

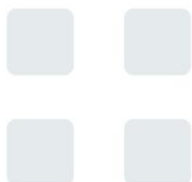
**Proposed Change of Use from Class B1
to Class E**

**Cocklebury Road,
Chippenham, SN15 3QF**

Environmental Noise Assessment

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Proposed Change of Use from Tyre Fitters (B1 use) to Convenience Shop (class E)	
Project Address:	Cocklebury Road Chippenham SN15 3QF
Project Reference:	104913

Issue/Revision Record			
Issue:	Date:	Remarks:	Author:
1	24/08/2026	First Issue	Andy Dodd
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1. INTRODUCTION

- 1.1 Acoustics Plus Ltd (APL) is an independent firm of multi-disciplinary acoustic engineers. APL is engaged by both private and public sector clients. APL is a registered member of The Association of Noise Consultants (ANC) and the author is a corporate member of The Institute of Acoustics (IOA).
- 1.2 APL has been instructed by Arcci Designs, to assess and advise upon the noise implications of a Proposed Change of Use from Tyre Fitters (B1 use) to Convenience Shop (class E).
- 1.3 The proposed development is located on Cocklebury Road, opposite the Wiltshire and Swindon History Centre and adjacent to residential dwellings on Market Mead.
- 1.4 The proposed opening hours are:
 - Monday – Sunday: 07:00 – 23:00 hrs
- 1.5 It is understood the Local Planning Authority (LPA) will require further information on noise levels from the proposed change of use in order to fully assess the noise impact upon the surrounding neighbourhood. This report provides the response to the LPA, on behalf of the Applicant.
- 1.6 This report has been prepared by Acoustics Plus Limited (APL) with all reasonable skill, care, and diligence in accordance with generally accepted acoustic consultancy principles and taking account the services and terms agreed between APL and our client.
- 1.7 Any information provided by third-parties and referred to herein may not have been checked or verified by APL unless expressly stated otherwise. Certain statements made in the report are predictions based on reasonable assumptions and good industry practice.
- 1.8 Such statements involve risk and uncertainty which could cause measured and predicted results to differ materially. APL does therefore not guarantee or warrant any prediction contained in this report.

2. BASELINE SITUATION

- 2.1 The Application Site (the “site”) is located at Cocklebury Road, Chippenham, SN15 3QF. The site consists of a light-industrial, single-storey commercial unit designed for vehicle access and customer drop-ins. This type of building is typically found on retail parks, trading estates, or roadside commercial strips. A site plan is shown in Diagram 1 below. The site and its surroundings can be seen in Figures 1 to 8 appended to this report. The site is located in a mixed use area. The nearest residential accommodation to the site is located on Market Mead.

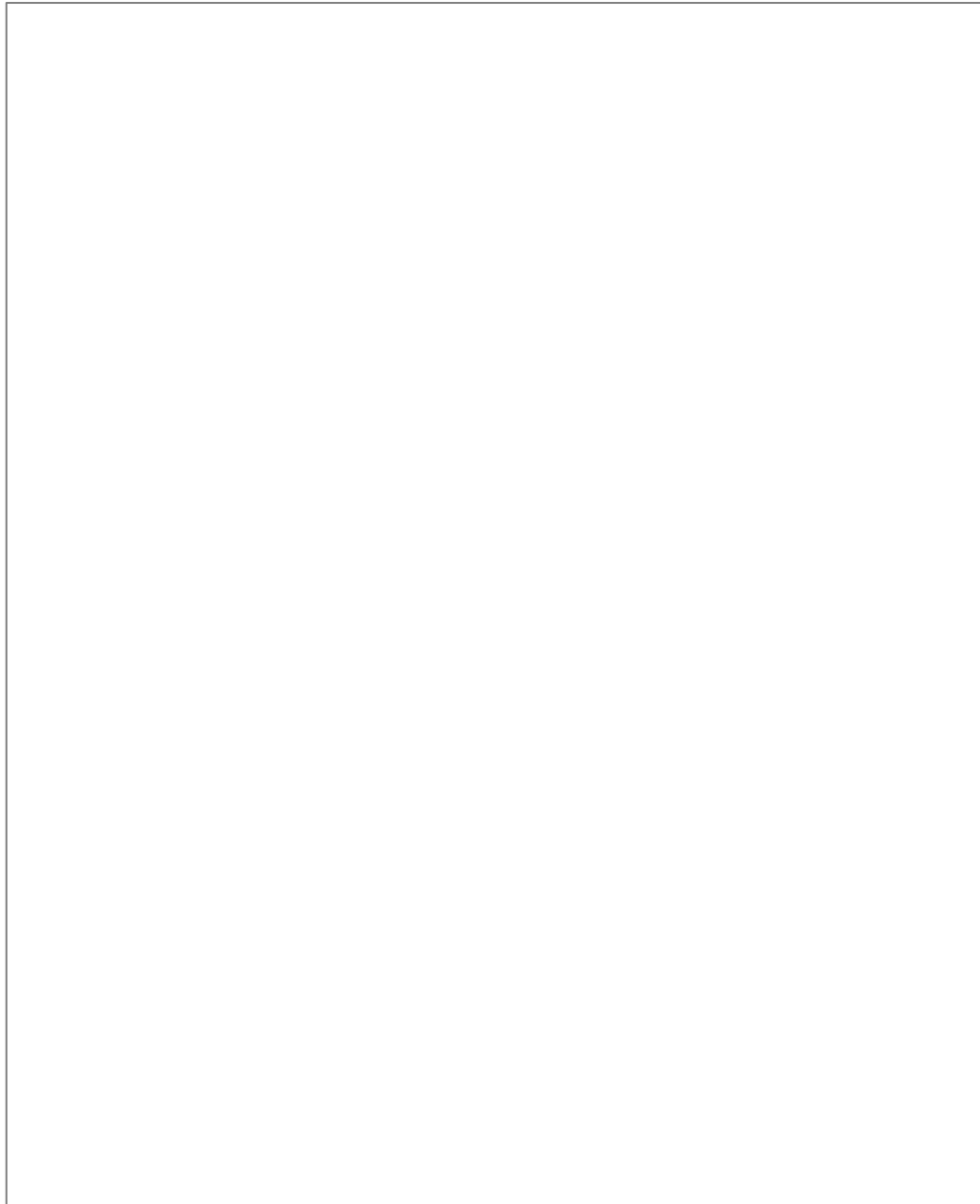


Diagram 1

- 2.2 It is understood that planning consent is being sought regarding the change of use from Proposed Change of Use from Tyre Fitters (B1 use) to Convenience Shop (class E). This proposed change of use will require the installation of a number of items of mechanical plant. The items of plant and their proposed location are shown in Diagram 2 below.

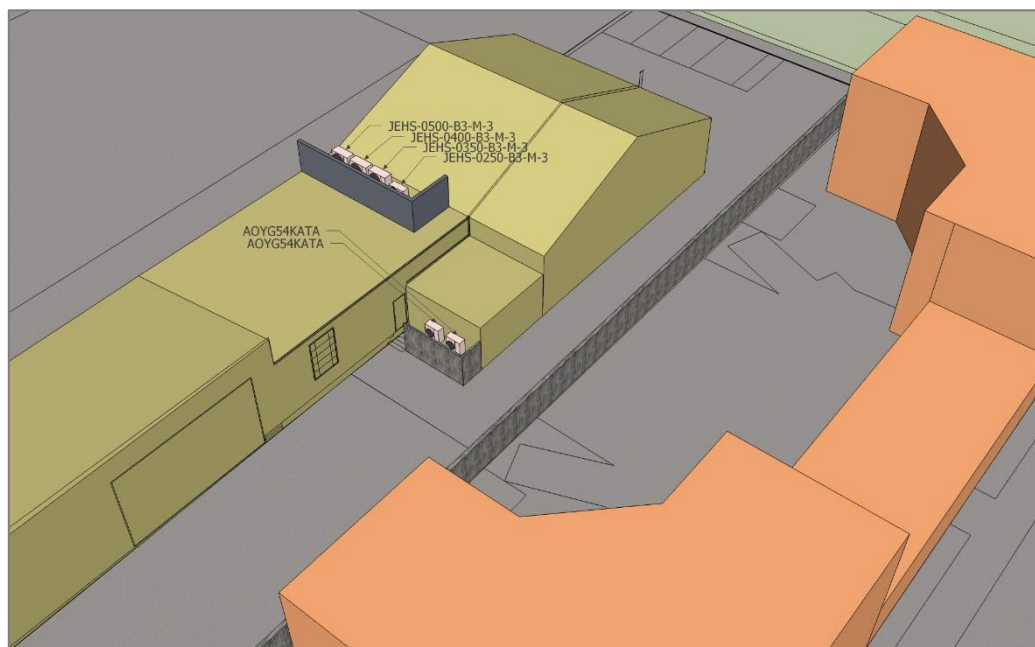


Diagram 2

- 2.3 4No. units will be roof mounted on the central section of flat roof (see Figure 9 attached). These units will service the refrigeration requirements of the convenience store. These will operate on a demand basis at any time of the day or night. In order to mitigate any loss of amenity to the adjacent residential properties on Market Mead, the units will be surrounded as indicated by a proprietary plant screen.
- 2.4 A further 2No. units will be mounted at ground floor level and enclosed with a timber screen. These units will service the cooling requirements of staff accommodation (office/mess room) within the store and will therefore only operate during the normal store opening hours.
- 2.5 The mechanical equipment has been specified as follows:
- (a) J&E Hall JEHS-0500-B3-M-3 (refrigeration)
 - (b) J&E Hall JEHS-0250-B2-M-1 (refrigeration)
 - (c) J&E Hall JEHS-0400-B3-M-1 (refrigeration)
 - (d) J&E Hall JEHS-0350-B3-M-1 (refrigeration)
 - (e) Fujitsu AOYG54KATA (cooling)
 - (f) Fujitsu AOYG54KATA (cooling)
- 2.6 Customer parking will be located at the front of the store to replicate the existing use. Deliveries will also occur at the front of the store. Further to conversations with the operator, it is anticipated that one delivery a day will occur.

