MULTI V™

R32 DUCTED INDOOR UNIT ENGINEERING MANUAL



High Static Ducted
7,500 to 95,900 Btu/h



Mid Static Ducted
7,500 to 48,000 Btu/h



Low Static Ducted
7,500 to 24,000 Btu/h



Multi-Position Air Handling Unit
12,00 to 60,000 Btu/h

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A summary list of safety precautions is on page 6.

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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. Contact your LG Rep for the best software program for your application.

NOTICE

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.

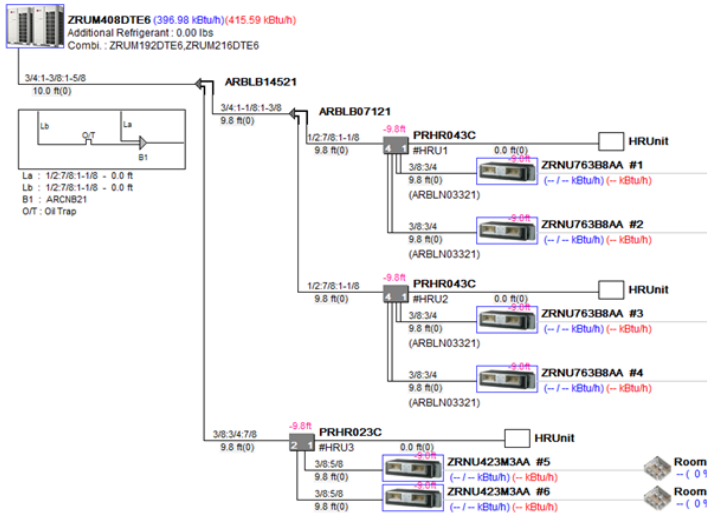
Formats

LATS is available to LG customers in two user interfaces: LATS HVAC and LATS Revit. Both 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, DOAS, and Energy Recovery Ventilator (ERV) systems.

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

Figure 1: LATS Example (Tree Diagram; Illustrative Purposes Only. is System will Vary Depending On Modell).



LATS Revit integrates the LG LATS program with Revit® software**. It permits engineers to layout and validate LG VRF, Multi F / Multi F MAX, Single-Zone, and DOAS directly into Revit drawings.

***Revit® is a registered mark 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.

NOTICE

Features depend on which LATS program is being used, and the type of system being designed. Contact your LG representative for the best software program for your application.

NOTICE

Any field changes, such as re-routing, shortening or lengthening a pipe segment, adding or eliminating elbows and/or fittings, re-sizing, adding, or eliminating indoor units, changing the mounting height, or moving the location of a device or fitting during installation must be done with caution and ALWAYS VERIFIED in LATS SOFTWARE BEFORE supplies are purchased or installed. Doing so will lead to a more profitable installation, reduce the potential for rework, and will reduce the potential for multiple visits to the job site to complete the system set up.

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LG AIR CONDITIONER TECHNICAL SOLUTION (LATS)

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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 be 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.).

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 if Y-Branches will also need to be changed.
- Changes to outdoor unit and indoor unit capacities. Capacities changes will 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.

NOTICE

Features depend on which LATS program is being used, and the type of system being designed. Contact your LG representative for the best software program for your application.

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TABLE OF SYMBOLS

	*Indicates that this appliance uses a flammable refrigerant. If the refrigerant leaks and is exposed to an external ignition source, there is a risk of fire.*
DANGER	*Indicates a hazardous situation that, if not avoided, WILL RESULT IN DEATH OR SERIOUS INJURY.[1]*
WARNING	*Indicates a hazardous situation that, if not avoided, COULD RESULT IN DEATH OR SERIOUS INJURY.[1]*
CAUTION	*Indicates a hazardous situation that, if not avoided, COULD RESULT IN MINOR OR MODERATE INJURY.[1]*
NOTICE	*Indicates information considered important, but not hazard-related; indicates situations that may result in equipment or property damage accidents.[1]*
	*This symbol indicates an action that should not be performed.*

[1]Signal words, symbols, and definitions taken from American National Standards Institute (ANSI) Z535.6. See https://www.ansi.org/ for more information.



R32 Refrigerant

LG Electronic split system heating and air conditioning (HVAC) products now contain R32 refrigerant. While R32 refrigerant is slightly flammable, it has a higher efficiency, a lower Global Warming Potential (GWP) value, and is more environmentally friendly than R410A.
R32 Ozone Depletion Potential (ODP) Value: 0.
R32 Global Warming Potential (GWP) Value: 675.

The amount of refrigerant depends on outdoor unit to indoor unit configuration. All refrigerant piping system components (copper piping, joints, and other fittings) must be selected and installed to conform with Refrigeration Safety Regulation standards. Use LG Air Conditioner Technical Solution (LATS) Software to verify the refrigerant amount needed for each installation.

WARNING

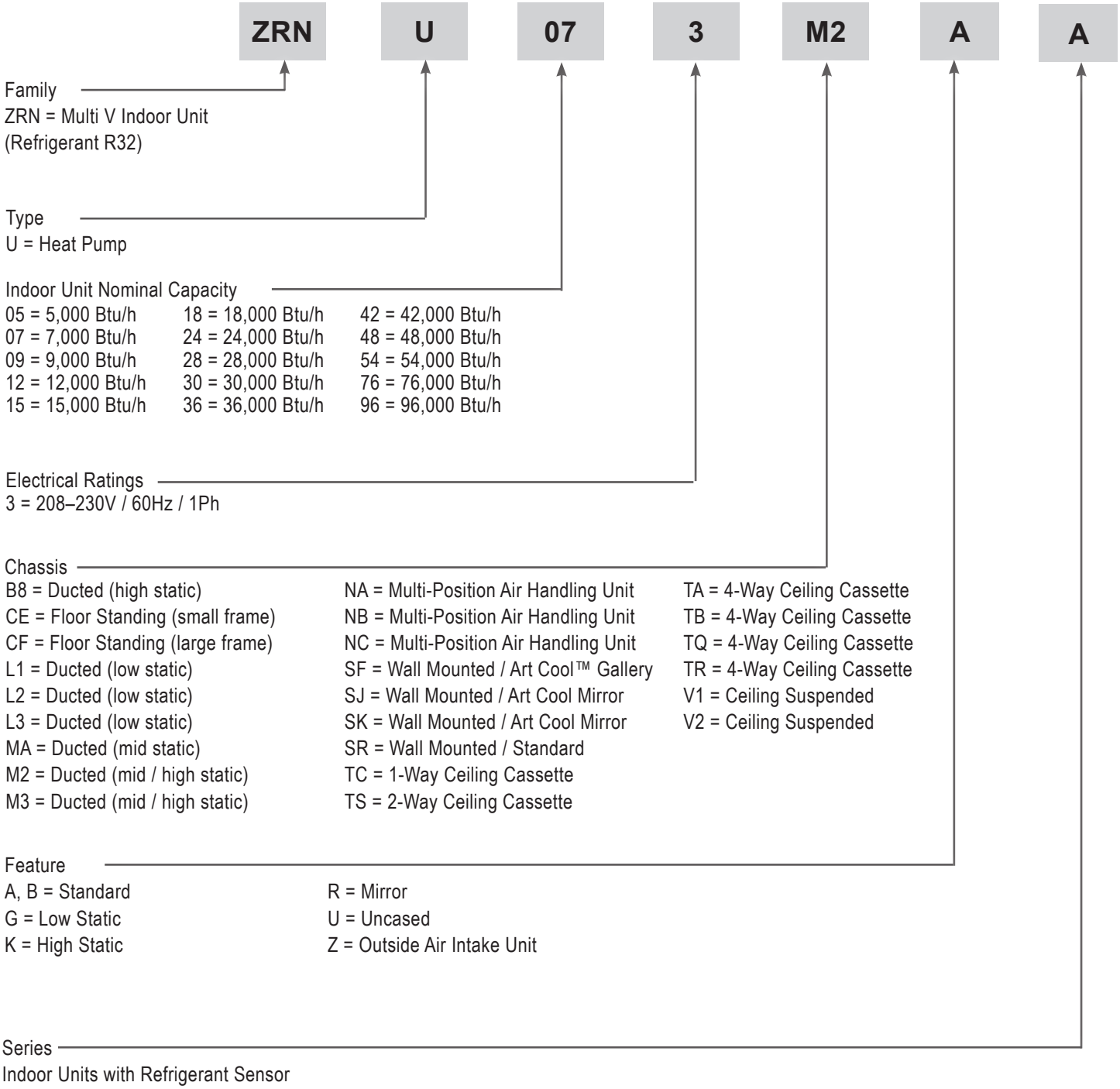
- *This HVAC system contains fluorinated greenhouse gases in the form of R32 refrigerant. ⃠ Do not leak refrigerant gas into the atmosphere.*
- *Only use R32 as the refrigerant in these HVAC systems. If other substances are added, it may cause an explosion.*
- *R32 refrigerant is slightly flammable. When handled properly, it does not leak. If the refrigerant leaks in the installation area and comes in contact with a flame, it may generate a fire and / or harmful gas.*
- *If a leak occurs, immediately turn off any combustion devices, ventilate the installation area, and contact the dealer / contractor where the HVAC unit was purchased. ⃠ Do not operate the unit until the refrigerant leaked is repaired.*

CAUTION

- *Piping wall thickness must comply with all applicable local, state, and federal regulations for the design pressures listed by the manufacturer. ⃠ Unapproved piping must not be used.*
- *To prevent piping from softening, ⃠ do not heat the piping more than necessary.*

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UNIT NOMENCLATURE



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REFRIGERANT CHARGE WORKSHEET

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Multi V i System R32 Refrigerant Charge Calculator (lbs.)

Table 1: Multi V i System R32 Refrigerant Charge Calculator (lbs. per feet).

System Tag or ID:	Job Name: _____ Project Manager: _____ Date: _____

Line #	Description	Chassis I.D.	Size	Quantity	CF (Ref.)[1]	Total (lbs.)
1	Linear feet of 1/4" liquid line tubing[2]	—	—		0.013	
2	Linear feet of 3/8" liquid line tubing[2]	—	—		0.036	
3	Linear feet of 1/2" liquid line tubing[2]	—	—		0.069	
4	Linear feet of 5/8" liquid line tubing[2]	—	—		0.103	
5	Linear feet of 3/4" liquid line tubing[2]	—	—		0.158	
6	Linear feet of 7/8" liquid line tubing[2]	—	—		0.210	
7	Linear feet of 1" liquid line tubing[2]	—	—		0.284	
8	Standard + Art Cool Mirror	SJ, SK	5k to 15k		0.44	
9	Standard + Art Cool Mirror	SJ, SK	18k to 24k		0.51	
10	Standard	SR	30k to 36k		1.08	
11	1-Way Cassette	TC	7k to 18k		0.42	
12	2-Way Cassette	TS	18k to 24k		0.62	
13	4-Way 2' x 2' Cassette	TR	5k to 7k		0.33	
14	4-Way 2' x 2' Cassette	TR	9k to 12k		0.46	
15	4-Way 2' x 2' Cassette	TQ	15k to 18k		0.57	
16	4-Way 3' x 3' Cassette	TA	7k to 48k		1.23	
17	4-Way 3' x 3' Cassette	TB	7k to 15k		0.26	
18	High Static Ducted	M2	7k to 24k		0.64	
19	High Static Ducted	M3	28k		1.10	
20	High Static Ducted	B8	36k to 96k		1.83	
21	Mid Static Ducted	M2	36k to 42k		0.95	
22	Mid Static Ducted	M3	48k		1.10	
22	Low Static Ducted	L1	7k to 9k		0.26	
24	Low Static Ducted	L2	12k to 18k		0.37	
25	Low Static Ducted	L3	24k		0.49	
26	Multi-Position Air Handling Unit	NA	12k to 24k		0.86	
27	Multi-Position Air Handling Unit	NB	30k to 48k		1.68	
28	Multi-Position Air Handling Unit	NC	54k to 60k		1.68	
29	Floor Standing	CE (U)	7k to 15k		0.31	
30	Floor Standing	CF (U)	18k to 24k		0.68	
31	Ceiling Suspended	VM1	18k to 24k		0.44	
32	Ceiling Suspended	VM2	36k to 48k		0.66	
33	Heat Recovery Units (HRU): PRHR024C, 034C, 044C	—	—		1.0	
34	Heat Recovery Units (HRU): PRHR065C, 085C	—	—		2.0	
35	**ADDITIONAL Refrigerant Charge Required (Sum of lines 1 – 34)**					
36	Outdoor Unit Factory Refrigerant Charge (lbs.)	36A	ZRUM072*TE6	72k		16.53
		36B	ZRUM096*TE6	96k		20.94
		36C	ZRUM121*TE6	121k		20.94
		36D	ZRUM144*TE6	144k		26.46
		36E	ZRUM168*TE6	168k		26.46
		36F	ZRUM192*TE6	192k		30.86
		36G	ZRUM216*TE6	216k		37.48
		36H	ZRUM241*TE6	241k		37.48
		36I	ZRUM264*TE6	264K		37.48
37	**Total FACTORY Outdoor Unit (ODU) Refrigerant Charge** (Sum of factory refrigerant charges for all ODUs in the system)					
38	**TOTAL SYSTEM CHARGE** Sum of ADDITIONAL Refrigerant Charge Required (line 35) and Total FACTORY ODU Refrigerant Charge (line 37)					

[1]CF (Ref.) = Correction Factor for Refrigerant Charge. [2]For refrigerant charge purposes, consider only the liquid line; ignore the vapor line(s).

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REFRIGERANT CHARGE WORKSHEET

Multi V S System R32 Refrigerant Charge Calculator (lbs.)

Table 2: Multi V S System R32 Refrigerant Charge Calculator (lbs. per feet).

System Tag or ID:	**Job Name:** _____ **Project Manager:** _____ **Date:** _____

Line #	Description			Chassis I.D.	Size	Quantity	CF (Ref.)[1]	Total (lbs.)
1	Linear feet of 1/4" liquid line tubing[2]			—	—		0.013	
2	Linear feet of 3/8" liquid line tubing[2]			—	—		0.036	
3	Linear feet of 1/2" liquid line tubing[2]			—	—		0.069	
4	Linear feet of 5/8" liquid line tubing[2]			—	—		0.103	
5	Linear feet of 3/4" liquid line tubing[2]			—	—		0.158	
6	Linear feet of 7/8" liquid line tubing[2]			—	—		0.210	
7	Linear feet of 1" liquid line tubing[2]			—	—		0.284	
8	Standard + Art Cool Mirror			SJ, SK	5k to 15k		0.44	
9	Standard + Art Cool Mirror			SJ, SK	18k to 24k		0.51	
10	Standard			SR	30k to 36k		1.08	
11	1-Way Cassette			TC	7k to 18k		0.42	
12	2-Way Cassette			TS	18k to 24k		0.62	
13	4-Way 2' x 2' Cassette			TR	5k to 7k		0.33	
14	4-Way 2' x 2' Cassette			TR	9k to 12k		0.46	
15	4-Way 2' x 2' Cassette			TQ	15k to 18k		0.57	
16	4-Way 3' x 3' Cassette			TA	7k to 48k		1.23	
17	4-Way 3' x 3' Cassette			TB	7k to 15k		0.26	
18	High Static Ducted			M2	7k to 24k		0.64	
19	High Static Ducted			M3	28k		1.10	
20	High Static Ducted			B8	36k to 96k		1.83	
21	Mid Static Ducted			M2	36k to 42k		0.95	
22	Mid Static Ducted			M3	48k		1.10	
22	Low Static Ducted			L1	7k to 9k		0.26	
24	Low Static Ducted			L2	12k to 18k		0.37	
25	Low Static Ducted			L3	24k		0.49	
26	Multi-Position Air Handling Unit			NA	12k to 24k		0.86	
27	Multi-Position Air Handling Unit			NB	30k to 48k		1.68	
28	Multi-Position Air Handling Unit			NC	54k to 60k		1.68	
29	Floor Standing			CE (U)	7k to 15k		0.31	
30	Floor Standing			CF (U)	18k to 24k		0.68	
31	Ceiling Suspended			VM1	18k to 24k		0.44	
32	Ceiling Suspended			VM2	36k to 48k		0.66	
33	Heat Recovery Units (HRU): PRHR024C, 034C, 044C			—	—		1.0	
34	Heat Recovery Units (HRU): PRHR065C, 085C			—	—		2.0	
35	**ADDITIONAL Refrigerant Charge Required (Sum of lines 1 – 34)**							
36	Outdoor Unit Factory Refrigerant Charge (lbs.)	36A	ZRUN024GSS0		24,000		3.3	
		36B	ZRUM036GSS0		36,000		6	
		36C	ZRUM048GSS0		48,000		6	
		36D	ZRUM060GSS0		60,000		6.9	
37	**Total FACTORY Outdoor Unit (ODU) Refrigerant Charge** (Sum of factory refrigerant charges for all ODUs in the system)							
38	**TOTAL SYSTEM CHARGE** Sum of ADDITIONAL Refrigerant Charge Required (line 35) and Total FACTORY ODU Refrigerant Charge (line 37)							

[1]CF (Ref.) = Correction Factor for Refrigerant Charge. [2]For refrigerant charge purposes, consider only the liquid line; ignore the vapor line(s).

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REFRIGERANT CHARGE WORKSHEET

R32 Multi V Water 5 Refrigerant Charge Calculator (lbs.)

Table 3: Multi V Water 5 System R32 Refrigerant Charge Calculator (lbs. per feet).

System Tag or ID:	Job Name: _____ Project Manager: _____ Date:

Line #	Description	Chassis I.D.	Size	Quantity	CF (Ref.)[1]	Total (lbs.)
1	Linear feet of 1/4" liquid line tubing[2]	—	—		0.013	
2	Linear feet of 3/8" liquid line tubing[2]	—	—		0.036	
3	Linear feet of 1/2" liquid line tubing[2]	—	—		0.069	
4	Linear feet of 5/8" liquid line tubing[2]	—	—		0.103	
5	Linear feet of 3/4" liquid line tubing[2]	—	—		0.158	
6	Linear feet of 7/8" liquid line tubing[2]	—	—		0.210	
7	Linear feet of 1" liquid line tubing[2]	—	—		0.284	
8	Standard + Art Cool Mirror	SJ, SK	5k to 15k		0.44	
9	Standard + Art Cool Mirror	SJ, SK	18k to 24k		0.51	
10	Standard	SR	30k to 36k		1.08	
11	1-Way Cassette	TC	7k to 18k		0.42	
12	2-Way Cassette	TS	18k to 24k		0.62	
13	4-Way 2' x 2' Cassette	TR	5k to 7k		0.33	
14	4-Way 2' x 2' Cassette	TR	9k to 12k		0.46	
15	4-Way 2' x 2' Cassette	TQ	15k to 18k		0.57	
16	4-Way 3' x 3' Cassette	TA	7k to 48k		1.23	
17	4-Way 3' x 3' Cassette	TB	7k to 15k		0.26	
18	High Static Ducted	M2	7k to 24k		0.64	
19	High Static Ducted	M3	28k		1.10	
20	High Static Ducted	B8	36k to 96k		1.83	
21	Mid Static Ducted	M2	36k to 42k		0.95	
22	Mid Static Ducted	M3	48k		1.10	
23	Low Static Ducted, Low Static Ducted Bottom Return	L1	7k to 9k		0.26	
24	Low Static Ducted, Low Static Ducted Bottom Return	L2	12k to 18k		0.37	
25	Low Static Ducted, Low Static Ducted Bottom Return	L3	24k		0.49	
26	Multi-Position Air Handling Unit	NA	12k to 24k		0.86	
27	Multi-Position Air Handling Unit	NB	30k to 48k		1.68	
28	Multi-Position Air Handling Unit	NC	54k to 60k		1.68	
29	Floor Standing	CE (U)	7k to 15k		0.31	
30	Floor Standing	CF (U)	18k to 24k		0.68	
31	Ceiling Suspended	VM1	18k to 24k		0.44	
32	Ceiling Suspended	VM2	36k to 48k		0.66	
33	Heat Recovery Units (HRU): PRHR024C, 034C, 044C	—	—		1.0	
34	Heat Recovery Units (HRU): PRHR065C, 085C	—	—		2.0	
35	**ADDITIONAL Refrigerant Charge Required (Sum of lines 1 – 34)**					
36	R32 Multi V Water 5 Unit Factory Refrigerant Charge	ZRWM072BAS5, ZRWM096BAS5, ZRWM121BAS5, ZRWM144BAS5			7.7	
		ZRWM072DAS5, ZRWM096DAS5, ZRWM121DAS5, ZRWM144DAS5			7.7	
		ZRWM168DAS5, ZRWM192DAS5			9.9	
37	**Total WSU FACTORY Refrigerant Charge (Sum of factory refrigerant charges for all WSUs in the system)**					
38	**TOTAL SYSTEM CHARGE Sum of Additional Refrigerant Charge Required (line 35) and Total WSU Factory Refrigerant Charge (line 37)**					

[1]CF (Ref.) = Correction Factor for Refrigerant Charge. [2]For refrigerant charge purposes, consider only the liquid line; ignore the vapor line(s).

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CEILING-CONCEALED HIGH STATIC DUCTED



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HIGH STATIC DUCTED

Mechanical Specifications

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. The controller is capable of performing functions necessary to operate the system without the use of a wall-mounted controller. A temperature thermistor is factory-mounted in the return air stream. 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 indoor unit(s) and outdoor unit must 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 five operating modes:

1. Auto Changeover (Heat Recovery only)
2. Heating
3. Cooling
4. Dry
5. Fan Only

For Heat Recovery systems, the Auto Changeover setting automatically switches control of the indoor 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 indoor unit when indoor room temperature falls below setpoint temperature and signals the outdoor unit to begin heating cycle. The indoor unit fan operation is delayed until coil pipe temperature reaches 76ºF. 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 space temperature readings concurrently or individually from either:

1. Wall-mounted wired controller(s)
2. Factory mounted return air thermistor or the optional wall-mounted wired remote temperature sensor

A single indoor 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, alpha numeric, and provide the service technician with a reason for the code displayed.

Condensate Lift / Pump
The indoor 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 indoor unit coil is constructed with grooved design copper tubes with slit coil fins, 2 to 3 rows, 18 - 19 fins per inch.

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Refrigerant Leak Detection

The indoor unit contains an R32 refrigerant leak sensor. The sensor is designed to control optional refrigerant piping shut-off valves if a leak is detected. Shut-off valve units are available as separate LG accessories or included as components in LG Heat Recovery Unit accessories. The sensor can enable four individual controller displayed error codes for leak detection (CH230), sensor fault (CH228), 6 months life remaining (CH236) and end of life (CH229).

Table 4: Refrigerant Leak Sensor Specifications.

Item	Specification
Refrigerant	R32
Detection Concentration	5,000 ppm
Power Supply	DC 5V
Operating Temperature	-25°F to +140°F
Lifetime	10 years

Controls Features

- Auto changeover (Heat Recovery only)
- Auto operation
- Auto restart
- External on/off control
- Dual thermistor control
- Dual set-point control
- Filter life display
- Multiple auxiliary heater applications
- Group control
- External static pressure control
- Hot start
- Self diagnostics
- Timer (on / off)
- Weekly schedule
- Fan speed control
- Wi-Fi compatible
- Auto fan
- R32 leak detection sensor

Figure 2: High Static Ducted Indoor Units.



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HIGH STATIC DUCTED

General Data

Table 5: R32 High Static Ducted Indoor Unit General Data.

Model No.	ZRNU073M2AA	ZRNU093M2AA	ZRNU123M2AA	ZRNU153M2AA	ZRNU183M2AA
Cooling Mode Performance					
Capacity (Btu/h)	7,500	9,600	12,300	15,400	19,100
Max. Power Input[1] (W)	430	430	430	430	430
H/M/L Power at Factory Default (W)	32 / 29 / 27	32 / 29 / 27	33 / 30 / 28	33 / 30 / 28	67 / 43 / 34
Heating Mode Performance					
Capacity (Btu/h)	8,500	10,900	13,600	17,100	21,500
Max Power Input[1] (W)	430	430	430	430	430
H/M/L Power at Factory Default (W)	32 / 29 / 27	32 / 29 / 27	33 / 30 / 28	33 / 30 / 28	67 / 43 / 34
Unit Data					
Refrigerant Type[2]	R32				
Refrigerant Control	EEV				
Sound Pressure[3] dB(A) (H/M/L)	38 / 37 / 36	38 / 38 / 36	38 / 38 / 36	38 / 38 / 36	39 / 38 / 37
Sound Power[4] dB(A) (H/M/L)	53 / 52 / 52	53 / 52 / 52	53 / 52 / 52	53 / 52 / 52	54 / 53 / 53
Net Unit Weight (lbs.)	82.9	82.9	82.9	82.9	82.9
Shipping Weight (lbs.)	95.5	95.5	95.5	95.5	95.5
Communication Cable[5] (No. x AWG)	2 x 18				
Fan					
Type	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco
Quantity	1	1	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct				
Factory Set Airflow Rate H/M/L (CFM)	468 / 381 / 294	468 / 381 / 294	512 / 425 / 337	512 / 425 / 337	587 / 512 / 425
Factory Set External Static Pressure (in. wg)	0.16	0.16	0.16	0.16	0.16
Piping					
Liquid Line (in., O.D.)	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare
Vapor Line (in., O.D.)	1/2 Flare	1/2 Flare	1/2 Flare	1/2 Flare	1/2 Flare
Condensate Line (in., I.D.)	1	1	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.

All capacities are net with a combination ratio between 95-105%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

[1] Max. power input is rated at maximum setting value.

[2] Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R32 refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

[3] Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[4] Sound Power level is measured using rated conditions, and tested in a reverberation room per ISO 3741.

[5] All communication cable to be minimum 18 AWG, 2-conductor, twisted, stranded, shielded and must comply with applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communication cable at any other point.

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Table 6: R32 High Static Ducted Indoor Unit General Data.

Model No.	ZRNU243M2AA	ZRNU283M3AA
Cooling Mode Performance		
Capacity (Btu/h)	24,200	28,000
Max. Power Input[1] (W)	430	430
H/M/L Power at Factory Default (W)	67 / 43 / 34	109 / 83 / 60
Heating Mode Performance		
Capacity (Btu/h)	27,300	31,500
Max Power Input[1] (W)	430	430
H/M/L Power at Factory Default (W)	67 / 43 / 34	109 / 83 / 60
Unit Data		
Refrigerant Type[2]	R32	
Refrigerant Control	EEV	
Sound Pressure[3] dB(A) (H/M/L)	39 / 38 / 37	40 / 39 / 37
Sound Power[4] dB(A) (H/M/L)	54 / 53 / 53	64 / 62 / 61
Net Unit Weight (lbs.)	82.9	93.7
Shipping Weight (lbs.)	95.5	105.4
Communication Cable[5] (No. x AWG)	2 x 18	
Fan		
Type	Sirocco	Sirocco
Quantity	1	1
Motor/Drive	Brushless Digitally Controlled / Direct	
Factory Set Airflow Rate H/M/L (CFM)	587 / 512 / 425	1,250 / 1,017 / 837
Factory Set External Static Pressure (in. wg)	0.16	0.16
Piping		
Liquid Line (in., O.D.)	3/8 Flare	3/8 Flare
Vapor Line (in., O.D.)	5/8 Flare	5/8 Flare
Condensate Line (in., I.D.)	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.

All capacities are net with a combination ratio between 95-105%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

[1] Max. power input is rated at maximum setting value.

[2] Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R32 refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

[3] Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[4] Sound Power level is measured using rated conditions, and tested in a reverberation room per ISO 3741.

[5] All communication cable to be minimum 18 AWG, 2-conductor, twisted, stranded, shielded and must comply with applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communication cable at any other point.

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HIGH STATIC DUCTED

General Data

Table 7: R32 High Static Ducted Indoor Unit General Data.

Model No.	ZRNU363B8AA	ZRNU423B8AA	ZRNU483B8AA
Cooling Mode Performance			
Capacity (Btu/h)	36,200	42,000	48,100
Max. Power Input[1] (W)	800	800	800
H/M/L Power Input at Factory Default (W)	478 / 420 / 403	528 / 497 / 465	538 / 500 / 482
Heating Mode Performance			
Capacity (Btu/h)	40,600	43,800	51,200
Max. Power Input[1] (W)	800	800	800
H/M/L Power Input at Factory Default (W)	478 / 420 / 403	528 / 497 / 465	538 / 500 / 482
Unit Data			
Refrigerant Type[2]	R32		
Refrigerant Control	EEV		
Sound Pressure[3] dB(A) (H/M/L)	46 / 45 / 42	47 / 46 / 43	47 / 46 / 44
Sound Power[4] dB(A) (H/M/L)	54 / 53 / 52	55 / 54 / 53	55 / 54 / 53
Net Unit Weight (lbs.)	192	192	192
Shipping Weight (lbs.)	222	222	222
Communication Cable[5] (No. x AWG)	2 x 18		
Fan			
Type	Sirocco	Sirocco	Sirocco
Motor	2	2	2
Housing	2	2	2
Motor/Drive	Brushless Digitally Controlled / Direct		
Factory Set Airflow Rate H/M/L (CFM)	1,730 / 1,317 / 1,066	1,914 / 1,458 / 1,123	2,019 / 1,518 / 1,200
Factory Set External Static Pressure (in. wg)	0.70	0.70	0.70
Piping			
Liquid Line (in., O.D.)	3/8 Brazed	3/8 Brazed	3/8 Brazed
Vapor Line (in., O.D.)	3/4 Brazed	3/4 Brazed	3/4 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.

All capacities are net with a combination ratio between 95-105%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

[1] Max. power input is rated at maximum setting value.

[2] Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R32 refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

[3] Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[4] Sound Power level is measured using rated conditions, and tested in a reverberation room per ISO 3741.

[5] All communication cable to be minimum 18 AWG, 2-conductor, twisted, stranded, shielded and must comply with applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communication cable at any other point.

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Table 8: R32 High Static Ducted Indoor Unit General Data.

Model No.	ZRNU543B8AA	ZRNU763B8AA	ZRNU963B8AA
Cooling Mode Performance			
Capacity (Btu/h)	54,000	76,400	95,900
Max. Power Input[1] (W)	800	800	800
H/M/L Power Input at Factory Default (W)	765 / 505 / 505	765 / 505 / 505	800 / 750 / 750
Heating Mode Performance			
Capacity (Btu/h)	61,400	86,000	107,500
Max. Power Input[1] (W)	800	800	800
H/M/L Power Input at Factory Default (W)	765 / 505 / 505	765 / 505 / 505	800 / 750 / 750
Unit Data			
Refrigerant Type[2]	R32		
Refrigerant Control	EEV		
Sound Pressure[3] dB(A) (H/M/L)	50 / 48 / 48	50 / 48 / 48	52 / 50 / 50
Sound Power[4] dB(A) (H/M/L)	57 / 57 / 57	57 / 57 / 57	58 / 57 / 57
Net Unit Weight (lbs.)	192	192	192
Shipping Weight (lbs.)	222	222	222
Communication Cable[5] (No. x AWG)	2 x 18		
Fan			
Type	Sirocco	Sirocco	Sirocco
Motor	2	2	2
Housing	2	2	2
Motor/Drive	Brushless Digitally Controlled / Direct		
Factory Set Airflow Rate H/M/L (CFM)	2,260 / 1,766 / 1,766	2,260 / 1,766 / 1,766	2,542 / 2,260 / 2,260
Factory Set External Static Pressure (in. wg)	0.87	0.87	0.87
Piping			
Liquid Line (in., O.D.)	3/8 Brazed	3/8 Brazed	3/8 Brazed
Vapor Line (in., O.D.)	3/4 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.

All capacities are net with a combination ratio between 95-105%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

[1] Max. power input is rated at maximum setting value.

[2] Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R32 refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

[3] Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[4] Sound Power level is measured using rated conditions, and tested in a reverberation room per ISO 3741.

[5] All communication cable to be minimum 18 AWG, 2-conductor, twisted, stranded, shielded and must comply with applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communication cable at any other point.

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HIGH STATIC DUCTED

Electrical Data

Table 9: R32 High Static Ducted Indoor Unit Electrical Data.

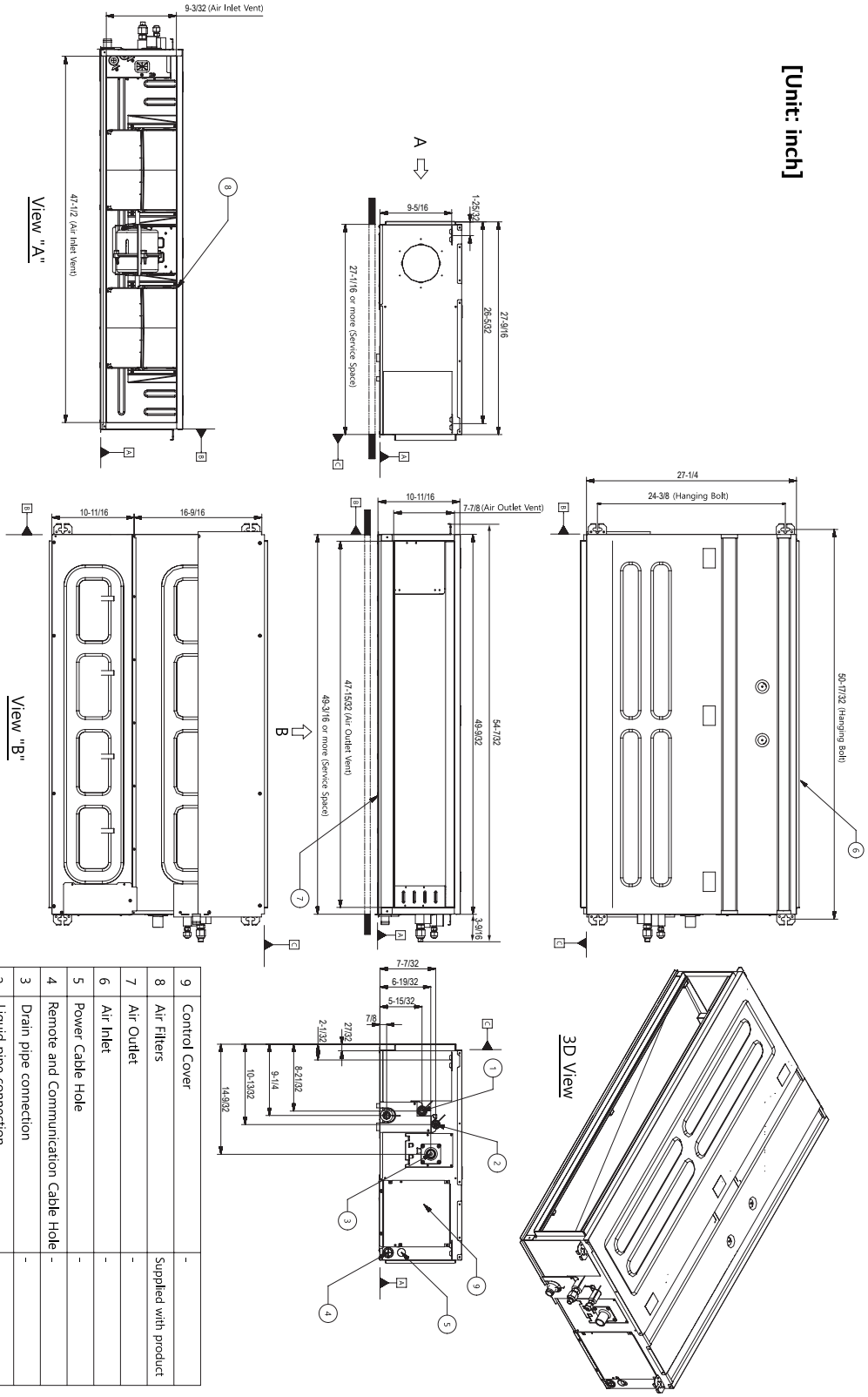
Model	Voltage Range	MCA	MOP	Rated Amps (A)	Power Supply			Power Input (W)		
					Hz	Volts	Phase	Max. Cooling	Max. Heating	H / M / L at Factory Default
M2 Units										
ZRNU073M2AA	208-230	2.9	15	2.3	60	208-230	1	430	430	32 / 29 / 27
ZRNU093M2AA		2.9		2.3				430	430	32 / 29 / 27
ZRNU123M2AA		2.9		2.3				430	430	33 / 30 / 28
ZRNU153M2AA		2.9		2.3				430	430	33 / 30 / 28
ZRNU183M2AA		2.9		2.3				430	430	67 / 43 / 34
ZRNU243M2AA		2.9		2.3				430	430	67 / 43 / 34
M3 Units										
ZRNU283M3AA	208-230	3.1	15	2.5	60	208-230	1	650	650	109 / 83 / 60
B8 Units										
ZRNU363B8AA	208-230	6.5	15	5.2	60	208-230	1	800	800	478 / 420 / 403
ZRNU423B8AA		6.5		5.2				800	800	528 / 497 / 465
ZRNU483B8AA		6.5		5.2				800	800	538 / 500 / 482
ZRNU543B8AA		6.5		5.2				800	800	765 / 505 / 505
ZRNU763B8AA		6.5		5.2				800	800	765 / 505 / 505
ZRNU963B8AA		6.5		5.2				800	800	800 / 750 / 750

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 a fuse, use the circuit breaker.

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Figure 3: ZRNU073M2~243M2AA Dimensions.



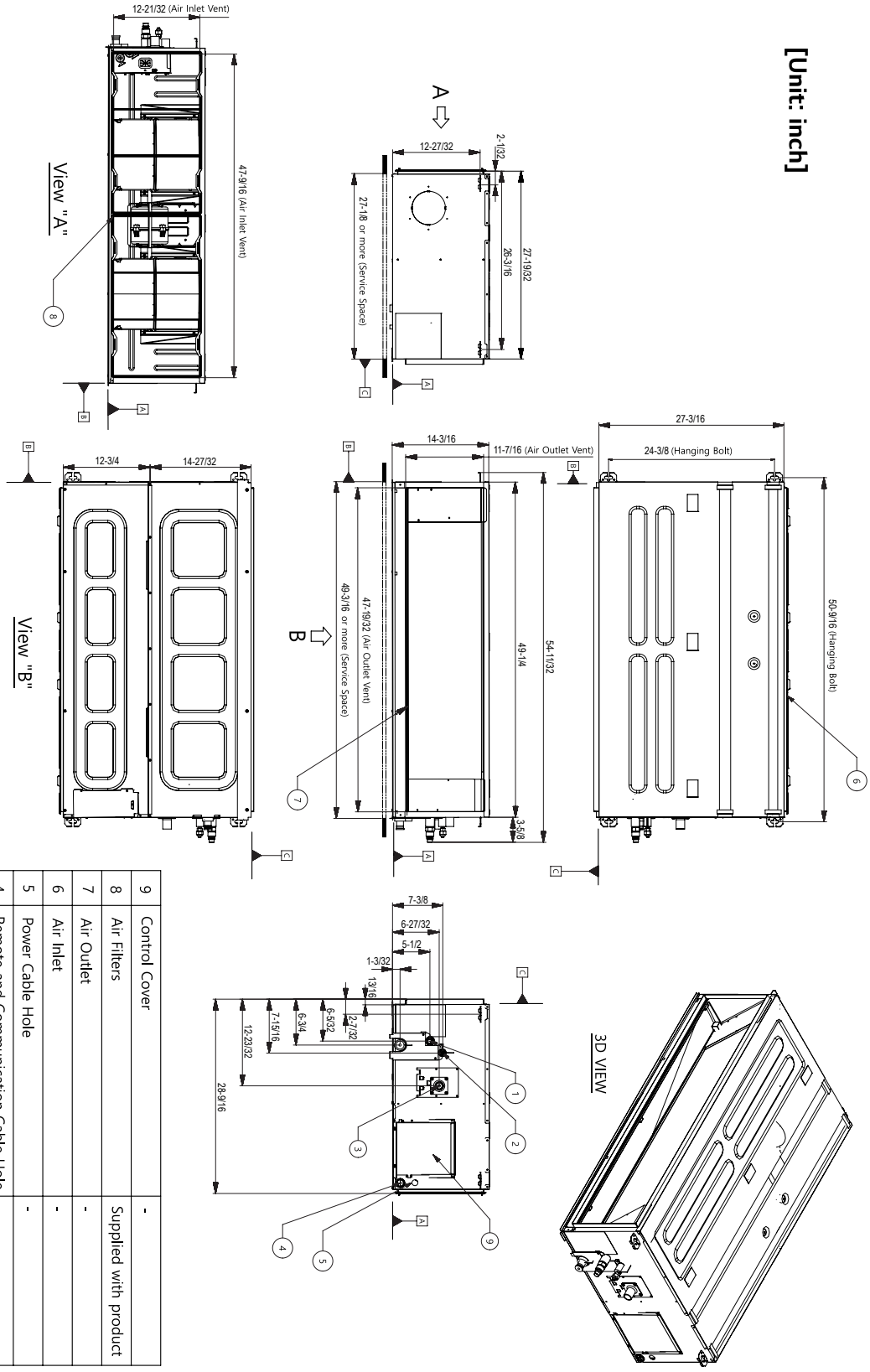
No.	Part Name	Description
1	Gas pipe connection	-
2	Liquid pipe connection	-
3	Drain pipe connection	-
4	Remote and Communication Cable Hole	-
5	Power Cable Hole	-
6	Air Inlet	-
7	Air Outlet	-
8	Air Filters	Supplied with product
9	Control Cover	-

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HIGH STATIC DUCTED

ZRNU283M3AA Dimensions

Figure 4: ZRNU283M3AA Dimensions.



No.	Part Name	Description
1	Gas pipe connection	-
2	Liquid pipe connection	-
3	Drain pipe connection	-
4	Remote and Communication Cable Hole	-
5	Power Cable Hole	-
6	Air Inlet	-
7	Air Outlet	-
8	Air Filters	Supplied with product
9	Control Cover	-

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Figure 5: Hanging Bolt and Duct Connections for High Static Ducted B8 Units.

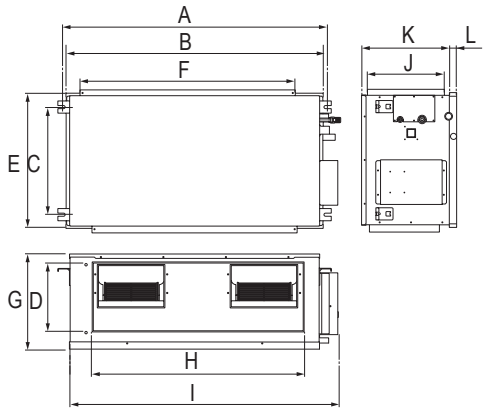
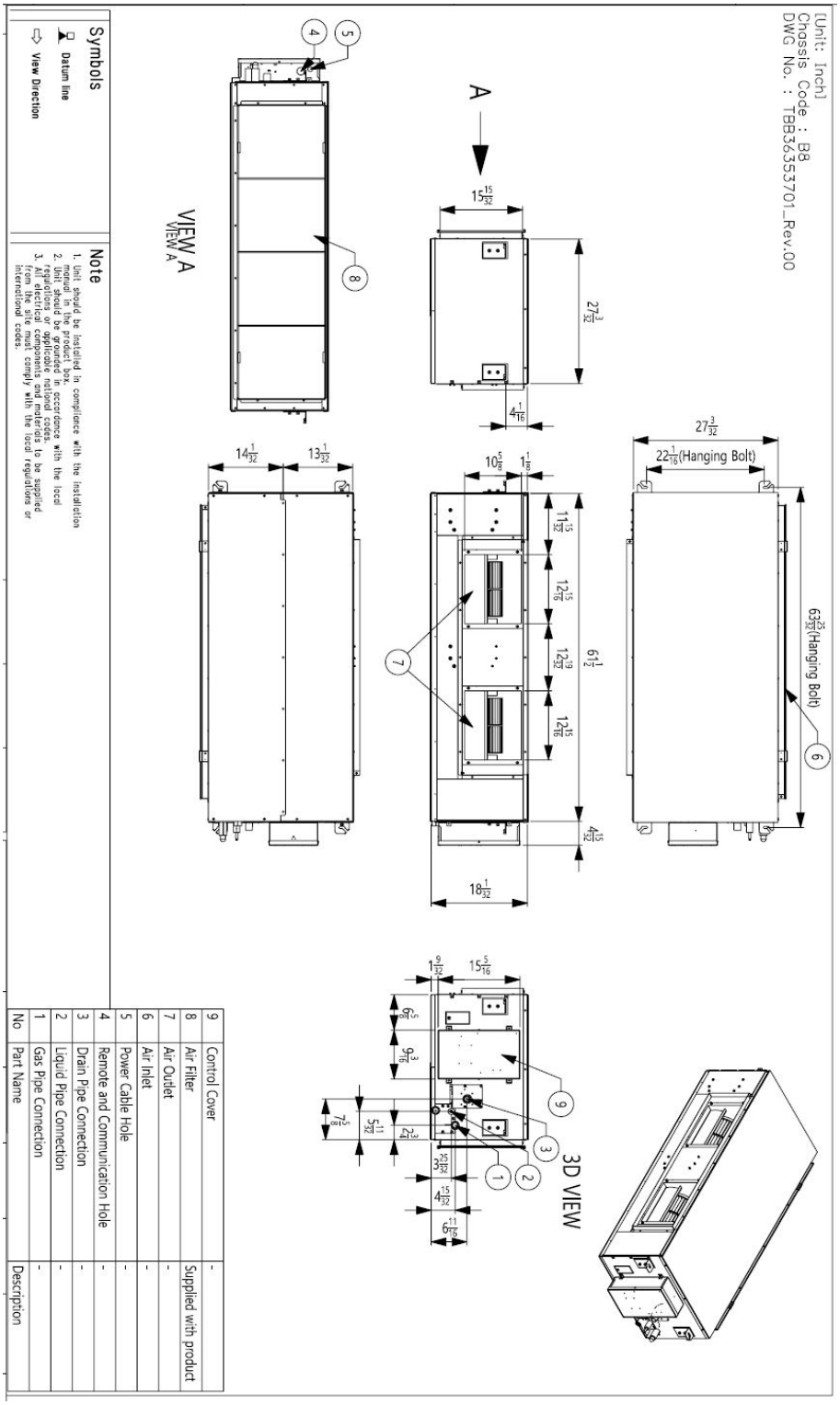


Table 10: Hanging Bolt and Duct Connection Dimensions for High Static Ducted B8 Units.

Frame	Dimensions (inches)	
B8	A	63-7/8
	B	61-5/8
	C	22-13/16
	D	11-1/2
	E	27-3/8
	F	55-1/8
	G	18-1/8
	H	44-3/16
	I	66-1/8
	J	15-3/8
	K	17-1/2
	L	9/16

Figure 6: ZRNU363B8 ~ 963B8AA Dimensions.

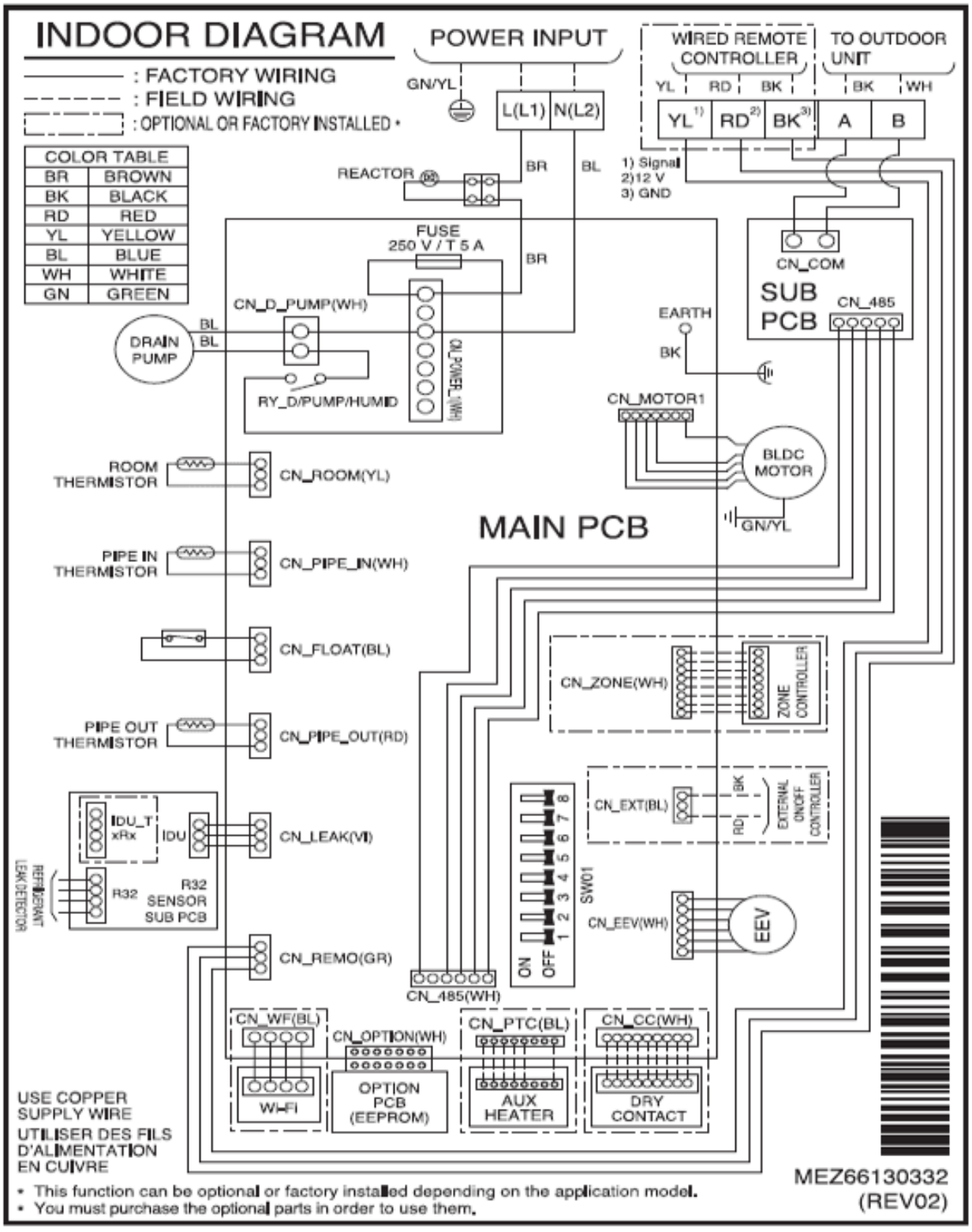


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HIGH STATIC DUCTED

ZRNU073M2~243M2AA and ZRNU283M3AA Wiring Diagram

Figure 7: ZRNU073M2~243M2AA and ZRNU283M3AA Wiring Diagram.



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ZRNU073M2~243M2AA and ZRNU283M3AA Wiring Diagram Legend

Table 11: ZRNU073M2~243M2AA and ZRNU283M3AA 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-ZONE	Zone controller	Zone controller connection
CN-EXT	External on / off controller	External on / off Controller connection
CN-EEV	EEV Output	EEV control output
CN-OPTION	Optional PCB EPROM	Option PCB connection
CN-DISPLAY	Display	Display of indoor status
CN-PTC	Auxiliary heater	Connection for Auxiliary Heater
CN-CC	Dry contact	Dry Contact connection
CN-LEAK	Leak detector	Leak detector connection
CN-FLOAT	Float switch input	Float switch sensing
CN-PIPE/OUT	Discharge pipe sensor	Pipe out thermistor
CN-WF	Wi-Fi	Wi-Fi module connection
CN-PIPE/IN	Suction pipe sensor	Pipe in thermistor
CN-ROOM	Room sensor	Room air thermistor
CN-REMO	Wired remote controller	Wired remote control connection
CN-D/PUMP	Drain pump output	AC output for drain pump
CN-485	Communication	Connection between indoor and outdoor units

*If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

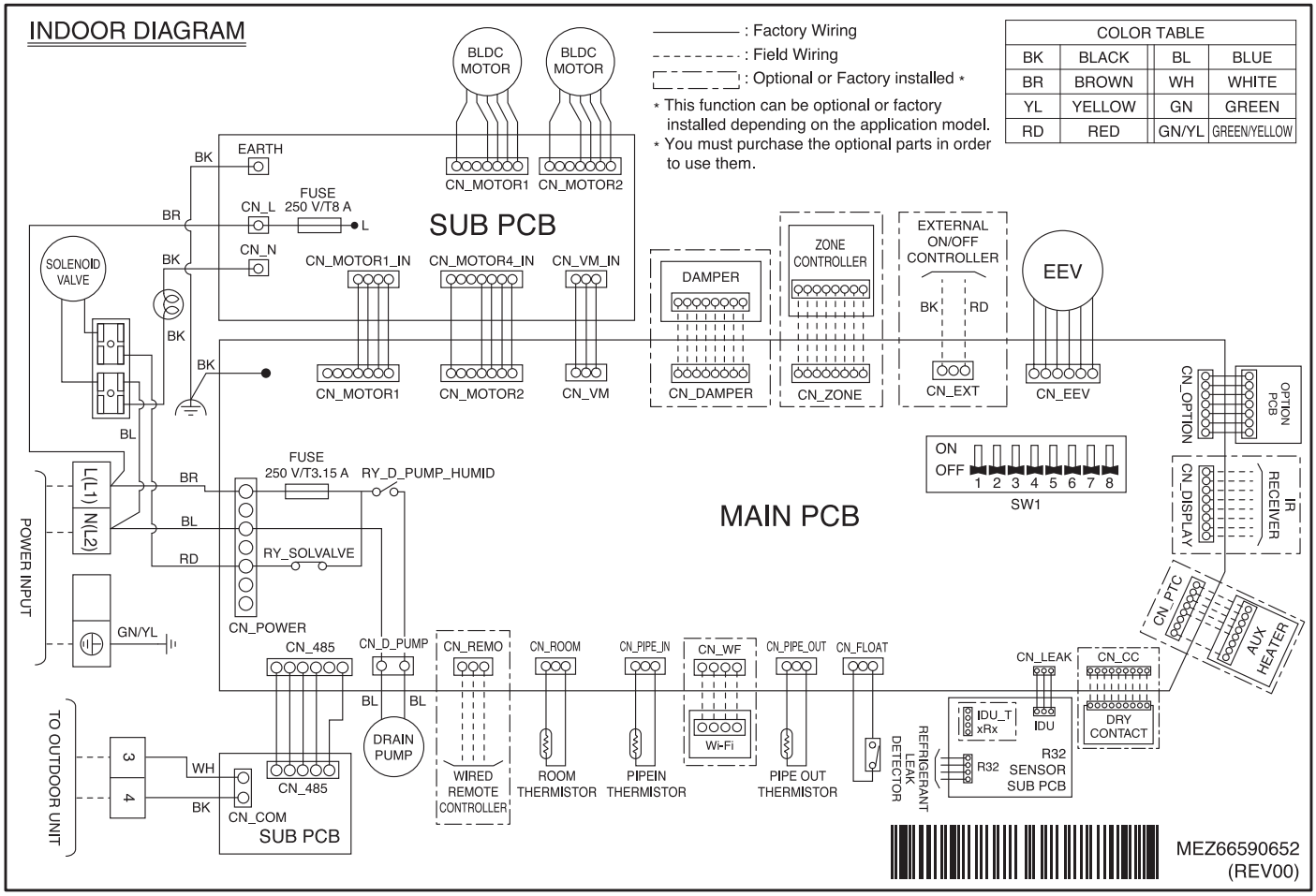
Table 12: ZRNU073M2~243M2AA and ZRNU283M3AA DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub 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.

