

## **NOISE IMPACT ASSESSMENT**

### **NEW SUBSTATION, UPPER MEDLOCK STREET, HULME**

REPORT NO. J004827-7737-SH-01

27<sup>TH</sup> MARCH 2024

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## Document Control Sheet

| Details of Assessment |                                                                       |
|-----------------------|-----------------------------------------------------------------------|
| Client                | Electricity North West                                                |
| Document Title        | Noise Impact Assessment – New Substation, Upper Medlock Street, Hulme |
| Report Reference      | J004827-7737-SH-01                                                    |

| Client Address:                                                     | Company Address:                                                |
|---------------------------------------------------------------------|-----------------------------------------------------------------|
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| Issue | Date       | Author      | Remark        | Status |
|-------|------------|-------------|---------------|--------|
| 01    | 27/03/2024 | Sky Hawkins | Initial Issue |        |

|             | Name                                  | Position             |
|-------------|---------------------------------------|----------------------|
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*This report has been prepared based upon a scope of works and associated resources agreed between the client and Philip Dunbavin Acoustics Ltd (PDA). This report has been prepared with all reasonable skill, care and diligence and has been based upon the interpretation of data collected. This has been accepted in good faith as being accurate and valid at the time of the collection. This report has been based solely on the specific design assumptions and criteria stated herein.*



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## 1.0 INTRODUCTION

At the request of Electricity North West, PDA has carried out a noise impact assessment for the proposed installation of two new transformers and an associated switch house on the land directly to the west of Upper Medlock Street in Hulme.

This report is intended to summarise our findings of the likely impact of the proposed development on neighbouring residences, so as to give guidance with respect to demonstrating compliance with the principles of the Noise Policy Statement for England and associated planning constraints.

### 1.1 Description of Site

The proposed site is currently occupied by vegetation. It is bordered by Upper Medlock Street to the east, Birchall Way (which itself overlooks the A5103) to the West and Bonsall Street to the North. A map of the proposed site location, the measurement location established by PDA Ltd and it's surroundings is shown in Figure 1.

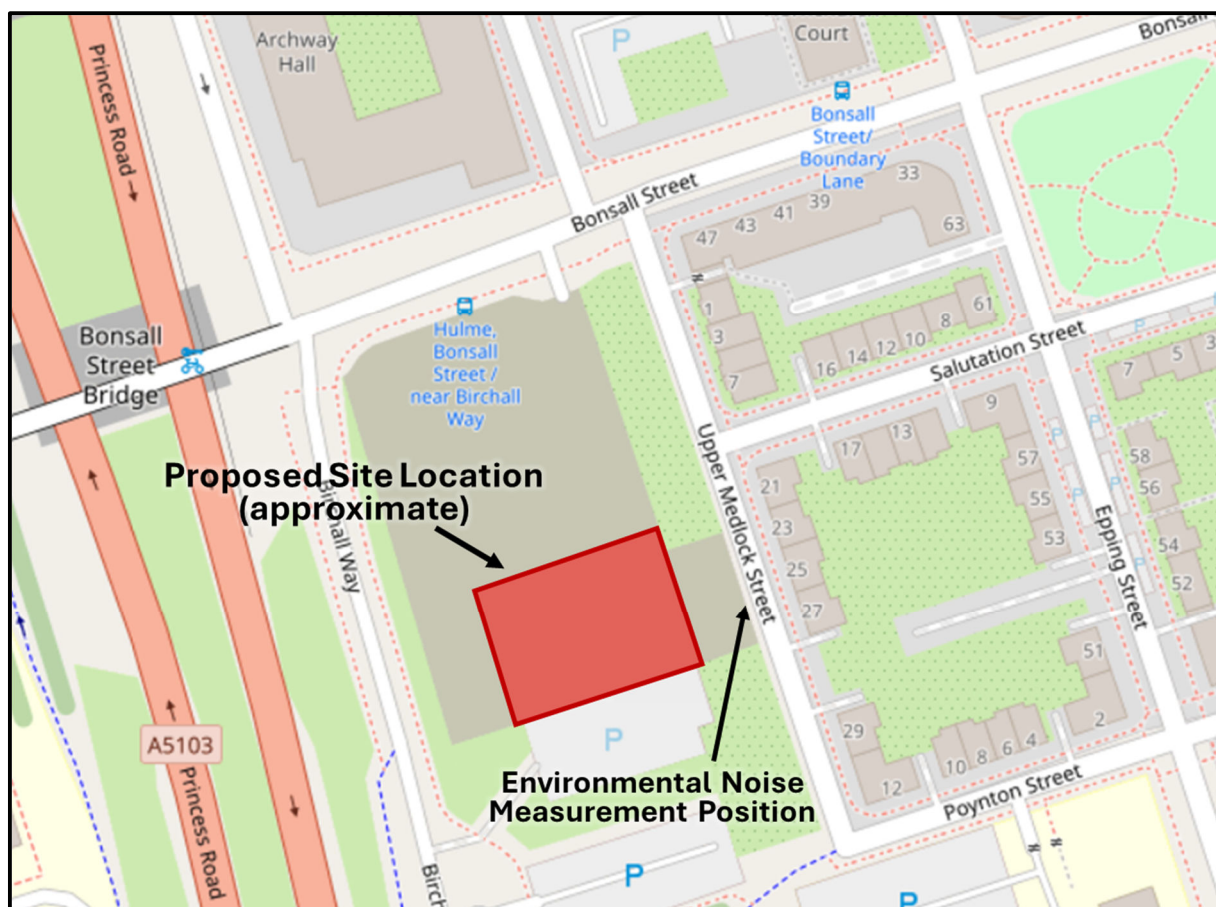


Figure 1 - Proposed Site Location, Measurement Location and Surroundings

## 2.0 ASSESSMENT CRITERIA

In our assessment, we have referred to the National Planning Policy Framework and its associated planning practice guidance in order to gauge the overall planning constraints associated with the proposed site. We have assessed the noise egress from the site with reference to the guidance given by BS 4142:2014 + A1:2019, which establishes a methodology for rating and assessing industrial and commercial noise. The details of these references are given in this section.

### 2.1 National Planning Policy Framework

National Planning Policy is guided by the National Planning Policy Framework (NPPF) updated in September 2023. With regard to Noise the Framework states the following;

*Planning policies and decisions should contribute to and enhance the natural and local environment by:*

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

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

- *mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- *identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.*

The terms 'significant adverse impact' and 'adverse impact' are defined in the explanatory notes of the 'Noise Policy Statement for England (NPSE)' which states;

*There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation. They are:*

*NOEL – No Observed Effect Level*

*This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.*

*LOAEL – Lowest Observed Adverse Effect Level*

*This is the level above which adverse effects on health and quality of life can be detected.*

*Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed adverse effect level.*

*SOAEL – Significant Observed Adverse Effect Level*

*This is the level above which significant adverse effects on health and quality of life occur.*

The notes also offer an explanation of the term 'adverse impacts' as follows;

*... refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of*

*sustainable development (paragraph 1.8). This does not mean that such adverse effects cannot occur.*

Although no specific noise limits for LOAEL and SOAEL have been defined, in 2014 the UK Government published a planning practice guidance document for noise which indicates where these limits fall with relation to the perception of noise. A summary is reproduced in Section 2.2 below, and the full document is published at <https://www.gov.uk/guidance/noise--2>. It is considered that guidance from other acoustic standards may be employed to determine suitable levels within the overall principal of the National Planning Policy Framework.

The National Planning Policy Framework also states:

*Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.*

*The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.*

## 2.2 Planning Practice Guidance – Noise

In March 2014 (updated July 2019) the UK Government published further guidance on the assessment of noise for planning purposes in the form of the on-line publication, Planning Practice Guidance on noise (<http://www.gov.uk/guidance/noise--2>). This document offers further guidance on the typical levels which constitute the NOEL, LOAEL and SOAEL. The relevant section is reproduced in the table below;

Table 1. Planning Practice Noise Level Guidance

| Response                             | Examples of Outcomes                                                                                                                                                                                                                   | Increasing Effect Level    | Action                           |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------|
| No Observed Effect Level             |                                                                                                                                                                                                                                        |                            |                                  |
| <b>Not present</b>                   | No Effect                                                                                                                                                                                                                              | No Observed Effect         | No specific measures required    |
| No Observed Adverse Effect Level     |                                                                                                                                                                                                                                        |                            |                                  |
| <b>Present and not intrusive</b>     | Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life. | No Observed Adverse Effect | No specific measures required    |
| Lowest Observed Adverse Effect Level |                                                                                                                                                                                                                                        |                            |                                  |
| <b>Present and intrusive</b>         | Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close             | Observed Adverse Effect    | Mitigate and reduce to a minimum |

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |         |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------|
|                                           | windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.                                                                                                                                                                                                                                                                     |                                     |         |
| Significant Observed Adverse Effect Level |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |         |
| <b>Present and disruptive</b>             | The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area. | Significant Observed Adverse Effect | Avoid   |
| <b>Present and very disruptive</b>        | Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory                                                                                                                                                                                        | Unacceptable Adverse Effect         | Prevent |

It is notable from the above planning guidance that development should not normally be permitted above Significant Observed Adverse Effect Levels, and should aim to minimise Other Adverse Effect Levels (below SOAEL but above LOAEL). However, it is clear that noise is permitted to approach and/or exceed the Lowest Observed Adverse Effect Level, providing that noise is mitigated and reduced to a minimum.

### 2.3 BS 4142:2014 + A1:2019

The effect of industrial noise on the nearest noise sensitive residences will be assessed in accordance with BS4142:2014+A1:2019 – ‘Methods for rating and assessing industrial and commercial sound’. This will include sound break-out from the mechanical services and deliveries to the proposed convenience store.

The standard describes a method of determining the level of sound of a commercial nature, together with procedures for assessing the impact of such a sound outside nearby noise sensitive areas.

The standard may be thought of as a procedure for comparing the sound from commercial sources with background sound levels in the absence of the commercial sound and determining the likely impact of the sound on noise sensitive residences.

In accordance with BS 4142 the background sound level is the typical A-weighted sound pressure level at the assessment position that is exceeded for 90% of a given time interval ( $L_{A90}$ ). The specific sound level is the equivalent continuous ( $L_{Aeq}$ ) sound pressure level at the assessment position produced by the commercial source over a given time interval.

Certain acoustic features can increase the impact over that expected from a simple comparison between the specific sound level and the background level. Where such features are present, these are taken into account by adding corrections to the specific sound level.

