



**Trammell Crow Company,
Heywood Stores, Manchester Road, Heywood**

Report to support the Non-Material Amendment of Condition 23 of
Planning Permission 22/01410/FUL in relation to Noise

March 2025

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This document has been prepared and checked in accordance with
 Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

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Comments

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Comments

Revision		Status	
Pnn	Preliminary (shared; non-contractual)	S1	Coordination
Cnn	Contractual	S2	Information
		S3	Review & Comment
		S4	Review & Authorise
		S5	Review & Acceptance
		A0, A1, An	Authorised & Accepted (n=work stage if applicable)

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Executive Summary

This report, prepared by Waterman Infrastructure & Environment Ltd, supports the Non-Material Amendment (NMA) of Condition 23 of Planning Permission 22/01410/FUL in relation to noise for the redevelopment of Heywood Stores on Manchester Road, Heywood

The redevelopment involves the demolition of existing units and the construction of new storage and distribution units (Use Class B8) with ancillary office space.

A baseline environmental noise survey was conducted from 21st November 2024 to 19th December 2024 to establish representative background sound levels at boundary locations

The report presents the results of the baseline noise survey, including ambient noise levels, modal background sound levels, and representative background sound levels derived from statistical analysis in line with the requirements of BS4142:2014+A1:2019.

The results of the baseline noise surveys were found to be higher than those adopted for the original noise assessment and agreed via Condition 23 of 22/01410/FUL. Given that the most recent noise surveys reported were completed over a month long period they are considered to be representative of the noise climate surrounding the development and appropriate for the setting of noise limits under Condition 23.

The proposed updated limits for Condition 23 are as set out below.

- *45dB(A) LAr,1hr between 07:00 and 23:00 and 42dB(A) LAr,15 mins between 23:00 and 07:00, when measured within Oldbury Close, Bader Drive, Whitehouse Close and along the north-west facing boundary of the site; and*
- *52dB(A) LAr,1hr between 07:00 and 23:00 and 48dB(A) LAr,15 mins between 23:00 and 07:00 when measured along the south and southwest facing boundaries of the site.*

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1. Introduction

The applicant was granted planning permission (22/01410/FUL) for redevelopment for Use Class B8, (the 'Development'), on Appeal Ref: APP/P4225/W/24/3346477 dated 7th November 2024 subject to conditions.

Condition 23 pertaining to noise is specific to prevailing background sound levels and the setting of appropriate noise limits with relation to noise from the approved development. The condition is replicated below for completeness.

The rating level ($L_{Ar,Tr}$) of noise generated by the operation of the development hereby permitted shall not exceed:

- a) the most recently approved background sound levels when measured within the garden of any existing dwelling within Oldbury Close, Bader Drive and Whitehouse Close between 07:00 and 23:00;
- b) the most recently approved background sound levels when measured at the facade of any existing dwelling within Oldbury Close, Bader Drive and Whitehouse Close at a height corresponding to that of the bedroom windows between 23:00 and 07:00; and
- c) 2dB above the most recently approved background sound level ($L_{A,Tr} = L_{A90} + 2dB$) when measured at the site's boundary with the North of Harehills Road Phase of the South Heywood Masterplan.

All measurements shall be completed in line with BS4142:2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound (or equivalent British Standard if replaced).

Unless further background sound levels are approved in writing by the Local Planning Authority, the approved background sound levels shall be taken as:

- 42dB(A) $L_{Ar,1hr}$ between 07:00 and 23:00 and 40dB(A) $L_{Ar,15 mins}$ between 23:00 and 07:00, when measured within Oldbury Close, Bader Drive, Whitehouse Close and along the north-west facing boundary of the site; and •
- 50dB(A) $L_{Ar,1hr}$ between 07:00 and 23:00 and 46dB(A) $L_{Ar,15 mins}$ between 23:00 and 07:00 when measured along the south and southwest facing boundaries of the site.

This report presents results of a baseline noise survey carried out from 21st November 2024 to 19th December 2024 to establish representative background sound levels at boundary locations and seeks approval of these levels as the most recently approved background sound levels.

1.1 Site Description and Permitted Development

The development comprises "*Redevelopment of site comprising the demolition of all existing units and erection of new storage and distribution units (Use Class B8) with ancillary office space, vehicular, pedestrian and cycle access, external yards, parking, landscaping and associated works*".

2. Baseline Environmental Conditions

2.1 Noise Sensitive Receptors

The following potential noise sensitive receptors have been identified and are described in Table 2-1 and illustrated as Figure 2-1

Table 2-1: Nearest Sensitive Receptors

Receptor	Description
SR A	Residential housing on White House Close, Oldbury Close, Mercers Road, Bader Drive
SR B	Residential housing on White House Close, and Bader Drive
SR C	Residential housing on Hareshill Road
SR D	Future residential, Russell Homes Permitted Development (16/01399/HYBR) to south and south-west of site boundary
SR E	Future residential, Russell Homes Permitted Development (16/01399/HYBR) to north-west of site boundary

2.1.1 November 2024 to December 2024 Baseline Environmental Noise Survey

A baseline environmental noise survey was conducted by Waterman from Thursday 21st November 2024 until Thursday 19th December 2024 to establish prevailing ambient noise levels over a prolonged measurement period of a month. The survey was undertaken in accordance with BS4142 and BS7445.

Unattended noise monitoring and weather monitoring locations are described below in **Table 2-2** and shown in **Figure 2-1**.

Table 2-2: Description of Unattended Noise Monitoring Locations

Unattended Noise /Weather Monitoring Location	What3Words Location	Location Description	Noise Climate Description
LT1 ¹	Level.brand.cliff	Long term unattended noise measurement on the southern boundary facing Queen Elizabeth II Way.	Noise environment at location dominated by RTN from Queen Elizabeth II Way.
LT2 ¹	Comb.entertainer.statue	Long term unattended noise measurement at the SW Corner.	Background noise at this location predominantly consisted of RTN from the surrounding transportation network, in particular Queen Elizabeth II Way.
LT3 ¹	Really.plus.fell	Long term unattended noise measurement at the NW Corner.	Noise at this location consisted of a mixture of distant road traffic noise from the surrounding road network.
LT4 ¹	Cloth.attend.share	Long term unattended noise measurement at eastern boundary with existing	Noise environment consisted of a mixture of distant RTN from surrounding transport

Unattended Noise /Weather Monitoring Location	What3Words Location	Location Description	Noise Climate Description
		sensitive.	network and some distant noise from Newhouse Academy.
LT5 ¹	Burn.remove.stage	Long term unattended noise measurement on the north-eastern boundary facing rear of dwellings along White House Close.	Background noise at this location predominantly consisted of RTN from the surrounding transportation network, in particular Manchester Road, Queen Elizabeth II Way and M62.
W1 ²	Bossy.tens.films	Long term unattended weather station (Larson Davis Advantage Pro) close to south western boundary.	N/A

Figure 2-1 Noise Monitoring Locations and Noise Sensitive Receptors



2.1.2 Baseline Environmental Noise Measurement Results (Nov-Dec 2024)

A summary of measured environmental noise levels are presented in **Table 2-3**. Full details of the baseline survey are presented in **Appendix B**, including time-history charts, histogram plots of L_{A90} statistical distribution and comprehensive weather information.

Table 2-3: Summary of Baseline Survey Results

Measurement Location	Period	Ambient Noise Level, dB L_{Aeq}^1	Modal Background Sound Level, dB L_{A90}^2	Representative Background Sound Level Derived From Statistical Analysis, dB L_{A90}^3
LT1	Daytime (0700-2300)	64	60	55
	Night-time (2300-0700)	60	52	48
LT2	Daytime (0700-2300)	57	54	50
	Night-time (2300-0700)	54	48	46
LT3	Daytime (0700-2300)	52	48	46
	Night-time (2300-0700)	50	44	42
LT4	Daytime (0700-2300)	51	47	45
	Night-time (2300-0700)	49	45	42
LT5	Daytime (0700-2300)	54	50	46
	Night-time (2300-0700)	53	44	45

Note: ¹ Logarithmic average. ² Modal (most frequently occurring). ³ Refer to Appendix B Histograms illustrating statistical analysis of L_{A90} distribution.

2.1.3 Comparison of Measured Background Sound Levels With Condition 23 Criteria

A comparison of the monitored noise levels presented above and the Condition 23 Criteria is presented below. To ensure a robust assessment the representative background sound levels derived from statistical analysis have been adopted rather than the modal levels which are higher.

Table 2-4: Comparison between Condition 23 and November Monitored Noise Levels

Receptor	Description	Period	Condition 23 Noise Limit (LArTr)	Noise Limit based on November Noise Survey Data (LArTr)	Difference (dB)
SR A	Residential housing on White House Close, Oldbury Close, Mercers Road, Bader Drive	Daytime (0700-2300)	42	45	+3
		Night-time (2300-0700)	40	42	+2
SR B	Residential housing on White House Close, and Bader Drive	Daytime (0700-2300)	42	46	+4
		Night-time (2300-0700)	40	45	+5

Receptor	Description	Period	Condition 23 Noise Limit (LArTr)	Noise Limit based on November Noise Survey Data (LArTr)	Difference (dB)
SR C	Residential housing on Hareshill Road	Daytime (0700- 2300)	50	55	+5
		Night-time (2300- 0700)	46	48	+2
SR D	Future residential, Russell Homes Permitted Development (16/01399/HYBR) to south and south-west of site boundary	Daytime (0700- 2300)	50	52	+2
		Night-time (2300- 0700)	46	48	+2
SR E	Future residential, Russell Homes Permitted Development (16/01399/HYBR) to north-west of site boundary	Daytime (0700- 2300)	42	48	+6
		Night-time (2300- 0700)	40	44	+2

With reference to Table 2-4 it can be seen that when considering the representative background noise level revised noise limits based upon the November 2024 baseline noise background noise levels and subsequently adopted noise limits would be higher than those set out under Condition 23.

3. Summary & Conclusion

Waterman has conducted a baseline environmental noise survey consisting of long-term unattended noise measurements between Thursday 21st November 2024 until Thursday 19th December 2024. Noise measurements were undertaken at five boundary locations to allow representative environmental noise levels to be established, in particular the prevailing background sound levels (dB L_{A90}). The noise monitoring locations are considered to be representative of noise levels at existing and future residential receptors within the vicinity of the Site.

It is the background sound level noise parameter (dB L_{A90}) that is used as a basis for a BS4142 assessment for the permitted development.

The survey also included the installation of a mobile weather station at the Site to establish weather conditions during the baseline environmental noise survey. This allowed removal of data from subsequent analysis when windspeed was greater than 5 m/s and or rain.

Statistical analysis of the revised data as completed in line with the guidance provided in BS4142 has identified noise levels which are slightly higher than those currently referenced in Condition 23.

In light of the fact that the surveys presented within this report were completed over a month long period to allow for fluctuations in traffic flows and ambient conditions the levels are considered representative of the noise climate surrounding the development and should be considered appropriate for the setting of limits under Planning Condition 23.

The proposed updated limits for Condition 23 are as set out below.

- *45dB(A) L_{Ar}, 1hr between 07:00 and 23:00 and 42dB(A) L_{Ar}, 15 mins between 23:00 and 07:00, when measured within Oldbury Close, Bader Drive, Whitehouse Close and along the north-west facing boundary of the site; and*
- *52dB(A) L_{Ar}, 1hr between 07:00 and 23:00 and 48dB(A) L_{Ar}, 15 mins between 23:00 and 07:00 when measured along the south and southwest facing boundaries of the site.*

Appendices

A. Glossary of Acoustic Terms

Ambient sound	The totally encompassing sound in a given situation at a given time, usually composed of sound from all sources near and far.																		
Assessment period	The period in a day over which assessments are made.																		
A-weighting	A frequency weighting applied to measured or predicted sounds levels in order to compensate for the non-linearity of human hearing.																		
Background noise	Background noise is the term used to describe the noise measured in the absence of the noise under investigation. It is described as the average of the minimum noise levels measured on a sound level meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L_{90} noise level (see below).																		
Broadband	Containing the full range of frequencies.																		
Octave Band	A group of adjoining frequencies where the value of the upper limiting frequency is twice that of the lower limiting value																		
Decibel [dB]	The level of noise is measured objectively using a Sound Level Meter. This instrument has been specifically developed to mimic the operation of the human ear. The human ear responds to minute pressure variations in the air. These pressure variations can be likened to the ripples on the surface of water but of course cannot be seen. The pressure variations in the air cause the eardrum to vibrate and this is heard as sound in the brain. The stronger the pressure variations, the louder the sound that is heard. The range of pressure variations associated with everyday living may span over a range of a million to one. On the top range may be the sound of a jet engine and on the bottom of the range may be the sound of a pin dropping. Instead of expressing pressure in units ranging from a million to one, it is found convenient to condense this range to a scale 0 to 120 and give it the units of decibels. The following are examples of the decibel readings of every day sounds: <table> <tr> <td>Four engine jet aircraft at 100m</td><td>120 dB</td></tr> <tr> <td>Riveting of steel plate at 10m</td><td>105 dB</td></tr> <tr> <td>Pneumatic drill at 10m</td><td>90 dB</td></tr> <tr> <td>Circular wood saw at 10m</td><td>80 dB</td></tr> <tr> <td>Heavy road traffic at 10m</td><td>75 dB</td></tr> <tr> <td>Telephone bell at 10m</td><td>65 dB</td></tr> <tr> <td>Male speech, average at 10m</td><td>50 dB</td></tr> <tr> <td>Whisper at 10m</td><td>25 dB</td></tr> <tr> <td>Threshold of hearing, 1000 Hz</td><td>0 dB</td></tr> </table>	Four engine jet aircraft at 100m	120 dB	Riveting of steel plate at 10m	105 dB	Pneumatic drill at 10m	90 dB	Circular wood saw at 10m	80 dB	Heavy road traffic at 10m	75 dB	Telephone bell at 10m	65 dB	Male speech, average at 10m	50 dB	Whisper at 10m	25 dB	Threshold of hearing, 1000 Hz	0 dB
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Telephone bell at 10m	65 dB																		
Male speech, average at 10m	50 dB																		
Whisper at 10m	25 dB																		
Threshold of hearing, 1000 Hz	0 dB																		
dB(A): A-weighted decibels	The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the 'A' filter. A sound level measured with this filter switched on is denoted as dB(A). Practically all noise is measured using the A filter. The sound pressure level in dB(A) gives a close indication of the subjective loudness of the noise.																		
Free Field	The term "free field" is used to define noise levels that have been measured or predicted in the absence of any influence of reflections from nearby surfaces, other than the ground. In practice, a noise level is considered to be free field if it is at a distance greater than 3.5 m from any reflecting surfaces, other than the ground.																		
Façade Noise Level	A noise level measured or predicted at the façade of a building, typically at a distance of 1m, containing a contribution made up of reflections from the façade itself (+3 dB).																		
L_{Amax} noise level	This is the maximum noise level recorded over the measurement period.																		