3. NOISE OUTLINE

- 3.1 In order to produce an environmental noise assessment, consideration must be given to the prevailing background noise in the locality of the site.
- 3.2 Measurements of background noise were obtained over a 96 hour period at a location deemed representative of background noise levels experienced at the nearest noise sensitive façades. Noise monitoring equipment was installed at the rear of the site on a flat roof directly opposite the rear block of flats on Market Mead (see Figure 1).
- 3.3 The particulars of the measurement exercise are recorded below:

Date: 13th – 17th August 2026
Start Time: 15:00 hrs
Location: Rear flat roof of site
Weather: Appropriate to monitor environmental noise (see Diagram 3) - weather data obtained from local weather station

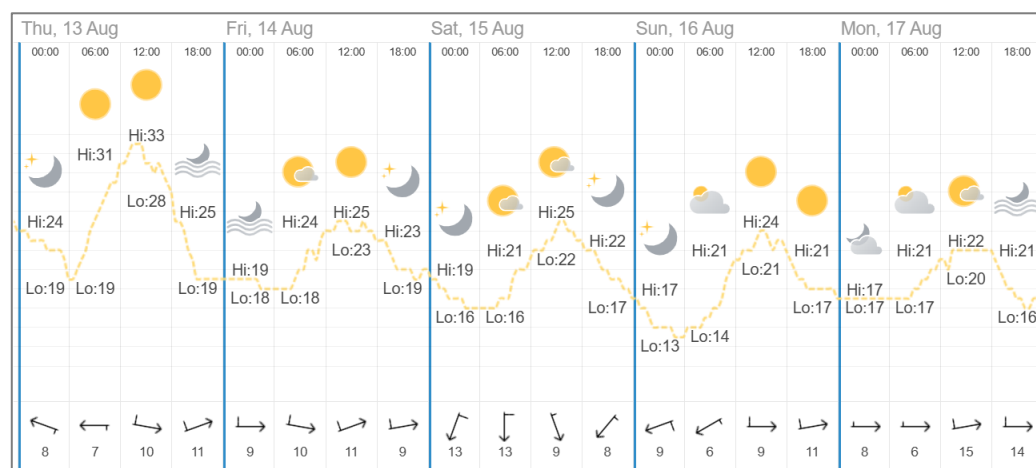


Diagram 3

- 3.4 Minimum background and average noise levels obtained at the rear of the site are shown in Table 1 below with the full level vs time history shown in Diagram 4 (L_{Aeq} and L_{A90}).

Measurements obtained on rear flat roof of site		
Time period	Lowest L_{A90}	Average $L_{Aeq,T}$
Day (07:00-23:00hrs) 1hr	31 dB	47 dB
Night (23:00-07:00hrs) 5min	27 dB	44 dB

Table 1

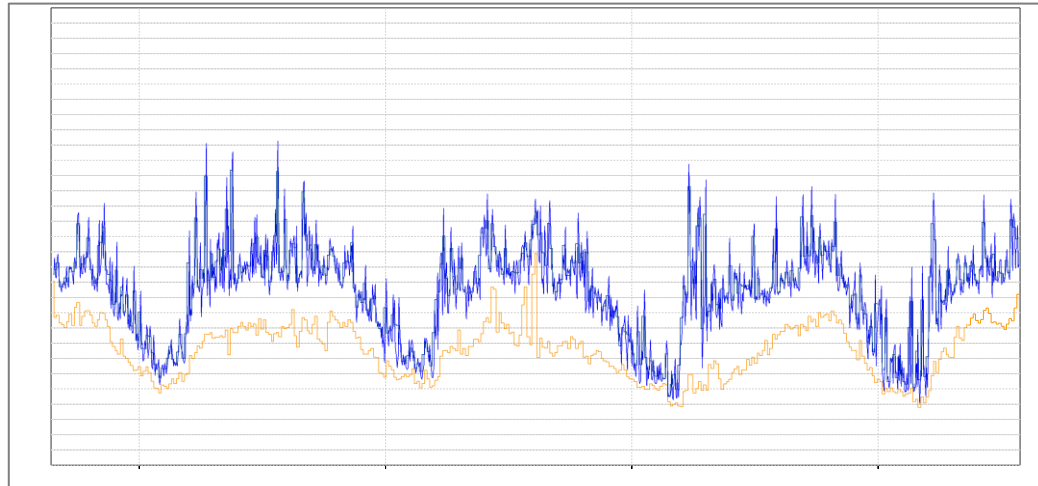


Diagram 4

- 3.5 The survey was undertaken using a precision integrating sound level meter and an associated acoustic calibrator that complies with the performance requirements for Class 1 instrumentation.
- 3.6 The following equipment was used during the monitoring exercise:
- NTi XL2 Sound Level Meter Class 1 Serial No. A2A-14612-E0, FW4.71
 - Rion NC-74 Class 1 Acoustic Calibrator (Serial No. 00410215).
- 3.7 Prior to the commencement of the survey, the sound level meter was acoustically calibrated using the Class 1 acoustic calibrator to verify correct operation. Calibration checks were repeated immediately following completion of the monitoring exercise to confirm instrument stability throughout the survey period. No significant calibration drift was observed before or after the survey, confirming the integrity of the measured data. The monitoring equipment therefore operated within acceptable tolerances, and the recorded measurements are considered suitable for use within this assessment.
- 3.8 The combination of a representative monitoring location, appropriate survey duration, calibrated Class 1 instrumentation and suitable weather conditions provides confidence that the measured data accurately characterise the prevailing acoustic environment at the application site and forms a reliable basis for the subsequent noise impact assessment.

4. DESIGN CRITERIA

- 4.1 Information regarding the noise levels not to be exceeded from activities and plant noise at the site were based on information received from Public Protection at Wiltshire Council. These were comments attached to the planning application which is under consideration pending further information. The comments are reproduced below:

We must see a noise assessment upfront which includes the following:

- *Traffic and delivery noise, which includes customer noise and vehicle movements, as well as loading/unloading.*
- *Plant noise and locations*
- *General operational noise*

The applicant will find our noise technical guidance useful. We expect to see an assessment of the acoustic impact arising from the operation of noise associated with a convenience store shall be undertaken in accordance with BS4142:2014 +A1:2019. Background levels are to be taken as a LA90 1 hour and the ambient noise levels shall be expressed as an LAeq 1 hour during the daytime [07:00-23:00] and shall be expressed as an LA90 and LAeq 5 minutes during the night [23:00-07:00] at the boundary of the nearest residential noise-sensitive receptor.

The assessment shall be submitted to the Local Planning Authority together with a scheme of attenuation measures to demonstrate the development can achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location. If the precise detail of the scheme is not known, then likely worst-case scenarios with respect to noise impact on residential premises should be assumed. The attenuation scheme shall be implemented in full prior to occupation of the development and thereafter be permanently retained.

- 4.2 It is accepted that noise from a new convenience store should be assessed in general accordance with the procedure outlined in BS 4142:2014+A1:2019 *Methods for rating and assessing commercial sound*.
- 4.3 BS 4142 provides an assessment method and is entitled "Methods for rating and assessing industrial and commercial sound". The procedure contained in BS 4142 is to quantify the "specific sound level", which is the measured or predicted level of sound from the source in question over a one hour period for the daytime and a 15 minute period for the night-time. Daytime is defined in the standard as 07:00 to 23:00 hours, and night-time as 23:00 to 07:00 hours.
- 4.4 The specific sound level is converted to a rating level by adding penalties to account for either tonality or impulsivity. The standard sets out objective methods for determining the presence of tones or impulsive elements, but notes that it is acceptable to subjectively determine these effects.
- 4.5 The commentary to paragraph 9.2 of BS 4142 suggests the following subjective methods for the determination of the rating penalty for tonal, impulsive and/or intermittent specific sounds:

Intermittency

- 4.6 When the specific sound has identifiable on/off conditions, the specific sound level should be representative of the time period of length equal to the reference time interval which contains the greatest total amount of on time. If the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.

Impulsivity

- 4.7 A correction of up to +9 dB can be applied for sound that is highly impulsive, considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively, this can be converted to a penalty of 3 dB for impulsivity which is just perceptible at the noise receptor, 6 dB where it is clearly perceptible, and 9 dB where it is highly perceptible.

Tonality

- 4.8 For sound ranging from not tonal to prominently tonal the Joint Nordic Method gives a correction of between 0 dB and +6 dB for tonality. Subjectively, this can be converted to a rating penalty of 2 dB for a tone which is just perceptible at the noise receptor, 4 dB where it is clearly perceptible, and 6 dB where it is highly perceptible.
- 4.9 If the subjective method is not sufficient for assessing the audibility of tones in sound or the prominence of impulsive sounds, BS 4142 suggests using the one-third octave method and/or the reference methods, as appropriate.
- 4.10 The $\frac{1}{3}$ octave method tests for the presence of a prominent, discrete-frequency spectral component (tone) and typically compares the $L_{Zeq,T}$ sound pressure level averaged over the time when the tone is present in a $\frac{1}{3}$ octave band with the time-average linear sound pressure levels in the adjacent $\frac{1}{3}$ octave bands. For a prominent, discrete tone to be identified as present, the time-averaged sound pressure level in the $\frac{1}{3}$ octave band of interest is required to exceed the time-averaged sound pressure levels of both adjacent $\frac{1}{3}$ octave bands by some constant level difference. The level differences between adjacent $\frac{1}{3}$ octave bands that identify a tone are:
- 15 dB in the low-frequency one-third-octave bands (25 Hz to 125 Hz);
 - 8 dB in the middle-frequency one-third-octave bands (160 Hz to 400 Hz); and
 - 5 dB in the high-frequency one-third-octave bands (500 Hz to 10,000 Hz).

Other Sound Characteristics

- 4.11 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.
- 4.12 An initial estimate of the impact of the specific sound is obtained by subtracting the measured background sound level from the rating level of the specific sound. In the context of the Standard, adverse impacts include, but are not limited to, annoyance and sleep disturbance.

4.13 The assessment outcome results from a comparison of the rating level with the background sound level. The standard states:

- a) Typically, the greater this difference, the greater the magnitude of the impact.
 - b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
 - c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
 - d) 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.
- Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact."

4.14 The standard goes on to note that:

"Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night."

4.15 In addition to the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level, the 2014 edition places emphasis upon an appreciation of the context, as follows:

"An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context."

