



MULTI V™

OUTSIDE AIR UNIT ENGINEERING MANUAL



48,100, 76,400, and 95,900 Btu/h

PROPRIETARY DATA NOTICE

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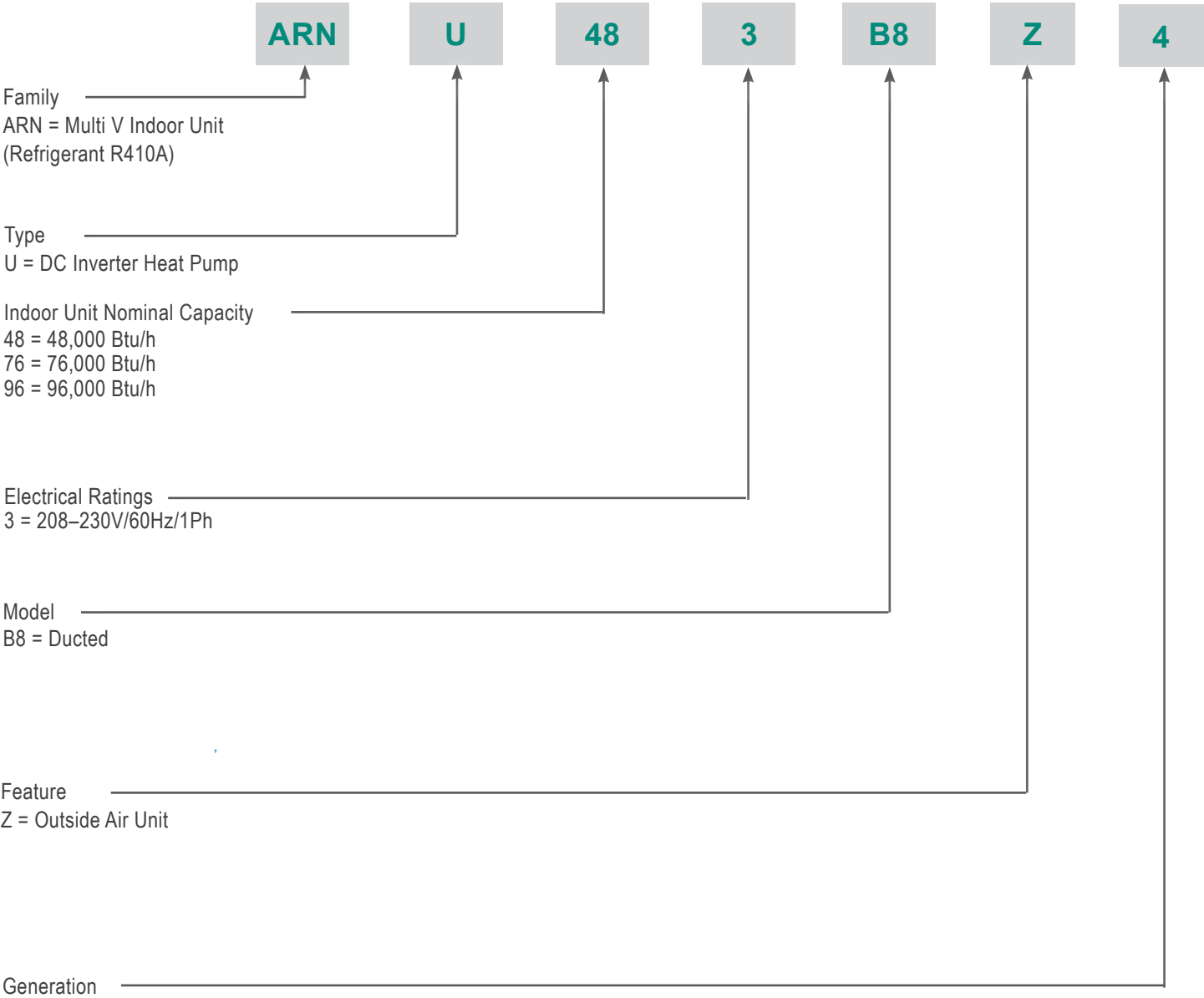
A summary list of safety precautions is on page 3.

For more technical materials such as submittals, catalogs, installation, owner's, and service manuals, visit www.lghvac.com.

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TABLE OF SYMBOLS

 DANGER	This symbol indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	This symbol indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	This symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
Note	This symbol indicates situations that may result in equipment or property damage accidents only.
	This symbol indicates an action should not be completed.



LG Air Conditioner Technical Solution (LATS) Software

A properly designed and installed refrigerant piping system is critical to the optimal performance of LG air-conditioning systems. To assist engineers, LG offers, free of charge, LG Air Conditioner Technical Solution (LATS) software—a total design solution for LG air conditioning systems.

Note:

To reduce the risk of designing an improper applied system or one that will not operate correctly, LG requires that LATS software be used on all projects.

Formats

LATS is available to LG customers in three user interfaces: LATS HVAC, LATS CAD2, and LATS REVIT. All three LATS formats are available through www.myLGHVAC.com, or contact an LG Sales Representative.

LATS HVAC is a Windows®-based application that aids engineers in designing LG Variable Refrigerant Flow (VRF), Multi F / Multi F MAX, Single-Zone, and Energy Recovery Ventilator (ERV) systems.

*Windows® is a registered mark of Microsoft® Corporation.

LATS CAD2 combines the LG LATS program with AutoCAD® software**. It permits engineers to layout and validate LG Multi V Variable Refrigerant Flow (VRF), Multi F / Multi F MAX, Single-Zone, and Energy Recovery Ventilator (ERV) systems directly into CAD drawings.

LATS Revit integrates the LG LATS program with Revit® software**. It permits engineers to layout and validate Multi V VRF systems directly into Revit drawings.

**AutoCAD® and Revit® are both registered marks of Autodesk, Inc.

Features

All LG product design criteria have been loaded into the program, making LATS simple to use: double click or drag and drop the component choices. Build systems in Tree Mode where the refrigerant system can be viewed. Switch to a Schematic diagram to see the electrical and communications wiring.

LATS software permits the user to input region data, indoor and outdoor design temperatures, modify humidity default values, zoning, specify type and size of outdoor units and indoor units, and input air flow and external static pressure (ESP) for ducted indoor units.

The program can also:

- Import building loads from a separate Excel file.
- Present options for outdoor unit auto selection.
- Automatically calculate component capacity based on design conditions for the chosen region.
- Verify if the height differences between the various system components are within system limits.
- Provide the correct size of each refrigerant piping segment and LG Y-Branches and Headers.
- Adjust overall piping system length when elbows are added.
- Check for component piping limitations and flag if any parameters are broken.
- Factor operation and capacity for defrost operation.
- Calculate refrigerant charge, noting any additional trim charge.
- Suggest accessories for indoor units and outdoor units.
- Run system simulation.

Note:

Features depend on which LATS program is being used, and the type of system being designed.

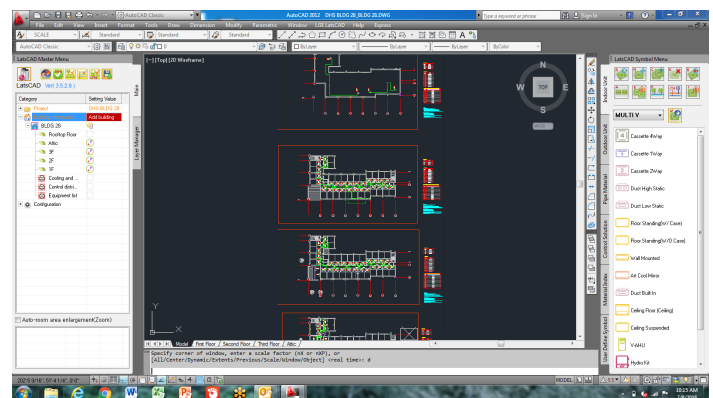


Figure 1: Example of LATS CAD2.

LG AIR CONDITIONER TECHNICAL SOLUTION (LATS)

LATS Generates a Complete Project Report

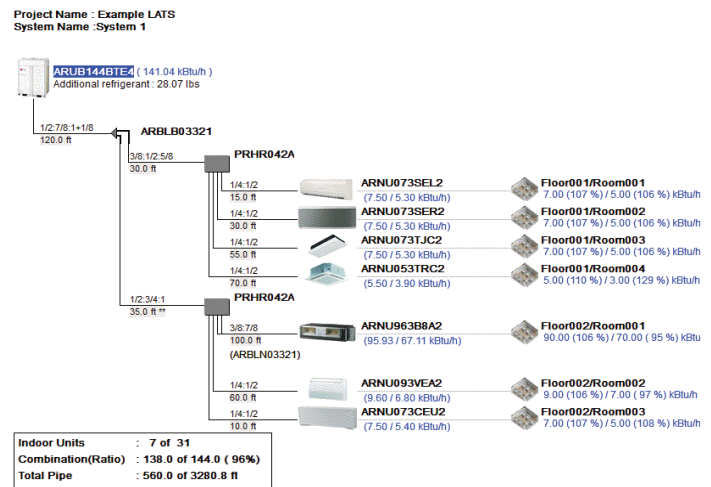
LATS software also generates a report containing project design parameters, cooling and heating design data, system component performance, and capacity data. The report includes system combination ratio and refrigerant charge calculations; and provides detailed bill of material, including outdoor units, indoor units, control devices, accessories, refrigerant pipe sizes segregated by building, by system, by pipe size, and by pipe segments. LATS can generate an Excel GERP report that can imported into the LG SOPS pricing and ordering system.

Proper Design to Install Procedure

LG encourages a two report design-to-install-procedure. After the design engineer determines building / zone loads and other details, the engineer opens the LATS program and inputs the project's information. When the design is complete, the "Auto Piping" and "System Check" functions must be used to verify piping sizes, limitations, and if any design errors are present. If errors are found, engineers must adjust the design, and run Auto Piping and System Check again. When the design passes the checks, then the engineer prints out a project "Shop Drawing" (LATS Tree Diagram) and provides it to the installing contractor. The contractor must follow the LATS Tree Diagram when building the piping system, but oftentimes the design changes on the building site:

- Architect has changed location and/or purpose of room(s).
- Outdoor unit cannot be placed where originally intended.
- Structural elements prevent routing the piping as planned.
- Air conditioning system conflicts with other building systems (plumbing, gas lines, etc.).

Figure 2: Example of a LATS Tree Diagram.



The contractor must mark any deviation from the design on the Shop Drawing, including as-built straight lines and elbows. This "Mark Up" drawing must be returned to the design engineer or Rep, who must input contractor changes into the LATS file. (Copy the original LATS software file, save and rename as a separate file, and modify all piping lengths by double-clicking on each length and editing information.) Like the shop drawing, the Auto Piping and System Check must also be run on this new "As Built" drawing. The design engineer or Rep must then provide the final As Built file to the contractor. The Mark Up version must be compared to the As Built version for:

- Differences in pipe diameter(s). If incorrect diameters have been installed, the piping must be changed out. If pipe diameters have changed, check to see if Y-Branches will also need to be changed.
- Changes to outdoor unit and indoor unit capacities. Capacities changes may impact line length changes.
- Additional refrigerant charge quantity ("Trim Charge"). Trim charge will change if piping lengths and diameters change. The As Built version must reflect installed piping lengths to ensure correct trim charge.

All documents submitted by the contractor, as well as the Shop Drawing and the As Built Drawing files must be provided for commissioning purposes. Model and serial numbers for all system components must also be submitted. If the steps previously detailed are not followed, and all documents are not provided to the commissioning agent, the project runs the risk of not being commissioned and voiding any limited warranty LG offers on the equipment.

OUTSIDE AIR UNIT



- Mechanical Specifications on page 8**
- General Data on page 9**
- Electrical Data on page 10**
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Casing

The case is designed to mount concealed above a finished ceiling. Fan supply air is front horizontal with a dedicated rear horizontal return. The unit is manufactured with coated metal. Cold surfaces are covered with a coated polystyrene insulating material. The cold surface areas of the case are covered externally with sheet insulation made of Ethylene Propylene Diene Monomer (M-Class) (EPDM) conforming to ASTM Standard D-1418. The case is provided with hanger brackets designed to support the unit weight on four corners. Hanger brackets have pre-punched holes designed to accept field supplied, all-thread rod hangers.

Fan Assembly and Control

The unit has Sirocco fans made of high strength ABS GP-2200 polymeric resin. Fans are directly driven and mounted on a common shaft. The fan motor is a Brushless Digitally Controlled (BLDC) design with permanently lubricated and sealed ball bearings. The fan motor includes thermal, overcurrent and low RPM protection. The fan / motor assembly is mounted on vibration attenuating rubber grommets. The fan impeller is statically and dynamically balanced. The fan speed is controlled using a microprocessor based, direct digital control algorithm that provides a high fan speed in cooling thermal ON and low fan speed in cooling thermal OFF, high fan speed in heating thermal ON and fan off in heating thermal OFF. The fan speeds can be field adjusted between low, medium, and high speeds and DIP switch settings will allow the fan to run constantly during defrost or oil return modes. Each setting can be field adjusted from the factory setting (RPM / ESP) to compensate for additional resistance to airflow caused by field connected ductwork or other airflow restricting devices.

Air Filter

Return air is filtered with a removable, washable filter with anti-fungal treatment. MERV 13 filter modules with plenums available.

Microprocessor Controls

The unit is provided with an integrated microprocessor-based controller. Two temperature thermistors are factory-mounted in the entering and discharge air streams. All unit operation parameters, excluding the unit operating schedule, are stored in non-volatile memory resident on the unit microprocessor. Operating schedules are stored in select models of the optional, wall-mounted, local, or central controller. The field-supplied communication cable between the outside air unit(s) and outdoor unit is to be a minimum of 18 AWG, 2-conductor, stranded, and shielded cable (RS-485), terminated via screw terminals on the control boards. The microprocessor control provides the following functions: auto addressing, self-diagnostics, auto restart following power restoration, test run, and will operate the indoor unit using one of four operating modes:

1. Auto Changeover
2. Heating
3. Cooling
4. Fan Only

For Heat Recovery systems the Auto Changeover setting automatically switches control of the outside air unit between cooling and heating modes based on space temperature conditions.

For Heat Pump systems, heated or cooled air delivery is dependent upon outdoor unit operating mode.

