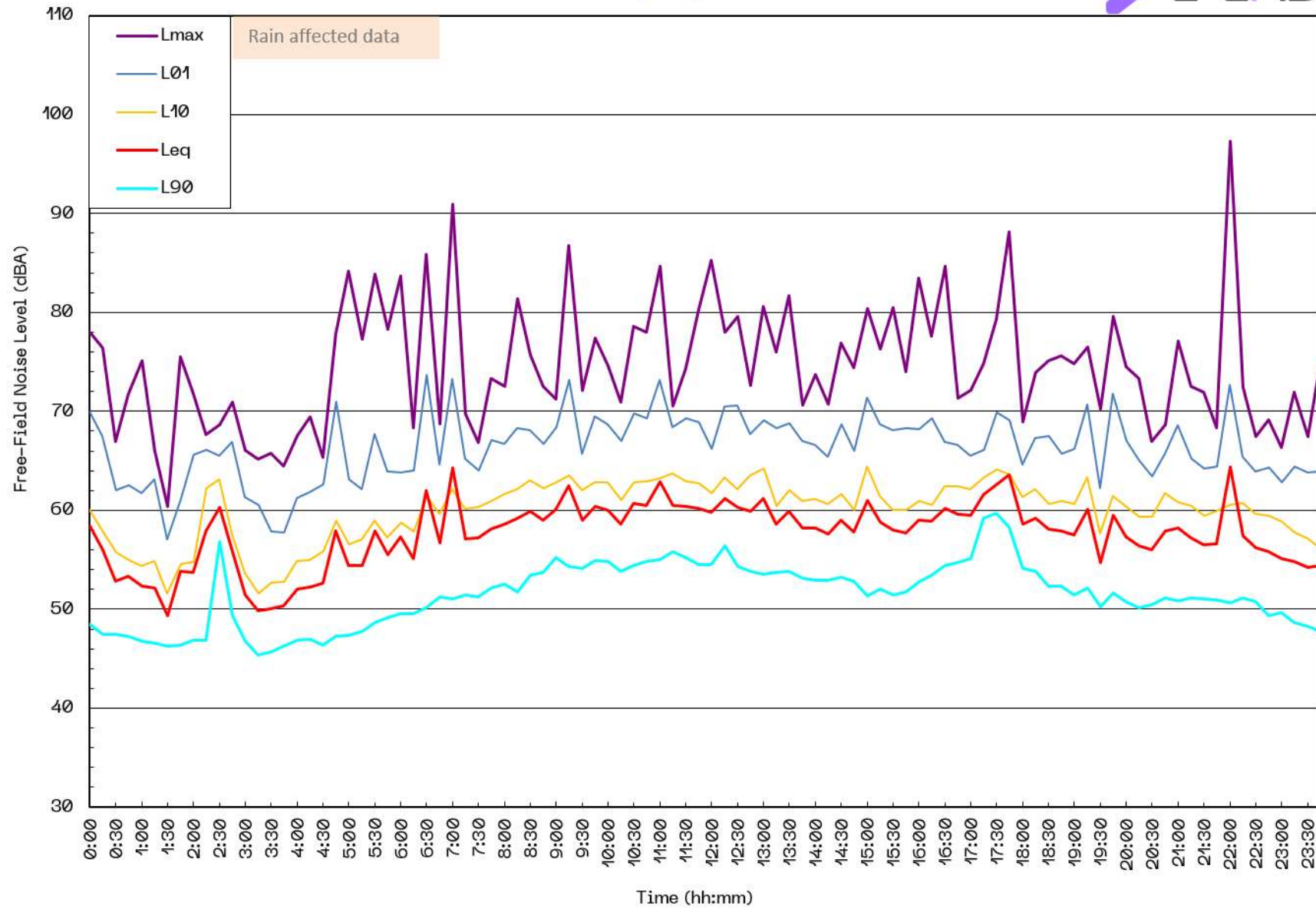
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