4.16 The background noise levels were assessed using statistical analysis of the measured data, as directed in BS 4142. The histogram for the day time and night-time periods can be seen in Diagrams 5 and 6.

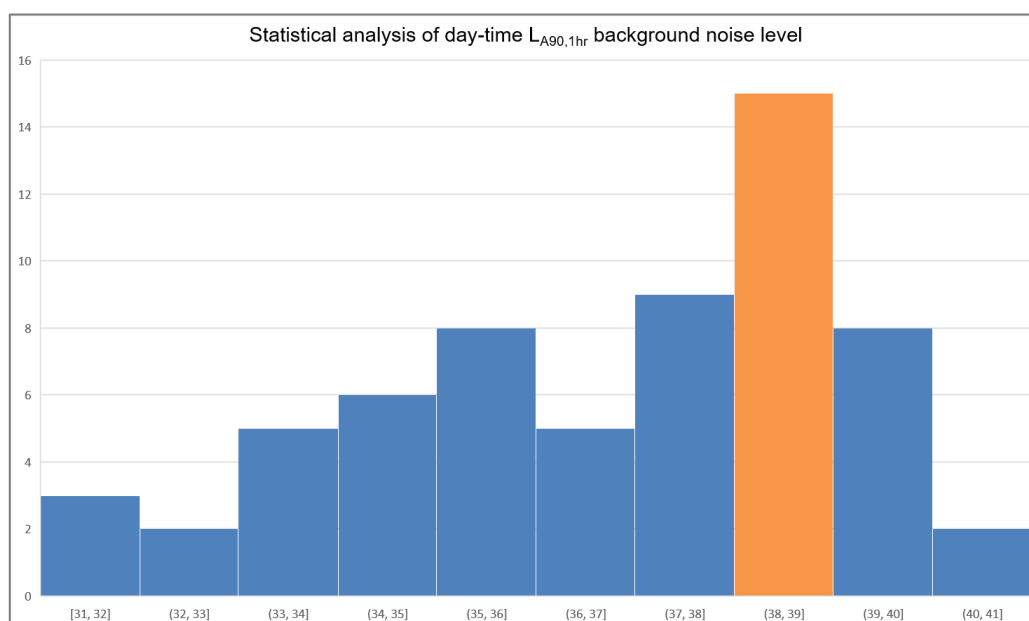


Diagram 5

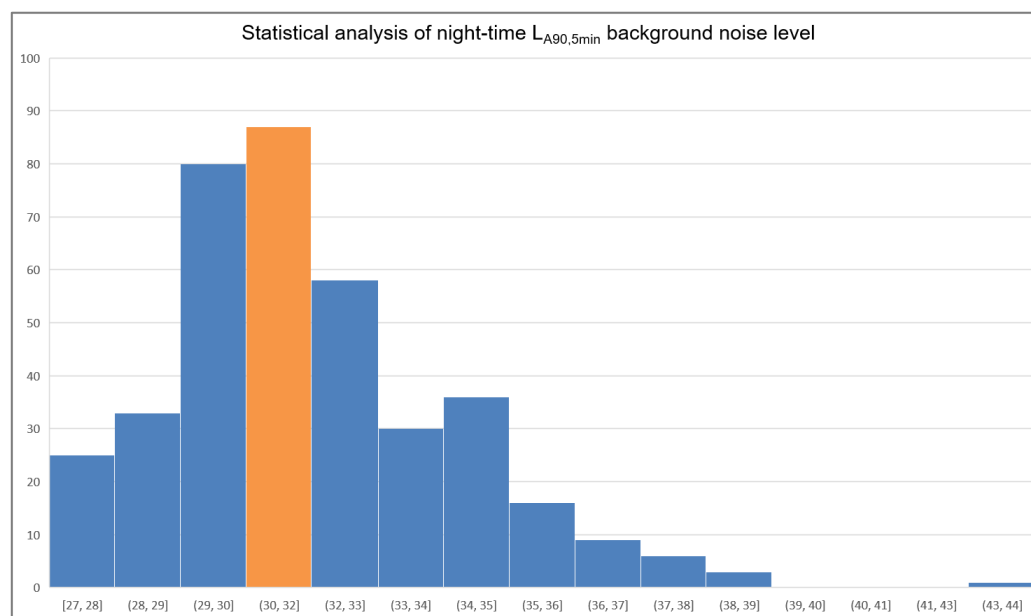


Diagram 6

- 4.17 The noise emission criteria that should not be exceeded is therefore based on the measured data using statistical analysis of the measured L_{A90} noise levels (as directed in BS 4142) and not the lowest measured L_{A90} levels reported in Table 1, and are shown in Table 2 below. These levels should not be exceeded at 1.0 m from the façade of the nearest residential premises (at any time).

Noise emission limit (5dB below background noise)	
During the daytime (07:00-23:00 hrs)	During the night-time (23:00-07:00 hrs)
$L_{Aeq} \leq 33$ dB	$L_{Aeq} \leq 25$ dB

Table 2

5. NOISE IMPACT ASSESSMENT

MECHANICAL PLANT

- 5.1 A prediction exercise was undertaken. The calculation exercise utilised information provided by equipment manufacturers – J&E Hall and Fujitsu (copies of the data sheets are provided in Appendix A).
- 5.2 A correction to account for building edge diffraction was assumed. This was extracted from the recently updated (20th March 2025) Planning Standard MCS020(a) Issue1.0. The planning standard MCS020 states the following:

A correction shall be made for attenuation due to barriers between the heat pump and an assessment position. The construction of the barrier and the line of sight between the heat pump and assessment position shall both be taken into account to determine the attenuation of the barrier.

The following definitions of a barrier shall be used for the purposes of the assessment

Barrier (Type 1) - a solid brick/masonry wall or a solid fence that is at least 18mm thick. There should be no cracks or gaps in the barrier. The barrier should extend horizontally by 1m or more from either edge of the heat pump.

Barrier (Type 2) – a solid fence that is less than 18mm thick. There should be no cracks or gaps in the barrier. The barrier should extend horizontally by 1m or more from either edge of the heat pump.

No barrier – open fences, fences with gaps and cracks, and vegetation do not count as a barrier. Walls or fences in a poor state of repair (e.g. gaps or pieces missing) do not count as a barrier.

The following definitions of line of sight shall be used for the purposes of the assessment.

- *No view – If a barrier that completely obscures the vision of an assessment position from the top edge of the heat pump.*
- *Partial view – If by moving up to 0.25m in any direction from the top edge of the heat pump the assessment position is visible.*
- *Full view – If the assessment position is visible from the top edge of the heat pump.*

The matrix table below shall be used in conjunction with the above definitions to determine the barrier attenuation.

Barrier Type	Line of Sight		
	No view	Partial View	Full view
Type 1	-10 dB	-5 dB	0 dB
Type 2	-5 dB	-2.5 dB	0 dB
No barrier	0 dB	0 dB	0 dB

Table 3 - MCS 020 a matrix

5.3 An acoustic fence or barrier will provide suitable screening to obscure the roof mounted J&E Hall units from the neighbouring residential windows of Market Mead and so there will be no direct line of sight, it has been assumed that the additional -10dB attenuation provided by the acoustic barrier wall (Type 1 barrier) would be in line with this Standard. The Fujitsu units that will be screened at ground floor level will provide partial screening to obscure them from the upper floor windows of residential dwellings at Market Mead, it has been assumed that the additional -5dB attenuation provided by acoustic fence / barrier (Type 1 barrier) would be in line with this Standard.

5.4 The following acoustic feature corrections were used to determine a rating level.

Results	Penalty	Relevant clause	Commentary
Acoustic feature corrections BS 4142	+3 dB	9.2	Other acoustic characteristics

Table 4

5.5 The following noise impacts were calculated. Other noise sensitive receptors located at similar or a greater distance will experience the same or a lower noise impact.

- **IMPACT 1** - The noise impact from all units operating during the daytime period to the windows of the residential accommodation located at Market Mead.
- **IMPACT 2** - The noise impact from the four J&E Hall units operating during the night-time period to the windows of the residential accommodation located at Market Mead.

IMPACT 1

5.6 A prediction exercise was undertaken, the calculation exercise is shown in Table 5. The units have been assessed operating in cooling mode.

Unit	SPL	Distance (m)	Screening	BS4142	Impact -L _p dBA
1	58 dBA	25.6	-10 dB	+3dB	23 [58-20Log (25.6)-10+3]
2	54 dBA	22.4	-10 dB	+3dB	20 [54-20Log (22.4)-10+3]
3	58 dBA	24.5	-10 dB	+3dB	23 [58-20Log (24.5)-10+3]
4	57 dBA	23.4	-10 dB	+3dB	23 [57-20Log (23.4)-10+3]
5	58 dBA	14.0	-5 dB	+3dB	33 [58-20Log (14.0)-5+3]
6	58 dBA	15.0	-5 dB	+3dB	33 [58-20Log (15.0)-5+3]
Combined rating noise level at nearest noise sensitive façade					37 dBA

Table 5 - daytime noise impact

5.7 In order to comply with the requirements of the LPA, any noise from the proposed installation of mechanical plant should not exceed a rated level of 33 dBA during the period 07:00 to 23:00 hrs (5dB below the measured background noise over the operational hours of the plant) at 1m from the nearest noise sensitive façade.

5.8 The calculation exercise (Table 5) demonstrates that while the proposed installation does not exceed the lowest statistical background level it does not meet the LPA criteria of not exceeding a level of 33 dBA during the period 07:00 to 23:00 hrs.

IMPACT 2

- 5.9 A prediction exercise was undertaken, the calculation exercise is shown in Table 6. The units have been assessed operating in cooling mode.

