

Appendix NOI

Noise and Vibration Study



Amáre Apartment Homes Project

Noise and Vibration Study

prepared for

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February 2022



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1 Project Description and Impact Summary

1.1 Introduction

This study analyzes the potential noise and vibration impacts of the proposed Am re Apartment Homes Project (project) in the City of Martinez (City), Contra Costa County, California. Rincon Consultants, Inc. (Rincon) prepared this study under contract to The Austin Group LLC in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the project’s noise and vibration impacts related to both temporary construction activity and long-term operation of the project. Table 1 provides a summary of project impacts.

Table 1 Summary of Impacts

Issue	Impact	Applicable Recommendations
Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Less than significant impact (Construction) Less than significant impact (Operation)	None
Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Less than significant impact (Construction) Less than significant impact (Operation)	None
For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact	None
Would the project conflict with land use compatibility guidelines for noise?	May conflict with exterior and interior noise standards	NOI-1 (Exterior-to-interior Noise Analysis)

1.2 Project Summary

Project Location

The project site is approximately 6.06 acres and located in between Arnold Drive and State Route 4 (SR 4) on assessor parcel numbers (APNs) 161-400-009 and 161-400-010. The project site is generally undeveloped. The site is zoned Mixed Use District: Multi-Family Residential/Professional and Administrative Offices (M-R-1.5/PA), as defined by the City’s Zoning Ordinance. The General Plan land use designation of the project site is Mixed Residential (up to 29 units/acre)/Office (MR/O). Figure 1 shows the regional location of the site, and Figure 2 shows the project site in the existing neighborhood context.

Figure 2 Project Location



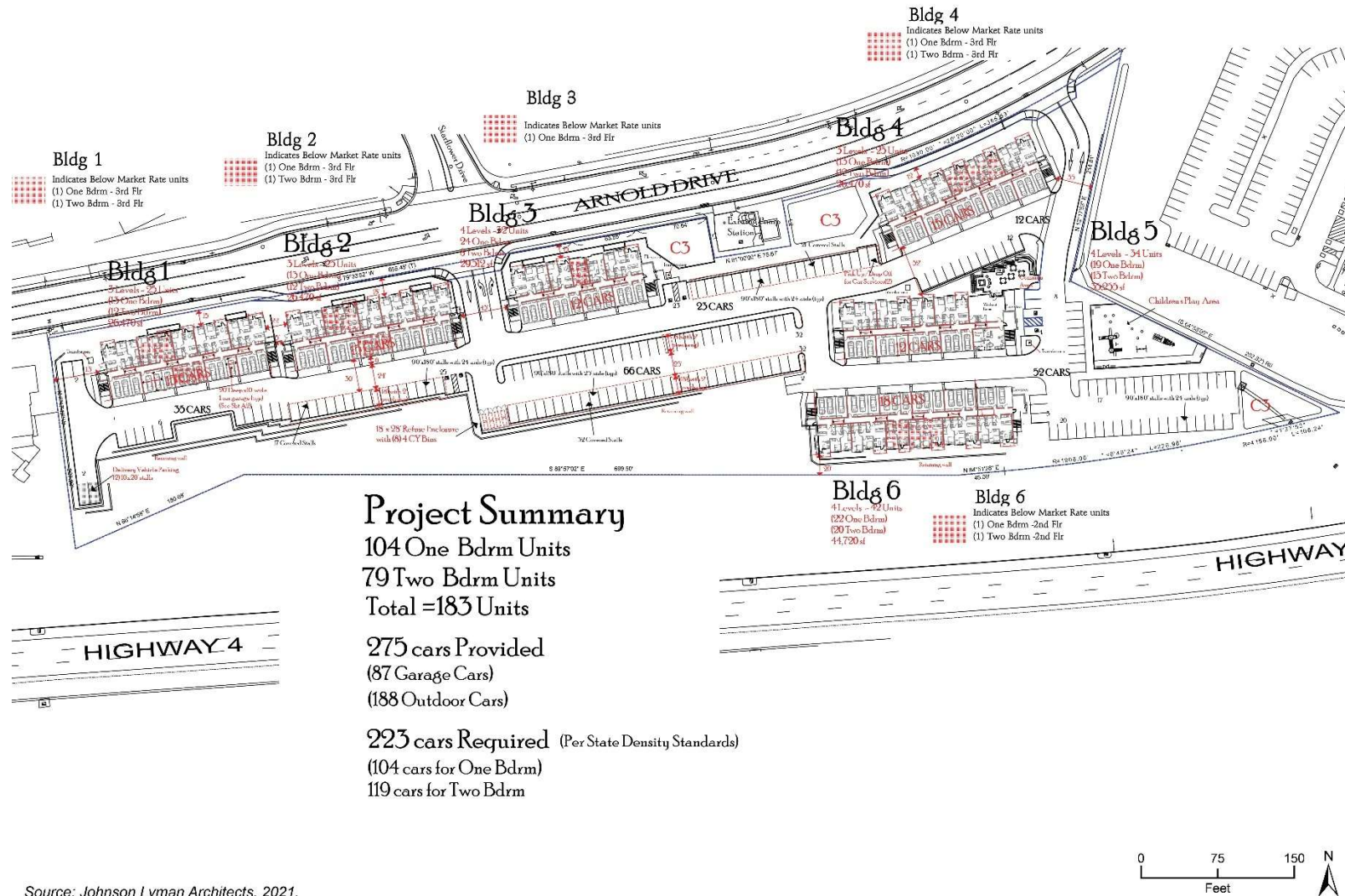
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Fig 2 Project Location_20200427

Project Description

The proposed project would involve the construction of six buildings that would include 104 one-bedroom residential units and 79 two-bedroom units, for a total of 183 residential units. Additional onsite amenities would include a workout facility, business center, children's play area, outdoor kitchen area, and parking areas. The project would include 77,855 square feet of open space. Three of the six buildings would be three stories and the remaining three buildings would be four stories. The new apartment buildings would be 31,483 square feet on average for a total of 188,897 square feet of total building area. Primary access to the site is provided via two entrances off Arnold Drive. No demolition of existing structures would be required. Construction would take approximately 24 months to complete. Figure 3 shows the project site plan of the ground floor.

Figure 3 Site Plan



Source: Johnson Lyman Architects, 2021.

2 Background

2.1 Overview of Sound Measurement

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

Human Perception of Sound

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response. Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Caltrans 2013).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (10.5 times the sound energy) (Caltrans 2013).

Sound Propagation and Shielding

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in the noise level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line), the path the sound will travel, site conditions, and obstructions.

Sound levels are described as either a “sound power level” or a “sound pressure level,” which are two distinct characteristics of sound. Both share the same unit of measurement, the dB. However, sound power (expressed as L_{pw}) is the energy converted into sound by the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers, such as an eardrum or microphone, which is the sound pressure level. Sound measurement instruments only measure sound pressure, and noise level limits are typically expressed as sound pressure levels.

Noise levels from a point source (e.g., construction, industrial machinery, air conditioning units) typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance. Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, and man-made features,

such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to noise as well. The FHWA's guidance indicates that modern building construction generally provides an exterior-to-interior noise level reduction of 10 dBA with open windows and an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows (FHWA 2011).

Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. The noise descriptors used for this study are the equivalent noise level (L_{eq}), Day-Night Average Level (DNL; may also be symbolized as L_{dn}), and the community noise equivalent level (CNEL; may also be symbolized as L_{den}).

L_{eq} is one of the most frequently used noise metrics; it considers both duration and sound power level. The L_{eq} is defined as the single steady-state A-weighted sound level equal to the average sound energy over a time period. When no time period is specified, a 1-hour period is assumed. The L_{max} is the highest noise level within the sampling period, and the L_{min} is the lowest noise level within the measuring period. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.). Community noise can also be measured using Community Noise Equivalent Level (CNEL or L_{DEN}), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013).¹ The relationship between the peak-hour L_{eq} value and the L_{dn} /CNEL depends on the distribution of noise during the day, evening, and night; however noise levels described by L_{dn} and CNEL usually differ by 1 dBA or less. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 CNEL, while areas near arterial streets are in the 50 to 60+ CNEL range (FTA 2018).

2.2 Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as groundborne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

¹ Because DNL and CNEL are typically used to assess human exposure to noise, the use of A-weighted sound pressure level (dBA) is implicit. Therefore, when expressing noise levels in terms of DNL or CNEL, the dBA unit is not included.

Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used as it corresponds to the stresses that are experienced by buildings (Caltrans 2020).

High levels of groundborne vibration may cause damage to nearby building or structures; at lower levels, groundborne vibration may cause minor cosmetic (i.e., non-structural damage) such as cracks. These vibration levels are nearly exclusively associated with high impact activities such as blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation. The American Association of State Highway and Transportation Officials (AASHTO) has determined vibration levels with potential to damage nearby buildings and structures; these levels are identified in Table 2.

Table 2 AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (in/sec)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5

Source: Caltrans 2020

Numerous studies have been conducted to characterize the human response to vibration. The vibration annoyance potential criteria recommended for use by Caltrans, which are based on the general human response to different levels of groundborne vibration velocity levels, are described in Table 3.

Table 3 Vibration Annoyance Potential Criteria

Human Response	Vibration Level (in/sec PPV)	
	Transient Sources	Continuous/ Frequent Intermittent Sources ¹
Severe	2.0	0.4
Strongly perceptible	0.9	0.10
Distinctly perceptible	0.25	0.04
Barely perceptible	0.04	0.01

in/sec = inches per second; PPV = peak particle velocity

¹ Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2020

2.3 Sensitive Receivers

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. The City of Martinez General Plan Noise Element identifies noise-sensitive land uses as hospitals, schools, churches, senior care uses and similar facilities (City of Martinez 2016).

Vibration-sensitive receivers, which are similar to noise-sensitive receivers, include residences and institutional uses, such as schools, churches, and hospitals. Vibration-sensitive receivers also include buildings where vibrations may interfere with vibration-sensitive equipment that is affected by vibration levels that may be well below those associated with human annoyance (e.g., recording studios or medical facilities with sensitive equipment).

As shown in Figure 2, the nearest sensitive receivers to the site boundaries are single-family residences adjacent to the project site to the west and across Arnold Drive 90 feet to the north, and single-family residences 450 feet to the south across SR 4.

2.4 Project Noise Setting

The most prevalent source of noise in the project site vicinity is vehicular traffic on Highway 4 to the south and Arnold Drive to the north. To characterize ambient sound levels at and near the project site, two 15-minute sound level measurements and one 24-hour measurement and were conducted on Tuesday, January 25, 2022 10:41 a.m., 11:02 a.m., and 11:31 a.m. An Extech, Model 407780A, ANSI Type 2 integrating sound level meter was used to conduct the measurements. Noise Measurement (NM) 1 was conducted to measure noise from SR 4 to the project site; NM-2 was conducted to measure noise from Arnold Drive to the project site; and Long Term (LT) 1 was conducted to analyze ambient noise levels in the western portion of the project site. These noise levels would be representative of ambient noise levels at the nearest sensitive receivers to the project site (residences adjacent to the west). Table 4 and Table 5 summarize the results of the noise measurements. Detailed sound level measurement data are included in Appendix A.

Table 4 Project Site Vicinity Sound Level Monitoring Results- Short-Term

Measurement Location		Sample Times	Approximate Distance to Primary Noise Source	L _{eq} (dBA)	L _{min} (dBA)	L _{max} (dBA)
NM-1	Southern Boundary of Project Site	10:29 – 10:44 a.m.	85 feet to Centerline of SR 4	58	56	63
NM-2	Northern Boundary of Project Site	10:53 – 11:08 a.m.	30 feet to Centerline of Arnold Drive	63	49	79 ¹

¹An airplane was observed overhead during NM-2 that resulted in the L_{max} value. Airport land use impacts are discussed under Section 4.4, Issue 4.

L_{eq} = average noise level equivalent; dBA = A-weighted decibel; L_{min} = minimum instantaneous noise level; L_{max} = maximum instantaneous noise level

Detailed sound level measurement data are included in Appendix A.

Table 5 Project Site Vicinity Noise Monitoring Results – Long Term

Sample Time	dBA L _{eq}	Sample Time	dBA L _{eq}
24-hour Measurement – West Side of Project Site – January 25-26, 2022			
11:30 a.m.	57.1	11:30 p.m.	55.8
12:30 p.m.	55.2	12:30 a.m.	51.4
1:30 p.m.	55.1	1:30 a.m.	51.7
2:30 p.m.	55.5	2:30 a.m.	51.4
3:30 p.m.	57.2	3:30 a.m.	56.8
4:30 p.m.	59.3	4:30 a.m.	58.3
5:30 p.m.	58.5	5:30 a.m.	62.4
6:30 p.m.	59.5	6:30 a.m.	62.3
7:30 p.m.	59.0	7:30 a.m.	62.6
8:30 p.m.	60.7	8:30 a.m.	59.3
9:30 p.m.	58.8	9:30 a.m.	57.8
10:30 p.m.	57.4	10:30 a.m.	57.4
24-hour Noise Level (CNEL)			64.8
L _{eq} = average noise level equivalent; dBA = A-weighted decibel; CNEL = Community Noise Equivalent Level			
Detailed sound level measurement data are included in Appendix A.			

2.5 Regulatory Setting

City of Martinez 1985 Noise Element of the General Plan

The City of Martinez Noise Element was adopted by the City through Resolution No, 194-85 on November 20, 1985, and utilizes the recommended State of California Office of Planning and Research (OPR) Noise Element Guidelines for community noise exposure. For low density residential land uses, these guidelines stipulate an ambient noise environment of up to 60 dBA L_{dn} is acceptable, up to dBA 70 L_{dn} is conditionally acceptable, and above 70 L_{dn} is normally unacceptable (City of Martinez 1985). These guidelines are consistent with the State Office of Planning and Research’s (OPR) most recent general plan guidelines (OPR 2017).

City of Martinez Municipal Code

MMC Section 8.34 (Noise Control) prescribes standards prohibiting detrimental levels of noise to implement the goals of the Noise Element of the General Plan. The following standards would be applicable to the proposed project:

8.34.020 Noise Standards

- A. Acceptable standards for noise levels shall be as follows:
1. A L_{dn} of 45 dBA is the standard for interior noise levels. An L_{dn} of 45 dBA is achieved by an allowable interior noise level of 35 dBA between 10:00 p.m. - 7:00 a.m. and 45 dBA between 7:00 a.m. - 10:00 p.m.
 2. A L_{dn} of 60 dBA is the standard for exterior noise. An L_{dn} of 60 dBA is a maximum noise level of 50 dBA between 10:00 p.m. - 7:00 a.m. and 60 dBA between 7:00 a.m. - 10:00 p.m.

8.34.030 Noise Regulations

The following specific acts are declared to be public nuisances and are prohibited, subject to the exemptions set forth herein.

- A. No person shall cause or allow to cause, any source of sound at any location within the City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which when measured within public or private indoor or outdoor space on the property where the noise disturbance is being experienced, causes the noise level to exceed the standards set forth in Section 8.34.020.
- B. The operation or use of any of the following before 7:00 a.m., or after 7:00 p.m. daily (except Saturday, Sunday, and State, Federal or Local Holidays, when the prohibited time shall be before 9:00 a.m. and after 5:00 p.m.).
 - 1. A hammer or any other device or implement used to repeatedly pound or strike an object.
 - 2. An impact wrench, or other tool or equipment powered by compressed air.
 - 3. Any tool or piece of equipment powered by an internal-combustion engine such as, but not limited to, chain saw, backpack leaf blower, and lawn mower. Except as specifically included in this Chapter, motor vehicles, powered by an internal combustion engine and subject to the State of California Vehicle Code, are excluded from this prohibition.
 - 4. Any electrically or battery powered tool or piece of equipment used for cutting drilling, or shaping wood, plastic, metal or other materials or objects, such as but not limited to a saw, drill, lathe, or router.
 - 5. Any of the following: the operation and/or loading or unloading of heavy equipment (such as but not limited to bulldozer, road grader, back hoe), ground drilling and boring equipment, hydraulic crane and boom equipment, portable power generator or pump, pavement equipment (such as but not limited to pneumatic hammer, pavement breaker, tamper, compacting equipment), pile-driving equipment, vibrating roller, sand blaster, gunite machine, trencher, concrete truck, and hot kettle pump and the like.
 - 6. Construction, demolition, excavation, erection, alteration, or repair activity.
- D. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans or similar objects between the hours of 10:00 p.m. and 7:00 a.m. daily in such a manner so as to create a noise disturbance.

8.34.060 Noise Standards for New Construction

- A. All residential development, including hotels and motels, subject to California Building Code, Title 24, Part 2, Section 1207, which are to proposed be located in zones exceeding 60 dB CNEL, or residential developments which are proposed to be located within 500 feet of any major arterial, highway, railroad or mass transit line shall submit, to the Community Development Department, as part of a development application, on-site noise measurements to determine existing and future noise levels, and shall include noise attenuation provisions in the design of those developments if they are found to exceed the adopted standards set forth herein.

3 Methodology

3.1 Construction Noise

Construction noise was estimated using the FHWA Roadway Construction Noise Model (RCNM) (FHWA 2006). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at noise sensitive receivers near the project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation rate of 6 dBA per doubling of distance for stationary equipment.

Variation in power imposes additional complexity in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the L_{eq} of the operation (FTA 2018). Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some will have higher continuous noise levels than others, and some have high-impact noise levels.

Construction activity would result in temporary noise in the project site vicinity, exposing surrounding nearby receivers to increased noise levels. Construction noise would typically be higher during the heavier periods of initial construction (i.e., site preparation and grading) and would be lower during the later construction phases (i.e., building construction and paving). Typical heavy construction equipment during project grading could include dozers, loaders, graders, and dump trucks. It is assumed that diesel engines would power all construction equipment. Construction equipment would not all operate at the same time or location. In addition, construction equipment would not be in constant use during the 8-hour operating day.

Project construction would occur nearest to the single-family residences north of the project site. Over the course of a typical construction day, construction equipment would be located as close as 15 feet to the properties but would typically be located at an average distance farther away due to the nature of construction and the lot size of the project. For example, during a typical construction day, the equipment may operate approximately 100 to 300 feet from a nearby sensitive receiver. Therefore, it is assumed that over the course of a typical construction day the construction equipment would operate at an average distance of 200 feet from the single-family residences to the north.

Construction noise is typically loudest during activities that involve excavation and move soil, such as site preparation and grading. A potential construction scenario includes a dozer and a front-end loader working during grading to excavate and move soil. At a distance of 200 feet, a dozer and a front-end loader would generate a noise level of 67.6 dBA L_{eq} (RCNM calculations are included in Appendix B).

3.2 Groundborne Vibration

The project does not include any substantial vibration sources associated with operation. Thus, construction activities have the greatest potential to generate ground-borne vibration affecting nearby receivers, especially during grading and excavation of the project site. Table 6 shows vibration levels of anticipated grading and excavation equipment used during construction. The greatest vibratory source during construction in the project vicinity would be a large bulldozer. Neither blasting nor pile driving would be required for construction of the project.

Table 6 Vibration Levels Measured during Construction Activities

Equipment	PPV at 25 ft. (in/sec)
Large Bulldozer	0.089
Loaded Trucks	0.076
Small Bulldozer	0.003

Source: FTA 2018

Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors; therefore, the vibration level threshold is assessed at occupied structures (FTA 2018). Therefore, all vibration impacts are assessed at the structure of an affected property.

Based on AASHTO recommendations, limiting vibration levels to below 0.2 In/sec PPV at residential structures would prevent structural damage regardless of building construction type. These limits are applicable regardless of the frequency of the source. However, as described in Section 2.2, *Vibration*, potential human annoyance associated with vibration is usually different if it is generated by a steady state or a transient vibration source.

As shown in Table 3, the vibration level threshold at which transient vibration sources (such as construction equipment) are considered to be distinctly perceptible is 0.25 in/sec PPV. This analysis uses the distinctly perceptible threshold for purposes of assessing vibration impacts.

3.3 Operational Noise Sources

On-site Noise Sources

Noise sources associated with operation of the proposed project would consist of landscaping maintenance, general conversations, and mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] units). Due to the distances and low noise levels associated with general site activities and landscape maintenance, these sources are not considered substantial and are not analyzed further.

The primary on-site operational noise source from the project would be HVAC units. Specific planning data for the future HVAC systems are not available at this stage of project design; however, this analysis assumes the use of a typical HVAC system for commercial or multi-family residential sites, which has a sound power level of 85 dBA. The unit used in this analysis is a 16.7-ton Carrier 38AUD25 split system condenser (see Appendix C for manufacturer's specifications). The project assumptions are based upon one ton of HVAC per 600 sf of building space, as shown in Table 7. Based on the size of the project, it is assumed that 19 rooftop-mounted HVAC units distributed

across the project site would be needed, producing a combined noise level at off-site receivers that is equivalent to all units being located at the center of the project site, which is measured at approximately 200 feet from the nearest off-site sensitive receivers north of the project boundary.

Table 7 Modeled HVAC

Use/Description	Building Square Footage	Model	Estimated HVAC Tons	Estimated HVAC Units	Sound Power Level per Unit
Multi-Family Housing/Hotel Use	188,897	38AUD25	315	19	85

See Appendix C for sample HVAC specification sheets.

3.4 Traffic Noise

Noise levels affecting the project site and existing receivers would be primarily influenced by traffic noise from SR 4 and Arnold Drive. Future noise levels affecting the compatibility of the project site were estimated using the FHWA’s Traffic Noise Model (TNM) traffic noise-reference levels and SoundPLAN. Traffic noise-model inputs to SoundPLAN include the three-dimensional coordinates of the roadways, noise receivers, and topographic features or planned barriers that would affect noise propagation; vehicle volumes and speeds, type of vehicle; and absorption factors.

Peak hour traffic volumes used for the noise analysis are shown in Table 8. Existing roadway volumes for SR 4 were taken from the Caltrans Traffic Census Program (Caltrans 2022); the observed traffic volume on Arnold Drive during the site measurements was used for that roadway. The posted speed limit is 65 miles per hour on SR 4 and 35 miles per hour on Arnold Drive. To determine the vehicle classification mix for modeling, the Caltrans vehicle classification mix from SR 4 was used, which observed 95 percent automobiles, 3 percent medium trucks, and 2 percent heavy trucks (Caltrans 2022). The observed traffic mix on Arnold Drive during the site measurements was used of 96 percent automobiles and 4 percent medium trucks. Peak hour traffic was assumed to be approximately 10 percent of the roadway’s total average daily traffic in the model as 10 percent peak hour traffic noise level is considered approximately equivalent to CNEL.

Table 8 Peak Hour Trip Volumes

Roadway	Modeled Peak Hour Traffic Volumes
SR 4 between Route 80 and Pacheco Boulevard	6,200
Arnold Drive	216

Source: Caltrans 2020 and 2022

Exterior traffic noise levels at the residential building faades were calculated with receivers placed on the ground floor 5 feet above ground level and residential receivers placed on the second, third, and fourth floor approximately 20, 30, 40 above ground level, respectively.

3.5 Significance Thresholds

To determine whether a project would have a significant noise impact, Appendix G of the CEQA Guidelines requires consideration of whether a project would result in:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
2. Generation of excessive groundborne vibration or groundborne noise levels
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels

Construction Noise

Per MMC Section 8.34.030, noise generated by construction activities is not prohibited by MMC Section 8.34.020 if it occurs between the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday and 9:00 a.m. to 5:00 p.m. on Saturday, Sunday, and Holidays. However, for purposes of analyzing impacts from this project, the FTA *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) criteria were used. The FTA provides reasonable criteria for assessing construction noise impacts based on the potential for adverse community reaction. For residential uses, the daytime noise threshold is 80 dBA L_{eq} for an 8-hour period (FTA 2018).

Land Use Compatibility

The City has adopted noise guidelines that provide the normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable noise levels for different land uses. The proposed project would include multi-family residences. For multi-family residential uses, these guidelines stipulate an ambient noise environment of up to 60 dBA L_{dn} is acceptable, up to dBA 70 L_{dn} is conditionally acceptable, and above 70 L_{dn} is normally unacceptable.

On-site Operational Noise

The City has adopted noise standards in the MMC that regulate operational noise sources in the City. The proposed project would involve a multi-family residential building. The proposed project would result in a significant impact if it generates noise from on-site sources in excess of MMC standards included in Section 8.34.030 which regulate noise from operations that are typically associated with residential uses (e.g., sound-amplifying devices, lawn maintenance equipment, hand tools, wheeled equipment), or if it generates noise exceeding levels established by MMC Section 8.34.020.

Off-site Traffic Noise

Off-site project noise (i.e., roadway noise) would result in a significant impact if the project would cause the ambient noise level measured at the property line of affected uses to increase by 3 dBA, which would be a perceptible increase in traffic noise.

Construction Vibration

The City has not adopted a significance threshold to assess vibration impacts during construction and operation. Therefore, the Caltrans *Transportation and Construction Vibration Guidance Manual* (2020) is used to evaluate potential construction vibration impacts related to both potential building damage and human annoyance. Based on the Caltrans criteria described above, construction vibration impacts would be significant if vibration levels exceed 0.5 in./sec. PPV for residential structures and 2.0 in./sec. PPV for commercial structures, which are the limits where minor cosmetic, i.e. non-structural, damage may occur to these buildings. In addition, construction vibration impacts would cause human annoyance at nearby receivers if vibration levels exceed 0.25 in./sec. PPV, which is the limit where vibration becomes distinctly perceptible from barely perceptible.

4 Impact Analysis

4.1 Issue 1

Issue: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

Project construction would occur nearest to the single-family homes north of the project site. Over the course of a typical construction day, construction equipment would be located at an average of 200 feet to the nearest sensitive receivers.

At a distance of 200 feet, a dozer and a backhoe are estimated at a noise level of 67.6 dBA L_{eq} (RCNM calculations are included in Appendix NOI). Therefore, construction noise would not exceed the threshold of 80 dBA L_{eq} for an 8-hour period. The approximate 80 dBA L_{eq} (8 hour) noise contour for project construction is estimated at 64 feet (i.e., if construction averages 64 feet or less throughout an 8-hour construction day, it would exceed the threshold). Therefore, if construction occurs within 64 feet of sensitive receivers, noise levels from construction may exceed the FTA construction noise threshold for residential uses. Construction would not occur within 64 feet of a sensitive receptor for an 8-hour period. Therefore, impacts from construction would be less than significant.

Operation

HVAC Units

New buildings on the project site would have rooftop-mounted HVAC equipment that generates noise. As shown in Table 7, it is assumed that the project would require 19 HVAC units. The combined operation of 19 HVAC units would generate an estimated noise level of 53.7 dBA L_{eq} at the nearest off-site sensitive receivers north of the project site boundary.

The project would include parapet walls surrounding HVAC equipment on the building rooftops, which would contribute at least a 5 dBA decrease in noise levels. Therefore, estimated noise levels at the nearest offsite sensitive receivers would be 48.7 dBA L_{eq} . This would not exceed the City's maximum noise level limit of 50 dBA between 10:00 p.m. - 7:00 a.m.

Additional on-site noise sources such as landscape maintenance, low-speed traffic on internal roadways, conversations, open space activities, and trash hauling also would be typical of noise generated by neighboring land uses and would not substantially contribute to overall ambient noise levels. Therefore, on-site operations would have a less than significant impact on noise-sensitive receivers.

Off-site Traffic Noise

According to the project's air quality analysis (Rincon 2022), the project would result in approximately 1,332 ADT, which would equate to a peak hour trip volume of 133. This additional traffic to SR 4 would increase noise levels by approximately 0.1 dBA and would increase noise levels

on Arnold Drive by approximately 2 dBA. These increases would not exceed the 3 dBA criterion for off-site traffic noise impacts. Impacts would be less than significant.

4.2 Issue 2

Issue: Would the project result in generation of excessive ground-borne vibration or ground-borne noise levels?

Construction activities known to generate excessive ground-borne vibration, such as pile driving, would not be conducted by the project. The greatest anticipated source of vibration during general project construction activities would be from a dozer, which may be used within 15 feet of the nearest off-site sensitive receivers to the to the southeast. A dozer would create approximately 0.089 in/sec PPV. at a distance of 25 feet (Caltrans 2013). This would equal a vibration level of approximately than 0.16 in/sec PPV. at a distance of 15 feet.² This would be lower than what is considered a distinctly perceptible impact for humans of 0.25 in/sec PPV. and the structural damage impact to residential structures of 0.5 in/sec PPV. Therefore, although a dozer may be perceptible to nearby human receptors, temporary impacts associated with the dozer (and other potential equipment) would be less than significant.

Operation of the project would not include any substantial vibration sources. Therefore, operational vibration impacts would be less than significant.

4.3 Issue 3

Issue: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The airport nearest to the project site, the Buchanan Field Airport, is located approximately 1 mile to the east. The project would not be located within the noise contours of the airport (County of Contra Costa 2000). Therefore, no substantial noise exposure from airport noise would occur to construction workers, users, or employees of the project, and no impacts would occur.

4.4 Issue 4

Issue: Would the project be subjected to noise levels in excess of the City's land use compatibility guidelines for noise?

Following the methodology and reference noise levels discussed in Section 3.4, noise levels at the project's residential façades were measured. As shown in Table 9, R1 through R36 capture noise at the residential façades around the project site, and R37 through R38 capture common area and children's play area noise levels. These receivers, as well as the contours from off-site traffic, are shown on Figure 4.

Standard construction techniques for wood-frame construction buildings required under the California Building Code typically achieve a minimum 25-dBA reduction from exterior sources at

² $PPV_{Equipment} = PPV_{Ref} (25/D)^n$ (in/sec), PPV_{Ref} = reference PPV at 25 feet, D = distance, and $n = 1.1$

interior locations when the windows are in a closed position. Therefore, if building façade noise levels exceeded 70 dBA L_{dn} for the residences, interior noise levels for the project would potentially exceed the City's interior noise standard of 45 dBA L_{dn} . As shown in Table 9, noise levels at the residential building façades on the southernmost building that face SR 4 may conflict with the City's interior noise standard because they are estimated to be higher than the 45 dBA L_{dn} threshold. Other building façades of the project would not exceed noise standards. Implementation of Recommendation NOI-2, an exterior-to-interior noise analysis, would achieve compliance with the interior noise standard.

As shown in Table 9, estimated exterior noise levels from traffic at the children's play area and common area would be 64 and 63 dBA L_{dn} , respectively. Therefore, noise levels at exterior areas of project residences would not exceed the City's 70 CNEL conditionally acceptable exterior noise standard, and exterior noise levels at the project would not conflict with the City General Plan.

Figure 4 On-site Receivers and Traffic Noise Contours

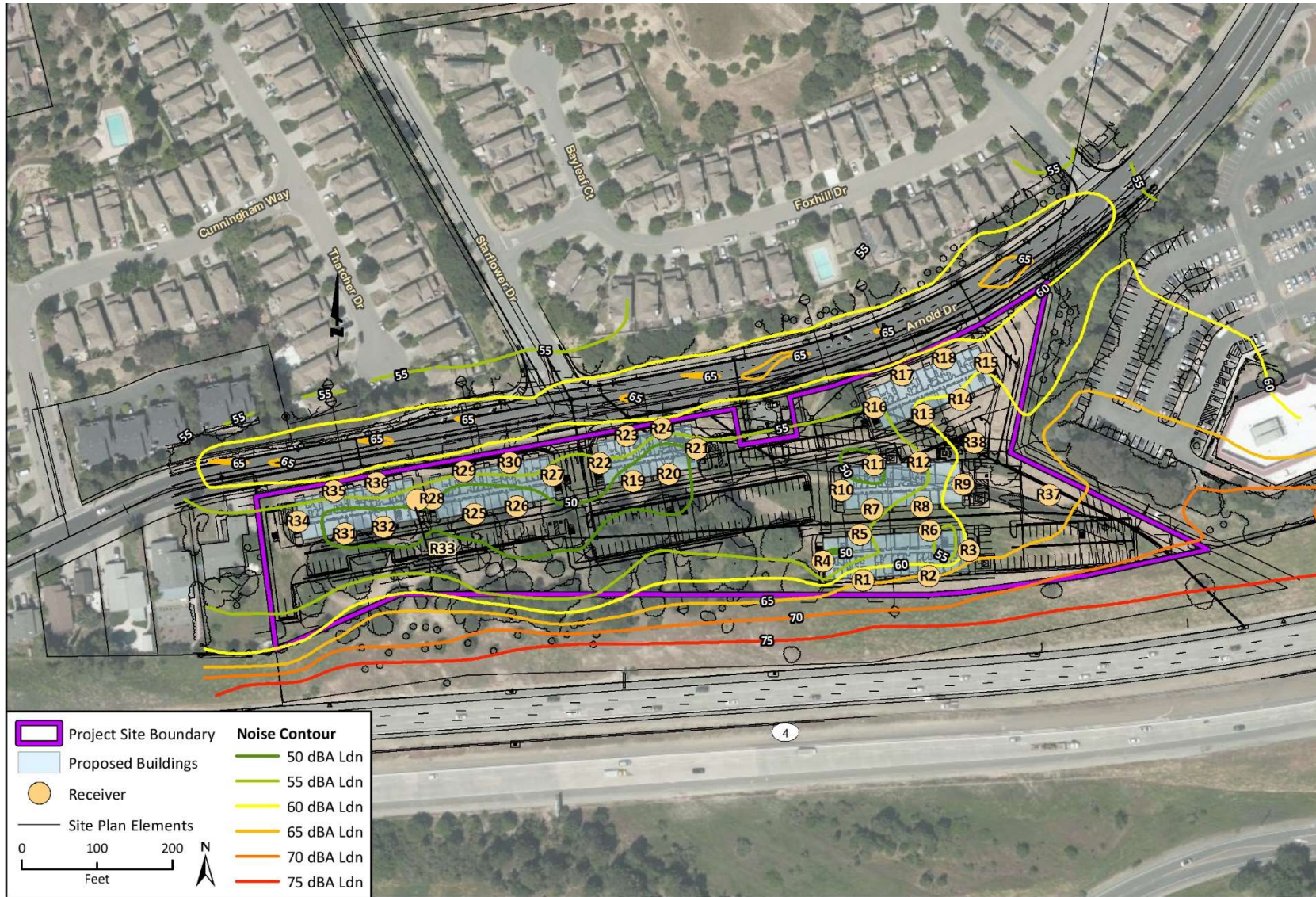


Fig X Roadway Noise Contours

Table 9 Traffic Noise Levels

Receiver	Description	Noise Level (dBA L _{dn})				Potentially Exceed Exterior Threshold?	Potentially Exceed Interior Threshold?
		Ground Level/ 1 st Floor	2 nd Floor	3 rd Floor	4 th Floor		
R1	Residential Building façade	50	55	61	65	N/A	No
R2	Residential Building façade	66	72	75	75	N/A	Yes
R3	Residential Building façade	65	70	74	72	N/A	Yes
R4	Residential Building façade	65	70	71	71	N/A	Yes
R5	Residential Building façade	54	58	60	59	N/A	No
R6	Residential Building façade	58	63	63	64	N/A	No
R7	Residential Building façade	53	58	59	58	N/A	No
R8	Residential Building façade	58	63	64	64	N/A	No
R9	Residential Building façade	50	52	53	55	N/A	No
R10	Residential Building façade	61	66	68	69	N/A	No
R11	Residential Building façade	48	54	55	56	N/A	No
R12	Residential Building façade	54	59	61	62	N/A	No
R13	Residential Building façade	60	64	65	N/A	N/A	No
R14	Residential Building façade	62	65	67	N/A	N/A	No
R15	Residential Building façade	59	62	64	N/A	N/A	No
R16	Residential Building façade	54	56	57	N/A	N/A	No
R17	Residential Building façade	59	59	59	N/A	N/A	No
R18	Residential Building façade	59	59	59	N/A	N/A	No
R19	Residential Building façade	47	51	54	57	N/A	No
R20	Residential Building façade	49	52	55	57	N/A	No
R21	Residential Building façade	54	56	57	58	N/A	No
R22	Residential Building façade	53	53	53	54	N/A	No
R23	Residential Building façade	59	59	59	59	N/A	No
R24	Residential Building façade	59	59	59	59	N/A	No
R25	Residential Building façade	46	49	54	N/A	N/A	No

Receiver	Description	Noise Level (dBA L _{dn})				Potentially Exceed Exterior Threshold?	Potentially Exceed Interior Threshold?
		Ground Level/ 1 st Floor	2 nd Floor	3 rd Floor	4 th Floor		
R26	Residential Building façade	47	50	54	N/A	N/A	No
R27	Residential Building façade	53	54	56	N/A	N/A	No
R28	Residential Building façade	52	53	53	N/A	N/A	No
R29	Residential Building façade	58	58	58	N/A	N/A	No
R30	Residential Building façade	58	58	58	N/A	N/A	No
R31	Residential Building façade	48	53	56	N/A	N/A	No
R32	Residential Building façade	48	50	56	N/A	N/A	No
R33	Residential Building façade	52	53	53	N/A	N/A	No
R34	Residential Building façade	53	55	56	N/A	N/A	No
R35	Residential Building façade	59	59	58	N/A	N/A	No
R36	Residential Building façade	59	59	58	N/A	N/A	No
R37	Children's Play Area	64	N/A	N/A	N/A	No	No
R38	Common Area	63	N/A	N/A	N/A	No	No

See Figure 4 for receiver locations. Bold numbers represent receivers that may exceed thresholds.