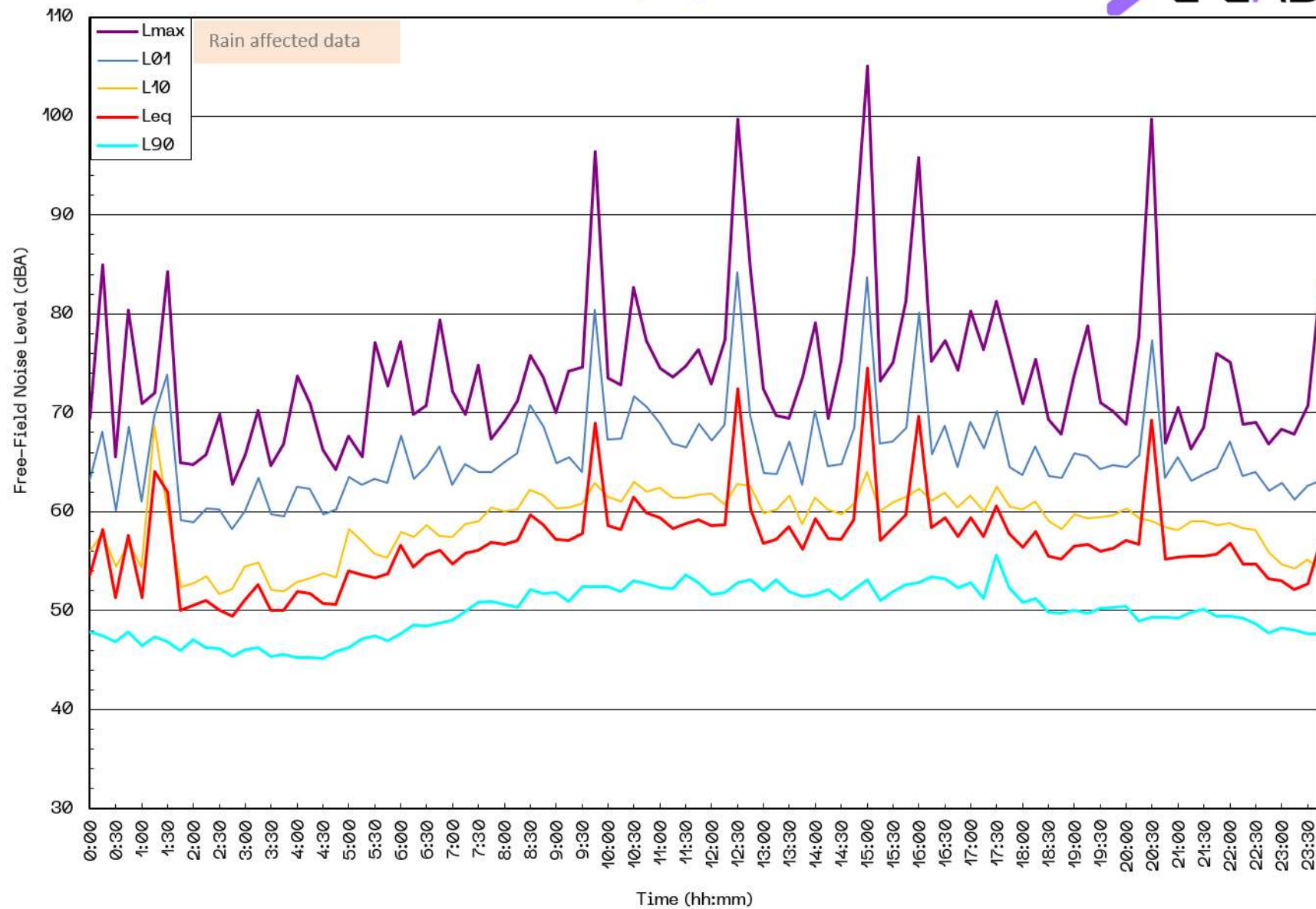
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