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

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Figure 8: ZRNU363B8 ~ 963B8AA Wiring Diagram.



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Table 13: B8 Unit Wiring Diagram Legend.

Terminal	Purpose	Function
CN-POWER	AC Power supply	AC Power line
CN-MOTOR1	Fan motor output	Motor output of BLDC
CN-MOTOR2	Fan motor output	Motor output of BLDC
CN-VM	Sub PCB to Main PCB power supply	Power supply connection
CN-DAMPER	N / A	N / A
CN-ZONE	Zone controller	Zone controller connection
CN-EXT	External on / off controller	External on / off Controller connection
CN-EEV	EEV Output	EEV control output
CN-OPTION	Optional PCB EPROM	Option PCB connection
CN-DISPLAY	Display	Display of indoor status
CN-PTC	Auxiliary heater	Connection for Auxiliary Heater
CN-CC	Dry contact	Dry Contact connection
CN-LEAK	Leak detector	Leak detector connection
CN-FLOAT	Float switch input	Float switch sensing
CN-PIPE/OUT	Discharge pipe sensor	Pipe out thermistor
CN-WF	Wi-Fi	Wi-Fi module connection
CN-HUMID	N / A	N / A
CN-AIRC	N / A	N / A
CN-PIPE/IN	Suction pipe sensor	Pipe in thermistor
CN-ROOM	Room sensor	Room air thermistor
CN-REMO	Wired remote controller	Wired remote control connection
CN-D/PUMP	Drain pump output	AC output for drain pump
CN-485	Communication	Connection between indoor and outdoor units

Table 14: B8 Unit DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub 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.

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

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ZRNU073M2~243M2AA and ZRNU283M3AA Refrigerant Flow Diagram

Figure 9: ZRNU073M2~243M2AA and ZRNU283M3M3AA Piping Diagram.

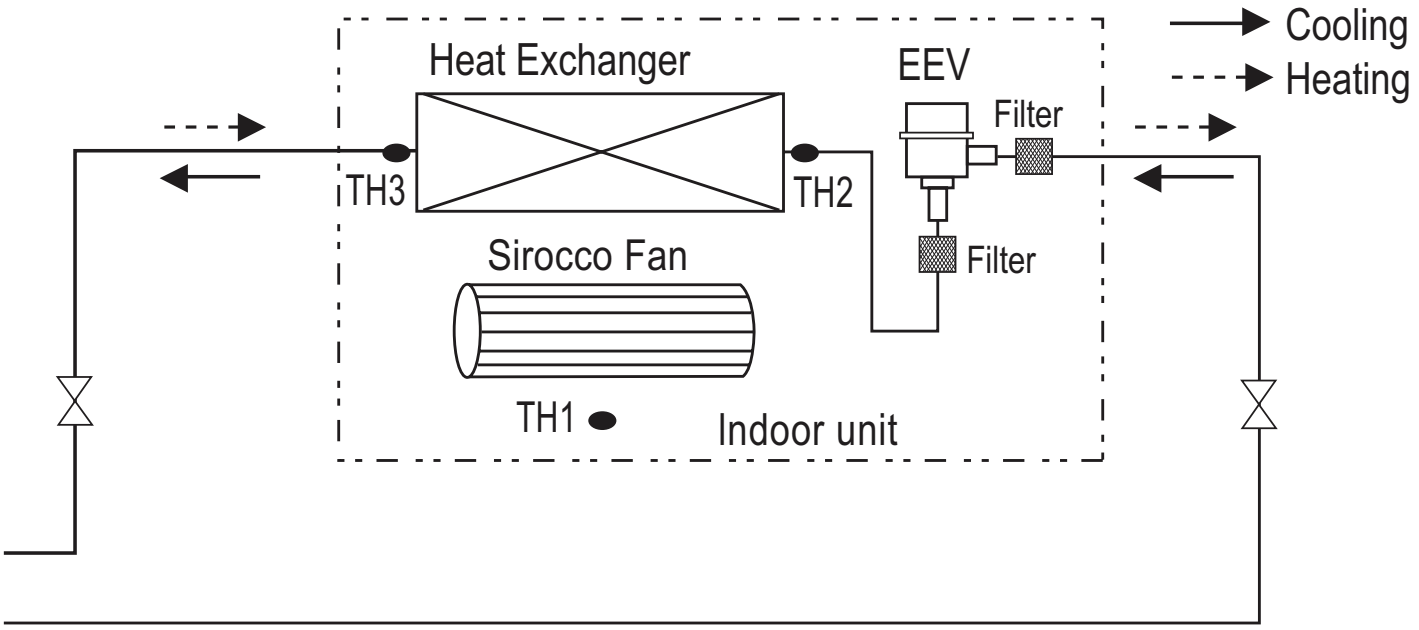


Table 15: ZRNU073M2~243M2AA and ZRNU283M3AA Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
M2 Frames		
ZRNU073M2AA	1/4 Flare	1/2 Flare
ZRNU093M2AA	1/4 Flare	1/2 Flare
ZRNU123M2AA	1/4 Flare	1/2 Flare
ZRNU153M2AA	1/4 Flare	1/2 Flare
ZRNU183M2AA	1/4 Flare	1/2 Flare
ZRNU243M2AA	3/8 Flare	5/8 Flare
M3 Frame		
ZRNU283M3AA	3/8 Flare	5/8 Flare

Table 16: ZRNU073M2~243M2AA and ZRNU283M3AA Thermistors.

Thermistor	Description
TH1	Return air thermistor
TH2	Pipe in thermistor
TH3	Pipe out thermistor

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Figure 10: B8 Unit Refrigerant Flow Diagram.

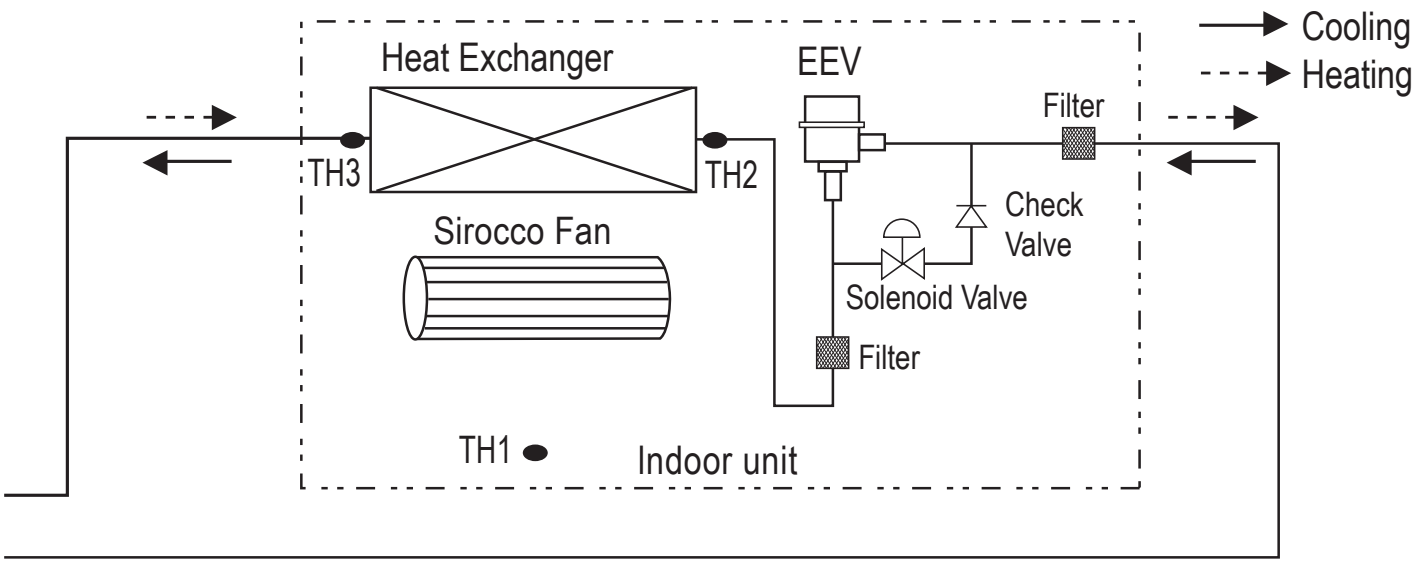


Table 17: B8 Unit Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
ZRNU363B8AA	3/8 Brazed	3/4 Brazed
ZRNU423B8AA		
ZRNU483B8AA		
ZRNU543B8AA		
ZRNU763B8AA		
ZRNU963B8AA		7/8 Brazed

Table 18: B8 Unit Thermistors.

Thermistor	Description
TH1	Return air thermistor
TH2	Pipe in thermistor
TH3	Pipe out thermistor

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ZRNU073M2~243M2AA and ZRNU283M3AA External Static Pressure and Air Flow Tables

Figure 11: ZRNU073M2~243M2AA External Static Pressure and Air Flow Table.

Set Value	Static Pressure (in wg)							
	0.16	0.24	0.31	0.39	0.47	0.55	0.63	0.71
	Air Flow Rate [CFM]							
65								
70								
75	530							
80	672	267						
85	879	486	173					
90	974	720	276					
95	1073	861	554	182				
100	1168	1013	734	325	135			
105	1267	1119	851	618	238			
110	1363	1225	1077	784	406	195		
115	1416	1334	1193	985	713	321		
120		1380	1310	1108	868	632	263	
125			1358	1236	1063	748	389	235
130				1310	1130	974	551	353
135					1298	1113	857	572
140					1431	1267	1052	792
145						1407	1233	980
150							1391	1207
155								1309

Figure 12: ZRNU283M3AA External Static Pressure and Air Flow Table.

Set Value	Static Pressure (in wg)								
	0.16	0.24	0.31	0.39	0.47	0.55	0.63	0.71	0.79
	Air Flow Rate [CFM]								
70	891								
75	1074	756							
80	1235	959	654						
85	1404	1250	869						
90	1562	1416	1111	800					
95	1741	1581	1300	1017	754				
100	1872	1744	1574	1251	978				
105	2020	1910	1737	1518	1234	935			
110		2076	1903	1691	1497	1193	858	522	
115			2069	1867	1687	1500	1108	717	646
120				2040	1874	1701	1384	1066	868
125					1913	1744	1520	1296	1168
130					1927	1860	1714	1567	1398
135								1772	1596

All static pressure air flow rates are listed in CFM. The table above shows the correlation between air flow rates and external static pressure.
If the external static pressure of the installed indoor unit is less than the lowest value (as mentioned in the table), the indoor unit components can fail.

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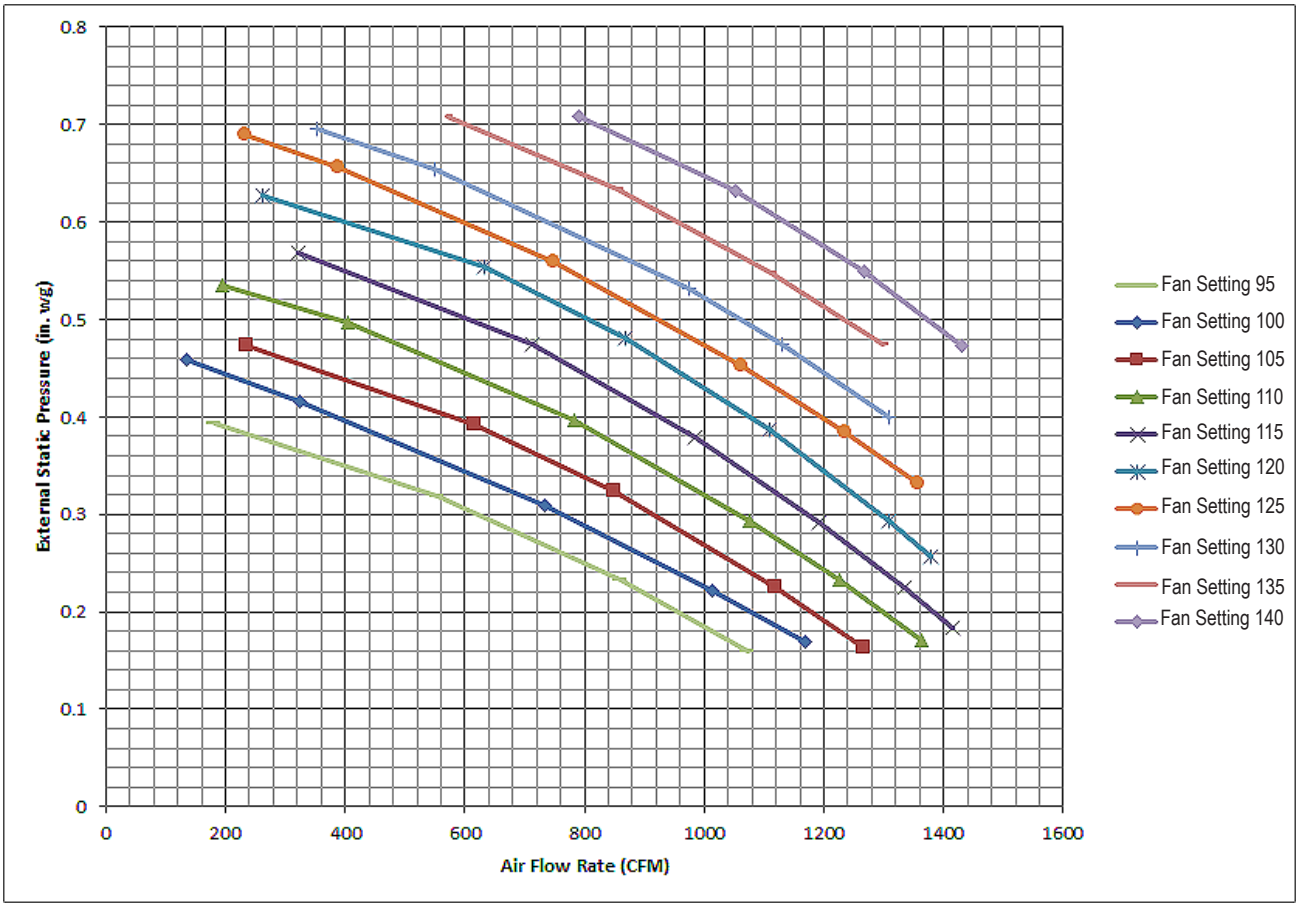
Table 19: B8 Units External Static Pressure and Air Flow Table.

Set Value	External Static Pressure (in.wg)								
	0.23	0.35	0.47	0.59	0.71	0.79	0.86	0.90	0.98
	Air Flow Rate [CFM]								
70	2377	1859							
75	2619	2231	1574						
80	2922	2549	2015	1326					
85	3159	2850	2406	1833	1123				
90	3691	3402	3009	2515	1914	1456			
95	3648	3621	3283	2860	2345	1953	1578		
100		3450	3275	3046	2680	2362	2034	1825	1363
105				3245	2961	2708	2443	2274	1896

All static pressure air flow rates are listed in CFM. The table above shows the correlation between air flow rates and external static pressure.
If the external static pressure of the installed indoor unit is less than the lowest value (as mentioned in the table), the indoor unit components can fail.

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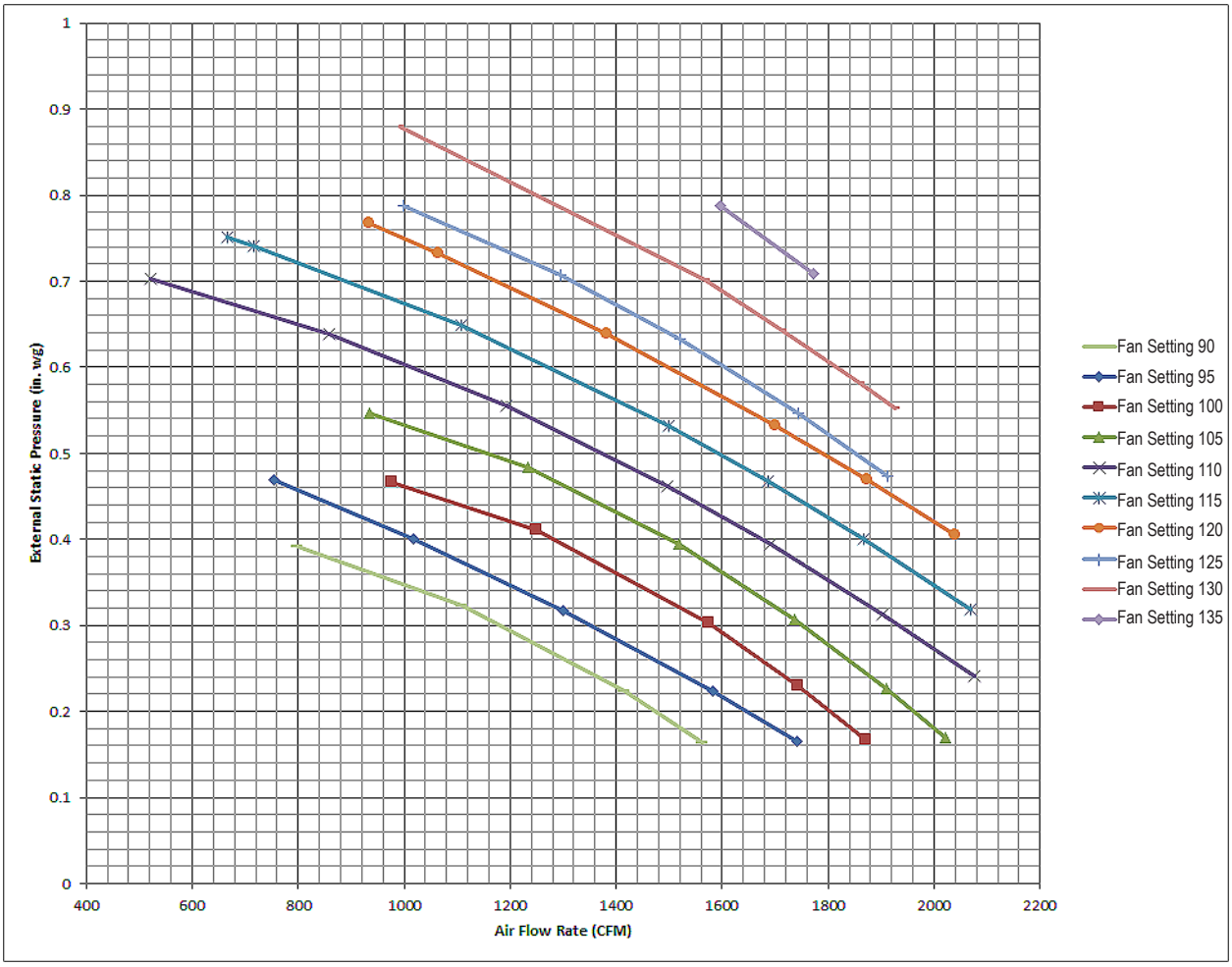
Figure 13: ZRNU073M2~243M2AA External Static Pressure and Air Flow Chart.



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ZRNU283M3AA External Static Pressure and Air Flow Chart

Figure 14: ZRNU283M3AA External Static Pressure and Air Flow Chart.

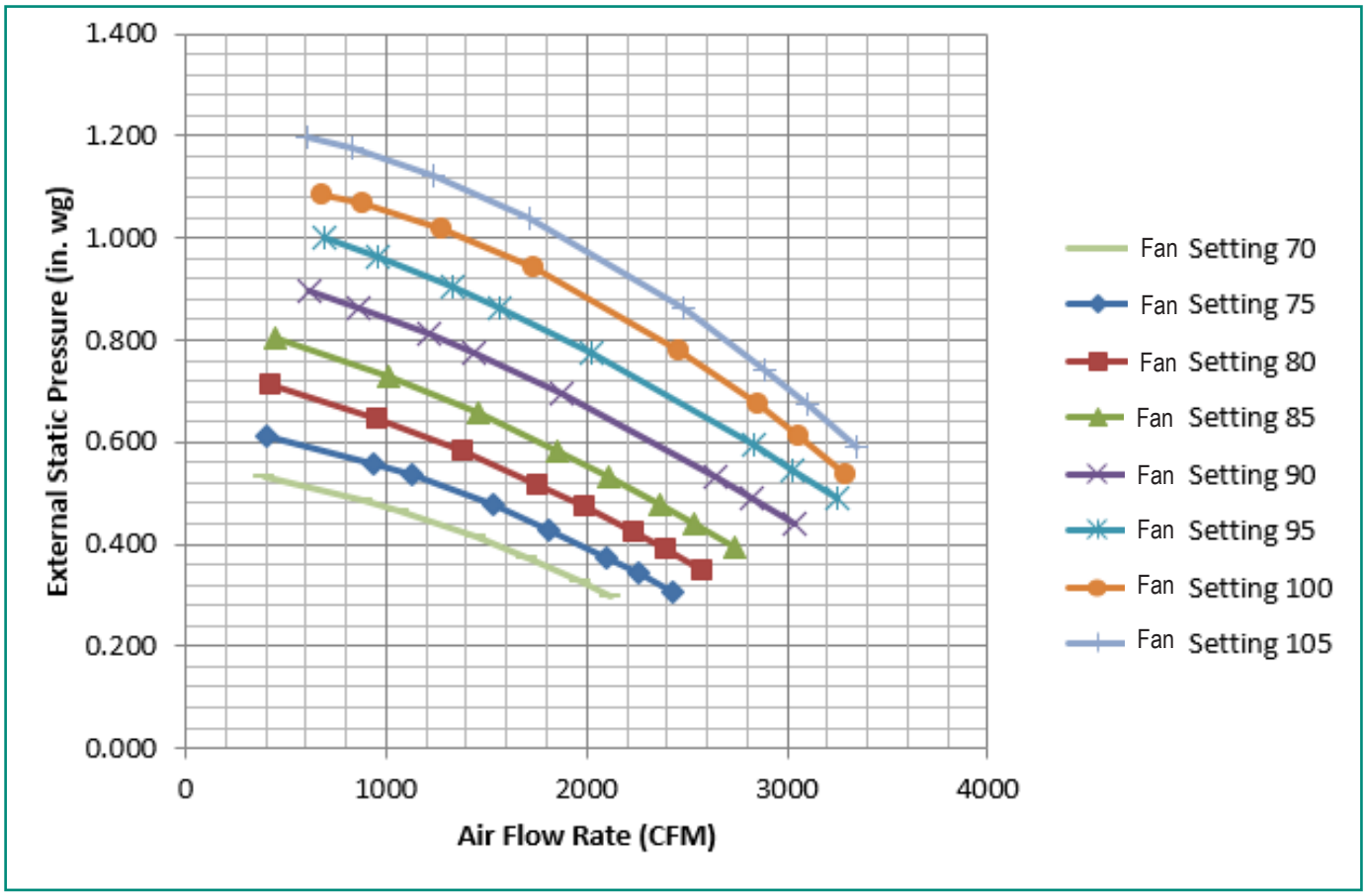


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B8 Units External Static Pressure and Air Flow Charts

Figure 15: B8 Units External Static Pressure and Air Flow Chart.



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ZRNU073M2~423M2AA and ZRNU283M3AA External Static Pressure Ranges

Table 20: ZRNU073M2~243M2AA External Static Pressure Ranges.

Model	Capacity (MBh)	Mode		Setting Value	Standard ESP (in wg)	CFM	Min. ESP (in wg)	Max. ESP (in wg)
ZRNU073M2AA	7.0	Factory Set	High	74	0.16	468	0.16	0.71
			Mid	72		381		
			Low	70		294		
ZRNU093M2AA	9.0	Factory Set	High	74	0.16	468	0.16	0.71
			Mid	72		381		
			Low	70		294		
ZRNU123M2AA	12.0	Factory Set	High	75	0.16	512	0.16	0.71
			Mid	73		425		
			Low	71		337		
ZRNU153M2AA	15.0	Factory Set	High	75	0.16	512	0.16	0.71
			Mid	73		425		
			Low	71		337		
ZRNU183M2AA	18.0	Factory Set	High	77	0.16	587	0.16	0.71
			Mid	75		512		
			Low	73		425		
ZRNU243M2AA	24.0	Factory Set	High	77	0.16	587	0.16	0.71
			Mid	75		512		
			Low	73		425		

Table 21: ZRNU283M3AA Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode		Setting Value	Standard ESP (in wg)	CFM	Min. ESP (in wg)	Max. ESP (in wg)
ZRNU283M3AA	28.0	Factory Set	High	80	0.16	1250	0.16	0.79
			Mid	73		1017		
			Low	69		837		

Tables above show available E.S.P. range.

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B8 Units External Static Pressure Ranges

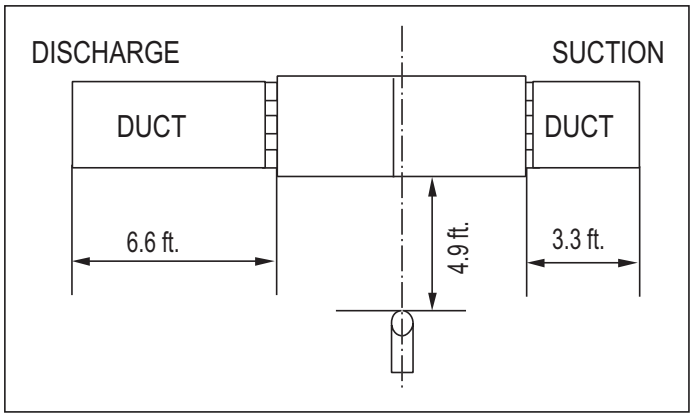
Table 22: B8 Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode		Flow Rate (CFM)	0.23	0.35	0.47	0.59	0.71	0.79	0.86	0.90	0.98
ZRNU363B8AA	36.2	Factory Set	Hi	1730	55	68	77	82	92	93	97	99	103
			Mid	1317	43	61	73	81	88	89	92	96	100
			Low	1066	36	56	72	81	84	87	90	94	98
ZRNU423B8AA	42	Factory Set	Hi	1914	59	71	79	84	93	95	99	101	*105
			Mid	1458	47	64	74	81	89	90	94	97	101
			Low	1123	38	56	72	81	85	87	91	94	98
ZRNU483B8AA	48.1	Factory Set	Hi	2019	62	72	80	85	94	96	100	102	*105
			Mid	1518	49	64	75	81	90	91	94	97	101
			Low	1200	40	61	73	81	86	88	91	95	99
ZRNU543B8AA	54.0	Factory Set	Hi	2019	62	72	80	85	94	96	100	102	*105
			Mid	1518	49	64	75	81	90	91	94	97	101
			Low	1200	40	61	73	81	86	88	91	95	99
ZRNU763B8AA	76.4	Factory Set	Hi	2260	67	79	82	87	94	99	102	105	*105
			Mid	1766	56	68	77	83	89	93	98	99	104
			Low	1766	56	68	77	83	89	93	98	99	104
ZRNU963B8AA	95.9	Factory Set	Hi	2542	73	82	86	91	98	103	*105	*105	*105
			Mid	2260	67	79	82	87	94	99	102	105	*105
			Low	2260	67	79	82	87	94	99	102	105	*105

*Tables above show available E.S.P. range. * Air flow will decrease according to table.*

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Figure 16: Sound Pressure Measurement Location.



- Measurements are taken 4.9 ft away from the front of the unit.
- Sound pressure levels are measured in dB(A) with a tolerance of ±3.
- Sound pressure levels are tested in an anechoic chamber under ISO Standard 3745.

Operating Conditions:

- Power source: 220V/60 Hz
- Sound level will vary depending on a range of factors including the construction (acoustic absorption coefficient) of a particular room in which the unit was installed.

Table 23: ZRNU073M2~243M2AA Indoor Unit Sound Pressure Levels.

Model	Sound Pressure Levels dB(A)		
	High Fan Speed	Medium Fan Speed	Low Fan Speed
ZRNU073M2AA	38	37	36
ZRNU093M2AA	38	38	36
ZRNU123M2AA	38	38	36
ZRNU153M2AA	38	38	36
ZRNU183M2AA	39	38	37
ZRNU243M2AA	39	38	37

Table 24: ZRNU283M3AA Indoor Unit Sound Pressure Levels.

Model	Sound Pressure Levels dB(A)		
	High Fan Speed	Medium Fan Speed	Low Fan Speed
ZRNU283M3AA	40	39	37

Table 25: B8 Units Sound Pressure Levels.

Model	Sound Pressure Levels [dB(A), H-M-L]	
	External Static Pressure [in wg]	
	0.70	0.86
ZRNU363B8AA	46-45-42	
ZRNU423B8AA	47-46-43	
ZRNU483B8AA	47-46-44	
ZRNU543B8AA		50-48-48
ZRNU763B8AA		50-48-48
ZRNU963B8AA		52-50-50

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Acoustic Data

Sound Power Levels

- 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 chamber under ISO Standard 3741.
- 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/m^2

Table 26: ZRNU073M2~243M2AA Indoor Unit Sound Power Levels.

Model	Sound Power Levels dB(A)		
	High Fan Speed	Medium Fan Speed	Low Fan Speed
ZRNU073M2AA	53	52	52
ZRNU093M2AA	53	52	52
ZRNU123M2AA	53	52	52
ZRNU153M2AA	53	52	52
ZRNU183M2AA	54	53	53
ZRNU243M2AA	54	53	53

Table 27: ZRNU283M3AA Indoor Unit Sound Power Levels.

Model	Sound Power Levels dB(A)		
	High Fan Speed	Medium Fan Speed	Low Fan Speed
ZRNU283M3AA	64	62	61

Table 28: B8 Indoor Units Sound Power Levels.

Model	Sound Power Levels [dB(A), H-M-L]	
	External Static Pressure [in wg]	
	0.70	0.86
ZRNU363B8AA	54-53-52	
ZRNU423B8AA	55-54-53	
ZRNU483B8AA	55-54-53	
ZRNU543B8AA		57-57-57
ZRNU763B8AA		57-57-57
ZRNU963B8AA		58-57-57

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Sound Power @0.16 ESP

Table 29: ZRNU073M2~243M2AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU073M2AA	RETURN OPENING	H	0.16	760	559	60	54	57	48	41	37	30	19
		M		720	430	60	52	57	47	38	34	27	16
		L		680	284	59	50	56	46	36	32	25	12
	CASING RADIATED	H		760	559	60	49	56	40	33	26	16	18
		M		720	430	59	47	57	39	31	24	13	17
		L		680	284	58	45	58	37	29	22	10	17
	DUCTED DISCHARGE	H		760	559	62	57	60	51	50	44	39	33
		M		720	430	60	55	60	50	48	42	37	30
		L		680	284	58	53	60	48	46	40	35	27
ZRNU093M2AA	RETURN OPENING	H	0.16	760	559	60	54	57	48	41	37	30	19
		M		720	430	60	52	57	47	38	34	27	16
		L		680	284	59	50	56	46	36	32	25	12
	CASING RADIATED	H		760	559	60	49	56	40	33	26	16	18
		M		720	430	59	47	57	39	31	24	13	17
		L		680	284	58	45	58	37	29	22	10	17
	DUCTED DISCHARGE	H		760	559	62	57	60	51	50	44	39	33
		M		720	430	60	55	60	50	48	42	37	30
		L		680	284	58	53	60	48	46	40	35	27
ZRNU123M2AA	RETURN OPENING	H	0.16	770	587	60	54	57	49	41	37	31	20
		M		730	463	60	52	57	47	39	35	28	16
		L		690	323	59	51	57	46	37	33	25	13
	CASING RADIATED	H		770	587	60	49	55	40	33	27	16	18
		M		730	463	59	47	57	39	31	25	13	17
		L		690	323	58	46	58	38	29	23	11	17
	DUCTED DISCHARGE	H		770	587	62	57	61	52	50	44	40	34
		M		730	463	61	55	60	50	48	42	38	31
		L		690	323	59	53	60	49	47	40	36	28
ZRNU153M2AA	RETURN OPENING	H	0.16	770	587	60	54	57	49	41	37	31	20
		M		730	463	60	52	57	47	39	35	28	16
		L		690	323	59	51	57	46	37	33	25	13
	CASING RADIATED	H		770	587	60	49	55	40	33	27	16	18
		M		730	463	59	47	57	39	31	25	13	17
		L		690	323	58	46	58	38	29	23	11	17
	DUCTED DISCHARGE	H		770	587	62	57	61	52	50	44	40	34
		M		730	463	61	55	60	50	48	42	38	31
		L		690	323	59	53	60	49	47	40	36	28

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Sound Power @0.16 ESP, continued

Table 30: ZRNU073M2~243M2AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU183M2AA	RETURN OPENING	H	0.16	810	713	61	56	58	50	43	39	33	24
		M		770	587	60	54	57	49	41	37	31	20
		L		730	463	60	52	57	47	39	35	28	16
	CASING RADIATED	H		810	713	61	51	54	41	35	29	19	19
		M		770	587	60	49	55	40	33	27	16	18
		L		730	463	59	47	57	39	31	25	13	17
	DUCTED DISCHARGE	H		810	713	64	59	61	53	52	46	42	37
		M		770	587	62	57	61	52	50	44	40	34
		L		730	463	61	55	60	50	48	42	38	31
ZRNU243M2AA	RETURN OPENING	H	0.16	810	713	61	56	58	50	43	39	33	24
		M		770	587	60	54	57	49	41	37	31	20
		L		730	463	60	52	57	47	39	35	28	16
	CASING RADIATED	H		810	713	61	51	54	41	35	29	19	19
		M		770	587	60	49	55	40	33	27	16	18
		L		730	463	59	47	57	39	31	25	13	17
	DUCTED DISCHARGE	H		810	713	64	59	61	53	52	46	42	37
		M		770	587	62	57	61	52	50	44	40	34
		L		730	463	61	55	60	50	48	42	38	31

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Sound Power @0.20 ESP

Table 31: ZRNU073M2~243M2AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU073M2AA	RETURN OPENING	H	0.20	810	477	60	58	61	49	42	38	31	21
		M		790	399	60	57	61	48	41	37	30	20
		L		770	327	59	57	61	48	40	36	29	18
	CASING RADIATED	H		810	477	60	54	51	42	35	28	18	18
		M		790	399	59	54	51	42	34	27	17	18
		L		770	327	59	54	52	41	33	26	16	18
	CASING RADIATED	H		810	477	70	60	58	53	51	46	41	38
		M		790	399	70	59	57	52	51	45	40	36
		L		770	327	70	59	57	52	50	44	39	35
ZRNU093M2AA	RETURN OPENING	H	0.20	810	477	60	58	61	49	42	38	31	21
		M		790	399	60	57	61	48	41	37	30	20
		L		770	327	59	57	61	48	40	36	29	18
	CASING RADIATED	H		810	477	60	54	51	42	35	28	18	18
		M		790	399	59	54	51	42	34	27	17	18
		L		770	327	59	54	52	41	33	26	16	18
	DUCTED DISCHARGE	H		810	477	70	60	58	53	51	46	41	38
		M		790	399	70	59	57	52	51	45	40	36
		L		770	327	70	59	57	52	50	44	39	35
ZRNU123M2AA	RETURN OPENING	H	0.20	820	520	60	58	60	49	42	39	32	22
		M		800	435	60	57	61	49	41	38	31	20
		L		780	363	59	57	61	48	40	37	29	19
	CASING RADIATED	H		820	520	60	54	51	42	35	28	18	19
		M		800	435	60	54	51	42	34	28	17	18
		L		780	363	59	54	51	41	33	27	16	18
	DUCTED DISCHARGE	H		820	520	70	60	58	53	52	46	42	38
		M		800	435	70	60	58	53	51	45	41	37
		L		780	363	70	59	57	52	50	44	40	36
ZRNU153M2AA	RETURN OPENING	H	0.20	820	520	60	58	60	49	42	39	32	22
		M		800	435	60	57	61	49	41	38	31	20
		L		780	363	59	57	61	48	40	37	29	19
	CASING RADIATED	H		820	520	60	54	51	42	35	28	18	19
		M		800	435	60	54	51	42	34	28	17	18
		L		780	363	59	54	51	41	33	27	16	18
	DUCTED DISCHARGE	H		820	520	70	60	58	53	52	46	42	38
		M		800	435	70	60	58	53	51	45	41	37
		L		780	363	70	59	57	52	50	44	40	36

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Sound Power @0.20 ESP, continued

Table 32: ZRNU073M2~243M2AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU183M2AA	RETURN OPENING	H	0.20	840	640	61	58	60	50	43	40	33	24
		M		820	520	60	58	60	49	42	39	32	22
		L		800	435	60	57	61	49	41	38	31	20
	CASING RADIATED	H		840	640	60	54	50	42	36	29	20	19
		M		820	520	60	54	51	42	35	28	18	19
		L		800	435	60	54	51	42	34	28	17	18
	DUCTED DISCHARGE	H		840	640	70	61	59	54	53	47	43	39
		M		820	520	70	60	58	53	52	46	42	38
		L		800	435	70	60	58	53	51	45	41	37
ZRNU243M2AA	RETURN OPENING	H	0.20	840	640	61	58	60	50	43	40	33	24
		M		820	520	60	58	60	49	42	39	32	22
		L		800	435	60	57	61	49	41	38	31	20
	CASING RADIATED	H		840	640	60	54	50	42	36	29	20	19
		M		820	520	60	54	51	42	35	28	18	19
		L		800	435	60	54	51	42	34	28	17	18
	DUCTED DISCHARGE	H		840	640	70	61	59	54	53	47	43	39
		M		820	520	70	60	58	53	52	46	42	38
		L		800	435	70	60	58	53	51	45	41	37

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Sound Power @0.24 ESP

Table 33: ZRNU073M2~243M2AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU073M2AA	RETURN OPENING	H	0.24	830	468	60	56	54	48	42	37	30	20
		M		810	381	59	55	53	48	42	36	29	19
		L		790	294	59	55	53	47	41	35	28	17
	CASING RADIATED	H		830	468	57	51	44	39	36	28	17	12
		M		810	381	57	50	44	38	35	27	16	11
		L		790	294	56	49	43	37	34	26	15	10
	DUCTED DISCHARGE	H		830	468	67	63	60	57	58	50	48	47
		M		810	381	66	63	60	57	57	50	48	47
		L		790	294	66	62	60	56	57	49	47	46
ZRNU093M2AA	RETURN OPENING	H	0.24	830	468	60	56	54	48	42	37	30	20
		M		810	381	59	55	53	48	42	36	29	19
		L		790	294	59	55	53	47	41	35	28	17
	CASING RADIATED	H		830	468	57	51	44	39	36	28	17	12
		M		810	381	57	50	44	38	35	27	16	11
		L		790	294	56	49	43	37	34	26	15	10
	DUCTED DISCHARGE	H		830	468	67	63	60	57	58	50	48	47
		M		810	381	66	63	60	57	57	50	48	47
		L		790	294	66	62	60	56	57	49	47	46
ZRNU123M2AA	RETURN OPENING	H	0.24	840	512	60	56	54	49	43	38	31	21
		M		820	425	60	56	54	48	42	37	30	20
		L		800	337	59	55	53	47	41	36	29	18
	CASING RADIATED	H		840	512	58	51	45	39	36	28	18	13
		M		820	425	57	50	44	38	35	28	17	12
		L		800	337	56	49	43	38	34	27	16	11
	DUCTED DISCHARGE	H		840	512	67	63	61	57	58	50	48	47
		M		820	425	66	63	60	57	57	50	48	47
		L		800	337	66	62	60	56	57	50	47	46
ZRNU153M2AA	RETURN OPENING	H	0.24	840	512	60	56	54	49	43	38	31	21
		M		820	425	60	56	54	48	42	37	30	20
		L		800	337	59	55	53	47	41	36	29	18
	CASING RADIATED	H		840	512	58	51	45	39	36	28	18	13
		M		820	425	57	50	44	38	35	28	17	12
		L		800	337	56	49	43	38	34	27	16	11
	DUCTED DISCHARGE	H		840	512	67	63	61	57	58	50	48	47
		M		820	425	66	63	60	57	57	50	48	47
		L		800	337	66	62	60	56	57	50	47	46

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Sound Power @0.24 ESP, continued

Table 34: ZRNU073M2~243M2AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU183M2AA	RETURN OPENING	H	0.24	890	673	61	58	56	50	45	40	34	25
		M		840	512	60	56	54	49	43	38	31	21
		L		820	425	60	56	54	48	42	37	30	20
	CASING RADIATED	H		890	673	59	53	46	41	38	31	21	16
		M		840	512	58	51	45	39	36	28	18	13
		L		820	425	57	50	44	38	35	28	17	12
	DUCTED DISCHARGE	H		890	673	67	62	59	56	55	49	46	43
		M		840	512	67	63	61	57	58	50	48	47
		L		820	425	66	63	60	57	57	50	48	47
ZRNU243M2AA	RETURN OPENING	H	0.24	890	673	61	58	56	50	45	40	34	25
		M		840	512	60	56	54	49	43	38	31	21
		L		820	425	60	56	54	48	42	37	30	20
	CASING RADIATED	H		890	673	59	53	46	41	38	31	21	16
		M		840	512	58	51	45	39	36	28	18	13
		L		820	425	57	50	44	38	35	28	17	12
	DUCTED DISCHARGE	H		890	673	67	62	59	56	55	49	46	43
		M		840	512	67	63	61	57	58	50	48	47
		L		820	425	66	63	60	57	57	50	48	47

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Sound Power @0.71 ESP

Table 35: ZRNU073M2~243M2AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU073M2AA	RETURN OPENING	H	0.71	1320	440	71	70	65	58	55	51	47	41
		M		1280	306	68	67	63	56	52	48	44	37
		L		1240	211	69	68	63	56	52	47	43	36
	CASING RADIATED	H		1320	440	72	63	54	49	50	43	36	29
		M		1280	306	73	63	53	48	47	41	34	28
		L		1240	211	75	65	55	49	46	41	34	27
	DUCTED DISCHARGE	H		1320	440	74	69	66	62	63	58	55	53
		M		1280	306	72	67	64	60	61	56	53	50
		L		1240	211	72	66	63	59	60	54	51	48
ZRNU093M2AA	RETURN OPENING	H	0.71	1320	440	71	70	65	58	55	51	47	41
		M		1280	306	68	67	63	56	52	48	44	37
		L		1240	211	69	68	63	56	52	47	43	36
	CASING RADIATED	H		1320	440	72	63	54	49	50	43	36	29
		M		1280	306	73	63	53	48	47	41	34	28
		L		1240	211	75	65	55	49	46	41	34	27
	DUCTED DISCHARGE	H		1320	440	74	69	66	62	63	58	55	53
		M		1280	306	72	67	64	60	61	56	53	50
		L		1240	211	72	66	63	59	60	54	51	48
ZRNU123M2AA	RETURN OPENING	H	0.71	1340	528	72	71	66	59	57	52	48	42
		M		1300	353	68	67	62	55	52	48	44	38
		L		1260	258	69	68	63	56	52	48	44	37
	CASING RADIATED	H		1340	528	74	65	55	50	53	45	38	31
		M		1300	353	71	62	53	48	48	41	34	28
		L		1260	258	75	65	54	49	47	41	34	27
	DUCTED DISCHARGE	H		1340	528	75	69	66	63	64	58	56	54
		M		1300	353	73	67	65	61	62	56	53	51
		L		1260	258	72	67	64	60	61	55	52	49
ZRNU153M2AA	RETURN OPENING	H	0.71	1340	528	72	71	66	59	57	52	48	42
		M		1300	353	68	67	62	55	52	48	44	38
		L		1260	258	69	68	63	56	52	48	44	37
	CASING RADIATED	H		1340	528	74	65	55	50	53	45	38	31
		M		1300	353	71	62	53	48	48	41	34	28
		L		1260	258	75	65	54	49	47	41	34	27
	DUCTED DISCHARGE	H		1340	528	75	69	66	63	64	58	56	54
		M		1300	353	73	67	65	61	62	56	53	51
		L		1260	258	72	67	64	60	61	55	52	49

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Sound Power @0.71 ESP, continued

Table 36: ZRNU073M2~243M2AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU183M2AA	RETURN OPENING	H	0.71	1360	616	73	72	67	60	58	53	50	44
		M		1340	528	72	71	66	59	57	52	48	42
		L		1300	353	68	67	62	55	52	48	44	38
	CASING RADIATED	H		1360	616	75	67	56	52	56	47	39	33
		M		1340	528	74	65	55	50	53	45	38	31
		L		1300	353	71	62	53	48	48	41	34	28
	DUCTED DISCHARGE	H		1360	616	75	70	67	63	64	59	56	55
		M		1340	528	75	69	66	63	64	58	56	54
		L		1300	353	73	67	65	61	62	56	53	51
ZRNU243M2AA	RETURN OPENING	H	0.71	1360	616	73	72	67	60	58	53	50	44
		M		1340	528	72	71	66	59	57	52	48	42
		L		1300	353	68	67	62	55	52	48	44	38
	CASING RADIATED	H		1360	616	75	67	56	52	56	47	39	33
		M		1340	528	74	65	55	50	53	45	38	31
		L		1300	353	71	62	53	48	48	41	34	28
	DUCTED DISCHARGE	H		1360	616	75	70	67	63	64	59	56	55
		M		1340	528	75	69	66	63	64	58	56	54
		L		1300	353	73	67	65	61	62	56	53	51

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Sound Power @0.16 ESP

Table 37: ZRNU0283M3AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU283M3AA	RETURN OPENING	H	0.16	790	1203	67	59	58	59	56	52	46	36
		M		740	1037	66	57	57	58	54	50	43	33
		L		680	817	65	55	54	56	51	48	41	29
	CASING RADIATED	H		790	1203	62	55	51	51	42	34	29	26
		M		740	1037	61	51	49	50	41	30	26	24
		L		680	817	60	46	47	49	39	27	23	22
	DUCTED DISCHARGE	H		790	1203	78	67	60	60	58	53	51	43
		M		740	1037	78	64	59	59	56	51	49	40
		L		680	817	77	60	57	57	54	48	46	36

Sound Power @0.20 ESP

Table 38: ZRNU0283M3AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU283M3AA	RETURN OPENING	H	0.20	830	1235	67	60	58	59	56	53	46	36
		M		790	1060	66	58	56	57	54	51	43	33
		L		750	915	66	55	55	56	53	49	41	30
	CASING RADIATED	H		830	1235	66	65	53	51	44	35	29	22
		M		790	1060	65	63	52	51	43	32	27	18
		L		750	915	64	61	52	50	43	30	25	14
	DUCTED DISCHARGE	H		830	1235	78	70	61	61	60	54	52	45
		M		790	1060	77	69	60	60	58	52	50	42
		L		750	915	76	67	59	58	56	50	48	39

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HIGH STATIC DUCTED

Acoustic Data

ZRNU283M3AA Sound Power Data

Sound Power @0.24 ESP

Table 39: ZRNU0283M3AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU283M3AA	RETURN OPENING	H	0.24	850	1250	66	61	59	59	56	53	46	36
		M		810	1017	66	60	58	58	54	51	44	34
		L		770	837	66	59	57	57	53	50	42	31
	CASING RADIATED	H		850	1250	64	59	51	50	43	36	29	25
		M		810	1017	66	57	52	49	41	34	27	22
		L		770	837	69	55	53	49	39	31	24	20
	DUCTED DISCHARGE	H		850	1250	79	69	62	62	60	55	53	46
		M		810	1017	80	68	61	61	59	53	51	43
		L		770	837	81	67	59	59	57	51	49	41

Sound Power @0.79 ESP

Table 40: ZRNU0283M3AA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU283M3AA	RETURN OPENING	H	0.79	1240	1108	81	74	69	64	63	59	54	46
		M		1200	868	81	74	69	64	63	59	54	46
		L		1180	779	81	75	69	64	63	59	54	46
	CASING RADIATED	H		1240	1108	67	66	53	55	52	47	44	37
		M		1200	868	65	66	51	55	52	47	44	37
		L		1180	779	64	66	51	54	52	47	44	37
	DUCTED DISCHARGE	H		1240	1108	84	78	70	68	70	64	62	56
		M		1200	868	84	79	70	68	70	64	62	55
		L		1180	779	83	79	70	68	70	64	62	55

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HIGH STATIC DUCTED

Acoustic Data

B8 Units Sound Power Data

MODEL	RATING	Fan speed	E.S.P	RPM	CFM	SOUND POWER LEVEL, (dB one reference picowatt)							
						63 Hz	125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz
ZRNU363B8AA	RETURN OPENING	Hi	0.7	920	1730	51.8	55.9	51.6	47.2	47.2	40.1	35.3	24.8
		Mid		880	1317	51.5	55.4	50.0	46.4	45.6	38.3	32.6	23.9
		Low		840	1066	51.2	54.7	48.7	45.4	44.1	36.5	29.9	22.9
	CASING RADIATED	Hi		920	1730	39.5	44.1	46.9	48.9	49.2	44.7	36.0	26.4
		Mid		880	1317	38.7	43.5	46.1	47.6	48.1	44.4	34.6	21.0
		Low		840	1066	37.8	42.8	44.4	46.3	46.9	44.2	33.1	16.6
	DUCTED DISCHARGE	Hi		920	1730	78.6	71.2	59.4	61.0	61.8	59.8	54.4	45.6
		Mid		880	1317	76.3	66.2	55.2	59.8	60.3	58.6	52.8	44.7
		Low		840	1066	73.8	60.6	50.6	58.7	58.8	57.3	51.2	43.0
ZRNU423B8AA	RETURN OPENING	Hi	0.7	930	1914	51.9	56.2	51.6	47.7	47.5	40.5	35.9	25.0
		Mid		890	1458	51.6	55.6	50.3	46.7	46.0	38.7	33.2	24.1
		Low		850	1123	51.3	54.9	49.0	45.7	44.5	37.0	30.5	23.2
	CASING RADIATED	Hi		930	1914	39.7	44.3	48.2	49.2	49.5	44.7	36.3	26.5
		Mid		890	1458	38.9	43.6	46.5	47.9	48.3	44.5	34.9	22.1
		Low		850	1123	38.0	43.0	44.8	46.6	47.2	44.3	33.5	17.7
	DUCTED DISCHARGE	Hi		930	1914	79.5	73.3	61.1	61.2	62.2	60.1	54.8	46.9
		Mid		890	1458	76.9	67.7	56.4	60.1	60.7	58.9	53.2	45.2
		Low		850	1123	74.4	62.0	51.7	59.0	59.2	57.6	51.6	43.4
ZRNU483B8AA	RETURN OPENING	Hi	0.7	940	2019	52.1	56.6	51.6	47.8	47.4	40.3	35.6	25.2
		Mid		900	1518	51.7	55.7	50.6	47.0	46.4	39.2	33.9	24.3
		Low		860	1200	51.3	55.1	49.3	45.9	44.9	37.4	31.2	23.4
	CASING RADIATED	Hi		940	2019	39.9	44.3	49.3	49.5	49.8	44.8	37.5	27.8
		Mid		900	1518	39.1	43.8	47.0	48.2	48.6	44.6	35.3	23.2
		Low		860	1200	38.3	43.1	45.2	46.9	47.5	44.3	33.8	18.8
	DUCTED DISCHARGE	Hi		940	2019	80.1	75.5	62.2	61.5	62.5	61.0	56.0	48.2
		Mid		900	1518	77.6	69.1	57.6	60.4	61.1	59.2	53.6	45.6
		Low		860	1200	75.0	63.4	52.9	59.3	59.6	57.9	52.0	43.9
ZRNU543B8AA	RETURN OPENING	Hi	0.87	1020	2260	54.0	58.6	53.3	48.9	48.9	41.8	37.2	27.6
		Mid		980	1766	54.0	58.3	51.5	48.6	48.4	40.8	35.2	27.2
		Low		980	1766	54.0	58.3	51.5	48.6	48.4	40.8	35.2	27.2
	CASING RADIATED	Hi		1020	2260	41.3	45.9	49.4	51.3	52.1	49.2	39.8	35.4
		Mid		980	1766	41.3	45.9	49.3	50.0	51.2	48.4	39.2	31.7
		Low		980	1766	41.3	45.9	49.3	50.0	51.2	48.4	39.2	31.7
	DUCTED DISCHARGE	Hi		1020	2260	79.4	72.3	60.7	62.7	63.7	62.0	56.9	49.7
		Mid		980	1766	78.2	68.6	56.8	62.3	63.2	61.6	56.0	48.8
		Low		980	1766	78.2	68.6	56.8	62.3	63.2	61.6	56.0	48.8

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HIGH STATIC DUCTED

Acoustic Data

B8 Units Sound Power Data

MODEL	RATING	Fan speed	E.S.P	RPM	CFM	SOUND POWER LEVEL, (dB one reference picowatt)							
						63 Hz	125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz
ZRNU763B8AA	RETURN OPENING	Hi	0.87	1020	2260	54.0	58.6	53.3	48.9	48.9	41.8	37.2	27.6
		Mid		980	1766	54.0	58.3	51.5	48.6	48.4	40.8	35.2	27.2
		Low		980	1766	54.0	58.3	51.5	48.6	48.4	40.8	35.2	27.2
	CASING RADIATED	Hi		1020	2260	41.3	45.9	49.4	51.3	52.1	49.2	39.8	35.4
		Mid		980	1766	41.3	45.9	49.3	50.0	51.2	48.4	39.2	31.7
		Low		980	1766	41.3	45.9	49.3	50.0	51.2	48.4	39.2	31.7
	DUCTED DISCHARGE	Hi		1020	2260	79.4	72.3	60.7	62.7	63.7	62.0	56.9	49.7
		Mid		980	1766	78.2	68.6	56.8	62.3	63.2	61.6	56.0	48.8
		Low		980	1766	78.2	68.6	56.8	62.3	63.2	61.6	56.0	48.8
ZRNU963B8AA	RETURN OPENING	Hi	0.87	1050	2542	55.5	59.7	54.3	50.3	50.8	43.6	39.5	30.3
		Mid		1020	2260	54.0	58.6	53.3	48.9	48.9	41.8	37.2	27.6
		Low		1020	2260	54.0	58.6	53.3	48.9	48.9	41.8	37.2	27.6
	CASING RADIATED	Hi		1050	2542	42.8	46.6	51.3	52.4	53.2	49.7	42.7	38.2
		Mid		1020	2260	41.3	45.9	49.4	51.3	52.1	49.2	39.8	35.4
		Low		1020	2260	41.3	45.9	49.4	51.3	52.1	49.2	39.8	35.4
	DUCTED DISCHARGE	Hi		1050	2542	82.4	75.9	65.3	64.1	65.7	63.8	58.6	51.7
		Mid		1020	2260	79.4	72.3	60.7	62.7	63.7	62.0	56.9	49.7
		Low		1020	2260	79.4	72.3	60.7	62.7	63.7	62.0	56.9	49.7

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HIGH STATIC DUCTED

Cooling Capacity Table

Table 41: R32 M2, M3 High Static Ducted Indoor Unit Cooling Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp. (°F DB)	Indoor Air Temperature (°F DB / WB)													
		68 / 57		73 / 61		79 / 64		80 / 67		85 / 70		88 / 73		91 / 76	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
M2 High Static Ducted Indoor Units															
ZRNU073M2AA / 7.5	95	4.9	4.6	6	5.3	6.8	5.6	7.5	6.0	8	6.2	8.2	5.9	8.3	5.6
ZRNU093M2AA / 9.6	95	6.3	5.8	7.7	6.7	8.6	7.1	9.6	7.6	10.3	7.9	10.5	7.5	10.6	7.1
ZRNU123M2AA / 12.3	95	8.1	7.3	9.8	8.5	11.1	9.0	12.3	9.6	13.2	10.0	13.4	9.5	13.6	8.9
ZRNU153M2AA / 15.4	95	10.1	9.3	12.3	10.7	13.9	11.4	15.4	12.2	16.5	12.6	16.8	12.0	17.1	11.3
ZRNU183M2AA / 19.1	95	12.6	11.4	15.3	13.1	17.2	14.0	19.1	14.9	20.5	15.5	20.9	14.7	21.2	13.9
ZRNU243M2AA / 24.2	95	15.9	14.4	19.4	16.1	21.8	17.7	24.2	17.7	25.9	19.2	26.4	18.7	26.8	17.6
M3 High Static Ducted Indoor Unit															
ZRNU283M3AA / 28.0	95	18.4	17.1	22.4	19.8	25.2	21.0	28.0	22.4	30	23.3	30.6	22.1	31	20.9

Table 42: R32 B8 High Static Ducted Indoor Unit Cooling Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp. (°F DB)	Indoor Air Temperature (°F DB / WB)													
		68 / 57		73 / 61		79 / 64		80 / 67		85 / 70		88 / 73		91 / 76	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
ZRNU363B8AA / 36.2	95	23.8	20.0	29.0	23.0	32.6	24.5	36.2	26.1	38.8	27.1	39.5	25.8	40.1	24.4
ZRNU423B8AA / 42.0	95	27.7	23.2	33.6	26.7	37.8	28.4	42.0	30.3	45.0	31.5	45.9	30.0	46.6	28.3
ZRNU463B8AA / 48.1	95	31.7	26.5	38.5	30.6	43.3	32.6	48.1	34.7	51.5	36.1	52.5	34.3	53.3	32.4
ZRNU543B8AA / 54.0	95	35.6	28.9	43.2	33.4	48.6	35.5	54.0	37.8	57.8	39.3	58.9	37.4	59.8	35.2
ZRNU763B8AA / 76.4	95	50.3	40.9	61.1	47.2	68.8	50.2	76.4	53.5	81.8	55.6	83.4	52.9	84.7	49.9
ZRNU963B8AA / 95.9	95	63.1	51.3	76.7	59.2	86.3	63.0	95.9	67.1	102.7	69.8	104.7	66.4	106.3	62.6

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

Cooling range with the Low Ambient Baffle Kit (sold separately) installed on the outdoor unit(s) is -9.9°F to +122°F, and is achieved only when all indoor units are operating in cooling mode. Does not impact heat recovery system synchronous operating range.