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L_{Amin} noise level	This is the lowest level during the measurement period.
L_{Aeq,T} noise level	This is the 'equivalent continuous A-weighted sound pressure level, in decibels' and is defined in British Standard 7445 as the 'value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time'. It is a unit commonly used to describe construction noise, noise from industrial premises and is the most suitable unit for the description of other forms of environmental noise.
L_{A90} noise level	This is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during quieter periods. It is often referred to as the background noise level and is used in the assessment of disturbance from industrial noise.
L_{A10} noise level	This is the noise level which is achieved for 10% of the monitoring period and is often used to describe road traffic noise.
Noise Rating (NR)	A European method of rating broadband sound against a set of standardised curves that broadly equate to curves of equal loudness.
Sound Reduction Index (R)	The sound reduction index is a single-number rating of the sound reduction through a wall or other building element. Since the sound reduction may be different at different frequencies, test measurements are subjected to a standard procedure which yields a single number that is about equal to the average sound reduction in the middle of the human hearing range.
Weighted Sound Reduction Index (R_w)	Single number rating used to describe the laboratory airborne sound insulation properties of a material or building element over a range of frequencies, typically 100-3150Hz.
C_{TR}	An adjustment to the R _w scale to take account of the lower performance against a typical spectrum of road traffic noise dominated by low frequencies.
Standardised Level Difference (D_{nT,w})	This is the level difference achieved from one room to another, normalised to a standard reverberation time of 0.5 seconds and weighted to provide a single-figure value. This is a field measurement of air-borne sound reduction between one room and another – there will be flanking transmission, so the whole room needs to be considered because the element under test, such as the separating wall, may not be the weakest path. environment.
Element Normalised Level Difference (D_{ne,w})	From BSEN ISO 12354;2000 – the difference in the space and time average sound pressure level produced in two rooms by a source in one, where sound transmission is only due to a small building element – for example, transfer air devices, electrical cable ducts, transit sealing systems.
Flanking Level Difference (D_{nf,w})	Amount of sound that can be transmitted by a façade system through non-direct (i.e. flanking) paths.
Weighted normalised impact sound pressure level (L_{n,w})	Laboratory measurement of sound performance of a building element (floor) – there is no flanking (indirect) transmission loss, so only the element under test needs to be considered.
Peak Particle Velocity (PPV)	The highest instantaneous particle velocity during a given time interval.
VDV	This is the vibration dose value, a measure of vibration exposure; the fourth root of the integral, over the measurement period, of the fourth power of the frequency-weighted and time-varying acceleration.
Natural Frequency f_n	All physical structures have an inherent natural frequency. The natural frequency is the frequency at which the structure will tend to vibrate when subjected to certain external forces to the structural system.
Rating Level dB L_{A,r,T}	The Rating Level is the specific sound level plus any adjustment for the characteristic features of the sound as per BS4142.

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Residual Sound	Ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound source.
Specific Sound Level dB $L_{Aeq,T}$	The Specific Sound Level is equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval.
Specific Sound Source	The sound source being measured.

Appendices

B. Baseline Noise Survey

Table B1 presents the equipment detail used for the baseline noise survey conducted between November 2024 and December 2024. The equipment was field calibrated before and on completion of the survey with no significant drift.

Table B1: Equipment Detail

Location	Description	Serial Number	Date of Last Calibration
LT1	Rion NC-75 Type 1 Sound Level Meter	35270122	17 th September 2024 Certificate Number 1509857-1
LT2	Rion NL-52 Type 1 Sound Level Meter	01076307	19 th November 2024 Certificate Number 1510597-2
LT3	Rion NL-52 Type 1 Sound Level Meter	0061077	16 th September 2024 Certificate Number 1509855-1
LT4	Rion NL-52 Type 1 Sound Level Meter	01076396	8 th February 2023 Calibration Number 1504481-1
LT5	Rion UC-59 Type 1 Sound Level Meter	00987349	15 th March 2023 Calibration Number 1504856-1
W1	Larson Davis Advantage Pro	N/A	N/A

During the survey, temperatures ranged between -3 and +17 degrees Celsius.

Daily Noise Measurements - Summary

Time history plots at locations LT1 to LT5 are presented as **Graph B-1, Graph B-2, Graph B-3, Graph B-4** and **Graph B-5** respectively.

A summary of daily measured noise levels at locations LT1 to LT5 is shown below as **Table B-2, Table B-3, Table B-4, Table B-5** and **Table B-6**, respectively.

Background Sound Level Statistical Distribution Histogram Plots

Histogram plots of measured background sound levels (dB L_{A90}) during daytime are presented as **Graph B-6, Graph B-7, Graph B-8, Graph B-9** and **Graph B-10** respectively.

Histogram plots of measured background sound levels (dB L_{A90}) during night-time are presented as **Graph B-11, Graph B-12, Graph B-13, Graph B-14** and **Graph B-15** respectively.

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Table B2: Daily Summary of Measured Noise Levels – LT1

Day	Period	L _{Aeq} ¹	L _{AFmax} ²	L _{A10} ³	L _{A90} ⁴	L _{A90} ⁵
21/11/2024	Daytime (0700-2300)	63.4	78.5	66.5	51.6	58.0
	Night-time (2300-0700)	61.0	74.2	64.9	44.2	51.0
22/11/2024	Daytime (0700-2300)	64.3	79.7	67.2	53.4	59.0
	Night-time (2300-0700)	61.4	79.3	64.7	50.9	55.0
23/11/2024	Daytime (0700-2300)	65.5	77.6	68.1	55.8	61.0
	Night-time (2300-0700)	62.3	77.1	65.6	50.1	53.0
24/11/2024	Daytime (0700-2300)	63.7	77.8	66.3	53.4	61.0
	Night-time (2300-0700)	60.9	76.7	63.0	48.0	49.0
25/11/2024	Daytime (0700-2300)	65.2	80.6	67.9	50.6	61.0
	Night-time (2300-0700)	61.8	75.6	64.7	48.1	53.0
26/11/2024	Daytime (0700-2300)	64.7	77.1	67.4	53.9	58.0
	Night-time (2300-0700)	58.5	72.5	61.7	44.0	46.0
27/11/2024	Daytime (0700-2300)	62.2	77.4	65.4	50.1	55.0
	Night-time (2300-0700)	60.2	75.2	63.0	46.7	51.0
28/11/2024	Daytime (0700-2300)	63.8	75.1	66.4	53.9	60.0
	Night-time (2300-0700)	60.8	73.8	63.2	50.1	52.0
29/11/2024	Daytime (0700-2300)	63.9	79.1	66.7	54.3	59.0
	Night-time (2300-0700)	60.2	74.1	63.3	51.2	55.0
30/11/2024	Daytime (0700-2300)	63.9	78.5	66.4	57.0	61.0
	Night-time (2300-0700)	59.3	76.8	62.2	49.2	56.0
01/12/2024	Daytime (0700-2300)	63.2	76.0	66.0	52.3	59.0
	Night-time (2300-0700)	61.0	76.8	63.3	47.5	49.0
02/12/2024	Daytime (0700-2300)	62.5	78.6	65.5	45.8	55.0
	Night-time (2300-0700)	58.7	75.3	61.5	43.4	47.0
03/12/2024	Daytime (0700-2300)	63.3	79.3	66.2	51.5	60.0
	Night-time (2300-0700)	60.5	75.3	63.8	45.5	53.0
04/12/2024	Daytime (0700-2300)	65.0	80.9	67.7	56.1	59.0
	Night-time (2300-0700)	62.4	75.5	65.5	51.6	53.0
05/12/2024	Daytime (0700-1900, 2100-2300) ⁶	66.6	78.6	68.8	51.4	60.0
	Night-time (2300-0700)	58.9	72.7	62.5	45.0	48.0
06/12/2024	Daytime (0700-2300)	64.8	79.2	67.5	53.6	60.0
	Night-time (2300-0700)	60.9	75.7	64.4	50.1	54.0

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Day	Period	L _{Aeq} ¹	L _{AFmax} ²	L _{A10} ³	L _{A90} ⁴	L _{A90} ⁵
07/12/2024	Daytime (0700-2300)	61.7	75.4	64.8	47.2	53.0
	Night-time (2300-0700)	56.9	70.6	60.7	45.9	49.0
08/12/2024	Daytime (0700-2300)	59.4	74.2	62.7	48.2	54.0
	Night-time (2300-0700)	58.0	72.4	60.9	42.8	45.0
09/12/2024	Daytime (0700-2300)	61.6	74.0	64.4	49.4	57.0
	Night-time (2300-0700)	57.7	74.0	60.9	42.5	44.0
10/12/2024	Daytime (0700-2300)	61.2	76.9	64.3	48.1	56.0
	Night-time (2300-0700)	57.4	71.5	60.6	43.2	45.0
11/12/2024	Daytime (0700-2300)	61.5	74.8	64.7	43.8	56.0
	Night-time (2300-0700)	57.6	71.4	60.9	37.6	41.0
12/12/2024	Daytime (0700-2300)	61.4	78.7	64.4	45.9	57.0
	Night-time (2300-0700)	57.5	74.1	61.0	39.5	40.0
13/12/2024	Daytime (0700-2300)	62.0	74.6	65.3	49.3	56.0
	Night-time (2300-0700)	58.2	74.0	62.2	40.7	47.0
14/12/2024	Daytime (0700-2300)	61.9	75.4	65.4	47.5	54.0
	Night-time (2300-0700)	59.3	75.2	63.0	45.7	48.0
15/12/2024	Daytime (0700-2300)	62.1	76.6	65.3	49.8	57.0
	Night-time (2300-0245, 0400-0700) ⁶	61.0	79.3	63.9	48.2	51.0
16/12/2024	Daytime (0700-2300)	64.2	79.6	66.9	53.0	60.0
	Night-time (2300-0700)	59.9	77.2	62.8	49.0	51.0
17/12/2024	Daytime (0700-2300)	64.7	78.2	67.5	55.6	61.0
	Night-time (2300-0645) ⁶	61.0	78.4	63.9	50.4	52.0
18/12/2024	Daytime (0700-0915, 1145-2300) ⁶	64.1	75.3	67.5	44.7	59.0
	Night-time (2300-0700)	60.2	73.6	63.9	39.6	44.0
19/12/2024	Daytime (0700-2300)	65.7	74.8	68.9	55.7	60.0

Note: ¹ Logarithmic average. ² 90th Percentile. ³ Arithmetic Average. ⁴ Minimum. ⁵ Modal (most frequently occurring) ⁶ Wind speeds greater than 5 m/s were recorded during the missing period, the presented numerical values reflect the dataset with the periods of high windspeed i.e. greater than 5 m/s, removed.