Unit	SPL	Distance (m)	Screening	BS4142	Impact -L _p dBA
1	58 dBA	25.6	-10 dB	+3dB	23 [58-20Log (25.6)-10+3]
2	54 dBA	22.4	-10 dB	+3dB	20 [54-20Log (22.4)-10+3]
3	58 dBA	24.5	-10 dB	+3dB	23 [58-20Log (24.5)-10+3]
4	57 dBA	23.4	-10 dB	+3dB	23 [57-20Log (23.4)-10+3]
Combined rating noise level at nearest noise sensitive façade					28 dBA

Table 6 – night-time noise impact

- 5.10 In order to comply with the requirements of the LPA, any noise from the proposed installation of mechanical plant should not exceed a level of 25 dBA during the period 23:00 to 07:00 hrs (5dB below the measured background noise over the operational hours of the plant) at 1m from the nearest noise sensitive façade.
- 5.11 The calculation exercise (Table 6) demonstrates that while the proposed installation does not exceed the lowest statistical background level it does not meet the LPA criteria of not exceeding a level of 25 dBA during the period 23:00 to 07:00 hrs.
- 5.12 At night, the measured background sound levels at the nearest noise-sensitive receptors are relatively low, at approximately 30 dB L_{A90}. The predicted rating levels from the proposed mechanical plant are similarly low and are approximately 2 dB below the measured background sound level.
- 5.13 BS 4142:2014+A1:2019 recognises that the numerical difference between the rating level and background sound level should not be considered in isolation and that appropriate consideration should be given to the context in which the sound will be experienced. In particular, the Standard states that where background sound levels and rating levels are low, absolute sound levels may be as, or more, relevant than the margin by which the rating level exceeds the background sound level. The Standard specifically identifies this consideration as being especially relevant at night.
- 5.14 Although the current Standard does not define numerical thresholds for what constitutes a "low" background or rating level, the ANC Technical Note accompanying BS 4142:2014+A1:2019 considers that the values contained within the previous 1997 edition remain reasonable reference points. BS 4142:1997 identified background sound levels below approximately 30 dB L_{A90} and rating levels below approximately 35 dB L_{Af,Tr} as being very low. The ANC therefore considers that these values can reasonably inform professional judgement when applying the contextual provisions of the current Standard.
- 5.15 In the present case, the predicted night-time rating level is below the measured background sound level and is also below the approximately 35 dB level historically identified by BS 4142 as representing a very low rating level. Consequently, although the Local Authority's criterion of 5 dB below background is not achieved, the BS 4142 assessment does not indicate that the plant would give rise to an adverse impact simply because this numerical criterion is not achieved. Indeed, BS 4142 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.

- 5.16 Furthermore, consideration of the absolute level is particularly relevant in this case. A rating level of approximately 28 dB $L_{A,T}$ externally at night would, subject to the actual façade and ventilation arrangements, result in a substantially lower sound level internally within a typical bedroom with windows closed. Even allowing for a conservative external-to-internal sound reduction of approximately 12 dB, the resulting internal level would be approximately 16 dB. This is well below the internal noise levels normally associated with sleep disturbance and demonstrates that the absolute level of sound from the proposed plant is very low.
- 5.17 On the basis of the BS 4142 contextual assessment, the predicted rating levels are therefore considered unlikely to result in an adverse impact or significant adverse impact upon nearby residential receptors.

NOISE FROM DELIVERY ACTIVITY

- 5.18 The sound pressure levels associated with lorry deliveries have been established by measurements held on file for delivery activities made at a similar sized convenience store. The measurements included the following aspects of the delivery process, the arrival, unloading / movement of cages and the departure of the lorry. The sound pressure levels were obtained at a distance of 10 m from the delivery area.
- 5.19 The loading area is approximately 25 metres from the residential properties located at Market Mead. Goods are to be unloaded off the tail-gate of the vehicle and wheeled directly into the store.
- 5.20 The Table below details typical source noise levels, used within the assessment.

Event Noise Level (at 10 metres)					
Arrival		Unloading		Departure	
Duration (minutes)	$L_{Aeq,T}$ (dB)	Duration (minutes)	$L_{Aeq,T}$ (dB)	Duration (minutes)	$L_{Aeq,T}$ (dB)
0.5	69	20	63	0.5	67

Table 7

- 5.21 All these sound levels are representative at 10 metres and are measured with the microphone in free field, away from any reflecting surfaces. The levels stated are realistic worst case noise levels from a large collection of sample measurements and include all delivery activity noise including refrigeration units, cage movements, vehicle manoeuvres and reversing alarms.
- 5.22 Based on the above source levels and the location of the residential dwellings at Market Mead there will be no screening provided by the building envelope or any fencing with the neighbouring upper floor residential windows. The levels stated are realistic worst case noise levels from a large collection of sample measurements and include all delivery activity noise including refrigeration units, cage movements, vehicle manoeuvres and reversing alarms.

- 5.23 To prevent significant adverse impacts on the health and quality of life of existing noise sensitive receptors, the 'rating noise level' should not exceed the typical measured daytime background noise level by more than 10 dB and to prevent adverse harm by around 5 dB depending on context. Noise levels below existing background noise levels, L_{A90} , would be indication of low impact subject to context.
- 5.24 Taking into account a feature correction of +6 dB for impulsivity associated with deliveries, the rating level of noise from delivery events is 57 dB. In accordance with the guidance in BS 4142 the Table below compares the rating level against the existing background level measurements. The noise data obtained during the Saturday period has been utilised as no deliveries are to be arranged to take place on a Sunday.

Time Period	Existing Background level $L_{A90, 1hr}$	Rating Level $L_{Ar, 1hr}$	Difference
07:00-08:00 hrs	35 dB	57 dB	+23 dB
08:00-09:00 hrs	36 dB	57 dB	+21 dB
09:00-10:00 hrs	37 dB	57 dB	+20 dB
10:00-11:00 hrs	39 dB	57 dB	+18 dB
11:00-12:00 hrs	38 dB	57 dB	+19 dB
12:00-13:00 hrs	36 dB	57 dB	+21 dB
13:00-14:00 hrs	38 dB	57 dB	+19 dB
14:00-15:00 hrs	37 dB	57 dB	+20 dB
15:00-16:00 hrs	36 dB	57 dB	+22 dB
16:00-17:00 hrs	35 dB	57 dB	+23 dB
17:00-18:00 hrs	36 dB	57 dB	+22 dB
18:00-19:00 hrs	36 dB	57 dB	+21 dB
19:00-20:00 hrs	34 dB	57 dB	+23 dB
20:00-21:00 hrs	35 dB	57 dB	+23 dB
21:00-22:00 hrs	33 dB	57 dB	+24 dB
22:00-23:00 hrs	32 dB	57 dB	+25 dB

Table 8

- 5.25 the initial BS 4142 numerical assessment indicates a significant adverse impact; however, consideration of context, duration, frequency and absolute levels leads to the conclusion that the deliveries would not result in a significant adverse impact in practice.
- 5.26 As explained in paragraph 4.15, Section 11 of BS 4142 explains "The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment should be conducted with an understanding of the reason for the assessment and consider the context in which the sound occurs.

- 5.27 In assessing the context in which the activity level noise occurs, the predicted delivery noise could be compared to WHO guideline noise values for outside amenity spaces; the table below shows this comparison.

Noise receptor	Predicted activity noise level (dB L _{Aeq,1hr})	WHO daytime value (dB L _{Aeq, 16hrs})
Market Mead	51	50-55

Table 9

- 5.28 A second contextual consideration is how the predicted delivery activity noise levels compare to the existing ambient noise climate and what the resultant change in ambient noise level would be. The table below shows this comparison during the daytime hours.

Time period	Existing ambient noise level L _{Aeq, 1hr}	Predicted delivery noise level L _{Aeq,1hr}	Overall noise level (existing + predicted)	Change in noise level
07:00-08:00 hrs	45 dB	51 dB	52 dB	+7 dB
08:00-09:00 hrs	44 dB	51 dB	52 dB	+8 dB
09:00-10:00 hrs	51 dB	51 dB	54 dB	+3 dB
10:00-11:00 hrs	49 dB	51 dB	53 dB	+4 dB
11:00-12:00 hrs	47 dB	51 dB	52 dB	+6 dB
12:00-13:00 hrs	45 dB	51 dB	52 dB	+7 dB
13:00-14:00 hrs	48 dB	51 dB	53 dB	+5 dB
14:00-15:00 hrs	51 dB	51 dB	54 dB	+3 dB
15:00-16:00 hrs	50 dB	51 dB	53 dB	+4 dB
16:00-17:00 hrs	45 dB	51 dB	52 dB	+7 dB
17:00-18:00 hrs	46 dB	51 dB	52 dB	+6 dB
18:00-19:00 hrs	47 dB	51 dB	53 dB	+5 dB
19:00-20:00 hrs	46 dB	51 dB	52 dB	+6 dB
20:00-21:00 hrs	43 dB	51 dB	52 dB	+9 dB
21:00-22:00 hrs	41 dB	51 dB	51 dB	+11 dB
22:00-23:00 hrs	39 dB	51 dB	51 dB	+12 dB

Table 10

- 5.29 The general change in noise level arising from deliveries between 07:00 hrs and 21:00 hrs provides an indication of potential adverse impact as a difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context. Deliveries are unlikely to be arranged and occur in the mid to late evening period.
- 5.30 If the frequency and duration of deliveries is considered, typically, the convenience store will receive one delivery a day with additional deliveries of bread and milk. The duration of the delivery is approximately 20 minutes and whilst unloading activity is taking place, there will be significant parts of the day when no noise occurs. Whilst noise from delivery activity will be noticeable, it will be for a short period and only occur during daytime hours and therefore will not cause sleep disturbance to local residents.

- 5.31 Assessing the contextual considerations, it is concluded that the store can receive deliveries during daytime periods (07:00 – 21:00 hours) without causing a material change in quality of life to local residents or significant adverse impact in line with policy aims of the NPPF. Whilst noise from delivery activity will be noticeable, it will be for short periods and only occur during daytime hours.
- 5.32 The predicted noise impact when compared to the existing use of the site as a ATS Euromaster tyre fitting garage, the potential for an adverse noise impact will be significantly lower.
- 5.33 The previous use as a tyre-fitting garage would have presented an acoustic environment characterised by high-intensity, impulsive noises that intermittently break a likely continuous background hum of workshop activity, mechanical ventilation and engines idling.
- 5.34 Noise levels within the tyre fitting garage will have produced short-duration, impulsive sounds that frequently spike between 85 and 110 dB(A) inside the workshop bays from the use of air impact wrenches, compressed air hisses, and charging of air compressors. Manual impacts provide sharp, metallic clangs from dropping hand tools, striking stubborn wheels with mallets, or handling wheel weights. The use of hydraulic lifts generates a mid-frequency mechanical whine / hum from the electric pumps lifting or lowering vehicles.
- 5.35 The acoustic character of noise egress via the open roller shutter bays will have been highly reverberant due to hard, non-porous surfaces like concrete floors, brick walls, and metal roller shutter doors.
- 5.36 Vehicle movements associated with the garage use will have generated low-frequency engine revs, exhaust rumbles, and the highly discernible friction squeal of tyres manoeuvring on smooth, painted concrete floors.