The System Combination Ratio must be between 50–130%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice.

Current certified ratings are available at https://www.ahridirectory.org/

For outdoor unit performance data, see the respective outdoor unit performance data manuals on https://lghvac.com/commercial.

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Heating Capacity Table

Table 43: R32 M2, M3 High Static Ducted Indoor Unit Heating Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp.		Indoor Air Temperature (°F DB)							
			59	61	64	67	70	73	76	80
	°F DB	°F WB	TC	TC	TC	TC	TC	TC	TC	TC
			MBh	MBh	MBh	MBh	MBh	MBh	MBh	MBh
M2 High Static Ducted Indoor Units										
ZRNU073M2AA / 7.5	47	43	9.5	9.4	9.4	8.9	8.5	8.3	7.8	7.4
ZRNU093M2AA / 9.6	47	43	12.2	12.1	12.0	11.5	10.9	10.6	10.0	9.5
ZRNU123M2AA/ 12.3	47	43	15.2	15.1	15.0	14.3	13.6	13.2	12.5	11.9
ZRNU153M2AA / 15.4	47	43	19.2	19.0	18.8	18.0	17.1	16.6	15.7	15.0
ZRNU183M2AA / 19.1	47	43	24.1	23.9	23.7	22.6	21.5	20.9	19.8	18.8
ZRNU243M2AA / 24.2	47	43	30.6	30.3	30.0	28.7	27.3	26.5	25.1	23.9
M3 High Static Ducted Indoor Unit										
ZRNU283M3AA / 28.0	47	43	35.3	35.0	34.7	33.1	31.5	30.6	29.0	27.6

Table 44: R32 B8 High Static Ducted Indoor Unit Heating Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp.		Indoor Air Temperature (°F DB)							
			59	61	64	67	70	73	76	80
	°F DB	°F WB	TC	TC	TC	TC	TC	TC	TC	TC
			MBh	MBh	MBh	MBh	MBh	MBh	MBh	MBh
ZRNU363B8AA / 36.2	47	43	45.5	45.1	44.7	42.6	40.6	39.4	37.4	35.5
ZRNU423B8AA / 42.0	47	43	49.1	48.6	48.2	46.0	43.8	42.5	40.3	38.3
ZRNU483B8AA / 48.1	47	43	57.3	56.8	56.3	53.8	51.2	49.7	47.1	44.8
ZRNU543B8AA / 54.0	47	43	74.7	71.1	67.7	64.5	61.4	59.6	56.1	53.7
ZRNU763B8AA / 76.4	47	43	96.3	95.5	94.6	90.3	86.0	83.4	79.1	75.3
ZRNU963B8AA / 95.9	47	43	120.4	119.3	118.3	112.9	107.5	104.3	98.9	94.1

TC: Total Capacity (MBh).

The System Combination Ratio must be between 50–130%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice.

Current certified ratings are available at https://www.ahridirectory.org/

For outdoor unit performance data, see the respective outdoor unit performance data manuals on https://lghvac.com/commercial.

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Table 45: Accessories Overview (Sold Separately).

Accessory	Model Number
High Efficiency Filter Box	• ZFBXM201A (For 7~24MBh M2 Ducted High Static Indoor Units) • ZFBXM301A (For 28MBh M3 Ducted High Static Indoor Units) • ZFBXB801A (For 36~96MBh B8 Ducted High Static Indoor Units)

All accessories are sold separately.

If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

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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.

MA convertible ducted units have a front horizontal supply air discharge outlet, and one rear horizontal return air outlet which is field convertible for a rear bottom return.

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. The controller is capable of performing functions necessary to operate the system without the use of a wall-mounted controller. A temperature thermistor is factory-mounted in the return air stream. 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 indoor 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 five operating modes:

1. Auto Changeover (Heat Recovery only)
2. Heating
3. Cooling
4. Dry
5. Fan Only

For Heat Recovery systems the Auto Changeover setting automatically switches control of the indoor 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 indoor unit when indoor room temperature falls below setpoint temperature and signals the outdoor unit to begin heating cycle. The indoor unit fan operation is delayed until coil pipe temperature reaches 76ºF. 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 space temperature readings concurrently or individually from either:

1. Wall-mounted wired controller(s)
2. Factory mounted return air thermistor or the optional wall-mounted wired remote temperature sensor

A single indoor 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, alpha numeric, and provide the service technician with a reason for the code displayed.

Condensate Lift/Pump

The indoor 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.

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Condensate Drain Pan

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

Coil

The indoor unit coil is constructed with grooved design copper tubes with slit coil fins, three (3) rows, 18 fins per inch.

Refrigerant Leak Detection

The indoor unit contains an R32 refrigerant leak sensor. The sensor is designed to control optional refrigerant piping shut-off valves if a leak is detected. Shut-off valve units are available as separate LG accessories or included as components in LG Heat Recovery Unit accessories. The sensor can enable four individual controller displayed error codes for leak detection (CH230), sensor fault (CH228), 6 months life remaining (CH236) and end of life (CH229).

Table 46: Refrigerant Leak Sensor Specifications.

Item	Specification
Refrigerant	R32
Detection Concentration	5,000 ppm
Power Supply	DC 5V
Operating Temperature	-25°F to +140°F
Lifetime	10 years

Controls Features

- Auto changeover (Heat Recovery only)
- Auto operation
- Auto restart
- External on/off control
- Dual thermistor control
- Dual set-point control
- Filter life display
- Multiple auxiliary heater applications
- Group control
- External static pressure control
- Hot start
- Self diagnostics
- Timer (on / off)
- Weekly schedule
- Fan speed control
- Wi-Fi compatible
- Auto fan
- R32 leak detection sensor

Figure 17: Convertible Mid Static Ducted Indoor Unit.



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Table 47: R32 Mid Static Ducted Indoor Unit General Data.

Model No.	ZRNU073MAAA	ZRNU093MAAA	ZRNU123MAAA	ZRNU153MAAA	ZRNU183MAAA	ZRNU243MAAA
Cooling Mode Performance						
Capacity (Btu/h)	7,500	9,600	12,300	15,400	19,100	24,200
Max. Power Input[1] (W)	220	220	220	220	220	220
H / M / L Power at Factory Default (W)	47 / 36 / 30	48 / 39 / 32	56 / 46 / 38	81 / 64 / 56	102 / 76 / 66	110 / 89 / 70
Heating Mode Performance						
Capacity (Btu/h)	8,500	10,900	13,600	17,100	21,500	27,300
Max Power Input[1] (W)	220	220	220	220	220	220
H / M / L Power at Factory Default (W)	47 / 36 / 30	48 / 39 / 32	56 / 46 / 38	81 / 64 / 56	102 / 76 / 66	110 / 89 / 70
Unit Data						
Refrigerant Type[2]	R32					
Refrigerant Control	EEV					
Sound Pressure[3] dB(A) (H/M/L)	27 / 24 / 23	27 / 25 / 23	28 / 25 / 23	30 / 27 / 24	32 / 29 / 27	33 / 30 / 28
Sound Power[4] dB(A) (H/M/L)	44 / 41 / 39	44 / 42 / 39	44 / 43 / 40	47 / 43 / 43	49 / 47 / 43	51 / 49 / 47
Net Unit Weight (lbs.)	62.6	62.6	62.6	62.6	62.6	65.5
Shipping Weight (lbs.)	72.1	72.1	72.1	72.1	72.1	75.0
Communication Cable[5] (No. x AWG)	2 x 18					
Fan						
Type	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco
Quantity	1	1	1	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct					
Factory Set Airflow Rate H/M/L (CFM)	283 / 247 / 212	353 / 318 / 283	494 / 424 / 353	530 / 424 / 388	635 / 530 / 424	706 / 547 / 459
Factory Set External Static Pressure (in. wg)	0.16	0.16	0.16	0.16	0.16	0.16
Piping						
Liquid Line (in., O.D.)	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare
Vapor Line (in., O.D.)	3/8 Flare	3/8 Flare	3/8 Flare	1/2 Flare	1/2 Flare	1/2 Flare
Condensate Line (in., I.D.)	1	1	1	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.

All capacities are net with a combination ratio between 95-105%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

[1] Max. power input is rated at maximum setting value.

[2] Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R32 refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

[3] Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[4] Sound Power level is measured using rated conditions, and tested in a reverberation room per ISO 3741.

[5] All communication cable to be minimum 18 AWG, 2-conductor, twisted, stranded, shielded and must comply with applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communication cable at any other point.

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MID STATIC DUCTED

General Data

Table 48: R32 Mid Static Ducted Indoor Unit General Data.

Model No.	ZRNU363M2AA	ZRNU423M2AA	ZRNU483M3AA
Cooling Mode Performance			
Capacity (Btu/h)	36,200	42,000	48,100
Max Power Input[1] (W)	650	650	650
H / M / L Power Input at Factory Default (W)	184 / 123 / 88	231 / 193 / 136	172 / 102 / 75
Heating Mode Performance			
Capacity (Btu/h)	40,600	47,000	54,200
Max Power Input[1] (W)	650	650	650
H / M / L Power Input at Factory Default (W)	184 / 123 / 88	231 / 193 / 136	172 / 102 / 75
Unit Data			
Refrigerant Type[2]	R32		
Refrigerant Control	EEV		
Sound Pressure[3] dB(A) (H/M/L)	42 / 40 / 38	44 / 43 / 40	42 / 39 / 37
Sound Power[4] dB(A) (H/M/L)	65 / 62 / 60	66 / 65 / 63	67 / 64 / 62
Net Unit Weight (lbs.)	86.2	86.2	93.7
Shipping Weight (lbs.)	99.2	99.2	105.4
Communication Cable[5] (No. x AWG)	2 x 18		
Fan			
Type	Sirocco	Sirocco	Sirocco
Motor	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct		
Factory Set Airflow Rate H/M/L (CFM)	992 / 845 / 643	1,260 / 1,076 / 888	1,482 / 1,191 / 918
Factory Set External Static Pressure (in. wg)	0.16	0.16	0.16
Piping			
Liquid Line (in., O.D.)	3/8 Flare	3/8 Flare	3/8 Flare
Vapor Line (in., O.D.)	5/8 Flare	5/8 Flare	5/8 Flare
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.

All capacities are net with a combination ratio between 95-105%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

[1] Max. power input is rated at maximum setting value.

[2] Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R32 refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

[3] Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[4] Sound Power level is measured using rated conditions, and tested in a reverberation room per ISO 3741.

[5] All communication cable to be minimum 18 AWG, 2-conductor, twisted, stranded, shielded and must comply with applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communication cable at any other point.

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Table 49: R32 Mid Static Ducted Indoor Unit Electrical Data.

Model	Voltage Range	MCA	MOP	Rated Amps (A)	Power Supply			Power Input (W)		
					Hz	Volts	Phase	Max. Cooling	Max. Heating	H / M / L at Factory Default
MA Units										
ZRNU073MAAA	208-230	2.9	15	1.7	60	208-230	1	220	220	47 / 36 / 30
ZRNU093MAAA		2.9		1.7				220	220	48 / 39 / 32
ZRNU123MAAA		2.9		1.7				220	220	56 / 46 / 38
ZRNU153MAAA		2.9		1.7				220	220	81 / 64 / 56
ZRNU183MAAA		2.9		1.7				220	220	102 / 76 / 66
ZRNU243MAAA		2.9		1.7				220	220	110 / 89 / 70
M2 Units										
ZRNU363M2AA	208-230	3.2	15	1.67	15	208-230	1	430	430	184 / 123 / 88
ZRNU423M2AA		3.2		1.67				430	430	231 / 193 / 136
M3 Units										
ZRNU483M3AA	208-230	3.2	15	1.67	15	208-230	1	650	650	172 / 102 / 75

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

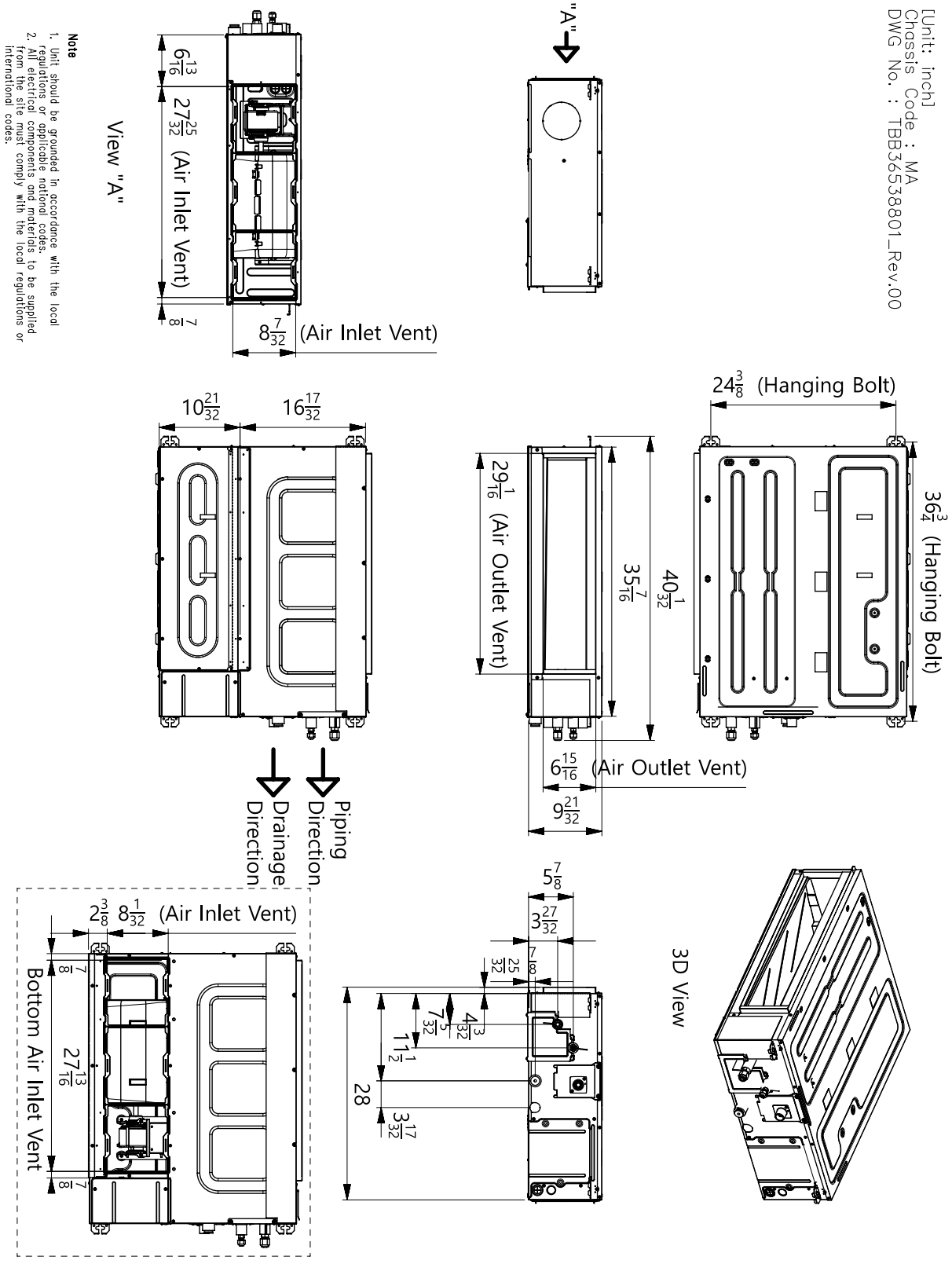
Units are suitable for use on an electrical system where voltage supplied to unit terminals is within the listed range limits.
Select wire size based on the larger MCA value.
Instead of a fuse, use the circuit breaker.

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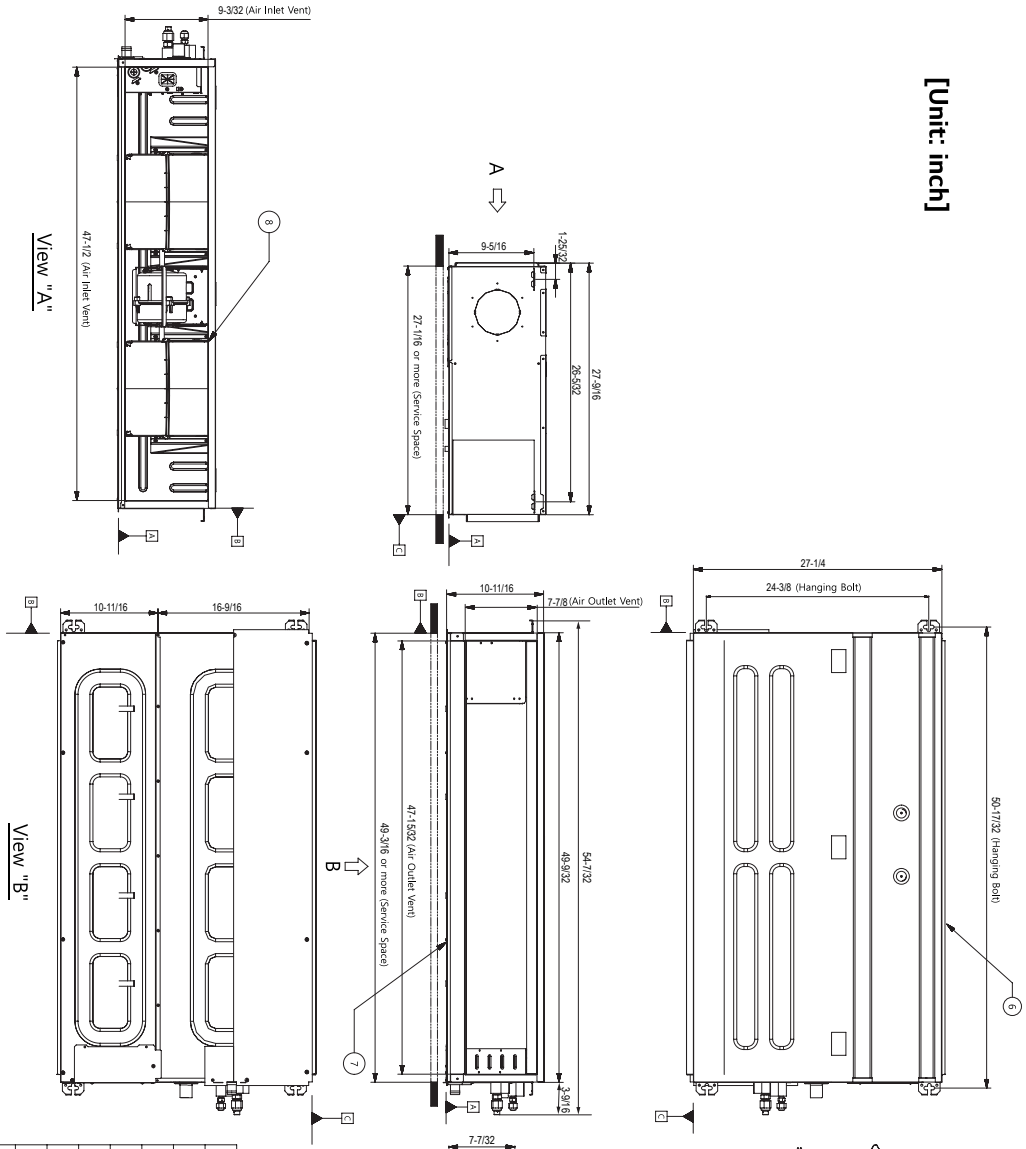
ZRNU073MAAA~243MAAA Dimensions

Figure 18: ZRNU073MAAA~243MAAA Dimensions.



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Figure 19: ZRNU363~423M2AA Dimensions.



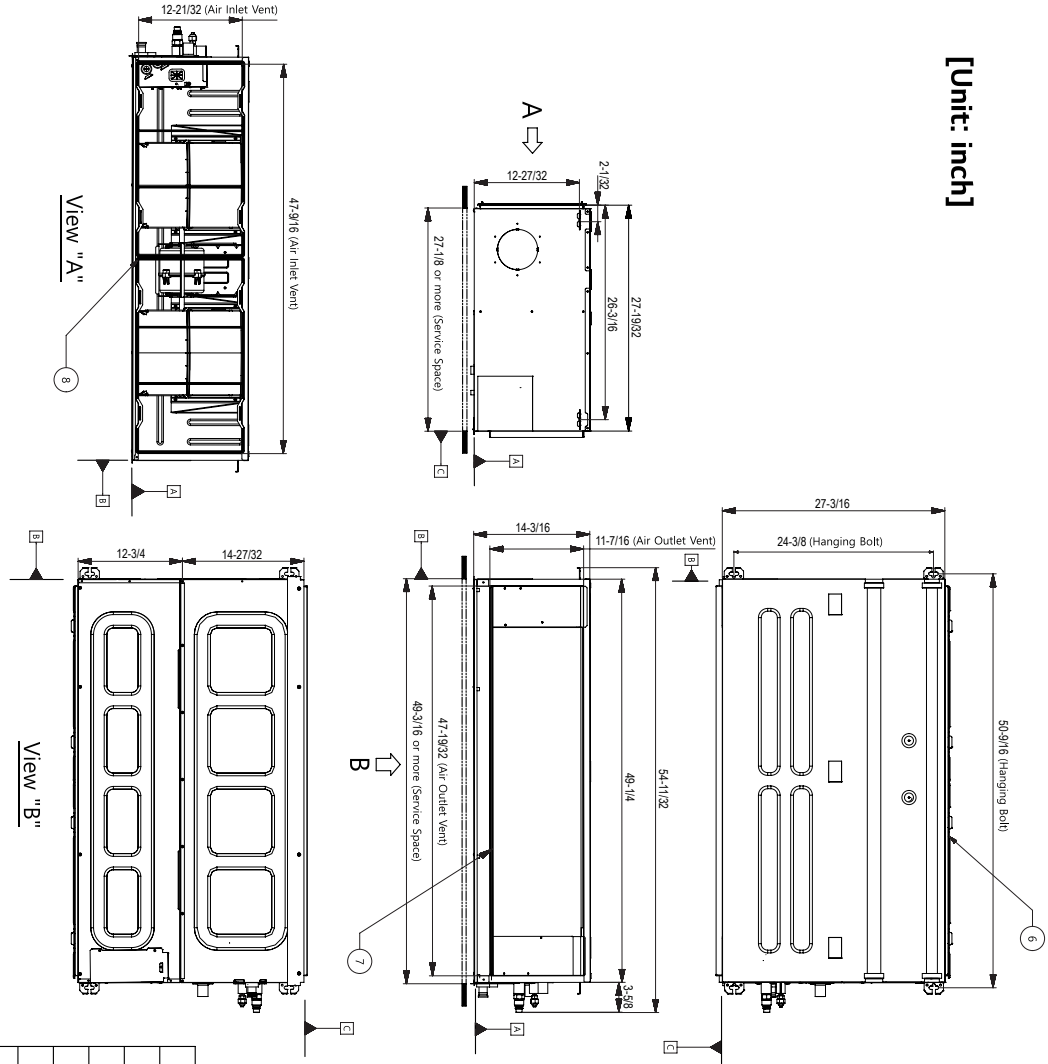
No.	Part Name	Description
1	Gas pipe connection	-
2	Liquid pipe connection	-
3	Drain pipe connection	-
4	Remote and Communication Cable Hole	-
5	Power Cable Hole	-
6	Air Inlet	-
7	Air Outlet	-
8	Air Filters	Supplied with product
9	Control Cover	-

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ZRNU483M3AA Dimensions

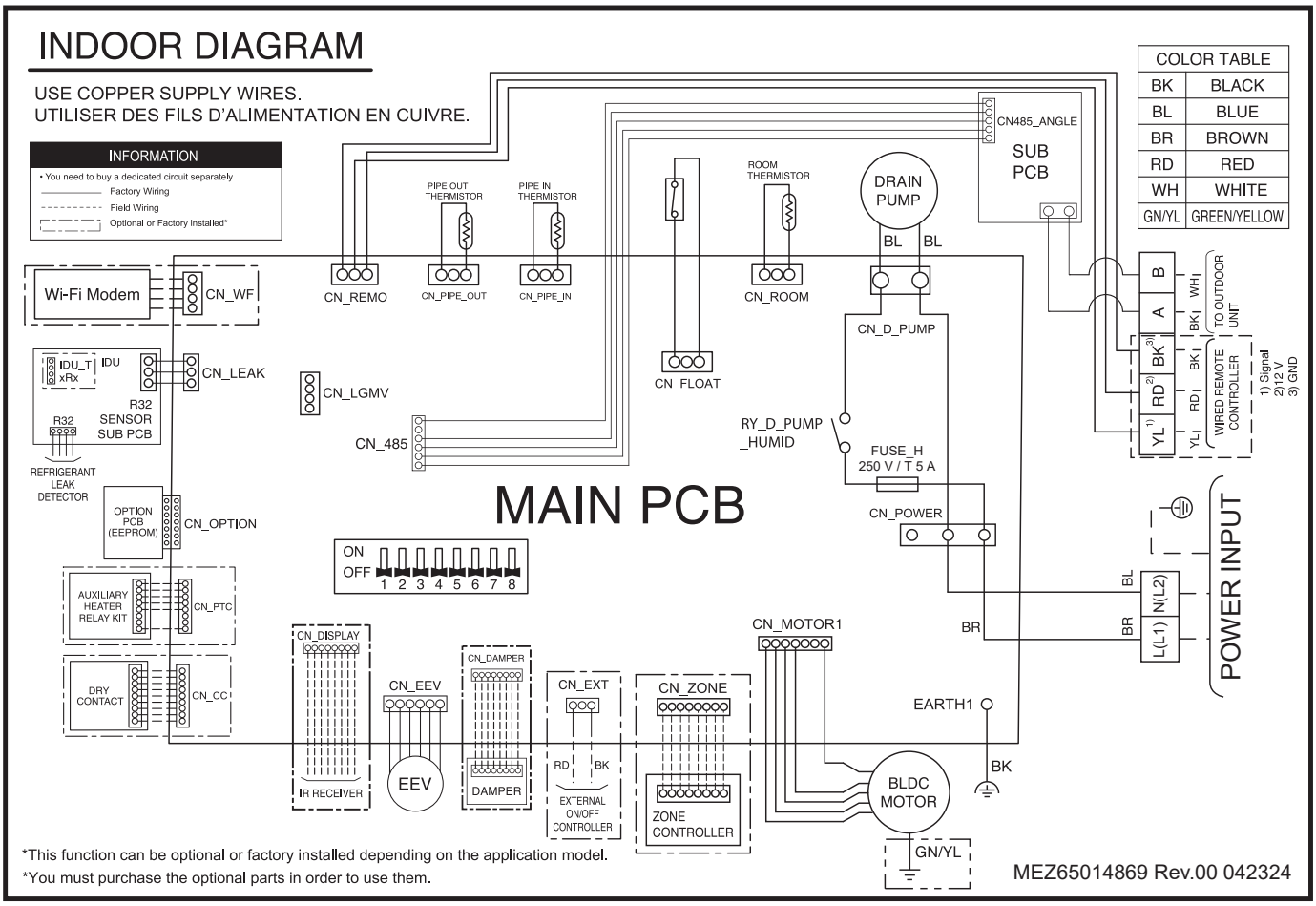
Figure 20: ZRNU483M3AA Dimensions.



No.	Part Name	Description
1	Gas pipe connection	-
2	Liquid pipe connection	-
3	Drain pipe connection	-
4	Remote and Communication Cable Hole	-
5	Power Cable Hole	-
6	Air Inlet	-
7	Air Outlet	-
8	Air Filters	Supplied with product
9	Control Cover	-

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Figure 21: ZRNU073MAAA~243MAAA Wiring Diagram.



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ZRNU073MAAA~243MAAA Wiring Diagram

Table 50: ZRNU073MAAA~243MAAA 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-DAMPER	N / A	N / A
CN-ZONE	Zone controller	Zone controller connection
CN-EXT	External on / off controller	External on / off Controller connection
CN-EEV	EEV Output	EEV control output
CN-OPTION	Optional PCB EPROM	Option PCB connection
CN-DISPLAY	Display	Display of indoor status
CN-PTC	Auxiliary heater	Connection for Auxiliary Heater
CN-CC	Dry contact	Dry Contact connection
CN-HUMID	N / A	N / A
CN-LEAK	Leak detector	Leak detector connection
CN-FLOAT	Float switch input	Float switch sensing
CN-PIPE-OUT	Discharge pipe sensor	Pipe out thermistor
CN-WF	Wi-Fi	Wi-Fi module connection
CN-AIRC	N / A	N / A
CN-PIPE-IN	Suction pipe sensor	Pipe in thermistor
CN-ROOM	Room sensor	Room air thermistor
CN-REMO	Wired remote controller	Wired remote control connection
CN-D-PUMP	Drain pump output	AC output for drain pump
CN-485	Communication	Connection between indoor and outdoor units
CN-LGMV	LGMV	LGMV Connection

*If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

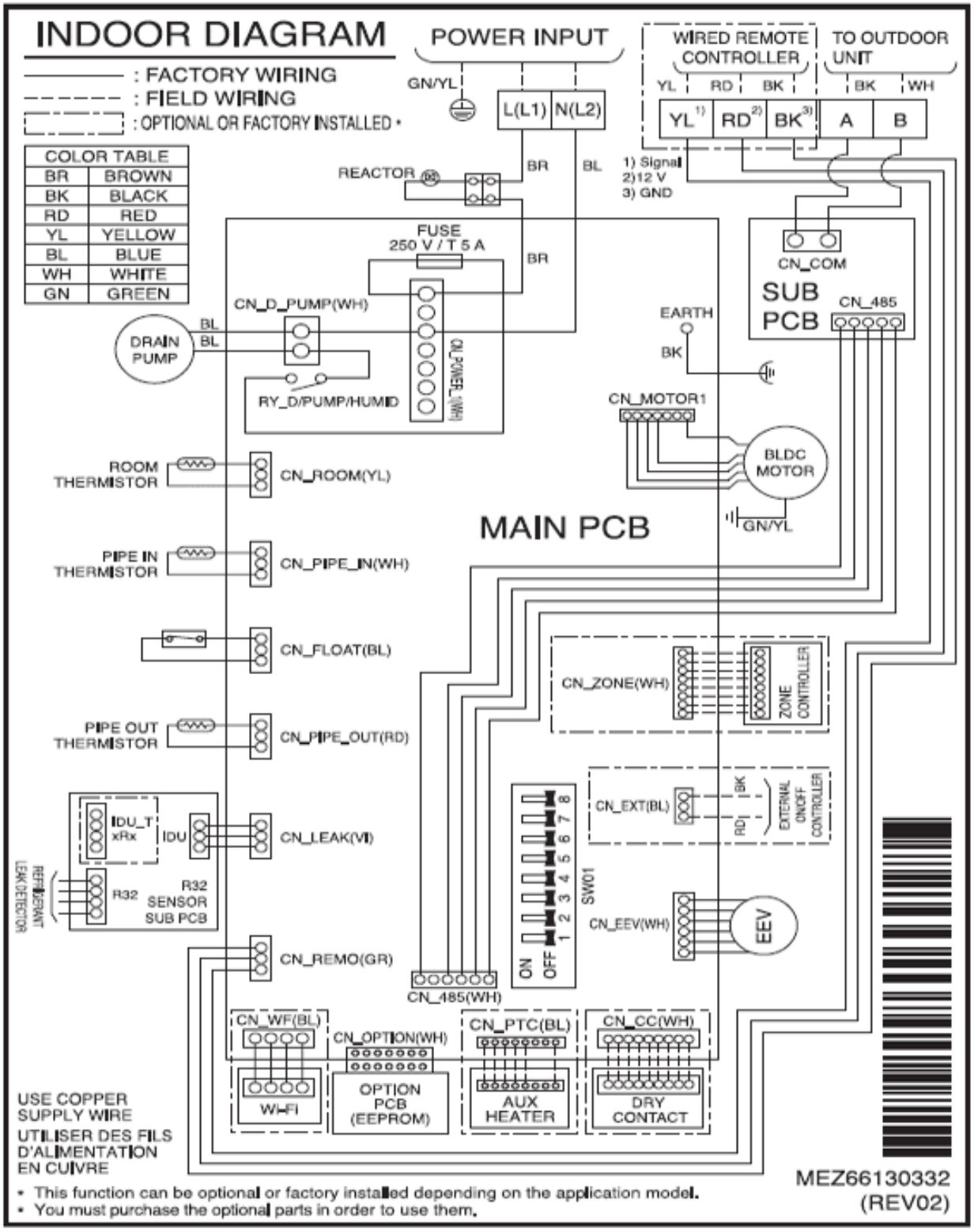
Table 51: ZRNU073MAAA~243MAAA DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub 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	VENTILATOR INTERLOCK	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

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

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Figure 22: ZRNU363~423M2AA Wiring Diagram.



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ZRNU363~423M2AA Wiring Diagram Legend

Table 52: ZRNU363~423M2AA 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-ZONE	Zone controller	Zone controller connection
CN-EXT	External on / off controller	External on / off Controller connection
CN-EEV	EEV Output	EEV control output
CN-OPTION	Optional PCB EPROM	Option PCB connection
CN-DISPLAY	Display	Display of indoor status
CN-PTC	Auxiliary heater	Connection for Auxiliary Heater
CN-CC	Dry contact	Dry Contact connection
CN-LEAK	Leak detector	Leak detector connection
CN-FLOAT	Float switch input	Float switch sensing
CN-PIPE/OUT	Discharge pipe sensor	Pipe out thermistor
CN-WF	Wi-Fi	Wi-Fi module connection
CN-PIPE/IN	Suction pipe sensor	Pipe in thermistor
CN-ROOM	Room sensor	Room air thermistor
CN-REMO	Wired remote controller	Wired remote control connection
CN-D/PUMP	Drain pump output	AC output for drain pump
CN-485	Communication	Connection between indoor and outdoor units

*If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

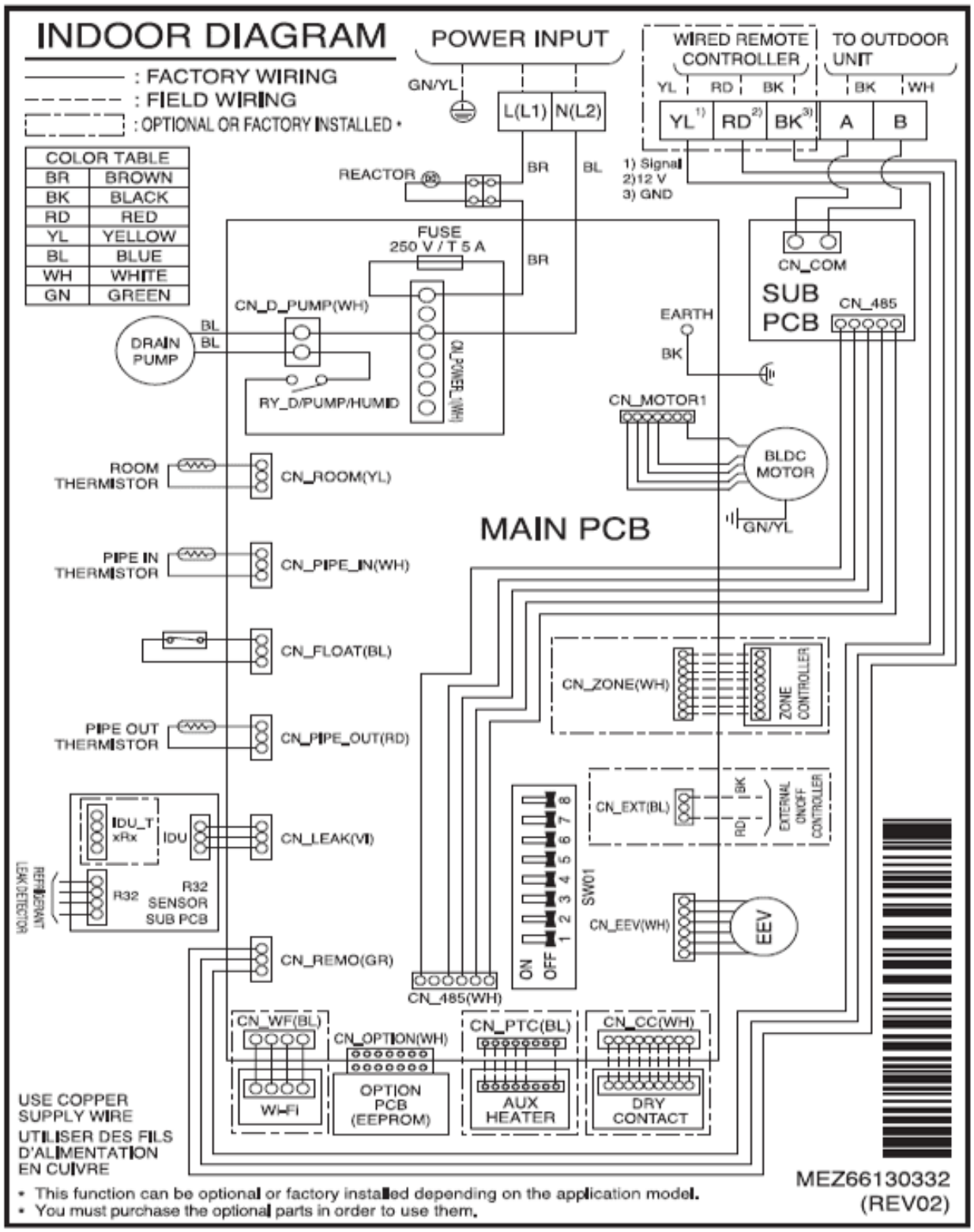
Table 53: ZRNU363~423M2AA DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub 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

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

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Figure 23: ZRNU483M3AA Wiring Diagram.



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ZRNU483M3AA Wiring Diagram Legend

Table 54: ZRNU483M3AA 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-ZONE	Zone controller	Zone controller connection
CN-EXT	External on / off controller	External on / off Controller connection
CN-EEV	EEV Output	EEV control output
CN-OPTION	Optional PCB EPROM	Option PCB connection
CN-DISPLAY	Display	Display of indoor status
CN-PTC	Auxiliary heater	Connection for Auxiliary Heater
CN-CC	Dry contact	Dry Contact connection
CN-LEAK	Leak detector	Leak detector connection
CN-FLOAT	Float switch input	Float switch sensing
CN-PIPE/OUT	Discharge pipe sensor	Pipe out thermistor
CN-WF	Wi-Fi	Wi-Fi module connection
CN-PIPE/IN	Suction pipe sensor	Pipe in thermistor
CN-ROOM	Room sensor	Room air thermistor
CN-REMO	Wired remote controller	Wired remote control connection
CN-D/PUMP	Drain pump output	AC output for drain pump
CN-485	Communication	Connection between indoor and outdoor units

*If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

Table 55: ZRNU483M3AA DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub 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

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

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Figure 24: ZRNU073MAAA~243MAAA, ZRNU363~423M2AA, ZRNU483M3AA Piping Diagram.

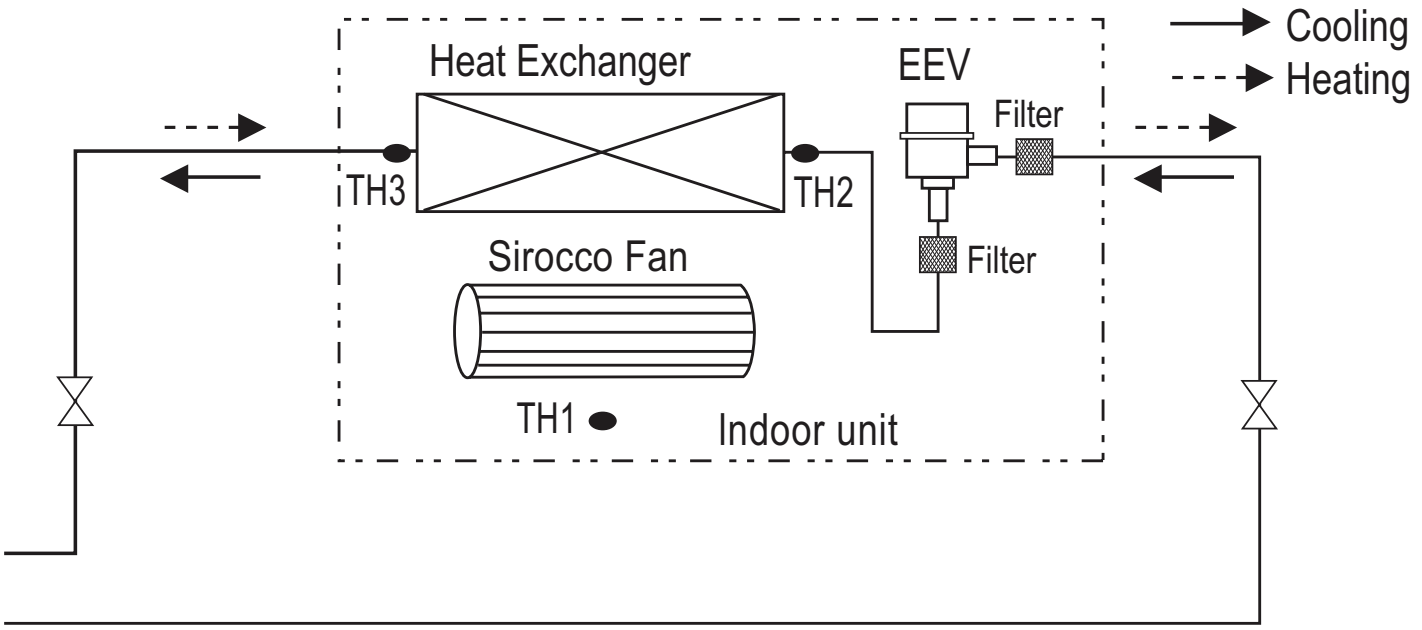


Table 56: ZRNU073MAAA~243MAAA, ZRNU363~423M2AA, ZRNU483M3AA Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
MA Units		
ZRNU073MAAA	1/4 Flare	3/8 Flare
ZRNU093MAAA	1/4 Flare	3/8 Flare
ZRNU123MAAA	1/4 Flare	3/8 Flare
ZRNU153MAAA	1/4 Flare	1/2 Flare
ZRNU183MAAA	1/4 Flare	1/2 Flare
ZRNU243MAAA	1/4 Flare	1/2 Flare
M2 Units		
ZRNU363M2AA	3/8 Flare	5/8 Flare
ZRNU423M2AA	3/8 Flare	5/8 Flare
M3 Units		
ZRNU483M3AA	3/8 Flare	5/8 Flare

Table 57: ZRNU073MAAA~243MAAA, ZRNU363~423M2AA, ZRNU483M3AA Thermistors.

Thermistor	Description
TH1	Return air thermistor
TH2	Pipe in thermistor
TH3	Pipe out thermistor

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ZRNU073MAAA~183MAAA External Static Pressure and Air Flow Tables

Table 58: ZRNU073MAAA~183MAAA External Static Pressure and Air Flow Table.

Setting value	Static Pressure (in wg)							
	0.10	0.16	0.24	0.31	0.39	0.47	0.55	0.59
	Air Flow Rate [CFM]							
60	233							
65	315							
70	400	285						
75	455	368	216					
80	520	440	296					
85	580	504	366					
90	640	569	454	314				
95	696	631	530	413				
100	737	681	598	509	344			
105	816	755	666	570	423	260		
110	860	809	731	652	538	351		
115		858	786	715	621	506	334	
120			841	775	687	581	452	352
125				833	761	675	569	501
130				906	828	742	644	590
135					890	819	735	684
140						888	820	770

All static pressure air flow rates are listed in CFM. The table above shows the correlation between air flow rates and external static pressure.
If the external static pressure of the installed indoor unit is less than the lowest value (as mentioned in the table), the indoor unit components can fail.

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ZRNU243MAAA External Static Pressure and Air Flow Tables

Table 59: ZRNU243MAAA External Static Pressure and Air Flow Table.

Setting value	Static Pressure (in wg)							
	0.10	0.16	0.24	0.31	0.39	0.47	0.55	0.59
	Air Flow Rate [CFM]							
85	572	510						
90	625	558						
95	667	615	515					
100	717	668	588	494				
105	770	710	633	554	440			
110	819	769	692	616	506			
115	872	825	755	687	598	487		
120	911	868	805	742	658	553	378	
125		916	858	798	723	631	504	418
130			900	848	784	710	618	560
135				894	844	786	713	664
140					884	830	764	728

All static pressure air flow rates are listed in CFM. The table above shows the correlation between air flow rates and external static pressure.
If the external static pressure of the installed indoor unit is less than the lowest value (as mentioned in the table), the indoor unit components can fail.

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ZRNU363~423M2AA External Static Pressure and Air Flow Tables

Table 60: ZRNU363~423M2AA External Static Pressure and Air Flow Table.

Set Value	Static Pressure (in wg)							
	0.16	0.24	0.31	0.39	0.47	0.55	0.63	0.71
	Air Flow Rate[CFM]							
90	812							
95	914	676						
100	1010	823						
105	1110	931	691					
110	1208	1056	854					
115	1292	1153	1016	765				
120	1383	1260	1121	926	692			
125	1473	1358	1227	1087	857			
130	1554	1456	1332	1203	1023	787		
135		1545	1437	1318	1150	971	723	
140			1534	1426	1313	1151	909	701
145				1533	1468	1320	1084	868
150					1532	1493	1249	1036
155						1543	1324	1155

Table 61: ZRNU483M3AA External Static Pressure and Air Flow Table.

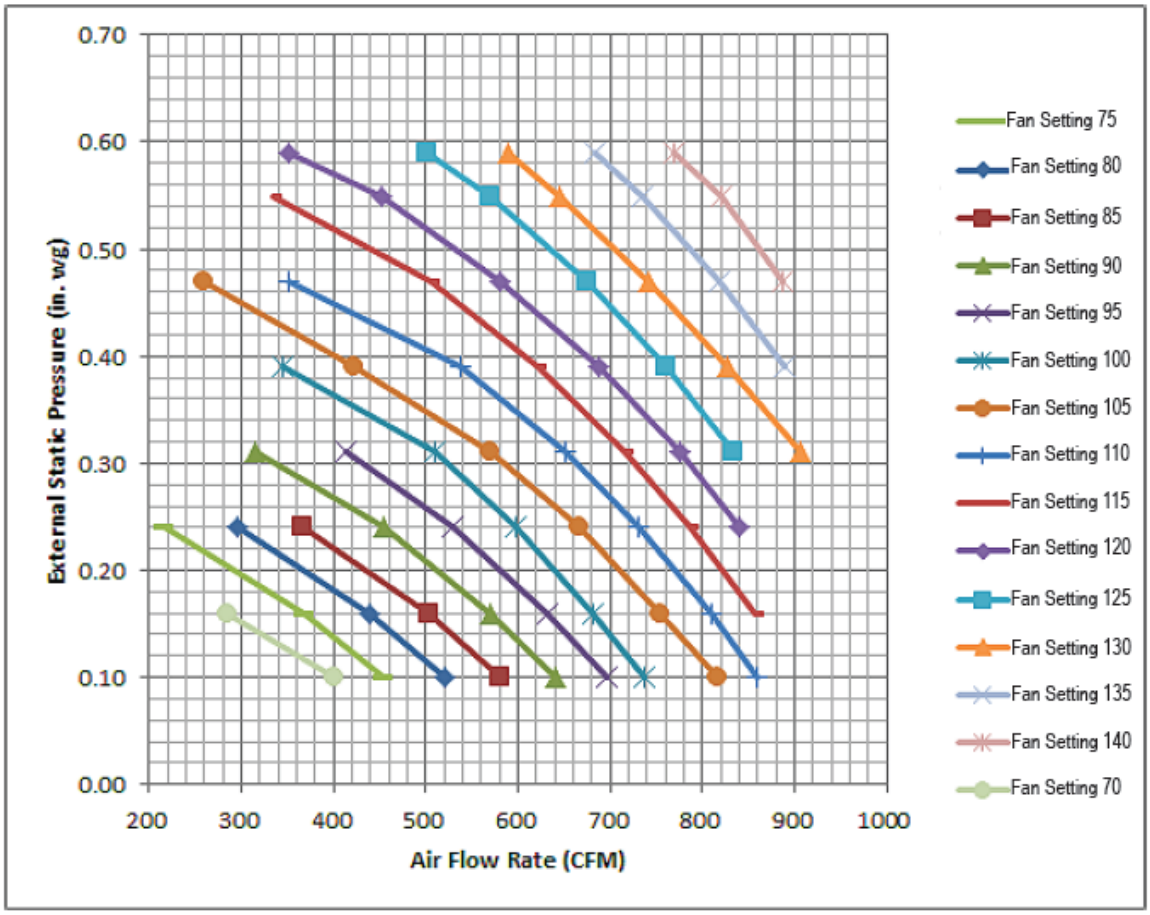
Set Value	Static Pressure (in wg)								
	0.16	0.24	0.31	0.39	0.47	0.55	0.63	0.71	0.79
	Air Flow Rate [CFM]								
70	891								
75	1074	756							
80	1235	959	654						
85	1404	1250	869						
90	1562	1416	1111	800					
95	1741	1581	1300	1017	754				
100	1872	1744	1574	1251	978				
105	2020	1910	1737	1518	1234	935			
110		2076	1903	1691	1497	1193	858	522	
115			2069	1867	1687	1500	1108	717	646
120				2040	1874	1701	1384	1066	868
125					1913	1744	1520	1296	1168
130					1927	1860	1714	1567	1398
135								1772	1596

All static pressure air flow rates are listed in CFM. The table above shows the correlation between air flow rates and external static pressure.
If the external static pressure of the installed indoor unit is less than the lowest value (as mentioned in the table), the indoor unit components can fail.

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ZRNU073MAAA ~183MAAA External Static Pressure and Air Flow Charts

Figure 25: ZRNU073MAAA~183MAAA External Static Pressure and Air Flow Chart.

