MULTI V™ S

THREE-PHASE HEAT PUMP OUTDOOR UNIT ENGINEERING MANUAL

Variable Refrigerant Flow
208-230V, 60 Hz, 3-Phase Outdoor Units
6.0 and 8.0 Tons

PROPRIETARY DATA NOTICE

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A summary list of safety precautions is on page 3.

To access additional technical documentation such as submittals, indoor unit engineering manuals, installation, service, product data performance, general best practice, and building ventilation manuals, as well as white papers, catalogs, LATS software programs, and more, log in to www.lghvac.com.

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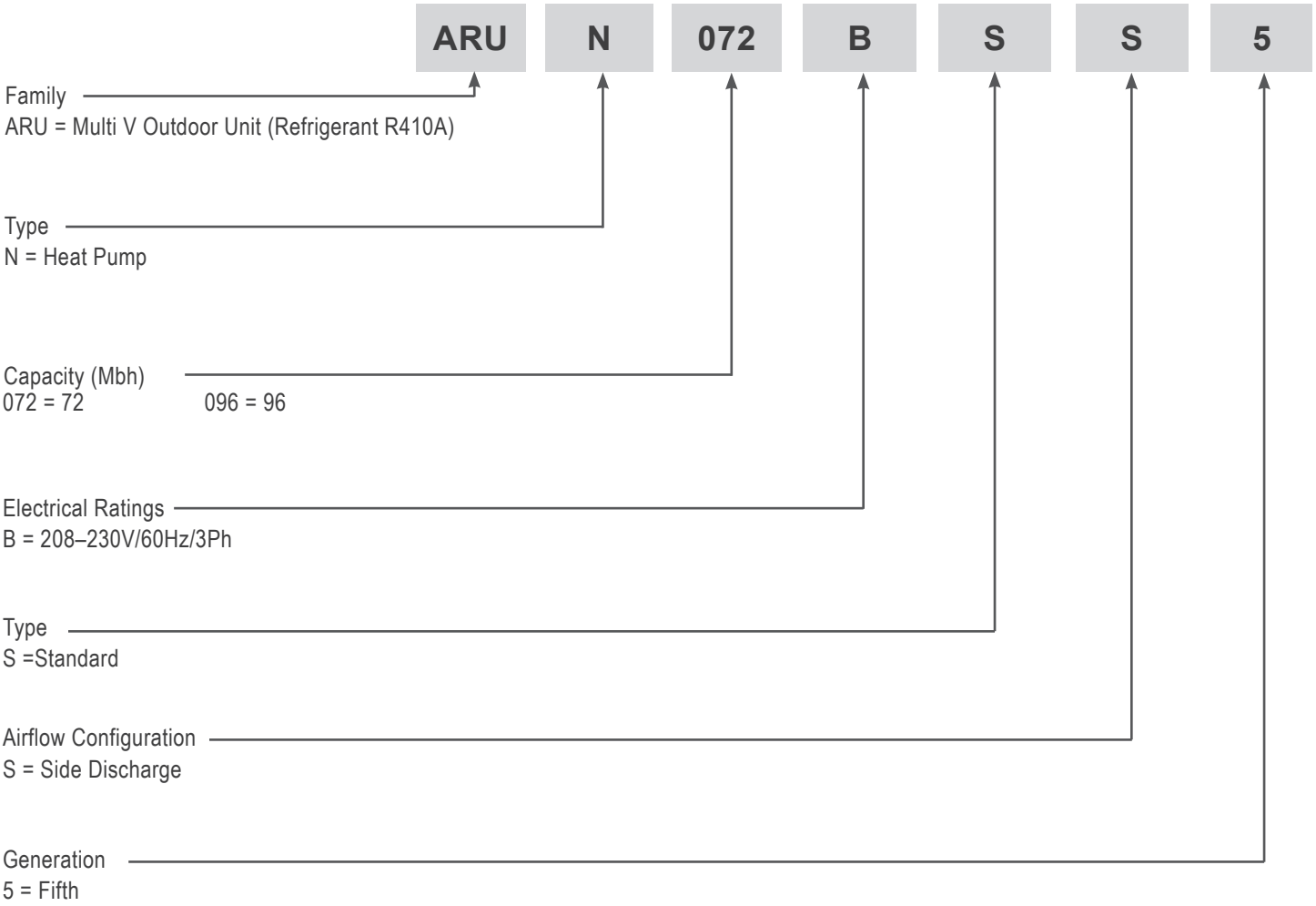
TABLE OF SYMBOLS

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

UNIT NOMENCLATURE

Outdoor Units

Outdoor Units (ODU)



LG AIR CONDITIONER TECHNICAL SOLUTION (LATS)

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. Both LATS formats are available through www.myLGHVAC.com, or contact an LG Sales Representative.

LATS HVAC is a Windows®-based application that aids engineers in designing LG Variable Refrigerant Flow (VRF), Multi F / Multi F MAX, Single-Zone, 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-Branches and Headers.
- Adjust overall piping system length when elbows are added.
- Check for component piping limitations and flag if any parameters are broken.
- Factor operation and capacity for defrost operation.
- Calculate refrigerant charge, noting any additional trim charge.
- Suggest accessories for indoor units and outdoor units.
- Run system simulation.

Note:

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

LG AIR CONDITIONER TECHNICAL SOLUTION (LATS)

LATS Generates a Complete Project Report

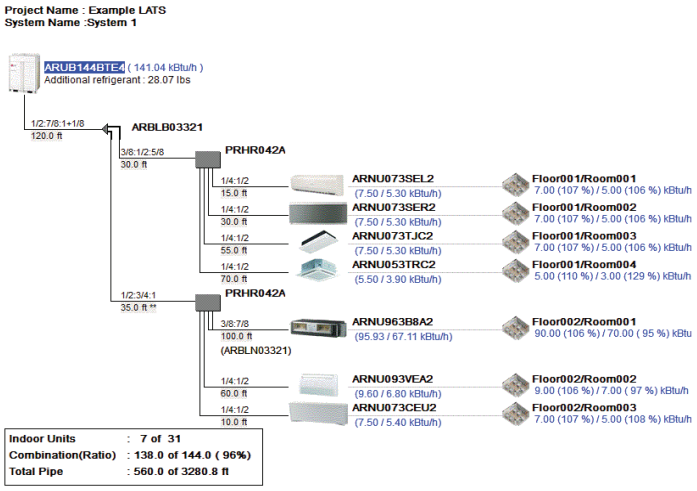
LATS software also generates a report containing project design parameters, cooling and heating design data, system component performance, and capacity data. The report includes system combination ratio and refrigerant charge calculations; and provides detailed bill of material, including outdoor units,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

Proper Design to Install Procedure

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

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

Figure 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 could 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.

Note:

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

MULTI V S THREE-PHASE

REFRIGERANT CHARGE WORKSHEET

Multi V S Three-Phase 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	SR	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	TA	7k to 48k		1.5	
19	Mid Static Ducted	M1	7k to 24k		0.57	
20	High Static Ducted	M2	7k to 24k		0.77	
21	High Static Ducted	M2	28k to 42k		1.15	
22	High Static Ducted	M3	28k to 54k		1.35	
23	High Static Ducted	B8	36k to 96k		2.20	
24	Low Static Ducted, Low Static Ducted Bottom Return	L1	5k to 9k		0.31	
25	Low Static Ducted, Low Static Ducted Bottom Return	L2	12k to 18k		0.42	
26	Low Static Ducted, Low Static Ducted Bottom Return	L3	21k to 24k		0.55	
27	Vertical / Horizontal Air Handling Unit	NJ	12k to 30k		1.04	
28	Vertical / Horizontal Air Handling Unit	NJ	36k		1.57	
29	Vertical / Horizontal Air Handling Unit	NK	42k to 54k		2.00	
30	Floor Standing	CE (U)	7k to 15k		0.37	
31	Floor Standing	CF (U)	18k to 24k		0.82	
32	**ADDITIONAL Refrigerant Charge Required** (Sum of lines 1 – 31)					
Multi V S Three-Phase Unit Factory Refrigerant Charge		ARUN072BSS5	72,000		13.2 lb.	
		ARUN096BSS5	96,000		13.2 lb.	
33	**Factory Refrigerant Charge** (Factory refrigerant charge for the ODU in the system					
34	**TOTAL SYSTEM CHARGE** Sum of Add'l Refrigerant Charge Required (line 32) and ODU Factory Refrigerant Charge (line 33)					

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

PRODUCT DATA

MECHANICAL SPECIFICATIONS

General

The LG Multi V S Three-Phase 208-230V 60Hz heat pump system consists of an outdoor unit, two or more indoor units, integrated system controls, and interconnecting field-provided refrigerant pipe containing various fittings including Y-Branch kits and Header kits supplied by LG. LG components are manufactured in a facility that meets or exceeds International Organization for Standardization (ISO) 9001 and 14001.

Casing

The outdoor unit case is constructed from 22-gauge coated metal. Exterior panels are cleaned and finished with a weather-resistant baked enamel finish. An easily removable front corner panel is provided to allow access to major components and control devices. Outdoor unit fan(s) are covered with guards made of heavy gauge, heavy duty polymeric resin. The outdoor unit coil is protected with a heavy gauge steel wire guard finished with baked enamel. Paint color is “warm gray.”

Refrigeration System

The refrigeration system consists of a single refrigeration circuit and uses refrigerant R410A. The outdoor unit is provided with factory installed components, including a refrigerant strainer, oil separator, accumulator, hot gas bypass valve, liquid injection valve, four-way reversing valve, electronic controlled expansion valve (EEV), high and low side charging ports, service valves, and interconnecting piping. Also included is an integral subcooler assembly consisting of a double spiral tube type heat exchanger and EEV providing refrigerant subcooling modulation up to 23°F. The unit comes factory charged with 13.2 lbs (6- and 8- Ton) of refrigerant.

Refrigeration Oil Control

The refrigeration oil level in the compressor is maintained using a two-stage oil control system. The compressor discharge port is equipped with an oil filtering device designed to restrict oil loss from the compressor. The high-pressure discharge vapor leaves the compressor and immediately enters a centrifugal oil separator that has no moving parts designed to extract oil from the refrigerant gas stream. A gravity drain returns captured oil back to the compressor sump. The outdoor unit microprocessor is programmed to flush the refrigerant piping system for a minimum period of three (3) minutes after eight (8) hours of compressor operation.

Single Inverter / Compressor

The outdoor unit is equipped with one hermetically sealed scroll (6-, 8-ton) compressor. The compressor is specifically designed for the refrigerant provided and is manufactured by LG. The frequency inverter is designed by LG and is capable of providing a modulation range for 6 and 8 tons from 15 Hz to 120 Hz (cooling) and 20 Hz to 150 Hz (heating), modulating in increments of 1.0 Hz. The compressor motor is suction gas-cooled and has an acceptable voltage range of ±10% of nameplate voltage.

External suction and discharge temperature and pressure sensors are provided to protect the compressor from damage caused by over / under temperature or over / under pressure conditions. The compressor is provided with a positive displacement oil pump providing sufficient oil film on all bearing surfaces across the entire inverter modulation range. The compressor is factory charged with Polyvinyl ether (PVE) refrigeration oil having no hygroscopic properties. Compressor bearings are Teflon® coated. The compressor is wrapped with a heat resistant, sound attenuating blanket and mounted on rubber isolation grommets.

Figure 3: Multi V S Three-Phase Outdoor Unit.

Outdoor Unit Coil

Outdoor unit coils are a minimum of three rows (6-, 8-ton), 14 fins per inch, and manufactured using copper tubes with mechanically bonded aluminum louvered fins. Fin surfaces are coated with Black Fin™ (6-, 8-ton) corrosion resistant hydrophilic silica gel coating. Coils are pressure tested at a minimum of 551 psig.

Fans and Motors

Units are furnished with two (6- 8- ton) axial flow fans providing horizontal airflow from the rear and discharging from the front of the unit. Fan blades are 20-1/2 inch diameter, balanced, and made of durable acrylonitrile butadiene styrene (ABS) polymeric resin. Motors are designed to operate between 200 and 950 RPM in cooling and heating (6-ton), and between 200 and 1,000 RPM in cooling and heating (8-ton). Fans are driven by digitally controlled inverters that vary the fan speed. Motors are brushless, digitally controlled (BLDC) and have permanently lubricated and sealed ball bearings. All outdoor unit fans are controlled by an inverter drive mounted near the main microprocessor.

The outdoor unit fan speed is controlled using an algorithm that provides three pre-programmed fan speeds. DIP Switch adjustable settings limit night time (off peak) fan speed to reduce fan generated noise by up to 10 dB(A).

Outdoor Unit Controls

Outdoor units are factory wired with necessary electrical control components, printed circuit boards, thermistors, sensors, terminal blocks, and lugs for power wiring. The control wiring circuit is low voltage and includes a control power transformer, fuses, and interconnecting wiring harness with plug connectors. Microprocessor based algorithms provide component protection, soft-start capability, refrigeration system pressure and temperature control, defrost, and ambient control. The unit is designed to provide continuous compressor operation to -9.9°F in cooling mode with optional low ambient wind baffle.

When the system is started, the connected indoor units are automatically assigned an electronic address by the outdoor unit's microprocessor. Additionally, each indoor unit is capable of accepting a manual assignment of a secondary electronic address that, if used, provides unit tag identification when integrating with LG VNet control devices.

While operating in Heating mode, the outdoor unit has a demand based defrost control algorithm and a refrigeration system pump down cycle designed to store refrigerant in the outdoor unit up to 13.2 lbs. (6-, 8-ton). In Heating mode, a cooperative control algorithm automatically balances, in real-time, the distribution of refrigerant to the indoor units when the system's refrigerant mass flow is insufficient to satisfy the demand of all indoor units when the system is called on to operate outside the system design parameters.

In 10-second intervals, the outdoor unit microprocessor will record the last three minutes of system run-time data in non-volatile memory. Upon unit malfunction, or a power outage that results in a system shutdown, the stored system operational data can be retrieved and analyzed to assist in diagnosing a system malfunction.

The outdoor unit microprocessor is provided with a three-digit, LED display that communicates active system information and / or malfunction codes. The microprocessor has an algorithm that actively verifies the operational condition of system sensors and thermistors. A refrigerant auto-trim-charge algorithm assists the installer with properly charging the system.

A power conditioning circuit is provided and designed to protect the unit's inverter compressor and outdoor unit fan motors from phase failure, phase reversal, sense an under-voltage or over-voltage condition, and to prevent transmission of power irregularities to the supply power source. A snow throw algorithm is provided and designed to reduce snow buildup on the discharge side louvers grille at regular intervals.

GENERAL DATA

Outdoor Unit Specifications

Table 1: 208-230V, 60Hz, 3-Phase Outdoor Unit Specifications.