In Heating mode, the microprocessor control will activate the outside air unit when indoor room temperature falls below setpoint temperature and signals the outdoor unit to begin heating cycle. The outside

air unit fan operation is delayed until coil pipe temperature reaches 76°F. Significant airflow is generated when pipe temperature reaches 80°F. In lieu of factory return air thermistor, screw terminals on the microprocessor circuit board accommodate various models of wall-mounted local controllers and/or a wall-mounted remote temperature sensor. The unit microprocessor is capable of accepting discharge air temperature readings concurrently from either:

1. Factory mounted return air thermistor or the optional wall-mounted wired remote temperature sensor
2. Factory mounted discharge air thermistor

A single outside air unit has the capability of being controlled by up to two local wired controllers. The microprocessor controls space temperature using the value provided by the temperature sensor sensing a space temperature that is farthest away from the temperature set-point. The microprocessor control provides a cooling or heating mode test cycle that operates the unit for 18 minutes without regard to the space temperature. If the system is provided with an optional wall-mounted local or central controller, displayed diagnostic codes are specific, alphanumeric, and provide the service technician with a reason for the code displayed.

Condensate Lift/Pump

The outside air unit is provided with a factory installed and wired condensate lift/pump capable of providing a maximum 27.5 inch lift from the bottom exterior surface of the unit casing. The unit drain pan is provided with a secondary drain port/plug allowing the pan to be drained for service. The lift pump comes with a safety switch that will shut off indoor unit if condensate rises too high in the drain pan.

Condensate Drain Pan

The condensate drain pan is constructed of high impact polystyrene resin (HIPS).

Coil

The outside air unit coil is constructed with grooved design copper tubes with slit coil fins, two (2) to three (3) rows, nineteen (19) to twenty-one (21) fins per inch.

Controls Features

- Auto operation
- Auto restart
- External on/off control
- Dual setpoint control*
- Filter life and power consumption display*
- Group control
- External static pressure control
- Hot start
- Self diagnostics
- Timer (on / off)
- Weekly schedule
- Fan speed control

**To enable Generation 4 features, outdoor unit DIP Switch No. 3 must be set to ON. Please refer to the Multi V IV, Multi V Water IV, Multi V S Engineering Manual for additional information.*

Figure 3: B8 Frame Outside Air Unit.



Table 1: Outside Air Unit (B8 Frame) General Data.

Model No.	ARNU483B8Z4	ARNU763B8Z4	ARNU963B8Z4
Cooling Mode Performance			
Capacity (Btu/h)	48,100	76,400	95,900
Power Input ¹ (W)	180	230	360
Heating Mode Performance			
Capacity (Btu/h)	46,115	73,080	91,360
Power Input ¹ (W)	180	230	360
Entering Air			
Cooling Max. (°F WB)	90	90	90
Heating Min. (°F DB)	23	23	23
Unit Data			
Refrigerant Type ²	R410A		
Refrigerant Control	EEV		
Sound Power ³ dB(A) (H)	65	70	72
Dimensions (in.)	61-1/2 x 18-1/8 x 27-1/8		
Net Unit Weight (lbs.)	161	161	161
Shipping Weight (lbs.)	191	191	191
Communication Cable ⁴ (No. x AWG)	2 x 18	2 x 18	2 x 18
Coil			
Rows x Columns x FPI	3 x 20 x 19	3 x 20 x 19	3 x 20 x 19
Area (ft. ²)	6.35	6.35	6.35
Fan			
Type	Sirocco	Sirocco	Sirocco
Motor	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct		
Airflow Rate H/M/L (CFM) High Mode (Factory Set)	708 / 477 / 477	837 / 446 / 446	1,260 / 837 / 837
External Static Pressure (in. wg) High Mode (Factory Set)	0.71	0.86	0.86
Piping			
Liquid Line (in., O.D.)	3/8 Brazed	3/8 Brazed	3/8 Brazed
Vapor Line (in., O.D.)	5/8 Brazed	3/4 Brazed	7/8 Brazed
Condensate Line (in., I.D.)	1	1	1

EEV: Electronic Expansion Valve

Power wiring is field supplied and must comply with the applicable local and national codes.

This unit comes with a dry nitrogen charge.

This data is rated 0 ft above sea level, with 25 feet of refrigerant line per outside air unit and a 0 feet level difference between outdoor unit and outside air units.

Cooling capacity is based on outdoor temperature conditions at 91.4°F dry bulb (DB) and 82.4°F wet bulb (WB).

Heating capacity is based on outdoor temperature conditions at 32°F dry bulb (DB) and 26.78°F wet bulb (WB).

Minimum discharge air setpoint in cooling mode is 64°F.

¹Power Input is rated at high speed.

²Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

³Sound Power levels are tested in a reverberation room under ISO Standard 3741.

⁴Communication cable between Master outdoor units to outside air units to be 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the Master outdoor unit chassis only. Ⓢ Do not ground the outdoor unit to outside air unit communication cable at any other point. Wiring must comply with all applicable local and national codes.

Table 2: Outside Air Unit (BR and B8 Frame) Electrical Data.

Model	Voltage Range	MCA	MOP	Rated Amps (A)	Power Supply			Power Input (W)	
					Hz	Volts	Phase	Cooling	Heating
ARNU483B8Z4	208-230	2.7	15	2.15	60	208-230	1	180	180
ARNU763B8Z4		2.7		2.15				230	230
ARNU963B8Z4		2.7		2.15				360	360

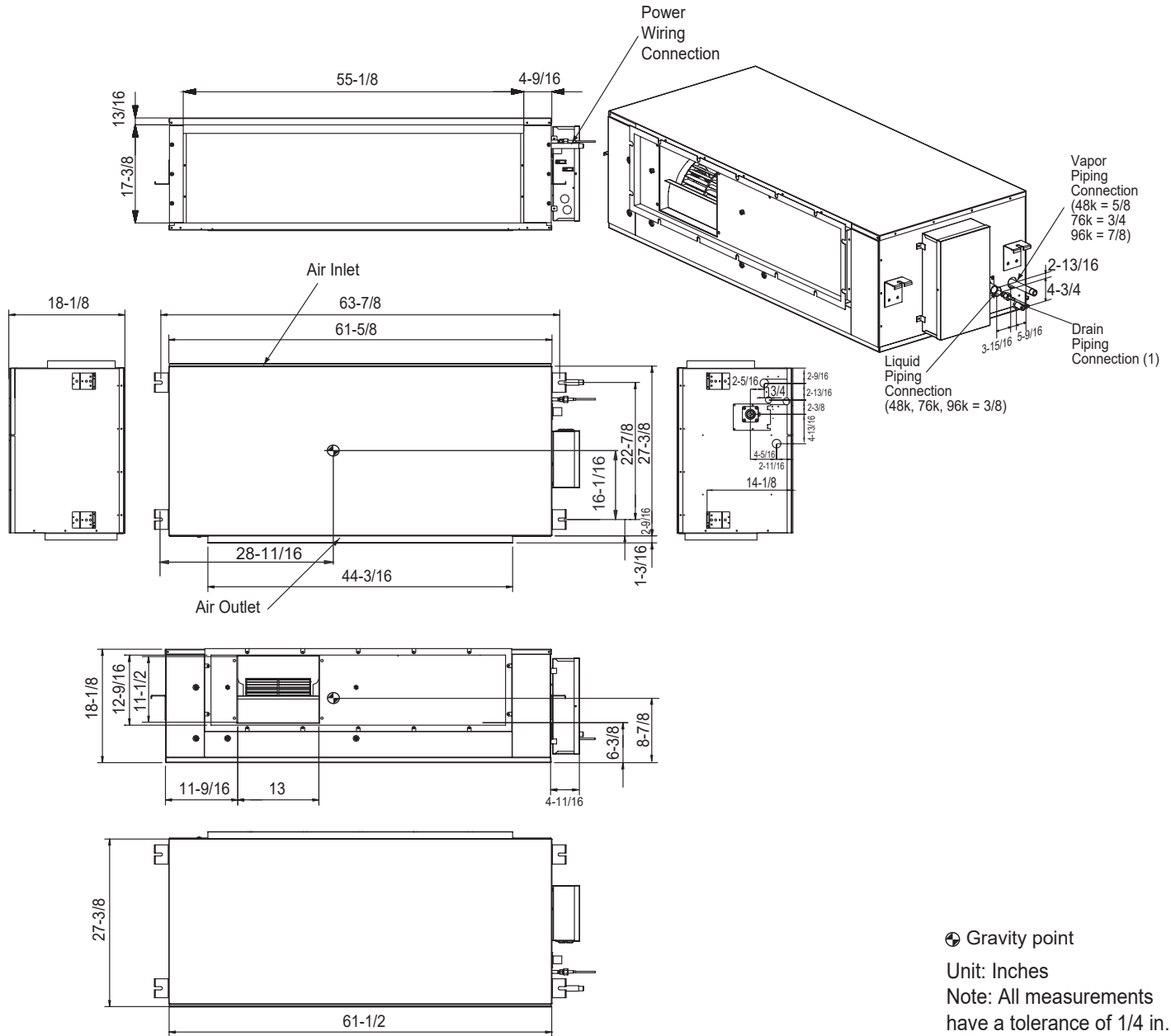
MCA: Minimum Circuit Ampacity.
MOP: Maximum Overcurrent Protection.

Units are suitable for use on an electrical system where voltage supplied to unit terminals is within the listed range limits.
Select wire size based on the larger MCA value.
Instead of fuse, use the circuit breaker.

EXTERNAL DIMENSIONS

ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4

Figure 4: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 Dimensions.



ELECTRICAL WIRING DIAGRAM

MULTI V™

ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4

Figure 5: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 Wiring Diagram.

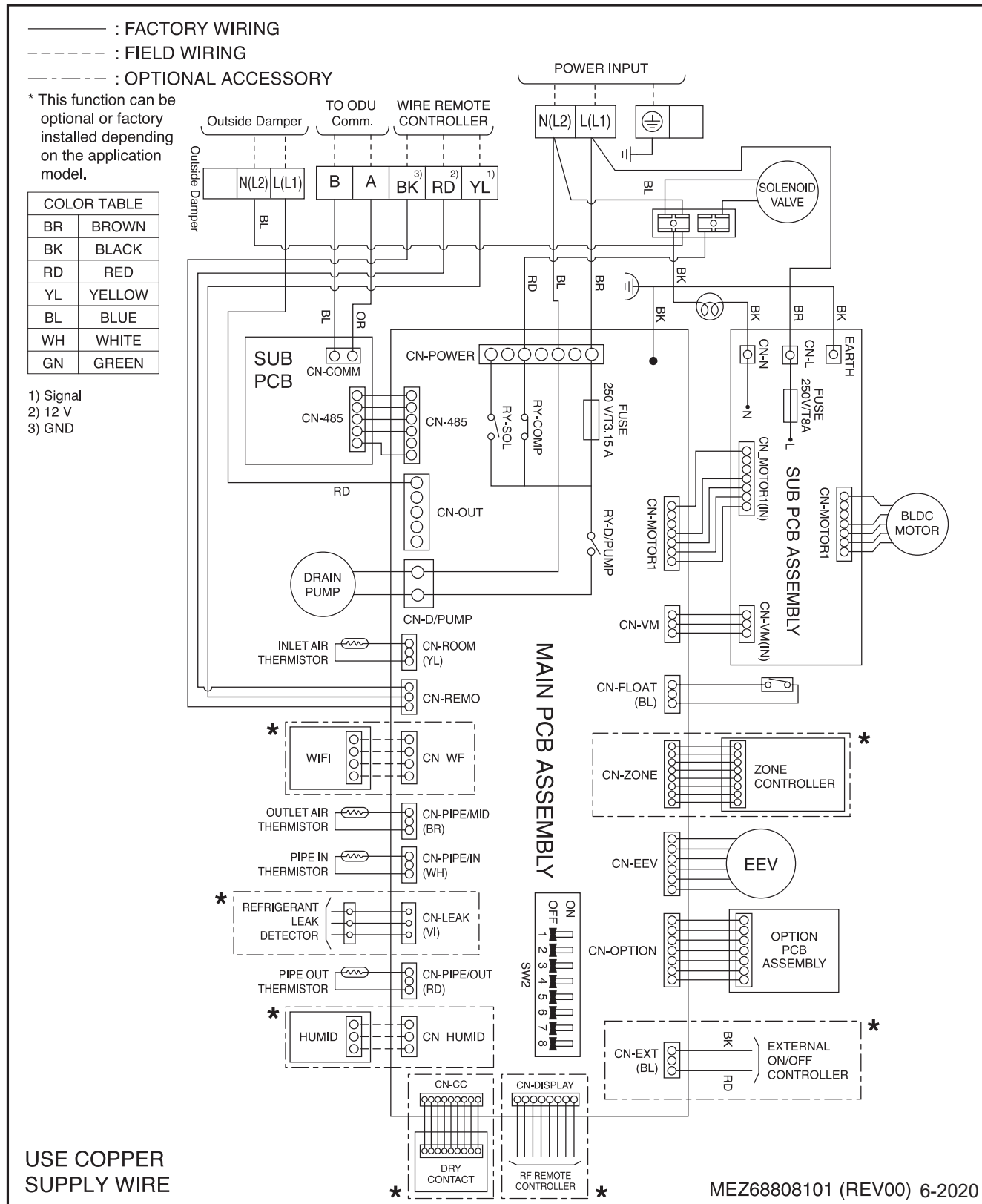


Table 3: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 Wiring Diagram Legend.