NOISE FROM CAR PARKING ACTIVITY

- 5.37 Noise from vehicles in car parks, and noise from customers, falls outside the scope of BS 4142. Guidance in BS 8233:2014 confirms that for sporadic sources it may not be appropriate to set specific noise limits and that bespoke limits may be set instead. Therefore, for the purposes of this assessment and in line with guidance summarised in BS 8233:2014 – *Sound Insulation and Noise Reduction for Buildings – Code of Practice*:
- 5.38 The recommendations detailed within BS8233 state that it is desirable that the internal ambient noise level does not exceed the guideline values shown in Table 11.

Activity	Location	Day: 07:00 to 23:00 hrs	Night: 23:00 to 07:00 hrs
Resting	Living room	35 dB $L_{Aeq,16hour}$	-
Sleeping	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$

Table 11

5.39 Whilst this table relates to steady external noise sources, it provides an indicative internal noise level from which to derive an appropriate criterion not to be exceeded from sound transmission from the customer car park use into the adjacent residential properties. In order to ensure that any noise generated within the site does not lead to a loss of amenity to the adjacent residential properties, it is recommended that the internal noise level does not exceed $L_{Aeq,T}$ 25 dB during the daytime period. The store and car park will not operate during the night-time period.

5.40 The table below details typical source noise levels used within the calculation exercise with the data presented in terms of sound exposure level (SEL):

Activity	Measurement Data			
	$L_{Aeq,T}$	Distance (m)	Time (s)	SEL
Car movement	58 dB	3	15	70 dB
Person talking	60 dB	1	15	72 dB

Table 12

5.41 The total number of car park spaces will remain the same as when used for B1 use, the diagram below confirms the existing and proposed parking spaces will be limited to six spaces at the front of the site.



Diagram 7

- 5.42 Peak use of the car park by store customers is likely to be in the morning (e.g. 07.30 to 08.30 hours, around lunchtime, and in the early evening (e.g. 17.00 to 18.00 hrs). An estimate of the typical number of movements to each space in these peak hours has been made and used to calculate the resultant external noise level at the receptors located at Market Mead.
- 5.43 As described in BS 8233, the typical noise reduction provided by an open window is around 15 dBA, and this has been used to predict the resulting highest internal noise levels within the nearest residential properties at Market Mead.
- 5.44 The calculation exercise is shown in the tables below and utilised the following formulae:

$$SEL_{10m} = SEL - 20\log_{10}\left(\frac{10}{\text{number of events per hour}}\right)$$

Equation 1

$$SEL \text{ correction} = 10\log_{10}(\text{number of events}) - 10\log_{10}(3600 \text{ seconds in 1 hour})$$

Equation 2

Activity	SEL	Normalised at 10m	Number of events per hour	SEL correction	L _{Aeq,1hr} @10m	Receptor distance / correction	Impact outside Market Mead receptor
Car movement	70 dB	59 dB	18	-23 dB	36 dB	20 m / - 6 dB	30 dB
Person talking	72 dB	52 dB	18	-23 dB	29 dB	20 m / - 6 dB	23 dB

Table 13

- 5.45 The combined noise impact of car movements (30 dB) and persons talking (23 dB) outside Market Mead receptors windows is L_{Aeq,1hr} 31 dB. Assuming propagation of the sporadic car parking noise via a partially open window (-15 dB) the resultant internal level is L_{Aeq,1hr} 16 dB.
- 5.46 In this case, predicted internal noise level within neighbouring residential properties remains below the adopted design criterion of 25 dB L_{Aeq,T} following transmission from car park activity noise in via open residential windows.

6. CONCLUSION

- 6.1 Acoustics Plus Ltd has undertaken an assessment of the potential noise impacts associated with the proposed change of use of the existing tyre-fitting premises at Cocklebury Road, Chippenham, to a convenience store (Class E). The assessment has considered noise from the proposed mechanical plant, delivery activity and customer car parking, having regard to the existing acoustic environment and the requirements provided by Wiltshire Council.
- 6.2 The existing acoustic environment has been established through a 96-hour unattended noise survey undertaken at a location representative of the nearest residential noise-sensitive receptors on Market Mead. The survey identified relatively low background sound levels, particularly during the night-time period.
- 6.3 The proposed mechanical plant has been assessed using manufacturers' noise data and incorporating the proposed acoustic screening. During the daytime period, the combined predicted rating level at the nearest residential façade is approximately 37 dBA. This exceeds the Local Planning Authority's adopted criterion of 33 dBA and therefore the proposed plant, as presently specified and screened, does not demonstrate compliance with that criterion. During the night-time period, when only the four refrigeration units are proposed to operate, the predicted combined rating level is approximately 28 dBA. Although this is above the stated LPA criterion of 25 dBA, it is below the typical measured night-time background sound level and is a very low absolute rating level. Having regard to the contextual provisions of BS 4142:2014+A1:2019, the predicted night-time plant noise is therefore considered unlikely to result in an adverse or significant adverse impact upon the nearby residential receptors.
- 6.4 Noise associated with deliveries has also been assessed. The initial BS 4142 numerical comparison indicates a significant adverse impact due to the relatively low existing background sound levels and the short-duration, relatively high-level nature of delivery activities. However, the contextual assessment has taken account of the anticipated frequency and duration of deliveries, the daytime-only restriction proposed, the absolute predicted noise levels and the existing acoustic environment. On this basis, deliveries undertaken during the daytime period are considered unlikely to result in a significant adverse impact or material change in the quality of life of nearby residents. It is recommended that deliveries are restricted to the daytime period, with no deliveries taking place during the late evening or night-time.
- 6.5 Noise from customer car parking and associated customer activity has been assessed separately, recognising that such sporadic activity falls outside the scope of BS 4142. The predicted internal noise level within the nearest residential properties is approximately 16 dB $L_{Aeq,1hr}$, which is below the adopted internal criterion of 25 dB $L_{Aeq,T}$. Customer car parking is therefore not expected to result in an unacceptable loss of residential amenity.
- 6.6 The proposed development also represents a change from the existing tyre-fitting use. The existing use would have the potential to generate intermittent, impulsive and mechanical noise associated with workshop activities, vehicle movements, compressed-air equipment and the opening of vehicle bays.

- 6.7 The proposed convenience store use is therefore not expected to introduce a fundamentally more intrusive acoustic environment than the existing use, subject to the proposed mitigation and operational controls.
- 6.8 In conclusion, the assessment demonstrates that noise from customer car parking and night-time mechanical plant is unlikely to result in an adverse or significant adverse impact when considered in accordance with BS 4142 and its contextual provisions. Delivery activity is expected to be noticeable at nearby residential properties but, subject to appropriate daytime restrictions and the anticipated limited frequency and duration of deliveries, is not considered likely to result in a significant adverse impact.
- 6.9 The daytime assessment indicates that the combined rating level from the proposed mechanical plant at the nearest residential façade is 37 dBA. Whilst this is above the Local Planning Authority's stated design criterion of 33 dBA, it is important to consider the predicted noise level in the context of the existing acoustic environment.
- 6.10 The assessment represents a robust scenario, with all six items of mechanical plant assumed to be operating simultaneously, this may not actually occur in reality. The assessment also incorporates the proposed acoustic screening, which provides additional attenuation between the plant and the residential receptors at Market Mead. The resulting predicted rating level of 37 dBA remains relatively low in absolute terms and is below the measured daytime ambient noise climate at the site, where average $L_{Aeq,16hr}$ level is 47 dBA.
- 6.11 The proposed plant is also associated with a convenience store use and will predominantly generate a steady mechanical sound rather than the intermittent, impulsive and potentially much more intrusive noise associated with the existing tyre-fitting use. The plant will therefore form a relatively low-level component of the existing acoustic environment and is not expected to materially alter the overall character of the local noise climate.
- 6.12 Furthermore, the nearest residential receptors are already exposed to noise from Cocklebury Road and the surrounding mixed commercial and residential environment. The predicted plant noise is therefore considered in the context of the existing acoustic environment which is not characterised by a particularly quiet or rural setting.
- 6.13 On this basis, although the calculated level is above the specific numerical criterion requested by the Local Planning Authority, the predicted 37 dBA rating level is considered to represent a low absolute level of sound and, when considered in conjunction with the existing acoustic environment, the proposed screening and the nature of the plant noise, is unlikely to result in a significant adverse impact upon the amenity of the neighbouring residential properties during the daytime.
- 6.14 It is recommended that the proposed acoustic screening is implemented as assessed and that the selected plant and associated attenuation measures are retained for the lifetime of the development. Subject to these measures, the daytime operation of the mechanical plant is considered acceptable in acoustic terms.
- 6.15 Subject to the implementation and retention of the proposed acoustic mitigation, appropriate control of delivery hours and confirmation of compliance with the required mechanical plant noise limits, it is considered that the proposed change of use can be operated without giving rise to an unacceptable adverse noise impact upon the surrounding residential properties.