Unit Model No.		ARUN072BSS5 6.0 Ton	ARUN096BSS5 8.0 Ton
Cooling Performance			
Nominal Cooling Capacity (Btu/h)[1]		72,000	96,000
Rated Cooling Capacity (Btu/h)[2]		69,000	92,000
Heating Performance			
Nominal Heating Capacity (Btu/h)[1]		81,000	108,000
Rated Heating Capacity (Btu/h)[2]		77,000	103,000
Operating Range			
Cooling (°F DB)[3]		23 to 122	23 to 122
Heating (°F WB)		-13 to +61	-13 to +61
Compressor			
Inverter Type / Quantity		Hermetically Sealed Scroll / 1	
Oil / Type		PVE / FW68D	
Fan (Side Discharge)			
Type		Axial Flow Fan	
Motor Output (kW) x Qty.		0.25 x 2	
Motor / Drive		Brushless Digitally Controlled / Direct	
Operating Range (RPM)	Cooling	200 to 950	200 to 1,000
	Heating	200 to 950	200 to 1,000
External Static Pressure (in. WG)		0.12	0.12
Maximum Air Volume (CFM)		7,416	7,416
Unit Data			
Refrigerant Type		R410A	R410A
Refrigerant Control / Location		EEV / Indoor Unit	EEV / Indoor Unit
Max. Number Indoor Units / System[4]		13	16
Sound Pressure Levels dB(A)[5] (Cooling / Heating)		55 / 57	59 / 60
Net Unit Weight (lbs.)		348	348
Shipping Weight (lbs.)		379	379
Communication Cables[6,7]		2 x 18	2 x 18
Heat Exchanger			
Material and Fin Coating		Copper Tube / Aluminum Fin and Black Coated Fin™ / Hydrophilic	
Rows / Fins per inch		(3 x 14) x 2	(3 x 14) x 2
Piping[8]			
Liquid Line Connection (in., OD)		3/8 Braze	3/8 Braze
Vapor Line Connection (in., OD)		3/4 Braze	7/8 Braze
Factory Charge lbs. of R410A		13.2	13.2

[1]Nominal capacity applied with non-ducted indoor units, and is rated 0 ft. above sea level with 25 ft. of refrigerant line per indoor unit and a 0 ft. level difference between outdoor and indoor units. All capacities are net with a Combination Ratio between 95–105%.

Nominal cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB) and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).

Nominal heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and 59ºF wet bulb (WB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

[2]Rated capacity is certified under AHRI Standard 1230. See www.ahrinet.org for information.

[3]Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.

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

[5]Sound pressure levels are tested in an anechoic chamber under ISO Standard 3745.

[6]Communication cable between outdoor unit and indoor units must be a minimum of 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the outdoor unit chassis only. ⃠ Do not ground the outdoor unit to the indoor units communication cable at any other point. Wiring must comply with all applicable local and national codes.

[7]Power wiring is field provided, solid or stranded, and must comply with all local and national codes. See next page for detailed electrical data.

[8]LG requires that LATS software be used on all projects to ensure correct line sizing. Designer must verify the shop drawing design against the as built design using LATS. Contractor must also use LG manufactured Y-Branch and Header Kits only.

ELECTRICAL DATA

Table 2: 208-230V, 60Hz, 3-Phase Outdoor Unit Electrical Data.

Nominal Tons	Unit Model No.	Compressor Motor		Outdoor Unit Fan Motor		MCA	MOCP
		Quantity	Motor Amps RLA (Ea.)	Fan Qty.	Amps FLA x Qty.		
6.0	ARUN072BSS5	1	17.6	2	1.2 x 2	24.4	40
8.0	ARUN096BSS5	1	18.6	2	1.2 x 2	25.7	40

Voltage tolerance is ±10%.

Maximum allowable voltage unbalance is 2%.

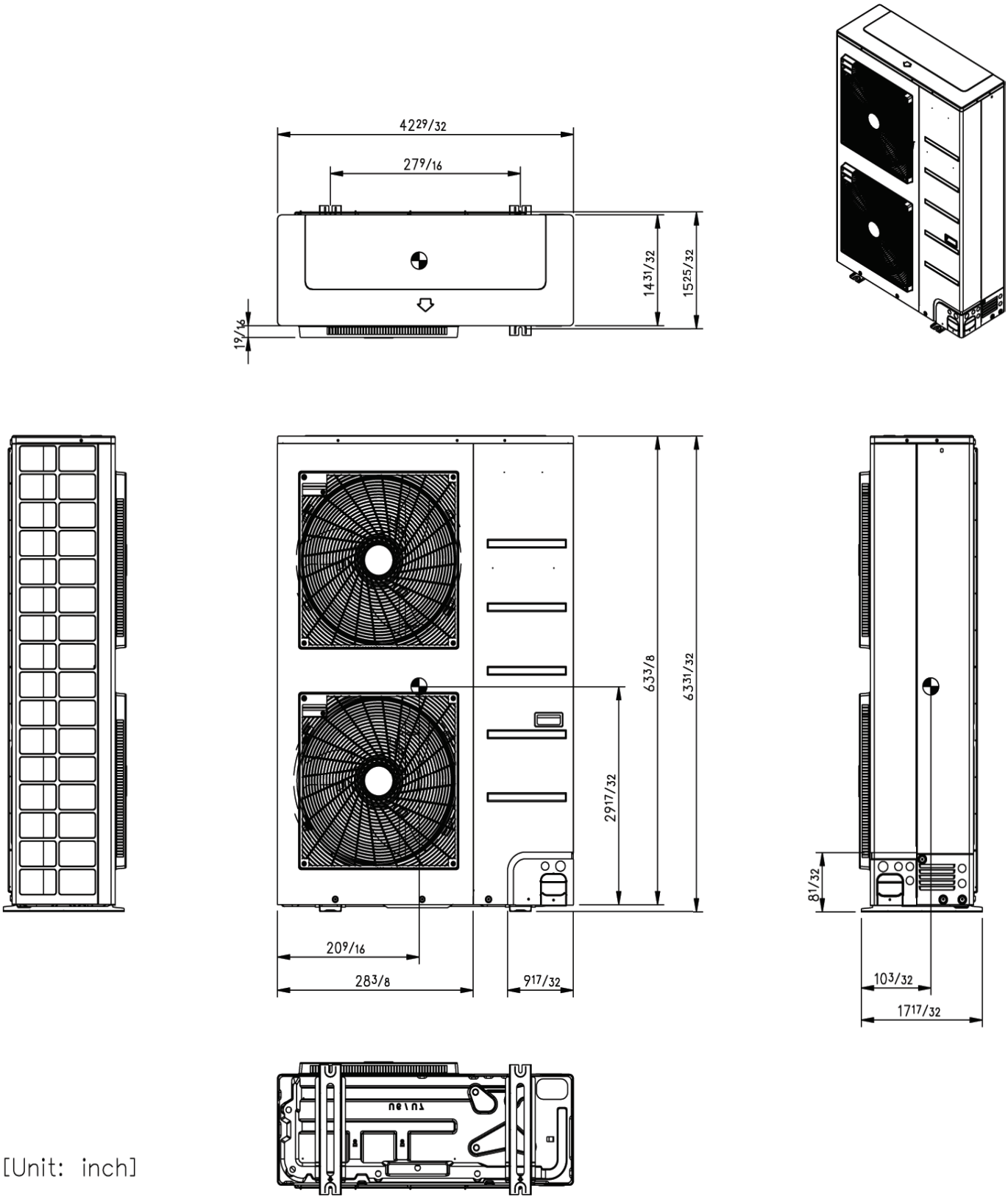
MCA = Minimum Circuit Ampacity.

Maximum Overcurrent Protection (MOCP) is calculated as follows: (Largest motor FLA x 2.25) + (Sum of other motor FLA) rounded down to the nearest standard fuse size. RFA = Recommended Fuse Amps.

*SCCR rating: 5kA RMS Symmetrical.

DIMENSIONS / CENTER OF GRAVITY

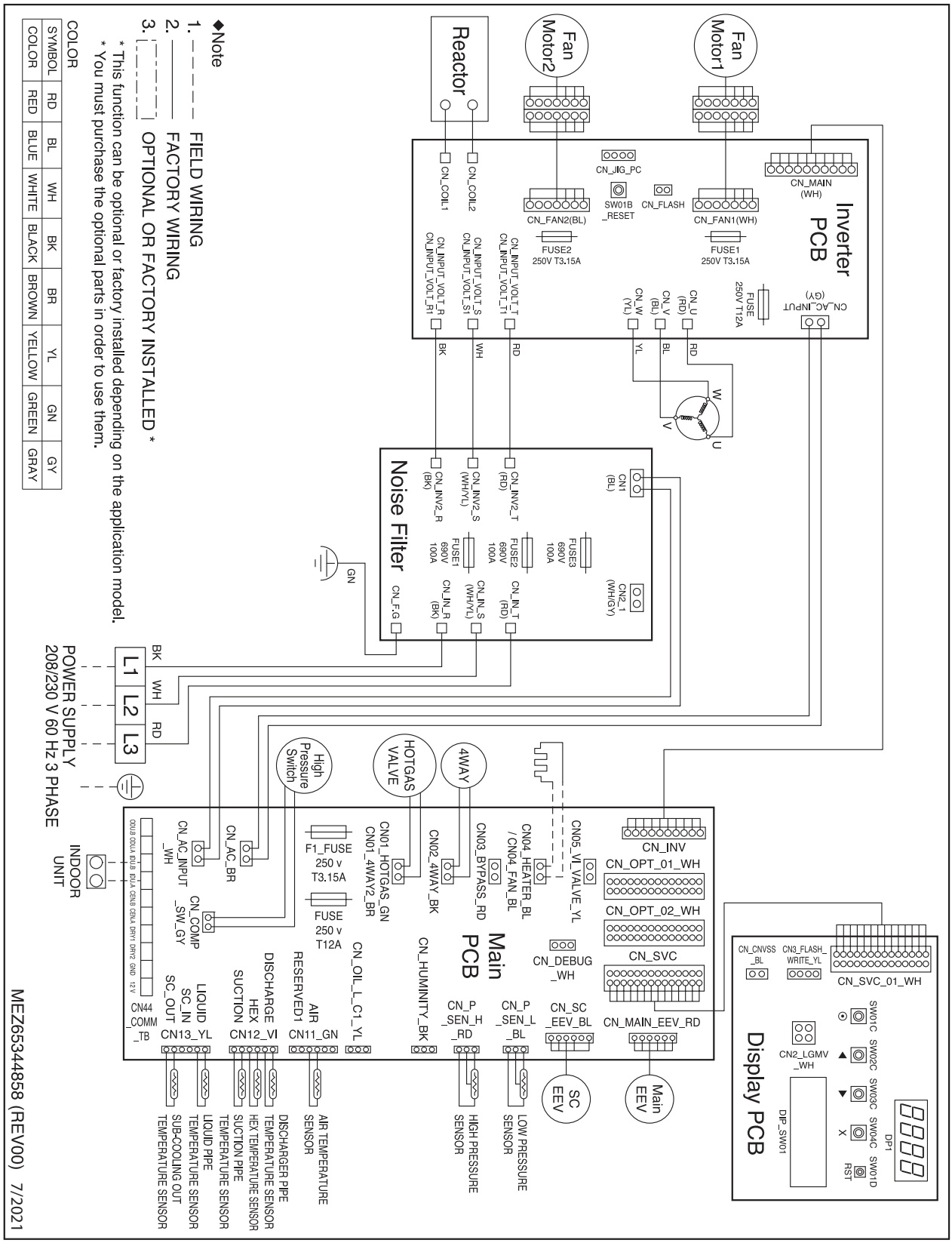
Figure 4: ARUN072BSS5 and ARUN096BSS5 Dimensions.



[Unit: inch]

WIRING DIAGRAM

Figure 5: ARUN072BSS5 and ARUN096BSS5 Wiring Diagram.

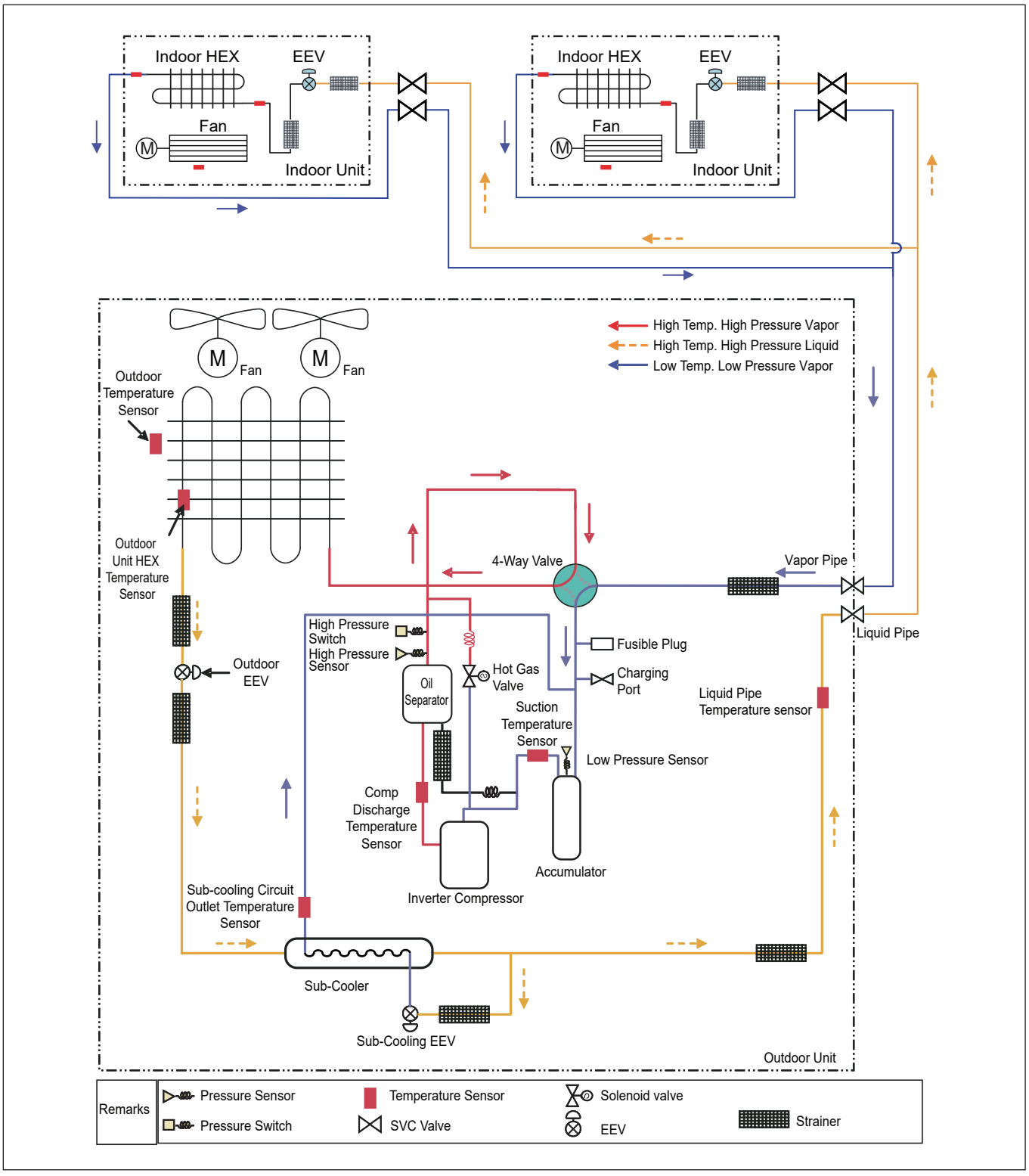


REFRIGERANT FLOW DIAGRAMS

Cooling Operation

Figure 6: ARUN072BSS5 and ARUN096BSS5 Cooling Refrigerant Diagram.