Appendices

Trammell Crow Company,
 Heywood Stores, Manchester Road, Heywood
 Document Reference: WIE20647-106
 20647106-WAT-XX-XX-RP-N-710001_S5_P03

Table B3: Daily Summary of Measured Noise Levels – LT2

Day	Period	L _{Aeq} ¹	L _{AFmax} ²	L _{A10} ³	L _{A90} ⁴	L _{A90} ⁵
21/11/2024	Daytime (0700-2300)	56.1	69.9	57.5	46.8	51.0
	Night-time (2300-0700)	52.7	68.1	55.5	42.3	43.0
22/11/2024	Daytime (0700-2300)	56.3	66.6	58.2	48.3	54.0
	Night-time (2300-0700)	54.5	66.8	57.4	46.0	49.0
23/11/2024	Daytime (0700-2300)	59.5	71.3	61.3	50.5	58.0
	Night-time (2300-0700)	56.7	68.5	59.5	48.5	53.0
24/11/2024	Daytime (0700-2300)	58.3	70.5	60.5	49.3	56.0
	Night-time (2300-0700)	55.9	66.5	58.3	47.9	49.0
25/11/2024	Daytime (0700-2300)	59.2	69.7	61.0	47.5	57.0
	Night-time (2300-0700)	54.6	64.9	56.6	45.6	46.0
26/11/2024	Daytime (0700-2300)	57.8	67.6	59.1	49.2	51.0
	Night-time (2300-0700)	47.8	57.1	49.0	38.9	42.0
27/11/2024	Daytime (0700-2300)	53.2	73.1	54.2	42.8	49.0
	Night-time (2300-0700)	52.7	64.4	55.1	42.1	45.0
28/11/2024	Daytime (0700-2300)	56.2	70.8	57.2	47.0	52.0
	Night-time (2300-0700)	54.1	65.0	55.9	46.1	47.0
29/11/2024	Daytime (0700-2300)	57.1	70.0	58.8	48.7	54.0
	Night-time (2300-0700)	53.4	72.0	55.5	46.9	49.0
30/11/2024	Daytime (0700-2300)	57.4	68.5	59.3	51.1	55.0
	Night-time (2300-0700)	52.9	70.8	55.6	44.0	51.0
01/12/2024	Daytime (0700-2300)	56.7	69.9	58.8	47.9	54.0
	Night-time (2300-0700)	53.6	66.2	55.8	43.6	45.0
02/12/2024	Daytime (0700-2300)	52.1	69.0	52.8	39.7	47.0
	Night-time (2300-0700)	49.6	62.4	50.8	37.4	38.0
03/12/2024	Daytime (0700-2300)	55.5	70.3	56.7	46.1	54.0
	Night-time (2300-0700)	51.4	70.2	53.0	41.3	48.0
04/12/2024	Daytime (0700-2300)	57.8	70.6	59.3	50.3	53.0
	Night-time (2300-0700)	55.8	69.6	58.6	48.5	50.0
05/12/2024	Daytime (0700-1900, 2100-2300) ⁶	59.7	74.4	61.3	50.8	57.0
	Night-time (2300-0700)	52.9	66.8	55.5	45.5	48.0
06/12/2024	Daytime (0700-2300)	58.1	70.6	59.9	48.6	57.0
	Night-time (2300-0700)	56.2	69.1	58.3	44.9	49.0

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Day	Period	L _{Aeq} ¹	L _{AFmax} ²	L _{A10} ³	L _{A90} ⁴	L _{A90} ⁵
07/12/2024	Daytime (0700-2300)	60.0	76.8	61.9	48.1	51.0
	Night-time (2300-0700)	62.0	81.0	64.5	47.5	51.0
08/12/2024	Daytime (0700-2300)	56.2	74.2	58.3	44.0	52.0
	Night-time (2300-0700)	51.3	70.7	52.9	40.4	43.0
09/12/2024	Daytime (0700-2300)	52.2	71.1	53.7	44.1	49.0
	Night-time (2300-0700)	46.1	60.0	48.1	39.7	40.0
10/12/2024	Daytime (0700-2300)	49.1	69.5	50.2	41.1	48.0
	Night-time (2300-0700)	44.5	56.2	46.4	36.8	38.0
11/12/2024	Daytime (0700-2300)	49.0	66.3	50.5	38.0	47.0
	Night-time (2300-0700)	45.6	58.0	46.7	34.8	37.0
12/12/2024	Daytime (0700-2300)	49.1	66.1	50.0	40.1	48.0
	Night-time (2300-0700)	45.4	58.5	46.6	35.9	38.0
13/12/2024	Daytime (0700-2300)	52.1	66.5	53.5	40.8	47.0
	Night-time (2300-0700)	49.2	62.7	52.5	40.4	42.0
14/12/2024	Daytime (0700-2300)	53.7	68.9	56.2	43.2	50.0
	Night-time (2300-0700)	52.5	67.4	55.5	44.3	48.0
15/12/2024	Daytime (0700-2300)	55.4	69.4	57.7	45.0	53.0
	Night-time (2300-0245, 0400-0700) ⁶	56.5	68.8	59.0	48.8	51.0
16/12/2024	Daytime (0700-2300)	58.2	69.0	60.1	49.8	56.0
	Night-time (2300-0700)	54.6	65.5	57.0	45.9	47.0
17/12/2024	Daytime (0700-2300)	58.7	70.2	60.6	52.6	56.0
	Night-time (2300-0645) ⁶	57.3	72.2	59.8	48.9	51.0
18/12/2024	Daytime (0700-0915, 1145-2300) ⁶	56.6	70.9	57.6	43.9	55.0
	Night-time (2300-0700)	51.1	64.8	53.1	40.2	42.0
19/12/2024	Daytime (0700-2300)	56.3	77.0	57.9	50.0	53.0

Note: ¹ Logarithmic average. ² 90th Percentile. ³ Arithmetic Average. ⁴ Minimum. ⁵ Modal (most frequently occurring) ⁶ Wind speeds greater than 5 m/s were recorded during the missing period, the presented numerical values reflect the dataset with the periods of high windspeed i.e. greater than 5 m/s, removed.

Appendices

Trammell Crow Company,
 Heywood Stores, Manchester Road, Heywood
 Document Reference: WIE20647-106
 20647106-WAT-XX-XX-RP-N-710001_S5_P03

Table B4: Daily Summary of Measured Noise Levels – LT3

Day	Period	L _{Aeq} ¹	L _{AFmax} ²	L _{A10} ³	L _{A90} ⁴	L _{A90} ⁵
21/11/2024	Daytime (0700-2300)	51.1	69.6	51.3	43.7	48.0
	Night-time (2300-0700)	46.2	62.3	47.6	39.1	40.0
22/11/2024	Daytime (0700-2300)	50.5	71.7	51.8	42.6	48.0
	Night-time (2300-0700)	50.5	69.3	51.4	44.3	47.0
23/11/2024	Daytime (0700-2300)	54.4	71.8	55.3	46.8	54.0
	Night-time (2300-0700)	51.1	69.8	53.0	44.5	48.0
24/11/2024	Daytime (0700-2300)	52.2	69.0	53.3	45.2	51.0
	Night-time (2300-0700)	49.3	64.2	50.0	41.9	43.0
25/11/2024	Daytime (0700-2300)	52.9	73.0	53.9	43.0	51.0
	Night-time (2300-0700)	49.7	67.0	51.0	40.4	45.0
26/11/2024	Daytime (0700-2300)	51.6	66.4	52.6	44.8	51.0
	Night-time (2300-0700)	48.4	57.4	49.6	40.7	44.0
27/11/2024	Daytime (0700-2300)	49.6	71.1	49.5	40.3	44.0
	Night-time (2300-0700)	49.8	59.8	50.1	39.0	47.0
28/11/2024	Daytime (0700-2300)	52.2	71.7	52.6	44.5	49.0
	Night-time (2300-0700)	49.2	60.2	50.2	43.4	44.0
29/11/2024	Daytime (0700-2300)	51.9	75.4	52.7	44.3	50.0
	Night-time (2300-0700)	48.8	61.1	50.1	42.8	46.0
30/11/2024	Daytime (0700-2300)	52.3	69.1	53.5	47.4	51.0
	Night-time (2300-0700)	48.0	68.6	49.6	41.2	43.0
01/12/2024	Daytime (0700-2300)	51.1	72.1	52.2	44.0	49.0
	Night-time (2300-0700)	47.6	66.9	48.6	40.0	41.0
02/12/2024	Daytime (0700-2300)	48.1	68.7	48.4	36.4	47.0
	Night-time (2300-0700)	46.8	56.6	46.7	35.4	39.0
03/12/2024	Daytime (0700-2300)	50.4	72.5	51.4	42.3	48.0
	Night-time (2300-0700)	45.1	61.9	46.1	36.0	44.0
04/12/2024	Daytime (0700-2300)	52.0	69.9	52.8	43.7	52.0
	Night-time (2300-0700)	49.7	70.0	51.5	44.5	48.0
05/12/2024	Daytime (0700-1900, 2100-2300) ⁶	56.0	75.1	56.5	47.4	50.0
	Night-time (2300-0700)	51.8	69.2	53.9	42.5	46.0
06/12/2024	Daytime (0700-2300)	53.3	73.8	54.5	45.0	51.0
	Night-time (2300-0700)	51.1	70.3	52.1	40.2	48.0

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Day	Period	L _{Aeq} ¹	L _{AFmax} ²	L _{A10} ³	L _{A90} ⁴	L _{A90} ⁵
07/12/2024	Daytime (0700-2300)	59.9	80.0	61.4	45.7	53.0
	Night-time (2300-0700)	58.5	77.6	61.0	44.3	51.0
08/12/2024	Daytime (0700-2300)	53.2	70.6	54.8	44.5	49.0
	Night-time (2300-0700)	47.4	62.4	48.4	39.3	41.0
09/12/2024	Daytime (0700-2300)	50.4	67.7	51.6	44.7	48.0
	Night-time (2300-0700)	45.4	55.4	46.4	38.9	40.0
10/12/2024	Daytime (0700-2300)	48.7	64.6	49.6	41.5	48.0
	Night-time (2300-0700)	44.2	53.8	45.3	37.0	39.0
11/12/2024	Daytime (0700-2300)	48.2	67.2	48.4	34.6	46.0
	Night-time (2300-0700)	43.8	62.9	41.5	31.5	32.0
12/12/2024	Daytime (0700-2300)	49.3	73.6	49.4	40.5	48.0
	Night-time (2300-0700)	44.0	57.1	44.2	34.9	39.0
13/12/2024	Daytime (0700-2300)	48.0	69.4	49.2	39.0	44.0
	Night-time (2300-0700)	43.8	60.4	46.1	37.5	40.0
14/12/2024	Daytime (0700-2300)	48.3	68.0	49.7	41.2	45.0
	Night-time (2300-0700)	47.1	66.3	49.1	40.0	45.0
15/12/2024	Daytime (0700-2300)	50.3	65.3	51.6	41.5	47.0
	Night-time (2300-0245, 0400-0700) ⁶	51.9	66.8	53.9	45.0	46.0
16/12/2024	Daytime (0700-2300)	51.8	69.6	52.7	45.5	51.0
	Night-time (2300-0700)	49.4	59.0	50.4	41.9	43.0
17/12/2024	Daytime (0700-2300)	53.0	67.9	54.4	48.0	51.0
	Night-time (2300-0645) ⁶	50.8	68.4	52.6	43.9	47.0
18/12/2024	Daytime (0700-0915, 1145-2300) ⁶	51.1	72.4	51.9	40.8	49.0
	Night-time (2300-0700)	46.8	67.8	47.6	37.2	40.0
19/12/2024	Daytime (0700-2300)	51.9	75.4	52.7	46.6	48.0

Note: ¹ Logarithmic average. ² 90th Percentile. ³ Arithmetic Average. ⁴ Minimum. ⁵ Modal (most frequently occurring) ⁶ Wind speeds greater than 5 m/s were recorded during the missing period, the presented numerical values reflect the dataset with the periods of high windspeed i.e. greater than 5 m/s, removed.

Appendices

Trammell Crow Company,
 Heywood Stores, Manchester Road, Heywood
 Document Reference: WIE20647-106
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Table B5: Daily Summary of Measured Noise Levels – LT4

Day	Period	L _{Aeq} ¹	L _{AFmax} ²	L _{A10} ³	L _{A90} ⁴	L _{A90} ⁵
21/11/2024	Daytime (0700-2300)	49.6	66.0	49.9	43.1	46.0
	Night-time (2300-0700)	45.7	63.7	47.0	38.3	40.0
22/11/2024	Daytime (0700-2300)	48.9	66.5	49.8	42.1	47.0
	Night-time (2300-0700)	49.4	62.0	50.0	42.4	45.0
23/11/2024	Daytime (0700-2300)	54.7	69.1	55.4	47.1	55.0
	Night-time (2300-0700)	50.6	67.0	52.4	43.8	48.0
24/11/2024	Daytime (0700-2300)	52.8	69.4	54.1	45.9	52.0
	Night-time (2300-0700)	49.6	64.2	51.0	42.2	45.0
25/11/2024	Daytime (0700-2300)	53.2	68.6	54.4	43.4	51.0
	Night-time (2300-0700)	48.1	65.6	49.0	40.3	43.0
26/11/2024	Daytime (0700-2300)	50.8	66.5	51.6	44.8	51.0
	Night-time (2300-0700)	47.3	58.9	48.6	39.9	43.0
27/11/2024	Daytime (0700-2300)	47.8	66.4	48.7	40.2	43.0
	Night-time (2300-0700)	48.6	60.7	48.5	37.8	45.0
28/11/2024	Daytime (0700-2300)	51.7	66.8	52.3	44.0	50.0
	Night-time (2300-0700)	48.3	59.5	48.8	42.6	44.0
29/11/2024	Daytime (0700-2300)	50.7	69.7	51.4	44.0	50.0
	Night-time (2300-0700)	47.6	58.8	48.6	42.0	46.0
30/11/2024	Daytime (0700-2300)	52.6	68.4	53.4	48.2	51.0
	Night-time (2300-0700)	47.6	60.9	48.7	41.5	43.0
01/12/2024	Daytime (0700-2300)	50.8	67.5	51.8	43.9	49.0
	Night-time (2300-0700)	47.1	62.4	48.0	39.0	41.0
02/12/2024	Daytime (0700-2300)	48.3	68.7	48.4	36.3	47.0
	Night-time (2300-0700)	46.0	59.5	45.7	35.9	37.0
03/12/2024	Daytime (0700-2300)	48.7	67.4	49.4	40.6	46.0
	Night-time (2300-0700)	43.4	56.3	43.9	35.5	41.0
04/12/2024	Daytime (0700-2300)	51.9	66.3	52.4	43.3	53.0
	Night-time (2300-0700)	49.8	68.0	51.5	44.6	46.0
05/12/2024	Daytime (0700-1900, 2100-2300) ⁶	54.2	72.4	55.1	46.2	51.0
	Night-time (2300-0700)	48.5	66.4	50.7	41.8	44.0
06/12/2024	Daytime (0700-2300)	52.9	66.9	53.6	45.5	53.0
	Night-time (2300-0700)	51.0	68.5	51.9	39.7	49.0