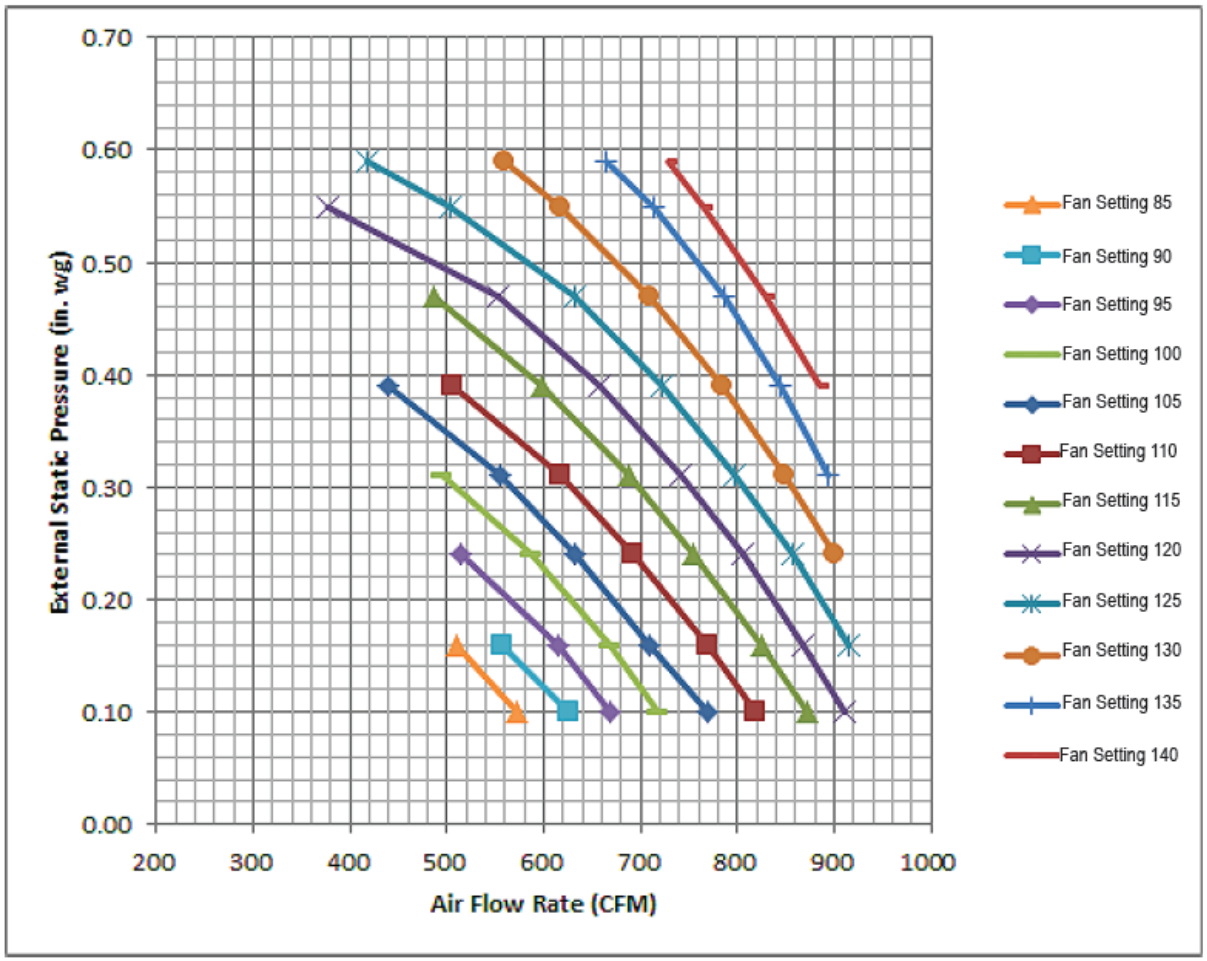


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ZRNU243MAAA External Static Pressure and Air Flow Charts

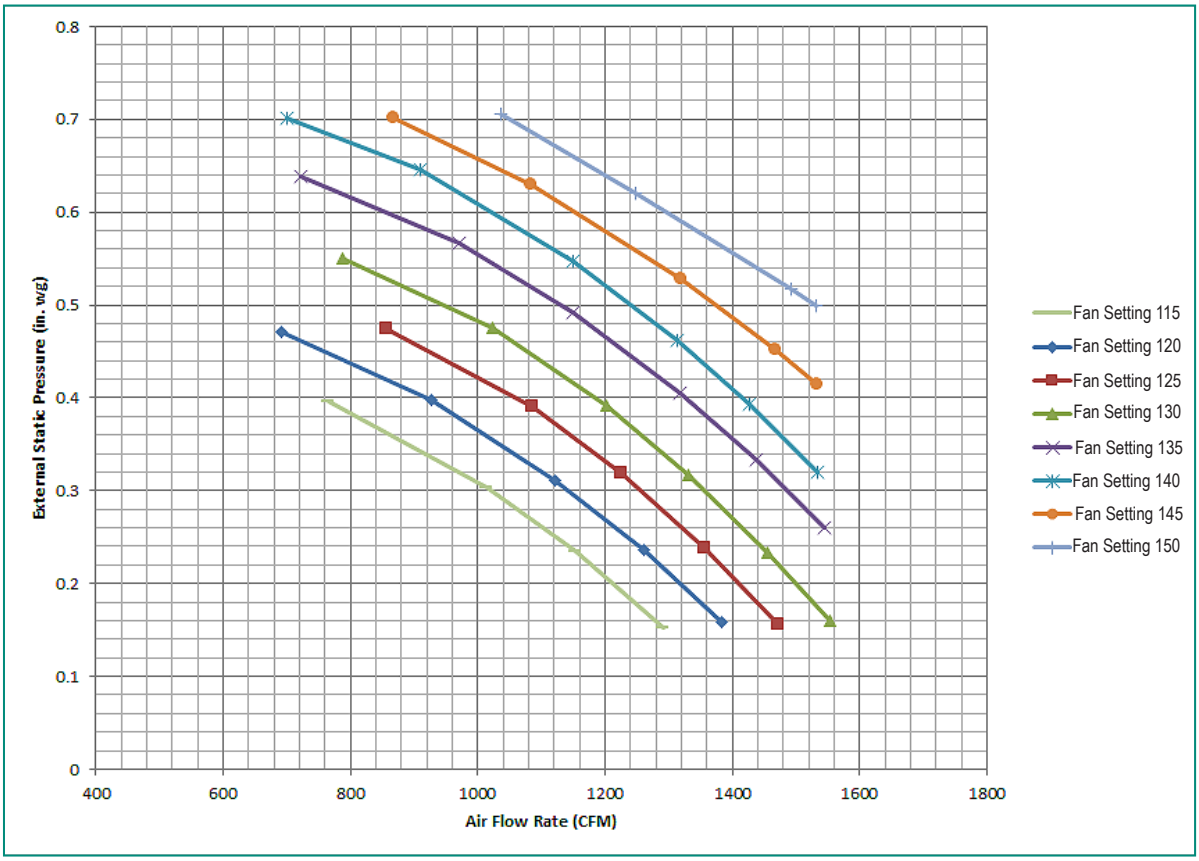
Figure 26: ZRNU243MAAA External Static Pressure and Air Flow Chart.



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ZRNU363~423M2AA External Static Pressure and Air Flow Charts

Figure 27: ZRNU363~423M2AA External Static Pressure and Air Flow Chart.

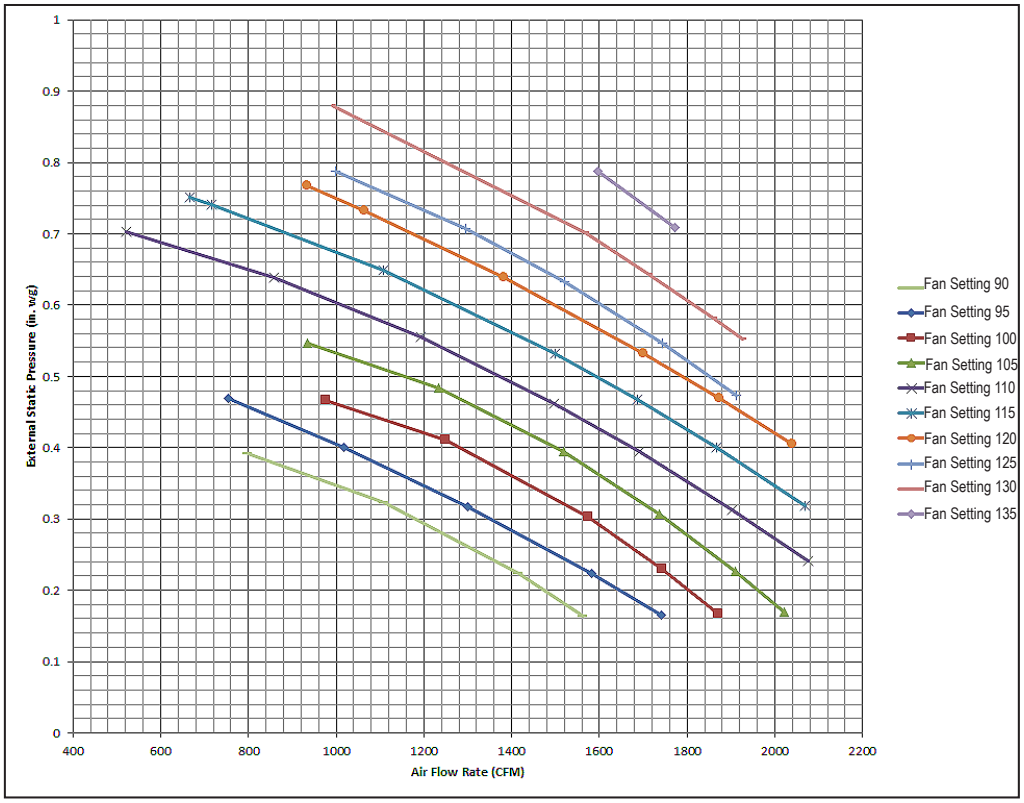


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ZRNU483M3AA External Static Pressure and Air Flow Charts

Figure 28: ZRNU483M3AA External Static Pressure and Air Flow Chart.



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Table 62: ZRNU073MAAA~243MAAA External Static Pressure Ranges.

Model	Capacity (MBh)	Mode		Setting Value	Standard ESP (in wg)	CFM	Lower Limit of ESP (in wg)	Upper Limit of ESP (in wg)
ZRNU073MAAA	7.5	Factory Set	High	78	0.16	283	0.1	0.59
			Mid	72		247		
			Low	68		212		
ZRNU093MAAA	9.6	Factory Set	High	88	0.16	353	0.1	0.59
			Mid	82		318		
			Low	78		283		
ZRNU123MAAA	12.3	Factory Set	High	98	0.16	494	0.1	0.59
			Mid	92		424		
			Low	88		353		
ZRNU153MAAA	15.4	Factory Set	High	106	0.16	530	0.1	0.59
			Mid	97		424		
			Low	90		388		
ZRNU183MAAA	19.1	Factory Set	High	113	0.16	635	0.1	0.59
			Mid	102		530		
			Low	92		424		
ZRNU243MAAA	24.2	Factory Set	High	128	0.16	706	0.1	0.59
			Mid	110		547		
			Low	100		459		

Table 63: ZRNU363~423M2AA External Static Pressure Ranges.

Model	Capacity (MBh)	Mode		Setting Value	Standard ESP (in wg)	CFM	Min. ESP (in wg)	Max. ESP (in wg)
ZRNU363M2AA	36.0	Factory Set	High	99	0.16	992	0.16	0.71
			Mid	92		845		
			Low	82		643		
ZRNU423M2AA	42.0	Factory Set	High	113	0.16	1260	0.16	0.71
			Mid	104		1076		
			Low	94		888		

Table 64: ZRNU483M3AA External Static Pressure Ranges.

Model	Capacity (MBh)	Mode		Setting Value	Standard ESP (in wg)	CFM	Min.ESP (in wg)	Max. ESP (in wg)
ZRNU483M3AA	48.0	Factory Set	High	89	0.16	1482	0.16	0.79
			Mid	78		1191		
			Low	71		918		

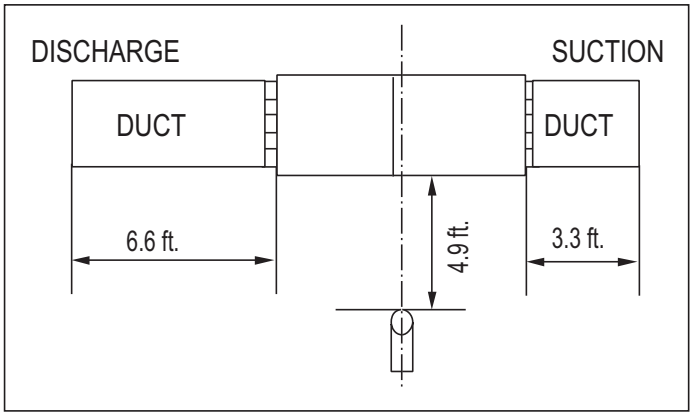
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Acoustic Data

Sound Pressure Levels

Figure 29: Sound Pressure Measurement Location.



- Measurements are taken 4.9 ft away from the front of the unit.
- Sound pressure levels are measured in dB(A) with a tolerance of ±3.
- Sound pressure levels are tested in an anechoic chamber under ISO Standard 3745.

Operating Conditions:

- Power source: 220V/60 Hz
- Sound level will vary depending on a range of factors including the construction (acoustic absorption coefficient) of a particular room in which the unit was installed.

Table 65: ZRNU073MAAA~243MAAA Indoor Unit Sound Pressure Levels.

Model	Sound Pressure Levels [dB(A), H-M-L]		
	External Static Pressure [in wg]		
	0.10	0.24	0.59
ZRNU073MAAA	26-24-23	27-24-23	33-28-25
ZRNU093MAAA	27-25-23	27-25-23	33-29-26
ZRNU123MAAA	27-25-23	28-25-23	33-30-27
ZRNU153MAAA	30-27-23	30-27-24	37-33-30
ZRNU183MAAA	31-28-25	32-29-27	37-34-29
ZRNU243MAAA	32-29-26	33-30-28	38-35-32

Table 66: ZRNU363~423M2AA Indoor Unit Sound Pressure Levels.

Model	Sound Pressure Levels [dB(A), H-M-L]			
	External Static Pressure [in wg]			
	0.16	0.20	0.24	0.71
ZRNU363M2AA	41-40-41	42-40-38	42-40-38	48-48-48
ZRNU423M2AA	46-44-41	45-43-41	44-43-40	49-48-48

Table 67: ZRNU483M3AA Indoor Unit Sound Pressure Levels.

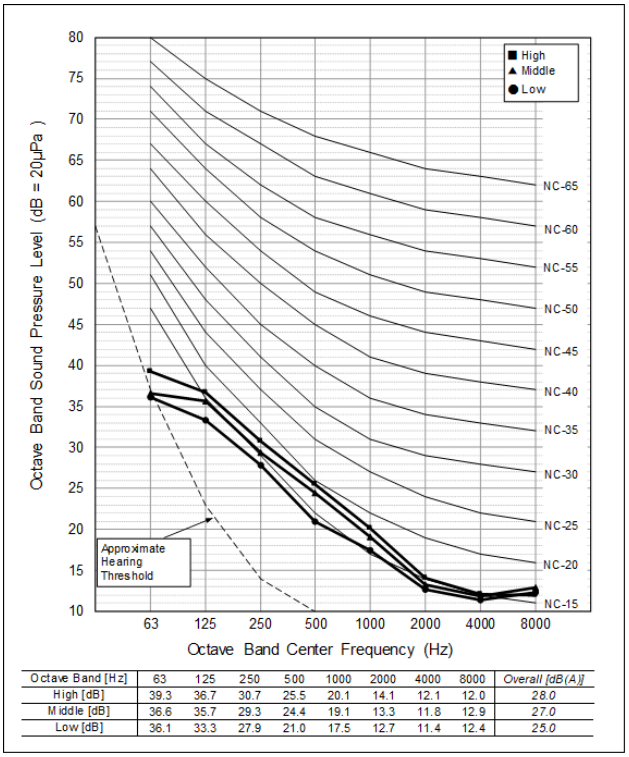
Model	Sound Pressure Levels [dB(A), H-M-L]			
	External Static Pressure [in wg]			
	0.16	0.20	0.24	0.79
ZRNU483M3AA	40-38-37	41-39-36	42-39-37	47-45-46

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Figure 30: ZRNU073MAAA~243MAAA Sound Pressure Level Diagrams.

ZRNU073MAAA

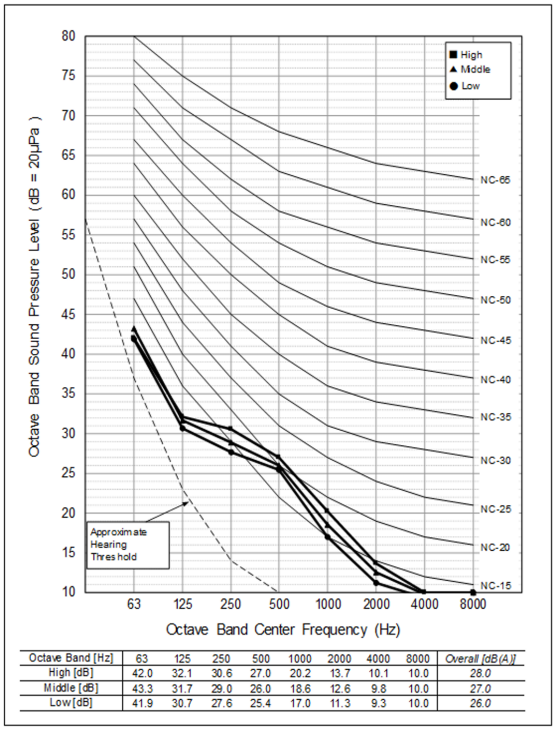
7K



Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	39.3	36.7	30.7	25.5	20.1	14.1	12.1	12.0	*28.0*
Middle [dB]	36.6	35.7	29.3	24.4	19.1	13.3	11.8	12.9	*27.0*
Low [dB]	36.1	33.3	27.9	21.0	17.5	12.7	11.4	12.4	*25.0*

ZRNU093MAAA

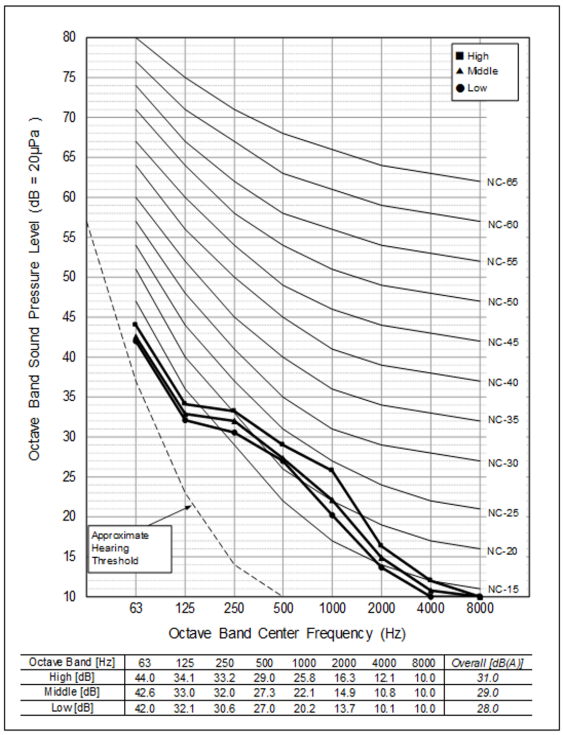
9K



Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	42.0	32.1	30.6	27.0	20.2	13.7	10.1	10.0	*28.0*
Middle [dB]	43.3	31.7	29.0	26.0	18.6	12.6	9.8	10.0	*27.0*
Low [dB]	41.9	30.7	27.6	25.4	17.0	11.3	9.3	10.0	*26.0*

ZRNU123MAAA

12K



Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	44.0	34.1	33.2	29.0	25.8	16.3	12.1	10.0	*31.0*
Middle [dB]	42.6	33.0	32.0	27.3	22.1	14.9	10.8	10.0	*29.0*
Low [dB]	42.0	32.1	30.6	27.0	20.2	13.7	10.1	10.0	*28.0*

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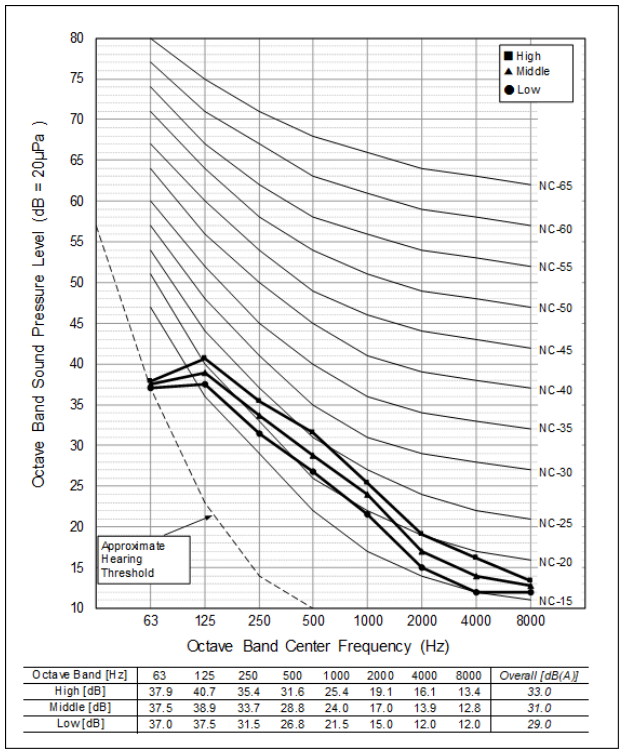
Acoustic Data

Sound Pressure Diagrams

Figure 31: ZRNU073MAAA~243MAAA Sound Pressure Level Diagrams.

ZRNU153MAAA

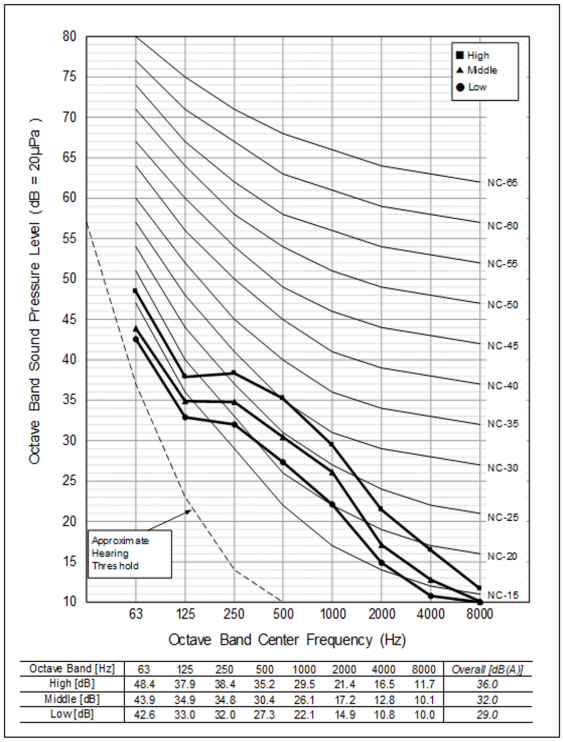
15K



Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	37.9	40.7	35.4	31.6	25.4	19.1	16.1	13.4	*33.0*
Middle [dB]	37.5	38.9	33.7	28.8	24.0	17.0	13.9	12.8	*31.0*
Low [dB]	37.0	37.5	31.5	26.8	21.5	15.0	12.0	12.0	*29.0*

ZRNU183MAAA

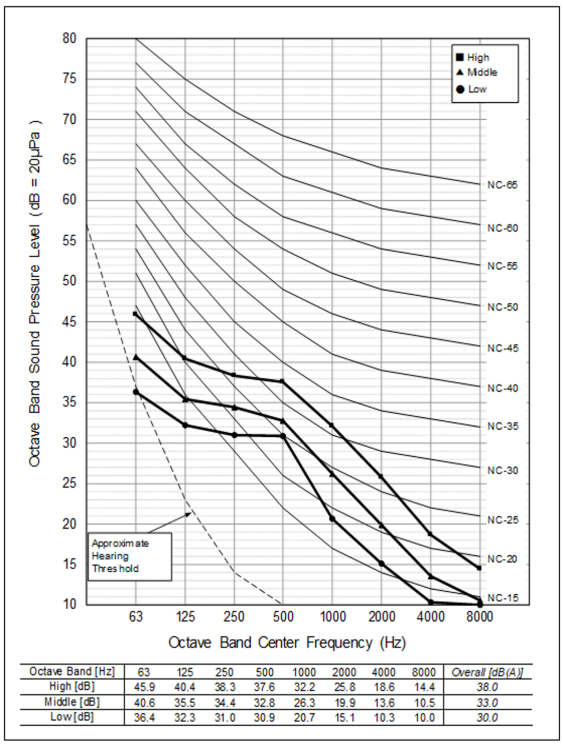
18K



Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	48.4	37.9	38.4	35.2	29.5	21.4	16.5	11.7	*36.0*
Middle [dB]	43.9	34.9	34.8	30.4	26.1	17.2	12.8	10.1	*32.0*
Low [dB]	42.6	33.0	32.0	27.3	22.1	14.9	10.8	10.0	*29.0*

ZRNU243MAAA

24K



Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	45.9	40.4	38.3	37.6	32.2	25.8	18.6	14.4	*38.0*
Middle [dB]	40.6	35.5	34.4	32.8	26.3	19.9	13.6	10.5	*33.0*
Low [dB]	36.4	32.3	31.0	30.9	20.7	15.1	10.3	10.0	*30.0*

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Table 68: ZRNU073MAAA~243MAAA Sound Power Levels.

Model	Sound Power Levels [dB(A), H-M-L] (CASING RADIATED)		
	External Static Pressure [in wg]		
	0.10	0.24	0.59
ZRNU073MAAA	40-39-38	44-41-39	50-48-47
ZRNU093MAAA	41-39-39	44-42-39	50-49-47
ZRNU123MAAA	42-40-39	44-43-40	50-50-48
ZRNU153MAAA	46-42-40	47-43-43	53-50-50
ZRNU183MAAA	47-45-42	49-47-43	53-52-50
ZRNU243MAAA	48-47-46	51-49-47	54-53-52

Table 69: ZRNU363~423M2AA Sound Power Levels.

Model	Sound Power Levels [dB(A), H-M-L] (CASING RADIATED)			
	External Static Pressure [in wg]			
	0.16	0.20	0.24	0.71
ZRNU363M2AA	50-48-47	56-48-46	51-48-46	64-64-63
ZRNU423M2AA	56-53-50	57-53-49	55-52-49	65-64-64

Table 70: ZRNU483M3AA Sound Power Levels.

Model	Sound Power Levels [dB(A), H-M-L] (CASING RADIATED)			
	External Static Pressure [in wg]			
	0.16	0.20	0.24	0.79
ZRNU483M3AA	51-50-49	55-53-51	55-51-50	57-57-57

- 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 chamber under ISO Standard 3741.
- 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/m^2

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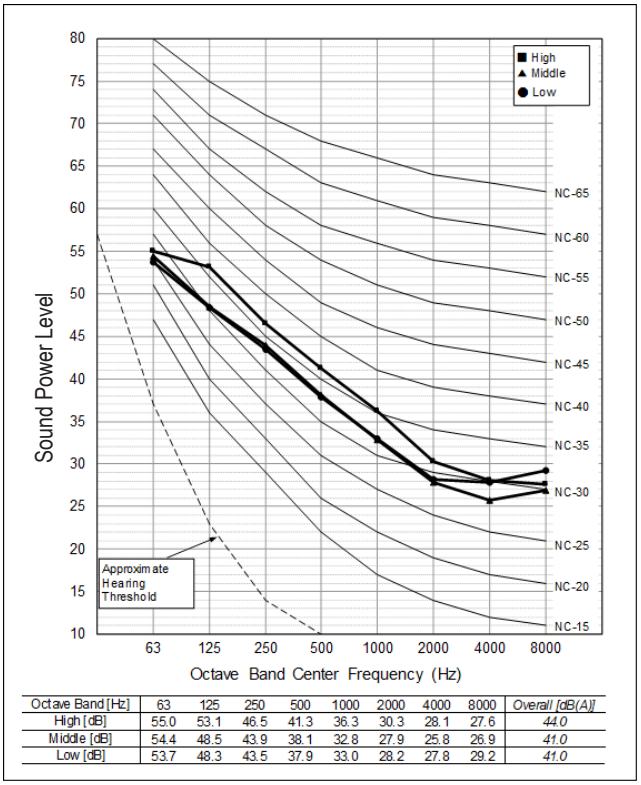
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Acoustic Data

Sound Power Levels

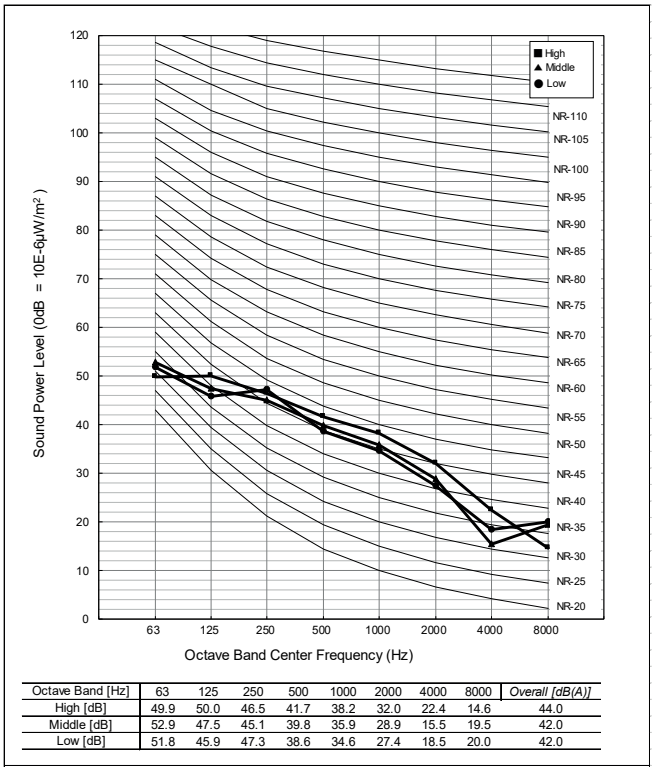
Figure 32: Mid Static Ducted Sound Power Level Diagrams.

ZRNU073MAAA



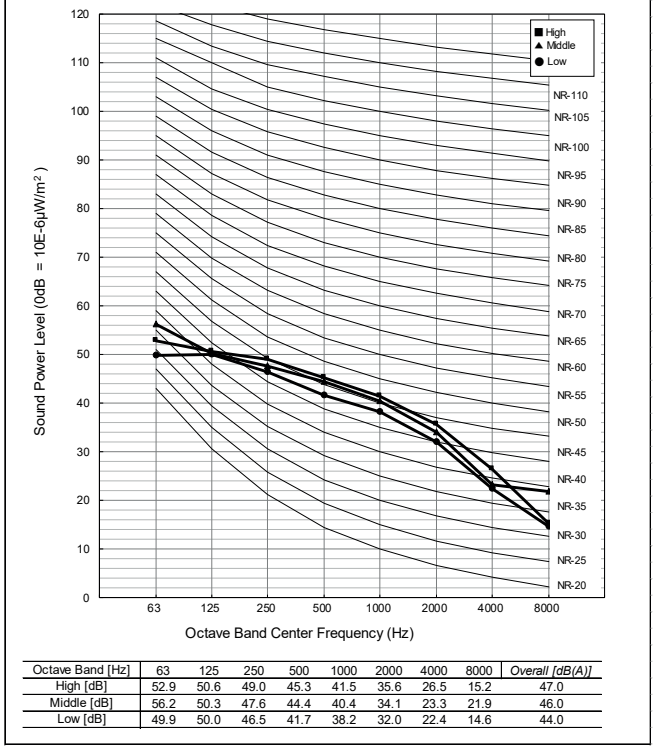
Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	55.0	53.1	46.5	41.3	36.3	30.3	28.1	27.6	*44.0*
Middle [dB]	54.4	48.5	43.9	38.1	32.8	27.9	25.8	26.9	*41.0*
Low [dB]	53.7	48.3	43.5	37.9	33.0	28.2	27.8	29.2	*41.0*

ZRNU093MAAA



Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	49.9	50.0	46.5	41.7	38.2	32.0	22.4	14.6	44.0
Middle [dB]	52.9	47.5	45.1	39.8	35.9	28.9	15.5	19.5	42.0
Low [dB]	51.8	45.9	47.3	38.6	34.6	27.4	18.5	20.0	42.0

ZRNU123MAAA

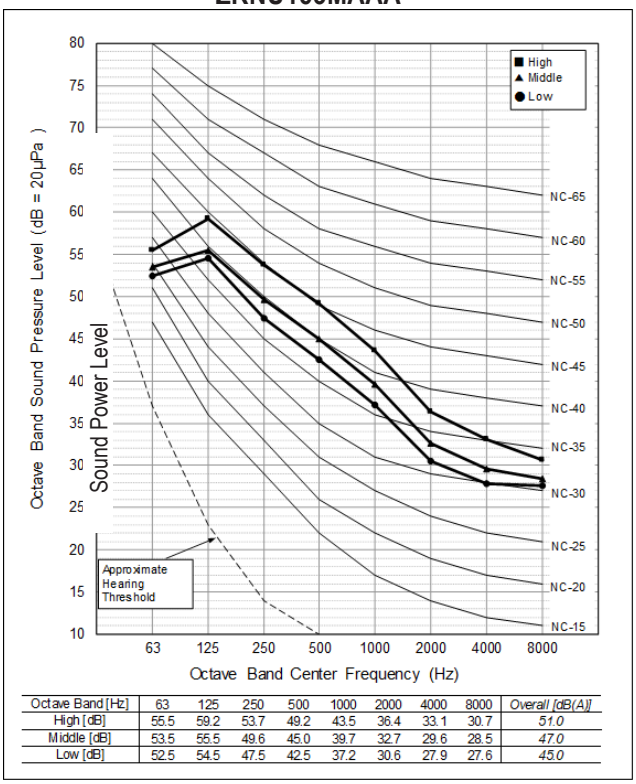


Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	52.9	50.6	49.0	45.3	41.5	35.6	26.5	15.2	47.0
Middle [dB]	56.2	50.3	47.6	44.4	40.4	34.1	23.3	21.9	46.0
Low [dB]	49.9	50.0	46.5	41.7	38.2	32.0	22.4	14.6	44.0

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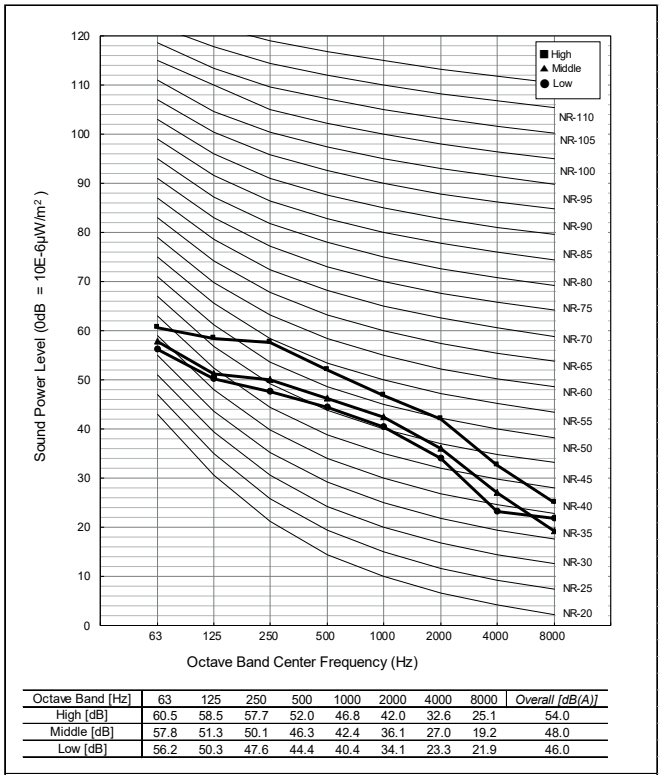
Figure 33: Mid Static Ducted Sound Power Level Diagrams.

ZRNU153MAAA



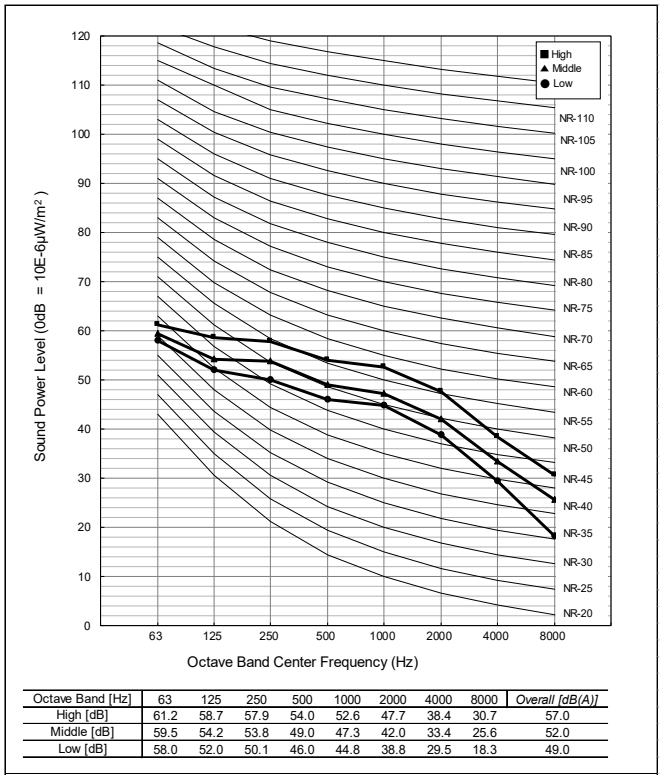
Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	55.5	59.2	53.7	49.2	43.5	36.4	33.1	30.7	*51.0*
Middle [dB]	53.5	55.5	49.6	45.0	39.7	32.7	29.6	28.5	*47.0*
Low [dB]	52.5	54.5	47.5	42.5	37.2	30.6	27.9	27.6	*45.0*

ZRNU183MAAA



Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	60.5	58.5	57.7	52.0	46.8	42.0	32.6	25.1	54.0
Middle [dB]	57.8	51.3	50.1	46.3	42.4	36.1	27.0	19.2	48.0
Low [dB]	56.2	50.3	47.6	44.4	40.4	34.1	23.3	21.9	46.0

ZRNU243MAAA



Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000	*Overall [dB(A)]*
High [dB]	61.2	58.7	57.9	54.0	52.6	47.7	38.4	30.7	57.0
Middle [dB]	59.5	54.2	53.8	49.0	47.3	42.0	33.4	25.6	52.0
Low [dB]	58.0	52.0	50.1	46.0	44.8	38.8	29.5	18.3	49.0

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MULTI V

Sound Power Data

ZRNU073MAAA~243MAAA

Sound Power @0.1 ESP

Table 71: ZRNU073MAAA~243MAAA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU073MAAA	RETURN OPENING	H	0.1	690	372	54	54	51	42	38	33	26	20
		M		650	315	54	49	51	42	36	30	23	18
		L		610	257	53	48	48	40	33	27	19	14
	CASING RADIATED	H		690	372	52	51	41	38	32	25	12	8
		M		650	315	51	50	39	38	29	24	11	8
		L		610	257	52	51	37	36	27	23	10	5
	DUCTED DISCHARGE	H		690	372	60	55	49	44	41	37	29	21
		M		650	315	58	52	50	42	40	35	27	17
		L		610	257	56	50	48	39	36	30	21	11
ZRNU093MAAA	RETURN OPENING	H	0.1	700	385	54	54	52	44	40	35	28	22
		M		660	329	54	51	50	43	37	31	24	19
		L		620	272	53	48	49	41	34	27	20	14
	CASING RADIATED	H		700	385	52	51	42	40	32	27	15	7
		M		660	329	51	49	39	38	30	25	12	9
		L		620	272	52	51	37	37	28	23	10	4
	DUCTED DISCHARGE	H		700	385	61	56	49	45	42	38	30	22
		M		660	329	59	53	48	43	39	34	27	19
		L		620	272	57	50	47	39	37	31	22	11
ZRNU123MAAA	RETURN OPENING	H	0.1	710	399	54	54	53	44	40	35	29	23
		M		670	344	54	52	51	41	37	33	26	19
		L		630	286	53	50	50	41	35	29	21	16
	CASING RADIATED	H		710	399	52	51	43	40	34	29	16	10
		M		670	344	52	50	40	39	30	25	11	9
		L		630	286	52	51	37	37	28	23	11	6
	DUCTED DISCHARGE	H		710	399	61	56	50	47	44	40	33	25
		M		670	344	59	54	49	43	41	35	28	19
		L		630	286	58	51	48	41	38	33	24	14
ZRNU153MAAA	RETURN OPENING	H	0.1	860	593	60	59	55	51	45	43	40	36
		M		720	413	54	54	53	44	40	35	29	23
		L		670	344	54	52	51	41	37	33	26	19
	CASING RADIATED	H		860	593	55	53	47	44	39	35	29	22
		M		720	413	52	51	43	40	34	29	16	10
		L		670	344	52	50	40	39	30	25	11	9
	DUCTED DISCHARGE	H		860	593	68	63	60	56	53	51	49	44
		M		720	413	61	56	50	47	44	40	33	25
		L		670	344	59	54	49	43	41	35	28	19

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LG

Sound Power @0.1 ESP, continued

Table 72: ZRNU073MAAA~243MAAA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU183MAAA	RETURN OPENING	H	0.1	870	606	60	62	59	53	49	45	41	35
		M		780	493	53	53	50	47	43	40	36	35
		L		720	413	54	54	53	44	40	35	29	23
	CASING RADIATED	H		870	606	56	55	47	46	41	37	29	20
		M		780	493	55	53	45	45	38	32	26	20
		L		720	413	52	51	43	40	34	29	16	10
	DUCTED DISCHARGE	H		870	606	69	64	58	55	54	50	47	44
		M		780	493	67	61	57	55	54	48	46	43
		L		720	413	61	56	50	47	44	40	33	25
ZRNU243MAAA	RETURN OPENING	H	0.1	920	641	61	63	59	53	50	47	42	36
		M		870	592	58	60	57	53	49	45	41	33
		L		770	493	56	58	55	49	46	42	37	32
	CASING RADIATED	H		920	641	59	55	49	46	43	37	31	23
		M		870	592	56	55	47	44	41	35	30	21
		L		770	493	56	55	47	44	38	32	26	16
	DUCTED DISCHARGE	H		920	641	69	65	61	56	54	52	49	44
		M		870	592	67	62	58	55	54	50	47	42
		L		770	493	65	62	55	53	52	46	44	38

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MULTI V

Sound Power Data

ZRNU073MAAA~243MAAA

Sound Power @0.24 ESP

Table 73: ZRNU073MAAA~243MAAA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU073MAAA	RETURN OPENING	H	0.24	840	361	57	58	54	46	41	36	29	21
		M		790	279	56	60	49	40	38	33	25	16
		L		750	211	56	61	45	36	36	30	22	13
	CASING RADIATED	H		840	361	56	55	45	41	36	31	25	11
		M		790	279	54	53	41	38	32	27	13	2
		L		750	211	52	52	37	35	28	23	4	2
	DUCTED DISCHARGE	H		840	361	64	59	56	51	47	43	38	30
		M		790	279	60	57	48	48	43	37	30	20
		L		750	211	57	56	41	46	39	33	24	12
ZRNU093MAAA	RETURN OPENING	H	0.24	850	376	57	58	53	45	41	35	28	19
		M		800	296	56	59	50	41	39	33	26	17
		L		760	229	56	61	46	37	37	31	23	14
	CASING RADIATED	H		850	376	56	55	43	41	35	30	22	13
		M		800	296	54	54	41	38	33	28	15	4
		L		760	229	52	52	38	36	29	24	6	3
	DUCTED DISCHARGE	H		850	376	64	59	58	51	48	44	39	31
		M		800	296	61	58	50	48	44	39	32	22
		L		760	229	58	57	43	46	40	34	25	14
ZRNU123MAAA	RETURN OPENING	H	0.24	860	392	57	58	53	45	41	36	29	20
		M		820	328	57	59	52	44	40	34	27	19
		L		780	262	56	60	48	39	38	32	24	16
	CASING RADIATED	H		860	392	57	55	44	41	35	30	22	11
		M		820	328	55	54	43	40	34	29	20	7
		L		780	262	53	53	40	37	31	26	11	4
	DUCTED DISCHARGE	H		860	392	64	59	56	51	48	44	39	31
		M		820	328	62	58	53	49	45	41	35	26
		L		780	262	59	57	46	47	42	36	28	18
ZRNU153MAAA	RETURN OPENING	H	0.24	980	570	56	60	57	50	49	44	39	32
		M		860	392	57	58	53	45	41	36	29	20
		L		820	328	57	59	52	44	40	34	27	19
	CASING RADIATED	H		980	570	57	53	47	44	43	37	31	21
		M		860	392	56	54	44	41	35	30	22	11
		L		820	328	55	54	43	40	34	29	20	7
	DUCTED DISCHARGE	H		980	570	70	65	60	56	55	51	49	44
		M		860	392	64	59	56	51	48	44	39	31
		L		820	328	62	58	53	49	45	41	35	26

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Sound Power @0.24 ESP, continued

Table 74: ZRNU073MAAA~243MAAA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU183MAAA	RETURN OPENING	H	0.24	1030	638	60	62	59	51	51	47	43	37
		M		970	556	58	60	57	49	48	44	39	31
		L		860	392	57	58	53	45	41	36	29	20
	CASING RADIATED	H		1030	638	58	53	49	46	45	39	35	26
		M		970	556	56	52	47	44	43	37	31	21
		L		860	392	56	54	44	41	35	30	22	11
	DUCTED DISCHARGE	H		1030	638	71	66	62	57	56	52	51	46
		M		970	556	70	64	60	55	54	51	49	43
		L		860	392	64	59	56	51	48	44	39	31
ZRNU243MAAA	RETURN OPENING	H	0.24	1080	703	61	63	61	53	54	49	46	40
		M		1030	638	60	62	59	51	51	47	43	37
		L		970	556	58	60	57	49	48	44	39	31
	CASING RADIATED	H		1080	703	59	55	51	48	47	41	38	30
		M		1030	638	58	53	49	46	45	39	35	26
		L		970	556	56	52	47	44	43	37	31	21
	DUCTED DISCHARGE	H		1080	703	73	67	63	58	58	54	53	49
		M		1030	638	71	66	62	57	56	52	51	46
		L		970	556	70	64	60	55	54	51	49	43

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MID STATIC DUCTED

MULTI V

Sound Power Data

ZRNU073MAAA~243MAAA

Sound Power @0.59 ESP

Table 75: ZRNU073MAAA~243MAAA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU073MAAA	RETURN OPENING	H	0.59	1240	455	64	66	62	52	51	47	41	34
		M		1180	296	65	65	61	50	48	43	37	29
		L		1140	176	64	64	59	48	46	40	33	25
	CASING RADIATED	H		1240	455	64	57	51	47	44	40	34	28
		M		1180	296	65	56	50	45	42	37	31	25
		L		1140	176	65	55	48	43	39	35	28	22
	DUCTED DISCHARGE	H		1240	455	72	67	62	56	56	51	47	41
		M		1180	296	69	64	59	53	52	47	42	34
		L		1140	176	67	62	56	50	49	43	38	29
ZRNU093MAAA	RETURN OPENING	H	0.59	1250	479	64	66	62	52	52	47	42	35
		M		1190	324	65	65	61	51	49	44	38	30
		L		1150	207	64	65	60	49	46	41	34	26
	CASING RADIATED	H		1250	479	64	57	51	47	45	40	35	28
		M		1190	324	65	56	50	46	42	38	32	26
		L		1150	207	65	55	48	44	40	35	29	23
	DUCTED DISCHARGE	H		1250	479	72	67	62	56	56	52	48	42
		M		1190	324	70	65	59	53	53	48	43	36
		L		1150	207	67	63	57	51	50	44	39	30
ZRNU123MAAA	RETURN OPENING	H	0.59	1250	479	64	66	62	52	52	47	42	35
		M		1210	378	65	66	61	51	50	45	40	32
		L		1170	267	65	65	60	50	48	43	36	28
	CASING RADIATED	H		1250	479	64	57	51	47	45	40	35	28
		M		1210	378	65	57	51	46	43	39	33	27
		L		1170	267	65	56	49	45	41	37	30	24
	DUCTED DISCHARGE	H		1250	479	72	67	62	56	56	52	48	42
		M		1210	378	70	66	60	55	54	49	45	38
		L		1170	267	69	64	58	52	51	46	41	33
ZRNU153MAAA	RETURN OPENING	H	0.59	1350	681	62	67	64	55	56	52	48	41
		M		1250	479	64	66	62	52	52	47	42	35
		L		1210	378	65	66	61	51	50	45	40	32
	CASING RADIATED	H		1350	681	62	58	53	50	49	44	39	32
		M		1250	479	64	57	51	47	45	40	35	28
		L		1210	378	65	57	51	46	43	39	33	27
	DUCTED DISCHARGE	H		1350	681	75	71	67	61	62	58	56	52
		M		1250	479	72	67	62	56	56	52	48	42
		L		1210	378	70	66	60	55	54	49	45	38

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Sound Power @0.59 ESP, continued

Table 76: ZRNU073MAAA~243MAAA Indoor Unit Sound Power Data.

Model	Rating	Fan speed	E.S.P	RPM	CFM	Sound power level, Lw (dB one reference picowatt)							
						63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
ZRNU183MAAA	RETURN OPENING	H	0.59	1360	698	63	67	64	55	56	52	48	42
		M		1320	628	63	66	64	54	55	50	46	40
		L		1250	479	64	66	62	52	52	47	42	35
	CASING RADIATED	H		1360	698	63	58	53	50	49	44	39	32
		M		1320	628	63	58	53	49	47	43	38	31
		L		1250	479	64	57	51	47	45	40	35	28
	DUCTED DISCHARGE	H		1360	698	76	71	67	61	62	58	56	52
		M		1320	628	74	70	65	60	60	56	54	49
		L		1250	479	72	67	62	56	56	52	48	42
ZRNU243MAAA	RETURN OPENING	H	0.59	1380	728	63	67	64	56	56	52	48	42
		M		1340	664	62	66	64	55	56	51	47	41
		L		1300	589	63	66	63	54	54	49	45	38
	CASING RADIATED	H		1380	728	63	59	54	50	49	44	39	32
		M		1340	664	63	58	53	49	48	43	38	32
		L		1300	589	63	58	52	49	47	42	37	30
	DUCTED DISCHARGE	H		1380	728	76	72	67	61	62	59	56	53
		M		1340	664	75	71	66	61	61	58	55	51
		L		1300	589	74	69	64	59	59	55	52	47

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MID STATIC DUCTED

Cooling Capacity Table

Table 77: R32 Mid Static Ducted Cooling Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp. (°F DB)	Indoor Air Temperature (°F DB / WB)													
		68 / 57		73 / 61		79 / 64		80 / 67		85 / 70		88 / 73		91 / 76	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
MA Convertible Mid Static Ducted Indoor Units															
ZRNU073MAAA / 7.5	95	4.9	4.4	6	5.1	6.8	5.4	7.5	5.8	8	6.0	8.2	5.7	8.3	5.4
ZRNU093MAAA / 9.5	95	6.3	5.8	7.7	6.7	8.6	7.1	9.6	7.6	10.3	7.9	10.5	7.5	10.6	7.1
ZRNU123MAAA / 12.3	95	8.1	7.3	9.8	8.5	11.1	9.0	12.3	9.6	13.2	10.0	13.4	9.5	13.6	8.9
ZRNU153MAAA / 15.4	95	10.1	9.2	12.3	10.6	13.9	11.3	15.4	12.0	16.5	12.5	16.8	11.9	17.1	11.2
ZRNU183MAAA / 19.1	95	12.6	10.7	15.3	12.3	17.2	13.1	19.1	13.9	20.5	14.5	20.9	13.8	21.2	13.0
ZRNU243MAAA / 24.3	95	15.9	13.5	19.4	15.6	21.8	16.6	24.2	17.7	25.9	18.4	26.4	17.5	26.8	16.5
M2 Mid Static Ducted Indoor Units															
ZRNU363M2AA / 36.2	95	23.8	20.5	29	23.6	32.6	25.1	36.2	26.8	38.8	27.8	39.5	26.5	40.1	25.0
ZRNU423M2AA / 42.0	95	27.7	23.7	33.6	27.4	37.8	29.2	42.0	31.1	45	32.3	45.9	30.7	46.6	29.0
M3 Mid Static Ducted Indoor Units															
ZRNU483M3AA / 48.1	95	31.7	27.6	38.5	31.9	43.3	33.9	48.1	36.1	51.5	37.5	52.5	35.7	53.3	33.7

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

Cooling range with the Low Ambient Baffle Kit (sold separately) installed on the outdoor unit(s) is -9.9°F to +122°F, and is achieved only when all indoor units are operating in cooling mode. Does not impact heat recovery system synchronous operating range.

The System Combination Ratio must be between 50–130%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice.

Current certified ratings are available at https://www.ahridirectory.org/

For outdoor unit performance data, see the respective outdoor unit performance data manuals on https://lghvac.com/commercial.

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MID STATIC DUCTED

Heating Capacity Table

Table 78: R32 Mid Static Ducted Heating Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp.		Indoor Air Temperature (°F DB)							
			59	61	64	67	70	73	76	80
	°F DB	°F WB	TC	TC	TC	TC	TC	TC	TC	TC
MA Convertible Mid Static Ducted Indoor Units										
ZRNU073MAAA / 7.5	47	43	9.5	9.4	9.4	8.9	8.5	8.3	7.8	7.4
ZRNU093MAAA / 9.5	47	43	12.2	12.1	12.0	11.5	10.9	10.6	10.0	9.5
ZRNU123MAAA / 12.3	47	43	15.2	15.1	15.0	14.3	13.6	13.2	12.5	11.9
ZRNU153MAAA / 15.4	47	43	19.2	19.0	18.8	18.0	17.1	16.6	15.7	15.0
ZRNU183MAAA / 19.1	47	43	24.1	23.9	23.7	22.6	21.5	20.9	19.8	18.8
ZRNU243MAAA / 24.3	47	43	30.6	30.3	30.0	28.7	27.3	26.5	25.1	23.9
M2 Mid Static Ducted Indoor Units										
ZRNU363M2AA / 36.2	47	43	45.5	45.1	44.7	42.6	40.6	39.4	37.4	35.5
ZRNU423M2AA / 42.0	47	43	52.6	52.2	51.7	49.4	47.0	45.6	43.2	41.1
M3 Mid Static Ducted Indoor Units										
ZRNU483M3AA / 48.1	47	43	60.7	60.2	59.6	56.9	54.2	52.6	49.9	47.4

TC: Total Capacity (MBh).

The System Combination Ratio must be between 50–130%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

For outdoor unit performance data, see the respective outdoor unit performance data manuals on https://lghvac.com/commercial.

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Table 79: Accessories Overview (Sold Separately).

Accessory	Model Number
High Efficiency Filter Box	• ZFBXMA01A (For 7~24 MBh MA Convertible Mid Static Ducted Indoor Units) • ZFBXM201A (For 36~42 MBh M2 Ducted Mid Static Indoor Units) • ZFBXM301A (For 48 MBh M3 Ducted Mid Static Indoor Units)
Vertical Installation Kit	• ABDAMA0 (For 7~24 MBh MA Convertible Mid Static Ducted Indoor Units)

All accessories are sold separately.

If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

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CEILING-CONCEALED LOW STATIC DUCTED



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LOW STATIC DUCTED

Mechanical Specifications

Casing

The case is a low profile design with a maximum height of eight inches designed to mount concealed above the finished ceiling. Fan supply air is front horizontal with a rear horizontal field convertible to a bottom return. The unit is manufactured with coated metal. Cold surfaces are covered with a polystyrene insulating material. 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 HT-700 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 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.

Microprocessor Controls

The unit is provided with an integrated microprocessor-based controller. The controller is capable of performing functions necessary to operate the system without the use of a wall-mounted controller. A temperature thermistor is factory-mounted in the return air stream. 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 indoor 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 five operating modes:

1. Auto Changeover (Heat Recovery only)
2. Heating
3. Cooling
4. Dry
5. Fan Only

For Heat Recovery systems the Auto Changeover setting automatically switches control of the indoor 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 indoor unit when indoor room temperature falls below set-point temperature and signals the outdoor unit to begin heating cycle. The indoor unit fan operation is delayed until coil pipe temperature reaches 76ºF. 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 space temperature readings concurrently or individually from either:

1. Wall-mounted wired controller(s)
2. Factory mounted return air thermistor or the optional wall-mounted wired remote temperature sensor.

A single indoor 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 or central controller, displayed diagnostic codes are specific, alpha numeric, and provide the service technician with a reason for the code displayed.

Condensate Lift / Pump

The indoor 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 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).

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Coil

The indoor unit coil is constructed with grooved design copper tubes with slit coil fins, three (3) rows, 18 fins per inch.

Refrigerant Leak Detection

The indoor unit contains an R32 refrigerant leak sensor. The sensor is designed to control optional refrigerant piping shut-off valves if a leak is detected. Shut-off valve units are available as separate LG accessories or included as components in LG Heat Recovery Unit accessories. The sensor can enable four individual controller displayed error codes for leak detection (CH230), sensor fault (CH228), 6 months life remaining (CH236) and end of life (CH229).