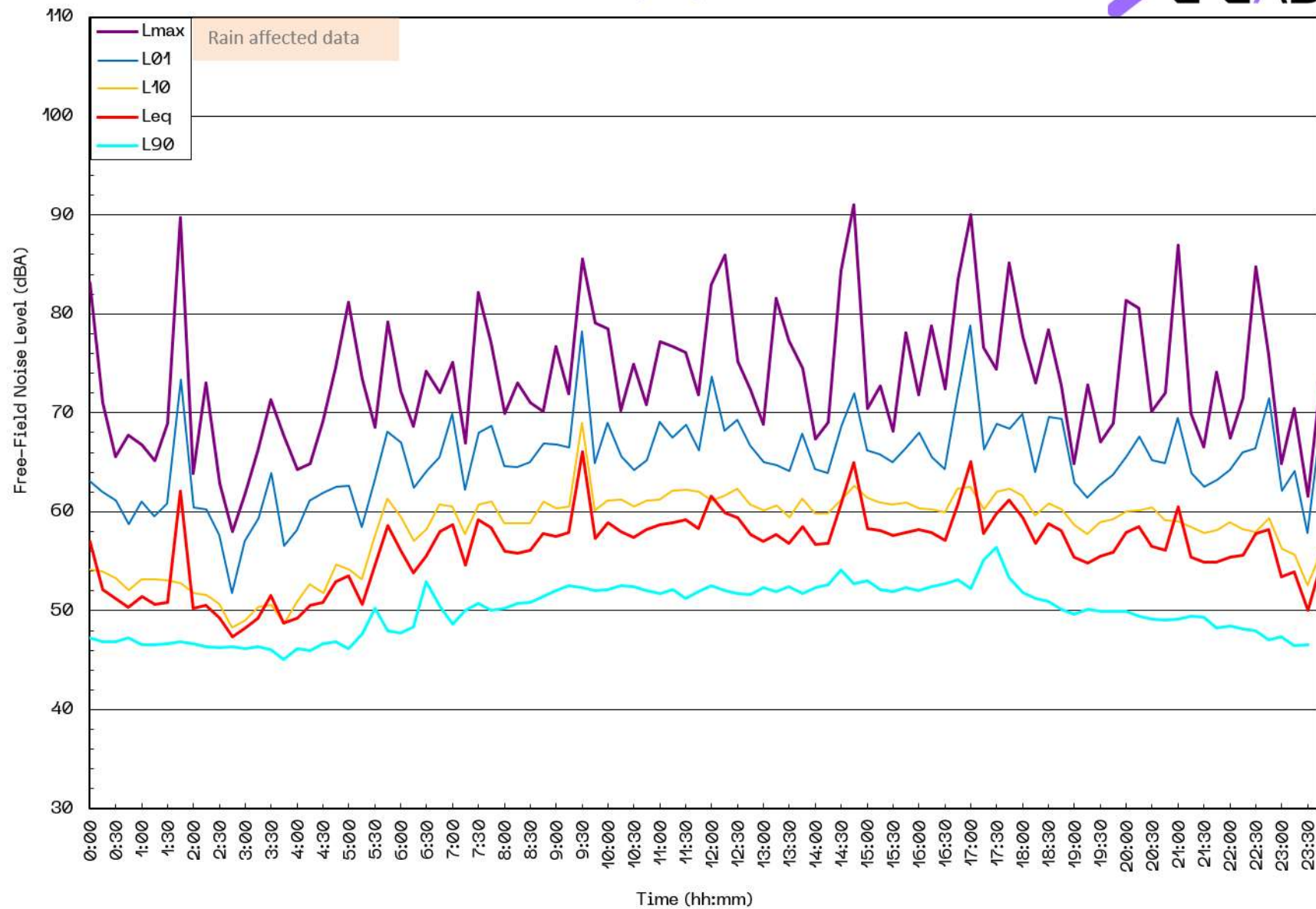
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