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Day	Period	L _{Aeq} ¹	L _{AFmax} ²	L _{A10} ³	L _{A90} ⁴	L _{A90} ⁵
07/12/2024	Daytime (0700-2300)	55.6	71.3	57.0	44.5	48.0
	Night-time (2300-0700)	55.5	70.8	58.0	43.5	49.0
08/12/2024	Daytime (0700-2300)	51.1	69.0	52.6	43.2	48.0
	Night-time (2300-0700)	46.9	59.0	47.6	39.0	43.0
09/12/2024	Daytime (0700-2300)	50.3	69.2	51.3	43.7	48.0
	Night-time (2300-0700)	45.1	53.5	46.0	38.3	39.0
10/12/2024	Daytime (0700-2300)	48.7	67.5	49.7	41.7	48.0
	Night-time (2300-0700)	43.7	53.3	44.6	36.8	39.0
11/12/2024	Daytime (0700-2300)	47.4	65.1	47.8	36.4	46.0
	Night-time (2300-0700)	44.0	54.1	42.2	31.7	37.0
12/12/2024	Daytime (0700-2300)	48.5	64.8	48.4	41.3	47.0
	Night-time (2300-0700)	43.6	52.6	44.2	36.1	38.0
13/12/2024	Daytime (0700-2300)	46.1	65.2	46.6	39.7	42.0
	Night-time (2300-0700)	42.0	60.4	44.0	36.4	39.0
14/12/2024	Daytime (0700-2300)	48.2	65.4	50.0	40.4	45.0
	Night-time (2300-0700)	45.9	65.5	48.0	38.4	43.0
15/12/2024	Daytime (0700-2300)	49.6	64.8	51.4	41.2	48.0
	Night-time (2300-0245, 0400-0700) ⁶	50.9	66.0	52.9	42.5	45.0
16/12/2024	Daytime (0700-2300)	52.1	66.9	53.2	45.2	51.0
	Night-time (2300-0700)	47.8	57.5	48.9	41.4	44.0
17/12/2024	Daytime (0700-2300)	52.7	66.2	53.8	48.6	51.0
	Night-time (2300-0645) ⁶	51.8	64.4	53.3	45.0	47.0
18/12/2024	Daytime (0700-0915, 1145-2300) ⁶	50.8	66.9	51.2	40.9	50.0
	Night-time (2300-0700)	46.0	67.2	46.7	37.5	38.0
19/12/2024	Daytime (0700-2300)	50.9	74.7	52.2	46.0	47.0

Note: ¹ Logarithmic average. ² 90th Percentile. ³ Arithmetic Average. ⁴ Minimum. ⁵ Modal (most frequently occurring) ⁶ Wind speeds greater than 5 m/s were recorded during the missing period, the presented numerical values reflect the dataset with the periods of high windspeed i.e. greater than 5 m/s, removed.

Appendices

Trammell Crow Company,
 Heywood Stores, Manchester Road, Heywood
 Document Reference: WIE20647-106
 20647106-WAT-XX-XX-RP-N-710001_S5_P03

Table B6: Daily Summary of Measured Noise Levels – LT5

Day	Period	L _{Aeq} ¹	L _{AFmax} ²	L _{A10} ³	L _{A90} ⁴	L _{A90} ⁵
21/11/2024	Daytime (0700-2300)	49.6	68.5	49.9	43.6	45.0
	Night-time (2300-0700)	46.0	67.4	47.0	38.9	40.0
22/11/2024	Daytime (0700-2300)	50.1	69.6	50.9	43.8	48.0
	Night-time (2300-0700)	51.9	77.7	52.1	44.1	46.0
23/11/2024	Daytime (0700-2300)	58.3	82.2	58.5	49.1	58.0
	Night-time (2300-0700)	55.9	86.2	54.8	45.5	50.0
24/11/2024	Daytime (0700-2300)	57.0	83.5	56.9	48.1	54.0
	Night-time (2300-0700)	55.8	82.7	54.4	43.6	44.0
25/11/2024	Daytime (0700-2300)	55.7	82.5	55.7	41.8	53.0
	Night-time (2300-0700)	49.0	67.5	49.7	39.5	46.0
26/11/2024	Daytime (0700-2300)	51.7	66.8	52.7	45.0	52.0
	Night-time (2300-0700)	49.1	62.4	50.2	42.1	44.0
27/11/2024	Daytime (0700-2300)	49.4	66.6	50.3	41.6	44.0
	Night-time (2300-0700)	50.5	61.4	50.5	38.7	47.0
28/11/2024	Daytime (0700-2300)	53.6	71.3	54.3	45.1	52.0
	Night-time (2300-0700)	50.7	73.8	51.1	42.9	44.0
29/11/2024	Daytime (0700-2300)	52.9	77.9	53.4	44.4	51.0
	Night-time (2300-0700)	49.1	65.2	50.2	42.3	47.0
30/11/2024	Daytime (0700-2300)	55.0	77.0	55.9	50.6	54.0
	Night-time (2300-0700)	52.5	81.4	52.5	43.4	45.0
01/12/2024	Daytime (0700-2300)	52.9	77.2	53.5	45.6	51.0
	Night-time (2300-0700)	48.8	75.0	48.8	39.4	40.0
02/12/2024	Daytime (0700-2300)	50.0	75.6	50.4	37.8	50.0
	Night-time (2300-0700)	48.8	58.1	48.6	37.4	42.0
03/12/2024	Daytime (0700-2300)	50.4	70.3	51.0	43.1	49.0
	Night-time (2300-0700)	44.9	67.9	45.6	34.6	38.0
04/12/2024	Daytime (0700-2300)	54.9	79.6	54.7	45.9	55.0
	Night-time (2300-0700)	53.7	81.7	53.7	46.3	50.0
05/12/2024	Daytime (0700-1900, 2100-2300) ⁶	55.7	82.6	56.0	46.5	51.0
	Night-time (2300-0700)	53.0	85.2	50.5	41.0	44.0
06/12/2024	Daytime (0700-2300)	56.3	83.3	55.3	45.9	56.0
	Night-time (2300-0700)	56.9	84.5	53.6	42.3	51.0

Appendices

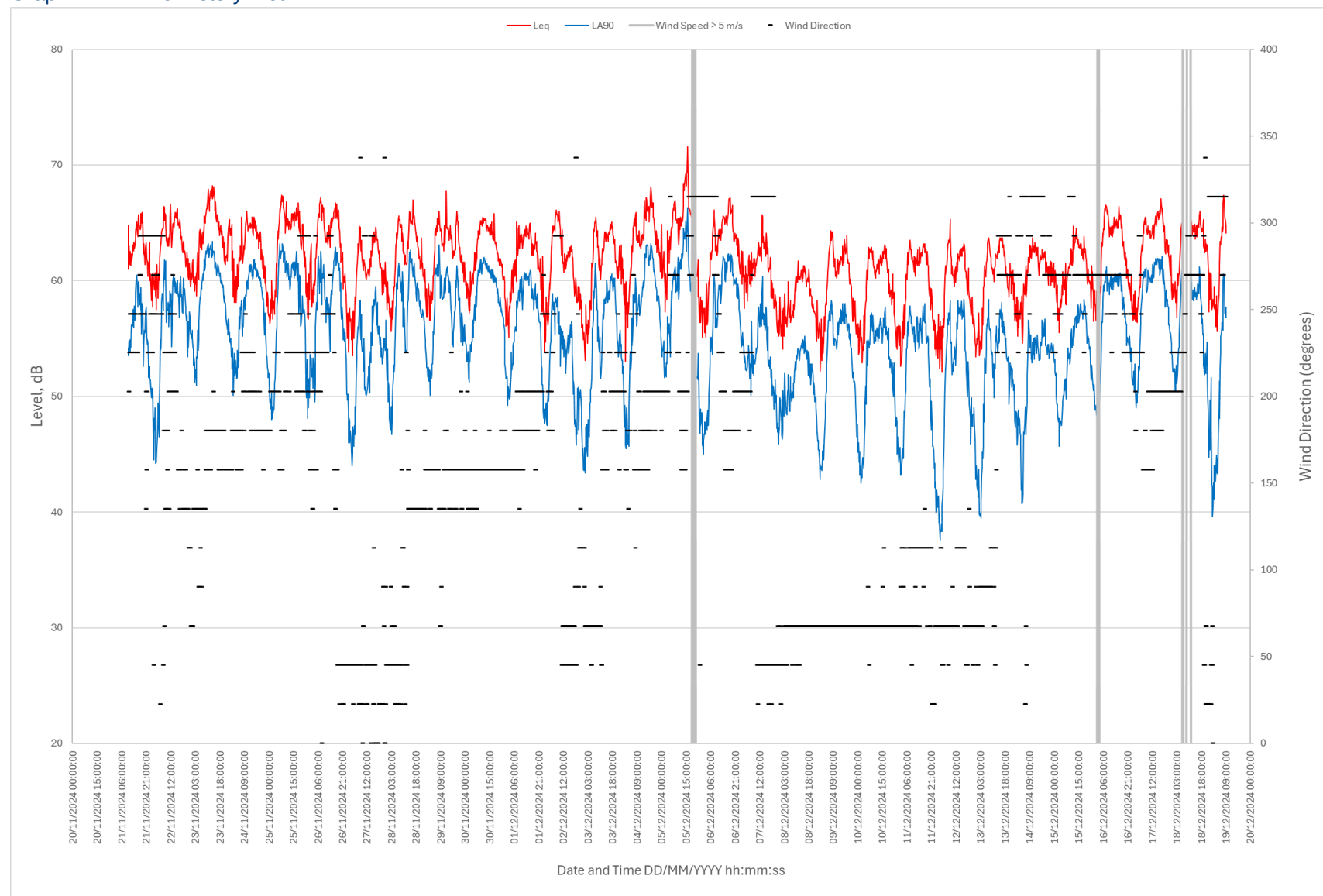
Day	Period	L _{Aeq} ¹	L _{AFmax} ²	L _{A10} ³	L _{A90} ⁴	L _{A90} ⁵
07/12/2024	Daytime (0700-2300)	58.3	89.1	56.2	44.5	52.0
	Night-time (2300-0700)	59.8	92.3	55.3	44.3	47.0
08/12/2024	Daytime (0700-2300)	56.6	89.0	53.5	45.5	50.0
	Night-time (2300-0700)	52.8	84.5	49.1	40.7	41.0
09/12/2024	Daytime (0700-2300)	54.7	85.3	53.4	45.5	51.0
	Night-time (2300-0700)	49.5	81.4	48.0	39.4	41.0
10/12/2024	Daytime (0700-2300)	52.0	79.0	52.5	44.2	50.0
	Night-time (2300-0700)	47.1	77.1	47.8	39.1	41.0
11/12/2024	Daytime (0700-2300)	50.4	69.0	50.9	40.1	49.0
	Night-time (2300-0700)	45.8	56.8	44.6	33.7	35.0
12/12/2024	Daytime (0700-2300)	50.5	66.2	51.3	42.8	51.0
	Night-time (2300-0700)	46.2	56.6	46.6	38.1	42.0
13/12/2024	Daytime (0700-2300)	47.6	64.7	47.8	40.3	44.0
	Night-time (2300-0700)	42.8	60.1	44.5	35.9	39.0
14/12/2024	Daytime (0700-2300)	49.4	77.0	50.8	41.6	47.0
	Night-time (2300-0700)	47.5	79.1	48.4	39.7	43.0
15/12/2024	Daytime (0700-2300)	51.2	80.0	52.2	41.9	48.0
	Night-time (2300-0245, 0400-0700) ⁶	53.0	85.3	52.1	42.5	46.0
16/12/2024	Daytime (0700-2300)	53.7	81.0	53.8	45.7	52.0
	Night-time (2300-0700)	48.8	64.2	49.5	42.5	43.0
17/12/2024	Daytime (0700-2300)	56.1	83.9	56.0	50.1	52.0
	Night-time (2300-0645) ⁶	57.4	87.4	55.6	45.1	48.0
18/12/2024	Daytime (0700-0915, 1145-2300) ⁶	51.9	81.8	51.9	40.5	51.0
	Night-time (2300-0700)	47.8	79.9	47.8	36.4	38.0
19/12/2024	Daytime (0700-2300)	55.0	88.1	53.6	46.7	49.0

Note: ¹ Logarithmic average. ² 90th Percentile. ³ Arithmetic Average. ⁴ Minimum. ⁵ Modal (most frequently occurring) ⁶ Wind speeds greater than 5 m/s were recorded during the missing period, the presented numerical values reflect the dataset with the periods of high windspeed i.e. greater than 5 m/s, removed.