This correction is applied based on whether the following features occur, or are expected to be present. The correction values can either be determined subjectively, or by various objective measurement procedures.

- The sound contains a distinguishable, discrete, continuous tone (whine, hiss, screech, hum, etc.). 0 – 6 dB penalty

- The sound contains distinct impulses (bangs, clicks, clatters, or thumps). 0 – 9 dB penalty.
- The sound is irregular enough to attract attention. 0 – 3 dB penalty.
- Where the specific sound features characteristics that are neither tonal nor impulsive, nor intermittent, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.

From the addition of the above penalties where appropriate the rating level is established, this being the value that is compared with the background noise. Note that corrections for impulsivity and tonality may be added arithmetically where both are present and likely to affect perception within the same reference period. However, if any single feature is dominant to the exclusion of the others then it might be appropriate to apply a reduced or even zero correction for the minor characteristics.

According to BS 4142 an initial estimate of the impact is given based on the rating level value as follows:

- a rating level 10 dB(A) or more above the background is an indication of significant adverse impact, depending on the context.
- a rating level 5 dB(A) above the background is an indication of an adverse impact, depending on the context.
- where the rating level does not exceed the background level, this is an indication of the specific sound source having a low impact, depending on the context.

BS4142 indicates that the noise source should be evaluated over the appropriate time interval which is as follows:

- 1h during the day (07:00 – 23:00)
- 15 min during the night (23:00 – 07:00)

The above initial assessment may then be modified depending on the context, to take into account;

- The absolute level of the sound.
- The character and level of the residual sound compared to the character and level of the specific sound.
- The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions, such as:
  - Façade insulation treatment
  - Ventilation and / or cooling that will reduce the need to have windows open so as to provide rapid or purge ventilation; and
  - Acoustic screening

### 3.0 ENVIRONMENTAL NOISE SURVEY

The assessment method of BS 4142:2014+A1:2019 requires an environmental noise survey to be carried out to establish the Background Sound Level at the nearest noise sensitive residences prior to the installation of the new source to be assessed (i.e. prior to the development).

#### 3.1 Survey Times and Dates

In order to determine the existing ambient noise climate in the vicinity of the nearby noise sensitive receivers, a survey was undertaken for a period of approximately 21 hours between 14:00 on Wednesday the 6<sup>th</sup> of March 2024 and 10:45 on Thursday 7<sup>th</sup> of March 2024.

All measurements were made and partially attended by Joe Meadows of PDA Ltd.

#### 3.2 Equipment Used

All measurements were undertaken with an NTi XL2 sound level. The meter is precision grade Class 1 (as per BS EN 61672-1: 2002) for which current calibration certificates are held. The meter was set to A-Weighted and fast response and measured continuously with 15-minute and 1-second time periods. The meter was field calibrated directly before any measurement took place and immediately afterwards and no significant drift was observed.

#### 3.3 Weather Conditions

A summary of the weather conditions during the survey period is given in Table 1 below.

Table 4 - Summary of Weather Conditions

| Temperature | Windspeed | Events                             |
|-------------|-----------|------------------------------------|
| 3 – 12 °c   | 0 – 9 m/s | Fair weather, partial cloud cover. |

The weather conditions were deemed to be suitable for noise measurements, note that the weather data is taken from the nearest Weather Underground station IMANCH115 located approximately 1400m from the site. The average wind speed was 1.1m/s and 2.1m/s for the 6<sup>th</sup> and 7<sup>th</sup> respectively.

#### 3.4 Measurement Positions & Procedure

Measurements were undertaken from a position on locations deemed to be representative of the noise climate in the vicinity of the nearby noise sensitive receivers. The microphone was mounted 1.5m above ground and was fitted with an all-weather windshield for the duration of the survey period. A range of statistical noise indicators was measured, including  $L_{Aeq}$  and  $L_{A90}$ . Measurements were setup to log every 15 -minutes.

Definitions of the above terms are listed below:

$L_{Aeq}$ : The equivalent A-weighted noise level containing the same energy within the measured time period.

$L_{A90}$ : This is a statistical parameter that is equivalent to the noise level that is exceeded 90% of the measurement period.

The measurement location is highlighted in Figure 1.

### 3.5 Measured Noise Results

The measurement results are summarised in Table 2, with the full results included in the appendices.

Table 2 - Measurement Results Summary

| Representative Time Period | Measurement Time                                      | Average Sound Level (dB L <sub>Aeq,15mins</sub> ) | Representative Background Sound Level (dB L <sub>A90,15mins</sub> ) |
|----------------------------|-------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------|
| Daytime Level              | 14:00 - 23:00 (6/3/24), and<br>07:00 – 10:45 (7/3/24) | 58                                                | 51                                                                  |
| Nighttime Level            | 23:00 - 07:00 (7/3/24)                                | 51                                                | 44                                                                  |

### 3.6 Derivation of Background Noise

In accordance with the requirements of BS4142 the determination of background is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during relevant time periods.

Within BS4142 it states the following:

*“8.1.4 The monitoring duration should reflect the range of background sound levels for the period being assessed. In practice, there is no “single” background sound level as this is a fluctuating parameter. However, the background sound level used for the assessment should be representative of the period being assessed.*

*NOTE 1 To obtain a representative background sound level a series of either sequential or disaggregated measurements ought to be carried out for the period(s) of interest, possibly on more than one occasion. A representative level ought to account for the range of background sound levels and ought not automatically to be assumed to be either the minimum or modal value.”*

Within Section 8.1 of BS4142 it also states the following:

*“Among other considerations, diurnal patterns can have a major influence on background sound levels and, for example, the middle of the night can be distinctly different (and potentially of lesser importance) compared to the start or end of the night-time period for sleep purposes.”*

Based on our statistical analysis of the measurement data, we have determined that 51dB and 44dB L<sub>A90,15mins</sub> are the representative background sound levels. The daytime level is the modal value, whereas the night-time value is an average of the modal value of 45 and 44 and 43dB, both of which had only a single incidence less than the modal value.

As the transformer will operate over a 24 hour period our assessment will be dictated by the night-time levels.

## 4.0 PLANT NOISE PROPOGATION ASSESSMENT

In this section, the likely propagation and resultant source noise of the proposed transformers has been assessed.

### 4.1 Description of Noise Sources

It is understood that two 23 MVA transformers are proposed to be installed. We have been provided with two sets of manufacturers test data for a similar transformer as that proposed for the site. As a conservative approach we have assumed the sound power level to be the greater of that reported by the two reports in any given state.

Based on this approach, the manufacturers test data indicates a sound power level of 54.4 dB(A) in normal operation. The transformers are equipped with a cooling unit which, while operational, is understood to emit a sound power level of 85.7 dB(A).

It is understood that in normal operation the transformers are intended to operate in tandem. Under these circumstances, it is understood that the cooling unit is unlikely to be required. However, if one of the transformers fails, it is understood that a single transformer can bear the load usually split between the two transformers, albeit with the cooling unit operating to manage overheating.

We have modelled both operating conditions in this section. As a conservative approach we have also modelled the resulting noise levels from both cooling units operating simultaneously.

### 4.2 Noise Propagation Model

In order to assess the likely impact of the proposed plant items, modelling was carried out using SoundPLAN essential 5.1, which is an environmental noise modelling program. The transformers each were modelled as point sources radiating a sound power level of 37dB(A). For assessment of the cooling system, point sources radiating a sound power level of 63 dB(A) were added. Spectral data was sourced from measurements of comparable units previously carried out by PDA Ltd.

The worst affected residences were found to be the row of houses between 21 and 27 Upper Medlock Street. All values presented are the highest levels measured in our model at these houses. The results of this exercise are shown in Table 3.

Table 3 - Noise Propagation Model results

| Unit Operational State      |                               | Predicted Sound Pressure Level (dB $L_{Aeq,T}$ ) |
|-----------------------------|-------------------------------|--------------------------------------------------|
| Transformer State           | Cooling Unit State            |                                                  |
| Both transformers operating | Neither cooling fan operating | 9                                                |
| East transformer operating  | East cooling fan operating    | 39                                               |
| Both transformers operating | Both cooling fans operating   | 41                                               |

### 4.3 BS 4142 Assessment

Under the worst case scenario of simultaneous operation of both transformers and their associated cooling systems, the night-time Sound Pressure Level at the worst affected receiver is predicted to be 41dB, which is 3dB lower than the night-time background level measured on site. It should be noted however that this figure does not account for any penalties which may be applicable under subjective assessment for BS 4142.

In accordance with BS 4142:2014, *“The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant*



*adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.”*

#### 4.4 Discussion

The National Planning Policy Framework requires that significant adverse impacts due to a new development should be avoided and other adverse impacts should be mitigated and reduced to a minimum. Based upon the above assessment it is concluded that the sound levels arising from the operations of the Proposed Development are likely to be below the level where adverse impacts may occur, and will therefore comply with the requirements of the NPPF.



## 5.0 CONCLUSION

At the request of Electricity North West, PDA has carried out a noise impact assessment for the proposed new substation in Hulme, Manchester.

The proposal is to install two new transformers and an associated switch house on vacant land located on Medlock Street, adjacent to the A5103. The nearest noise sensitive receivers relative to the site are considered to be residential dwellings to the west of the proposed site.

A survey was conducted of the background sound levels at the nearest noise sensitive receivers relative to the proposed substation. Typical daytime background sound levels were found to be  $\geq 51$  dB  $L_{A90,15\text{mins}}$ . Typical night-time background sound levels were found to be  $\geq 44$  dB  $L_{A90,15\text{mins}}$ .

Under a worst case operational scenario, the transformers were predicted to produce a source noise level of 41dB(A) at the façade of the worst affected residence. This level is 3dB below the night-time background level.

BS 4142:2014 states that “*where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.*”. As such, it is unlikely that noise emissions from the proposed development would cause an adverse impact for residents in the vicinity of the proposed development.

The National Planning Policy Framework requires that significant adverse impacts due to a new development should be avoided and other adverse impacts should be mitigated and reduced to a minimum. Based upon the above assessment it is concluded that the sound levels arising from the operations of the proposed transformers are below the level where adverse impacts may occur and will therefore comply with the requirements of the NPPF.

## APPENDIX A - DEFINITION OF ACOUSTIC TERMS

### The decibel

This is the basic unit of noise, denoted dB.

### A Weighting

This is a weighting process which simulates the human ear's different sensitivity at different frequencies. A weighting can be shown two typical ways, 50 dB(A)  $L_{eq}$  or 50 dB  $L_{Aeq}$ . Both mean the same thing. (See below for a definition of  $L_{eq}$ ). The dB(A) level can be regarded as the overall level perceived by human beings.