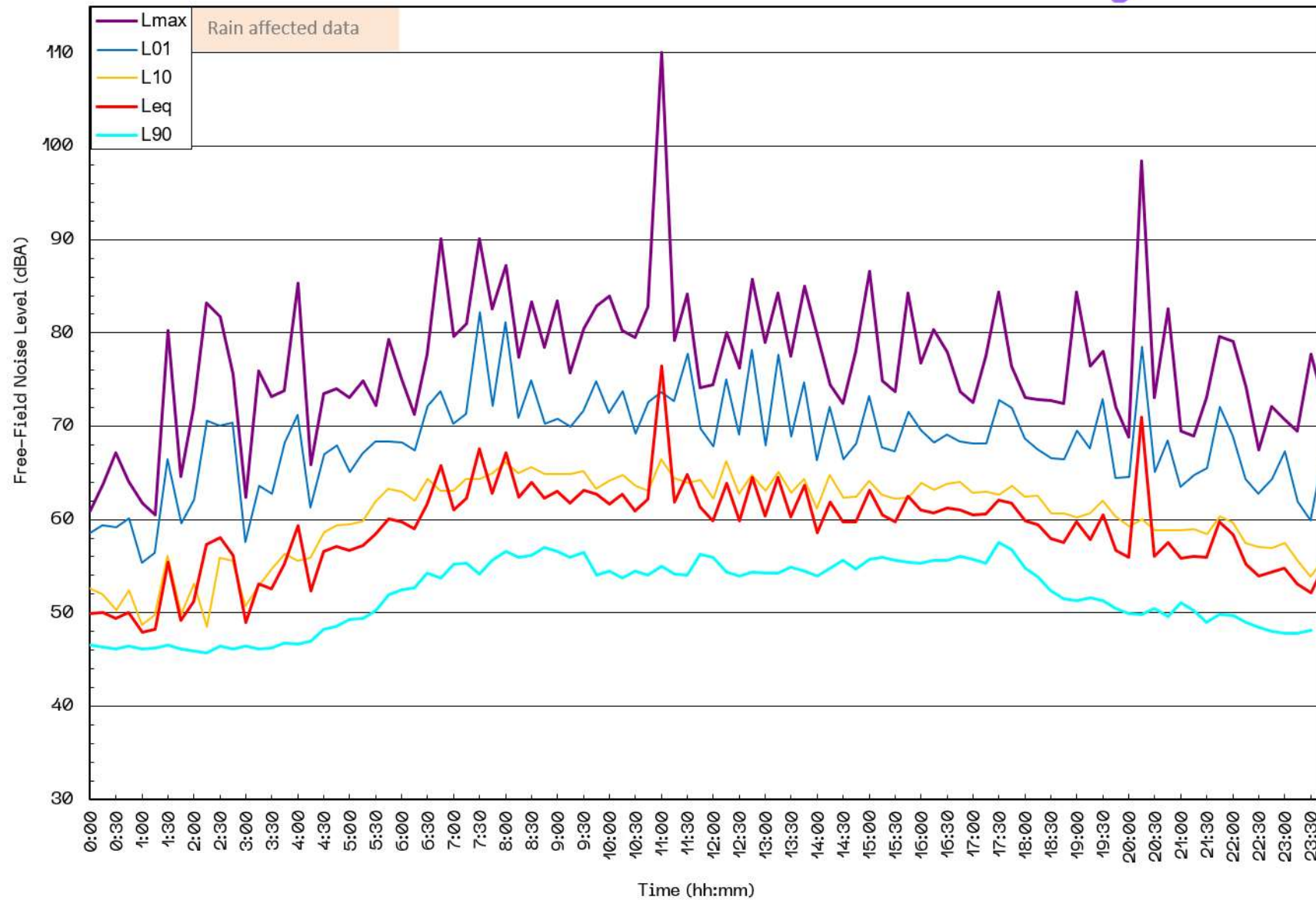