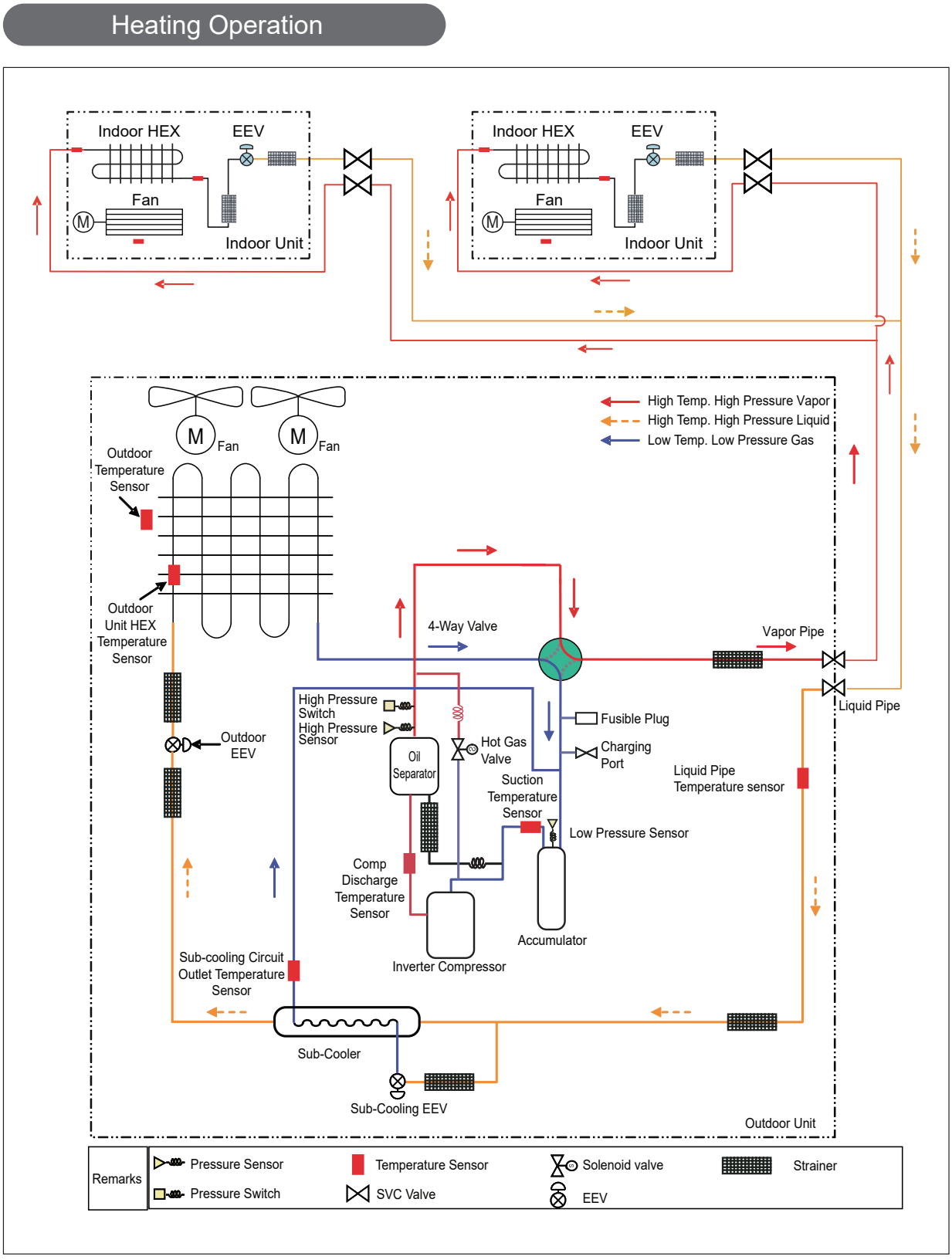
Cooling Operation



REFRIGERANT FLOW DIAGRAMS

Heating Operation

Figure 7: ARUN072BSS5 and ARUN096BSS5 Heating Refrigerant Diagram.

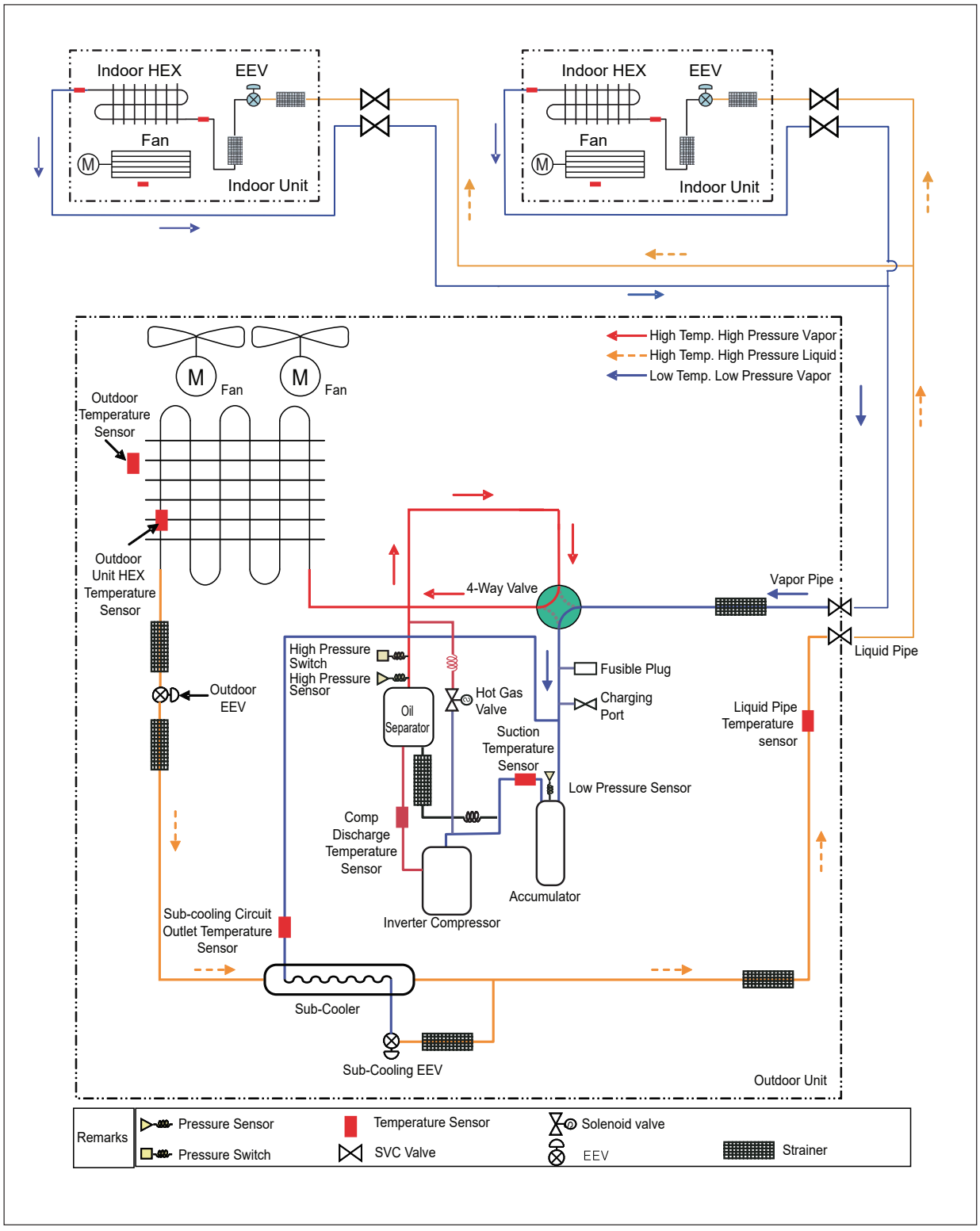


REFRIGERANT FLOW DIAGRAMS

Oil Return and Defrost Operation

Figure 8: ARUN072BSS5 and ARUN096BSS5 Oil Return and Defrost Refrigerant Diagram.

Oil Return / Defrost Operation



Sound Pressure Levels

- Measurement taken 4.9' above finished floor, and at a distance of 3.3' from face of fan discharge.
- Measurements taken with no attenuation and units operating at full load normal operating condition.
- 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.
- Sound levels are measured in dB(A)±3.
- Tested in anechoic chamber per ISO Standard 3745.

Figure 9: ARUN072BSS5 and ARUN096BSS5 Acoustic Measurement Location.

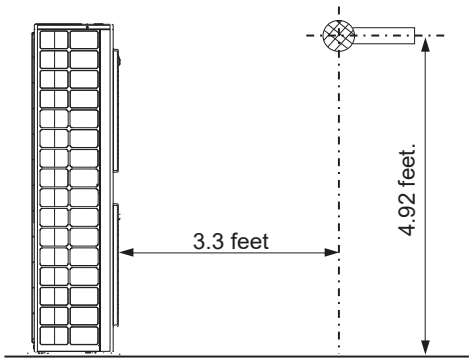
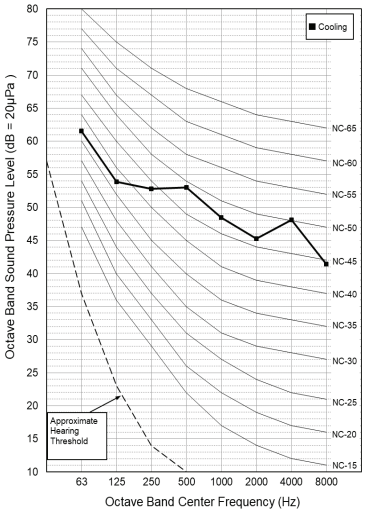


Table 3: ARUN072BSS5 and ARUN096BSS5 Sound Pressure Levels.

Model No.	Cooling Operation	Heating Operation
ARUN072BSS5	55 dB(A)	57 dB(A)
ARUN096BSS5	59 dB(A)	60 dB(A)

Figure 10: ARUN072BSS5 Cooling and Heating Sound Pressure Levels.

Cooling



Heating

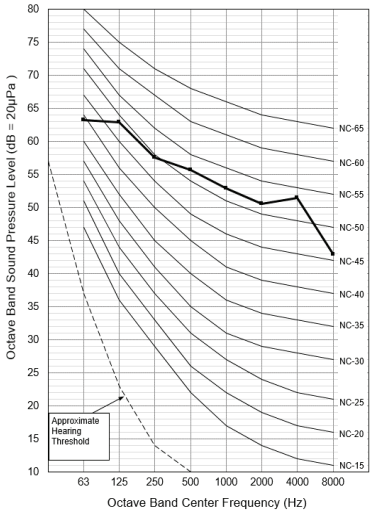
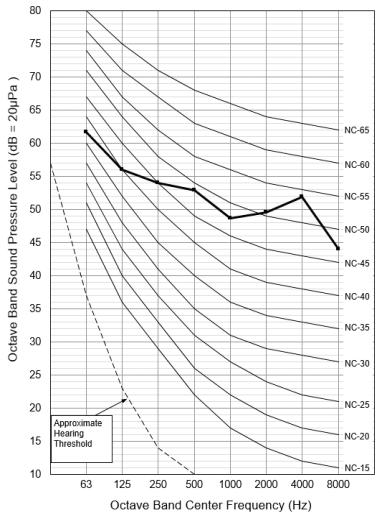
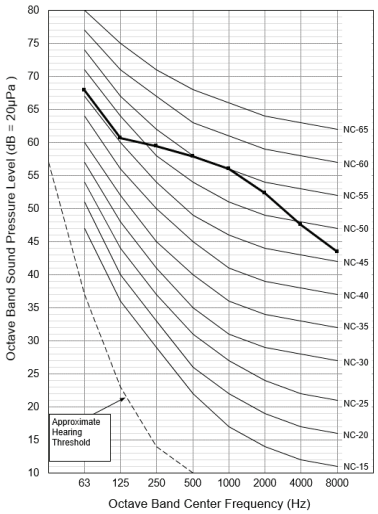


Figure 11: ARUN096BSS5 Cooling and Heating Sound Pressure Levels.

Cooling



Heating



Sound Power Levels

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

Table 4: ARUN072BSS5 and ARUN096BSS5 Sound Power Levels.

Model No.	dB(A)
ARUN072BSS5	72
ARUN096BSS5	73

Figure 12: ARUN072BSS5 Sound Power Levels.

