



MULTI V™

DUCTED INDOOR UNIT ENGINEERING MANUAL



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



Mid Static Ducted
7,500 to 54,000 Btu/h



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



Vertical Air Handling Unit
12,000 to 54,000 Btu/h

PROPRIETARY DATA NOTICE

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A summary list of safety precautions is on page 3.

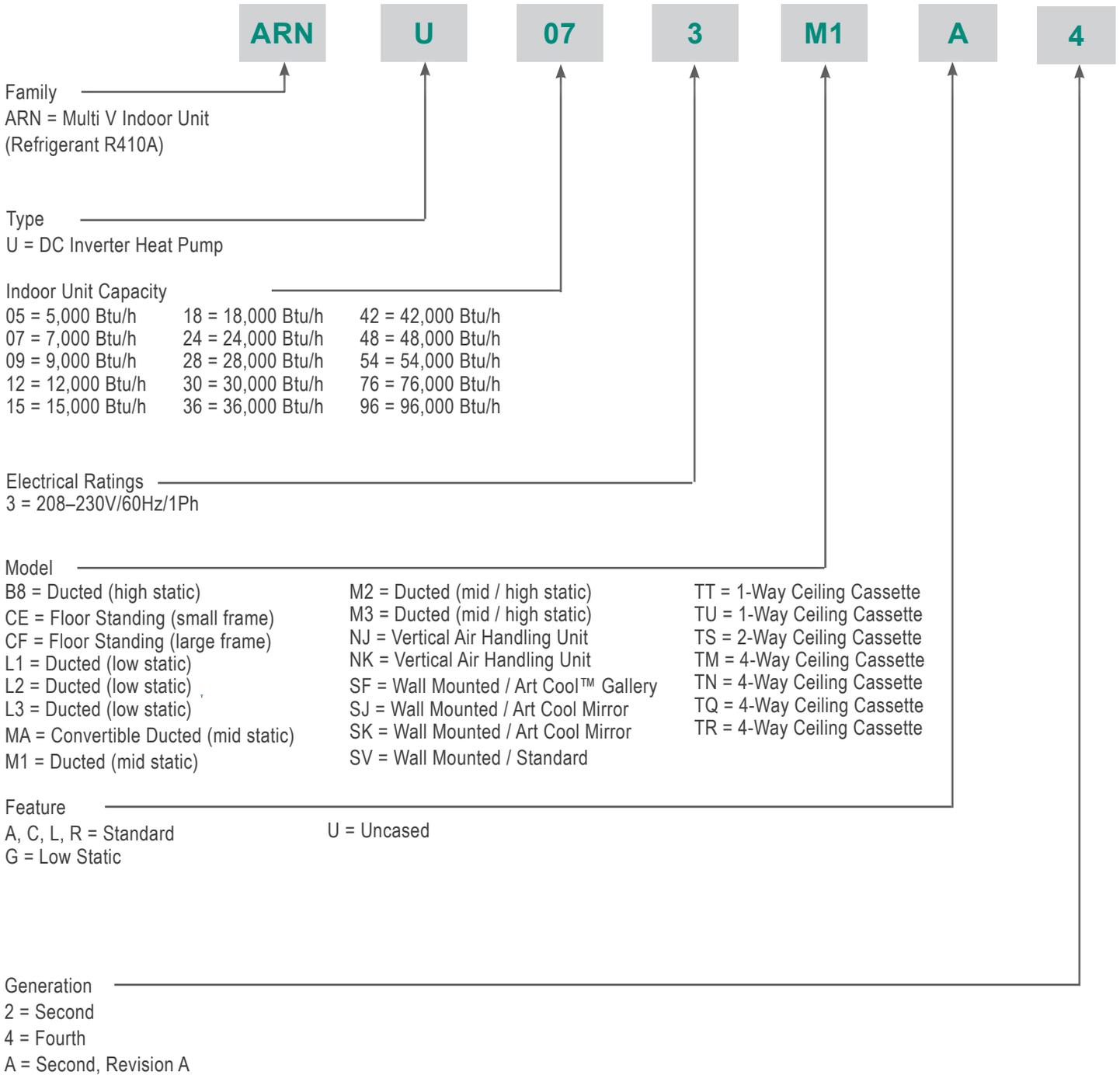
For more technical materials such as submittals, catalogs, installation, owner's, and service manuals, visit www.lghvac.com.

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TABLE OF SYMBOLS

	<i>This symbol indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.</i>
	<i>This symbol indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</i>
	<i>This symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.</i>
	<i>This symbol indicates situations that may result in equipment or property damage accidents only.</i>
Note:	<i>This symbol indicates information related to the current procedure.</i>
	<i>This symbol indicates an action that should not be performed.</i>

UNIT NOMENCLATURE



LG Air Conditioner Technical Solution (LATS) Software

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

Note:

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

Formats

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

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

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

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

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

Features

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

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

The program can also:

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

Note:

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

LG AIR CONDITIONER TECHNICAL SOLUTION (LATS)

LATS Generates a Complete Project Report

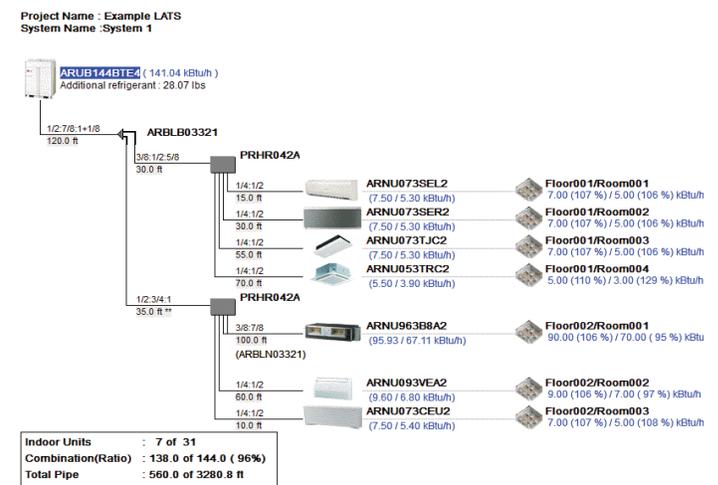
LATS software also generates a report containing project design parameters, cooling and heating design data, system component performance, and capacity data. The report includes system combination ratio and refrigerant charge calculations; and provides detailed bill of material, including outdoor units,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

Figure 1: Example of a LATS Tree Diagram.



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

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

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

REFRIGERANT CHARGE WORKSHEET

Multi V 5 System R410A Refrigerant Charge Calculator (lbs.)

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	—	—		0.015	
2	Linear feet of 3/8" liquid line tubing ²	—	—		0.041	
3	Linear feet of 1/2" liquid line tubing ²	—	—		0.079	
4	Linear feet of 5/8" liquid line tubing ²	—	—		0.116	
5	Linear feet of 3/4" liquid line tubing ²	—	—		0.179	
6	Linear feet of 7/8" liquid line tubing ²	—	—		0.238	
7	Linear feet of 1" liquid line tubing ²	—	—		0.323	
8	Standard + Art Cool Mirror	SJ, SK	5k to 15k		0.53	
9	Standard + Art Cool Mirror	SJ, SK	18k to 24k		0.62	
10	Standard	SV	30k to 36k		1.01	
11	Art Cool Gallery	SF	9k to 12k		0.22	
12	1-Way Cassette	TU	7k to 12k		0.44	
13	1-Way Cassette	TT	18k to 24k		0.64	
14	2-Way Cassette	TS	18k to 24k		0.75	
15	4-Way 2' x 2' Cassette	TR	5k to 7k		0.40	
16	4-Way 2' x 2' Cassette	TR	9k to 12k		0.55	
17	4-Way 2' x 2' Cassette	TQ	15k to 18k		0.71	
18	4-Way 3' x 3' Cassette	TN	7k to 24k		0.88	
19	4-Way 3' x 3' Cassette	TM	28k to 36k		1.08	
20	4-Way 3' x 3' Cassette	TM	42k to 48k		1.41	
21	Mid Static Ducted	MA, M1	7k to 24k		0.57	
22	High Static Ducted	M2	7k to 24k		0.77	
23	Mid Static Ducted	M2	28k to 42k		1.15	
24	Mid / High Static Ducted	M3	28k to 54k		1.35	
25	High Static Ducted	B8	36k to 96k		2.20	
26	Low Static Ducted, Low Static Ducted Bottom Return	L1	5k to 9k		0.31	
27	Low Static Ducted, Low Static Ducted Bottom Return	L2	12k to 18k		0.42	
28	Low Static Ducted, Low Static Ducted Bottom Return	L3	21k to 24k		0.55	
29	Vertical Air Handling Unit	NJ	12k to 30k		1.04	
30	Vertical Air Handling Unit	NJ	36k		1.57	
31	Vertical Air Handling Unit	NK	42k to 54k		2.00	
32	Floor Standing	CE (U)	7k to 15k		0.37	
33	Floor Standing	CF (U)	18k to 24k		0.82	
34	HRU: PRHR022A/023A, 032A/033A, 042A/043A	—	—		1.1	
35	HRU: PRHR063A, 083A	—	—		2.2	
36	ADDITIONAL Refrigerant Charge Required (Sum of lines 1 – 35)					
37	Multi V 5 Outdoor Unit Factory Refrigerant Charge	37A	ARUM072*TE5	72k		14.3
		37B	ARUM096*TE5	96k		23.2
		37C	ARUM121*TE5	121k		23.2
		37D	ARUM144*TE5	144k		26.5
		37E	ARUM168*TE5	168k		26.5
		37F	ARUM192*TE5	192k		30.9
		37G	ARUM216*TE5	216k		37.5
		37H	ARUM241*TE5	241k		37.5
38	Total ODU FACTORY Refrigerant Charge (Sum of factory refrigerant charges for all ODUs in the system, lines 37A -37H)					
39	TOTAL SYSTEM CHARGE					
Sum of Additional Refrigerant Charge Required (line 36) and Total ODU Factory Refrigerant Charge (line 38)						

Introduction

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

REFRIGERANT CHARGE WORKSHEET



Multi V Water 5 System R410A Refrigerant Charge Calculator (lbs.)

MULTI V Ducted Indoor Unit Engineering Manual

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	—	—		0.015	
2	Linear feet of 3/8" liquid line tubing ²	—	—		0.041	
3	Linear feet of 1/2" liquid line tubing ²	—	—		0.079	
4	Linear feet of 5/8" liquid line tubing ²	—	—		0.116	
5	Linear feet of 3/4" liquid line tubing ²	—	—		0.179	
6	Linear feet of 7/8" liquid line tubing ²	—	—		0.238	
7	Linear feet of 1" liquid line tubing ²	—	—		0.323	
8	Standard + Art Cool Mirror	SJ, SK	5k to 15k		0.53	
9	Standard + Art Cool Mirror	SJ, SK	18k to 24k		0.62	
10	Standard	SV	30k to 36k		1.01	
11	Art Cool Gallery	SF	9k to 12k		0.22	
12	1-Way Cassette	TU	7k to 12k		0.44	
13	1-Way Cassette	TT	18k to 24k		0.64	
14	2-Way Cassette	TS	18k to 24k		0.75	
15	4-Way 2' x 2' Cassette	TR	5k to 7k		0.40	
16	4-Way 2' x 2' Cassette	TR	9k to 12k		0.55	
17	4-Way 2' x 2' Cassette	TQ	15k to 18k		0.71	
18	4-Way 3' x 3' Cassette	TN	7k to 24k		0.88	
19	4-Way 3' x 3' Cassette	TM	28k to 36k		1.08	
20	4-Way 3' x 3' Cassette	TM	42k to 48k		1.41	
21	Mid Static Ducted	MA, M1	7k to 24k		0.57	
22	High Static Ducted	M2	7k to 24k		0.77	
23	Mid Static Ducted	M2	28k to 42k		1.15	
24	Mid / High Static Ducted	M3	28k to 54k		1.35	
25	High Static Ducted	B8	36k to 96k		2.20	
26	Low Static Ducted, Low Static Ducted Bottom Return	L1	5k to 9k		0.31	
27	Low Static Ducted, Low Static Ducted Bottom Return	L2	12k to 18k		0.42	
28	Low Static Ducted, Low Static Ducted Bottom Return	L3	21k to 24k		0.55	
29	Vertical Air Handling Unit	NJ	12k to 30k		1.04	
30	Vertical Air Handling Unit	NJ	36k		1.57	
31	Vertical Air Handling Unit	NK	42k to 54k		2.00	
32	Floor Standing	CE (U)	7k to 15k		0.37	
33	Floor Standing	CF (U)	18k to 24k		0.82	
34	HRU: PRHR022A/023A, 032A/033A, 042A/043A	—	—		1.1	
35	HRU: PRHR063A, 083A	—	—		2.2	
36	ADDITIONAL Refrigerant Charge Required (Sum of lines 1 – 35)					
37	Water-Source Unit Factory Refrigerant Charge	ARW*072BAS5, ARW*096BAS5, ARW*121BAS5, ARW*144BAS5			7.7	
		ARW*072DAS5, ARW*096DAS5, ARW*121DAS5			7.7	
		ARW*144DAS5, ARW*192DAS5			9.9	
38	Total WSU FACTORY Refrigerant Charge (Sum of factory refrigerant charges for all WSUs in the system)					
39	TOTAL SYSTEM CHARGE					
	Sum of Additional Refrigerant Charge Required (line 36) and Total WSU Factory Refrigerant Charge (line 38)					

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



REFRIGERANT CHARGE WORKSHEET

Multi V S System R410A Refrigerant Charge Calculator (lbs.)

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	—	—		0.015	
2	Linear feet of 3/8" liquid line tubing ²	—	—		0.041	
3	Linear feet of 1/2" liquid line tubing ²	—	—		0.079	
4	Linear feet of 5/8" liquid line tubing ²	—	—		0.116	
5	Linear feet of 3/4" liquid line tubing ²	—	—		0.179	
6	Linear feet of 7/8" liquid line tubing ²	—	—		0.238	
7	Linear feet of 1" liquid line tubing ²	—	—		0.323	
8	Standard + Art Cool Mirror	SJ, SK	5k to 15k		0.53	
9	Standard + Art Cool Mirror	SJ, SK	18k to 24k		0.62	
10	Standard	SV	30k to 36k		1.01	
11	Art Cool Gallery	SF	9k to 12k		0.22	
12	1-Way Cassette	TU	7k to 12k		0.44	
13	1-Way Cassette	TT	18k to 24k		0.64	
14	2-Way Cassette	TS	18k to 24k		0.75	
15	4-Way 2' x 2' Cassette	TR	5k to 7k		0.40	
16	4-Way 2' x 2' Cassette	TR	9k to 12k		0.55	
17	4-Way 2' x 2' Cassette	TQ	15k to 18k		0.71	
18	4-Way 3' x 3' Cassette	TN	7k to 24k		0.88	
19	4-Way 3' x 3' Cassette	TM	28k to 36k		1.08	
20	4-Way 3' x 3' Cassette	TM	42k to 48k		1.41	
21	Mid Static Ducted	MA, M1	7k to 24k		0.57	
22	High Static Ducted	M2	7k to 24k		0.77	
23	Mid Static Ducted	M2	28k to 42k		1.15	
24	Mid / High Static Ducted	M3	28k to 54k		1.35	
25	High Static Ducted	B8	36k to 96k		2.20	
26	Low Static Ducted, Low Static Ducted Bottom Return	L1	5k to 9k		0.31	
27	Low Static Ducted, Low Static Ducted Bottom Return	L2	12k to 18k		0.42	
28	Low Static Ducted, Low Static Ducted Bottom Return	L3	21k to 24k		0.55	
29	Vertical Air Handling Unit	NJ	12k to 30k		1.04	
30	Vertical Air Handling Unit	NJ	36k		1.57	
31	Vertical Air Handling Unit	NK	42k to 54k		2.00	
32	Floor Standing	CE (U)	7k to 15k		0.37	
33	Floor Standing	CF (U)	18k to 24k		0.82	
34	HRU: PRHR022A/023A, 032A/ 033A, 042A/ 043A	—	—		1.1	
35	HRU: PRHR063A, 083A	—	—		2.2	
36	ADDITIONAL Refrigerant Charge Required (Sum of lines 1 – 35)					
37	Multi V S Unit Factory Refrigerant Charge	37A	ARUN024GSS4		4.0	
		37B	ARUN038GSS4		6.6	
		37C	ARUN048GSS4		6.6	
		37D	ARUN053GSS4		6.6	
		37E	ARUN060GSS4		7.7	
		37F	ARUB060GSS4		7.7	
	Multi V S with LGRED Unit Factory Refrigerant Charge	37G	ARUM036GSS5		7.7	
		37H	ARUM048GSS5		7.7	
38	TOTAL SYSTEM CHARGE					
Sum of Additional Refrigerant Charge Required (line 36) and Total ODU Factory Refrigerant Charge (from lines 37A through 37H)						

Introduction

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

CEILING-CONCEALED DUCTED HIGH STATIC



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- [Optional Accessories on page 52](#)

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

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
 - Ventilation (outside air)
 - Wi-Fi compatible
 - Auto fan
 - Leak detection
- *To enable Generation 4 features, outdoor unit DIP Switch No. 3 must be set to ON. Please refer to the Multi V IV, Multi V Water IV, Multi V S Engineering Manual for additional information.*

DUCTED HIGH STATIC



General Data

Table 1: Ducted High Static Indoor Unit General Data.

Model No.	ARNU073M2A4	ARNU093M2A4	ARNU123M2A4	ARNU153M2A4	ARNU183M2A4
<i>Cooling Mode Performance</i>					
Capacity (Btu/h)	7,500	9,600	12,300	15,400	19,100
Max Power Input ¹ (W)	430	430	430	430	430
L/M/H Power Input at Factory Default (W)	21 / 29 / 38	21 / 29 / 38	25 / 34 / 43	25 / 34 / 43	34 / 43 / 67
<i>Heating Mode Performance</i>					
Capacity (Btu/h)	8,500	10,900	13,600	17,100	21,500
Max Power Input ¹ (W)	430	430	430	430	430
L/M/H Power Input at Factory Default (W)	21 / 29 / 38	21 / 29 / 38	25 / 34 / 43	25 / 34 / 43	34 / 43 / 67
<i>Entering Mixed Air</i>					
Cooling Max. (°F WB)	76	76	76	76	76
Heating Min. (°F DB) ²	59	59	59	59	59
<i>Unit Data</i>					
Refrigerant Type ³	R410A	R410A	R410A	R410A	R410A
Refrigerant Control	EEV	EEV	EEV	EEV	EEV
Sound Power ⁴ dB(A) (H-M-L, @0.24" ESP)	42-41-41	42-41-41	42-41-41	42-42-41	44-42-42
Sound Pressure ⁵ dB(A) (H/M/L, @0.24" ESP)	38 / 37 / 36	38 / 38 / 36	38 / 38 / 36	38 / 38 / 36	39 / 38 / 37
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 ⁶ (No. x AWG)	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18
<i>Fan</i>					
Type	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco
Motor	1	1	1	1	1
Housing	2	2	2	2	2
Motor/Drive	Brushless Digitally Controlled / Direct				
Airflow Rate H / M / L (CFM) High Mode (Factory Set)	468 / 381 / 294	468 / 381 / 294	512 / 425 / 337	512 / 425 / 337	673 / 512 / 425
External Static Pressure (in. wg) High Mode (Factory Set)	0.24	0.24	0.24	0.24	0.24
<i>Piping</i>					
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 www.ahridirectory.org.

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

²Low ambient performance with LGRED[®] heat technology is included in Multi V 5 Air Source Units produced after February 2019.

³Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

⁴Sound Power level is measured using rated conditions, and tested in a reverberation room per AHRI 260.

⁵Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

⁶All 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.

Table 2: Ducted High Static Indoor Unit General Data.

Model No.	ARNU243M2A4	ARNU283M3A4
Cooling Mode Performance		
Capacity (Btu/h)	24,200	28,000
Max Power Input ¹ (W)	430	650
L/M/H Power Input at Factory Default (W)	34 / 43 / 67	60 / 83 / 109
Heating Mode Performance		
Capacity (Btu/h)	27,300	31,500
Max Power Input ¹ (W)	450	650
L/M/H Power Input at Factory Default (W)	34 / 43 / 67	60 / 83 / 109
Entering Mixed Air		
Cooling Max. (°F WB)	76	76
Heating Min. (°F DB) ²	59	59
Unit Data		
Refrigerant Type ³	R410A	R410A
Refrigerant Control	EEV	EEV
Sound Power ⁴ dB(A) (H-M-L, @0.24" ESP)	44-42-42	51-50-50
Sound Pressure ⁵ dB(A) (H/M/L, @0.24" ESP)	39 / 38 / 37	40 / 39 / 37
Net Unit Weight (lbs.)	82.9	96.1
Shipping Weight (lbs.)	95.5	105.4
Communication Cable ⁶ (No. x AWG)	2 x 18	2 x 18
Fan		
Type	Sirocco	Sirocco
Motor	1	1
Housing	2	2
Motor/Drive	Brushless Digitally Controlled / Direct	
Airflow Rate H/M/L (CFM) High Mode (Factory Set)	673 / 512 / 425	1,250 / 1,017 / 837
External Static Pressure (in. wg) High Mode (Factory Set)	0.24	0.23
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 www.ahridirectory.org.
¹Max. power input is rated at maximum setting value.
²Low ambient performance with LGRED® heat technology is included in Multi V 5 Air Source Units produced after February 2019.

³Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.
⁴Sound Power level is measured using rated conditions, and tested in a reverberation room per AHRI 260.
⁵Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.
⁶All 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.

Ducted High Static

DUCTED HIGH STATIC



General Data

Table 3: Ducted High Static Indoor Unit General Data.

Model No.	ARNU363B8A4	ARNU423B8A4	ARNU483B8A4	ARNU763B8A4	ARNU963B8A4
Cooling Mode Performance					
Capacity (Btu/h)	36,200	42,000	48,100	76,400	95,900
Max. Power Input ¹ (W)	800	800	800	800	800
L/M/H Power Input at Factory Default (W)	403 / 420 / 478	465 / 497 / 528	482 / 500 / 538	505 / 505 / 765	750 / 750 / 800
Heating Mode Performance					
Capacity (Btu/h)	40,600	43,800	51,200	86,000	107,500
Max. Power Input ¹ (W)	800	800	800	800	800
L/M/H Power Input at Factory Default (W)	403 / 420 / 478	465 / 497 / 528	482 / 500 / 538	505 / 505 / 765	750 / 750 / 800
Entering Mixed Air					
Cooling Max. (°F WB)	76	76	76	76	76
Heating Min. (°F DB) ²	59	59	59	59	59
Unit Data					
Refrigerant Type ³	R410A	R410A	R410A	R410A	R410A
Refrigerant Control	EEV	EEV	EEV	EEV	EEV
Sound Power ⁴ dB(A) (H-M-L) (ESP)	54-53-52	55-54-53	55-54-53	57-57-57	58-57-57
Sound Pressure ⁵ dB(A) (H / M / L)	46 / 45 / 42	47 / 46 / 43	47 / 46 / 44	50 / 48 / 48	52 / 50 / 50
Net Unit Weight (lbs.)	192	192	192	192	192
Shipping Weight (lbs.)	222	222	222	222	222
Communication Cable ⁶ (No. x AWG)	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18
Fan					
Type	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco
Motor	2	2	2	2	2
Housing	2	2	2	2	2
Motor/Drive	Brushless Digitally Controlled / Direct				
Airflow Rate H / M / L (CFM) High Mode (Factory Set)	1,730 / 1,317 / 1,066	1,914 / 1,458 / 1,123	2,019 / 1,518 / 1,200	2,260 / 1,766 / 1,766	2,542 / 2,260 / 2,260
External Static Pressure (in. wg) High Mode (Factory Set)	0.70	0.70	0.70	0.87	0.87
Piping					
Liquid Line (in., O.D.)	3/8 Brazed	3/8 Brazed	3/8 Brazed	3/8 Brazed	3/8 Brazed
Vapor Line (in., O.D.)	3/4 Brazed	3/4 Brazed	3/4 Brazed	3/4 Brazed	7/8 Brazed
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 www.ahridirectory.org.

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

²Low ambient performance with LGRED[®] heat technology is included in Multi V 5 Air Source Units produced after February 2019.

³Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

⁴Sound Power level is measured using rated conditions, and tested in a reverberation room per AHRI 260.

⁵Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

⁶All 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.

Table 4: Ducted High Static Indoor Unit 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
M2 Units										
ARNU073M2A4	208-230	2.9	15	2.3	60	208-230	1	430	430	21 / 29 / 38
ARNU093M2A4		2.9		2.3				430	430	21 / 29 / 38
ARNU123M2A4		2.9		2.3				430	430	25 / 34 / 43
ARNU153M2A4		2.9		2.3				430	430	25 / 34 / 43
ARNU183M2A4		2.9		2.3				430	430	34 / 43 / 67
ARNU243M2A4		2.9		2.3				430	430	34 / 43 / 67
M3 Units										
ARNU283M3A4	208-230	3.1	15	2.5	60	208-230	1	650	650	60 / 83 / 109
B8 Units										
ARNU363B8A4	208-230	6.5	15	5.2	60	208-230	1	800	800	403 / 420 / 478
ARNU423B8A4		6.5		5.2				800	800	465 / 497 / 528
ARNU483B8A4		6.5		5.2				800	800	482 / 500 / 538
ARNU763B8A4		6.5		5.2				800	800	505 / 505 / 765
ARNU963B8A4		6.5		5.2				800	800	750 / 750 / 800

MCA : Minimum Circuit Ampacity.

MOP : Maximum Overcurrent Protection.

Units are suitable for use on an electrical system where voltage supplied to unit terminals is within the listed range limits.

Select wire size based on the larger MCA value.

Instead of fuse, use the circuit breaker.

Max. power input is rated at maximum setting value.

DUCTED HIGH STATIC



External Dimensions

ARNU073~243M2A4 Units

Figure 2: ARNU073~243M2A4 Dimensions.

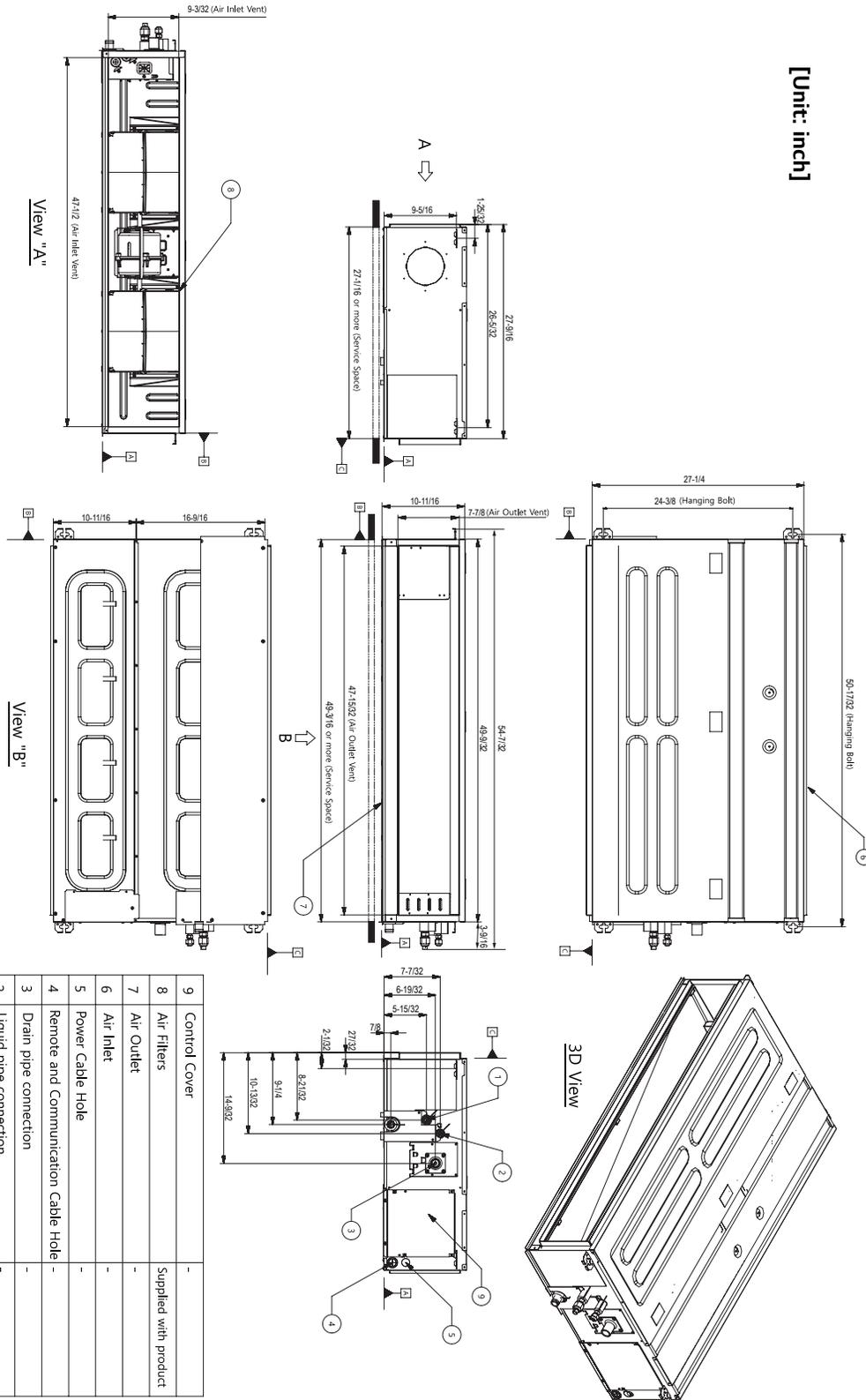
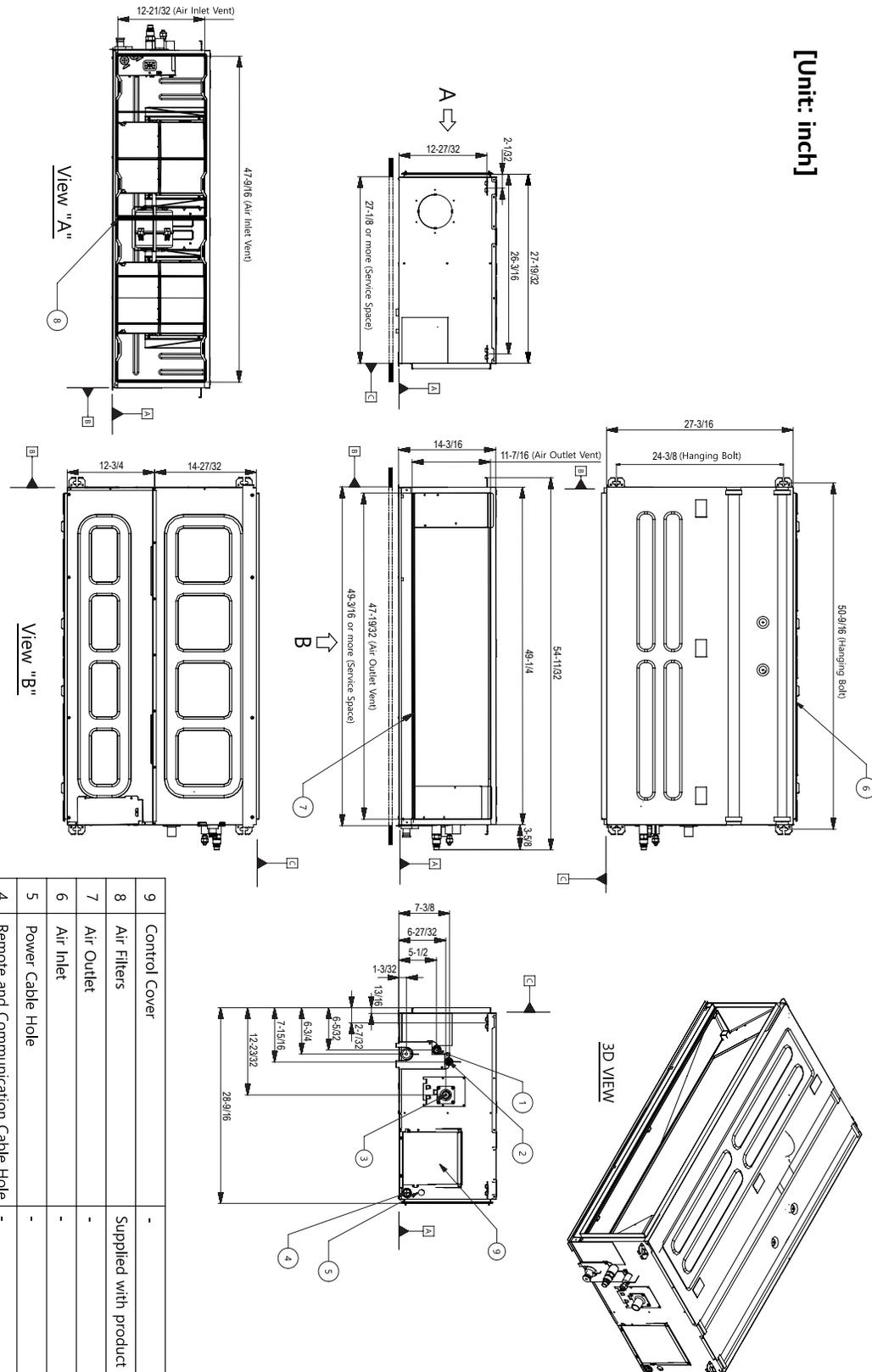


Figure 3: ARNU283M3A4 Dimensions.



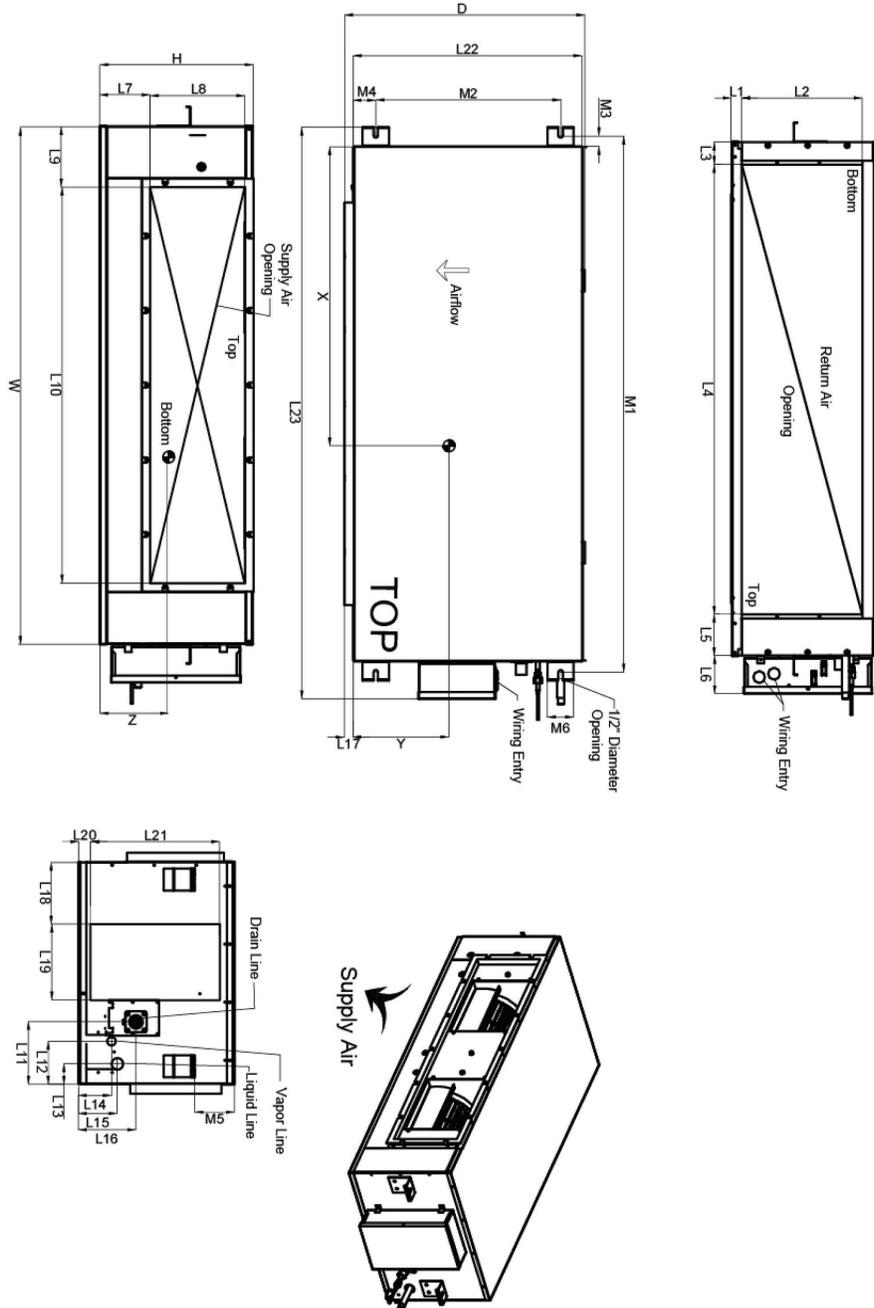
DUCTED HIGH STATIC



External Dimensions

B8 Units

Figure 4: ARNU363~963B8A4 Dimensions.



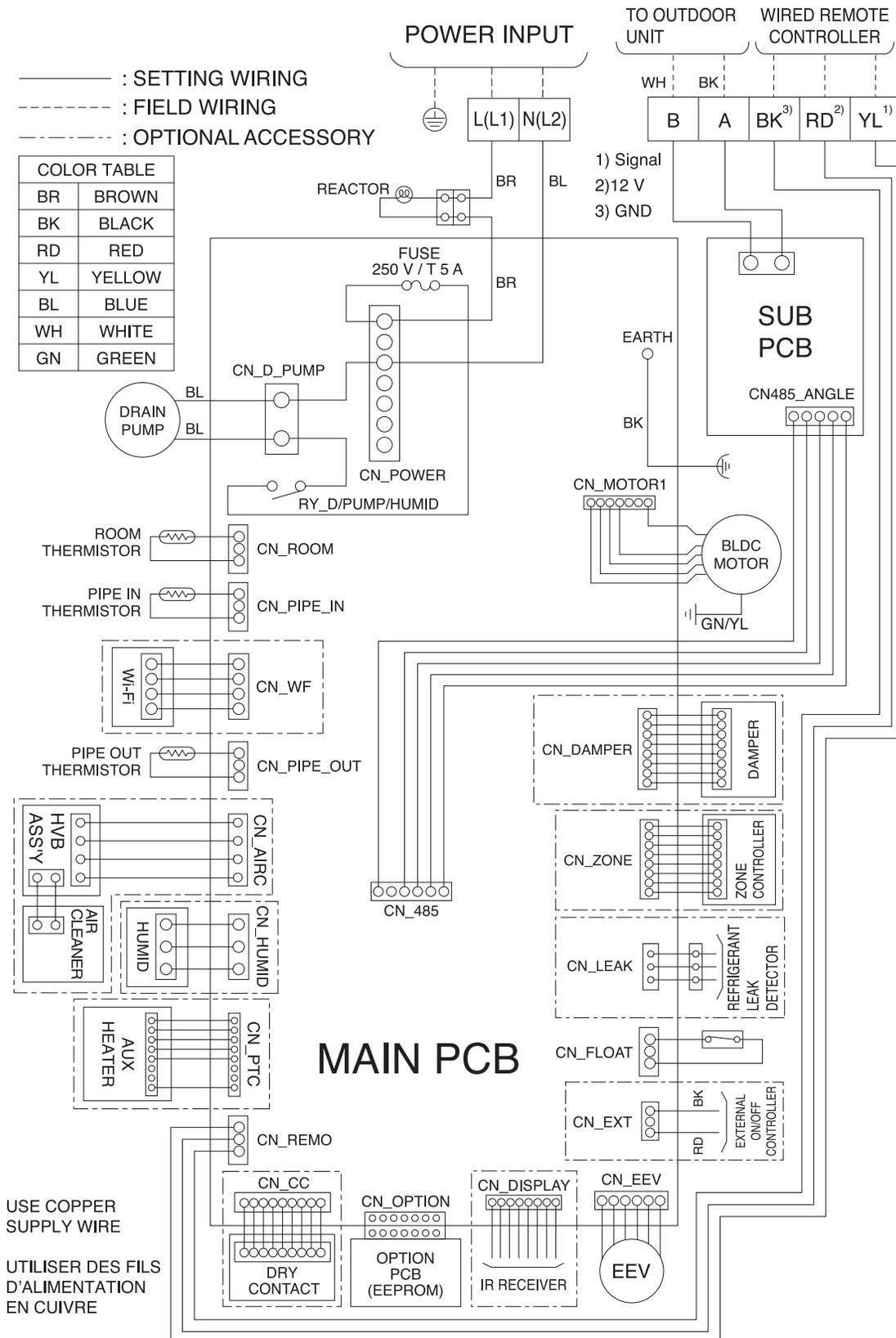
W	61 1/2"
D	28 5/8"
H	18 1/8"
L1	2 3/8"
L2	15 7/16"
L3	2"
L4	55"
L5	4 9/16"
L6	4 1/2"
L7	6"
L8	12 1/2"
L9	6 3/4"
L10	44 1/4"
L11	7 5/8"
L12	5 1/4"
L13	2 1/2"
L14	4 3/4"
L15	5 1/2"
L16	6 7/8"
L17	1 3/16"
L18	7 13/16"
L19	9 3/16"
L20	1 5/16"
L21	15 3/8"
L22	27 1/8"
L23	68 1/4"
M1	63 13/16"
M2	22"
M3	1 3/16"
M4	2 1/2"
M5	4 1/8"
M6	3 3/16"

Center of Gravity	
X	31 1/16"
Y	18 1/8"
Z	8 3/4"

Note - All dimensions have a tolerance of ±0.25 in.
 = Center of gravity



Figure 5: ARNU073~243M2A4 Wiring Diagram.



DUCTED HIGH STATIC



Electrical Wiring Diagram

ARNU073~243M2A4 Units

Table 5: ARNU073~243M2A4 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-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

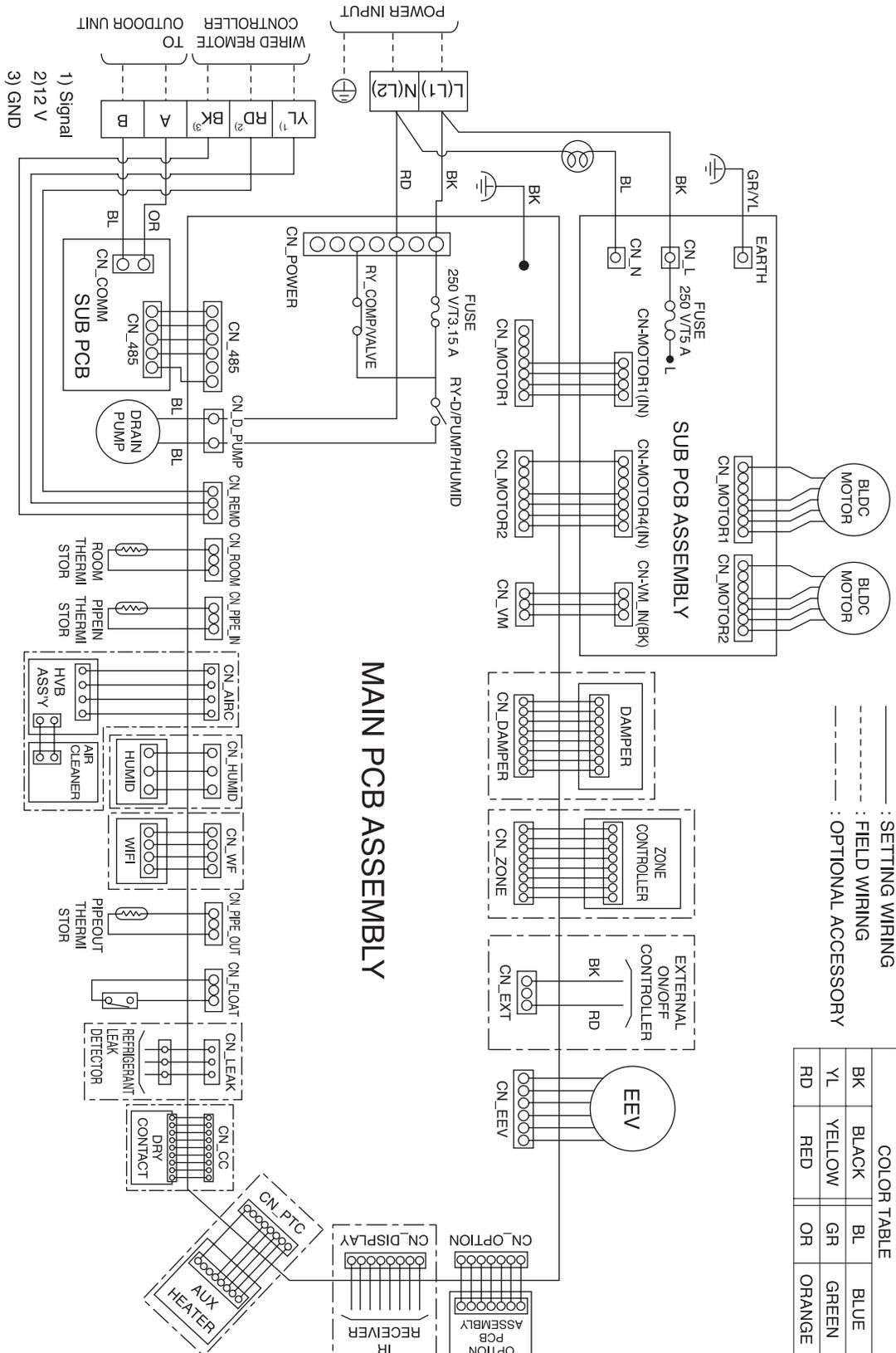
Table 6: ARNU073~243M2A4 Unit DIP Switch Settings.