Terminal	Purpose	Function
CN-POWER	AC Power supply	AC Power line
CN-MOTOR1	Fan motor output	Motor output of BLDC
CN-VM	Sub PCB to main PCB power supply	Power supply connection
CN-FLOAT	Float switch input	Float switch sensing
CN-ZONE	Zone controller	Zone controller connection
CN-EEV	EEV Output	EEV control output
CN-OPTION	Optional PCB EEPROM	Option PCB connection
CN-EXT	External on / off controller	External on / off Controller connection
CN-DISPLAY	Display	Display of indoor status
CN-CC	Dry contact	Dry Contact connection
CN-HUMID	N / A	N / A
CN-PIPE/OUT	Discharge pipe sensor	Pipe out thermistor
CN-LEAK	Leak detector	Leak detector connection
CN-PIPE/IN	Suction pipe sensor	Pipe in thermistor
CN-PIPE/MID	Outlet air thermistor	Outlet air thermistor connection
CN-WF	Wi-Fi	Wi-Fi module connection
CN-REMO	Wired remote controller	Wired remote control connection
CN-ROOM	Room sensor	Room air thermistor
CN-D/PUMP	Drain pump output	AC output for drain pump
CN-OUT	Outdoor air damper output	Output to open motorized outdoor air damper
CN-485	Communication	Connection between indoor and outdoor units

Table 4: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Master	Slave	Group control setting using 7-Day Programmable Controller; selects Master / Slave on each indoor unit
SW4	DRY CONTACT MODE	Variable	Auto	Sets operation mode for optional Dry Contact accessory 1. Variable: Auto or Manual Mode can be set through 7-Day Programmable Controller or Wireless Remote Controller (factory default setting is Auto if there is no setting) 2. Auto: For Dry Contact, it is always Auto mode
SW5	CONTINUOUS FAN	Off	On	Selects continuous fan for ducted indoor units. 1. On: Indoor unit fan will always operate at a set fan speed, except when the system is off, or the outdoor unit is in defrost mode (when the outdoor unit is in defrost mode, the fan will operate at super low fan speed) 2. Off: Indoor unit fan speed can be changed by on / off
SW7	OPERATION RANGE	Off	On	1. On: Extends maximum entering air operating temperature range to 118°F. 2. Off: Default value. Maximum entering air operating temperature range is 109°F

***For Gen 4 Multi V ducted units, DIP Switches 1, 2, 6 through 8 must be set to OFF. These DIP switches are used for other models.**

****To enable Generation 4 features, outdoor unit DIP Switch No. 3 must be set to ON. Please refer to the Multi V IV, Multi V Water IV, Multi V S Engineering Manual for additional information.**

REFRIGERANT FLOW DIAGRAM

ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4

Figure 6: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 Refrigerant Flow Diagram.

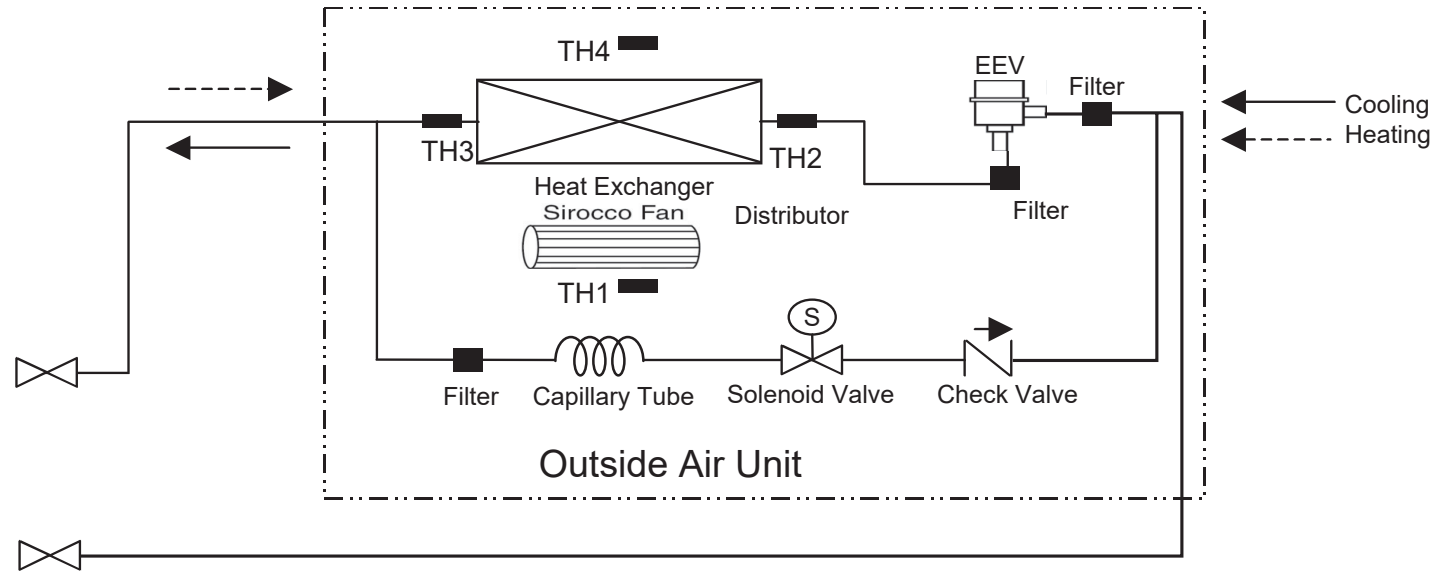


Table 5: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 Refrigerant Piping Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
ARNU483B8Z4	3/8 Brazed	5/8 Brazed
ARNU763B8Z4		3/4 Brazed
ARNU963B8Z4		7/8 Brazed

Table 6: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 Thermistors.

Thermistor	Description
TH1	Outlet air thermistor
TH2	Pipe in thermistor
TH3	Pipe out thermistor
TH4	Inlet air thermistor

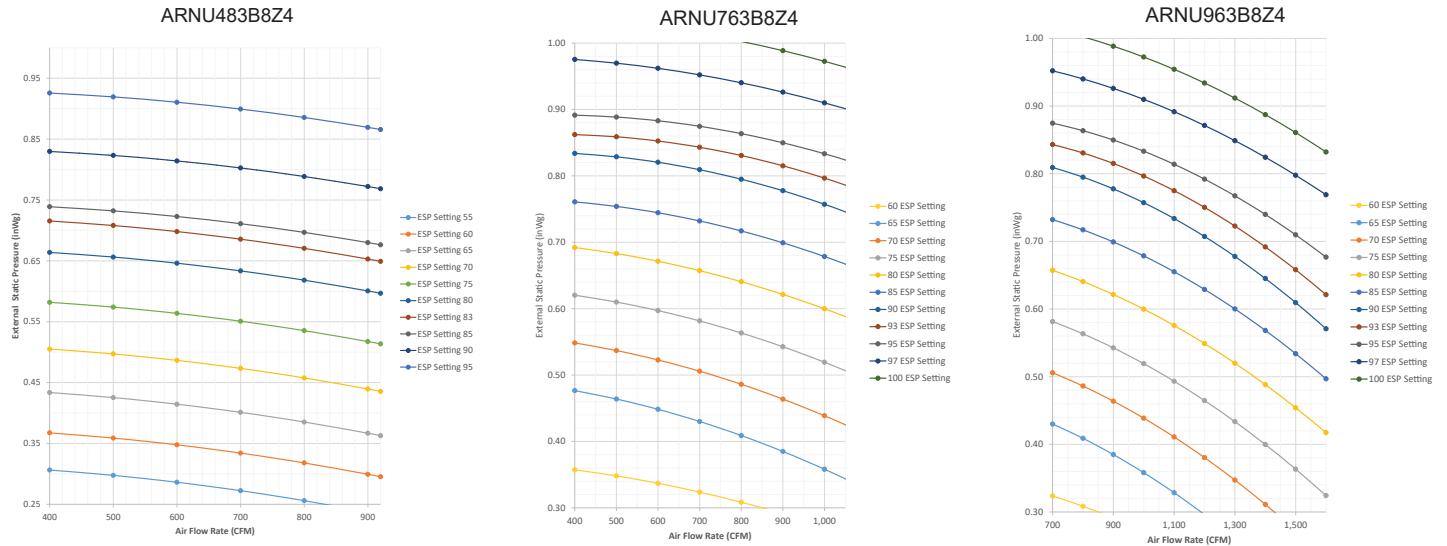
Note:

- The solenoid valve will open in heating mode thermal ON, defrost, and oil return modes.
- The solenoid valve will close when the outside air unit is OFF, in cooling mode, or heating mode thermal OFF.

EXTERNAL STATIC PRESSURE / AIR FLOW GRAPHS

ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4

Figure 7: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 External Static Pressure / Air Flow Graphs.



ACOUSTIC DATA

Sound Power Levels

Table 7: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 Sound Power Levels.

Model	Sound Power Levels dB(A)
	High Fan Speed (Casing Radiated)
ARNU483B8Z4	54
ARNU763B8Z4	56
ARNU963B8Z4	57

- Data is valid under diffuse field conditions.
- Data is valid under nominal operating conditions.
- Sound power level is measured using rated conditions, and tested in a reverberation room per ISO 3741 standards.
- Sound level will vary depending on a range of factors such as construction (acoustic absorption coefficient) of particular area in which the equipment is installed.
- Reference acoustic intensity: 0dB = 10E-6μW/m²

Figure 8: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 Sound Power Level Diagrams (Casing Radiated).

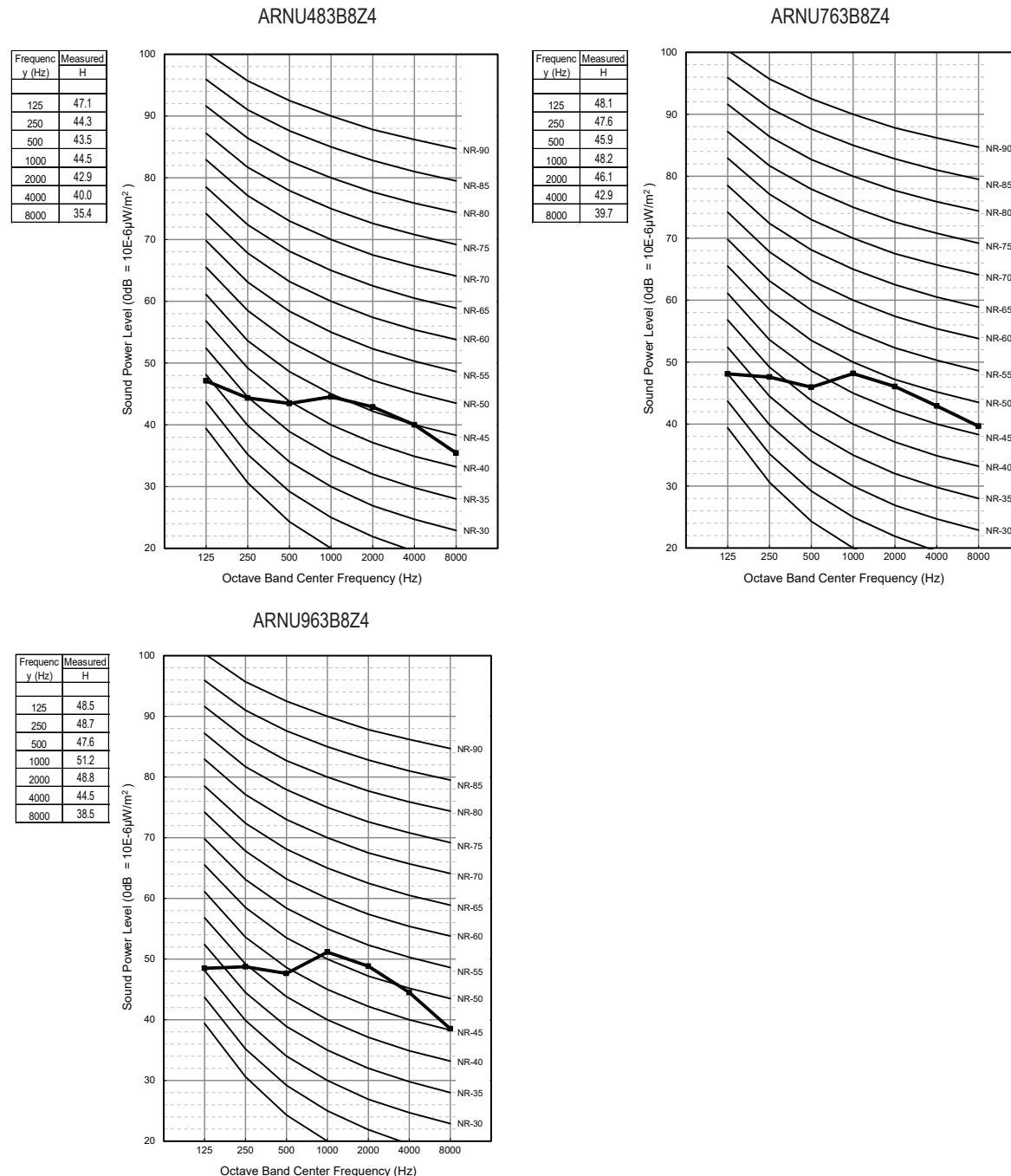


Table 8: ARNU483B8Z4 Cooling Capacity Table.