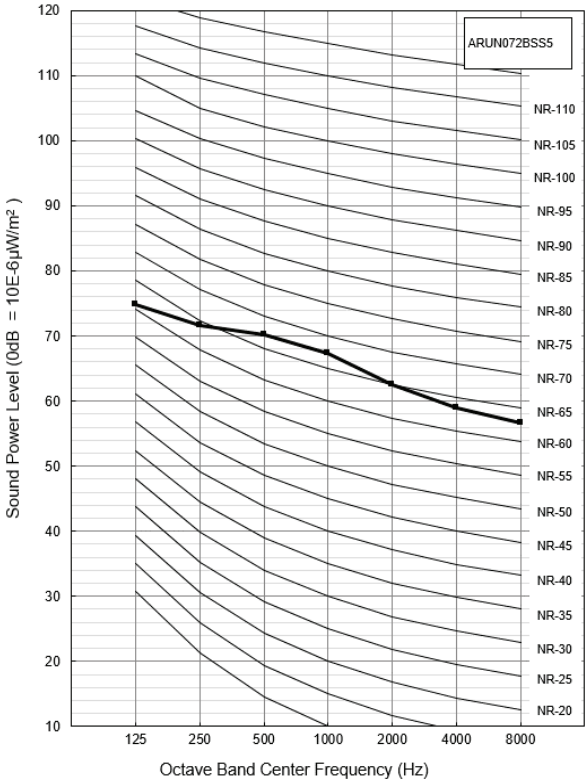
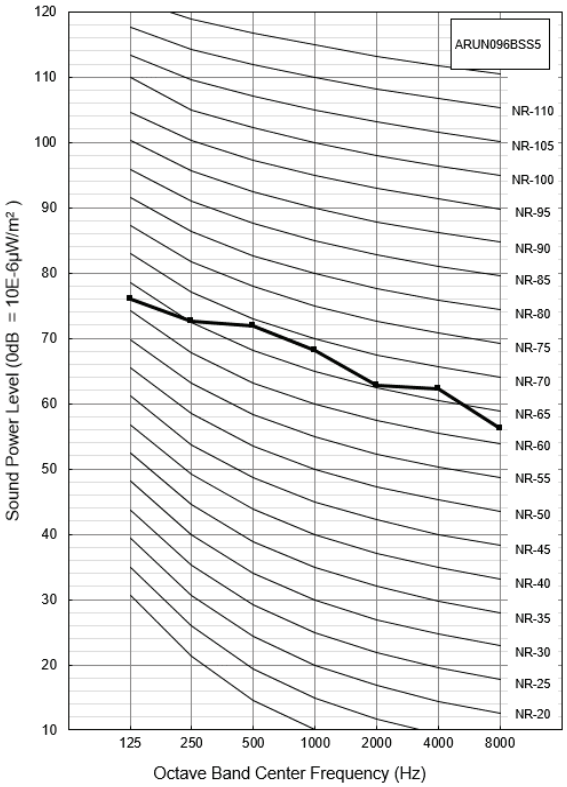
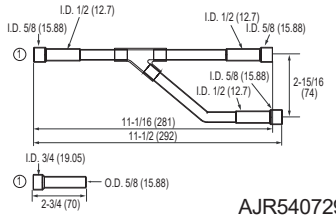
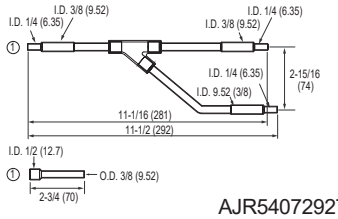
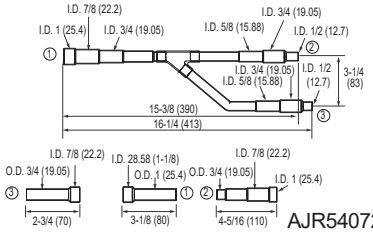
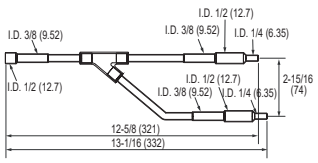
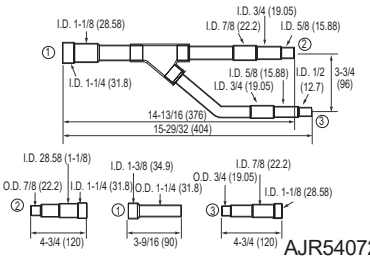
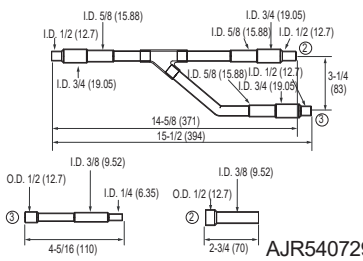
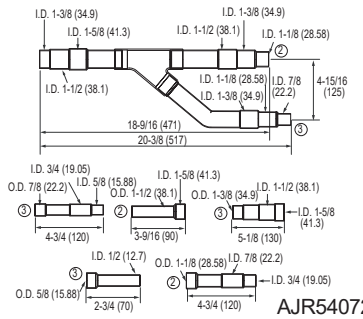
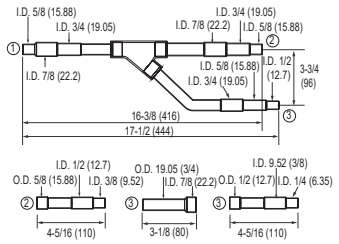
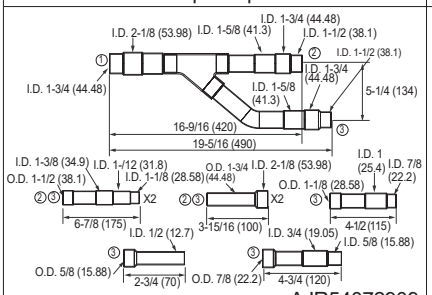
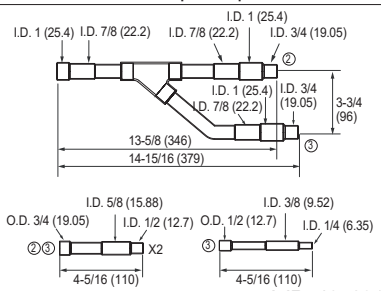


Figure 13: ARUN048GSS5 Sound Power Levels



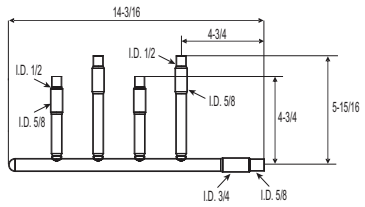
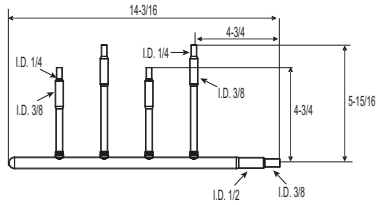
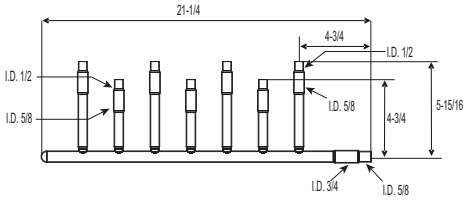
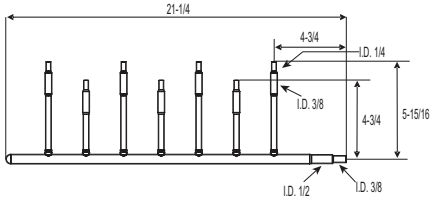
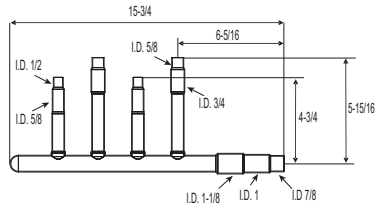
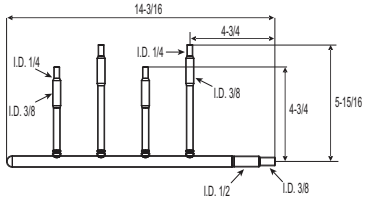
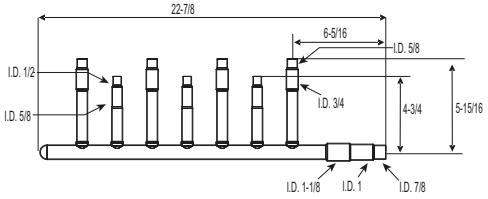
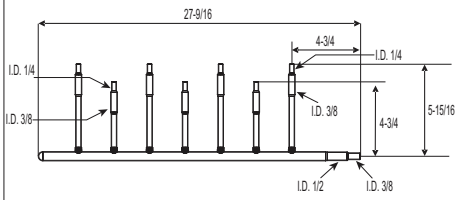
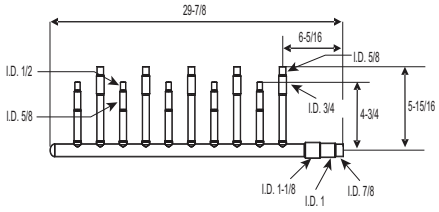
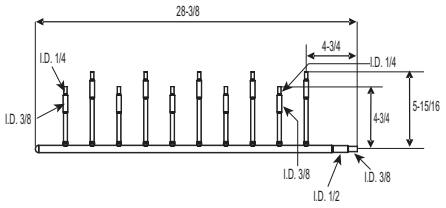
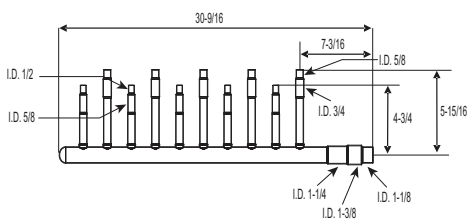
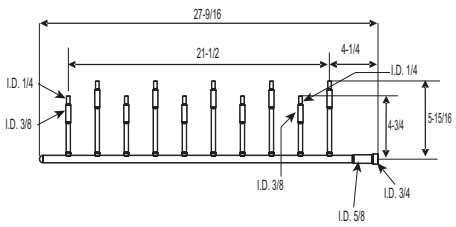
Indoor Unit Y-Branches

(Unit: Inch [mm])

Models	Pipe	
	Vapor Pipe	Liquid Pipe
ARBLN01621	 AJR54072929	 AJR54072927
ARBLN03321	 AJR54072930	 AJR54072928
ARBLN07121	 AJR54072933	 AJR54072931
ARBLN14521	 AJR54072908	 AJR54072932
ARBLN23220	 AJR54072909	 AJR54072910

Headers

Unit: Inch

Models	Vapor pipe	Liquid pipe
4 branch ARBL054		
7 branch ARBL057		
4 branch ARBL104		
7 branch ARBL107		
10 branch ARBL1010		
10 branch ARBL2010		

Product Data

Low Ambient Wind Baffle

(ZLABGP04A)

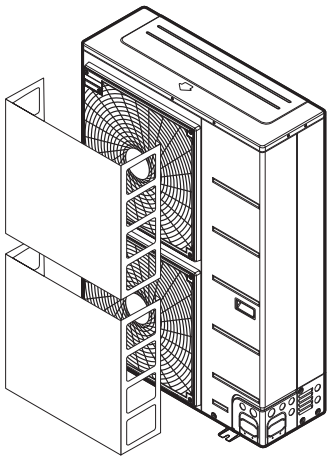
Optional low ambient baffles allow for Multi V S Three-Phase outdoor units operation down to -9.9°F in cooling mode.

Includes:

- 20 Gauge Paint Grip Wind Baffle in Soft Dove Grey
- Four (4) Zinc-Plated Pan-Head Phillips Screws, #8 x 1/2"

Use two (2) ZLABGP04A kits with the 6-ton ARUN072BSS5 and 8-ton ARUN096BSS5.

Contact an LG Sales Representative for more information.



LG Monitoring View (LGMV) Diagnostic Software and Cable

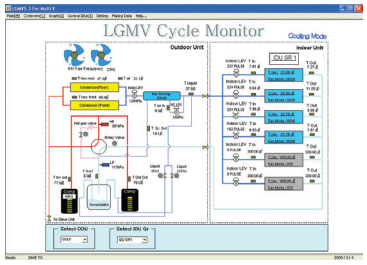
LGMV software allows the service technician or commissioning agent to connect a computer USB port to the outdoor unit main printed circuit board (PCB) using an accessory cable without the need for a separate interface device. The main screen for LGMV allows user to view the following real time data on one screen:

- Actual inverter compressor speed
- Target inverter compressor speed
- Actual outdoor fan speed
- Target outdoor unit fan speed
- Actual superheat
- Target superheat
- Actual subcooler circuit superheat
- Target subcooler circuit superheat
- Main EEV position
- Subcooling EEV position
- Inverter compressor current transducer value
- Outdoor air temperature
- Actual high pressure/saturation temperature
- Actual low pressure/saturation temperature
- Suction temperature
- Inverter compressor discharge temperature
- Constant speed compressor discharge temperature
- Front outdoor coil pipe temperature
- Back outdoor coil pipe temperature
- Liquid line pipe temperature
- Subcooler inlet temperature
- Subcooler outlet temperature
- Average indoor unit (IDU) pipe temperature
- Inverter compressor operation indicator light
- Four-way reversing valve operation indicator light
- Pressure graph showing actual low pressure and actual high pressure levels
- Error code display
- Operating mode indicator
- Target high pressure
- Target low pressure
- PCB (printed circuit board) version
- Software version
- Installer name
- Model no. of outdoor units
- Site name
- Total number of connected indoor units
- Communication indicator lights
- Indoor unit capacity
- Indoor unit operating mode
- Indoor unit fan speed
- Indoor unit EEV position
- Indoor unit room temperature
- Indoor unit inlet pipe temperature
- Indoor unit outlet pipe temperature
- Indoor unit error code

Additional screens can be accessed by tabs on the main screen:

1. Cycleview: Graphic of internal components including:
   - Compressors showing actual speeds
   - EEVs
   - Indoor Units
   - Liquid injection valves
   - Temperature and pressure sensors
   - Four-way reversing valve
   - Outdoor fans showing status and speeds

Figure 14: MV Cycleview.



2. Graph: Full screen graph of actual high and low pressures and high and low pressure limits. A sliding bar enables user to go back in time and view data.
3. Control IDU: Enables user to turn on all IDU's default setpoints of 86°F in heat mode or 64°F in cool mode.
4. Setting: Converts metric values to imperial values.
5. Making Data: Recording of real time data to a separate file created to be stored on the user's computer.
6. Loading Data: Recorded data from a saved ".CSV" file can be loaded to create an LGMV session.
7. Electrical Data: The lower half of main screen is changed to show the following:
   - Inverter compressor
     - Amps
     - Volts
     - Power Hz
     - Inverter control board fan Hz
   - Constant compressor
     - Current transducer value
     - Phase

In lieu of connecting to the outdoor unit, user has the option to connect to the indoor unit with the use of a USB to RS-485 connector kit. When connected through the indoor unit, user will not be able to record data.

This software can be used to both commission new systems and troubleshoot existing systems. LGMV data can be recorded to a ".CSV" file and emailed to an LG representative to assist with diagnostic evaluations.

LGMV is available in different formats, including Mobile LGMV, which is an app for use on wireless devices. Contact your LG Sales Representative for information about the different formats, and recommended system requirements for any version of LGMV.