Recommendations

NOI-1 Exterior-to-Interior Noise Level Analysis

For residential units where exterior noise levels exceed 70 dBA L_{dn} , coordinate with the project architects and other contractors to ensure compliance with the 45 dBA L_{dn} interior noise level standard. The units that are located on the southernmost project that face SR 4 may be exposed to noise levels exceeding 70 dBA L_{dn} . This will be achieved through additional exterior-to-interior noise analysis and incorporation of noise attenuation features once specific building plan information is available. The information in the analysis should include wall heights and lengths, room volumes, window, and door tables typical for a building plan, as well as information on any other openings in the building shell. With this specific building plan information, the analysis should determine the predicted interior noise levels at the planned on-site buildings. If predicted noise levels are found to be in excess of the applicable limit, the report should identify architectural materials or techniques that could be included to reduce noise levels to the applicable limit.

Possible noise reduction techniques include, but are not limited to:

- Windows and sliding glass doors would be mounted in low air infiltration rate frames (0.5 cubic feet per minute or less, per ANSI specifications).
- Exterior doors would have a solid core with perimeter weather-stripping and threshold seals with a Sound Transmission Class (STC) rating of at least 31, with the potential for STC rating of 36 or higher if necessary.
- Exterior walls would include minimum of 5/8-inch of stucco or brick veneer over a minimum 1/2-inch plywood or OSB shear panel, R11 insulation and interior 5/8-inch gypsum board.
- Walls would have a STC rating of at least 46.
- Dual-paned windows would be installed with a STC rating of at least 31, with the potential for STC rating of 36 or higher if necessary.
- If exterior sliding glass doors are included, high-performance glazing would be installed with a minimum STC rating of 36.
- Air conditioning or mechanical ventilation systems would be installed to allow windows and doors to remain closed for extended intervals of time so that acceptable interior noise levels can be maintained. The mechanical ventilation system would meet the criteria of the International Building Code (Chapter 12, Section 1203.3 of the 2001 California Building Code).

Consistency After Implementation of Recommendations

Interior noise levels at the project residences would be compatible with the City interior noise standard of 45 dBA L_{dn} with implementation of Recommendation NOI-1.

5 Conclusion

The project would generate both temporary construction-related noise and long-term noise associated with operation of the project. The project's noise exposure from construction would not exceed the FTA noise standard of 80 dBA. No implementation of additional measures would be required to achieve compliance with the FTA construction noise standard.

The project's stationary noise sources (HVAC units) would not exceed City standards at the nearest property lines. Therefore, stationary noise impacts would be less than significant.

Project-generated traffic would generate an increase of up to approximately 2 dBA at adjacent roadways. This is below the threshold of 3 dBA; therefore, the off-site traffic noise increase would be less than significant.

The project would generate groundborne vibration during construction, but vibration would not exceed the applicable thresholds at the closest residential structures adjacent to the west. Therefore, construction-related vibration impacts would be less than significant.

The project site is outside the noise contour for the nearest airport, the Buchanan Field Airport. Therefore, the project would not result in impacts from airport noise.

Noise levels at the residential building faades on the southernmost building that face SR 4 may conflict with the City's interior noise standard because they are estimated to be higher than the 45 dBA L_{dn} threshold. Other building faades of the project would not exceed noise standards. Implementation of Recommendation NOI-1, an exterior-to-interior noise analysis, would achieve compliance with the interior noise standard.

Estimated exterior noise levels from traffic at the children's play area and common area would be 64 and 63 dBA L_{dn} , respectively. Therefore, noise levels at exterior areas of project residences would not exceed the City's 70 CNEL conditionally acceptable exterior noise standard, and exterior noise levels at the project would not conflict with the City General Plan.

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Appendix A

Noise Measurement Data

24-Hour Noise Measurement Avg Leq, CNEL, and Ldn Calculation Spreadsheet

Instructions

1. Open meter data in Excel.
2. Copy and paste values for into highlighted cells in spreadsheet.

Results	
24-hour average Leq	58.5
CNEL	64.8
Ldn	64.4

Duration (seconds)

240

No.s	Date Time	Date	Time	dB
1	1/25/2022 11:29	1/25/2022	11:29:32 AM	53.5
2	1/25/2022 11:33	1/25/2022	11:33:32 AM	57.1
3	1/25/2022 11:37	1/25/2022	11:37:32 AM	58.1
4	1/25/2022 11:41	1/25/2022	11:41:32 AM	56.5
5	1/25/2022 11:45	1/25/2022	11:45:32 AM	55.2
6	1/25/2022 11:49	1/25/2022	11:49:32 AM	54.3
7	1/25/2022 11:53	1/25/2022	11:53:32 AM	54.9
8	1/25/2022 11:57	1/25/2022	11:57:32 AM	57
9	1/25/2022 12:01	1/25/2022	12:01:32 PM	56
10	1/25/2022 12:05	1/25/2022	12:05:32 PM	57.3
11	1/25/2022 12:09	1/25/2022	12:09:32 PM	53.3
12	1/25/2022 12:13	1/25/2022	12:13:32 PM	63.8
13	1/25/2022 12:17	1/25/2022	12:17:32 PM	56.1
14	1/25/2022 12:21	1/25/2022	12:21:32 PM	54.5
15	1/25/2022 12:25	1/25/2022	12:25:32 PM	54.1
16	1/25/2022 12:29	1/25/2022	12:29:32 PM	57.1
17	1/25/2022 12:33	1/25/2022	12:33:32 PM	53.2
18	1/25/2022 12:37	1/25/2022	12:37:32 PM	56.5
19	1/25/2022 12:41	1/25/2022	12:41:32 PM	54.8
20	1/25/2022 12:45	1/25/2022	12:45:32 PM	59
21	1/25/2022 12:49	1/25/2022	12:49:32 PM	58.8
22	1/25/2022 12:53	1/25/2022	12:53:32 PM	53
23	1/25/2022 12:57	1/25/2022	12:57:32 PM	53.2
24	1/25/2022 13:01	1/25/2022	1:01:32 PM	52.8
25	1/25/2022 13:05	1/25/2022	1:05:32 PM	51.2
26	1/25/2022 13:09	1/25/2022	1:09:32 PM	55.2
27	1/25/2022 13:13	1/25/2022	1:13:32 PM	52.8
28	1/25/2022 13:17	1/25/2022	1:17:32 PM	52
29	1/25/2022 13:21	1/25/2022	1:21:32 PM	53.4
30	1/25/2022 13:25	1/25/2022	1:25:32 PM	55
31	1/25/2022 13:29	1/25/2022	1:29:32 PM	51.7
32	1/25/2022 13:33	1/25/2022	1:33:32 PM	54.3
33	1/25/2022 13:37	1/25/2022	1:37:32 PM	55.9
34	1/25/2022 13:41	1/25/2022	1:41:32 PM	54.9
35	1/25/2022 13:45	1/25/2022	1:45:32 PM	52
36	1/25/2022 13:49	1/25/2022	1:49:32 PM	57.5
37	1/25/2022 13:53	1/25/2022	1:53:32 PM	58.8
38	1/25/2022 13:57	1/25/2022	1:57:32 PM	55.5

39	1/25/2022 14:01	1/25/2022	2:01:32 PM	54.3
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56	1/25/2022 15:09	1/25/2022	3:09:32 PM	56.1
57	1/25/2022 15:13	1/25/2022	3:13:32 PM	55.4
58	1/25/2022 15:17	1/25/2022	3:17:32 PM	57.9
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86	1/25/2022 17:09	1/25/2022	5:09:32 PM	58.9
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91	1/25/2022 17:29	1/25/2022	5:29:32 PM	57.7

92	1/25/2022 17:33	1/25/2022	5:33:32 PM	57.4
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117	1/25/2022 19:13	1/25/2022	7:13:32 PM	58.9
118	1/25/2022 19:17	1/25/2022	7:17:32 PM	59.5
119	1/25/2022 19:21	1/25/2022	7:21:32 PM	59.8
120	1/25/2022 19:25	1/25/2022	7:25:32 PM	56.8
121	1/25/2022 19:29	1/25/2022	7:29:32 PM	52.4
122	1/25/2022 19:33	1/25/2022	7:33:32 PM	58.9
123	1/25/2022 19:37	1/25/2022	7:37:32 PM	56.2
124	1/25/2022 19:41	1/25/2022	7:41:32 PM	58.1
125	1/25/2022 19:45	1/25/2022	7:45:32 PM	56.4
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127	1/25/2022 19:53	1/25/2022	7:53:32 PM	57.3
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130	1/25/2022 20:05	1/25/2022	8:05:32 PM	59.9
131	1/25/2022 20:09	1/25/2022	8:09:32 PM	63.1
132	1/25/2022 20:13	1/25/2022	8:13:32 PM	57.1
133	1/25/2022 20:17	1/25/2022	8:17:32 PM	59.1
134	1/25/2022 20:21	1/25/2022	8:21:32 PM	60.5
135	1/25/2022 20:25	1/25/2022	8:25:32 PM	59.9
136	1/25/2022 20:29	1/25/2022	8:29:32 PM	59.1
137	1/25/2022 20:33	1/25/2022	8:33:32 PM	54.8
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139	1/25/2022 20:41	1/25/2022	8:41:32 PM	61.7
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143	1/25/2022 20:57	1/25/2022	8:57:32 PM	61.5
144	1/25/2022 21:01	1/25/2022	9:01:32 PM	64.2

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147	1/25/2022 21:13	1/25/2022	9:13:32 PM	61.4
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150	1/25/2022 21:25	1/25/2022	9:25:32 PM	58.5
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153	1/25/2022 21:37	1/25/2022	9:37:32 PM	57.8
154	1/25/2022 21:41	1/25/2022	9:41:32 PM	62
155	1/25/2022 21:45	1/25/2022	9:45:32 PM	59.4
156	1/25/2022 21:49	1/25/2022	9:49:32 PM	58.8
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172	1/25/2022 22:53	1/25/2022	10:53:32 PM	53.9
173	1/25/2022 22:57	1/25/2022	10:57:32 PM	61.5
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175	1/25/2022 23:05	1/25/2022	11:05:32 PM	53.3
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182	1/25/2022 23:33	1/25/2022	11:33:32 PM	50.6
183	1/25/2022 23:37	1/25/2022	11:37:32 PM	48.3
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191	1/26/2022 0:09	1/26/2022	12:09:32 AM	53.1
192	1/26/2022 0:13	1/26/2022	12:13:32 AM	55.3
193	1/26/2022 0:17	1/26/2022	12:17:32 AM	49.5
194	1/26/2022 0:21	1/26/2022	12:21:32 AM	56.5
195	1/26/2022 0:25	1/26/2022	12:25:32 AM	61.3
196	1/26/2022 0:29	1/26/2022	12:29:32 AM	54.1
197	1/26/2022 0:33	1/26/2022	12:33:32 AM	48.2

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201	1/26/2022 0:49	1/26/2022	12:49:32 AM	50.8
202	1/26/2022 0:53	1/26/2022	12:53:32 AM	43.6
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206	1/26/2022 1:09	1/26/2022	1:09:32 AM	59.5
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208	1/26/2022 1:17	1/26/2022	1:17:32 AM	53.4
209	1/26/2022 1:21	1/26/2022	1:21:32 AM	49.6
210	1/26/2022 1:25	1/26/2022	1:25:32 AM	44
211	1/26/2022 1:29	1/26/2022	1:29:32 AM	44.1
212	1/26/2022 1:33	1/26/2022	1:33:32 AM	53
213	1/26/2022 1:37	1/26/2022	1:37:32 AM	52.3
214	1/26/2022 1:41	1/26/2022	1:41:32 AM	49.4
215	1/26/2022 1:45	1/26/2022	1:45:32 AM	57.7
216	1/26/2022 1:49	1/26/2022	1:49:32 AM	47.5
217	1/26/2022 1:53	1/26/2022	1:53:32 AM	54.2
218	1/26/2022 1:57	1/26/2022	1:57:32 AM	46.9
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225	1/26/2022 2:25	1/26/2022	2:25:32 AM	46.5
226	1/26/2022 2:29	1/26/2022	2:29:32 AM	53.9
227	1/26/2022 2:33	1/26/2022	2:33:32 AM	56.2
228	1/26/2022 2:37	1/26/2022	2:37:32 AM	54.1
229	1/26/2022 2:41	1/26/2022	2:41:32 AM	51.6
230	1/26/2022 2:45	1/26/2022	2:45:32 AM	41.1
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233	1/26/2022 2:57	1/26/2022	2:57:32 AM	49.4
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236	1/26/2022 3:09	1/26/2022	3:09:32 AM	48.2
237	1/26/2022 3:13	1/26/2022	3:13:32 AM	51.5
238	1/26/2022 3:17	1/26/2022	3:17:32 AM	53.3
239	1/26/2022 3:21	1/26/2022	3:21:32 AM	51.2
240	1/26/2022 3:25	1/26/2022	3:25:32 AM	51.6
241	1/26/2022 3:29	1/26/2022	3:29:32 AM	54.9
242	1/26/2022 3:33	1/26/2022	3:33:32 AM	52.4
243	1/26/2022 3:37	1/26/2022	3:37:32 AM	50.3
244	1/26/2022 3:41	1/26/2022	3:41:32 AM	57.6
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246	1/26/2022 3:49	1/26/2022	3:49:32 AM	51
247	1/26/2022 3:53	1/26/2022	3:53:32 AM	57.3
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254	1/26/2022 4:21	1/26/2022	4:21:32 AM	57.1
255	1/26/2022 4:25	1/26/2022	4:25:32 AM	58.8
256	1/26/2022 4:29	1/26/2022	4:29:32 AM	57.7
257	1/26/2022 4:33	1/26/2022	4:33:32 AM	57.9
258	1/26/2022 4:37	1/26/2022	4:37:32 AM	57.3
259	1/26/2022 4:41	1/26/2022	4:41:32 AM	57.4
260	1/26/2022 4:45	1/26/2022	4:45:32 AM	59.2
261	1/26/2022 4:49	1/26/2022	4:49:32 AM	55.9
262	1/26/2022 4:53	1/26/2022	4:53:32 AM	56.3
263	1/26/2022 4:57	1/26/2022	4:57:32 AM	57.9
264	1/26/2022 5:01	1/26/2022	5:01:32 AM	59.1
265	1/26/2022 5:05	1/26/2022	5:05:32 AM	54.4
266	1/26/2022 5:09	1/26/2022	5:09:32 AM	60.6
267	1/26/2022 5:13	1/26/2022	5:13:32 AM	58
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269	1/26/2022 5:21	1/26/2022	5:21:32 AM	60.3
270	1/26/2022 5:25	1/26/2022	5:25:32 AM	60.4
271	1/26/2022 5:29	1/26/2022	5:29:32 AM	57.6
272	1/26/2022 5:33	1/26/2022	5:33:32 AM	60.7
273	1/26/2022 5:37	1/26/2022	5:37:32 AM	61
274	1/26/2022 5:41	1/26/2022	5:41:32 AM	64
275	1/26/2022 5:45	1/26/2022	5:45:32 AM	59.6
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279	1/26/2022 6:01	1/26/2022	6:01:32 AM	59.7
280	1/26/2022 6:05	1/26/2022	6:05:32 AM	63.5
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282	1/26/2022 6:13	1/26/2022	6:13:32 AM	63.7
283	1/26/2022 6:17	1/26/2022	6:17:32 AM	63.9
284	1/26/2022 6:21	1/26/2022	6:21:32 AM	64.9
285	1/26/2022 6:25	1/26/2022	6:25:32 AM	61.2
286	1/26/2022 6:29	1/26/2022	6:29:32 AM	62
287	1/26/2022 6:33	1/26/2022	6:33:32 AM	66.2
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302	1/26/2022 7:33	1/26/2022	7:33:32 AM	60.2
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308	1/26/2022 7:57	1/26/2022	7:57:32 AM	61.4
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315	1/26/2022 8:25	1/26/2022	8:25:32 AM	61
316	1/26/2022 8:29	1/26/2022	8:29:32 AM	58.6
317	1/26/2022 8:33	1/26/2022	8:33:32 AM	61.7
318	1/26/2022 8:37	1/26/2022	8:37:32 AM	59
319	1/26/2022 8:41	1/26/2022	8:41:32 AM	59
320	1/26/2022 8:45	1/26/2022	8:45:32 AM	59.4
321	1/26/2022 8:49	1/26/2022	8:49:32 AM	58.9
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323	1/26/2022 8:57	1/26/2022	8:57:32 AM	58
324	1/26/2022 9:01	1/26/2022	9:01:32 AM	58
325	1/26/2022 9:05	1/26/2022	9:05:32 AM	59.7
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330	1/26/2022 9:25	1/26/2022	9:25:32 AM	58.9
331	1/26/2022 9:29	1/26/2022	9:29:32 AM	57.6
332	1/26/2022 9:33	1/26/2022	9:33:32 AM	59.4
333	1/26/2022 9:37	1/26/2022	9:37:32 AM	58.5
334	1/26/2022 9:41	1/26/2022	9:41:32 AM	56.7
335	1/26/2022 9:45	1/26/2022	9:45:32 AM	58.5
336	1/26/2022 9:49	1/26/2022	9:49:32 AM	56.6
337	1/26/2022 9:53	1/26/2022	9:53:32 AM	57.6
338	1/26/2022 9:57	1/26/2022	9:57:32 AM	60.9
339	1/26/2022 10:01	1/26/2022	10:01:32 AM	54
340	1/26/2022 10:05	1/26/2022	10:05:32 AM	55.3
341	1/26/2022 10:09	1/26/2022	10:09:32 AM	56.7
342	1/26/2022 10:13	1/26/2022	10:13:32 AM	59.5
343	1/26/2022 10:17	1/26/2022	10:17:32 AM	55.5
344	1/26/2022 10:21	1/26/2022	10:21:32 AM	58.4
345	1/26/2022 10:25	1/26/2022	10:25:32 AM	56.5
346	1/26/2022 10:29	1/26/2022	10:29:32 AM	57.9
347	1/26/2022 10:33	1/26/2022	10:33:32 AM	58.1
348	1/26/2022 10:37	1/26/2022	10:37:32 AM	54.9
349	1/26/2022 10:41	1/26/2022	10:41:32 AM	56
350	1/26/2022 10:45	1/26/2022	10:45:32 AM	59.7
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353	1/26/2022 10:57	1/26/2022	10:57:32 AM	57.4
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355	1/26/2022 11:05	1/26/2022	11:05:32 AM	57.8
356	1/26/2022 11:09	1/26/2022	11:09:32 AM	55.9

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36	1/25/2022 13:49	57.5
37	1/25/2022 13:53	58.8
38	1/25/2022 13:57	55.5
39	1/25/2022 14:01	54.3
40	1/25/2022 14:05	54.2
41	1/25/2022 14:09	52.8
42	1/25/2022 14:13	54
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44	1/25/2022 14:21	55.2
45	1/25/2022 14:25	55.9
46	1/25/2022 14:29	55.5
47	1/25/2022 14:33	53

48	1/25/2022 14:37	52.2
49	1/25/2022 14:41	55.1
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76	1/25/2022 16:29	57.2
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81	1/25/2022 16:49	57.9
82	1/25/2022 16:53	56.1
83	1/25/2022 16:57	56.7
84	1/25/2022 17:01	55.5
85	1/25/2022 17:05	64.1
86	1/25/2022 17:09	58.9
87	1/25/2022 17:13	57.6
88	1/25/2022 17:17	61
89	1/25/2022 17:21	56
90	1/25/2022 17:25	64.2
91	1/25/2022 17:29	57.7
92	1/25/2022 17:33	57.4
93	1/25/2022 17:37	59.7
94	1/25/2022 17:41	57.9

95	1/25/2022 17:45	58.4
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97	1/25/2022 17:53	59.4
98	1/25/2022 17:57	58.6
99	1/25/2022 18:01	58
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103	1/25/2022 18:17	60
104	1/25/2022 18:21	58.4
105	1/25/2022 18:25	58
106	1/25/2022 18:29	60
107	1/25/2022 18:33	59.6
108	1/25/2022 18:37	58.5
109	1/25/2022 18:41	59.1
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117	1/25/2022 19:13	58.9
118	1/25/2022 19:17	59.5
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120	1/25/2022 19:25	56.8
121	1/25/2022 19:29	52.4
122	1/25/2022 19:33	58.9
123	1/25/2022 19:37	56.2
124	1/25/2022 19:41	58.1
125	1/25/2022 19:45	56.4
126	1/25/2022 19:49	61.6
127	1/25/2022 19:53	57.3
128	1/25/2022 19:57	57.7
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132	1/25/2022 20:13	57.1
133	1/25/2022 20:17	59.1
134	1/25/2022 20:21	60.5
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141	1/25/2022 20:49	59.5

142	1/25/2022 20:53	56.9
143	1/25/2022 20:57	61.5
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146	1/25/2022 21:09	61.9
147	1/25/2022 21:13	61.4
148	1/25/2022 21:17	60.1
149	1/25/2022 21:21	59.1
150	1/25/2022 21:25	58.5
151	1/25/2022 21:29	57.3
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156	1/25/2022 21:49	58.8
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158	1/25/2022 21:57	62.5
159	1/25/2022 22:01	63.3
160	1/25/2022 22:05	57.3
161	1/25/2022 22:09	57.3
162	1/25/2022 22:13	53.1
163	1/25/2022 22:17	56.2
164	1/25/2022 22:21	54.6
165	1/25/2022 22:25	54.7
166	1/25/2022 22:29	59.3
167	1/25/2022 22:33	58.8
168	1/25/2022 22:37	59.4
169	1/25/2022 22:41	53.8
170	1/25/2022 22:45	61.9
171	1/25/2022 22:49	54.5
172	1/25/2022 22:53	53.9
173	1/25/2022 22:57	61.5
174	1/25/2022 23:01	57
175	1/25/2022 23:05	53.3
176	1/25/2022 23:09	56.9
177	1/25/2022 23:13	56.3
178	1/25/2022 23:17	53.3
179	1/25/2022 23:21	49.7
180	1/25/2022 23:25	48.1
181	1/25/2022 23:29	53.4
182	1/25/2022 23:33	50.6
183	1/25/2022 23:37	48.3
184	1/25/2022 23:41	58.7
185	1/25/2022 23:45	54.3
186	1/25/2022 23:49	54.3
187	1/25/2022 23:53	59.6
188	1/25/2022 23:57	56.4

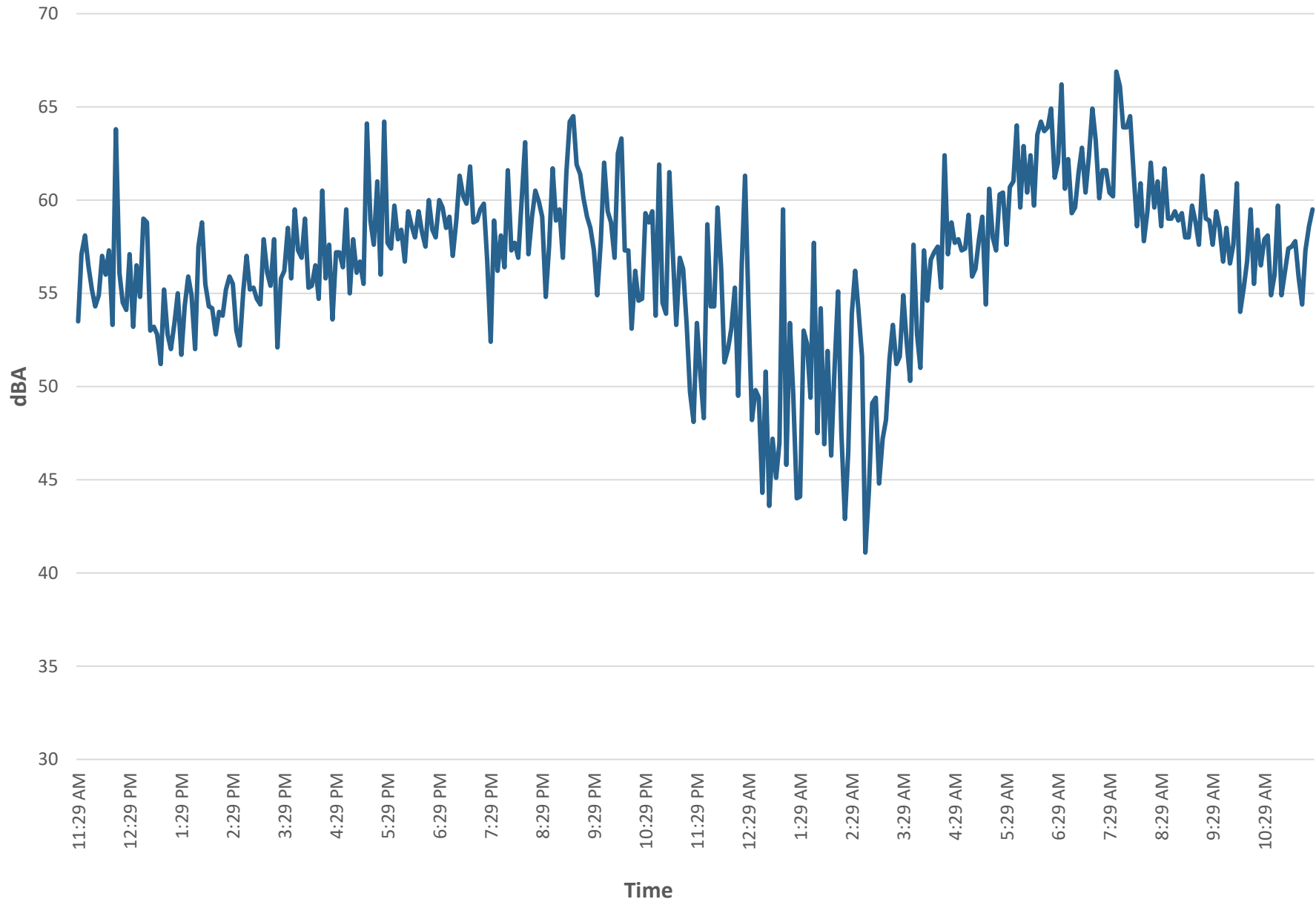
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190	1/26/2022 0:05	52
191	1/26/2022 0:09	53.1
192	1/26/2022 0:13	55.3
193	1/26/2022 0:17	49.5
194	1/26/2022 0:21	56.5
195	1/26/2022 0:25	61.3
196	1/26/2022 0:29	54.1
197	1/26/2022 0:33	48.2
198	1/26/2022 0:37	49.8
199	1/26/2022 0:41	49.4
200	1/26/2022 0:45	44.3
201	1/26/2022 0:49	50.8
202	1/26/2022 0:53	43.6
203	1/26/2022 0:57	47.2
204	1/26/2022 1:01	45.1
205	1/26/2022 1:05	47
206	1/26/2022 1:09	59.5
207	1/26/2022 1:13	45.8
208	1/26/2022 1:17	53.4
209	1/26/2022 1:21	49.6
210	1/26/2022 1:25	44
211	1/26/2022 1:29	44.1
212	1/26/2022 1:33	53
213	1/26/2022 1:37	52.3
214	1/26/2022 1:41	49.4
215	1/26/2022 1:45	57.7
216	1/26/2022 1:49	47.5
217	1/26/2022 1:53	54.2
218	1/26/2022 1:57	46.9
219	1/26/2022 2:01	51.9
220	1/26/2022 2:05	46.3
221	1/26/2022 2:09	50.9
222	1/26/2022 2:13	55.1
223	1/26/2022 2:17	47.5
224	1/26/2022 2:21	42.9
225	1/26/2022 2:25	46.5
226	1/26/2022 2:29	53.9
227	1/26/2022 2:33	56.2
228	1/26/2022 2:37	54.1
229	1/26/2022 2:41	51.6
230	1/26/2022 2:45	41.1
231	1/26/2022 2:49	44.4
232	1/26/2022 2:53	49.1
233	1/26/2022 2:57	49.4
234	1/26/2022 3:01	44.8
235	1/26/2022 3:05	47.2

236	1/26/2022 3:09	48.2
237	1/26/2022 3:13	51.5
238	1/26/2022 3:17	53.3
239	1/26/2022 3:21	51.2
240	1/26/2022 3:25	51.6
241	1/26/2022 3:29	54.9
242	1/26/2022 3:33	52.4
243	1/26/2022 3:37	50.3
244	1/26/2022 3:41	57.6
245	1/26/2022 3:45	52.8
246	1/26/2022 3:49	51
247	1/26/2022 3:53	57.3
248	1/26/2022 3:57	54.6
249	1/26/2022 4:01	56.8
250	1/26/2022 4:05	57.2
251	1/26/2022 4:09	57.5
252	1/26/2022 4:13	55.3
253	1/26/2022 4:17	62.4
254	1/26/2022 4:21	57.1
255	1/26/2022 4:25	58.8
256	1/26/2022 4:29	57.7
257	1/26/2022 4:33	57.9
258	1/26/2022 4:37	57.3
259	1/26/2022 4:41	57.4
260	1/26/2022 4:45	59.2
261	1/26/2022 4:49	55.9
262	1/26/2022 4:53	56.3
263	1/26/2022 4:57	57.9
264	1/26/2022 5:01	59.1
265	1/26/2022 5:05	54.4
266	1/26/2022 5:09	60.6
267	1/26/2022 5:13	58
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269	1/26/2022 5:21	60.3
270	1/26/2022 5:25	60.4
271	1/26/2022 5:29	57.6
272	1/26/2022 5:33	60.7
273	1/26/2022 5:37	61
274	1/26/2022 5:41	64
275	1/26/2022 5:45	59.6
276	1/26/2022 5:49	62.9
277	1/26/2022 5:53	60.4
278	1/26/2022 5:57	62.4
279	1/26/2022 6:01	59.7
280	1/26/2022 6:05	63.5
281	1/26/2022 6:09	64.2
282	1/26/2022 6:13	63.7

283	1/26/2022 6:17	63.9
284	1/26/2022 6:21	64.9
285	1/26/2022 6:25	61.2
286	1/26/2022 6:29	62
287	1/26/2022 6:33	66.2
288	1/26/2022 6:37	60.6
289	1/26/2022 6:41	62.2
290	1/26/2022 6:45	59.3
291	1/26/2022 6:49	59.6
292	1/26/2022 6:53	61.5
293	1/26/2022 6:57	62.8
294	1/26/2022 7:01	60.4
295	1/26/2022 7:05	62.3
296	1/26/2022 7:09	64.9
297	1/26/2022 7:13	63.2
298	1/26/2022 7:17	60.1
299	1/26/2022 7:21	61.6
300	1/26/2022 7:25	61.6
301	1/26/2022 7:29	60.4
302	1/26/2022 7:33	60.2
303	1/26/2022 7:37	66.9
304	1/26/2022 7:41	66.1
305	1/26/2022 7:45	63.9
306	1/26/2022 7:49	63.9
307	1/26/2022 7:53	64.5
308	1/26/2022 7:57	61.4
309	1/26/2022 8:01	58.6
310	1/26/2022 8:05	60.9
311	1/26/2022 8:09	57.8
312	1/26/2022 8:13	59.4
313	1/26/2022 8:17	62
314	1/26/2022 8:21	59.6
315	1/26/2022 8:25	61
316	1/26/2022 8:29	58.6
317	1/26/2022 8:33	61.7
318	1/26/2022 8:37	59
319	1/26/2022 8:41	59
320	1/26/2022 8:45	59.4
321	1/26/2022 8:49	58.9
322	1/26/2022 8:53	59.3
323	1/26/2022 8:57	58
324	1/26/2022 9:01	58
325	1/26/2022 9:05	59.7
326	1/26/2022 9:09	58.8
327	1/26/2022 9:13	57.6
328	1/26/2022 9:17	61.3
329	1/26/2022 9:21	59