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.

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

Figure 6: ARNU283M3A4 Wiring Diagram.



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Electrical Wiring Diagram

ARNU283M3A4 Unit

Table 7: ARNU283M3A4 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

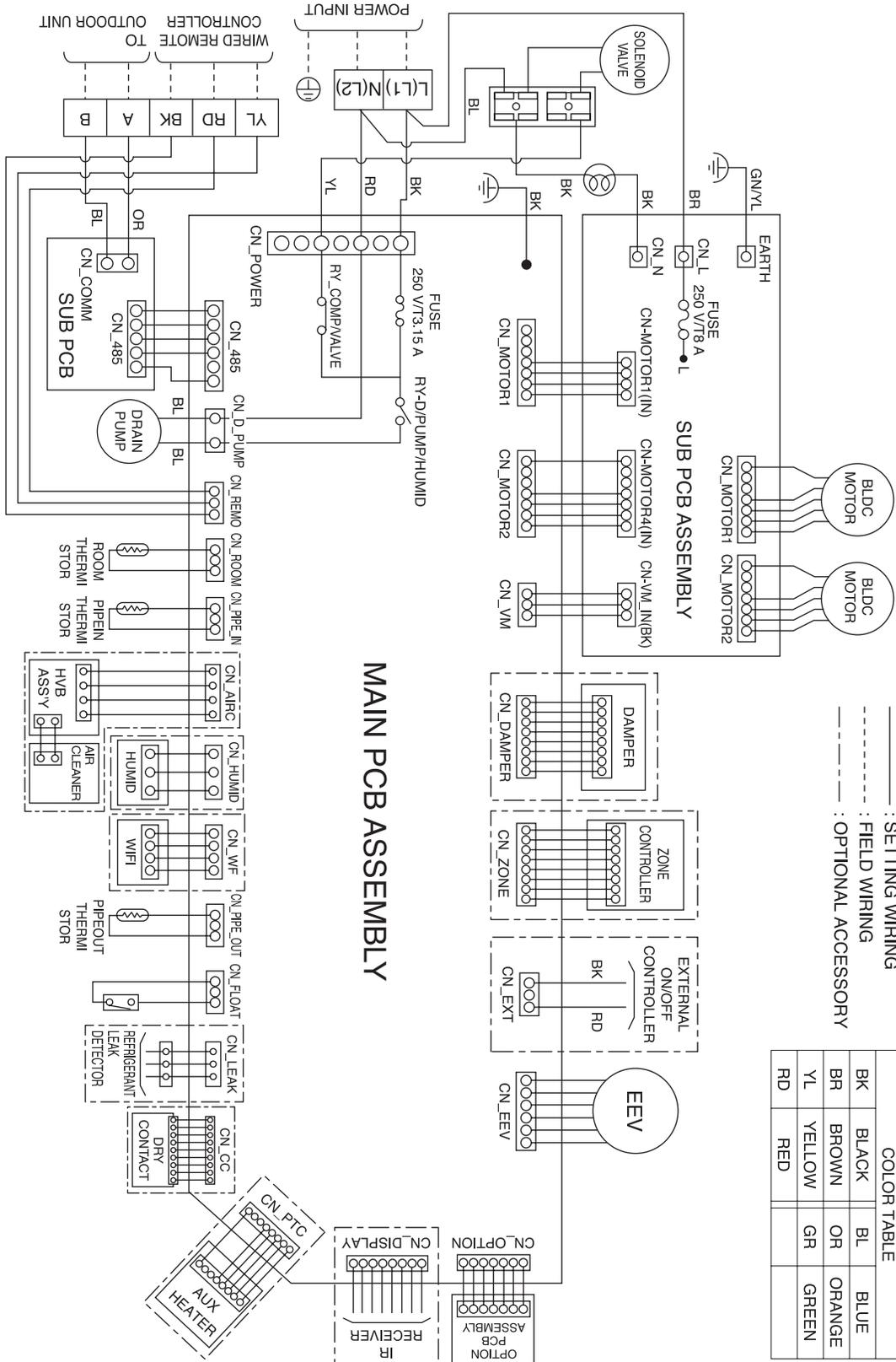
Table 8: ARNU283M3A4 Unit DIP Switch Settings.

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.**

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

Figure 7: ARNU363~963B8A4 Wiring Diagram.



DUCTED HIGH STATIC



Electrical Wiring Diagram

B8 Units

Table 9: 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 10: 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.

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

Figure 8: M2, M3 Unit Refrigerant Flow Diagram.

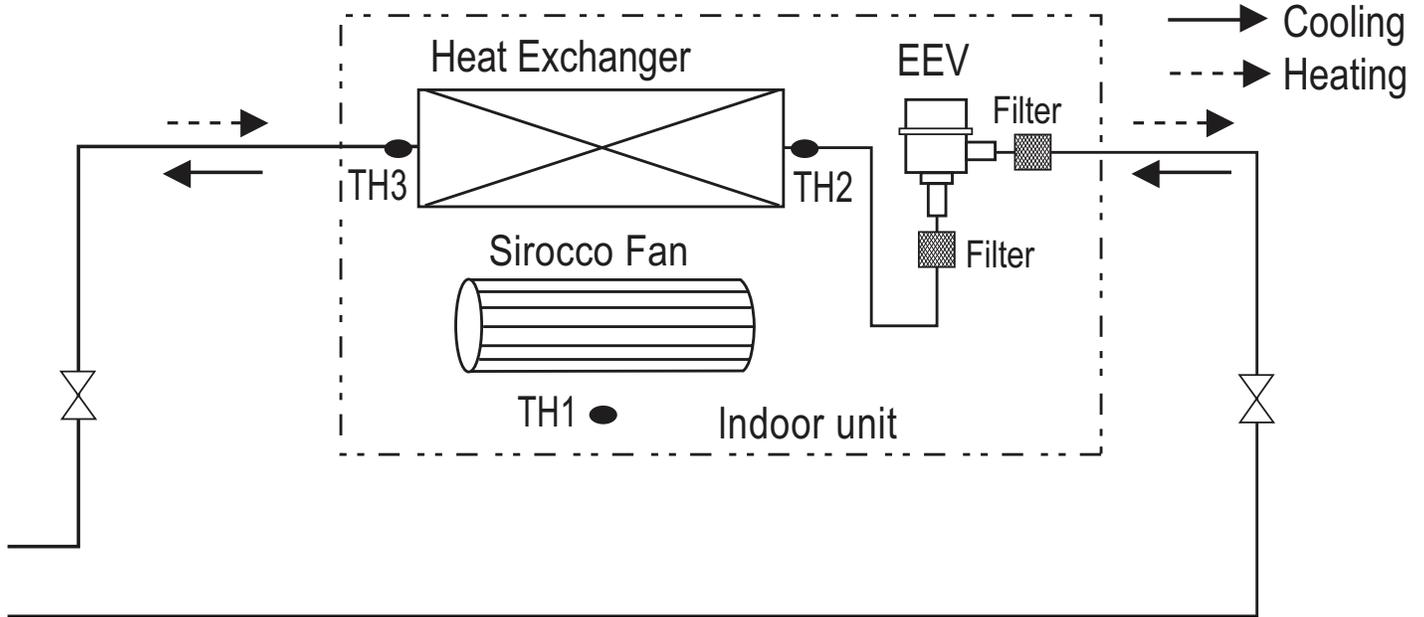


Table 11: M2, M3 Unit Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
M2 Units		
ARNU073M2A4	1/4 Flare	1/2 Flare
ARNU093M2A4	1/4 Flare	1/2 Flare
ARNU123M2A4	1/4 Flare	1/2 Flare
ARNU153M2A4	1/4 Flare	1/2 Flare
ARNU183M2A4	1/4 Flare	1/2 Flare
ARNU243M2A4	3/8 Flare	5/8 Flare
M3 Units		
ARNU283M3A4	3/8 Flare	5/8 Flare

Table 12: M2, M3 Frame Thermistors.

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

DUCTED HIGH STATIC

Refrigerant Flow Diagram B8 Units

Figure 9: B8 Unit Refrigerant Flow Diagram.

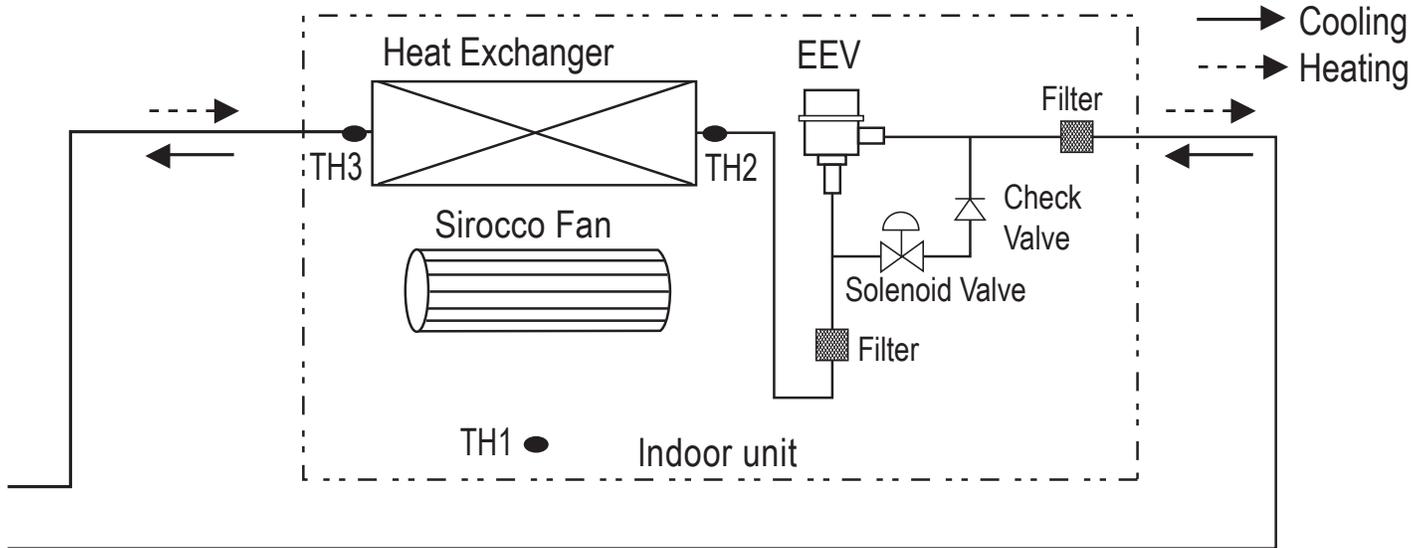


Table 13: B8 Unit Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
ARNU363B8A4	3/8 Brazed	3/4 Brazed
ARNU423B8A4		
ARNU483B8A4		
ARNU763B8A4		
ARNU963B8A4		7/8 Brazed

Table 14: B8 Unit Thermistors.

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

ARNU073~243M2A4 Unit External Static Pressure and Air Flow Table

Table 15: ARNU073~243M2A4 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

- All static pressure air flow rates are listed in CFM.
- The tables above show the correlation between air flow rates and external static pressure.
- The tables above show the available external static pressure range.

Note:

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.

DUCTED HIGH STATIC



External Static Pressure and Air Flow Tables

ARNU283M3A4 Unit External Static Pressure and Air Flow Table

Table 16: ARNU283M3A4 Unit 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 tables above show the correlation between air flow rates and external static pressure.
- The tables above show the available external static pressure range.

Note:
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.

B8 Unit External Static Pressure and Air Flow Table

Table 17: B8 Unit 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 tables above show the correlation between air flow rates and external static pressure.
- The tables above show the available external static pressure range.

Note:

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.

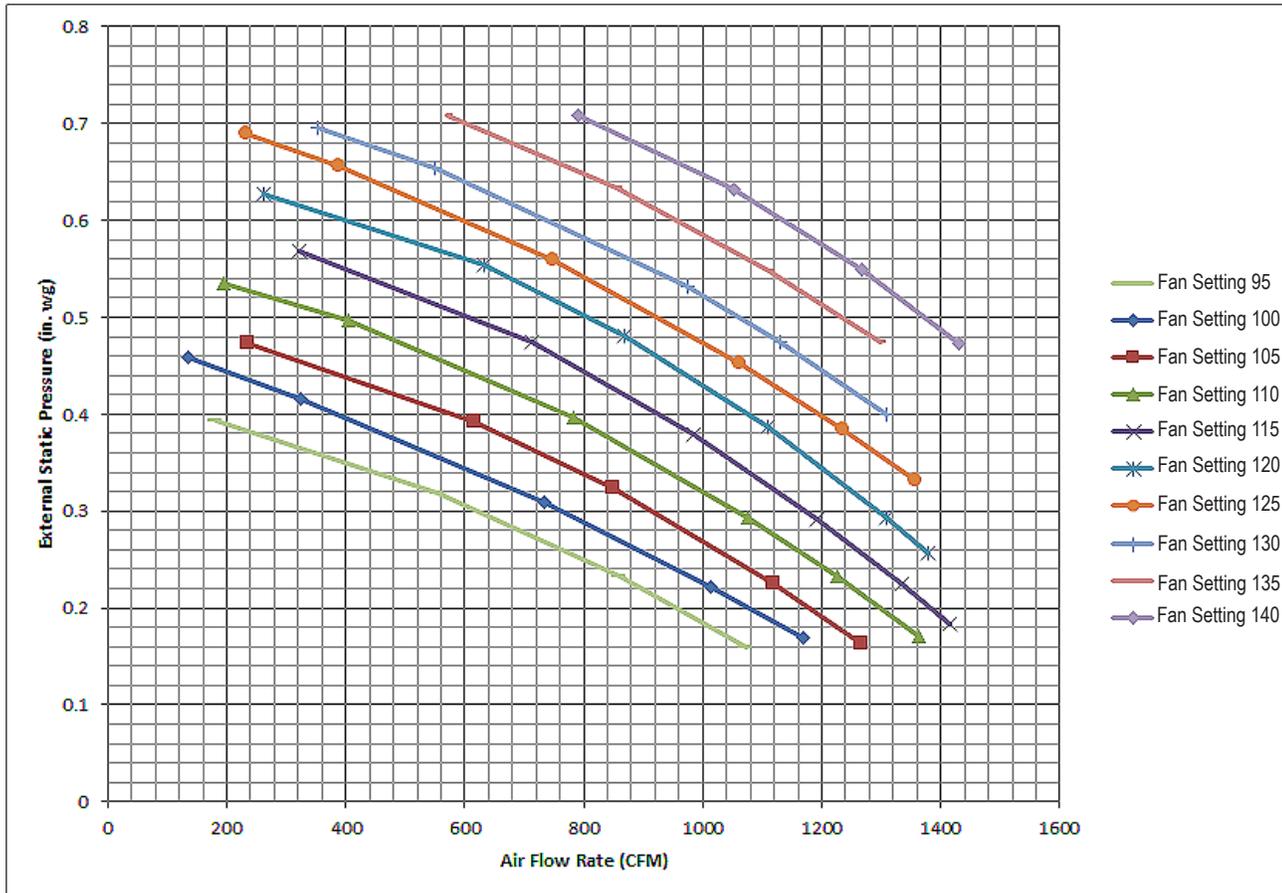
DUCTED HIGH STATIC



External Static Pressure and Air Flow Charts

ARNU073~243M2A4 Unit External Static Pressure and Air Flow Chart

Figure 10: ARNU073~243M2A4 External Static Pressure and Air Flow Chart.

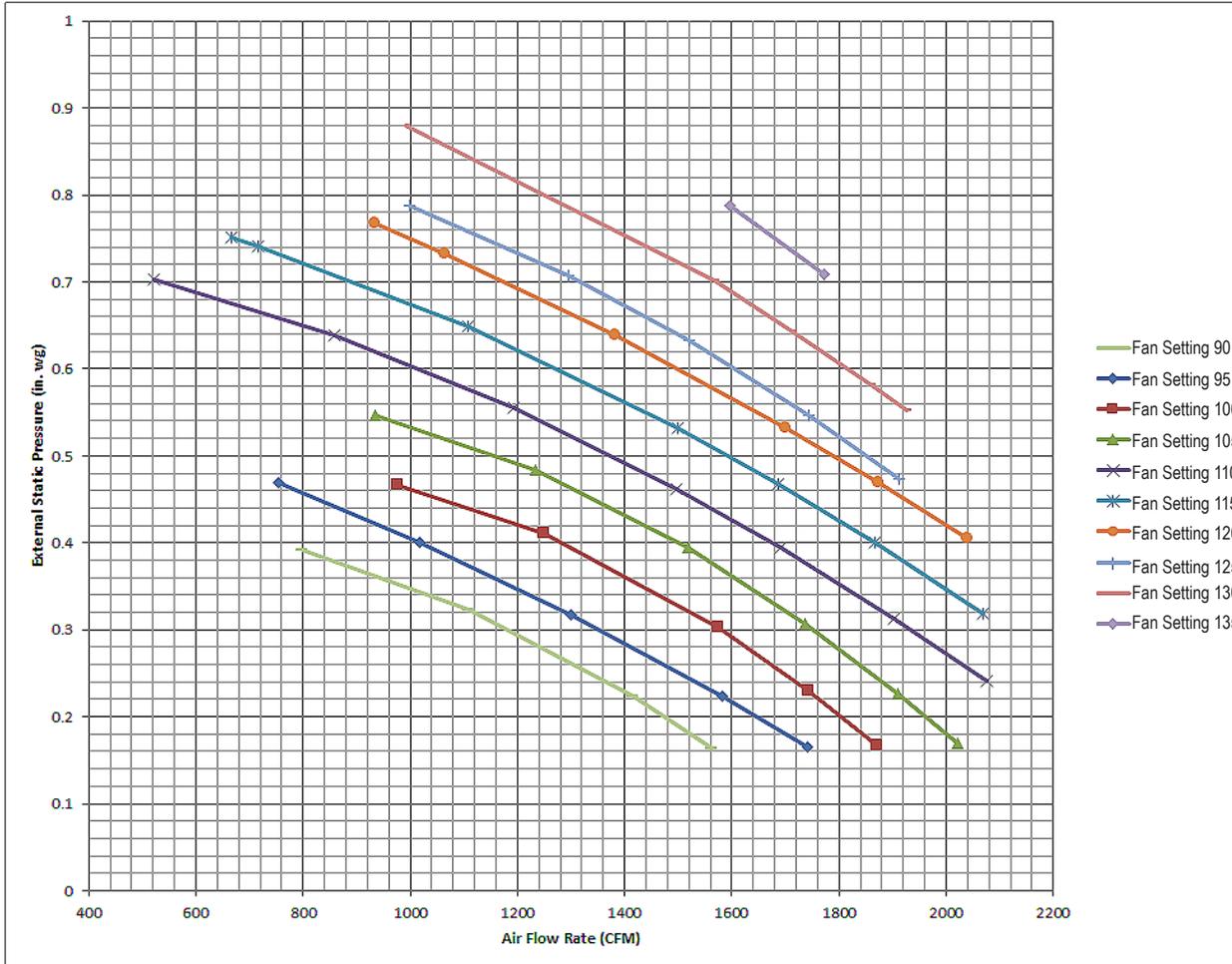


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ARNU283M3A4 Unit External Static Pressure and Air Flow Chart

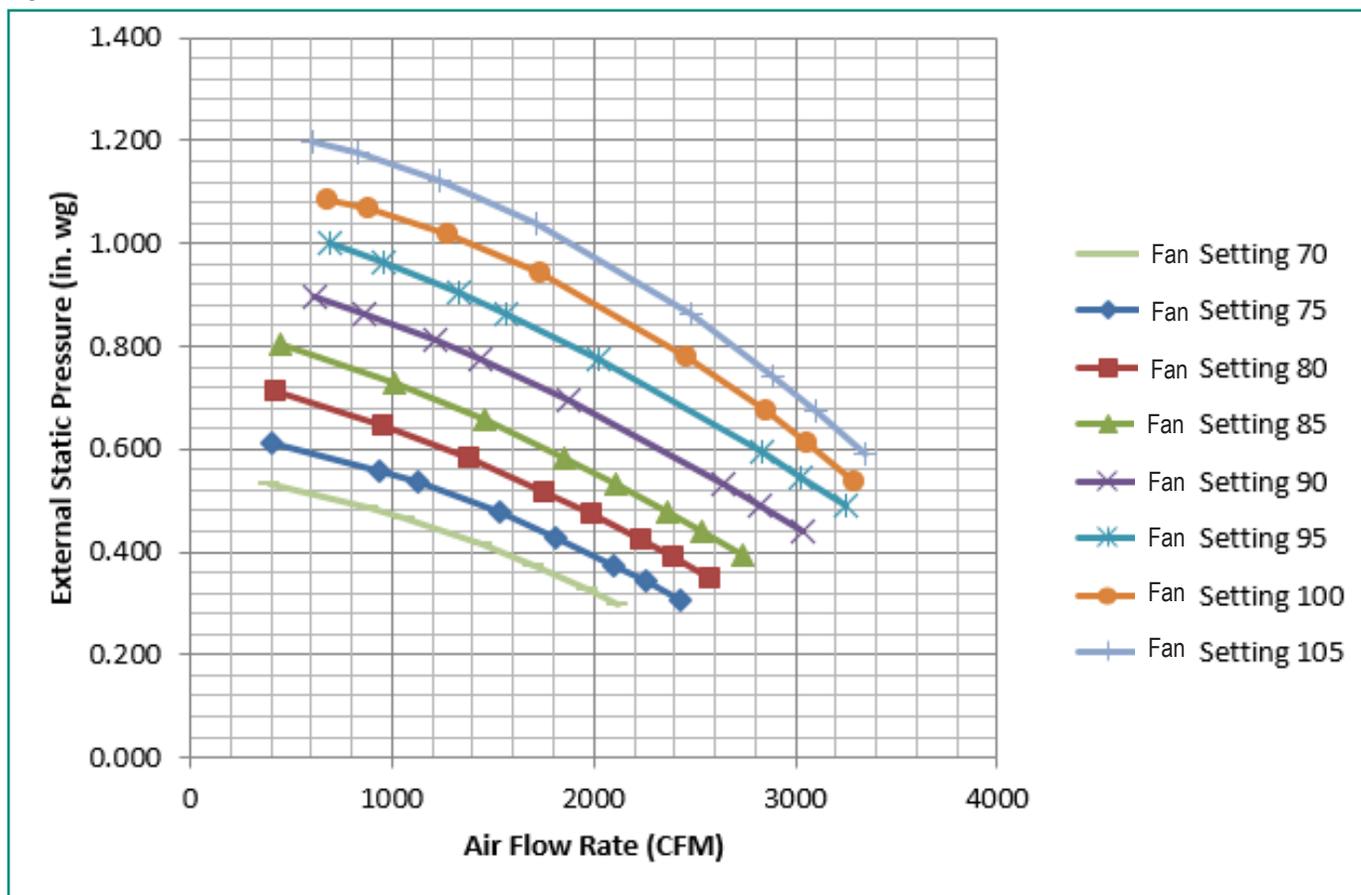
Figure 11: ARNU283M3A4 Unit External Static Pressure and Air Flow Chart.



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B8 Units External Static Pressure and Air Flow Chart

Figure 12: B8 Unit External Static Pressure and Air Flow Chart.



External Static Pressure Ranges for ARNU073~243M2A4 units

Table 18: M2 Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode	Setting Value	Standard ESP (in wg)	CFM	Min. ESP (in wg)	Max. ESP (in wg)	
ARNU073M2A4	7.0	High (Factory Set)	High	83	0.24	468	0.16	0.71
			Mid	81		381		
			Low	79		294		
ARNU093M2A4	9.0	High (Factory Set)	High	83	0.24	468	0.16	0.71
			Mid	81		381		
			Low	79		294		
ARNU123M2A4	12.0	High (Factory Set)	High	84	0.24	512	0.16	0.71
			Mid	82		425		
			Low	80		337		
ARNU153M2A4	15.0	High (Factory Set)	High	84	0.24	512	0.16	0.71
			Mid	82		425		
			Low	80		337		
ARNU183M2A4	18.0	High (Factory Set)	High	89	0.24	673	0.16	0.71
			Mid	84		512		
			Low	82		425		
ARNU243M2A4	24.0	High (Factory Set)	High	89	0.24	673	0.16	0.71
			Mid	84		512		
			Low	82		425		

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External Static Pressure Ranges for ARNU283M3A4 unit

Table 19: M3 Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode	Setting Value	Standard ESP (in wg)	CFM	Min. ESP (in wg)	Max. ESP (in wg)
ARNU283M3A4	28.0	High (Factory Set)	High	86	1250	0.16	0.79
			Mid	82	1017		
			Low	78	837		

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

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External Static Pressure Ranges

External Static Pressure Ranges for B8 units

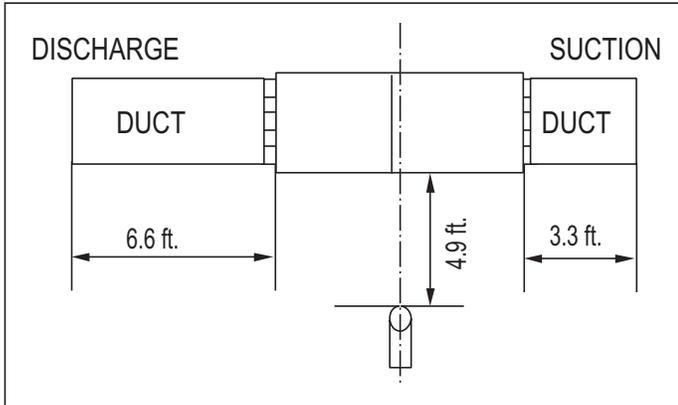
Table 20: B8 Unit External Static Pressure Ranges.

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	
ARNU363B8A4	36.2	High (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	58	72	81	84	87	87	90	94
ARNU423B8A4	42	High (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	58	72	81	85	87	91	94	98
ARNU483B8A4	48.1	High (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	60	73	81	86	88	91	95	99
ARNU763B8A4	76.4	High (Factory Set)	Hi	2260	67	76	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
ARNU963B8A4	95.9	High (Factory Set)	Hi	2542	73	80	86	91	98	103	*105	*105	*105
			Mid	2260	67	76	82	87	94	99	102	105	*105
			Low	2260	67	76	82	87	94	99	102	105	*105

The table above show the available E.S.P. range.

* Air flow will decrease according to table.

Figure 13: 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.

Sound Pressure for ARNU073~243M2A4 Units

Table 21: M2 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
ARNU073M2A4	32-31-29	33-33-32	38-37-36	42-42-41
ARNU093M2A4	32-31-29	33-33-32	38-38-36	42-42-41
ARNU123M2A4	32-32-29	34-33-32	38-38-36	43-42-41
ARNU153M2A4	32-32-29	34-33-32	38-38-36	43-42-41
ARNU183M2A4	33-32-32	34-34-33	39-38-37	44-43-42
ARNU243M2A4	33-32-32	34-34-33	39-38-37	44-43-42

Sound Pressure for ARNU283M3A4 Unit

Table 22: M3 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
ARNU283M3A4	38-37-33	39-37-35	40-39-37	46-46-44

Sound Pressure for B8 Units

Table 23: B8 Indoor Unit Sound Pressure Levels.

Model	Sound Pressure Levels [dB(A), H-M-L]	
	External Static Pressure [in wg]	
	0.70	0.86
ARNU363B8A4	46-45-42	
ARNU423B8A4	47-46-43	
ARNU483B8A4	47-46-44	
ARNU763B8A4		50-48-48
ARNU963B8A4		52-50-50

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Acoustic Data

Sound Power Levels

Sound Power for ARNU073~243M2A4 Units

Table 24: Ducted High Static Indoor Unit Sound Power Levels.

Model	Sound Power Levels [dB(A), H-M-L]			
	External Static Pressure [in wg]			
	0.16	0.20	0.24	0.71
ARNU073M2A4	50-49-48	46-46-46	42-41-41	55-55-54
ARNU093M2A4	50-49-48	46-46-46	42-41-41	55-55-54
ARNU123M2A4	50-49-48	46-46-46	42-42-41	57-55-53
ARNU153M2A4	50-49-48	46-46-46	42-42-41	57-55-53
ARNU183M2A4	49-48-47	46-46-46	44-42-42	59-57-53
ARNU243M2A4	49-48-47	46-46-46	44-42-42	59-57-53

- 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 AHRI 260 standards.
- Sound level will vary depending on a range of factors such as construction (acoustic absorption coefficient) of particular area in which the equipment is installed.
- Reference acoustic intensity: 0dB = 10E-6μW/m²

Sound Power for ARNU283M3A4 Unit

Table 25: Ducted High Static Indoor Unit Sound Power Levels.

Model	Sound Power Levels [dB(A), H-M-L]			
	External Static Pressure [in wg]			
	0.16	0.20	0.24	0.79
ARNU283M3A4	50-49-47	53-52-51	51-50-50	57-57-57

Sound Power for B8 Units

Table 26: Ducted High Static Indoor Unit Sound Power Levels.

Model	Sound Power Levels [dB(A), H-M-L]	
	External Static Pressure [in wg]	
	0.70	0.86
ARNU363B8A4	54-53-52	
ARNU423B8A4	55-54-53	
ARNU483B8A4	55-54-53	
ARNU763B8A4		57-57-57
ARNU963B8A4		58-57-57

Sound Power @0.16 ESP

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
ARNU073M2A4	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
ARNU093M2A4	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
ARNU123M2A4	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
ARNU153M2A4	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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Acoustic Data

Sound Power Data for ARNU073~243M2A4 Units

Sound Power @0.16 ESP, continued

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
ARNU183M2A4	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
ARNU243M2A4	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

Sound Power @0.20 ESP

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
ARNU073M2A4	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
ARNU093M2A4	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
ARNU123M2A4	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
ARNU153M2A4	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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Acoustic Data

Sound Power Data for ARNU073~243M2A4 Units

Sound Power @0.20 ESP, continued

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
ARNU183M2A4	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
ARNU243M2A4	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

Sound Power @0.24 ESP

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
ARNU073M2A4	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
ARNU093M2A4	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
ARNU123M2A4	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
ARNU153M2A4	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 Data for ARNU073~243M2A4 Units

Sound Power @0.24 ESP, continued

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
ARNU183M2A4	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
ARNU243M2A4	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

Sound Power @0.71 ESP

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	
ARNU073M2A4	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	
ARNU093M2A4	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	
ARNU123M2A4	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	
ARNU153M2A4	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	

Ducted High Static

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Acoustic Data

Sound Power Data for ARNU073~243M2A4 Units

Sound Power @0.71 ESP, continued

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
ARNU183M2A4	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
ARNU243M2A4	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

Sound Power Data for ARNU283M3A4 Unit

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	
ARNU283M3A4	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	

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	
ARNU283M3A4	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	

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	
ARNU283M3A4	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	

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	
ARNU283M3A4	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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Acoustic Data

Sound Power Data for B8 Units

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	
ARNU363B8A4	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	
ARNU423B8A4	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	
ARNU483B8A4	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	
ARNU763B8A4	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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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	
ARNU963B8A4	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	

DUCTED HIGH STATIC



Cooling Capacity Table

Cooling Capacity for High Static M2 Units

Table 27: Ducted High Static 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
ARNU073M2A4 / 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
ARNU093M2A4 / 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
ARNU123M2A4 / 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
ARNU153M2A4 / 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
ARNU183M2A4 / 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
ARNU243M2A4 / 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

Cooling Capacity for High Static M3 Unit

Table 28: Ducted High Static 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
ARNU283M3A4 / 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

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 www.ahridirectory.org.
 For outdoor unit performance data, see the respective outdoor unit performance data manuals on <https://lghvac.com/commercial>.

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

Cooling Capacity for High Static B8 Units

Table 29: Ducted High Static 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
ARNU363B8A4 / 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
ARNU423B8A4 / 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
ARNU483B8A4 / 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
ARNU763B8A4 / 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
ARNU963B8A4 / 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 www.ahridirectory.org.
 For outdoor unit performance data, see the respective outdoor unit performance data manuals on <https://lghvac.com/commercial>.

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

DUCTED HIGH STATIC



Heating Capacity Table

Heating Capacity for High Static M2 Units

Table 30: Ducted High Static 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
ARNU073M2A4 / 7.5	47	43	9.5	9.4	9.4	8.9	8.5	8.3	7.8	7.4
ARNU093M2A4 / 9.6	47	43	12.2	12.1	12.0	11.5	10.9	10.6	10.0	9.5
ARNU123M2A4 / 12.3	47	43	15.2	15.1	15.0	14.3	13.6	13.2	12.5	11.9
ARNU153M2A4 / 15.4	47	43	19.2	19.0	18.8	18.0	17.1	16.6	15.7	15.0
ARNU183M2A4 / 19.1	47	43	24.1	23.9	23.7	22.6	21.5	20.9	19.8	18.8
ARNU243M2A4 / 24.2	47	43	30.6	30.3	30.0	28.7	27.3	26.5	25.1	23.9

Heating Capacity for High Static M3 Unit

Table 31: Ducted High Static 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
ARNU283M3A4 / 28.0	47	43	35.3	35.0	34.7	33.1	31.5	30.6	29.0	27.6

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 www.ahridirectory.org.

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

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

Heating Capacity for High Static B8 Units

Table 32: Ducted High Static Unit Heating Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp.		Indoor Air Temperature (°F DB)							
	°F DB	°F WB	59	61	64	67	70	73	76	80
			TC	TC	TC	TC	TC	TC	TC	TC
			MBh	MBh	MBh	MBh	MBh	MBh	MBh	MBh
ARNU363B8A4 / 36.2	47	43	45.5	45.1	44.7	42.6	40.6	39.4	37.4	35.5
ARNU423B8A4 / 42.0	47	43	49.1	48.6	48.2	46.0	43.8	42.5	40.3	38.3
ARNU483B8A4 / 48.1	47	43	57.3	56.8	56.3	53.8	51.2	49.7	47.1	44.8
ARNU763B8A4 / 76.4	47	43	96.3	95.5	94.6	90.3	86.0	83.4	79.1	75.3
ARNU963B8A4 / 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 www.ahridirectory.org.

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

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

DUCTED HIGH STATIC



Optional Accessories

Table 33: Optional Accessories for Ducted High Static Indoor Units.

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.

CEILING-CONCEALED DUCTED MID STATIC



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DUCTED MID STATIC



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.

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

Figure 14: Convertible Mid Static Ducted Indoor Unit (MA).



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 76°F. Significant airflow is generated when pipe temperature reaches 80°F. In lieu of factory return air thermistor, screw terminals on the microprocessor circuit board accommodate various models of wall-mounted local controllers and/or a wall-mounted remote temperature sensor. The unit microprocessor is capable of accepting 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 fins per inch.

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
- Ventilation (outside air)
- Wi-Fi compatible
- Auto fan
- Leak detection

Figure 15: Mid Static Ducted Indoor Unit (M1).



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

CONVERTIBLE MID STATIC DUCTED



General Data

Table 34: Convertible Mid Static Ducted (MA Frame) Indoor Unit General Data.

Model No.	ARNU073MAA4	ARNU093MAA4	ARNU123MAA4	ARNU153MAA4	ARNU183MAA4	ARNU243MAA4
<i>Cooling Mode Performance</i>						
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 Input at Factory Default (W)	47 / 36 / 30	48 / 39 / 32	56 / 46 / 38	81 / 64 / 56	102 / 76 / 66	110 / 89 / 70
<i>Heating Mode Performance</i>						
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 Input at Factory Default (W)	47 / 36 / 30	48 / 39 / 32	56 / 46 / 38	81 / 64 / 56	102 / 76 / 66	110 / 89 / 70
<i>Entering Mixed Air</i>						
Cooling Max. (°F WB)	76	76	76	76	76	76
Heating Min. (°F DB) ²	59	59	59	59	59	59
<i>Unit Data</i>						
Refrigerant Type ³	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant Control	EEV	EEV	EEV	EEV	EEV	EEV
Sound Power ⁴ dB(A) Max.	44	44	47	51	54	57
Sound Pressure ⁵ dB(A) (H/M/L, @0.24" ESP)	28 / 27 / 25	28 / 27 / 26	31 / 29 / 28	33 / 31 / 29	36 / 32 / 29	38 / 33 / 30
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 ⁶ (No. x AWG)	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18
<i>Fan</i>						
Type	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco
Motor	1	1	1	1	1	1
Housing	1	1	1	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct					
Airflow Rate H/M/L (CFM) High Mode (Factory Set)	283 / 247 / 212	353 / 318 / 283	494 / 424 / 353	530 / 424 / 388	635 / 530 / 424	706 / 547 / 459
External Static Pressure (in. wg) High Mode (Factory Set)	0.24	0.24	0.24	0.24	0.24	0.24
<i>Piping</i>						
Liquid Line (in., O.D.)	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	3/8 Flare
Vapor Line (in., O.D.)	1/2 Flare	1/2 Flare	1/2 Flare	1/2 Flare	1/2 Flare	5/8 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 www.ahridirectory.org.

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

²Low ambient performance with LGRED[®] heat technology is included in Multi V 5 Air Source Units produced after February 2019.

³Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

⁴Sound Power level is measured using rated conditions, and tested in a reverberation room per AHRI 260.

⁵Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

⁶All 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.

Table 35: Ducted Mid Static (M1 Frame) Indoor Unit General Data.

Model No.	ARNU073M1A4	ARNU093M1A4	ARNU123M1A4	ARNU153M1A4	ARNU183M1A4	ARNU243M1A4
Cooling Mode Performance						
Capacity (Btu/h)	7,500	9,600	12,300	15,400	19,100	24,200
Max. Power Input ¹ (W)	190	190	190	190	190	190
L/M/H Power Input at Factory Default (W)	25 / 30 / 39	26 / 32 / 40	31 / 38 / 46	46 / 53 / 67	55 / 63 / 85	58 / 74 / 91
Heating Mode Performance						
Capacity (Btu/h)	8,500	10,900	13,600	17,100	21,500	27,300
Max. Power Input ¹ (W)	190	190	190	190	190	190
L/M/H Power Input at Factory Default (W)	25 / 30 / 39	26 / 32 / 40	31 / 38 / 46	46 / 53 / 67	55 / 63 / 85	58 / 74 / 91
Entering Mixed Air						
Cooling Max. (°F WB)	76	76	76	76	76	76
Heating Min. (°F DB) ²	59	59	59	59	59	59
Unit Data						
Refrigerant Type ³	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant Control	EEV	EEV	EEV	EEV	EEV	EEV
Sound Power ⁴ dB(A) (H/M/L, @0.24" ESP)	44-41-39	44-42-39	44-43-40	47-43-43	49-47-43	51-49-47
Sound Pressure ⁵ dB(A) (H/M/L, @0.24" ESP)	27-24-23	27-25-23	28-25-23	30-27-24	32-29-27	33-30-28
Net Unit Weight (lbs.)	56.0	56.0	56.0	56.0	56.0	59.0
Shipping Weight (lbs.)	67.0	67.0	67.0	67.0	67.0	70.0
Communication Cable ⁶ (No. x AWG)	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18
Fan						
Type	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco
Motor	1	1	1	1	1	1
Housing	1	1	1	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct					
Airflow Rate H/M/L (CFM) High Mode (Factory Set)	361 / 279 / 211	376 / 296 / 229	392 / 328 / 262	570 / 392 / 328	638 / 556 / 392	703 / 638 / 556
External Static Pressure (in. wg) High Mode (Factory Set)	0.24	0.24	0.24	0.24	0.24	0.24
Piping						
Liquid Line (in., O.D.)	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	3/8 Flare
Vapor Line (in., O.D.)	1/2 Flare	1/2 Flare	1/2 Flare	1/2 Flare	1/2 Flare	5/8 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 www.ahridirectory.org.

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

²Low ambient performance with LGRED® heat technology is included in Multi V 5 Air Source Units produced after February 2019.

³Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

⁴Sound Power level is measured using rated conditions, and tested in a reverberation room per AHRI 260.

⁵Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

⁶All 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.

DUCTED MID STATIC



General Data

Table 36: Ducted Mid Static (M2 Frame) Indoor Unit General Data, continued.

Model No.	ARNU283M2A4	ARNU363M2A4	ARNU423M2A4
<i>Cooling Mode Performance</i>			
Capacity (Btu/h)	28,000	36,200	42,000
Max Power Input ¹ (W)	430	430	430
L/M/H Power Input at Factory Default (W)	57 / 88 / 123	88 / 123 / 184	136 / 193 / 231
<i>Heating Mode Performance</i>			
Capacity (Btu/h)	31,500	40,600	47,000
Max Power Input ¹ (W)	450	450	450
L/M/H Power Input at Factory Default (W)	57 / 88 / 123	88 / 123 / 184	136 / 193 / 231
<i>Entering Mixed Air</i>			
Cooling Max. (°F WB)	76	76	76
Heating Min. (°F DB) ²	59	59	59
<i>Unit Data</i>			
Refrigerant Type ³	R410A	R410A	R410A
Refrigerant Control	EEV	EEV	EEV
Sound Power ⁴ dB(A) (H/M/L, @0.24" ESP)	48-46-44	51-48-46	55-52-49
Sound Pressure ⁵ dB(A) (H/M/L, @0.24" ESP)	40-39-37	42-40-38	44-43-40
Net Unit Weight (lbs.)	86.2	86.2	86.2
Shipping Weight (lbs.)	99.2	99.2	99.2
Communication Cable ⁶ (No. x AWG)	2 x 18	2 x 18	2 x 18
<i>Fan</i>			
Type	Sirocco	Sirocco	Sirocco
Motor	1	1	1
Housing	2	2	2
Motor/Drive	Brushless Digitally Controlled / Direct		
Airflow Rate H / M / L (CFM) High Mode (Factory Set)	845 / 676 / 528	1,031 / 845 / 676	1,260 / 1,076 / 888
External Static Pressure (in. wg) High Mode (Factory Set)	0.24	0.24	0.24
<i>Piping</i>			
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 www.ahridirectory.org.

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

²Low ambient performance with LGRED[®] heat technology is included in Multi V 5 Air Source Units produced after February 2019.

³Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

⁴Sound Power level is measured using rated conditions, and tested in a reverberation room per AHRI 260.

⁵Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

⁶All 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.

Table 37: Ducted Mid Static (M3 Frames) Indoor Unit General Data.

Model No.	ARNU483M3A4	ARNU543M3A4
<i>Cooling Mode Performance</i>		
Capacity (Btu/h)	48,100	54,000
Max Power Input ¹ (W)	650	650
L/M/H Power Input at Factory Default (W)	75 / 107 / 172	172 / 215 / 260
<i>Heating Mode Performance</i>		
Capacity (Btu/h)	54,200	61,400
Power Input ¹ (W)	650	650
L/M/H Power Input at Factory Default (W)	75 / 107 / 172	172 / 215 / 260
<i>Entering Mixed Air</i>		
Cooling Max. (°F WB)	76	76
Heating Min. (°F DB) ²	59	59
<i>Unit Data</i>		
Refrigerant Type ³	R410A	R410A
Refrigerant Control	EEV	EEV
Sound Power ⁴ dB(A) (H/M/L, @0.24" ESP)	55-51-50	56-54-55
Sound Pressure ⁵ dB(A) (H/M/L, @0.24" ESP)	42-39-37	44-43-42
Net Unit Weight (lbs.)	96.1	96.1
Shipping Weight (lbs.)	105.4	105.4
Communication Cable ⁶ (No. x AWG)	2 x 18	2 x 18
<i>Fan</i>		
Type	Sirocco	Sirocco
Motor	1	1
Housing	2	2
Motor/Drive	Brushless Digitally Controlled / Direct	
Airflow Rate H/M/L (CFM) High Mode (Factory Set)	1,482 / 1,191 / 918	1,744 / 1,614 / 1,482
External Static Pressure (in. wg) High Mode (Factory Set)	0.23	0.23
<i>Piping</i>		
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 www.ahridirectory.org.
¹Max. power input is rated at maximum setting value.
²Low ambient performance with LGRED[®] heat technology is included in Multi V 5 Air Source Units produced after February 2019.

³Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.
⁴Sound Power level is measured using rated conditions, and tested in a reverberation room per AHRI 260.
⁵Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.
⁶All 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.

Ducted Mid Static

MID STATIC DUCTED



Electrical Data

Table 38: Ducted Mid Static Indoor Unit 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
MA Units										
ARNU073MAA4	208-230	2.2	15	1.7	60	208-230	1	220	220	30 / 36 / 47
ARNU093MAA4		2.2		1.7				220	220	32 / 39 / 48
ARNU123MAA4		2.2		1.7				220	220	38 / 46 / 56
ARNU153MAA4		2.2		1.7				220	220	56 / 64 / 81
ARNU183MAA4		2.2		1.7				220	220	66 / 76 / 102
ARNU243MAA4		2.2		1.7				220	220	70 / 89 / 110
M1 Units										
ARNU073M1A4	208-230	2.0	15	1.6	60	208-230	1	190	190	25 / 30 / 39
ARNU093M1A4		2.0		1.6				190	190	26 / 32 / 40
ARNU123M1A4		2.0		1.6				190	190	31 / 38 / 46
ARNU153M1A4		2.0		1.6				190	190	46 / 53 / 67
ARNU183M1A4		2.0		1.6				190	190	55 / 63 / 85
ARNU243M1A4		2.0		1.6				190	190	58 / 74 / 91
M2 Units										
ARNU283M2A4	208-230	2.9	15	2.3	60	208-230	1	430	430	57 / 88 / 123
ARNU363M2A4		2.9		2.3				430	430	88 / 123 / 184
ARNU423M2A4		2.9		2.3				430	430	136 / 193 / 231
M3 Units										
ARNU483M3A4	208-230	3.1	15	2.5	60	208-230	1	650	650	75 / 107 / 172
ARNU543M3A4		3.1		2.5				650	650	172 / 215 / 260

MCA : Minimum Circuit Ampacity.

MOP : Maximum Overcurrent Protection.

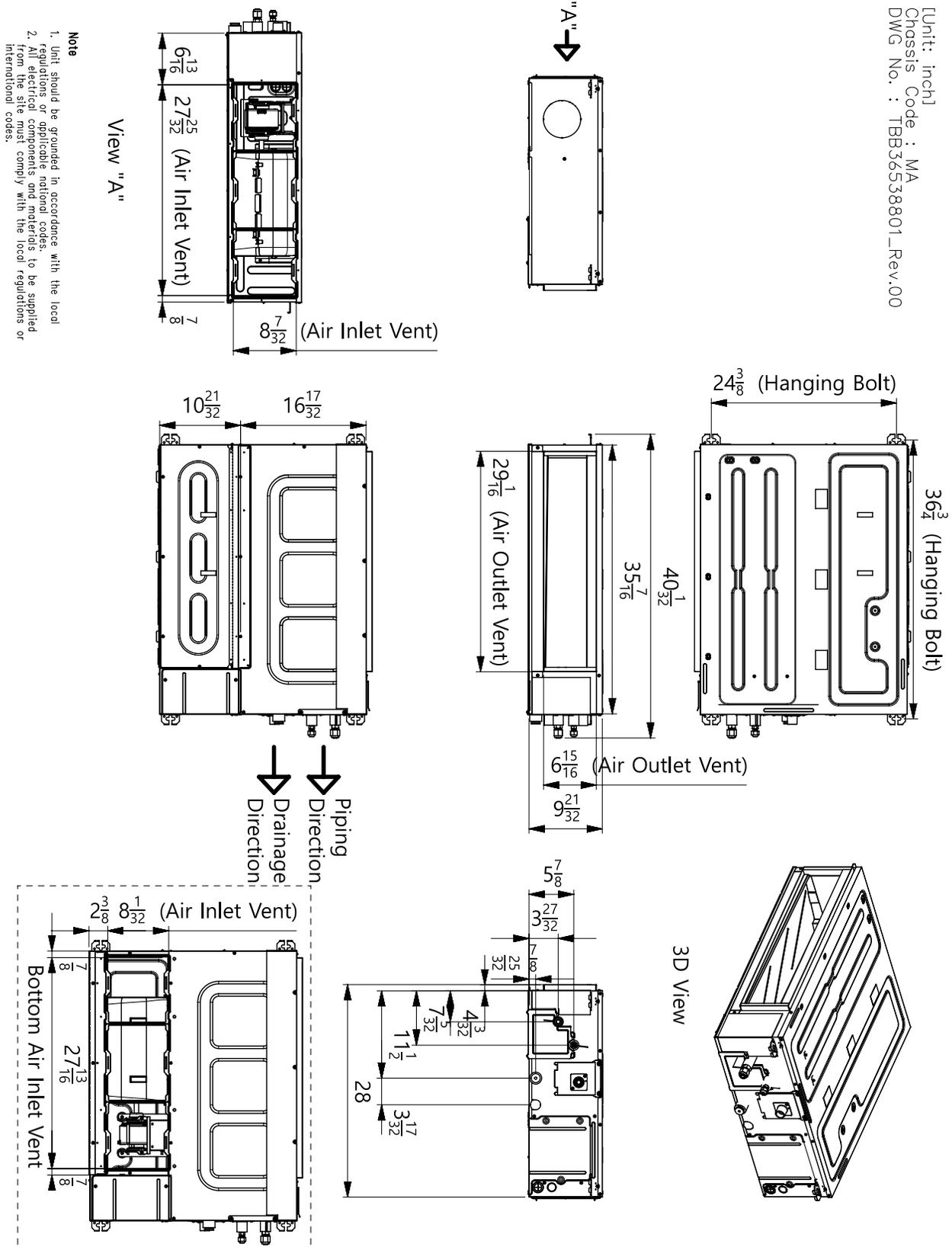
Units are suitable for use on an electrical system where voltage supplied to unit terminals is within the listed range limits.

Select wire size based on the larger MCA value.

Instead of fuse, use the circuit breaker.

Max. power input is rated at maximum setting value.

Figure 16: ARNU073~243MAA4 Dimensions.



Ducted Mid Static

DUCTED MID STATIC



External Dimensions

M1 Units

Figure 17: ARNU073~243M1A4 Dimensions.

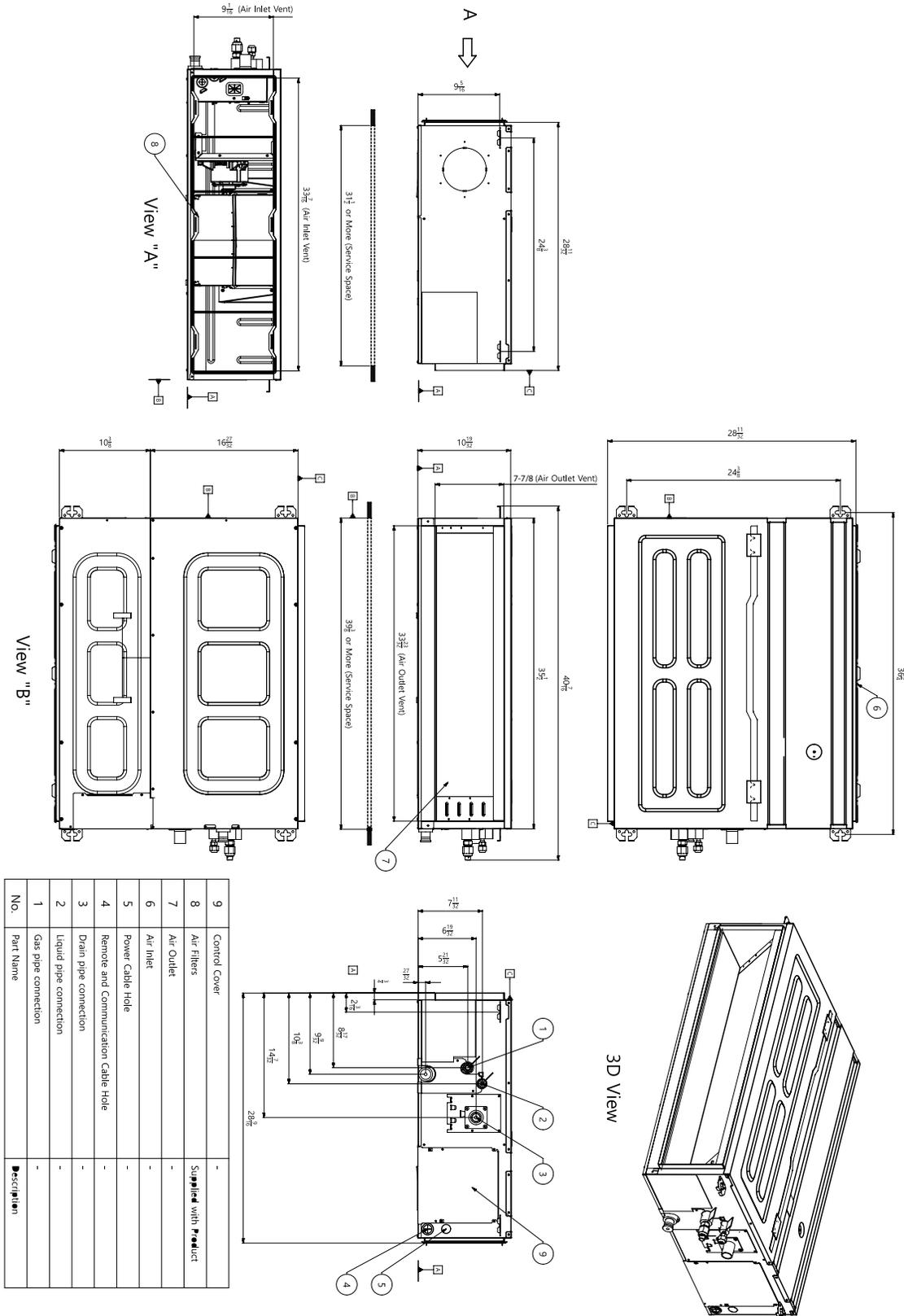
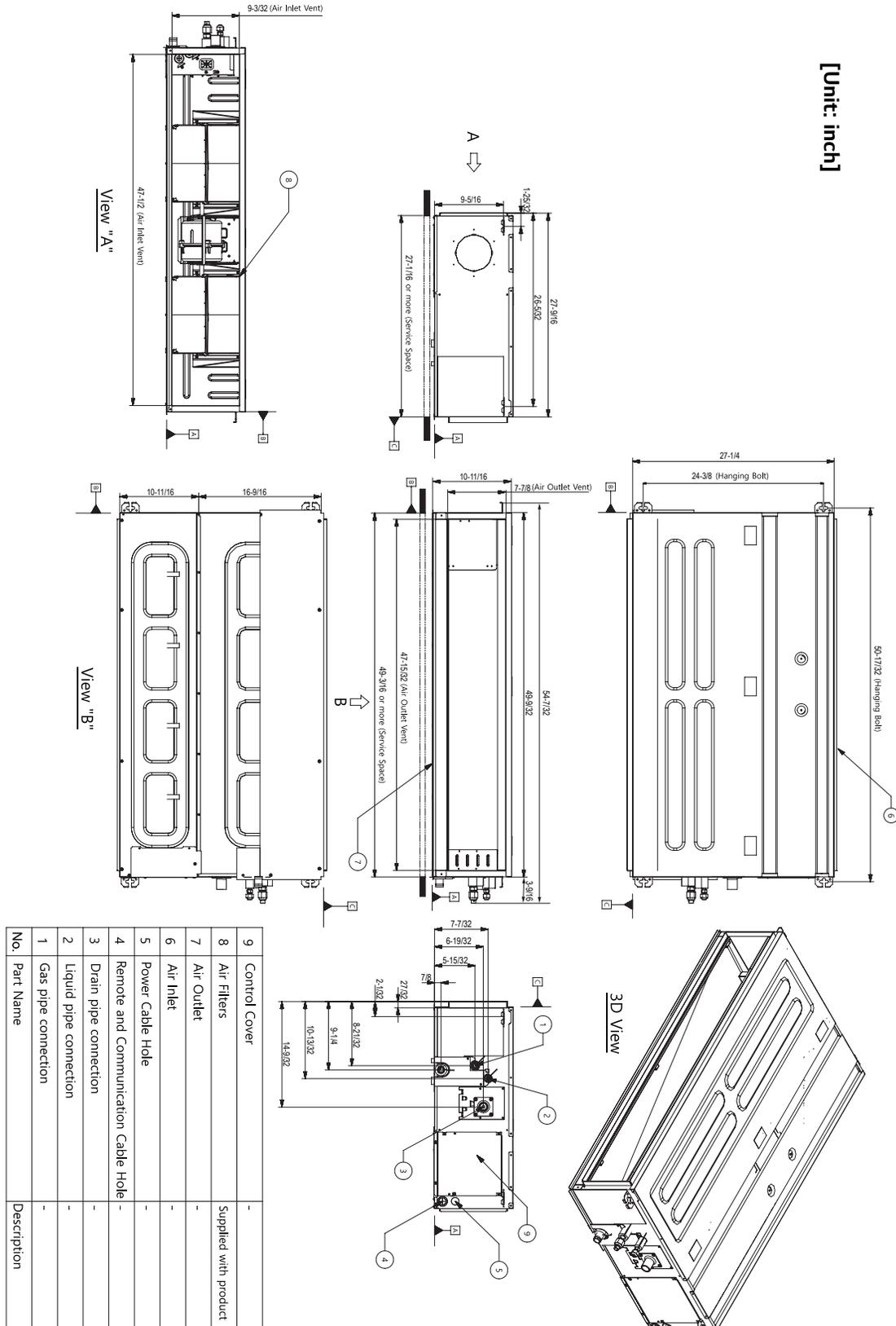


Figure 18: ARNU283~423M2A4 Dimensions.



Ducted Mid Static

DUCTED MID STATIC



External Dimensions

ARNU483~543M3A4 Units

Figure 19: ARNU483~543M3A4 Dimensions.

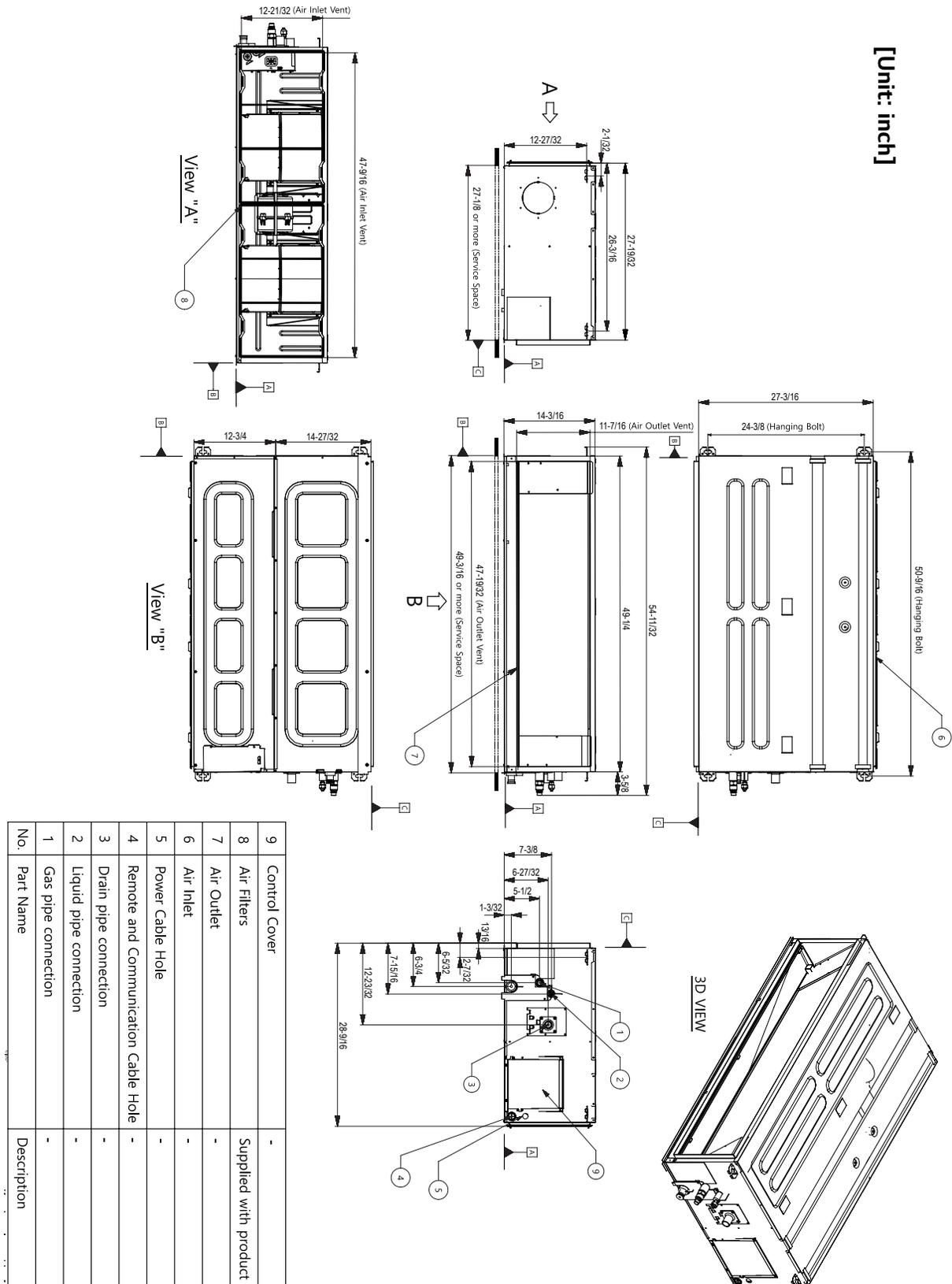
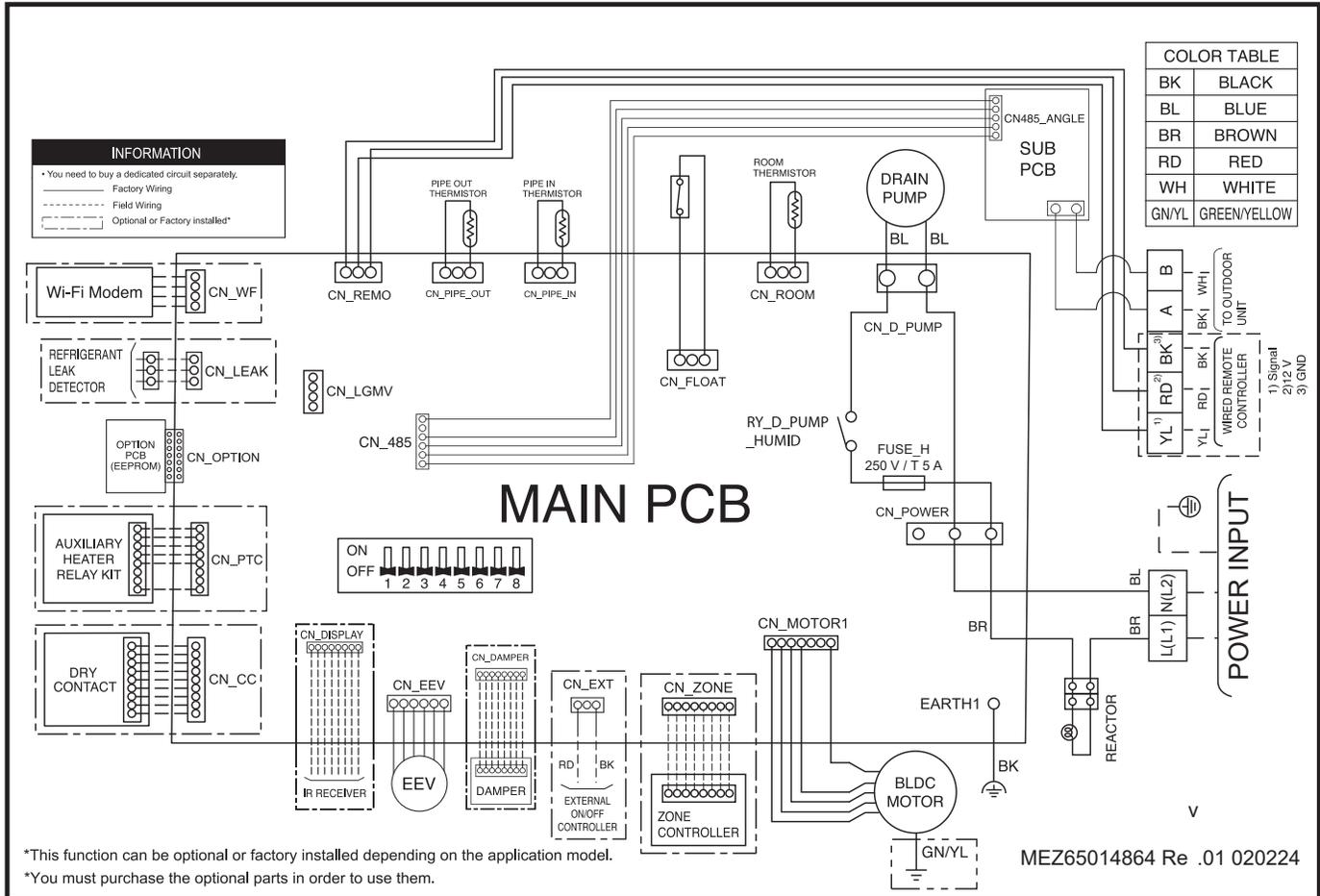


Figure 20: ARNU073~243MAA4 Wiring Diagram.



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Electrical Wiring Diagram

MA Units

Table 39: MA 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-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	LGMVConnection

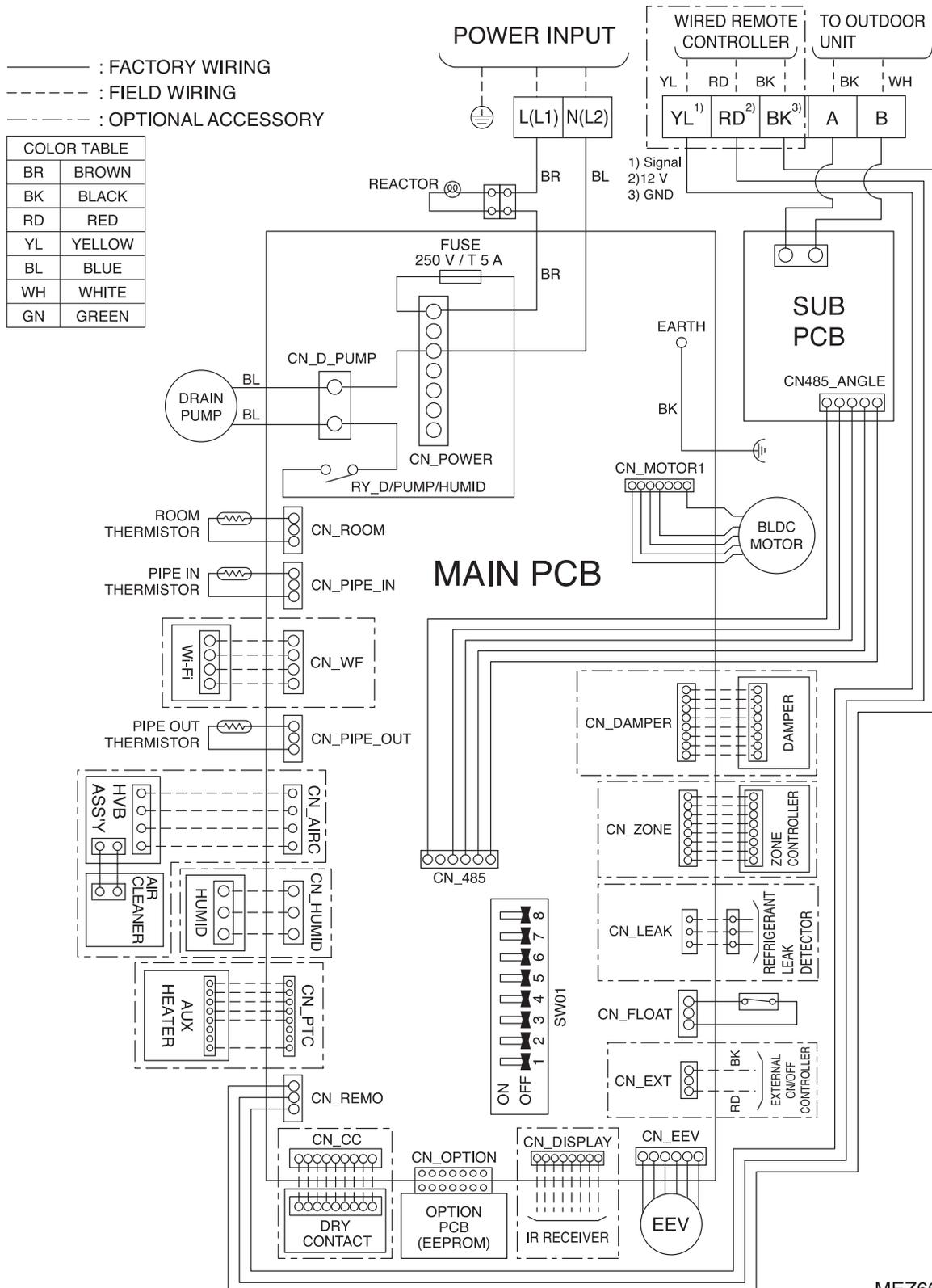
Table 40: MA Unit DIP Switch Settings.

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.**

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

Figure 21: ARNU073~243M1A4 Wiring Diagram.



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Electrical Wiring Diagram

M1 Units

Table 41: M1 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-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

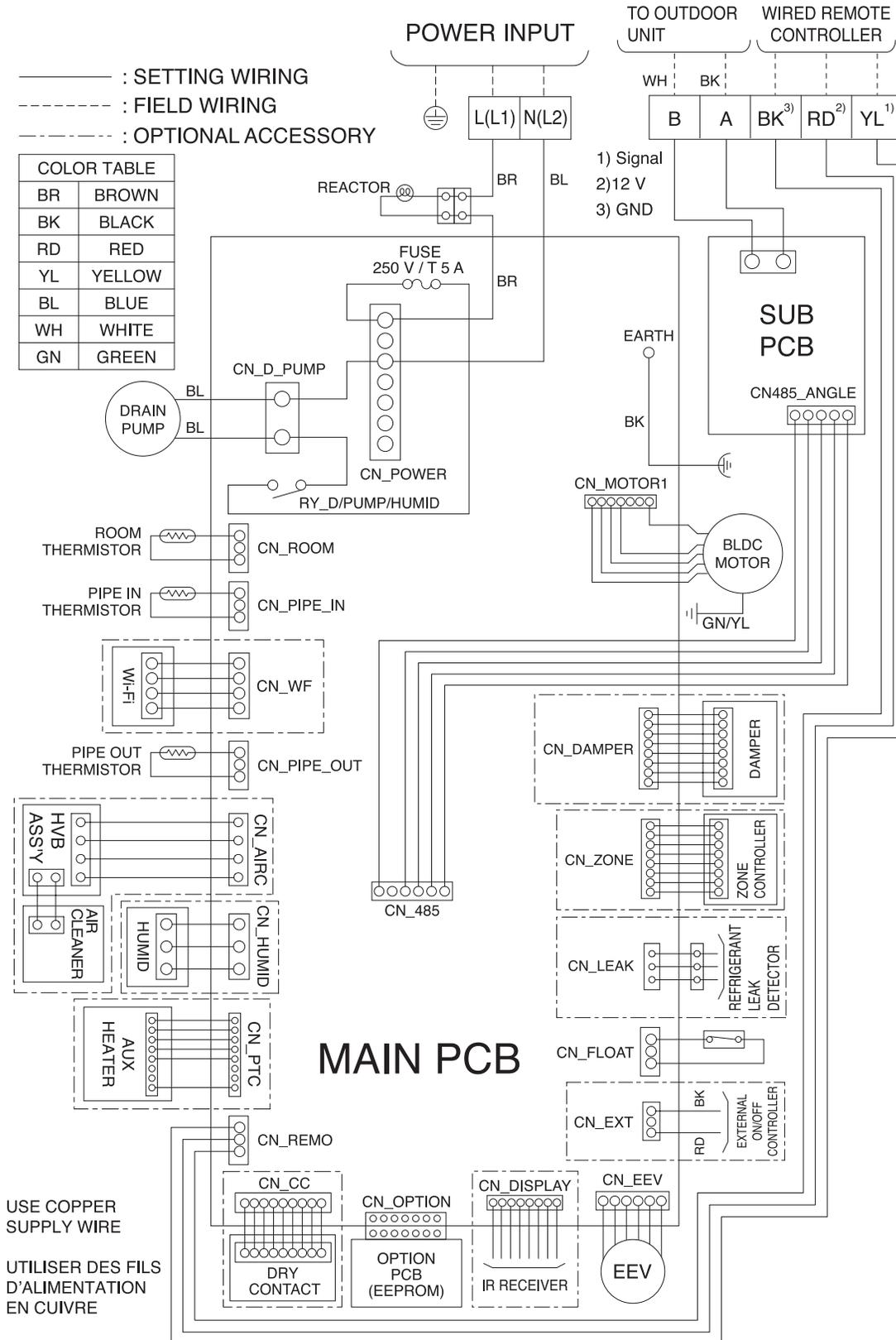
Table 42: M1 Unit DIP Switch Settings.

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.

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

Figure 22: ARNU283~423M2A4 Wiring Diagram.



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Electrical Wiring Diagram

ARNU283~423M2A4 Units

Table 43: ARNU283~423M2A4 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-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

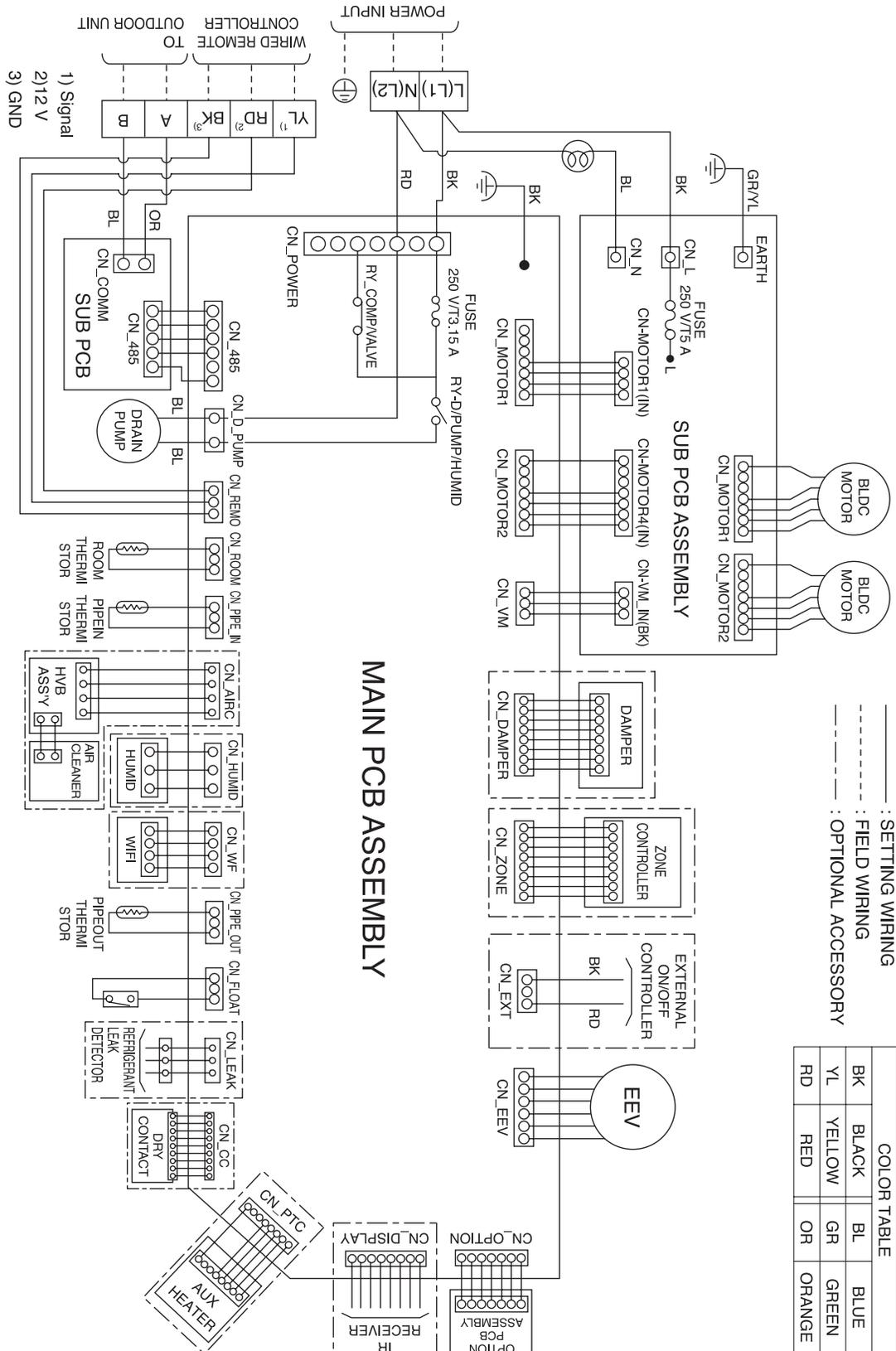
Table 44: ARNU283~423M2A4 Unit DIP Switch Settings.

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.

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

Figure 23: ARNU483~543M3A4 Wiring Diagram.



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Electrical Wiring Diagram ARNU483~543M3A4 Units

Table 45: ARNU483~543M3A4 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 46: M3 Unit DIP Switch Settings.

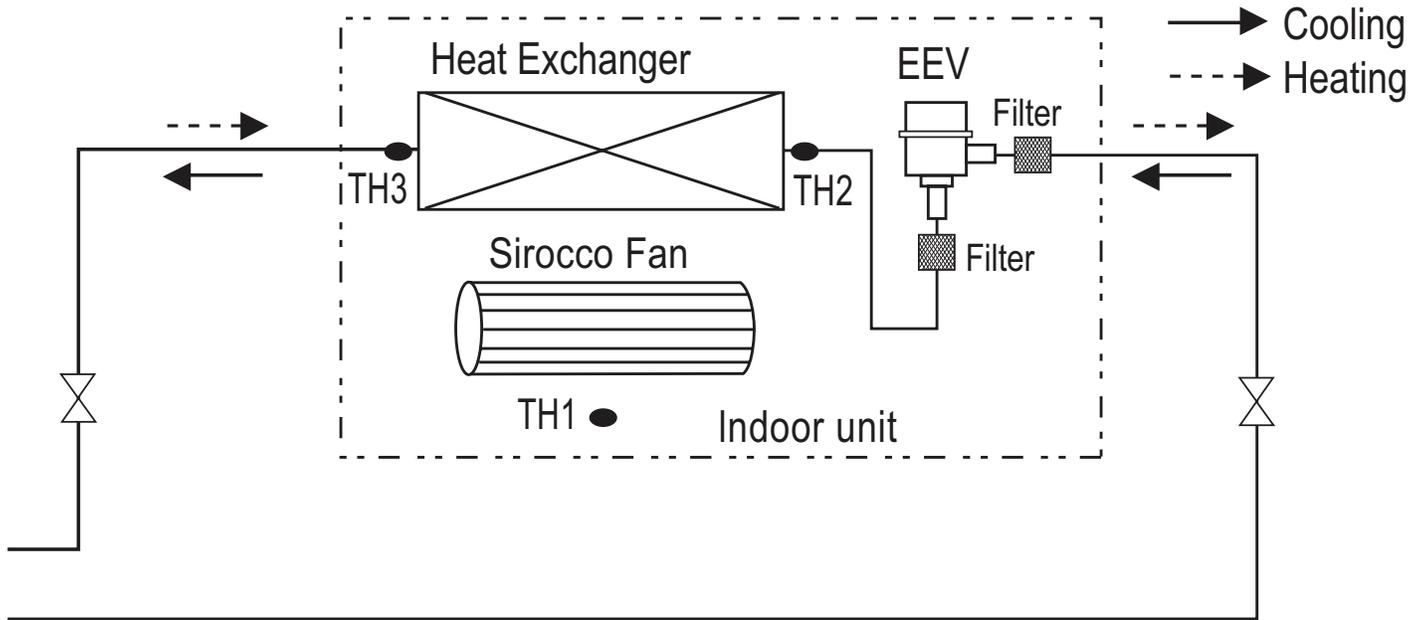
DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub on each indoor unit
SW4	DRY CONTACT MODE	Variable	Auto	Sets operation mode for optional Dry Contact accessory 1. Variable: Auto or Manual Mode can be set through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

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

Refrigerant Flow Diagram for ARNU073~243MAA4, ARNU073~243M1A4, ARNU283~423M2A4, ARNU483~543M3A4 Units

Figure 24: M1, M2, M3 Unit Refrigerant Flow Diagram.



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Table 47: MA, M1, M2, M3 Unit Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
MA, M1 Units		
ARNU073MAA4, ARNU073M1A4	1/4 Flare	1/2 Flare
ARNU093MAA4, ARNU093M1A4		
ARNU123MAA4, ARNU123M1A4		
ARNU153MAA4, ARNU153M1A4		
ARNU183MAA4, ARNU183M1A4		
ARNU243MAA4, ARNU243M1A4	3/8 Flare	5/8 Flare
M2 Units		
ARNU283M2A4	3/8 Flare	5/8 Flare
ARNU363M2A4	3/8 Flare	5/8 Flare
ARNU423M2A4	3/8 Flare	5/8 Flare
M3 Units		
ARNU483M3A4	3/8 Flare	5/8 Flare
ARNU543M3A4		

Table 48: MA, M1, M2, M3 Frame Thermistors.

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

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External Static Pressure and Air Flow Tables

MA Units External Static Pressure and Air Flow Tables

ARNU073~153MAA4 External Static Pressure and Air Flow Table.

Table 49: ARNU073~153MAA4 External Static Pressure and Air Flow Table.

Set Value	Static Pressure (in wg)							
	0.10	0.16	0.20	0.24	0.28	0.31	0.35	0.39
	Air Flow Rate [CFM]							
65	218.2	-	-	-	-	-	-	-
70	291.6	-	-	-	-	-	-	-
75	343.5	207.2	-	-	-	-	-	-
80	395.4	267.6	-	-	-	-	-	-
85	441.1	336.1	-	-	-	-	-	-
90	486.8	404.5	353.4	233.3	-	-	-	-
95	534.3	457.0	388.1	306.2	216.4	-	-	-
100	581.7	509.4	438.1	379.1	323.3	218.2	-	-
105	622.9	559.3	498.1	447.3	402.8	312.2	180.7	-
110	664.0	609.3	561.6	515.4	473.7	406.3	324.8	169.1
115	706.9	655.7	615.5	568.2	527.4	474.1	408.8	289.1
120	749.8	702.1	660.8	620.9	582.8	541.9	488.2	409.1
125	788.6	743.6	701.4	666.8	637.2	595.7	551.0	485.9
130	827.4	785.1	749.8	712.7	690.5	649.5	601.9	562.7
135	866.3	824.6	788.4	760.9	735.7	697.5	663.3	616.3
140	905.1	864.1	840.8	809.1	785.1	745.5	722.2	670.0
145	-	907.2	880.4	852.8	835.6	790.7	767.8	721.2
150	-	950.3	925.9	896.6	884.6	835.9	814.7	772.4
155	-	-	-	943.9	931.6	885.9	864.9	823.0
160	-	-	-	991.2	971.8	935.8	917.8	873.7
165	-	-	-	-	-	-	-	922.4

- The table above shows the available external static pressure range and the correlation between air flow rates and external static pressure.
- All static pressure air flow rates are listed in CFM.

Note:

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.

MA Units External Static Pressure and Air Flow Tables

ARNU183MAA4 External Static Pressure and Air Flow Table.

Table 50: ARNU183MAA4 External Static Pressure and Air Flow Table.

Set Value	Static Pressure (in wg)											
	0.10	0.16	0.20	0.24	0.28	0.31	0.35	0.39	0.43	0.47	0.51	0.59
	Air Flow Rate [CFM]											
65	218.2	-	-	-	-	-	-	-	-	-	-	-
70	291.6	-	-	-	-	-	-	-	-	-	-	-
75	343.5	207.2	-	-	-	-	-	-	-	-	-	-
80	395.4	267.6	-	-	-	-	-	-	-	-	-	-
85	441.1	336.1	-	-	-	-	-	-	-	-	-	-
90	486.8	404.5	353.4	233.3	-	-	-	-	-	-	-	-
95	534.3	457.0	388.1	306.2	216.4	-	-	-	-	-	-	-
100	581.7	509.4	438.1	379.1	323.3	218.2	-	-	-	-	-	-
105	622.9	559.3	498.1	447.3	402.8	312.2	180.7	-	-	-	-	-
110	664.0	609.3	561.6	515.4	473.7	406.3	324.8	169.1	-	-	-	-
115	706.9	655.7	615.5	568.2	527.4	474.1	408.8	289.1	209.7	-	-	-
120	749.8	702.1	660.8	620.9	582.8	541.9	488.2	409.1	345.9	186.4	-	-
125	788.6	743.6	701.4	666.8	637.2	595.7	551.0	485.9	428.9	309.2	191.0	-
130	827.4	785.1	749.8	712.7	690.5	649.5	601.9	562.7	524.9	432.1	365.7	-
135	866.3	824.6	788.4	760.9	735.7	697.5	663.3	616.3	587.7	517.5	445.0	263.7
140	905.1	864.1	840.8	809.1	785.1	745.5	722.2	670.0	642.8	602.9	524.2	379.8
145	-	907.2	880.4	852.8	835.6	790.7	767.8	721.2	702.5	659.9	594.1	468.1
150	-	950.3	925.9	896.6	884.6	835.9	814.7	772.4	755.4	716.9	664.0	556.3
155	-	-	-	943.9	931.6	885.9	864.9	823.0	807.3	765.5	714.1	622.9
160	-	-	-	991.2	971.8	935.8	917.8	873.7	862.7	814.0	764.2	689.4
165	-	-	-	-	-	-	-	922.4	907.2	865.6	819.3	741.3

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- The table above shows the available external static pressure range and the correlation between air flow rates and external static pressure.
- All static pressure air flow rates are listed in CFM.

Note:

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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External Static Pressure and Air Flow Tables

MA Units External Static Pressure and Air Flow Tables

ARNU243MAA4 External Static Pressure and Air Flow Table.

Table 51: ARNU243MAA4 External Static Pressure and Air Flow Table.

Set Value	Static Pressure (in wg)											
	0.10	0.16	0.20	0.24	0.28	0.31	0.35	0.39	0.43	0.47	0.51	0.59
	Air Flow Rate [CFM]											
70	252.0	-	-	-	-	-	-	-	-	-	-	-
75	301.1	182.9	-	-	-	-	-	-	-	-	-	-
80	350.2	247.1	-	-	-	-	-	-	-	-	-	-
85	393.8	308.3	-	-	-	-	-	-	-	-	-	-
90	437.4	369.6	255.2	163.4	-	-	-	-	-	-	-	-
95	482.2	413.9	317.9	251.2	162.9	-	-	-	-	-	-	-
100	527.0	458.2	383.4	338.9	257.7	164.5	-	-	-	-	-	-
105	568.5	505.3	456.8	402.8	348.8	257.7	-	-	-	-	-	-
110	610.0	552.4	515.4	466.7	415.5	350.9	300.1	-	-	-	-	-
115	648.5	597.1	559.7	522.6	472.5	416.0	363.1	284.9	-	-	-	-
120	686.9	641.8	610.0	578.6	533.4	481.1	439.8	363.6	282.8	164.9	-	-
125	730.0	682.7	651.3	624.1	586.3	530.2	497.7	423.6	367.1	275.2	210.4	-
130	773.1	723.7	690.8	669.6	630.1	579.3	542.2	483.5	438.7	385.5	353.7	-
135	806.1	765.7	745.5	718.4	688.7	631.2	598.3	550.5	515.9	457.8	418.1	-
140	839.1	807.7	798.5	767.1	740.6	683.1	653.4	617.4	584.2	530.2	482.6	370.7
145	877.6	842.4	835.7	806.8	778.2	731.1	699.3	672.5	640.3	588.3	548.4	447.8
150	-	877.2	873.3	846.5	821.8	779.1	745.5	727.5	691.5	646.3	614.2	524.9
155	-	-	933.7	903.3	882.1	821.8	787.5	773.4	743.8	703.2	672.6	594.5
160	-	-	-	-	-	-	-	819.3	786.1	760.0	731.1	664.0
165	-	-	-	-	-	-	-	-	-	809.4	783.7	719.1

- The table above shows the available external static pressure range and the correlation between air flow rates and external static pressure.
- All static pressure air flow rates are listed in CFM.