Outdoor Air Temp. (°F W.B.)	°F D.B. (MBtu/h)																											
	70		73		77		81		84		88		91		95		99		104		109		113		118			
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC		
90.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59.7	17.0	59.0	19.1	58.3	22.9	56.3	26.3	54.6	28.0	51.9	31.7		
89.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58.4	18.0	57.3	19.6	56.5	23.3	54.6	27.0	52.8	28.9	50.1	32.3		
88.7	-	-	-	-	-	-	-	-	-	-	-	-	-	59.1	16.9	58.0	18.1	56.8	19.8	56.0	23.4	54.1	27.2	52.3	29.1	49.6	32.5	
88.0	-	-	-	-	-	-	-	-	-	-	-	-	-	58.0	16.8	57.0	18.3	55.6	20.2	54.8	23.8	52.9	27.7	51.0	29.7	48.4	32.9	
87.6	-	-	-	-	-	-	-	-	-	-	-	-	-	57.3	16.7	56.4	18.4	54.9	20.4	54.0	23.9	52.2	27.9	50.2	30.1	47.6	33.2	
87.0	-	-	-	-	-	-	-	-	-	-	-	-	-	56.4	16.6	55.7	18.5	53.9	20.7	53.0	24.2	51.2	28.3	49.2	30.6	46.5	33.4	
86.0	-	-	-	-	-	-	-	-	-	-	-	-	-	54.9	16.4	54.3	18.8	52.2	21.2	51.2	24.6	49.5	29.0	47.4	31.4	44.4	33.8	
85.2	-	-	-	-	-	-	-	-	-	-	54.7	16.3	53.6	16.9	53.0	19.3	51.1	21.7	50.1	24.5	48.5	28.3	46.1	30.7	43.3	33.3		
85.0	-	-	-	-	-	-	-	-	-	-	54.5	16.4	53.2	17.1	52.7	19.4	50.8	21.8	49.8	24.4	48.2	28.2	45.8	30.5	43.0	33.2		
84.0	-	-	-	-	-	-	-	-	-	-	53.5	17.0	51.5	17.8	51.1	20.0	49.5	22.4	48.5	24.3	47.0	27.3	44.2	29.5	41.5	32.6		
83.6	-	-	-	-	-	-	-	-	-	-	53.1	17.2	50.9	18.0	50.5	20.2	49.0	22.6	48.0	24.2	46.5	27.0	43.6	29.2	41.0	32.4		
83.0	-	-	-	-	-	-	-	-	-	-	52.5	17.5	49.8	18.4	49.4	20.6	48.1	22.9	47.1	24.1	45.7	26.5	42.8	28.7	40.1	32.0		
82.0	-	-	-	-	-	-	-	-	-	-	51.5	18.1	48.1	19.1	47.8	21.2	46.7	23.5	45.7	23.9	44.4	25.6	41.6	28.0	38.6	31.4		
81.7	-	-	-	-	-	-	-	-	-	51.7	17.0	50.9	18.2	47.7	19.3	47.3	21.4	46.1	23.7	45.0	24.4	43.6	26.3	39.9	30.5	38.8	32.8	
81.1	-	-	-	-	-	-	-	-	-	50.5	16.8	49.6	18.3	46.9	19.6	46.4	21.8	44.7	24.0	43.5	25.5	41.8	27.9	38.7	31.0	38.1	33.0	
81.0	-	-	-	-	-	-	-	-	-	50.4	16.8	49.5	18.3	46.9	19.7	46.3	21.9	44.6	24.1	43.4	25.6	41.7	28.0	38.6	31.0	38.0	33.0	
80.0	-	-	-	-	-	-	-	-	-	48.5	16.6	47.4	18.6	45.6	20.2	44.8	22.5	42.4	24.6	41.2	27.3	39.6	29.3	37.1	30.9	36.7	32.7	
79.0	-	-	-	-	-	-	-	-	-	46.7	16.4	45.4	18.8	44.4	20.8	43.3	23.2	40.3	25.2	38.9	29.0	37.5	30.7	34.8	32.4	35.8	33.4	
78.2	-	-	-	-	-	-	46.6	15.6	45.3	17.2	43.7	19.0	42.8	21.1	41.7	23.5	39.0	25.7	37.8	29.3	36.6	30.7	34.0	31.9	34.7	32.6		
78.0	-	-	-	-	-	-	46.2	15.6	44.9	17.4	43.2	19.1	42.4	21.2	41.3	23.5	38.6	25.8	37.5	29.4	36.3	30.7	33.8	31.8	34.4	32.4		
77.2	-	-	-	-	-	-	44.7	15.8	43.4	18.2	41.4	19.3	40.6	21.4	39.7	23.8	37.3	26.4	36.4	29.7	35.3	30.6	32.9	31.3	33.3	31.6		
77.0	-	-	-	-	-	-	44.4	15.8	43.1	18.3	41.1	19.4	40.3	21.5	39.3	23.9	37.0	26.5	36.2	29.7	35.1	30.6	32.8	31.2	33.1	31.5		
76.0	-	-	-	-	-	-	42.6	15.9	41.3	19.3	38.9	19.7	38.3	21.9	37.4	24.2	35.3	27.1	34.8	29.8	34.0	30.6	31.8	30.6	31.7	30.5		
75.0	-	-	-	-	-	-	40.8	16.1	39.4	20.3	36.7	19.9	36.2	22.2	35.4	24.5	33.7	27.8	33.4	29.9	32.8	30.5	30.7	29.9	30.3	29.5		
74.7	-	-	-	-	40.0	15.5	40.3	16.1	38.9	20.6	36.1	20.0	35.6	22.3	34.8	24.6	33.2	28.0	33.0	29.9	32.4	30.5	30.4	29.7	29.9	29.2		
74.0	-	-	-	-	39.0	15.6	39.0	16.2	37.6	21.2	34.6	20.2	34.2	22.6	33.4	24.9	32.0	28.4	32.1	29.9	31.6	30.5	29.7	29.3	29.0	28.6		
73.3	-	-	-	-	38.0	15.7	37.8	16.4	36.4	21.9	33.1	20.4	32.7	22.8	32.0	25.1	30.9	28.9	31.1	30.0	30.8	30.4	29.0	28.9	28.0	27.9		
73.0	-	-	-	-	37.5	15.7	37.2	16.4	35.8	22.2	32.4	20.5	32.1	22.9	31.4	25.2	30.2	28.4	30.7	30.0	30.4	30.4	28.7	28.7	27.6	27.6		
72.0	-	-	-	-	35.0	15.5	34.1	16.7	32.8	21.6	30.0	20.9	30.1	22.6	29.3	24.7	28.0	26.6	28.3	27.8	28.0	28.0	26.4	26.4	23.6	23.6		
71.2	-	-	34.1	9.3	32.9	15.4	31.7	16.8	30.5	21.1	28.1	21.3	28.5	22.4	27.7	24.3	26.3	25.3	26.4	26.0	26.1	26.1	24.5	24.5	19.5	19.5		
71.0	-	-	33.5	9.6	32.4	15.4	31.1	16.9	29.9	21.0	27.7	21.4	28.1	22.4	27.2	24.2	25.9	24.9	26.0	25.6	25.6	24.1	24.1	19.4	19.4			
70.7	-	-	32.8	10.0	31.7	15.3	30.2	17.0	29.1	20.8	27.0	21.5	27.6	22.3	26.7	24.0	25.3	24.5	25.3	25.0	25.0	25.0	23.4	23.4	19.1	19.1		
70.0	-	-	30.7	11.1	29.9	15.2	28.0	17.2	26.9	20.4	25.3	21.8	26.1	22.1	25.7	23.3	23.7	23.2	23.6	23.4	23.2	23.2	21.7	21.7	18.5	18.5		
69.0	-	-	28.0	12.6	27.3	15.0	24.9	17.4	23.9	19.8	22.9	22.2	24.1	21.8	24.3	22.4	21.5	21.5	21.2	21.2	20.8	20.8	19.4	19.4	17.7	17.7		
68.2	-	-	26.6	12.7	26.0	15.1	23.9	17.4	23.1	19.5	22.3	21.7	22.5	21.6	23.2	21.6	20.8	20.8	20.5	20.5	20.1	20.1	18.7	18.7	-	-		
68.0	-	-	26.3	12.7	25.7	15.1	23.7	17.4	22.9	19.4	22.1	21.5	22.3	21.5	23.0	21.4	20.7	20.7	20.4	20.4	20.0	20.0	18.5	18.5	-	-		
67.6	28.3	11.1	25.7	12.8	25.1	15.2	23.2	17.4	22.6	19.3	21.9	21.3	21.9	21.1	22.5	21.1	20.3	20.3	20.1	20.1	19.7	19.7	18.2	18.2	-	-		
67.0	26.9	11.0	24.6	12.8	24.1	15.2	22.4	17.4	21.9	19.0	21.4	20.9	21.2	20.5	21.6	20.5	19.8	19.8	19.6	19.6	19.2	19.2	17.6	17.6	-	-		
66.0	24.8	11.0	22.9	13.0	22.5	15.4	21.2	17.4	21.0	18.7	20.6	20.2	20.1	19.6	20.3	19.5	19.0	19.0	18.8	18.8	18.4	18.4	16.7	16.7	-	-		
65.6	24.0	11.0	22.2	13.0	21.9	15.4	20.7	17.4	20.6	18.5	20.3	20.0	19.6	19.2	19.8	19.2	18.6	18.6	18.5	18.5	18.1	18.1	16.4	16.4	-	-		
65.0	22.7	11.0	21.1	13.1	20.9	15.5	19.9	17.4	20.0	18.3	19.5	19.3	18.9	18.6	18.9	18.6	18.1	18.1	18.0	18.0	17.6	17.6	15.8	15.8	-	-		
64.0	20.5	10.9	19.4	13.2	19.3	15.6	18.7	17.4	19.0	17.9	18.3	18.2	17.8	17.7	17.6	17.6	17.3	17.3	17.2	17.2	16.8	16.8	14.9	14.9	-	-		
63.1	18.5	10.9	17.8	13.3	17.8	15.7	17.5	17.4	17.7	17.4	17.2	17.2	16.8	16.8	16.8	16.8	16.5	16.5	16.5	16.5	16.1	16.1	14.1	14.1	-	-		
63.0	18.4	10.9	17.7	13.3	17.7	15.7	17.4	17.4	17.1	17.1	17.1	17.1	16.7	16.7	16.7	16.7	16.4	16.4	16.4	16.4	16.0	16.0	14.0	14.0	-	-		
62.6	18.4	10.9	17.7	13.4	17.7	15.8	17.4	17.4	17.1	17.1	17.1	17.1	16.7	16.7	16.6	16.6	16.4	16.4	-	-	-	-	-	-	-	-		
62.0	18.2	11.1	17.6	13.7	17.6	16.1	17.3	17.3	17.0	17.0	17.0	17.0	16.6	16.6	16.5	16.5	16.3	16.3	-	-	-	-	-	-	-	-		
61.0	18.0	11.5	17.6	14.0	17.6	16.4	17.2	17.2	16.9	16.9	16.9	16.9	16.6	16.6	16.4	16.4	16.2	16.2	-	-	-	-	-	-	-	-		
60.5	17.8	11.7	17.5	14.2	17.5	16.6	17.2	17.2	16.9	16.9	16.9	16.9	16.5	16.5	16.3	16.3	16.2	16.2	-	-	-	-	-	-	-	-		
60.0	17.7	11.9	17.5	14.4	17.5	16.8	17.2	17.2	16.8	16.8	16.8	16.8	16.5	16.5	16.2	16.2	16.1	16.1	-	-	-	-	-	-	-	-		
59.0	17.4	12.3	17.4	14.7	17.4	17.1	17.1	17.1	16.7	16.7	16.7	16.7	16.4	16.4	16.0	16.0	16.0	16.0	-	-	-	-	-	-	-	-		
58.0	17.1	12.6	17.3	15.1	17.3	17.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
58.0	16.8	12.6	16.7	15.1	17.3	17.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
57.0	15.7	12.9	16.2	15.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
56.0	15.0	13.2	15.8	15.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
55.4	14.5	13.3	16.0	16.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
55.0	14.3	13.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					

TC: Total Capacity (MBh); SHC: Sensible Heat Capacity (MBh).

This data is rated 0 ft above sea level, with 25 feet of refrigerant line per Outside Air unit and a 0 feet level difference between outdoor and Outside Air units.

COOLING CAPACITY TABLES



ARNU763B8Z

Table 9: ARNU763B8Z4 Cooling Capacity Table.