### $L_{eq}$ and $L_{eq(s)}$

This is the equivalent continuous noise level which contains the same acoustic energy as the actual time-varying sound. In other words it is a kind of average noise level. It is denoted dB  $L_{eq}$  or, for A-weighted figures dB(A)  $L_{eq}$  or dB  $L_{Aeq}$ . It can also be expressed in terms of frequency analysis (see later).  $L_{eq(s)}$  is the sample  $L_{eq}$  level.

### $L_n$

This is the level exceeded for n% of the time. It is denoted dB  $L_n$  or, for A-weighted figures dB(A)  $L_n$  or dB  $L_{An}$ . It can be expressed in terms of frequency analysis (see later).  $L_{90}$  is the level exceeded for 90% of the time and is a measure of the lowest level typically reached.  $L_{10}$  is the level exceeded for 10% of the time and is the highest level typically reached.  $L_{50}$  is the level exceeded for 50% of the time and, mathematically, it is the median.

### $L_{max}$

This is the maximum level reached during a measurement period. The "time constant", or the ability of the equipment to respond to impulses is usually expressed along with it, e.g. "Fast", "Slow", etc. It is denoted dB  $L_{max}$  or, for A-weighted figures dB(A)  $L_{max}$ , dB  $L_{Amax}$ , etc. It can also be expressed in terms of frequency analysis.

### Frequency Analysis

Whereas dB(A) gives a very useful overall figure, it has its limitations in that it cannot be used to model or predict the effect of noise control and mitigation as this nearly always has radically different performance at different frequencies.

Frequency analysis expresses an overall noise level at each frequency or band of frequencies in the audible range. Octave band analysis divides the audible range into 10 bands from 31.5 Hz to 16 kHz and the noise level in each band can be expressed in any form e.g.  $L_{eq}$ ,  $L_{90}$ ,  $L_{max}$  etc. One third octave band analysis uses 30 bands.

Narrow band analysis takes the process to resolutions of less than 1 Hz. This is useful for identifying the existence of tones (whines, hums, etc.) and in pin-pointing the sources.



## APPENDIX B - FULL RESULTS

### Octave Band L<sub>Zeq</sub> Results:

| Date       | Time     | Date       | Time     | 8    | 16   | 31.5 | 63   | 125  | 250  | 500  | 1000 | 2000 | 4000 | 8000 | 16000 |
|------------|----------|------------|----------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 06/03/2024 | 14:00:08 | 06/03/2024 | 14:15:00 | 58.8 | 60   | 61.5 | 62.2 | 55.7 | 52.2 | 50.1 | 52.6 | 46.9 | 44.5 | 42.1 | 49.5  |
| 06/03/2024 | 14:15:00 | 06/03/2024 | 14:30:00 | 54.1 | 58.7 | 62.1 | 62.9 | 55.7 | 50.8 | 49   | 52.3 | 45.7 | 36.2 | 30.5 | 22.2  |
| 06/03/2024 | 14:30:00 | 06/03/2024 | 14:45:00 | 54.7 | 59.3 | 62.3 | 63.2 | 56.9 | 53.2 | 50.8 | 52.5 | 47.1 | 38.2 | 30.2 | 22.3  |
| 06/03/2024 | 14:45:00 | 06/03/2024 | 15:00:00 | 54.9 | 59.3 | 62.3 | 62.7 | 56   | 51.4 | 50.4 | 54.5 | 51.5 | 43.1 | 33.9 | 26.4  |
| 06/03/2024 | 15:00:00 | 06/03/2024 | 15:15:00 | 58.5 | 60   | 61.9 | 62.4 | 57.9 | 54.2 | 51.3 | 53.6 | 49.5 | 43.8 | 33.3 | 26.1  |
| 06/03/2024 | 15:15:00 | 06/03/2024 | 15:30:00 | 56.6 | 60   | 62.6 | 62.2 | 58.9 | 55.4 | 51.8 | 53.6 | 50.3 | 45.6 | 37.3 | 34.4  |
| 06/03/2024 | 15:30:00 | 06/03/2024 | 15:45:00 | 57.4 | 59.5 | 62.9 | 63.5 | 57   | 51.9 | 49.9 | 51.8 | 45.4 | 35.9 | 26.6 | 21    |
| 06/03/2024 | 15:45:00 | 06/03/2024 | 16:00:00 | 57.7 | 61.6 | 65.1 | 64.4 | 56.6 | 52.9 | 51.6 | 52.9 | 47.9 | 48.1 | 35.9 | 36.3  |
| 06/03/2024 | 16:00:00 | 06/03/2024 | 16:15:00 | 56.9 | 59.9 | 63.1 | 61.8 | 54.7 | 50.6 | 48.5 | 51.7 | 46   | 39.7 | 30.2 | 23.1  |
| 06/03/2024 | 16:15:00 | 06/03/2024 | 16:30:00 | 57.1 | 58.7 | 62.6 | 61.6 | 55.1 | 48.4 | 49.2 | 52.9 | 48.8 | 39.3 | 27.4 | 19.5  |
| 06/03/2024 | 16:30:00 | 06/03/2024 | 16:45:00 | 54.9 | 58.6 | 63.7 | 61.9 | 54.2 | 50.1 | 51.2 | 54.6 | 51.2 | 37.3 | 32.6 | 28.1  |
| 06/03/2024 | 16:45:00 | 06/03/2024 | 17:00:00 | 53.5 | 58.2 | 64.5 | 62.6 | 54.3 | 48.4 | 48   | 50.2 | 44   | 42.3 | 35.1 | 21.1  |
| 06/03/2024 | 17:00:00 | 06/03/2024 | 17:15:00 | 54.3 | 58.1 | 64.5 | 61.8 | 55.2 | 50.8 | 48.4 | 48   | 42.8 | 44.7 | 38.7 | 42.2  |
| 06/03/2024 | 17:15:00 | 06/03/2024 | 17:30:00 | 53.7 | 58.1 | 64.7 | 62.3 | 55.5 | 49.7 | 47.9 | 48.9 | 45.6 | 38.8 | 31.9 | 23.1  |
| 06/03/2024 | 17:30:00 | 06/03/2024 | 17:45:00 | 53.5 | 57.4 | 64   | 62.5 | 56.6 | 51.7 | 48.7 | 50.2 | 44.6 | 35.2 | 25.1 | 20.4  |
| 06/03/2024 | 17:45:00 | 06/03/2024 | 18:00:00 | 53.3 | 57   | 61.2 | 60.8 | 54.5 | 48.7 | 47.9 | 51.8 | 45.2 | 33.7 | 29.7 | 20.6  |
| 06/03/2024 | 18:00:00 | 06/03/2024 | 18:15:00 | 53.6 | 57.8 | 60.6 | 61.4 | 56.1 | 49.6 | 48.4 | 52.4 | 45.6 | 30.8 | 22.4 | 19.5  |
| 06/03/2024 | 18:15:00 | 06/03/2024 | 18:30:00 | 53.6 | 59.5 | 61.8 | 62.2 | 57.2 | 51.4 | 49.7 | 53   | 46.7 | 38.2 | 34.4 | 31.7  |
| 06/03/2024 | 18:30:00 | 06/03/2024 | 18:45:00 | 52.9 | 56.6 | 60.5 | 62.1 | 54.8 | 49.2 | 48.3 | 52.5 | 45.7 | 31.8 | 21.3 | 18.4  |
| 06/03/2024 | 18:45:00 | 06/03/2024 | 19:00:00 | 53.3 | 57.3 | 60.2 | 61.2 | 54.1 | 49.3 | 47.2 | 52   | 45.1 | 30.3 | 21.3 | 18.6  |
| 06/03/2024 | 19:00:00 | 06/03/2024 | 19:15:00 | 53   | 56.4 | 60.5 | 63.4 | 58.9 | 54.1 | 48.4 | 51.8 | 45.4 | 33.3 | 23.2 | 19    |
| 06/03/2024 | 19:15:00 | 06/03/2024 | 19:30:00 | 54.5 | 58.5 | 61.2 | 62.1 | 56.2 | 52.4 | 49   | 52.1 | 45.5 | 31.2 | 21.3 | 19.3  |
| 06/03/2024 | 19:30:00 | 06/03/2024 | 19:45:00 | 53.7 | 57.4 | 60   | 61.5 | 54.5 | 50.9 | 47.8 | 51.8 | 45.4 | 33.4 | 24   | 19.4  |
| 06/03/2024 | 19:45:00 | 06/03/2024 | 20:00:00 | 52.8 | 56.4 | 60   | 60.8 | 53.8 | 49.2 | 49.1 | 52.1 | 45.4 | 30.6 | 19.7 | 18.2  |
| 06/03/2024 | 20:00:00 | 06/03/2024 | 20:15:00 | 53.8 | 58   | 60.2 | 60.7 | 53.3 | 49   | 48.3 | 52.1 | 45.9 | 33.1 | 27.9 | 22.4  |
| 06/03/2024 | 20:15:00 | 06/03/2024 | 20:30:00 | 53   | 56.1 | 58.4 | 60.4 | 54.4 | 48.4 | 46.8 | 51.8 | 45.2 | 32.4 | 28.9 | 23.2  |
| 06/03/2024 | 20:30:00 | 06/03/2024 | 20:45:00 | 53.2 | 57.4 | 59.9 | 61.5 | 54.1 | 49   | 48   | 52.4 | 46   | 32.3 | 24.3 | 20.3  |
| 06/03/2024 | 20:45:00 | 06/03/2024 | 21:00:00 | 52.6 | 56.2 | 58.4 | 59.3 | 52.9 | 47.9 | 45.8 | 50.8 | 44.1 | 28.6 | 17.7 | 17.9  |
| 06/03/2024 | 21:00:00 | 06/03/2024 | 21:15:00 | 53.4 | 56.7 | 63.9 | 60.8 | 53.1 | 48.8 | 51.6 | 54.2 | 55.1 | 46   | 35.3 | 24.3  |
| 06/03/2024 | 21:15:00 | 06/03/2024 | 21:30:00 | 53.4 | 56.3 | 59.2 | 60.4 | 53.9 | 49   | 48.3 | 52.2 | 45.8 | 32.8 | 24.3 | 19.8  |
| 06/03/2024 | 21:30:00 | 06/03/2024 | 21:45:00 | 53.6 | 56.2 | 58   | 59.5 | 53   | 48.3 | 47.4 | 52.2 | 46.3 | 32.1 | 19.9 | 18.2  |
| 06/03/2024 | 21:45:00 | 06/03/2024 | 22:00:00 | 55.1 | 55.1 | 57.5 | 59   | 51.9 | 47.7 | 47   | 52   | 45.4 | 29.3 | 17.3 | 17.9  |
| 06/03/2024 | 22:00:00 | 06/03/2024 | 22:15:00 | 54.5 | 55.9 | 60.7 | 60.6 | 53.5 | 47.9 | 46.7 | 50.8 | 44.1 | 29.1 | 19.3 | 18    |