330	1/26/2022 9:25	58.9
331	1/26/2022 9:29	57.6
332	1/26/2022 9:33	59.4
333	1/26/2022 9:37	58.5
334	1/26/2022 9:41	56.7
335	1/26/2022 9:45	58.5
336	1/26/2022 9:49	56.6
337	1/26/2022 9:53	57.6
338	1/26/2022 9:57	60.9
339	1/26/2022 10:01	54
340	1/26/2022 10:05	55.3
341	1/26/2022 10:09	56.7
342	1/26/2022 10:13	59.5
343	1/26/2022 10:17	55.5
344	1/26/2022 10:21	58.4
345	1/26/2022 10:25	56.5
346	1/26/2022 10:29	57.9
347	1/26/2022 10:33	58.1
348	1/26/2022 10:37	54.9
349	1/26/2022 10:41	56
350	1/26/2022 10:45	59.7
351	1/26/2022 10:49	54.9
352	1/26/2022 10:53	56.1
353	1/26/2022 10:57	57.4
354	1/26/2022 11:01	57.5
355	1/26/2022 11:05	57.8
356	1/26/2022 11:09	55.9
357	1/26/2022 11:13	54.4
358	1/26/2022 11:17	57.3
359	1/26/2022 11:21	58.6
360	1/26/2022 11:25	59.5

Long-Term Noise Measurement 1 - January 25-26, 2022



Freq Weight : A
Time Weight : SLOW
Level Range : 40-100
Max dB : 62.9 - 2022/01/25 10:41:38
Level Range : 40-100
SEL : 87.5
Leq : 58.0

No. s	Date Time	(dB)
1	2022/01/25 10:29:39	57.5
2	2022/01/25 10:29:42	58.6
3	2022/01/25 10:29:45	58.0
4	2022/01/25 10:29:48	57.7
5	2022/01/25 10:29:51	57.1
6	2022/01/25 10:29:54	56.4
7	2022/01/25 10:29:57	56.6
8	2022/01/25 10:30:00	57.0
9	2022/01/25 10:30:03	57.4
10	2022/01/25 10:30:06	57.6
11	2022/01/25 10:30:09	57.6
12	2022/01/25 10:30:12	57.7
13	2022/01/25 10:30:15	57.2
14	2022/01/25 10:30:18	57.5
15	2022/01/25 10:30:21	57.1
16	2022/01/25 10:30:24	57.2
17	2022/01/25 10:30:27	58.5
18	2022/01/25 10:30:30	60.7
19	2022/01/25 10:30:33	61.5
20	2022/01/25 10:30:36	60.8
21	2022/01/25 10:30:39	60.6
22	2022/01/25 10:30:42	59.4
23	2022/01/25 10:30:45	58.2
24	2022/01/25 10:30:48	57.9
25	2022/01/25 10:30:51	58.2
26	2022/01/25 10:30:54	59.7
27	2022/01/25 10:30:57	59.1
28	2022/01/25 10:31:00	58.3
29	2022/01/25 10:31:03	57.4
30	2022/01/25 10:31:06	56.9
31	2022/01/25 10:31:09	56.6
32	2022/01/25 10:31:12	56.6
33	2022/01/25 10:31:15	56.9
34	2022/01/25 10:31:18	57.5
35	2022/01/25 10:31:21	57.2
36	2022/01/25 10:31:24	57.3
37	2022/01/25 10:31:27	58.3
38	2022/01/25 10:31:30	58.9
39	2022/01/25 10:31:33	59.8
40	2022/01/25 10:31:36	60.6
41	2022/01/25 10:31:39	59.6
42	2022/01/25 10:31:42	58.6
43	2022/01/25 10:31:45	57.7
44	2022/01/25 10:31:48	56.8
45	2022/01/25 10:31:51	56.9
46	2022/01/25 10:31:54	57.1
47	2022/01/25 10:31:57	57.3
48	2022/01/25 10:32:00	57.8
49	2022/01/25 10:32:03	58.9
50	2022/01/25 10:32:06	60.0
51	2022/01/25 10:32:09	58.3
52	2022/01/25 10:32:12	58.8
53	2022/01/25 10:32:15	58.0
54	2022/01/25 10:32:18	58.3
55	2022/01/25 10:32:21	58.5
56	2022/01/25 10:32:24	57.5
57	2022/01/25 10:32:27	57.4
58	2022/01/25 10:32:30	57.8
59	2022/01/25 10:32:33	58.1
60	2022/01/25 10:32:36	57.6
61	2022/01/25 10:32:39	57.4
62	2022/01/25 10:32:42	58.4
63	2022/01/25 10:32:45	59.3
64	2022/01/25 10:32:48	61.0
65	2022/01/25 10:32:51	61.2
66	2022/01/25 10:32:54	60.4
67	2022/01/25 10:32:57	60.2
68	2022/01/25 10:33:00	59.6
69	2022/01/25 10:33:03	59.5
70	2022/01/25 10:33:06	58.9
71	2022/01/25 10:33:09	58.6
72	2022/01/25 10:33:12	58.8
73	2022/01/25 10:33:15	57.6
74	2022/01/25 10:33:18	57.4
75	2022/01/25 10:33:21	59.7
76	2022/01/25 10:33:24	60.5
77	2022/01/25 10:33:27	60.6
78	2022/01/25 10:33:30	58.7
79	2022/01/25 10:33:33	57.3
80	2022/01/25 10:33:36	57.2
81	2022/01/25 10:33:39	57.3
82	2022/01/25 10:33:42	58.2
83	2022/01/25 10:33:45	57.9
84	2022/01/25 10:33:48	60.5

85	2022/01/25	10:33:51	60.7
86	2022/01/25	10:33:54	59.9
87	2022/01/25	10:33:57	58.4
88	2022/01/25	10:34:00	57.6
89	2022/01/25	10:34:03	57.7
90	2022/01/25	10:34:06	58.8
91	2022/01/25	10:34:09	60.3
92	2022/01/25	10:34:12	59.5
93	2022/01/25	10:34:15	59.5
94	2022/01/25	10:34:18	58.8
95	2022/01/25	10:34:21	60.4
96	2022/01/25	10:34:24	61.8
97	2022/01/25	10:34:27	59.1
98	2022/01/25	10:34:30	57.4
99	2022/01/25	10:34:33	56.8
100	2022/01/25	10:34:36	56.7
101	2022/01/25	10:34:39	57.2
102	2022/01/25	10:34:42	57.6
103	2022/01/25	10:34:45	57.2
104	2022/01/25	10:34:48	57.7
105	2022/01/25	10:34:51	59.2
106	2022/01/25	10:34:54	57.4
107	2022/01/25	10:34:57	57.0
108	2022/01/25	10:35:00	57.0
109	2022/01/25	10:35:03	57.2
110	2022/01/25	10:35:06	58.3
111	2022/01/25	10:35:09	58.4
112	2022/01/25	10:35:12	58.9
113	2022/01/25	10:35:15	58.9
114	2022/01/25	10:35:18	59.2
115	2022/01/25	10:35:21	59.2
116	2022/01/25	10:35:24	57.9
117	2022/01/25	10:35:27	57.9
118	2022/01/25	10:35:30	57.9
119	2022/01/25	10:35:33	58.6
120	2022/01/25	10:35:36	58.5
121	2022/01/25	10:35:39	57.8
122	2022/01/25	10:35:42	57.1
123	2022/01/25	10:35:45	57.3
124	2022/01/25	10:35:48	56.3
125	2022/01/25	10:35:51	56.1
126	2022/01/25	10:35:54	57.9
127	2022/01/25	10:35:57	58.3
128	2022/01/25	10:36:00	56.5
129	2022/01/25	10:36:03	56.5
130	2022/01/25	10:36:06	56.8
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133	2022/01/25	10:36:15	59.3
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141	2022/01/25	10:36:39	57.7
142	2022/01/25	10:36:42	57.8
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145	2022/01/25	10:36:51	58.1
146	2022/01/25	10:36:54	60.3
147	2022/01/25	10:36:57	60.8
148	2022/01/25	10:37:00	59.6
149	2022/01/25	10:37:03	57.7
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152	2022/01/25	10:37:12	57.8
153	2022/01/25	10:37:15	57.5
154	2022/01/25	10:37:18	57.0
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156	2022/01/25	10:37:24	56.5
157	2022/01/25	10:37:27	55.9
158	2022/01/25	10:37:30	56.8
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165	2022/01/25	10:37:51	57.4
166	2022/01/25	10:37:54	57.5
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174	2022/01/25	10:38:18	54.3
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178	2022/01/25	10:38:30	55.0
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180	2022/01/25	10:38:36	55.9
181	2022/01/25	10:38:39	57.1
182	2022/01/25	10:38:42	58.5

183	2022/01/25	10:38:45	58.3
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185	2022/01/25	10:38:51	61.0
186	2022/01/25	10:38:54	60.2
187	2022/01/25	10:38:57	60.2
188	2022/01/25	10:39:00	58.4
189	2022/01/25	10:39:03	57.1
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202	2022/01/25	10:39:42	55.7
203	2022/01/25	10:39:45	57.9
204	2022/01/25	10:39:48	59.0
205	2022/01/25	10:39:51	61.6
206	2022/01/25	10:39:54	61.5
207	2022/01/25	10:39:57	59.8
208	2022/01/25	10:40:00	57.9
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211	2022/01/25	10:40:09	55.7
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213	2022/01/25	10:40:15	57.1
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215	2022/01/25	10:40:21	58.1
216	2022/01/25	10:40:24	61.1
217	2022/01/25	10:40:27	62.3
218	2022/01/25	10:40:30	61.5
219	2022/01/25	10:40:33	58.8
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221	2022/01/25	10:40:39	55.5
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224	2022/01/25	10:40:48	55.5
225	2022/01/25	10:40:51	55.0
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227	2022/01/25	10:40:57	55.9
228	2022/01/25	10:41:00	54.8
229	2022/01/25	10:41:03	54.7
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235	2022/01/25	10:41:21	57.1
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239	2022/01/25	10:41:33	61.9
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243	2022/01/25	10:41:45	56.1
244	2022/01/25	10:41:48	55.5
245	2022/01/25	10:41:51	55.0
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247	2022/01/25	10:41:57	55.8
248	2022/01/25	10:42:00	55.7
249	2022/01/25	10:42:03	55.5
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251	2022/01/25	10:42:09	55.9
252	2022/01/25	10:42:12	55.6
253	2022/01/25	10:42:15	55.6
254	2022/01/25	10:42:18	56.6
255	2022/01/25	10:42:21	56.9
256	2022/01/25	10:42:24	61.6
257	2022/01/25	10:42:27	61.0
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259	2022/01/25	10:42:33	58.5
260	2022/01/25	10:42:36	57.3
261	2022/01/25	10:42:39	57.5
262	2022/01/25	10:42:42	56.5
263	2022/01/25	10:42:45	59.0
264	2022/01/25	10:42:48	58.9
265	2022/01/25	10:42:51	56.7
266	2022/01/25	10:42:54	55.9
267	2022/01/25	10:42:57	56.9
268	2022/01/25	10:43:00	58.0
269	2022/01/25	10:43:03	57.0
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279	2022/01/25	10:43:33	57.6
280	2022/01/25	10:43:36	56.4

281	2022/01/25	10:43:39	56.5
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283	2022/01/25	10:43:45	57.3
284	2022/01/25	10:43:48	56.4
285	2022/01/25	10:43:51	55.1
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293	2022/01/25	10:44:15	57.4
294	2022/01/25	10:44:18	58.2
295	2022/01/25	10:44:21	57.4
296	2022/01/25	10:44:24	59.4
297	2022/01/25	10:44:27	60.4
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300	2022/01/25	10:44:36	57.3

Freq Weight : A
Time Weight : SLOW
Level Range : 40-100
Max dB : 79.0 - 2022/01/25 11:02:43
Level Range : 40-100
SEL : 92.8
Leq : 63.4

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3	2022/01/25 10:53:51	49.6
4	2022/01/25 10:53:54	49.4
5	2022/01/25 10:53:57	50.4
6	2022/01/25 10:54:00	54.0
7	2022/01/25 10:54:03	70.1
8	2022/01/25 10:54:06	67.2
9	2022/01/25 10:54:09	59.1
10	2022/01/25 10:54:12	56.4
11	2022/01/25 10:54:15	53.5
12	2022/01/25 10:54:18	52.6
13	2022/01/25 10:54:21	52.4
14	2022/01/25 10:54:24	53.0
15	2022/01/25 10:54:27	53.1
16	2022/01/25 10:54:30	53.1
17	2022/01/25 10:54:33	53.2
18	2022/01/25 10:54:36	56.8
19	2022/01/25 10:54:39	58.0
20	2022/01/25 10:54:42	60.7
21	2022/01/25 10:54:45	66.6
22	2022/01/25 10:54:48	65.6
23	2022/01/25 10:54:51	65.7
24	2022/01/25 10:54:54	58.5
25	2022/01/25 10:54:57	55.8
26	2022/01/25 10:55:00	54.3
27	2022/01/25 10:55:03	60.0
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32	2022/01/25 10:55:18	49.1
33	2022/01/25 10:55:21	49.7
34	2022/01/25 10:55:24	50.0
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36	2022/01/25 10:55:30	53.7
37	2022/01/25 10:55:33	52.1
38	2022/01/25 10:55:36	54.3
39	2022/01/25 10:55:39	55.9
40	2022/01/25 10:55:42	55.0
41	2022/01/25 10:55:45	55.3
42	2022/01/25 10:55:48	59.3
43	2022/01/25 10:55:51	62.9
44	2022/01/25 10:55:54	67.9
45	2022/01/25 10:55:57	67.4
46	2022/01/25 10:56:00	61.2
47	2022/01/25 10:56:03	61.2
48	2022/01/25 10:56:06	68.1
49	2022/01/25 10:56:09	67.9
50	2022/01/25 10:56:12	61.4
51	2022/01/25 10:56:15	57.7
52	2022/01/25 10:56:18	54.1
53	2022/01/25 10:56:21	53.2
54	2022/01/25 10:56:24	53.4
55	2022/01/25 10:56:27	54.4
56	2022/01/25 10:56:30	52.6
57	2022/01/25 10:56:33	52.6
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60	2022/01/25 10:56:42	51.2
61	2022/01/25 10:56:45	50.2
62	2022/01/25 10:56:48	50.6
63	2022/01/25 10:56:51	50.4
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66	2022/01/25 10:57:00	50.4
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68	2022/01/25 10:57:06	51.5
69	2022/01/25 10:57:09	51.2
70	2022/01/25 10:57:12	51.2
71	2022/01/25 10:57:15	51.3
72	2022/01/25 10:57:18	51.1
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74	2022/01/25 10:57:24	52.2
75	2022/01/25 10:57:27	55.1
76	2022/01/25 10:57:30	71.6
77	2022/01/25 10:57:33	66.9
78	2022/01/25 10:57:36	62.0
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80	2022/01/25 10:57:42	57.5
81	2022/01/25 10:57:45	65.1
82	2022/01/25 10:57:48	65.0
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84	2022/01/25 10:57:54	55.5

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236	2022/01/25	11:05:30	52.6
237	2022/01/25	11:05:33	51.0
238	2022/01/25	11:05:36	50.7
239	2022/01/25	11:05:39	50.3
240	2022/01/25	11:05:42	51.5
241	2022/01/25	11:05:45	60.1
242	2022/01/25	11:05:48	67.1
243	2022/01/25	11:05:51	58.1
244	2022/01/25	11:05:54	57.3
245	2022/01/25	11:05:57	59.1
246	2022/01/25	11:06:00	71.6
247	2022/01/25	11:06:03	66.0
248	2022/01/25	11:06:06	57.5
249	2022/01/25	11:06:09	52.4
250	2022/01/25	11:06:12	52.2
251	2022/01/25	11:06:15	62.3
252	2022/01/25	11:06:18	72.1
253	2022/01/25	11:06:21	67.8
254	2022/01/25	11:06:24	59.6
255	2022/01/25	11:06:27	58.0
256	2022/01/25	11:06:30	54.0
257	2022/01/25	11:06:33	54.4
258	2022/01/25	11:06:36	62.6
259	2022/01/25	11:06:39	63.2
260	2022/01/25	11:06:42	55.2
261	2022/01/25	11:06:45	52.5
262	2022/01/25	11:06:48	54.9
263	2022/01/25	11:06:51	70.0
264	2022/01/25	11:06:54	66.9
265	2022/01/25	11:06:57	58.5
266	2022/01/25	11:07:00	56.9
267	2022/01/25	11:07:03	58.4
268	2022/01/25	11:07:06	61.8
269	2022/01/25	11:07:09	76.9
270	2022/01/25	11:07:12	68.5
271	2022/01/25	11:07:15	60.9
272	2022/01/25	11:07:18	57.7
273	2022/01/25	11:07:21	62.5
274	2022/01/25	11:07:24	63.3
275	2022/01/25	11:07:27	55.9
276	2022/01/25	11:07:30	52.5
277	2022/01/25	11:07:33	54.6
278	2022/01/25	11:07:36	73.8
279	2022/01/25	11:07:39	64.7
280	2022/01/25	11:07:42	56.7

281	2022/01/25	11:07:45	53.5
282	2022/01/25	11:07:48	51.9
283	2022/01/25	11:07:51	51.1
284	2022/01/25	11:07:54	52.1
285	2022/01/25	11:07:57	51.8
286	2022/01/25	11:08:00	50.6
287	2022/01/25	11:08:03	50.3
288	2022/01/25	11:08:06	52.7
289	2022/01/25	11:08:09	53.3
290	2022/01/25	11:08:12	52.6
291	2022/01/25	11:08:15	53.9
292	2022/01/25	11:08:18	55.0
293	2022/01/25	11:08:21	55.0
294	2022/01/25	11:08:24	52.5
295	2022/01/25	11:08:27	53.6
296	2022/01/25	11:08:30	50.7
297	2022/01/25	11:08:33	49.4
298	2022/01/25	11:08:36	53.0
299	2022/01/25	11:08:39	59.6
300	2022/01/25	11:08:42	71.7

Appendix B

RCNM Results

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: #####

Case Descr Amare Apartments Project

---- Receptor #1 ----

Descriptor Land Use	Baselines (dBA)		
	Daytime	Evening	Night
Single-Fma Residential	60	50	50

Description	Impact Device	Usage(%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	200	0
Front End Loader	No	40		79.1	200	0

Equipment	Calculated (dBA)		Results				
	*Lmax	Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax
Dozer	69.6	65.6	N/A	N/A	N/A	N/A	N/A
Front End Loader	67.1	63.1	N/A	N/A	N/A	N/A	N/A
Total	69.6	67.6	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Noise Limit Exceedance (dBA)

	Day		Evening		Night	
Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A

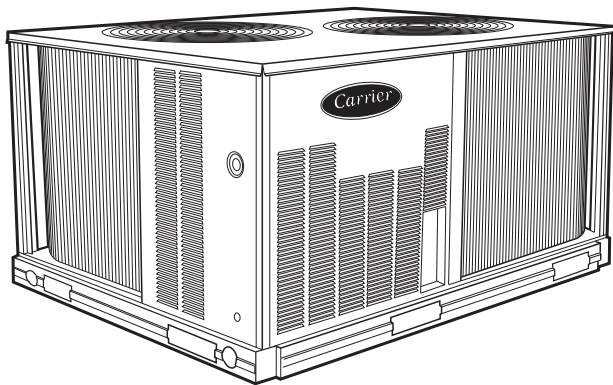
Appendix C

Sample HVAC Specifications

**38AUZ/D 50 Hz
Commercial Split Systems
Air Conditioning Condensing Units
18.3 kW to 59.2 kW**



Product Data



C09227

38AUZ07-08 shown



Certified to ISO 9001

Carrier's air-cooled air conditioning split systems:

- provide a logical solution for commercial needs
- have a rugged, dependable construction
- are available in single and circuit scroll compressor capacity control
- have cooling capability up to 52°C (125°F) ambient and down to 2°C (35°F) ambient standard

FEATURES/BENEFITS

These dependable outdoor air cooled condensing units match Carrier's indoor-air handlers to meet a wide selection of cooling solutions.

Constructed for long life

The 38AUZ single circuit and 38AUD dual circuit, scroll compressor models are designed and built to last. The high efficient designed outdoor coil construction allows for a more efficient design in a smaller cabinet size that utilizes an overall reduction in refrigerant charge. Where conditions require, special coil coating coil protection option is available. Cabinets are constructed of prepainted galvanized steel, delivering unparalleled protection from the environment. Inside and outside surfaces are protected to ensure long life, good looks, and reliable operation. Safety controls are used for enhanced system protection and reliability.

Each unit utilizes the Comfort Alert diagnostic and troubleshoot control system. This protects the units operation and provides valuable diagnostic information when required.

Factory-installed options (FIOPs)

Certified and pre-engineered factory-installed options (FIOPs) allow units to be installed in less time, thereby reducing installed cost. FIOPs include:

- low ambient controls which provide cooling operation down to -29°C (-20°F) ambient temperatures
- non-fused disconnect
- special coil coating coil protection
- louvered hail guard

FEATURES AND BENEFITS (cont.)

Efficient operation

These air cooled condensing units will provide EER's up to 12.6 (tested in accordance with ASHRAE 90.1 standards).

This high efficiency will help reduce overall operating cost and energy consumption.

Controls for performance dependability

The 38AU condensing units offer operating controls and components designed for performance dependability. The high efficiency hermetic scroll compressor is engineered for long life and durability. The compressors include vibration isolation for quiet operation. The high-pressure switch protects the entire refrigeration system from abnormally high operating pressures. A low-pressure switch protects the system from loss of charge. These units also include anti-short-cycling protection, which helps to protect the units against compressor failure.

All units include a crankcase heater to eliminate liquid slugging at start-up. Each unit comes standard with the Comfort Alert™ control system. This provides:

- System Go LED indicator
- Fault LED indicator
- Compressor fault LED indicator
- Phase loss protection
- Phase reversal protection
- Safety pressure indicator
- Anti-short cycle protection

Innovative Carrier 40RU packaged air handlers are custom matched to 38AUZ/D condensing units

Information on matching 40RU DX packaged air handler follows for convenience. See separate product data for more details. The 40RU Series has excellent fan performance, efficient direct-expansion (DX) coils, a unique combination of indoor-air quality features, and is easy to install. Its versatility and state-of-the-art features help to ensure economical performance of the split system both now and in the future.

Indoor-air quality (IAQ) features

The unique combination of IAQ features in the 40RU Series air handlers help to ensure that only clean, fresh, conditioned air is delivered to the occupied space.

Direct-expansion (DX) 4 row cooling coils prevent the build-up of humidity in the room, even during part-load conditions.

Standard 2-in. (51mm) disposable filters remove dust and airborne particles from the occupied space for cleaner air.

The pitched, non-corroding drain pan can be adjusted for a right-hand or left-hand connection to suit many applications and provide positive drainage and prevent standing condensate.

The accessory economizer can provide ventilation air to improve indoor-air quality by using demand control ventilation. When used in conjunction with Carrier Comfort System and CO₂ sensors, the economizer admits fresh outdoor air to replace stale, recirculated indoor air.

Economy

The 40RU Series packaged air handlers provide reduced installation expense and energy-efficient performance.

Quick installation is ensured by the multipoise design. Units can be installed in either the horizontal or vertical configuration without modifications. Fan motors and contactors are pre-wired and thermostatic expansion valves (TXVs) are factory-installed on all 40RU models.

High efficiency, precision-balanced fans minimize air turbulence, surging, and unbalanced operation, cutting operation expenses.

The economizer accessory precisely controls the blend of outdoor air and room air to achieve comfort levels. When the outside air enthalpy is suitable, outside air dampers can fully open to provide “free” cooling without energizing mechanical cooling.

Rugged dependability

The 40RU series units are made to last. The die-formed galvanized steel panels ensure structural integrity under all operating conditions. Galvanized steel fan housings are securely mounted to a die-formed galvanized steel fan deck.

Rugged pillow-block bearings (40RU14) are securely fastened to the solid steel fan shaft with split collets and clamp locking devices. Smaller unit sizes have spider-type bearings.

Coil flexibility

Model 40RU direct-expansion coils have galvanized steel casings; inlet and outlet connections are on the same end. The coils are designed for use with Puron (R-410A) refrigerant and have 3/8-in. diameter copper tubes mechanically bonded to aluminum sine-wave fins. The coils include matched, factory-installed thermostatic expansion valves (TXVs) with matching distributor nozzles and offers a removable power element and extended connections.

Easier installation and service

The multipoise design and component layout ensures quick unit installation and operation. Units can be converted from horizontal to vertical operation by simply repositioning the unit. Drain pan connections are duplicated on both sides of the unit. The filters, motor, drive, TXVs, and coil connections are all easily accessed by removing a single side panel.

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
3	8	A	U	Z	A	0	7	A	0	A	9	-	0	A	0	A	0

Model Type

Commercial Air Cooled Cond. Unit
Puron® R-410A Refrigerant

Type of Coil

D = Dual Circuit
Z = Single Circuit

Refrigerant Options

A = Standard
B = Low Ambient Controls

Nominal Tonnage

07 = 18.3 kW (5.2 Tons)
08 = 23.2 kW (6.6 Tons)
12 = 29.1 kW (8.3 Tons)
14 = 35.2 kW (10.0 Tons)
16 = 45.8 kW (13.0 Tons)
25 = 59.2 kW (16.8 Tons)

Factory Assigned

A = Default

Factory Assigned

0 = Default

Brand / Packaging

0 = Standard
1 = LTL

Electrical Options

A = None
C = Non-Fused Disconnect

Service Options

0 = None

Factory Assigned

A = Default

Base Unit Controls

0 = Standard Electro-Mechanical Controls

Design Rev

- = Factory Assigned

Voltage

9 = 400-3-50

Coil Options (Condenser)

With Round Tube/Plate Fin Design

All models except 14 size (12.5 Ton)

A = Al/Cu Standard
B = Pre Coat Al/Cu
C = E-Coat Al/Cu
E = Cu/Cu
M = Al/Cu Standard with louvered hail guard
N = Pre Coat Al/Cu with louvered hail guard
P = E-Coat Al/Cu with louvered hail guard
R = Cu/Cu - Louvered hail guard

Coil Options (Condenser)

With All Aluminum - NOVATION Design (07-16 sizes)

G = Al/Al Standard
K = E-Coat Al/Al
T = Al/Al with louvered hail guard
W = E-Coat Al/Al with louvered hail guard

38AU

AHRI CAPACITY RATINGS

UNIT	COOLING STAGES	NOM. CAPACITY (TONS)	NET COOLING CAPACITY (MBH)	TOTAL POWER (kW)	EER
38AUZ07/40RU07	1	5	62.7	5.1	12.2
38AUZ08/40RU08	1	6.3	79.3	6.9	11.5
38AUD12/40RU12	2	8.3	103.0	8.2	12.6
38AUD14/40RU14	2	10.4	125.0	10.9	11.5
38AUD16/40RU16	2	12.5	162.0	13.5	12.0
38AUD25/40RU25	2	16.7	202.2	16.6	12.2

LEGEND

- AHRI – Air Conditioning, Heating and Refrigeration Institute
 ASHRAE – American Society of Heating, Refrigerating and Air Conditioning, Inc.
 EER – Energy Efficiency Ratio
 IEER – Integrated Energy Efficiency Ratio

NOTES

- Rated in accordance with AHRI Standard 340/360, as appropriate.
- Ratings are based on:
Cooling Standard: 27°C (80°F) db, 19°C (67°F) wb indoor air temp and 35°C (95°F) db outdoor air temp.
- All units comply with ASHRAE 90.1 Energy Standard for minimum EER and IEER requirements.

38AU

SOUND POWER LEVELS, dB

UNIT	COOLING STAGES	OUTDOOR SOUND (dB)								
		A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
NOVATION – All Aluminum Coil Design										
38AUZ07	1	82	78.7	91.2	84.4	79.7	76.9	73.5	71.9	67.5
38AUZ08	1	81	81.7	89.7	82.6	77.6	74.4	70.3	68.0	64.2
38AUD12	2	78	79.2	81.1	78.4	75.0	72.9	68.2	66.4	68.2
38AUD14	2	79	76.2	78.6	78.1	75.1	75.2	71.4	67.9	65.1
38AUD16	2	80	90.3	81.8	78.0	76.7	75.2	70.5	66.4	61.9
RTPF – Round Tube/Plate Fin Coil Design										
38AUZ07	1	83	81.7	88.2	84.0	79.7	78.1	74.0	71.4	68.0
38AUZ08	1	83	81.7	88.2	84.0	79.7	78.1	74.0	71.4	68.0
38AUD12	2	80	76.0	79.9	79.8	77.4	75.6	69.8	67.8	66.4
38AUD16	2	83	86.7	81.2	78.9	80.4	78.0	74.2	70.2	65.0
38AUD25	2	85	91.0	85.0	80.0	86.0	79.0	73.0	68.0	63.0

NOTE: Outdoor sound data is measure in accordance with AHRI standard 270–2008.

LEGEND:

dB = Decibel

PHYSICAL DATA

SINGLE CIRCUIT MODELS with RTPF – Round Tube/Plate Fin Coil Design		
	38AUZ07	38AUZ08
Refrigeration System		
# Circuits / # Comp. / Type	1 / 1 / Scroll	1 / 1 / Scroll
R-410a shipping charge A/B (lbs, 50 Hz)	11	13
System charge w/ fan coil* (50 Hz)	14	17
Metering device	TXV	TXV
High–press. Trip / Reset (psig)	630 / 505	630 / 505
Low–press. Trip / Reset (psig)	54 / 117	54 / 117
Cond. Coil		
Material	Al/Cu	Al/Cu
Coil type	RTPF	RTPF
Rows / FPI	2 / 17	2 / 17
Total face area (ft2)	17.5	17.5
Cond. fan / motor		
Qty / Motor drive type	2 / direct	2 / direct
Motor HP / RPM	1/4 / 1100	1/4 / 1100
Fan diameter (in)	22	22
Nominal Airflow (cfm)	6000	6000
Watts (total)	610	610
Piping Connections		
Qty / Suction (in. ODS)	1 / 1 1/8	1 / 1 1/8
Qty / Liquid (in. ODS)	1 / 3/8	1 / 1/2

38AU

SINGLE CIRCUIT MODELS with NOVATION – All Aluminum coil Design		
	38AUZ07	38AUZ08
Refrigeration System		
# Circuits / # Comp. / Type	1 / 1 / Scroll	1 / 1 / Scroll
R-410a shipping charge A/B (lbs)	4.4	4.9
System charge w/ fan coil	8.4	10.2
System charge w/ fan coil (50hz)	9.0	12.3
Metering device	TXV	TXV
High–press. Trip / Reset (psig)	630 / 505	630 / 505
Low–press. Trip / Reset (psig)	54 / 117	54 / 117
Cond. Coil		
Material	Al	Al
Coil type	microchannel	microchannel
Rows / FPI	1 / 17	1 / 17
total face area (ft2)	17.5	20.5
Cond. fan / motor		
Qty / Motor drive type	2 / direct	2 / direct
Motor HP / RPM	1/4 / 1100	1/4 / 1100
Fan diameter (in)	22	22
Nominal Airflow (cfm)	6,000	6,000
Watts (total)	610	610

RTPF – Round tube /plate fin design

* Approximate system charge with about 25 ft piping of sizes indicated with matched 40RU.

PHYSICAL DATA (CONT)

38AU

DUAL CIRCUIT MODELS with RTPF – Round Tube/Plate Fin Coil Design			
	38AUD12	38AUD16	38AUD25
Refrigeration System			
# Circuits / # Comp. / Type	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll
R-410a shipping charge A/B (lbs, 50 Hz)	8.0 / 8.0	16.0 / 16.0	14.0 / 14.0
System charge w/ fan coil* (50 Hz)	11.0 / 10.0	22.0 / 22.0	19.0 / 19.0
Metering device	TXV	TXV	TXV
High–press. Trip / Reset (psig)	630 / 505	630 / 505	630 / 505
Low–press. Trip / Reset (psig)	54 / 117	54 / 117	54 / 117
Compressor			
Model	ZP51 (2)	ZP83 (2)	ZP103 (2)
Oil Charge A/B (oz)	42 / 42	60 / 60	110 / 110
Speed rpm 50 Hz	2900	2900	2900
Cond. Coil			
Material	Al/Cu	Al/Cu	Al/Cu
Coil type	RTPF	RTPF	RTPF
Rows / FPI	2 / 17	2 / 17	2 / 17
Total face area (ft2)	25.1	23.5 x 2	25.0 x 2
Cond. fan / motor			
Qty / Motor drive type	2 / direct	3 / direct	4 / direct
Motor HP / RPM	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan diameter (in)	22	22	22
Nominal Airflow (cfm)	6000	9000	12000
Watts (total)	610	970	1150
Piping Connections			
Qty / Suction (in. ODS)	2 / 1 1/8	2 / 1 3/8	2 / 1 3/8
Qty / Liquid (in. ODS)	2 / 3/8	2 / 1/2	2 / 1/2

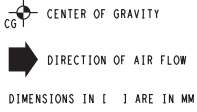
DUAL CIRCUIT MODELS with NOVATION – All Aluminum coil Design			
	38AUD12	38AUD14	38AUD16
Refrigeration System			
# Circuits / # Comp. / Type	2/2/Scroll	2/2/Scroll	2/2/Scroll
R-410a shipping charge A/B (lbs)	3.0 / 3.1	3.7 / 3.9	6.1 / 6.1
System charge w/ fan coil	7.4 / 7.4	10.8 / 10.8	12.0 / 12.0
System charge w/ fan coil (50hz)	7.5 / 7.5	11.2 / 11.2	14.0 / 14.0
Metering device	TXV	TXV	TXV
High–press. Trip / Reset (psig)	630 / 505	630 / 505	630 / 505
Low–press. Trip / Reset (psig)	54 / 117	54 / 117	54 / 117
Cond. Coil			
Material	Al	Al	Al
Coil type	microchannel	microchannel	microchannel
Rows / FPI	1 / 17	1 / 17	1 / 17
total face area (ft2)	25.0	31.8	25.0 x 2
Cond. fan / motor			
Qty / Motor drive type	2 / direct	2 / direct	3 / direct
Motor HP / RPM	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan diameter (in)	22	22	22
Nominal Airflow (cfm)	6,000	6,000	10,000
Watts (total)	610	610	970

RTPF – Round tube /plate fin design

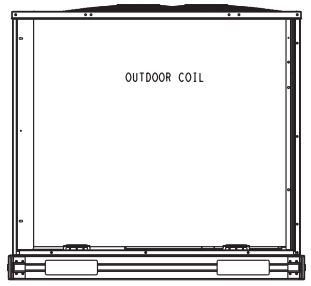
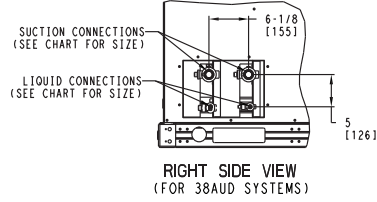
* Approximate system charge with about 25 ft piping of sizes indicated with matched 40RU.