Table 80: Refrigerant Leak Sensor Specifications.

Item	Specification
Refrigerant	R32
Detection Concentration	5,000 ppm
Power Supply	DC 5V
Operating Temperature	-25°F to +140°F
Lifetime	10 years

Controls Features

- Auto changeover (Heat Recovery only)
- Auto operation
- Auto restart
- External on/off control
- Dual thermistor control
- Dual set-point control
- Filter life display
- Multiple auxiliary heater applications
- Group control
- External static pressure control
- Hot start
- Self diagnostics
- Timer (on / off)
- Weekly schedule
- Fan speed control
- Wi-Fi compatible
- Auto fan
- R32 leak detection sensor

Figure 34: Low Static Ducted Indoor Units.



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LOW STATIC DUCTED

General Data

Table 81: R32 Low Static Ducted Indoor Unit General Data.

Model No.	ZRNU073L1GA	ZRNU093L1GA	ZRNU123L2GA	ZRNU153L2GA	ZRNU183L2GA	ZRNU243L3GA
Cooling Mode Performance						
Capacity (Btu/h)	7,500	9,600	12,300	15,400	19,100	24,000
Max. Power Input[1] (W)						
H/M/L Power at Factory Default (W)	31 / 28 / 24	31 / 28 / 24	41 /34 / 29	56 / 41 / 34	71 / 56 / 41	103 / 63 / 48
Heating Mode Performance						
Capacity (Btu/h)	8,500	10,900	13,600	17,100	21,500	27,300
Max Power Input[1] (W)						
H/M/L Power at Factory Default (W)	31 / 28 / 24	31 / 28 / 24	41 / 34 / 29	56 / 41 / 34	71 / 56 / 41	103 / 63 / 48
Unit Data						
Refrigerant Type[2]	R32					
Refrigerant Control	EEV					
Sound Pressure[3] dB(A) (H/M/L)	27 / 26 / 23	30 / 26 / 23	31 / 29 / 26	34 / 31 / 29	36 / 34 / 31	39 / 35 / 32
Sound Power[4] dB(A) (H)	48	49	52	53	54	58
Net Unit Weight (lbs.)	35.9	35.9	46.1	46.1	46.1	53.4
Shipping Weight (lbs.)	45.6	45.6	56.9	56.9	56.9	65.9
Communication Cable[5] (No. x AWG)	2 x 18					
Fan						
Type	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco
Quantity	1	1	1	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct					
Factory Set Airflow Rate H/M/L (CFM)	270 / 230 / 200	320 / 250 / 200	360 / 310 / 250	450 / 360 / 310	530 / 450 / 360	710 / 570 / 430
Factory Set External Static Pressure (in. wg)	0.1	0.1	0.1	0.1	0.1	0.1
Piping						
Liquid Line (in., O.D.)	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare
Vapor Line (in., O.D.)	3/8 Flare	3/8 Flare	3/8 Flare	1/2 Flare	1/2 Flare	1/2 Flare
Condensate Line (in., I.D.)	1	1	1	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.

All capacities are net with a combination ratio between 95-105%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

[1] Max. power input is rated at maximum setting value.

[2] Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R32 refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

[3] Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[4] Sound Power level is measured using rated conditions, and tested in a reverberation room per ISO 3741.

[5] All communication cable to be minimum 18 AWG, 2-conductor, twisted, stranded, shielded and must comply with applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communication cable at any other point.

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Table 82: R32 Low Static Ducted Indoor Unit Electrical Data.

Model	Voltage Range	MCA	MOP	Rated Amps (A)	Power Supply			Power Input (W)		
					Hz	Volts	Phase	Max. Cooling	Max. Heating	H/M/L at Factory Default
L1 Frames										
ZRNU073L1GA	208-230	0.5	15	0.4	60	208-230	1	40	40	31 / 28 / 24
ZRNU093L1GA		0.5		0.4				40	40	39 / 29 / 24
L2 Frames										
ZRNU123L2GA	208-230	1.0	15	0.8	60	208-230	1	85	85	41 / 34 / 29
ZRNU153L2GA		1.0		0.8				85	85	56 / 41 / 34
ZRNU183L2GA		1.0		0.8				85	85	71 / 56 / 41
L3 Frame										
ZRNU243L3GA	208-230	1.5	15	1.2	60	208-230	1	115	115	103 / 63 / 48

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

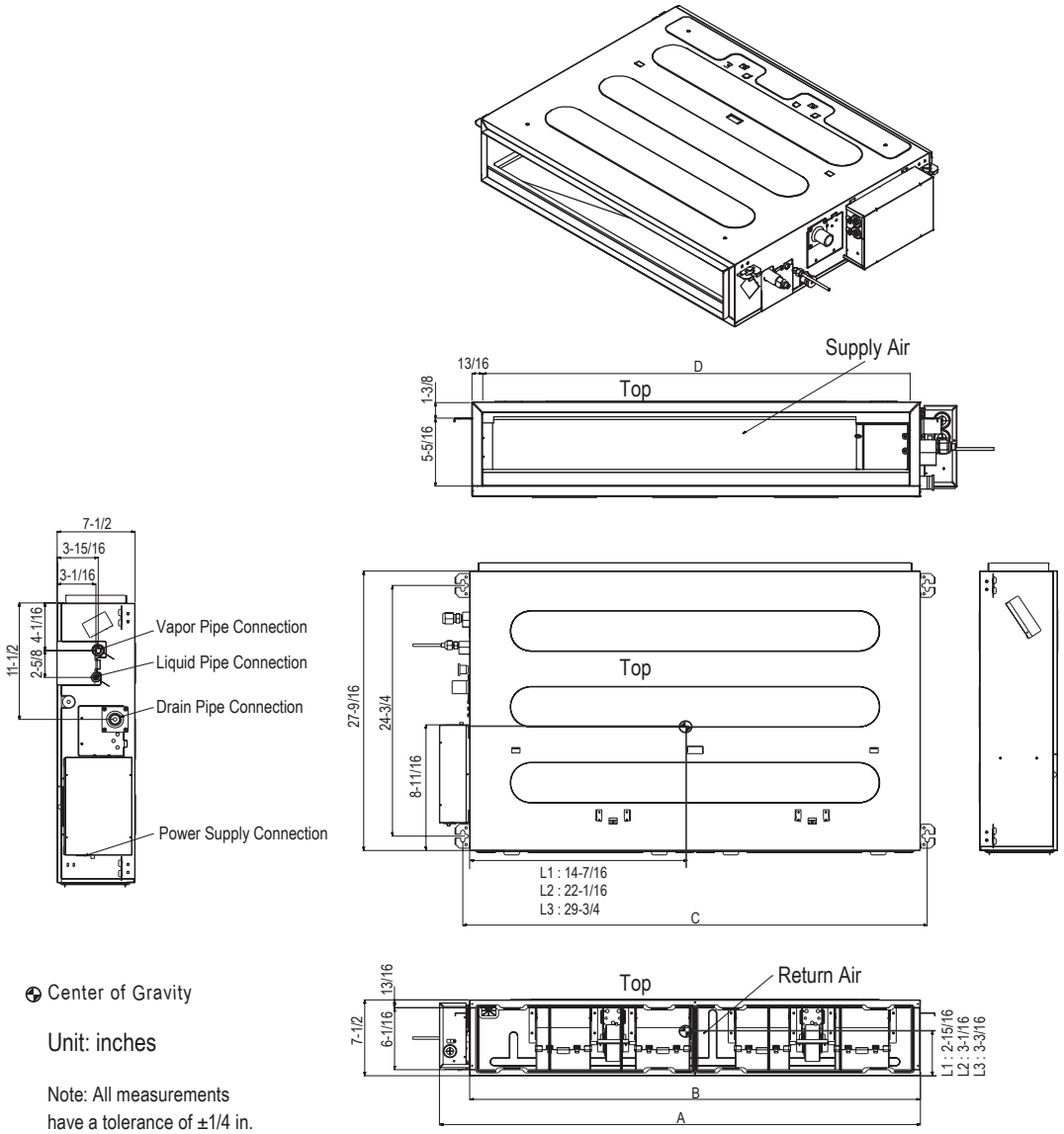
Units are suitable for use on an electrical system where voltage supplied to unit terminals is within the listed range limits.
Select wire size based on the larger MCA value.
Instead of a fuse, use the circuit breaker.

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LOW STATIC DUCTED

ZRNU073L1GA~243L3GA Dimensions

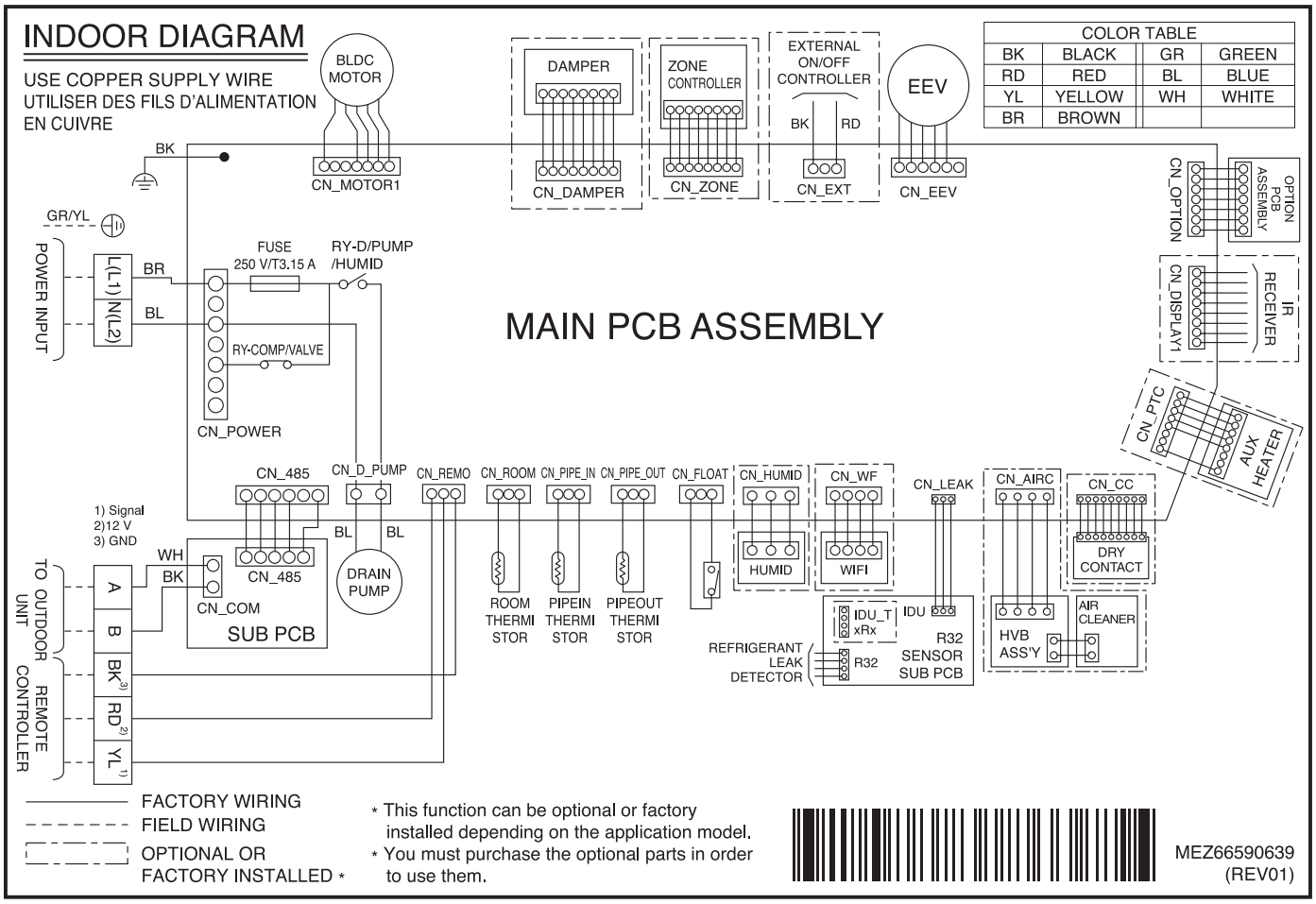
Figure 35: Low Static Ducted Dimensions.



	A	B	C	D	Supply Duct Connection					Return Duct Connection				
					Type	Height	Width	Flange Width	Flange Depth	Opening Location	Height	Width	Flange Width	Flange Depth
ZRNU073L1GA ZRNU093L1GA	30-1/2	27-9/16	28-7/8	26	Flange	5-7/8	26	13/16	5/8	Rear	6-1/8	26	3/4	No Flange
										Bottom	6-1/16	26	3/4	No Flange
ZRNU123L2GA ZRNU153L2GA ZRNU183L2GA	38-3/8	35-7/16	36-3/4	33-7/8	Flange	5-7/8	33-13/16	13/16	5/8	Rear	6-1/8	33-11/16	3/4	No Flange
										Bottom	6-1/16	33-11/16	3/4	No Flange
ZRNU243L3GA	46-1/4	43-5/16	44-5/8	41-3/4	Flange	5-7/8	41-3/4	13/16	5/8	Rear	6-1/8	41-11/16	3/4	No Flange
										Bottom	6-1/16	41-11/16	3/4	No Flange

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Figure 36: ZRNU073L1GA, ZRNU093L1GA Wiring Diagram.



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ZRNU073L1GA, ZRNU093L1GA Wiring Diagram

Table 83: ZRNU073L1GA, ZRNU093L1GA Wiring Diagram Legend.

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

*If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

Table 84: ZRNU073L1GA, ZRNU093L1GA DIP Switch Settings.

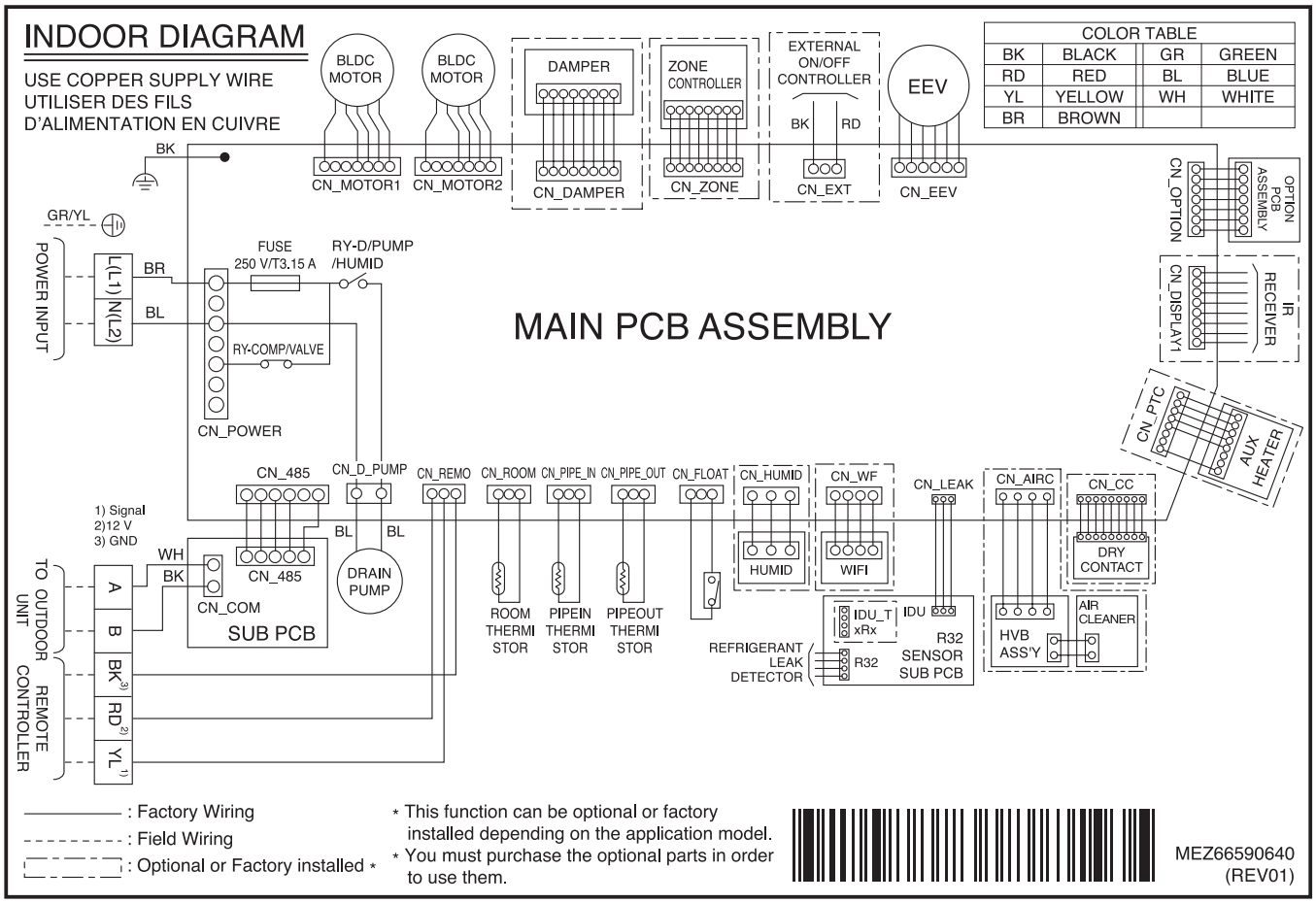
DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub on each indoor unit
SW4	DRY CONTACT MODE	Variable	Auto	Sets operation mode for optional Dry Contact accessory. 1. Variable: Auto or Manual Mode can be set through 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	VENTILATOR INTERLOCK	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.

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

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ZRNU123L2GA, ZRNU153L2GA, ZRNU183L2GA, ZRNU243L3GA Wiring Diagram

Figure 37: ZRNU123L2GA, ZRNU153L2GA, ZRNU183L2GA, ZRNU243L3GA Wiring Diagram.



Product Data

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ZRNU123L2GA, ZRNU153L2GA, ZRNU183L2GA, ZRNU243L3GA Wiring Diagram

Figure 38: ZRNU123L2GA, ZRNU153L2GA, ZRNU183L2GA, ZRNU243L3GA Wiring Diagram.

Terminal	Purpose	Function
CN-POWER	AC Power supply	AC Power line
CN-MOTOR1	Fan motor output	Motor output of BLDC
CN-MOTOR2	Fan motor output	Motor output of BLDC
CN-DAMPER	N / A	N / A
CN-ZONE	Zone controller	Zone controller connection
CN-EXT	External on / off controller	External on / off Controller connection
CN-EEV	EEV Output	EEV control output
CN-OPTION	Optional PCB EPROM	Option PCB connection
CN-DISPLAY	Display	Display of indoor status
CN-PTC	Auxiliary heater	Connection for Auxiliary Heater
CN-CC	Dry contact	Dry Contact connection
CN-AIRC	N / A	N / A
CN-LEAK	Leak detector	Leak detector connection
CN-WF	Wi-Fi	Wi-Fi module connection
CN-HUMID	N / A	N / A
CN-FLOAT	Float switch input	Float switch sensing
CN-PIPE/OUT	Discharge pipe sensor	Pipe out thermistor
CN-PIPE/IN	Suction pipe sensor	Pipe in thermistor
CN-ROOM	Room sensor	Room air thermistor
CN-REMO	Wired remote controller	Wired remote control connection
CN-D/PUMP	Drain pump output	AC output for drain pump
CN-485	Communication	Connection between indoor and outdoor units

*If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

Table 85: ZRNU123L2GA, ZRNU153L2GA, ZRNU183L2GA, ZRNU243L3GA DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub 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	VENTILATOR INTERLOCK	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.

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

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ZRNU073L1GA~243L3GA Refrigerant Flow Diagram

Figure 39: ZRNU073L1GA~243L3GA Piping Diagram.

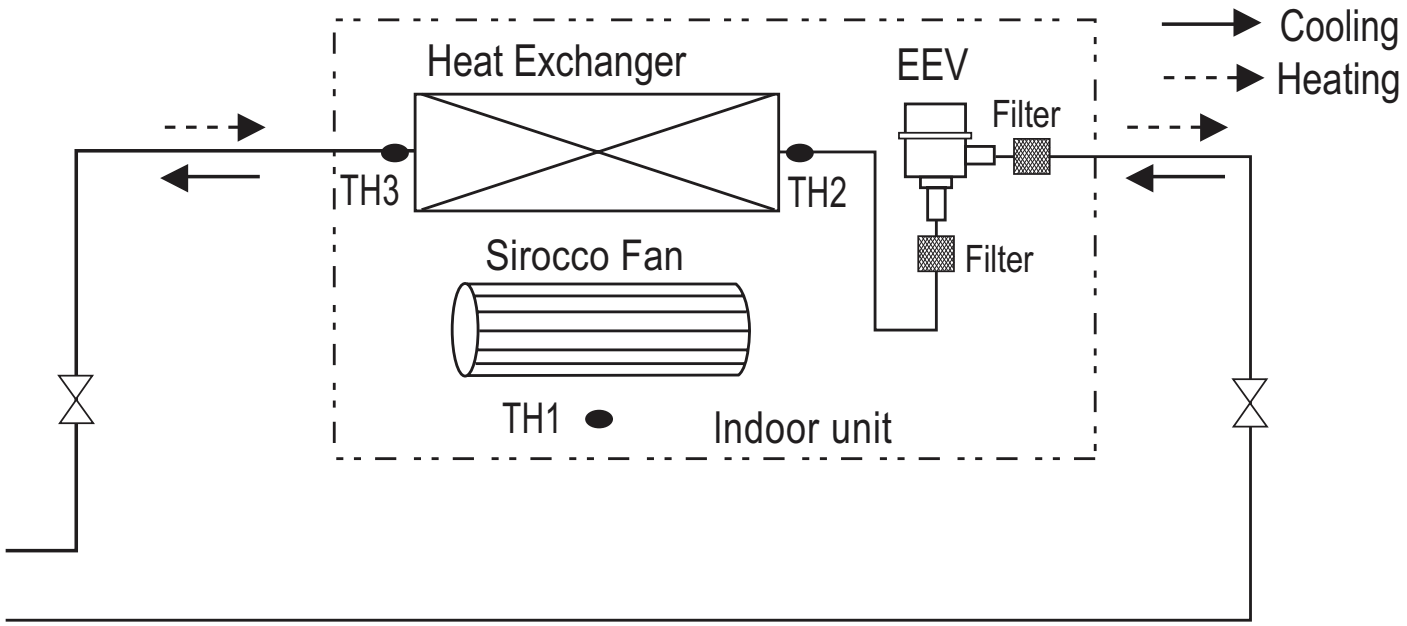


Table 86: ZRNU073L1GA~243L3GA Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
L1 Frames		
ZRNU073L1GA	1/4 Flare	3/8 Flare
ZRNU093L1GA		
L2 Frames		
ZRNU123L2GA	1/4 Flare	3/8 Flare
ZRNU153L2GA	1/4 Flare	1/2 Flare
ZRNU183L2GA	1/4 Flare	1/2 Flare
L3 Frame		
ZRNU243L3GA	1/4 Flare	1/2 Flare

Table 87: ZRNU073L1GA~243L3GA Thermistors.

Thermistor	Description
TH1	Return air thermistor
TH2	Pipe in thermistor
TH3	Pipe out thermistor

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ZRNU073L1GA~243L3GA External Static Pressure and Air Flow Tables

Table 88: ZRNU073L1GA, ZRNU093L1GA External Static Pressure and Air Flow Table.

Set Value	Static Pressure (in. wg)					
	0	0.04	0.08	0.11	0.15	0.19
65	178	-	-	-	-	-
70	198	171	-	-	-	-
75	219	192	161	-	-	-
80	240	214	183	-	-	-
85	262	236	205	170	-	-
90	284	258	227	192	-	-
95	308	281	251	215	176	-
100	331	305	274	239	199	-
105	356	329	299	263	224	180
110	-	354	324	288	249	205
115	-	-	349	314	274	230
120	-	-	-	340	300	256
125	-	-	-	367	327	283
130	-	-	-	-	354	310

Table 89: ZRNU123L2GA, ZRNU153L2GA, ZRNU183L2GA External Static Pressure and Air Flow Table.

Set Value	Static Pressure (in. wg)					
	0	0.04	0.08	0.11	0.15	0.19
75	230	-	-	-	-	-
80	259	237	-	-	-	-
85	290	267	236	-	-	-
90	320	298	267	229	-	-
95	352	329	299	260	-	-
100	384	361	331	292	246	-
105	417	394	363	325	279	224
110	450	427	396	358	312	258
115	484	461	430	392	346	292
120	518	495	465	427	380	326
125	553	530	500	461	415	361
130	589	566	536	497	451	397
135	-	-	572	534	487	433

Table 90: ZRNU243L3GA External Static Pressure and Air Flow Table.

Set Value	Static Pressure (in. wg)					
	0	0.04	0.08	0.11	0.15	0.19
85	360	-	-	-	-	-
90	430	392	378	-	-	-
95	488	436	431	-	-	-
100	536	484	473	378	-	-
105	576	524	507	419	-	-
110	612	560	538	454	388	-
115	646	594	568	488	422	-
120	681	629	598	523	456	371
125	719	667	632	561	494	409
130	763	711	672	606	539	453
135	-	765	719	659	592	507
139	-	-	745	673	613	540

All static pressure air flow rates are listed in CFM.

The tables above show the available external static pressure range and the correlation between air flow rates and external static pressure.

If the external static pressure of the installed indoor unit is less than the lowest value (as mentioned in the table), the indoor unit components can fail.

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Figure 40: ZRNU073L1GA, ZRNU093L1GA External Static Pressure and Air Flow Chart.

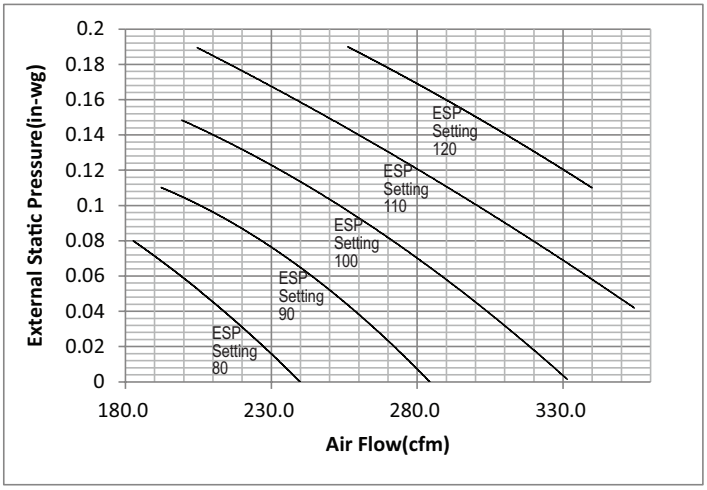


Figure 41: ZRNU123L2GA, ZRNU153L2GA, ZRNU183L2GA Unit External Static Pressure and Air Flow Chart.

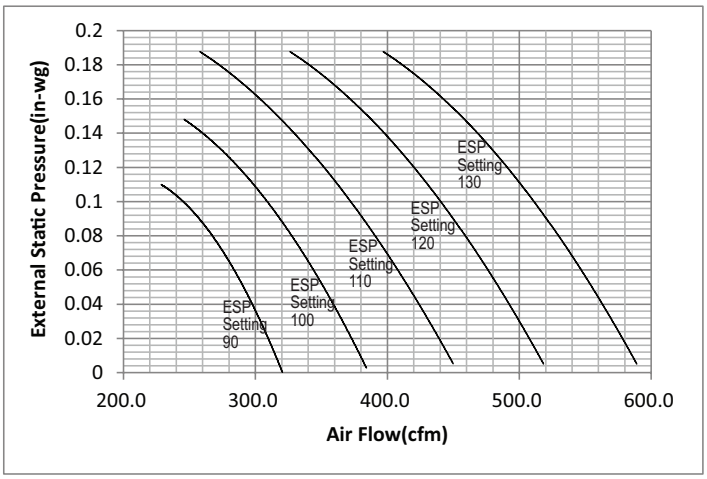
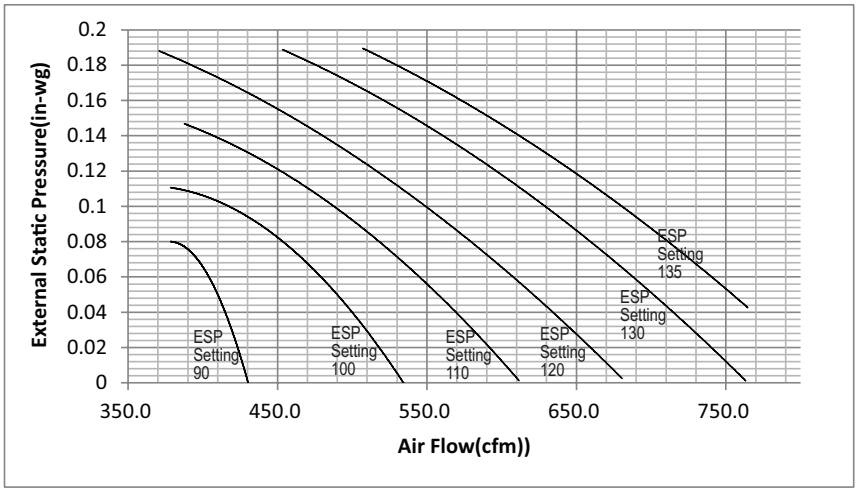


Figure 42: ZRNU243L3GA Unit External Static Pressure and Air Flow Chart.



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ZRNU073L1GA~243L3GA External Static Pressure Ranges

Table 91: ZRNU073L1GA, ZRNU093L1GA Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode		Setting Value	Standard ESP (in. wg)	CFM	Min. ESP (in. wg)	Max. ESP (in. wg)
ZRNU073L1GA	7.5	High (Factory Set)	High	100	0	265	-	0.2
			Mid	93		230		
			Low	86		194		
ZRNU093L1GA	9.6	High (Factory Set)	High	113	0	318	-	0.2
			Mid	97		247		
			Low	86		194		

Table 92: ZRNU123L2GA, ZRNU153L2GA, ZRNU183L2GA Unit External Static Pressure Ranges.

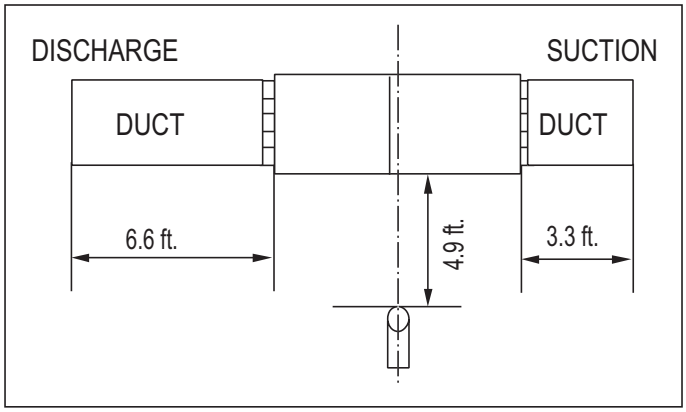
Model	Capacity (MBh)	Mode		Setting Value	Standard ESP (in. wg)	CFM	Min. ESP (in. wg)	Max. ESP (in. wg)
ZRNU123L2GA	12.3	High (Factory Set)	High	105	0	353	-	0.2
			Mid	96		300		
			Low	89		247		
ZRNU153L2GA	15.4	High (Factory Set)	High	119	0	442	-	0.2
			Mid	105		353		
			Low	96		300		
ZRNU183L2GA	19.1	High (Factory Set)	High	131	0	530	-	0.2
			Mid	119		442		
			Low	105		353		

Table 93: ZRNU243L3GA Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode		Setting Value	Standard ESP (in. wg)	CFM	Min. ESP (in. wg)	Max. ESP (in. wg)
ZRNU243L3GA	24.0	High (Factory Set)	High	139	0	707	-	0.2
			Mid	118		565		
			Low	105		424		

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Figure 43: Sound Pressure Measurement Location.



- Measurements are taken 4.9 ft away from the front of the unit.
- Sound pressure levels are measured in dB(A) with a tolerance of ±3.
- Sound pressure levels are tested in an anechoic chamber under ISO Standard 3745.

Operating Conditions:

- Power source: 220V/60 Hz

- Sound level will vary depending on a range of factors including the construction (acoustic absorption coefficient) of a particular room in which the unit was installed.

Table 94: ZRNU073L1GA~243L3GA Indoor Unit Sound Pressure Levels.

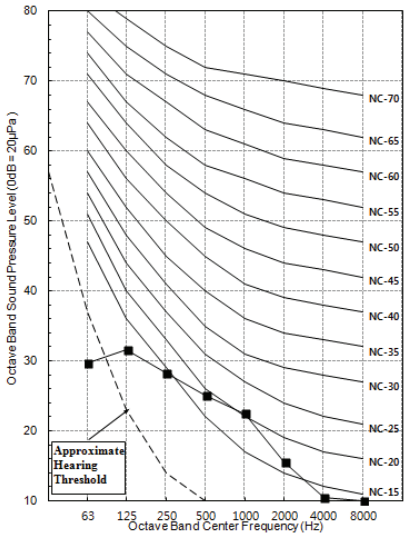
Model	Sound Pressure Levels dB(A)		
	High Fan Speed	Medium Fan Speed	Low Fan Speed
L1 Units			
ZRNU073L1GA	27	26	23
ZRNU093L1GA	30	26	23
L2 Units			
ZRNU123L2GA	31	29	26
ZRNU153L2GA	34	31	29
ZRNU183L2GA	36	34	31
L3 Units			
ZRNU243L3GA	39	35	32

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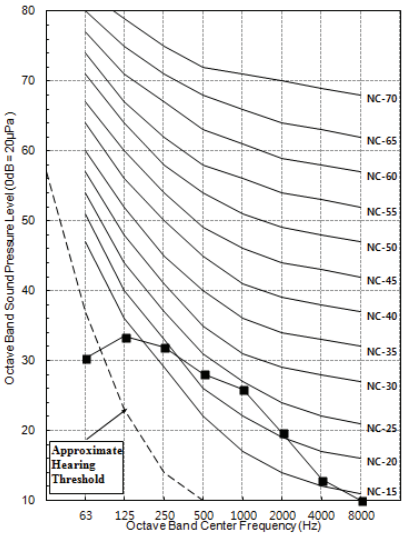
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Figure 44: ZRNU073L1GA, ZRNU093L1GA, and ZRNU123L2GA Sound Pressure Level Diagrams.

ZRNU073L1GA



ZRNU093L1GA



ZRNU123L2GA

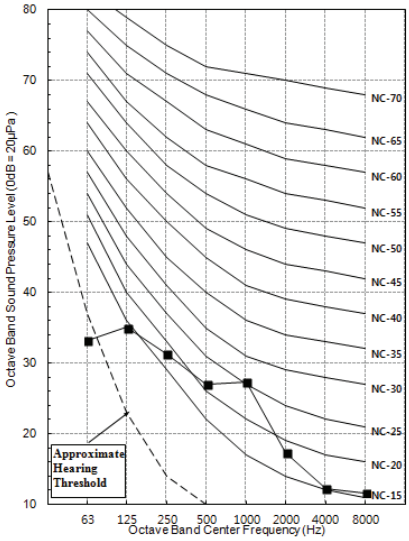
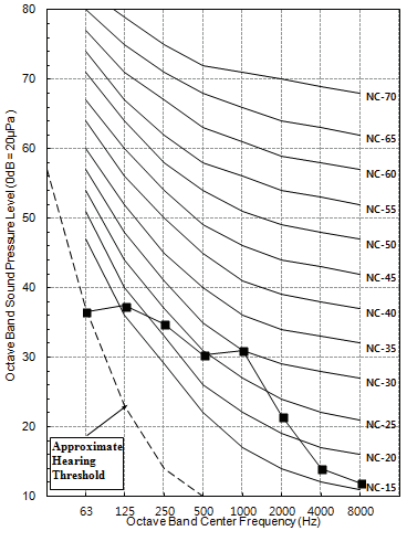
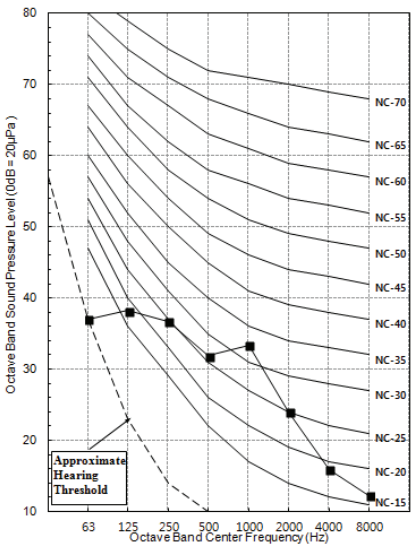


Figure 45: ZRNU153L2GA, ZRNU183L2GA, and ZRNU243L3GA Sound Pressure Level Diagrams.

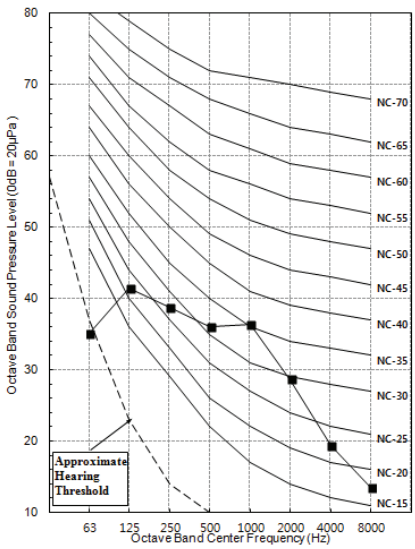
ZRNU153L2GA



ZRNU183L2GA



ZRNU243L3GA



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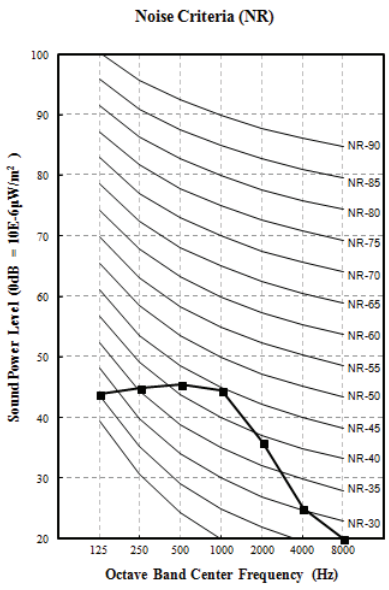
Table 95: ZRNU073L1GA~243L3GA Indoor Unit Sound Power Levels.

Model	Sound Power Levels dB(A)
L1 Units	
ZRNU073L1GA	48
ZRNU093L1GA	49
L2 Units	
ZRNU123L2GA	52
ZRNU153L2GA	53
ZRNU183L2GA	54
L3 Unit	
ZRNU243L3GA	58

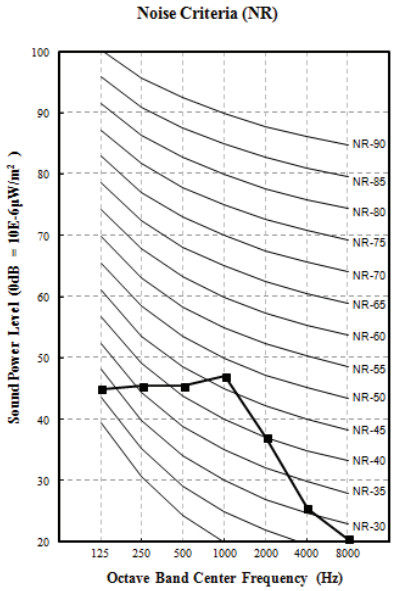
- Data is valid under diffuse field conditions.
- Data is valid under nominal operating conditions.
- Sound power level is measured using rated conditions and tested in a reverberation chamber under ISO Standard 3741.
- Sound level will vary depending on a range of factors such as construction (acoustic absorption coefficient) of particular area in which the equipment is installed.
- Reference acoustic intensity: 0dB = 10E-6μW/m^2

Figure 46: ZRNU073L1GA, ZRNU093L1GA, and ZRNU123L2GA Sound Power Level Diagrams.

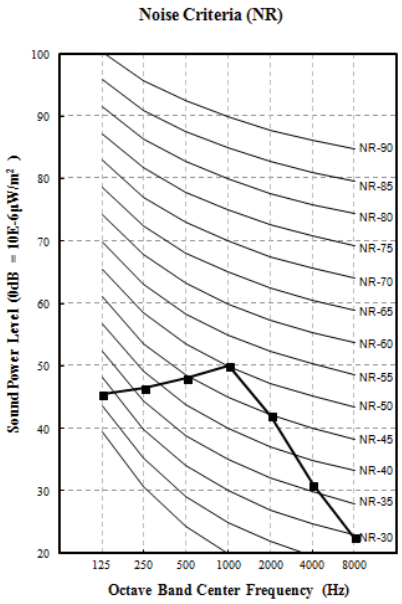
ZRNU073L1GA



ZRNU093L1GA



ZRNU123L2GA



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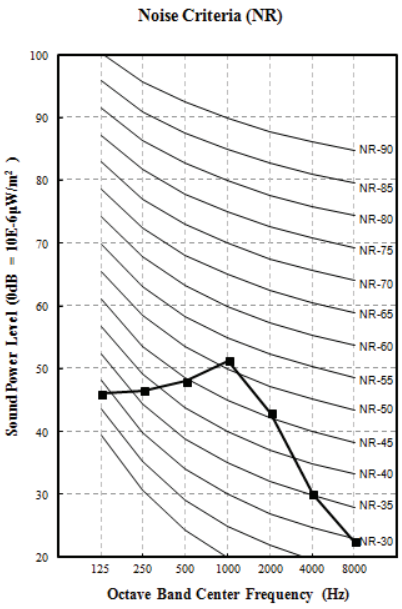
LOW STATIC DUCTED

Acoustic Data

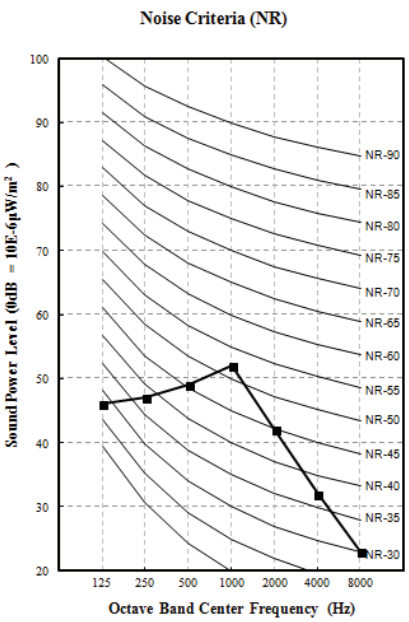
Sound Power Levels

Figure 47: ZRNU153L2GA, ZRNU183L2GA, and ZRNU243L3GA Sound Power Level Diagrams.

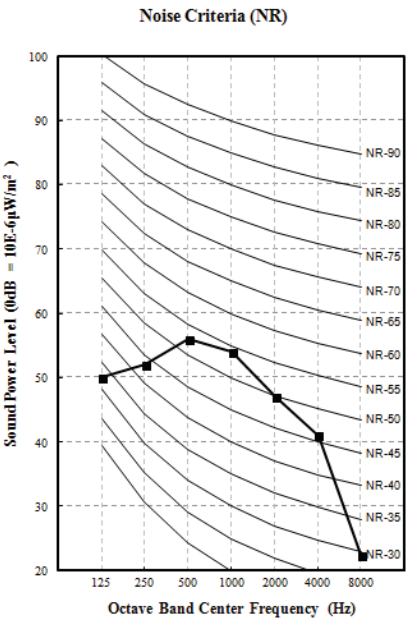
ZRNU153L2GA



ZRNU183L2GA



ZRNU243L3GA



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Cooling Capacity Table

Table 96: ZRNU073L1GA~243L3GA Cooling Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp. (°F DB)	Indoor Air Temperature (°F DB / WB)													
		68 / 57		73 / 61		79 / 64		80 / 67		85 / 70		88 / 73		91 / 76	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
ZRNU073L1GA / 7.5	95	4.9	4.4	6	5.1	6.8	5.4	7.5	5.8	8	6.0	8.2	5.7	8.3	5.4
ZRNU093L1GA / 9.6	95	6.3	5.5	7.7	6.4	8.6	6.8	9.6	7.2	10.3	7.5	10.5	7.1	10.6	6.7
ZRNU123L2GA / 12.3	95	8.1	6.8	9.8	7.9	11.1	8.4	12.3	8.9	13.2	9.3	13.4	8.8	13.6	8.3
ZRNU153L2GA / 15.4	95	10.1	8.6	12.3	10.0	13.9	10.6	15.4	11.3	16.5	11.7	16.8	11.2	17.1	10.5
ZRNU183L2GA / 19.1	95	12.6	10.7	15.3	12.3	17.2	13.1	19.1	14.0	20.5	14.6	20.9	13.8	21.2	13.1
ZRNU243L3GA / 24.2	95	15.8	14	19.2	16.2	21.6	17.2	24.0	18.3	25.7	19.0	26.2	18.1	26.6	17.1

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

Cooling range with the Low Ambient Baffle Kit (sold separately) installed on the outdoor unit(s) is -9.9°F to +122°F, and is achieved only when all indoor units are operating in cooling mode. Does not impact heat recovery system synchronous operating range.

The System Combination Ratio must be between 50–130%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice.

Current certified ratings are available at https://www.ahridirectory.org/

For outdoor unit performance data, see the respective outdoor unit performance data manuals on https://lghvac.com/commercial.

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LOW STATIC DUCTED

Heating Capacity Table

Table 97: ZRNU073L1GA~243L3GA Heating Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp.		Indoor Air Temperature (°F DB)							
			59	61	64	67	70	73	76	80
	°F DB	°F WB	TC	TC	TC	TC	TC	TC	TC	TC
			MBh	MBh	MBh	MBh	MBh	MBh	MBh	MBh
ZRNU073L1GA / 7.5	47	43	9.5	9.4	9.4	8.9	8.5	8.3	7.8	7.4
ZRNU093L1GA / 9.6	47	43	12.2	12.1	12.0	11.5	10.9	10.6	10.0	9.5
ZRNU123L2GA / 12.3	47	43	15.2	15.1	15.0	14.3	13.6	13.2	12.5	11.9
ZRNU153L2GA / 15.4	47	43	19.2	19.0	18.8	18.0	17.1	16.6	15.7	15.0
ZRNU183L2GA / 19.1	47	43	24.1	23.9	23.7	22.6	21.5	20.9	19.8	18.8
ZRNU243L3GA / 24.2	47	43	30.6	30.3	30.0	28.7	27.3	26.5	25.1	23.9

TC: Total Capacity (MBh).

The System Combination Ratio must be between 50–130%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

For outdoor unit performance data, see the respective outdoor unit performance data manuals on https://lghvac.com/commercial.

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MULTI-POSITION AIR HANDLING UNIT



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MULTI-POSITION AHU

Mechanical Specifications

Casing

The unit is designed to operate in vertical up flow, down flow (requires conversion kit sold separately), horizontal left, and horizontal right configurations.

Return air opening is on the bottom in the vertical position or right end in the horizontal position. Return air plenum sub-base is to be field-provided. The supply air connection is male flange. The unit case is made of 22-gauge coated metal and the external surfaces are finished with a high gloss baked enamel finish. Finish color is Black STS (morning dawn). Cold surfaces are galvanized steel. The cold surfaces of the case are internally insulated with ½ inch foil faced, polystyrene fiber insulation. The inside surface of the fan assembly door access panel is treated with ½ inch polystyrene fiber insulation, encapsulated on both sides, and sealed along the edges with a reinforced foil-faced covering to prevent deterioration caused by panel removal. All access panels are provided with gasket seals to minimize air leakage. The unit case is designed to accept an internal, optional, LG electric strip heater. Unit breaker, fuses, and / or disconnect are provided by others.

Fan Assembly and Control

The indoor unit has an integral fan assembly consisting of a galvanized steel housing and a forward-curved fan wheel. The direct drive fan/motor assembly is mounted on rubber grommets isolating the rotating assembly from the fan housing. The fan motor is a Brushless Digitally-Controlled design (BLDC), having 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. Fan speed is controlled using a microprocessor-based direct digital control algorithm that provides a minimum of 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) for the NB (30K/36K/42K/48K) and NC (54K/60K) chassis. The setting provides delivery of the high speed air volume against an external static pressure of up to 1.0 in-wg.

Being a Constant Air Volume (CAV) unit, the NA (12K/18K/24K) chassis does not require any field adjustment to change the ESP settings. The NB and NC chassis come with factory setting that provides delivery of air volume against an external static pressure of up to 1.0” in-wg.

Air Filter

The unit comes with a filter rack capable of accepting a field-provided 16” x 20” x 1” (NA chassis), 20” x 20” x 1” (NB chassis) or 24” x 20” x 1” (NC chassis) filter cartridge. The filter rack is equipped with guides that keep the filter centered in the rack. Filter service access is from the front of the unit without removing the coil or fan area access panels. Filter access door is provided with sliding door latches that can be removed.

Optional Auxiliary Electric Heat Module(s)

LG optional electric heat modules are designed for field installation in the reheat position. The electric heat module is provided with heating elements, contractors, relays, high temperature safety switch, and interconnecting control wiring harness with a quick connect plug for easy connection to the Multi-Position Air Handling Unit control board. Auxiliary heat modules are available in nominal capacities of 3, 5, 8, 10, 15, and 20kW at 230/60/1. Heating elements are powered from a field provided separate power source. 5 and 10 kW modules are powered from a single power wire. The 15 and 20 kW modules are powered from two power wires.

Heating module breakers, fuses, and / or disconnects are to be field provided.

Electric Heat Module Controls

The electric heat module is capable of operating at full capacity during system defrost and oil return operations. When the Multi-Position Air Handling Unit is operating in the Cooling, Dry, or Fan Only modes, the electric heater operation is locked out and unavailable. When the unit is operating in the Heating mode, the heater is field selectable to operate when the room temperature is 2°F lower than set-point or manually if provided with a start/stop signal from a third-party outside source.

Microprocessor Controls

The unit is equipped with an integrated microprocessor-based controller capable of performing functions necessary to operate the system without the use of a wall-mounted controller. A temperature thermistor is mounted in the return air stream. All unit operating parameters, excluding the operation 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 indoor unit(s) and outdoor unit is to be a minimum of 18 AWG, 2 conductor, stranded, and shielded (RS-485). The microprocessor control provides the following functions: auto addressing, self-diagnostics, auto restart following power restoration, and will operate the indoor unit using one of the following five operation modes:

1. Auto Changeover (Heat Recovery only)
2. Heating
3. Cooling
4. Dry
5. Fan Only

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- For Heat Recovery systems the Auto Changeover setting automatically switches control of the indoor 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 does not begin fan operation until coil pipe temperature reaches 76ºF. Significant airflow is generated when pipe temperature reaches 80°F. A field-selectable option maintains fan operation for 30 minutes following cooling cycle operations.

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

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. A single indoor unit has the capability of being controlled by up to two local wired controllers. 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 local or central controller, displayed diagnostic codes are specific and provide the service technician with the reason for the code displayed.

Handling Condensate

The drain pan is designed to work with a gravity building drain system. If condensate lifts/pumps are needed, they are to be field-provided. A secondary drain port plug is provided allowing the pan to be drained for service. Condensate float safety switch connections are available on the main control board for connection of a field supplied float safety switch.

Condensate Drain Pan

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

Coil

The indoor unit coil is constructed with grooved design copper tubes with slit coil fins, 2 to 3 rows, 18 fins per inch.

Refrigerant Leak Detection

The indoor unit contains an R32 refrigerant leak sensor. The sensor is designed to control optional refrigerant piping shut-off valves if a leak is detected. Shut-off valve units are available as separate LG accessories or included as components in LG Heat Recovery Unit accessories. The sensor can enable four individual controller displayed error codes for leak detection (CH230), sensor fault (CH228), 6 months life remaining (CH236) and end of life (CH229).

Table 98: Refrigerant Leak Sensor Specifications.

Item	Specification
Refrigerant	R32
Detection Concentration	5,000 ppm
Power Supply	DC 5V
Operating Temperature	-25°F to +140°F
Lifetime	10 years

Controls Features

- Auto changeover (Heat Recovery only)
- Auto operation
- Auto restart
- External on / off control
- Dual thermistor control
- External static pressure control
- Group control
- Hot start
- Self diagnostics
- Timer (on / off)
- Weekly schedule
- Fan speed control
- Dual set-point control
- Filter life display
- Multiple auxiliary heater applications
- Wi-Fi compatible
- Auto fan
- R32 leak detection sensor

Figure 48: Multi-Position Air Handling Units.



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MULTI-POSITION AHU

General Data
NA Frames

Table 99: R32 Multi-Position AHU (NA Frame) General Data.

Model No.	ZRNU123NAAA	ZRNU183NAAA	ZRNU243NAAA
Cooling Mode Performance			
Capacity (Btu/h)	12,000	18,000	24,000
Max Power Input[1] (W)	228	228	228
L/M/H Power Input at Factory Default (W)	38 / 56 / 91	49 / 79 / 125	67 / 110 / 173
Heating Mode Performance			
Capacity (Btu/h)	13,500	20,000	27,000
Max Power Input[1] (W)	228	228	228
L/M/H Power Input at Factory Default (W)	38 / 56 / 91	49 / 79 / 125	67 / 110 / 173
Unit Data			
Refrigerant Type[2]	R32		
Refrigerant Control	EEV		
Sound Pressure[3] dB(A) H/M/L, @0.30 ESP (in wg)	34 / 31 / 28	35 / 32 / 29	36 / 33 / 29
Sound Power[4] dB(A) H/M/L, @0.30 ESP (in wg)	54 / 52 / 50	56 / 54 / 52	58 / 56 / 53
Net Unit Weight (lbs.)	116	116	116
Shipping Weight (lbs.)	129	129	129
Communication Cable[5] (No. x AWG)	2 x 18		
Fan			
Type	Sirocco	Sirocco	Sirocco
Motor	1	1	1
Housing	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct		
Factory Set Airflow Rate H/M/L (CFM)	500 / 460 / 420	600 / 510 / 440	800 / 700 / 580
Factory Set External Static Pressure (in. wg)	0.3	0.3	0.3
Piping			
Liquid Line (in., O.D.)	1/4 Brazed	1/4 Brazed	1/4 Brazed
Vapor Line (in., O.D.)	3/8 Brazed	1/2 Brazed	1/2 Brazed
Condensate Line (in., I.D.)	1 (3/4" FPT)	1 (3/4" FPT)	1 (3/4" FPT)

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.

All capacities are net with a combination ratio between 95-105%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

[1] Max. power input is rated at maximum setting value.

[2] Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R32 refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

[3] Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[4] Sound Power level is measured using rated conditions, and tested in a reverberation room per ISO 3741.

[5] All communication cable to be minimum 18 AWG, 2-conductor, twisted, stranded, shielded and must comply with applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communication cable at any other point.

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MULTI-POSITION AHU

General Data

NB Frames

Table 100: R32 Multi-Position AHU (NB Frame) General Data.