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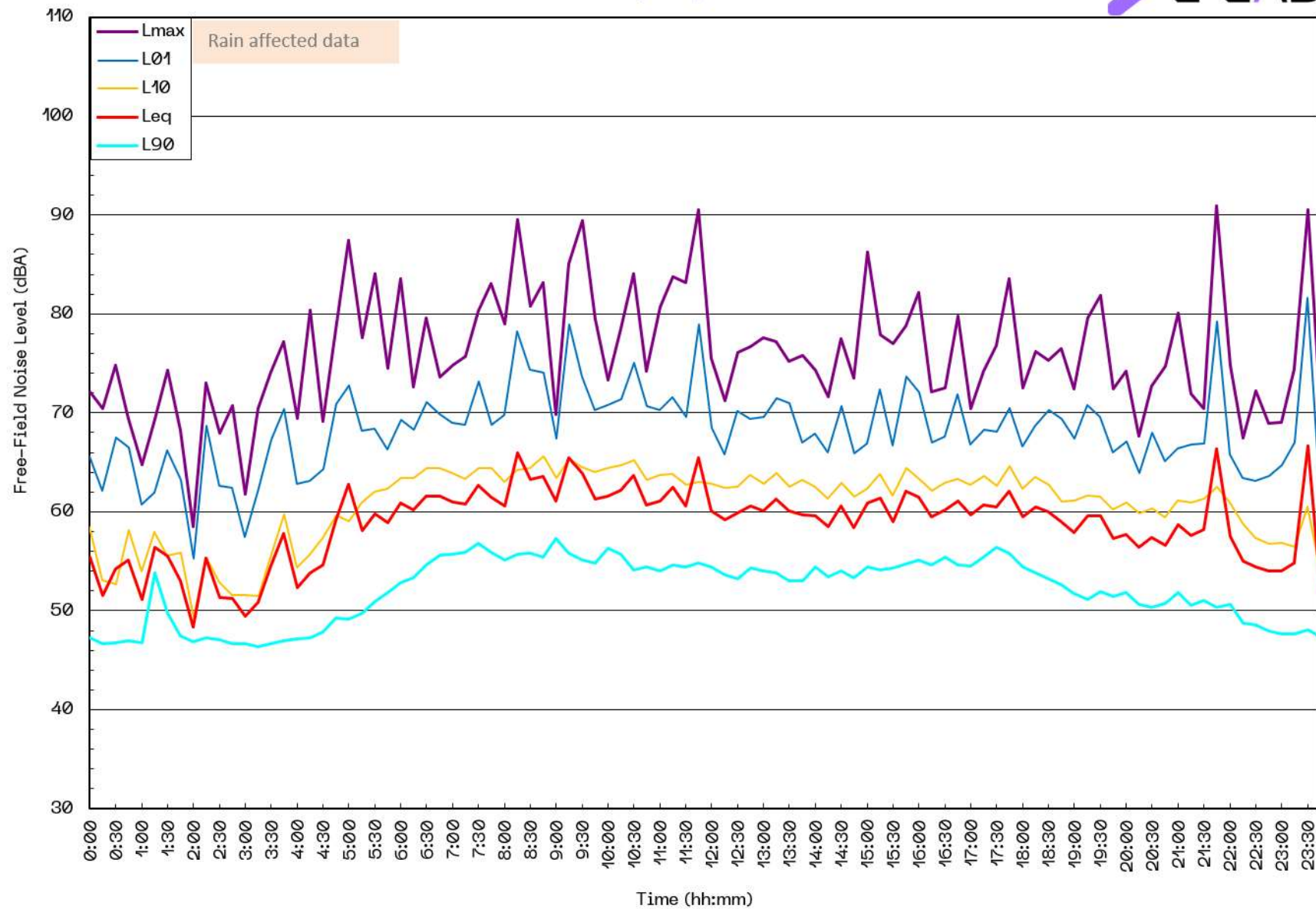