Outdoor Air Temp. (°F W.B.)	°F D.B. (MBtu/h)																										
	70		73		77		81		84		88		91		95		99		104		109		113		118		
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	
90.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91.1	27.6	90.1	29.7	89.4	34.5	86.0	37.5	82.9	40.6	80.5	42.7	
89.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88.0	27.8	87.1	30.1	86.3	34.8	83.6	37.9	80.6	40.8	78.3	43.1	
88.7	-	-	-	-	-	-	-	-	-	-	-	-	-	89.5	25.8	87.1	27.8	86.2	30.3	85.3	34.9	82.9	38.1	79.9	40.8	77.7	43.2
88.0	-	-	-	-	-	-	-	-	-	-	-	-	-	87.3	25.8	85.0	28.0	84.1	30.6	83.1	35.2	81.2	38.4	78.3	41.0	76.1	43.5
87.6	-	-	-	-	-	-	-	-	-	-	-	-	-	86.2	25.8	83.8	28.0	83.0	30.7	81.9	35.3	80.3	38.5	77.4	41.0	75.3	43.6
87.0	-	-	-	-	-	-	-	-	-	-	-	-	-	84.3	25.8	81.9	28.1	81.1	31.0	80.0	35.5	78.8	38.8	76.0	41.1	73.8	43.8
86.0	-	-	-	-	-	-	-	-	-	-	-	-	-	81.2	25.9	78.8	28.3	78.1	31.4	76.8	35.8	76.4	39.2	73.7	41.3	71.3	44.0
85.2	-	-	-	-	-	-	-	-	-	-	-	81.7	25.0	80.2	26.5	77.7	29.0	76.8	32.0	75.7	36.5	74.9	39.5	72.1	41.9	69.8	44.3
85.0	-	-	-	-	-	-	-	-	-	-	81.5	25.1	80.0	26.7	77.5	29.2	76.4	32.2	75.4	36.7	74.5	39.6	71.7	42.0	69.4	44.4	
84.0	-	-	-	-	-	-	-	-	-	-	80.5	25.5	78.8	27.5	76.1	30.0	74.7	33.0	73.9	37.5	72.5	39.9	69.7	42.7	67.6	44.9	
83.6	-	-	-	-	-	-	-	-	-	-	80.1	25.6	78.4	27.7	75.6	30.3	74.1	33.2	73.4	37.8	71.8	40.0	69.0	43.0	66.9	45.0	
83.0	-	-	-	-	-	-	-	-	-	-	79.5	25.9	77.6	28.2	74.8	30.9	73.0	33.7	72.5	38.4	70.6	40.3	68.0	43.3	65.7	45.3	
82.0	-	-	-	-	-	-	-	-	-	-	78.5	26.3	76.4	29.0	73.4	31.7	71.3	34.5	71.0	39.2	68.6	40.6	66.5	43.7	63.8	45.7	
81.7	-	-	-	-	-	-	-	-	-	77.5	24.8	77.1	26.5	75.1	29.2	72.4	31.9	70.4	34.7	69.8	39.4	67.1	41.2	63.2	44.6	61.3	46.5
81.1	-	-	-	-	-	-	-	-	-	75.2	24.8	74.8	26.8	73.0	29.6	70.6	32.3	68.9	35.2	67.9	39.7	64.6	42.3	61.6	45.0	59.7	46.9
81.0	-	-	-	-	-	-	-	-	-	74.6	24.8	74.2	26.9	72.4	29.7	70.2	32.4	68.5	35.3	67.4	39.8	64.2	42.4	61.2	45.1	59.3	47.0
80.0	-	-	-	-	-	-	-	-	-	70.4	24.9	69.8	27.4	68.5	30.3	67.0	33.1	65.6	36.0	63.7	40.3	61.1	43.2	59.0	45.7	57.0	47.6
79.0	-	-	-	-	-	-	-	-	-	66.2	24.9	65.5	28.0	64.5	31.0	63.8	33.8	62.8	36.8	60.1	40.9	58.0	44.0	55.3	46.7	53.6	48.5
78.2	-	-	-	-	-	-	65.4	23.7	64.3	25.1	63.6	28.2	62.6	31.2	61.9	34.0	60.7	36.9	58.2	41.2	56.1	44.0	53.6	46.2	52.0	47.5	
78.0	-	-	-	-	-	-	64.9	23.7	63.9	25.1	63.1	28.2	62.1	31.2	61.4	34.1	60.1	36.9	57.7	41.3	55.7	44.0	53.2	46.0	51.6	47.3	
77.2	-	-	-	-	-	-	63.1	23.6	62.0	25.3	61.2	28.4	60.2	31.4	59.3	34.3	57.9	37.0	55.8	41.7	53.8	43.9	51.5	45.5	49.9	46.3	
77.0	-	-	-	-	-	-	62.7	23.6	61.5	25.4	60.7	28.4	59.7	31.5	58.9	34.4	57.4	37.1	55.4	41.7	53.3	43.9	51.1	45.4	49.5	46.1	
76.0	-	-	-	-	-	-	60.4	23.6	59.2	25.6	58.4	28.7	57.4	31.7	56.5	34.7	54.8	37.2	53.1	41.6	51.0	43.9	49.0	44.7	47.5	44.9	
75.0	-	-	-	-	-	-	58.1	23.6	56.9	25.8	56.0	28.9	55.0	31.9	54.0	34.9	52.1	37.3	50.7	41.5	48.7	43.8	46.9	44.0	45.4	43.7	
74.7	-	-	-	-	57.9	20.9	57.4	23.6	56.1	25.9	55.2	28.9	54.2	32.0	53.2	35.0	51.2	37.4	50.0	41.5	47.9	43.8	46.2	43.8	44.7	43.3	
74.0	-	-	-	-	56.6	21.3	55.9	23.5	54.5	26.1	53.6	29.1	52.6	32.2	51.6	35.2	49.4	37.4	48.4	41.4	46.3	43.8	44.8	43.4	43.4	42.5	
73.3	-	-	-	-	55.2	21.6	54.3	23.5	52.9	26.2	51.9	29.2	50.9	32.3	49.9	35.4	47.6	37.5	46.8	41.3	44.7	43.7	43.4	42.9	41.9	41.7	
73.0	-	-	-	-	54.6	21.8	53.6	23.5	52.2	26.3	51.2	29.3	50.2	32.4	49.1	35.5	46.7	37.4	46.1	41.3	44.0	43.7	42.7	42.7	41.3	41.3	
72.0	-	-	-	-	51.2	22.1	50.3	24.0	49.0	26.9	48.1	30.0	47.7	32.6	46.6	35.5	44.0	36.9	43.5	39.9	41.9	41.7	40.7	40.7	39.1	39.1	
71.2	-	-	49.2	16.2	48.6	22.3	47.7	24.4	46.5	27.4	45.8	30.5	45.8	32.7	44.6	35.6	41.9	36.6	41.6	38.9	40.3	40.1	39.1	39.1	37.4	37.4	
71.0	-	-	48.5	16.6	47.8	22.4	47.0	24.6	45.7	27.5	45.1	30.7	45.3	32.7	44.0	35.6	41.3	36.4	41.0	38.6	39.8	39.6	38.6	38.6	36.9	36.9	
70.7	-	-	47.5	17.0	46.7	22.4	46.0	24.7	44.7	27.7	44.1	30.9	44.5	32.8	43.2	35.6	40.4	36.3	40.2	38.1	39.1	39.0	38.0	38.0	36.2	36.2	
70.0	-	-	45.4	18.0	44.3	22.6	43.6	25.1	42.5	28.1	42.0	31.4	42.8	32.9	40.8	35.1	38.5	36.0	38.4	37.2	37.6	37.6	36.6	36.6	34.6	34.6	
69.0	-	-	42.3	19.4	40.9	22.9	40.3	25.6	39.2	28.7	38.9	32.1	40.3	33.0	37.2	34.5	35.8	35.5	35.8	35.8	35.5	35.5	34.5	34.5	32.4	32.4	
68.2	-	-	40.7	19.6	39.4	23.0	38.9	25.8	37.9	28.5	37.8	31.7	38.3	33.2	36.0	33.7	34.8	34.5	34.8	34.8	34.4	34.4	33.4	33.4	-	-	
68.0	-	-	40.4	19.6	39.0	23.1	38.6	25.8	37.7	28.5	37.6	31.6	38.0	33.0	35.7	33.5	34.6	34.3	34.6	34.6	34.2	34.2	33.1	33.1	-	-	
67.6	42.3	18.1	39.7	19.7	38.4	23.1	38.0	25.9	37.1	28.4	37.1	31.4	37.3	32.7	35.2	33.2	34.1	33.9	34.1	34.1	33.7	33.7	32.6	32.6	-	-	
67.0	40.9	18.1	38.4	19.9	37.2	23.2	36.9	26.1	36.1	28.3	36.3	31.1	36.1	32.1	34.2	32.6	33.3	33.1	33.3	33.3	32.9	32.9	31.8	31.8	-	-	
66.2	39.2	18.0	36.9	20.1	35.7	23.4	35.5	26.3	34.9	28.2	35.3	30.7	34.6	31.3	33.0	31.8	32.3	32.1	32.3	32.3	31.8	31.8	30.7	30.7	-	-	
66.0	38.8	18.0	36.5	20.1	35.3	23.4	35.2	26.3	34.6	28.1	35.0	30.6	34.3	31.1	32.7	31.6	32.1	31.9	32.1	32.1	31.6	31.6	30.4	30.4	-	-	
65.6	38.0	18.0	35.8	20.2	34.6	23.5	34.5	26.4	34.0	28.1	34.5	30.4	33.6	30.8	32.1	31.2	31.4	31.4	31.6	31.6	31.1	31.1	29.9	29.9	-	-	
65.0	36.7	17.9	34.6	20.3	33.4	23.6	33.4	26.5	33.1	27.9	33.2	29.8	32.4	30.2	31.2	30.6	30.7	30.7	30.8	30.8	30.2	30.2	29.0	29.0	-	-	
64.0	34.5	17.8	32.6	20.6	31.6	23.7	31.7	26.8	31.5	27.7	31.1	28.7	30.6	29.2	29.7	29.7	29.5	29.5	29.6	29.6	28.9	28.9	27.7	27.7	-	-	
63.1	32.7	17.7	31.0	20.8	30.0	23.9	30.2	27.0	30.2	27.6	29.3	27.8	29.0	28.4	28.8	28.8	28.5	28.5	28.5	28.5	27.8	27.8	26.5	26.5	-	-	
63.0	32.4	17.7	30.7	20.8	29.7	23.9	30.0	27.0	29.3	27.3	29.0	27.6	28.7	28.3	28.7	28.7	28.3	28.3	28.3	28.3	27.6	27.6	26.3	26.3	-	-	

Table 10: ARNU963B8Z4 Cooling Capacity Table.

Outdoor Air Temp. (°F W.B.)	°F D.B. (MBtu/h)																											
	70		73		77		81		84		88		91		95		99		104		109		113		118			
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC		
90.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128.3	39.9	126.2	41.6	89.4	34.5	86.0	37.5	82.9	40.6	80.5	42.7		
89.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123.6	39.9	121.8	42.3	86.3	34.8	83.6	37.9	80.6	40.8	78.7	50.1		
88.7	-	-	-	-	-	-	-	-	-	-	-	-	-	125.6	37.8	122.2	39.9	120.4	42.5	85.3	34.9	82.9	38.1	79.9	40.8	92.4	52.3	
88.0	-	-	-	-	-	-	-	-	-	-	-	-	-	122.4	37.4	118.9	39.9	117.4	43.0	83.1	35.2	81.2	38.4	78.3	41.0	98.8	57.5	
87.6	-	-	-	-	-	-	-	-	-	-	-	-	-	120.7	37.2	117.1	39.9	115.7	43.3	81.9	35.3	80.3	38.5	77.4	41.0	102.3	60.3	
87.0	-	-	-	-	-	-	-	-	-	-	-	-	-	117.9	36.8	114.2	39.9	112.9	43.7	80.0	35.5	78.8	38.8	76.0	41.1	98.1	58.7	
86.0	-	-	-	-	-	-	-	-	-	-	-	-	-	113.3	36.2	109.5	39.9	108.5	44.4	76.8	35.8	76.4	39.2	73.7	41.3	91.2	56.1	
85.2	-	-	-	-	-	-	-	-	-	-	112.3	34.5	109.9	36.2	106.5	40.0	105.0	44.5	75.7	36.5	74.9	39.5	78.5	47.1	85.8	54.0		
85.0	-	-	-	-	-	-	-	-	-	-	111.6	34.4	109.0	36.2	105.7	40.1	104.1	44.5	75.4	36.7	74.5	39.6	79.8	48.6	84.4	53.5		
84.0	-	-	-	-	-	-	-	-	-	-	108.3	34.3	104.6	36.2	101.9	40.3	99.7	44.6	73.9	37.5	72.5	39.9	85.8	55.9	77.5	50.9		
83.6	-	-	-	-	-	-	-	-	-	-	107.1	34.3	103.0	36.2	100.5	40.3	98.1	44.6	73.4	37.8	71.8	40.0	88.0	58.6	75.1	50.0		
83.0	-	-	-	-	-	-	-	-	-	-	105.0	34.2	100.3	36.2	98.0	40.4	95.2	44.6	72.5	38.4	70.6	40.3	79.6	52.8	70.7	48.3		
82.0	-	-	-	-	-	-	-	-	-	-	101.7	34.1	95.9	36.2	94.2	40.6	90.8	44.7	71.0	39.2	68.6	40.6	66.5	43.7	63.8	45.7		
81.7	-	-	-	-	-	-	-	-	-	100.9	32.4	100.5	34.6	95.2	37.0	93.5	41.4	90.4	45.5	69.8	39.4	74.2	46.8	74.2	53.5	66.0	49.3	
81.1	-	-	-	-	-	-	-	-	-	99.0	32.8	98.6	35.6	94.0	38.4	92.4	42.8	89.6	46.9	67.9	39.7	83.8	57.3	70.4	52.2	63.5	49.2	
81.0	-	-	-	-	-	-	-	-	-	98.6	32.9	98.1	35.8	93.6	38.7	92.1	43.1	89.4	47.3	67.4	39.8	82.1	56.4	69.4	51.8	62.8	49.1	
80.0	-	-	-	-	-	-	-	-	-	95.2	33.7	94.4	37.5	91.4	41.2	90.1	45.6	88.1	49.9	63.7	40.3	70.0	50.2	59.0	45.7	57.0	47.6	
79.0	-	-	-	-	-	-	-	-	-	91.8	34.5	90.8	39.2	89.1	43.7	88.0	48.1	86.7	52.5	60.1	40.9	58.0	44.0	55.3	46.7	53.6	48.5	
78.2	-	-	-	-	-	-	91.3	33.2	89.1	34.8	88.0	39.5	86.3	44.0	85.2	48.4	83.6	52.6	67.4	48.6	56.1	44.0	53.6	46.2	52.0	47.5		
78.0	-	-	-	-	-	-	90.6	33.2	88.4	34.9	87.3	39.6	85.6	44.1	84.4	48.5	82.8	52.7	69.3	50.6	55.7	44.0	53.2	46.0	51.6	47.3		
77.2	-	-	-	-	-	-	87.8	33.0	85.6	35.2	84.4	39.8	82.8	44.4	81.5	48.8	79.6	52.8	76.9	58.6	53.8	43.9	51.5	45.5	49.9	46.3		
77.0	-	-	-	-	-	-	87.1	33.0	85.0	35.3	83.7	39.9	82.1	44.5	80.8	48.9	78.9	52.9	75.6	57.9	53.3	43.9	51.1	45.4	49.5	46.1		
76.0	-	-	-	-	-	-	83.7	32.9	81.6	35.7	80.2	40.3	78.7	44.9	77.3	49.3	75.0	53.0	68.2	53.7	51.0	43.9	49.0	44.7	47.5	44.9		
75.0	-	-	-	-	-	-	80.3	32.7	78.1	36.0	76.7	40.6	75.2	45.3	73.7	49.7	71.1	53.2	60.8	49.6	48.7	43.8	46.9	44.0	45.4	43.7		
74.7	-	-	-	-	81.2	29.5	79.1	32.7	77.0	36.2	75.5	40.7	74.0	45.4	72.4	49.8	69.8	53.3	58.3	48.2	47.9	43.8	46.2	43.8	44.7	43.3		
74.0	-	-	-	-	79.2	30.0	76.8	32.6	74.7	36.4	73.1	41.0	71.7	45.7	70.1	50.1	67.3	53.4	53.5	45.4	46.3	43.8	44.8	43.4	43.4	42.5		
73.3	-	-	-	-	77.0	30.5	74.5	32.4	72.4	36.7	70.7	41.2	69.3	46.0	67.6	50.4	64.6	53.5	48.4	42.6	44.7	43.7	43.4	42.9	41.9	41.7		
73.0	-	-	-	-	76.1	30.7	73.4	32.4	71.3	36.8	69.6	41.3	68.2	46.1	66.5	50.5	63.5	53.2	46.1	41.3	44.0	43.7	42.7	42.7	41.3	41.3		
72.0	-	-	-	-	70.8	30.9	68.4	33.3	66.5	37.7	65.2	42.3	64.7	46.3	62.9	50.4	60.0	52.1	43.5	39.9	41.9	41.7	40.7	40.7	39.1	39.1		
71.2	-	-	64.9	24.2	66.8	31.0	64.5	33.9	62.8	38.3	61.8	43.1	62.0	46.4	60.2	50.3	57.3	51.3	41.6	38.9	40.3	40.1	39.1	39.1	37.4	37.4		
71.0	-	-	64.0	24.5	65.5	31.1	63.3	34.1	61.6	38.6	60.8	43.4	61.1	46.4	59.4	50.2	56.5	51.0	41.0	38.6	39.8	39.6	38.6	38.6	36.9	36.9		
70.7	-	-	63.0	24.8	63.9	31.1	61.8	34.4	60.1	38.8	59.4	43.7	60.0	46.5	58.3	50.2	55.4	50.7	40.2	38.1	39.1	39.0	38.0	38.0	36.2	36.2		
70.0	-	-	60.5	25.5	60.2	31.2	58.3	35.0	56.8	39.4	56.3	44.4	57.6	46.6	56.3	49.0	53.0	49.9	38.4	37.2	37.6	37.6	36.6	36.6	34.6	34.6		
69.0	-	-	57.0	26.6	54.9	31.4	53.2	35.8	51.9	40.3	51.9	45.4	54.0	46.7	53.4	47.4	49.5	48.8	35.8	35.8	35.5	35.5	34.5	34.5	32.4	32.4		
68.2	-	-	55.2	26.7	53.0	31.3	51.2	35.7	50.2	39.8	50.4	44.5	51.1	46.9	51.1	46.0	47.8	47.2	34.8	34.8	34.4	34.4	33.4	33.4	-	-		
68.0	-	-	54.8	26.7	52.6	31.3	50.8	35.7	49.8	39.7	50.1	44.3	50.6	46.5	50.6	45.7	47.5	46.9	34.6	34.6	34.2	34.2	33.1	33.1	-	-		
67.6	57.5	24.6	54.0	26.8	51.8	31.2	50.0	35.6	49.0	39.5	49.4	43.9	49.7	45.8	49.5	45.1	46.7	46.2	34.1	34.1	33.7	33.7	32.6	32.6	-	-		
67.0	55.7	24.4	52.6	26.8	50.4	31.2	48.4	35.6	47.6	39.1	48.2	43.3	48.0	44.6	47.7	44.1	45.4	44.9	33.3	33.3	32.9	32.9	31.8	31.8	-	-		
66.2	53.6	24.2	50.8	26.9	48.6	31.1	46.5	35.5	45.9	38.6	46.8	42.4	45.9	43.0	45.4	42.8	43.8	43.4	32.3	32.3	31.8	31.8	30.7	30.7	-	-		
66.0	53.1	24.2	50.4	27.0	48.1	31.1	46.1	35.5	45.5	38.5	46.4	42.2	45.4	42.6	44.8	42.4	43.4	43.0	32.1	32.1	31.6	31.6	30.4	30.4	-	-		
65.6	52.0	24.1	49.5	27.0	47.2	31.0	45.2	35.4	44.7	38.2	45.7	41.8	44.4	41.9	43.8	41.8	42.3	42.3	31.6	31.6	31.1	31.1	29.9	29.9	-	-		
65.0	50.4	24.0	48.1	27.1	44.2	30.9	43.7	35.3	43.4	37.8	43.9	40.5	42.7	40.7	42.0	40.8	41.1	41.1	30.8	30.8	30.2	30.2	29.0	29.0	-	-		
64.0	47.7	23.7	45.9	27.2	41.1	30.8	41.3	35.2	41.2	37.2	40.9	38.5	40.1	38.7	39.1	39.1	39.1	39.1	29.6	29.6	28.9	28.9	27.7	27.7	-	-		
63.1	45.4	23.5	45.5	27.3	38.9	30.7	39.2	35.1	39.4	36.7	38.3	36.8	37.9	37.1	37.7	37.7	37.5	37.5	28.5	28.5	27.8	27.8	26.5	26.5	-	-		
63.0	45.0	23.5	42.0	27.3	38.4	30.7	38.9	35.1	38.2	36.2	37.9	36.5	37.5	36.8	37.5	37.5	37.2	37.2	28.3	28.3	27.6	27.6	26.3	26.3	-	-		
-6																												