Model No.	ZRNU303NBAA	ZRNU363NBAA	ZRNU423NBAA	ZRNU483NBAA
Cooling Mode Performance				
Capacity (Btu/h)	30,000	36,000	42,000	48,000
Max Power Input[1] (W)	554	554	554	554
L/M/H Power Input at Factory Default (W)	131 / 152 / 189	147 / 187 / 260	157 / 220 / 337	157 / 220 / 337
Heating Mode Performance				
Capacity (Btu/h)	34,000	40,000	46,000	54,000
Max Power Input[1] (W)	228	366	366	366
L/M/H Power Input at Factory Default (W)	131 / 152 / 189	147 / 187 / 260	157 / 220 / 337	157 / 220 / 337
Unit Data				
Refrigerant Type[2]	R32			
Refrigerant Control	EEV			
Sound Pressure[3] dB(A) H/M/L, @0.30 ESP (in wg)	40 / 37 / 35	40 / 37 / 35	41 / 38 / 36	42 / 39 / 37
Sound Power[4] dB(A) H/M/L, @0.30 ESP (in wg)	54 / 54 / 53	54 / 54 / 53	57 / 55 / 54	58 / 56 / 54
Net Unit Weight (lbs.)	141	141	141	141
Shipping Weight (lbs.)	154	154	154	154
Communication Cable[5] (No. x AWG)		2 x 18		
Fan				
Type	Sirocco	Sirocco	Sirocco	Sirocco
Motor	1	1	1	1
Housing	1	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct			
Factory Set Airflow Rate H/M/L (CFM)	880 / 750 / 630	1,050 / 980 / 900	1,230 / 1,100 / 1,000	1,400 / 1,200 / 1,070
Factory Set External Static Pressure (in. wg)	0.3	0.3	0.3	0.3
Piping				
Liquid Line (in., O.D.)	1/4 Brazed	3/8 Brazed	3/8 Brazed	3/8 Brazed
Vapor Line (in., O.D.)	1/2 Brazed	5/8 Brazed	5/8 Brazed	5/8 Brazed
Condensate Line (in., I.D.)	1 (3/4" FPT)	1 (3/4" FPT)	1 (3/4" FPT)	1 (3/4" FPT)

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.

All capacities are net with a combination ratio between 95-105%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

[1] Max. power input is rated at maximum setting value.

[2] Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R32 refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

[3] Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[4] Sound Power level is measured using rated conditions, and tested in a reverberation room per ISO 3741.

[5] All communication cable to be minimum 18 AWG, 2-conductor, twisted, stranded, shielded and must comply with applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communication cable at any other point.

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MULTI-POSITION AHU

General Data
NC Frames

Table 101: R32 Multi-Position AHU (NC Frame) General Data.

Model No.	ZRNU543NCAA	ZRNU603NCAA
Cooling Mode Performance		
Capacity (Btu/h)	54,000	60,000
Max Power Input[1] (W)	770	770
L/M/H Power Input at Factory Default (W)	191 / 255 / 376	245 / 345 / 465
Heating Mode Performance		
Capacity (Btu/h)	60,000	66,000
Max Power Input[1] (W)	770	770
L/M/H Power Input at Factory Default (W)	191 / 255 / 376	245 / 345 / 465
Unit Data		
Refrigerant Type[2]	R32	
Refrigerant Control	EEV	
Sound Pressure[3] dB(A) H/M/L, @0.30 ESP (in wg)	43 / 39 / 35	47 / 43 / 39
Sound Power[4] dB(A) H/M/L, @0.30 ESP (in wg)	56 / 54 / 53	58 / 57 / 54
Net Unit Weight (lbs.)	153	153
Shipping Weight (lbs.)	169	169
Communication Cable[5] (No. x AWG)	2 x 18	
Fan		
Type	Sirocco	Sirocco
Motor	1	1
Housing	1	1
Motor/Drive	Brushless Digitally Controlled / Direct	
Factory Set Airflow Rate H/M/L (CFM)	1,575 / 1,400 / 1,260	1,750 / 1,575 / 1,400
Factory Set External Static Pressure (in. wg)	0.3	0.3
Piping		
Liquid Line (in., O.D.)	3/8 Brazed	3/8 Brazed
Vapor Line (in., O.D.)	5/8 Brazed	3/4 Brazed
Condensate Line (in., I.D.)	1 (3/4" FPT)	1 (3/4" FPT)

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.

All capacities are net with a combination ratio between 95-105%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

[1] Max. power input is rated at maximum setting value.

[2] Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R32 refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

[3] Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[4] Sound Power level is measured using rated conditions, and tested in a reverberation room per ISO 3741.

[5] All communication cable to be minimum 18 AWG, 2-conductor, twisted, stranded, shielded and must comply with applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communication cable at any other point.

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MULTI-POSITION AHU

Electrical Data

Table 102: R32 Multi-Position AHU Electrical Data.

Model	Voltage Range	MCA	MOP	Rated Amps (A)	Power Supply			Power Input (W)		
					Hz	Volts	Phase	Max. Cooling	Max. Heating	L / M / H at Factory Default
NA Frames										
ZRNU123NAAA	208-230	3.5	15	2.8	60	208-230	1	228	228	38 / 56 / 91
ZRNU183NAAA		3.5		2.8				228	228	49 / 79 / 125
ZRNU243NAAA		3.5		2.8				228	228	67 / 110 / 173
NB Frames										
ZRNU303NBAA	208-230	6.0	15	4.8	15	208-230	1	554	554	131 / 152 / 189
ZRNU363NBAA		6.0		4.8				554	554	147 / 187 / 260
ZRNU423NBAA		6.0		4.8				554	554	157 / 220 / 337
ZRNU483NBAA		6.0		4.8				554	554	157 / 220 / 337
NC Frames										
ZRNU543NCAA	208-230	7.88	15	6.3	15	208-230	1	770	770	191 / 255 / 376
ZRNU603NCAA		7.88	15	6.3	15		1	770	770	245 / 345 / 465

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 a fuse, use the circuit breaker.

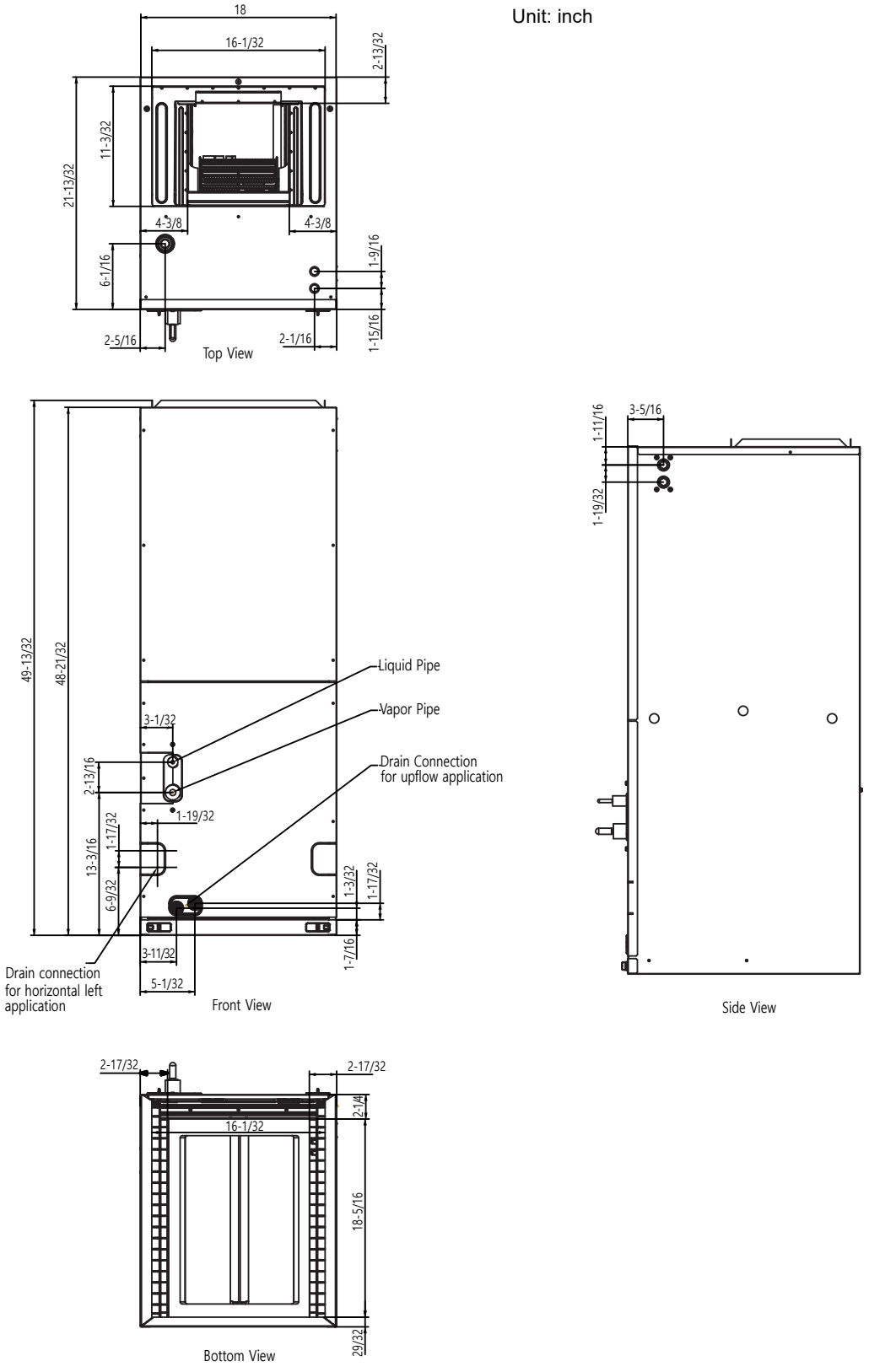
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MULTI-POSITION AHU

NA Frame External Dimensions

Figure 49: R32 Multi-Position AHU (NA Frame) Dimensions.

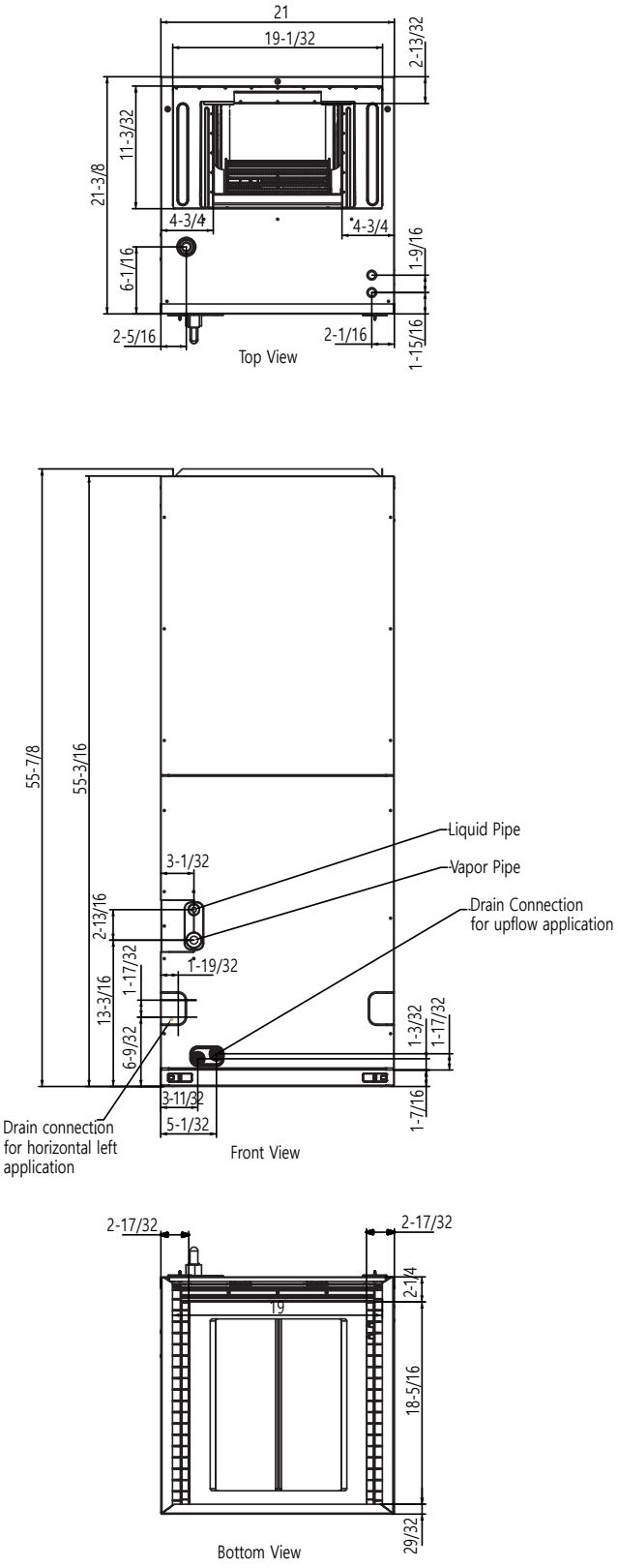
Unit: inch



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Figure 50: R32 Multi-Position AHU (NB Frame) Dimensions.

Unit: inch



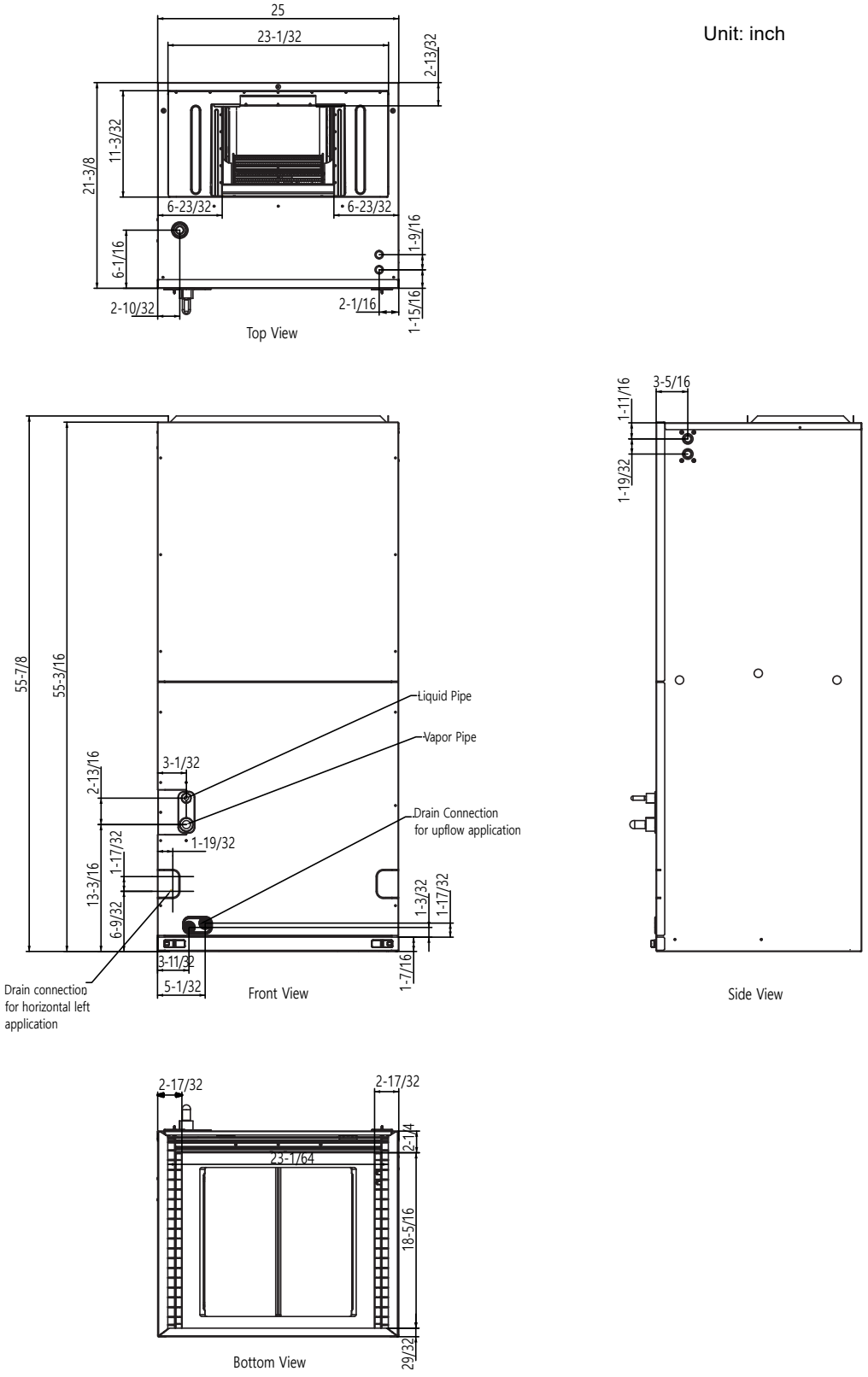
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MULTI-POSITION AHU

NC Frames External Dimensions

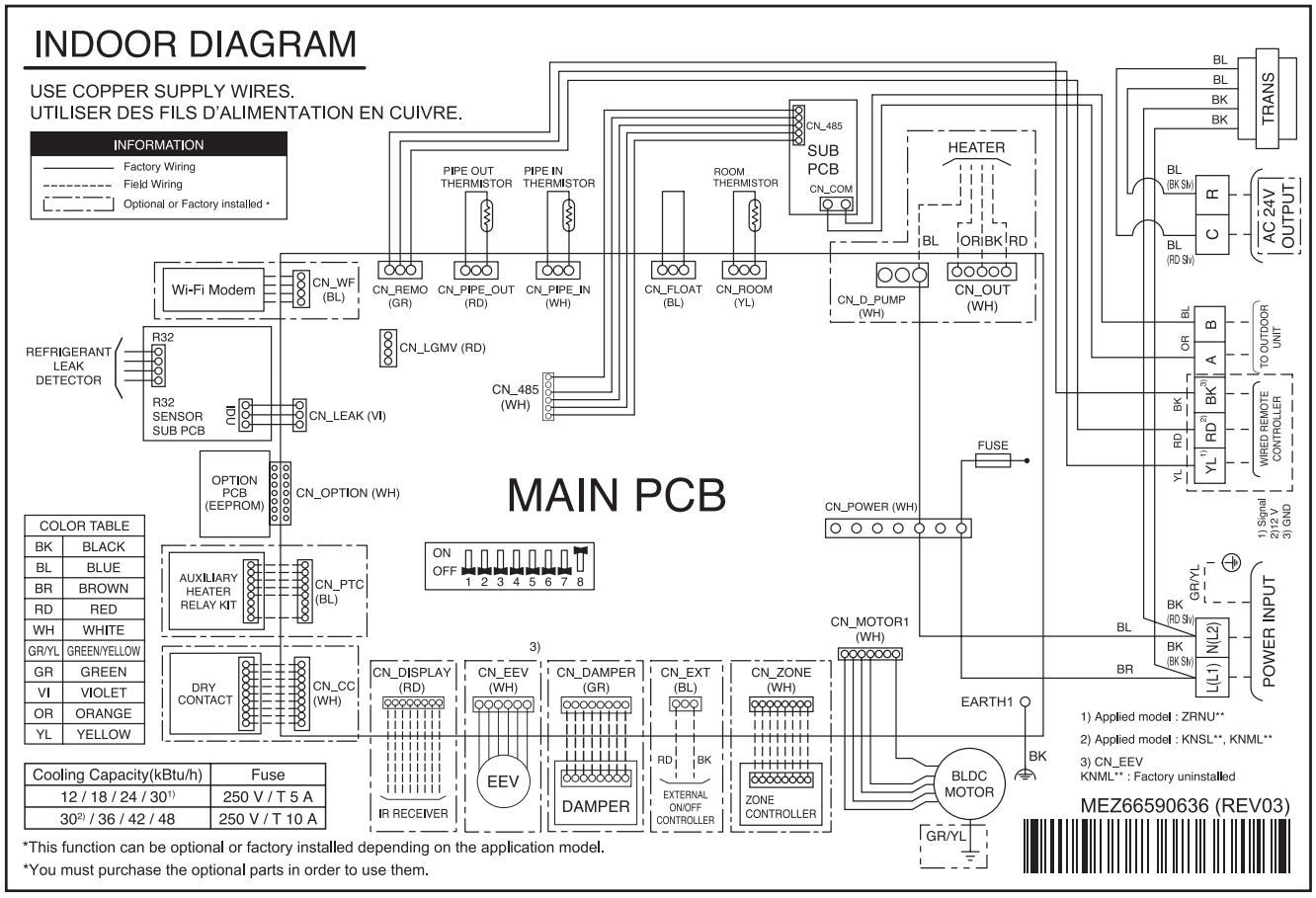
Figure 51: R32 Multi-Position AHU (NC Frame) Dimensions.

Unit: inch



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Figure 52: R32 Multi-Position AHU NA Frame Wiring Diagram.



Auxillary Heat Control DIP Switch Settings

When an indoor unit is operated with an Internal Electric heater, DIP Switch 6 must be set to ON.

- SW6 ON: Automatic Heater Operation: Heater operates automatically according to the heater logic.
- SW6 OFF: Manual Heater Operation: Operator involvement is required for on/off operation, but the heater operation is per the heater logic.

When an indoor unit is operated with an Internal Electric heater, DIP Switch 5 may be set to ON or OFF.

- SW5 ON: Fan operates continuously even during defrost or oil return operation.
- SW5 OFF: Fan does not operate continuously during defrost or oil return operation which can cause a reduction in heating capacity.

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MULTI-POSITION AHU

Electrical Wiring Diagram

NA Frames

Table 103: NA Frame 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 PC power supply	Power supply connection
CN_OUT	Heater	Connection for heater
CN-DAMPER	N/A	N/A
CN-ZONE	Zone controller	Zone controller connection
CN-EXT	External ON / OFF controller	External ON / OFF controller connection
CN-EEV	EEV Output	EEV control output
CN-OPTION	Optional PCB EPROM	Option PCB connection
CN-DISPLAY	Display	Display of indoor status
CN-PTC	Auxiliary heater	Auxiliary heater connection
CN-CC	Dry contact	Dry Contact connection
CN-LEAK	Refrigerant leak detector	Refrigerant leak detector connection
CN-FLOAT	Float switch input	Float switch sensing
CN-PIPE-OUT	Discharge pipe sensor	Pipe out thermistor
CN-WF	Wi-Fi	Wi-Fi module connection
CN-HUMID	N/A	N/A
CN-AIRC	N/A	N A
CN-PIPE-IN	Suction pipe sensor	Pipe in thermistor
CN-ROOM	Room sensor	Room air thermistor
CN-REMO	Wired remote controller	Wired remote control connection
CN-D-PUMP	Drain pump output	AC output for drain pump
CN-485	Communication	Connection between indoor and outdoor units

*If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

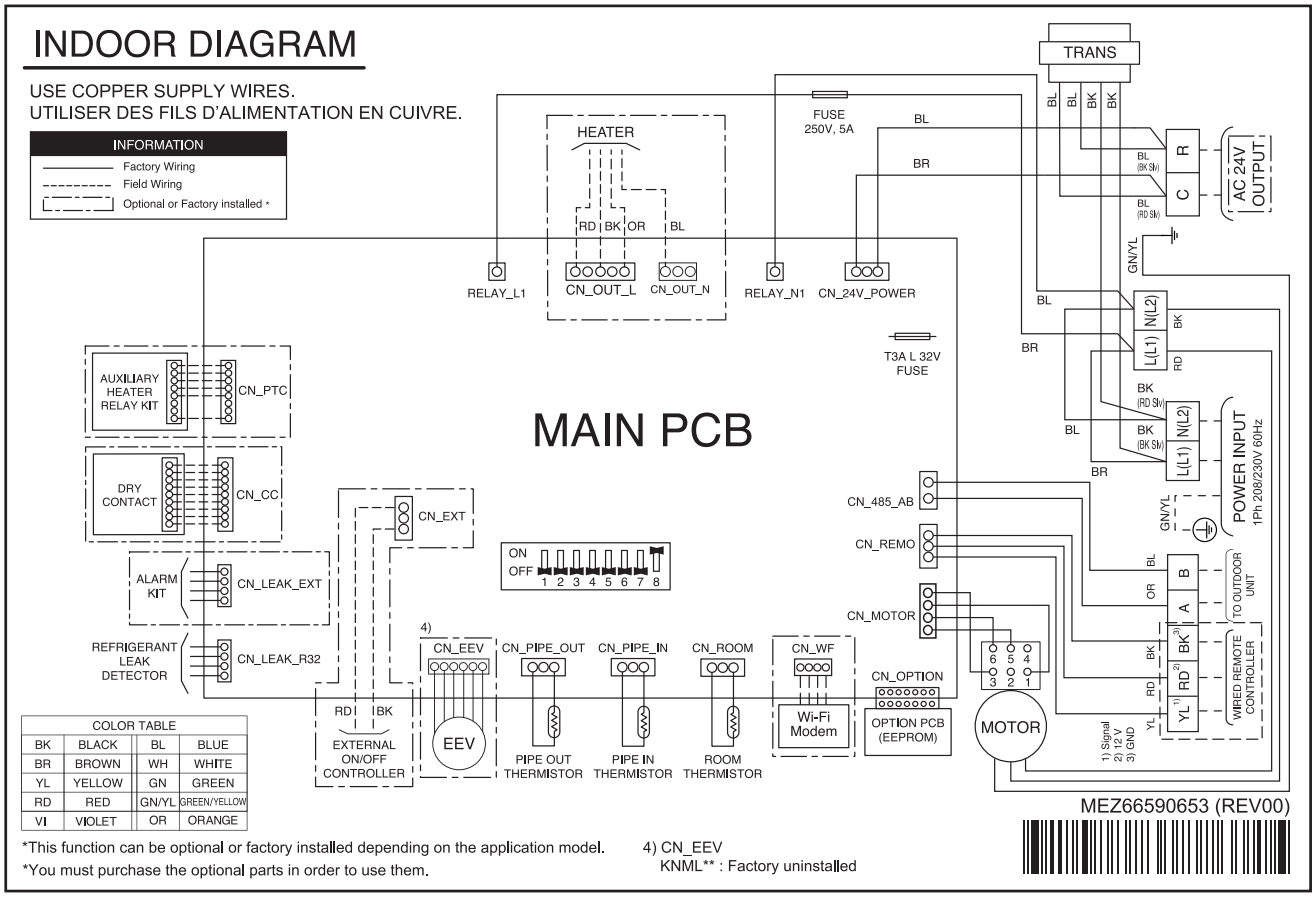
Table 104: NA, NB Frame DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub 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
SW6	HEATER INTERLOCK	Off	On	Selects heater interlock function for Multi-Position AHUs. 1. On: Automatic (heater will automatically operate during heating mode) 2. Off: Manual (heater needs to be manually turned on during heating mode)
SW8	REFRIGERANT LEAK DETECTOR	Off	On	Selection of Installed or Not Installed. By default, SW8 is set to ON. Keep this setting.

***For Gen 4 Multi V Multi-Position AHUs, DIP switches 1, 2, 7 must be set to OFF. These DIP switches are used for other models.**

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Figure 53: R32 Multi-Position AHU NB Frame Wiring Diagram.



Auxillary Heat Control DIP Switch Settings

When an indoor unit is operated with an Internal Electric heater, DIP Switch 6 must be set to ON.

- SW6 ON: Automatic Heater Operation: Heater operates automatically according to the heater logic.
- SW6 OFF: Manual Heater Operation: Operator involvement is required for on/off operation, but the heater operation is per the heater logic.

When an indoor unit is operated with an Internal Electric heater, DIP Switch 5 may be set to ON or OFF.

- SW5 ON: Fan operates continuously even during defrost or oil return operation.
- SW5 OFF: Fan does not operate continuously during defrost or oil return operation which can cause a reduction in heating capacity.

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MULTI-POSITION AHU

Electrical Wiring Diagram

NB Frames

Table 105: NB Frame 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 PC power supply	Power supply connection
CN_OUT	Heater	Connection for heater
CN-DAMPER	N/A	N/A
CN-ZONE	Zone controller	Zone controller connection
CN-EXT	External ON / OFF controller	External ON / OFF controller connection
CN-EEV	EEV Output	EEV control output
CN-OPTION	Optional PCB EPROM	Option PCB connection
CN-DISPLAY	Display	Display of indoor status
CN-PTC	Auxiliary heater	Auxiliary heater connection
CN-CC	Dry contact	Dry Contact connection
CN-LEAK	Refrigerant leak detector	Refrigerant leak detector connection
CN-FLOAT	Float switch input	Float switch sensing
CN-PIPE-OUT	Discharge pipe sensor	Pipe out thermistor
CN-WF	Wi-Fi	Wi-Fi module connection
CN-HUMID	N/A	N/A
CN-AIRC	N/A	N A
CN-PIPE-IN	Suction pipe sensor	Pipe in thermistor
CN-ROOM	Room sensor	Room air thermistor
CN-REMO	Wired remote controller	Wired remote control connection
CN-D-PUMP	Drain pump output	AC output for drain pump
CN-485	Communication	Connection between indoor and outdoor units

*If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

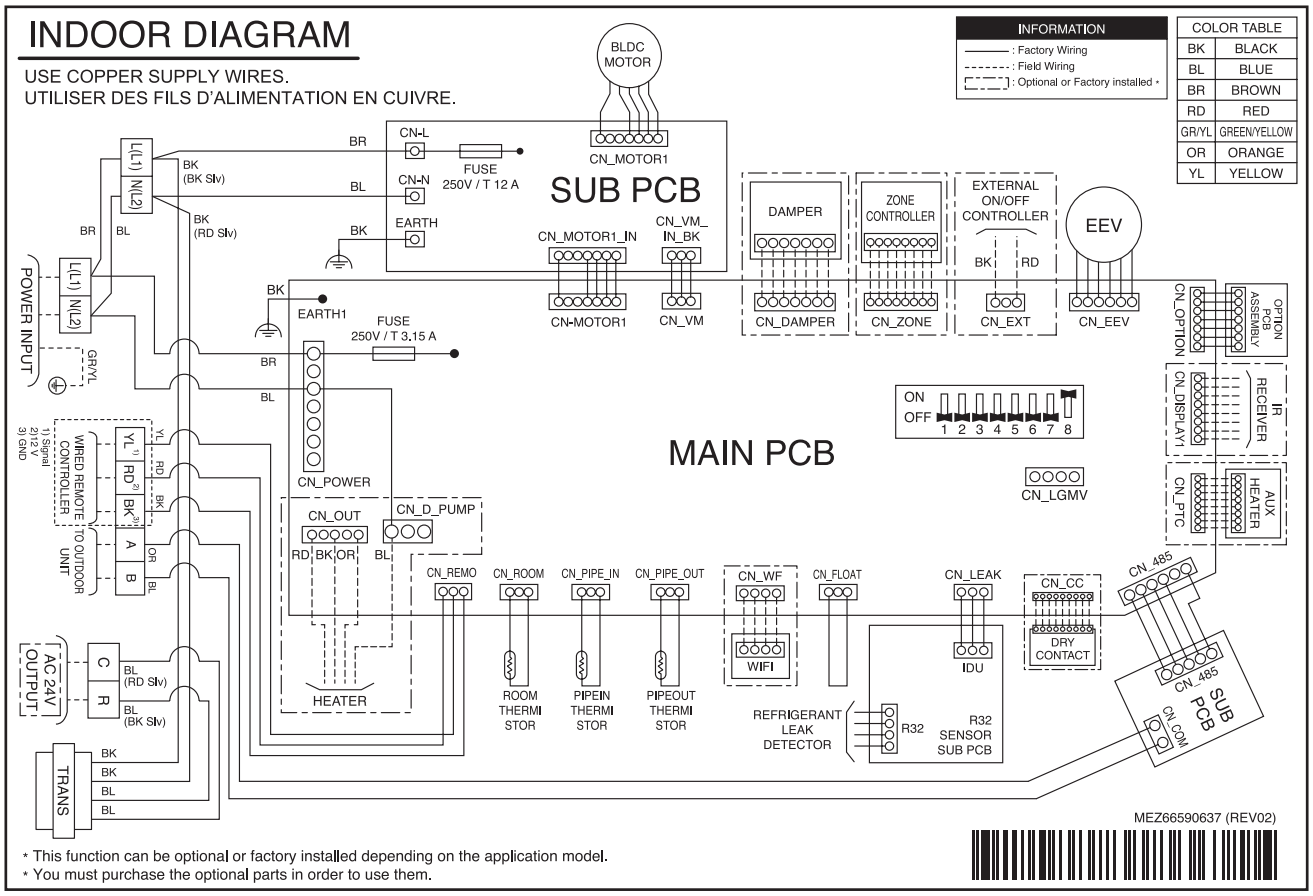
Table 106: NB Frame DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub 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
SW6	HEATER INTERLOCK	Off	On	Selects heater interlock function for Multi-Position AHUs. 1. On: Automatic (heater will automatically operate during heating mode) 2. Off: Manual (heater needs to be manually turned on during heating mode)
SW8	REFRIGERANT LEAK DETECTOR	Off	On	Selection of Installed or Not Installed. By default, SW8 is set to ON. Keep this setting.

***For Gen 4 Multi V Multi-Position AHUs, DIP switches 1, 2, 7 must be set to OFF. These DIP switches are used for other models.**

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Figure 54: R32 Multi-Position AHU NC Frame Wiring Diagram.



Auxillary Heat Control DIP Switch Settings

When an indoor unit is operated with an Internal Electric heater, DIP Switch 6 must be set to ON.

- SW6 ON: Automatic Heater Operation: Heater operates automatically according to the heater logic.
- SW6 OFF: Manual Heater Operation: Operator involvement is required for on/off operation, but the heater operation is per the heater logic.

When an indoor unit is operated with an Internal Electric heater, DIP Switch 5 may be set to ON or OFF.

- SW5 ON: Fan operates continuously even during defrost or oil return operation.
- SW5 OFF: Fan does not operate continuously during defrost or oil return operation, which can cause a reduction in heating capacity.

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MULTI-POSITION AHU

Electrical Wiring Diagram

NC Frames

Table 107: NC Frame 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 PC power supply	Power supply connection
CN_OUT	Heater	Connection for heater
CN-DAMPER	N/A	N/A
CN-ZONE	Zone controller	Zone controller connection
CN-EXT	External ON / OFF controller	External ON / OFF controller connection
CN-EEV	EEV Output	EEV control output
CN-OPTION	Optional PCB EPROM	Option PCB connection
CN-DISPLAY	Display	Display of indoor status
CN-PTC	Auxiliary heater	Auxiliary heater connection
CN-CC	Dry contact	Dry Contact connection
CN-LEAK	Refrigerant leak detector	Refrigerant leak detector connection
CN-FLOAT	Float switch input	Float switch sensing
CN-PIPE-OUT	Discharge pipe sensor	Pipe out thermistor
CN-WF	Wi-Fi	Wi-Fi module connection
CN-HUMID	N/A	N/A
CN-AIRC	N/A	N/A
CN-PIPE-IN	Suction pipe sensor	Pipe in thermistor
CN-ROOM	Room sensor	Room air thermistor
CN-REMO	Wired remote controller	Wired remote control connection
CN-D-PUMP	Drain pump output	AC output for drain pump
CN-485	Communication	Connection between indoor and outdoor units

*If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

Table 108: NC Frame DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub 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
SW6	HEATER INTERLOCK	Off	On	Selects heater interlock function for Multi-Position Air Handling Units 1. On: Automatic (heater will automatically operate during heating mode) 2. Off: Manual (heater needs to be manually turned on during heating mode)
SW8	REFRIGERANT LEAK DETECTOR	Off	On	Selection of Installed or Not Installed. By default, SW8 is set to ON. Keep this setting.

***For Gen 4 Multi V Multi-Position AHUs, DIP switches 1, 2, 7 must be set to OFF. These DIP switches are used for other models.**

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Figure 55: R32 Multi-Position AHU Refrigerant Flow Diagram.

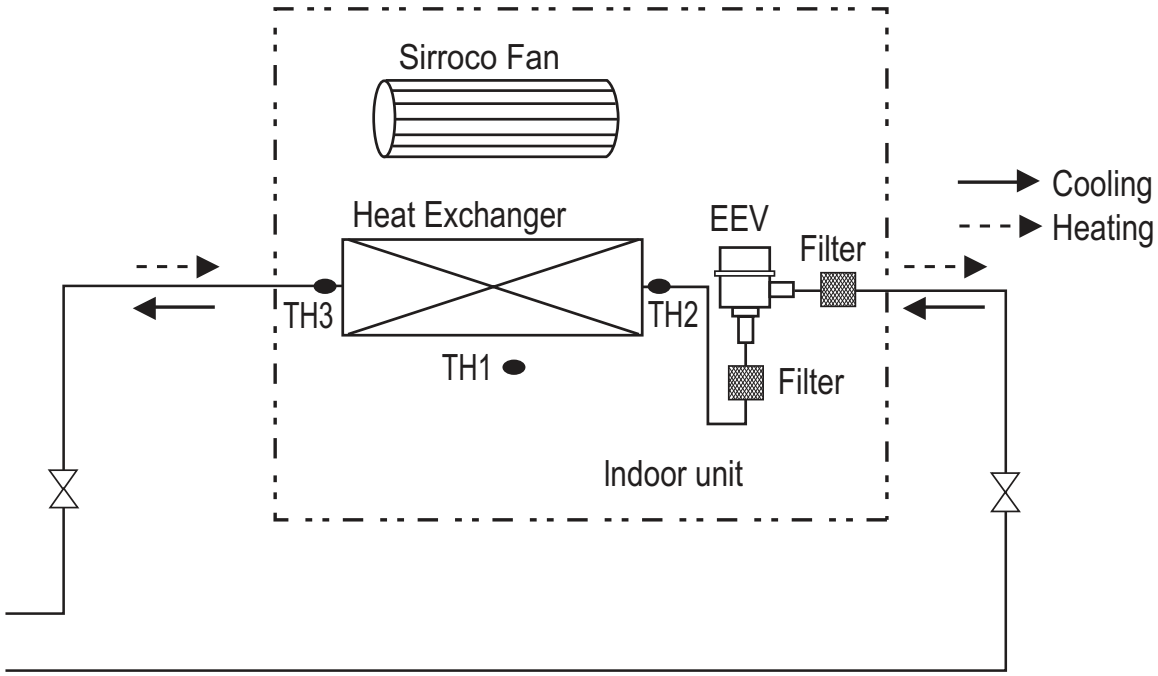


Table 109: R32 Multi-Position AHU Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
NA Frames		
ZRNU123NAAA	1/4 Brazed	3/8 Brazed
ZRNU183NAAA		1/2 Brazed
ZRNU243NAAA		
NB Frames		
ZRNU303NBAA	1/4 Brazed	1/2 Brazed
ZRNU363NBAA	3/8 Brazed	5/8 Brazed
ZRNU423NBAA		
ZRNU483NBAA		
NC Frames		
ZRNU543NCAA	3/8 Brazed	5/8 Brazed
ZRNU603NCAA		3/4 Brazed

Table 110: ZRNU123~243NAAA, ZRNU363~483NBAA, ZRNU543~603NCAA Thermistors.

Thermistor	Description	PCB Connector
TH1	Return air thermistor	CN_ROOM
TH2	Pipe in thermistor	CN_PIPE_IN
TH3	Pipe out thermistor	CN_PIPE_OUT

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MULTI-POSITION AHU

ZRNU303NBAA, ZRNU363NBAA, ZRNU423NBAA, ZRNU483NBAA

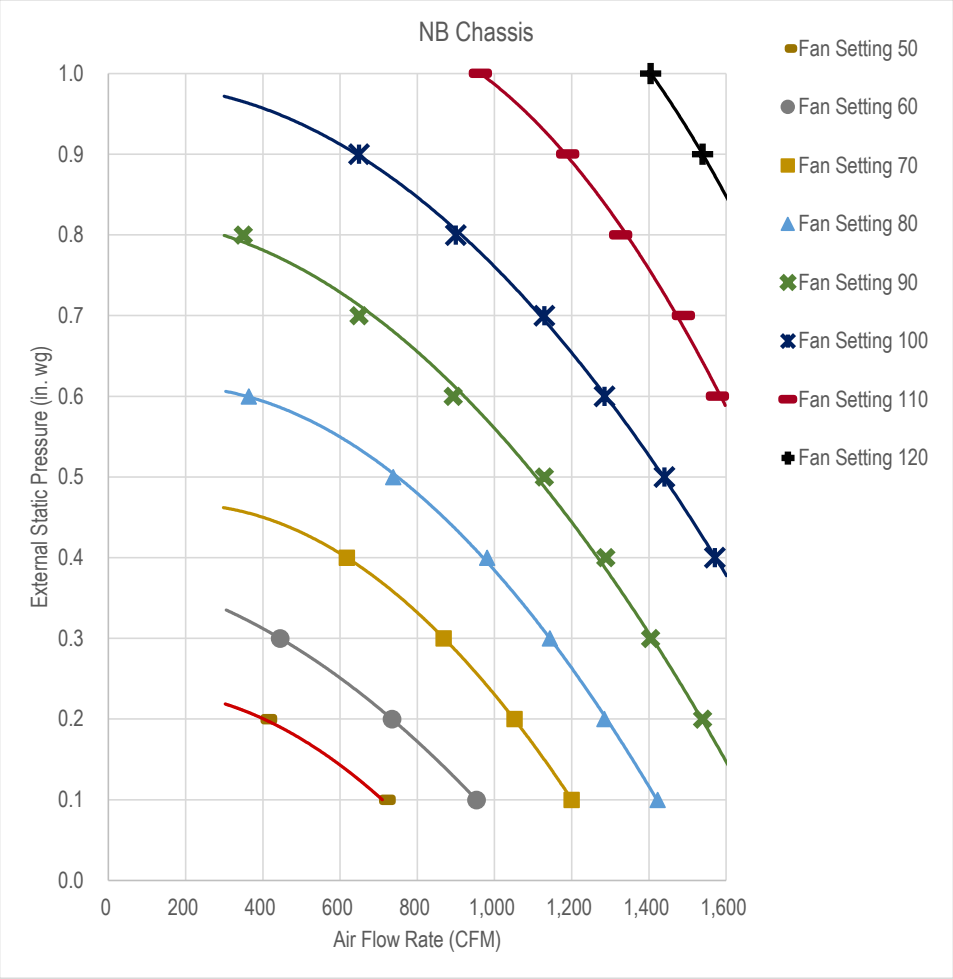
External Static Pressure and Air Flow Tables and Graphs

Table 111: R32 Multi-Position AHU (NB Frame) External Static Pressure and Air Flow Table.

Set Value		External Static Pressure (in.wg)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
		Air Flow Rate(CFM)									
RPM	400	374									
	500	710	402								
	600	953	734	445							
	700	1200	1052	868	618						
	800	1423	1285	1144	981	738	364				
	900	1645	1539	1405	1288	1130	893	650	349		
	1000				1571	1440	1285	1130	900	650	
	1100						1578	1490	1327	1190	964
	1200								1652	1539	1405

All static pressure air flow rates are listed in CFM. The table above shows the correlation between air flow rates and external static pressure.
If the external static pressure of the installed indoor unit is less than the lowest value (as mentioned in the table), the indoor unit components can fail.

Figure 56: R32 Multi-Position AHU (NB Frame) External Static Pressure and Air Flow Chart.



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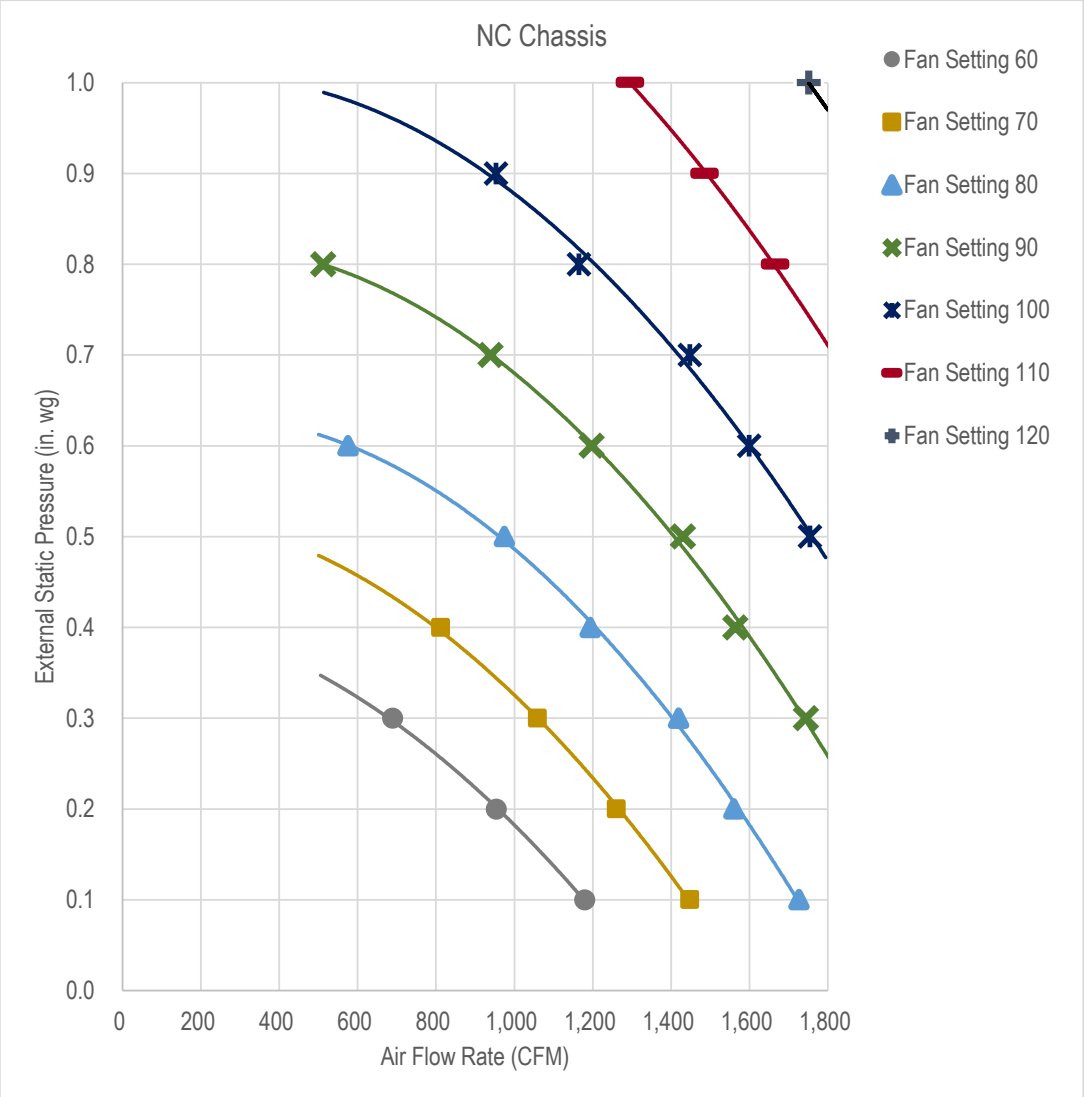
ZRNU543~603NCAA External Static Pressure and Air Flow Table and Graphs

Table 112: R32 Multi-Position AHU (NC Frame) External Static Pressure and Air Flow Table.

Set Value		External Static Pressure (in.wg)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
		Air Flow Rate(CFM)									
RPM	600	1179	953	688							
	700	1447	1260	1059	812						
	800	1726	1560	1419	1193	974	575				
	900			1744	1564	1430	1197	939	512		
	1000					1754	1599	1447	1165	953	
	1100							1814	1666	1486	1296
	1200										1751

All static pressure air flow rates are listed in CFM. The table above shows the correlation between air flow rates and external static pressure.
If the external static pressure of the installed indoor unit is less than the lowest value (as mentioned in the table), the indoor unit components can fail.

Figure 57: R32 Multi-Position AHU (NC Frame) External Static Pressure and Air Flow Chart.



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MULTI-POSITION AHU

External Static Pressure Ranges

Table 113: External Static Pressure Ranges.

Capacity (MBh)	Flow rate (CFM)	Setting Value @ ESP (in.wc)									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
60	High (1,750)	81	86	90	95	100	104	109	112	116	120
	Middle (1,575)	73	76	81	85	89	92	97	100	105	108
	Low (1,400)	66	67	73	77	79	82	87	90	95	97
54	High (1,575)	75	81	85	90	95	99	104	107	112	115
	Middle (1,400)	67	72	76	80	84	89	92	96	100	103
	Low (1,260)	60	63	68	72	74	79	81	85	90	93
48	High (1,400)	79	85	90	94	99	104	107	113	115	120
	Middle (1,200)	67	74	79	81	86	89	93	97	100	105
	Low (1,070)	61	65	69	73	77	80	83	86	89	92
42	High (1,230)	71	77	83	88	93	98	102	108	111	116
	Middle (1,100)	61	66	71	76	81	84	87	93	95	101
	Low (1,000)	56	62	67	72	76	79	82	85	88	91
36	High (1,050)	63	70	76	82	86	94	98	104	107	112
	Middle (980)	58	63	70	75	81	84	87	91	95	98
	Low (900)	54	58	66	71	75	78	81	84	78	83
30	High (880)	Constant Flow Rate condition									
	Middle (750)										
	Low (630)										
24	High (800)	Constant Flow Rate condition									
	Middle (700)										
	Low (580)										
18	High (600)	Constant Flow Rate condition									
	Middle (510)										
	Low (440)										
12	High (500)	Constant Flow Rate condition									
	Middle (460)										
	Low (420)										

If the ESP is set incorrectly, the unit may malfunction.

Factory set external static pressure: 0.5 in.wc (inch Water Column, inAq)

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MULTI-POSITION AHU

Heater Capacity Airflow / Static Pressure Drop Factors

Table 114: Minimum Airflow by Heater Capacity.

Capacity (MBh [tons])	Heater Capacity (kW)					
	3	5	8	10	15	20
12 (1.0)	380	380	380	Not available	Not available	Not available
18 (1.5)	480	480	480	480	Not available	Not available
24 (2.0)	480	480	480	480	Not available	Not available
30 (2.5)	630	630	630	630	Not available	Not available
36 (3.0)	800	800	800	800	800	800
42 (3.5)	1,000	1,000	1,000	1,000	1,000	1,000
48 (4.0)	1,000	1,000	1,000	1,000	1,000	1,000
54 (4.5)	1,260	1,260	1,260	1,260	1,260	1,260
60 (5.0)	1,260	1,260	1,260	1,260	1,260	1,260

Airflow rates in the table above are listed in CFM.

Flow rate (CFM) decreases by 3% per 0.1 in wg from 0.8 in wg to 1.0 in wg.

⚠ WARNING

Do not operate with less than the minimum airflow. If an airflow is used below the minimum, there is a risk of fire, which may lead to physical injury or death.

NOTICE

Do not operate with less than the minimum airflow. If an airflow is used below the minimum, there is a risk of damage to the product.

Table 115: Electric Heater Static Pressure Drop Factors.

Heater Capacity (kW)	Static Pressure Drop (in. wg)
0	0
3	-0.01
5	-0.01
8	-0.02
10	-0.02
15	-0.04
20	-0.06

in wg = inch water gauge

If the electric heater has been installed, then the ESP value has to be set.

For every increase in static pressure by 0.01 in wg, the ESP value must be increased by 1.

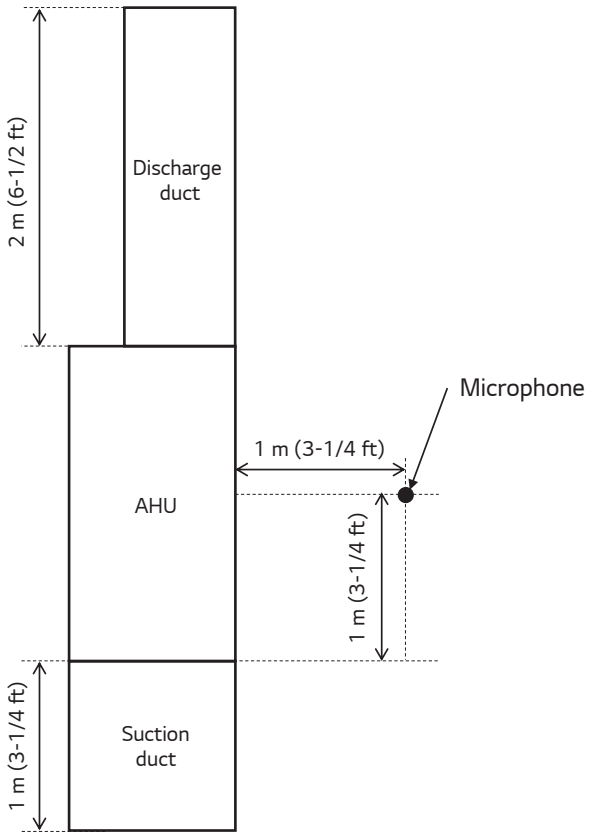
If the ESP setting value is inappropriate, the provided safety device will turn the heater off according to the airflow.

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MULTI-POSITION AHU

Acoustic Data
Sound Pressure Levels

Figure 58: Multi-Position AHU Sound Pressure Measurement Location.



- Measurements are taken 3.3 ft away from the front of the unit.
- Sound pressure levels are measured in dB(A) with a tolerance of ±3.
- Sound pressure levels are tested in an anechoic chamber under ISO Standard 3745.

Operating Conditions:

- Power source: 220V/60 Hz
- Sound level will vary depending on a range of factors including the construction (acoustic absorption coefficient) of a particular room in which the unit was installed.

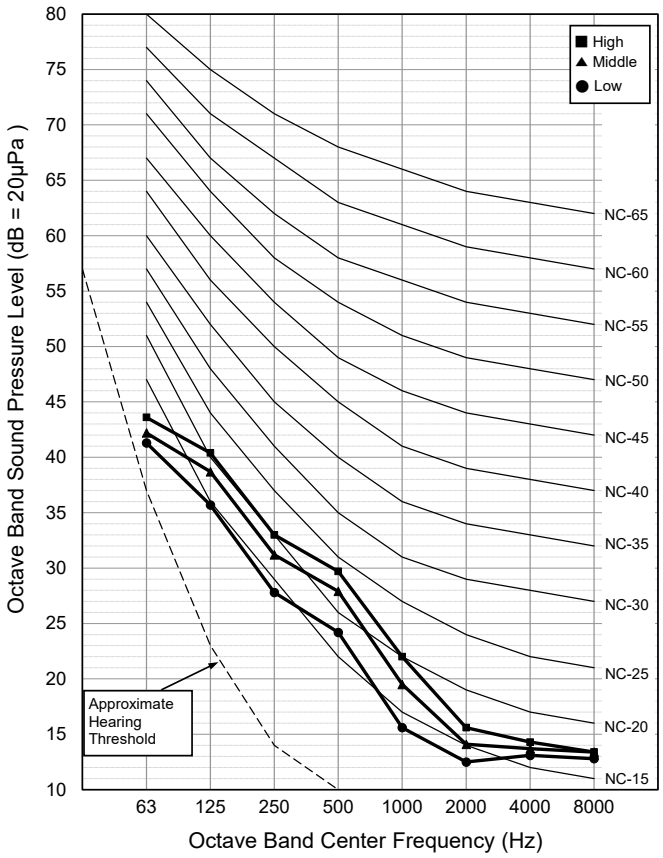
Table 116: R32 Multi-Position AHU Sound Pressure Levels.