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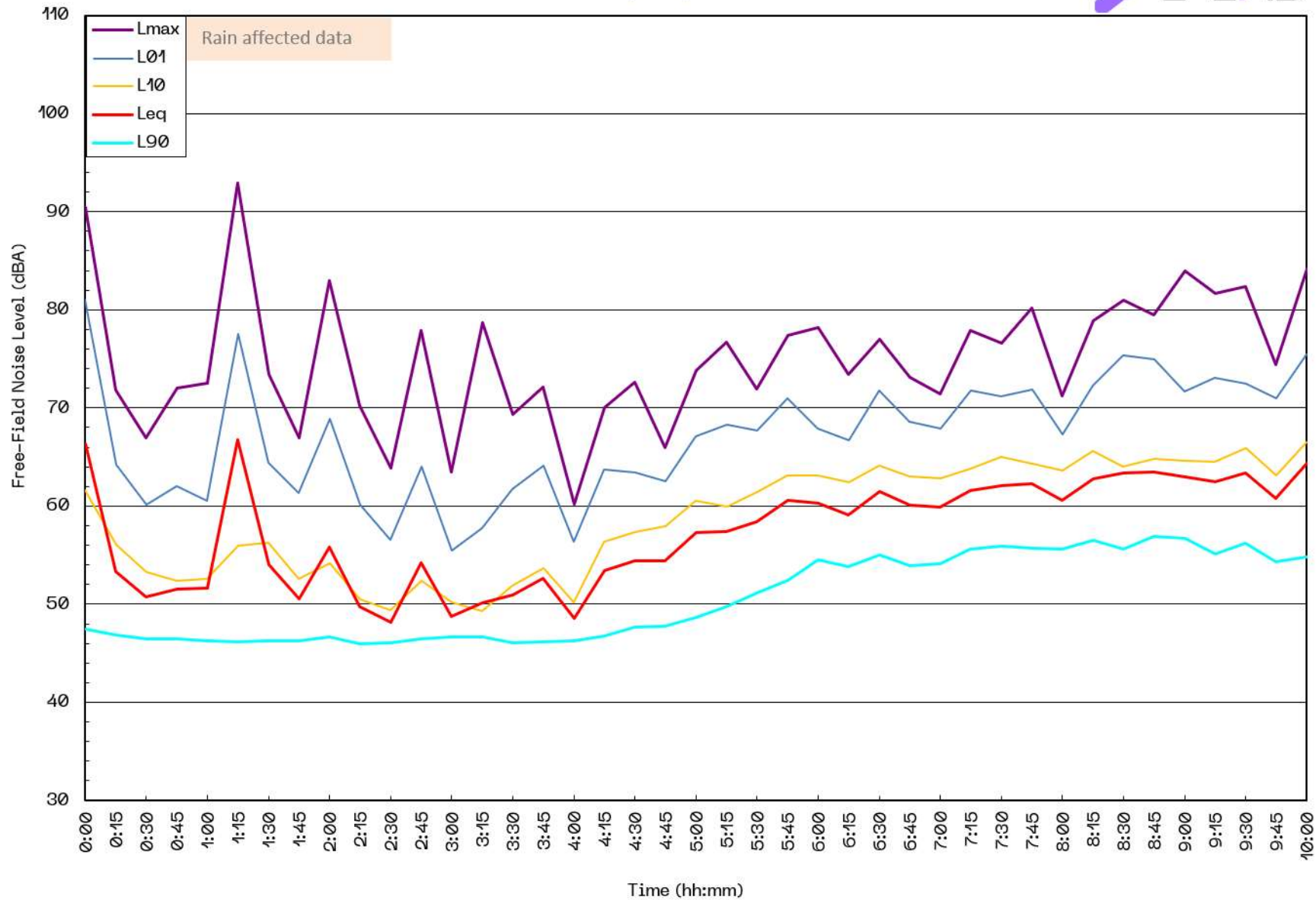