Note:

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.

M1 Units External Static Pressure and Air Flow Tables

ARNU073~153M1A4 External Static Pressure and Air Flow Table.

Table 52: ARNU073~153M1A4 External Static Pressure and Air Flow Table.

Set Value	Static Pressure (in wg)					
	0.10	0.16	0.24	0.31	0.39	0.47
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
120			841	775	687	581
125				833	761	675
130				906	828	742
135					890	819
140						888

- The table above shows the available external static pressure range and the correlation between air flow rates and external static pressure.
- All static pressure air flow rates are listed in CFM.

Note:

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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External Static Pressure and Air Flow Tables

M1 Units External Static Pressure and Air Flow Tables

ARNU183M1A4 External Static Pressure and Air Flow Table.

Table 54: ARNU183M1A4 External Static Pressure and Air Flow Table.

Set 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

ARNU243M1A4 External Static Pressure and Air Flow Table.

Table 53: 243M1A4 Unit External Static Pressure and Air Flow Table.

Set 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

- The tables above show the available external static pressure range and the correlation between air flow rates and external static pressure.
- All static pressure air flow rates are listed in CFM.

Note:

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.



ARNU283~423M2A4 Units External Static Pressure and Air Flow Table

Table 56: ARNU283~423M2A4 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

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ARNU483~543M3A4 Unit External Static Pressure and Air Flow Table

Table 55: ARNU483~543M3A4 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

- The tables above show the available external static pressure range and the correlation between air flow rates and external static pressure.
- All static pressure air flow rates are listed in CFM.

Note:

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.

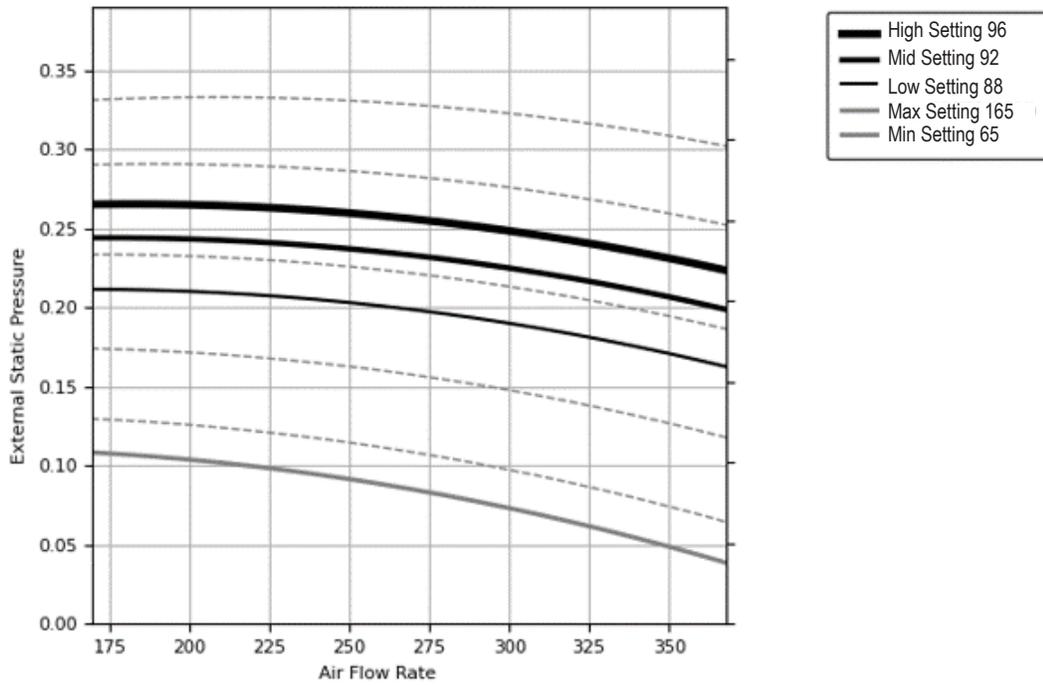
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External Static Pressure and Air Flow Charts

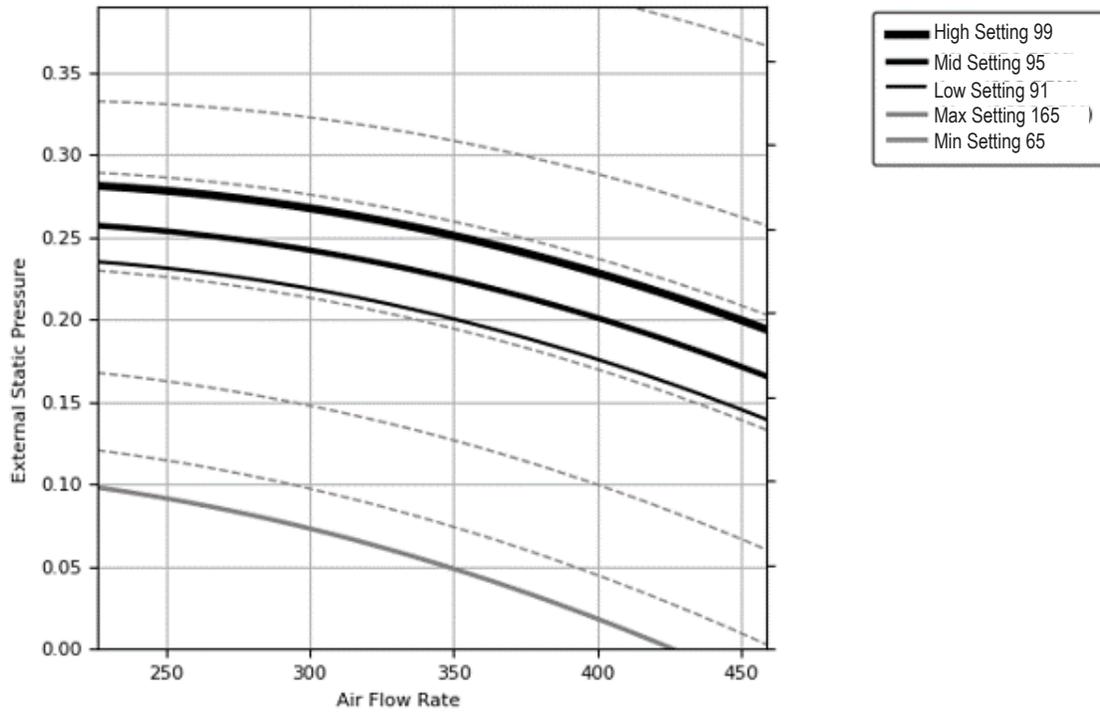
ARNU073MAA4 External Static Pressure and Air Flow Chart

Figure 25: ARNU073MAA4 External Static Pressure and Air Flow Chart.



ARNU093MAA4 External Static Pressure and Air Flow Chart

Figure 26: ARNU093MAA4 External Static Pressure and Air Flow Chart.



Ducted Mid Static

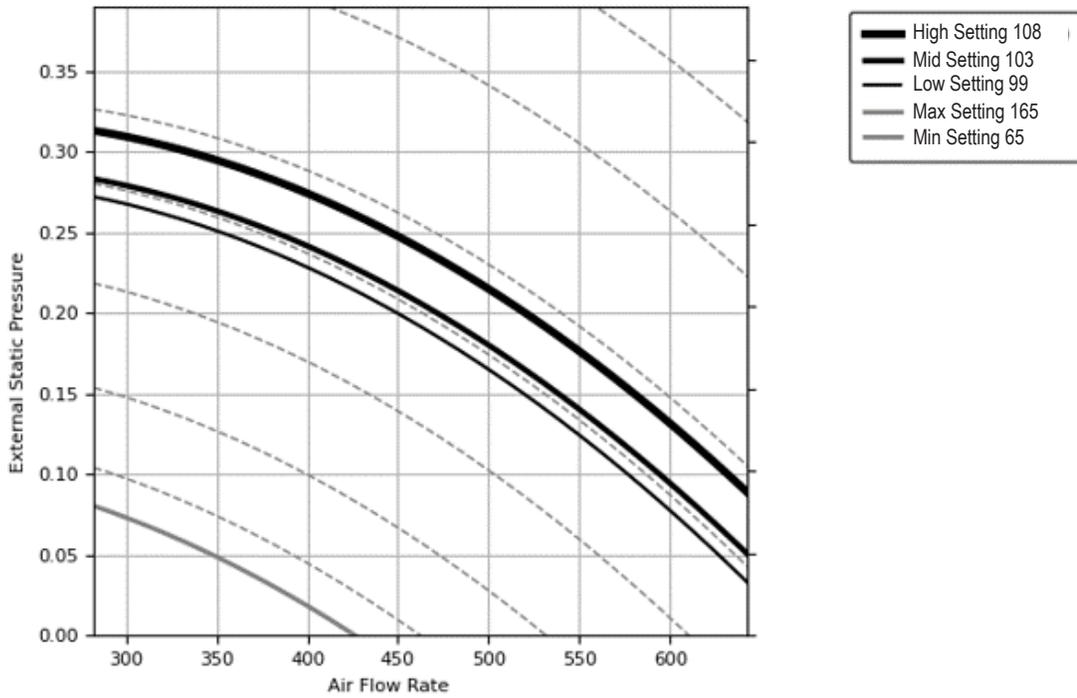
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External Static Pressure and Air Flow Charts

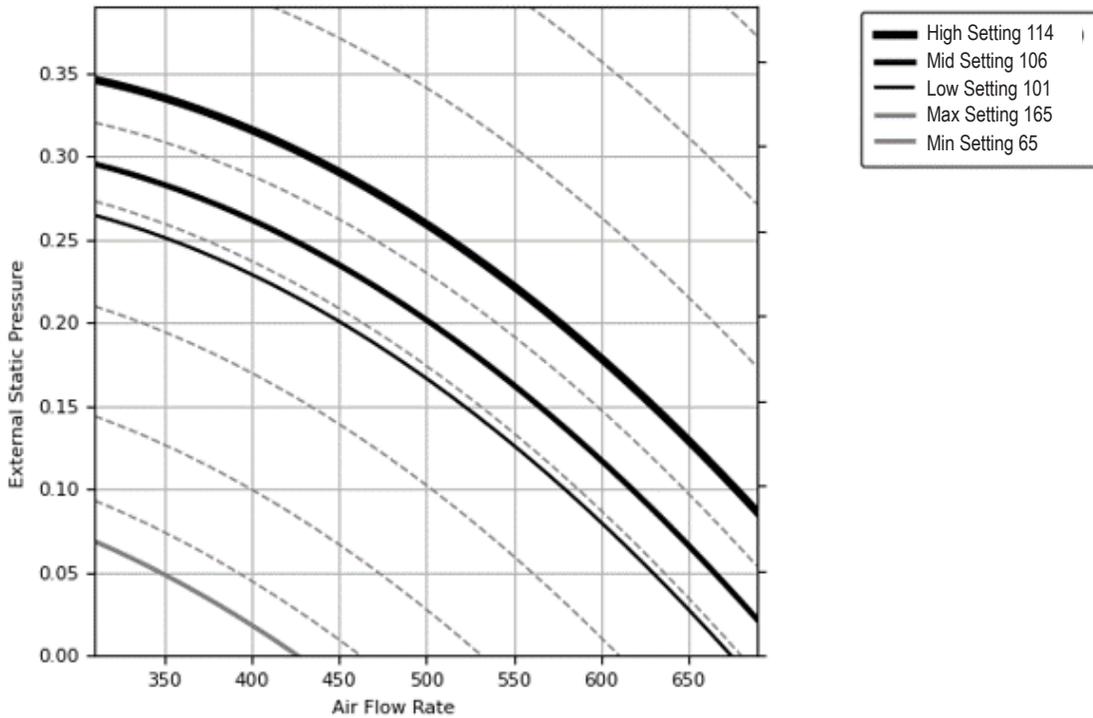
ARNU123MAA4 External Static Pressure and Air Flow Chart

Figure 27: ARNU123MAA4 External Static Pressure and Air Flow Chart.



ARNU153MAA4 External Static Pressure and Air Flow Chart

Figure 28: ARNU153MAA4 External Static Pressure and Air Flow Chart.



Ducted Mid Static

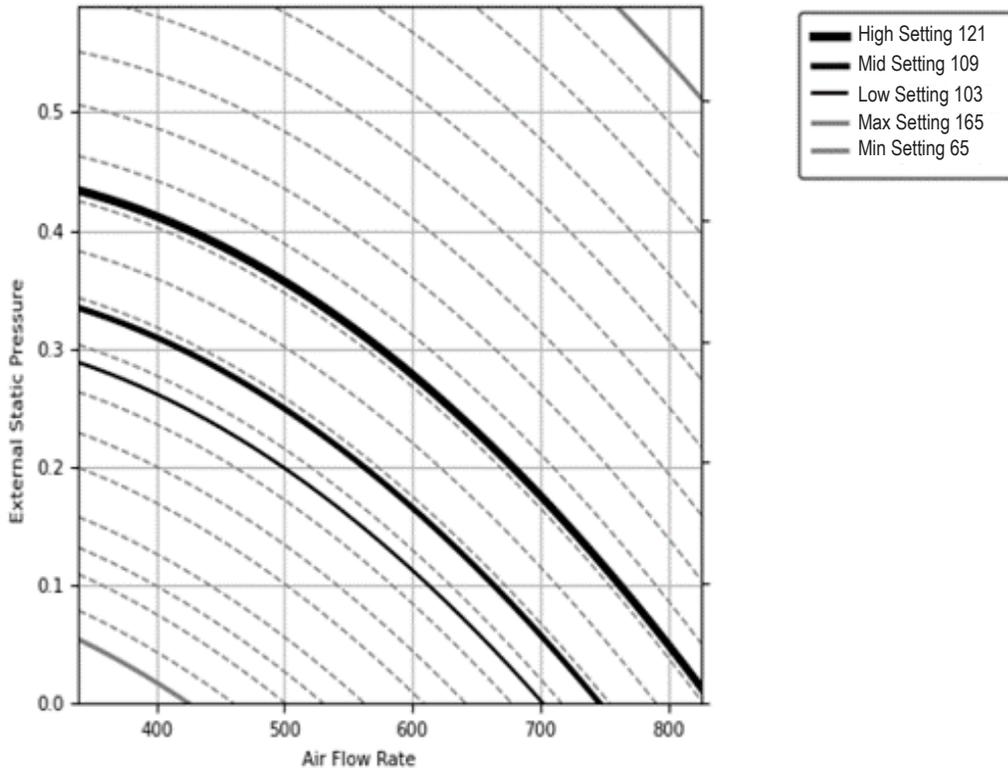
CONVERTIBLE MID STATIC DUCTED



External Static Pressure and Air Flow Charts

ARNU183MAA4 External Static Pressure and Air Flow Chart

Figure 29: ARNU183MAA4 External Static Pressure and Air Flow Chart.

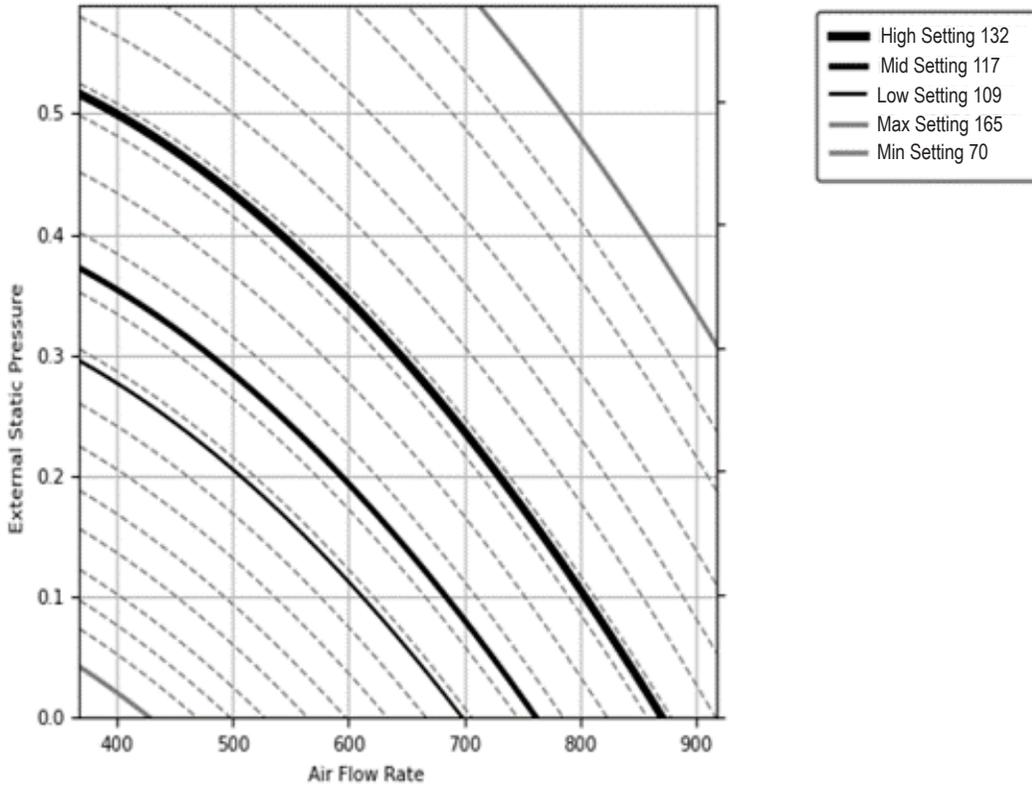


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ARNU243MAA4 External Static Pressure and Air Flow Chart

Figure 30: ARNU243MAA4 External Static Pressure and Air Flow Chart.



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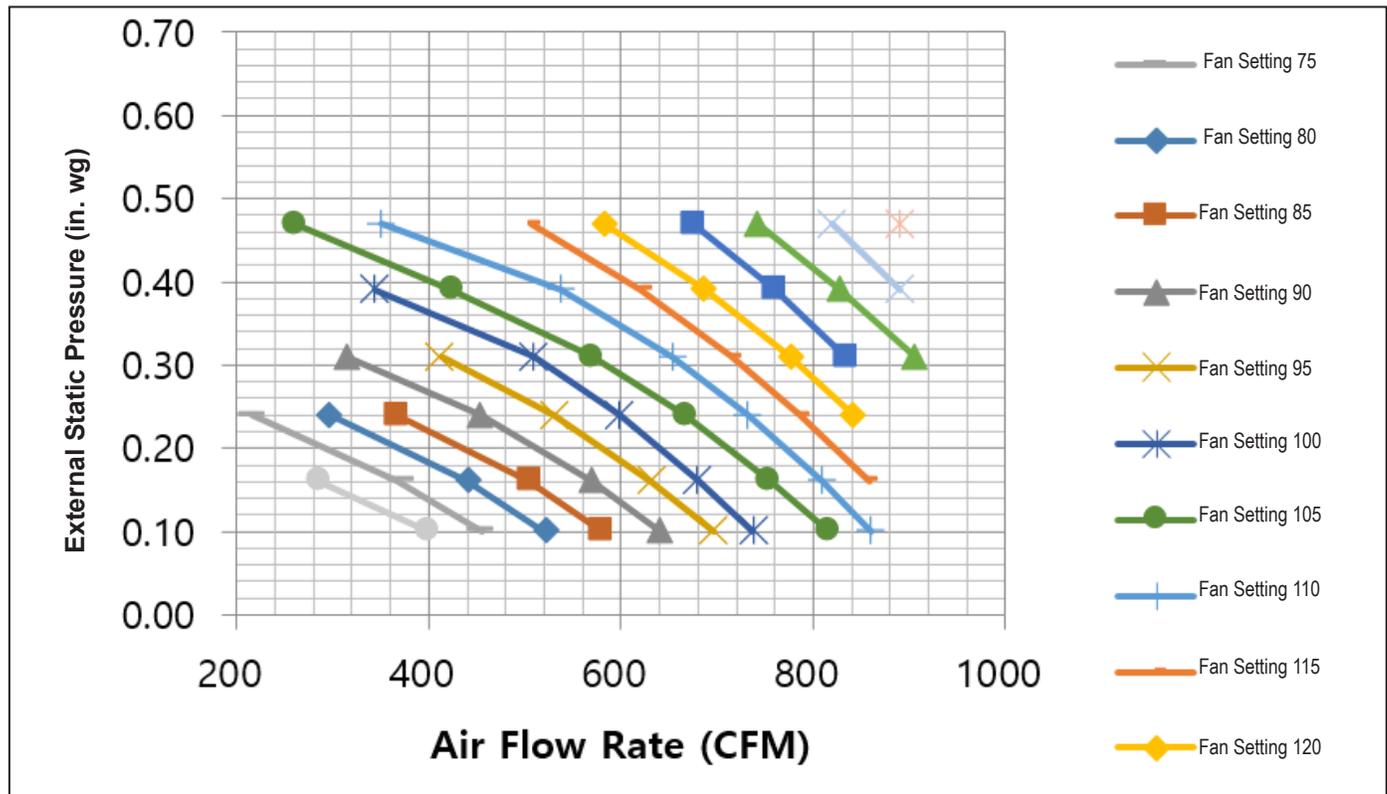
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External Static Pressure and Air Flow Charts

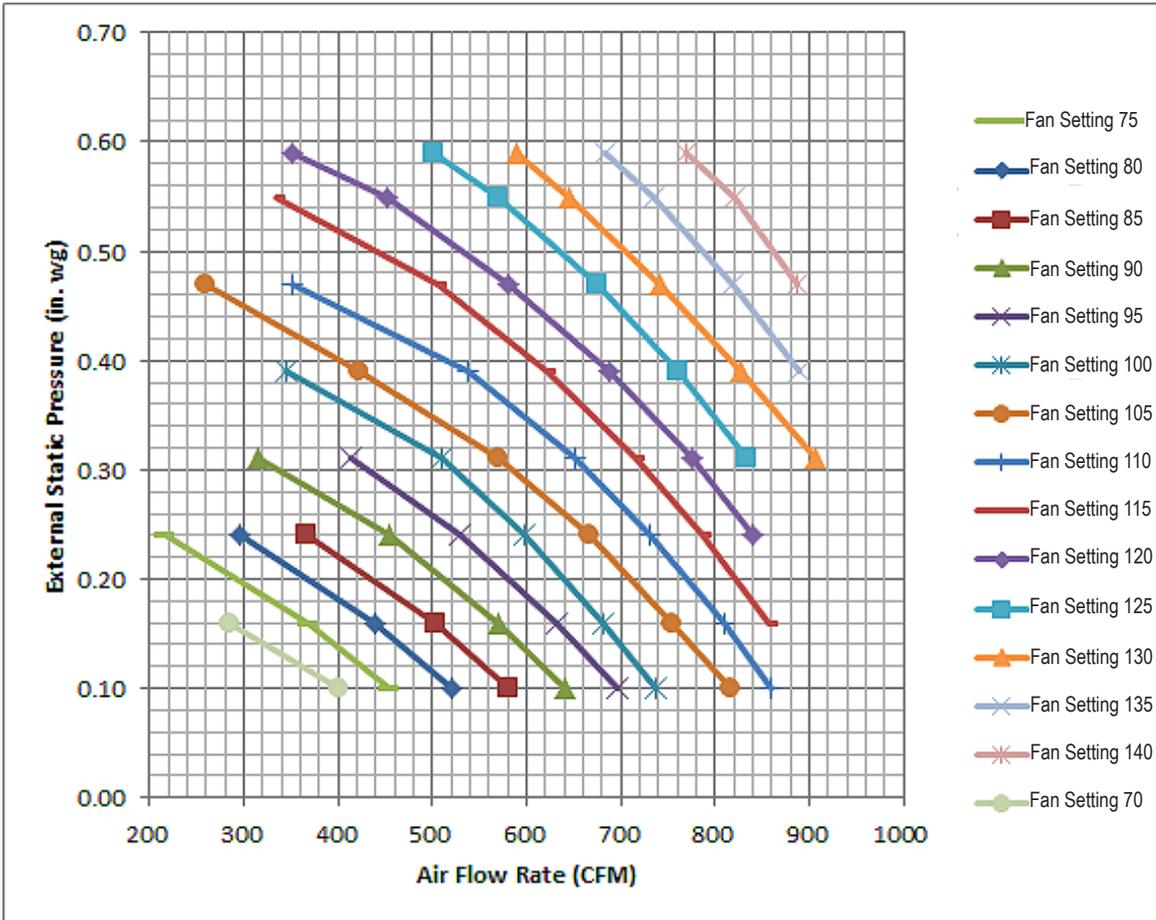
ARNU073~153M1A4 External Static Pressure and Air Flow Chart

Figure 31: ARNU073~153M1A4 External Static Pressure and Air Flow Chart.



ARNU183M1A4 External Static Pressure and Air Flow Chart

Figure 32: ARNU183M1A4 External Static Pressure and Air Flow Chart.



Ducted Mid Static

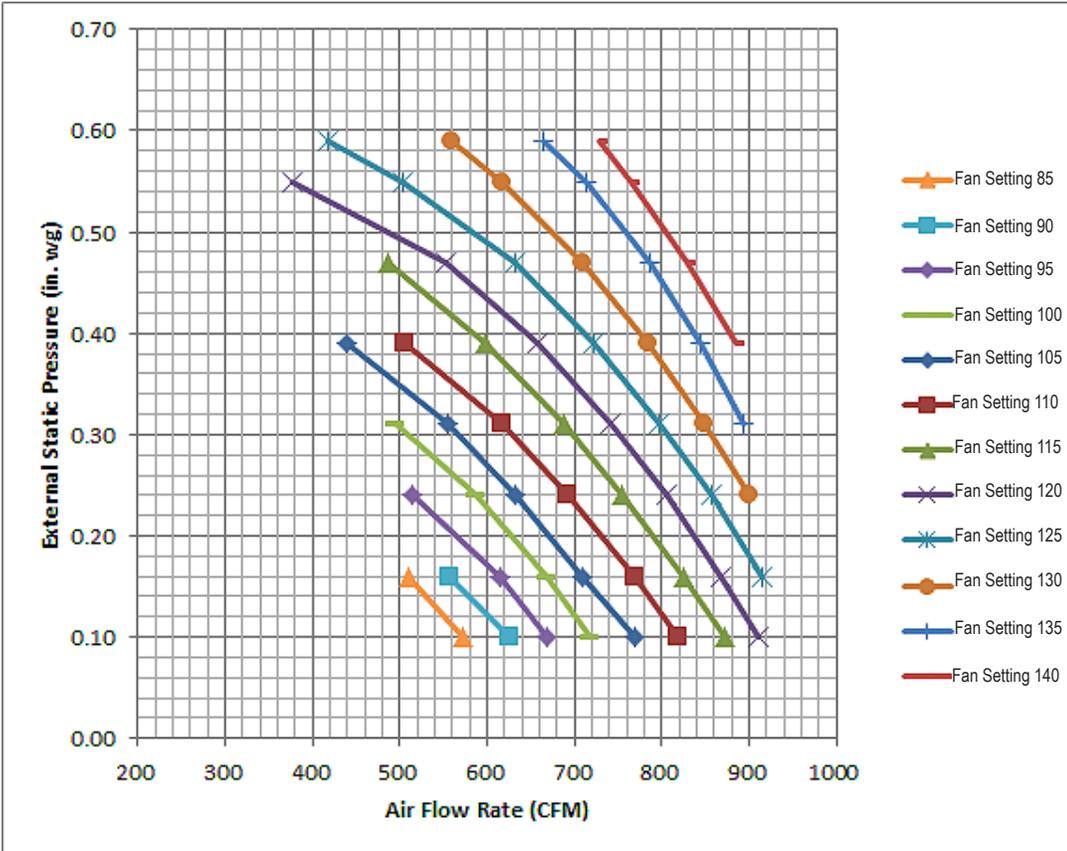
DUCTED MID STATIC



External Static Pressure and Air Flow Charts

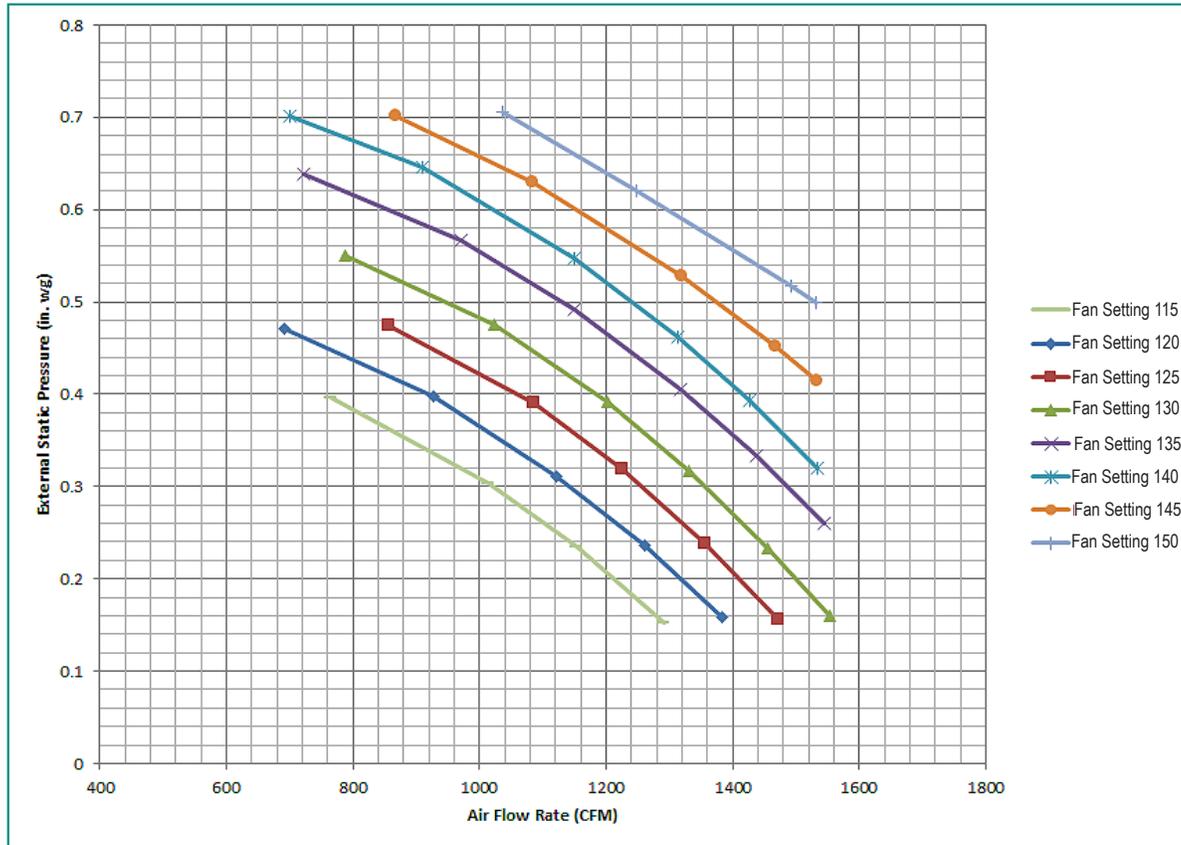
ARNU243M1A4 External Static Pressure and Air Flow Chart

Figure 33: 243M1A4 External Static Pressure and Air Flow Chart.



ARNU283~423M2A4 External Static Pressure and Air Flow chart

Figure 34: ARNU283~423M2A4 External Static Pressure and Air Flow Chart.



Ducted Mid Static

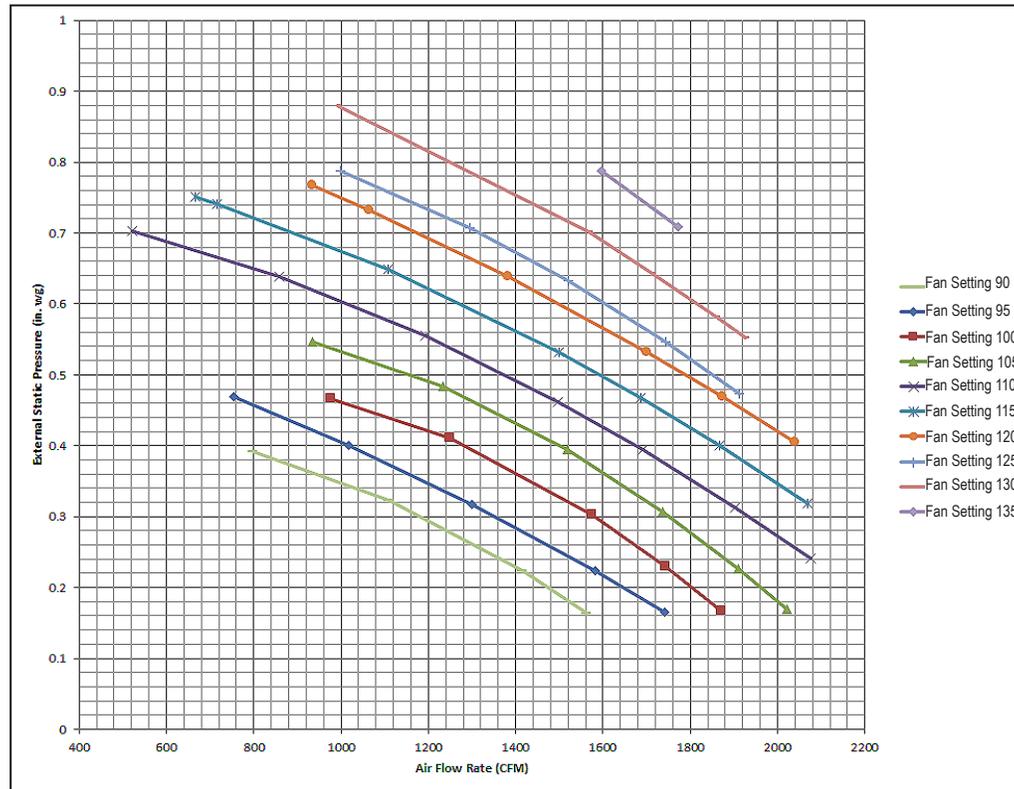
DUCTED MID STATIC



External Static Pressure and Air Flow Charts

ARNU483~543M3A4 Units External Static Pressure and Air Flow Chart

Figure 35: ARNU483~543M3A4 External Static Pressure and Air Flow Chart.



External Static Pressure Ranges for MA units

Table 57: MA Unit External Static Pressure Ranges.

Model	Capacity (kBtu/h)	Mode	Setting Value	Standard ESP (in wg)	CFM	Lower Limit of ESP (in wg)	Upper Limit of ESP (in wg)	
ARNU073MAA4	7.5	High (factory set)	High	96	0.24	283	0.1	0.39
			Mid	92		247		
			Low	88		212		
ARNU093MAA4	9.6	High (factory set)	High	99	0.24	353	0.1	0.39
			Mid	95		318		
			Low	91		283		
ARNU123MAA4	12.3	High (factory set)	High	108	0.24	494	0.1	0.39
			Mid	103		424		
			Low	99		353		
ARNU153MAA4	15.4	High (factory set)	High	114	0.24	530	0.1	0.39
			Mid	106		424		
			Low	101		388		
ARNU183MAA4	19.1	High (factory set)	High	121	0.24	635	0.1	0.59
			Mid	109		530		
			Low	103		424		
ARNU243MAA4	24.2	High (factory set)	High	132	0.24	706	0.1	0.59
			Mid	117		547		
			Low	109		459		

Table above shows the available E.S.P. range.

DUCTED MID STATIC



External Static Pressure Ranges

External Static Pressure Ranges for M1 units

Table 58: M1 Unit 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)
ARNU073M1A4	7.5	High (factory set)	High	84	0.24	361	0.08	0.47
			Mid	79		279		
			Low	75		211		
ARNU093M1A4	9.6	High (factory set)	High	85	0.24	376	0.08	0.47
			Mid	80		296		
			Low	76		229		
ARNU123M1A4	12.3	High (factory set)	High	86	0.24	392	0.08	0.47
			Mid	82		328		
			Low	78		262		
ARNU153M1A4	15.4	High (factory set)	High	98	0.24	570	0.08	0.47
			Mid	86		392		
			Low	82		328		
ARNU183M1A4	19.1	High (factory set)	High	103	0.24	638	0.08	0.59
			Mid	97		556		
			Low	86		392		
ARNU243M1A4	24.2	High (factory set)	High	108	0.24	703	0.08	0.59
			Mid	103		638		
			Low	97		556		

External Static Pressure Ranges for ARNU283~423M2A4 units

Table 59: ARNU283~423M2A4 Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode		Setting Value	Standard ESP (in wg)	CFM	Min. ESP (in wg)	Max. ESP (in wg)
ARNU283M2A4	28.0	High (Factory Set)	High	101	0.24	845	0.16	0.71
			Mid	95		676		
			Low	90		528		
ARNU363M2A4	36.0	High (Factory Set)	High	109	0.24	1031	0.16	0.71
			Mid	101		845		
			Low	95		676		
ARNU423M2A4	42.0	High (Factory Set)	High	120	0.24	1260	0.16	0.71
			Mid	111		1076		
			Low	103		888		

External Static Pressure Ranges for ARNU483~543M3A4 units

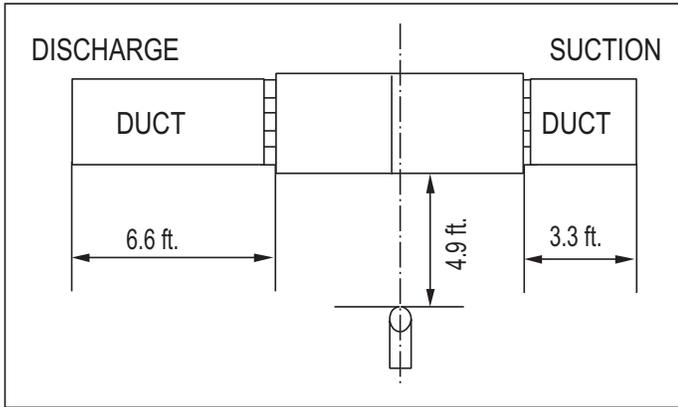
Table 60: ARNU483~543M3A4 Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode		Setting Value	Standard ESP (in wg)	CFM	Min. ESP (in wg)	Max. ESP (in wg)
ARNU483M3A4	48.0	High (Factory Set)	High	92	0.23	1482	0.16	0.79
			Mid	84		1191		
			Low	79		918		
ARNU543M3A4	54.0	High (Factory Set)	High	100	0.23	1744	0.16	0.79
			Mid	96		1614		
			Low	92		1482		

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

Sound Pressure Measurement

Figure 36: 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.

Sound Pressure Levels for ARNU073~243MAA4 Units

Table 62: MA Indoor Unit Sound Pressure Levels.

Model	Sound Pressure Levels (dB[A]) (Cooling and Heating)		
	High Fan Speed	Medium Fan Speed	Low Fan Speed
ARNU073MAA4	28	27	25
ARNU093MAA4	28	27	26
ARNU123MAA4	31	29	28
ARNU153MAA4	33	31	29
ARNU183MAA4	36	32	29
ARNU243MAA4	38	33	30

Sound Pressure Levels for ARNU073~153M1A4 Units

Table 61: M1 Indoor Unit Sound Pressure Levels.

Model	Sound Pressure Levels [dB(A), H-M-L]		
	External Static Pressure [in wg]		
	0.10	0.24	0.47
ARNU073M1A4	26-24-23	27-24-23	32-27-24
ARNU093M1A4	27-25-23	27-25-23	32-28-25
ARNU123M1A4	27-25-23	28-25-23	32-29-26
ARNU153M1A4	30-27-23	30-27-24	36-32-29

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Acoustic Data

Sound Pressure Levels

Sound Pressure Levels for ARNU183~243M1A4 Units

Table 65: M1 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
ARNU183M1A4	31-28-25	32-29-27	37-34-29
ARNU243M1A4	32-29-26	33-30-28	38-35-32

Sound Pressure Levels for ARNU283~423M2A4 Units

Table 63: M2 Indoor Unit Sound Pressure Levels.

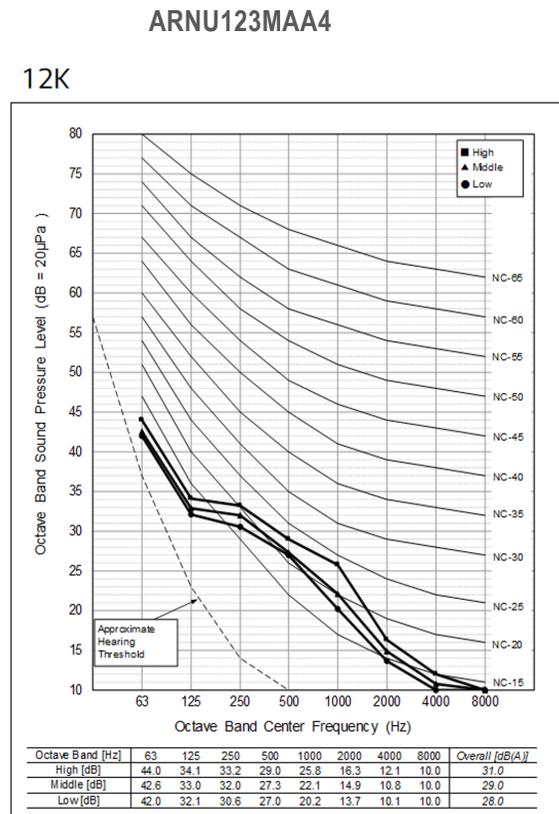
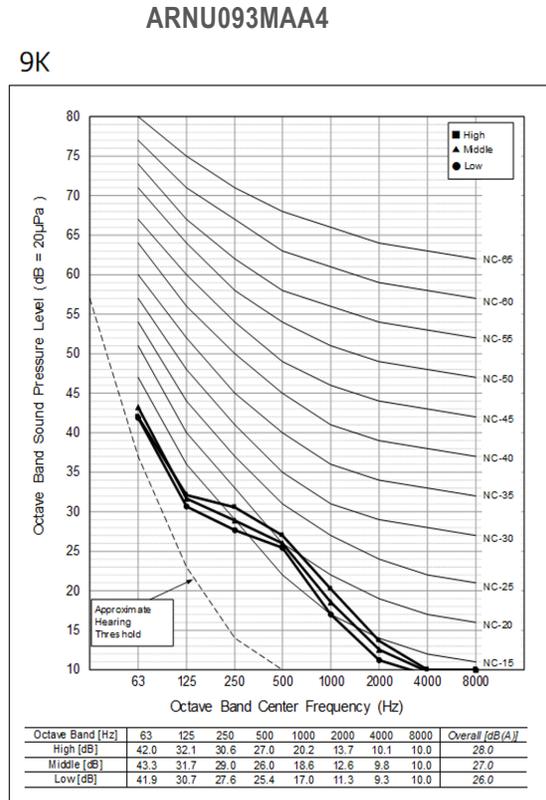
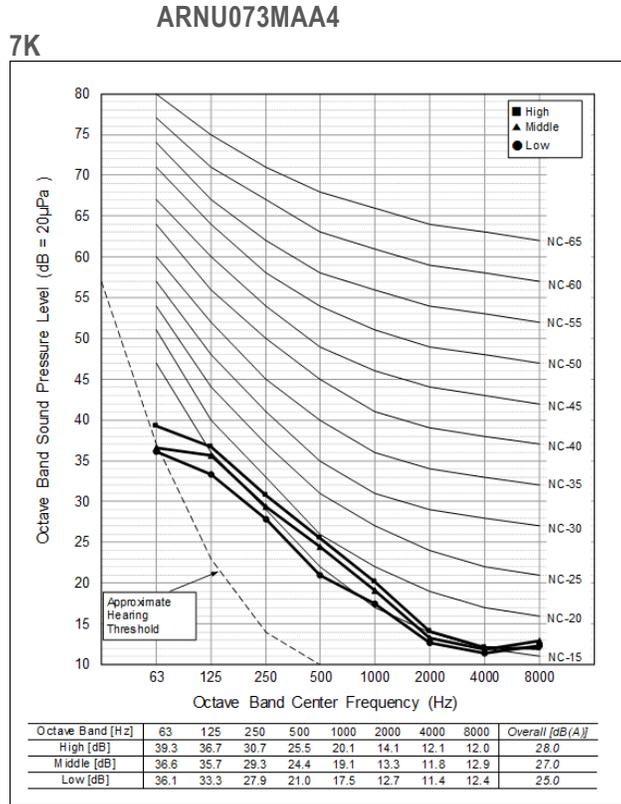
Model	Sound Pressure Levels [dB(A), H-M-L]			
	External Static Pressure [in wg]			
	0.16	0.2	0.24	0.71
ARNU283M2A4	40-39-41	40-39-38	40-39-37	48-48-49
ARNU363M2A4	41-40-41	42-40-38	42-40-38	48-48-48
ARNU423M2A4	46-44-41	45-43-41	44-43-40	49-48-48

Sound Pressure Levels for ARNU483~543M3A4 Units

Table 64: M3 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
ARNU483M3A4	40-38-37	41-39-36	42-39-37	47-45-46
ARNU543M3A4	44-42-40	44-42-41	44-43-42	47-47-47

Figure 37: Sound Pressure Level Diagrams.