Model	Sound Pressure Levels dB(A) (H-M-L)
	External Static Pressure [in wg]
	0.3
ZRNU123NAAA	34 / 31 / 28
ZRNU183NAAA	35 / 32 / 29
ZRNU243NAAA	36 / 33 / 29
ZRNU303NBAA	40 / 37 / 35
ZRNU363NBAA	40 / 37 / 35
ZRNU423NBAA	41 / 38 / 36
ZRNU483NBAA	42 / 39 / 37
ZRNU543NCAA	43 / 39 / 35
ZRNU603NCAA	47 / 43 / 39

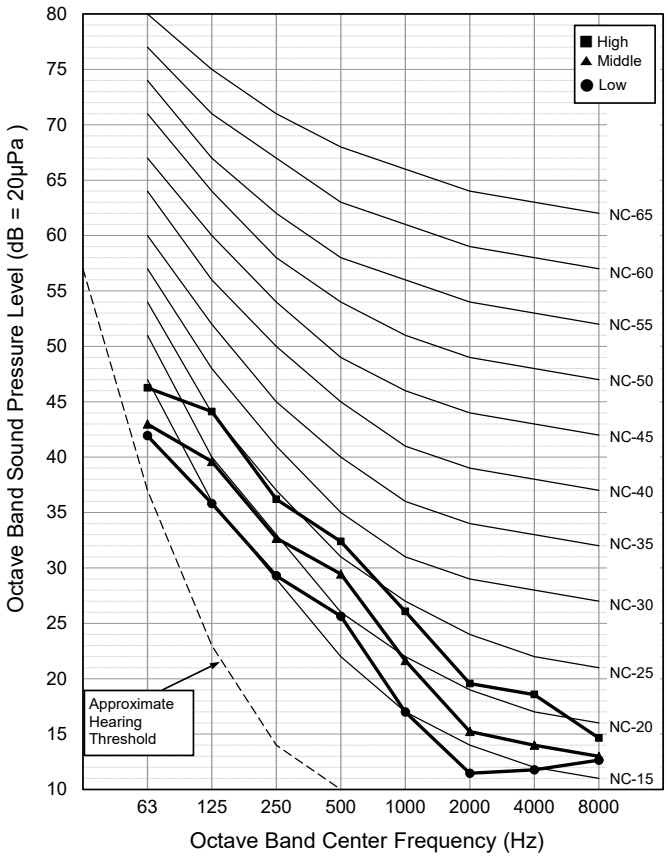
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Figure 59: ZRNU123NAAA, ZRNU183NAAA Sound Pressure Level Diagrams.

ZRNU123NAAA



ZRNU183NAAA



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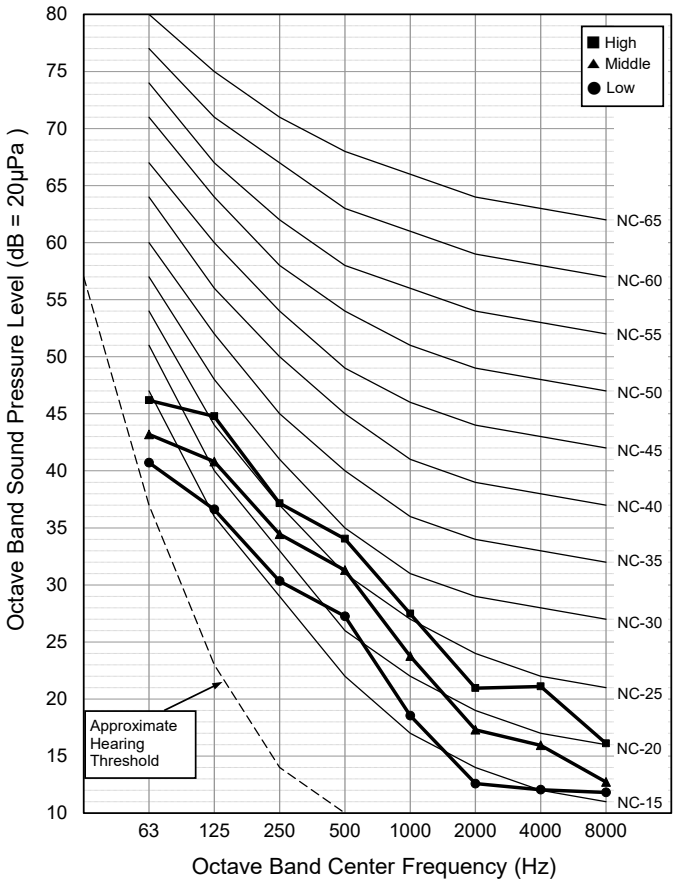
MULTI-POSITION AHU

Acoustic Data

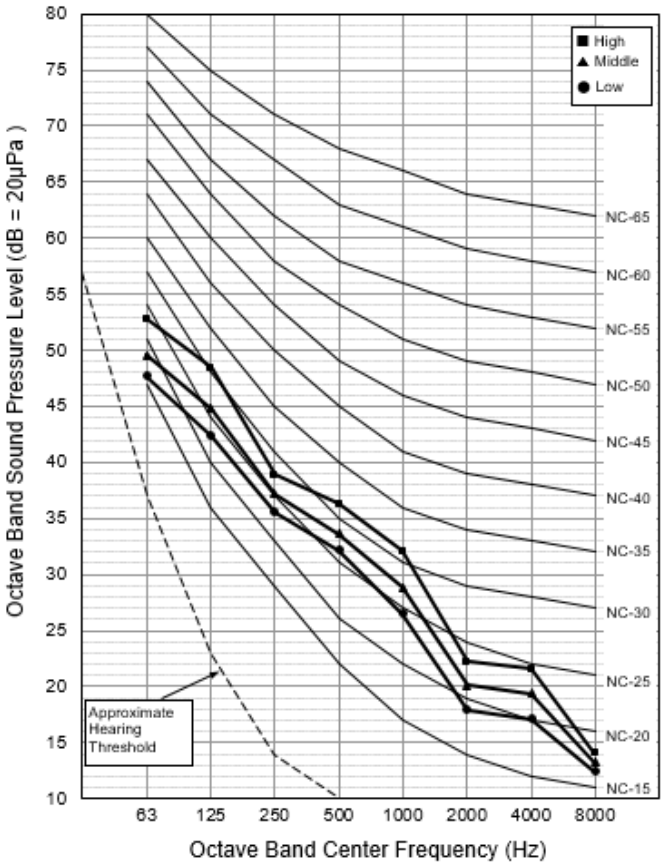
Sound Pressure Diagrams

Figure 60: ZRNU243NAAA, ZRNU303NBAA Sound Pressure Level Diagrams.

ZRNU243NAAA



ZRNU303NBAA

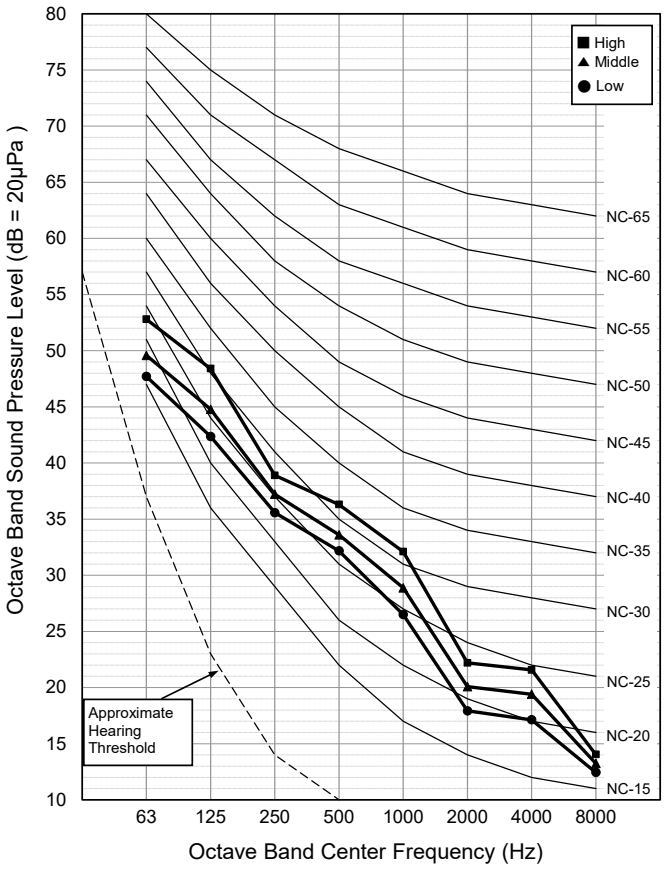


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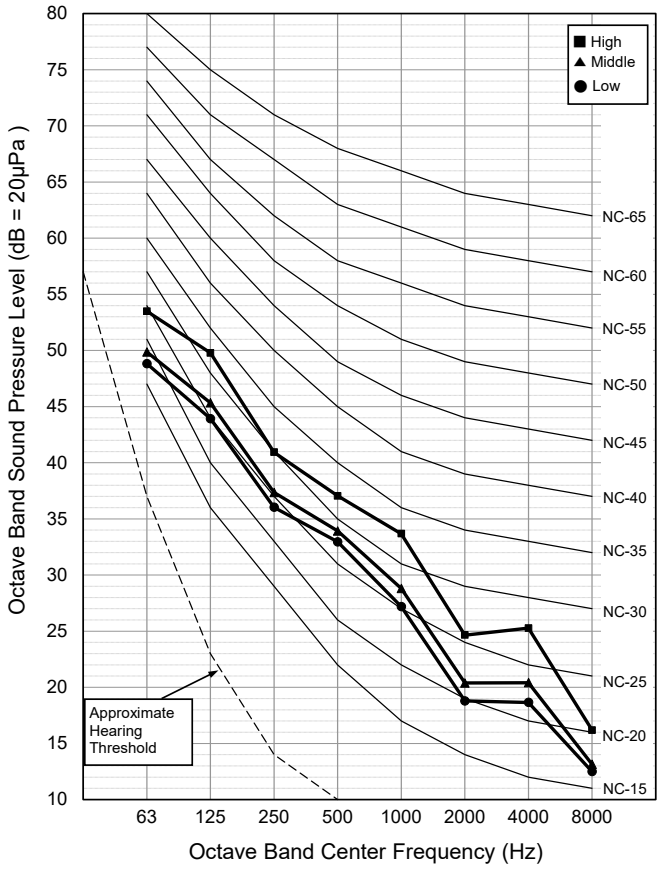
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Figure 61: ZRNU363NBAA, ZRNU423NBAA Sound Pressure Level Diagrams.

ZRNU363NBAA



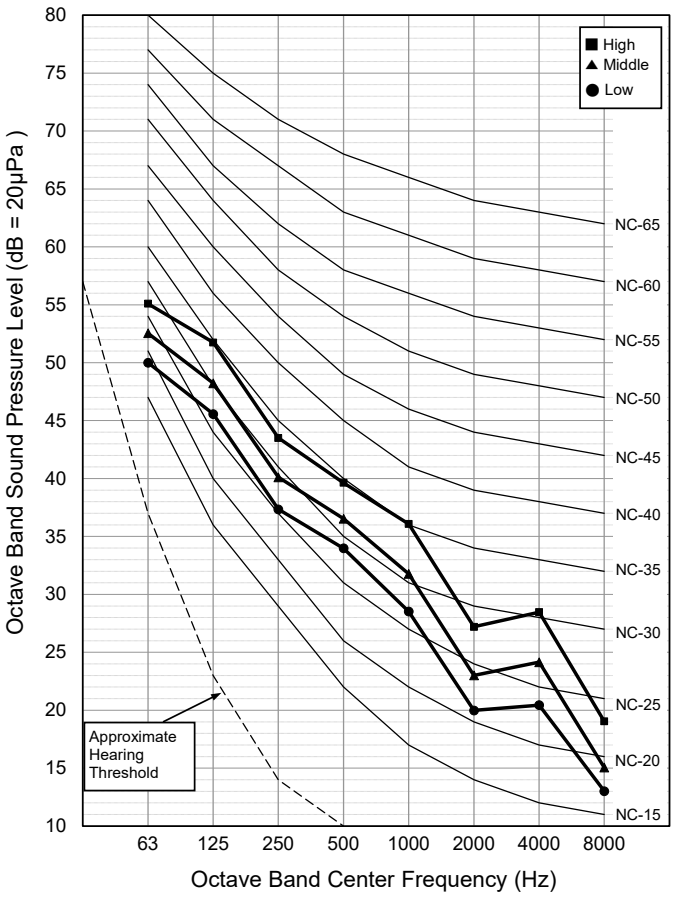
ZRNU423NBAA



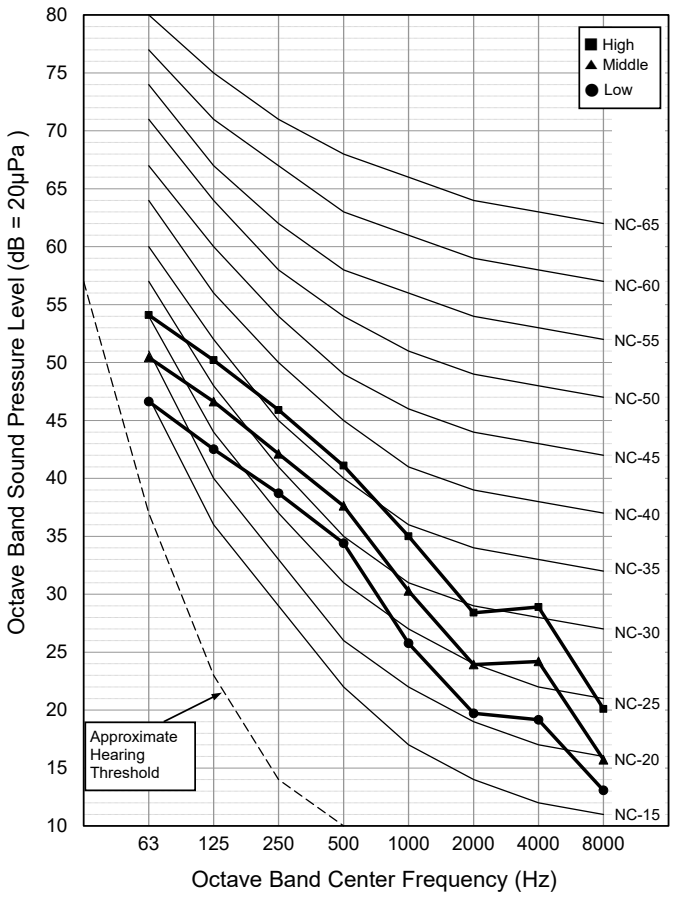
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Figure 62: ZRNU483NBAA, ZRNU543NCAA Sound Pressure Level Diagrams.

ZRNU483NBAA

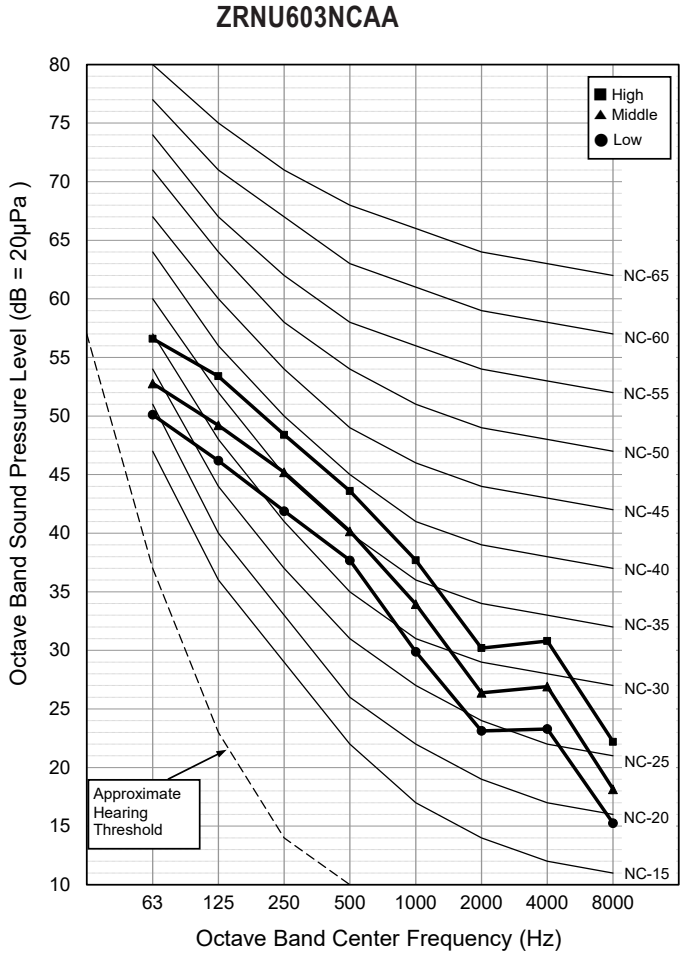


ZRNU543NCAA



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Figure 63: ZRNU603NCAA Sound Pressure Level Diagrams.



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MULTI-POSITION AHU

Acoustic Data
Sound Power Levels

Table 117: ZRNU123~303NAAA Multi-Position AHU Sound Power Levels.

Model	Sound Power Levels dB(A) (H-M-L) (CASING RADIATED)
	External Static Pressure [in wg]
	0.3
ZRNU123NAAA	54 / 52 / 50
ZRNU183NAAA	56 / 54 / 52
ZRNU243NAAA	58 / 56 / 53
ZRNU303NBAA	54 / 54 / 53
ZRNU363NBAA	54 / 54 / 53
ZRNU423NBAA	57 / 55 / 54
ZRNU483NBAA	58 / 56 / 54
ZRNU543NCAA	56 / 54 / 53
ZRNU603NCAA	58 / 57 / 54

- 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/m^2

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Sound Power @0.3 ESP

Table 118: R32 Multi-Position AHU Sound Power Data.

MODEL	RATING	FAN SPEED	E.S.P	CFM	SOUND POWER LEVEL, (dB one reference picowatt)							
					63Hz	125Hz	250Hz	500Hz	1K Hz	2K Hz	4K Hz	8K Hz
ZRNU123NAAA	RETURN OPENING	Hi	0.3	500	31.8	22.8	27.6	30.1	22.5	23.4	19.9	12.9
		Mid		460	34.6	19	27.3	26.8	16.8	22	17.2	12.7
		Low		420	31.1	20.5	27	26.1	18.3	18.8	13.6	20.8
	CASING RADIATED	Hi		500	51.1	46.5	34	41.1	41.1	38.9	32.4	32.3
		Mid		460	50.1	41.7	34	40.5	38.8	35.6	29	32.8
		Low		420	48.3	36.8	23.8	39.4	36.1	34.9	30.3	30.3
	DUCTED DISCHARGE	Hi		500	51.9	46.4	32.1	40.8	40.8	39	26.7	9
		Mid		460	49.3	41.6	30.9	39.8	37.5	35.2	23.7	11.7
		Low		420	48.5	35.9	33.2	38.7	36.2	34.7	20.8	13.6
ZRNU183NAAA	RETURN OPENING	Hi	0.3	600	36.2	23	30.3	27.6	21.8	24.6	19.1	12.3
		Mid		510	31.7	24.2	30.7	29.8	24.7	27.4	24.6	9.4
		Low		440	36.2	20.1	27.2	26.6	19.2	21.3	14.3	11.8
	CASING RADIATED	Hi		600	53.8	50	36.2	42.5	39.4	37.7	32.4	32.5
		Mid		510	51.8	48.6	37.6	42.8	41.2	39.6	33.5	32.7
		Low		440	49.7	42.6	32.7	39.7	36.4	32.9	30	33.2
	DUCTED DISCHARGE	Hi		600	53.7	49.9	34.1	42.2	39.5	37.4	27.3	7.4
		Mid		510	51.7	48.5	35.5	42.3	41.5	39.7	30.6	14.1
		Low		440	49.4	42.5	29.2	39.2	36.9	33.3	21.2	10.4
ZRNU243NAAA	RETURN OPENING	Hi	0.3	800	36.4	26.2	32.8	31.9	26.4	30.5	29.2	11.1
		Mid		700	29.3	22.3	30.7	29.8	24.4	25.7	20.3	10.8
		Low		580	29.3	28	28.7	25.7	23.1	21.2	11.6	9.3
	CASING RADIATED	Hi		800	55.7	50	39.4	45.2	44	42.4	36.2	32.7
		Mid		700	52.9	48.2	38.2	45.8	43.1	40.3	34.8	33.7
		Low		580	49.4	43.4	33.4	41.2	39.1	34.5	31.4	33.7
	DUCTED DISCHARGE	Hi		800	55.5	49.9	37.2	44.9	43.8	41.7	33.8	16.5
		Mid		700	52.9	48.3	37.2	45.6	43	39.5	32.9	15.5
		Low		580	49.9	43.1	31	40.9	38.9	35.5	24	10.9

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MULTI-POSITION AHU

MULTI V

Acoustic Data

ZRNU303NBAA, ZRNU363NBAA, ZRNU423NBAA, ZRNU483NBAA Sound Power Data

Sound Power @0.3 ESP

Table 119: R32 Multi-Position AHU Sound Power Data.

MODEL	RATING	FAN SPEED	E.S.P	CFM	SOUND POWER LEVEL, (dB one reference picowatt)							
					63Hz	125Hz	250Hz	500Hz	1K Hz	2K Hz	4K Hz	8K Hz
ZRNU303NBAA	RETURN OPENING	Hi	0.3	880	35.5	26.1	33.3	32.8	28.7	30.1	29.4	10
		Mid		750	36.1	24.9	32.8	32.1	28	30	28.3	10
		Low		630	38.5	21.1	29.9	30.4	23	24	19.9	8.6
	CASING RADIATED	Hi		880	55.5	52.8	42.9	48.5	47.6	45.6	40.1	32.8
		Mid		750	52.5	50.5	40.2	48.2	47.4	44.2	38.3	33.3
		Low		630	51.5	47.4	38.8	45.9	42.8	39.8	33.1	32.7
	DUCTED DISCHARGE	Hi		880	55.5	52.7	42.2	48.3	47.5	45.1	39.2	23.7
		Mid		750	52.1	50.3	37.7	47.8	46.8	44	37.8	20.2
		Low		630	50.6	47.3	37.5	45.6	42.8	39.8	30.9	0.1
ZRNU363NBAA	RETURN OPENING	Hi	0.3	1050	38.1	33.8	40.3	37.8	30.6	35.9	36.5	24.2
		Mid		980	29.8	33.8	39.8	36.7	30.7	35.9	36.2	23.8
		Low		900	39.1	36.1	40.7	39.4	31.2	37.1	36.9	24.9
	CASING RADIATED	Hi		1050	50.3	37.4	42.7	38.8	34.5	41.3	40.5	39.9
		Mid		980	50.5	37.3	42	40	36.5	42.4	40	39.6
		Low		900	46.2	38.5	43.3	40	41.2	42.9	40.8	38.8
	DUCTED DISCHARGE	Hi		1050	61.8	55.7	47.6	54.9	55.2	54.3	48.8	34.2
		Mid		980	61	55.1	47.6	54.6	55.3	54.6	48.8	34
		Low		900	62	56	47.5	54.7	55	54.1	48.6	33.7
ZRNU423NBAA	RETURN OPENING	Hi	0.3	1225	42.4	34.7	39.9	38.1	34.5	37.5	36.6	25.3
		Mid		1100	38.8	36.7	40.3	36.8	33.7	38.5	37.1	24.2
		Low		1000	44.3	34.3	39.8	36.8	30.9	36.9	36.2	24.3
	CASING RADIATED	Hi		1225	43.2	37.1	43.6	40.6	39.6	43	40.1	40
		Mid		1100	46.7	38.4	42.9	41.7	28.9	42.6	40.8	38.5
		Low		1000	49.5	40.8	37.8	40	40.9	43.1	41.7	40.7
	DUCTED DISCHARGE	Hi		1225	61.5	56.3	47.8	55.1	56.2	55.3	49.7	35.2
		Mid		1100	60.5	54.2	47.3	55.5	55	54.7	49.1	34.6
		Low		1000	57.7	53	47.5	55.1	55.2	54.3	49.2	34.2
ZRNU483NBAA	RETURN OPENING	Hi	0.3	1400	45.1	34.9	41.9	37.5	33	38.9	37.7	26.8
		Mid		1200	41.9	31.8	39.6	35.4	28.8	35.5	34.8	23.1
		Low		1070	38.8	33.4	38.9	36.1	30.3	35.7	35.5	23.6
	CASING RADIATED	Hi		1400	56.1	35.7	43.4	44.5	42.7	47.9	41.8	38.7
		Mid		1200	45.1	33.6	40.9	37.9	39.3	37.7	40	39.6
		Low		1070	46.5	31	40.3	37	40	44.2	39.7	39.9
	DUCTED DISCHARGE	Hi		1400	60.7	52.8	48.3	55.7	56.1	55.2	50.3	35.6
		Mid		1200	61.9	50.9	53.5	55.9	57.8	54.5	48.7	39.4
		Low		1070	59.6	53.6	46.5	54	55	54.9	48.2	33.3

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Sound Power @0.3 ESP

Table 120: R32 Multi-Position AHU Sound Power Data.

MODEL	RATING	FAN SPEED	E.S.P	CFM	SOUND POWER LEVEL, (dB one reference picowatt)							
					63Hz	125Hz	250Hz	500Hz	1K Hz	2K Hz	4K Hz	8K Hz
ZRNU543NCAA	RETURN OPENING	Hi	0.3	1575	30.5	25.3	35	31.6	23.7	29.6	25.4	13.6
		Mid		1400	33.9	23.4	32.3	28	21.9	28.1	11.9	9
		Low		1260	34.9	23.3	31.9	29.3	13.1	24.5	17.5	14.1
	CASING RADIATED	Hi		1575	43.3	44.7	39.7	47	45	41.1	36.9	36.9
		Mid		1400	35.9	38.2	38.3	47.1	42.2	39.5	33.8	36.5
		Low		1260	43.2	32.9	37.4	46.4	42.1	39.6	33.4	35.7
	DUCTED DISCHARGE	Hi		1575	58.7	54.5	46.4	56.8	54.9	51.1	42.7	26.7
		Mid		1400	52.4	47.6	46.2	57.1	51.5	48.1	36.8	21.5
		Low		1260	50.7	40.7	44.8	56.3	51.8	49.9	38.1	24.8
ZRNU603NCAA	RETURN OPENING	Hi	0.3	1750	32.2	28.5	35.7	32.3	24.5	31.4	28.5	10.9
		Mid		1575	35.2	26.4	34	31.4	22.7	29.8	26.9	11.8
		Low		1400	21.4	23.7	31.5	29.1	19.7	25.2	15.1	12.1
	CASING RADIATED	Hi		1750	44.7	43.4	41.5	49.5	47.5	45.6	39.5	33.9
		Mid		1575	38.3	35	40.4	50.5	46.3	44.3	39.5	36.2
		Low		1400	40.6	32.6	37.4	49.3	43.1	40.4	35.8	35.2
	DUCTED DISCHARGE	Hi		1750	58.4	53.2	49.2	59.3	57.4	55	48.3	32.6
		Mid		1575	50.1	42.2	48.1	60.4	56.2	54.1	47.9	31.4
		Low		1400	48.8	42.6	45	59.2	53.2	50	42.4	20.3

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MULTI-POSITION AHU

Cooling Capacity Table

Table 121: R32 Multi-Position AHU Cooling Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp. (°F DB)	Indoor Air Temperature (°F DB / WB)													
		68 / 57		73 / 61		79 / 64		80 / 67		85 / 70		88 / 73		91 / 76	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
NA Frames															
ZRNU123NAAA / 12.0	95	7.9	6.1	9.6	7.0	10.8	7.4	12.0	7.9	12.9	8.2	13.1	7.8	13.3	7.4
ZRNU183NAAA / 18.0	95	11.9	9.5	14.4	11.0	16.2	11.7	18.0	12.4	19.3	12.9	19.7	12.3	20.0	11.6
ZRNU243NAAA / 24.0	95	15.8	12.7	19.2	14.6	21.6	15.5	24.0	16.6	25.7	17.2	26.2	16.4	26.6	15.4
NB Frames															
ZRNU303NBAA / 30.0	95	19.8	16.3	24.0	18.8	27.0	20.0	30.0	21.3	32.1	22.1	32.8	21.1	33.3	19.9
ZRNU363NBAA / 36.0	95	23.7	19.3	28.8	22.2	32.4	23.6	36.0	25.2	38.6	26.2	39.3	24.9	39.9	23.5
ZRNU423NBAA / 42.0	95	27.7	23.1	33.6	26.7	37.8	28.4	42.0	30.2	45	31.4	45.9	29.9	46.6	28.2
ZRNU483NBAA / 48.0	95	31.6	26.4	38.4	30.5	43.2	32.4	48.0	34.6	51.4	35.9	52.4	34.2	53.2	32.2
NC Frames															
ZRNU543NCAA / 54.0	95	35.6	30.1	43.2	34.8	48.6	37	54.0	39.4	57.8	41	59	39	59.9	36.8
ZRNU603NCAA / 60.0	95	39.5	33.5	48	38.6	54	41.1	60.0	43.8	64.3	45.5	65.5	43.3	66.5	40.8

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

Cooling range with the Low Ambient Baffle Kit (sold separately) installed on the outdoor unit(s) is -9.9°F to +122°F, and is achieved only when all indoor units are operating in cooling mode. Does not impact heat recovery system synchronous operating range.

The System Combination Ratio must be between 50–130%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

For outdoor unit performance data, see the respective outdoor unit performance data manuals on https://lghvac.com/commercial.

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MULTI-POSITION AHU

Heating Capacity Tables

Table 122: R32 Multi-Position AHU Heating Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp.		Indoor Air Temperature (°F DB)							
			59	61	64	67	70	73	76	80
	°F DB	°F WB	TC	TC	TC	TC	TC	TC	TC	TC
NA Frames										
ZRNU123NAAA / 12.0	47	43	15.1	15	14.9	14.2	13.5	13.1	12.4	11.8
ZRNU183NAAA / 18.0	47	43	22.4	22.2	22	21	20	19.4	18.4	17.5
ZRNU243NAAA / 24.0	47	43	30.2	30	29.7	28.4	27	26.2	24.8	23.6
NB Frames										
ZRNU303NBAA / 30.0	47	43	38.1	37.7	37.4	35.7	34	33	31.3	29.8
ZRNU363NBAA / 36.0	47	43	44.8	44.4	44	42	40	38.8	36.8	35
ZRNU423NBAA / 42.0	47	43	51.5	51.1	50.6	48.3	46	44.6	42.3	40.3
ZRNU483NBAA / 48.0	47	43	60.5	59.9	59.4	56.7	54	52.4	49.7	47.3
NC Frames										
ZRNU543NCAA / 54.0	47	43	67.2	66.6	66	63	60	58.2	55.2	52.5
ZRNU603NCAA / 60.0	47	43	73.9	73.3	72.6	69.3	66	64	60.7	57.8

TC: Total Capacity (MBh).

The System Combination Ratio must be between 50–130%.

Rated capacity is certified under AHRI Standard 1230. Ratings are subject to change without notice. Current certified ratings are available at https://www.ahridirectory.org/

For outdoor unit performance data, see the respective outdoor unit performance data manuals on https://lghvac.com/commercial.

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Table 123: Electric Heater for Multi-Position AHU.

Accessory	Model Number
3kW Electric Heater	ANEH033C1
5kW Electric Heater	ANEH053C1
8kW Electric Heater	ANEH083C2
10kW Electric Heater	ANEH103C2
15kW Electric Heater	ANEH153C3
20kW Electric Heater	ANEH203C3

All accessories are sold separately.

Figure 64: Electric Heater.

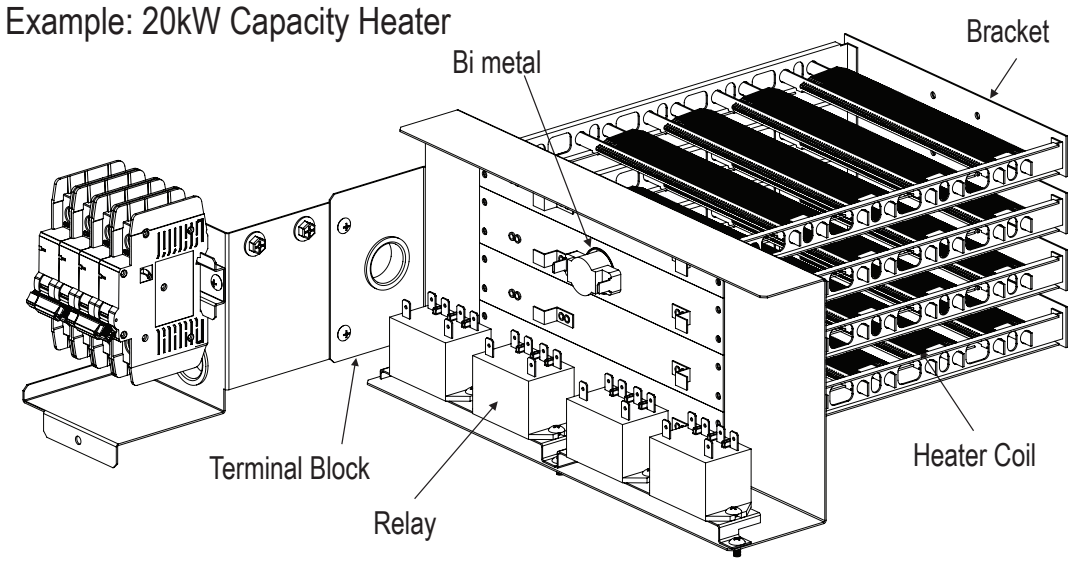


Table 124: Electric Heater Capacities.

Indoor Unit Model No. / Capacity (MBh)	Model Number / Heater Capacity					
	ANEH033C1 (3kW)	ANEH053C1 (5kW)	ANEH083C2 (8kW)	ANEH103C2 (10kW)	ANEH153C3 (15kW)	ANEH203C3 (20kW)
ZRNU123NAAA (12)	X	X	X	Not available	Not available	Not available
ZRNU183NAAA (18)	X	X	X	X	Not available	Not available
ZRNU243NAAA (24)	X	X	X	X	Not available	Not available
ZRNU303NBAA (30)	X	X	X	X	Not available	Not available
ZRNU363NBAA (36)	X	X	X	X	X	Not available
ZRNU423NBAA (42)	X	X	X	X	X	X
ZRNU483NBAA (48)	X	X	X	X	X	X
ZRNU543NCAA (54)	X	X	X	X	X	X
ZRNU603NCAA (60)	X	X	X	X	X	X

Image shown above may vary depending on model capacity. For additional information, refer to the Electric Heater Manual.

If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heat Kit is installed, supplemental heat capability cannot be controlled by the Third-PartyThermostat.

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APPLICATION GUIDELINES

Selecting the Best Location on page 146

Convertible Mid Static Ducted Clearance Requirements and Installation on page 147

High, Mid, and Low Static Ducted Units Clearance Requirements on page 149

High, Mid, and Low Static Ducted Units General Mounting on page 150

Multi-Position Air Handling Units Clearance Requirements and Installation on page 153

General Drain Piping Information on page 161

Wiring Guidelines on page 163

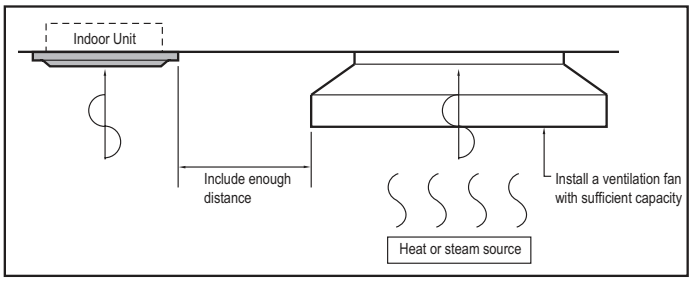
Controllers on page 167

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.
- Place the unit where noise prevention is taken into consideration.
- Ensure there is sufficient space from the ceiling and floor.
- Ensure there is sufficient maintenance space.
- Locate the indoor unit in a location where it can be easily connected to the outdoor unit / heat recovery unit.

Figure 65: Installing Near a Heat or Steam Source.



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 may 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.)*

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

NOTICE

- *Indoor units (IDUs) should not be placed in an environment where the IDUs may 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 indoor units are installed, proper air make up or supply and/or adequate ventilation should be provided.*
- *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.*

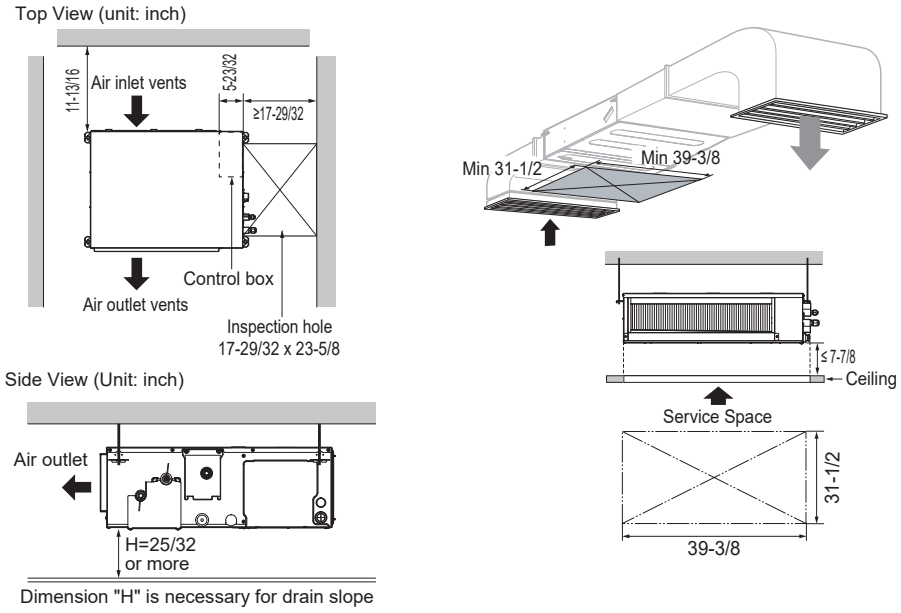
Installing in an Area Exposed to Unconditioned Air

In some installation applications, areas (floors, walls) in some rooms may be exposed to unconditioned air (room may be above or next to an unheated garage or storeroom). Proper isolation from outside air ambient temperatures is required.

- Add insulation between the floor joists.
- Install radiant heat or another type of heating system to the floor.

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Figure 66: Convertible Mid Static Ducted MA Unit Access Panel Required Dimensions.

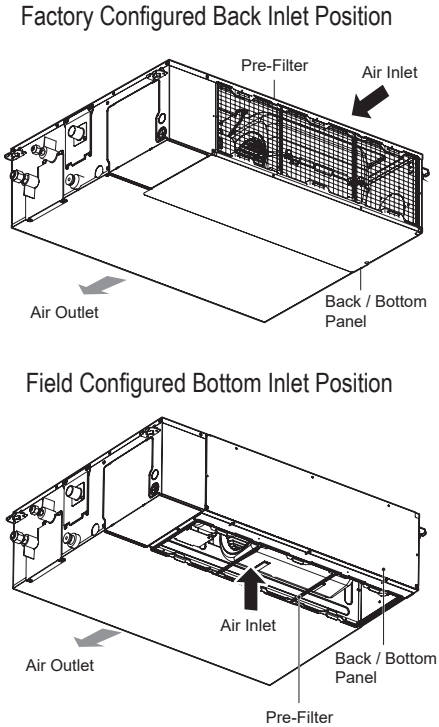


Note:
Appearances and installation structure may differ depending on model.
If the distance between the dropped ceiling and the actual ceiling is <7-7/8 inch, the inspection access area should greater than the size of indoor unit.

Changing Air Inlet from Back to Bottom of Indoor Unit

The mid-static ducted indoor unit is factory configured with the air inlet at the back. The unit can be field reconfigured with the inlet from back to bottom in applications where the indoor unit is installed in a recessed ceiling, the return grille is under the indoor unit for a bottom return, and the discharge is horizontal into the room.

Figure 67: MA Unit Bottom Air Inlet Conversion.



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The Mid Static Ducted IDU has the option to be installed vertically on a floor or along a wall. The vertical up flow configuration installation requires optional installation kit ABDAMA0 (sold separately) to change the condensate drain pan position suitable for vertical installation.

Figure 68: Mid Static Ducted IDU Vertical Installation Position.

Case1.
Floor Installation

Case2.
Wall Installation

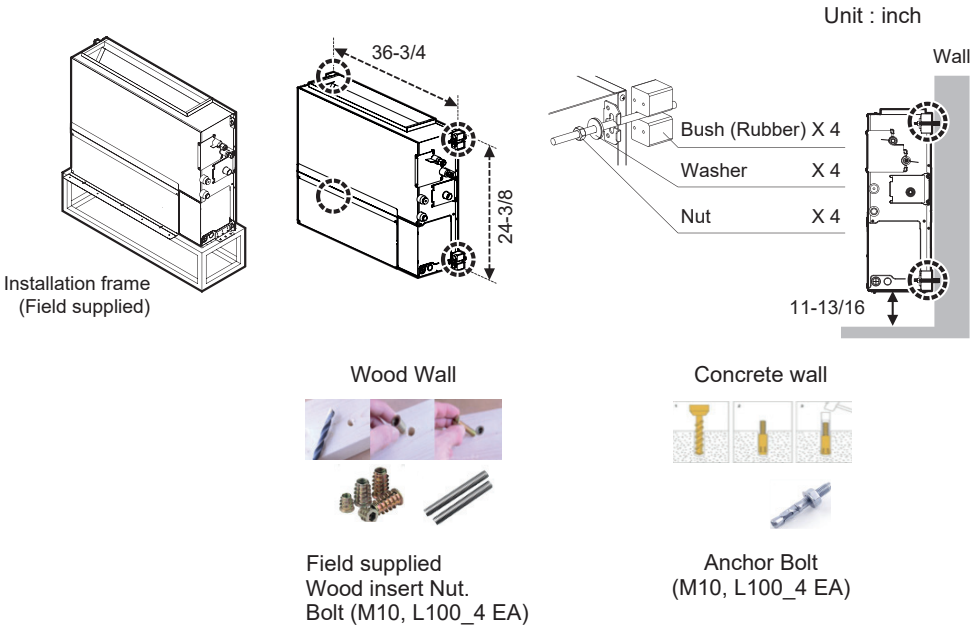
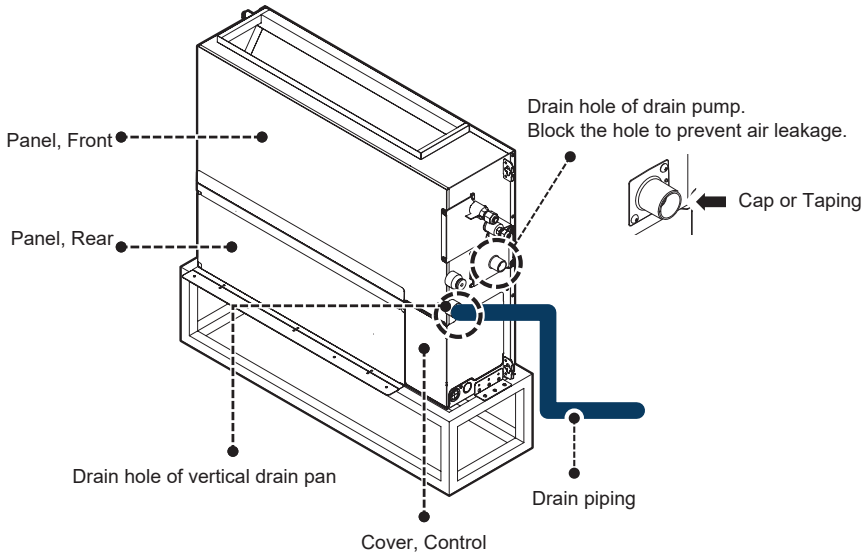


Figure 69: Mid Static Ducted IDU Vertical Installation Drain.

Connect the drain piping to drain hole of vertical drain pan.
Block the drain hole of drain pump to prevent air leakage.



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Figure 70: Clearance Requirements for B8 High Static Ducted Units.

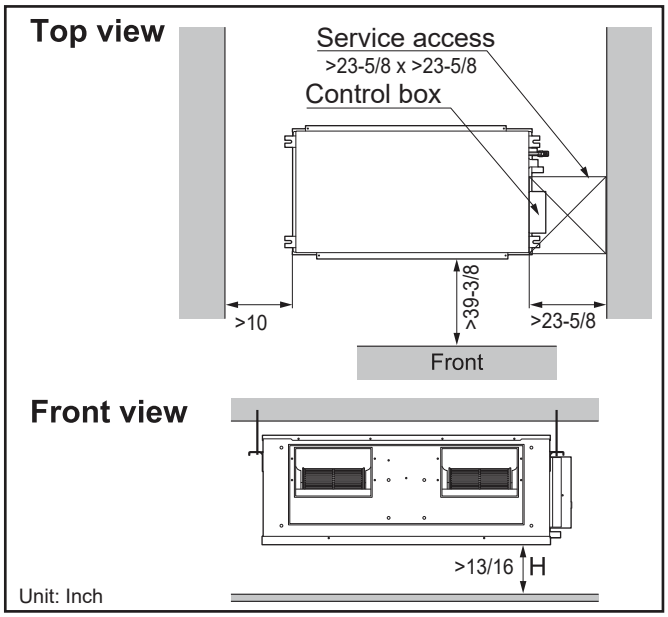


Figure 71: Clearance Requirements for M2 and M3 Mid and High Static Ducted Units.

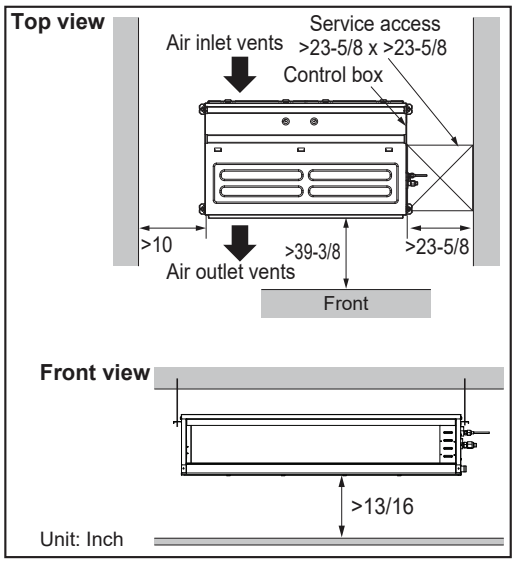


Figure 72: Clearance Requirements for Low Static Ducted Units.

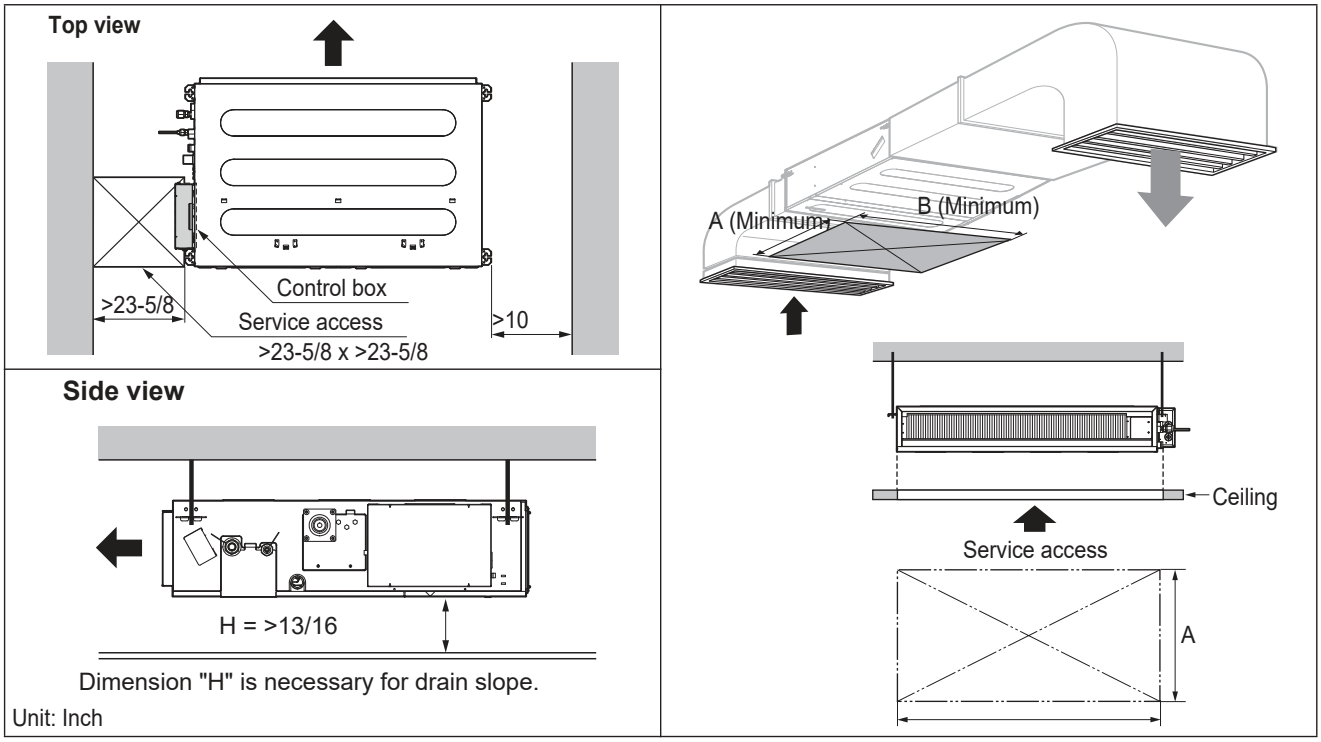


Table 125: Service Dimensions for L1, L2, and L3 Low Static Ducted Units.

Frame	Dimensions (inches)	
	A	B
L1	31-1/2	31-1/2
L2	31-1/2	39-3/8
L3	31-1/2	47-1/4

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General Mounting - High, Mid, and Low Static Ducted Units

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

Figure 73: High Static Ducted B8 Frame Bolt Locations.

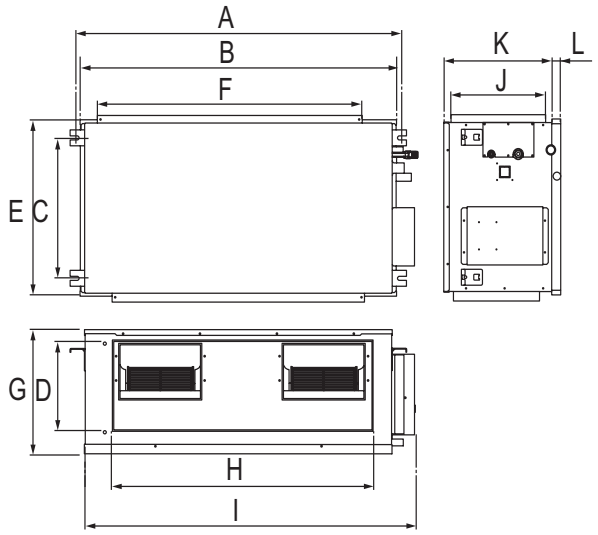


Table 126: High Static Ducted B8 Frame Suspension Bolt Positions.

Frame	Dimensions (inches)											
	A	B	C	D	E	F	G	H	I	J	K	L
B8	63-7/8	61-5/8	22-13/16	11-1/2	27-3/8	55-1/8	18-1/8	44-3/16	66-1/8	15-3/8	17-1/2	9/16

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Figure 74: Mid and High Static Ducted M2, M3 Bolt Locations.

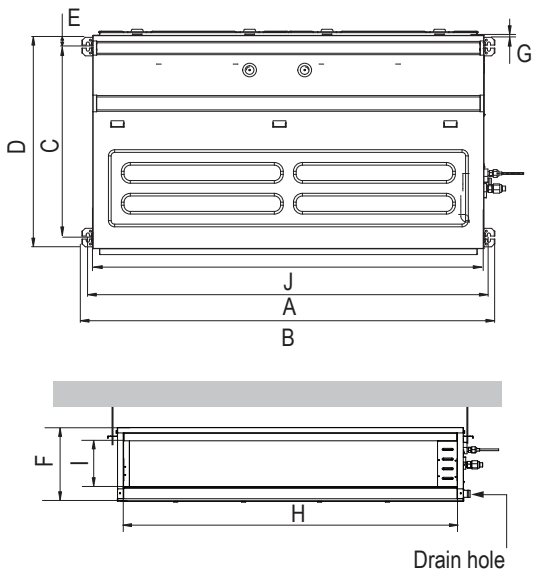


Figure 75: Low Static Ducted Frame Bolt Locations.

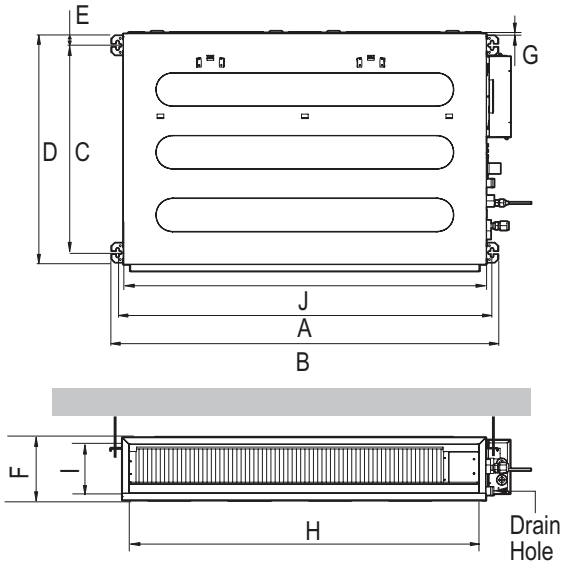


Table 127: Mid and High Static Ducted M2, M3 Frame Suspension Bolt Positions.

Frame	Dimensions (inches)									
	A	B	C	D	E	F	G	H	I	J
MA	36-3/4	38-1/4	24-3/8	28-11/32	1-3/4	10-19/32	19/32	33-23/32	6-21/32	35-1/2
M2	50-17/32	52-1/32	24-3/8	27-9/16	1-3/16	10-5/8	19/32	47-9/16	7-15/16	49-7/32
M3	50-17/32	52-1/32	24-3/8	27-9/16	1-3/16	14-3/16	19/32	47-9/16	11-15/32	49-7/32

Table 128: Low Static Ducted L1, L2, L3 Frame Suspension Bolt Positions.

Frame	Dimension (inches)									
	A	B	C	D	E	F	G	H	I	J
L1	28-7/8	30-3/8	24-3/4	27-9/16	1-7/16	7-1/2	13/16	26	6-1/8	27-9/16
L2	36-3/4	38-1/4	24-3/4	27-9/16	1-7/16	7-1/2	13/16	33-7/8	6-1/8	35-7/16
L3	44-5/8	46-1/8	24-3/4	27-9/16	1-7/16	7-1/2	13/16	41-3/4	6-1/8	43-5/16

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General Mounting Procedure

1. Select and mark the area where the hanging bolts, refrigerant and condensate piping will be placed. The hanging bolts must be slightly tilted to the direction of the drain hose.
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 may result in physical injury or death.