DIMENSIONS

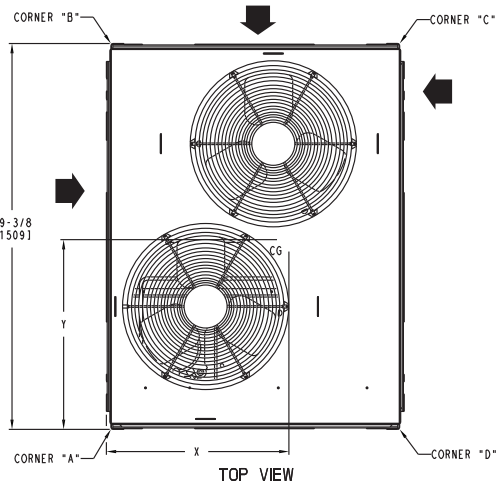
UNIT	STD. UNIT WT.		CORNER A		CORNER B		CORNER C		CORNER D		CENTER OF GRAVITY			UNIT HEIGHT
	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	X	Y	Z	H
38AUZ-07 (MCHX)	149	328	58	128	31	68	28	62	32	70	21 [533.4]	19 [482.6]	13 [330.2]	42-3/8 [1076.0]
38AUZ-08 (MCHX)	160	353	63	138	33	72	29	65	35	78	19 [482.6]	23 [584.2]	13 [330.2]	42-3/8 [1076.0]
38AUD-12 (MCHX)	226	499	88	193	50	111	38	72	56	123	20 [508.0]	23 [584.2]	15 [381.0]	50-3/8 [1279.2]
38AUD-14 (MCHX)	229	505	86	190	40	88	34	76	68	151	20 [508.0]	24 [609.6]	15 [381.0]	50-3/8 [1279.2]
38AUZ-07 (RTPF)	176	389	64	141	44	96	28	62	41	91	18 [457.2]	24 [609.6]	21 [533.4]	42-3/8 [1076.0]
38AUZ-08 (RTPF)	177	391	64	142	44	96	28	62	41	91	18 [457.2]	24 [609.6]	21 [533.4]	42-3/8 [1076.0]
38AUD-12 (RTPF)	234	516	84	185	53	117	38	83	59	131	19 [482.6]	23 [584.2]	24 [609.6]	50-3/8 [1279.2]



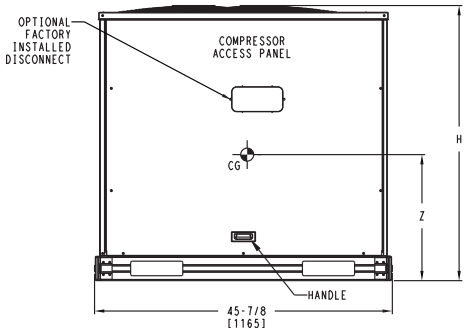
SERVICE VALVE CONNECTIONS			
UNIT	SUCTION	LIQUID	
38AUZ07	1-1/8 [28.6]	3/8 [9.5]	
38AUZ08	1-1/8 [28.6]	1/2 [12.7]	
38AUD12	1-1/8 [28.6]	3/8 [9.5]	
38AUD14	1-3/8 [34.9]	1/2 [12.7]	



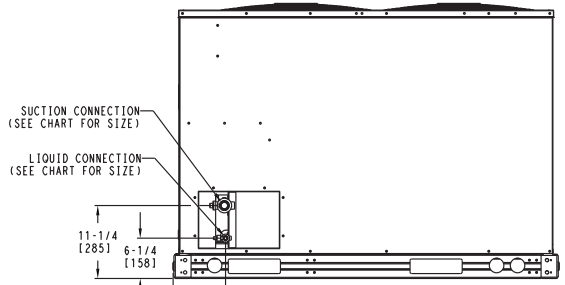
PFAF VIEW



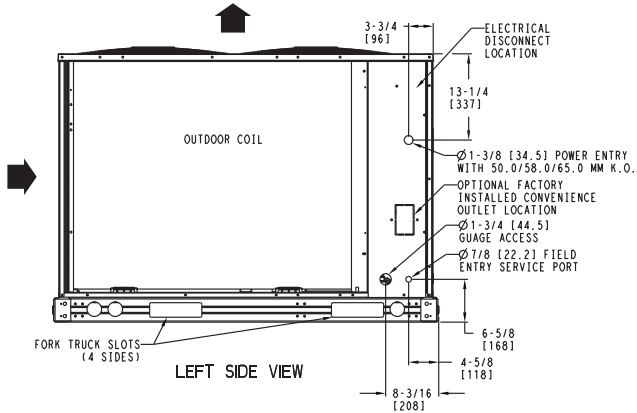
TOP VIEW



FRONT VIEW



RIGHT SIDE VIEW
(FOR 38AUZ AND 38AUQ SYSTEMS)





LEFT SIDE VIEW

- NOTES:
- MINIMUM CLEARANCE (LOCAL CODES OR JURISDICTION MAY PREVAIL):
 - A. BOTTOM TO COMBUSTIBLE SURFACES: 0 INCHES.
 - B. OUTDOOR COIL, FOR PROPER AIR FLOW: 36 INCHES ONE SIDE, 12 INCHES THE OTHER. THE SIDE GETTING THE GREATER CLEARANCE IS OPTIONAL.
 - C. OVERHEAD: 60 INCHES, TO ASSURE PROPER OUTDOOR FAN OPERATION.
 - D. BETWEEN UNITS: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - E. BETWEEN UNIT AND UNGROUNDED SURFACES: CONTROL BOX SIDE, 36 INCHES PER NEC.
 - F. BETWEEN UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - WITH EXCEPTION OF THE CLEARANCE FOR THE OUTDOOR COIL AS STATED IN NOTE 1B, A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.
 - UNITS MAY BE INSTALLED ON COMBUSTIBLE FLOORS MADE FROM WOOD OR CLASS A, B OR C ROOF COVERING MATERIAL.

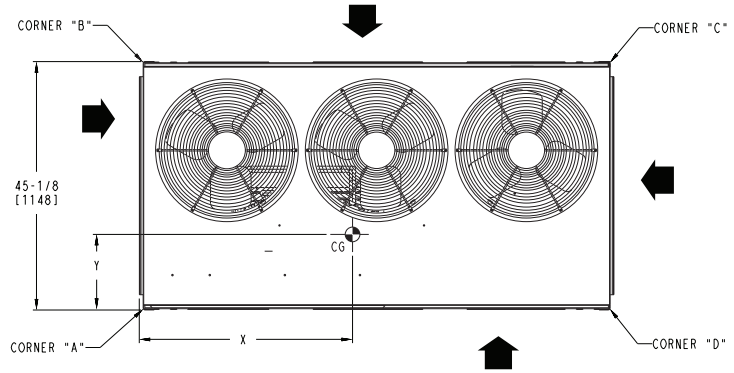
38AU

DIMENSIONS (cont.)

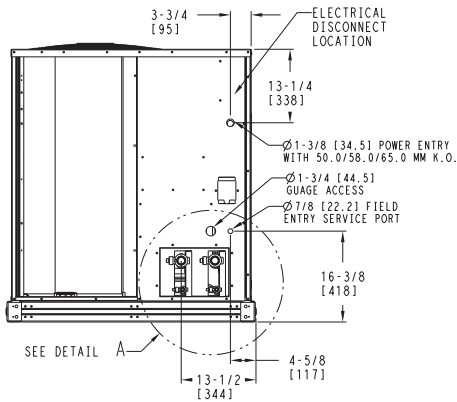
UNIT	STD. UNIT WT.		CORNER A		CORNER B		CORNER C		CORNER D		CENTER OF GRAVITY			UNIT HEIGHT
	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	X	Y	Z	H
38AUD16 (MCHX)	288	633	100	220	61	134	61.5	135	65.5	144	38 [965.2]	19 [482.6]	15 [381]	50-3/8 [1279.2]
38AUD16 (RTPF)	332	731	107	237	78	172	61	135	84	186	38 [965.2]	19 [482.6]	17 [431.8]	50-3/8 [1279.2]

 CENTER OF GRAVITY
 DIRECTION OF AIR FLOW
 DIMENSIONS IN [] ARE IN MM

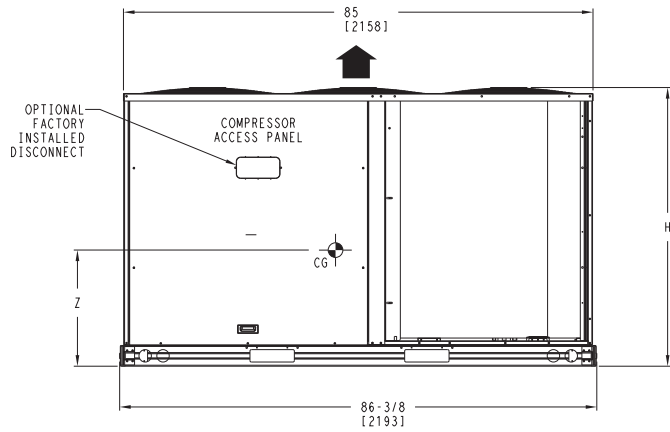
SERVICE VALVE CONNECTIONS			
UNIT	SUCTION	LIQUID	QTY
38AUD16	1-3/8 [34.9]	1/2 [12.7]	2 EA



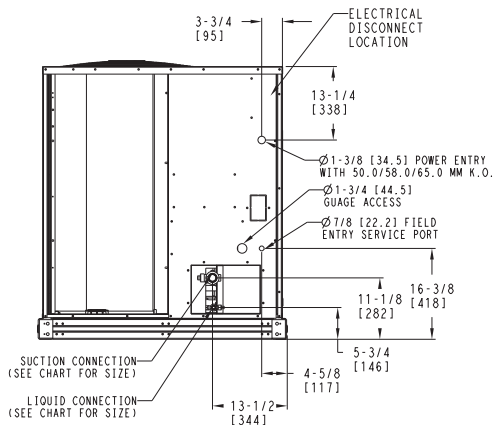
TOP VIEW



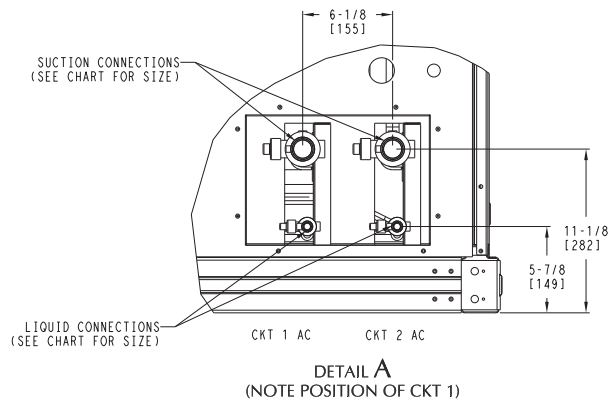
LEFT SIDE VIEW FOR 38AUD SYSTEMS



FRONT VIEW



LEFT SIDE VIEW



DETAIL A
(NOTE POSITION OF CKT 1)



- NOTES:**
- MINIMUM CLEARANCE (LOCAL CODES OR JURISDICTION MAY PREVAIL):
 - BOTTOM TO COMBUSTIBLE SURFACES: 0 INCHES.
 - OUTDOOR COIL, FOR PROPER AIR FLOW: 36 INCHES ONE SIDE, 12 INCHES THE OTHER. THE SIDE GETTING THE GREATER CLEARANCE IS OPTIONAL.
 - OVERHEAD: 60 INCHES, TO ASSURE PROPER OUTDOOR FAN OPERATION.
 - BETWEEN UNITS: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - BETWEEN UNIT AND UNGROUNDED SURFACES: CONTROL BOX SIDE, 36 INCHES PER NEC.
 - BETWEEN UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - WITH EXCEPTION OF THE CLEARANCE FOR THE OUTDOOR COIL AS STATED IN NOTE 1B, A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.
 - UNITS MAY BE INSTALLED ON COMBUSTIBLE FLOORS MADE FROM WOOD OR CLASS A, B OR C ROOF COVERING MATERIAL.

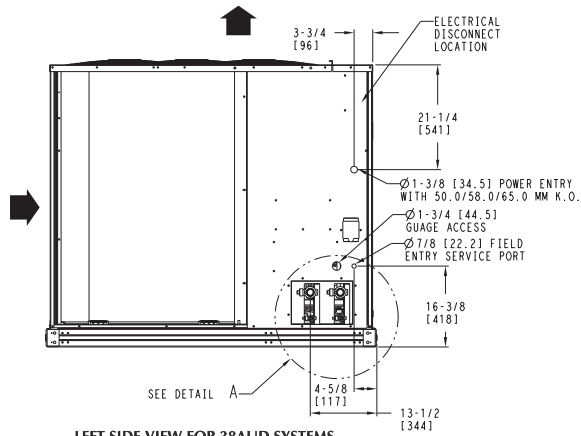
C10591

38AU

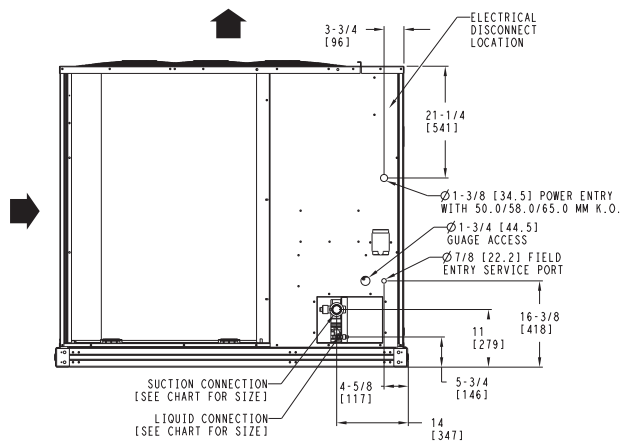
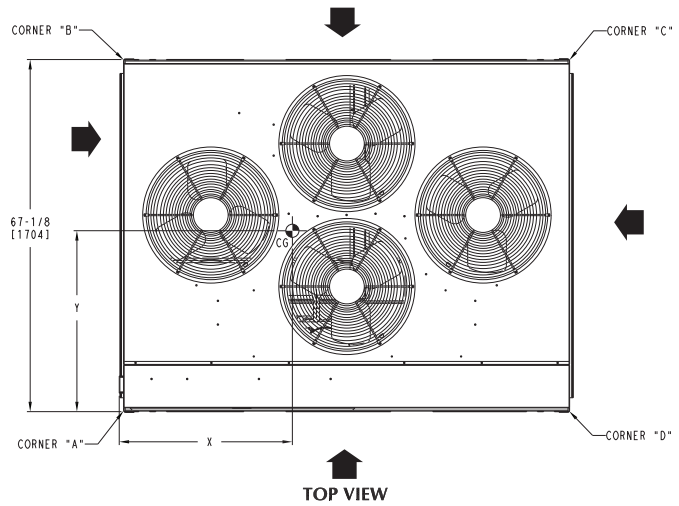
DIMENSIONS (cont.)

UNIT	STD. UNIT WT.		CORNER A		CORNER B		CORNER C		CORNER D		CENTER OF GRAVITY			UNIT HEIGHT
	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	X	Y	Z	H
38AUD25 (RTPF)	444	978	163	360	85	188	67	147	128	283	38 [965.2]	23 [584.2]	17 [431.8]	50-3/8 [1279.2]

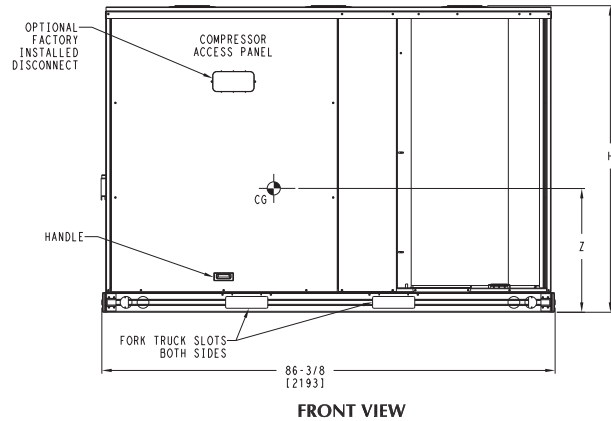
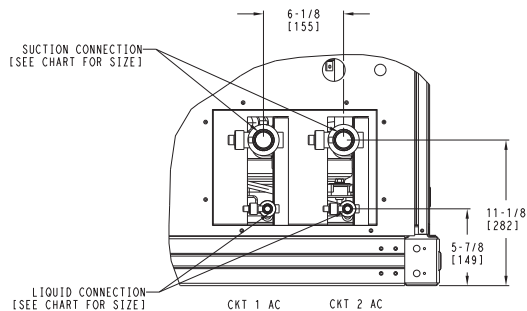
 CENTER OF GRAVITY
 DIRECTION OF AIR FLOW
 DIMENSIONS IN [] ARE IN MM



LEFT SIDE VIEW FOR 38AUD SYSTEMS



LEFT SIDE VIEW



- NOTES:
- MINIMUM CLEARANCE (LOCAL CODES OR JURISDICTION MAY PREVAIL):
 - BOTTOM TO COMBUSTIBLE SURFACES: 0 INCHES.
 - OUTDOOR COIL, FOR PROPER AIR FLOW: 36 INCHES ONE SIDE, 12 INCHES THE OTHER. THE SIDE GETTING THE GREATER CLEARANCE IS OPTIONAL.
 - OVERHEAD: 60 INCHES, TO ASSURE PROPER OUTDOOR FAN OPERATION.
 - BETWEEN UNITS: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - BETWEEN UNIT AND UNGROUNDED SURFACES: CONTROL BOX SIDE, 36 INCHES PER NEC.
 - BETWEEN UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES: CONTROL BOX SIDE, 42 INCHES PER NEC.
 - WITH EXCEPTION OF THE CLEARANCE FOR THE OUTDOOR COIL AS STATED IN NOTE 1B, A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.
 - UNITS MAY BE INSTALLED ON COMBUSTIBLE FLOORS MADE FROM WOOD OR CLASS A, B OR C ROOF COVERING MATERIAL.

UNIT	SERVICE VALVE CONNECTIONS		QTY
	SUCTION	LIQUID	
38AUD25	1-3/8 [34.9]	1/2 [12.7]	2 EA

38AU

OPTIONS AND ACCESSORIES

38AUZ/D OPTIONS AND ACCESSORIES

ITEM	OPTION*	ACCESSORY†
Disconnect Switch (non-fused)	X	
Special-coated Coil Protection	X	
Low Ambient Temperature MotorMaster I® Control	X	X
Wired Condenser Coil Grille (Novation 07-14 models only)		X
Louvered Hail Guard	X	X
Programmable Thermostats		X

* Factory-installed option.

† Field-installed accessory.

38AUZ/38AUD factory-installed options

E-coated aluminum-fin coils have a flexible and durable epoxy coating uniformly applied to all coil surfaces. Unlike brittle phenolic dip and bake coatings, E-coating provides superior protection with unmatched flexibility, edge coverage, metal adhesion, thermal performance, and most importantly, corrosion resistance.

E-coated coils provide this protection since all coil surfaces are completely encapsulated from environmental contamination. This coating is especially suitable in industrial environments.

Pre-coated coils (RTPF coils only) provide protection in mild coastal environments.

-29°C (-20°F) low-ambient temperature kit option (MotorMaster I®) controls outdoor-fan motor operation to maintain the correct head pressure at low outdoor ambient temperatures.

Louvered hail guard package protects coils against damage from flying debris and hail.

Non-fused disconnect switch is used to remove power locally at the condensing unit. This switch also includes a power lockout capability to protect the service person. This lockout switch saves the service person time and effort because there is no need to access a distant disconnect switch while servicing the unit.

NOTE: Non-fused disconnect switch cannot be used when unit MOCP electrical rating exceeds 80 amps.

38AUZ/D field-installed accessories

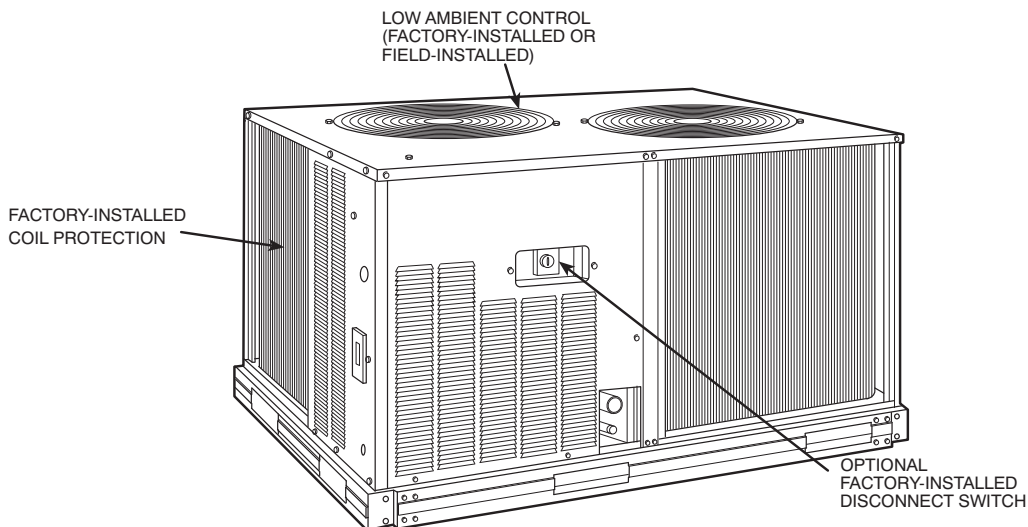
-29°C (-20°F) low-ambient temperature kit accessory (MotorMaster I®) controls outdoor-fan motor operation to maintain the correct head pressure at low outdoor ambient temperatures.

Louvered hail guard package protects coils against damage from flying debris and hail.

Condenser coil grille package protects condensing unit coil from impact by large objects and vandalism.

Carrier's line of thermostats provide both programmable and non-programmable capability with the new **Debonair®** line of commercial programmable thermostats. The **Commercial Electronic** thermostats provide 7-day programmable capability for economical applications.

38AU



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OPTIONS AND ACCESSORIES (cont.)

40RU OPTIONS AND ACCESSORIES

ITEM	OPTION*	ACCESSORY†
Alternate Fan Motors	X	
Alternate Drives	X	
CO ₂ Sensors		X
Condensate Drain Trap		X
Discharge Plenum		X
Economizer		X
Electric Heat		X
Hot Water Heating Coils		X
Overhead Suspension Package		X
Prepainted Units	X	
Return Air Grille		X
Steam Heating Coil		X
Subbase		X

* Factory-installed option.

† Field-installed accessory.

40RU factory-installed options

Alternate fan motors and drives are available to provide the widest possible range of performance.

Units constructed of prepainted steel are available from the factory for applications that require painted units. Unit color is American Sterling Gray.

40RU field-installed accessories

Two-row hot water coils have $\frac{5}{8}$ -in. diameter copper tubes mechanically bonded to aluminum plate fins. Coils have non-ferrous headers.

One-row steam coil has 1-in. OD copper tube and aluminum fins. The Inner Distributing Tube (IDT) design provides uniform temperatures across the coil face. The IDT steam coils are especially suited to applications where sub-freezing air enters the unit.

Electric resistance heat coils have an open-wire design and are mounted in a rigid frame. Safety cutouts for high temperature conditions are standard.

Economizer (enthalpy controlled) provides ventilation air and provides “free” cooling if the outside ambient temperature and humidity are suitable. The economizer can also be used in conjunction with Carrier Comfort System thermostats and CO₂ sensors to help meet indoor air quality requirements. The economizer can be used in both vertical and horizontal positions.

Discharge plenum directs the air discharge into the occupied space; integral horizontal and vertical louvers enable redirection of airflow. This accessory is available unpainted or painted.

Return-air grille provides a protective barrier over the return-air opening and gives a finished appearance to units installed in the occupied space. This accessory is available unpainted or painted.

Subbase provides a stable, raised platform and room for condensate drain connection for floor-mounted units. This accessory is available unpainted or painted.

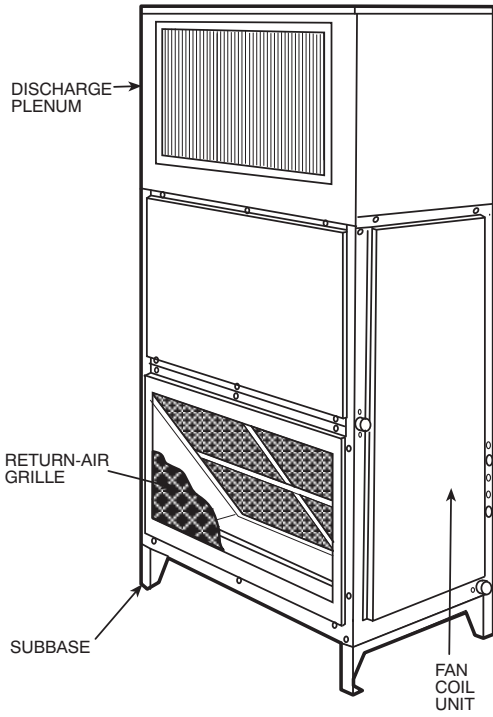
Overhead suspension package includes necessary brackets to support units in horizontal installations.

CO₂ sensors can be used in conjunction with the economizer accessory to help meet indoor air quality requirements. The sensor signals the economizer to open when the CO₂ level in the space exceeds the setpoint. A Carrier Comfort System programmable thermostat can also be used to override the sensor if the outside-air temperature is too high or too low.

Condensate drain trap includes an overflow shutoff switch that can be wired to turn off the unit if the trap becomes plugged. The kit also includes a wire harness that can be connected to an alarm if desired. The transparent trap is designed for easy service and maintenance.

OPTIONS AND ACCESSORIES (cont.)

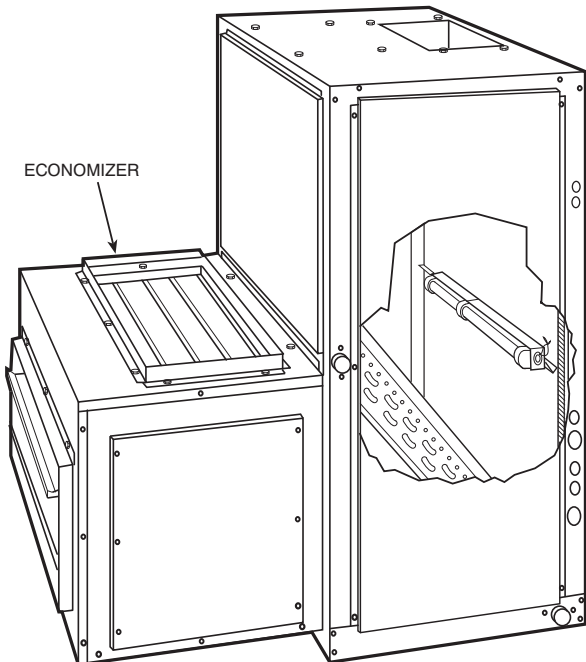
40RU WITH DISCHARGE PLENUM RETURN-AIR GRILLE AND SUBBASE



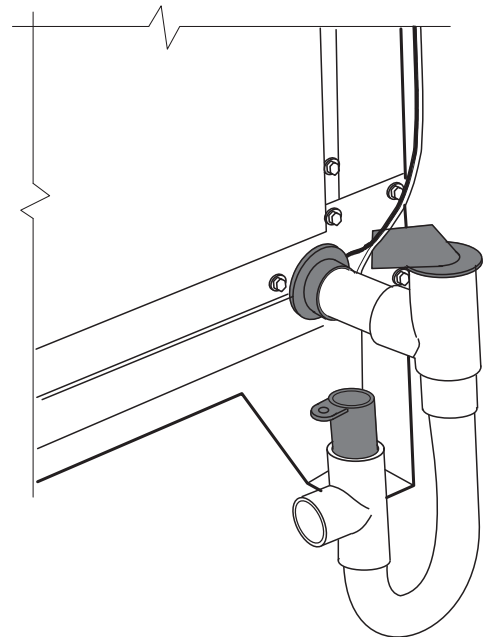
40RU WITH HOT WATER OR STEAM COIL



40RU WITH ECONOMIZER

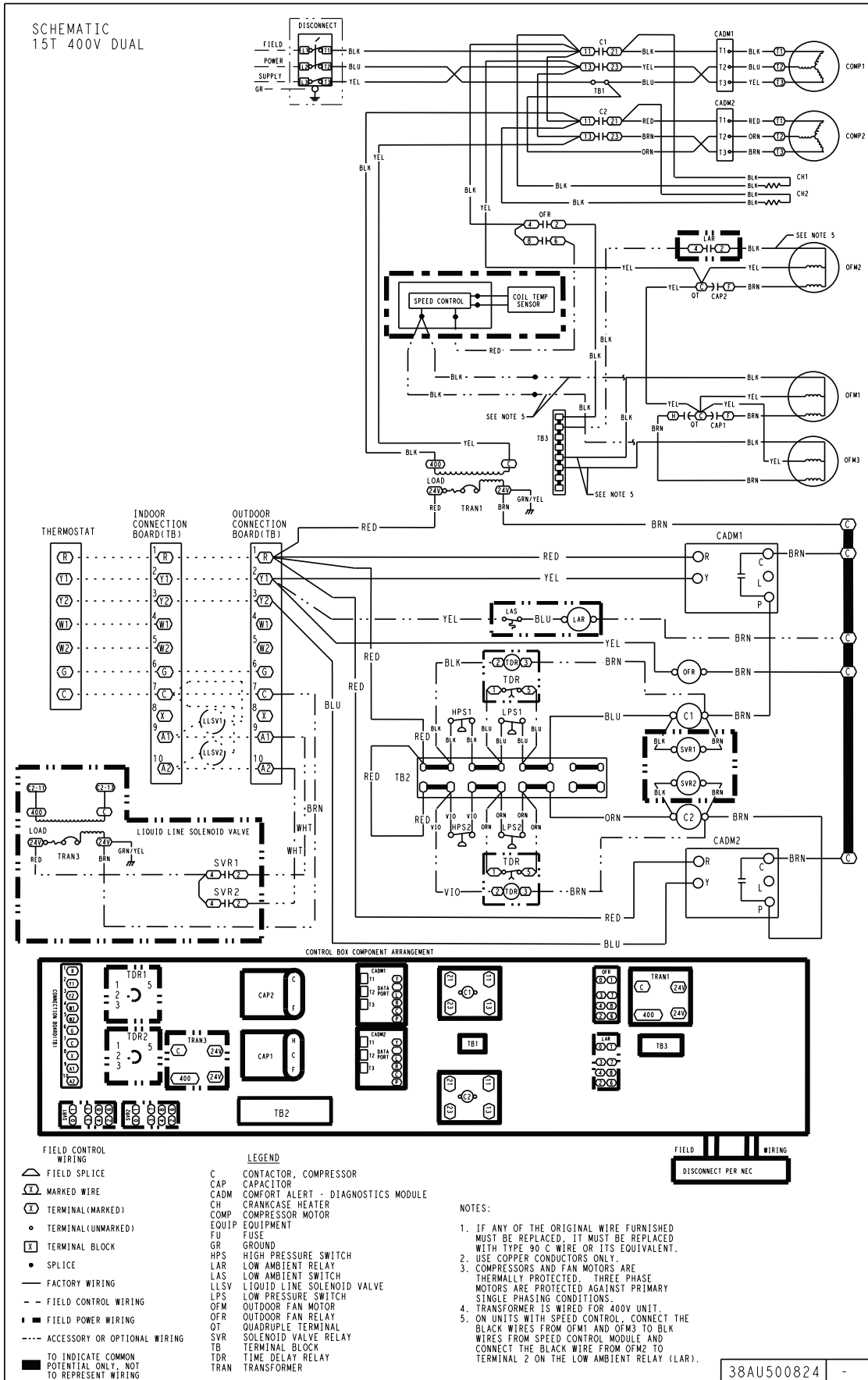


40RU WITH CONDENSATE TRAP



38AU

TYPICAL WIRING SCHEMATIC



38AU

Typical 38AUD16 Dual Circuit

PERFORMANCE DATA

38AUZ07 50 Hz

CONDENSER ONLY RATINGS

SI

38AU

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	11.9	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.4	38.1	44.2	49.5	54.5	59.6
-4	TC	13.2	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.9	38.7	44.2	49.5	54.3	60.0
-1	TC	14.6	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.5	39.3	44.8	50.0	54.9	61.9
2	TC	16.0	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.1	39.8	45.4	50.9	56.1	61.6
4	TC	17.4	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.7	40.4	45.9	51.5	56.9	62.2
7	TC	18.9	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.2	41.0	46.5	52.0	57.4	62.5
10	TC	20.3	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.8	41.6	47.1	52.5	57.9	63.3