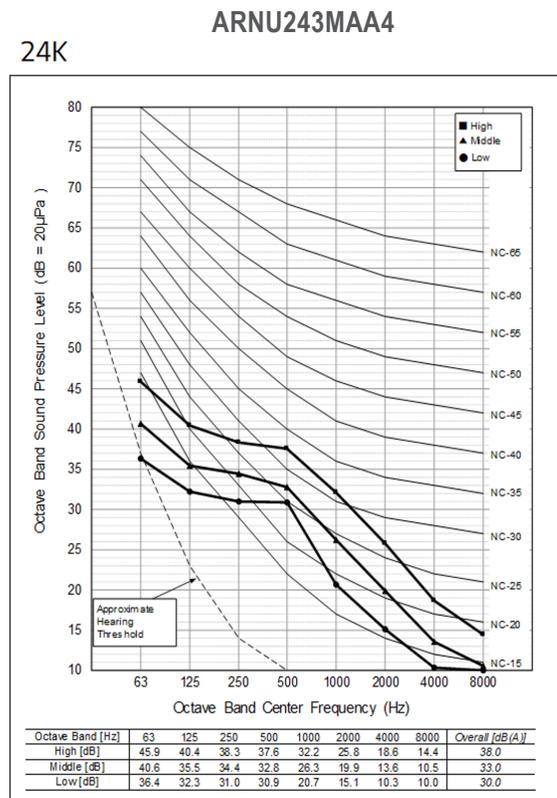
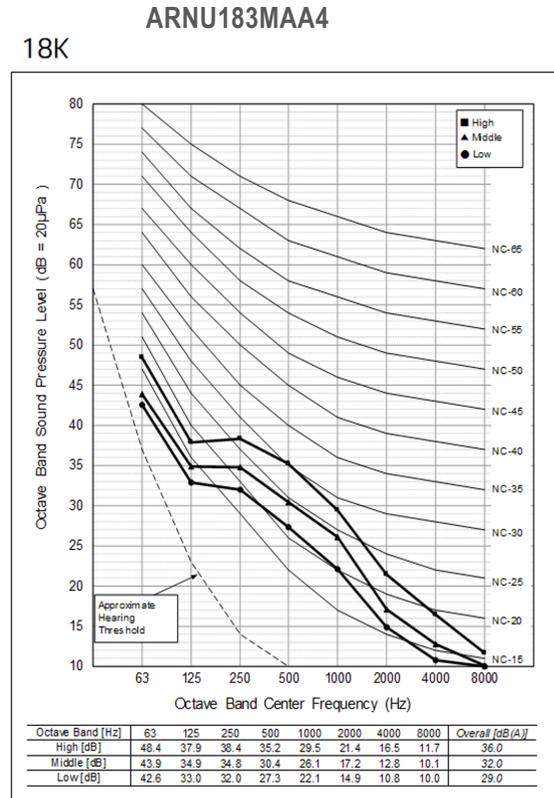
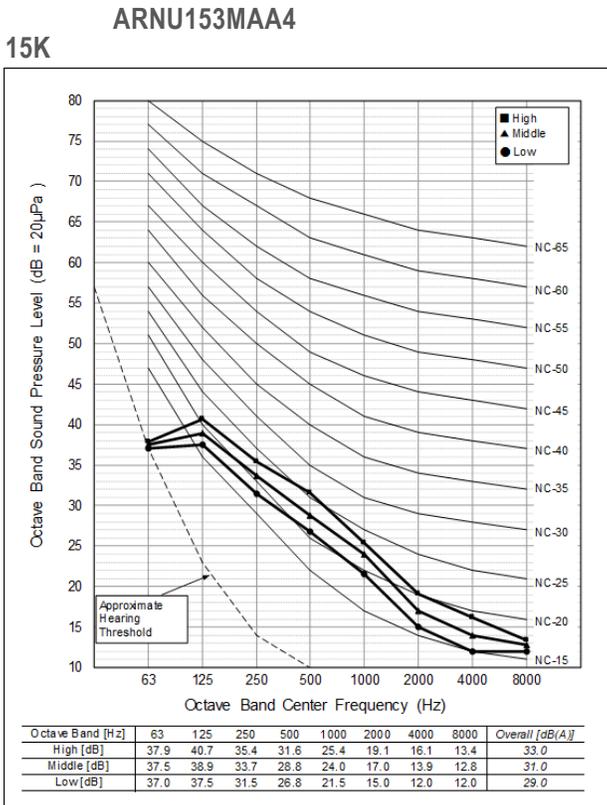
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Acoustic Data

Sound Pressure Diagrams

Figure 38: Sound Pressure Level Diagrams.



Sound Power Levels for ARNU073~243MAA4 Units

Table 66: MA Indoor Unit Sound Power Levels.

Model	Sound Power Levels dB(A)
	High Fan Speed
ARNU073MAA4	44
ARNU093MAA4	44
ARNU123MAA4	47
ARNU153MAA4	51
ARNU183MAA4	54
ARNU243MAA4	57

Sound Power Levels for ARNU073~153M1A4 Units

Table 67: M1 Indoor Unit Sound Power Levels.

Model	Sound Power Levels [dB(A), H-M-L] (CASING RADIATED)		
	External Static Pressure [in wg]		
	0.10	0.24	0.47
ARNU073M1A4	40-39-38	44-41-39	48-46-45
ARNU093M1A4	41-39-39	44-42-39	48-47-45
ARNU123M1A4	42-40-39	44-43-40	48-48-46
ARNU153M1A4	46-42-40	47-43-43	51-48-48

Sound Power Levels for ARNU183~243M1A4 Units

Table 68: M1 Indoor Unit 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
ARNU183M1A4	47-45-42	49-47-43	53-52-50
ARNU243M1A4	48-47-46	51-49-47	54-53-52

- 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 AHRI 260 standards.
- Sound level will vary depending on a range of factors such as construction (acoustic absorption coefficient) of particular area in which the equipment is installed.
- Reference acoustic intensity: 0dB = 10E-6μW/m²

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Acoustic Data

Sound Power Levels

Sound Power Levels for ARNU283~423M2A4 Units

Table 69: M2 Indoor Unit 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
ARNU283M2A4	49-48-47	48-47-46	48-46-44	64-63-62
ARNU363M2A4	50-48-47	56-48-46	51-48-46	64-64-63
ARNU423M2A4	56-53-50	57-53-49	55-52-49	65-64-64

Sound Power Levels for ARNU483~543M3A4 Units

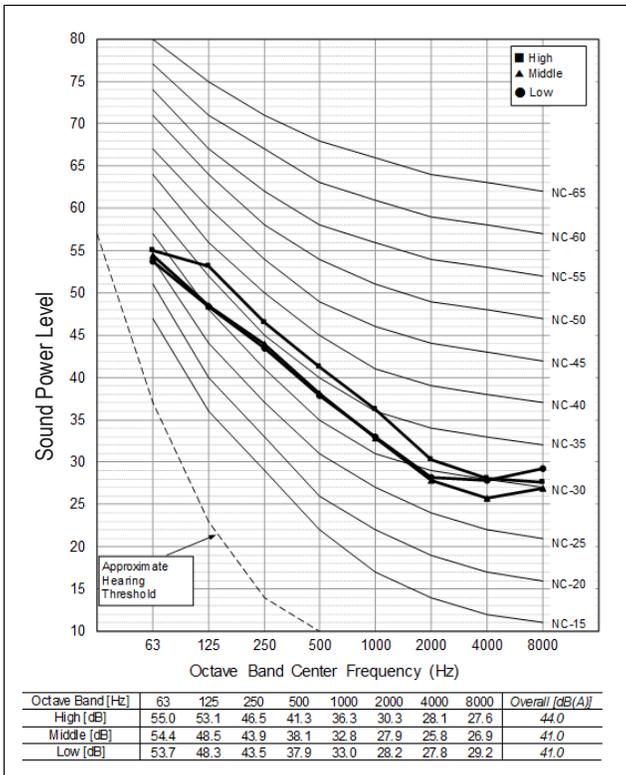
Table 70: M3 Indoor Unit Sound Power Levels.

Model	Sound Power Levels [dB(A), H-M-L] (CASING RADIATED)			
	External Static Pressure [in wg]			
	0.16	0.20	0.24	0.79
ARNU483M3A4	51-50-49	55-53-51	55-51-50	57-57-57
ARNU543M3A4	56-54-51	57-55-54	56-54-55	58-58-57

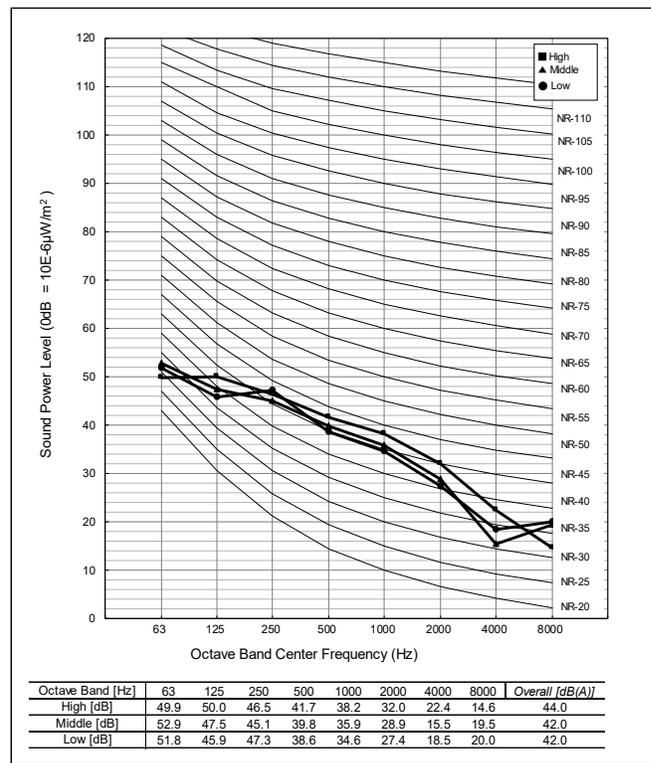
- Data is valid under diffuse field conditions.
- Data is valid under nominal operating conditions.
- Sound power level is measured using rated conditions, and tested in a reverberation room per AHRI 260 standards.
- Sound level will vary depending on a range of factors such as construction (acoustic absorption coefficient) of particular area in which the equipment is installed.
- Reference acoustic intensity: $0\text{dB} = 10\text{E-}6\mu\text{W/m}^2$

Figure 39: Sound Power Level Diagrams.

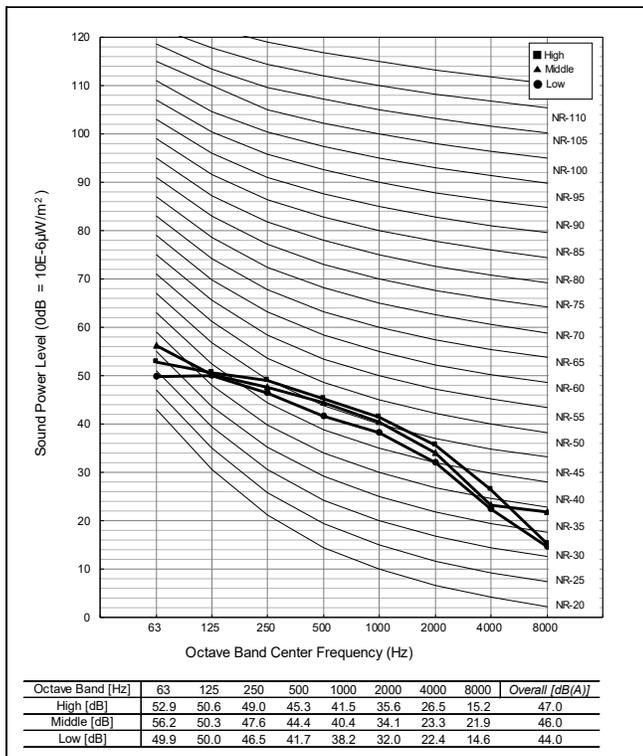
ARNU073MAA4



ARNU093MAA4



ARNU123MAA4



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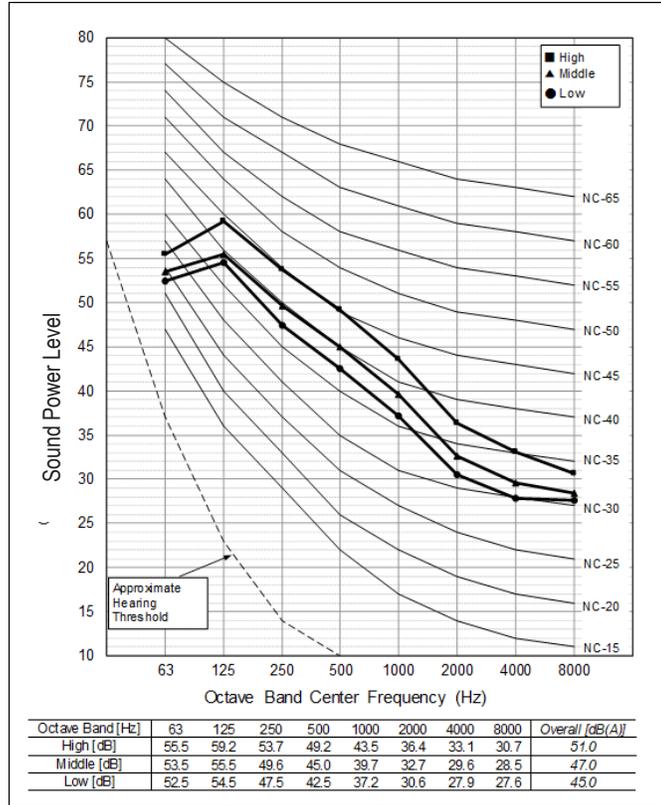


Acoustic Data

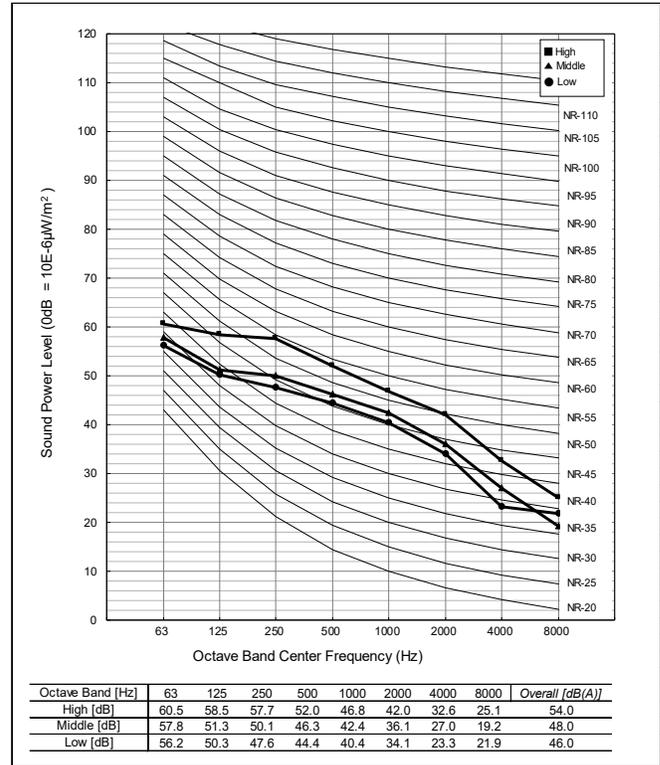
Sound Power Diagrams

Figure 40: Sound Power Level Diagrams.

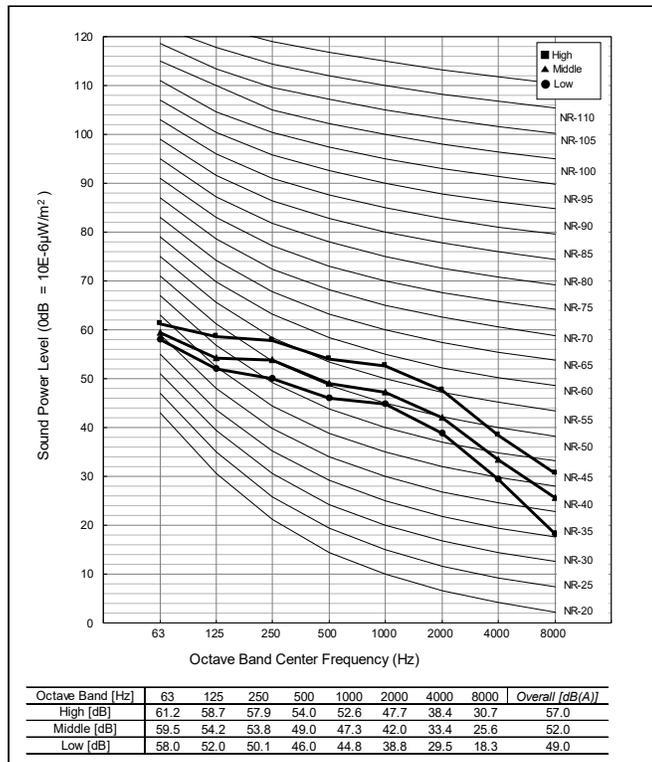
ARNU153MAA4



ARNU183MAA4



ARNU243MAA4



Sound Power @0.1 ESP

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	
ARNU073M1A4	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	
ARNU093M1A4	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	
ARNU123M1A4	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	
ARNU153M1A4	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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Acoustic Data

Sound Power Data for M1 Units

Sound Power @0.1 ESP, continued

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
ARNU183M1A4	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
ARNU243M1A4	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

Sound Power @0.24 ESP

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
ARNU073M1A4	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
ARNU093M1A4	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
ARNU123M1A4	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
ARNU153M1A4	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

Ducted Mid Static

DUCTED MID STATIC



Acoustic Data

Sound Power Data for M1 Units

Sound Power @0.24 ESP, continued

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
ARNU183M1A4	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
ARNU243M1A4	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

Sound Power @0.47 ESP

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
ARNU073M1A4	RETURN OPENING	H	0.47	1120	455	62	64	60	50	49	45	39	32
		M		1080	296	63	63	59	48	46	41	35	27
		L		1040	176	62	62	57	46	44	38	31	23
	CASING RADIATED	H		1120	455	62	55	49	45	42	38	32	26
		M		1080	296	63	54	48	43	40	35	29	23
		L		1040	176	63	53	46	41	37	33	26	20
	DUCTED DISCHARGE	H		1120	455	70	65	60	54	54	49	45	39
		M		1080	296	67	62	57	51	50	45	40	32
		L		1040	176	65	60	54	48	47	41	36	27
ARNU093M1A4	RETURN OPENING	H	0.47	1130	479	62	64	60	50	50	45	40	33
		M		1090	324	63	63	59	49	47	42	36	28
		L		1050	207	62	63	58	47	44	39	32	24
	CASING RADIATED	H		1130	479	62	55	49	45	43	38	33	26
		M		1090	324	63	54	48	44	40	36	30	24
		L		1050	207	63	53	46	42	38	33	27	21
	DUCTED DISCHARGE	H		1130	479	70	65	60	54	54	50	46	40
		M		1090	324	68	63	57	51	51	46	41	34
		L		1050	207	65	61	55	49	48	42	37	28
ARNU123M1A4	RETURN OPENING	H	0.47	1150	479	62	64	60	50	50	45	40	33
		M		1100	378	63	64	59	49	48	43	38	30
		L		1060	267	63	63	58	48	46	41	34	26
	CASING RADIATED	H		1150	479	62	55	49	45	43	38	33	26
		M		1100	378	63	55	49	44	41	37	31	25
		L		1060	267	63	54	47	43	39	35	28	22
	DUCTED DISCHARGE	H		1150	479	70	65	60	54	54	50	46	40
		M		1100	378	68	64	58	53	52	47	43	36
		L		1060	267	67	62	56	50	49	44	39	31
ARNU153M1A4	RETURN OPENING	H	0.47	1240	681	60	65	62	53	54	50	46	39
		M		1150	479	62	64	60	50	50	45	40	33
		L		1100	378	63	64	59	49	48	43	38	30
	CASING RADIATED	H		1240	681	60	56	51	48	47	42	37	30
		M		1150	479	62	55	49	45	43	38	33	26
		L		1100	378	63	55	49	44	41	37	31	25
	DUCTED DISCHARGE	H		1240	681	73	69	65	59	60	56	54	50
		M		1150	479	70	65	60	54	54	50	46	40
		L		1100	378	68	64	58	53	52	47	43	36

Ducted Mid Static

DUCTED MID STATIC



Acoustic Data

Sound Power Data for M1 Units

Sound Power @0.59 ESP

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
ARNU183M1A4	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
ARNU243M1A4	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

Sound Power @0.16 ESP

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
ARNU283M2A4	RETURN OPENING	H	0.16	960	933	63	62	60	55	51	47	43	37
		M		920	853	63	60	59	54	49	45	41	34
		L		880	770	62	59	59	52	47	43	38	30
	CASING RADIATED	H		960	933	64	57	50	45	43	37	29	23
		M		920	853	63	55	50	44	41	35	27	21
		L		880	770	62	53	52	43	39	33	24	20
	DUCTED DISCHARGE	H		960	933	71	66	62	58	58	53	50	48
		M		920	853	69	64	62	57	56	51	48	45
		L		880	770	68	62	61	56	55	49	46	42
ARNU363M2A4	RETURN OPENING	H	0.16	1010	1030	65	64	62	56	53	49	46	40
		M		930	873	63	61	59	54	50	46	41	35
		L		880	770	62	59	59	52	47	43	38	30
	CASING RADIATED	H		1010	1030	66	59	51	47	45	39	32	26
		M		930	873	63	55	50	44	42	35	27	21
		L		880	770	62	53	52	43	39	33	24	20
	DUCTED DISCHARGE	H		1010	1030	72	67	64	60	60	54	52	51
		M		930	873	70	64	62	57	57	51	48	46
		L		880	770	68	62	61	56	55	49	46	42
ARNU423M2A4	RETURN OPENING	H	0.16	1170	1328	68	70	67	61	59	56	53	50
		M		1080	1169	66	66	64	58	56	52	49	44
		L		1000	1010	64	63	61	56	53	49	45	39
	CASING RADIATED	H		1170	1328	71	65	57	51	51	45	39	38
		M		1080	1169	68	61	54	49	47	41	35	31
		L		1000	1010	65	58	51	46	45	38	31	25
	DUCTED DISCHARGE	H		1170	1328	77	71	69	65	65	60	58	59
		M		1080	1169	74	69	66	62	62	57	55	54
		L		1000	1010	72	67	64	60	59	54	51	50

Ducted Mid Static

DUCTED MID STATIC



Acoustic Data

Sound Power Data for ARNU283~423M2A4 Units

Sound Power @0.20 ESP

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	
ARNU283M2A4	RETURN OPENING	H	0.20	990	892	64	61	60	55	51	47	43	36	
		M		940	770	63	60	59	53	49	44	40	32	
		L		890	645	62	59	59	52	46	42	36	28	
	CASING RADIATED	H		990	892	63	56	50	45	43	36	29	22	
		M		940	770	62	55	49	44	41	34	25	19	
		L		890	645	61	54	49	43	38	32	22	19	
	DUCTED DISCHARGE	H		990	892	72	66	63	59	58	53	50	48	48
		M		940	770	69	64	61	57	56	51	48	45	45
		L		890	645	69	62	60	56	54	49	45	42	42
ARNU363M2A4	RETURN OPENING	H	0.20	1050	1021	68	68	66	60	58	55	52	49	
		M		970	844	63	61	59	54	50	46	41	34	
		L		910	695	62	59	59	52	47	43	38	29	
	CASING RADIATED	H		1050	1021	72	65	56	50	51	45	41	35	
		M		970	844	63	55	49	44	42	35	27	21	
		L		910	695	61	54	49	43	39	33	24	19	
	DUCTED DISCHARGE	H		1050	1021	82	72	68	65	66	60	58	58	59
		M		970	844	70	65	62	58	58	52	49	47	47
		L		910	695	69	63	60	56	55	50	46	43	43
ARNU423M2A4	RETURN OPENING	H	0.20	1170	1262	69	69	66	60	59	56	53	51	
		M		1080	1087	66	65	63	58	55	51	48	43	
		L		1000	917	64	62	60	55	51	47	43	37	
	CASING RADIATED	H		1170	1262	73	66	56	50	52	46	42	36	
		M		1080	1087	69	61	53	48	47	41	35	29	
		L		1000	917	63	56	50	45	43	37	29	22	
	DUCTED DISCHARGE	H		1170	1262	83	72	69	65	66	61	60	60	61
		M		1080	1087	77	69	66	62	62	57	55	55	55
		L		1000	917	73	66	63	59	59	53	50	49	49

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Sound Power @0.24 ESP

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
ARNU283M2A4	RETURN OPENING	H	0.24	1010	845	63	62	60	54	50	46	42	35
		M		950	676	63	60	58	52	47	43	38	29
		L		900	528	61	58	56	51	45	41	35	25
	CASING RADIATED	H		1010	845	64	57	49	44	43	36	28	21
		M		950	676	61	55	48	42	40	33	24	19
		L		900	528	60	53	46	41	38	31	21	16
	DUCTED DISCHARGE	H		1010	845	72	66	63	59	59	53	50	48
		M		950	676	68	63	60	57	56	50	47	45
		L		900	528	67	61	58	55	55	49	45	42
ARNU363M2A4	RETURN OPENING	H	0.24	1090	1031	63	65	62	57	54	51	47	42
		M		1010	845	63	62	60	54	50	46	42	35
		L		950	676	63	60	58	52	47	43	38	29
	CASING RADIATED	H		1090	1031	66	59	52	48	46	40	33	28
		M		1010	845	64	57	49	44	43	36	28	21
		L		950	676	61	55	48	42	40	33	24	19
	DUCTED DISCHARGE	H		1090	1031	74	68	65	61	61	56	54	52
		M		1010	845	72	66	63	59	59	53	50	48
		L		950	676	68	63	60	57	56	50	47	45
ARNU423M2A4	RETURN OPENING	H	0.24	1200	1260	71	68	66	60	58	55	52	48
		M		1110	1076	66	65	63	58	55	51	48	43
		L		1030	888	65	62	61	55	51	47	42	35
	CASING RADIATED	H		1200	1260	70	64	56	50	50	44	38	35
		M		1110	1076	67	59	52	48	47	40	34	29
		L		1030	888	64	58	50	45	43	37	28	24
	DUCTED DISCHARGE	H		1200	1260	76	72	69	65	65	60	58	58
		M		1110	1076	74	69	66	62	62	57	54	53
		L		1030	888	71	66	63	59	59	53	51	49

Ducted Mid Static

DUCTED MID STATIC



Acoustic Data

Sound Power Data for ARNU283~423M2A4 Units

Sound Power @0.71 ESP

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
ARNU283M2A4	RETURN OPENING	H	0.71	1480	969	72	71	67	61	61	56	53	49
		M		1440	835	73	72	68	61	60	56	52	47
		L		1420	768	73	72	68	61	60	55	52	46
	CASING RADIATED	H		1480	969	71	65	56	53	63	51	43	37
		M		1440	835	73	66	57	53	61	50	42	36
		L		1420	768	74	67	57	53	60	49	41	35
	DUCTED DISCHARGE	H		1480	969	77	72	69	67	68	62	60	61
		M		1440	835	76	71	68	65	67	61	59	59
		L		1420	768	76	71	68	65	66	61	58	58
ARNU363M2A4	RETURN OPENING	H	0.71	1500	1036	72	71	67	61	61	56	53	49
		M		1480	969	72	71	67	61	61	56	53	49
		L		1440	835	73	72	68	61	60	56	52	47
	CASING RADIATED	H		1500	1036	69	64	55	52	63	50	43	38
		M		1480	969	71	65	56	53	63	51	43	37
		L		1440	835	73	66	57	53	61	50	42	36
	DUCTED DISCHARGE	H		1500	1036	77	72	69	67	68	63	61	62
		M		1480	969	77	72	69	67	68	62	60	61
		L		1440	835	76	71	68	65	67	61	59	59
ARNU423M2A4	RETURN OPENING	H	0.71	1520	1084	74	73	69	63	63	59	56	51
		M		1500	1036	72	71	67	61	61	56	53	49
		L		1480	969	72	71	67	61	61	56	53	49
	CASING RADIATED	H		1520	1084	69	64	55	52	64	51	43	38
		M		1500	1036	69	64	55	52	63	50	43	38
		L		1480	969	71	65	56	53	63	51	43	37
	DUCTED DISCHARGE	H		1520	1084	79	74	71	69	70	64	63	64
		M		1500	1036	77	72	69	67	68	63	61	62
		L		1480	969	77	72	69	67	68	62	60	61

Sound Power @0.16 ESP

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
ARNU483M3A4	RETURN OPENING	H	0.16	830	1336	67	60	60	60	57	53	47	39
		M		780	1171	66	59	58	59	55	52	45	36
		L		740	1037	66	57	57	58	54	50	43	33
	CASING RADIATED	H		830	1336	62	58	52	52	44	36	31	27
		M		780	1171	62	54	50	51	42	33	28	26
		L		740	1037	61	51	49	50	41	30	26	24
	DUCTED DISCHARGE	H		830	1336	78	69	62	62	60	54	53	46
		M		780	1171	78	66	60	60	58	52	51	43
		L		740	1037	78	64	59	59	56	51	49	40
ARNU543M3A4	RETURN OPENING	H	0.16	940	1705	68	65	63	63	62	57	52	46
		M		900	1562	68	63	62	62	60	56	51	43
		L		820	1303	67	60	59	60	57	53	47	38
	CASING RADIATED	H		940	1705	64	67	56	53	47	43	37	31
		M		900	1562	63	64	54	53	46	40	34	30
		L		820	1303	62	57	52	51	43	35	30	27
	DUCTED DISCHARGE	H		940	1705	79	76	65	65	64	59	58	53
		M		900	1562	79	74	64	64	63	57	56	51
		L		820	1303	78	69	61	61	59	54	53	45

Ducted Mid Static

DUCTED MID STATIC



Acoustic Data

Sound Power Data for ARNU483~543M3A4 Units

Sound Power @0.20 ESP

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
ARNU483M3A4	RETURN OPENING	H	0.20	890	1457	68	64	61	62	59	55	50	41
		M		820	1189	67	60	58	59	56	52	45	35
		L		760	952	66	56	55	56	53	49	41	30
	CASING RADIATED	H		890	1457	68	67	53	52	44	38	33	27
		M		820	1189	66	64	53	51	44	34	29	21
		L		760	952	65	62	52	50	43	30	25	15
	DUCTED DISCHARGE	H		890	1457	79	72	63	63	62	57	55	49
		M		820	1189	77	70	61	61	59	53	51	44
		L		760	952	76	67	59	59	57	51	48	40
ARNU543M3A4	RETURN OPENING	H	0.20	970	1720	69	69	65	65	63	59	55	48
		M		920	1558	68	66	62	63	60	57	51	44
		L		880	1424	68	63	61	61	59	55	49	40
	CASING RADIATED	H		970	1720	70	70	54	53	45	43	37	35
		M		920	1558	69	68	54	52	45	40	34	30
		L		880	1424	68	67	53	52	44	38	32	26
	DUCTED DISCHARGE	H		970	1720	80	75	66	66	65	60	60	55
		M		920	1558	79	73	64	64	63	58	57	51
		L		880	1424	78	72	63	63	62	56	55	48

Sound Power @0.24 ESP

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
ARNU483M3A4	RETURN OPENING	H	0.24	920	1482	67	66	61	61	59	56	50	42
		M		840	1191	66	61	59	59	56	52	45	36
		L		790	918	66	60	57	58	54	50	43	32
	CASING RADIATED	H		920	1482	63	66	54	52	47	41	36	30
		M		840	1191	65	58	52	50	42	35	29	24
		L		790	918	68	56	52	49	40	33	25	21
	DUCTED DISCHARGE	H		920	1482	78	74	64	64	63	57	56	50
		M		840	1191	79	69	62	61	60	54	52	45
		L		790	918	80	67	60	60	58	52	50	42
ARNU543M3A4	RETURN OPENING	H	0.24	1000	1744	70	68	64	63	63	58	53	46
		M		960	1614	69	66	62	62	61	57	51	44
		L		920	1482	67	66	61	61	59	56	50	42
	CASING RADIATED	H		1000	1744	64	68	54	53	50	45	40	34
		M		960	1614	63	65	53	52	48	42	37	31
		L		920	1482	63	66	54	52	47	41	36	30
	DUCTED DISCHARGE	H		1000	1744	80	75	66	66	66	61	60	55
		M		960	1614	79	73	65	65	65	59	58	52
		L		920	1482	78	74	64	64	63	57	56	50

Ducted Mid Static

DUCTED MID STATIC



Acoustic Data

Sound Power Data for ARNU483~543M3A4 Units

Sound Power @0.79 ESP

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
ARNU483M3A4	RETURN OPENING	H	0.79	1280	1306	81	74	69	64	63	59	54	47
		M		1260	1214	81	74	69	64	63	59	54	46
		L		1200	868	81	74	69	64	63	59	54	46
	CASING RADIATED	H		1280	1306	67	66	53	55	52	47	43	37
		M		1260	1214	68	66	53	55	52	47	44	37
		L		1200	868	65	66	51	55	52	47	44	37
	DUCTED DISCHARGE	H		1280	1306	84	78	70	68	70	65	62	56
		M		1260	1214	84	78	70	68	70	65	62	56
		L		1200	868	84	79	70	68	70	64	62	55
ARNU543M3A4	RETURN OPENING	H	0.79	1320	1477	81	73	69	64	63	59	54	47
		M		1300	1398	81	74	69	64	63	59	54	47
		L		1280	1306	81	74	69	64	63	59	54	47
	CASING RADIATED	H		1320	1477	66	66	53	55	52	47	43	37
		M		1300	1398	67	66	53	55	52	47	43	37
		L		1280	1306	67	66	53	55	52	47	43	37
	DUCTED DISCHARGE	H		1320	1477	84	78	70	68	70	65	62	56
		M		1300	1398	84	78	70	68	70	65	62	56
		L		1280	1306	84	78	70	68	70	65	62	56

Cooling Capacity for Convertible Mid Static Ducted MA Units

Table 72: Ducted Mid Static (MA Frame) Cooling Capacity.

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
ARNU073MAA4 / 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
ARNU093MAA4 / 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
ARNU123MAA4 / 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
ARNU153MAA4 / 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
ARNU183MAA4 / 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
ARNU243MAA4 / 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

Cooling Capacity for Mid Static M1 Units

Table 71: Ducted Mid Static (M1 Frame) Cooling Capacity.

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
ARNU073M1A4 / 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
ARNU093M1A4 / 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
ARNU123M1A4 / 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
ARNU153M1A4 / 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
ARNU183M1A4 / 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
ARNU243M1A4 / 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

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 www.ahridirectory.org.
 For outdoor unit performance data, see the respective outdoor unit performance data manuals on <https://lghvac.com/commercial>.

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

Ducted Mid Static

DUCTED MID STATIC



Cooling Capacity Table

Cooling Capacity for Mid Static M2 Units

Table 73: Ducted Mid Static (M2 Frame) Cooling Capacity.

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
ARNU283M2A4 / 28.0	95	18.4	15.8	22.4	18.3	25.2	19.4	28.0	20.7	30	21.5	30.6	20.5	31	19.3
ARNU363M2A4 / 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
ARNU423M2A4 / 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

Cooling Capacity for Mid Static M3 Units

Table 74: Ducted Mid Static (M3 Frame) Cooling Capacity.

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
ARNU483M3A4 / 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
ARNU543M3A4 / 54.0	95	35.6	32.2	43.2	37.2	48.6	39.5	54.0	42.1	57.8	43.8	59	41.6	59.9	39.3

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 www.ahridirectory.org.
 For outdoor unit performance data, see the respective outdoor unit performance data manuals on <https://ghvac.com/commercial>.

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.



Heating Capacity for Convertible Mid Static Ducted MA Units

Table 75: Ducted Mid Static (MA Frame) Heating Capacity.

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
ARNU073MAA4 / 7.5	47	43	9.5	9.4	9.4	8.9	8.5	8.3	7.8	7.4
ARNU093MAA4 / 9.5	47	43	12.2	12.1	12.0	11.5	10.9	10.6	10.0	9.5
ARNU123MAA4 / 12.3	47	43	15.2	15.1	15.0	14.3	13.6	13.2	12.5	11.9
ARNU153MAA4 / 15.4	47	43	19.2	19.0	18.8	18.0	17.1	16.6	15.7	15.0
ARNU183MAA4 / 19.1	47	43	24.1	23.9	23.7	22.6	21.5	20.9	19.8	18.8
ARNU243MAA4 / 24.3	47	43	30.6	30.3	30.0	28.7	27.3	26.5	25.1	23.9

Heating Capacity for Mid Static M1 Units

Table 76: Ducted Mid Static (M1 Frame) Heating Capacity.

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
ARNU073M1A4 / 7.5	47	43	9.5	9.4	9.4	8.9	8.5	8.3	7.8	7.4
ARNU093M1A4 / 9.5	47	43	12.2	12.1	12.0	11.5	10.9	10.6	10.0	9.5
ARNU123M1A4 / 12.3	47	43	15.2	15.1	15.0	14.3	13.6	13.2	12.5	11.9
ARNU153M1A4 / 15.4	47	43	19.2	19.0	18.8	18.0	17.1	16.6	15.7	15.0
ARNU183M1A4 / 19.1	47	43	24.1	23.9	23.7	22.6	21.5	20.9	19.8	18.8
ARNU243M1A4 / 24.3	47	43	30.6	30.3	30.0	28.7	27.3	26.5	25.1	23.9

Ducted Mid Static

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 www.ahridirectory.org.

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

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

DUCTED MID STATIC



Heating Capacity Table

Heating Capacity for Mid Static M2 Units

Table 77: Ducted Mid Static (M2 Frame) Heating Capacity.

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
ARNU283M2A4 / 28.0	47	43	35.3	35.0	34.7	33.1	31.5	30.6	29.0	27.6
ARNU363M2A4 / 36.2	47	43	45.5	45.1	44.7	42.6	40.6	39.4	37.4	35.5
ARNU423M2A4 / 42.0	47	43	52.6	52.2	51.7	49.4	47.0	45.6	43.2	41.1

Heating Capacity for Mid Static M3 Units

Table 78: Ducted Mid Static (M3 Frame) Heating Capacity.

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
ARNU483M3A4 / 48.1	47	43	60.7	60.2	59.6	56.9	54.2	52.6	49.9	47.4
ARNU543M3A4 / 54.0	47	43	68.8	68.2	67.5	64.5	61.4	59.6	56.5	53.7

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 www.ahridirectory.org.

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

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

Table 79: Optional Accessories for Ducted Mid Static Indoor Units.

Accessory	Model Number
High Efficiency Filter Box	ZFBXM101A (For 7~24MBh M1 Ducted Mid Static Indoor Units) ZFBXM201A (For 24~42MBh M2 Ducted Mid Static Indoor Units) ZFBXM301A (For 48~54MBh M3 Ducted Mid Static Indoor Units)

All accessories are sold separately.

CEILING-CONCEALED DUCTED LOW STATIC



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Electrical Wiring Diagrams on page 125

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External Static Pressure and Air Flow on page 130

External Static Pressure Ranges on page 132

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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 gromets. 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 76°F. Significant airflow is generated when pipe temperature reaches 80°F. In lieu of factory return air thermistor, screw terminals on the microprocessor circuit board accommodate various models of wall-mounted local controllers and/or a wall-mounted remote temperature sensor. The unit microprocessor is capable of accepting 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).

Coil

The indoor unit coil is constructed with grooved design copper tubes with slit coil fins, 2 to 3 rows, 18 to 21 fins per inch.

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
- Wi-Fi compatible
- Auto fan
- Leak detection
- External static pressure control
- Hot start
- Self diagnostics
- Timer (on / off)
- Weekly schedule
- Fan speed control
- Ventilation (outside air)

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

DUCTED LOW STATIC



General Data

L1, L2, L3 Units

Table 80: Ducted Low Static (L1, L2, L3 Frames) Indoor Unit General Data.

Model No.	ARNU073L1G4	ARNU093L1G4	ARNU123L2G4	ARNU153L2G4	ARNU183L2G4	ARNU243L3G4
Cooling Mode Performance						
Capacity (Btu/h)	7,500	9,600	12,300	15,400	19,100	24,000
Max Power Input ¹ (W)	40	40	85	85	85	115
L/M/H Power Input at Factory Default (W)	24 / 28 / 31	24 / 29 / 39	29 / 34 / 41	34 / 41 / 56	41 / 56 / 71	48 / 63 / 103
Heating Mode Performance						
Capacity (Btu/h)	8,500	10,900	13,600	17,100	21,500	27,300
Max Power Input ¹ (W)	40	40	85	85	85	115
L/M/H Power Input at Factory Default (W)	24 / 28 / 31	24 / 29 / 39	29 / 34 / 41	34 / 41 / 56	41 / 56 / 71	48 / 63 / 103
Entering Mixed Air						
Cooling Max. (°F WB) ²	76	76	76	76	76	76
Heating Min. (°F DB) ²	59	59	59	59	59	59
Unit Data						
Refrigerant Type ³	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant Control	EEV	EEV	EEV	EEV	EEV	EEV
Sound Power ⁴ dB(A)	48	49	52	53	54	58
Sound Pressure ⁵ dB(A) (H/M/L)	27 / 26 / 23	30 / 26 / 23	31 / 29 / 26	34 / 31 / 29	36 / 34 / 31	39 / 35 / 32
Net Unit Weight (lbs.)	38.6	38.6	50.7	50.7	50.7	59.5
Shipping Weight (lbs.)	47.4	47.4	60.6	60.6	60.6	68.3
Communication Cable ⁶ (No. x AWG)	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18
Fan						
Type	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco
Motor	1	1	2	2	2	2
Housing	2	2	3	3	3	4
Motor/Drive	Brushless Digitally Controlled / Direct					
Airflow Rate H/M/L (CFM) High Mode (Factory Set)	270 / 230 / 200	320 / 250 / 200	360 / 310 / 250	450 / 360 / 310	530 / 450 / 360	710 / 570 / 430
External Static Pressure (in. wg) High Mode (Factory Set)	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	3/8 Flare
Vapor Line (in., O.D.)	1/2 Flare	1/2 Flare	1/2 Flare	1/2 Flare	1/2 Flare	5/8 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 www.ahridirectory.org.

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

²Low ambient performance with LGRED[®] heat technology is included in Multi V 5 Air Source Units produced after February 2019.

³Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

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

⁵Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

⁶All 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.

Table 81: Ducted Low Static (L1, L2, L3 Frames) Indoor Unit Electrical Data.

Model	Voltage Range	MCA	MOP	Rated Amps (A)	Power Supply			Power Input ¹ (W)		
					Hz	Volts	Phase	Max. Cooling	Max. Heating	L / M / H at Factory Default
<i>L1 Units</i>										
ARNU073L1G4	208-230	0.5	15	0.4	60	208-230	1	40	40	24 / 28 / 31
ARNU093L1G4		0.5		0.4				40	40	24 / 29 / 39
<i>L2 Units</i>										
ARNU123L2G4	208-230	1.0	15	0.76	60	208-230	1	85	85	29 / 34 / 41
ARNU153L2G4		1.0		0.76				85	85	34 / 41 / 56
ARNU183L2G4		1.0		0.76				85	85	41 / 56 / 71
<i>L3 Units</i>										
ARNU243L3G4	208-230	1.2	15	0.97	60	208-230	1	115	115	48 / 63 / 103

MCA : Minimum Circuit Ampacity.

MOP : Maximum Overcurrent Protection.

Units are suitable for use on an electrical system where voltage supplied to unit terminals is within the listed range limits.

Select wire size based on the larger MCA value.

Instead of fuse, use the circuit breaker.