|                     |                     |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 06/03/2024 22:15:00 | 06/03/2024 22:30:00 | 52.9 | 56.6 | 63.4 | 62   | 55.1 | 47.9 | 47.3 | 50.3 | 44.2 | 31.4 | 18.2 | 17.9 |
| 06/03/2024 22:30:00 | 06/03/2024 22:45:00 | 52.6 | 55.1 | 61.3 | 60.7 | 52.8 | 47.5 | 46.5 | 50.6 | 44.8 | 33.2 | 20   | 18.2 |
| 06/03/2024 22:45:00 | 06/03/2024 23:00:00 | 52.7 | 56.3 | 58.9 | 59.8 | 52.4 | 47.7 | 47.2 | 51.1 | 45.6 | 33.4 | 21.1 | 18.8 |
| 06/03/2024 23:00:00 | 06/03/2024 23:15:00 | 52.2 | 54.9 | 57.3 | 58.6 | 51.8 | 46.9 | 46.3 | 50.9 | 44.5 | 29.1 | 16.7 | 17.8 |
| 06/03/2024 23:15:00 | 06/03/2024 23:30:00 | 53.7 | 55.6 | 56.7 | 59.2 | 51.9 | 46.5 | 46   | 51   | 44.7 | 28.7 | 17.3 | 17.9 |
| 06/03/2024 23:30:00 | 06/03/2024 23:45:00 | 52.8 | 55.3 | 56.5 | 58.4 | 51.6 | 47   | 46.2 | 50.6 | 44.3 | 31.6 | 24.5 | 20.4 |
| 06/03/2024 23:45:00 | 07/03/2024 00:00:00 | 53.4 | 56.3 | 55.8 | 57.6 | 51.1 | 46.2 | 45.3 | 49.7 | 43   | 27.6 | 16.6 | 17.8 |
| 07/03/2024 00:00:00 | 07/03/2024 00:15:00 | 52.7 | 54.3 | 55.7 | 59.6 | 50.7 | 47.6 | 47.2 | 51   | 45.7 | 33.7 | 25.2 | 19.8 |
| 07/03/2024 00:15:00 | 07/03/2024 00:30:00 | 52.9 | 53.9 | 54.5 | 57   | 50.2 | 45.4 | 44.1 | 48.7 | 42.2 | 26.9 | 16.4 | 17.8 |
| 07/03/2024 00:30:00 | 07/03/2024 00:45:00 | 52.6 | 55   | 55.1 | 59.6 | 51.5 | 46.6 | 44.8 | 49.1 | 42.9 | 29.6 | 20   | 18.3 |
| 07/03/2024 00:45:00 | 07/03/2024 01:00:00 | 51.7 | 51.7 | 53.6 | 56.3 | 49.2 | 44   | 43.3 | 47.4 | 41   | 26.2 | 16.5 | 17.8 |
| 07/03/2024 01:00:00 | 07/03/2024 01:15:00 | 52.8 | 53.1 | 53.6 | 55.5 | 49.7 | 43.9 | 43.1 | 47.4 | 41   | 25.9 | 16.3 | 17.8 |
| 07/03/2024 01:15:00 | 07/03/2024 01:30:00 | 51   | 54   | 54   | 55.9 | 48.9 | 44.7 | 43.7 | 48.1 | 42.8 | 29.8 | 18.7 | 18   |
| 07/03/2024 01:30:00 | 07/03/2024 01:45:00 | 50.9 | 52.2 | 53.6 | 54.8 | 49.5 | 44.4 | 42.6 | 46.6 | 41.2 | 27.5 | 29.5 | 20.2 |
| 07/03/2024 01:45:00 | 07/03/2024 02:00:00 | 48.9 | 49.8 | 51.2 | 52.9 | 46.8 | 42.3 | 41.3 | 45.6 | 39.2 | 24.9 | 16   | 17.7 |
| 07/03/2024 02:00:00 | 07/03/2024 02:15:00 | 50.2 | 52   | 52.2 | 57.1 | 47.8 | 42.2 | 41.9 | 46.1 | 39.8 | 25.4 | 16   | 17.7 |
| 07/03/2024 02:15:00 | 07/03/2024 02:30:00 | 50.3 | 52   | 53   | 52   | 46.4 | 41.6 | 40.6 | 45   | 38.9 | 25   | 16.1 | 17.7 |
| 07/03/2024 02:30:00 | 07/03/2024 02:45:00 | 49.3 | 53.6 | 56.3 | 54.6 | 48.8 | 45.3 | 43.3 | 46.4 | 40.3 | 29.4 | 21.9 | 18.7 |
| 07/03/2024 02:45:00 | 07/03/2024 03:00:00 | 49.8 | 49.2 | 51.7 | 55.9 | 46.2 | 41.4 | 40.6 | 45.1 | 38.5 | 24.4 | 16.1 | 17.7 |
| 07/03/2024 03:00:00 | 07/03/2024 03:15:00 | 51.8 | 52.8 | 52.1 | 53.6 | 47   | 42.5 | 41.8 | 45.9 | 39.2 | 24.9 | 16   | 17.7 |
| 07/03/2024 03:15:00 | 07/03/2024 03:30:00 | 54.1 | 55.1 | 51.8 | 52.5 | 46.4 | 41.3 | 40.9 | 44.7 | 38.2 | 24.6 | 16.7 | 17.9 |
| 07/03/2024 03:30:00 | 07/03/2024 03:45:00 | 55.9 | 55.8 | 54.3 | 55.4 | 48.3 | 42.7 | 42.2 | 46   | 39.4 | 25.7 | 18.1 | 18.5 |
| 07/03/2024 03:45:00 | 07/03/2024 04:00:00 | 55.7 | 54.3 | 53.8 | 54.5 | 47.9 | 43.9 | 42.4 | 46.2 | 39.9 | 26.3 | 17.7 | 18   |
| 07/03/2024 04:00:00 | 07/03/2024 04:15:00 | 51.8 | 52.1 | 52.8 | 53   | 47.6 | 42.1 | 41.4 | 45.8 | 39.6 | 35   | 21.8 | 17.8 |
| 07/03/2024 04:15:00 | 07/03/2024 04:30:00 | 51.1 | 54   | 54.9 | 54.1 | 48.1 | 43.1 | 42.7 | 46.9 | 40.9 | 37.6 | 26.7 | 18   |
| 07/03/2024 04:30:00 | 07/03/2024 04:45:00 | 51.9 | 56   | 55.2 | 56.8 | 48.7 | 43   | 42.8 | 46.6 | 41.9 | 38.5 | 29.2 | 18.2 |
| 07/03/2024 04:45:00 | 07/03/2024 05:00:00 | 50.9 | 54.6 | 55.2 | 57.8 | 49.2 | 43.8 | 43.4 | 47.4 | 42.6 | 36.7 | 32.1 | 18   |
| 07/03/2024 05:00:00 | 07/03/2024 05:15:00 | 51.4 | 55   | 55.4 | 57   | 49.1 | 44.2 | 43.1 | 47   | 41.9 | 35.8 | 23.9 | 17.8 |
| 07/03/2024 05:15:00 | 07/03/2024 05:30:00 | 51   | 53.4 | 54.1 | 56.3 | 49   | 43.7 | 43.5 | 48.3 | 42.5 | 37.2 | 31.6 | 18   |
| 07/03/2024 05:30:00 | 07/03/2024 05:45:00 | 52   | 55.9 | 56.1 | 57.3 | 50.9 | 45.6 | 45   | 49.5 | 43.1 | 35.5 | 24.7 | 17.8 |
| 07/03/2024 05:45:00 | 07/03/2024 06:00:00 | 52.9 | 56.3 | 56.2 | 58.3 | 51.2 | 45.9 | 45.9 | 50.6 | 44.2 | 35.6 | 29.3 | 17.9 |
| 07/03/2024 06:00:00 | 07/03/2024 06:15:00 | 54.1 | 59   | 58   | 59.5 | 53.2 | 48.8 | 47.1 | 50.7 | 43.9 | 36.2 | 31.5 | 18   |
| 07/03/2024 06:15:00 | 07/03/2024 06:30:00 | 53.6 | 57.7 | 58.2 | 60.4 | 53   | 49.7 | 48.4 | 51.7 | 45.4 | 33.1 | 22.9 | 17.9 |
| 07/03/2024 06:30:00 | 07/03/2024 06:45:00 | 55.4 | 58.8 | 63.4 | 62.1 | 56.4 | 52   | 49.5 | 53.2 | 47   | 39.7 | 38.5 | 22.6 |
| 07/03/2024 06:45:00 | 07/03/2024 07:00:00 | 54.9 | 58.4 | 64.2 | 62.5 | 55.2 | 49.9 | 48.9 | 53.1 | 46.7 | 39   | 34.5 | 18.7 |
| 07/03/2024 07:00:00 | 07/03/2024 07:15:00 | 55.1 | 59.6 | 64   | 63.5 | 57.3 | 53.3 | 50.7 | 53.7 | 48.1 | 44.1 | 40.9 | 33.9 |
| 07/03/2024 07:15:00 | 07/03/2024 07:30:00 | 55.5 | 58.9 | 62.4 | 62.8 | 55.6 | 50.7 | 49   | 53   | 46.5 | 35.5 | 31.1 | 19.2 |
| 07/03/2024 07:30:00 | 07/03/2024 07:45:00 | 55.7 | 60.4 | 63.3 | 63.8 | 56.1 | 52.3 | 50.1 | 52.7 | 46.4 | 37.5 | 35   | 20.5 |