38AUZ07 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	40.7	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	95.7	100.6	111.5	121.1	130.1	139.3
25	TC	45.2	43.8	41.0	38.0	34.5	31.3
	KW	3.6	3.8	4.4	5.0	5.7	6.4
	SDT	96.7	101.6	111.6	121.1	129.8	140.1
30	TC	49.8	48.4	45.5	42.2	38.6	36.0
	KW	3.5	3.8	4.4	5.0	5.7	6.6
	SDT	97.8	102.7	112.6	122.1	130.8	143.5
35	TC	54.6	53.2	50.2	47.0	43.2	40.0
	KW	3.5	3.7	4.3	5.0	5.8	6.6
	SDT	98.8	103.7	113.7	123.6	132.9	142.9
40	TC	59.5	58.0	54.9	51.6	48.1	44.3
	KW	3.4	3.7	4.3	5.0	5.7	6.6
	SDT	99.8	104.7	114.7	124.6	134.5	143.9
45	TC	64.4	62.9	59.7	56.4	52.8	48.6
	KW	3.3	3.6	4.2	4.9	5.7	6.5
	SDT	100.8	105.8	115.7	125.6	135.4	144.4
50	TC	69.3	67.8	64.6	61.2	57.6	53.6
	KW	3.2	3.5	4.2	4.9	5.6	6.5
	SDT	101.9	106.8	116.7	126.5	136.3	145.9

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	15.3	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	34.5	37.2	42.7	48.2	53.5	59.1
-4	TC	16.9	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.0	37.7	43.2	48.7	53.5	58.9
-1	TC	18.6	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.6	38.3	43.7	49.2	54.6	59.5
2	TC	20.3	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.1	38.8	44.3	49.7	55.1	60.5
4	TC	22.1	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.7	39.4	44.8	50.2	55.6	60.9
7	TC	23.8	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.3	40.0	45.4	50.7	56.1	61.4
10	TC	25.6	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.0	40.6	46.0	51.3	56.6	61.8

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	52.2	50.6	47.2	43.7	39.9	36.3
	kW	4.1	4.4	5.2	6.0	6.8	7.8
	SDT	94.1	99.0	108.9	118.8	128.2	138.4
25	TC	57.7	55.9	52.3	48.6	44.0	40.1
	kW	4.1	4.5	5.2	6.0	6.9	7.9
	SDT	95.0	99.9	109.8	119.7	128.3	138.1
30	TC	63.4	61.5	57.7	53.8	49.6	44.7
	kW	4.2	4.5	5.3	6.1	7.0	8.0
	SDT	96.0	100.9	110.7	120.6	130.3	139.1
35	TC	69.3	67.3	63.3	59.2	54.9	50.4
	kW	4.2	4.6	5.3	6.2	7.1	8.0
	SDT	97.0	101.9	111.7	121.5	131.3	140.9
40	TC	75.2	73.3	69.2	64.9	60.4	55.6
	kW	4.3	4.6	5.4	6.2	7.1	8.1
	SDT	98.1	102.9	112.7	122.4	132.1	141.7
45	TC	81.3	79.3	75.2	70.7	66.0	61.0
	kW	4.3	4.6	5.4	6.2	7.2	8.2
	SDT	99.2	104.0	113.7	123.3	132.9	142.5
50	TC	87.4	85.4	81.1	76.6	71.7	66.5
	kW	4.3	4.7	5.5	6.3	7.2	8.2
	SDT	100.3	105.1	114.7	124.3	133.8	143.3

LEGEND:

- kW – Compressor Power
 SDT – Saturated Discharge Temperature at Compressor
 SST – Saturated Suction Temperature
 TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD12 Total Unit 50 Hz

CONDENSER ONLY RATINGS

SI

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	19.5	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.5	38.0	43.1	48.2	53.2	58.2
-4	TC	21.5	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.2	38.7	43.8	48.8	53.8	58.7
-1	TC	23.7	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.9	39.5	44.5	49.5	54.4	59.2
2	TC	26.0	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.7	40.2	45.2	50.1	55.0	59.8
4	TC	28.4	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.5	40.9	45.9	50.8	55.6	60.3
7	TC	30.9	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.2	41.7	46.6	51.5	56.2	60.9
10	TC	33.6	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	40.1	42.5	47.3	52.2	56.9	61.4

38AU

38AUD12 Total Unit 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	66.5	64.3	59.8	55.1	50.0	44.7
	KW	5.2	5.6	6.4	7.3	8.2	9.1
	SDT	95.9	100.5	109.6	118.8	127.8	136.7
25	TC	73.4	71.0	66.1	61.0	55.7	50.0
	KW	5.2	5.6	6.5	7.4	8.3	9.2
	SDT	97.2	101.7	110.8	119.9	128.9	137.7
30	TC	80.8	78.2	72.9	67.3	61.6	55.5
	KW	5.3	5.7	6.6	7.5	8.4	9.3
	SDT	98.5	103.0	112.1	121.1	129.9	138.6
35	TC	88.6	85.8	80.0	74.0	67.9	61.4
	KW	5.4	5.8	6.6	7.5	8.5	9.4
	SDT	99.8	104.3	113.3	122.3	131.1	139.6
40	TC	96.8	93.8	87.5	81.2	74.5	67.4
	KW	5.5	5.9	6.7	7.6	8.6	9.5
	SDT	101.2	105.7	114.6	123.4	132.2	140.6
45	TC	105.6	102.2	95.4	88.5	81.2	73.6
	KW	5.6	5.9	6.8	7.7	8.7	9.6
	SDT	102.6	107.0	115.9	124.6	133.2	141.6
50	TC	114.7	111.0	103.6	96.0	88.0	79.6
	KW	5.6	6.0	6.9	7.8	8.7	9.7
	SDT	104.1	108.4	117.2	125.9	134.3	142.6

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD12 Circuit A 50 Hz

CONDENSER ONLY RATINGS

SI

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	9.6	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.4	37.9	43.0	48.1	53.1	58.0
-4	TC	10.6	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.1	38.6	43.7	48.7	53.7	58.6
-1	TC	11.7	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.8	39.3	44.3	49.3	54.3	59.1
2	TC	12.8	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.5	40.0	45.0	50.0	54.9	59.6
4	TC	14.0	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.3	40.8	45.7	50.6	55.5	60.1
7	TC	15.2	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.1	41.5	46.4	51.3	56.0	60.7
10	TC	16.5	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.9	42.3	47.1	52.0	56.6	61.2

38AU

38AUD12 Circuit A 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	32.9	31.8	29.6	27.2	24.7	22.1
	kW	2.6	2.8	3.2	3.6	4.1	4.5
	SDT	95.7	100.3	109.4	118.6	127.6	136.4
25	TC	36.3	35.1	32.6	30.1	27.4	24.6
	kW	2.6	2.8	3.2	3.7	4.1	4.6
	SDT	96.9	101.5	110.6	119.7	128.6	137.4
30	TC	39.9	38.6	35.9	33.2	30.3	27.3
	kW	2.6	2.8	3.3	3.7	4.2	4.7
	SDT	98.3	102.8	111.8	120.8	129.7	138.3
35	TC	43.7	42.2	39.4	36.4	33.3	30.1
	kW	2.7	2.9	3.3	3.8	4.2	4.7
	SDT	99.6	104.1	113.0	122.0	130.7	139.3
40	TC	47.6	46.1	43.0	39.8	36.5	32.9
	kW	2.7	2.9	3.3	3.8	4.3	4.8
	SDT	101.0	105.4	114.3	123.1	131.8	140.3
45	TC	51.8	50.1	46.8	43.3	39.6	35.9
	kW	2.8	3.0	3.4	3.8	4.3	4.8
	SDT	102.3	106.7	115.5	124.3	132.9	141.3
50	TC	56.2	54.3	50.6	46.8	42.8	38.6
	kW	2.8	3.0	3.4	3.9	4.3	4.8
	SDT	103.8	108.1	116.8	125.5	133.9	142.1

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD12 Circuit B 50 Hz

CONDENSER ONLY RATINGS

SI

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	9.8	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.6	38.2	43.3	48.3	53.3	58.3
-4	TC	10.9	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.3	38.9	43.9	49.0	53.9	58.8
-1	TC	12.0	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.1	39.6	44.6	49.6	54.6	59.4
2	TC	13.2	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.8	40.3	45.3	50.3	55.2	60.0
4	TC	14.4	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.6	41.1	46.0	51.0	55.8	60.5
7	TC	15.7	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.4	41.8	46.8	51.6	56.4	61.1
10	TC	17.1	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	40.2	42.7	47.5	52.3	57.1	61.7

38AU

38AUD12 Circuit B 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	33.6	32.5	30.2	27.8	25.3	22.7
	KW	2.6	2.8	3.2	3.7	4.1	4.5
	SDT	96.1	100.7	109.9	119.0	128.0	136.9
25	TC	37.1	35.9	33.5	30.9	28.2	25.4
	KW	2.6	2.8	3.2	3.7	4.2	4.6
	SDT	97.4	101.9	111.1	120.2	129.1	137.9
30	TC	40.9	39.6	37.0	34.2	31.3	28.2
	KW	2.7	2.9	3.3	3.7	4.2	4.7
	SDT	98.7	103.3	112.3	121.3	130.2	138.9
35	TC	44.9	43.5	40.6	37.6	34.6	31.3
	KW	2.7	2.9	3.3	3.8	4.3	4.7
	SDT	100.1	104.6	113.6	122.6	131.4	139.9
40	TC	49.2	47.7	44.5	41.4	38.0	34.5
	KW	2.7	2.9	3.4	3.8	4.3	4.8
	SDT	101.5	106.0	114.9	123.7	132.5	141.0
45	TC	53.7	52.1	48.7	45.2	41.6	37.8
	KW	2.8	3.0	3.4	3.9	4.3	4.8
	SDT	102.9	107.3	116.2	125.0	133.6	142.0
50	TC	58.5	56.7	53.0	49.2	45.2	41.1
	KW	2.8	3.0	3.5	3.9	4.4	4.9
	SDT	104.4	108.8	117.6	126.2	134.7	143.0

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD14 Total Unit 50 Hz

CONDENSER ONLY RATINGS

SI

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	24.5	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.5	39.0	44.0	48.9	53.7	58.4
-4	TC	27.0	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.4	39.8	44.8	49.6	54.4	59.1
-1	TC	29.6	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.2	40.7	45.6	50.4	55.1	59.7
2	TC	32.3	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.1	41.5	46.4	51.2	55.9	60.4
4	TC	35.1	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	40.0	42.4	47.2	52.0	56.6	61.1
7	TC	38.0	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	40.9	43.3	48.1	52.8	57.4	61.7
10	TC	40.8	39.4	37.0	34.2	30.9	27.2
	kW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	41.9	44.3	48.9	53.6	58.1	62.4

38AU

38AUD14 Total Unit 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	83.7	80.8	74.6	68.0	61.0	53.9
	kW	7.0	7.5	8.4	9.3	10.2	11.0
	SDT	97.8	102.2	111.2	120.0	128.7	137.2
25	TC	92.1	89.0	82.3	75.4	67.9	60.3
	kW	7.1	7.6	8.5	9.5	10.4	11.3
	SDT	99.3	103.7	112.6	121.4	129.9	138.3
30	TC	101.0	97.5	90.5	83.0	75.3	66.8
	kW	7.3	7.7	8.7	9.7	10.6	11.6
	SDT	100.8	105.2	114.0	122.7	131.3	139.5
35	TC	110.2	106.5	98.9	91.0	82.4	73.5
	kW	7.4	7.9	8.8	9.8	10.8	11.8
	SDT	102.4	106.8	115.5	124.2	132.6	140.8
40	TC	119.8	115.7	107.6	98.9	89.8	80.1
	kW	7.6	8.0	9.0	10.0	11.0	12.1
	SDT	104.0	108.3	117.0	125.6	133.9	141.9
45	TC	129.6	125.1	116.1	106.8	97.1	86.6
	kW	7.7	8.2	9.2	10.2	11.2	12.3
	SDT	105.7	110.0	118.5	127.0	135.2	143.1
50	TC	139.3	134.6	124.7	114.8	104.1	93.1
	kW	7.9	8.4	9.3	10.4	11.4	12.5
	SDT	107.4	111.7	120.1	128.5	136.5	144.4

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD14 Circuit A 50 Hz

CONDENSER ONLY RATINGS

SI

38AU

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	12.3	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.3	38.8	43.7	48.7	53.5	58.2
-4	TC	13.6	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.1	39.6	44.5	49.4	54.2	58.9
-1	TC	14.9	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.9	40.4	45.3	50.1	54.9	59.5
2	TC	16.2	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.8	41.2	46.1	50.9	55.6	60.2
4	TC	17.7	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.7	42.1	46.9	51.7	56.4	60.9
7	TC	19.1	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	40.6	43.0	47.8	52.5	57.1	61.5
10	TC	20.6	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	41.6	43.9	48.6	53.3	57.8	62.2

38AUD14 Circuit A 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	42.0	40.5	37.4	34.2	30.7	27.1
	KW	3.5	3.8	4.2	4.7	5.1	5.5
	SDT	97.3	101.8	110.7	119.6	128.3	136.8
25	TC	46.2	44.7	41.4	37.9	34.2	30.3
	KW	3.6	3.8	4.3	4.8	5.2	5.7
	SDT	98.8	103.2	112.1	120.9	129.5	138.0
30	TC	50.7	49.0	45.5	41.7	37.9	33.7
	KW	3.7	3.9	4.4	4.9	5.3	5.8
	SDT	100.3	104.7	113.6	122.3	130.8	139.1
35	TC	55.4	53.5	49.7	45.8	41.5	37.0
	KW	3.7	4.0	4.4	4.9	5.4	5.9
	SDT	101.8	106.2	115.0	123.7	132.1	140.4
40	TC	60.2	58.2	54.1	49.8	45.2	40.4
	KW	3.8	4.0	4.5	5.0	5.6	6.1
	SDT	103.5	107.8	116.5	125.1	133.4	141.5
45	TC	65.2	62.9	58.4	53.8	48.9	43.7
	KW	3.9	4.1	4.6	5.1	5.6	6.2
	SDT	105.1	109.4	118.0	126.5	134.8	142.7
50	TC	70.2	67.8	62.8	57.9	52.5	47.0
	KW	4.0	4.2	4.7	5.2	5.7	6.3
	SDT	106.8	111.1	119.5	127.9	136.0	143.9

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD14 Circuit B 50 Hz

CONDENSER ONLY RATINGS

SI

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	12.2	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.8	39.3	44.2	49.1	53.9	58.6
-4	TC	13.4	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.6	40.1	45.0	49.9	54.6	59.3
-1	TC	14.7	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.5	41.0	45.9	50.7	55.4	60.0
2	TC	16.1	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.4	41.8	46.7	51.5	56.1	60.7
4	TC	17.5	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	40.3	42.7	47.5	52.3	56.9	61.3
7	TC	18.9	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	41.3	43.6	48.4	53.1	57.6	62.0
10	TC	20.3	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	42.2	44.6	49.2	53.9	58.4	62.7

38AU

38AUD14 Circuit B 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	41.7	40.2	37.1	33.8	30.3	26.8
	KW	3.5	3.7	4.2	4.6	5.1	5.5
	SDT	98.2	102.7	111.6	120.4	129.1	137.6
25	TC	45.9	44.3	41.0	37.5	33.8	29.9
	KW	3.5	3.8	4.2	4.7	5.2	5.6
	SDT	99.7	104.2	113.1	121.8	130.3	138.7
30	TC	50.2	48.5	45.0	41.3	37.4	33.2
	KW	3.6	3.8	4.3	4.8	5.3	5.8
	SDT	101.3	105.7	114.5	123.2	131.7	139.9
35	TC	54.8	53.0	49.2	45.2	40.9	36.5
	KW	3.7	3.9	4.4	4.9	5.4	5.9
	SDT	102.9	107.3	116.0	124.6	133.0	141.2
40	TC	59.6	57.5	53.5	49.1	44.6	39.7
	KW	3.8	4.0	4.5	5.0	5.5	6.0
	SDT	104.6	108.9	117.6	126.1	134.4	142.4
45	TC	64.4	62.1	57.6	53.0	48.1	42.9
	KW	3.8	4.1	4.5	5.1	5.6	6.1
	SDT	106.3	110.5	119.1	127.5	135.7	143.6
50	TC	69.2	66.8	61.9	56.9	51.6	46.2
	KW	3.9	4.1	4.6	5.1	5.7	6.2
	SDT	108.0	112.3	120.6	129.0	137.0	144.8

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD16 Total Unit 50 Hz

CONDENSER ONLY RATINGS

SI

38AU

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	31.6	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.4	38.0	43.2	48.3	53.4	58.4
-4	TC	34.8	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.2	38.7	43.8	48.9	53.9	58.9
-1	TC	38.3	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.9	39.5	44.5	49.5	54.5	59.4
2	TC	41.9	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.7	40.2	45.2	50.2	55.1	59.9
4	TC	45.6	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.5	41.0	45.9	50.9	55.7	60.5
7	TC	49.7	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.3	41.8	46.7	51.6	56.4	61.0
10	TC	53.9	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	40.2	42.6	47.5	52.3	57.0	61.6

38AUD16 Total Unit 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	107.8	104.6	97.9	90.9	83.7	76.1
	KW	8.4	8.9	10.0	11.2	12.5	13.9
	SDT	95.8	100.4	109.7	118.9	128.1	137.1
25	TC	118.8	115.3	107.9	100.4	92.4	84.1
	KW	8.6	9.1	10.2	11.4	12.7	14.1
	SDT	97.1	101.7	110.9	120.0	129.1	138.0
30	TC	130.5	126.6	118.6	110.3	101.6	92.7
	KW	8.7	9.2	10.3	11.6	12.9	14.3
	SDT	98.4	103.0	112.1	121.2	130.1	138.9
35	TC	142.8	138.5	129.7	120.8	111.5	101.6
	KW	8.9	9.4	10.5	11.7	13.0	14.4
	SDT	99.8	104.3	113.4	122.4	131.2	139.9
40	TC	155.8	151.0	141.6	132.0	121.7	110.7
	KW	9.1	9.6	10.7	11.9	13.2	14.6
	SDT	101.3	105.7	114.7	123.6	132.3	140.8
45	TC	169.5	164.3	154.0	143.4	132.0	120.1
	KW	9.3	9.8	10.9	12.1	13.4	14.8
	SDT	102.7	107.2	116.0	124.8	133.5	141.9
50	TC	183.9	178.2	166.8	154.9	142.6	129.5
	KW	9.5	10.0	11.1	12.3	13.6	15.0
	SDT	104.3	108.7	117.4	126.1	134.6	142.9

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD16 Circuit A 50 Hz

CONDENSER ONLY RATINGS

SI

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	15.8	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.9	38.5	43.6	48.7	53.8	58.8
-4	TC	17.4	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.6	39.2	44.3	49.4	54.3	59.3
-1	TC	19.1	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.4	39.9	45.0	50.0	54.9	59.8
2	TC	20.8	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.2	40.7	45.7	50.7	55.6	60.3
4	TC	22.7	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.0	41.5	46.4	51.4	56.2	60.9
7	TC	24.7	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.9	42.3	47.2	52.1	56.8	61.5
10	TC	26.8	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	40.7	43.1	48.0	52.8	57.5	62.1

38AU

38AUD16 Circuit A 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	53.8	52.2	48.8	45.3	41.7	37.9
	KW	4.2	4.5	5.1	5.7	6.3	7.0
	SDT	96.6	101.2	110.5	119.7	128.8	137.8
25	TC	59.3	57.5	53.8	50.0	46.0	41.9
	KW	4.3	4.6	5.1	5.7	6.4	7.1
	SDT	97.9	102.5	111.7	120.8	129.8	138.7
30	TC	65.1	63.1	59.0	54.9	50.6	46.1
	KW	4.4	4.7	5.2	5.8	6.5	7.2
	SDT	99.3	103.9	112.9	122.0	130.9	139.6
35	TC	71.1	68.9	64.5	60.1	55.4	50.5
	KW	4.5	4.8	5.3	5.9	6.6	7.3
	SDT	100.7	105.2	114.2	123.2	132.0	140.6
40	TC	77.5	75.1	70.4	65.6	60.5	55.0
	KW	4.6	4.9	5.4	6.0	6.7	7.4
	SDT	102.2	106.7	115.6	124.5	133.2	141.6
45	TC	84.3	81.7	76.6	71.3	65.6	59.6
	KW	4.7	5.0	5.5	6.1	6.8	7.5
	SDT	103.7	108.1	117.0	125.7	134.3	142.7
50	TC	91.4	88.6	82.9	76.9	70.8	64.3
	KW	4.8	5.1	5.6	6.2	6.9	7.6
	SDT	105.3	109.7	118.4	127.0	135.5	143.7

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD16 Circuit B 50 Hz

CONDENSER ONLY RATINGS

SI

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	15.8	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.0	37.6	42.7	47.9	53.0	58.0
-4	TC	17.5	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.7	38.3	43.4	48.5	53.5	58.5
-1	TC	19.2	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.4	39.0	44.0	49.1	54.1	59.0
2	TC	21.0	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.2	39.7	44.7	49.7	54.7	59.5
4	TC	22.9	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.0	40.4	45.4	50.4	55.3	60.0
7	TC	25.0	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.8	41.2	46.2	51.1	55.9	60.6
10	TC	27.1	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.6	42.0	46.9	51.8	56.5	61.2

38AU

38AUD16 Circuit B 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	54.0	52.4	49.1	45.6	42.0	38.2
	KW	4.2	4.4	5.0	5.6	6.2	6.9
	SDT	95.0	99.7	108.9	118.2	127.3	136.3
25	TC	59.6	57.8	54.2	50.4	46.4	42.3
	KW	4.2	4.5	5.0	5.6	6.3	7.0
	SDT	96.2	100.9	110.1	119.2	128.3	137.2
30	TC	65.5	63.5	59.5	55.4	51.1	46.6
	KW	4.3	4.6	5.1	5.7	6.4	7.1
	SDT	97.6	102.1	111.3	120.4	129.3	138.1
35	TC	71.7	69.5	65.2	60.7	56.0	51.1
	KW	4.4	4.7	5.2	5.8	6.5	7.2
	SDT	98.9	103.4	112.5	121.5	130.4	139.1
40	TC	78.2	75.9	71.2	66.3	61.2	55.7
	KW	4.5	4.8	5.3	5.9	6.5	7.2
	SDT	100.3	104.8	113.8	122.7	131.5	140.0
45	TC	85.2	82.6	77.4	72.1	66.4	60.4
	KW	4.6	4.9	5.4	6.0	6.6	7.3
	SDT	101.8	106.2	115.1	123.9	132.6	141.1
50	TC	92.4	89.6	83.9	77.9	71.8	65.2
	KW	4.7	5.0	5.5	6.1	6.7	7.4
	SDT	103.3	107.6	116.5	125.2	133.8	142.1

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD25 Total Unit

CONDENSER ONLY RATINGS

SI

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	38.7	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	33.8	36.4	41.6	46.7	51.9	57.0
-4	TC	42.8	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	34.5	37.1	42.2	47.4	52.5	57.5
-1	TC	47.2	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.2	37.8	42.9	48.0	53.1	58.1
2	TC	52.0	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.0	38.6	43.6	48.7	53.7	58.6
4	TC	57.1	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.9	39.4	44.4	49.4	54.4	59.2
7	TC	62.6	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.8	40.3	45.2	50.2	55.1	59.8
10	TC	68.4	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.8	41.2	46.1	51.0	55.8	60.5

38AU

38AUD25 Total Unit

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	131.9	128.0	119.8	111.1	101.6	91.4
	KW	10.0	10.6	12.0	13.5	15.2	17.2
	SDT	92.8	97.5	106.9	116.1	125.4	134.6
25	TC	145.9	141.7	132.9	123.5	113.3	102.3
	KW	10.2	10.8	12.1	13.6	15.4	17.3
	SDT	94.1	98.7	108.0	117.3	126.4	135.5
30	TC	161.1	156.5	146.9	136.7	125.6	113.7
	KW	10.4	11.0	12.3	13.8	15.5	17.5
	SDT	95.4	100.0	109.2	118.4	127.5	136.5
35	TC	177.3	172.3	161.9	150.7	138.7	125.7
	KW	10.6	11.2	12.5	14.0	15.7	17.6
	SDT	96.9	101.4	110.5	119.6	128.7	137.6
40	TC	194.8	189.3	177.9	165.7	152.5	138.4
	KW	10.8	11.4	12.7	14.2	15.9	17.8
	SDT	98.4	102.9	111.9	120.9	129.8	138.6
45	TC	213.5	207.4	194.9	181.5	167.1	151.7
	KW	11.1	11.7	13.0	14.5	16.1	18.0
	SDT	100.0	104.5	113.4	122.3	131.1	139.7
50	TC	233.4	226.7	213.0	198.2	182.5	165.6
	KW	11.4	12.0	13.3	14.7	16.4	18.2
	SDT	101.8	106.2	115.0	123.7	132.4	140.9

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD25 Circuit A 50 Hz

CONDENSER ONLY RATINGS

SI

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	19.3	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	33.6	36.2	41.4	46.6	51.7	56.8
-4	TC	21.4	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	34.3	36.8	42.0	47.2	52.3	57.3
-1	TC	23.6	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.0	37.5	42.7	47.8	52.9	57.9
2	TC	26.0	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.8	38.3	43.4	48.5	53.5	58.4
4	TC	28.6	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.6	39.1	44.1	49.2	54.1	59.0
7	TC	31.3	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.5	40.0	44.9	49.9	54.8	59.6
10	TC	34.3	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.4	40.9	45.8	50.7	55.5	60.3

38AU

38AUD25 Circuit A 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	66.0	64.0	60.0	55.6	50.9	45.8
	KW	5.0	5.3	5.9	6.7	7.6	8.5
	SDT	92.4	97.1	106.5	115.8	125.1	134.3
25	TC	73.0	70.9	66.5	61.8	56.7	51.2
	KW	5.1	5.4	6.0	6.8	7.6	8.6
	SDT	93.7	98.3	107.6	116.9	126.1	135.2
30	TC	80.6	78.3	73.5	68.4	62.9	57.0
	KW	5.2	5.5	6.1	6.9	7.7	8.7
	SDT	95.0	99.6	108.8	118.0	127.1	136.2
35	TC	88.8	86.2	81.1	75.5	69.5	63.0
	KW	5.3	5.6	6.2	7.0	7.8	8.8
	SDT	96.4	100.9	110.1	119.2	128.3	137.2
40	TC	97.5	94.8	89.1	83.0	76.4	69.4
	KW	5.4	5.7	6.3	7.1	7.9	8.9
	SDT	97.9	102.4	111.4	120.5	129.4	138.2
45	TC	106.9	103.9	97.6	91.0	83.8	76.0
	KW	5.5	5.8	6.5	7.2	8.0	9.0
	SDT	99.5	104.0	112.9	121.8	130.6	139.3
50	TC	116.9	113.6	106.7	99.4	91.5	83.0
	KW	5.7	6.0	6.6	7.3	8.1	9.1
	SDT	101.2	105.6	114.4	123.2	131.9	140.5

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)

38AUD25 Circuit B 50 Hz

CONDENSER ONLY RATINGS

SI

SST (°C)		Air Temperature entering Condenser (°C)					
		27	29	35	41	46	52
-7	TC	19.3	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	34.0	36.6	41.8	46.9	52.1	57.2
-4	TC	21.4	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	34.7	37.3	42.4	47.6	52.7	57.7
-1	TC	23.6	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	35.5	38.0	43.1	48.2	53.3	58.3
2	TC	26.0	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	36.3	38.8	43.9	48.9	53.9	58.8
4	TC	28.5	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	37.2	39.7	44.7	49.7	54.6	59.4
7	TC	31.2	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	38.1	40.6	45.5	50.4	55.3	60.1
10	TC	34.1	39.4	37.0	34.2	30.9	27.2
	KW	3.6	3.9	4.4	5.0	5.7	6.3
	SDT	39.1	41.5	46.4	51.2	56.0	60.7

38AU

38AUD25 Circuit B 50 Hz

CONDENSER ONLY RATINGS

ENGLISH

SST (°F)		Air Temperature entering Condenser (°F)					
		80	85	95	105	115	125
20	TC	65.9	63.9	59.9	55.5	50.7	45.6
	KW	5.0	5.3	6.0	6.8	7.6	8.6
	SDT	93.3	97.9	107.2	116.5	125.8	134.9
25	TC	72.9	70.8	66.4	61.7	56.6	51.0
	KW	5.1	5.4	6.1	6.8	7.7	8.7
	SDT	94.5	99.2	108.4	117.6	126.8	135.9
30	TC	80.5	78.2	73.4	68.2	62.7	56.7
	KW	5.2	5.5	6.2	6.9	7.8	8.8
	SDT	95.9	100.5	109.6	118.8	127.9	136.9
35	TC	88.6	86.0	80.8	75.2	69.2	62.7
	KW	5.3	5.6	6.3	7.0	7.9	8.9
	SDT	97.4	101.9	111.0	120.1	129.0	137.9
40	TC	97.3	94.5	88.8	82.7	76.1	69.0
	KW	5.4	5.7	6.4	7.1	8.0	8.9
	SDT	98.9	103.4	112.4	121.4	130.3	139.0
45	TC	106.6	103.5	97.2	90.5	83.3	75.6
	KW	5.6	5.9	6.5	7.3	8.1	9.0
	SDT	100.6	105.0	113.9	122.8	131.5	140.1
50	TC	116.5	113.1	106.2	98.8	91.0	82.5
	KW	5.7	6.0	6.7	7.4	8.2	9.2
	SDT	102.4	106.8	115.5	124.2	132.9	141.3

LEGEND:

- kW – Compressor Power
- SDT – Saturated Discharge Temperature at Compressor
- SST – Saturated Suction Temperature
- TC – Gross Cooling Capacity (1000 Btuh)