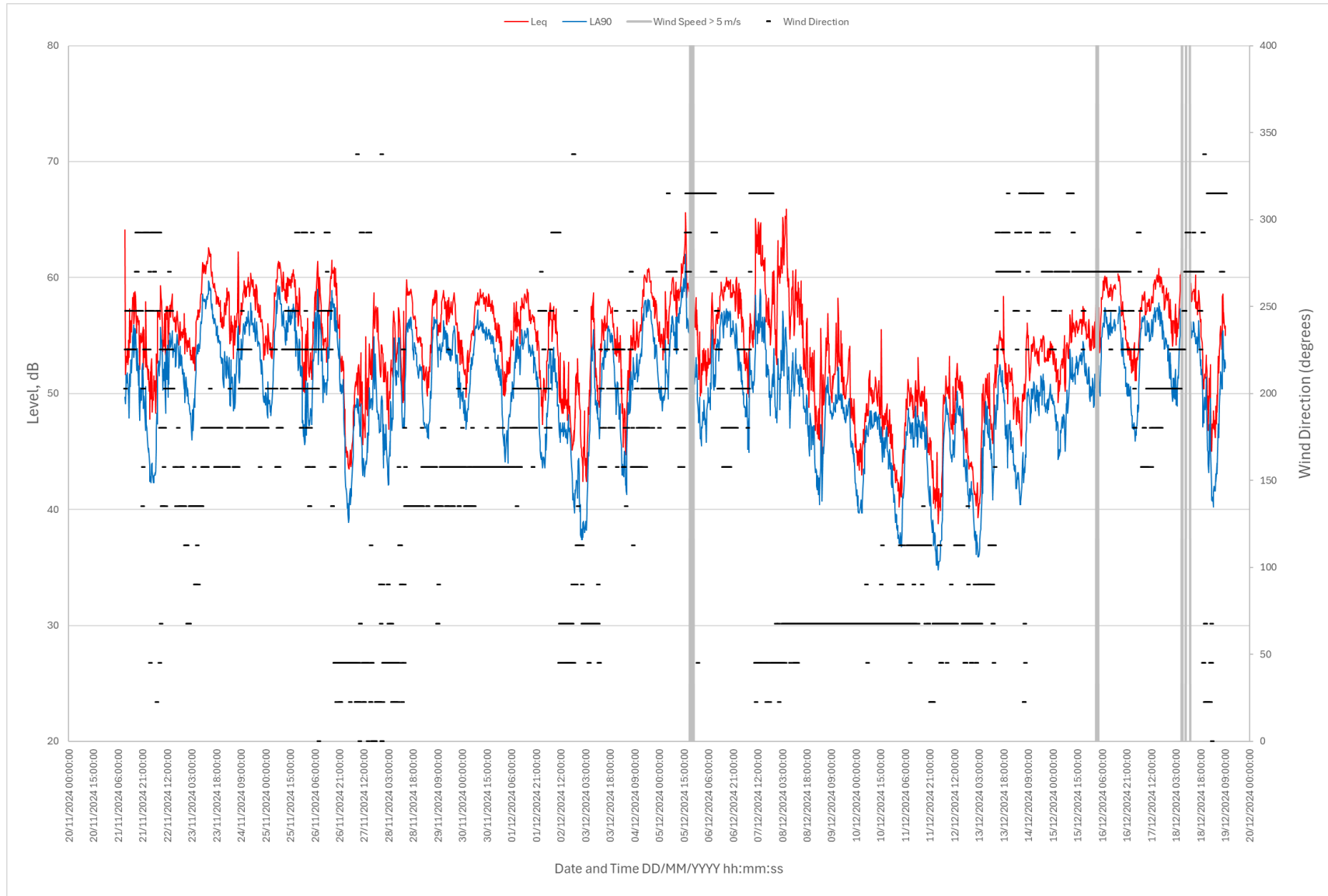
Appendices

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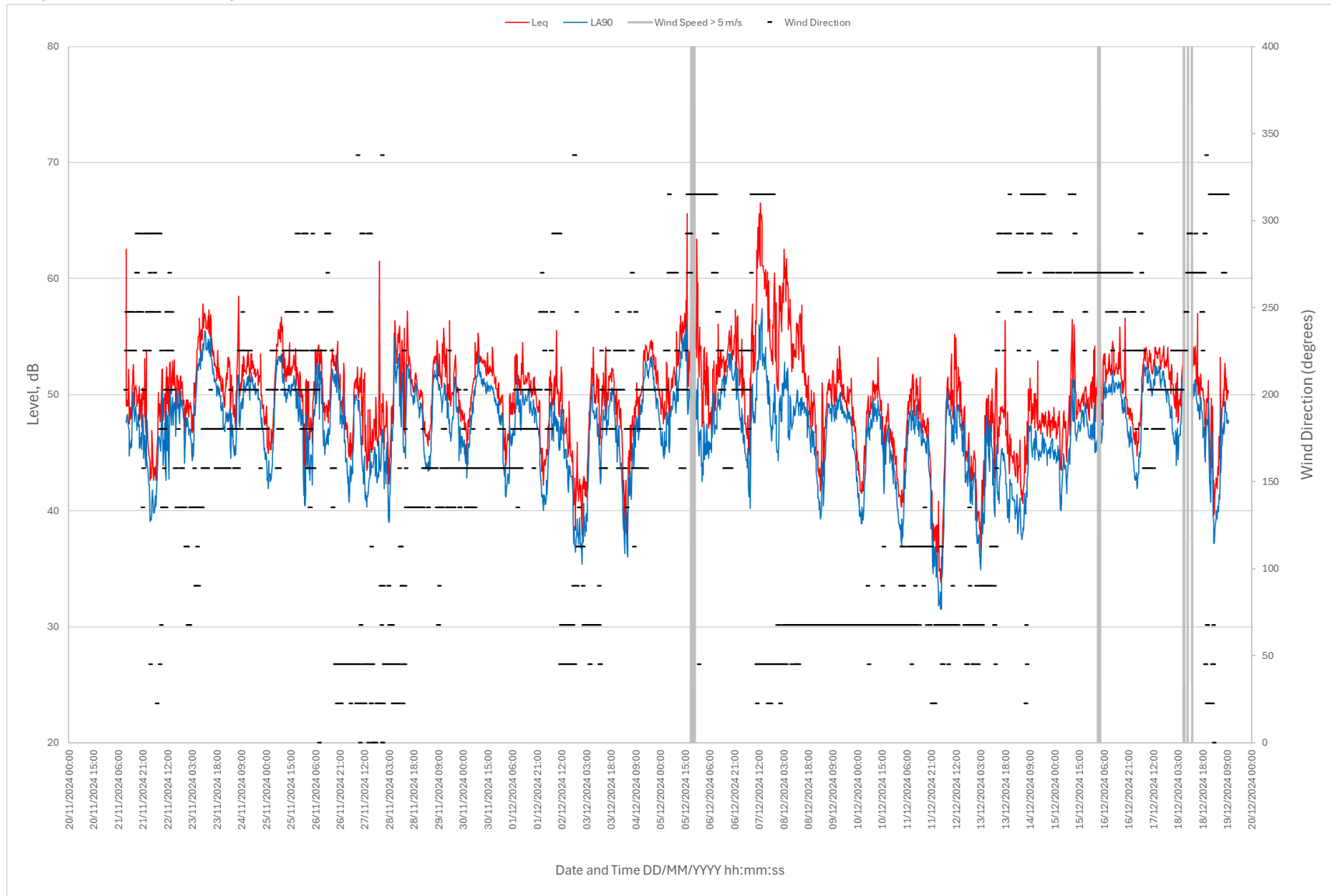
Graph B-1: Time History Plot LT1