Figures

Cocklebury Road, Chippenham, SN15 3QE



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

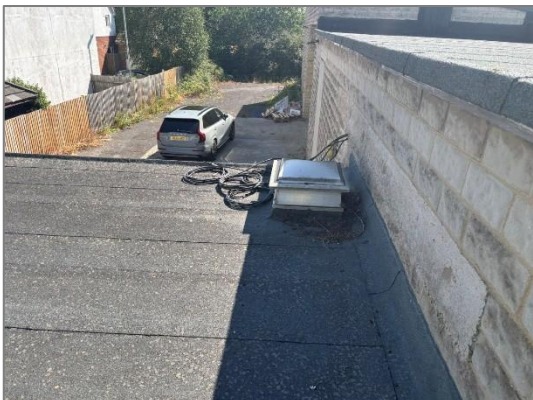


Figure 7

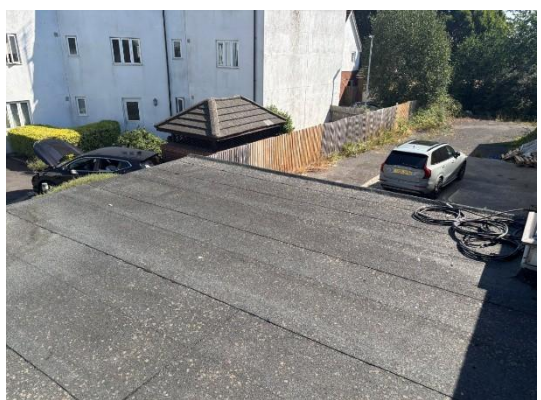


Figure 8

Cocklebury Road, Chippenham, SN15 3QE



Figure 9



Figure 10



Figure 11



Figure 12



Figure 13



Figure 14

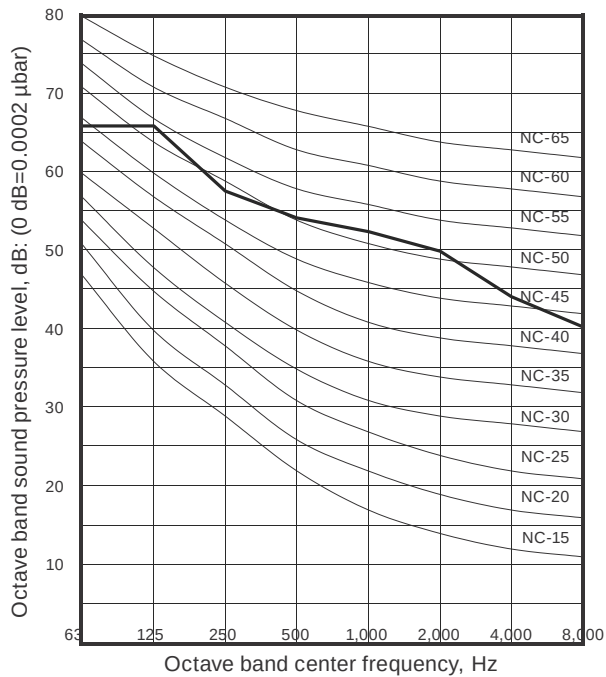


Figure 15

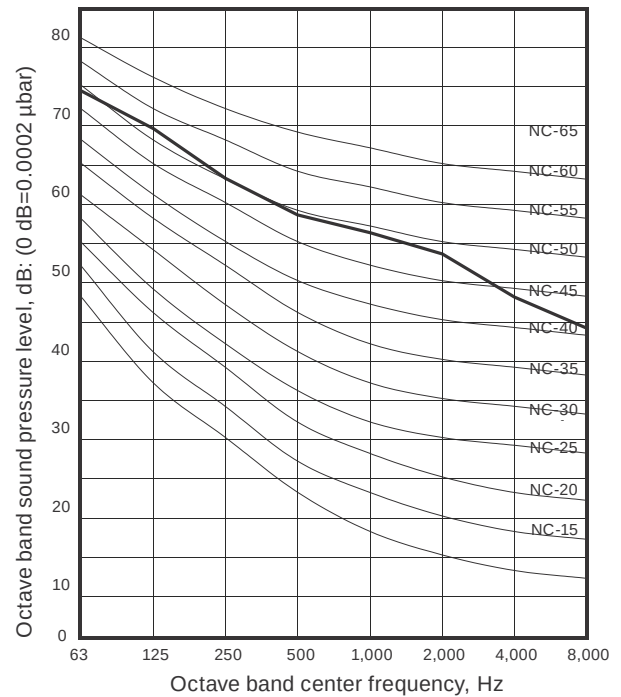
Appendix A

Model: AOYG54KATA

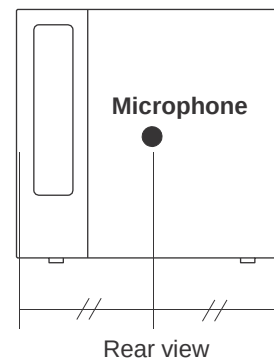
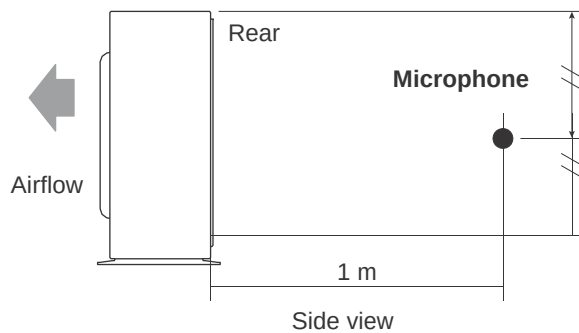
● Cooling



● Heating



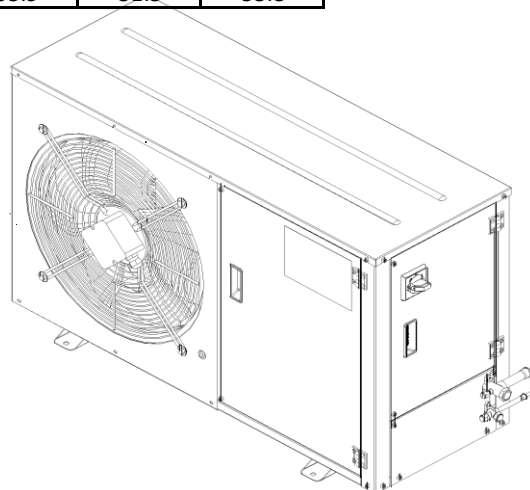
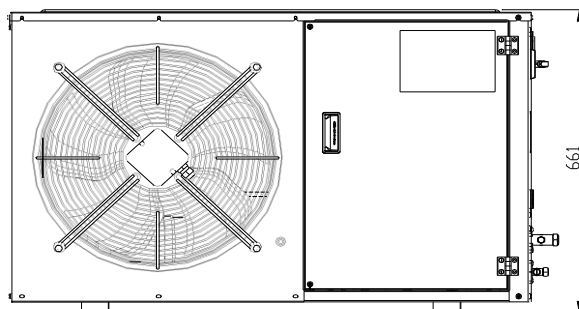
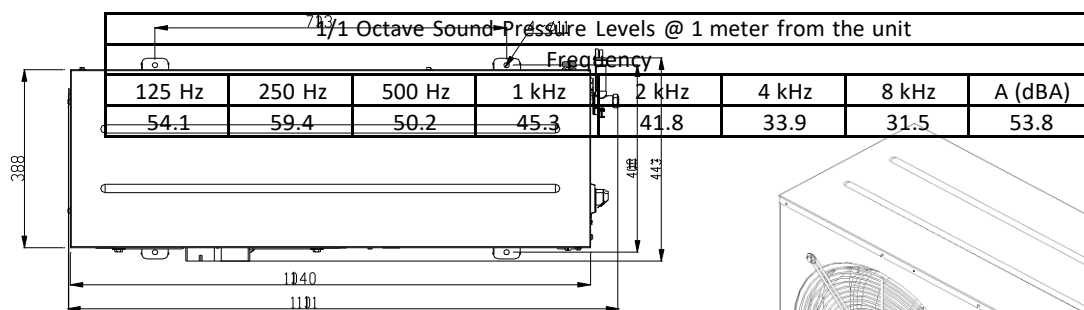
9-2. Sound level check point



NOTE: Detailed shape of the actual outdoor unit might be slightly different from the one illustrated above.

CONDENSING UNIT SPECIFICATION SHEET

Condensing Unit		Condenser	
Model	JEHS-0250-B2-M-1	Type	Microchannel
Application	Medium Temperature	Volume	0.51 litres
Electrical Supply		Liquid	
	230V / 1Ph / 50Hz	Volume	4.5 litres
Weights & Dimensions		Airflow	
Width	1101 mm	Volume	2700 m ³ /h
Depth	444 mm	Applicable	
Height	662 mm		
Mounting Dims.	703 mm (W) x 408 mm (D)	R134a/R404A/R407A/R407F/R448A/R449A	
Weight (Dry)	72 kgs	Unit Connections	
Compressor Data		Liquid	3/8"
Type	ZB19KQE-PFJ	Suction	3/4"
Swept Volume	6.80 m ³ /h	Sound Pressure Level @ 10m (-10°C/+32°C)	
Oil Charge	1.30 litres	34 dB(A)	
Nom. Current	9.3	Performance Data at -10°C/+32°C Conditions	
(A) MCC (A)	20.5		
LRC (A)	61.0		
Fan Motors		Capacity (W) 10K SH	Capacity (W) 20°C RGT
No.	1	R134a	2590
FLC (A)	0.6	R404A	3990
		R407A	3980
		R407F	3730
		R448A	3700
		R449A	3700



Product Information based on the requirements of Commission Regulation EU 2015/1095

Model : JEHS-0250-B2-M-1

Refrigerant fluid:		R404A	R407A	R407F	R448A	R449A	
Item	Symbol	Value					Unit
Evaporating temperature*	t	-10					°C
Parameters at full load and ambient temperature 32 °C							
Rated cooling capacity	P_A	4.27	4.09	3.82	3.82	3.82	kW
Rated power input	D_A	2.00	1.99	2.09	1.98	1.98	kW
Rated COP	COP_A	2.14	2.06	1.83	1.93	1.93	
Parameters at full load and ambient temperature 25 °C							
Cooling capacity	P_2	4.57	4.35	4.26	4.08	4.08	kW
Power input	D_2	1.70	1.79	1.83	1.76	1.76	kW
COP	COP_2	2.69	2.44	2.33	2.32	2.32	
Parameters at full load and ambient temperature 43 °C							
Cooling capacity	P_3	3.58	N/A	N/A	3.35	3.35	kW
Power input	D_3	2.46	N/A	N/A	2.47	2.47	kW
COP	COP_3	1.46	N/A	N/A	1.36	1.36	
Other items							
Capacity control	Fixed						
Coefficient of degradation for fixed and staged capacity units*	C_d	0.25					
Contact details	Daikin Refrigeration Malaysia Sdn. Bhd. Lot 10, Jalan Perusahaan 8, Kawasan Perusahaan Pekan Banting, 42700 Banting, Selangor Darul Ehsan.						