|            |          |            |          |      |      |      |      |      |      |      |      |      |      |      |      |
|------------|----------|------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|
| 07/03/2024 | 07:45:00 | 07/03/2024 | 08:00:00 | 57.2 | 58.6 | 62.5 | 62.9 | 58.3 | 52.2 | 50   | 53   | 47.4 | 38.5 | 31.9 | 20.8 |
| 07/03/2024 | 08:00:00 | 07/03/2024 | 08:15:00 | 56.1 | 62.1 | 64.6 | 66.7 | 65.9 | 59   | 54.7 | 56.3 | 54   | 49.3 | 44.5 | 40.5 |
| 07/03/2024 | 08:15:00 | 07/03/2024 | 08:30:00 | 55.6 | 59.7 | 64.4 | 64.9 | 56.5 | 53   | 51.9 | 54.7 | 50   | 41.3 | 32.6 | 26   |
| 07/03/2024 | 08:30:00 | 07/03/2024 | 08:45:00 | 56.3 | 59.4 | 62.1 | 63.3 | 56.1 | 51.8 | 50.2 | 53.8 | 48.2 | 38.9 | 33.2 | 20.6 |
| 07/03/2024 | 08:45:00 | 07/03/2024 | 09:00:00 | 56   | 59   | 61.6 | 62.6 | 56   | 51   | 49   | 52.7 | 46.6 | 43.5 | 36.7 | 23   |
| 07/03/2024 | 09:00:00 | 07/03/2024 | 09:15:00 | 58   | 61.1 | 62.2 | 63.8 | 57.3 | 54.1 | 52.9 | 54.3 | 49.5 | 46.2 | 39.4 | 27.5 |
| 07/03/2024 | 09:15:00 | 07/03/2024 | 09:30:00 | 57   | 59.4 | 61.9 | 62.6 | 55.9 | 52.5 | 50.7 | 52.4 | 46.1 | 38.8 | 31.6 | 21.3 |
| 07/03/2024 | 09:30:00 | 07/03/2024 | 09:45:00 | 58.9 | 60   | 62.8 | 61.9 | 56.1 | 52.5 | 50.6 | 53   | 48.4 | 37.9 | 31.2 | 21   |
| 07/03/2024 | 09:45:00 | 07/03/2024 | 10:00:00 | 59.2 | 61.2 | 61.4 | 61.9 | 55.7 | 51.8 | 49.5 | 52.4 | 45.8 | 34.7 | 28   | 20   |
| 07/03/2024 | 10:00:00 | 07/03/2024 | 10:15:00 | 62.5 | 61.5 | 63.3 | 61.5 | 55   | 50.6 | 48.2 | 50.8 | 44.7 | 39.4 | 32.1 | 22.1 |
| 07/03/2024 | 10:15:00 | 07/03/2024 | 10:30:00 | 59.2 | 60.3 | 63   | 62.9 | 55   | 51   | 48.7 | 50.4 | 47.2 | 43   | 36.8 | 22.9 |
| 07/03/2024 | 10:30:00 | 07/03/2024 | 10:45:00 | 56.6 | 59.3 | 60.6 | 62.1 | 56.2 | 52.2 | 49.4 | 52.4 | 47.1 | 44.3 | 36.3 | 24.7 |
| 07/03/2024 | 10:45:00 | 07/03/2024 | 10:56:38 | 61.7 | 60.9 | 61.7 | 62.2 | 56.2 | 53.2 | 50.1 | 52.7 | 47.2 | 39.4 | 33.7 | 28.6 |

### Octave Band LZF90 Results

| Date       | Time     | Date       | Time     |    | 8  | 16 | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | 16000 |
|------------|----------|------------|----------|----|----|----|------|----|-----|-----|-----|------|------|------|------|-------|
| 06/03/2024 | 14:00:08 | 06/03/2024 | 14:15:00 | 49 | 54 | 57 | 57   | 50 | 46  | 46  | 49  | 42   | 27   | 16   | 17   |       |
| 06/03/2024 | 14:15:00 | 06/03/2024 | 14:30:00 | 48 | 54 | 57 | 56   | 50 | 46  | 45  | 48  | 41   | 27   | 16   | 17   |       |
| 06/03/2024 | 14:30:00 | 06/03/2024 | 14:45:00 | 48 | 53 | 57 | 57   | 50 | 46  | 45  | 48  | 41   | 27   | 16   | 17   |       |
| 06/03/2024 | 14:45:00 | 06/03/2024 | 15:00:00 | 48 | 53 | 58 | 57   | 51 | 46  | 46  | 48  | 41   | 26   | 16   | 17   |       |
| 06/03/2024 | 15:00:00 | 06/03/2024 | 15:15:00 | 49 | 53 | 57 | 57   | 51 | 47  | 46  | 49  | 42   | 30   | 18   | 17   |       |
| 06/03/2024 | 15:15:00 | 06/03/2024 | 15:30:00 | 49 | 55 | 60 | 58   | 57 | 53  | 49  | 51  | 48   | 42   | 30   | 20   |       |
| 06/03/2024 | 15:30:00 | 06/03/2024 | 15:45:00 | 49 | 53 | 59 | 58   | 51 | 46  | 46  | 48  | 41   | 26   | 16   | 17   |       |
| 06/03/2024 | 15:45:00 | 06/03/2024 | 16:00:00 | 49 | 53 | 58 | 57   | 51 | 47  | 45  | 49  | 42   | 29   | 18   | 17   |       |
| 06/03/2024 | 16:00:00 | 06/03/2024 | 16:15:00 | 49 | 53 | 59 | 57   | 50 | 45  | 45  | 48  | 41   | 26   | 16   | 17   |       |
| 06/03/2024 | 16:15:00 | 06/03/2024 | 16:30:00 | 48 | 53 | 59 | 57   | 50 | 45  | 44  | 47  | 40   | 27   | 16   | 17   |       |
| 06/03/2024 | 16:30:00 | 06/03/2024 | 16:45:00 | 48 | 53 | 60 | 58   | 51 | 45  | 46  | 48  | 41   | 27   | 17   | 17   |       |
| 06/03/2024 | 16:45:00 | 06/03/2024 | 17:00:00 | 47 | 53 | 61 | 58   | 51 | 44  | 44  | 45  | 38   | 25   | 16   | 17   |       |
| 06/03/2024 | 17:00:00 | 06/03/2024 | 17:15:00 | 48 | 53 | 61 | 58   | 51 | 44  | 43  | 44  | 37   | 24   | 16   | 17   |       |
| 06/03/2024 | 17:15:00 | 06/03/2024 | 17:30:00 | 47 | 53 | 61 | 59   | 51 | 44  | 43  | 45  | 38   | 24   | 16   | 17   |       |
| 06/03/2024 | 17:30:00 | 06/03/2024 | 17:45:00 | 47 | 53 | 60 | 59   | 52 | 45  | 44  | 46  | 39   | 25   | 16   | 17   |       |
| 06/03/2024 | 17:45:00 | 06/03/2024 | 18:00:00 | 47 | 51 | 57 | 56   | 50 | 45  | 44  | 47  | 40   | 25   | 16   | 17   |       |
| 06/03/2024 | 18:00:00 | 06/03/2024 | 18:15:00 | 47 | 51 | 57 | 56   | 50 | 45  | 45  | 49  | 42   | 26   | 16   | 17   |       |
| 06/03/2024 | 18:15:00 | 06/03/2024 | 18:30:00 | 47 | 51 | 57 | 57   | 50 | 45  | 46  | 50  | 43   | 27   | 16   | 17   |       |
| 06/03/2024 | 18:30:00 | 06/03/2024 | 18:45:00 | 47 | 51 | 56 | 56   | 50 | 45  | 45  | 49  | 42   | 26   | 16   | 17   |       |
| 06/03/2024 | 18:45:00 | 06/03/2024 | 19:00:00 | 47 | 51 | 56 | 57   | 50 | 46  | 45  | 49  | 42   | 26   | 15   | 17   |       |