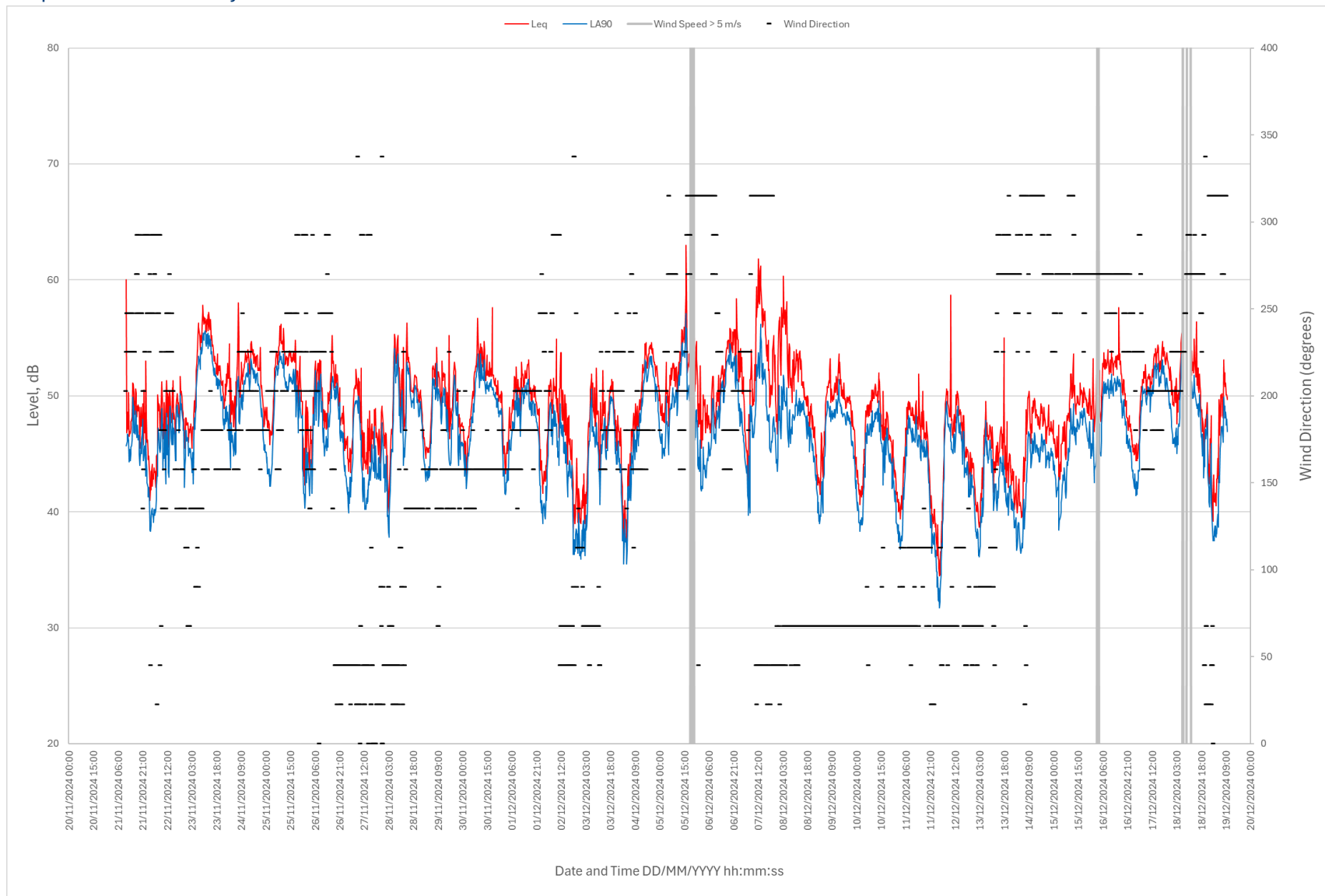
Graph B-2: Time History Plot LT2



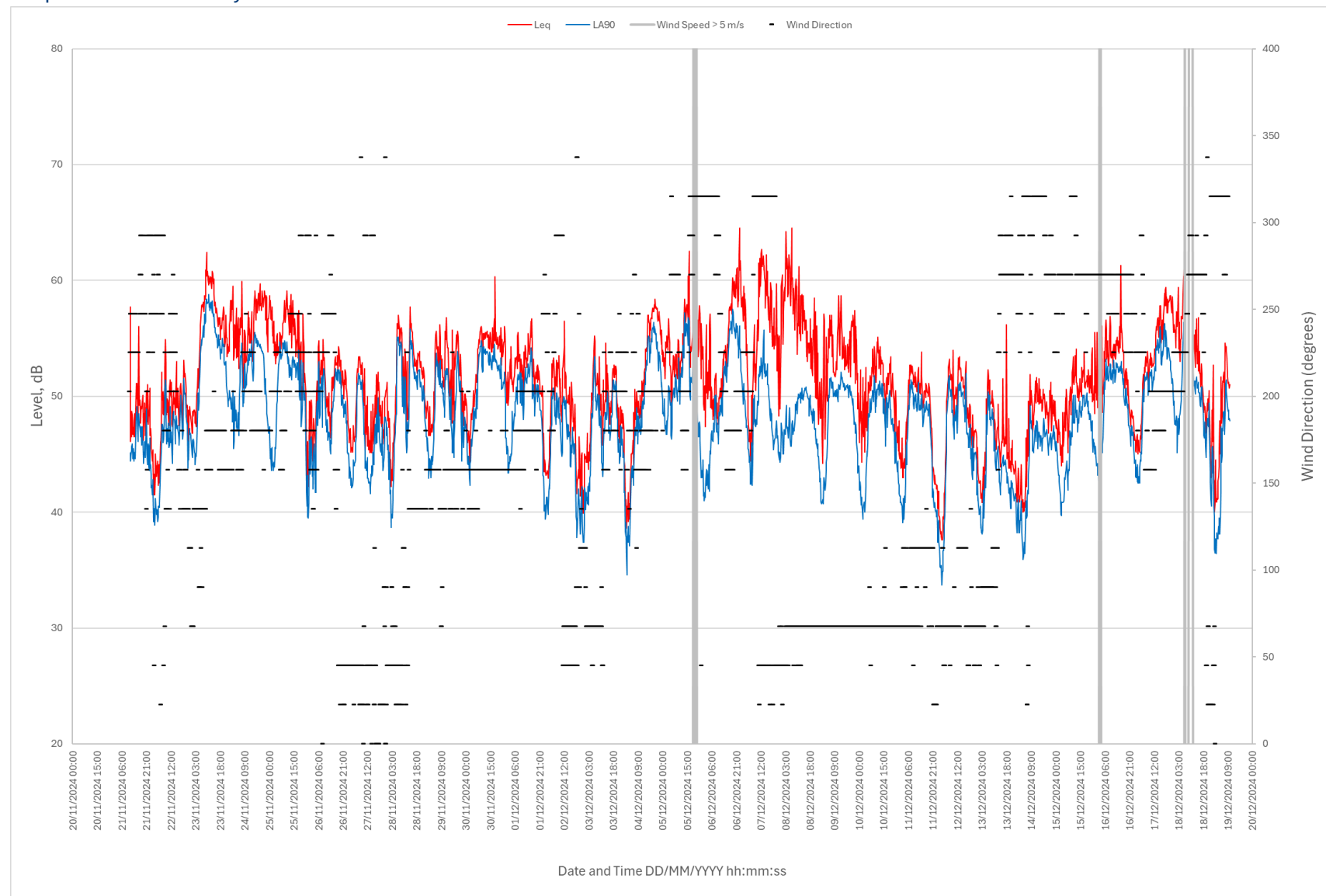
Graph B-3: Time History Plot LT3



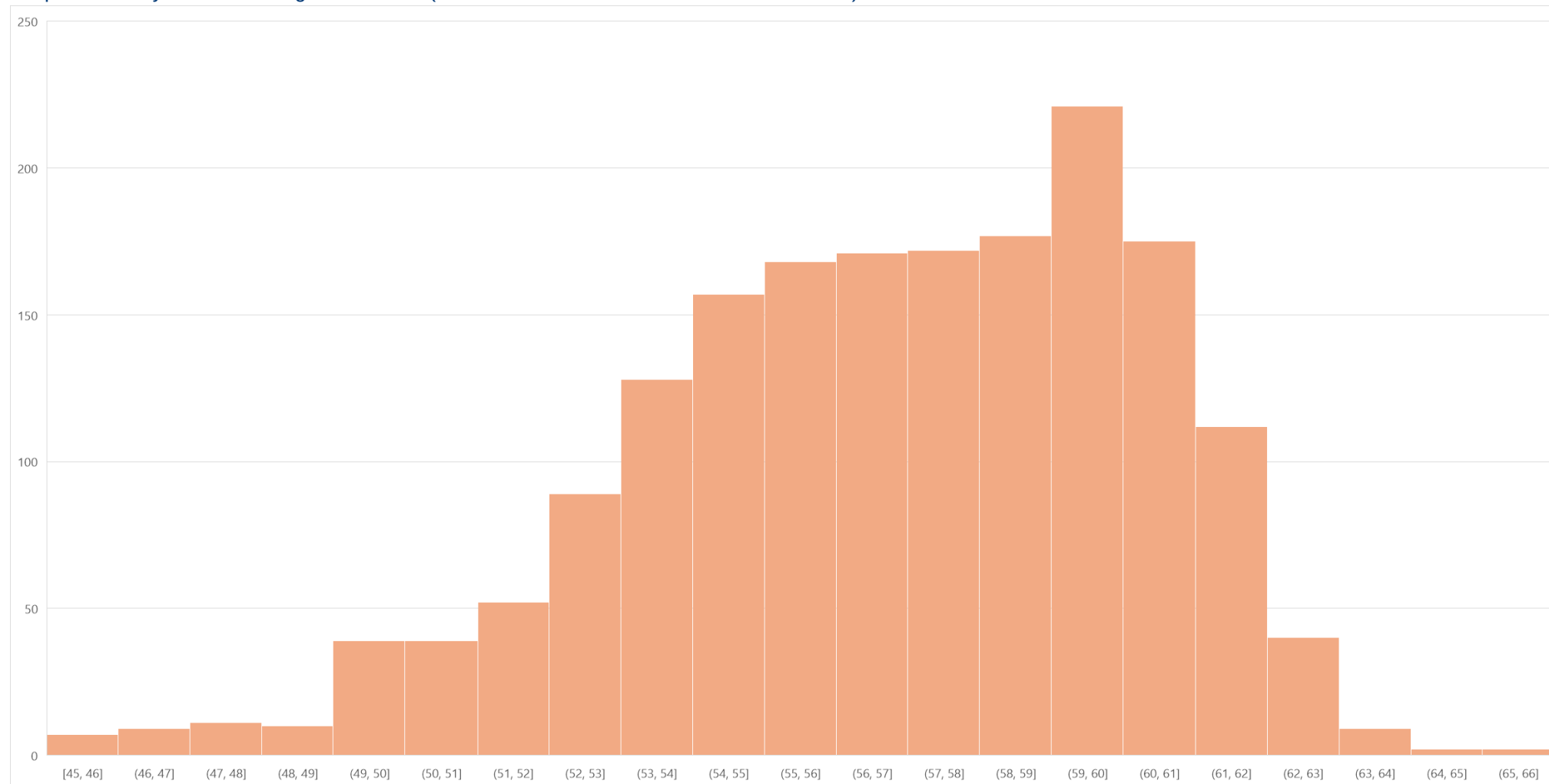
Graph B-4: Time History Plot LT4



Graph B-5: Time History Plot LT5



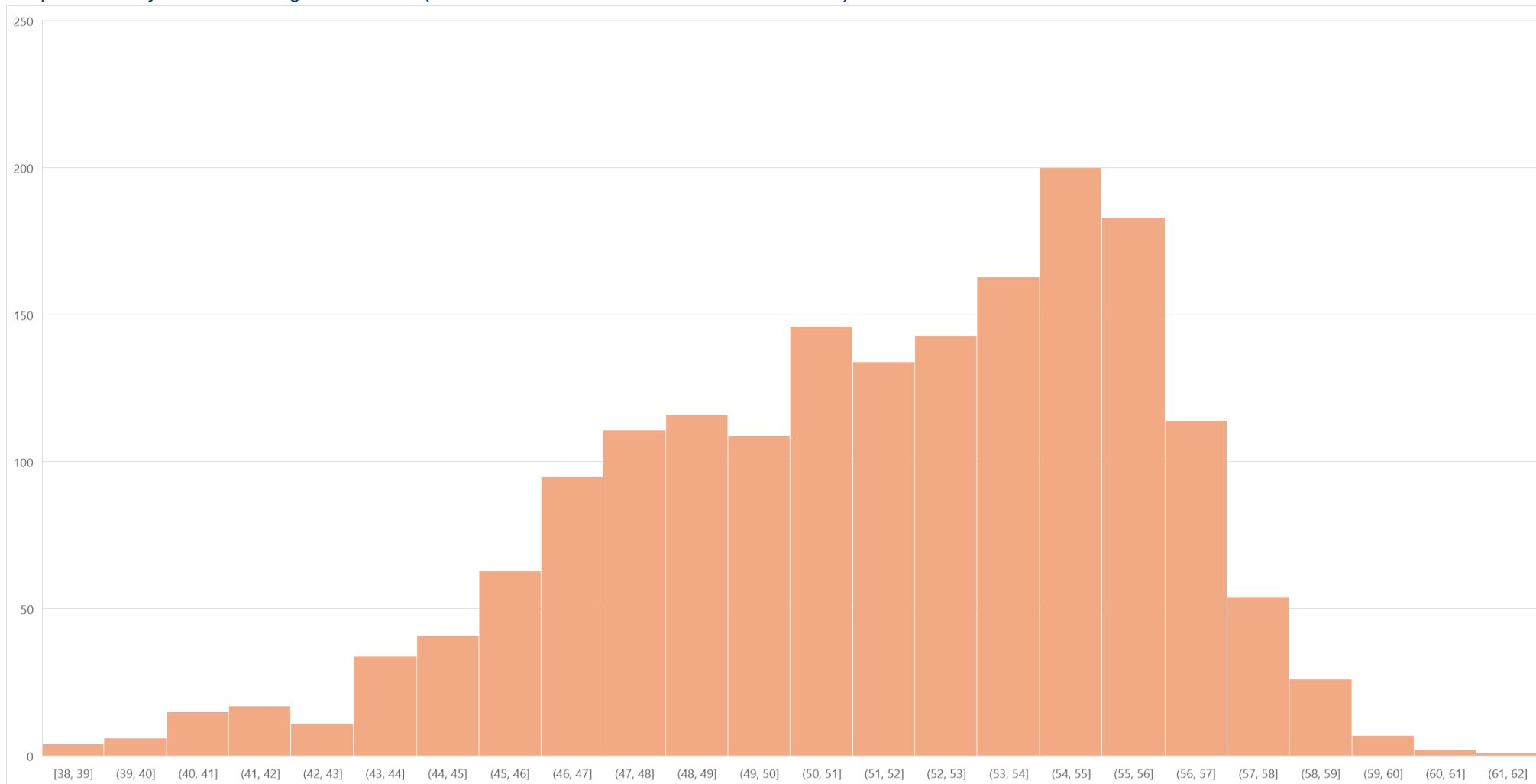
Graph B-6: Daytime L_{A90} Histogram Plot LT1 (Full Measurement Period between 0700-2300)



Appendices

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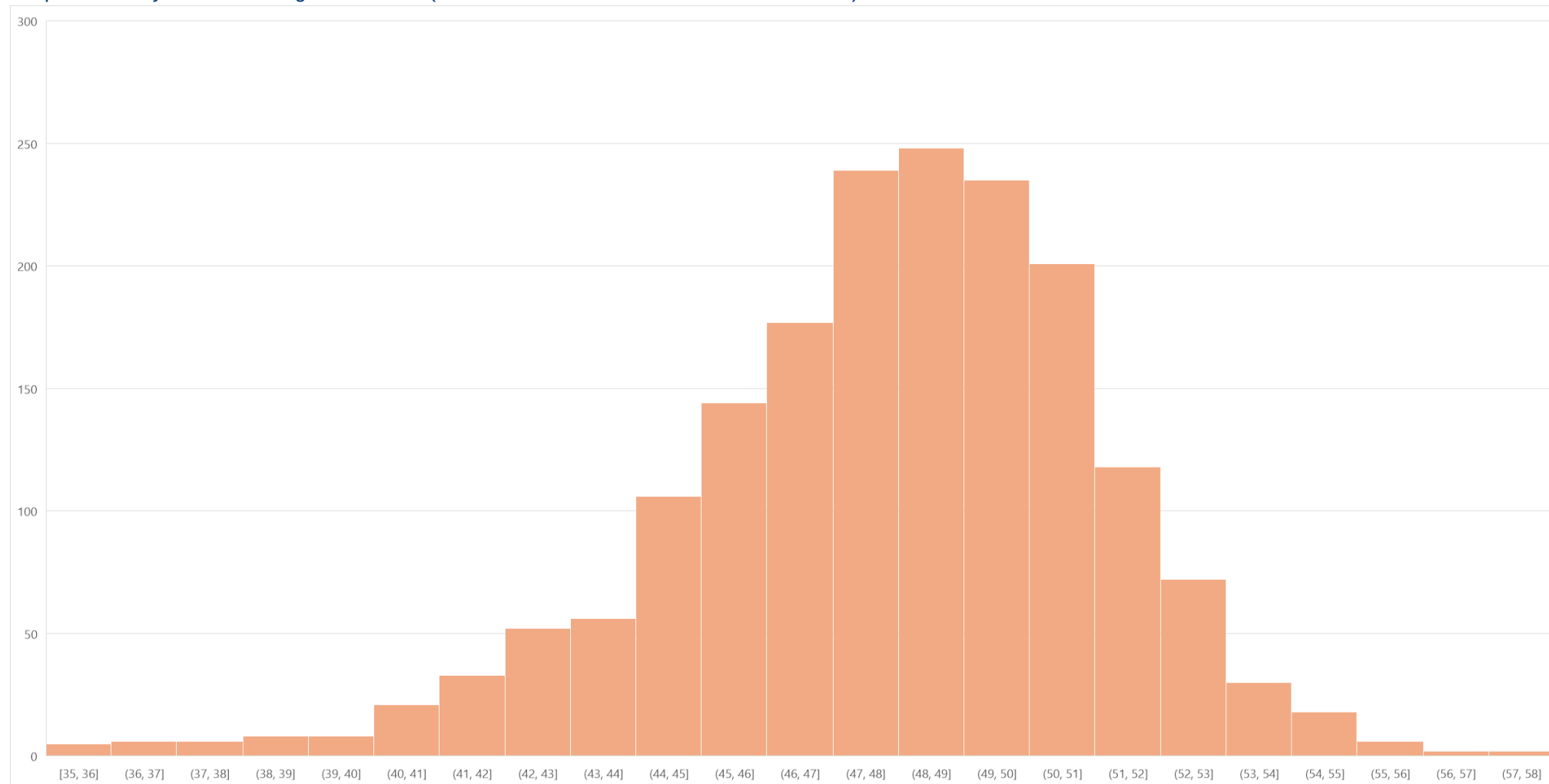
Graph B-7: Daytime L_{A90} Histogram Plot LT2 (Full Measurement Period between 0700-2300)



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20647106-WAT-XX-XX-RP-N-710001_S5_P03