HEATING CAPACITY TABLES



ARNU483B8Z4, ARNU763B8Z4, ARNU963B8Z4

Table 11: ARNU483B8Z4, ARNU763B8Z4, and ARNU963B8Z4 Heating Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp. (°F D.B.)	Total Capacity (MBh)
ARNU483B8Z4 / 48.0	23	64.9
	27	49.1
	32	48.5
	37	47.1
	45	42.7
	52	37.5
	59	33.1
ARNU763B8Z4 / 76.0	23	81.2
	27	77.1
	32	73.0
	37	61.8
	45	55.6
	52	49.5
	59	43.7
ARNU963B8Z4 / 96.0	23	97.6
	27	96.9
	32	91.1
	37	88.7
	45	86.3
	52	74.7
	59	66.9

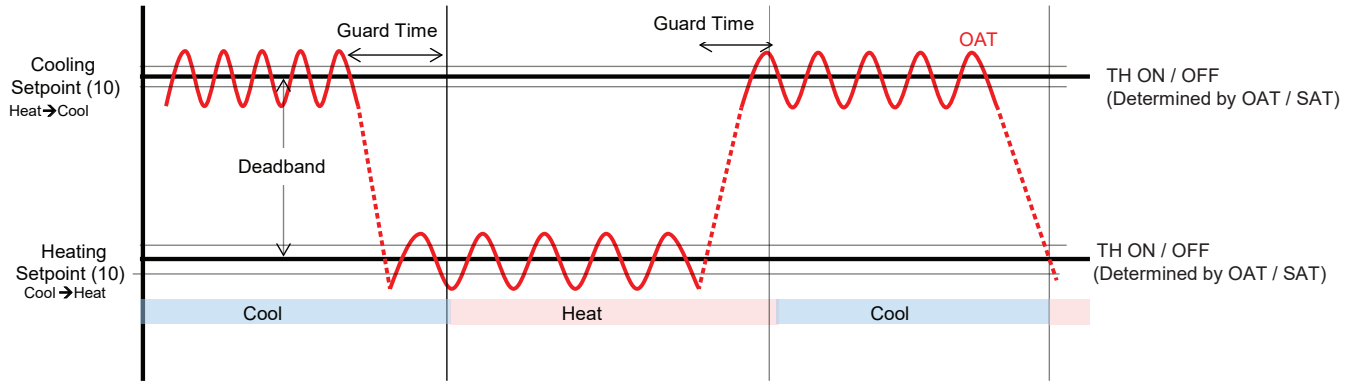
This data is rated 0 ft above sea level, with 25 feet of refrigerant line per Outside Air unit and a 0 feet level difference between outdoor units and outside air units.



Operation Sequence

Two set-point logic.

Figure 9: Outside Air Unit Operation Sequence.



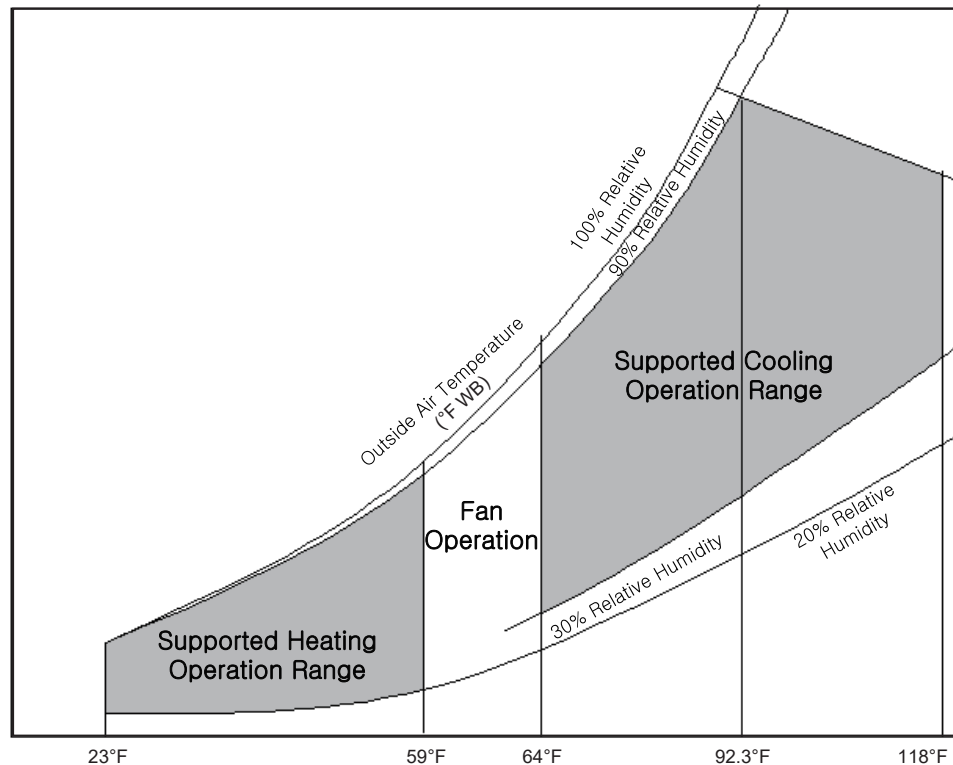
Operation Range

Outside air units operate in the temperature range shown in the diagrams below. Outdoor temperatures hotter than 118°F or colder than 23°F are not recommended, and capacity cannot be guaranteed.

Note:

Default maximum entering air temperature is 109°F. DIP Switch 7 on the outside air unit must be turned On to extend the range to 118°F.

Usage Limitations



Note:

- Fan only operation when entering air temperature is between 59°F and 64°F.
- When entering air temperature is <23°F in heating mode, fan will turn off.
- Default maximum entering air temperature is 109°F. DIP Switch 7 must be turned On to extend the range to 118°F.

Table 12: Optional Accessories for Outside Air Units.

Accessory	Model Number
High Efficiency Filter Box (Optional)*	ZFBXB801A (For 48, 76, and 96MBh B8 Frame Outside Air Units)

*Accessories are sold separately.

APPLICATION GUIDELINES

Installation Guidelines on page 24

Selecting the Best Location on page 24

General Mounting on page 25

Duct Installation on page 26

General Drain Piping Information on page 27

Refrigerant Piping Insulation on page 28

Wiring Guidelines on page 29

Control System on page 31

Acronyms on page 32

INSTALLATION GUIDELINES / SELECTING THE BEST LOCATION

Installation Guidelines

Note:

Failure to comply with the installation guidelines will cause a reduction in system cooling and heating capacity.

System Only Includes Outside Air Units

1. The total capacity of all outside air units must be 50 to 105% of the outdoor unit capacity.

Note:

Combination ratio of 106% is allowed when using 6 ton (76 MBH) outside air unit with 6 ton (72 MBH) outdoor unit.

2. If only Outside Air Units are connected, there is no limit on the quantity of Outside Air Units within the combination ratio.

System Includes a Combination of Standard Indoor Units and Outside Air Units

1. The total capacity of all standard indoor units and outside air units must be 50 to 105% of the outdoor unit capacity.
2. The total capacity of the outside air units must be less than 30% of outdoor unit capacity.
3. The maximum quantity of outside air units connected to one system is four (4).

Example:

4-Ton Outside Air Unit x 4 Units = 16 Tons → Required Outdoor / Water-Source Unit Capacity = 54 Tons.

- MV 5 Maximum Capacity (One System) = 42 Tons.
 - MV Water IV Maximum Capacity (One System) = 48 Tons.
- For IDU + OAU combination, maximum quantity of Outside Air Units connected to one system is three (3).

Selecting the Best Location

Do's

- Place the unit where air circulation will not be blocked.
- Place the unit where drainage can be obtained easily and to minimize the length of the condensate drain piping. "H" dimension in the figure at right is necessary for enough slope for drainage.
- Place the unit where noise prevention is taken into consideration.
- Place the unit in a location that can support a load four times the weight of the outside air unit, and where the unit can be level.
- Ensure there is sufficient maintenance space.
- Install the outside air unit in a location where it can be easily connected to the outdoor unit.



Do Not's

- Avoid installing the unit near high-frequency generators.
- Do not install the unit near a doorway.
- The unit must not be installed near a heat or steam source, or where considerable amounts of oil, iron powder, or flour are used. (These materials will generate condensate, cause a reduction in heat exchanger efficiency, or the drain pump to malfunction. If this is a potential problem, install a ventilation fan large enough to vent out these materials.)

Figure 10: System with Only Outside Air Units.

Outdoor Unit Capacity: 8 Ton

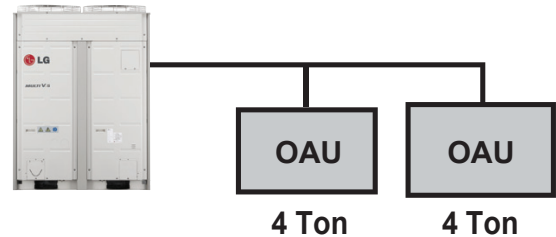


Figure 11: System with A Combination of Standard Indoor Units and Outside Air Units.

Outdoor Unit Capacity: 16 Ton

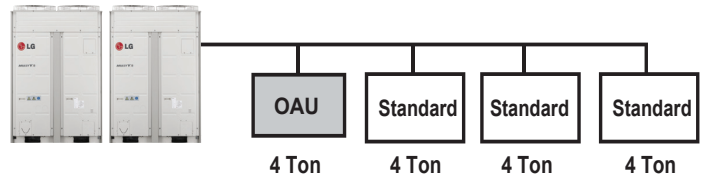
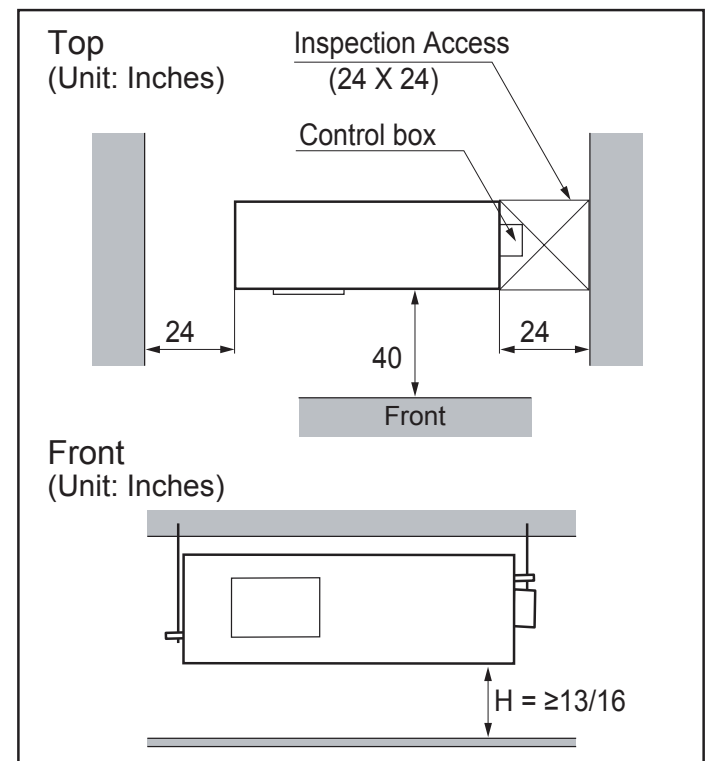


Figure 12: Service Clearances.



⚠ WARNING

The unit must not be installed where sulfuric acid and flammable or corrosive gases are generated, vented into, or stored. There is risk of fire, explosion, and physical injury or death.

The unit will be damaged, will malfunction, and / or will not operate as designed if installed in any of the conditions listed.

Note:

If the unit is installed near a body of water, the installation parts are at risk of corroding. Appropriate anti-corrosion methods must be taken for the unit and all installation parts.