PERFORMANCE DATA (cont.)
COMBINATION RATINGS

38AUZ07 - 40RUA07

SI

38AU

				Ambient Temperature															
				29.4			35.0			40.6			46.1			51.7			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	
850 L/S	EAT (wb)	14.4	THC	17.2	17.2	19.3	16.6	16.6	18.8	16.0	16.0	18.1	15.4	15.4	17.4	14.5	14.5	16.4	
			SHC	15.0	17.2	19.3	14.5	16.6	18.8	14.0	16.0	18.1	13.5	15.4	17.4	12.7	14.5	16.4	
			kW	3.6			4.3			4.9			5.7			6.5			
		16.7	THC	17.5	17.5	19.2	16.9	16.9	18.8	16.2	16.2	18.4	15.5	15.5	17.9	14.6	14.6	17.1	
			SHC	13.8	16.5	19.2	13.5	16.2	18.8	13.2	15.8	18.4	12.8	15.4	17.9	12.2	14.6	17.1	
			kW	3.6			4.2			4.9			5.7			6.5			
		19.4	THC	18.9	18.9	18.9	18.3	18.3	18.3	17.5	17.5	17.5	16.7	16.7	16.7	15.8	15.8	15.8	
			SHC	11.2	13.9	16.6	10.9	13.6	16.3	10.6	13.3	16.0	10.3	13.0	15.7	9.9	12.6	15.3	
			kW	3.6			4.2			4.9			5.7			6.5			
		22.2	THC	20.6	20.6	20.6	19.9	19.9	19.9	19.1	19.1	19.1	18.3	18.3	18.3	17.3	17.3	17.3	
			SHC	8.4	11.2	13.9	8.2	10.9	13.6	7.9	10.6	13.3	7.6	10.3	13.0	7.2	9.9	12.7	
			kW	3.5			4.1			4.8			5.6			6.5			
	24.4	THC	-	22.0	22.0	-	21.3	21.3	-	20.5	20.5	-	19.6	19.6	-	-	-		
		SHC	-	9.0	11.8	-	8.7	11.5	-	8.4	11.2	-	8.1	10.9	-	-	-		
		kW	3.5			4.1			4.8			5.6			6.5				
	991 L/S	EAT (wb)	14.4	THC	17.9	17.9	20.2	17.4	17.4	19.5	16.7	16.7	18.8	16.1	16.1	18.1	15.3	15.3	17.3
				SHC	15.6	17.9	20.2	15.2	17.4	19.5	14.6	16.7	18.8	14.0	16.1	18.1	13.4	15.3	17.3
				kW	3.6			4.2			4.9			5.7			6.5		
			16.7	THC	18.0	18.0	20.6	17.4	17.4	20.3	16.7	16.7	19.6	16.1	16.1	18.8	15.3	15.3	17.9
				SHC	14.7	17.7	20.6	14.4	17.4	20.3	13.9	16.7	19.6	13.4	16.1	18.8	12.7	15.3	17.9
				kW	3.6			4.2			4.9			5.7			6.5		
			19.4	THC	19.3	19.3	19.3	18.6	18.6	18.6	17.8	17.8	17.8	17.0	17.0	17.1	16.1	16.1	16.7
				SHC	11.8	14.9	18.0	11.5	14.6	17.7	11.3	14.3	17.4	10.9	14.0	17.1	10.6	13.6	16.7
				kW	3.6			4.2			4.9			5.6			6.5		
22.2			THC	21.0	21.0	21.0	20.3	20.3	20.3	19.5	19.5	19.5	18.6	18.6	18.6	17.6	17.6	17.6	
			SHC	8.7	11.8	14.9	8.4	11.5	14.6	8.2	11.3	14.3	7.9	10.9	14.0	7.5	10.6	13.7	
			kW	3.5			4.1			4.8			5.6			6.4			
24.4		THC	-	22.4	22.4	-	21.7	21.7	-	20.8	20.8	-	-	-	-	-	-		
		SHC	-	9.3	12.5	-	9.1	12.3	-	8.8	12.0	-	-	-	-	-	-		
		kW	3.4			4.1			4.8			5.6			6.4				
1133 L/S		EAT (wb)	14.4	THC	18.5	18.5	20.8	17.9	17.9	20.2	17.3	17.3	19.5	16.6	16.6	18.7	15.8	15.8	17.8
				SHC	16.1	18.5	20.8	15.7	17.9	20.2	15.1	17.3	19.5	14.5	16.6	18.7	13.8	15.8	17.8
				kW	3.6			4.2			4.9			5.7			6.5		
			16.7	THC	18.5	18.5	21.7	17.9	17.9	21.0	17.3	17.3	20.2	16.6	16.6	19.4	15.8	15.8	18.5
				SHC	15.4	18.5	21.7	14.9	17.9	21.0	14.4	17.3	20.2	13.8	16.6	19.4	13.2	15.8	18.5
				kW	3.6			4.2			4.9			5.7			6.5		
			19.4	THC	19.6	19.6	19.6	18.9	18.9	19.0	18.1	18.1	18.7	17.3	17.3	18.3	16.3	16.3	17.9
				SHC	12.4	15.9	19.3	12.1	15.6	19.0	11.8	15.3	18.7	11.5	14.9	18.3	11.1	14.5	17.9
				kW	3.5			4.2			4.9			5.6			6.5		
	22.2		THC	21.2	21.2	21.2	20.5	20.5	20.5	19.7	19.7	19.7	18.8	18.8	18.8	17.8	17.8	17.8	
			SHC	8.9	12.4	15.9	8.7	12.1	15.6	8.4	11.8	15.3	8.1	11.5	14.9	7.7	11.2	14.6	
			kW	3.5			4.1			4.8			5.6			6.4			
	24.4	THC	-	22.7	22.7	-	21.9	21.9	-	21.1	21.1	-	-	-	-	-	-		
		SHC	-	9.6	13.2	-	9.4	12.9	-	9.1	12.6	-	-	-	-	-	-		
		kW	3.4			4.1			4.8			5.6			6.4				
	1274 L/S	EAT (wb)	14.4	THC	19.0	19.0	21.4	18.4	18.4	20.7	17.7	17.7	20.0	17.0	17.0	19.2	16.2	16.2	18.3
				SHC	16.6	19.0	21.4	16.0	18.4	20.7	15.5	17.7	20.0	14.9	17.0	19.2	14.2	16.2	18.3
				kW	3.6			4.2			4.9			5.6			6.5		
			16.7	THC	19.0	19.0	22.2	18.4	18.4	21.5	17.7	17.7	20.8	17.0	17.0	19.9	16.2	16.2	19.0
				SHC	15.8	19.0	22.2	15.3	18.4	21.5	14.7	17.7	20.8	14.1	17.0	19.9	13.5	16.2	19.0
				kW	3.6			4.2			4.9			5.6			6.5		
			19.4	THC	19.8	19.8	20.5	19.1	19.1	20.2	18.3	18.3	19.9	17.5	17.5	19.5	16.5	16.5	19.1
				SHC	13.0	16.8	20.5	12.7	16.5	20.2	12.4	16.1	19.9	12.0	15.8	19.5	11.6	15.4	19.1
				kW	3.5			4.2			4.8			5.6			6.5		
22.2			THC	21.5	21.5	21.5	20.8	20.8	20.8	19.9	19.9	19.9	19.0	19.0	19.0	-	-	-	
			SHC	9.2	13.0	16.8	8.9	12.7	16.5	8.6	12.4	16.2	8.3	12.1	15.9	-	-	-	
			kW	3.5			4.1			4.8			5.6			6.5			
24.4		THC	-	22.9	22.9	-	22.2	22.2	-	21.3	21.3	-	-	-	-	-	-		
		SHC	-	9.9	13.8	-	9.7	13.5	-	9.4	13.2	-	-	-	-	-	-		
		kW	3.4			4.1			4.8			5.6			6.5				
1416 L/S		EAT (wb)	14.4	THC	19.4	19.4	21.9	18.8	18.8	21.2	18.1	18.1	20.4	17.4	17.4	19.6	16.6	16.6	18.6
				SHC	16.9	19.4	21.9	16.4	18.8	21.2	15.8	18.1	20.4	15.2	17.4	19.6	14.4	16.6	18.6
				kW	3.5			4.2			4.9			5.6			6.5		
			16.7	THC	19.4	19.4	22.7	18.8	18.8	22.0	18.1	18.1	21.2	17.4	17.4	20.3	16.6	16.6	19.4
				SHC	16.1	19.4	22.7	15.6	18.8	22.0	15.1	18.1	21.2	14.4	17.4	20.3	13.7	16.6	19.4
				kW	3.5			4.2			4.8			5.6			6.5		
			19.4	THC	20.0	20.0	21.7	19.3	19.3	21.4	18.5	18.5	21.0	17.6	17.6	20.6	16.7	16.7	20.1
				SHC	13.5	17.6	21.7	13.2	17.3	21.4	12.9	17.0	21.0	12.5	16.6	20.6	12.1	16.1	20.1
				kW	3.5			4.1			4.8			5.6			6.5		
	22.2		THC	21.7	21.7	21.7	20.9	20.9	20.9	20.1	20.1	20.1	19.1	19.1	19.1	-	-	-	
			SHC	9.4	13.5	17.6	9.1	13.2	17.4	8.8	12.9	17.1	8.5	12.6	16.7	-	-	-	
			kW	3.5			4.1			4.8			5.6			6.5			
	24.4	THC	-	23.1	23.1	-	22.3	22.3	-	21.4	21.4	-	-	-	-	-	-		
		SHC	-	10.2	14.4	-	9.9	14.1	-	9.6	13.8	-	-	-	-	-	-		
		kW	3.4			4.1			4.8			5.6			6.5				

LEGEND:

- = Do not operate
L/s = Liters per second

EAT (wb) = Entering air temp (wet bulb)
kW = Compressor kilowatts

SHC = Sensible heat capacity (Gross)
THC = Total heat capacity (Gross)

EAT (db) = Entering air temp (dry bulb)
Cfm = Cubic feet per minute (supply air)

			Ambient Temperature															
			85.0			95.0			105.0			115.0			125.0			
			EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
			75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	
1800 cfm	EAT (wb)	58.0	THC	58.6	58.6	66.0	56.8	56.8	64.0	54.7	54.7	61.7	52.6	52.6	59.3	49.6	49.6	55.9
			SHC	51.1	58.6	66.0	49.6	56.8	64.0	47.8	54.7	61.7	45.9	52.6	59.3	43.3	49.6	55.9
			kW	3.6			4.3			4.9			5.7			6.5		
		62.0	THC	59.7	59.7	65.4	57.5	57.5	64.2	55.2	55.2	62.8	52.8	52.8	61.2	49.9	49.9	58.4
			SHC	47.2	56.3	65.4	46.2	55.2	64.2	44.9	53.9	62.8	43.6	52.4	61.2	41.5	49.9	58.4
			kW	3.6			4.2			4.9			5.7			6.5		
	67.0	THC	64.6	64.6	64.6	62.3	62.3	62.3	59.7	59.7	59.7	57.0	57.0	57.0	54.0	54.0	54.0	
		SHC	38.2	47.4	56.6	37.2	46.4	55.6	36.2	45.4	54.6	35.1	44.3	53.4	33.8	43.0	52.2	
		kW	3.6			4.2			4.9			5.7			6.5			
	72.0	THC	70.3	70.3	70.3	67.9	67.9	67.9	65.3	65.3	65.3	62.3	62.3	62.3	59.1	59.1	59.1	
		SHC	28.8	38.1	47.4	27.9	37.2	46.5	27.0	36.2	45.5	25.9	35.1	44.4	24.7	33.9	43.2	
		kW	3.5			4.1			4.8			5.6			6.5			
76.0	THC	-	75.1	75.1	-	72.7	72.7	-	69.9	69.9	-	66.8	66.8	-	-	-		
	SHC	-	30.6	40.2	-	29.8	39.3	-	28.8	38.3	-	27.7	37.2	-	-	-		
	kW	3.5			4.1			4.8			5.6			-				
2100 cfm	EAT (wb)	58.0	THC	61.1	61.1	68.8	59.2	59.2	66.7	57.1	57.1	64.3	54.8	54.8	61.8	52.3	52.3	58.9
			SHC	53.3	61.1	68.8	51.7	59.2	66.7	49.8	57.1	64.3	47.9	54.8	61.8	45.6	52.3	58.9
			kW	3.6			4.2			4.9			5.7			6.5		
		62.0	THC	61.5	61.5	70.4	59.2	59.2	69.2	57.1	57.1	66.8	54.9	54.9	64.2	52.3	52.3	61.2
			SHC	50.3	60.3	70.4	49.2	59.2	69.2	47.4	57.1	66.8	45.6	54.9	64.2	43.5	52.3	61.2
			kW	3.6			4.2			4.9			5.7			6.5		
	67.0	THC	65.8	65.8	65.8	63.4	63.4	63.4	60.9	60.9	60.9	58.0	58.0	58.2	54.9	54.9	56.9	
		SHC	40.4	50.9	61.4	39.4	49.9	60.4	38.4	48.9	59.3	37.2	47.7	58.2	36.0	46.4	56.9	
		kW	3.6			4.2			4.9			5.6			6.5			
	72.0	THC	71.6	71.6	71.6	69.1	69.1	69.1	66.4	66.4	66.4	63.4	63.4	63.4	60.1	60.1	60.1	
		SHC	29.7	40.3	50.9	28.8	39.4	49.9	27.9	38.4	48.9	26.8	37.3	47.8	25.6	36.1	46.6	
		kW	3.5			4.1			4.8			5.6			6.4			
76.0	THC	-	76.4	76.4	-	73.9	73.9	-	71.0	71.0	-	-	-	-	-	-		
	SHC	-	31.8	42.6	-	30.9	41.8	-	29.9	40.8	-	-	-	-	-	-		
	kW	3.4			4.1			4.8			-			-				
2400 cfm	EAT (wb)	58.0	THC	63.1	63.1	71.1	61.1	61.1	68.9	58.9	58.9	66.4	56.6	56.6	63.8	54.0	54.0	60.9
			SHC	55.1	63.1	71.1	53.4	61.1	68.9	51.5	58.9	66.4	49.4	56.6	63.8	47.1	54.0	60.9
			kW	3.6			4.2			4.9			5.7			6.5		
		62.0	THC	63.2	63.2	73.9	61.2	61.2	71.5	59.0	59.0	68.9	56.6	56.6	66.2	54.0	54.0	63.2
			SHC	52.5	63.2	73.9	50.8	61.2	71.5	49.0	59.0	68.9	47.0	56.6	66.2	44.9	54.0	63.2
			kW	3.6			4.2			4.9			5.7			6.5		
	67.0	THC	66.8	66.8	66.8	64.4	64.4	64.9	61.8	61.8	63.8	58.9	58.9	62.5	55.7	55.7	61.1	
		SHC	42.4	54.2	65.9	41.4	53.2	64.9	40.4	52.1	63.8	39.2	50.9	62.5	37.9	49.5	61.1	
		kW	3.5			4.2			4.9			5.6			6.5			
	72.0	THC	72.5	72.5	72.5	70.1	70.1	70.1	67.3	67.3	67.3	64.2	64.2	64.2	60.7	60.7	60.7	
		SHC	30.5	42.3	54.1	29.7	41.4	53.2	28.7	40.4	52.2	27.6	39.3	51.0	26.4	38.1	49.7	
		kW	3.5			4.1			4.8			5.6			6.4			
76.0	THC	-	77.4	77.4	-	74.8	74.8	-	71.9	71.9	-	-	-	-	-	-		
	SHC	-	32.8	44.9	-	32.0	44.0	-	31.0	43.0	-	-	-	-	-	-		
	kW	3.4			4.1			4.8			-			-				
2700 cfm	EAT (wb)	58.0	THC	64.8	64.8	73.0	62.7	62.7	70.7	60.5	60.5	68.2	58.0	58.0	65.4	55.4	55.4	62.4
			SHC	56.6	64.8	73.0	54.7	62.7	70.7	52.8	60.5	68.2	50.7	58.0	65.4	48.3	55.4	62.4
			kW	3.6			4.2			4.9			5.6			6.5		
		62.0	THC	64.8	64.8	75.8	62.7	62.7	73.4	60.5	60.5	70.8	58.1	58.1	67.9	55.4	55.4	64.8
			SHC	53.9	64.8	75.8	52.1	62.7	73.4	50.3	60.5	70.8	48.2	58.1	67.9	46.0	55.4	64.8
			kW	3.6			4.2			4.9			5.6			6.5		
	67.0	THC	67.6	67.6	70.1	65.1	65.1	69.0	62.5	62.5	67.9	59.6	59.6	66.6	56.4	56.4	65.1	
		SHC	44.3	57.2	70.1	43.3	56.2	69.0	42.3	55.1	67.9	41.1	53.8	66.6	39.7	52.4	65.1	
		kW	3.5			4.2			4.8			5.6			6.5			
	72.0	THC	73.3	73.3	73.3	70.8	70.8	70.8	67.9	67.9	67.9	64.8	64.8	64.8	-	-	-	
		SHC	31.3	44.3	57.2	30.4	43.3	56.3	29.4	42.3	55.2	28.3	41.2	54.1	-	-	-	
		kW	3.5			4.1			4.8			5.6			-			
76.0	THC	-	78.2	78.2	-	75.6	75.6	-	72.6	72.6	-	-	-	-	-	-		
	SHC	-	33.9	47.1	-	33.0	46.2	-	32.0	45.2	-	-	-	-	-	-		
	kW	3.4			4.1			4.8			-			-				
3000 cfm	EAT (wb)	58.0	THC	66.2	66.2	74.6	64.1	64.1	72.2	61.8	61.8	69.6	59.3	59.3	66.8	56.5	56.5	63.6
			SHC	57.8	66.2	74.6	55.9	64.1	72.2	53.9	61.8	69.6	51.8	59.3	66.8	49.3	56.5	63.6
			kW	3.5			4.2			4.9			5.6			6.5		
		62.0	THC	66.2	66.2	77.4	64.1	64.1	75.0	61.8	61.8	72.3	59.3	59.3	69.4	56.5	56.5	66.1
			SHC	55.0	66.2	77.4	53.3	64.1	75.0	51.4	61.8	72.3	49.3	59.3	69.4	46.9	56.5	66.1
			kW	3.5			4.2			4.8			5.6			6.5		
	67.0	THC	68.2	68.2	74.0	65.8	65.8	72.9	63.1	63.1	71.7	60.2	60.2	70.3	57.0	57.0	68.5	
		SHC	46.1	60.1	74.0	45.1	59.0	72.9	44.0	57.9	71.7	42.7	56.5	70.3	41.3	54.9	68.5	
		kW	3.5			4.1			4.8			5.6			6.5			
	72.0	THC	73.9	73.9	73.9	71.3	71.3	71.3	68.5	68.5	68.5	65.3	65.3	65.3	-	-	-	
		SHC	32.0	46.1	60.2	31.1	45.2	59.2	30.1	44.1	58.2	29.0	43.0	57.0	-	-	-	
		kW	3.5			4.1			4.8			5.6			-			
76.0	THC	-	78.9	78.9	-	76.2	76.2	-	73.1	73.1	-	-	-	-	-	-		
	SHC	-	34.8	49.2	-	33.9	48.2	-	32.9	47.2	-	-	-	-	-	-		
	kW	3.4			4.1			4.8			-			-				

38AU

LEGEND:

- = Do not operate EAT(wb) = Entering air temp (wet bulb) SHC = Sensible heat capacity (Gross) EAT(db) = Entering air temp (dry bulb)
 L/s = Liters per second kW = Compressor kilowatts THC = Total heat capacity (Gross) Cfm = Cubic feet per minute (supply air)

PERFORMANCE DATA (cont.)

COMBINATION RATINGS

38AUZ08 - 40RUA08

SI

38AU

			Ambient Temperature															
			29.4			35.0			40.6			46.1			51.7			
			EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
			23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	
1062 L/S	EAT (wb)	14.4	THC	21.9	21.9	24.6	21.2	21.2	23.9	20.4	20.4	23.0	19.5	19.5	22.0	18.6	18.6	21.0
			SHC	19.1	21.9	24.6	18.5	21.2	23.9	17.8	20.4	23.0	17.1	19.5	22.0	16.2	18.6	21.0
			kW	4.6			5.4			6.2			7.2			8.2		
		16.7	THC	22.5	22.5	24.3	21.6	21.6	23.9	20.7	20.7	23.3	19.6	19.6	22.7	18.6	18.6	21.7
			SHC	17.6	21.0	24.3	17.2	20.5	23.9	16.7	20.0	23.3	16.1	19.4	22.7	15.4	18.6	21.7
			kW	4.6			5.4			6.3			7.2			8.2		
	19.4	THC	24.4	24.4	24.4	23.5	23.5	23.5	22.4	22.4	22.4	21.3	21.3	21.3	20.0	20.0	20.0	
		SHC	14.3	17.7	21.1	13.9	17.3	20.7	13.5	16.9	20.3	13.0	16.4	19.8	12.5	15.9	19.3	
		kW	4.7			5.5			6.3			7.2			8.2			
	22.2	THC	26.5	26.5	26.5	25.5	25.5	25.5	24.4	24.4	24.4	23.2	23.2	23.2	-	-	-	
		SHC	10.8	14.3	17.7	10.5	13.9	17.3	10.1	13.5	16.9	9.6	13.0	16.4	-	-	-	
		kW	4.8			5.5			6.4			7.3			-			
24.4	THC	-	28.3	28.3	-	27.3	27.3	-	26.1	26.1	-	24.8	24.8	-	-	-		
	SHC	-	11.5	15.0	-	11.1	14.6	-	10.7	14.2	-	10.3	13.8	-	-	-		
	kW	4.8			5.6			6.4			7.4			-				
1239 L/S	EAT (wb)	14.4	THC	22.9	22.9	25.8	22.1	22.1	24.9	21.3	21.3	24.0	20.4	20.4	22.9	19.4	19.4	21.8
			SHC	20.0	22.9	25.8	19.3	22.1	24.9	18.6	21.3	24.0	17.8	20.4	22.9	16.9	19.4	21.8
			kW	4.6			5.4			6.3			7.2			8.2		
		16.7	THC	23.1	23.1	26.4	22.2	22.2	25.9	21.3	21.3	24.9	20.4	20.4	23.9	19.4	19.4	22.7
			SHC	18.9	22.7	26.4	18.4	22.2	25.9	17.7	21.3	24.9	16.9	20.4	23.9	16.1	19.4	22.7
			kW	4.7			5.4			6.3			7.2			8.2		
	19.4	THC	24.9	24.9	24.9	23.9	23.9	23.9	22.9	22.9	22.9	21.7	21.7	21.7	20.4	20.4	21.1	
		SHC	15.2	19.1	23.0	14.8	18.7	22.6	14.3	18.2	22.1	13.9	17.8	21.6	13.4	17.2	21.1	
		kW	4.7			5.5			6.3			7.2			8.2			
	22.2	THC	27.1	27.1	27.1	26.0	26.0	26.0	24.9	24.9	24.9	23.6	23.6	23.6	22.2	22.2	22.2	
		SHC	11.2	15.1	19.1	10.8	14.7	18.6	10.4	14.3	18.2	10.0	13.9	17.8	9.5	13.4	17.3	
		kW	4.8			5.5			6.4			7.3			8.3			
24.4	THC	-	28.9	28.9	-	27.8	27.8	-	26.6	26.6	-	-	-	-	-	-		
	SHC	-	11.9	16.0	-	11.6	15.6	-	11.2	15.2	-	-	-	-	-	-		
	kW	4.8			5.6			6.5			-			-				
1416 L/S	EAT (wb)	14.4	THC	23.7	23.7	26.7	22.9	22.9	25.8	22.0	22.0	24.8	21.1	21.1	23.7	20.0	20.0	22.5
			SHC	20.7	23.7	26.7	20.0	22.9	25.8	19.2	22.0	24.8	18.4	21.1	23.7	17.5	20.0	22.5
			kW	4.7			5.4			6.3			7.2			8.2		
		16.7	THC	23.7	23.7	27.8	22.9	22.9	26.8	22.0	22.0	25.8	21.1	21.1	24.6	20.0	20.0	23.4
			SHC	19.7	23.7	27.8	19.1	22.9	26.8	18.3	22.0	25.8	17.5	21.1	24.6	16.6	20.0	23.4
			kW	4.7			5.4			6.3			7.2			8.2		
	19.4	THC	25.3	25.3	25.3	24.3	24.3	24.4	23.2	23.2	23.9	22.0	22.0	23.4	20.7	20.7	22.8	
		SHC	16.0	20.4	24.8	15.6	20.0	24.4	15.2	19.5	23.9	14.7	19.0	23.4	14.1	18.5	22.8	
		kW	4.7			5.5			6.3			7.3			8.3			
	22.2	THC	27.4	27.4	27.4	26.4	26.4	26.4	25.2	25.2	25.2	23.9	23.9	23.9	22.5	22.5	22.5	
		SHC	11.5	15.9	20.3	11.1	15.6	20.0	10.7	15.1	19.5	10.3	14.7	19.1	9.8	14.2	18.6	
		kW	4.8			5.6			6.4			7.3			8.3			
24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				
1593 L/S	EAT (wb)	14.4	THC	24.4	24.4	27.5	23.5	23.5	26.5	22.6	22.6	25.5	21.6	21.6	24.4	20.5	20.5	23.1
			SHC	21.3	24.4	27.5	20.5	23.5	26.5	19.8	22.6	25.5	18.9	21.6	24.4	17.9	20.5	23.1
			kW	4.7			5.5			6.3			7.2			8.2		
		16.7	THC	24.4	24.4	28.5	23.6	23.6	27.5	22.6	22.6	26.5	21.6	21.6	25.3	20.5	20.5	24.0
			SHC	20.3	24.4	28.5	19.6	23.6	27.5	18.8	22.6	26.5	18.0	21.6	25.3	17.1	20.5	24.0
			kW	4.7			5.5			6.3			7.2			8.2		
	19.4	THC	25.6	25.6	26.5	24.6	24.6	26.0	23.5	23.5	25.5	22.2	22.2	25.0	21.0	21.0	24.4	
		SHC	16.8	21.6	26.5	16.3	21.2	26.0	15.9	20.7	25.5	15.4	20.2	25.0	14.8	19.6	24.4	
		kW	4.7			5.5			6.3			7.3			8.3			
	22.2	THC	27.7	27.7	27.7	26.7	26.7	26.7	25.5	25.5	25.5	24.2	24.2	24.2	-	-	-	
		SHC	11.8	16.7	21.6	11.5	16.4	21.2	11.0	15.9	20.8	10.6	15.5	20.3	-	-	-	
		kW	4.8			5.6			6.4			7.3			-			
24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				
1770 L/S	EAT (wb)	14.4	THC	24.9	24.9	28.1	24.1	24.1	27.1	23.1	23.1	26.1	22.1	22.1	24.9	21.0	21.0	23.6
			SHC	21.8	24.9	28.1	21.0	24.1	27.1	20.2	23.1	26.1	19.3	22.1	24.9	18.3	21.0	23.6
			kW	4.7			5.5			6.3			7.3			8.3		
		16.7	THC	24.9	24.9	29.2	24.1	24.1	28.2	23.2	23.2	27.1	22.1	22.1	25.8	21.0	21.0	24.5
			SHC	20.7	24.9	29.2	20.0	24.1	28.2	19.2	23.2	27.1	18.3	22.1	25.8	17.4	21.0	24.5
			kW	4.7			5.5			6.3			7.3			8.3		
	19.4	THC	25.8	25.8	28.1	24.8	24.8	27.6	23.7	23.7	27.1	22.5	22.5	26.5	21.2	21.2	25.7	
		SHC	17.5	22.8	28.1	17.1	22.3	27.6	16.6	21.8	27.1	16.1	21.2	26.5	15.4	20.6	25.7	
		kW	4.7			5.5			6.3			7.3			8.3			
	22.2	THC	28.0	28.0	28.0	26.9	26.9	26.9	25.7	25.7	25.7	24.4	24.4	24.4	-	-	-	
		SHC	12.1	17.5	22.9	11.8	17.1	22.5	11.3	16.7	22.0	10.9	16.2	21.6	-	-	-	
		kW	4.8			5.6			6.4			7.3			-			
24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				

LEGEND:

- = Do not operate
L/s = Liters per second

EAT(wb) = Entering air temp (wet bulb)
kW = Compressor kilowatts

SHC = Sensible heat capacity (Gross)
THC = Total heat capacity (Gross)

EAT(db) = Entering air temp (dry bulb)
Cfm = Cubic feet per minute (supply air)

PERFORMANCE DATA (cont.)

38AUZ08 - 40RUA08

COMBINATION RATINGS

ENGLISH

				Ambient Temperature															
				85.0			95.0			105.0			115.0			125.0			
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
				75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	
2250 cfm	EAT (wb)	58.0	THC	74.7	74.7	84.1	72.2	72.2	81.4	69.6	69.6	78.4	66.6	66.6	75.1	63.4	63.4	71.5	
			SHC	65.2	74.7	84.1	63.1	72.2	81.4	60.7	69.6	78.4	58.2	66.6	75.1	55.4	63.4	71.5	
			kW	4.6			5.4			6.2			7.2			8.2			
		62.0	THC	76.7	76.7	83.0	73.7	73.7	81.4	70.5	70.5	79.6	67.0	67.0	77.3	63.5	63.5	74.2	
			SHC	60.2	71.6	83.0	58.7	70.0	81.4	57.1	68.3	79.6	55.1	66.2	77.3	52.7	63.5	74.2	
			kW	4.6			5.4			6.3			7.2			8.2			
		67.0	THC	83.3	83.3	83.3	80.1	80.1	80.1	76.5	76.5	76.5	72.6	72.6	72.6	68.4	68.4	68.4	
			SHC	48.8	60.4	72.0	47.5	59.0	70.6	46.0	57.6	69.1	44.5	56.0	67.5	42.8	54.3	65.8	
			kW	4.7			5.5			6.3			7.2			8.2			
	72.0	THC	90.5	90.5	90.5	87.1	87.1	87.1	83.3	83.3	83.3	79.2	79.2	79.2	-	-	-		
		SHC	37.0	48.7	60.3	35.8	47.4	59.0	34.4	46.0	57.6	32.8	44.4	56.0	-	-	-		
		kW	4.8			5.5			6.4			7.3			-				
	76.0	THC	-	96.5	96.5	-	93.0	93.0	-	89.1	89.1	-	84.7	84.7	-	-	-		
		SHC	-	39.2	51.2	-	37.9	49.9	-	36.6	48.5	-	35.1	47.0	-	-	-		
		kW	4.8			5.6			6.4			7.4			-				
	2625 cfm	EAT (wb)	58.0	THC	78.1	78.1	88.0	75.5	75.5	85.1	72.7	72.7	81.9	69.5	69.5	78.3	66.1	66.1	74.5
				SHC	68.2	78.1	88.0	65.9	75.5	85.1	63.4	72.7	81.9	60.7	69.5	78.3	57.7	66.1	74.5
				kW	4.6			5.4			6.3			7.2			8.2		
62.0			THC	78.8	78.8	90.1	75.7	75.7	88.5	72.7	72.7	85.0	69.6	69.6	81.4	66.2	66.2	77.4	
			SHC	64.4	77.3	90.1	62.9	75.7	88.5	60.4	72.7	85.0	57.8	69.6	81.4	54.9	66.2	77.4	
			kW	4.7			5.4			6.3			7.2			8.2			
67.0			THC	85.1	85.1	85.1	81.7	81.7	81.7	78.0	78.0	78.0	74.0	74.0	74.0	69.7	69.7	72.0	
			SHC	51.8	65.1	78.4	50.4	63.7	77.0	48.9	62.2	75.5	47.3	60.6	73.8	45.6	58.8	72.0	
			kW	4.7			5.5			6.3			7.2			8.2			
72.0		THC	92.3	92.3	92.3	88.7	88.7	88.7	84.9	84.9	84.9	80.6	80.6	80.6	75.9	75.9	75.9		
		SHC	38.2	51.6	65.0	36.9	50.3	63.6	35.5	48.9	62.2	34.0	47.3	60.6	32.4	45.6	58.9		
		kW	4.8			5.5			6.4			7.3			8.3				
76.0		THC	-	98.5	98.5	-	94.7	94.7	-	90.7	90.7	-	-	-	-	-	-		
		SHC	-	40.7	54.5	-	39.5	53.1	-	38.1	51.7	-	-	-	-	-	-		
		kW	4.8			5.6			6.5			-			-				
3000 cfm		EAT (wb)	58.0	THC	80.9	80.9	91.2	78.2	78.2	88.1	75.2	75.2	84.7	71.9	71.9	81.0	68.3	68.3	76.9
				SHC	70.6	80.9	91.2	68.2	78.2	88.1	65.6	75.2	84.7	62.8	71.9	81.0	59.6	68.3	76.9
				kW	4.7			5.4			6.3			7.2			8.2		
	62.0		THC	81.0	81.0	94.7	78.3	78.3	91.6	75.2	75.2	88.0	71.9	71.9	84.1	68.3	68.3	79.9	
			SHC	67.3	81.0	94.7	65.0	78.3	91.6	62.5	75.2	88.0	59.7	71.9	84.1	56.8	68.3	79.9	
			kW	4.7			5.4			6.3			7.2			8.2			
	67.0		THC	86.3	86.3	86.3	82.9	82.9	83.1	79.2	79.2	81.5	75.1	75.1	79.7	70.7	70.7	77.8	
			SHC	54.5	69.5	84.5	53.2	68.1	83.1	51.7	66.6	81.5	50.0	64.9	79.7	48.2	63.0	77.8	
			kW	4.7			5.5			6.3			7.3			8.3			
	72.0	THC	93.6	93.6	93.6	90.0	90.0	90.0	86.0	86.0	86.0	81.6	81.6	81.6	76.9	76.9	76.9		
		SHC	39.3	54.4	69.4	38.0	53.1	68.1	36.6	51.6	66.7	35.1	50.1	65.1	33.4	48.4	63.4		
		kW	4.8			5.6			6.4			7.3			8.3				
	76.0	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		kW	-			-			-			-			-				
	3375 cfm	EAT (wb)	58.0	THC	83.1	83.1	93.7	80.3	80.3	90.5	77.2	77.2	87.0	73.8	73.8	83.1	70.0	70.0	78.9
				SHC	72.6	83.1	93.7	70.1	80.3	90.5	67.4	77.2	87.0	64.4	73.8	83.1	61.1	70.0	78.9
				kW	4.7			5.5			6.3			7.2			8.2		
62.0			THC	83.2	83.2	97.3	80.4	80.4	94.0	77.2	77.2	90.3	73.8	73.8	86.3	70.1	70.1	81.9	
			SHC	69.1	83.2	97.3	66.8	80.4	94.0	64.2	77.2	90.3	61.3	73.8	86.3	58.2	70.1	81.9	
			kW	4.7			5.5			6.3			7.2			8.2			
67.0			THC	87.4	87.4	90.3	83.9	83.9	88.8	80.1	80.1	87.1	75.9	75.9	85.3	71.5	71.5	83.1	
			SHC	57.2	73.7	90.3	55.7	72.3	88.8	54.2	70.7	87.1	52.5	68.9	85.3	50.6	66.9	83.1	
			kW	4.7			5.5			6.3			7.3			8.3			
72.0		THC	94.6	94.6	94.6	91.0	91.0	91.0	86.9	86.9	86.9	82.5	82.5	82.5	-	-	-		
		SHC	40.4	57.1	73.8	39.1	55.8	72.4	37.7	54.3	71.0	36.1	52.8	69.4	-	-	-		
		kW	4.8			5.6			6.4			7.3			-				
76.0		THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		kW	-			-			-			-			-				
3750 cfm		EAT (wb)	58.0	THC	85.1	85.1	95.8	82.1	82.1	92.5	78.9	78.9	88.9	75.4	75.4	84.9	71.5	71.5	80.6
				SHC	74.3	85.1	95.8	71.7	82.1	92.5	68.9	78.9	88.9	65.8	75.4	84.9	62.4	71.5	80.6
				kW	4.7			5.5			6.3			7.3			8.3		
	62.0		THC	85.1	85.1	99.5	82.2	82.2	96.1	79.0	79.0	92.3	75.4	75.4	88.2	71.5	71.5	83.6	
			SHC	70.7	85.1	99.5	68.3	82.2	96.1	65.6	79.0	92.3	62.6	75.4	88.2	59.4	71.5	83.6	
			kW	4.7			5.5			6.3			7.3			8.3			
	67.0		THC	88.2	88.2	95.8	84.7	84.7	94.2	80.9	80.9	92.4	76.7	76.7	90.3	72.2	72.2	87.8	
			SHC	59.6	77.7	95.8	58.2	76.2	94.2	56.6	74.5	92.4	54.8	72.5	90.3	52.7	70.3	87.8	
			kW	4.7			5.5			6.3			7.3			8.3			
	72.0	THC	95.5	95.5	95.5	91.7	91.7	91.7	87.6	87.6	87.6	83.1	83.1	83.1	-	-	-		
		SHC	41.4	59.7	78.0	40.1	58.4	76.6	38.7	56.9	75.2	37.1	55.3	73.6	-	-	-		
		kW	4.8			5.6			6.4			7.3			-				
	76.0	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		kW	-			-			-			-			-				

LEGEND:

- = Do not operate EAT(wb) = Entering air temp (wet bulb) SHC = Sensible heat capacity (Gross) EAT(db) = Entering air temp (dry bulb)
 L/s = Liters per second kW = Compressor kilowatts THC = Total heat capacity (Gross) Cfm = Cubic feet per minute (supply air)

38AU

PERFORMANCE DATA (cont.)