NOTICE

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

Figure 76: Drilling Holes for the Bolts, Refrigerant and Condensate Piping.

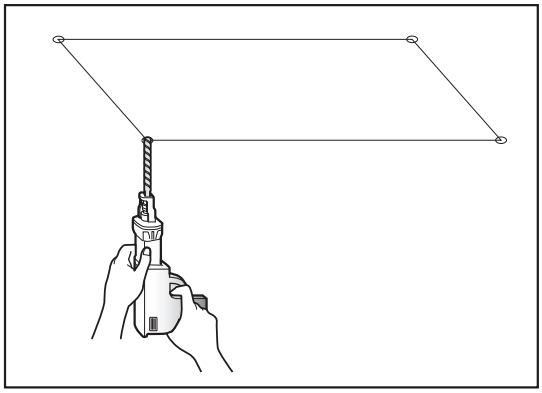
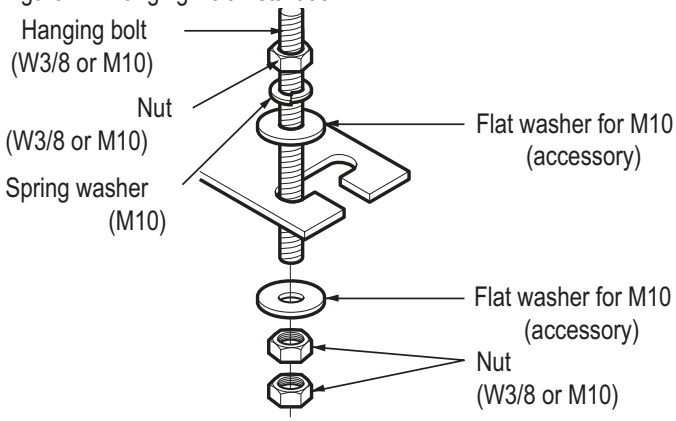


Figure 77: Hanging Bolt Installation.



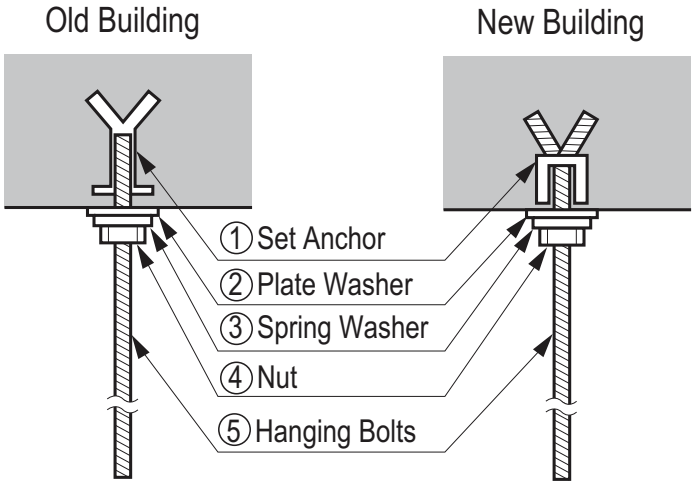
The following parts are field supplied:

- 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

Figure 78: Old Versus New Building Hanging Bolt Installation.



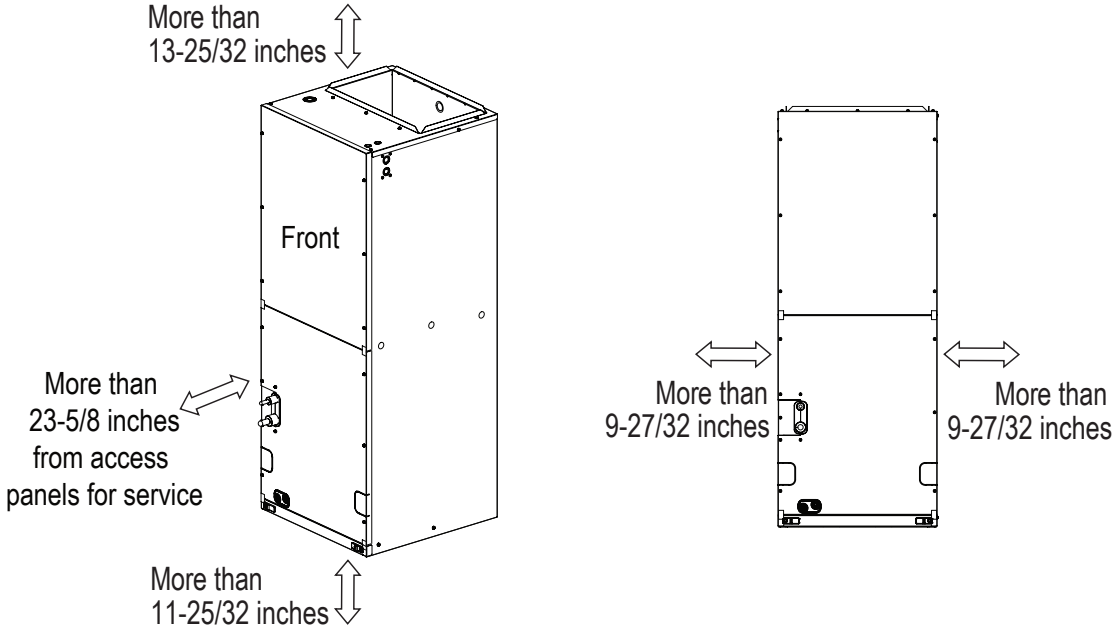
⚠WARNING

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.

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Clearance Requirements for Multi-Position AHUs

Figure 79: Clearances Requirements for Multi-Position AHUs.

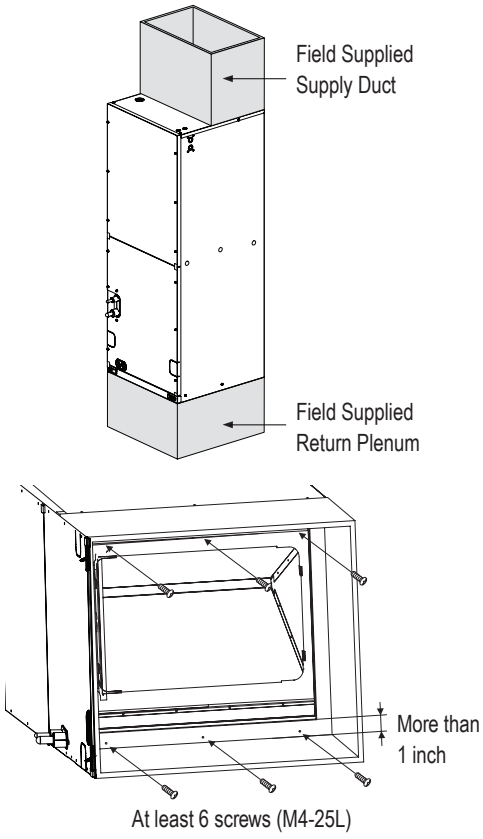


Upflow Installation for Multi-Position AHUs

Multi-Position Air Handling Units can be installed in upflow, downflow, horizontal-left and right positions.

- Support platforms must be sturdy enough to support the unit plus any accessories including filter boxes. The size of the support must be bigger than the Multi-Position AHU; the unit itself must be placed at the center of the support.
- Vibration isolators (field-supplied) must be installed between the Multi-Position AHU and the support(s).
- Upflow installation has to be applied if a return plenum and a supply duct are present.
- Secure the plenum to support adapters and duct work.
- To prevent air leaks, seal all ducts following local codes.
- Follow all relevant building codes in installations in which an external condensate pan may be necessary. Supports for air handling units must be located in or above the external condensate pan.

Figure 80: Upflow Installation.



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Duct Work for Multi-Position AHUs

- Use at least ten (10) M4-25L screws when attaching the supply duct to the Multi-Position Air Handling Unit.
- To prevent vibration transmission, install flexible connectors between the supply duct and the Multi-Position Air Handling Unit. If an electrical heater is included, the flexible connector must be constructed from a heat-resistant material.
- When routed through unconditioned spaces, ducts must be insulated and covered with vapor barriers.
- Internal acoustical insulation lining may be necessary for a metal duct system if it does not have a 90° elbow and ten (10) feet of main duct to the first branch takeoff.
- Fibrous ducts could be used as a substitute if built and installed in accordance with the most recent edition of the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) Construction Standard.
- Fibrous ducts and acoustical linings must follow National Fire Protection Association (NFPA) Standards 90A or 90B as tested by UL Standard 181 for Class 1 ducts.
- Seal around the ducts to prevent air leaks.

Figure 81: Attaching Ducts to the Multi-Position AHU.

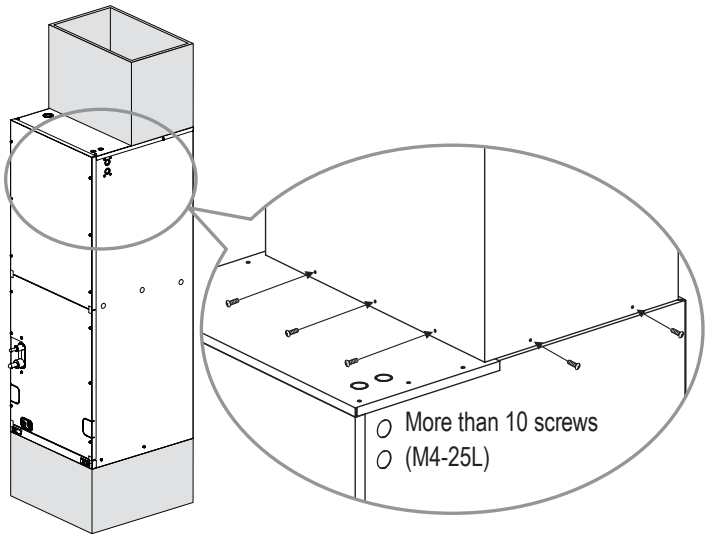
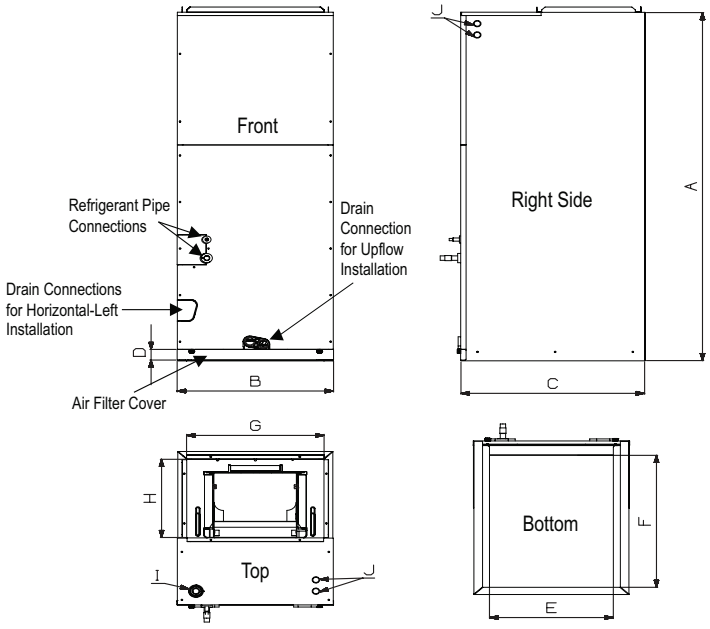


Figure 82: Multi-Position Air Handling Unit Duct Connection Dimensions Diagram.



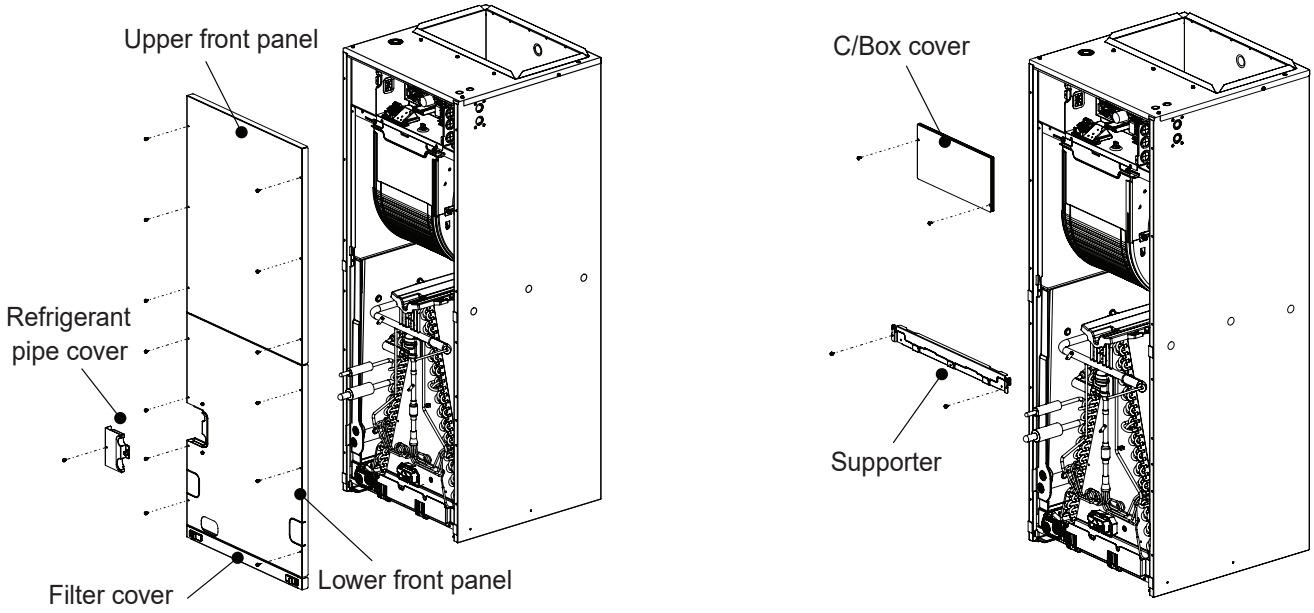
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Downflow Installation for Multi-Position AHUs

Downflow installation requires various changes to the air handling unit from original configuration. There are additional kits required in order to convert the air handling unit to the downflow configuration.

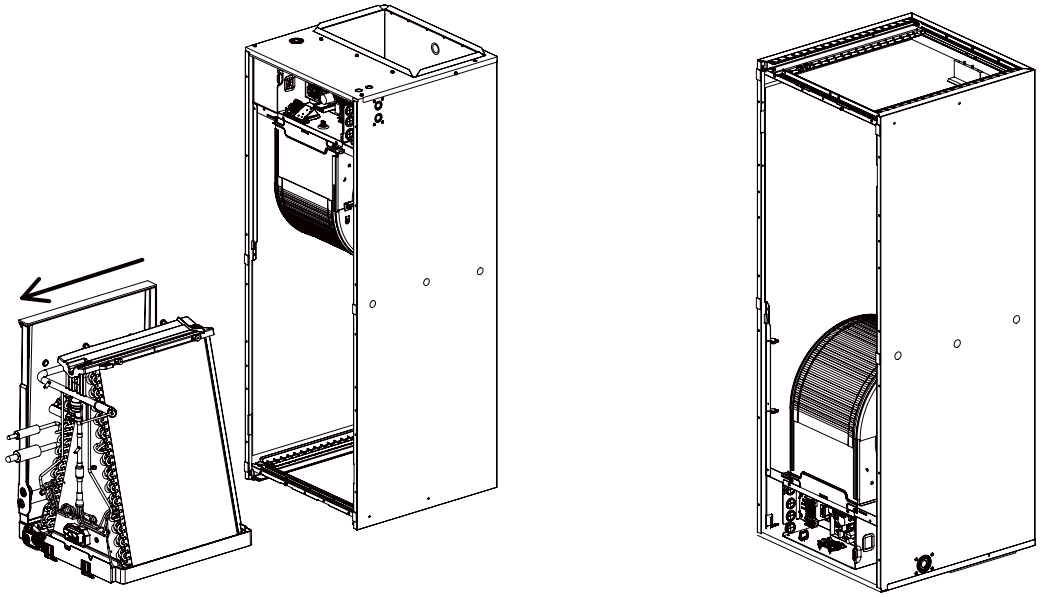
1. Detach the refrigerant pipe cover, the upper front panel, and lower front panels to open the cabinet in order. The control box cover and the supporter connecting both side panels of the cabinet are detached afterward.

Figure 83: Downflow Installation for Multi-Position Air Handling Unit - Step 1.



2. Before pulling out the coil unit,, detach the connected thermistors on the coil assembly. Remove the EEV cable from the PCB inside the C/Box. Remove the coil assembly from the unit. This can now be done easily. After this, rotate the unit and place it where it would be installed.

Figure 84: Downflow Installation for Multi-Position Air Handling Unit - Step 2.



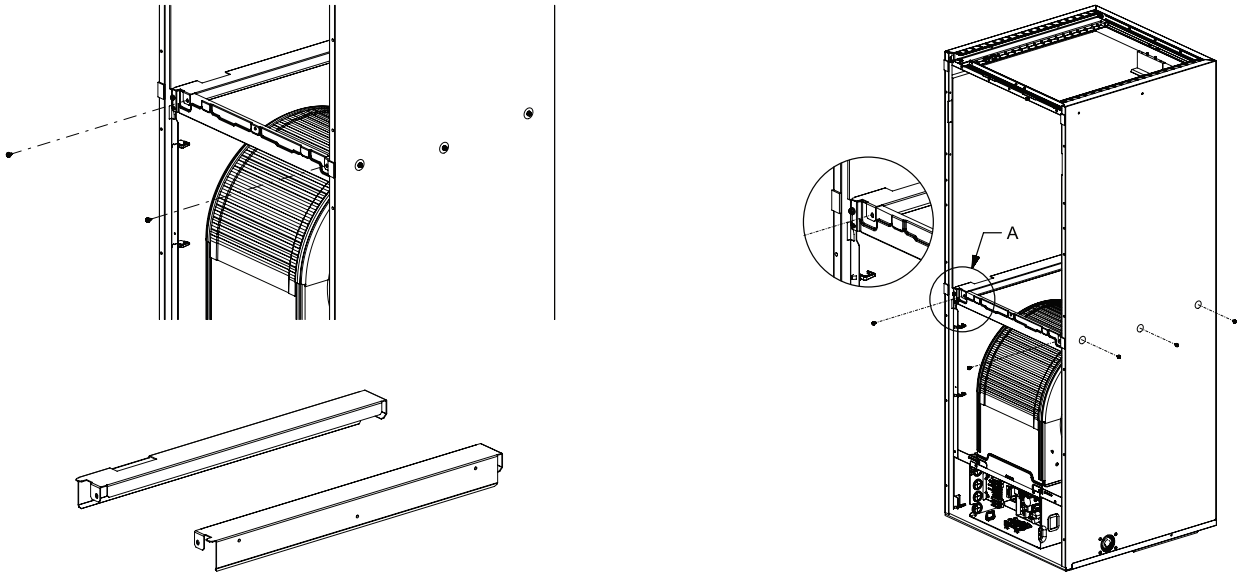
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Downflow Installation for Multi-Position AHUs, continued.

3. Prior to the installation of downflow kits containing left and right bracket, the supporter connecting both of side cabinets must be reinstalled. Align the three holes on each bracket with cabinet side panels for making the screwing convenient.

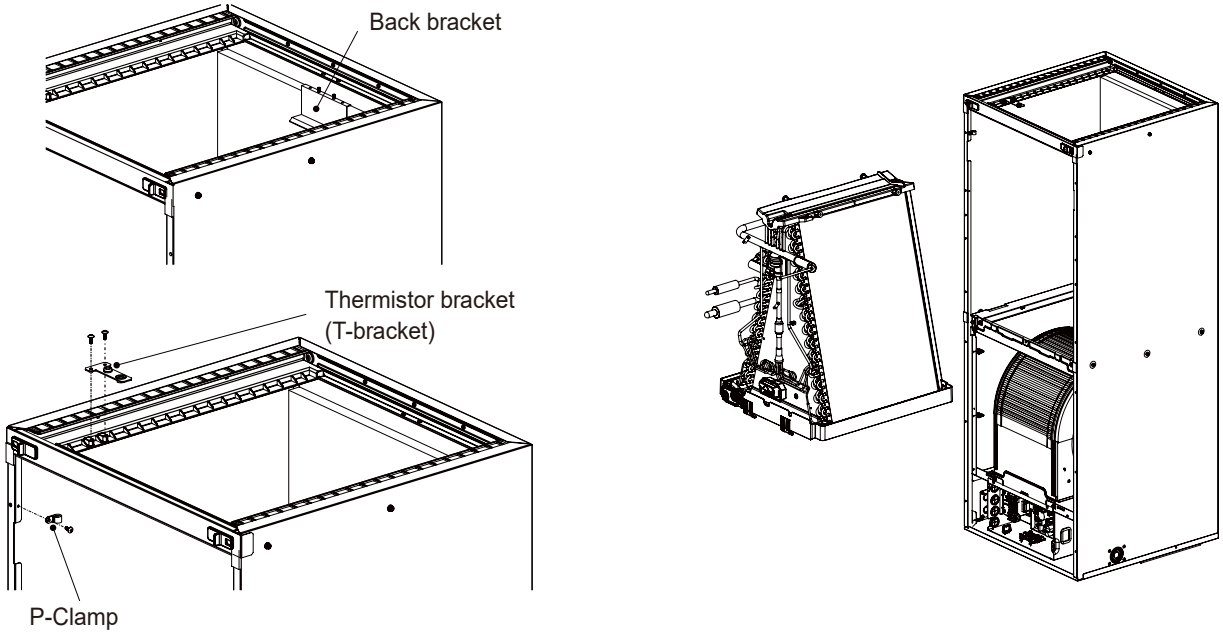
In addition, the strength of the brackets and unit is enhanced by fastening two screws on the front side of the supporter.

Figure 85: Downflow Installation for Multi-Position Air Handling Unit - Step 3.



4. Remove the back bracket and install thermistor bracket and P-clamp included in the downflow kit set. The coil assembly without the side drain pan must be placed on the downflow brackets installed in the previous step.

Figure 86: Downflow Installation for Multi-Position Air Handling Unit - Step 4.



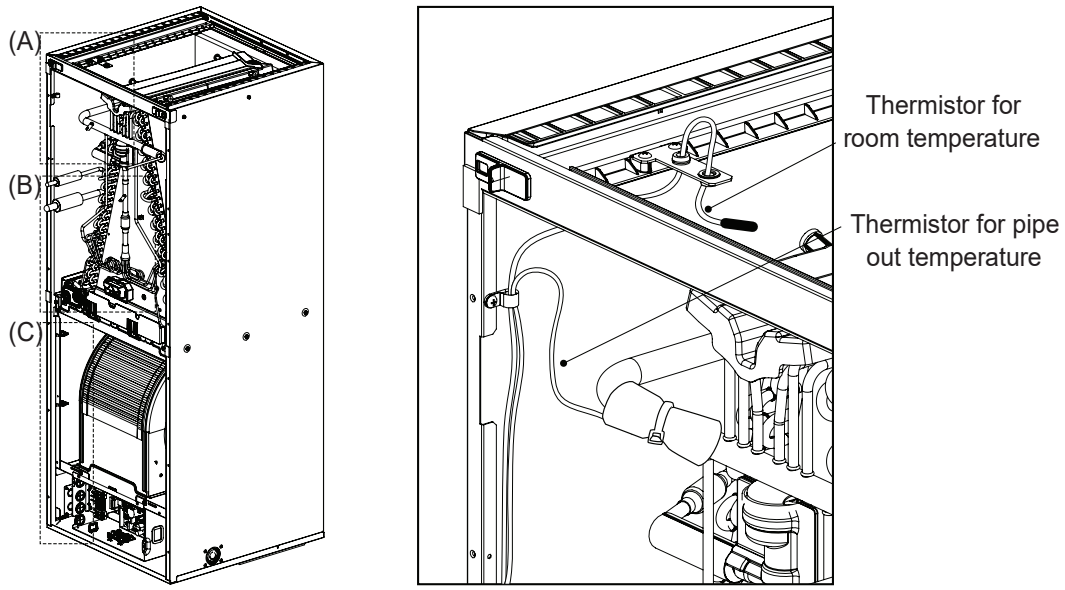
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Downflow Installation for Multi-Position AHUs, continued.

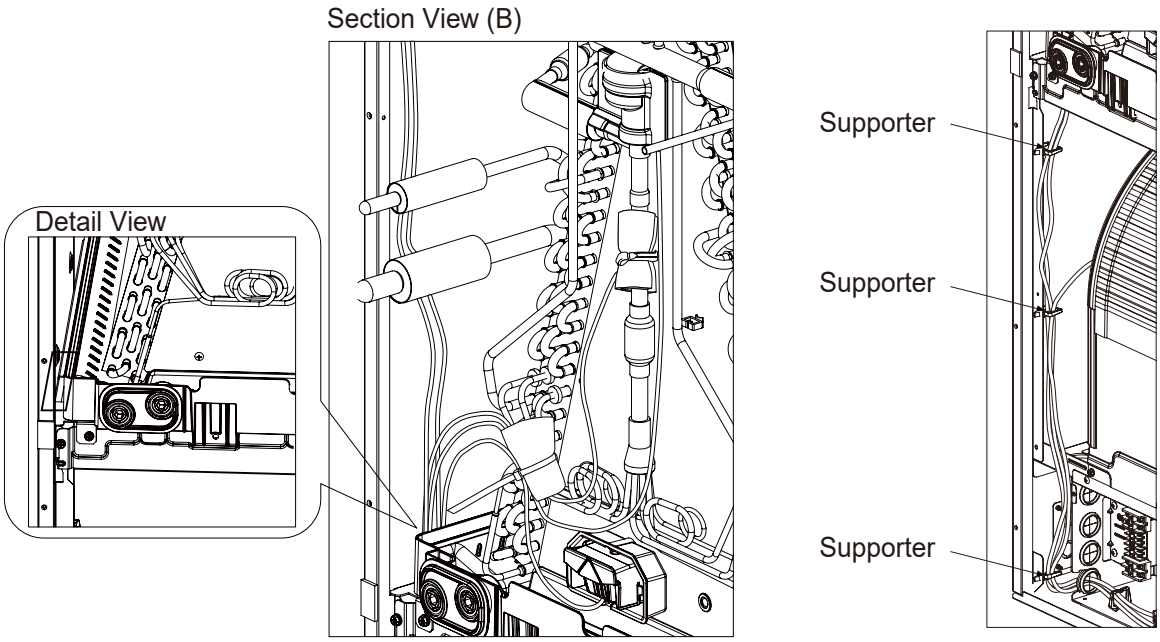
5. This step describes the harness wiring method as shown below. In the section view (A), the T-bracket installed on the previous step is utilized to support thermistor for room temperature being passed through its two holes. Similarly, the P-Clamp plays roles of binding the two thermistors and keeping the thermistor for pipe_out temperature making a U-loop for dripping water.

Figure 87: Downflow Installation for Multi-Position Air Handling Unit - Step 5.



6. Three wires, EEV, thermistor for pipe-in temperature, and R32 dector's harness, must be bound together on the insulator wrapping the left side of the coil's pipes by using a provided tie. Here, it is crucial for the wiring bundle to have a loop formation for the purpose of dripping the condensate on the harness. All kinds of wirings should be inserted through the hole of the left downflow bracket as shown in the Detail View of the section view (B). After then, they are placed along the left edge of the cabinet being hung in the supportes. Before inserting the wirings on the C/Box, the bundle should be finally hung on the supporter to make a U-loop.

Figure 88: Downflow Installation for Multi-Position Air Handling Unit - Step 6.

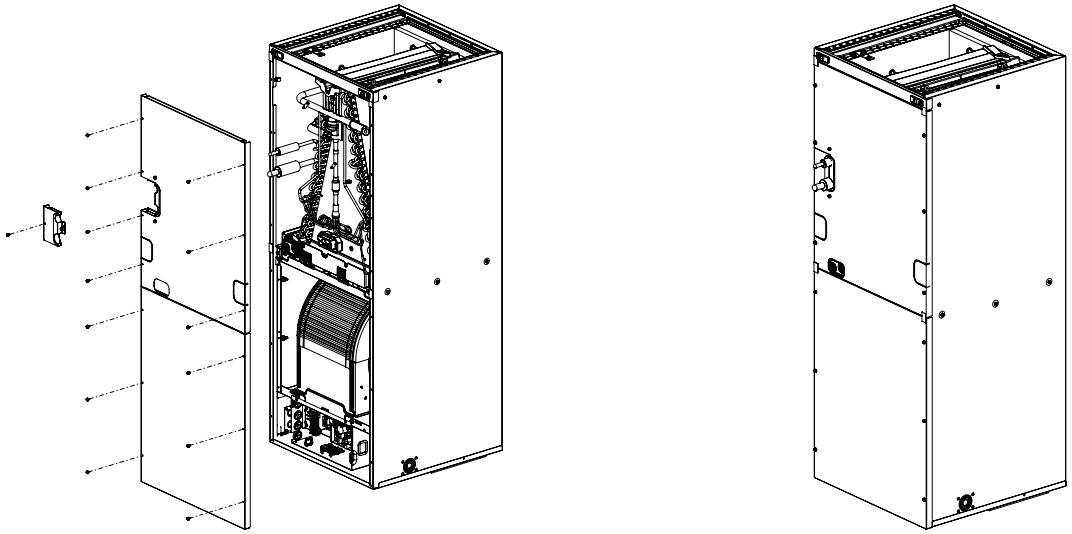


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Downflow Installation for Multi-Position AHUs, continued.

7. Assemble the detached parts in previous step (step 1) in reverse order.

Figure 89: Downflow Installation for Multi-Position Air Handling Unit - Step 7.



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Horizontal-Left Installation for Multi-Position AHUs

- Units must not be installed where the access panels face up or down, nor where filter access is obstructed.
- If the Multi-Position AHU is suspended, use angled steel brackets with threaded rods as support.
- To ensure proper condensate drainage, the unit must be installed so it is within 1/8" level of its length and width.

Figure 90: Horizontal-Left Installation for Multi-Position AHUs.

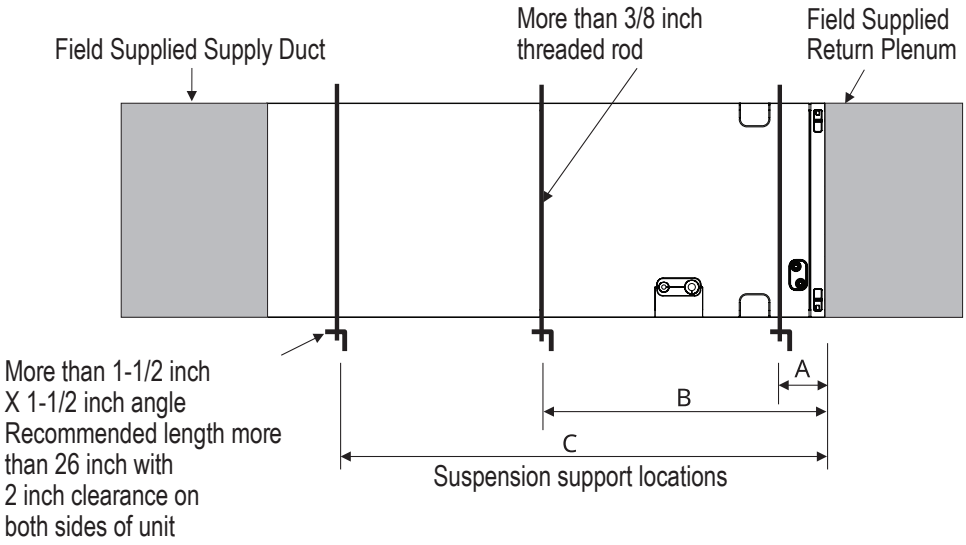


Table 129: Horizontal-Left Installation Dimensions for Multi-Position AHUs.

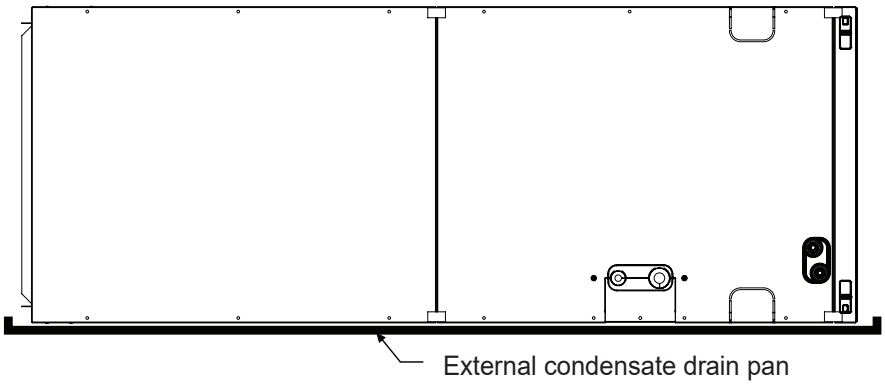
Model No.	Capacity (Btu/h)	Dimensions (inches)		
		A	B	C
NA Frames				
ZRNU123NAAA	12,000	4	23	41-1/2
ZRNU183NAAA	18,000			
ZRNU243NAAA	24,000			
NB Frames				
ZRNU303NBAA	30,000	4	29	48
ZRNU363NBAA	36,000			
ZRNU423NBAA	42,000			
ZRNU483NBAA	48,000			
NC Frames				
ZRNU543NCAA	54,000	4	29	48
ZRNU603NCAA	60,000			

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Horizontal-Left Installation for Multi-Position AHUs, continued.

- For Horizontal installation (left and right), the external condensate drain pan must be installed.
- To ensure proper drainage for horizontal installations, unit must be installed so it is within 1/8” level of the length and width of unit.

Figure 91: External condensate drain pan for Multi-Position AHUs.



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General Drain Piping Information

All ducted indoor units generate water during cooling operation, therefore, how to properly handle this condensation must be considered. Depending on the location of the indoor unit, condensation can be drained directly to the outside of the building, or a common indoor unit drainage piping system can be installed.

Ducted Unit Drain Information

High, Mid, and Low Static Ducted indoor units include factory-installed drain pumps. 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 IDU 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 IDU condensate pump discharge riser before connection to the Y-45 fitting.

Multi-Position AHU Drain Information

Multi-Position AHU has a gravity drain.

- Avoid blocking filter access panel when connecting the condensate drain lines.
- An additional external condensate line must run from the unit into the pan.
- The entire condensate line must be drained from the external condensate pan.
- Point the drain hose downward for easy drain flow.
- Do not use pipe joint connection or PVC/CPVC for the unit drain line connection. Use Teflon® tape.

NOTICE

A field-supplied external condensate pan must be installed underneath the entire Multi-Position AHU. If not, damage may result due to condensate overflow.

Table 130: Ducted Indoor Unit Drainage Specifications.

Indoor Unit	Drain Type	Drain Pipe Dia. (ID, in.)
B8, MA, M2, M3 Frames	27-1/2 in. Lift Drain Pump, Factory Installed	Ø1
L1, L2, L3 Frames		
Multi-Position AHU	Gravity	Ø1 (3/4" FPT)

Figure 92: High, Mid, and Low Static Ducted Indoor Unit Drain Pump to Drain Piping System.

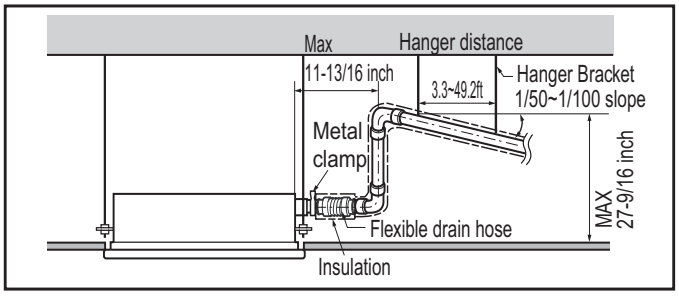


Figure 93: Multi-Position AHU Drain Piping System.

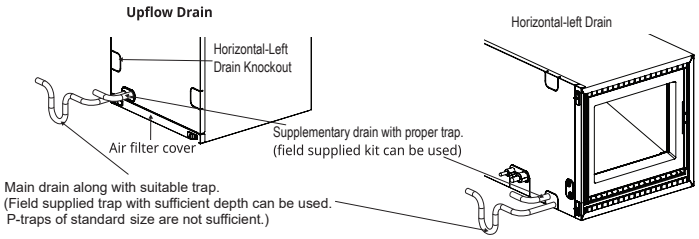
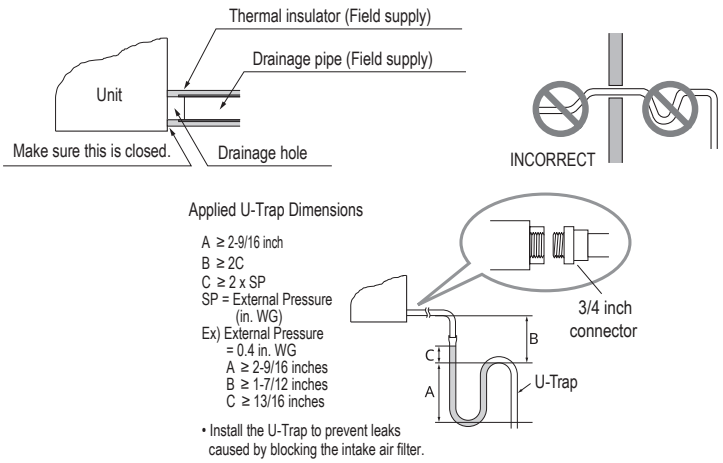


Figure 94: Multi-Position AHU U-Trap Specifications.



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APPLICATION GUIDELINES

General Drain Piping Information

Flexible Drain Hose

Ducted indoor units and Multi-Position Air Handling units include a factory-provided flexible drain hose (with one or two clamps) to connect the indoor unit to the drain piping / drain piping system.

Figure 97: Flexible Drain Hose Connection.



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.
- For High, Mid, and Low Static Ducted Units, the outside diameter of the drain connection is 1-1/4 to 1-1/8 inches (depending on model).
- For Multi-Position Air Handling Units, use PVC with a 3/4 inch male pipe thread fitting for the condensate pan.
- Drain piping material is polyvinyl chloride pipe (1 inch).

To prevent reversal flow, do not install with an up / down slope.

Drain Leak Test

A leak test must be performed 24 hours after the drainage system has been installed.

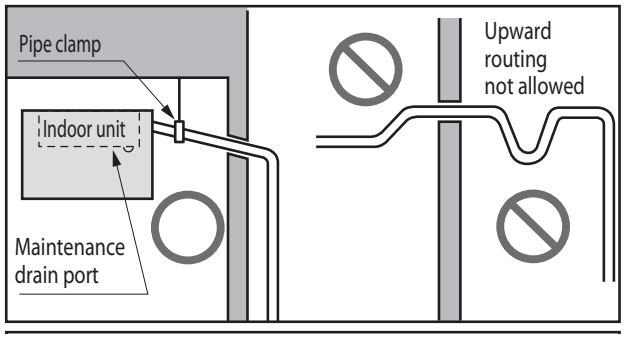
Drain Pipe Insulation

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

NOTICE

All condensate piping is to be installed per applicable local codes. Avoid any contact with building sewer lines and vent lines.

Figure 96: Drain Piping Slope.



NOTICE

Ensure the indoor unit, 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.

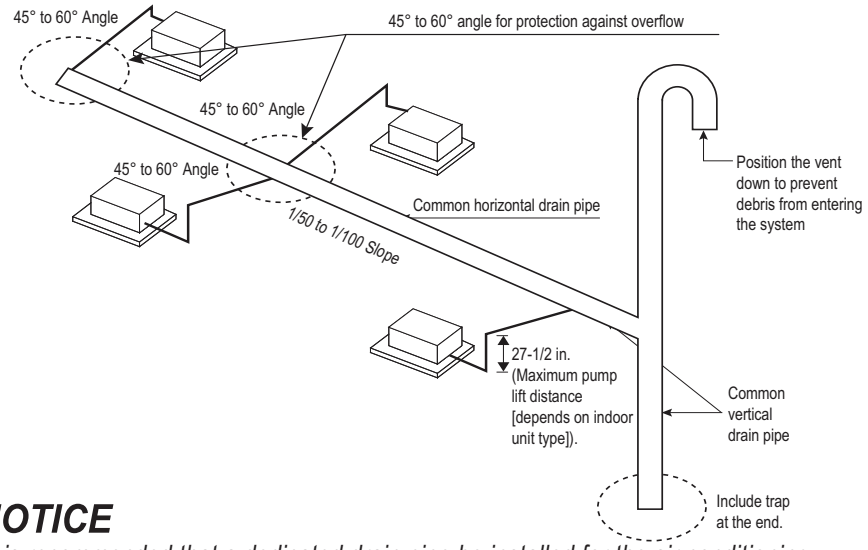
Common Indoor Unit Drainage System

It is usual work practice to connect individual indoor 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 may be prudent to install a secondary drain line.

Design the drain system to plan for winter operation (condensate line may freeze up 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 95: Example of a Common Indoor Unit Drainage System.



NOTICE

- *It is recommended that a dedicated drain pipe be installed for the air conditioning system. If the indoor unit drainage system is shared with a rainwater drain, waste water, or any other type of building drain system, back flow, leaks, ice may form, or noxious odors may 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 may infiltrate the air conditioning system.*

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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 indoor units.
- Provide a circuit breaker switch between the power source and the indoor unit.
- 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.
  - Communication cable must be a minimum of 18 AWG, two-conductor, twisted, stranded, shielded, and must comply with the applicable local and national codes. Ensure the communication cable is properly grounded at the main outdoor unit only. ⃠ Do not ground the ODU-IDU communications cable at any other point.
- It is recommended that a circuit breaker is installed, 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.

⚠DANGER

High voltage electricity is required to operate this system. Adhere to the National Electrical Codes and these instructions when wiring. Always ground the unit following local, state, and National Electrical Codes. Read the safety summary at the beginning of this manual.

- *Secure all field wiring connections with appropriate wire strain relief. Improperly securing wires will create undue stress on equipment power lugs. Inadequate connections will generate heat, cause a fire and physical injury or death.*
- *Properly tighten all power connections. Loose wiring will overheat at connection points, causing a fire, physical injury or death.*

NOTICE

Connect the indoor unit input power cable but ⃠ do not apply power to the indoor unit until authorized to do so by the system commissioning agent. Inappropriate power connection can result in equipment damage and will void the LG limited liability warranty.

NOTICE

- *When connecting the communications bus between the outdoor unit, indoor unit(s), and heat recovery unit(s), it does not matter what physical path or route the wire takes. The installer can use discretion when choosing the order the components are connected to the communications bus, but must maintain the daisy chain and polarity configuration.*
- *Failure to follow any of these power and communications wiring guidelines or instructions will cause communications errors and unit malfunction.*

⃠ Do Not's

- *Never use wire caps and never splice communications cables.*
- *Never connect zone controllers or other central controllers or LG building management system gateways to the indoor unit / outdoor unit communications cable.*

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Connecting Power Wiring / Communication Cable

Indoor unit installation best practices are to connect control wiring (low voltage) and then connect power wiring (high voltage). ⃠ Do not apply power to the indoor unit or any Multi V system component until authorized to do so by the system commissioning agent.

1. Ensure the input power is disconnected and there is no power on the power input cable.
2. Remove the knock-out plugs from the control box. Remember the communications cable and the power cable must enter the control box through different knockouts.
3. Field-install a plastic or rubber grommet in the knockout holes to prevent wire chaffing.
4. If using conduit, connect the conduit to the control box using field-provided fittings and industry best-practice procedures.
5. Separately route the power wiring and communications cables to the unit's terminal block (see figures on the following pages). ⃠ Do not route the communications cable near the power cable.

NOTICE

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.

6. Insert the power wiring / communications cable from the outdoor unit or heat recovery unit (Heat Recovery systems only) using the designated path in the indoor unit.
7. Connect each wire to its appropriate terminal on the indoor unit control board. Verify that the color and terminal numbers from the outdoor unit or heat recovery unit (Heat Recovery systems only) wiring match the color and terminal numbers on the indoor unit.
8. Secure the power wiring / communications cable. Refer to the next pages for indoor unit wiring connections, the Outdoor Unit Installation Manual for information regarding the outdoor unit and heat recovery unit wiring connections, or review the wiring diagrams on the applicable units.

NOTICE

- *Field-provided communication cable between Main ODU to IDUs / HRUs to be 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the Main outdoor unit chassis only. ⃠ Do not ground the outdoor unit to indoor units / heat recovery units communication cable at any other point. Wiring must comply with all applicable local and national codes.*

9. If a remote controller is to be installed, connect the remote controller's cable to the indoor unit's remote controller connection. Controller connections depend on type of indoor unit being installed. Some indoor units use terminal block connections; other indoor units use Molex connections. See the wiring diagram for each specific indoor unit.
10. Connect any additional cables required for the installation.

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Power Wiring / Communications Cable Terminals

Figure 98: Location of Power Wiring / Communications Cable Terminals in B8, MA, L1,L2, L3 Ducted Indoor Units (Appearances Vary Depending on Model).

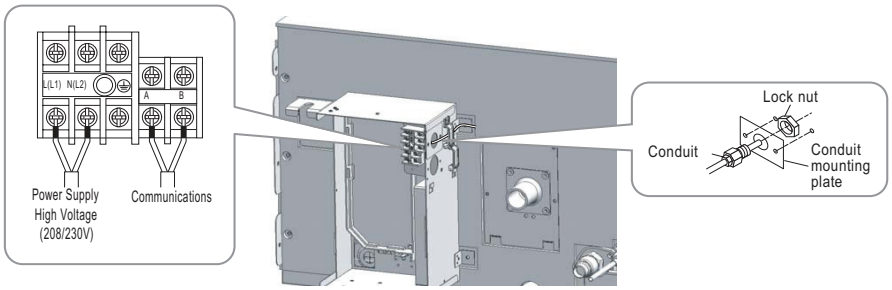


Figure 99: Connecting Power Wiring / Communications Cable for M2, M3 Mid and High Static Ducted Indoor Units.

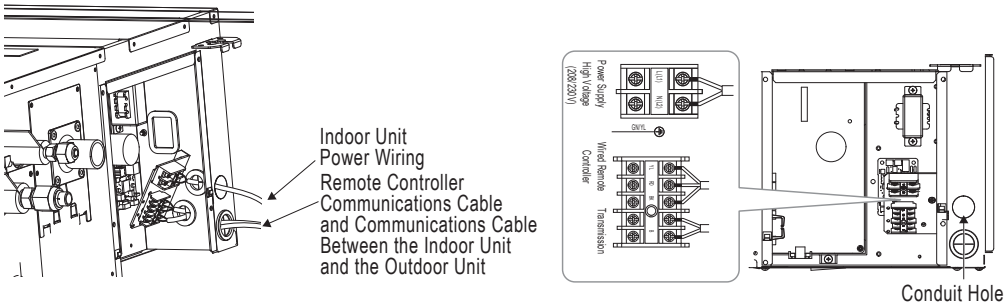
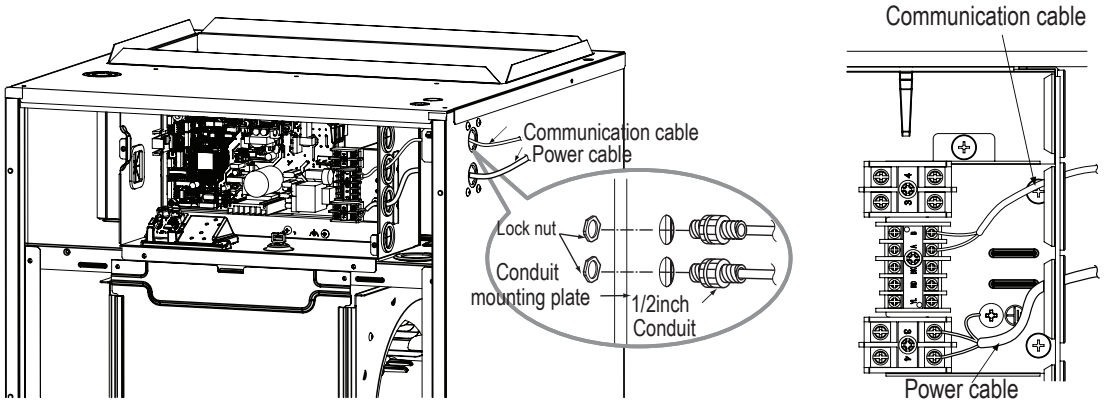


Figure 100: Location of Power Wiring / Communications Cable Terminals in the Multi-Position AHUs.



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Figure 101: Terminal Block in MA, M2, M3 Mid and High Static Ducted Indoor Units.

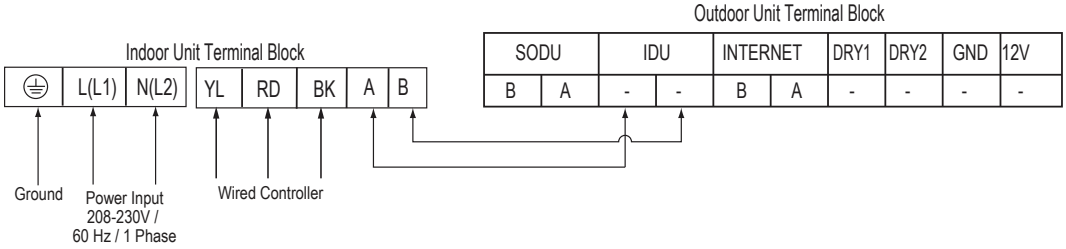


Figure 102: Terminal Block in L1, L2, L3 Low Static Ducted Indoor Units.

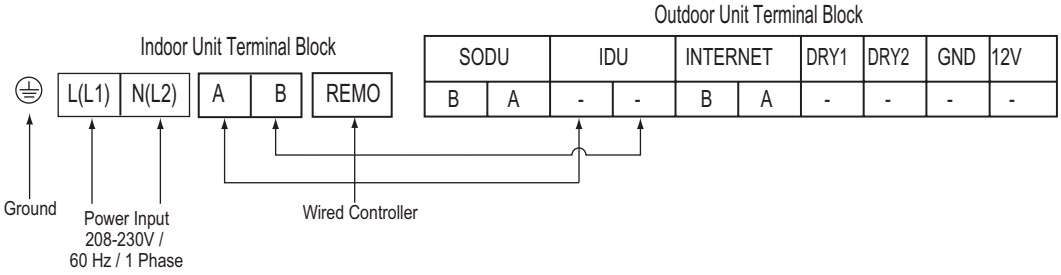


Figure 103: Terminal Block in Multi-Position AHU.

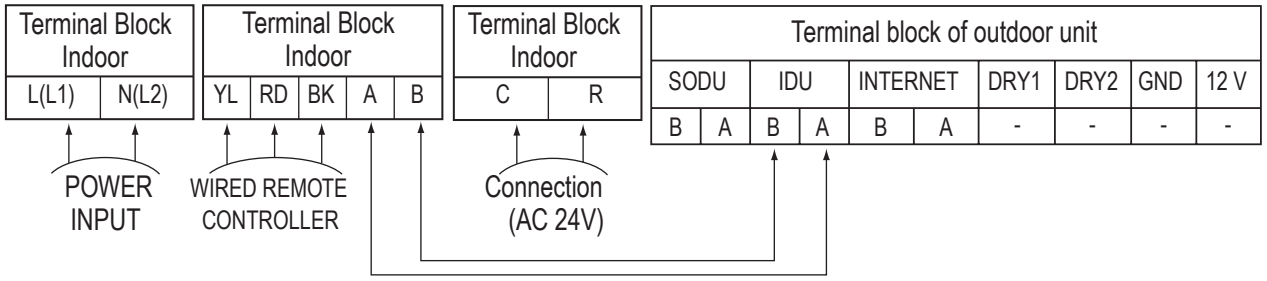
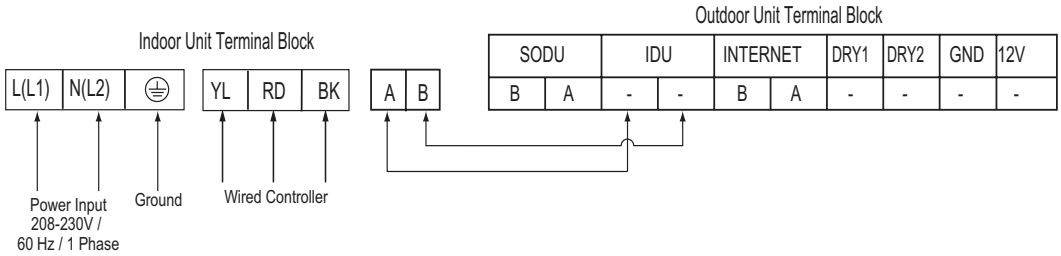


Figure 104: Terminal Block in B8 High Static Ducted Indoor Units.



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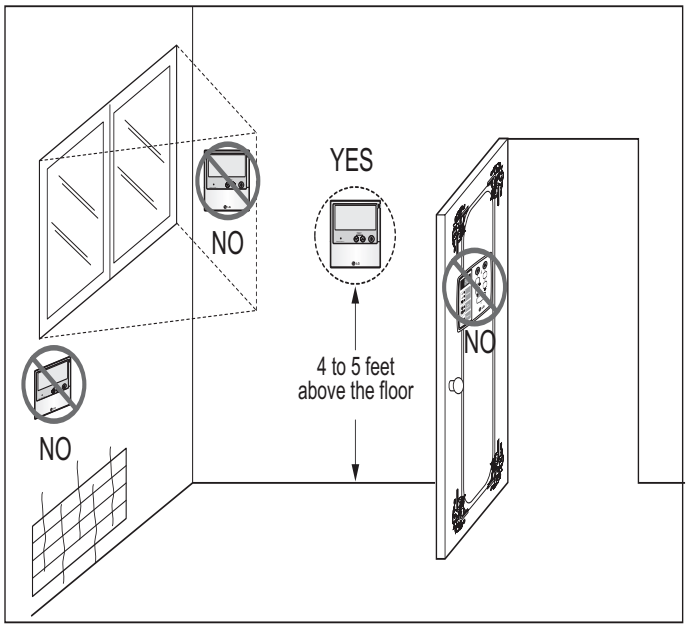
Wired Controller Placement

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 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.

Figure 105: Proper Location for the Wired Controller.



Assigning the Thermistor for Temperature Detection

Each indoor unit includes a return air thermistor assigned to sense the temperature. If a wired controller is installed, there is a choice of sensing temperature with either the indoor unit return air thermistor or the thermistor in the wired controller. It is also an option to set both thermistors to sense temperature so that indoor unit bases its operation on the first thermistor to reach the designated temperature differential. For applicable indoor units, an optional Remote Temperature Sensor can be used in lieu of the return air thermistor—either alone or in conjunction with a wired controller thermistor as previously described.

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LIMITED WARRANTY (USA)

“The product’s full Limited Warranty terms and conditions and arbitration requirements are available at https://www.lghvac.com."

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EM_MultiV_Ducted_IDU_R32_08_26
Supersedes: EM_MultiV_Ducted_IDU_R32_04_26
EM_MultiV_Ducted_IDU_R32_03_26
EM_MultiV_Ducted_IDU_R32_11_25
EM_MultiV_Ducted_IDU_R32_08_25
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