PERFORMANCE DATA

COOLING CAPACITY DATA

ARUN072BSS5

72,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp. (°F DB)	Indoor Air Temp. °F DB/°F WB													
		68/57		73/61		79/64		80/67		85/70		88/73		91/76	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
130%	-9.9	65.5	2.15	77.8	2.60	90.4	3.09	93.7	3.34	95.1	3.60	98.4	4.12	100.7	4.26
	-4	65.5	2.26	77.8	2.75	90.4	3.26	93.7	3.52	95.1	3.80	98.4	4.35	100.7	4.50
	0	65.5	2.36	77.8	2.86	90.4	3.39	93.7	3.66	95.1	3.95	98.4	4.53	100.7	4.68
	5	65.5	2.44	77.8	2.96	90.4	3.52	93.7	3.79	95.1	4.09	98.4	4.69	100.7	4.85
	10	65.5	2.51	77.8	3.05	90.4	3.62	93.7	3.90	95.1	4.21	98.4	4.83	100.7	4.99
	14	65.5	2.60	77.8	3.16	90.4	3.75	93.7	4.04	95.1	4.36	98.4	5.00	100.7	5.17
	20	65.5	2.65	77.8	3.21	90.4	3.80	93.7	4.11	95.1	4.42	98.4	5.07	100.7	5.24
	25	65.5	2.68	77.8	3.25	90.4	3.85	93.7	4.16	95.1	4.47	98.4	5.13	100.7	5.30
	30	65.5	2.72	77.8	3.29	90.4	3.89	93.7	4.21	95.1	4.52	98.4	5.19	100.7	5.37
	35	65.5	2.75	77.8	3.33	90.4	3.94	93.7	4.26	95.1	4.58	98.4	5.25	100.7	5.43
	40	65.5	2.79	77.8	3.37	90.4	3.99	93.7	4.31	95.1	4.63	98.4	5.31	100.7	5.50
	45	65.5	2.81	77.8	3.40	90.4	4.03	93.7	4.35	95.1	4.68	98.4	5.37	100.7	5.55
	50	65.5	2.84	77.8	3.44	90.4	4.07	93.7	4.40	95.1	4.73	98.4	5.42	100.7	5.61
	55	65.5	2.89	77.8	3.50	90.4	4.15	92.4	4.49	93.7	4.82	97.0	5.51	99.4	5.65
	60	65.5	2.98	77.8	3.63	89.1	4.32	90.3	4.67	91.4	5.01	94.7	5.69	97.0	5.71
	65	65.5	3.05	77.8	3.71	87.7	4.40	89.1	4.76	90.1	5.11	93.3	5.87	95.7	5.92
	70	65.5	2.93	77.8	3.56	86.1	4.38	87.1	4.82	88.4	5.29	91.6	5.88	94.0	5.94
	75	65.5	3.01	77.8	3.80	84.8	4.69	85.7	5.18	87.1	5.67	90.3	6.16	92.6	6.20
	80	65.5	3.42	77.8	4.32	82.4	5.37	83.4	5.92	84.8	6.51	87.9	6.69	90.3	6.74
	85	65.5	3.64	77.8	4.62	81.1	5.73	82.4	6.32	83.4	6.91	86.6	6.96	89.0	7.02
	90	65.5	4.12	76.4	5.25	78.8	6.51	79.8	7.20	81.1	7.45	84.3	7.51	86.6	7.58
	95	66.2	4.37	75.9	5.59	78.3	6.95	**79.6**	**7.68**	80.6	7.71	83.8	7.78	86.2	7.86
	100	66.2	4.73	74.6	6.04	76.9	7.53	78.3	8.09	79.3	8.13	82.8	8.21	85.2	8.28
	105	66.2	5.33	72.6	6.84	74.9	8.50	76.1	8.69	77.2	8.74	79.9	8.82	81.1	8.90
	110	66.2	5.99	69.6	7.70	72.5	9.27	72.7	9.31	73.8	9.34	75.3	9.44	75.6	9.53
	115	65.8	6.93	67.0	8.86	67.0	9.77	67.0	9.77	67.0	9.77	68.0	9.79	68.3	9.81
	118	57.2	5.87	58.3	7.51	58.4	8.22	58.4	8.29	58.4	8.29	59.2	8.30	59.0	8.32
	122	45.7	4.45	46.7	5.71	46.5	6.25	46.6	6.27	46.7	6.28	47.5	6.30	47.5	6.32
120%	-9.9	59.6	2.02	71.1	2.45	82.6	2.90	88.5	3.13	92.5	3.37	96.7	3.87	98.7	4.00
	-4	59.6	2.13	71.1	2.59	82.6	3.06	88.5	3.30	92.5	3.56	96.7	4.08	98.7	4.22
	0	59.6	2.22	71.1	2.69	82.6	3.19	88.5	3.43	92.5	3.70	96.7	4.25	98.7	4.39
	5	59.6	2.30	71.1	2.79	82.6	3.30	88.5	3.56	92.5	3.84	96.7	4.40	98.7	4.55
	10	59.6	2.37	71.1	2.87	82.6	3.40	88.5	3.66	92.5	3.95	96.7	4.53	98.7	4.68
	14	59.6	2.45	71.1	2.97	82.6	3.52	88.5	3.80	92.5	4.09	96.7	4.69	98.7	4.85
	20	59.6	2.49	71.1	3.02	82.6	3.57	88.5	3.85	92.5	4.15	96.7	4.76	98.7	4.92
	25	59.6	2.52	71.1	3.05	82.6	3.61	88.5	3.90	92.5	4.20	96.7	4.81	98.7	4.98
	30	59.6	2.55	71.1	3.09	82.6	3.65	88.5	3.95	92.5	4.25	96.7	4.87	98.7	5.04
	35	59.6	2.59	71.1	3.13	82.6	3.70	88.5	4.00	92.5	4.30	96.7	4.93	98.7	5.10
	40	59.6	2.62	71.1	3.17	82.6	3.75	88.5	4.05	92.5	4.35	96.7	4.99	98.7	5.16
	45	59.6	2.65	71.1	3.20	82.6	3.79	88.5	4.10	92.5	4.40	96.7	5.04	98.7	5.22
	50	59.6	2.68	71.1	3.24	82.6	3.83	88.5	4.14	92.5	4.45	96.7	5.10	98.7	5.28
	55	59.6	2.72	71.1	3.30	82.6	3.91	88.5	4.23	91.5	4.54	95.4	5.19	97.7	5.32
	60	59.6	2.81	71.1	3.42	82.6	4.07	87.9	4.39	88.9	4.72	93.0	5.35	95.0	5.45
	65	59.6	2.87	71.1	3.49	82.6	4.14	86.6	4.48	87.9	4.81	91.7	5.53	94.0	5.58
	70	59.6	2.81	71.1	3.42	82.6	4.21	84.9	4.63	85.9	5.08	90.0	5.64	92.0	5.70
	75	59.6	2.89	71.1	3.65	82.6	4.50	83.6	4.97	84.9	5.45	88.6	5.91	91.0	5.95
	80	59.6	3.28	71.1	4.15	80.3	5.15	81.3	5.69	82.3	6.25	86.3	6.42	88.3	6.47
	85	59.6	3.49	71.1	4.43	79.0	5.50	80.0	6.07	81.3	6.63	84.9	6.69	87.3	6.74
	90	59.6	3.95	71.1	5.04	76.7	6.25	77.7	6.91	78.7	7.15	82.6	7.21	84.6	7.28
	95	60.2	4.19	71.9	5.36	76.2	6.67	**77.2**	**7.37**	78.5	7.40	82.1	7.47	84.5	7.54
	100	60.2	4.54	71.9	5.80	74.8	7.23	76.2	7.76	77.2	7.80	81.1	7.88	83.1	7.95
	105	60.2	5.11	70.7	6.57	72.9	8.16	74.0	8.35	75.0	8.39	78.7	8.46	80.0	8.54
	110	60.2	5.75	68.9	7.40	71.1	8.90	71.4	8.94	72.4	8.97	74.7	9.06	75.0	9.15
	115	58.5	6.65	66.4	8.51	66.4	9.38	66.4	9.38	66.4	9.38	68.0	9.40	68.3	9.41
	118	52.3	5.87	57.7	7.21	57.8	7.89	57.8	7.96	57.8	7.96	59.2	7.97	59.0	7.99
	122	41.8	4.45	46.3	5.48	46.1	6.00	46.2	6.02	46.3	6.03	47.6	6.04	47.5	6.07

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB), and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).

COOLING CAPACITY DATA

MULTI V S THREE-PHASE

ARUN072BSS5

72,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp. (°F DB)	Indoor Air Temp. °F DB/°F WB													
		68/57		73/61		79/64		80/67		85/70		88/73		91/76	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
110%	-9.9	55.2	1.86	65.9	2.25	76.5	2.66	81.8	2.89	87.2	3.09	96.0	3.53	98.1	3.66
	-4	55.2	1.96	65.9	2.37	76.5	2.81	81.8	3.04	87.2	3.26	96.0	3.72	98.1	3.86
	0	55.2	2.04	65.9	2.46	76.5	2.92	81.8	3.17	87.2	3.39	96.0	3.87	98.1	4.02
	5	55.2	2.12	65.9	2.55	76.5	3.03	81.8	3.28	87.2	3.52	96.0	4.01	98.1	4.16
	10	55.2	2.18	65.9	2.63	76.5	3.11	81.8	3.38	87.2	3.62	96.0	4.13	98.1	4.28
	14	55.2	2.26	65.9	2.72	76.5	3.23	81.8	3.50	87.2	3.75	96.0	4.28	98.1	4.44
	20	55.2	2.29	65.9	2.77	76.5	3.28	81.8	3.55	87.2	3.81	96.0	4.35	98.1	4.51
	25	55.2	2.32	65.9	2.80	76.5	3.32	81.8	3.59	87.2	3.85	96.0	4.41	98.1	4.56
	30	55.2	2.35	65.9	2.84	76.5	3.36	81.8	3.63	87.2	3.90	96.0	4.47	98.1	4.62
	35	55.2	2.38	65.9	2.88	76.5	3.40	81.8	3.68	87.2	3.96	96.0	4.54	98.1	4.70
	40	55.2	2.41	65.9	2.92	76.5	3.45	81.8	3.73	87.2	4.01	96.0	4.60	98.1	4.75
	45	55.2	2.45	65.9	2.96	76.5	3.51	81.8	3.79	87.2	4.08	96.0	4.68	98.1	4.84
	50	55.2	2.49	65.9	3.02	76.5	3.57	81.8	3.86	87.2	4.15	96.0	4.75	98.1	4.91
	55	55.2	2.53	65.9	3.07	76.5	3.64	81.8	3.94	87.2	4.23	94.7	4.83	96.7	4.96
	60	55.2	2.62	65.9	3.18	76.5	3.79	81.8	4.09	87.2	4.39	92.3	4.99	94.3	5.03
	65	55.2	2.67	65.9	3.25	76.5	3.86	81.8	4.17	87.2	4.48	90.9	5.15	93.0	5.19
	70	55.2	2.70	65.9	3.28	76.5	4.04	81.8	4.44	85.5	4.87	89.2	5.41	91.3	5.47
	75	55.2	2.77	65.9	3.50	76.5	4.32	81.8	4.76	84.2	5.22	87.9	5.67	89.9	5.71
	80	54.7	3.14	65.2	3.98	75.7	4.94	80.0	5.45	81.0	5.99	84.6	6.15	86.6	6.21
	85	54.7	3.35	65.2	4.25	75.7	5.28	78.7	5.82	79.7	6.36	83.3	6.41	85.3	6.46
	90	54.7	3.79	65.2	4.83	75.4	5.99	76.4	6.63	77.4	6.86	80.9	6.91	83.0	6.98
	95	54.7	4.02	65.2	5.14	74.1	6.40	**75.1**	**7.07**	76.1	7.10	79.6	7.17	81.6	7.23
	100	54.7	4.35	65.2	5.56	73.1	6.93	74.1	7.44	75.1	7.48	78.6	7.55	80.6	7.62
	105	54.7	4.91	65.2	6.29	70.8	7.82	71.8	8.01	72.8	8.05	76.3	8.12	78.2	8.20
	110	54.7	5.51	65.2	7.09	68.6	8.53	68.8	8.57	69.8	8.60	72.0	8.69	72.3	8.77
	115	54.7	6.38	65.2	8.16	65.7	8.99	65.7	8.99	66.0	8.99	67.3	9.01	67.6	9.03
	118	52.8	5.81	56.7	6.91	57.2	7.56	57.2	7.63	57.5	7.63	58.6	7.64	58.4	7.66
	122	42.2	4.41	45.5	5.25	45.6	5.76	45.7	5.77	46.0	5.78	47.1	5.79	47.0	5.82
100%	-9.9	48.5	1.64	57.9	1.98	67.2	2.34	72.0	2.55	79.1	2.76	88.7	3.19	93.7	3.32
	-4	48.5	1.73	57.9	2.09	67.2	2.47	72.0	2.69	79.1	2.91	88.7	3.36	93.7	3.50
	0	48.5	1.80	57.9	2.17	67.2	2.57	72.0	2.80	79.1	3.03	88.7	3.50	93.7	3.64
	5	48.5	1.86	57.9	2.25	67.2	2.66	72.0	2.90	79.1	3.14	88.7	3.62	93.7	3.77
	10	48.5	1.92	57.9	2.31	67.2	2.74	72.0	2.99	79.1	3.23	88.7	3.73	93.7	3.88
	14	48.5	1.99	57.9	2.40	67.2	2.84	72.0	3.09	79.1	3.35	88.7	3.86	93.7	4.02
	20	48.5	2.05	57.9	2.47	67.2	2.93	72.0	3.18	79.1	3.46	88.7	3.98	93.7	4.14
	25	48.5	2.10	57.9	2.54	67.2	3.00	72.0	3.26	79.1	3.54	88.7	4.07	93.7	4.23
	30	48.5	2.15	57.9	2.60	67.2	3.08	72.0	3.33	79.1	3.63	88.7	4.16	93.7	4.33
	35	48.5	2.18	57.9	2.65	67.2	3.13	72.0	3.38	79.1	3.69	88.7	4.23	93.7	4.40
	40	48.5	2.22	57.9	2.69	67.2	3.18	72.0	3.44	79.1	3.75	88.7	4.30	93.7	4.47
	45	48.5	2.27	57.9	2.75	67.2	3.24	72.0	3.51	79.1	3.83	88.7	4.39	93.7	4.56
	50	48.5	2.31	57.9	2.80	67.2	3.31	72.0	3.58	79.1	3.91	88.7	4.48	93.7	4.66
	55	48.5	2.35	57.9	2.85	67.2	3.38	72.0	3.66	79.1	3.98	88.7	4.56	92.7	4.72
	60	48.5	2.43	57.9	2.95	67.2	3.52	72.0	3.80	79.1	4.14	88.4	4.70	90.1	4.81
	65	48.5	2.48	57.9	3.02	67.2	3.58	72.0	3.87	79.1	4.22	87.1	4.85	89.1	4.95
	70	48.5	2.56	57.9	3.11	67.2	3.82	72.0	4.21	79.1	4.69	85.4	5.20	87.1	5.30
	75	48.5	2.62	57.9	3.31	67.2	4.09	72.0	4.51	79.1	5.02	84.1	5.45	86.1	5.52
	80	48.5	2.98	57.9	3.77	67.2	4.68	72.0	5.17	79.1	5.76	81.8	5.92	83.4	6.00
	85	48.5	3.17	57.9	4.03	67.2	5.00	72.0	5.51	78.8	6.11	80.5	6.16	82.4	6.25
	90	48.5	3.59	57.9	4.58	67.2	5.68	72.0	6.28	76.1	6.59	78.1	6.64	79.8	6.74
	95	48.5	3.81	57.9	4.87	67.2	6.06	**72.0**	**6.70**	75.2	6.83	76.8	6.89	78.8	6.99
	100	48.5	4.11	57.9	5.26	67.2	6.55	70.7	7.04	73.9	7.18	75.8	7.25	77.5	7.35
	105	48.5	4.62	57.9	5.92	66.8	7.37	68.8	7.54	71.6	7.69	73.5	7.76	75.3	7.87
	110	48.5	5.17	57.9	6.65	66.0	8.00	67.5	8.04	68.9	8.19	70.0	8.27	71.3	8.39
	115	48.5	5.94	57.9	7.59	62.9	8.38	64.8	8.38	66.4	8.50	67.0	8.52	67.3	8.57
	118	48.5	5.99	50.8	7.12	54.7	7.04	56.4	7.11	57.8	7.21	58.4	7.23	58.1	7.27
	122	41.5	5.42	40.7	5.42	43.6	5.36	45.1	5.37	46.3	5.46	46.9	5.48	46.8	5.53

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.
The System Combination Ratio must be between 50–130%.