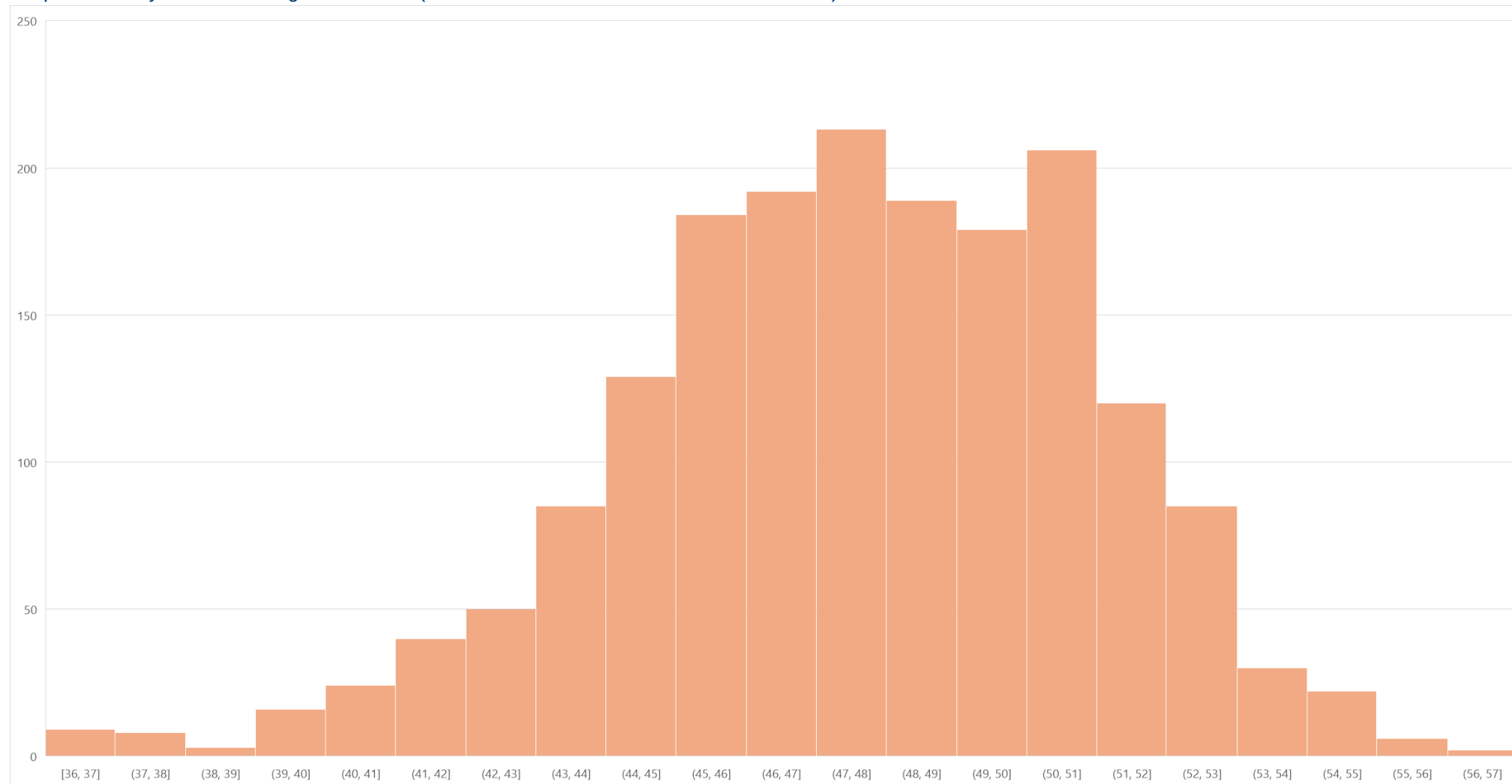
Graph B-8: Daytime L_{A90} Histogram Plot LT3 (Full Measurement Period between 0700-2300)



Appendices

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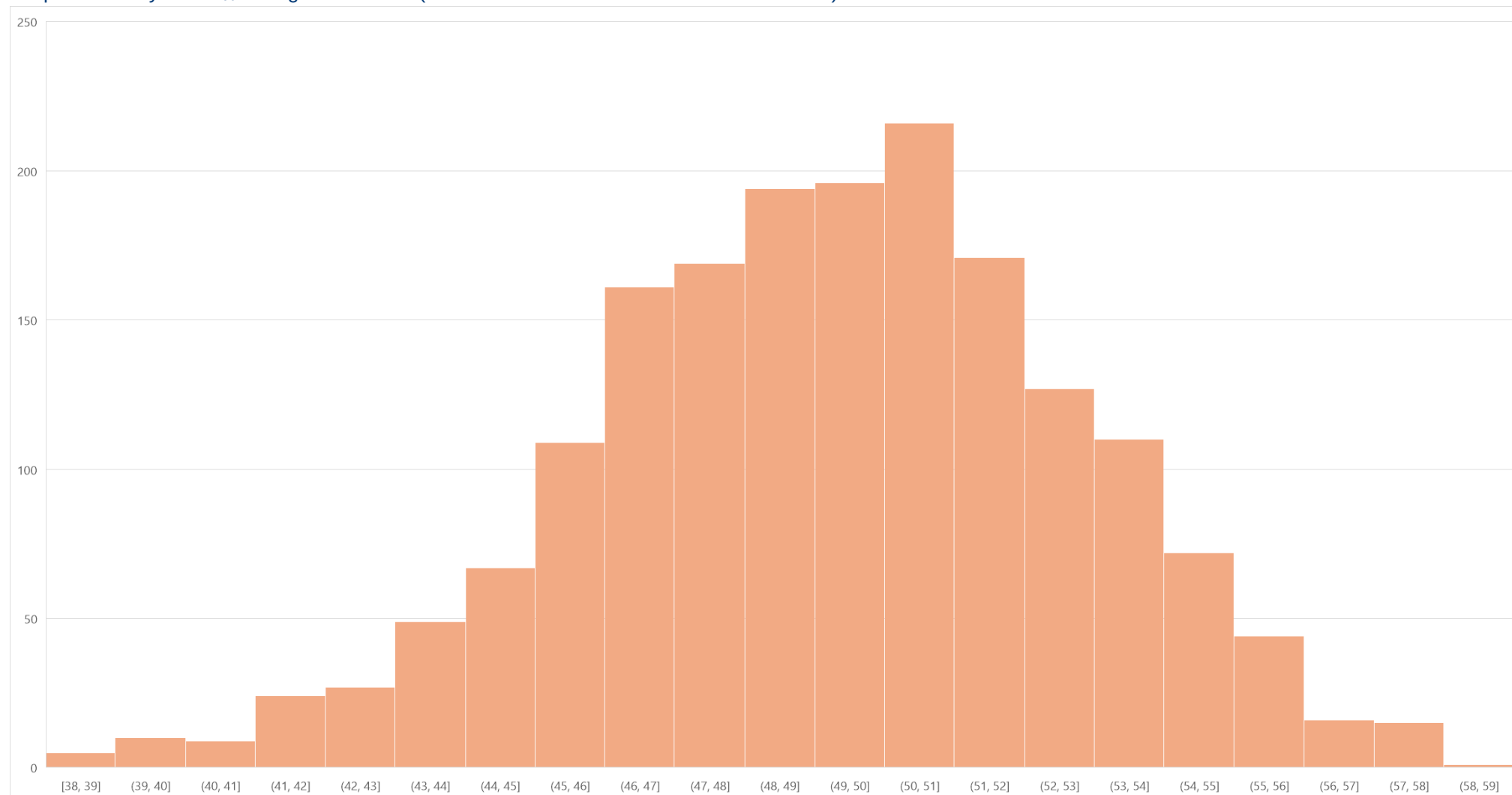
Graph B-9: Daytime L_{A90} Histogram Plot LT4 (Full Measurement Period between 0700-2300)



Appendices

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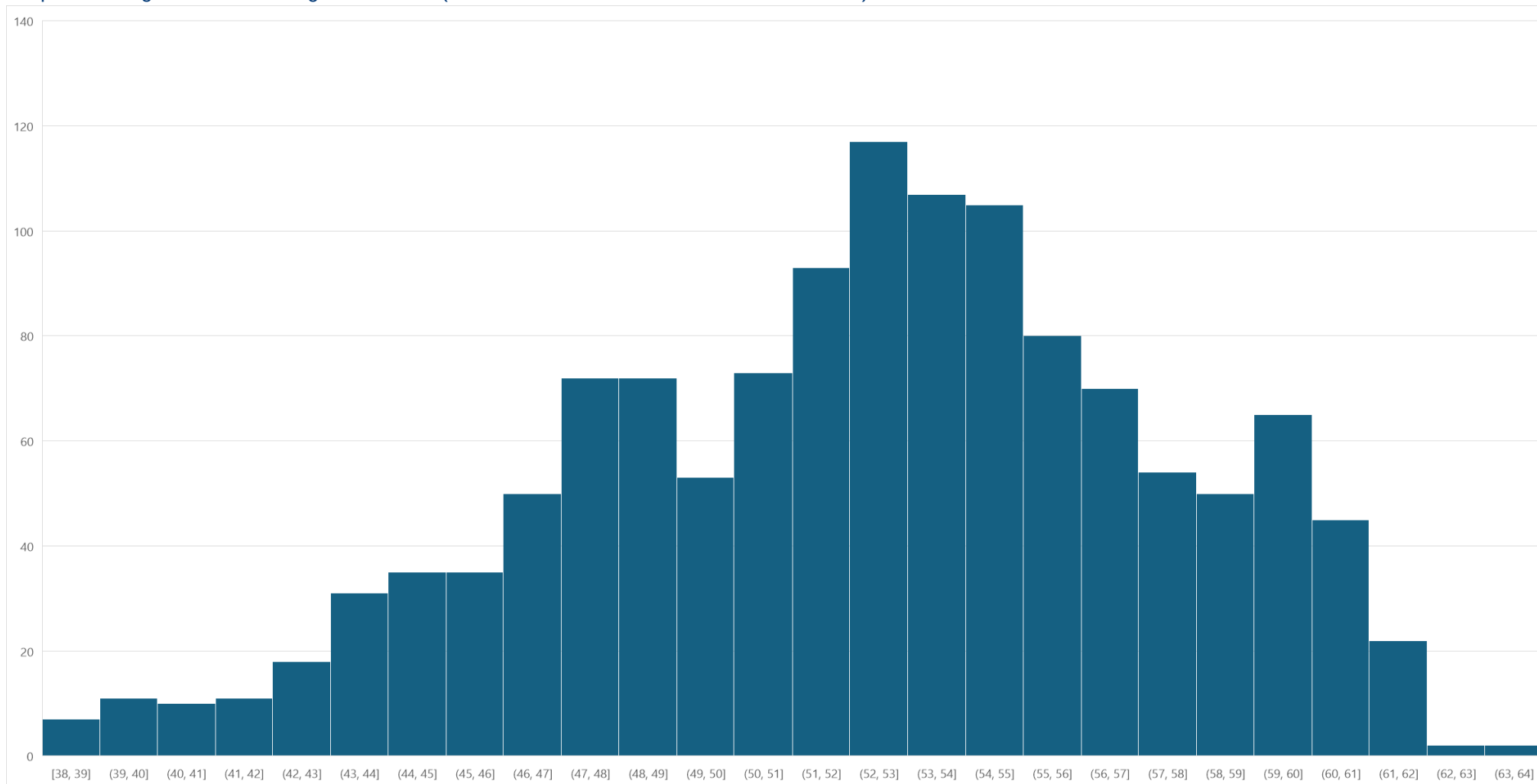
Graph B-10: Daytime L_{A90} Histogram Plot LT5 (Full Measurement Period between 0700-2300)



Appendices

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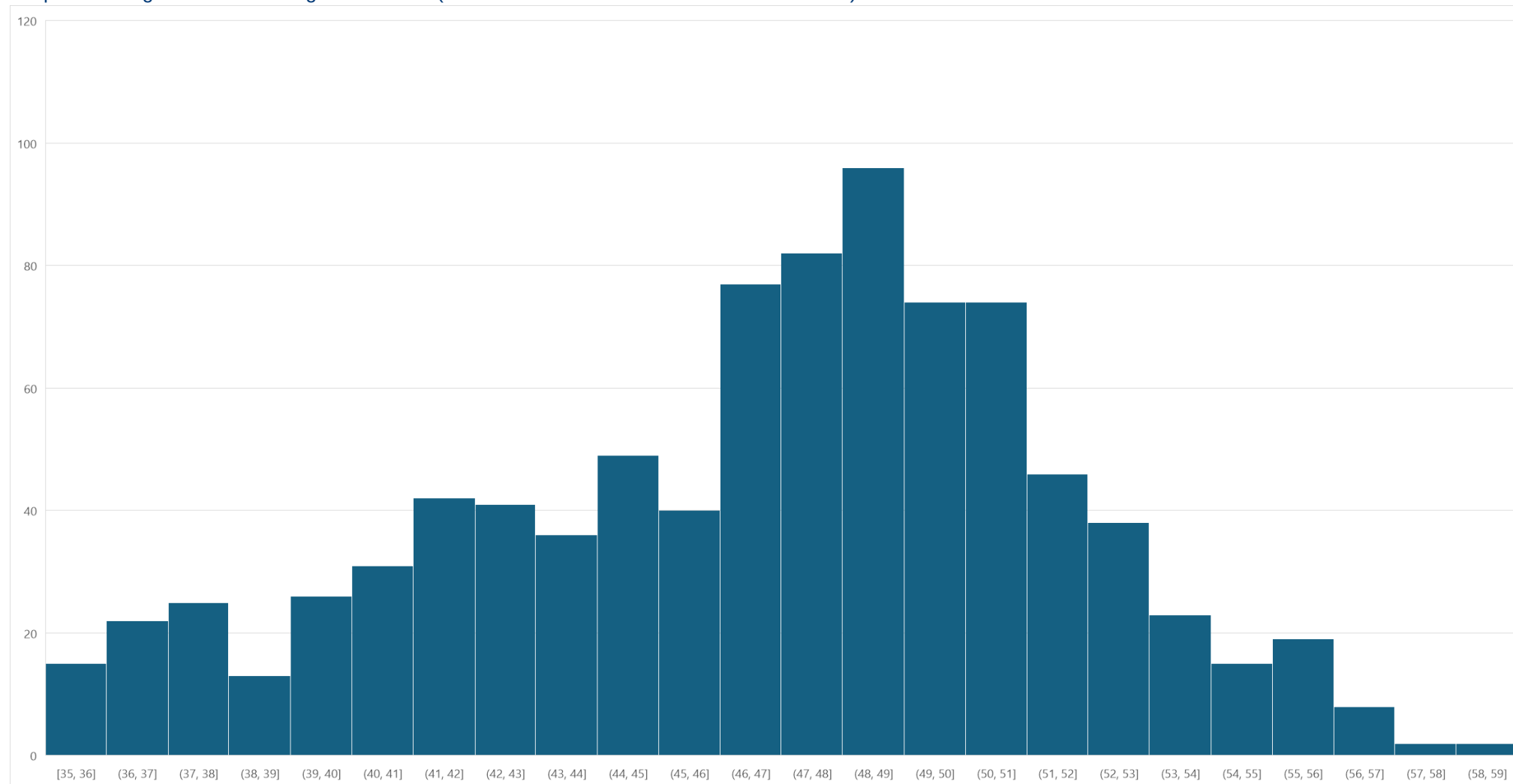
Graph B-11: Night-time L_{A90} Histogram Plot LT1 (Full Measurement Period between 2300-0700)