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

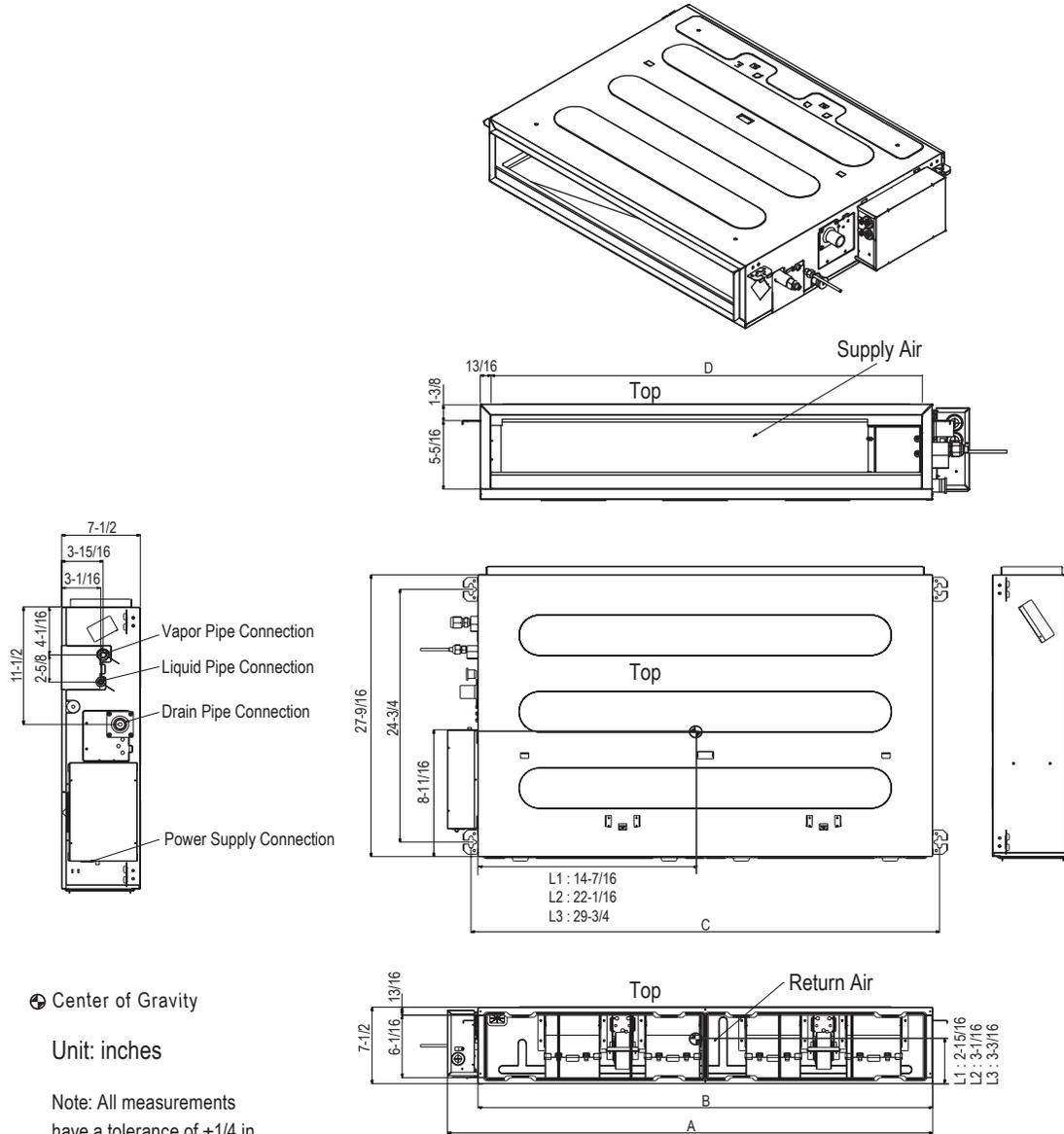
DUCTED LOW STATIC



External Dimensions

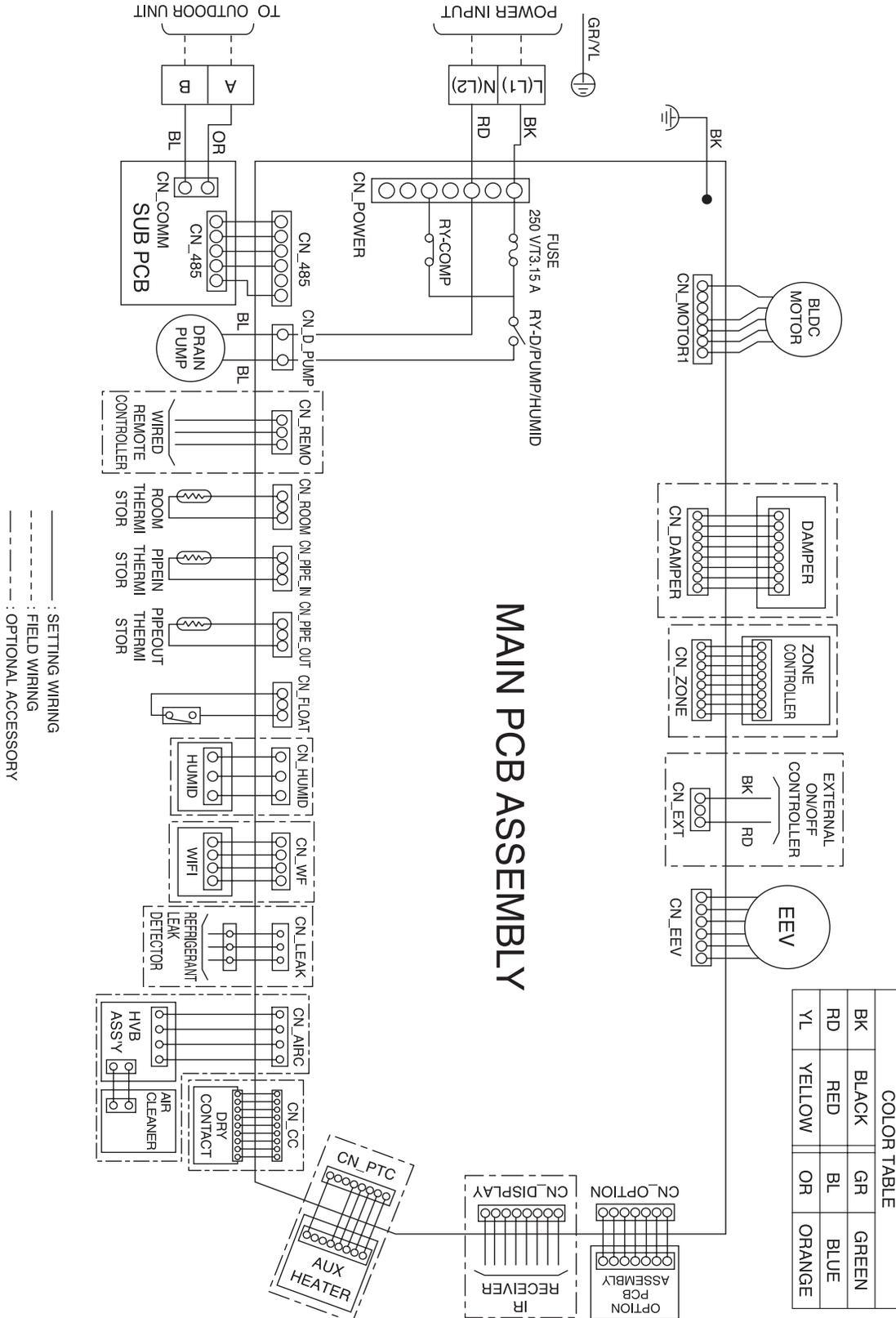
L1, L2, L3 Units

Figure 41: ARNU073-093L1G4, ARNU123~183L2G4, ARNU243L3G4 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
ARNU073L1G4 ARNU093L1G4	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
ARNU123L2G4 ARNU153L2G4 ARNU183L2G4	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
ARNU243L3G4	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

Figure 42: ARNU073L1G4, ARNU093L1G4 Wiring Diagram.



DUCTED LOW STATIC



Electrical Wiring Diagram

L1 Units

Table 82: L1 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-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

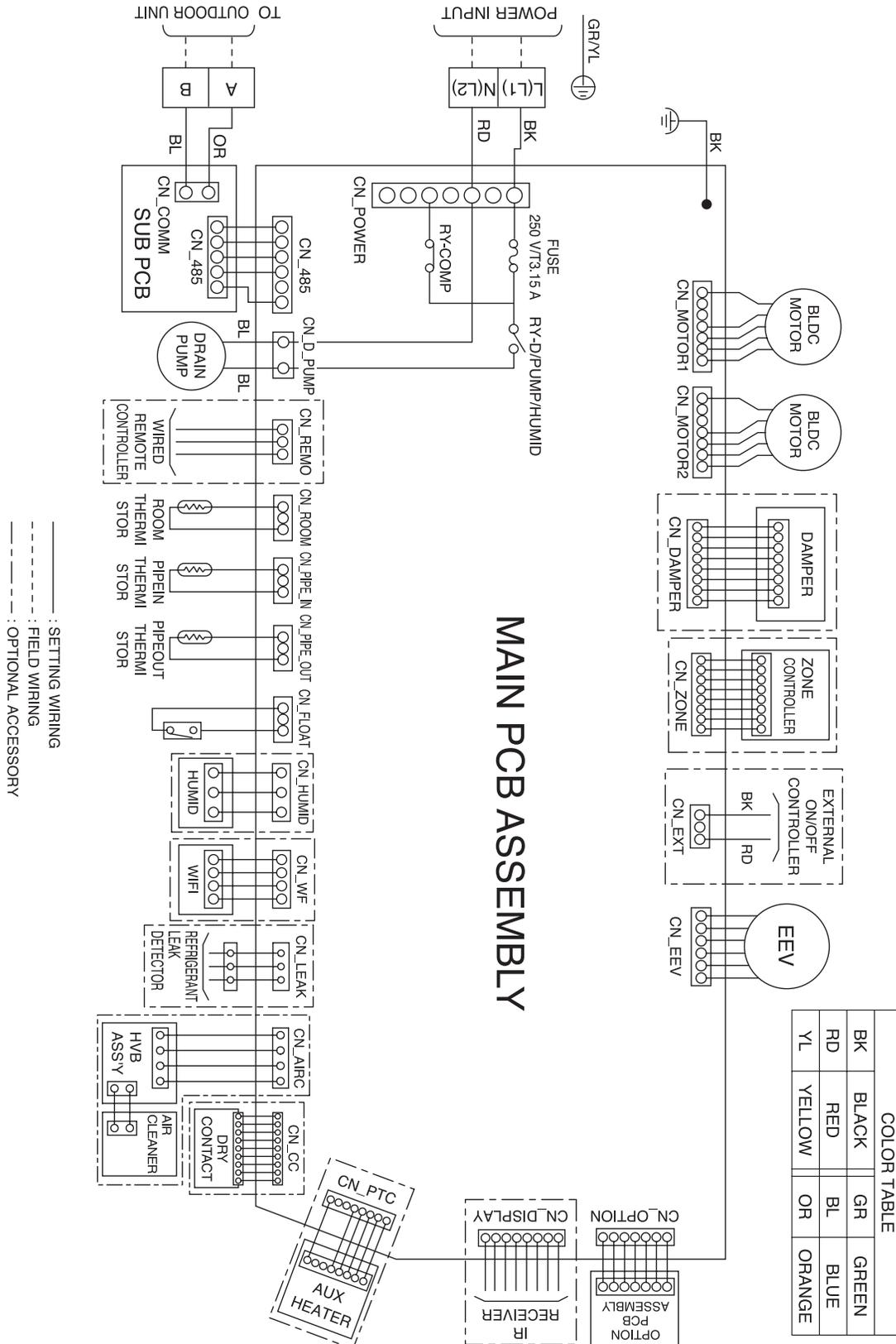
Table 83: L1 Unit DIP Switch Settings.

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.**

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

Figure 43: ARNU123L2G4, ARNU153L2G4, ARNU183L2G4, ARNU243L3G4 Wiring Diagram.



Ducted Low Static

DUCTED LOW STATIC



Electrical Wiring Diagram

L2, L3 Units

Table 84: L2, L3 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-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

Table 85: L2, L3 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.

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

Figure 44: L1, L2, L3 Unit Refrigerant Flow Diagram.

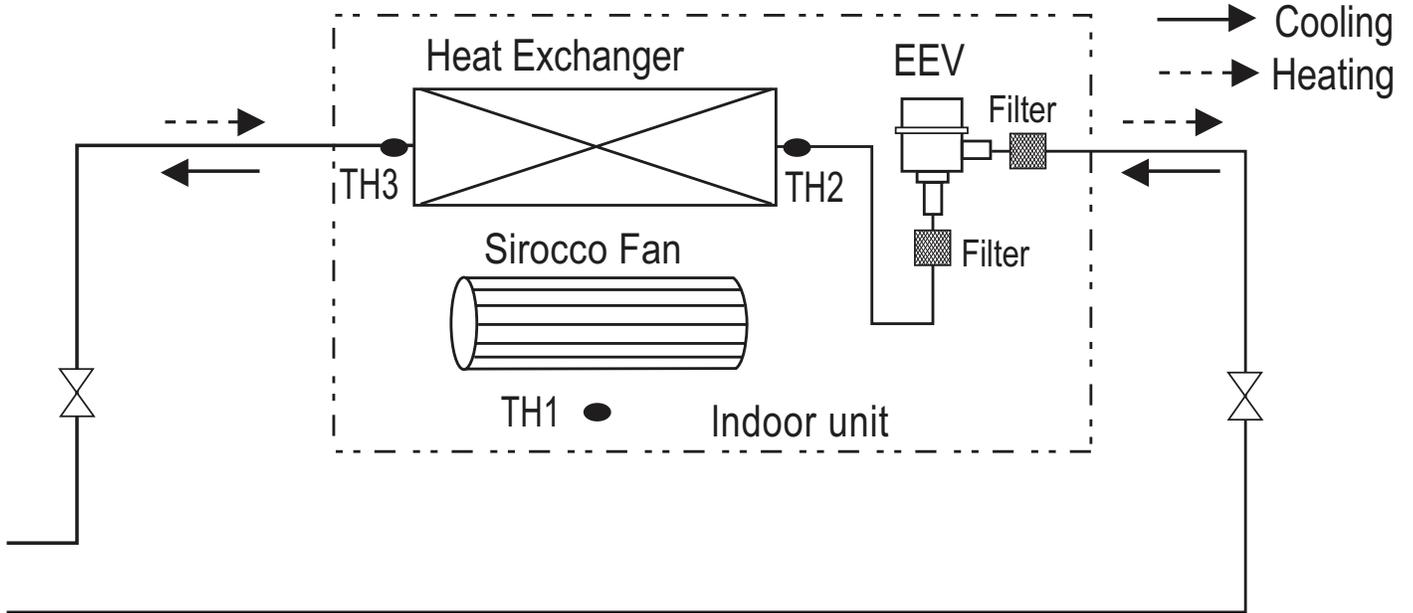


Table 86: L1, L2, L3 Unit Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
L1 Units		
ARNU073L1G4	1/4 Flare	1/2 Flare
ARNU093L1G4		
L2 Units		
ARNU123L2G4	1/4 Flare	1/2 Flare
ARNU153L2G4		
ARNU183L2G4		
L3 Units		
ARNU243L3G4	3/8 Flare	5/8 Flare

Table 87: L1, L2, L3 Unit Thermistors.

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

DUCTED LOW STATIC



External Static Pressure and Air Flow Tables L1, L2, L3 Units

Table 88: L1 Unit 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: L2 Unit 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: L3 Unit 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

1. All static pressure air flow rates are listed in CFM.
2. The tables above show the correlation between air flow rates and external static pressure.
3. The tables above show the available external static pressure range.

Note:

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 45: L1 Unit External Static Pressure and Air Flow Chart.

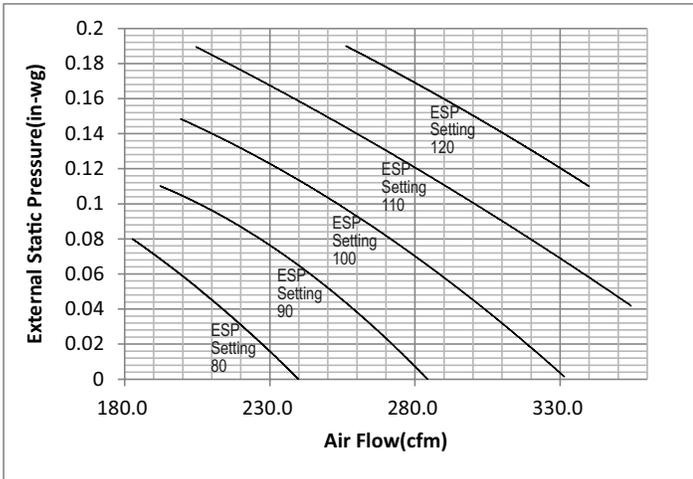


Figure 46: L2 Unit External Static Pressure and Air Flow Chart.

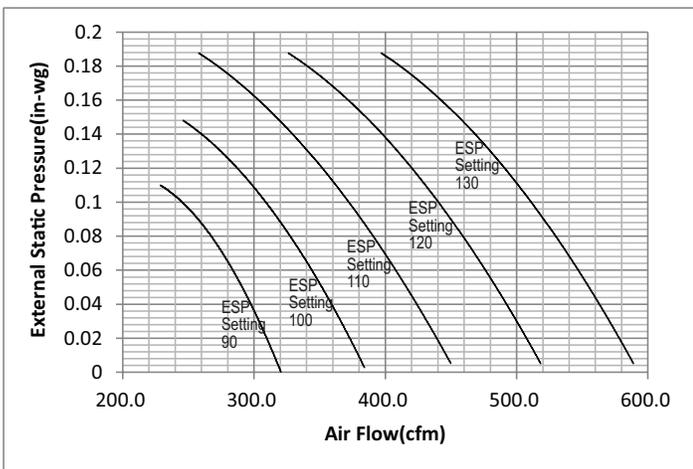
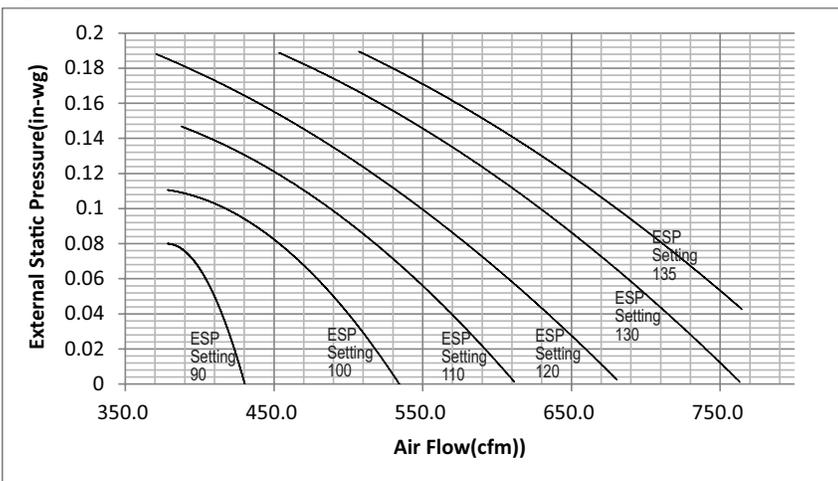


Figure 47: L3 Unit External Static Pressure and Air Flow Chart.



DUCTED LOW STATIC



External Static Pressure Ranges L1, L2, L3 Units

External Static Pressure Ranges for L1 units

Table 91: L1 Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode	Setting Value	Standard ESP (in. wg)	CFM	Min. ESP (in. wg)	Max. ESP (in. wg)	
ARNU073L1G4	7.5	High (Factory Set)	High	100	0	265	-	0.2
			Mid	93		230		
			Low	86		194		
ARNU093L1G4	9.6	High (Factory Set)	High	113	0	318	-	0.2
			Mid	97		247		
			Low	86		194		

External Static Pressure Ranges for L2 units

Table 93: L2 Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode	Setting Value	Standard ESP (in. wg)	CFM	Min. ESP (in. wg)	Max. ESP (in. wg)	
ARNU123L2G4	12.3	High (Factory Set)	High	105	0	353	-	0.2
			Mid	96		300		
			Low	89		247		
ARNU153L2G4	15.4	High (Factory Set)	High	119	0	442	-	0.2
			Mid	105		353		
			Low	96		300		
ARNU183L2G4	19.1	High (Factory Set)	High	131	0	530	-	0.2
			Mid	119		442		
			Low	105		353		

External Static Pressure Ranges for L3 unit

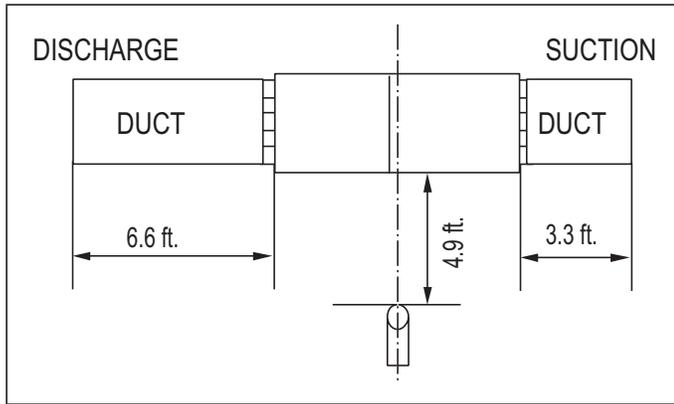
Table 92: L3 Unit External Static Pressure Ranges.

Model	Capacity (MBh)	Mode	Setting Value	Standard ESP (in. wg)	CFM	Min. ESP (in. wg)	Max. ESP (in. wg)	
ARNU243L3G4	24.0	High (Factory Set)	High	139	0	707	-	0.2
			Mid	118		565		
			Low	105		424		

The tables above show the available E.S.P. range.

Sound Pressure Levels

Figure 48: Sound Pressure Measurement Location.

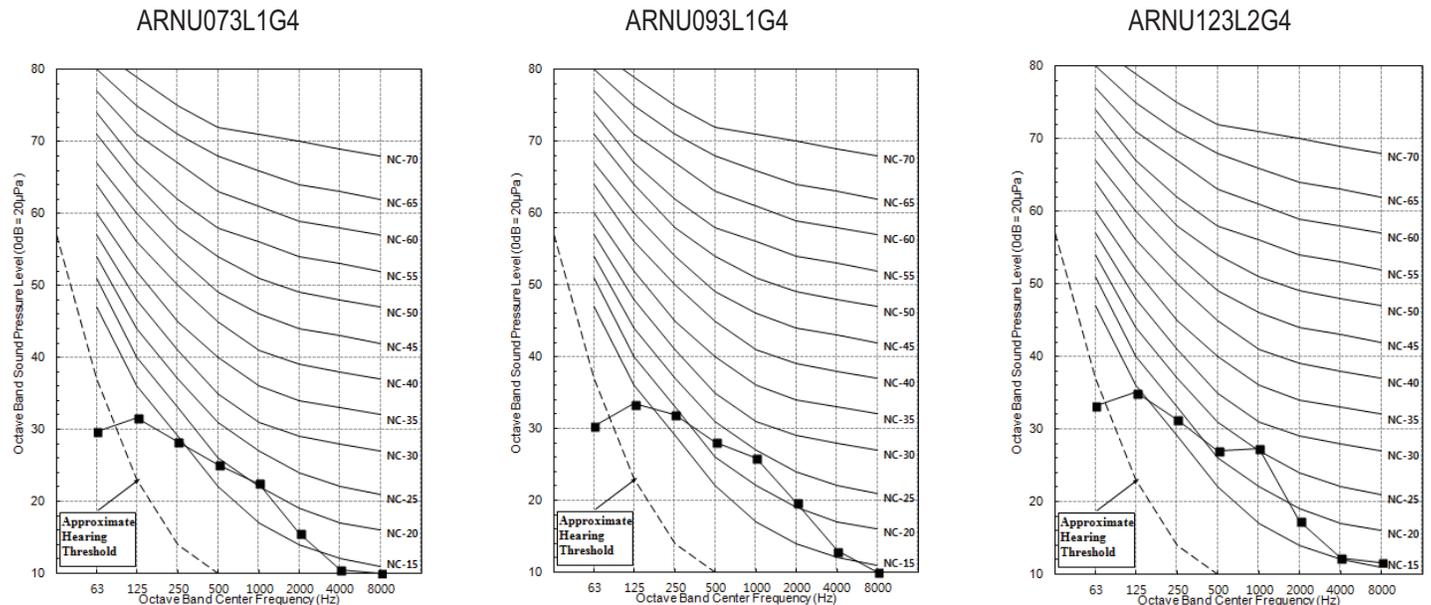


- Measurements are taken 4.9 ft away from the front of the unit.
 - Sound pressure levels are measured in dB(A) with a tolerance of ± 3 .
 - Sound pressure levels are tested in an anechoic chamber under ISO Standard 3745.
- Operating Conditions:
- Power source: 220V/60 Hz
 - Sound level will vary depending on a range of factors including the construction (acoustic absorption coefficient) of a particular room in which the unit was installed.

Table 94: Ducted Low Static Sound Pressure Levels.

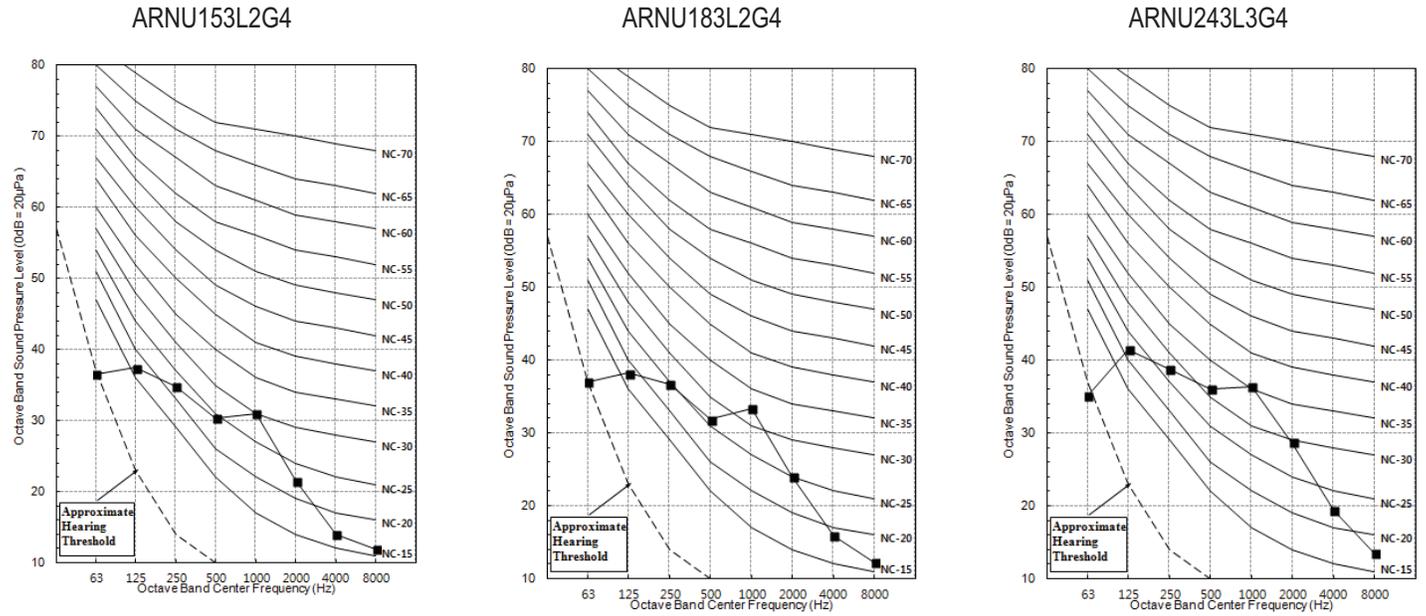
Model	Sound Pressure Levels dB(A)		
	High Fan Speed	Medium Fan Speed	Low Fan Speed
L1 Units			
ARNU073L1G4	27	26	23
ARNU093L1G4	30	26	23
L2 Units			
ARNU123L2G4	31	29	26
ARNU153L2G4	34	31	29
ARNU183L2G4	36	34	31
L3 Units			
ARNU243L3G4	39	35	32

Figure 49: ARNU073L1G4, ARNU093L1G4, and ARNU123L2G4 Sound Pressure Level Diagrams.



Sound Pressure Levels

Figure 50: ARNU153L2G4, ARNU183L2G4, and ARNU243L3G4 Sound Pressure Level Diagrams.



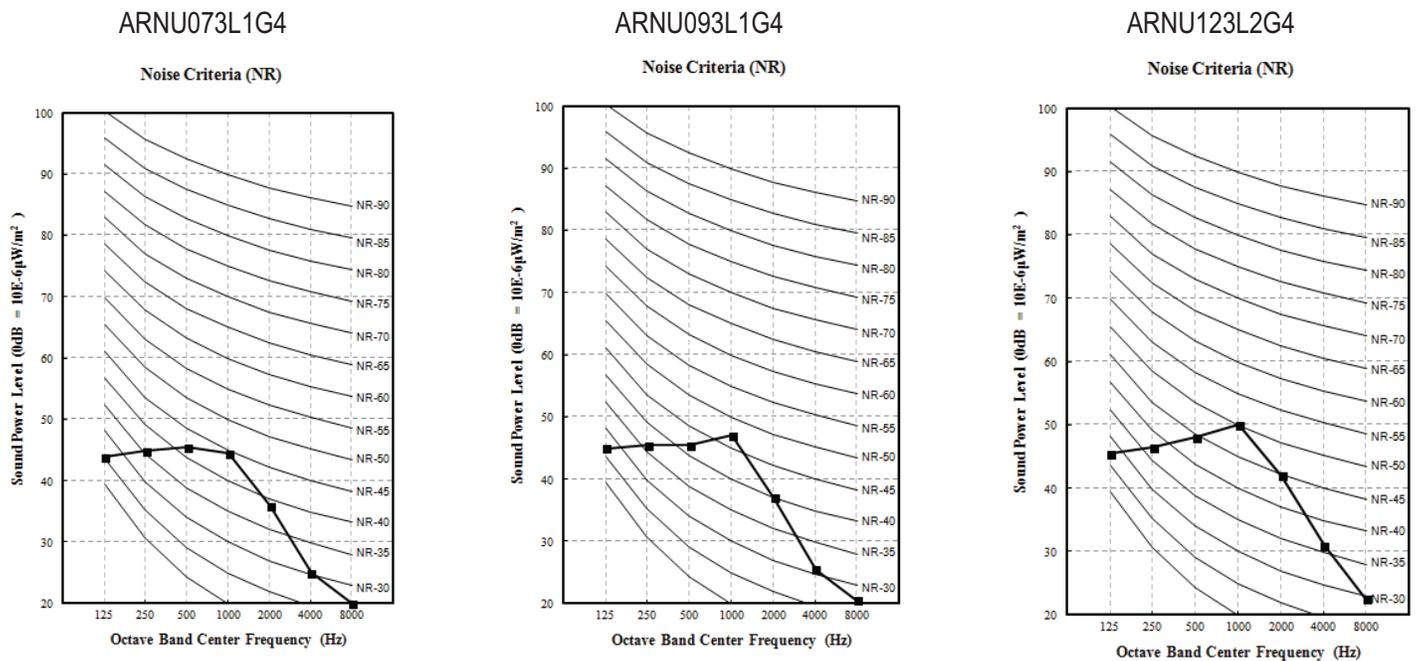
Sound Power Levels

Table 95: Ducted Low Static Sound Power Levels.

Model	Sound Power Levels dB(A)
L1 Units	
ARNU073L1G4	48
ARNU093L1G4	49
L2 Units	
ARNU123L2G4	52
ARNU153L2G4	53
ARNU183L2G4	54
L3 Units	
ARNU243L3G4	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 room per ISO 3741 standards.
- Sound level will vary depending on a range of factors such as construction (acoustic absorption coefficient) of particular area in which the equipment is installed.
- Reference acoustic intensity: 0dB = 10E-6μW/m²

Figure 51: ARNU073L1G4, ARNU093L1G4, and ARNU123L2G4 Sound Power Level Diagrams.



Ducted Low Static

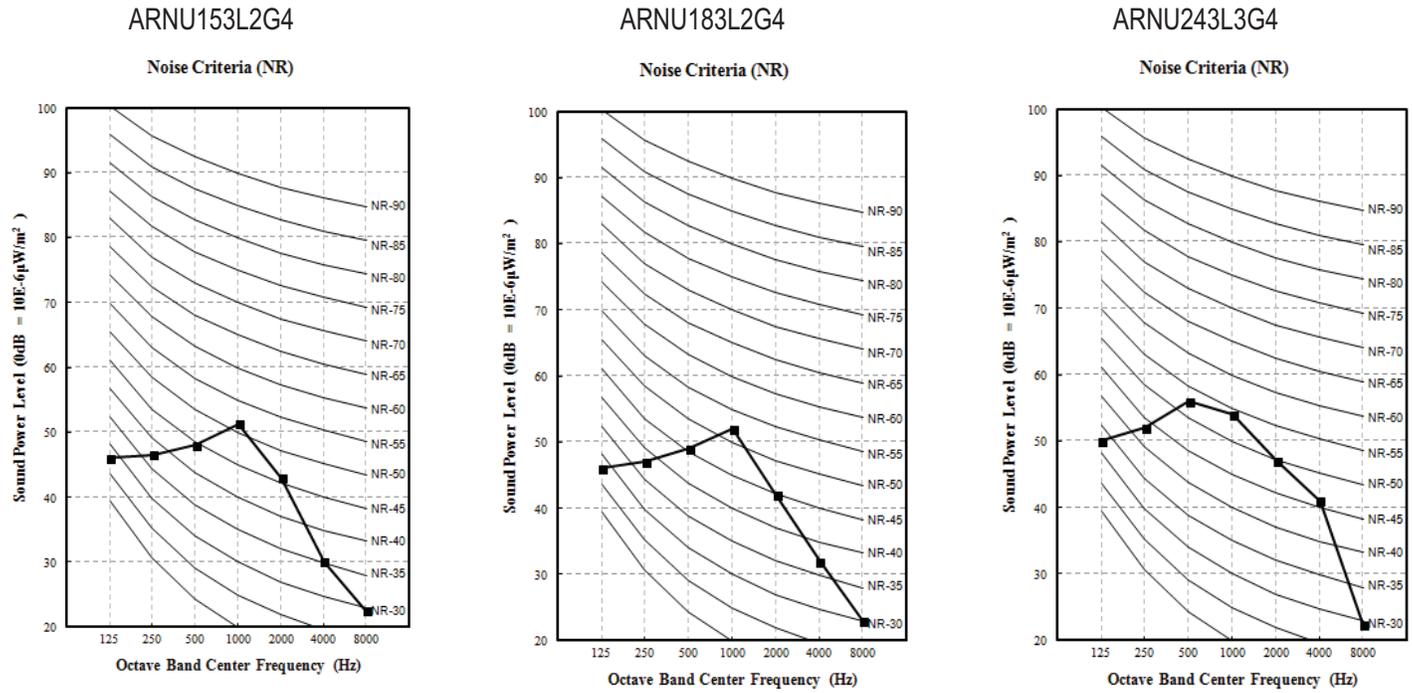
DUCTED LOW STATIC



Acoustic Data

Sound Power Levels

Figure 52: ARNU153L2G4, ARNU183L2G4, and ARNU243L3G4 Sound Power Level Diagrams.



MULTI V Ducted Indoor Unit Engineering Manual



Table 96: Ducted Low Static 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
ARNU073L1G4 / 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
ARNU093L1G4 / 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
ARNU123L2G4 / 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
ARNU153L2G4 / 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
ARNU183L2G4 / 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
ARNU243L3G4 / 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 www.ahridirectory.org.
 For outdoor unit performance data, see the respective outdoor unit performance data manuals on <https://lghvac.com/commercial>.

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

DUCTED LOW STATIC



Heating Capacity Tables

Table 97: Ducted Low Static 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
ARNU073L1G4 / 7.5	47	43	9.5	9.4	9.4	8.9	8.5	8.3	7.8	7.4
ARNU093L1G4 / 9.6	47	43	12.2	12.1	12.0	11.5	10.9	10.6	10.0	9.5
ARNU123L2G4 / 12.3	47	43	15.2	15.1	15.0	14.3	13.6	13.2	12.5	11.9
ARNU153L2G4 / 15.4	47	43	19.2	19.0	18.8	18.0	17.1	16.6	15.7	15.0
ARNU183L2G4 / 19.1	47	43	24.1	23.9	23.7	22.6	21.5	20.9	19.8	18.8
ARNU243L3G4 / 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 www.ahridirectory.org.

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

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

VERTICAL AIR HANDLING UNIT



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VERTICAL AIR HANDLING UNIT



Mechanical Specifications

Casing

The unit is designed to operate in the vertical up flow configuration or horizontal left end supply air. 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 "morning fog" (medium beige). 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. The unit bears the ETL label. 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). The setting provides delivery of the high speed 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" (NJ chassis) or 24" x 20" x 1" (NK 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 thumb screws 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 Vertical 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 Vertical 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

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 76°F. 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.

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
- Leak detection

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

VERTICAL AIR HANDLING UNIT



General Data NJ Frames

Table 98: Vertical Air Handling Unit (NJ Frame) General Data.

Model No.	ARNU123NJA4	ARNU183NJA4	ARNU243NJA4	ARNU303NJA4	ARNU363NJA4
Cooling Mode Performance					
Capacity (Btu/h)	12,000	18,000	24,000	30,000	36,000
Max Power Input ¹ (W)	228	228	228	228	228
L/M/H Power Input at Factory Default (W)	47 / 64 / 80	64 / 80 / 90	64 / 96 / 120	94 / 133 / 180	133 / 180 / 230
Heating Mode Performance					
Capacity (Btu/h)	13,500	20,000	27,000	34,000	40,000
Max Power Input ¹ (W)	228	228	228	228	228
L/M/H Power Input at Factory Default (W)	47 / 64 / 80	64 / 80 / 90	64 / 96 / 120	94 / 133 / 180	133 / 180 / 230
Entering Mixed Air					
Cooling Max. (°F WB)	76	76	76	76	76
Heating Min. (°F DB) ²	59	59	59	59	59
Unit Data					
Refrigerant Type ³	R410A				
Refrigerant Control	EEV				
Sound Power ⁴ dB(A) H/M/L, @0.50 ESP (in wg)	54 / 53 / 52	56 / 55 / 54	57 / 56 / 53	62 / 60 / 56	67 / 62 / 60
Sound Pressure ⁵ dB(A) H/M/L, @0.50 ESP (in wg)	42 / 41 / 39	42 / 42 / 41	43 / 42 / 41	44 / 43 / 42	45 / 44 / 43
Net Unit Weight (lbs.)	117	117	117	117	121
Shipping Weight (lbs.)	140	140	140	140	144
Communication Cable ⁶ (No. x AWG)	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18
Fan					
Type	Sirocco	Sirocco	Sirocco	Sirocco	Sirocco
Motor	1	1	1	1	1
Housing	1	1	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct				
Airflow Rate H / M / L (CFM) High Mode (Factory Set)	530 / 480 / 380	580 / 530 / 480	710 / 640 / 480	880 / 800 / 630	990 / 880 / 800
External Static Pressure (in. wg) High Mode (Factory Set)	0.5	0.5	0.5	0.5	0.5
Piping					
Liquid Line (in., O.D.)	1/4 Flare	1/4 Flare	3/8 Flare	3/8 Flare	3/8 Flare
Vapor Line (in., O.D.)	1/2 Flare	1/2 Flare	5/8 Flare	5/8 Flare	5/8 Flare
Condensate Line (in., I.D.)	1 (3/4" FPT)	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.

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

¹Max power input is rated at maximum setting value.

²Low ambient performance with LGRED[®] heat technology is included in Multi V 5 Air Source Units produced after February 2019.

³Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

⁴Sound Power level is measured using rated conditions, and tested in a reverberation room per AHRI 260.

⁵Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

⁶All 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.

Table 99: Vertical Air Handling Unit (NK Frame) General Data.

Model No.	ARNU423NKA4	ARNU483NKA4	ARNU543NKA4
Cooling Mode Performance			
Capacity (Btu/h)	42,000	48,000	54,000
Max Power Input ¹ (W)	366	366	366
L/M/H Power Input at Factory Default (W)	186 / 215 / 260	186 / 264 / 330	264 / 312 / 370
Heating Mode Performance			
Capacity (Btu/h)	46,000	54,000	60,000
Max Power Input ¹ (W)	366	366	366
L/M/H Power Input at Factory Default (W)	186 / 215 / 260	186 / 264 / 330	264 / 312 / 370
Entering Mixed Air			
Cooling Max. (°F WB)	76	76	76
Heating Min. (°F DB) ²	59	59	59
Unit Data			
Refrigerant Type ³	R410A		
Refrigerant Control	EEV		
Sound Power ⁴ dB(A) H/M/L, @0.50 ESP (in wg)	59 / 57 / 56	63 / 59 / 56	65 / 63 / 59
Sound Pressure ⁴ dB(A) H/M/L, @0.50 ESP (in wg)	46 / 44 / 41	49 / 47 / 41	50 / 49 / 47
Net Unit Weight (lbs.)	165	165	165
Shipping Weight (lbs.)	181	181	181
Communication Cable ⁵ (No. x AWG)	2 x 18	2 x 18	2 x 18
Fan			
Type	Sirocco	Sirocco	Sirocco
Motor	1	1	1
Housing	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct		
Airflow Rate H / M / L (CFM) High Mode (Factory Set)	1,250 / 1,100 / 1,000	1,400 / 1,260 / 1,000	1,475 / 1,400 / 1,260
External Static Pressure (in. wg) High Mode (Factory Set)	0.5	0.5	0.5
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 (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.

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

¹Max power input is rated at maximum setting value.

²Low ambient performance with LGRED[®] heat technology is included in Multi V 5 Air Source Units produced after February 2019.

³Take appropriate actions at the end of HVAC equipment life to recover, recycle, reclaim or destroy R410A refrigerant according to applicable regulations (40 CFR Part 82, Subpart F) under section 608 of CAA.

⁴Sound Power level is measured using rated conditions, and tested in a reverberation room per AHRI 260.

⁵Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.

⁶All 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.

VERTICAL AIR HANDLING UNIT



Electrical Data

Table 100: Vertical Air Handling Unit (NJ, NK Frames) Unit Electrical Data.

Model	Voltage Range	MCA	MOP	Rated Amps (A)	Power Supply			Power Input ¹ (W)		
					Hz	Volts	Phase	Max. Cooling	Max. Heating	L / M / H at Factory Default
<i>NJ Frames</i>										
ARNU123NJA4	208-230	3.5	15	2.8	60	208-230	1	228	228	47 / 64 / 80
ARNU183NJA4		3.5		2.8				228	228	64 / 80 / 90
ARNU243NJA4		3.5		2.8				228	228	64 / 96 / 120
ARNU303NJA4		3.5		2.8				228	228	94 / 133 / 180
ARNU363NJA4		3.5		2.8				228	228	133 / 180 / 230
<i>NK Frames</i>										
ARNU423NKA4	208-230	4.25	15	3.4	60	208-230	1	366	366	186 / 215 / 260
ARNU483NKA4		4.25		3.4				366	366	186 / 264 / 330
ARNU543NKA4		4.25		3.4				366	366	264 / 312 / 370

MCA : Minimum Circuit Ampacity.

MOP : Maximum Overcurrent Protection.