|                     |                     |    |    |    |    |    |    |    |    |    |    |    |    |
|---------------------|---------------------|----|----|----|----|----|----|----|----|----|----|----|----|
| 06/03/2024 19:00:00 | 06/03/2024 19:15:00 | 47 | 51 | 56 | 56 | 50 | 45 | 44 | 48 | 41 | 26 | 15 | 17 |
| 06/03/2024 19:15:00 | 06/03/2024 19:30:00 | 47 | 52 | 57 | 57 | 51 | 46 | 45 | 49 | 42 | 25 | 15 | 17 |
| 06/03/2024 19:30:00 | 06/03/2024 19:45:00 | 47 | 51 | 55 | 56 | 50 | 45 | 44 | 48 | 42 | 26 | 15 | 17 |
| 06/03/2024 19:45:00 | 06/03/2024 20:00:00 | 47 | 50 | 55 | 56 | 50 | 46 | 44 | 49 | 42 | 27 | 16 | 17 |
| 06/03/2024 20:00:00 | 06/03/2024 20:15:00 | 47 | 50 | 54 | 55 | 49 | 45 | 44 | 49 | 43 | 27 | 16 | 17 |
| 06/03/2024 20:15:00 | 06/03/2024 20:30:00 | 47 | 50 | 54 | 56 | 50 | 45 | 44 | 49 | 42 | 27 | 16 | 17 |
| 06/03/2024 20:30:00 | 06/03/2024 20:45:00 | 47 | 50 | 55 | 56 | 49 | 45 | 44 | 48 | 42 | 26 | 16 | 17 |
| 06/03/2024 20:45:00 | 06/03/2024 21:00:00 | 46 | 49 | 54 | 55 | 49 | 44 | 43 | 47 | 40 | 25 | 15 | 17 |
| 06/03/2024 21:00:00 | 06/03/2024 21:15:00 | 46 | 50 | 54 | 55 | 49 | 44 | 44 | 48 | 41 | 26 | 15 | 17 |
| 06/03/2024 21:15:00 | 06/03/2024 21:30:00 | 47 | 50 | 54 | 55 | 49 | 45 | 45 | 49 | 42 | 26 | 16 | 17 |
| 06/03/2024 21:30:00 | 06/03/2024 21:45:00 | 46 | 49 | 54 | 55 | 49 | 45 | 44 | 48 | 42 | 26 | 16 | 17 |
| 06/03/2024 21:45:00 | 06/03/2024 22:00:00 | 47 | 49 | 54 | 55 | 49 | 45 | 45 | 49 | 42 | 26 | 16 | 17 |
| 06/03/2024 22:00:00 | 06/03/2024 22:15:00 | 47 | 50 | 56 | 56 | 49 | 44 | 44 | 47 | 40 | 24 | 16 | 17 |
| 06/03/2024 22:15:00 | 06/03/2024 22:30:00 | 47 | 51 | 59 | 57 | 50 | 44 | 43 | 45 | 38 | 24 | 16 | 17 |
| 06/03/2024 22:30:00 | 06/03/2024 22:45:00 | 46 | 50 | 55 | 54 | 48 | 44 | 43 | 46 | 40 | 25 | 15 | 17 |
| 06/03/2024 22:45:00 | 06/03/2024 23:00:00 | 46 | 49 | 54 | 55 | 48 | 44 | 43 | 47 | 40 | 25 | 15 | 17 |
| 06/03/2024 23:00:00 | 06/03/2024 23:15:00 | 46 | 48 | 53 | 54 | 48 | 43 | 43 | 47 | 40 | 24 | 15 | 17 |
| 06/03/2024 23:15:00 | 06/03/2024 23:30:00 | 46 | 48 | 52 | 53 | 47 | 43 | 43 | 47 | 40 | 24 | 15 | 17 |
| 06/03/2024 23:30:00 | 06/03/2024 23:45:00 | 46 | 48 | 52 | 53 | 47 | 43 | 43 | 47 | 40 | 25 | 15 | 17 |
| 06/03/2024 23:45:00 | 07/03/2024 00:00:00 | 46 | 48 | 51 | 52 | 46 | 42 | 42 | 46 | 39 | 23 | 15 | 17 |
| 07/03/2024 00:00:00 | 07/03/2024 00:15:00 | 46 | 48 | 51 | 51 | 46 | 42 | 42 | 46 | 39 | 23 | 15 | 17 |
| 07/03/2024 00:15:00 | 07/03/2024 00:30:00 | 45 | 46 | 50 | 51 | 46 | 42 | 41 | 45 | 38 | 23 | 15 | 17 |
| 07/03/2024 00:30:00 | 07/03/2024 00:45:00 | 45 | 46 | 49 | 51 | 45 | 41 | 41 | 44 | 37 | 22 | 15 | 17 |
| 07/03/2024 00:45:00 | 07/03/2024 01:00:00 | 45 | 45 | 49 | 50 | 44 | 40 | 40 | 43 | 36 | 22 | 15 | 17 |
| 07/03/2024 01:00:00 | 07/03/2024 01:15:00 | 45 | 46 | 49 | 50 | 44 | 40 | 40 | 42 | 35 | 21 | 15 | 17 |
| 07/03/2024 01:15:00 | 07/03/2024 01:30:00 | 44 | 45 | 48 | 49 | 43 | 39 | 39 | 42 | 35 | 22 | 15 | 17 |
| 07/03/2024 01:30:00 | 07/03/2024 01:45:00 | 44 | 44 | 48 | 49 | 43 | 39 | 39 | 42 | 35 | 22 | 15 | 17 |
| 07/03/2024 01:45:00 | 07/03/2024 02:00:00 | 43 | 44 | 47 | 48 | 43 | 39 | 38 | 41 | 34 | 21 | 15 | 17 |
| 07/03/2024 02:00:00 | 07/03/2024 02:15:00 | 43 | 44 | 47 | 48 | 43 | 38 | 38 | 41 | 34 | 22 | 15 | 17 |
| 07/03/2024 02:15:00 | 07/03/2024 02:30:00 | 44 | 44 | 47 | 47 | 42 | 39 | 38 | 41 | 34 | 21 | 15 | 17 |
| 07/03/2024 02:30:00 | 07/03/2024 02:45:00 | 43 | 44 | 47 | 48 | 42 | 38 | 38 | 40 | 33 | 21 | 15 | 17 |
| 07/03/2024 02:45:00 | 07/03/2024 03:00:00 | 43 | 44 | 46 | 47 | 42 | 38 | 38 | 40 | 33 | 21 | 15 | 17 |
| 07/03/2024 03:00:00 | 07/03/2024 03:15:00 | 44 | 44 | 46 | 47 | 42 | 38 | 38 | 40 | 33 | 21 | 15 | 17 |
| 07/03/2024 03:15:00 | 07/03/2024 03:30:00 | 44 | 45 | 46 | 47 | 42 | 38 | 38 | 41 | 33 | 21 | 15 | 17 |
| 07/03/2024 03:30:00 | 07/03/2024 03:45:00 | 45 | 46 | 47 | 48 | 43 | 39 | 38 | 40 | 33 | 21 | 15 | 17 |
| 07/03/2024 03:45:00 | 07/03/2024 04:00:00 | 46 | 46 | 47 | 48 | 42 | 38 | 38 | 41 | 34 | 21 | 15 | 17 |
| 07/03/2024 04:00:00 | 07/03/2024 04:15:00 | 44 | 45 | 47 | 48 | 42 | 38 | 38 | 41 | 34 | 22 | 15 | 17 |
| 07/03/2024 04:15:00 | 07/03/2024 04:30:00 | 44 | 46 | 49 | 49 | 44 | 39 | 39 | 41 | 34 | 23 | 15 | 17 |



|            |          |            |          |    |    |    |    |    |    |    |    |    |    |    |    |
|------------|----------|------------|----------|----|----|----|----|----|----|----|----|----|----|----|----|
| 07/03/2024 | 04:30:00 | 07/03/2024 | 04:45:00 | 44 | 46 | 49 | 50 | 44 | 39 | 40 | 41 | 36 | 23 | 15 | 17 |
| 07/03/2024 | 04:45:00 | 07/03/2024 | 05:00:00 | 44 | 46 | 49 | 50 | 44 | 40 | 40 | 42 | 36 | 25 | 15 | 17 |
| 07/03/2024 | 05:00:00 | 07/03/2024 | 05:15:00 | 45 | 48 | 49 | 51 | 44 | 40 | 40 | 42 | 35 | 23 | 15 | 17 |
| 07/03/2024 | 05:15:00 | 07/03/2024 | 05:30:00 | 45 | 47 | 49 | 51 | 44 | 40 | 40 | 42 | 35 | 23 | 15 | 17 |
| 07/03/2024 | 05:30:00 | 07/03/2024 | 05:45:00 | 46 | 48 | 51 | 52 | 46 | 41 | 42 | 45 | 38 | 24 | 15 | 17 |
| 07/03/2024 | 05:45:00 | 07/03/2024 | 06:00:00 | 47 | 49 | 52 | 53 | 46 | 42 | 43 | 46 | 39 | 25 | 15 | 17 |
| 07/03/2024 | 06:00:00 | 07/03/2024 | 06:15:00 | 47 | 51 | 53 | 54 | 48 | 43 | 44 | 47 | 40 | 25 | 15 | 17 |
| 07/03/2024 | 06:15:00 | 07/03/2024 | 06:30:00 | 48 | 51 | 53 | 54 | 48 | 43 | 44 | 48 | 41 | 26 | 16 | 17 |
| 07/03/2024 | 06:30:00 | 07/03/2024 | 06:45:00 | 49 | 53 | 59 | 57 | 51 | 46 | 46 | 50 | 43 | 29 | 17 | 17 |
| 07/03/2024 | 06:45:00 | 07/03/2024 | 07:00:00 | 49 | 53 | 61 | 58 | 51 | 47 | 47 | 50 | 43 | 30 | 17 | 17 |
| 07/03/2024 | 07:00:00 | 07/03/2024 | 07:15:00 | 49 | 53 | 58 | 57 | 51 | 46 | 46 | 50 | 43 | 31 | 18 | 17 |
| 07/03/2024 | 07:15:00 | 07/03/2024 | 07:30:00 | 49 | 54 | 58 | 58 | 52 | 47 | 47 | 50 | 43 | 29 | 17 | 17 |
| 07/03/2024 | 07:30:00 | 07/03/2024 | 07:45:00 | 49 | 54 | 59 | 59 | 52 | 47 | 47 | 49 | 43 | 28 | 16 | 17 |
| 07/03/2024 | 07:45:00 | 07/03/2024 | 08:00:00 | 49 | 53 | 59 | 59 | 52 | 47 | 46 | 49 | 42 | 29 | 16 | 17 |
| 07/03/2024 | 08:00:00 | 07/03/2024 | 08:15:00 | 50 | 54 | 59 | 59 | 53 | 49 | 48 | 51 | 45 | 31 | 18 | 17 |
| 07/03/2024 | 08:15:00 | 07/03/2024 | 08:30:00 | 50 | 54 | 59 | 59 | 53 | 48 | 47 | 51 | 45 | 31 | 17 | 17 |
| 07/03/2024 | 08:30:00 | 07/03/2024 | 08:45:00 | 49 | 54 | 58 | 59 | 52 | 48 | 47 | 51 | 45 | 30 | 17 | 17 |
| 07/03/2024 | 08:45:00 | 07/03/2024 | 09:00:00 | 49 | 53 | 58 | 59 | 52 | 48 | 47 | 50 | 44 | 30 | 18 | 17 |
| 07/03/2024 | 09:00:00 | 07/03/2024 | 09:15:00 | 50 | 54 | 58 | 58 | 52 | 48 | 47 | 50 | 44 | 30 | 18 | 17 |
| 07/03/2024 | 09:15:00 | 07/03/2024 | 09:30:00 | 50 | 53 | 57 | 58 | 51 | 47 | 46 | 49 | 42 | 28 | 17 | 17 |
| 07/03/2024 | 09:30:00 | 07/03/2024 | 09:45:00 | 50 | 53 | 56 | 57 | 51 | 47 | 46 | 49 | 43 | 28 | 17 | 17 |
| 07/03/2024 | 09:45:00 | 07/03/2024 | 10:00:00 | 50 | 54 | 57 | 57 | 51 | 47 | 46 | 50 | 43 | 29 | 17 | 17 |
| 07/03/2024 | 10:00:00 | 07/03/2024 | 10:15:00 | 50 | 54 | 58 | 58 | 51 | 46 | 45 | 48 | 41 | 27 | 17 | 17 |
| 07/03/2024 | 10:15:00 | 07/03/2024 | 10:30:00 | 51 | 54 | 59 | 59 | 52 | 47 | 45 | 48 | 41 | 28 | 18 | 17 |
| 07/03/2024 | 10:30:00 | 07/03/2024 | 10:45:00 | 50 | 53 | 56 | 57 | 51 | 47 | 46 | 49 | 42 | 29 | 17 | 17 |
| 07/03/2024 | 10:45:00 | 07/03/2024 | 10:56:38 | 52 | 55 | 57 | 57 | 52 | 48 | 47 | 50 | 42 | 29 | 18 | 17 |