COMBINATION RATINGS

38AUD12 - 40RUA12

SI

38AU

			Ambient Temperature															
			29.4			35.0			40.6			46.1			51.7			
			EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
			23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	
1416 L/S	EAT (wb)	14.4	THC	28.2	28.2	31.8	27.2	27.2	30.7	26.1	26.1	29.4	24.9	24.9	28.1	23.5	23.5	26.5
			SHC	24.6	28.2	31.8	23.8	27.2	30.7	22.8	26.1	29.4	21.7	24.9	28.1	20.5	23.5	26.5
			kW	5.9			6.8			7.9			9.0			10.2		
		16.7	THC	28.7	28.7	31.9	27.5	27.5	31.2	26.2	26.2	30.4	24.9	24.9	29.2	23.6	23.6	27.5
			SHC	22.9	27.4	31.9	22.3	26.8	31.2	21.7	26.1	30.4	20.7	24.9	29.2	19.6	23.6	27.5
			kW	5.9			6.8			7.9			9.0			10.2		
	19.4	THC	31.2	31.2	31.2	29.9	29.9	29.9	28.5	28.5	28.5	26.9	26.9	26.9	25.1	25.1	25.1	
		SHC	18.6	23.1	27.6	18.0	22.5	27.1	17.4	22.0	26.5	16.8	21.3	25.8	16.1	20.6	25.1	
		kW	6.0			6.9			7.9			9.0			10.2			
	22.2	THC	33.8	33.8	33.8	32.5	32.5	32.5	31.0	31.0	31.0	29.3	29.3	29.3	-	-	-	
		SHC	13.9	18.5	23.0	13.4	18.0	22.5	12.9	17.4	22.0	12.3	16.8	21.4	-	-	-	
		kW	6.0			7.0			8.0			9.1			10.3			
24.4	THC	-	36.1	36.1	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	14.7	19.3	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	6.1			-			-			-			-				
1652 L/S	EAT (wb)	14.4	THC	29.5	29.5	33.2	28.4	28.4	32.0	27.3	27.3	30.7	26.0	26.0	29.3	24.6	24.6	27.7
			SHC	25.7	29.5	33.2	24.8	28.4	32.0	23.8	27.3	30.7	22.7	26.0	29.3	21.4	24.6	27.7
			kW	5.9			6.9			7.9			9.0			10.2		
		16.7	THC	29.6	29.6	34.3	28.5	28.5	33.3	27.3	27.3	31.9	26.0	26.0	30.4	24.6	24.6	28.7
			SHC	24.4	29.3	34.3	23.6	28.5	33.3	22.7	27.3	31.9	21.6	26.0	30.4	20.4	24.6	28.7
			kW	5.9			6.9			7.9			9.0			10.2		
	19.4	THC	31.8	31.8	31.8	30.5	30.5	30.5	29.0	29.0	29.0	27.4	27.4	28.3	25.6	25.6	27.5	
		SHC	19.7	24.9	30.1	19.1	24.4	29.6	18.6	23.8	29.0	17.9	23.1	28.3	17.2	22.4	27.5	
		kW	6.0			6.9			7.9			9.1			10.2			
	22.2	THC	34.5	34.5	34.5	33.1	33.1	33.1	31.5	31.5	31.5	29.8	29.8	29.8	28.0	28.0	28.0	
		SHC	14.4	19.6	24.9	13.9	19.1	24.4	13.3	18.6	23.8	12.7	17.9	23.2	12.0	17.3	22.5	
		kW	6.1			7.0			8.0			9.1			10.3			
24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				
1888 L/S	EAT (wb)	14.4	THC	30.5	30.5	34.3	29.4	29.4	33.1	28.2	28.2	31.7	26.8	26.8	30.2	25.3	25.3	28.5
			SHC	26.6	30.5	34.3	25.7	29.4	33.1	24.6	28.2	31.7	23.4	26.8	30.2	22.1	25.3	28.5
			kW	5.9			6.9			7.9			9.0			10.2		
		16.7	THC	30.5	30.5	35.7	29.4	29.4	34.4	28.2	28.2	33.0	26.8	26.8	31.4	25.4	25.4	29.7
			SHC	25.4	30.5	35.7	24.4	29.4	34.4	23.4	28.2	33.0	22.3	26.8	31.4	21.1	25.4	29.7
			kW	5.9			6.9			7.9			9.0			10.2		
	19.4	THC	32.3	32.3	32.5	30.9	30.9	31.9	29.4	29.4	31.3	27.8	27.8	30.6	26.0	26.0	29.8	
		SHC	20.8	26.6	32.5	20.2	26.1	31.9	19.6	25.5	31.3	19.0	24.8	30.6	18.2	24.0	29.8	
		kW	6.0			6.9			8.0			9.1			10.2			
	22.2	THC	34.9	34.9	34.9	33.5	33.5	33.5	31.9	31.9	31.9	30.2	30.2	30.2	-	-	-	
		SHC	14.8	20.7	26.6	14.3	20.2	26.1	13.7	19.6	25.6	13.2	19.1	24.9	-	-	-	
		kW	6.1			7.0			8.0			9.1			-			
24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				
2124 L/S	EAT (wb)	14.4	THC	31.3	31.3	35.3	30.2	30.2	34.0	28.9	28.9	32.6	27.5	27.5	31.0	26.0	26.0	29.3
			SHC	27.3	31.3	35.3	26.3	30.2	34.0	25.3	28.9	32.6	24.0	27.5	31.0	22.7	26.0	29.3
			kW	6.0			6.9			7.9			9.1			10.2		
		16.7	THC	31.4	31.4	36.7	30.2	30.2	35.3	29.0	29.0	33.9	27.5	27.5	32.2	26.0	26.0	30.4
			SHC	26.1	31.4	36.7	25.1	30.2	35.3	24.0	29.0	33.9	22.9	27.5	32.2	21.6	26.0	30.4
			kW	6.0			6.9			7.9			9.1			10.2		
	19.4	THC	32.6	32.6	34.8	31.2	31.2	34.2	29.7	29.7	33.5	28.1	28.1	32.7	26.3	26.3	31.7	
		SHC	21.8	28.3	34.8	21.2	27.7	34.2	20.6	27.1	33.5	19.9	26.3	32.7	19.1	25.4	31.7	
		kW	6.0			6.9			8.0			9.1			10.2			
	22.2	THC	35.3	35.3	35.3	33.8	33.8	33.8	32.2	32.2	32.2	-	-	-	-	-	-	
		SHC	15.2	21.8	28.3	14.7	21.2	27.8	14.2	20.7	27.3	-	-	-	-	-	-	
		kW	6.1			7.0			8.0			-			-			
24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				
2360 L/S	EAT (wb)	14.4	THC	32.0	32.0	36.1	30.9	30.9	34.8	29.5	29.5	33.3	28.1	28.1	31.7	26.5	26.5	29.9
			SHC	28.0	32.0	36.1	26.9	30.9	34.8	25.8	29.5	33.3	24.6	28.1	31.7	23.2	26.5	29.9
			kW	6.0			6.9			8.0			9.1			10.2		
		16.7	THC	32.0	32.0	37.5	30.9	30.9	36.1	29.6	29.6	34.6	28.1	28.1	32.9	26.6	26.6	31.0
			SHC	26.6	32.0	37.5	25.6	30.9	36.1	24.6	29.6	34.6	23.4	28.1	32.9	22.0	26.6	31.0
			kW	6.0			6.9			8.0			9.1			10.2		
	19.4	THC	32.9	32.9	36.9	31.6	31.6	36.2	30.0	30.0	35.5	28.4	28.4	34.5	26.6	26.6	33.3	
		SHC	22.7	29.8	36.9	22.2	29.2	36.2	21.5	28.5	35.5	20.8	27.6	34.5	19.8	26.6	33.3	
		kW	6.0			7.0			8.0			9.1			10.2			
	22.2	THC	35.6	35.6	35.6	34.1	34.1	34.1	-	-	-	-	-	-	-	-	-	
		SHC	15.6	22.8	30.0	15.1	22.3	29.5	-	-	-	-	-	-	-	-	-	
		kW	6.1			7.0			-			-			-			
24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				

LEGEND:

- = Do not operate EAT(wb) = Entering air temp (wet bulb) SHC = Sensible heat capacity (Gross) EAT(db) = Entering air temp (dry bulb)
 L/s = Liters per second kW = Compressor kilowatts THC = Total heat capacity (Gross) Cfm = Cubic feet per minute (supply air)

PERFORMANCE DATA (cont.)

38AUD12 - 40RUA12

COMBINATION RATINGS

ENGLISH

			Ambient Temperature															
			85.0			95.0			105.0			115.0			125.0			
			EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
			75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	
3000 cfm	EAT (wb)	58.0	THC	96.3	96.3	108.5	92.9	92.9	104.6	89.1	89.1	100.4	85.0	85.0	95.8	80.3	80.3	90.5
			SHC	84.1	96.3	108.5	81.1	92.9	104.6	77.8	89.1	100.4	74.2	85.0	95.8	70.1	80.3	90.5
			kW	5.9			6.8			7.9			9.0			10.2		
		62.0	THC	98.0	98.0	108.7	94.0	94.0	106.4	89.5	89.5	103.8	85.1	85.1	99.5	80.4	80.4	94.0
			SHC	78.3	93.5	108.7	76.2	91.3	106.4	73.9	88.9	103.8	70.7	85.1	99.5	66.8	80.4	94.0
			kW	5.9			6.8			7.9			9.0			10.2		
	67.0	THC	106.4	106.4	106.4	102.0	102.0	102.0	97.1	97.1	97.1	91.7	91.7	91.7	85.8	85.8	85.8	
		SHC	63.3	78.7	94.2	61.5	76.9	92.4	59.5	74.9	90.4	57.3	72.8	88.2	54.9	70.3	85.8	
		kW	6.0			6.9			7.9			9.0			10.2			
	72.0	THC	115.4	115.4	115.4	110.8	110.8	110.8	105.8	105.8	105.8	100.1	100.1	100.1	93.8	93.8	93.8	
		SHC	47.4	63.0	78.6	45.7	61.3	76.8	43.9	59.4	75.0	41.8	57.4	72.9	39.6	55.1	70.6	
		kW	6.0			7.0			8.0			9.1			10.3			
76.0	THC	-	123.2	123.2	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	50.2	66.0	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	6.1			-			-			-			-				
3500 cfm	EAT (wb)	58.0	THC	100.6	100.6	113.4	97.0	97.0	109.3	93.0	93.0	104.8	88.6	88.6	99.9	83.8	83.8	94.4
			SHC	87.8	100.6	113.4	84.7	97.0	109.3	81.2	93.0	104.8	77.4	88.6	99.9	73.1	83.8	94.4
			kW	5.9			6.9			7.9			9.0			10.2		
		62.0	THC	100.9	100.9	117.0	97.1	97.1	113.5	93.1	93.1	108.9	88.7	88.7	103.7	83.8	83.8	98.0
			SHC	83.2	100.1	117.0	80.6	97.1	113.5	77.3	93.1	108.9	73.7	88.7	103.7	69.6	83.8	98.0
			kW	5.9			6.9			7.9			9.0			10.2		
	67.0	THC	108.5	108.5	108.5	104.0	104.0	104.0	98.9	98.9	98.9	93.4	93.4	96.5	87.3	87.3	94.0	
		SHC	67.2	85.0	102.8	65.3	83.1	100.9	63.3	81.1	98.8	61.1	78.8	96.5	58.7	76.3	94.0	
		kW	6.0			6.9			7.9			9.1			10.2			
	72.0	THC	117.6	117.6	117.6	112.8	112.8	112.8	107.6	107.6	107.6	101.8	101.8	101.8	95.4	95.4	95.4	
		SHC	49.0	66.9	84.8	47.3	65.2	83.1	45.4	63.3	81.2	43.4	61.2	79.1	41.1	59.0	76.8	
		kW	6.1			7.0			8.0			9.1			10.3			
76.0	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				
4000 cfm	EAT (wb)	58.0	THC	104.0	104.0	117.2	100.3	100.3	113.0	96.1	96.1	108.3	91.5	91.5	103.1	86.4	86.4	97.4
			SHC	90.8	104.0	117.2	87.6	100.3	113.0	83.9	96.1	108.3	79.9	91.5	103.1	75.5	86.4	97.4
			kW	5.9			6.9			7.9			9.0			10.2		
		62.0	THC	104.1	104.1	121.8	100.4	100.4	117.4	96.2	96.2	112.5	91.6	91.6	107.1	86.5	86.5	101.2
			SHC	86.5	104.1	121.8	83.4	100.4	117.4	79.9	96.2	112.5	76.1	91.6	107.1	71.9	86.5	101.2
			kW	5.9			6.9			7.9			9.0			10.2		
	67.0	THC	110.1	110.1	110.9	105.5	105.5	109.0	100.3	100.3	106.8	94.7	94.7	104.4	88.6	88.6	101.6	
		SHC	70.8	90.9	110.9	69.0	89.0	109.0	66.9	86.9	106.8	64.7	84.5	104.4	62.1	81.9	101.6	
		kW	6.0			6.9			8.0			9.1			10.2			
	72.0	THC	119.2	119.2	119.2	114.3	114.3	114.3	109.0	109.0	109.0	103.1	103.1	103.1	-	-	-	
		SHC	50.5	70.7	90.8	48.8	68.9	89.1	46.9	67.0	87.2	44.9	65.0	85.1	-	-	-	
		kW	6.1			7.0			8.0			9.1			-			
76.0	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				
4500 cfm	EAT (wb)	58.0	THC	106.9	106.9	120.5	103.0	103.0	116.0	98.7	98.7	111.2	93.9	93.9	105.8	88.6	88.6	99.9
			SHC	93.3	106.9	120.5	89.9	103.0	116.0	86.2	98.7	111.2	82.0	93.9	105.8	77.4	88.6	99.9
			kW	6.0			6.9			7.9			9.1			10.2		
		62.0	THC	107.0	107.0	125.1	103.1	103.1	120.5	98.8	98.8	115.5	94.0	94.0	109.9	88.7	88.7	103.7
			SHC	88.9	107.0	125.1	85.6	103.1	120.5	82.0	98.8	115.5	78.1	94.0	109.9	73.7	88.7	103.7
			kW	6.0			6.9			7.9			9.1			10.2		
	67.0	THC	111.3	111.3	118.6	106.6	106.6	116.6	101.5	101.5	114.3	95.8	95.8	111.6	89.6	89.6	108.3	
		SHC	74.3	96.5	118.6	72.4	94.5	116.6	70.3	92.3	114.3	67.9	89.7	111.6	65.2	86.7	108.3	
		kW	6.0			6.9			8.0			9.1			10.2			
	72.0	THC	120.5	120.5	120.5	115.4	115.4	115.4	110.0	110.0	110.0	-	-	-	-	-	-	
		SHC	51.9	74.3	96.7	50.2	72.5	94.9	48.3	70.7	93.0	-	-	-	-	-	-	
		kW	6.1			7.0			8.0			-			-			
76.0	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				
5000 cfm	EAT (wb)	58.0	THC	109.3	109.3	123.1	105.3	105.3	118.6	100.8	100.8	113.6	95.9	95.9	108.1	90.5	90.5	102.0
			SHC	95.4	109.3	123.1	91.9	105.3	118.6	88.0	100.8	113.6	83.8	95.9	108.1	79.0	90.5	102.0
			kW	6.0			6.9			8.0			9.1			10.2		
		62.0	THC	109.3	109.3	127.8	105.3	105.3	123.2	100.9	100.9	118.0	96.0	96.0	112.2	90.6	90.6	105.9
			SHC	90.8	109.3	127.8	87.5	105.3	123.2	83.8	100.9	118.0	79.7	96.0	112.2	75.2	90.6	105.9
			kW	6.0			6.9			8.0			9.1			10.2		
	67.0	THC	112.4	112.4	125.8	107.7	107.7	123.6	102.5	102.5	121.0	96.8	96.8	117.8	90.7	90.7	113.7	
		SHC	77.6	101.7	125.8	75.6	99.6	123.6	73.4	97.2	121.0	70.8	94.3	117.8	67.7	90.7	113.7	
		kW	6.0			7.0			8.0			9.1			10.2			
	72.0	THC	121.5	121.5	121.5	116.4	116.4	116.4	-	-	-	-	-	-	-	-	-	
		SHC	53.3	77.9	102.4	51.5	76.1	100.6	-	-	-	-	-	-	-	-	-	
		kW	6.1			7.0			-			-			-			
76.0	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				

LEGEND:
 - = Do not operate
 L/s = Liters per second
 EAT(wb) = Entering air temp (wet bulb)
 kW = Compressor kilowatts
 SHC = Sensible heat capacity (Gross)
 THC = Total heat capacity (Gross)
 EAT(db) = Entering air temp (dry bulb)
 Cfm = Cubic feet per minute (supply air)

38AU

PERFORMANCE DATA (cont.)

COMBINATION RATINGS

38AUD14 - 40RUA14

SI

38AU

			Ambient Temperature																
			29.4			35.0			40.6			46.1			51.7				
			EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)				
			23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4		
1699 L/S	EAT (wb)	14.4	THC	34.2	34.2	38.5	33.0	33.0	37.2	31.7	31.7	35.7	30.2	30.2	34.0	28.5	28.5	32.1	
			SHC	29.8	34.2	38.5	28.8	33.0	37.2	27.6	31.7	35.7	26.3	30.2	34.0	24.9	28.5	32.1	
			kW	8.1			9.2			10.4			11.6			12.9			
		16.7	THC	34.8	34.8	38.3	33.4	33.4	37.5	31.9	31.9	36.6	30.2	30.2	35.3	28.5	28.5	33.3	
			SHC	27.6	33.0	38.3	26.9	32.2	37.5	26.1	31.4	36.6	25.1	30.2	35.3	23.7	28.5	33.3	
			kW	8.1			9.2			10.4			11.6			12.9			
		19.4	THC	37.5	37.5	37.5	36.0	36.0	36.0	34.3	34.3	34.3	32.4	32.4	32.4	30.3	30.3	30.3	
			SHC	22.2	27.7	33.1	21.6	27.0	32.4	20.9	26.3	31.7	20.2	25.6	31.0	19.3	24.7	30.1	
			kW	8.3			9.4			10.6			11.8			13.1			
		22.2	THC	40.7	40.7	40.7	38.8	38.8	38.8	37.0	37.0	37.0	35.1	35.1	35.1	32.9	32.9	32.9	
			SHC	16.7	22.2	27.6	16.0	21.5	26.9	15.4	20.8	26.2	14.7	20.1	25.5	13.9	19.3	24.7	
			kW	8.5			9.6			10.7			12.0			13.3			
	24.4	THC	-	43.6	43.6	-	-	-	-	-	-	-	-	-	-	-	-		
		SHC	-	17.7	23.3	-	-	-	-	-	-	-	-	-	-	-	-		
		kW	8.7			-			-			-			-				
	1982 L/S	EAT (wb)	14.4	THC	35.6	35.6	40.1	34.3	34.3	38.7	32.9	32.9	37.1	31.4	31.4	35.3	29.6	29.6	33.3
				SHC	31.1	35.6	40.1	30.0	34.3	38.7	28.8	32.9	37.1	27.4	31.4	35.3	25.8	29.6	33.3
				kW	8.2			9.3			10.5			11.7			13.0		
			16.7	THC	35.7	35.7	41.6	34.4	34.4	40.2	33.0	33.0	38.5	31.4	31.4	36.7	29.6	29.6	34.6
				SHC	29.5	35.6	41.6	28.5	34.4	40.2	27.4	33.0	38.5	26.1	31.4	36.7	24.6	29.6	34.6
				kW	8.2			9.3			10.5			11.7			13.0		
			19.4	THC	38.2	38.2	38.2	36.6	36.6	36.6	34.9	34.9	34.9	33.0	33.0	33.9	30.8	30.8	33.0
				SHC	23.6	29.8	36.1	22.9	29.2	35.4	22.3	28.5	34.7	21.5	27.7	33.9	20.6	26.8	33.0
				kW	8.4			9.4			10.6			11.8			13.1		
22.2			THC	41.5	41.5	41.5	39.5	39.5	39.5	37.6	37.6	37.6	35.6	35.6	35.6	33.3	33.3	33.3	
			SHC	17.3	23.5	29.8	16.6	22.8	29.1	15.9	22.2	28.4	15.2	21.4	27.7	14.4	20.6	26.9	
			kW	8.6			9.6			10.8			12.0			13.3			
24.4		THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		kW	-			-			-			-			-				
2265 L/S		EAT (wb)	14.4	THC	36.7	36.7	41.4	35.4	35.4	39.9	33.9	33.9	38.2	32.3	32.3	36.4	30.5	30.5	34.3
				SHC	32.1	36.7	41.4	30.9	35.4	39.9	29.6	33.9	38.2	28.2	32.3	36.4	26.6	30.5	34.3
				kW	8.3			9.4			10.5			11.8			13.1		
			16.7	THC	36.8	36.8	43.0	35.4	35.4	41.4	34.0	34.0	39.7	32.3	32.3	37.8	30.5	30.5	35.6
				SHC	30.5	36.8	43.0	29.4	35.4	41.4	28.2	34.0	39.7	26.8	32.3	37.8	25.3	30.5	35.6
				kW	8.3			9.4			10.5			11.8			13.1		
			19.4	THC	38.7	38.7	39.0	37.1	37.1	38.2	35.3	35.3	37.5	33.4	33.4	36.7	31.2	31.2	35.7
				SHC	24.9	31.9	39.0	24.2	31.2	38.2	23.5	30.5	37.5	22.7	29.7	36.7	21.8	28.8	35.7
				kW	8.4			9.5			10.6			11.9			13.1		
	22.2		THC	42.1	42.1	42.1	39.9	39.9	39.9	38.0	38.0	38.0	36.0	36.0	36.0	-	-	-	
			SHC	17.8	24.9	32.0	17.1	24.1	31.2	16.4	23.4	30.5	15.7	22.7	29.8	-	-	-	
			kW	-			-			-			-			-			
	24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		kW	-			-			-			-			-				
	2549 L/S	EAT (wb)	14.4	THC	37.7	37.7	42.4	36.3	36.3	40.9	34.8	34.8	39.2	33.1	33.1	37.3	31.2	31.2	35.1
				SHC	32.9	37.7	42.4	31.7	36.3	40.9	30.4	34.8	39.2	28.9	33.1	37.3	27.2	31.2	35.1
				kW	8.3			9.4			10.6			11.9			13.1		
			16.7	THC	37.7	37.7	44.1	36.3	36.3	42.4	34.8	34.8	40.7	33.1	33.1	38.7	31.2	31.2	36.5
				SHC	31.3	37.7	44.1	30.2	36.3	42.4	28.9	34.8	40.7	27.5	33.1	38.7	25.9	31.2	36.5
				kW	8.3			9.4			10.6			11.9			13.1		
			19.4	THC	39.2	39.2	41.6	37.5	37.5	40.9	35.7	35.7	40.1	33.7	33.7	39.2	31.5	31.5	38.0
				SHC	26.1	33.9	41.6	25.4	33.1	40.9	24.7	32.4	40.1	23.9	31.5	39.2	22.9	30.5	38.0
				kW	8.4			9.5			10.7			11.9			13.2		
22.2			THC	42.6	42.6	42.6	40.3	40.3	40.3	38.4	38.4	38.4	-	-	-	-	-	-	
			SHC	18.3	26.2	34.0	17.5	25.4	33.2	16.9	24.7	32.6	-	-	-	-	-	-	
			kW	8.7			9.7			10.8			-			-			
24.4		THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		kW	-			-			-			-			-				
2832 L/S		EAT (wb)	14.4	THC	38.5	38.5	43.3	37.0	37.0	41.7	35.5	35.5	40.0	33.7	33.7	38.0	31.8	31.8	35.8
				SHC	33.6	38.5	43.3	32.3	37.0	41.7	31.0	35.5	40.0	29.5	33.7	38.0	27.8	31.8	35.8
				kW	8.4			9.5			10.7			11.9			13.2		
			16.7	THC	38.5	38.5	45.0	37.0	37.0	43.3	35.5	35.5	41.5	33.8	33.8	39.5	31.8	31.8	37.2
				SHC	32.0	38.5	45.0	30.8	37.0	43.3	29.5	35.5	41.5	28.0	33.8	39.5	26.4	31.8	37.2
				kW	8.4			9.5			10.7			11.9			13.2		
			19.4	THC	39.6	39.6	44.2	37.8	37.8	43.4	36.0	36.0	42.5	34.0	34.0	41.4	31.8	31.8	39.9
				SHC	27.3	35.7	44.2	26.5	35.0	43.4	25.8	34.1	42.5	24.9	33.1	41.4	23.8	31.8	39.9
				kW	8.5			9.5			10.7			11.9			13.2		
	22.2		THC	43.0	43.0	43.0	40.7	40.7	40.7	-	-	-	-	-	-	-	-	-	
			SHC	18.8	27.4	36.0	18.0	26.6	35.3	-	-	-	-	-	-	-	-	-	
			kW	8.7			9.7			-			-			-			
	24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		kW	-			-			-			-			-				

LEGEND:

- = Do not operate EAT(wb) = Entering air temp (wet bulb) SHC = Sensible heat capacity (Gross) EAT(db) = Entering air temp (dry bulb)
 L/s = Liters per second kW = Compressor kilowatts THC = Total heat capacity (Gross) Cfm = Cubic feet per minute (supply air)

PERFORMANCE DATA (cont.)

38AUD14 - 40RUA14

COMBINATION RATINGS

ENGLISH

				Ambient Temperature														
				85.0			95.0			105.0			115.0			125.0		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0	75.0	80.0	85.0
3600 cfm	EAT (wb)	58.0	THC	116.6	116.6	131.3	112.5	112.5	126.8	108.0	108.0	121.7	102.9	102.9	115.9	97.1	97.1	109.4
			SHC	101.8	116.6	131.3	98.2	112.5	126.8	94.3	108.0	121.7	89.8	102.9	115.9	84.8	97.1	109.4
			kW	8.1			9.2			10.4			11.6			12.9		
		62.0	THC	118.8	118.8	130.6	114.0	114.0	128.0	108.7	108.7	124.9	103.0	103.0	120.4	97.2	97.2	113.7
			SHC	94.3	112.5	130.6	91.9	110.0	128.0	89.1	107.0	124.9	85.5	103.0	120.4	80.7	97.2	113.7
			kW	8.1			9.2			10.4			11.6			12.9		
		67.0	THC	128.0	128.0	128.0	122.8	122.8	122.8	117.1	117.1	117.1	110.6	110.6	110.6	103.4	103.4	103.4
			SHC	75.9	94.4	112.8	73.8	92.2	110.7	71.4	89.9	108.3	68.9	87.3	105.7	66.0	84.4	102.8
			kW	8.3			9.4			10.6			11.8			13.1		
		72.0	THC	138.8	138.8	138.8	132.5	132.5	132.5	126.4	126.4	126.4	119.7	119.7	119.7	112.1	112.1	112.1
			SHC	57.0	75.6	94.1	54.6	73.2	91.8	52.4	71.0	89.5	50.0	68.5	87.1	47.3	65.8	84.3
			kW	8.5			9.6			10.7			12.0			13.3		
		76.0	THC	-	148.6	148.6	-	-	-	-	-	-	-	-	-	-	-	-
			SHC	-	60.5	79.4	-	-	-	-	-	-	-	-	-	-	-	-
			kW	8.7			-			-			-			-		
4200 cfm	EAT (wb)	58.0	THC	121.4	121.4	136.8	117.1	117.1	131.9	112.3	112.3	126.6	107.0	107.0	120.6	100.9	100.9	113.7
			SHC	106.0	121.4	136.8	102.2	117.1	131.9	98.1	112.3	126.6	93.4	107.0	120.6	88.1	100.9	113.7
			kW	8.2			9.3			10.5			11.7			13.0		
		62.0	THC	121.8	121.8	141.8	117.3	117.3	137.1	112.5	112.5	131.5	107.1	107.1	125.2	101.0	101.0	118.1
			SHC	100.8	121.3	141.8	97.4	117.3	137.1	93.4	112.5	131.5	88.9	107.1	125.2	83.9	101.0	118.1
			kW	8.2			9.3			10.5			11.7			13.0		
		67.0	THC	130.4	130.4	130.4	124.9	124.9	124.9	119.1	119.1	119.1	112.5	112.5	115.8	105.0	105.0	112.6
			SHC	80.5	101.8	123.1	78.3	99.6	120.8	76.0	97.2	118.5	73.4	94.6	115.8	70.4	91.5	112.6
			kW	8.4			9.4			10.6			11.8			13.1		
		72.0	THC	141.6	141.6	141.6	134.7	134.7	134.7	128.4	128.4	128.4	121.5	121.5	121.5	113.7	113.7	113.7
			SHC	59.0	80.3	101.7	56.5	77.8	99.2	54.2	75.6	97.0	51.8	73.1	94.5	49.0	70.4	91.7
			kW	8.6			9.6			10.8			12.0			13.3		
		76.0	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			kW	-			-			-			-			-		
4800 cfm	EAT (wb)	58.0	THC	125.3	125.3	141.2	120.8	120.8	136.1	115.8	115.8	130.5	110.2	110.2	124.2	103.9	103.9	117.1
			SHC	109.4	125.3	141.2	105.4	120.8	136.1	101.1	115.8	130.5	96.3	110.2	124.2	90.7	103.9	117.1
			kW	8.3			9.4			10.5			11.8			13.1		
		62.0	THC	125.5	125.5	146.7	120.9	120.9	141.3	115.9	115.9	135.6	110.3	110.3	129.0	104.0	104.0	121.6
			SHC	104.2	125.4	146.7	100.4	120.9	141.3	96.3	115.9	135.6	91.6	110.3	129.0	86.4	104.0	121.6
			kW	8.3			9.4			10.5			11.8			13.1		
		67.0	THC	132.2	132.2	132.9	126.5	126.5	130.5	120.6	120.6	128.0	113.9	113.9	125.1	106.4	106.4	121.7
			SHC	84.9	108.9	132.9	82.6	106.6	130.5	80.2	104.1	128.0	77.5	101.3	125.1	74.5	98.1	121.7
			kW	8.4			9.5			10.6			11.9			13.1		
		72.0	THC	143.8	143.8	143.8	136.3	136.3	136.3	129.8	129.8	129.8	122.8	122.8	122.8	-	-	-
			SHC	60.8	84.9	109.1	58.2	82.3	106.4	55.9	80.0	104.1	53.5	77.6	101.7	-	-	-
			kW	8.6			9.7			10.8			12.1			-		
		76.0	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			kW	-			-			-			-			-		
5400 cfm	EAT (wb)	58.0	THC	128.5	128.5	144.8	123.8	123.8	139.5	118.7	118.7	133.8	112.9	112.9	127.2	106.4	106.4	119.9
			SHC	112.2	128.5	144.8	108.1	123.8	139.5	103.6	118.7	133.8	98.6	112.9	127.2	92.9	106.4	119.9
			kW	8.3			9.4			10.6			11.9			13.1		
		62.0	THC	128.6	128.6	150.4	123.9	123.9	144.8	118.8	118.8	138.9	113.0	113.0	132.1	106.4	106.4	124.5
			SHC	106.8	128.6	150.4	102.9	123.9	144.8	98.7	118.8	138.9	93.8	113.0	132.1	88.4	106.4	124.5
			kW	8.3			9.4			10.6			11.9			13.1		
		67.0	THC	133.7	133.7	142.1	127.8	127.8	139.5	121.8	121.8	136.9	115.0	115.0	133.7	107.5	107.5	129.8
			SHC	89.1	115.6	142.1	86.7	113.1	139.5	84.2	110.6	136.9	81.4	107.6	133.7	78.1	103.9	129.8
			kW	8.4			9.5			10.7			11.9			13.2		
		72.0	THC	145.3	145.3	145.3	137.6	137.6	137.6	130.9	130.9	130.9	-	-	-	-	-	-
			SHC	62.5	89.3	116.1	59.8	86.6	113.4	57.5	84.3	111.1	-	-	-	-	-	-
			kW	8.7			9.7			10.8			-			-		
		76.0	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			kW	-			-			-			-			-		
6000 cfm	EAT (wb)	58.0	THC	131.2	131.2	147.9	126.3	126.3	142.3	121.0	121.0	136.4	115.1	115.1	129.7	108.4	108.4	122.2
			SHC	114.6	131.2	147.9	110.3	126.3	142.3	105.7	121.0	136.4	100.5	115.1	129.7	94.7	108.4	122.2
			kW	8.4			9.5			10.7			11.9			13.2		
		62.0	THC	131.3	131.3	153.6	126.4	126.4	147.8	121.1	121.1	141.6	115.2	115.2	134.7	108.5	108.5	126.8
			SHC	109.1	131.3	153.6	105.0	126.4	147.8	100.6	121.1	141.6	95.7	115.2	134.7	90.1	108.5	126.8
			kW	8.4			9.5			10.7			11.9			13.2		
		67.0	THC	135.0	135.0	150.8	128.9	128.9	148.0	122.8	122.8	145.0	116.1	116.1	141.3	108.6	108.6	136.2
			SHC	93.0	121.9	150.8	90.5	119.3	148.0	87.9	116.5	145.0	84.8	113.0	141.3	81.1	108.6	136.2
			kW	8.5			9.5			10.7			11.9			13.2		
		72.0	THC	146.6	146.6	146.6	138.8	138.8	138.8	-	-	-	-	-	-	-	-	-
			SHC	64.2	93.6	123.0	61.5	90.9	120.3	-	-	-	-	-	-	-	-	-
			kW	8.7			9.7			-			-			-		
		76.0	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			kW	-			-			-			-			-		