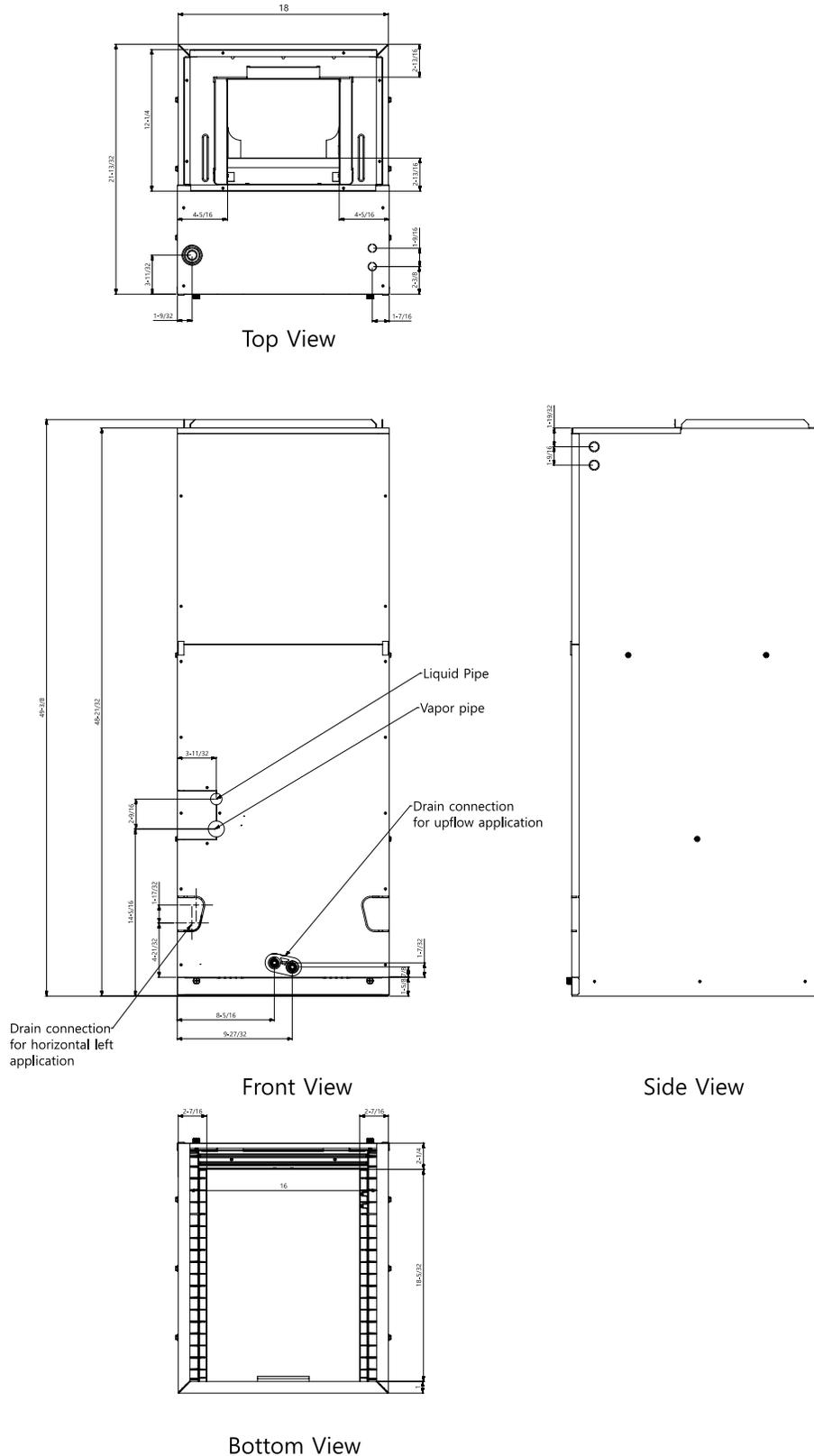
Units are suitable for use on an electrical system where voltage supplied to unit terminals is within the listed range limits.

Select wire size based on the larger MCA value.

Instead of fuse, use the circuit breaker.

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

Figure 53: ARNU123~363NJA4 Dimensions.



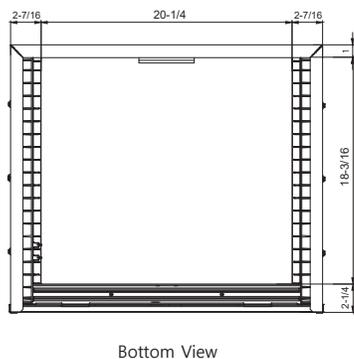
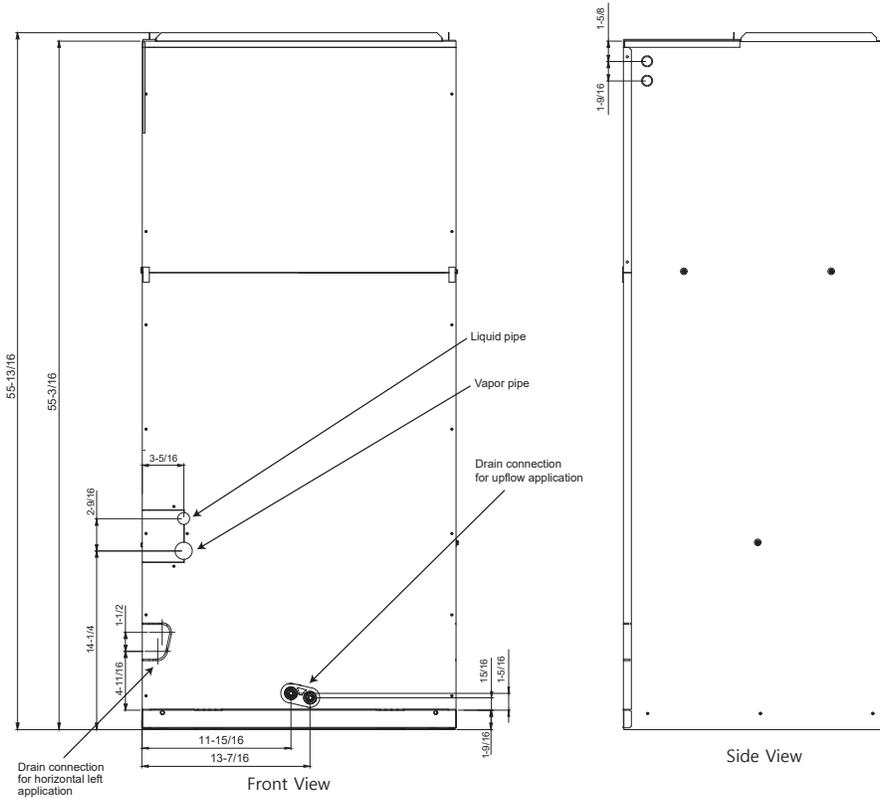
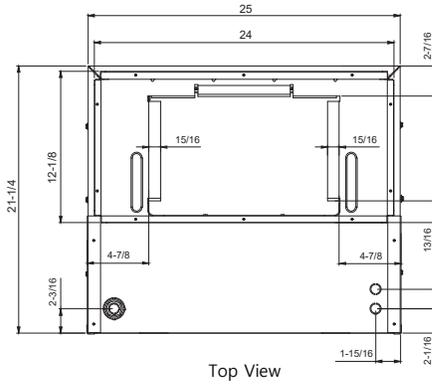
Vertical Air Handling Unit

VERTICAL AIR HANDLING UNIT



External Dimensions NK Frame

Figure 54: ARNU423~543NKA4 Dimensions.



Side View

Unit: inch

VERTICAL AIR HANDLING UNIT



Electrical Wiring Diagram

NJ Frame

Table 101: NJ 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

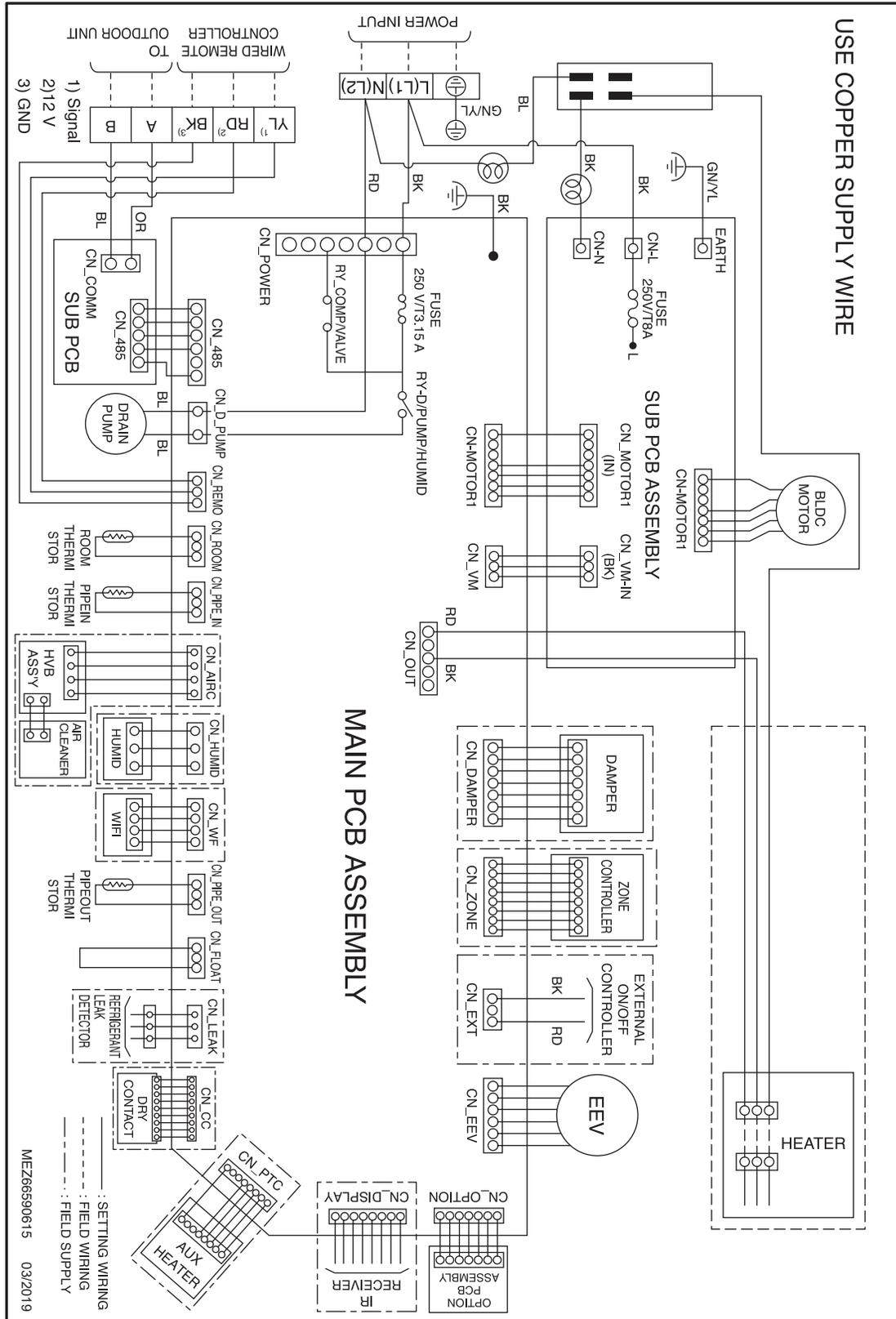
Table 102: NJ Frame DIP Switch Settings.

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 vertical 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)

*For Gen 4 Multi V Vertical Air Handling Units, DIP switches 1, 2, 7 and 8 must be set to OFF. These DIP switches are used for other models.

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

Figure 56: ARNU423-543NKA4 Wiring Diagram.



VERTICAL AIR HANDLING UNIT



Electrical Wiring Diagram

NK Frame

Table 103: NK 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

Table 104: NK 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 vertical 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)

***For Gen 4 Multi V Vertical Air Handling Units, DIP switches 1, 2, 7 and 8 must be set to OFF. These DIP switches are used for other models.**

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

VERTICAL AIR HANDLING UNIT



External Static Pressure and Air Flow Tables

NJ Unit External Static Pressure and Air Flow Table

Table 107: NJ Unit 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
	Air Flow Rate [CFM]							
50	652							
60	799	651						
70	929	879	685					
80	1118	1070	951	760	497			
90	1214	1182	1102	975	800	577		
100				1029	990	892	713	447

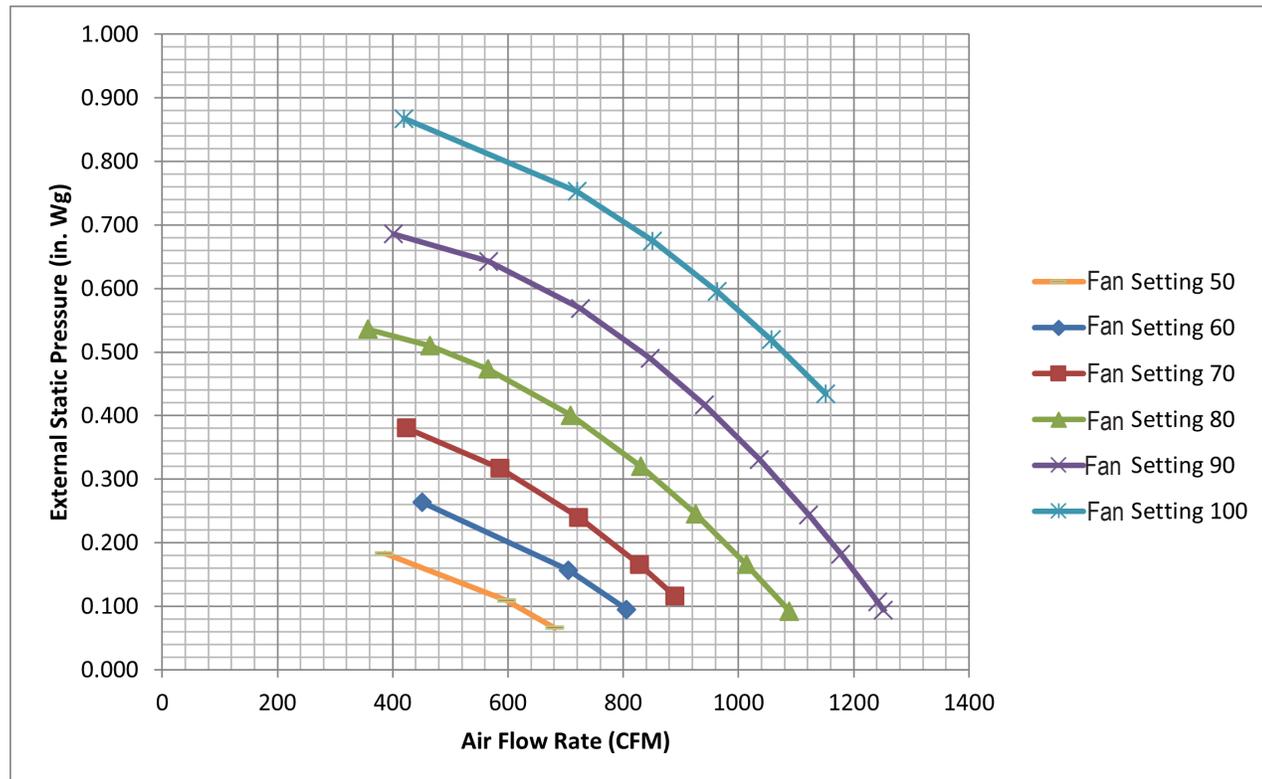
- All static pressure air flow rates are listed in CFM.
- The tables above show the correlation between air flow rates and external static pressure.
- The tables above show the available external static pressure range.

Note:

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.

NJ Unit External Static Pressure Graph

Figure 58: NJ Frame External Static Pressure and Air Flow Chart.



External Static Pressure Ranges for NJ Frames

Table 108: NJ Frame External Static Pressure and Air Flow Table.

Model No. / Capacity (MBh)	Mode		Flow Rate (CFM)	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
ARNU123NJA4 / 12	High (Factory Set)	Hi	530	**53	57	69	70	82	89	*92	*92
		Mid	480	**53	57	69	69	79	88	*92	*92
		Low	380	**53	56	70	67	77	86	*92	*92
ARNU183NJA4 / 18	High (Factory Set)	Hi	580	**53	58	69	71	84	90	*95	*95
		Mid	530	**53	57	69	70	82	89	*92	*92
		Low	480	**53	57	69	69	79	88	*92	*92
ARNU243NJA4 / 24	High (Factory Set)	Hi	710	54	62	71	77	87	94	*98	*98
		Mid	640	**53	60	69	74	85	92	*96	*96
		Low	480	**53	57	69	69	79	88	*92	*92
ARNU303NJA4 / 30	High (Factory Set)	Hi	880	65	69	76	86	92	100	*103	*103
		Mid	800	60	66	73	81	90	97	*101	*101
		Low	640	**53	60	69	74	85	92	*96	*96
ARNU363NJA4 / 36	High (Factory Set)	Hi	990	73	76	82	94	100	*103	*103	*103
		Mid	880	65	69	76	86	92	100	*103	*103
		Low	800	60	66	73	81	90	97	*101	*101

* Air flow will decrease according to table "P-Q graph"

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

VERTICAL AIR HANDLING UNIT



External Static Pressure and Air Flow Tables

NK Unit External Static Pressure and Air Flow Table

Table 109: NK Unit 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
	Air Flow Rate [CFM]							
50	825							
60	1134	796						
70	1378	1167	848					
80	1597	1463	1251	960	590			
90	1697	1599	1450	1250	1000	698	148	
100				1550	1335	1091	816	512

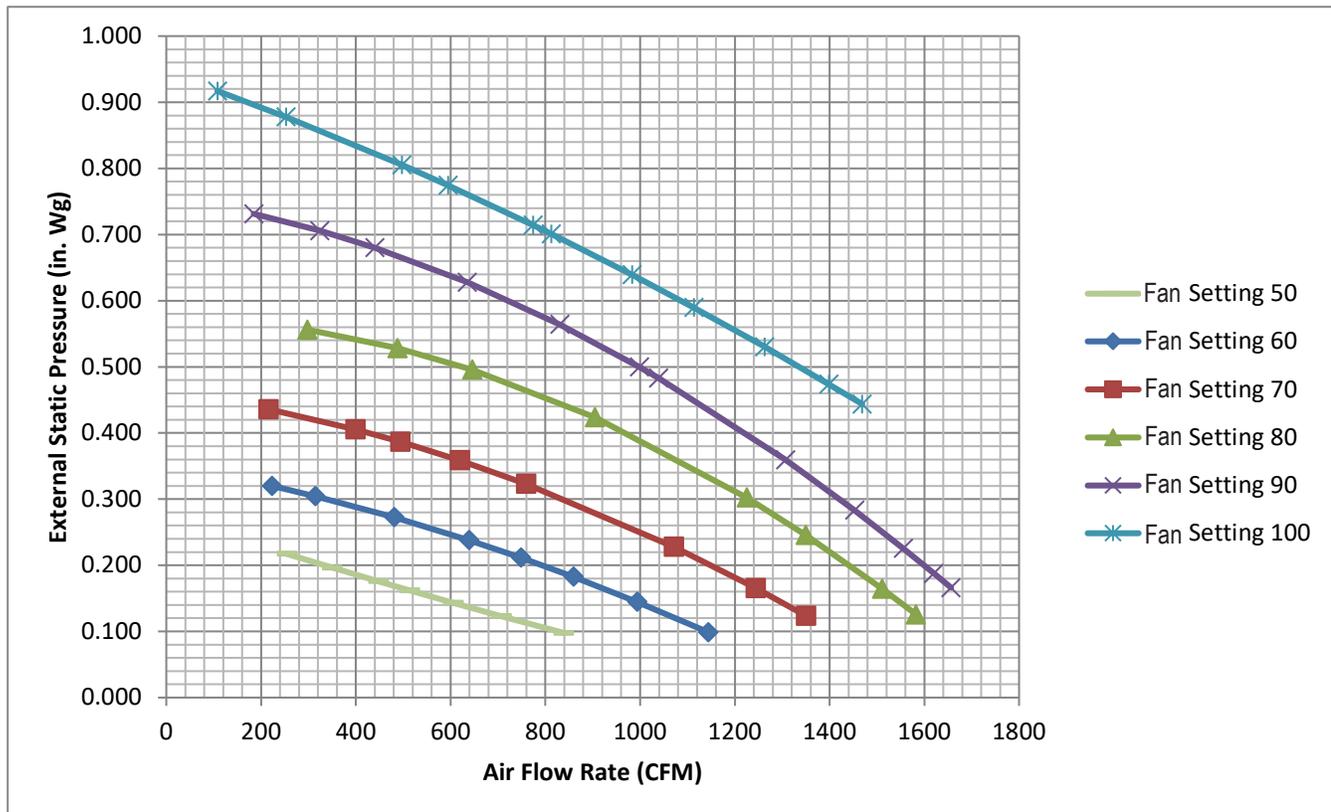
- All static pressure air flow rates are listed in CFM.
- The tables above show the correlation between air flow rates and external static pressure.
- The tables above show the available external static pressure range.

Note:

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.

NK Unit External Static Pressure Graph

Figure 59: NK Frame External Static Pressure and Air Flow Chart.



External Static Pressure Ranges for NK Frames

Table 110: NK Frame External Static Pressure and Air Flow Table.

Model No / Capacity (MBh)	Mode		Flow Rate (CFM)	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
ARNU423NKA4 / 42	High (Factory Set)	Hi	1260	64	72	80	90	90	105	114	*115
		Mid	1100	58	67	75	85	87	100	108	*115
		Low	1000	55	64	72	81	84	97	105	*115
ARNU483NKA4 / 48	High (Factory Set)	Hi	1400	71	79	87	95	96	111	*115	*115
		Mid	1260	64	72	80	90	90	106	114	*115
		Low	1000	55	64	72	81	84	97	105	*115
ARNU543NKA4 / 54	High (Factory Set)	Hi	1475	75	82	92	98	98	114	*115	*115
		Mid	1400	71	79	87	95	96	111	*115	*115
		Low	1260	64	72	80	90	90	106	114	*115

* Air flow will decrease according to table "P-Q graph"

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

VERTICAL AIR HANDLING UNIT



Heater Capacity Airflow / Static Pressure Drop Factors

Table 111: 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

Airflow rates in the table above are listed in CFM.

Flow rate (CFM) is decreased 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.

Note:

⊘ 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 112: 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.

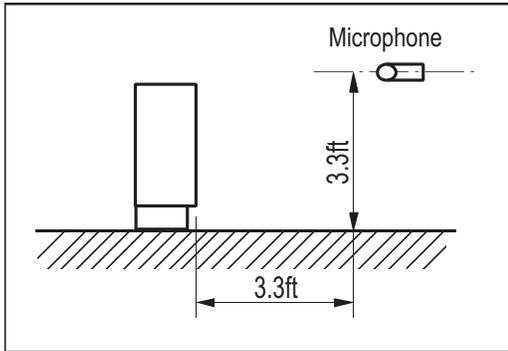
If the ESP setting value is inappropriate, the provided safety device will turn the heater off according to the airflow.

Note:

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-Party Thermostat.

Sound Pressure Levels and Diagrams

Figure 60: 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 113: Vertical Air Handling Unit Sound Pressure Levels.

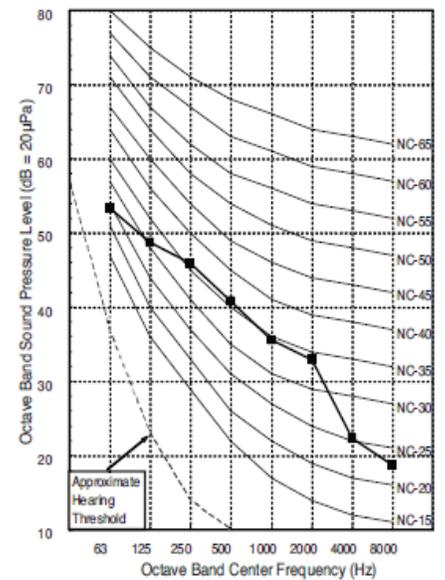
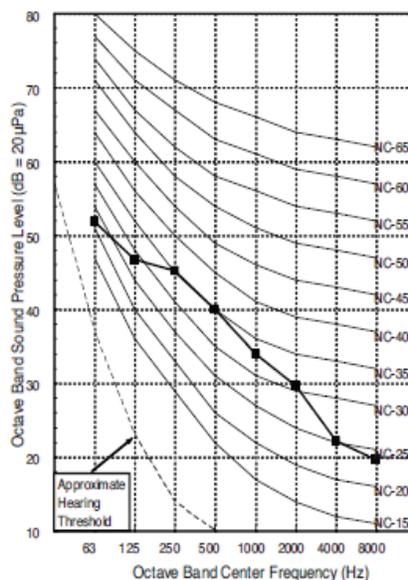
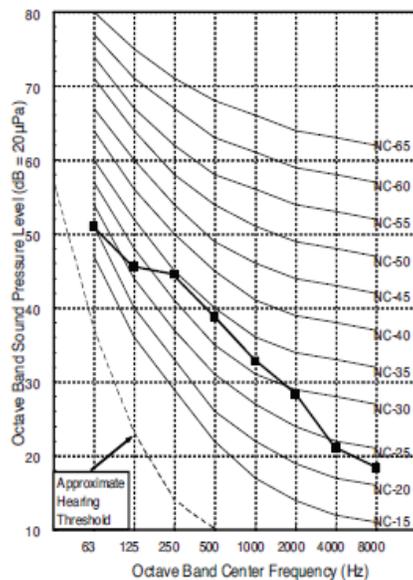
Model	Sound Pressure Levels dB(A) (H-M-L)
	External Static Pressure [in wg]
	0.50
ARNU123NJA4	42-41-39
ARNU183NJA4	42-42-41
ARNU243NJA4	43-42-41
ARNU303NJA4	44-43-42
ARNU363NJA4	45-44-43
ARNU423NKA4	46-44-41
ARNU483NKA4	49-47-41
ARNU543NKA4	50-49-47

Figure 61: ARNU123NJA4, ARNU183NJA4, and ARNU243NJA4 Sound Pressure Level Diagrams.

ARNU123NJA4

ARNU183NJA4

ARNU243NJA4



VERTICAL AIR HANDLING UNIT



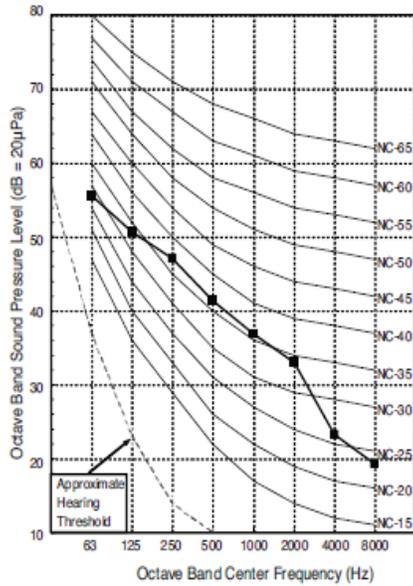
Acoustic Data

Sound Pressure Levels

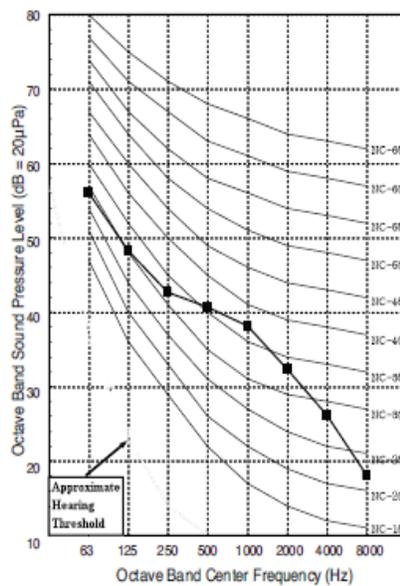
Sound Pressure Diagrams

Figure 62: ARNU303NJA4, ARNU363NJA4, and ARNU423NKA4 Sound Pressure Level Diagrams.

ARNU303NJA4



ARNU363NJA4



ARNU423NKA4

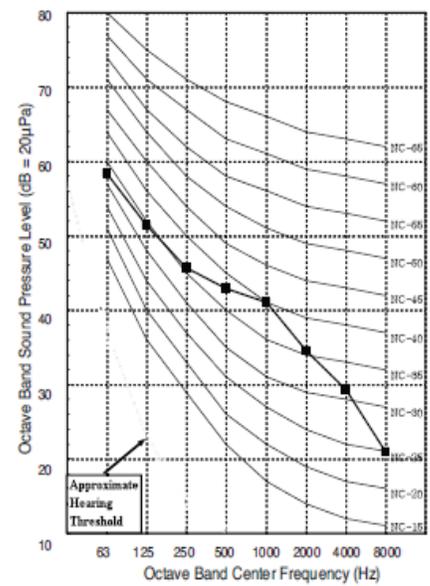
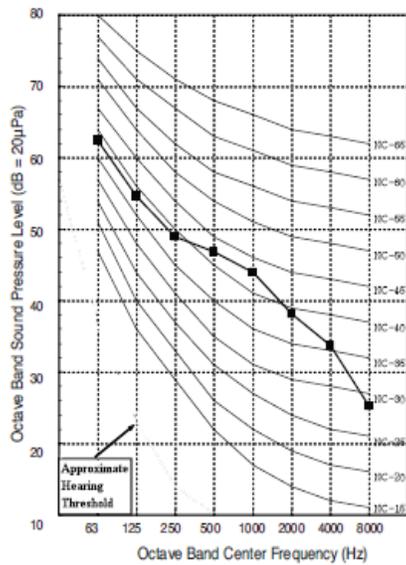
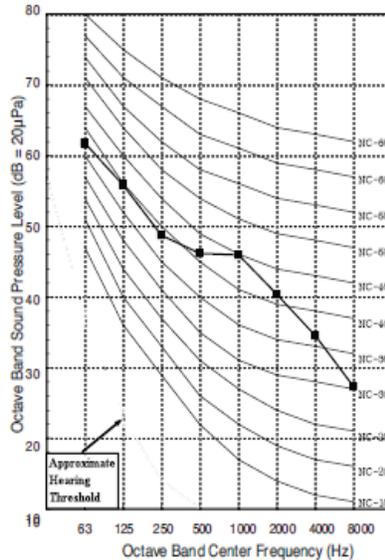


Figure 63: ARNU483NKA4 and ARNU543NKA4 Sound Pressure Level Diagrams.

ARNU483NKA4



ARNU543NKA4



Sound Power Levels

Table 114: Vertical Air Handling Unit Sound Power Levels.

Model	Sound Power Levels dB(A) (H-M-L) (CASING RADIATED)
	External Static Pressure [in wg]
	0.50
ARNU123NJA4	54-53-52
ARNU183NJA4	56-55-54
ARNU243NJA4	57-56-53
ARNU303NJA4	62-60-56
ARNU363NJA4	67-62-60
ARNU423NKA4	59-57-56
ARNU483NKA4	63-59-56
ARNU543NKA4	65-63-59

- 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 AHRI 260 standards.
- Sound level will vary depending on a range of factors such as construction (acoustic absorption coefficient) of particular area in which the equipment is installed.
- Reference acoustic intensity: 0dB = 10E-6μW/m²

VERTICAL AIR HANDLING UNIT



Acoustic Data

Sound Power Data for NJ Units

Sound Power for NJ Units

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	
ARNU123NJA4	RETURN OPENING	Hi	0.5	820	530	40.8	43.6	44.7	38.5	32.6	27.7	28.8	22.2	
		Mid		790	480	40.7	42.1	42.2	37.1	32.0	25.2	26.2	20.6	
		Low		770	380	40.5	41.0	40.7	34.5	29.5	22.0	24.8	19.4	
	CASING RADIATED	Hi		820	530	38.9	40.6	48.7	49.8	48.3	38.7	39.9	37.0	
		Mid		790	480	38.2	37.4	46.4	47.9	47.6	36.6	37.4	34.7	
		Low		770	380	37.4	35.5	44.4	46.8	46.7	35.8	36.1	34.0	
	DUCTED DISCHARGE	Hi		820	530	51.1	42.3	47.7	52.5	57.4	54.3	46.5	37.6	
		Mid		790	480	47.3	39.1	45.3	50.6	55.8	53.0	44.8	36.1	
		Low		770	380	46.4	37.8	43.8	49.7	55.1	52.2	43.7	34.9	
ARNU183NJA4	RETURN OPENING	Hi	0.5	840	580	40.9	44.6	46.3	39.4	33.0	29.4	30.5	23.3	
		Mid		820	530	40.8	43.6	44.7	38.5	32.6	27.7	28.8	22.2	
		Low		790	480	40.7	42.1	42.2	37.1	32.0	25.2	26.2	20.6	
	CASING RADIATED	Hi		840	580	39.4	42.8	50.2	51.0	48.8	40.1	41.6	38.6	
		Mid		820	530	38.9	40.6	48.7	49.8	48.3	38.7	39.9	37.0	
		Low		790	480	38.2	37.4	46.4	47.9	47.6	36.6	37.4	34.7	
	DUCTED DISCHARGE	Hi		840	580	53.6	44.4	49.4	53.8	58.4	55.1	47.6	38.6	
		Mid		820	530	51.1	42.3	47.7	52.5	57.4	54.3	46.5	37.6	
		Low		790	480	47.3	39.1	45.3	50.6	55.8	53.0	44.8	36.1	
ARNU243NJA4	RETURN OPENING	Hi	0.5	870	710	41.3	46.7	50.1	41.3	33.9	32.5	32.6	25.7	
		Mid		850	640	40.9	45.1	47.1	39.8	33.2	30.3	31.4	23.8	
		Low		790	480	40.7	42.1	42.2	37.1	32.0	25.2	26.2	20.6	
	CASING RADIATED	Hi		870	710	40.2	44.7	51.7	52.7	50.7	41.9	43.2	40.9	
		Mid		850	640	39.7	43.8	50.9	51.6	49.1	40.7	42.4	39.3	
		Low		790	480	38.2	37.4	46.4	47.9	47.6	36.6	37.4	34.7	
	DUCTED DISCHARGE	Hi		870	710	56.7	47.5	53.5	55.6	60.0	55.7	49.1	39.8	
		Mid		850	640	54.9	45.5	50.2	54.4	58.9	55.6	48.2	39.1	
		Low		790	480	47.3	39.1	45.3	50.6	55.8	53.0	44.8	36.1	

Sound Power for NJ Units

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	
ARNU303NJA4	RETURN OPENING	Hi	0.5	920	880	42.3	49.9	54.4	52.5	35.7	36.7	36.0	29.9	
		Mid		900	800	42.1	48.7	52.5	50.1	34.8	34.8	34.5	28.5	
		Low		850	630	40.9	45.1	47.1	39.8	33.2	30.3	31.4	23.8	
	CASING RADIATED	Hi		920	880	41.5	48.4	56.3	58.1	52.6	46.7	47.5	44.6	
		Mid		900	800	40.9	46.7	54.7	56.6	51.8	45.2	46.0	43.2	
		Low		850	630	39.7	43.8	50.9	51.6	49.1	40.7	42.4	39.3	
	DUCTED DISCHARGE	Hi		920	880	60.7	49.3	59.3	61.2	61.2	57.9	52.7	44.0	
		Mid		900	800	58.8	47.8	57.2	59.6	60.4	57.1	51.5	42.7	
		Low		850	630	54.9	45.5	50.2	54.4	58.9	55.6	48.2	39.1	
ARNU363NJA4	RETURN OPENING	Hi	0.5	1000	990	43.3	54.7	61.7	62.0	38.9	44.6	41.9	35.5	
		Mid		920	880	42.3	49.9	54.4	52.5	35.7	36.7	36.0	29.9	
		Low		900	800	42.1	48.7	52.5	50.1	34.8	34.8	34.5	28.5	
	CASING RADIATED	Hi		1000	990	43.6	55.3	62.6	64.1	55.7	52.4	53.6	50.3	
		Mid		920	880	41.5	48.4	56.3	58.1	52.6	46.7	47.5	44.6	
		Low		900	800	40.9	46.7	54.7	56.6	51.8	45.2	46.0	43.2	
	DUCTED DISCHARGE	Hi		1000	990	68.3	55.4	67.6	67.3	64.5	60.9	57.4	48.8	
		Mid		920	880	60.7	49.3	59.3	61.2	61.2	57.9	52.7	44.0	
		Low		900	800	58.8	47.8	57.2	59.6	60.4	57.1	51.5	42.7	

Vertical Air Handling Unit

VERTICAL AIR HANDLING UNIT



Acoustic Data

Sound Power Data for NK Units

Sound Power for NK Units

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
ARNU423NKA4	RETURN OPENING	Hi	0.5	900	1250	52.4	51.2	44.5	36.8	35.0	31.4	32.2	25.0
		Mid		870	1100	51.4	50.1	43.4	33.2	33.4	27.6	27.5	23.7
		Low		840	1000	50.5	48.9	42.3	29.5	31.8	23.7	22.8	22.4
	CASING RADIATED	Hi		900	1250	40.8	47.2	46.0	54.4	54.9	49.5	44.2	35.6
		Mid		870	1100	35.5	45.4	44.8	53.4	52.5	47.6	41.4	31.6
		Low		840	1000	30.2	43.6	43.5	52.3	50.1	45.6	38.6	27.6
	DUCTED DISCHARGE	Hi		900	1250	61.9	50.9	53.5	55.9	57.8	54.5	48.7	39.4
		Mid		870	1100	61.1	50.3	52.5	54.8	56.2	53.0	46.0	36.7
		Low		840	1000	60.3	49.7	51.6	53.6	54.7	51.6	43.4	34.1
ARNU483NKA4	RETURN OPENING	Hi	0.5	960	1400	54.2	53.5	46.8	44.1	38.2	39.2	41.5	27.5
		Mid		900	1260	52.4	51.2	44.5	36.8	35.0	31.4	32.2	25.0
		Low		840	1000	50.5	48.9	42.3	29.5	31.8	23.7	22.8	22.4
	CASING RADIATED	Hi		960	1400	51.3	50.7	48.5	56.6	59.6	53.3	49.8	43.6
		Mid		900	1260	40.8	47.2	46.0	54.4	54.9	49.5	44.2	35.6
		Low		840	1000	30.2	43.6	43.5	52.3	50.1	45.6	38.6	27.6
	DUCTED DISCHARGE	Hi		960	1400	63.4	52.1	55.3	58.3	60.9	57.5	54.0	44.7
		Mid		900	1260	61.9	50.9	53.5	55.9	57.8	54.5	48.7	39.4
		Low		840	1000	60.3	49.7	51.6	53.6	54.7	51.6	43.4	34.1
ARNU543NKA4	RETURN OPENING	Hi	0.5	980	1475	54.9	54.3	47.6	46.6	39.2	41.8	44.7	28.3
		Mid		960	1400	54.2	53.5	46.8	44.1	38.2	39.2	41.5	27.5
		Low		900	1260	52.4	51.2	44.5	36.8	35.0	31.4	32.2	25.0
	CASING RADIATED	Hi		980	1475	54.8	51.9	49.4	57.3	61.2	54.6	51.7	46.2
		Mid		960	1400	51.3	50.7	48.5	56.6	59.6	53.3	49.8	43.6
		Low		900	1260	40.8	47.2	46.0	54.4	54.9	49.5	44.2	35.6
	DUCTED DISCHARGE	Hi		980	1475	63.9	52.5	55.9	59.1	61.9	58.4	55.8	46.5
		Mid		960	1400	63.4	52.1	55.3	58.3	60.9	57.5	54.0	44.7
		Low		900	1260	61.9	50.9	53.5	55.9	57.8	54.5	48.7	39.4

MULTI V Ducted Indoor Unit Engineering Manual

Table 115: Vertical Air Handling 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
ARNU123NJA4 / 12.0	95	7.9	7.8	9.6	9.0	10.8	9.6	12.0	10.2	12.9	10.6	13.1	10.1	13.3	9.5
ARNU183NJA4 / 18.0	95	11.9	9.8	14.4	11.3	16.2	12.0	18.0	12.8	19.3	13.3	19.7	12.7	20	11.9
ARNU243NJA4 / 24.0	95	15.8	13.6	19.2	15.7	21.6	16.7	24.0	17.8	25.7	18.5	26.2	17.6	26.6	16.6
ARNU303NJA4 / 30.0	95	19.8	16.5	24	19.1	27	20.3	30.0	21.6	32.1	22.4	32.8	21.4	33.3	20.1
ARNU363NJA4 / 36.0	95	23.7	19.8	28.8	22.8	32.4	24.3	36.0	25.9	38.6	26.9	39.3	25.6	39.9	24.1
ARNU423NKA4 / 42.0	95	27.7	23.1	33.6	26.6	37.8	28.3	42.0	30.2	45	31.4	45.9	29.9	46.6	28.2
ARNU483NKA4 / 48.0	95	31.6	25.3	38.4	29.2	43.2	31.1	48.0	33.1	51.4	34.4	52.4	32.7	53.2	30.9
ARNU543NKA4 / 54.0	95	35.6	28.5	43.2	32.9	48.6	35.0	54.0	37.3	57.8	38.8	59	36.9	59.9	34.8

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 www.ahridirectory.org.
 For outdoor unit performance data, see the respective outdoor unit performance data manuals on <https://lghvac.com/commercial>.

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

VERTICAL AIR HANDLING UNIT



Heating Capacity Tables

Table 116: Vertical Air Handling 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
ARNU123NJA4 / 12.0	47	43	15.1	15.0	14.9	14.2	13.5	13.1	12.4	11.8
ARNU183NJA4 / 18.0	47	43	22.4	22.2	22.0	21.0	20.0	19.4	18.4	17.5
ARNU243NJA4 / 24.0	47	43	30.2	30.0	29.7	28.4	27.0	26.2	24.8	23.6
ARNU303NJA4 / 30.0	47	43	38.1	37.7	37.4	35.7	34.0	33.0	31.3	29.8
ARNU363NJA4 / 36.0	47	43	44.8	44.4	44.0	42.0	40.0	38.8	36.8	35.0
ARNU423NKA4 / 42.0	47	43	51.5	51.1	50.6	48.3	46.0	44.6	42.3	40.3
ARNU483NKA4 / 48.0	47	43	60.5	59.9	59.4	56.7	54.0	52.4	49.7	47.3
ARNU543NKA4 / 54.0	47	43	67.2	66.6	66.0	63.0	60.0	58.2	55.2	52.5

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 www.ahridirectory.org.

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

Note:

Low ambient performance with LGRED° heat technology is included in Multi V 5 Air Source Units produced after February 2019.

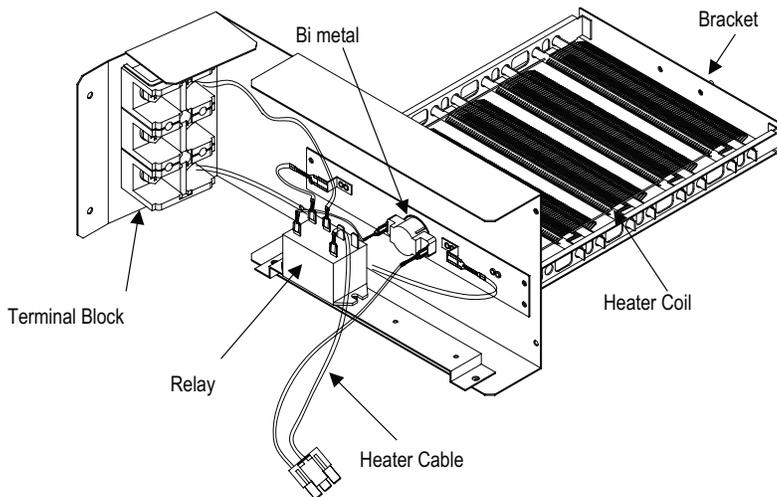
Table 117: Optional Accessories for Vertical Air Handling Unit.

Accessory	Model Number
3kW Electric Heater	ANEH033B1
5kW Electric Heater	ANEH053B1
8kW Electric Heater	ANEH083B2
10kW Electric Heater	ANEH103B2
15kW Electric Heater	ANEH153B2
20kW Electric Heater	ANEH203B2

All accessories are sold separately.

Figure 64: Electric Heater.

Example: 5kW Capacity Heater



Note:

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-Party Thermostat.

Table 118: Electric Heater Capacities.

Indoor Unit Model No. / Capacity (MBh)	Model Number / Heater Capacity					
	ANEH033B1 (3kW)	ANEH053B1 (5kW)	ANEH083B2 (8kW)	ANEH103B2 (10kW)	ANEH153B2 (15kW)	ANEH203B2 (20kW)
ARNU123NJA4 (12)	X	X	X	Not available	Not available	Not available
ARNU183NJA4 (18)	X	X	X	X	Not available	Not available
ARNU243NJA4 (24)	X	X	X	X	Not available	Not available
ARNU303NJA4 (30)	X	X	X	X	Not available	Not available
ARNU363NJA4 (36)	X	X	X	X	X	X
ARNU423NKA4 (42)	X	X	X	X	X	X
ARNU483NKA4 (48)	X	X	X	X	X	X
ARNU543NKA4 (54)	X	X	X	X	X	X

Note:

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

APPLICATION GUIDELINES

Selecting the Best Location on page 167

**General Mounting - High, Mid, and Low Static Ducted Units
on page 171**

**General Mounting - Vertical Handling Units
on page 173**

General Drain Piping Information on page 175

Wiring Guidelines on page 177

Wired Controller Placement on page 179

Acronyms on page 180

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.
- Place the unit in a location that can support a load four times the indoor unit weight, and where the indoor unit can be level.
- 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.

Don'ts

- Avoid installing the unit near high-frequency generators.
- Do not install the unit near a doorway.
- Do not install the unit 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.)

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

⚠ 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.

Note:

- Indoor units (IDUs) must 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 IDUs are installed, proper air make up or supply and/ or adequate ventilation must be provided. Additionally, in buildings where IDUs will be exposed to VOCs consider a factory-applied epoxy coating to the fan coils for each IDU.
- 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.

Figure 66: Clearance Requirements for B8 High Static Ducted Units.