#### Octave Band LZFMax Results:

| Date       | Time     | Date       | Time     | 8    | 16   | 31.5 | 63   | 125  | 250  | 500  | 1000 | 2000 | 4000 | 8000 | 16000 |
|------------|----------|------------|----------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 06/03/2024 | 14:00:08 | 06/03/2024 | 14:15:00 | 84.6 | 79   | 82.5 | 81   | 78.2 | 73.2 | 71   | 71.1 | 74.3 | 77.2 | 71.1 | 79.9  |
| 06/03/2024 | 14:15:00 | 06/03/2024 | 14:30:00 | 68.8 | 72.1 | 76.9 | 84   | 74.1 | 68.3 | 64.5 | 67.3 | 62.6 | 58.6 | 56.1 | 47.6  |
| 06/03/2024 | 14:30:00 | 06/03/2024 | 14:45:00 | 75.1 | 77.5 | 80.4 | 81.2 | 75.7 | 71.3 | 67   | 66.5 | 66.9 | 62.5 | 55.1 | 48.4  |
| 06/03/2024 | 14:45:00 | 06/03/2024 | 15:00:00 | 72.2 | 76.7 | 78   | 80.4 | 74.6 | 69   | 70.7 | 82.4 | 84.4 | 75.1 | 64.1 | 54.1  |
| 06/03/2024 | 15:00:00 | 06/03/2024 | 15:15:00 | 82.7 | 79.8 | 77.2 | 77.3 | 76.9 | 75.9 | 69.8 | 70.8 | 67.8 | 64.4 | 60.9 | 56.3  |
| 06/03/2024 | 15:15:00 | 06/03/2024 | 15:30:00 | 78   | 80   | 83.3 | 81.2 | 70.2 | 70.4 | 71   | 74.3 | 65.7 | 68.9 | 63.4 | 62.4  |
| 06/03/2024 | 15:30:00 | 06/03/2024 | 15:45:00 | 76.8 | 79.8 | 75   | 82.1 | 77.4 | 69.1 | 67.6 | 66   | 62.9 | 57.4 | 48.8 | 43.5  |



|                     |                     |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 06/03/2024 15:45:00 | 06/03/2024 16:00:00 | 79.7 | 89.6 | 93   | 85.2 | 79.6 | 71.5 | 68.4 | 67   | 65.7 | 74.5 | 53.9 | 71.6 |
| 06/03/2024 16:00:00 | 06/03/2024 16:15:00 | 77.8 | 84.9 | 75.3 | 80.2 | 73.8 | 70.2 | 73   | 77.3 | 74.1 | 74   | 59.7 | 48.8 |
| 06/03/2024 16:15:00 | 06/03/2024 16:30:00 | 81.4 | 78.9 | 73.3 | 72.8 | 76.2 | 63.1 | 78   | 79.1 | 78.7 | 66.7 | 57.3 | 41.9 |
| 06/03/2024 16:30:00 | 06/03/2024 16:45:00 | 68.1 | 76.3 | 76.3 | 72.9 | 66.2 | 63.5 | 70.7 | 70.3 | 69   | 67.1 | 67.2 | 63.7 |
| 06/03/2024 16:45:00 | 06/03/2024 17:00:00 | 66.9 | 72.6 | 74.4 | 81.3 | 69.8 | 65.9 | 68.7 | 65.6 | 64.1 | 61.3 | 57.1 | 41.5 |
| 06/03/2024 17:00:00 | 06/03/2024 17:15:00 | 72.1 | 83.7 | 81.8 | 75.4 | 73.6 | 73.6 | 72.5 | 65.4 | 62.2 | 62.5 | 61.7 | 69.2 |
| 06/03/2024 17:15:00 | 06/03/2024 17:30:00 | 74.2 | 76.4 | 73.7 | 73   | 71.7 | 73.3 | 74.3 | 66.1 | 64.7 | 61.9 | 56.4 | 49.7 |
| 06/03/2024 17:30:00 | 06/03/2024 17:45:00 | 72.9 | 75.3 | 79.4 | 77.4 | 73.2 | 70.3 | 75.1 | 68.4 | 64   | 55.4 | 47.7 | 43.4 |
| 06/03/2024 17:45:00 | 06/03/2024 18:00:00 | 75.4 | 79.5 | 73.4 | 78   | 72.3 | 69.1 | 67.5 | 69.2 | 65.8 | 60   | 59.3 | 46.3 |
| 06/03/2024 18:00:00 | 06/03/2024 18:15:00 | 66.3 | 74.4 | 72.3 | 73.9 | 73.8 | 61.1 | 65.4 | 67.8 | 66.2 | 53.2 | 46.5 | 39.6 |
| 06/03/2024 18:15:00 | 06/03/2024 18:30:00 | 72.3 | 81.7 | 80.9 | 76.9 | 80   | 79.4 | 78.8 | 74.5 | 70.2 | 71.2 | 66.9 | 63.5 |
| 06/03/2024 18:30:00 | 06/03/2024 18:45:00 | 64.2 | 75.1 | 72   | 79.9 | 76.7 | 63.8 | 69.9 | 70.1 | 65.2 | 59.4 | 46.6 | 33.2 |
| 06/03/2024 18:45:00 | 06/03/2024 19:00:00 | 65.5 | 74.4 | 71.6 | 72.5 | 70.2 | 59.5 | 58.2 | 57.1 | 52.3 | 54   | 49.2 | 39.5 |
| 06/03/2024 19:00:00 | 06/03/2024 19:15:00 | 67.1 | 76   | 76.1 | 86.2 | 82.8 | 80.1 | 71.1 | 68.9 | 64.4 | 57.4 | 49.8 | 39.7 |
| 06/03/2024 19:15:00 | 06/03/2024 19:30:00 | 70.7 | 75.3 | 72.5 | 76   | 72.8 | 71.8 | 63.3 | 64.4 | 60.5 | 51   | 48   | 44.8 |
| 06/03/2024 19:30:00 | 06/03/2024 19:45:00 | 76.1 | 79   | 82.9 | 76.6 | 69.5 | 69.9 | 62.3 | 60.1 | 59   | 63.6 | 56.3 | 46.4 |
| 06/03/2024 19:45:00 | 06/03/2024 20:00:00 | 70.2 | 76.9 | 81.5 | 71.8 | 64.1 | 64.8 | 74.6 | 63.8 | 58.4 | 48.6 | 45.9 | 34.6 |
| 06/03/2024 20:00:00 | 06/03/2024 20:15:00 | 75.9 | 88.4 | 85.2 | 81.7 | 73.2 | 68.4 | 70.5 | 66.4 | 63.1 | 56.7 | 63   | 56.6 |
| 06/03/2024 20:15:00 | 06/03/2024 20:30:00 | 71.3 | 72.3 | 74.6 | 72.6 | 74.4 | 62.2 | 59.9 | 60.4 | 59.8 | 66.3 | 65.9 | 59   |
| 06/03/2024 20:30:00 | 06/03/2024 20:45:00 | 69.8 | 74.1 | 74.2 | 72.9 | 68.9 | 67.5 | 67.7 | 70.5 | 65.9 | 57.1 | 53.8 | 48.6 |
| 06/03/2024 20:45:00 | 06/03/2024 21:00:00 | 66.2 | 73.9 | 67.2 | 69.8 | 65   | 59.1 | 57.3 | 59.8 | 57   | 50.5 | 46.3 | 37   |
| 06/03/2024 21:00:00 | 06/03/2024 21:15:00 | 75.8 | 79.9 | 82.1 | 83.5 | 73.5 | 67.5 | 84.9 | 86.1 | 90.4 | 80.7 | 69.8 | 54.3 |
| 06/03/2024 21:15:00 | 06/03/2024 21:30:00 | 67.4 | 74.5 | 78.2 | 76.3 | 67.5 | 64.4 | 64   | 64.2 | 61.1 | 56.5 | 46.3 | 39.5 |
| 06/03/2024 21:30:00 | 06/03/2024 21:45:00 | 70.2 | 80.4 | 69   | 71.7 | 68.1 | 66.7 | 67.7 | 71.2 | 67.4 | 58.1 | 46   | 36.5 |
| 06/03/2024 21:45:00 | 06/03/2024 22:00:00 | 75.8 | 70.8 | 69.8 | 70.5 | 60.6 | 62.5 | 62.2 | 57.3 | 51.2 | 42.1 | 34.3 | 27.3 |
| 06/03/2024 22:00:00 | 06/03/2024 22:15:00 | 71.6 | 78.5 | 71.7 | 73.9 | 68.5 | 61.6 | 61.2 | 56   | 59.5 | 47.8 | 45.3 | 31.8 |
| 06/03/2024 22:15:00 | 06/03/2024 22:30:00 | 71.4 | 74.7 | 74.8 | 77.1 | 75.1 | 65.1 | 68.3 | 66.6 | 59.4 | 49.3 | 38.3 | 29.4 |
| 06/03/2024 22:30:00 | 06/03/2024 22:45:00 | 64.9 | 69.6 | 76.7 | 81.7 | 71.6 | 65.9 | 64.8 | 67.2 | 63.1 | 60.3 | 45.6 | 39.7 |
| 06/03/2024 22:45:00 | 06/03/2024 23:00:00 | 66.5 | 73.5 | 70.5 | 72   | 61.2 | 64.5 | 69.6 | 67.5 | 68.3 | 59.6 | 44.9 | 40.1 |
| 06/03/2024 23:00:00 | 06/03/2024 23:15:00 | 64.4 | 70.4 | 68.8 | 70.7 | 61.1 | 55.6 | 66.2 | 58.8 | 56.2 | 42.8 | 36.6 | 24.9 |
| 06/03/2024 23:15:00 | 06/03/2024 23:30:00 | 76   | 74.1 | 72.8 | 73.9 | 68.6 | 60.4 | 55.4 | 62.4 | 56.1 | 44.4 | 37.3 | 29.3 |
| 06/03/2024 23:30:00 | 06/03/2024 23:45:00 | 75.8 | 74.6 | 74.5 | 71.2 | 65.2 | 64.5 | 61.7 | 62.4 | 62.5 | 60.6 | 53.1 | 45.5 |
| 06/03/2024 23:45:00 | 07/03/2024 00:00:00 | 73.4 | 76.4 | 69   | 69   | 64.8 | 61.6 | 59.2 | 57.7 | 50.9 | 38.1 | 25.8 | 22.9 |
| 07/03/2024 00:00:00 | 07/03/2024 00:15:00 | 70.5 | 74.4 | 77.7 | 84.8 | 71.9 | 69.7 | 71.2 | 73.4 | 69.6 | 59.8 | 51.3 | 42.6 |
| 07/03/2024 00:15:00 | 07/03/2024 00:30:00 | 73.4 | 72.3 | 68.7 | 73.1 | 62.4 | 56.1 | 51.3 | 57.6 | 49.6 | 40.8 | 29.8 | 22.5 |
| 07/03/2024 00:30:00 | 07/03/2024 00:45:00 | 71.5 | 77.3 | 67.7 | 82.1 | 74.4 | 70   | 65.7 | 69.7 | 63.4 | 54.5 | 47.1 | 38.9 |
| 07/03/2024 00:45:00 | 07/03/2024 01:00:00 | 67.7 | 70.1 | 75.7 | 70.4 | 62.6 | 58.6 | 53.7 | 56.4 | 51.7 | 39.6 | 35.3 | 21.8 |
| 07/03/2024 01:00:00 | 07/03/2024 01:15:00 | 71.4 | 72.5 | 68.6 | 68.6 | 63.6 | 52.9 | 50.3 | 54.9 | 50.1 | 35   | 28.3 | 23.8 |