PERFORMANCE DATA (cont.)
COMBINATION RATINGS

38AUD16 - 40RUA16

SI

38AU

			Ambient Temperature															
			29.4			35.0			40.6			46.1			51.7			
			EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)			
			23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	23.9	26.7	29.4	
2124 L/S	EAT (wb)	14.4	THC	44.1	44.1	49.7	42.6	42.6	48.0	40.9	40.9	46.1	39.2	39.2	44.2	37.3	37.3	42.0
			SHC	38.5	44.1	49.7	37.2	42.6	48.0	35.8	40.9	46.1	34.2	39.2	44.2	32.5	37.3	42.0
			kW	9.7			10.9			12.3			13.8			15.4		
		16.7	THC	45.3	45.3	49.0	43.4	43.4	48.0	41.4	41.4	46.9	39.4	39.4	45.4	37.3	37.3	43.6
			SHC	35.5	42.3	49.0	34.6	41.3	48.0	33.6	40.3	46.9	32.4	38.9	45.4	31.0	37.3	43.6
			kW	9.7			10.9			12.3			13.8			15.4		
	19.4	THC	49.2	49.2	49.2	47.1	47.1	47.1	44.9	44.9	44.9	42.6	42.6	42.6	40.0	40.0	40.0	
		SHC	28.8	35.6	42.5	28.0	34.8	41.6	27.1	33.9	40.7	26.1	32.9	39.7	25.1	31.9	38.7	
		kW	9.9			11.1			12.4			13.9			15.5			
	22.2	THC	53.3	53.3	53.3	51.1	51.1	51.1	48.8	48.8	48.8	46.2	46.2	46.2	43.5	43.5	43.5	
		SHC	21.8	28.7	35.5	21.0	27.9	34.7	20.1	27.0	33.9	19.2	26.1	32.9	18.2	25.1	31.9	
		kW	10.1			11.3			12.6			14.1			15.6			
24.4	THC	-	56.7	56.7	-	54.5	54.5	-	52.0	52.0	-	-	-	-	-	-		
	SHC	-	23.0	30.0	-	22.2	29.2	-	21.4	28.3	-	-	-	-	-	-		
	kW	10.3			11.5			12.8			-			-				
2478 L/S	EAT (wb)	14.4	THC	46.1	46.1	52.0	44.5	44.5	50.1	42.8	42.8	48.2	40.9	40.9	46.0	38.8	38.8	43.7
			SHC	40.3	46.1	52.0	38.9	44.5	50.1	37.3	42.8	48.2	35.7	40.9	46.0	33.9	38.8	43.7
			kW	9.8			11.0			12.4			13.8			15.4		
		16.7	THC	46.5	46.5	53.3	44.7	44.7	51.7	42.8	42.8	50.0	40.9	40.9	47.8	38.8	38.8	45.4
			SHC	38.0	45.6	53.3	36.8	44.3	51.7	35.6	42.8	50.0	34.0	40.9	47.8	32.2	38.8	45.4
			kW	9.8			11.0			12.4			13.8			15.4		
	19.4	THC	50.2	50.2	50.2	48.1	48.1	48.1	45.8	45.8	45.8	43.3	43.3	43.5	40.7	40.7	42.4	
		SHC	30.6	38.4	46.3	29.7	37.5	45.4	28.8	36.6	44.5	27.8	35.6	43.5	26.8	34.6	42.4	
		kW	10.0			11.2			12.5			13.9			15.5			
	22.2	THC	54.3	54.3	54.3	52.1	52.1	52.1	49.6	49.6	49.6	47.0	47.0	47.0	44.2	44.2	44.2	
		SHC	22.5	30.4	38.3	21.7	29.6	37.5	20.8	28.7	36.6	19.9	27.8	35.6	18.9	26.8	34.6	
		kW	10.2			11.4			12.7			14.1			15.7			
24.4	THC	-	57.8	57.8	-	55.4	55.4	-	-	-	-	-	-	-	-	-		
	SHC	-	23.9	31.9	-	23.1	31.1	-	-	-	-	-	-	-	-	-		
	kW	10.4			11.6			-			-			-				
2832 L/S	EAT (wb)	14.4	THC	47.8	47.8	53.8	46.1	46.1	51.9	44.2	44.2	49.8	42.2	42.2	47.6	40.0	40.0	45.1
			SHC	41.7	47.8	53.8	40.2	46.1	51.9	38.6	44.2	49.8	36.8	42.2	47.6	34.9	40.0	45.1
			kW	9.9			11.1			12.4			13.9			15.5		
		16.7	THC	47.8	47.8	55.9	46.1	46.1	53.9	44.3	44.3	51.7	42.2	42.2	49.4	40.0	40.0	46.8
			SHC	39.7	47.8	55.9	38.3	46.1	53.9	36.8	44.3	51.7	35.1	42.2	49.4	33.3	40.0	46.8
			kW	9.9			11.1			12.4			13.9			15.5		
	19.4	THC	50.9	50.9	50.9	48.8	48.8	49.0	46.4	46.4	48.1	43.9	43.9	47.0	41.2	41.2	45.8	
		SHC	32.2	41.1	49.9	31.3	40.2	49.0	30.4	39.2	48.1	29.4	38.2	47.0	28.3	37.1	45.8	
		kW	10.0			11.2			12.5			14.0			15.5			
	22.2	THC	55.1	55.1	55.1	52.8	52.8	52.8	50.3	50.3	50.3	47.6	47.6	47.6	44.7	44.7	44.7	
		SHC	23.2	32.1	41.0	22.3	31.2	40.2	21.5	30.4	39.2	20.5	29.4	38.3	19.5	28.4	37.3	
		kW	10.2			11.4			12.7			14.2			15.7			
24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				
3186 L/S	EAT (wb)	14.4	THC	49.1	49.1	55.4	47.3	47.3	53.3	45.4	45.4	51.1	43.3	43.3	48.8	41.0	41.0	46.2
			SHC	42.9	49.1	55.4	41.3	47.3	53.3	39.6	45.4	51.1	37.8	43.3	48.8	35.8	41.0	46.2
			kW	9.9			11.1			12.5			13.9			15.5		
		16.7	THC	49.2	49.2	57.5	47.4	47.4	55.4	45.4	45.4	53.1	43.3	43.3	50.6	41.0	41.0	47.9
			SHC	40.8	49.2	57.5	39.3	47.4	55.4	37.7	45.4	53.1	36.0	43.3	50.6	34.1	41.0	47.9
			kW	9.9			11.1			12.5			13.9			15.5		
	19.4	THC	51.5	51.5	53.4	49.3	49.3	52.5	47.0	47.0	51.4	44.4	44.4	50.3	41.7	41.7	49.0	
		SHC	33.8	43.6	53.4	32.9	42.7	52.5	31.9	41.7	51.4	30.9	40.6	50.3	29.7	39.4	49.0	
		kW	10.0			11.2			12.6			14.0			15.6			
	22.2	THC	55.7	55.7	55.7	53.3	53.3	53.3	50.8	50.8	50.8	48.0	48.0	48.0	45.0	45.0	45.0	
		SHC	23.8	33.7	43.6	23.0	32.9	42.7	22.1	32.0	41.9	21.1	31.0	40.9	20.1	30.0	39.8	
		kW	10.3			11.4			12.8			14.2			15.7			
24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				
3540 L/S	EAT (wb)	14.4	THC	50.2	50.2	56.6	48.4	48.4	54.5	46.4	46.4	52.3	44.2	44.2	49.8	41.8	41.8	47.1
			SHC	43.9	50.2	56.6	42.2	48.4	54.5	40.5	46.4	52.3	38.6	44.2	49.8	36.5	41.8	47.1
			kW	10.0			11.2			12.5			14.0			15.6		
		16.7	THC	50.3	50.3	58.8	48.4	48.4	56.6	46.4	46.4	54.2	44.2	44.2	51.7	41.8	41.8	48.9
			SHC	41.8	50.3	58.8	40.2	48.4	56.6	38.5	46.4	54.2	36.7	44.2	51.7	34.8	41.8	48.9
			kW	10.0			11.2			12.5			14.0			15.6		
	19.4	THC	52.0	52.0	56.7	49.8	49.8	55.7	47.4	47.4	54.5	44.8	44.8	53.3	42.1	42.1	51.7	
		SHC	35.3	46.0	56.7	34.3	45.0	55.7	33.3	43.9	54.5	32.2	42.7	53.3	30.9	41.3	51.7	
		kW	10.1			11.3			12.6			14.0			15.6			
	22.2	THC	56.1	56.1	56.1	53.7	53.7	53.7	51.2	51.2	51.2	-	-	-	-	-	-	
		SHC	24.4	35.3	46.1	23.6	34.4	45.3	22.7	33.5	44.4	-	-	-	-	-	-	
		kW	10.3			11.5			12.8			14.2			-			
24.4	THC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	SHC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	kW	-			-			-			-			-				

LEGEND:

- = Do not operate
L/s = Liters per second

EAT(wb) = Entering air temp (wet bulb)
kW = Compressor kilowatts

SHC = Sensible heat capacity (Gross)
THC = Total heat capacity (Gross)

EAT(db) = Entering air temp (dry bulb)
Cfm = Cubic feet per minute (supply air)

ELECTRICAL DATA

38AUZ07 COOLING 50 Hz

38AUZ07							WITHOUT PWRD C.O.		WITH PWRD C.O.	
V-Ph-Hz	VOLTAGE RANGE		COMP 1		OFM (ea)		MCA	Fuse	MCA	Fuse
	MIN	MAX	RLA	LRA	WATTS	FLA				
400-3-50	380	420	9.7	64	270	0.7	13.5	20	15.9	25

38AUZ08 COOLING 50 Hz

38AUZ08							WITHOUT PWRD C.O.		WITH PWRD C.O.	
V-Ph-Hz	VOLTAGE RANGE		COMP 1		OFM (ea)		MCA	Fuse	MCA	Fuse
	MIN	MAX	RLA	LRA	WATTS	FLA				
400-3-50	380	420	12.2	101	270	0.7	16.7	25	19.0	30

38AUD12 COOLING 50 Hz

38AUD12									WITHOUT PWRD C.O.		WITH PWRD C.O.	
V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		MCA	Fuse	MCA	Fuse
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA				
400-3-50	380	420	7.8	51.5	7.8	51.5	270	0.7	19.0	25	21.3	30

38AUD14 COOLING 50 Hz

38AUD14									WITHOUT PWRD C.O.		WITH PWRD C.O.	
V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM (ea)		MCA	Fuse	MCA	Fuse
	MIN	MAX	RLA	LRA	RLA	LRA	WATTS	FLA				
400-3-50	380	420	10.6	74	10.6	74	270	0.7	25.3	30	27.6	30

38AUD16 COOLING 50 Hz

38AUD16									POWER SUPPLY		DISCONNECT SIZE	
V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM		MCA	MOCP	FLA	LRA
	Min	Max	RLA	LRA	RLA	LRA	Qty	FLA (ea)				
400-3-50	360	440	12.2	101	12.2	101	3	0.7	29.6	40	30	208

38AUD25 COOLING 50 Hz

38AUD24									POWER SUPPLY		DISCONNECT SIZE	
V-Ph-Hz	VOLTAGE RANGE		COMP 1		COMP 2		OFM		MCA	MOCP	FLA	LRA
	Min	Max	RLA	LRA	RLA	LRA	Qty	FLA (ea)				
400-3-50	360	440	16.7	111	16.7	111	4	0.7	40.4	50	42	230

38AU

APPLICATION DATA

Operating limits

Maximum outdoor temperature 125°F
 Minimum return-air temperature (40RUA) 55°F
 Maximum return-air temperature (40RUA) 95°F
 Range of acceptable saturation
 suction temperature 20 to 50°F
 Maximum discharge temperature 275°F
 Minimum discharge superheat 60°F

NOTES:

1. Select air handler at no less than 300 cfm/ton (nominal condensing unit capacity).
2. Total combined draw of the field-supplied liquid line solenoid valve and air handler fan contactor must not exceed 22 va. If the specified va must be exceeded, use a remote relay to control the load.

MINIMUM OUTDOOR-AIR OPERATING TEMPERATURE

UNIT 38AU	MINIMUM OUTDOOR TEMP (°F)	
	Std	With MotorMaster I® Control†
Z07	35	-20
Z08	35	
D12	35	
D14	35	
D16	35	
D25	35	

† Wind baffles (field-supplied and field-installed) are recommended for all units with MotorMaster I® control. Refer to Low Ambient Temperature Control Installation Instructions for additional information.

Refrigerant piping

IMPORTANT: Do not bury refrigerant piping underground.

It is recommended that the refrigerant piping for all commercial split systems include a liquid line solenoid valve, a liquid line filter drier and a sight glass.

For refrigerant lines longer than 75 lineal ft, a liquid line solenoid valve installed at the **indoor** unit and a suction accumulator are required. Refer to the Refrigerant Specialties Part Numbers table.

REFRIGERANT SPECIALTIES PART NUMBERS

LIQUID LINE SIZE (in.)	LIQUID LINE SOLENOID VALVE (LLSV)	LLSV COIL	SIGHT GLASS
3/8	EF680033	EF680037	KM680008
1/2	EF680035	EF680037	KM680004
5/8	EF680036	EF680037	KM680005

NOTE: 38AUD units require TWO sets of parts.

38AU

38AUZ 07-08 PIPING RECOMMENDATIONS (SINGLE-CIRCUIT UNIT)

R-410A	Equivalent Length										
	meter	0-12		12-23		23-34		34-46		46-57	
	feet	0-38		38-75		75-113		113-150		150-188	
Model	Linear Length										
	meter	0-7.5		7.5-15		15-23		23-30		30-38	
	feet	0-25		25-50		50-75		75-100		100-125	
38AUZ*07	Liquid Line	3/8		3/8 1/2		3/8 1/2		3/8 1/2		3/8 1/2	
	Max Lift										
	SI (m)										
	Novation	7.5		15		16 23		9 29		10 34	
	RTPF	7.5		15		19 23		12 30		11 38	
	EN (ft)										
	Novation	25		50		53 75		34 97		33 112	
	RTPF	25		50		63 75		42 100		38 125	
	Suction Line	7/8 7/8		7/8		7/8		7/8		1-1/8	
	Charge										
	SI (kg)										
	Novation	3.8		4.4		4.9 5.9		5.4 6.8		6.1 7.9	
RTPF	6.4		7.0		7.4 8.5		7.9 9.3		8.7 10.4		
EN (lbs)											
Novation	8.4		9.8		10.8 13.1		11.8 14.9		13.5 17.4		
RTPF	14.0		15.4		16.4 18.7		17.4 20.5		19.1 23.0		
38AUZ*08	Liquid Line	1/2		1/2 5/8		1/2 5/8		1/2 5/8		1/2 5/8	
	Max Lift										
	SI (m)										
	Novation	7.5		9 11		7 10		DNU 10		10 16	
	RTPF	7.5		15 NR		23 NR		27 30		18 38	
	EN (ft)										
	Novation	25		30 38		24 36		DNU 35		33 53	
	RTPF	25		50 NR		75 NR		89 100		62 125	
	Suction Line	7/8		7/8		1-1/8		1-1/8		1-1/8	
	Charge										
	SI (kg)										
	Novation	5.5		6.3 7.2		7.4 8.6		DNU 9.9		9.1 11.2	
RTPF	8.6		9.4 NR		10.4 NR		11.3 13.0		12.2 14.3		
EN (lbs)											
Novation	12.2		13.9 15.8		16.2 19.0		DNU 21.9		20.0 24.8		
RTPF	19.0		20.7 NR		23.0 NR		24.9 28.7		26.8 31.6		

Legend:

- Equivalent Length – Equivalent tubing length, including effects of refrigeration specialties devices
- Linear Length – Linear tubing length, feet
- Liquid Line – Tubing size, inches OD.
- Max Lift – Maximum liquid lift (indoor unit ABOVE outdoor unit only), at maximum permitted liquid line pressure drop
 - Linear Length Less than 30 m (100 ft): Minimum 1.1° C (2.0° F) subcooling entering TXV
 - Linear Length Greater than 30 m (100 ft): Minimum 0.3° C (0.5° F) subcooling entering TXV
- Suction Line – Tube size, inches OD
- Charge – Charge Quantity, lbs. Calculated for both liquid line sizes (where applicable), but only with larger suction line size (where applicable)
- DNU – Do Not Use (pressure drop exceeds available subcooling in this model)
- NR – Not Recommended (use smaller liquid tube size)
- SI – Metric units of measure
- EN – English units of measure (I-P)

NOTE: For applications with equivalent length greater than 57 m (188 ft) and/or linear length greater than 38 m (125 ft), contact your local Carrier representative.

38AU

38AUD 12-14 PIPING RECOMMENDATIONS (TWO-CIRCUIT UNIT)

NOTE: 38AUD requires TWO sets of refrigeration piping

R-410A	Equivalent Length										
	meter	0-12		12-23		23-34		34-46		46-57	
	feet	0-38		38-75		75-113		113-150		150-188	
Model	Linear Length										
	meter	0-7.5		7.5-15		15-23		23-30		30-38	
	feet	0-25		25-50		50-75		75-100		100-125	
38AUD*12	Liquid Line	$\frac{3}{8}$		$\frac{3}{8}$		$\frac{3}{8}$ $\frac{1}{2}$		$\frac{3}{8}$ $\frac{1}{2}$		$\frac{3}{8}$ $\frac{1}{2}$	
	Max Lift										
	SI (m)										
	Novation	7.5		15		15 23		10 24		13 29	
	RTPF	7.5		15		15 23		10 27		11 32	
	EN (ft)										
	Novation	25		50		50 75		36 79		44 96	
	RTPF	25		50		50 75		36 89		39 106	
	Suction Line	$\frac{7}{8}$		$\frac{7}{8}$		$\frac{7}{8}$		$\frac{7}{8}$		$1-\frac{1}{8}$	
	Charge										
	SI (kg)										
	Novation	3.3		3.8		4.2 5.3		4.7 6.1		5.1 6.9	
RTPF	4.9		5.4		5.8 6.9		6.3 7.7		6.8 8.6		
EN (lbs)											
Novation	7.3		8.3		9.3 11.6		10.3 13.4		11.3 15.2		
RTPF	10.9		11.9		12.9 15.2		13.9 17.0		14.9 18.8		
38AUD*14	Liquid Line	$\frac{3}{8}$		$\frac{1}{2}$ $\frac{5}{8}$		$\frac{1}{2}$ $\frac{5}{8}$		$\frac{1}{2}$ $\frac{5}{8}$		$\frac{1}{2}$ $\frac{5}{8}$	
	Max Lift										
	SI (m)										
	Novation	7.5		13 15		12 14		11 14		17 20	
	EN (ft)										
	Novation	25		45 50		42 49		39 48		56 68	
	Suction Line	$\frac{7}{8}$		$\frac{7}{8}$		$\frac{7}{8}$		$1-\frac{1}{8}$		$1-\frac{1}{8}$	
	Charge										
SI (kg)											
Novation	4.6		5.8 6.6		6.6 7.8		7.6 10.7		9.4 12.0		
EN (lbs)											
Novation	10.1		12.7 14.6		14.5 17.3		16.8 23.5		20.7 26.4		

38AU

Legend:

- Equivalent Length – Equivalent tubing length, including effects of refrigeration specialties devices
- Linear Length – Linear tubing length, feet
- Liquid Line – Tubing size, inches OD.
- Max Lift – Maximum liquid lift (indoor unit ABOVE outdoor unit only), at maximum permitted liquid line pressure drop
 - Linear Length Less than 30 m (100 ft): Minimum 1.1° C (2.0° F) subcooling entering TXV
 - Linear Length Greater than 30 m (100 ft): Minimum 0.3° C (0.5° F) subcooling entering TXV
- Suction Line – Tube size, inches OD
- Charge – Charge Quantity, lbs. Calculated for both liquid line sizes (where applicable), but only with larger suction line size (where applicable)
- DNU – Do Not Use (pressure drop exceeds available subcooling in this model)
- NR – Not Recommended (use smaller liquid tube size)
- SI – Metric units of measure
- EN – English units of measure (I-P)
- NOTE:** For applications with equivalent length greater than 57 m (188 ft) and/or linear length greater than 38 m (125 ft), contact your local Carrier representative.

38AUD 16-25 PIPING RECOMMENDATIONS (TWO-CIRCUIT UNIT)

NOTE: 38AUD requires TWO sets of refrigeration piping

R-410A	Equivalent Length													
	meter	0-12		12-23		23-34		34-46		46-57				
	feet	0-38		38-75		75-113		113-150		150-188				
Model	Linear Length													
	meter	0-7.5		7.5-15		15-23		23-30		30-38				
	feet	0-25		25-50		50-75		75-100		100-125				
38AUD*16	Liquid Line	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$				
	Max Lift													
	SI (m)													
	Novation	7.5	NR	15	NR	21	23	13	30	38				
	RTPF	DNU	7.5	DNU	15	DNU	23	DNU	30	36				
	EN (ft)													
	Novation	25	NR	50	NR	71	75	43	100	125				
	RTPF	DNU	25	DNU	50	DNU	75	DNU	100	119				
	Suction Line	$\frac{7}{8}$			$1-\frac{1}{8}$			$1-\frac{1}{8}$			$1-\frac{1}{8}$			
	Charge													
SI (kg)														
Novation	5.8	NR	6.3	NR	7.0	8.0	7.5	8.9	9.8					
RTPF	DNU	9.8	DNU	10.7	DNU	11.6	DNU	12.4	13.3					
EN (lbs)														
Novation	12.9	NR	13.9	NR	15.4	17.7	16.5	19.6	21.6					
RTPF	DNU	21.7	DNU	23.6	DNU	25.5	DNU	27.4	29.3					
38AUD*25	Liquid Line	$\frac{1}{2}$			$\frac{1}{2}$			$\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{2}$	$\frac{5}{8}$			
	Max Lift													
	SI (m)													
	RTPF	7.5			15			23			20	27	23	32
	EN (ft)													
	RTPF	25			50			75			67	91	76	107
	Suction Line	$\frac{7}{8}$			$1-\frac{1}{8}$			$1-\frac{1}{8}$			$1-\frac{1}{8}$			
	Charge													
SI (kg)														
RTPF	9.4			10.3			11.2			12.1	13.8	13.0	15.1	
EN (lbs)														
RTPF	20.7			22.8			24.7			26.6	30.4	28.6	33.3	

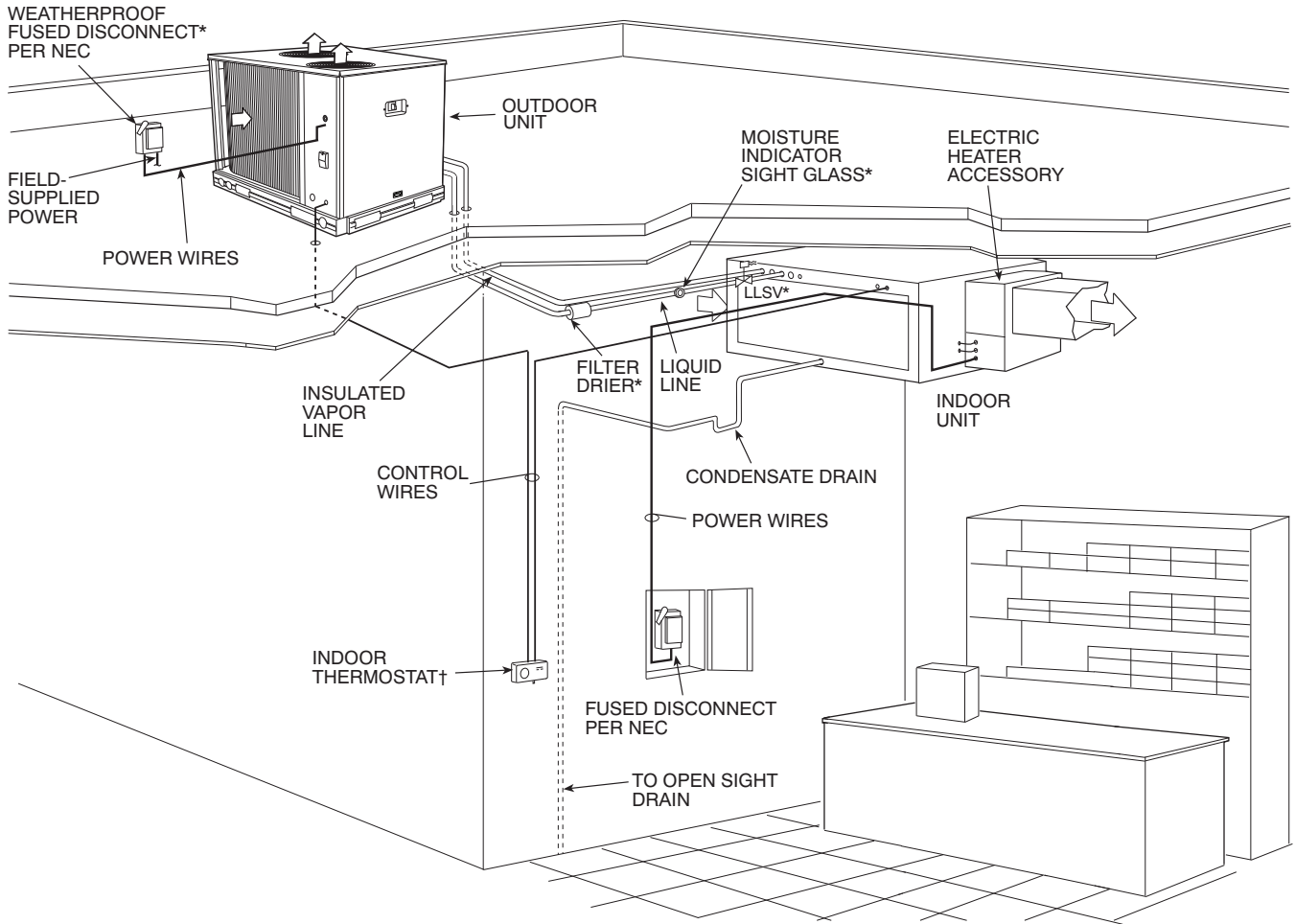
Legend:

- Equivalent Length – Equivalent tubing length, including effects of refrigeration specialties devices
- Linear Length – Linear tubing length, feet
- Liquid Line – Tubing size, inches OD.
- Max Lift – Maximum liquid lift (indoor unit ABOVE outdoor unit only), at maximum permitted liquid line pressure drop
 - Linear Length Less than 30 m (100 ft): Minimum 1.1° C (2.0° F) subcooling entering TXV
 - Linear Length Greater than 30 m (100 ft): Minimum 0.3° C (0.5° F) subcooling entering TXV
- Suction Line – Tube size, inches OD
- Charge – Charge Quantity, lbs. Calculated for both liquid line sizes (where applicable), but only with larger suction line size (where applicable)
- DNU – Do Not Use (pressure drop exceeds available subcooling in this model)
- NR – Not Recommended (use smaller liquid tube size)
- SI – Metric units of measure
- EN – English units of measure (I-P)

NOTE: For applications with equivalent length greater than 57 m (188 ft) and/or linear length greater than 38 m (125 ft), contact your local Carrier representative.

38AU

TYPICAL PIPING AND WIRING



38AU

C09054

LEGEND:

NEC – National Electrical Code

TXV – Thermostatic Expansion Valve

* Field-supplied

† Double riser may be required. Consult condensing unit product data catalog for details.

NOTES:

1. All piping must follow standard refrigerant piping techniques. Refer to Carrier System Design Manual for details.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

GUIDE SPECIFICATIONS

Commercial Air-Cooled Condensing Units

HVAC Guide Specifications

Size Range: 18.3 kW to 59.2 kW

Carrier Model Numbers: **38AUZ, Single Circuit (07 - 08 Models) 38AUD, Dual Circuit (12, 14, 16, 25 Models)**

Part 1 — General

1.01 SYSTEM DESCRIPTION

Outdoor-mounted, air-cooled condensing unit suitable for on-the-ground or rooftop installation. Unit shall consist of a hermetic scroll air-conditioning compressor(s) assembly, an air-cooled coil, propeller-type condenser fans, and a control box. Unit shall discharge supply air upward as shown on contract drawings. Unit shall be used in a refrigeration circuit matched with a packaged air-handling unit.

1.02 QUALITY ASSURANCE

- A. Unit shall be rated in accordance with AHRI Standard 340/360.
- B. Unit construction shall comply with ANSI/ASHRAE 15 safety code latest revision and comply with NEC.
- C. Unit shall be constructed in accordance with UL 1995 standard and shall carry the UL and UL, Canada label.
- D. Unit cabinet shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
- E. Air-cooled condenser coils for hermetic scroll compressor units 38AUZ and 38AUD shall be leak tested at 150 psig, and pressure tested at 650 psig.
- F. Unit shall be manufactured in a facility registered to ISO 9001:2008 manufacturing quality standard.

1.03 DELIVERY, STORAGE, AND HANDLING

Unit shall be shipped as single package only, and shall be stored and handled according to unit manufacturer's recommendations.

1.04 WARRANTY (FOR INCLUSION BY SPECIFYING ENGINEER.)

Part 2 — Products

2.01 EQUIPMENT

A. General:

Factory-assembled, single piece, air-cooled condensing unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, compressor, holding charge, and special features required prior to field start-up.

B. Unit Cabinet:

1. Unit cabinet shall be constructed of galvanized steel, bonderized and coated with a prepainted baked enamel finish.
2. A heavy-gauge roll-formed perimeter base rail with forklift slots and lifting holes shall be provided to facilitate rigging.

C. Condenser Fans:

1. Condenser fans shall be direct driven, propeller type, discharging air vertically upward.
2. Fan blades shall be balanced.
3. Condenser fan discharge openings shall be equipped with PVC-coated steel wire safety guards.
4. Condenser fan and motor shaft shall be corrosion resistant.

D. Compressor:

1. Compressor shall be of the hermetic scroll type .
2. Compressor shall be mounted on rubber grommets.
3. Compressors shall include overload protection.
4. Compressors shall be equipped with a crankcase heater.
5. Compressor shall be equipped with internal high pressure and high temperature protection.

E. Condenser Coils:

1. Standard Aluminum fin - Copper Tube Coils:

- a. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.

- b. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.
 - c. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.
2. Optional Copper-fin evaporator and condenser coils:
- a. Shall be constructed of copper fins mechanically bonded to copper tubes and copper tube sheets.
 - b. Galvanized steel tube sheets shall not be acceptable.
 - c. A polymer strip shall prevent coil assembly from contacting the sheet metal coil pan to minimize potential for galvanic corrosion between coil and pan.
3. Optional E-coated aluminum-fin evaporator and condenser coils:
- a. Shall have a flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins.
 - b. Coating process shall ensure complete coil encapsulation of tubes, fins and headers.
 - c. Color shall be high gloss black with gloss per ASTM D523-89.
 - d. Uniform dry film thickness from 0.8 to 1.2 mil on all surface areas including fin edges.
 - e. Superior hardness characteristics of 2H per ASTM D3363-92A and cross-hatch adhesion of 4B-5B per ASTM D3359-93.
 - f. Impact resistance shall be up to 160 in.-lb (ASTM D2794-93).
 - g. Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247-92 and ASTM D870-92).
 - h. Corrosion durability shall be confirmed through testing to be no less than 1000 hours salt spray per ASTM B117-90.
4. Standard All Aluminum Novation Coils:
- a. Standard condenser coils shall have all aluminum Novation Heat Exchanger Technology design consisting of aluminum multi port flat tube design and aluminum fin. Coils shall be a furnace brazed design and contain epoxy lined shrink wrap on all aluminum to copper connections.
 - b. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.
5. Optional E-coated aluminum-fin, aluminum tube condenser coils:
- a. Shall have a flexible epoxy polymer coating uniformly applied to all coil external surface areas without material bridging between fins or louvers.
 - b. Coating process shall ensure complete coil encapsulation, including all exposed fin edges.
 - c. E-coat thickness of 0.8 to 1.2 mil with top coat having a uniform dry film thickness from 1.0 to 2.0 mil on all external coil surface areas, including fin edges, shall be provided.
 - d. Shall have superior hardness characteristics of 2H per ASTM D3363-00 and cross-hatch adhesion of 4B-5B per ASTM D3359-02.
 - e. Shall have superior impact resistance with no cracking, chipping or peeling per NSF/ANSI 51-2002 Method 10.2.

F. Refrigeration Components:

Refrigeration circuit components shall include liquid line service valve, suction line service valve, a full charge of compressor oil, and a partial holding charge of refrigerant.

G. Controls and Safeties:

1. Minimum control functions shall include:

- f. Control wire terminal blocks.
- g. Compressor lockout on auto-reset safety until reset from thermostat.
- h. Each unit shall utilize the Comfort Alert™ Diagnostic Board that provides:
 - (1.) System Pressure Trip fault code indication
 - (2.) Short Cycling fault code indication
 - (3.) Locked Rotor fault code indication
 - (4.) Open Circuit fault code indication
 - (5.) Reverse Phase 3 fault code indication
 - (6.) Welded Contactor fault code indication
 - (7.) Low Voltage fault code indication
 - (8.) Anti-short cycle protection
 - (9.) Phase reversal protection

2. Minimum safety devices which are equipped with automatic reset (after resetting first at thermostat), shall include:
 - a. High discharge pressure cutout.
 - b. Low pressure cutout.
- H. Operating Characteristics:
1. The capacity of the condensing unit shall meet or exceed _____ Btuh at a suction temperature of _____ °C/F. The power consumption at full load shall not exceed _____ kW.
 2. The combination of the condensing unit and the evaporator or fan coil unit shall have a total net cooling capacity of _____ Btuh or greater at conditions of _____ cfm entering-air temperature at the evaporator at _____ °C/F wet bulb and _____ °C/F dry bulb, and air entering the condensing unit at _____ °C/F.
 3. The system shall have an EER of _____ Btuh/Watt or greater at standard AHRI conditions.
 4. Standard unit shall be capable to operate up to 52°C (125°F) and down to 4°C (40°F)
- I. Electrical Requirements:
1. Nominal unit electrical characteristics shall be _____ v, 3-ph, 50 Hz. The unit shall be capable of satisfactory operation within voltage limits of _____ v to _____ v.
 2. Unit electrical power shall be single-point connection.
 3. Unit control circuit shall contain a 24-v transformer for unit control.
- J. Special Features:
1. Low-Ambient Temperature Control:
A low-ambient temperature control shall be available as a factory-installed option or as a field-installed accessory. This low-ambient control shall regulate speed of the condenser-fan motors in response to the saturated condensing temperature of the unit. The control shall maintain correct condensing pressure at outdoor temperatures down to -29°C (-20°F).
 2. Unit-Mounted, Non-Fused Disconnect Switch:
Switch shall be factory-installed and internally mounted. NEC and UL-approved non-fused switch shall provide unit power shutoff. Switch shall be accessible from outside the unit and shall provide power off lock-out capability. Non-fused disconnect cannot be used when unit MOCP electrical rating exceeds 80 amps.
 3. Thermostat Controls:
 - a. Programmable multi-stage thermostat shall have 7-day clock, holiday scheduling, large backlit display, remote sensor capability, and Title 24 compliance.
 - b. Commercial Electronic Thermostat shall have 7-day time clock, auto-changeover, multi-stage capability, and large LCD (liquid crystal display) temperature display.
 4. Louvered hail Guard Package:
Louvered hail guard package shall protect coils against damage from hail and other flying debris.
 5. Condenser Coil Grille (Novation 07-14 models only):
Grille shall add decorative appearance to unit and protect condenser coil from large objects and vandalism.