Installing in an Area Exposed to Unconditioned Air

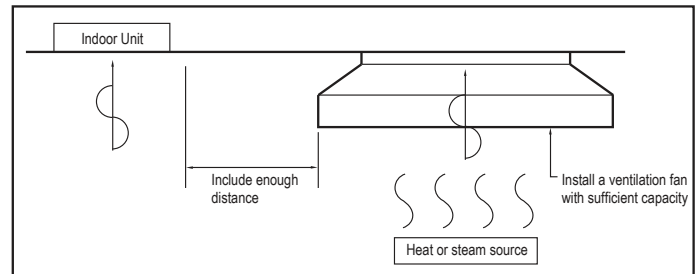
In some installation applications, areas (floors, walls) in some rooms will be exposed to unconditioned air (room will be above or next to an unheated garage or storeroom). To countermeasure:

- Verify that carpet is or will be installed (carpet will increase the temperature by three [3] degrees).
- Add insulation between the floor joists.
- Install radiant heat or another type of heating system to the floor.

General Mounting

- The ceiling must be strong and solid enough to protect the outside air unit from vibration.
- Refer to dimensions table below for the outside air unit frame size.
- Install a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Install a filter accessory at the air intake opening.
- Install the unit with a slope towards the drainage point to ensure condensate drains easily.

Figure 13: Installing Near a Heat or Steam Source.



⚠ Indoor units (IDUs) must not be placed in an environment where the IDUs will be exposed to harmful volatile organic compounds (VOCs) or in environments where there is improper air make up or supply or inadequate ventilation. If there are concerns about VOCs in the environment where the IDUs are installed, proper air make up or supply and/or adequate ventilation must be provided. Additionally, in buildings where IDUs will be exposed to VOCs, consider a third party factory-applied epoxy coating to the fan coils for each IDU where the entire coil is dipped, not sprayed.

Figure 14: Outside Air Unit B8 Frame Bolt Locations.

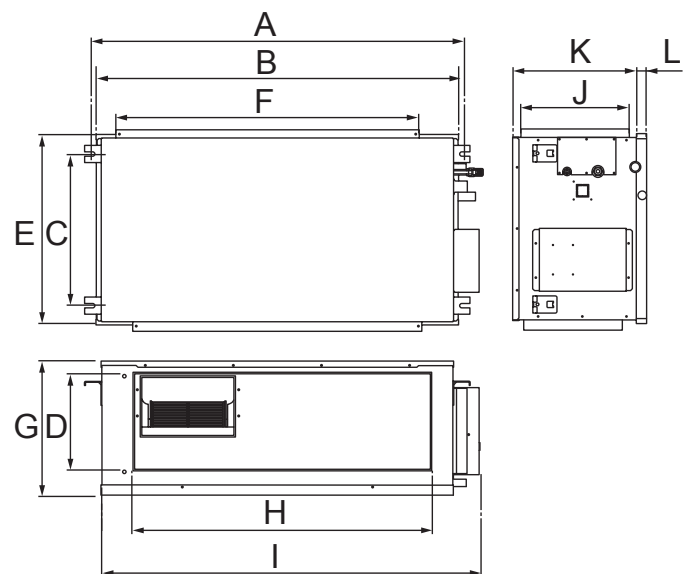


Table 13: Outside Air Unit B8 Frame Suspension Bolt Positions.

Frame	Dimensions (inches)											
	A	B	C	D	E	F	G	H	I	J	K	L
B8	63-7/8	61-5/8	22-7/8	11-1/2	27-3/8	55-1/8	18-1/8	44-3/16	66-3/16	15-3/8	17-9/16	5/8

GENERAL MOUNTING / DUCT INSTALLATION

General Mounting Procedure

1. Select and mark the areas where the hanging bolts should be placed.
2. Drill the holes.
3. Install the unit horizontally using a level gauge.

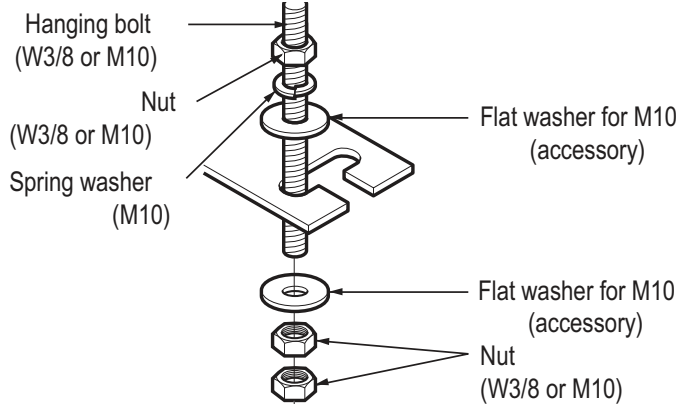
⚠ WARNING

⊘ Do not damage power wiring during installation. There is risk of electric shock, which will result in physical injury or death.

Note:

⊘ Do not damage power wiring during installation. There is a risk of equipment malfunction, which will result in property damage.

Figure 16: Hanging Bolt Installation.



The following parts are field supplied:

- Hanging bolt - W-3/8" or 1/2"
- Nut - W-3/8" or M10
- Spring washer - M10

Included with the indoor unit:

- Flat washer - M10

Duct Installation

- Inlet Hood—Install so that water will not enter inside the outside air unit.
- Intake Air Duct
 - Must slope downward 1/30.
 - Must be a minimum of 7 feet.
- Outside Air Unit—Connection of wired remote controller is required.
- Exhaust Fans—Install to maintain room pressure (outside air unit could introduce positive pressure into the room).
- Door—Add exhaust fans or relief dampers to room to avoid over-pressurization of the space, and to avoid doors from slamming.

Figure 15: Drilling Holes for the Hanging Bolts.

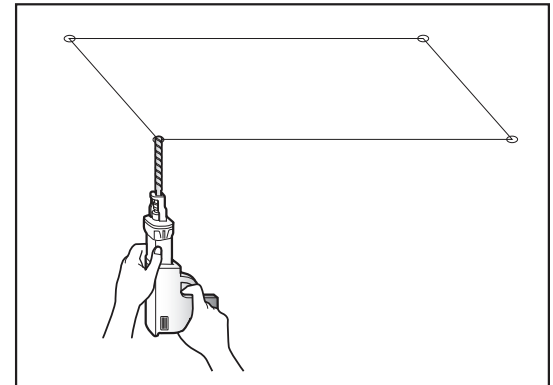
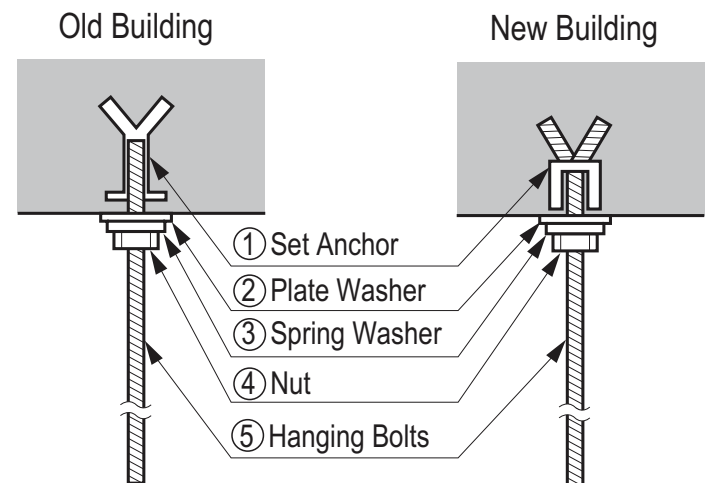


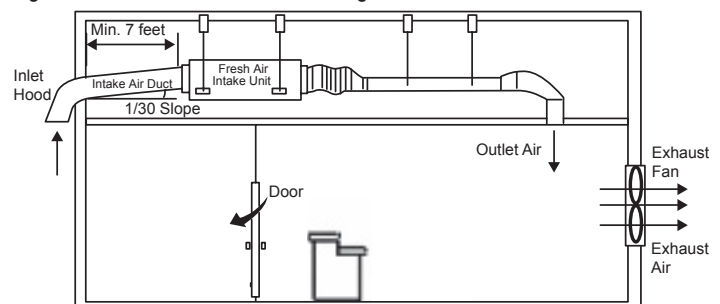
Figure 17: Old Versus New Building Hanging Bolt Installation.



⚠ WARNING

The threaded rod hangers (bolts) and hardware must be securely tightened to prevent the unit from falling from its installation location. There is a risk of personal injury from falling equipment.

Figure 18: Outside Air Unit Duct Diagram.



General Drain Piping Information

Outside air units generate condensate water during cooling operation, therefore, how to properly handle this condensation must be considered.

Outside air units include factory-installed drain pumps. Depending on the location of the outside air unit, condensation can be drained directly to the outside of the building, or a common indoor unit drainage piping system can be installed.

Table 14: Outside Air Unit Drainage Specifications.

Indoor Unit	Drain Type	Drain Pipe Dia. (ID, in.)
B8 Frames	27-1/2 in. Lift Drain Pump, Factory Installed	Ø1

Flexible Drain Hose

Outside air units include a factory-provided flexible drain hose (with two clamps) to connect the unit to the drain piping / drain piping be extended. If necessary, the drain hose can be extended. When the bottom surface of the indoor unit is at an elevation below the receiving building drain line connection, install an inverted trap at the top of the condensate pump discharge riser before connection to the building drain pipe.

When the receiving drain line is mounted horizontal, connect the inverted trap to the top half of the pipe. The connection point of the inverted trap to the building drain pipe must always be to the top half of the pipe and must  never be over 45° either side of the upper most point of the horizontal building drain line. If connecting to a vertical drain line or plumbing system vent line, connect the outside air unit condensate pump discharge line using a Y-45 fitting with the double end of the Y-45 fitting facing up. When connecting to a vertical drain line include an inverted trap at the top of the outside air unit condensate pump discharge riser before connection to the Y-45 fitting.

Drain Piping

- Drain piping must have down slope (1/50 to 1/100).
- Any holes through the ceilings, walls, etc., must be large enough to accommodate the drain piping and insulation.
- To prevent reversal flow,  do not provide up and down slope.
- The outside diameter of the drain connection on outside air units is 1-1/4 inches.
- The drain piping material is polyvinyl chloride pipe (1 inch).

Drain Leak Test

Perform a leak test 24 hours after the drainage system has been installed.

Drain Pipe Insulation

Install field-supplied polyethylene foam insulation 5/16 inch thick or greater on the flexible drain pipe, and position snugly against the outside air unit.

Note:

Ensure the refrigerant piping, drain piping, and power wiring / communication cables are properly supported with anchor bolts and clamp hangers positioned at 3.3 to 4.9 foot intervals.

Figure 19: Outside Air Unit Drain Pump to Drain Piping System.

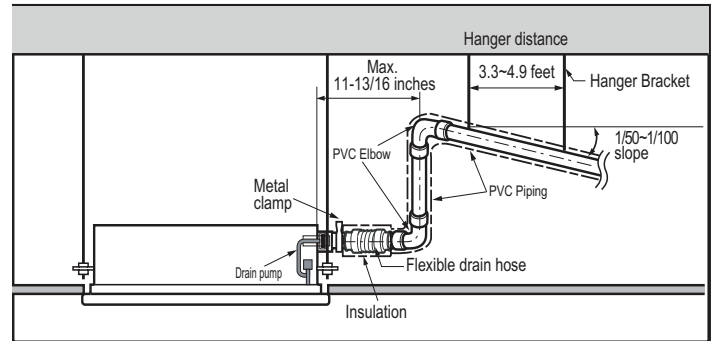
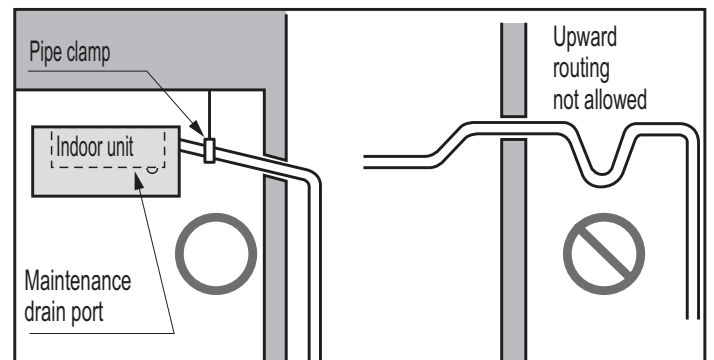


Figure 20: Flexible Drain Hose Connection.



Figure 21: Drain Piping Slope.



GENERAL DRAIN PIPING / PIPING INSULATION

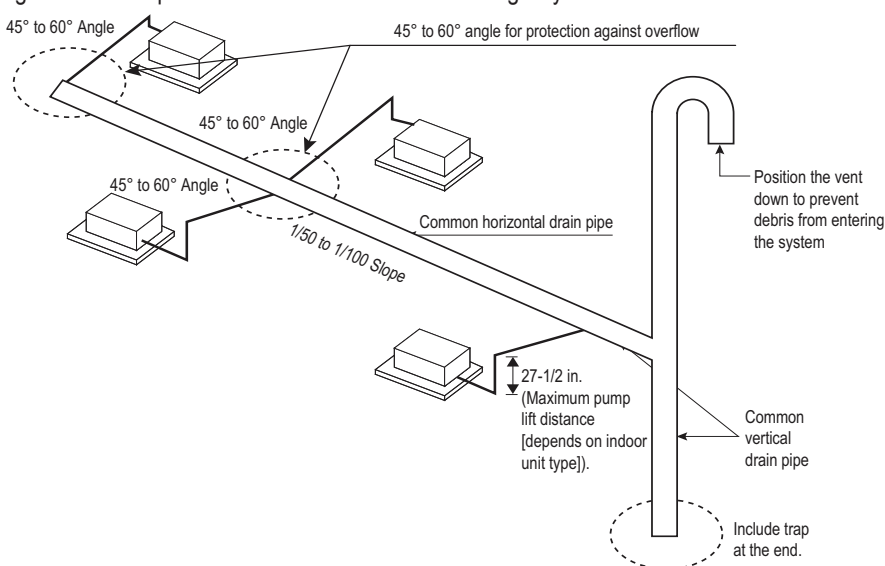
Common Indoor Unit Drainage System

It is usual work practice to connect individual unit drain pipes to one common indoor unit drainage system.