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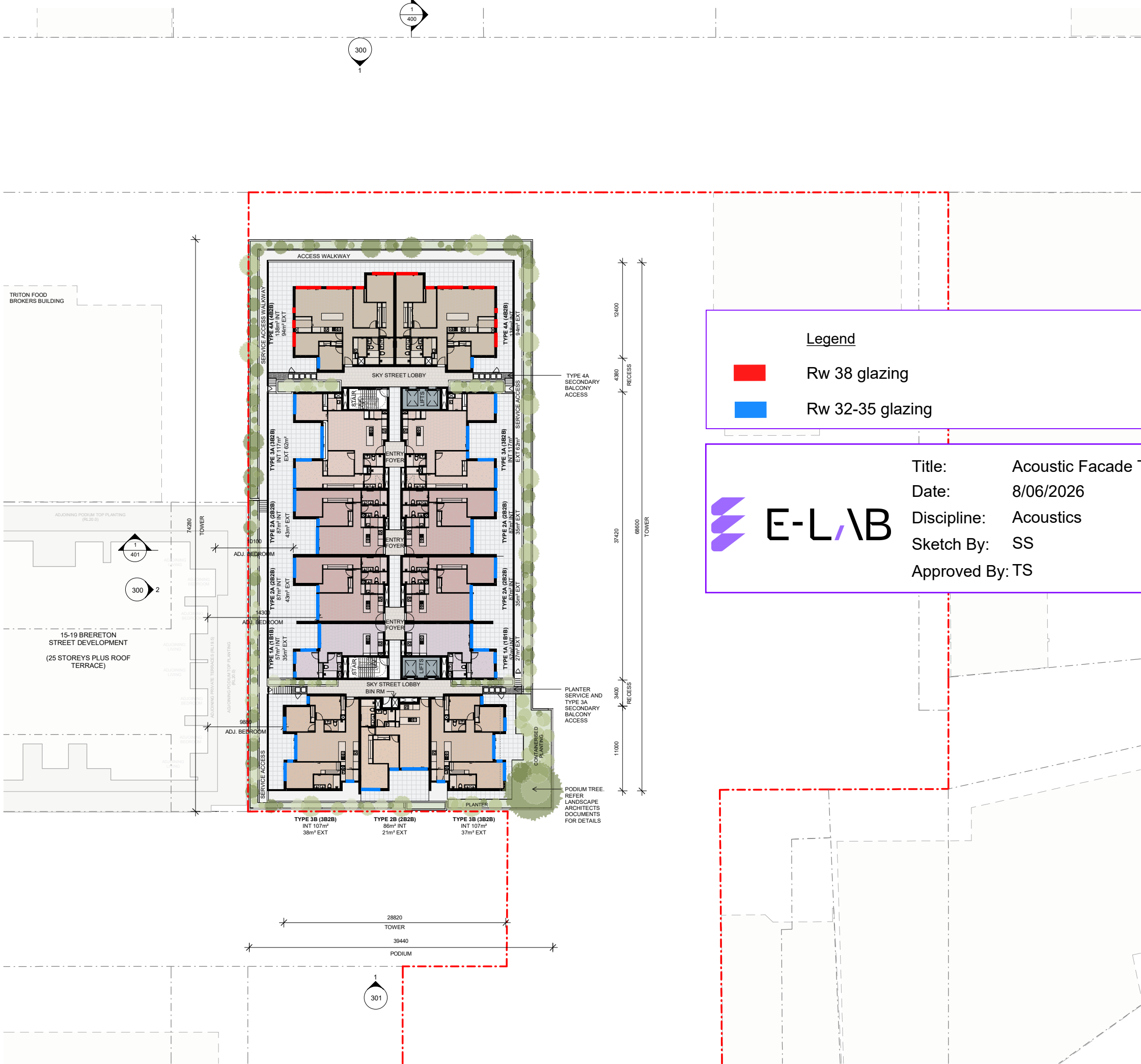