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.
Nominal cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB), and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).

COOLING CAPACITY DATA

ARUN072BSS5

72,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp. (°F DB)	Indoor Air Temp. °F DB/°F WB													
		68/57		73/61		79/64		80/67		85/70		88/73		91/76	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
90%	-9.9	43.7	1.46	52.1	1.75	60.8	2.07	64.9	2.22	69.1	2.38	77.5	2.74	85.8	3.00
	-4	43.7	1.54	52.1	1.85	60.8	2.18	64.9	2.35	69.1	2.51	77.5	2.89	85.8	3.17
	0	43.7	1.60	52.1	1.92	60.8	2.27	64.9	2.44	69.1	2.61	77.5	3.00	85.8	3.30
	5	43.7	1.66	52.1	1.99	60.8	2.35	64.9	2.53	69.1	2.70	77.5	3.11	85.8	3.42
	10	43.7	1.71	52.1	2.05	60.8	2.42	64.9	2.60	69.1	2.78	77.5	3.20	85.8	3.52
	14	43.7	1.77	52.1	2.12	60.8	2.51	64.9	2.70	69.1	2.88	77.5	3.32	85.8	3.64
	20	43.7	1.84	52.1	2.20	60.8	2.60	64.9	2.80	69.1	3.00	77.5	3.44	85.8	3.78
	25	43.7	1.89	52.1	2.27	60.8	2.68	64.9	2.89	69.1	3.10	77.5	3.54	85.8	3.90
	30	43.7	1.94	52.1	2.34	60.8	2.76	64.9	2.97	69.1	3.20	77.5	3.64	85.8	4.02
	35	43.7	2.00	52.1	2.41	60.8	2.84	64.9	3.06	69.1	3.30	77.5	3.75	85.8	4.14
	40	43.7	2.06	52.1	2.48	60.8	2.93	64.9	3.16	69.1	3.40	77.5	3.86	85.8	4.26
	45	43.7	2.11	52.1	2.54	60.8	2.99	64.9	3.23	69.1	3.48	77.5	3.95	85.8	4.36
	50	43.7	2.16	52.1	2.60	60.8	3.06	64.9	3.30	69.1	3.55	77.5	4.04	85.8	4.46
	55	43.7	2.18	52.1	2.64	60.8	3.11	64.9	3.37	69.1	3.62	77.5	4.12	85.8	4.50
	60	43.7	2.26	52.1	2.74	60.8	3.23	64.9	3.50	69.1	3.77	77.5	4.27	85.1	4.55
	65	43.7	2.30	52.1	2.80	60.8	3.30	64.9	3.57	69.1	3.83	77.5	4.35	84.5	4.78
	70	43.7	2.37	52.1	2.88	60.8	3.42	64.9	3.77	69.1	4.11	77.5	4.86	82.9	5.13
	75	43.7	2.41	52.1	3.01	60.8	3.66	64.9	4.03	69.1	4.42	77.5	5.07	81.6	5.36
	80	43.7	2.70	52.1	3.41	60.8	4.18	64.9	4.61	69.1	5.04	77.5	5.60	79.4	5.83
	85	43.7	2.88	52.1	3.63	60.8	4.47	64.9	4.91	69.1	5.39	76.5	5.90	78.1	6.07
	90	43.7	3.25	52.1	4.11	60.8	5.07	64.9	5.59	69.1	6.14	74.3	6.45	75.9	6.55
	95	43.7	3.46	52.1	4.37	60.8	5.40	**64.9**	**5.96**	69.1	6.55	73.0	6.70	74.6	6.79
	100	43.7	3.57	52.1	4.55	60.8	5.63	64.9	6.20	69.1	6.69	72.0	6.99	73.3	7.06
	105	43.7	4.14	52.1	5.28	60.8	6.37	64.9	6.79	68.3	7.18	69.8	7.49	70.7	7.58
	110	43.7	4.76	52.1	6.09	60.8	6.98	64.9	7.33	65.6	7.78	66.4	8.05	67.0	8.14
	115	43.7	5.15	52.1	6.60	56.9	7.35	61.6	7.67	62.4	8.03	63.0	8.21	63.3	8.31
	118	43.7	5.47	50.8	7.12	49.5	6.18	53.6	6.51	54.4	6.81	54.9	6.96	54.6	7.05
	122	41.5	5.42	40.7	5.42	39.5	4.71	42.8	4.92	43.5	5.16	44.1	5.28	44.0	5.36
80%	-9.9	38.9	1.27	46.3	1.52	54.0	1.77	57.5	1.92	61.4	2.07	68.8	2.37	76.2	2.64
	-4	38.9	1.33	46.3	1.61	54.0	1.87	57.5	2.03	61.4	2.19	68.8	2.50	76.2	2.78
	0	38.9	1.39	46.3	1.67	54.0	1.94	57.5	2.11	61.4	2.28	68.8	2.60	76.2	2.89
	5	38.9	1.44	46.3	1.73	54.0	2.01	57.5	2.19	61.4	2.36	68.8	2.69	76.2	3.00
	10	38.9	1.48	46.3	1.78	54.0	2.07	57.5	2.25	61.4	2.43	68.8	2.77	76.2	3.09
	14	38.9	1.53	46.3	1.85	54.0	2.15	57.5	2.33	61.4	2.51	68.8	2.87	76.2	3.20
	20	38.9	1.59	46.3	1.91	54.0	2.23	57.5	2.42	61.4	2.60	68.8	2.98	76.2	3.32
	25	38.9	1.64	46.3	1.97	54.0	2.30	57.5	2.49	61.4	2.67	68.8	3.06	76.2	3.42
	30	38.9	1.69	46.3	2.02	54.0	2.38	57.5	2.57	61.4	2.75	68.8	3.15	76.2	3.53
	35	38.9	1.74	46.3	2.08	54.0	2.45	57.5	2.63	61.4	2.82	68.8	3.24	76.2	3.62
	40	38.9	1.78	46.3	2.14	54.0	2.51	57.5	2.71	61.4	2.90	68.8	3.32	76.2	3.72
	45	38.9	1.81	46.3	2.16	54.0	2.55	57.5	2.75	61.4	2.93	68.8	3.37	76.2	3.77
	50	38.9	1.83	46.3	2.20	54.0	2.58	57.5	2.78	61.4	2.98	68.8	3.42	76.2	3.82
	55	38.9	1.86	46.3	2.23	54.0	2.62	57.5	2.83	61.4	3.03	68.8	3.48	76.2	3.89
	60	38.9	1.93	46.3	2.31	54.0	2.72	57.5	2.93	61.4	3.15	68.8	3.60	76.2	4.05
	65	38.9	1.95	46.3	2.35	54.0	2.77	57.5	2.99	61.4	3.22	68.8	3.67	76.2	4.14
	70	38.9	2.01	46.3	2.42	54.0	2.86	57.5	3.08	61.4	3.35	68.8	3.95	76.2	4.58
	75	38.9	2.05	46.3	2.47	54.0	3.00	57.5	3.28	61.4	3.57	68.8	4.21	76.2	4.83
	80	38.9	2.24	46.3	2.80	54.0	3.42	57.5	3.73	61.4	4.08	68.8	4.84	76.2	5.39
	85	38.9	2.39	46.3	2.98	54.0	3.64	57.5	3.98	61.4	4.36	68.8	5.16	76.2	5.53
	90	38.9	2.69	46.3	3.38	54.0	4.11	57.5	4.52	61.4	4.96	68.8	5.67	74.9	5.86
	95	38.9	2.86	46.3	3.57	54.0	4.39	**57.5**	**4.80**	61.4	5.28	68.8	5.86	73.3	6.02
	100	38.9	3.08	46.3	3.85	54.0	4.74	57.5	5.14	61.4	5.49	68.8	6.10	71.7	6.22
	105	38.9	3.51	46.3	4.41	54.0	5.27	57.5	5.52	61.4	5.88	68.0	6.34	69.6	6.53
	110	38.9	3.98	46.3	5.03	54.0	5.59	57.5	5.90	61.4	6.34	65.6	6.58	65.9	6.86
	115	38.9	4.26	46.3	5.37	54.0	5.78	57.5	6.20	57.5	6.49	57.9	6.73	57.9	7.14
	118	38.9	4.52	46.3	5.71	49.5	6.18	50.5	5.88	50.1	5.50	50.4	5.71	50.0	6.05
	122	38.9	4.89	40.8	5.38	39.5	4.71	40.4	4.45	40.1	4.17	40.5	4.33	40.2	4.60

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB), and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).

COOLING CAPACITY DATA

MULTI V S THREE-PHASE

ARUN072BSS5

72,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp. (°F DB)	Indoor Air Temp. °F DB/°F WB													
		68/57		73/61		79/64		80/67		85/70		88/73		91/76	
		TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
70%	-9.9	34.1	1.12	40.5	1.33	47.3	1.56	50.5	1.67	53.7	1.78	60.1	2.04	66.9	2.28
	-4	34.1	1.18	40.5	1.40	47.3	1.65	50.5	1.76	53.7	1.88	60.1	2.15	66.9	2.41
	0	34.1	1.23	40.5	1.46	47.3	1.72	50.5	1.84	53.7	1.96	60.1	2.24	66.9	2.51
	5	34.1	1.27	40.5	1.51	47.3	1.78	50.5	1.90	53.7	2.03	60.1	2.32	66.9	2.60
	10	34.1	1.31	40.5	1.55	47.3	1.83	50.5	1.96	53.7	2.09	60.1	2.39	66.9	2.67
	14	34.1	1.35	40.5	1.61	47.3	1.90	50.5	2.03	53.7	2.16	60.1	2.48	66.9	2.77
	20	34.1	1.40	40.5	1.66	47.3	1.95	50.5	2.10	53.7	2.24	60.1	2.55	66.9	2.86
	25	34.1	1.44	40.5	1.71	47.3	2.00	50.5	2.15	53.7	2.30	60.1	2.62	66.9	2.94
	30	34.1	1.48	40.5	1.75	47.3	2.05	50.5	2.21	53.7	2.36	60.1	2.69	66.9	3.02
	35	34.1	1.52	40.5	1.80	47.3	2.11	50.5	2.26	53.7	2.43	60.1	2.75	66.9	3.10
	40	34.1	1.56	40.5	1.85	47.3	2.16	50.5	2.32	53.7	2.49	60.1	2.83	66.9	3.18
	45	34.1	1.58	40.5	1.88	47.3	2.20	50.5	2.37	53.7	2.53	60.1	2.87	66.9	3.23
	50	34.1	1.61	40.5	1.91	47.3	2.23	50.5	2.40	53.7	2.57	60.1	2.92	66.9	3.28
	55	34.1	1.64	40.5	1.94	47.3	2.27	50.5	2.44	53.7	2.61	60.1	2.98	66.9	3.35
	60	34.1	1.68	40.5	2.01	47.3	2.35	50.5	2.53	53.7	2.71	60.1	3.09	66.9	3.48
	65	34.1	1.71	40.5	2.05	47.3	2.39	50.5	2.58	53.7	2.76	60.1	3.15	66.9	3.54
	70	34.1	1.76	40.5	2.10	47.3	2.47	50.5	2.65	53.7	2.85	60.1	3.26	66.9	3.76
	75	34.1	1.79	40.5	2.14	47.3	2.51	50.5	2.75	53.7	2.98	60.1	3.48	66.9	3.98
	80	34.1	1.93	40.5	2.36	47.3	2.86	50.5	3.12	53.7	3.38	60.1	3.85	66.9	4.41
	85	34.1	2.05	40.5	2.51	47.3	3.04	50.5	3.32	53.7	3.64	60.1	4.10	66.9	4.60
	90	34.1	2.30	40.5	2.84	47.3	3.44	50.5	3.76	53.7	4.11	60.1	4.57	66.9	5.00
	95	34.1	2.43	40.5	3.02	47.3	3.67	**50.5**	**4.01**	53.7	4.36	60.1	4.81	66.9	5.15
	100	34.1	2.62	40.5	3.26	47.3	3.95	50.5	4.33	53.7	4.49	60.1	5.03	66.9	5.29
	105	34.1	2.97	40.5	3.71	47.3	4.36	50.5	4.62	53.7	4.88	60.1	5.30	66.9	5.60
	110	34.1	3.35	40.5	4.21	47.3	4.62	50.5	4.89	53.7	5.29	60.1	5.52	64.9	6.02
	115	34.1	3.60	40.5	4.49	47.3	4.77	50.5	5.17	53.7	5.45	60.1	5.69	61.2	6.41
	118	34.1	3.82	40.5	4.77	47.3	5.07	50.5	5.48	48.8	5.45	50.4	4.83	50.0	5.44
	122	34.1	4.13	40.5	5.16	42.2	4.84	40.3	4.51	39.1	4.13	40.5	3.66	40.2	4.13
60%	-9.9	29.3	0.97	34.7	1.12	40.5	1.32	43.1	1.41	46.0	1.52	51.8	1.72	57.2	1.92
	-4	29.3	1.02	34.7	1.19	40.5	1.39	43.1	1.49	46.0	1.60	51.8	1.81	57.2	2.03
	0	29.3	1.06	34.7	1.23	40.5	1.45	43.1	1.55	46.0	1.67	51.8	1.89	57.2	2.11
	5	29.3	1.10	34.7	1.28	40.5	1.50	43.1	1.60	46.0	1.73	51.8	1.96	57.2	2.19
	10	29.3	1.13	34.7	1.32	40.5	1.54	43.1	1.65	46.0	1.78	51.8	2.01	57.2	2.25
	14	29.3	1.17	34.7	1.36	40.5	1.60	43.1	1.71	46.0	1.84	51.8	2.08	57.2	2.33
	20	29.3	1.21	34.7	1.41	40.5	1.65	43.1	1.77	46.0	1.90	51.8	2.15	57.2	2.41
	25	29.3	1.24	34.7	1.45	40.5	1.70	43.1	1.82	46.0	1.95	51.8	2.21	57.2	2.48
	30	29.3	1.27	34.7	1.49	40.5	1.74	43.1	1.87	46.0	2.00	51.8	2.27	57.2	2.55
	35	29.3	1.30	34.7	1.53	40.5	1.78	43.1	1.92	46.0	2.05	51.8	2.32	57.2	2.61
	40	29.3	1.34	34.7	1.57	40.5	1.83	43.1	1.97	46.0	2.10	51.8	2.39	57.2	2.68
	45	29.3	1.35	34.7	1.59	40.5	1.84	43.1	1.98	46.0	2.12	51.8	2.41	57.2	2.70
	50	29.3	1.36	34.7	1.60	40.5	1.86	43.1	2.00	46.0	2.14	51.8	2.43	57.2	2.73
	55	29.3	1.38	34.7	1.63	40.5	1.90	43.1	2.04	46.0	2.18	51.8	2.48	57.2	2.77
	60	29.3	1.42	34.7	1.68	40.5	1.96	43.1	2.11	46.0	2.26	51.8	2.56	57.2	2.88
	65	29.3	1.44	34.7	1.71	40.5	2.00	43.1	2.15	46.0	2.30	51.8	2.61	57.2	2.94
	70	29.3	1.48	34.7	1.76	40.5	2.06	43.1	2.21	46.0	2.36	51.8	2.69	57.2	3.05
	75	29.3	1.51	34.7	1.79	40.5	2.09	43.1	2.25	46.0	2.44	51.8	2.85	57.2	3.25
	80	29.3	1.60	34.7	1.95	40.5	2.35	43.1	2.56	46.0	2.77	51.8	3.19	57.2	3.67
	85	29.3	1.70	34.7	2.08	40.5	2.49	43.1	2.73	46.0	2.97	51.8	3.36	57.2	3.79
	90	29.3	1.91	34.7	2.35	40.5	2.82	43.1	3.08	46.0	3.33	51.8	3.75	57.2	4.14
	95	29.3	2.02	34.7	2.48	40.5	3.00	**43.1**	**3.28**	46.0	3.53	51.8	3.92	57.2	4.35
	100	29.3	2.17	34.7	2.67	40.5	3.23	43.1	3.54	46.0	3.69	51.8	4.16	57.2	4.54
	105	29.3	2.47	34.7	3.04	40.5	3.56	43.1	3.77	46.0	4.01	51.8	4.42	57.2	4.95
	110	29.3	2.77	34.7	3.45	40.5	3.85	43.1	4.00	46.0	4.34	51.8	4.73	57.2	5.40
	115	29.3	2.97	34.7	3.69	40.5	4.00	43.1	4.23	46.0	4.49	51.8	5.00	57.2	5.77
	118	29.3	3.14	34.7	3.91	40.5	4.24	43.1	4.50	46.0	4.78	50.4	4.83	50.0	5.44
	122	29.3	3.39	34.7	4.23	40.5	4.60	40.2	4.56	38.9	4.23	40.5	3.66	40.2	4.13