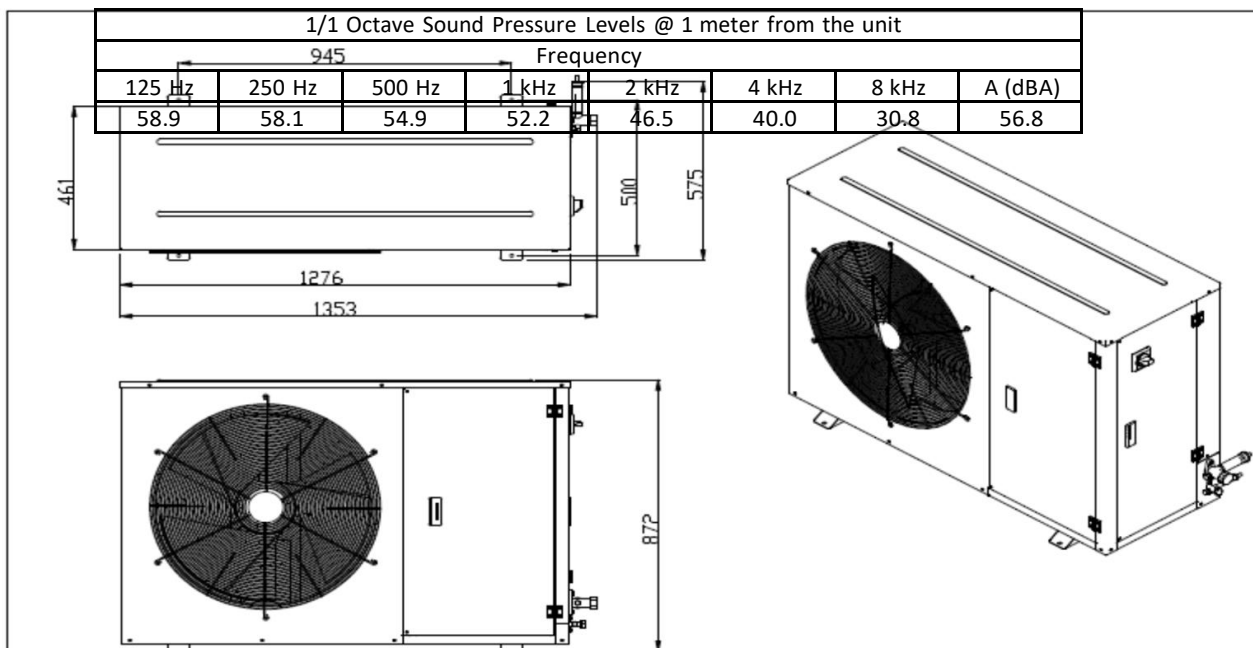
Note: Published data based on condition - Return Gas Temperature 20° C



6SC0250EM-ABBA-55

CONDENSING UNIT SPECIFICATION SHEET

Condensing Unit		Condenser	
Model	JEHS-0350-B3-M-1	Type	Al-Cu Fin/Tube
Application	Medium Temperature	Volume	4.42 litres
Electrical Supply		Liquid	
	230V / 1Ph / 50Hz	Volume	7.6 litres
Weights & Dimensions		Airflow	
Width	1353 mm	Volume	4250 m ³ /h
Depth	575 mm	Applicable	
Height	872 mm		
Mounting Dims.	945 mm (W) x 500 mm (D)	R134a/R404A/R407A/R407F/R448A/R449A	
Weight (Dry)	112 kgs	Unit Connections	
Compressor Data		Liquid	1/2"
Type	ZB26KQE-PFJ	Suction	3/4"
Swept Volume	9.90 m ³ /h	Sound Pressure Level @ 10m (-10°C/+32°C)	
Oil Charge	1.50 litres	37 dB(A)	
Nom. Current	13.9	Performance Data at -10°C/+32°C Conditions	
(A) MCC (A)	25.0		
LRC (A)	97.0		
Fan Motors		Capacity (W) 10K SH	Capacity (W) 20°C RGT
No.	1	R134a	3610
FLC (A)	0.9	R404A	5540
		R407A	5400
		R407F	5390
		R448A	5600
		R449A	5600



Product Information based on the requirements of Commission Regulation EU 2015/1095

Model : JEHS-0350-B3-M-1

Refrigerant fluid:		R404A	R407A	R407F	R448A	R449A	
Item	Symbol	Value					Unit
Evaporating temperature*	t	-10					°C
Annual electricity consumption	Q	11418	9976	10740	11736	11736	kWh/a
Seasonal Energy Performance Ratio	$SEPR$	3.19	3.43	3.16	3.02	3.02	
Parameters at full load and ambient temperature 32 °C (Point A)							
Rated cooling capacity	P_A	5.93	5.56	5.52	5.76	5.76	kW
Rated power input	D_A	3.15	2.53	2.84	2.83	2.83	kW
Rated COP	COP_A	1.88	2.20	1.94	2.04	2.04	
Parameters at part load and ambient temperature 25 °C (Point B)							
Declared cooling capacity	P_B	6.650	6.050	6.070	6.250	6.250	kW
Declared power input	D_B	2.730	2.220	2.430	2.440	2.440	kW
Declared COP	COP_B	2.44	2.73	2.50	2.56	2.56	
Parameters at part load and ambient temperature 15 °C (Point C)							
Declared cooling capacity	P_C	7.700	6.710	6.700	6.720	6.720	kW
Declared power input	D_C	2.180	1.840	1.970	2.110	2.110	kW
Declared COP	COP_C	3.53	3.65	3.40	3.18	3.18	
Parameters at part load and ambient temperature 5 °C (Point D)							
Declared cooling capacity	P_D	8.390	7.320	7.150	7.250	7.250	kW
Declared power input	D_D	1.860	1.530	1.630	1.790	1.790	kW
Declared COP	COP_D	4.51	4.78	4.39	4.05	4.05	
Parameters at full load and ambient temperature 43 °C							
Cooling capacity	P_3	4.74	N/A	N/A	4.99	4.99	kW
Power input	D_3	3.95	N/A	N/A	3.54	3.54	kW
Declared COP	COP_3	1.20	N/A	N/A	1.41	1.41	
Other items							
Capacity control	Fixed						
Coefficient of degradation for fixed and staged capacity units*	C_d	0.25					
Contact details	Daikin Refrigeration Malaysia Sdn. Bhd. Lot 10, Jalan Perusahaan 8, Kawasan Perusahaan Pekan Banting, 42700 Banting, Selangor Darul Ehsan.						

Note: Published data based on condition - Return Gas Temperature
20° C

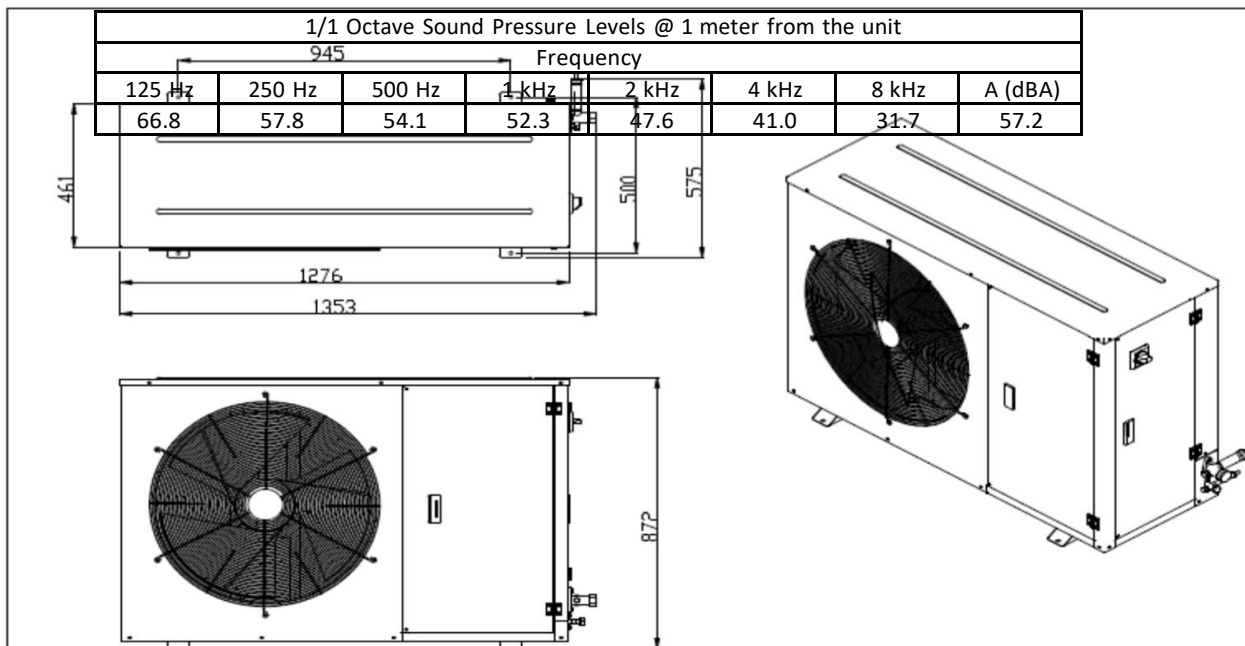


6SC0360EM-ABBA-55

Refrigerant fluid:		R134a	
Item	Symbol	Value	Unit
Evaporating temperature*	t	-10	°C
Parameters at full load and ambient temperature 32 °C			
Rated cooling capacity	P_A	3.73	kW
Rated power input	D_A	1.75	kW
Rated COP	COP_A	2.13	
Parameters at full load and ambient temperature 25 °C			
Rated cooling capacity	P_2	4.00	kW
Rated power input	D_2	1.54	kW
Rated COP	COP_2	2.60	
Parameters at full load and ambient temperature 43 °C			
Rated cooling capacity	P_3	N/A	kW
Rated power input	D_3	N/A	kW
Rated COP	COP_3	N/A	
Other items			
Capacity control		Fixed	
Coefficient of degradation for fixed and staged capacity units*	C_d	0.25	
Contact details	Daikin Refrigeration Malaysia Sdn. Bhd. Lot 10, Jalan Perusahaan 8, Kawasan Perusahaan Pekan Banting, 42700 Banting, Selangor Darul Ehsan.		