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Appendix D **Façade Acoustic Performance Markups**





Legend

Rw 38 glazing

Rw 32-35 glazing

Title:Acoustic Facade Types

Date:8/06/2026

Discipline:Acoustics

Sketch By:SS

Approved By:TS

A	JD	FOR DA LODGEMENT	05.06.26
Rev	Initial	Description	Date

PLANNING APPROVAL

Client

Archipelago

Turrbal and Yuggera/Jagera Country
Level 3, 199 George Street Brisbane QLD 4000
www.archipelago.com.au

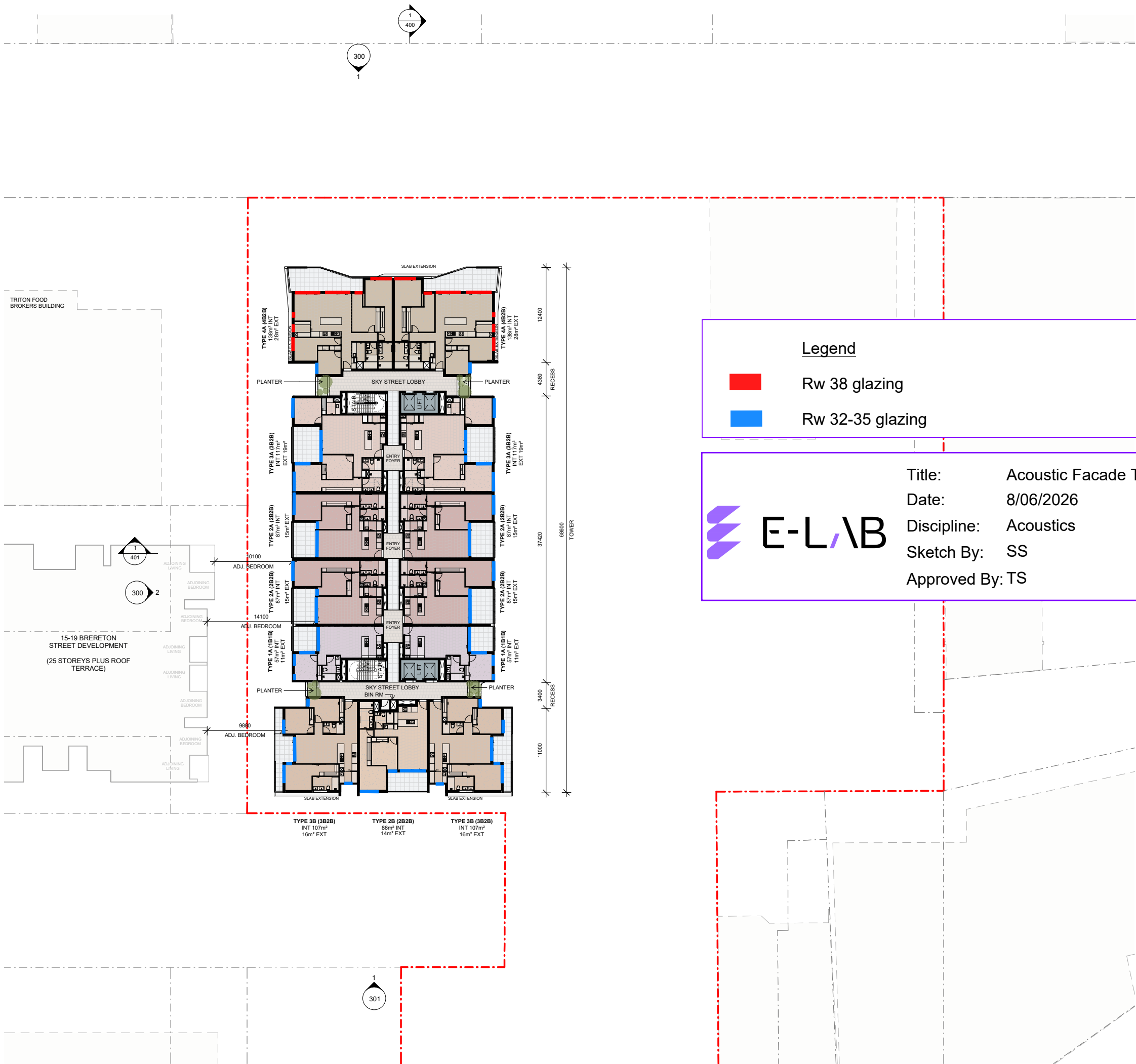
Project
25026
108 MONTAGUE ROAD

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TOWER - LEVEL 4**

DRAWN BY JD
CHECKED DC
DATE PRINTED 5/06/2026 4:28:02 PM

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Legend



Rw 38 glazing



Rw 32-35 glazing



Title: Acoustic Facade Types
Date: 8/06/2026
Discipline: Acoustics
Sketch By: SS
Approved By: TS

A JD FOR DA LODGEMENT 05.06.26
Rev Initial Description Date

PLANNING APPROVAL

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108 MONTAGUE ROAD

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TOWER - LEVEL 5-26

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