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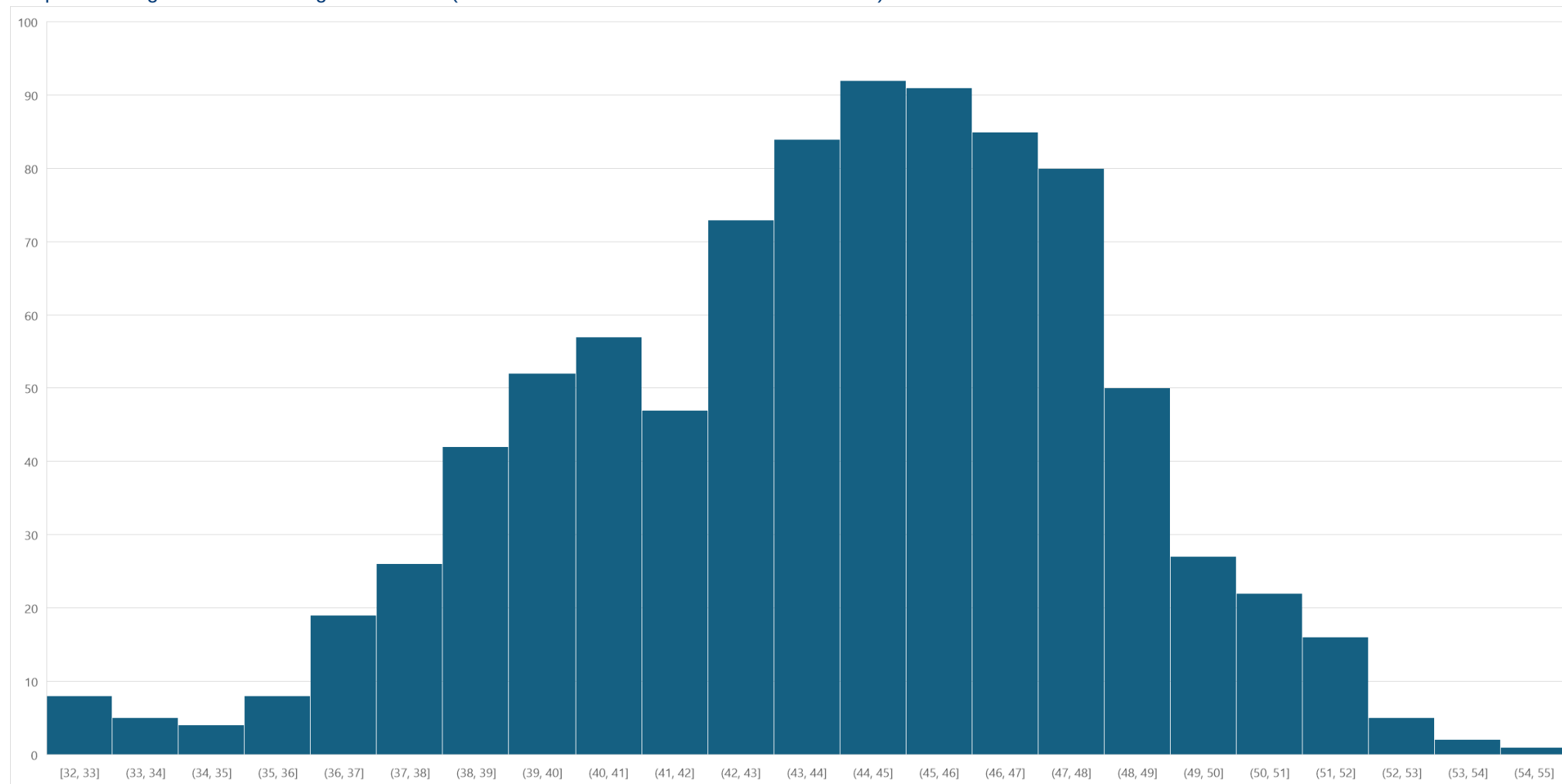
Graph B-12: Night-time L_{A90} Histogram Plot LT2 (Full Measurement Period between 2300-0700)



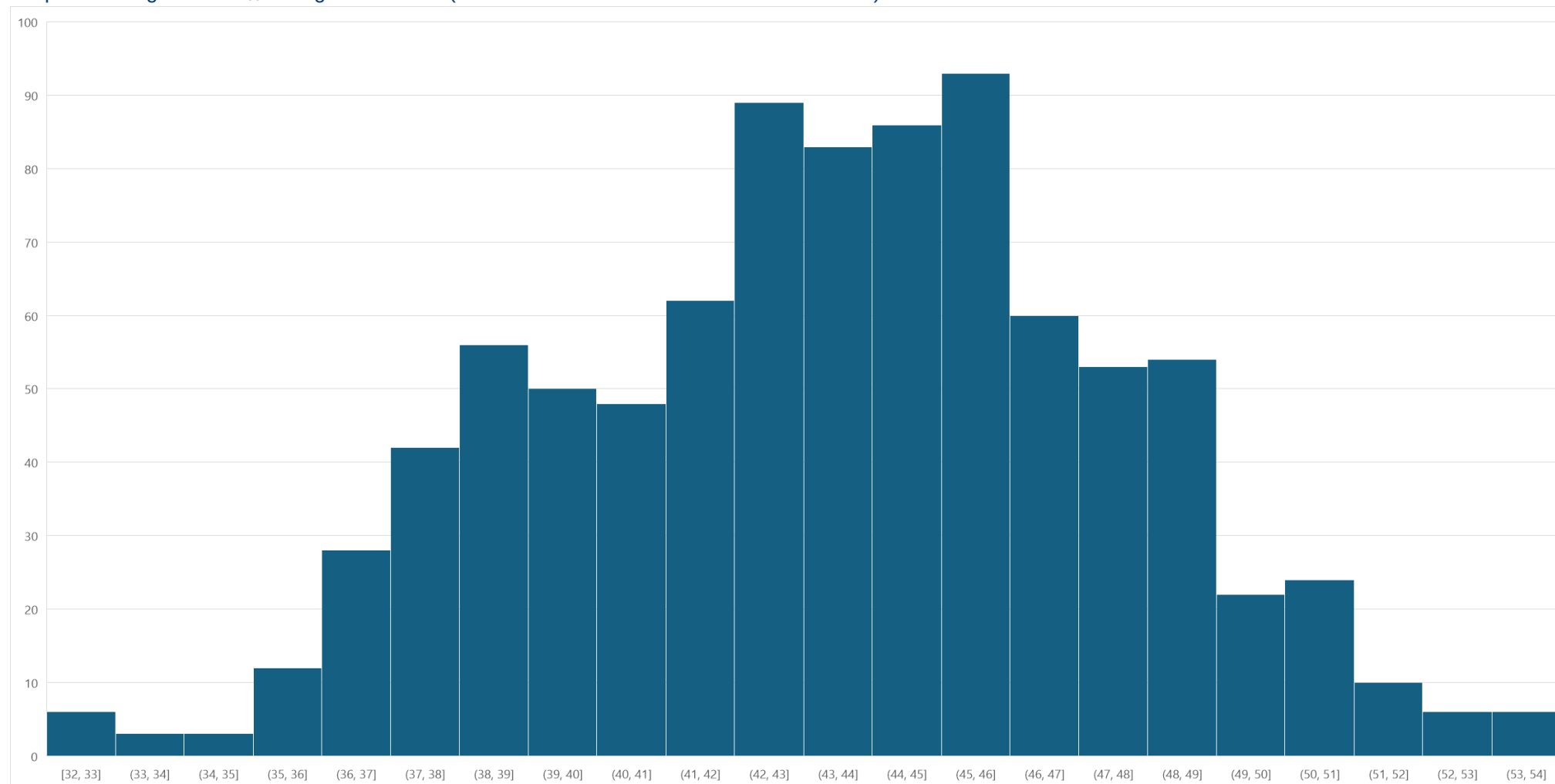
Appendices

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Graph B-13: Night-time L_{A90} Histogram Plot LT3 (Full Measurement Period between 2300-0700)



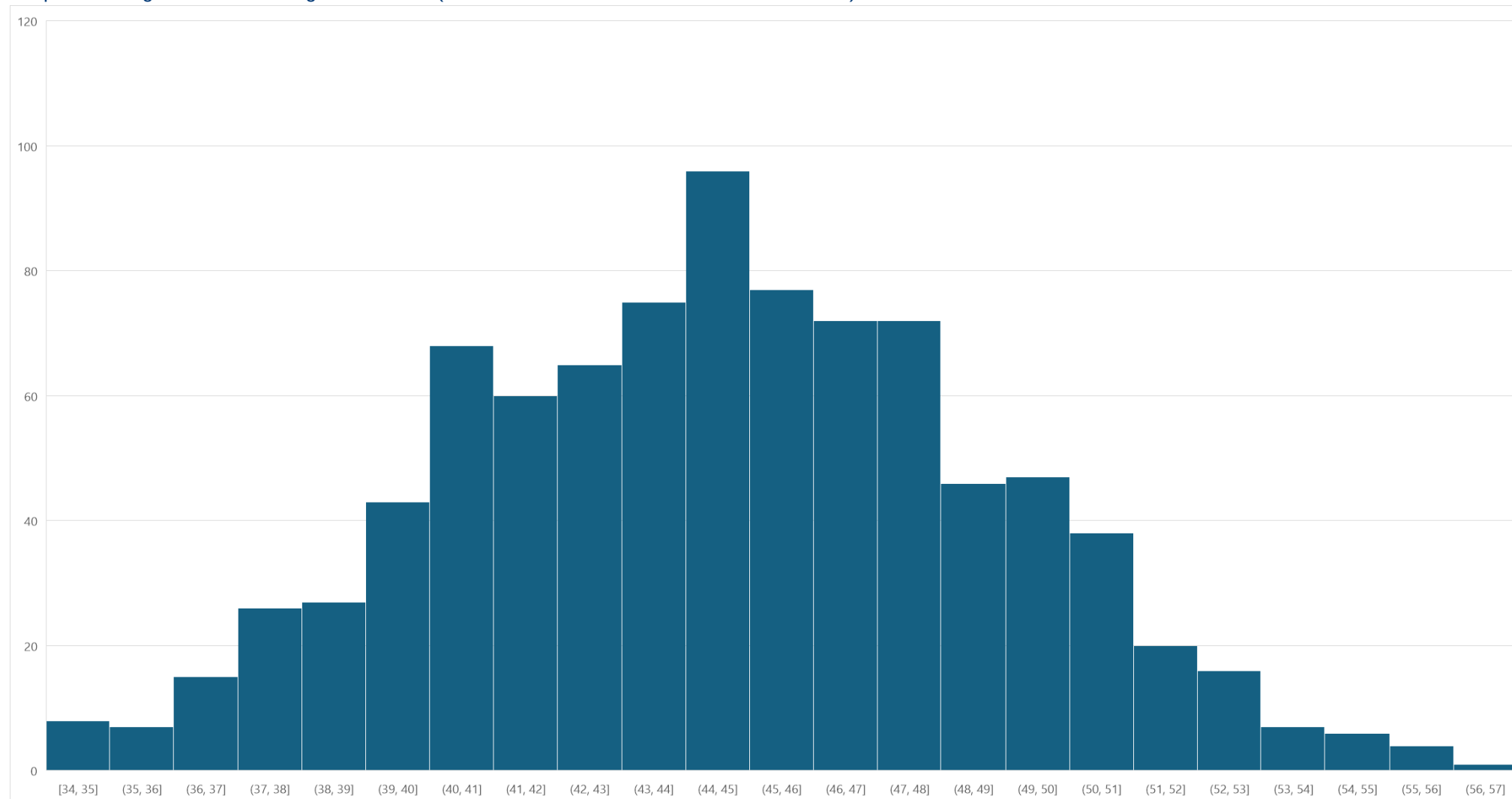
Graph B-14: Night-time L_{A90} Histogram Plot LT4 (Full Measurement Period between 2300-0700)



Appendices

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Graph B-15: Night-time L_{A90} Histogram Plot LT5 (Full Measurement Period between 2300-0700)



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