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal cooling capacity rating obtained with air entering the indoor unit at 80°F dry bulb (DB) and 67°F wet bulb (WB), and outdoor ambient conditions of 95°F dry bulb (DB) and 75°F wet bulb (WB).

COOLING CAPACITY DATA

ARUN072BSS5

72,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp. (°F DB)	Indoor Air Temp. °F DB/°F WB													
		68/57		73/61		79/64		80/67		85/70		88/73		91/76	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
50%	-9.9	24.3	0.83	28.9	0.98	33.8	1.10	36.0	1.18	38.3	1.27	43.1	1.41	47.6	1.56
	-4	24.3	0.88	28.9	1.03	33.8	1.16	36.0	1.25	38.3	1.34	43.1	1.49	47.6	1.65
	0	24.3	0.91	28.9	1.08	33.8	1.20	36.0	1.30	38.3	1.40	43.1	1.55	47.6	1.72
	5	24.3	0.95	28.9	1.11	33.8	1.25	36.0	1.34	38.3	1.45	43.1	1.61	47.6	1.78
	10	24.3	0.97	28.9	1.15	33.8	1.28	36.0	1.38	38.3	1.49	43.1	1.65	47.6	1.83
	14	24.3	1.01	28.9	1.19	33.8	1.33	36.0	1.43	38.3	1.54	43.1	1.71	47.6	1.90
	20	24.3	1.05	28.9	1.23	33.8	1.38	36.0	1.48	38.3	1.59	43.1	1.77	47.6	1.97
	25	24.3	1.08	28.9	1.26	33.8	1.43	36.0	1.53	38.3	1.63	43.1	1.83	47.6	2.03
	30	24.3	1.11	28.9	1.29	33.8	1.48	36.0	1.57	38.3	1.68	43.1	1.88	47.6	2.09
	35	24.3	1.14	28.9	1.32	33.8	1.51	36.0	1.61	38.3	1.72	43.1	1.93	47.6	2.14
	40	24.3	1.17	28.9	1.35	33.8	1.55	36.0	1.65	38.3	1.76	43.1	1.98	47.6	2.20
	45	24.3	1.19	28.9	1.37	33.8	1.57	36.0	1.68	38.3	1.79	43.1	2.00	47.6	2.23
	50	24.3	1.20	28.9	1.39	33.8	1.60	36.0	1.70	38.3	1.82	43.1	2.03	47.6	2.26
	55	24.3	1.23	28.9	1.42	33.8	1.62	36.0	1.73	38.3	1.84	43.1	2.07	47.6	2.30
	60	24.3	1.25	28.9	1.46	33.8	1.68	36.0	1.79	38.3	1.91	43.1	2.14	47.6	2.39
	65	24.3	1.27	28.9	1.48	33.8	1.70	36.0	1.82	38.3	1.93	43.1	2.17	47.6	2.43
	70	24.3	1.30	28.9	1.51	33.8	1.74	36.0	1.87	38.3	1.98	43.1	2.24	47.6	2.51
	75	24.3	1.32	28.9	1.53	33.8	1.78	36.0	1.89	38.3	2.02	43.1	2.28	47.6	2.56
	80	24.3	1.36	28.9	1.62	33.8	1.91	36.0	2.06	38.3	2.21	43.1	2.54	47.6	2.90
	85	24.3	1.44	28.9	1.71	33.8	2.02	36.0	2.19	38.3	2.35	43.1	2.71	47.6	3.09
	90	24.3	1.61	28.9	1.92	33.8	2.28	36.0	2.45	38.3	2.65	43.1	3.06	47.6	3.50
	95	24.3	1.70	28.9	2.03	33.8	2.40	**36.0**	**2.61**	38.3	2.81	43.1	3.25	47.6	3.72
	100	24.3	1.79	28.9	2.15	33.8	2.54	36.0	2.76	38.3	2.98	43.1	3.45	47.6	3.95
	105	24.3	1.96	28.9	2.37	33.8	2.81	36.0	3.05	38.3	3.30	43.1	3.83	47.6	4.40
	110	24.3	2.16	28.9	2.62	33.8	3.12	36.0	3.39	38.3	3.67	43.1	4.27	47.6	4.91
	115	24.3	2.31	28.9	2.81	33.8	3.35	36.0	3.64	38.3	3.95	43.1	4.60	47.6	5.29
	118	24.3	2.50	28.9	3.05	33.8	3.64	36.0	3.96	38.3	4.30	43.1	4.83	47.6	5.44
	122	24.3	2.76	28.9	3.37	33.8	4.03	36.0	4.40	38.3	4.23	40.5	3.66	40.2	4.13

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).
Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.
The System Combination Ratio must be between 50–130%.

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.
Nominal cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB), and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).

COOLING CAPACITY DATA

MULTI V S THREE-PHASE

ARUN096BSS5

96,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp. (°F DB)	Indoor Air Temp. °F DB/°F WB													
		68/57		73/61		79/64		80/67		85/70		88/73		91/76	
		TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
130%	-9.9	87.3	2.86	103.7	3.47	120.5	4.12	125.0	4.45	126.7	4.80	131.1	5.50	134.3	5.68
	-4	87.3	3.02	103.7	3.66	120.5	4.35	125.0	4.69	126.7	5.06	131.1	5.80	134.3	5.99
	0	87.3	3.14	103.7	3.81	120.5	4.52	125.0	4.88	126.7	5.26	131.1	6.03	134.3	6.23
	5	87.3	3.25	103.7	3.95	120.5	4.69	125.0	5.06	126.7	5.46	131.1	6.25	134.3	6.46
	10	87.3	3.35	103.7	4.06	120.5	4.82	125.0	5.20	126.7	5.61	131.1	6.43	134.3	6.65
	14	87.3	3.47	103.7	4.21	120.5	5.00	125.0	5.39	126.7	5.82	131.1	6.67	134.3	6.89
	20	87.3	3.53	103.7	4.28	120.5	5.07	125.0	5.47	126.7	5.90	131.1	6.76	134.3	6.99
	25	87.3	3.58	103.7	4.33	120.5	5.13	125.0	5.54	126.7	5.96	131.1	6.84	134.3	7.07
	30	87.3	3.63	103.7	4.39	120.5	5.19	125.0	5.61	126.7	6.03	131.1	6.91	134.3	7.15
	35	87.3	3.67	103.7	4.45	120.5	5.25	125.0	5.67	126.7	6.11	131.1	7.00	134.3	7.24
	40	87.3	3.71	103.7	4.49	120.5	5.32	125.0	5.75	126.7	6.18	131.1	7.08	134.3	7.33
	45	87.3	3.75	103.7	4.54	120.5	5.37	125.0	5.81	126.7	6.24	131.1	7.16	134.3	7.40
	50	87.3	3.79	103.7	4.59	120.5	5.42	125.0	5.86	126.7	6.30	131.1	7.22	134.3	7.48
	55	87.3	3.85	103.7	4.67	120.5	5.53	123.2	5.99	125.0	6.43	129.3	7.35	132.5	7.53
	60	87.3	3.98	103.7	4.84	118.8	5.76	120.5	6.22	121.9	6.68	126.2	7.58	129.3	7.61
	65	87.3	4.06	103.7	4.94	117.0	5.86	118.8	6.35	120.1	6.81	124.4	7.83	127.6	7.89
	70	87.3	3.91	103.7	4.75	114.8	5.84	116.1	6.43	117.9	7.06	122.2	7.84	125.3	7.92
	75	87.3	4.01	103.7	5.06	113.0	6.25	114.3	6.90	116.1	7.56	120.4	8.21	123.5	8.27
	80	87.3	4.55	103.7	5.77	109.9	7.15	111.2	7.90	113.0	8.68	117.3	8.91	120.4	8.99
	85	87.3	4.85	103.7	6.16	108.1	7.64	109.9	8.42	111.2	9.21	115.5	9.28	118.6	9.36
	90	87.3	5.49	101.9	7.00	105.0	8.68	106.4	9.60	108.1	9.93	112.3	10.01	115.5	10.10
	95	88.2	5.82	101.2	7.45	104.4	9.26	**106.1**	**10.24**	107.5	10.28	111.7	10.38	114.9	10.48
	100	88.2	6.30	99.4	8.05	102.6	10.04	104.4	10.78	105.7	10.84	110.4	10.94	113.5	11.04
	105	88.2	7.11	96.8	9.11	99.9	11.33	101.4	11.59	103.0	11.65	106.5	11.76	108.1	11.87
	110	88.2	7.98	92.7	10.27	96.6	12.36	96.9	12.42	98.4	12.46	100.4	12.58	100.8	12.70
	115	87.8	9.23	89.4	11.81	89.4	13.02	89.4	13.02	89.4	13.02	90.7	13.05	91.1	13.07
	118	76.3	7.82	77.7	10.01	77.8	10.95	77.8	11.05	77.8	11.05	78.9	11.07	78.6	11.09
	122	61.0	5.93	62.3	7.61	62.0	8.34	62.2	8.36	62.3	8.37	63.4	8.39	63.3	8.43
120%	-9.9	79.4	2.70	94.8	3.27	110.2	3.87	118.1	4.17	123.3	4.50	128.9	5.16	131.6	5.33
	-4	79.4	2.84	94.8	3.45	110.2	4.08	118.1	4.40	123.3	4.75	128.9	5.44	131.6	5.62
	0	79.4	2.96	94.8	3.59	110.2	4.25	118.1	4.58	123.3	4.94	128.9	5.66	131.6	5.85
	5	79.4	3.07	94.8	3.72	110.2	4.40	118.1	4.75	123.3	5.12	128.9	5.87	131.6	6.06
	10	79.4	3.15	94.8	3.82	110.2	4.53	118.1	4.88	123.3	5.27	128.9	6.04	131.6	6.24
	14	79.4	3.27	94.8	3.96	110.2	4.69	118.1	5.06	123.3	5.46	128.9	6.26	131.6	6.47
	20	79.4	3.32	94.8	4.02	110.2	4.76	118.1	5.14	123.3	5.53	128.9	6.34	131.6	6.56
	25	79.4	3.36	94.8	4.07	110.2	4.82	118.1	5.20	123.3	5.60	128.9	6.42	131.6	6.64
	30	79.4	3.41	94.8	4.12	110.2	4.87	118.1	5.27	123.3	5.66	128.9	6.49	131.6	6.72
	35	79.4	3.45	94.8	4.17	110.2	4.93	118.1	5.34	123.3	5.73	128.9	6.57	131.6	6.80
	40	79.4	3.49	94.8	4.22	110.2	5.00	118.1	5.40	123.3	5.81	128.9	6.65	131.6	6.89
	45	79.4	3.53	94.8	4.27	110.2	5.05	118.1	5.46	123.3	5.87	128.9	6.73	131.6	6.96
	50	79.4	3.57	94.8	4.32	110.2	5.11	118.1	5.52	123.3	5.94	128.9	6.80	131.6	7.04
	55	79.4	3.63	94.8	4.40	110.2	5.21	118.1	5.64	122.0	6.05	127.1	6.92	130.3	7.09
	60	79.4	3.75	94.8	4.56	110.2	5.42	117.2	5.86	118.5	6.29	124.0	7.14	126.7	7.26
	65	79.4	3.83	94.8	4.65	110.2	5.52	115.4	5.98	117.2	6.41	122.2	7.38	125.3	7.43
	70	79.4	3.75	94.8	4.56	110.2	5.61	113.2	6.17	114.6	6.77	120.0	7.52	122.7	7.60
	75	79.4	3.85	94.8	4.86	110.2	6.00	111.5	6.62	113.2	7.26	118.2	7.88	121.3	7.94
	80	79.4	4.37	94.8	5.54	107.1	6.87	108.4	7.58	109.7	8.33	115.1	8.56	117.7	8.63
	85	79.4	4.65	94.8	5.91	105.3	7.34	106.7	8.09	108.4	8.84	113.3	8.91	116.4	8.99
	90	79.4	5.27	94.8	6.72	102.3	8.33	103.6	9.21	104.9	9.53	110.1	9.61	112.8	9.70
	95	80.3	5.59	95.8	7.15	101.6	8.89	**102.9**	**9.83**	104.7	9.87	109.5	9.96	112.6	10.06
	100	80.3	6.05	95.8	7.73	99.8	9.64	101.6	10.35	102.9	10.40	108.1	10.50	110.8	10.60
	105	80.3	6.82	94.3	8.75	97.1	10.88	98.7	11.13	100.0	11.19	105.0	11.28	106.7	11.39
	110	80.3	7.66	91.9	9.86	94.9	11.86	95.1	11.92	96.6	11.96	99.6	12.08	99.9	12.19
	115	78.1	8.86	88.5	11.34	88.5	12.50	88.5	12.50	88.5	12.50	90.7	12.53	91.1	12.55
	118	69.7	7.82	77.0	9.61	77.1	10.51	77.1	10.61	77.1	10.61	79.0	10.63	78.6	10.65
	122	55.7	5.93	61.7	7.31	61.4	8.00	61.6	8.02	61.7	8.03	63.4	8.06	63.3	8.09

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB), and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).