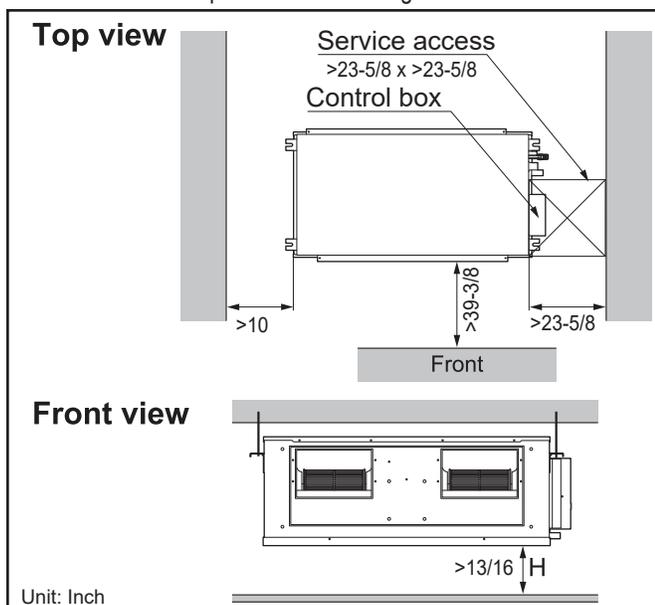


Figure 65: Installing Near a Heat or Steam Source.

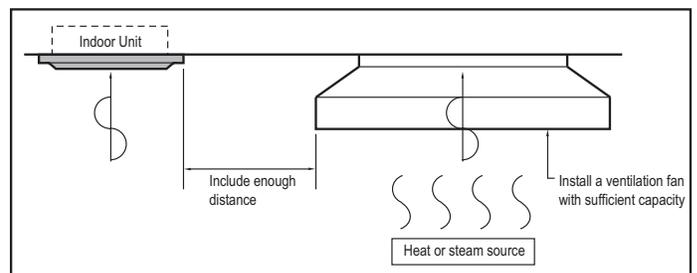
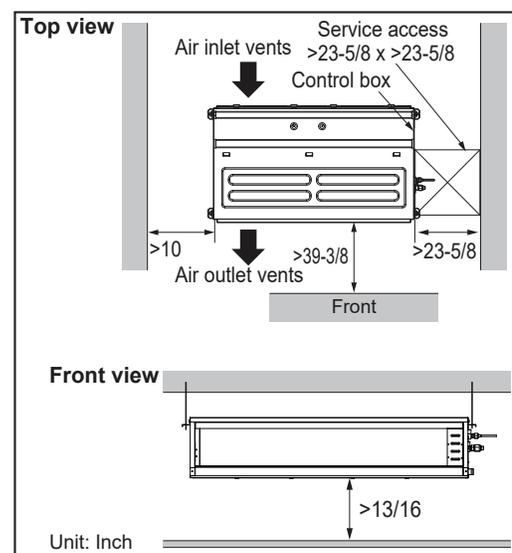


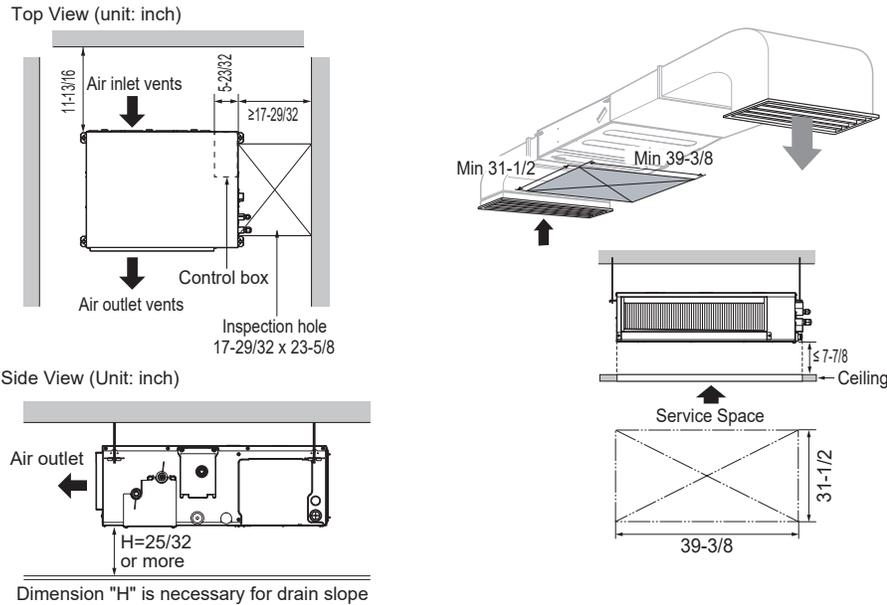
Figure 67: Clearance Requirements for M1, M2, and M3 Mid and High Static Ducted Units.



Selecting the Best Location

Convertible Mid Static Ducted Clearance Requirements

Figure 68: Convertible Mid Static Ducted MA Unit Access Panel Required Dimensions.



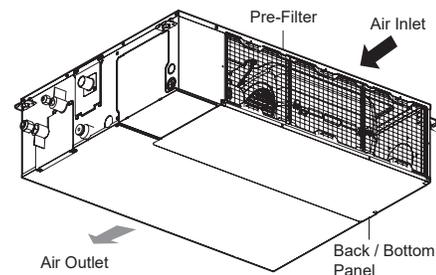
Note:
Appearances and installation structure may differ depending on model.
If the distance between the dropped ceiling and the actual ceiling is <math>< 7-7/8</math> inch, the inspection access area should be greater than the size of indoor unit.

Figure 69: MA Unit Bottom Air Inlet Conversion.

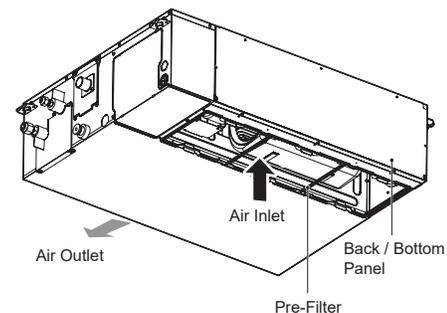
Changing Air Inlet from Back to Bottom of Indoor Unit

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.

Factory Configured Back Inlet Position



Field Configured Bottom Inlet Position



Convertible Mid Static Ducted Vertical Installation and Best Layout Practices

The Mid Static Duct 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 70: Mid Static Duct IDU Vertical Installation Position.

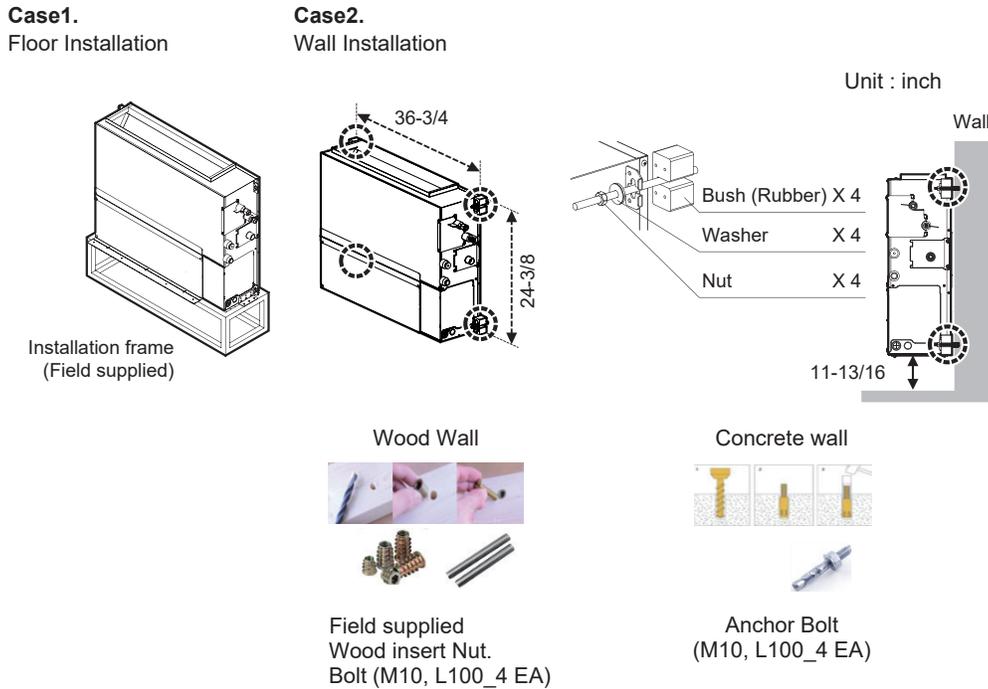
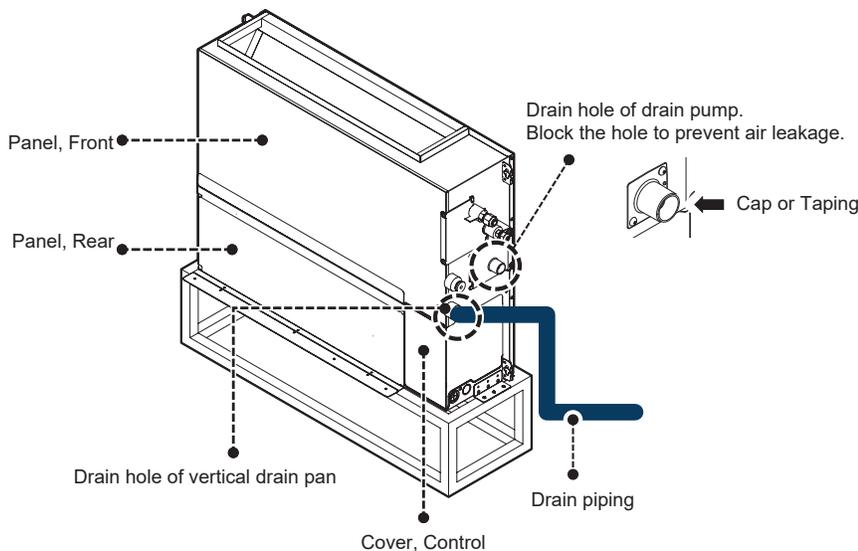


Figure 71: Mid Static Duct IDU Vertical Installation Drain.

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



Selecting the Best Location

Figure 72: Clearance Requirements for L1, L2, and L3 Low Static Ducted Units.

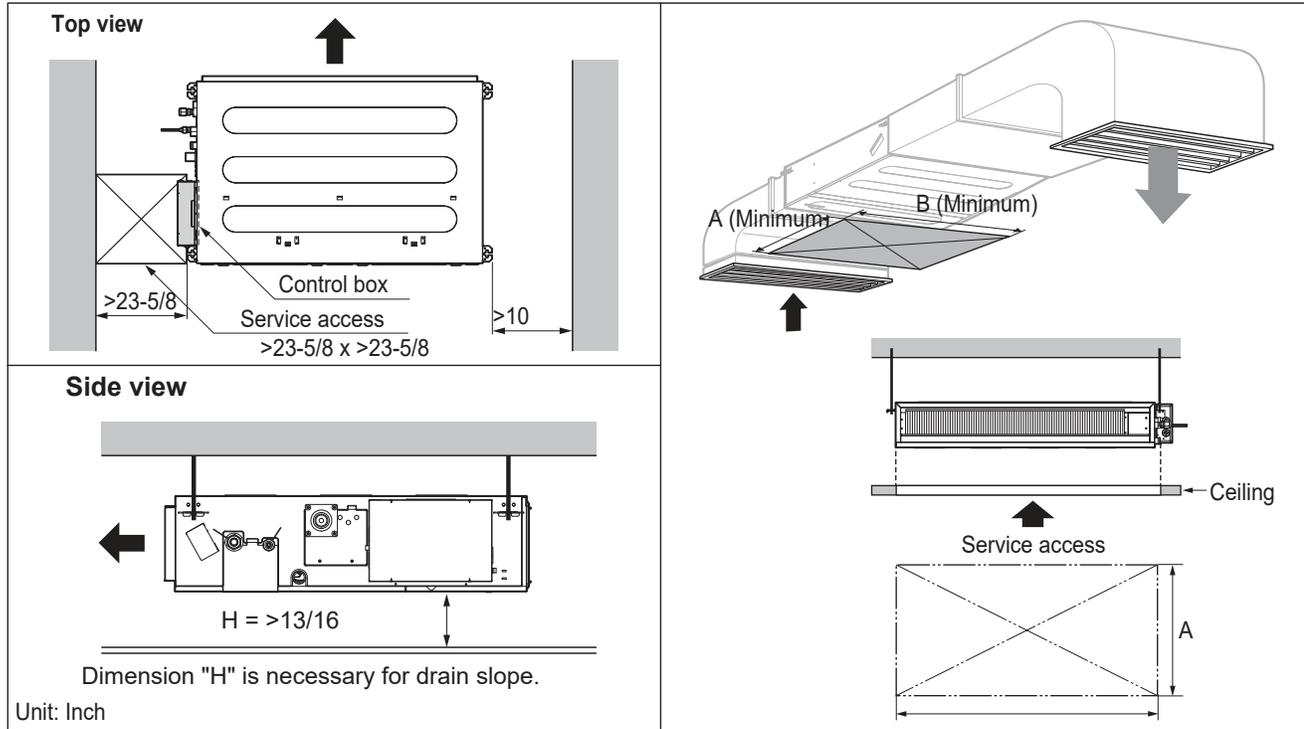
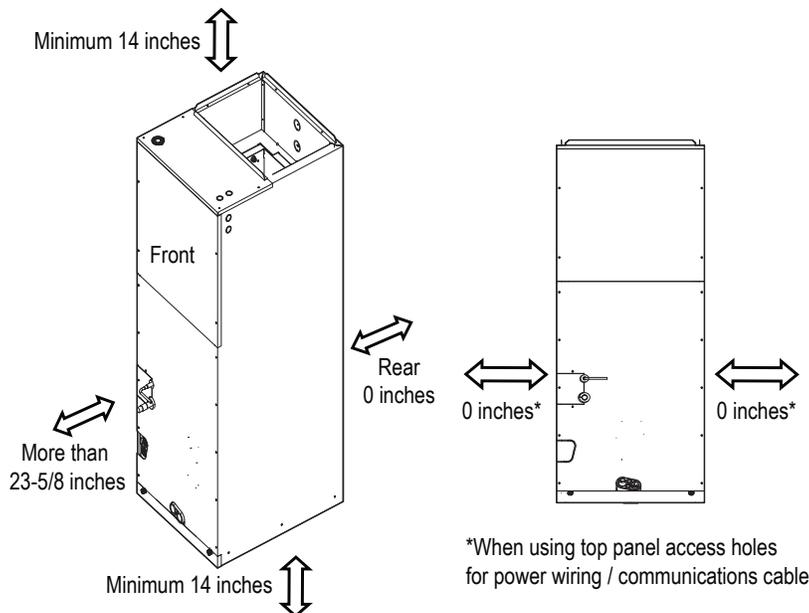


Table 119: Service Dimensions For L1, L2, and L3 Low Static Ducted Units.

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

Figure 73: Clearances Requirements for Vertical Air Handling Units.



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 store-room). To countermeasure:

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

General Mounting - 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 74: High Static Ducted B8 Frame Bolt Locations.

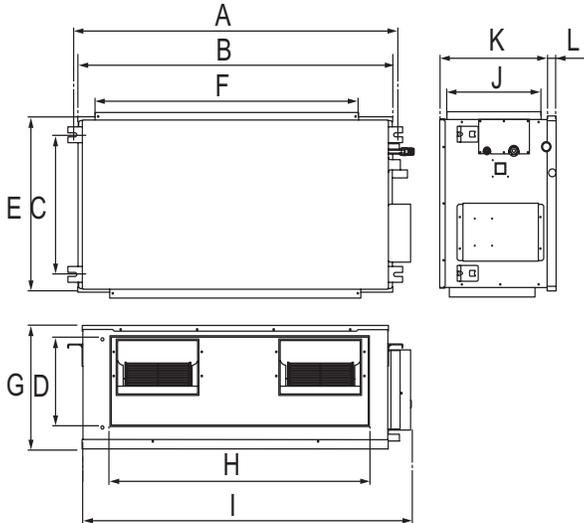


Table 120: High Static Ducted B8 Frame Suspension Bolt Positions.

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

Figure 75: Mid and High Static Ducted M1, M2, M3 Frame Bolt Locations.

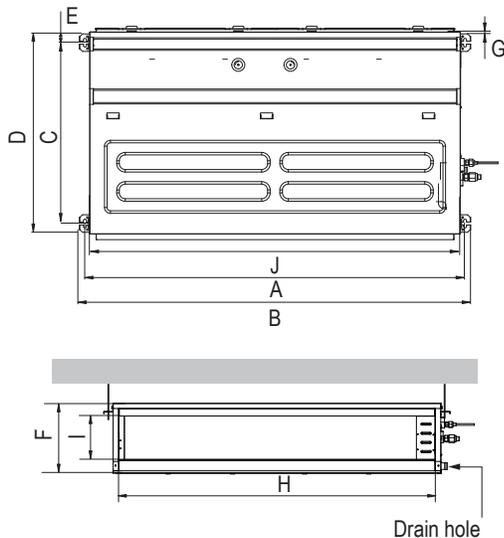


Table 121: Mid and High Static Ducted M1, M2, M3 Frame Suspension Bolt Positions.

Frame	Dimensions (inches)										
	A	B	C	D	E	F	G	H	I	J	
M1	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	

APPLICATION GUIDELINES

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

Table 122: Low Static Ducted L1, L2, L3 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

General Mounting Procedure

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

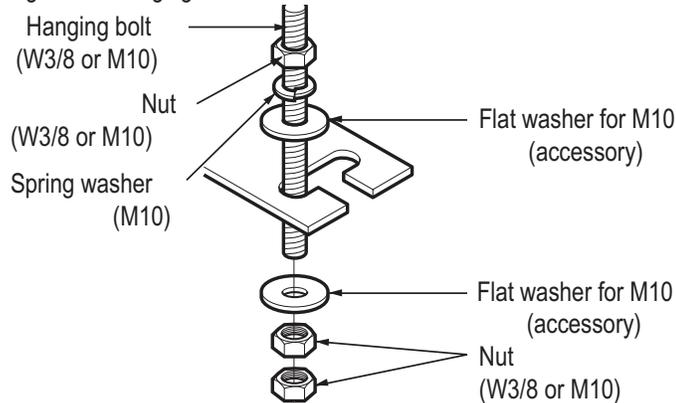
⚠ WARNING

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

Note:

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

Figure 78: 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

⚠ WARNING

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

Figure 76: Low Static Ducted L1, L2, L3 Bolt Locations..

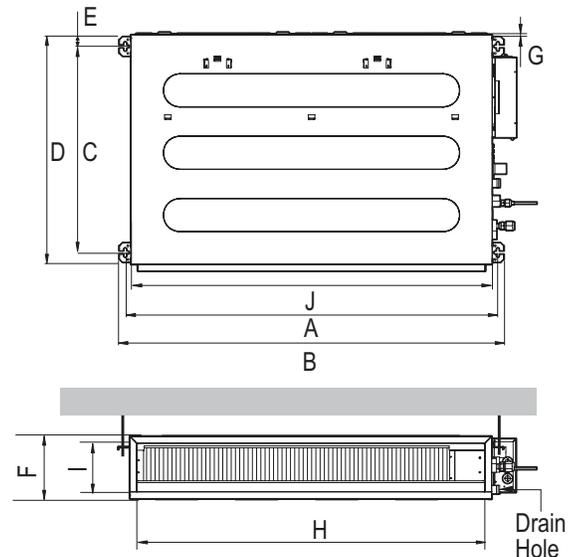


Figure 77: Drilling Holes for the Hanging Bolt

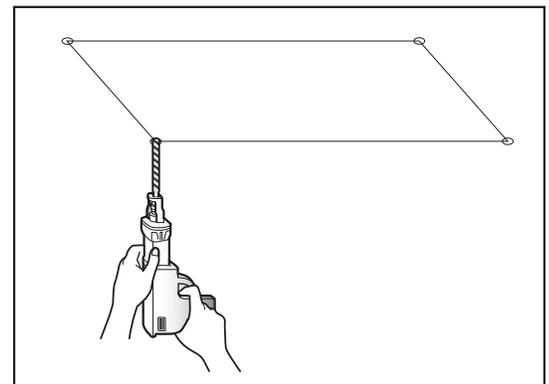
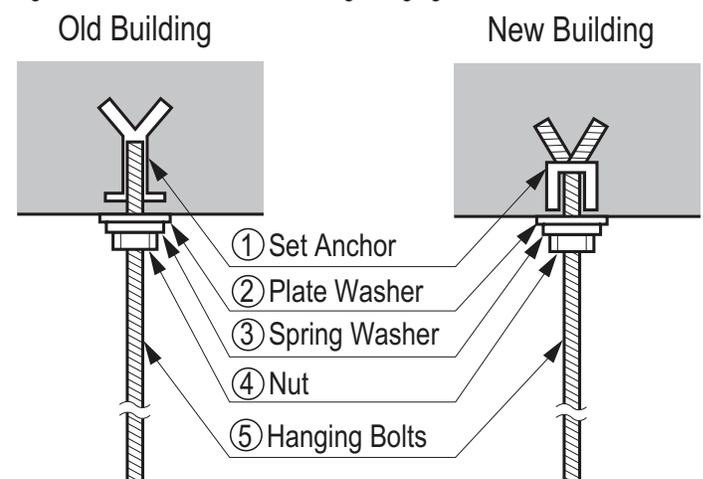


Figure 79: Old Versus New Building Hanging Bolt Installation.



General Mounting - Vertical Air Handling Units

Vertical Air Handling Units can be installed either in an upflow or a horizontal-left position.

General Guidelines

- 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 Vertical Air Handling Unit; the unit itself must be placed at the center of the support.
- Vibration isolators (field-supplied) must be installed between the Vertical Air Handling Unit 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.

Specific Guidelines for Horizontal-Left Installation

- Units must not be installed where the access panels face up or down, nor where filter access is obstructed.
- If the Vertical Air Handling Unit 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 80: Upflow Installation.

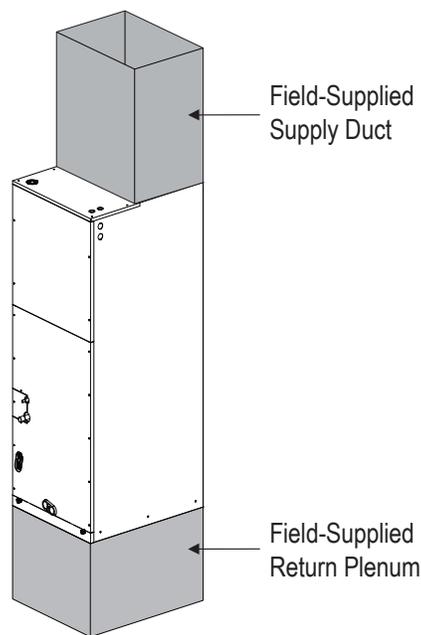


Figure 81: Horizontal-Left Installation.

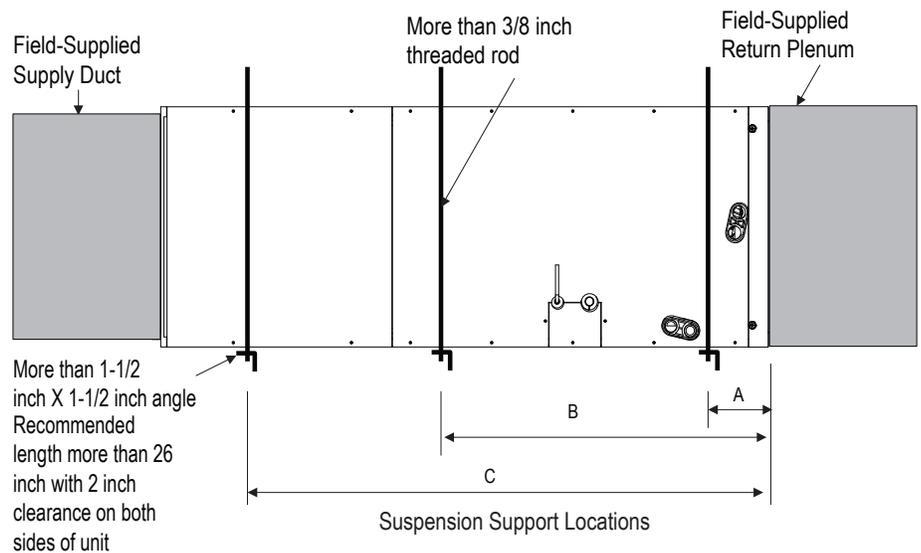


Table 123: Horizontal-Left Installation Dimensions.

Model No.	Capacity (Btu/h)	Dimensions (inches)		
		A	B	C
NJ Frames				
ARNU123NJA4	12,000	4	23	41-3/8
ARNU183NJA4	18,000			
ARNU243NJA4	24,000			
ARNU303NJA4	30,000			
ARNU363NJA4	36,000			
NK Frames				
ARNU423NKA4	42,000	4	29	48
ARNU483NKA4	48,000			
ARNU543NKA4	54,000			

APPLICATION GUIDELINES



General Mounting - Vertical Air Handling Units

Duct Work For Vertical Air Handling Units

- Use at least ten (10) M4-25L screws when attaching the supply duct to the Vertical Air Handling unit.
- To prevent vibration transmission, install flexible connectors between the supply duct and the Vertical 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 82: Attaching Ducts to the Vertical Air Handling unit.

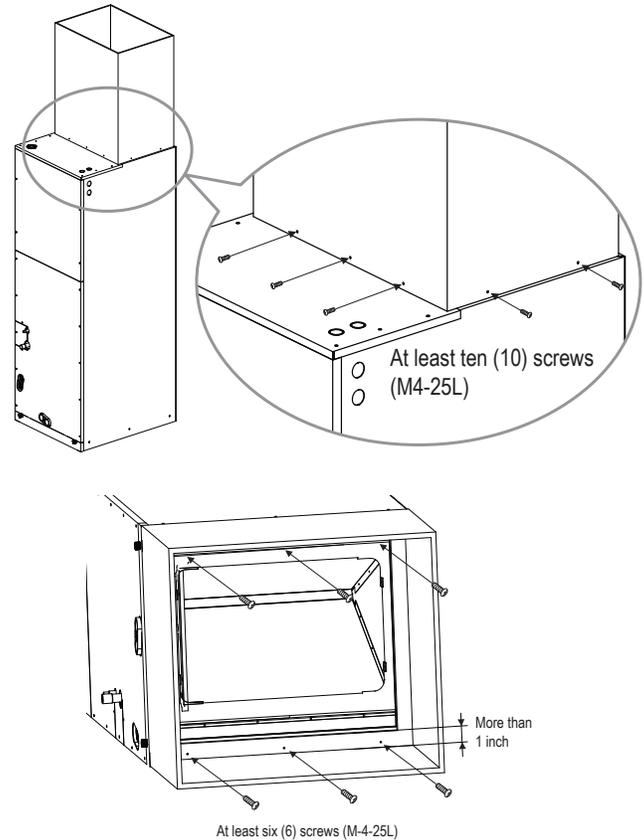
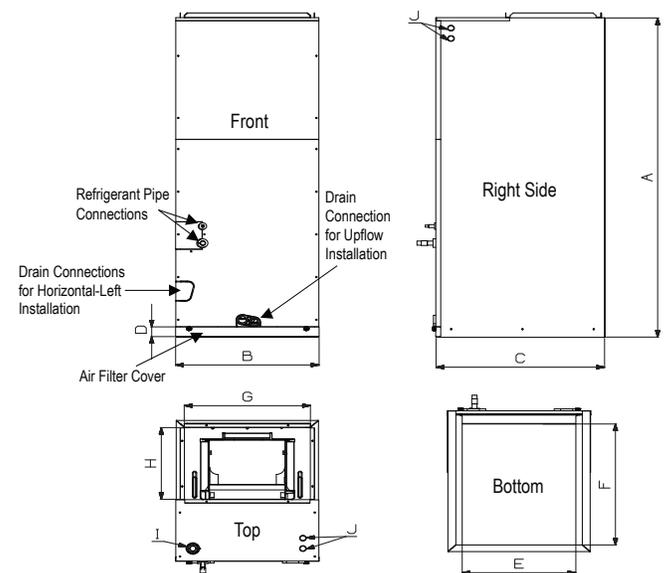


Figure 83: Vertical Air Handling Unit Duct Connection Dimensions Diagram.

Table 124: Vertical Air Handling Unit Duct Connection Dimensions Table.

Model No.	Dimensions (inches)							
	A	B	C	D	E	F	G	H
	Height	Width	Depth					
NJ Frames								
ARNU123NJA4	48-5/8	18	21-1/4	1-9/16	17-1/2	20	17	12-1/8
ARNU183NJA4								
ARNU243NJA4	48-5/8	18	21-1/4	1-9/16	17-1/2	20	17	12-1/8
ARNU303NJA4								
ARNU363NJA4								
NK Frames								
ARNU423NKA4	48-5/8	25	21-1/4	1-9/16	24-1/2	20	24	12-1/8
ARNU483NKA4								
ARNU543NKA4								



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.

Vertical Air Handling Unit Drain Information

Vertical Air Handling units have 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.

Note:

A field-supplied external condensate pan must be installed underneath the entire Vertical Air Handling unit. If not, damage may result due to condensate overflow.

Table 125: Indoor Unit Drainage Specifications.

Indoor Unit	Drain Type	Drain Pipe Dia. (ID, in.)
B8, MA, M1, M2, M3 Frames	27-1/2 in. Lift Drain Pump, Factory Installed	Ø1
L1, L2, L3 Frames		
Vertical Air Handling Unit (NJ, NK Frames)	Gravity	Ø1 (3/4" FPT)

Flexible Drain Hose

Ducted indoor units and Vertical 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 84: High, Mid, and Low Static Ducted Indoor Unit Drain Pump to Drain Piping System.

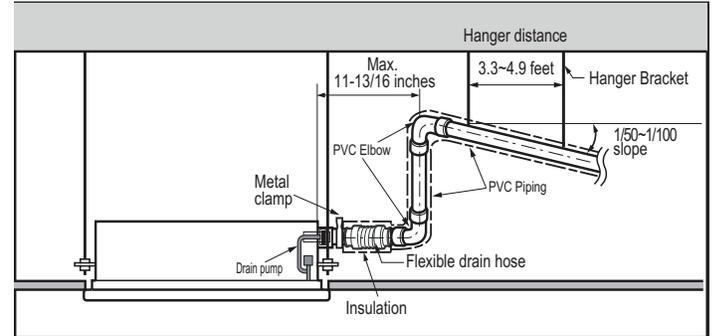


Figure 85: Vertical Air Handling Unit Drain Piping System.

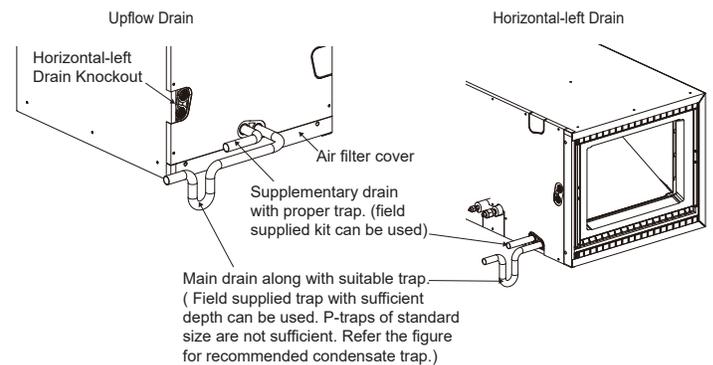


Figure 86: Vertical Air Handling Unit U-Trap Specifications.

- Install the U-Trap to prevent leaks caused by blocking the intake air filter.

Applied U-Trap Dimensions

- A ≥ 2-9/16 inch
- B ≥ 2C
- C ≥ 2 x SP
- SP = External Pressure (in. WG)
- Ex) External Pressure = 0.4 in. WG
- A ≥ 2-9/16 inches
- B ≥ 1-7/12 inches
- C ≥ 13/16 inches

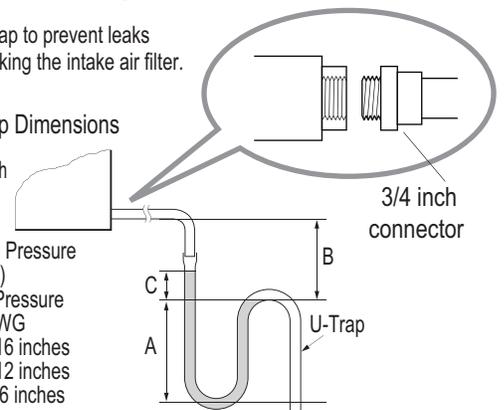


Figure 87: Flexible Drain Hose Connection.

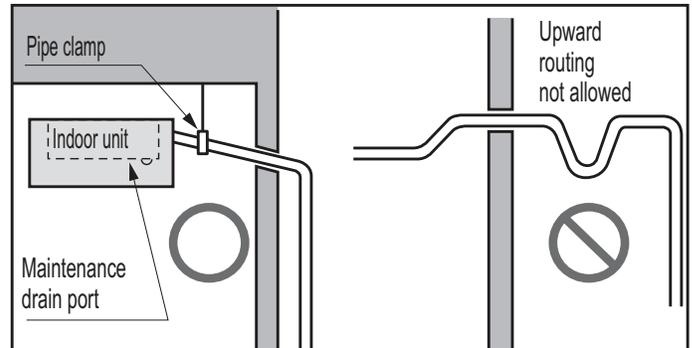


General Drain Piping Information

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 Vertical / Horizontal Air Handling Units, use PVC with a 3/4 inch male pipe thread fitting for the condensate pan.
- For High, Mid, and Low Static Ducted Units, the drain piping material is polyvinyl chloride pipe (1 inch).

Figure 88: Drain Piping 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 indoor unit.

Note:

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.

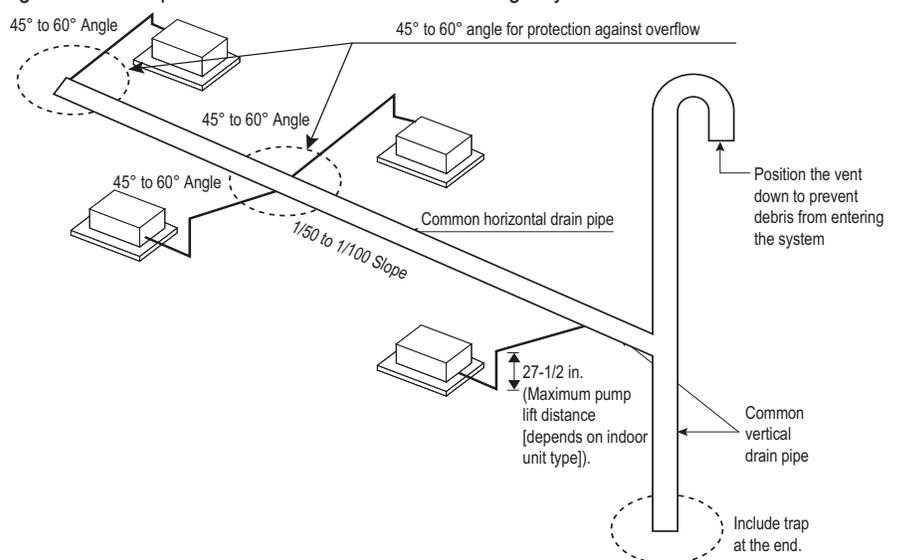
Common Indoor Unit Drainage System

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 89: Example of a Common Indoor Unit Drainage System.



Note:

- 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.

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.

⚠ WARNING

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

Note:

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

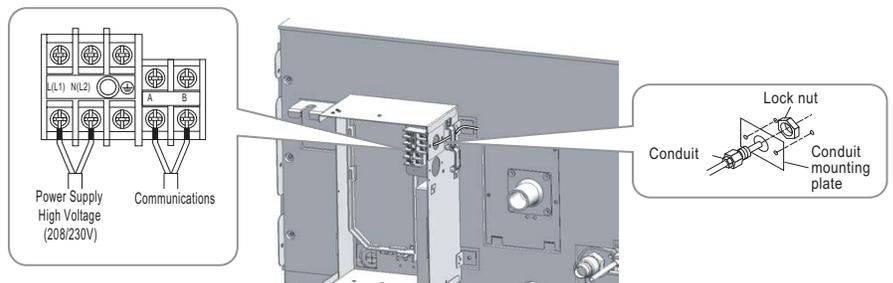
A voltage drop may cause the following problems:

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

Power Wiring and Communications Cable Connections

1. Insert the power wiring / communications cable from the outdoor unit or heat recovery unit (Heat Recovery systems only) using the designated path in the indoor unit.
2. 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.
3. Secure the power wiring / communications cable.

Figure 90: Location of Power Wiring / Communications Cable Terminals in the B8, MA, M1, L1, L2, L3 High, Mid, and Low Static Ducted Indoor Units (Appearances Vary Depending on Model).



APPLICATION GUIDELINES

Wiring Guidelines

Figure 91: Location of Power Wiring / Communications Cable Terminals in the M2, M3 Mid and High Static Ducted Indoor Units.

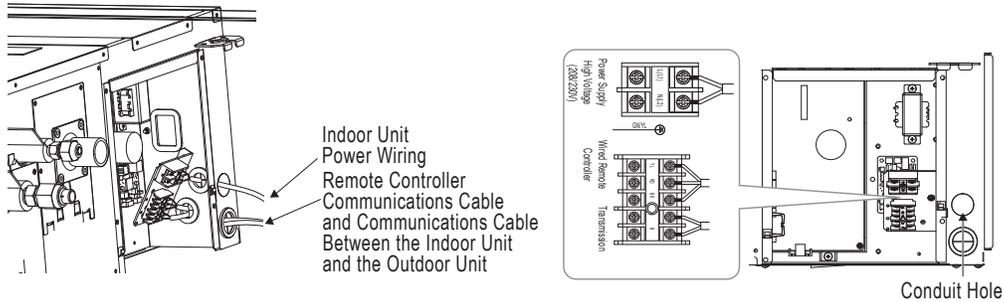


Figure 92: Location of Power Wiring / Communications Cable Terminals in the Vertical Air Handling Unit.

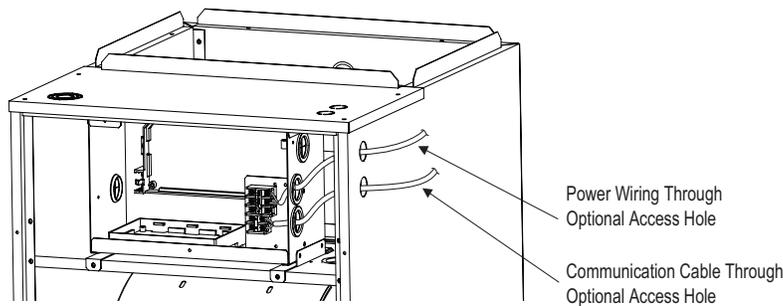


Figure 93: Terminal Block in the B8 High Static Ducted Indoor Units.

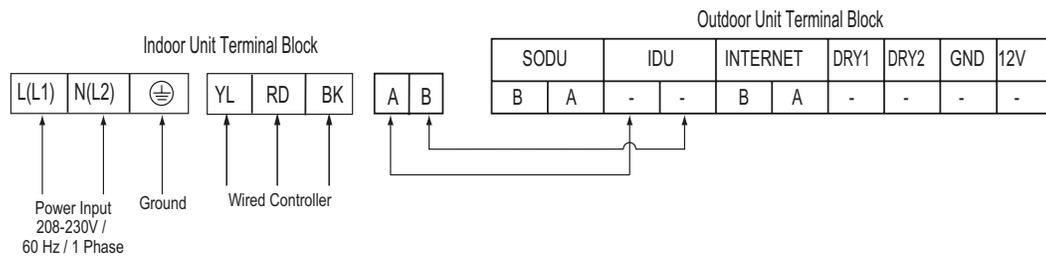


Figure 94: Terminal Block in the MA, M1, M2, M3 Mid and High Static Ducted Indoor Units.

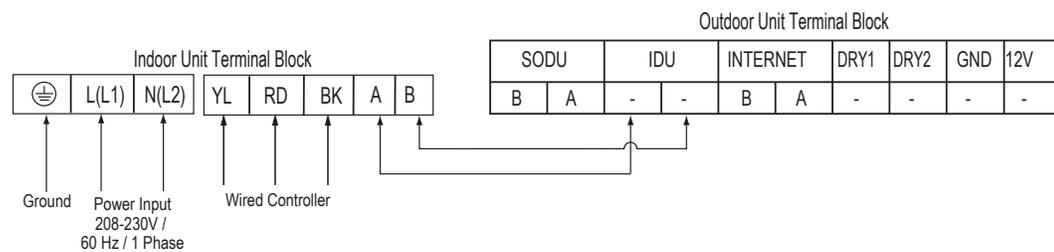


Figure 95: Terminal Block in the L1, L2, L3 Low Static Ducted Indoor Units.

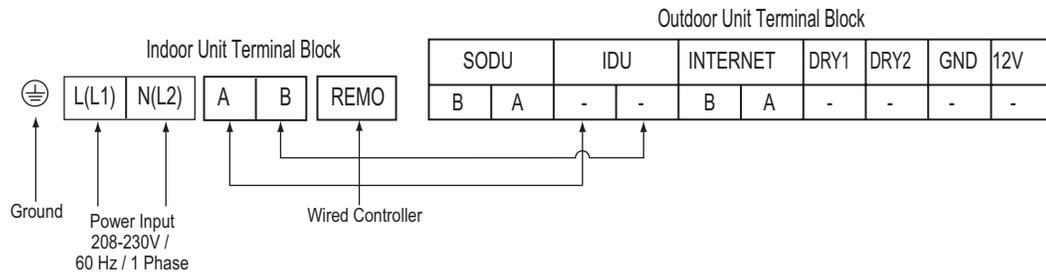
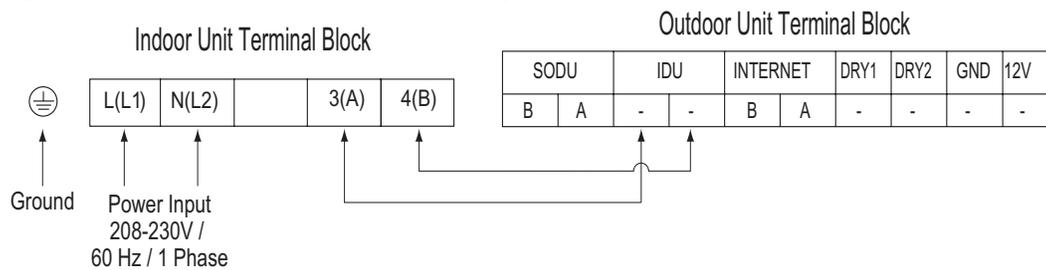


Figure 96: Terminal Block in the Vertical Air Handling Unit



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 LED display can be read easily, in an area with good air circulation, and where it can detect an average room temperature.

- ⊘ Do not install the wired controller near or in:
 - Drafts or dead spots behind doors and in corners
 - Hot or cold air from ducts
 - Radiant heat from the sun or appliances
 - Concealed pipes and chimneys
 - An area where temperatures are uncontrolled, such as an outside wall

Figure 97: Proper Location for the Wired Controller.

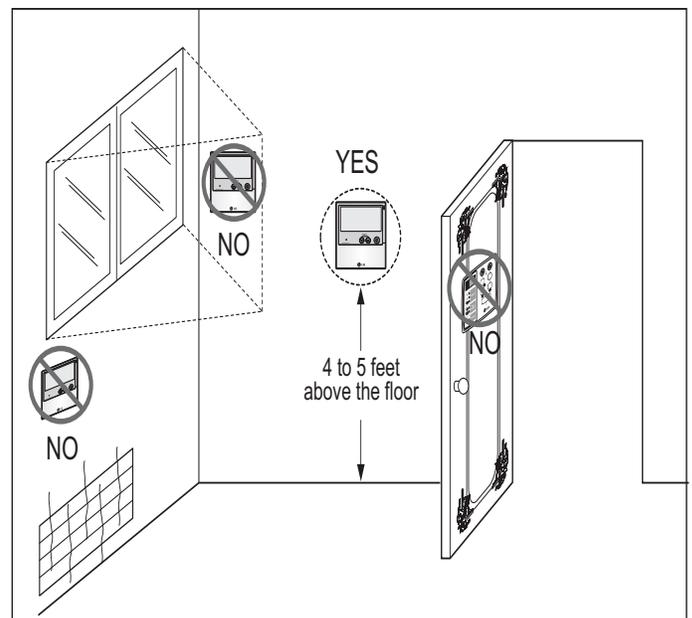


Table 126: Acronym Table.

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



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EM_MultiV_Ducted_IndoorUnits_04_24
Supersedes: EM_MultiV_Ducted_IndoorUnits_03_24
EM_MultiV_Ducted_IndoorUnits_11_23
EM_MultiV_Ducted_IndoorUnits_05_21
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