CONDENSING UNIT SPECIFICATION SHEET

Condensing Unit		Condenser	
Model	JEHS-0400-B3-M-1	Type	Al-Cu Fin/Tube
Application	Medium Temperature	Volume	4.42 litres
Electrical Supply		Liquid	
	230V / 1Ph / 50Hz	Volume	7.6 litres
Weights & Dimensions		Airflow	
Width	1353 mm	Volume	4250 m ³ /h
Depth	575 mm	Applicable	
Height	872 mm		
Mounting Dims.	945 mm (W) x 500 mm (D)	R134a/R404A/R407A/R407F/R448A/R449A	
Weight (Dry)	119 kgs	Unit Connections	
Compressor Data		Liquid	1/2"
Type	ZB29KQE-PFJ	Suction	7/8"
Swept Volume	11.40 m ³ /h	Sound Pressure Level @ 10m (-10°C/+32°C) 37 dB(A)	
Oil Charge	1.36 litres	Performance Data at -10°C/+32°C Conditions	
Nom. Current	16.1		
(A) MCC (A)	28.0		
LRC (A)	114.0		
Fan Motors		Capacity (W) 10K SH	
No.	1	R134a	4900
FLC (A)	0.9	R404A	6650
		R407A	6910
		R407F	6850
		R448A	6170
		R449A	6170
		Capacity (W) 20°C RGT	
			5050
			7120
			7110
			6980
			6370
			6370



Product Information based on the requirements of Commission Regulation EU 2015/1095

Model : JEHS-0400-B3-M-1

Refrigerant fluid:		R404A	R407A	R407F	R448A	R449A	
Item	Symbol	Value					Unit
Evaporating temperature*	t	-10					°C
Annual electricity consumption	Q	12946	12123	12112	12512	12512	kWh/a
Seasonal Energy Performance Ratio	$SEPR$	3.38	3.61	3.54	3.13	3.13	
Parameters at full load and ambient temperature 32 °C (Point A)							
Rated cooling capacity	P_A	7.12	7.11	6.98	6.37	6.37	kW
Rated power input	D_A	3.20	3.02	3.23	3.22	3.22	kW
Rated COP	COP_A	2.23	2.35	2.16	1.98	1.98	
Parameters at part load and ambient temperature 25 °C (Point B)							
Declared cooling capacity	P_B	7.880	7.690	7.640	6.900	6.900	kW
Declared power input	D_B	2.860	2.660	2.790	2.750	2.750	kW
Declared COP	COP_B	2.76	2.89	2.74	2.51	2.51	
Parameters at part load and ambient temperature 15 °C (Point C)							
Declared cooling capacity	P_C	8.890	8.390	8.410	7.540	7.540	kW
Declared power input	D_C	2.440	2.190	2.240	2.260	2.260	kW
Declared COP	COP_C	3.64	3.83	3.75	3.34	3.34	
Parameters at part load and ambient temperature 5 °C (Point D)							
Declared cooling capacity	P_D	9.830	8.870	9.050	8.160	8.160	kW
Declared power input	D_D	2.110	1.790	1.790	1.890	1.890	kW
Declared COP	COP_D	4.66	4.96	5.06	4.32	4.32	
Parameters at full load and ambient temperature 43 °C							
Cooling capacity	P_3	5.84	N/A	N/A	5.57	5.57	kW
Power input	D_3	3.85	N/A	N/A	4.08	4.08	kW
Declared COP	COP_3	1.52	N/A	N/A	1.37	1.37	
Other items							
Capacity control		Fixed					
Coefficient of degradation for fixed and staged capacity units*	C_d	0.25					
Contact details	Daikin Refrigeration Malaysia Sdn. Bhd. Lot 10, Jalan Perusahaan 8, Kawasan Perusahaan Pekan Banting, 42700 Banting, Selangor Darul Ehsan.						

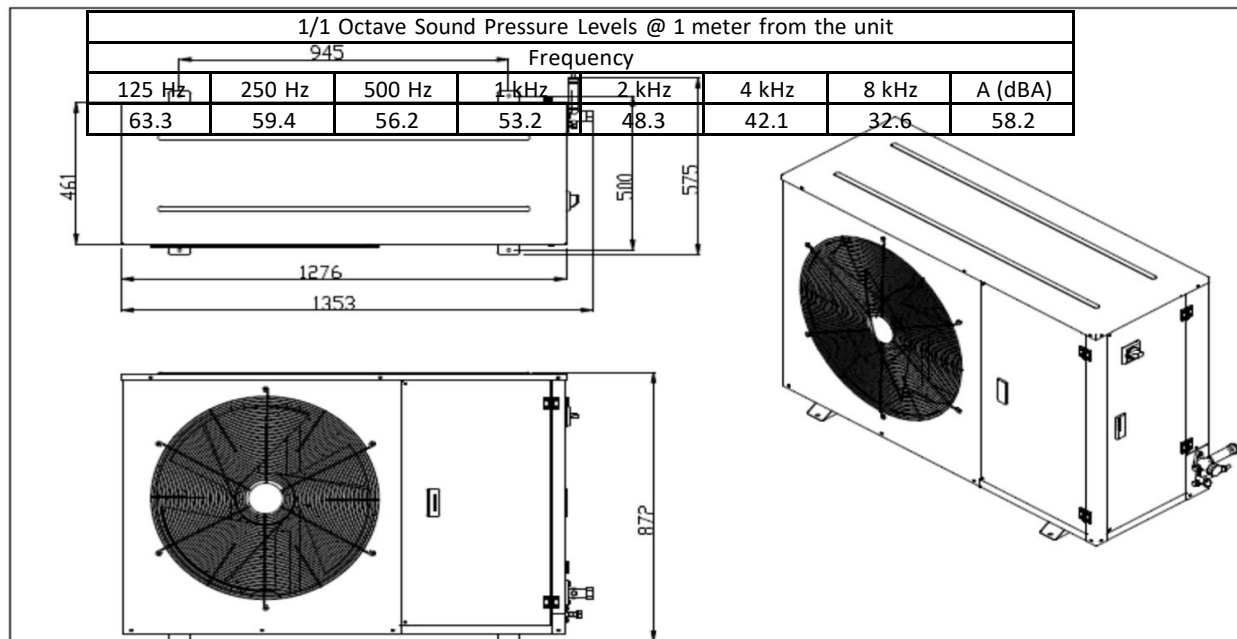
Note: Published data based on condition - Return Gas Temperature 20°C



6SC0400EM-ABBA-55

CONDENSING UNIT SPECIFICATION SHEET

Condensing Unit		Condenser	
Model	JEHS-0500-B3-M-3	Type	Al-Cu Fin/Tube
Application	Medium Temperature	Volume	4.42 litres
Electrical Supply		Liquid	
	400V / 3Ph / 50Hz	Volume	7.6 litres
Weights & Dimensions		Airflow	
Width	1353 mm	Volume	4250 m ³ /h
Depth	575 mm	Applicable	
Height	872 mm		
Mounting Dims.	945 mm (W) x 500 mm (D)	R134a/R404A/R407A/R407F/R448A/R449A	
Weight (Dry)	123 kgs	Unit Connections	
Compressor Data		Liquid	1/2"
Type	ZB38KQE-	Suction	7/8"
Swept Volume	TFD 14.40 m ³ /h		
Oil Charge	2.07 litres	Sound Pressure Level @ 10m (-10°C/+32°C)	
Nom. Current	8.2	38 dB(A)	
(A) MCC (A)	13.5	Performance Data at -10°C/+32°C Conditions	
LRC (A)	65.5		
Fan Motors		Capacity (W) 10K SH	
No.	1	R134a	5240
FLC (A)	0.9	R404A	8030
		R407A	8030
		R407F	7990
		R448A	7600
		R449A	7600
		Capacity (W) 20°C RGT	
			n/a
			8660
			8280
			8180
			7880
			7880



Product Information based on the requirements of Commission Regulation EU 2015/1095

Model : JEHS-0500-B3-M-3

Refrigerant fluid:		R404A	R407A	R407F	R448A	R449A	
Item	Symbol	Value					Unit
Evaporating temperature*	t	-10					°C
Annual electricity consumption	Q	16466	15848	16401	16305	16305	kWh/a
Seasonal Energy Performance Ratio	$SEPR$	3.23	3.21	3.07	2.97	2.97	
Parameters at full load and ambient temperature 32 °C (Point A)							
Rated cooling capacity	P_A	8.66	8.28	8.18	7.88	7.88	kW
Rated power input	D_A	4.39	3.93	4.36	4.43	4.43	kW
Rated COP	COP_A	1.97	2.11	1.88	1.78	1.78	
Parameters at part load and ambient temperature 25 °C (Point B)							
Declared cooling capacity	P_B	9.610	9.000	9.000	8.870	8.870	kW
Declared power input	D_B	3.820	3.460	3.810	3.680	3.680	kW
Declared COP	COP_B	2.52	2.60	2.36	2.41	2.41	
Parameters at part load and ambient temperature 15 °C (Point C)							
Declared cooling capacity	P_C	10.900	9.910	10.000	9.800	9.800	kW
Declared power input	D_C	3.150	2.890	3.090	3.060	3.060	kW
Declared COP	COP_C	3.46	3.43	3.24	3.20	3.20	
Parameters at part load and ambient temperature 5 °C (Point D)							
Declared cooling capacity	P_D	12.050	10.600	10.850	10.600	10.600	kW
Declared power input	D_D	2.600	2.410	2.450	2.570	2.570	kW
Declared COP	COP_D	4.63	4.40	4.43	4.12	4.12	
Parameters at full load and ambient temperature 43 °C							
Cooling capacity	P_3	7.03	N/A	N/A	6.79	6.79	kW
Power input	D_3	5.48	N/A	N/A	5.46	5.46	kW
Declared COP	COP_3	1.28	N/A	N/A	1.24	1.24	
Other items							
Capacity control	Fixed						
Coefficient of degradation for fixed and staged capacity units*	C_d	0.25					
Contact details	Daikin Refrigeration Malaysia Sdn. Bhd. Lot 10, Jalan Perusahaan 8, Kawasan Perusahaan Pekan Banting, 42700 Banting, Selangor Darul Ehsan.						

Note: Published data based on condition - Return Gas Temperature 20° C



6SC0500EM-FBBA-55