|                     |                     |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 07/03/2024 01:15:00 | 07/03/2024 01:30:00 | 70   | 74.9 | 69.3 | 69.4 | 62.9 | 66.2 | 66.1 | 69.8 | 65.9 | 55.4 | 43   | 33.3 |
| 07/03/2024 01:30:00 | 07/03/2024 01:45:00 | 76.5 | 82.6 | 84.5 | 79.2 | 67.6 | 62.4 | 65.9 | 63   | 59   | 54   | 61   | 45.6 |
| 07/03/2024 01:45:00 | 07/03/2024 02:00:00 | 62.8 | 65.2 | 61.9 | 64.6 | 58.7 | 53.9 | 53.5 | 53.7 | 47.8 | 42.2 | 28   | 18.5 |
| 07/03/2024 02:00:00 | 07/03/2024 02:15:00 | 65.5 | 70.8 | 65.3 | 76.1 | 63.6 | 50.8 | 52   | 53.4 | 47.4 | 40.5 | 26.2 | 23.1 |
| 07/03/2024 02:15:00 | 07/03/2024 02:30:00 | 66.2 | 72.1 | 69.8 | 64.3 | 57.7 | 52.4 | 49.8 | 53.4 | 48.5 | 38.3 | 27.7 | 20.4 |
| 07/03/2024 02:30:00 | 07/03/2024 02:45:00 | 62.2 | 74.4 | 80.9 | 73.2 | 65.5 | 66.2 | 63.6 | 66.5 | 62.4 | 57.3 | 52.1 | 43.4 |
| 07/03/2024 02:45:00 | 07/03/2024 03:00:00 | 63.3 | 66.5 | 70   | 74.8 | 58.3 | 53   | 47.1 | 54   | 48.4 | 38.2 | 30.2 | 23.8 |
| 07/03/2024 03:00:00 | 07/03/2024 03:15:00 | 69   | 72   | 68.9 | 67.3 | 60.1 | 54.7 | 51.8 | 55.9 | 50.5 | 38.8 | 28.6 | 19.9 |
| 07/03/2024 03:15:00 | 07/03/2024 03:30:00 | 73.5 | 76.9 | 67.1 | 66.7 | 62.3 | 51.2 | 53.6 | 52.9 | 49.1 | 43.2 | 35.3 | 35.5 |
| 07/03/2024 03:30:00 | 07/03/2024 03:45:00 | 75.9 | 76.8 | 74.5 | 72.2 | 64.2 | 57.9 | 52.5 | 58.5 | 51.1 | 41.7 | 38.8 | 41.3 |
| 07/03/2024 03:45:00 | 07/03/2024 04:00:00 | 81   | 76.3 | 70.6 | 72.1 | 60.6 | 58.3 | 60.9 | 57.5 | 51.5 | 47.2 | 41.4 | 32.7 |
| 07/03/2024 04:00:00 | 07/03/2024 04:15:00 | 68.9 | 68.2 | 65.2 | 67.4 | 62.3 | 53.5 | 54.9 | 55.2 | 53.6 | 52.3 | 39.5 | 29.4 |
| 07/03/2024 04:15:00 | 07/03/2024 04:30:00 | 65.2 | 75.7 | 69.8 | 65   | 57.2 | 52.9 | 52.7 | 54.9 | 52   | 62.2 | 55.8 | 36.3 |
| 07/03/2024 04:30:00 | 07/03/2024 04:45:00 | 69.8 | 76.3 | 71.7 | 74.3 | 63.2 | 57.9 | 50.1 | 59.1 | 55.4 | 61.5 | 56.5 | 38.8 |
| 07/03/2024 04:45:00 | 07/03/2024 05:00:00 | 66.1 | 73.9 | 70.4 | 73.8 | 64.6 | 57.9 | 51.7 | 55.2 | 52.5 | 52.5 | 52.3 | 25.4 |
| 07/03/2024 05:00:00 | 07/03/2024 05:15:00 | 66.1 | 71.2 | 69.4 | 73.8 | 62.3 | 54.3 | 50.9 | 52.8 | 54.7 | 52.9 | 50.8 | 32.8 |
| 07/03/2024 05:15:00 | 07/03/2024 05:30:00 | 62.4 | 69.3 | 67.5 | 73.5 | 58.4 | 55.5 | 50.8 | 57.1 | 52.3 | 52.6 | 50   | 33   |
| 07/03/2024 05:30:00 | 07/03/2024 05:45:00 | 69.5 | 77.4 | 70   | 69.2 | 66.4 | 58   | 52.7 | 57.7 | 52   | 52   | 47.8 | 25.9 |
| 07/03/2024 05:45:00 | 07/03/2024 06:00:00 | 68.1 | 74.6 | 71.4 | 71.9 | 63.7 | 55.1 | 52.1 | 56.9 | 50.6 | 50.1 | 49.2 | 31.2 |
| 07/03/2024 06:00:00 | 07/03/2024 06:15:00 | 68.9 | 81.1 | 69.2 | 74.4 | 66.3 | 62.1 | 56.3 | 58   | 51   | 57.5 | 54.6 | 30.6 |
| 07/03/2024 06:15:00 | 07/03/2024 06:30:00 | 68.9 | 76.8 | 69.8 | 72.1 | 65.5 | 65.8 | 62.7 | 57.3 | 53.7 | 54.3 | 45.1 | 28.6 |
| 07/03/2024 06:30:00 | 07/03/2024 06:45:00 | 73.7 | 72.1 | 76.2 | 76.8 | 72.4 | 69.3 | 64.4 | 67.4 | 64.4 | 65.9 | 67.4 | 47.9 |
| 07/03/2024 06:45:00 | 07/03/2024 07:00:00 | 66   | 70.8 | 71   | 73.7 | 71.1 | 64.6 | 55.5 | 57.1 | 65.7 | 59.3 | 59.4 | 42.7 |
| 07/03/2024 07:00:00 | 07/03/2024 07:15:00 | 68.8 | 74.7 | 78.7 | 79.3 | 80.6 | 77.3 | 72.3 | 70.1 | 70   | 68.8 | 69.3 | 65.2 |
| 07/03/2024 07:15:00 | 07/03/2024 07:30:00 | 71   | 74.1 | 72   | 71.7 | 63.7 | 59.4 | 53.8 | 57.6 | 55.8 | 52.8 | 62.2 | 43.5 |
| 07/03/2024 07:30:00 | 07/03/2024 07:45:00 | 72.7 | 76   | 77   | 76.5 | 68.3 | 67.4 | 62.7 | 61.4 | 64.2 | 61.9 | 61.7 | 47.9 |
| 07/03/2024 07:45:00 | 07/03/2024 08:00:00 | 77.8 | 77.6 | 75.7 | 78   | 78.9 | 69.8 | 67.8 | 68.7 | 67.6 | 59.9 | 52.1 | 42.8 |
| 07/03/2024 08:00:00 | 07/03/2024 08:15:00 | 83   | 91.2 | 77.5 | 78.2 | 78.6 | 75.4 | 70.9 | 74.4 | 72.9 | 72.1 | 70   | 56.4 |
| 07/03/2024 08:15:00 | 07/03/2024 08:30:00 | 70.7 | 77.6 | 84.7 | 84.4 | 69.1 | 69.1 | 73.3 | 74.1 | 72.6 | 68.1 | 59.4 | 53.2 |
| 07/03/2024 08:30:00 | 07/03/2024 08:45:00 | 69.8 | 77.3 | 79.9 | 83.1 | 72.4 | 66.7 | 65.8 | 68.2 | 65.5 | 61.3 | 60.3 | 41.7 |
| 07/03/2024 08:45:00 | 07/03/2024 09:00:00 | 76.1 | 78.3 | 80.8 | 76.6 | 71.6 | 63.9 | 62.6 | 61.9 | 66.5 | 68.8 | 63.6 | 54.6 |
| 07/03/2024 09:00:00 | 07/03/2024 09:15:00 | 75.3 | 81.1 | 77.4 | 85.4 | 75.9 | 75.3 | 77.1 | 74.9 | 72.4 | 63.9 | 58.2 | 54.8 |
| 07/03/2024 09:15:00 | 07/03/2024 09:30:00 | 75.4 | 77   | 80.1 | 78.8 | 72.5 | 69.7 | 68.2 | 73.6 | 61.7 | 64.9 | 58.7 | 49.8 |
| 07/03/2024 09:30:00 | 07/03/2024 09:45:00 | 78   | 77   | 80.7 | 74.3 | 70.3 | 67.7 | 76.5 | 69.5 | 68.4 | 59.4 | 55.3 | 46.1 |
| 07/03/2024 09:45:00 | 07/03/2024 10:00:00 | 78   | 77.5 | 77.3 | 80.3 | 73.4 | 66.4 | 65   | 63.6 | 58.8 | 57.1 | 55.4 | 41.3 |
| 07/03/2024 10:00:00 | 07/03/2024 10:15:00 | 85.5 | 85.3 | 76.8 | 73.9 | 70.1 | 65.5 | 66.8 | 66.1 | 65.1 | 62.7 | 55.2 | 46.5 |
| 07/03/2024 10:15:00 | 07/03/2024 10:30:00 | 80.1 | 79   | 71.6 | 74.9 | 65   | 64.6 | 62.5 | 57.2 | 68.5 | 62.7 | 61.2 | 44.3 |
| 07/03/2024 10:30:00 | 07/03/2024 10:45:00 | 72.2 | 73.5 | 71   | 79.5 | 73.3 | 71   | 67.8 | 69.6 | 69   | 65.8 | 58.2 | 48.8 |



07/03/2024 10:45:00    07/03/2024 10:56:38            84.4 78.6 77.1 79.2 76.7 76.6 68.7 68.6 67.2 66.2 64.5 59.2