The diameter of the common vertical drain pipe must be as large as necessary. The diameter of the horizontal pipe must be the same or larger than the vertical drain pipe. To avoid property damage in the event of the primary drain becoming clogged, and to optimize drain system performance, it will be prudent to install a secondary drain line.

Design the drain system to plan for winter operation (condensate line will freeze if condensate does not properly drain away). Drain all generated condensate from the external condensate pan to an appropriate area. Install a trap in the condensate lines as near to the indoor unit coil as possible. To prevent overflow, the outlet of each trap must be positioned below its connection to the condensate pan. All traps must be primed, insulated, and leak tested.

Figure 22: Example of a Common Indoor Unit Drainage System.



Note:

- Install a dedicated drain pipe for the air conditioning system. If the drainage system is shared with a rainwater drain, waste water, or any other type of building drain system, back flow, leaks, ice will form, or noxious odors will infiltrate the air conditioning system.
- Install a trap if the drain access to the outside faces an undesirable location (i.e., sewer), otherwise, noxious odors will infiltrate the air conditioning system.

Refrigerant Piping Insulation

Sufficiently insulate all cold surfaces to prevent moisture from forming. All pipes must be fully insulated and each pipe must be separately wrapped. Use field-provided one-half (1/2) inch thick (or thicker) closed-cell insulation. The thickness will need to be increased based on ambient conditions and local codes.

Wrap all refrigerant and condensate piping including field-provided isolation ball valves and flexible pipe connection kits provided by LG. Glue all insulation joints with no air gaps between insulation segments, and between insulation segments and the unit case. Ensure insulation material fits snugly against the refrigeration pipe with no air space between the pipe surface and the surrounding insulation.

Protect insulation inside hangers and supports with a second insulation layer. Ensure insulation on all pipe passing through pipe hangers, inside conduit, and/or sleeves is not compressed.

Note:

All insulation must comply with all applicable code requirements.

Figure 23: Outside Air Unit Piping Connections.

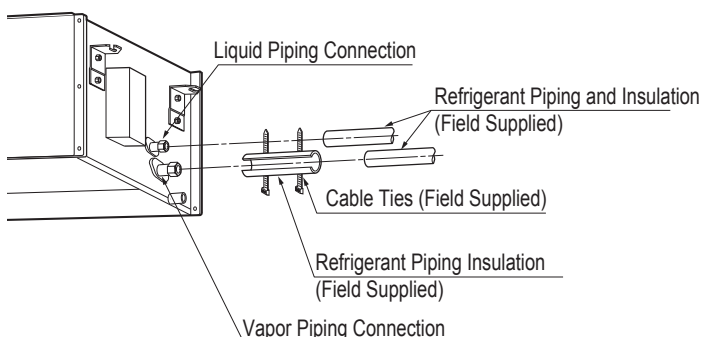
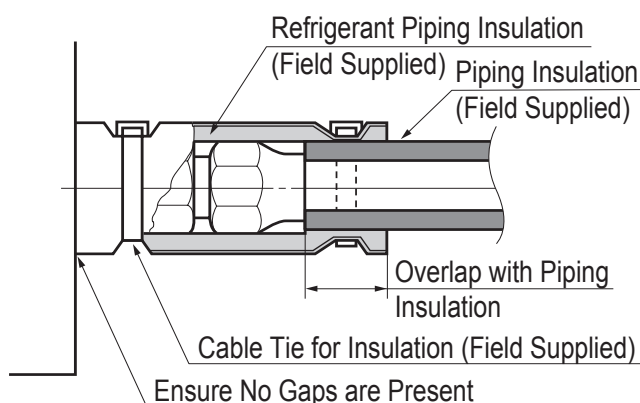


Figure 24: Typical Refrigerant Line Flare Fitting Insulation Detail.



General Power Wiring / Communications Cable Guidelines

- Follow manufacturer's circuit diagrams displayed on the inside of the control box cover.
- Have a separate power supply for the outside air units.
- Provide a circuit breaker switch between the power source and the outside air unit(s).
- Confirm power source specifications.
- Confirm that the electrical capacity is sufficient.
- Starting current must be maintained ± 10 percent of the rated current marked on the name plate.
- Confirm wiring / cable thickness specifications:
 - Power wiring is field supplied. Wire size is selected based on the larger MCA value, and must comply with the applicable local and national codes.
 - All communication cable must be a minimum of 18 AWG, two-conductor, stranded, shielded, and must comply with the applicable local and national codes. Ensure the communication cable is properly grounded at the master outdoor unit only.  Do not ground the ODU-OAU communication cable at any other point.
- Install a circuit breaker, especially if conditions could become wet or moist.
- Include a disconnect in the power wiring system. Add an air gap contact separation of at least 1/8 inch in each active (phase) conductor.
- Any openings where the field wiring enters the cabinet must be completely sealed.

WARNING

- Terminal screws will loosen during transport. Properly tighten the terminal connections during installation or risk electric shock, physical injury or death.
- Loose wiring will cause the wires to burnout or the terminal to overheat and catch fire. There is a risk of electric shock, physical injury or death.

Note:

- Terminal screws will loosen during transport. Properly tighten the terminal connections during installation or risk equipment malfunction or property damage.
- Loose wiring will cause unit malfunction, the wires to burnout or the terminal to overheat and catch fire. There is a risk of equipment malfunction or property damage.

A voltage drop will cause the following problems:

- Magnetic switch vibration, fuse breaks, or disturbance to the normal function of an overload protection device.
- Compressor will not receive the proper starting current.

Power Wiring and Communications Cable Connections

1. Insert the power wiring / communications cable from the outdoor unit using the designated path in the outside air unit.
2. Connect each wire to its appropriate terminal on the outside air unit control board. Verify that the color and terminal numbers from the outdoor unit wiring match the color and terminal numbers on the outside air unit.
3. Secure the power wiring / communications cable.

Figure 25: Location of Power Wiring / Communications Cable Terminals in the Outside Air Unit.

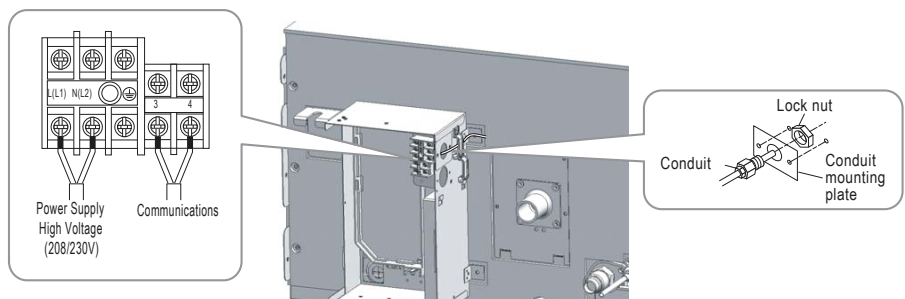
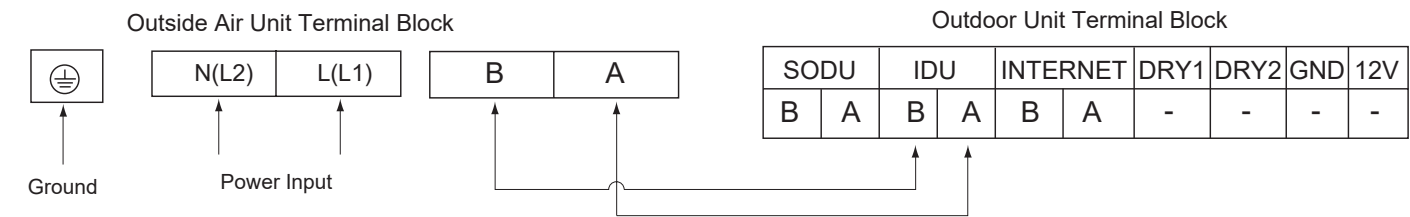


Figure 26: Terminal Block in the Outside Air Unit (B8 Frames).

ARNU483B8Z4, ARNU763B8Z4, ARNU963B8Z4



Wired Remote Controller Placement

Outside air units must be controlled by a wired remote controller. Wired controllers include a sensor to detect room temperature. To maintain comfort levels in the conditioned space, the wired controller must be installed in a location away from direct sunlight, high humidity, and where it could be directly exposed to cold air. Controller must be installed four (4) to five (5) feet above the floor where its LED display can be read easily, in an area with good air circulation, and where it can detect an average room temperature.

⊘ Do not install the wired controller near or in:

- Drafts or dead spots behind doors and in corners

- Hot or cold air from ducts

- Radiant heat from the sun or appliances

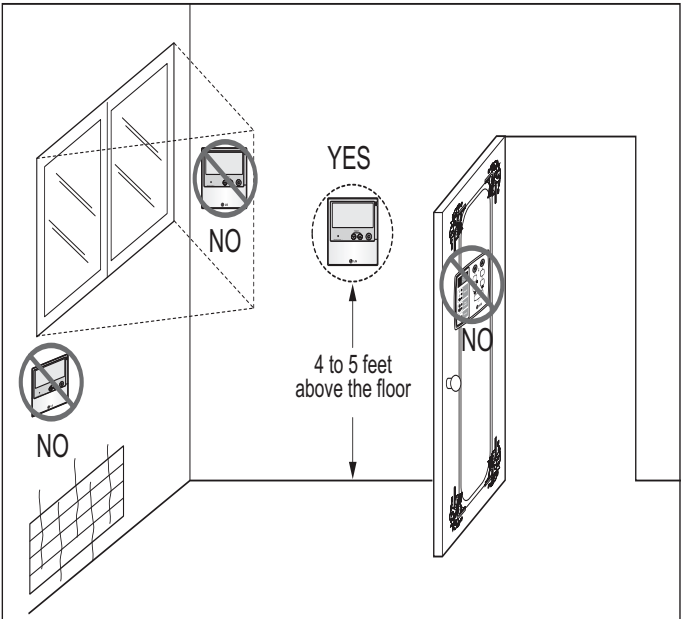
- Concealed pipes and chimneys

- An area where temperatures are uncontrolled, such as an outside wall

Note:

- When using the room thermostat sensor for control, Installer code 04:01 must be used.
- When using the factory installed discharge air sensor, installer code 04:02 must be used, and the thermostat must be installed on the unit.

Figure 27: Proper Location for the Wired Controller.

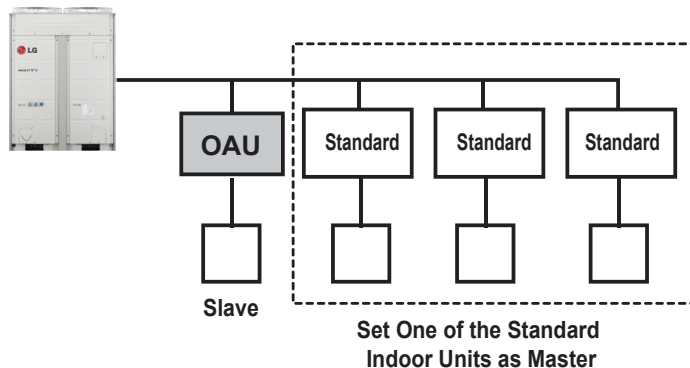


Control System

System Includes a Combination of Standard Indoor Units and Outside Air Units

When combining outside air units with standard indoor units in heat pump applications, a standard indoor unit must be selected as the Master, and the outside air unit must be selected as the Slave.

Figure 28: System Control with a Combination of Standard Indoor Units and Outside Air Units.



System Includes a Combination of Standard Indoor Units and Outside Air Units, and a Central Controller is Used

A system cannot include a combination of standard indoor units and outside air units in the same zone if a central controller is used. Place all outside air units in one zone, and place all standard indoor units in a separate, second zone.

Figure 29: System Control with a Central Controller.

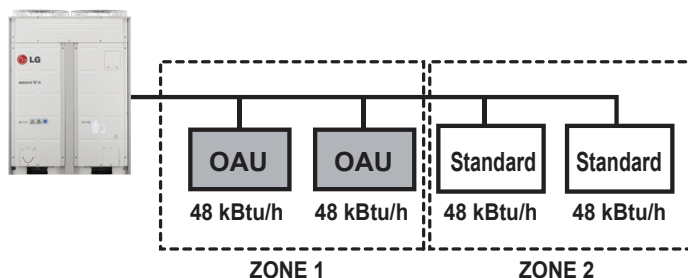


Table 15: Acronym Table.

ABS	Acrylonitrile Butadiene Styrene	IDU	Indoor Unit
AC	Air Conditioner/Alternate Current	kW	Kilowatts
ACP	Advanced Control Platform	in Aq	inches water
AHU	Air Handling Unit	ISO	International Standards Organization
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning	LATS	LG Air Conditioning Technical Solution software
ASTM	American Society for Testing and Materials	LED	Light Emitting Diode
AWG	American Wire Gauge	LEED	Leadership in Energy and Environmental Design
AWHP	Air-to-Air Water Heat Pump	MBh	Thousands BTUs per hour
BLDC	Brushless Digitally-Controlled	MCA	Minimum Circuit Ampacity
BTL	BACnet® Testing Laboratories	mm	Millimeter
Btu/h	British Thermal Unit per Hour	MOP	Maximum Overcurrent Protection
CAA	Clean Air Act	OD	Outside Diameter
CFM	Cubic Feet per Minute	ODU	Outdoor Unit
CFR	Code of Federal Regulations	PI	Power Input
DB	Dry Bulb	PTAC	Packaged Terminal Air Conditioner
dB(A)	Decibels with “A” frequency weighting	SHC	Sensible Heat Capacity
DPST	Double-Pole Single Throw	SMACNA	Sheet Metal & Air Conditioning Contractors' National Association
DX	Direct expansion	RPM	Revolutions per Minute
EEV	Electric Expansion valve	TC	Total Capacity
EPDM	Ethylene Propylene Diene M-Class Rubber	USD	United States Dollar
EMF	Electromagnetic Field	UL	Underwriters Laboratories
ESP	External Static Pressure	V	Voltage
ETL	Electric Testing Laboratories	VAV	Variable Air Volume
GND	Ground	VRF	Variable Refrigerant Flow
H/M/L	High/Medium/Low	W	Watts
HVAC	Heating, Ventilating and Air Conditioning	WB	Wet Bulb
Hz	Hertz	wg	Water Gauge
ID	Inside Diameter		

Inverter



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EM_MultiV_Outside_Air_Unit_12_22
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EM_MultiV_Outside_Air_Unit_5_21
EM_MultiV_Outside_Air_Unit_8_20
EM_MultiV_Outside_Air_Unit_6_20
EM_MultiV_Outside_Air_Unit_5_20
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