COOLING CAPACITY DATA

ARUN096BSS5

96,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp. (°F DB)	Indoor Air Temp. °F DB/°F WB													
		68/57		73/61		79/64		80/67		85/70		88/73		91/76	
		TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
110%	-9.9	73.6	2.48	87.8	2.99	102.0	3.55	109.1	3.85	116.2	4.12	128.0	4.70	130.7	4.88
	-4	73.6	2.62	87.8	3.16	102.0	3.74	109.1	4.06	116.2	4.35	128.0	4.96	130.7	5.15
	0	73.6	2.72	87.8	3.29	102.0	3.89	109.1	4.22	116.2	4.52	128.0	5.16	130.7	5.35
	5	73.6	2.82	87.8	3.41	102.0	4.04	109.1	4.38	116.2	4.69	128.0	5.35	130.7	5.55
	10	73.6	2.90	87.8	3.50	102.0	4.15	109.1	4.50	116.2	4.82	128.0	5.50	130.7	5.71
	14	73.6	3.01	87.8	3.63	102.0	4.30	109.1	4.66	116.2	5.00	128.0	5.70	130.7	5.92
	20	73.6	3.05	87.8	3.69	102.0	4.37	109.1	4.73	116.2	5.07	128.0	5.80	130.7	6.01
	25	73.6	3.09	87.8	3.74	102.0	4.42	109.1	4.78	116.2	5.14	128.0	5.88	130.7	6.08
	30	73.6	3.13	87.8	3.78	102.0	4.48	109.1	4.84	116.2	5.20	128.0	5.96	130.7	6.16
	35	73.6	3.17	87.8	3.84	102.0	4.54	109.1	4.91	116.2	5.28	128.0	6.05	130.7	6.26
	40	73.6	3.22	87.8	3.89	102.0	4.60	109.1	4.98	116.2	5.35	128.0	6.13	130.7	6.34
	45	73.6	3.27	87.8	3.95	102.0	4.68	109.1	5.06	116.2	5.44	128.0	6.23	130.7	6.45
	50	73.6	3.32	87.8	4.02	102.0	4.76	109.1	5.14	116.2	5.53	128.0	6.33	130.7	6.55
	55	73.6	3.38	87.8	4.09	102.0	4.85	109.1	5.25	116.2	5.64	126.2	6.45	128.9	6.61
	60	73.6	3.49	87.8	4.24	102.0	5.05	109.1	5.45	116.2	5.86	123.1	6.65	125.8	6.71
	65	73.6	3.56	87.8	4.33	102.0	5.14	109.1	5.56	116.2	5.97	121.2	6.87	124.0	6.92
	70	73.6	3.60	87.8	4.37	102.0	5.38	109.1	5.92	114.0	6.49	119.0	7.21	121.7	7.29
	75	73.6	3.69	87.8	4.66	102.0	5.76	109.1	6.35	112.2	6.96	117.2	7.56	119.9	7.61
	80	72.9	4.19	86.9	5.31	101.0	6.58	106.7	7.27	108.0	7.99	112.8	8.20	115.5	8.28
	85	72.9	4.46	86.9	5.67	101.0	7.03	104.9	7.75	106.2	8.47	111.0	8.55	113.7	8.62
	90	72.9	5.06	86.9	6.44	100.5	7.99	101.8	8.83	103.2	9.14	107.9	9.21	110.6	9.30
	95	72.9	5.36	86.9	6.85	98.8	8.53	**100.1**	**9.43**	101.4	9.46	106.1	9.55	108.8	9.64
	100	72.9	5.80	86.9	7.41	97.5	9.24	98.8	9.92	100.1	9.98	104.8	10.07	107.5	10.16
	105	72.9	6.54	86.9	8.39	94.4	10.43	95.7	10.67	97.0	10.73	101.7	10.82	104.3	10.93
	110	72.9	7.35	86.9	9.45	91.5	11.37	91.8	11.43	93.1	11.47	96.0	11.58	96.4	11.69
	115	72.9	8.50	86.9	10.87	87.6	11.99	87.6	11.99	88.0	11.99	89.8	12.01	90.2	12.03
	118	70.4	7.74	75.6	9.21	76.3	10.08	76.3	10.17	76.6	10.17	78.2	10.19	77.8	10.21
	122	56.3	5.87	60.6	7.00	60.8	7.68	60.9	7.69	61.4	7.70	62.8	7.73	62.6	7.76
100%	-9.9	64.7	2.18	77.1	2.63	89.6	3.12	96.0	3.40	105.5	3.68	118.3	4.25	124.9	4.42
	-4	64.7	2.30	77.1	2.78	89.6	3.29	96.0	3.59	105.5	3.88	118.3	4.48	124.9	4.67
	0	64.7	2.40	77.1	2.89	89.6	3.43	96.0	3.73	105.5	4.04	118.3	4.66	124.9	4.85
	5	64.7	2.48	77.1	3.00	89.6	3.55	96.0	3.87	105.5	4.19	118.3	4.83	124.9	5.03
	10	64.7	2.56	77.1	3.08	89.6	3.65	96.0	3.98	105.5	4.31	118.3	4.97	124.9	5.18
	14	64.7	2.65	77.1	3.19	89.6	3.79	96.0	4.13	105.5	4.47	118.3	5.15	124.9	5.36
	20	64.7	2.73	77.1	3.30	89.6	3.91	96.0	4.24	105.5	4.61	118.3	5.30	124.9	5.52
	25	64.7	2.80	77.1	3.39	89.6	4.01	96.0	4.34	105.5	4.73	118.3	5.43	124.9	5.65
	30	64.7	2.87	77.1	3.47	89.6	4.11	96.0	4.44	105.5	4.84	118.3	5.55	124.9	5.77
	35	64.7	2.91	77.1	3.53	89.6	4.17	96.0	4.51	105.5	4.92	118.3	5.65	124.9	5.87
	40	64.7	2.96	77.1	3.58	89.6	4.24	96.0	4.58	105.5	5.00	118.3	5.73	124.9	5.96
	45	64.7	3.03	77.1	3.66	89.6	4.32	96.0	4.68	105.5	5.10	118.3	5.85	124.9	6.08
	50	64.7	3.09	77.1	3.73	89.6	4.41	96.0	4.77	105.5	5.21	118.3	5.97	124.9	6.21
	55	64.7	3.14	77.1	3.80	89.6	4.50	96.0	4.88	105.5	5.31	118.3	6.07	123.6	6.30
	60	64.7	3.24	77.1	3.94	89.6	4.69	96.0	5.06	105.5	5.52	117.9	6.26	120.1	6.41
	65	64.7	3.31	77.1	4.02	89.6	4.77	96.0	5.16	105.5	5.62	116.1	6.47	118.7	6.60
	70	64.7	3.41	77.1	4.14	89.6	5.10	96.0	5.61	105.5	6.25	113.9	6.94	116.1	7.06
	75	64.7	3.49	77.1	4.41	89.6	5.45	96.0	6.02	105.5	6.70	112.1	7.27	114.8	7.35
	80	64.7	3.97	77.1	5.03	89.6	6.24	96.0	6.89	105.5	7.68	109.0	7.89	111.2	8.00
	85	64.7	4.23	77.1	5.37	89.6	6.66	96.0	7.35	105.1	8.15	107.3	8.22	109.9	8.33
	90	64.7	4.79	77.1	6.10	89.6	7.57	96.0	8.37	101.5	8.79	104.2	8.86	106.4	8.99
	95	64.7	5.08	77.1	6.49	89.6	8.08	**96.0**	**8.93**	100.2	9.10	102.4	9.19	105.1	9.32
	100	64.7	5.49	77.1	7.01	89.6	8.74	94.3	9.38	98.5	9.57	101.1	9.66	103.3	9.80
	105	64.7	6.16	77.1	7.90	89.1	9.83	91.7	10.05	95.5	10.25	98.0	10.34	100.4	10.49
	110	64.7	6.89	77.1	8.87	88.1	10.67	90.0	10.72	91.9	10.92	93.3	11.02	95.0	11.18
	115	64.7	7.91	77.1	10.12	83.8	11.17	86.4	11.17	88.6	11.33	89.4	11.35	89.8	11.43
	118	64.7	7.98	67.7	9.50	73.0	9.39	75.2	9.47	77.1	9.62	77.8	9.63	77.5	9.70
	122	55.4	7.23	54.3	7.22	58.2	7.15	60.1	7.16	61.8	7.28	62.5	7.30	62.4	7.37

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping. 0 ft. level difference between outdoor and indoor units.

Nominal cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB), and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).

COOLING CAPACITY DATA

MULTI V S THREE-PHASE

ARUN096BSS5

96,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp. (°F DB)	Indoor Air Temp. °F DB/°F WB													
		68/57		73/61		79/64		80/67		85/70		88/73		91/76	
		TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
90%	-9.9	58.3	1.95	69.4	2.33	81.0	2.76	86.6	2.97	92.1	3.17	103.3	3.65	114.4	4.01
	-4	58.3	2.06	69.4	2.46	81.0	2.91	86.6	3.13	92.1	3.34	103.3	3.85	114.4	4.23
	0	58.3	2.14	69.4	2.56	81.0	3.03	86.6	3.25	92.1	3.48	103.3	4.01	114.4	4.40
	5	58.3	2.22	69.4	2.66	81.0	3.14	86.6	3.37	92.1	3.60	103.3	4.15	114.4	4.56
	10	58.3	2.28	69.4	2.73	81.0	3.23	86.6	3.47	92.1	3.71	103.3	4.27	114.4	4.69
	14	58.3	2.36	69.4	2.83	81.0	3.34	86.6	3.60	92.1	3.84	103.3	4.43	114.4	4.86
	20	58.3	2.45	69.4	2.94	81.0	3.47	86.6	3.73	92.1	4.00	103.3	4.58	114.4	5.04
	25	58.3	2.52	69.4	3.03	81.0	3.57	86.6	3.85	92.1	4.14	103.3	4.72	114.4	5.20
	30	58.3	2.59	69.4	3.12	81.0	3.68	86.6	3.96	92.1	4.27	103.3	4.85	114.4	5.35
	35	58.3	2.67	69.4	3.22	81.0	3.79	86.6	4.08	92.1	4.39	103.3	4.99	114.4	5.52
	40	58.3	2.75	69.4	3.31	81.0	3.90	86.6	4.21	92.1	4.53	103.3	5.14	114.4	5.68
	45	58.3	2.81	69.4	3.39	81.0	3.99	86.6	4.31	92.1	4.64	103.3	5.26	114.4	5.81
	50	58.3	2.87	69.4	3.46	81.0	4.08	86.6	4.40	92.1	4.74	103.3	5.38	114.4	5.94
	55	58.3	2.91	69.4	3.51	81.0	4.15	86.6	4.49	92.1	4.83	103.3	5.49	114.4	6.00
	60	58.3	3.02	69.4	3.66	81.0	4.31	86.6	4.67	92.1	5.02	103.3	5.70	113.5	6.06
	65	58.3	3.07	69.4	3.73	81.0	4.40	86.6	4.76	92.1	5.11	103.3	5.80	112.7	6.37
	70	58.3	3.16	69.4	3.83	81.0	4.56	86.6	5.02	92.1	5.48	103.3	6.47	110.6	6.84
	75	58.3	3.21	69.4	4.01	81.0	4.88	86.6	5.38	92.1	5.89	103.3	6.75	108.9	7.15
	80	58.3	3.60	69.4	4.54	81.0	5.57	86.6	6.14	92.1	6.73	103.3	7.47	105.9	7.77
	85	58.3	3.83	69.4	4.84	81.0	5.96	86.6	6.55	92.1	7.19	102.0	7.86	104.1	8.09
	90	58.3	4.33	69.4	5.48	81.0	6.76	86.6	7.45	92.1	8.18	99.0	8.61	101.1	8.73
	95	58.3	4.61	69.4	5.82	81.0	7.20	**86.6**	**7.95**	92.1	8.73	97.3	8.93	99.4	9.05
	100	58.3	4.76	69.4	6.07	81.0	7.50	86.6	8.26	92.1	8.92	96.0	9.32	97.7	9.42
	105	58.3	5.52	69.4	7.04	81.0	8.49	86.6	9.05	91.1	9.57	93.0	9.99	94.3	10.11
	110	58.3	6.34	69.4	8.12	81.0	9.31	86.6	9.77	87.4	10.37	88.6	10.73	89.3	10.85
	115	58.3	6.87	69.4	8.80	75.9	9.80	82.1	10.22	83.2	10.70	84.0	10.94	84.4	11.08
	118	58.3	7.29	67.7	9.50	66.0	8.24	71.5	8.67	72.5	9.08	73.2	9.28	72.9	9.40
	122	55.4	7.23	54.3	7.22	52.6	6.28	57.1	6.56	58.1	6.88	58.7	7.04	58.6	7.14
80%	-9.9	51.9	1.69	61.7	2.03	72.0	2.36	76.7	2.56	81.9	2.76	91.7	3.16	101.6	3.52
	-4	51.9	1.78	61.7	2.14	72.0	2.49	76.7	2.70	81.9	2.92	91.7	3.33	101.6	3.71
	0	51.9	1.85	61.7	2.23	72.0	2.59	76.7	2.81	81.9	3.03	91.7	3.46	101.6	3.86
	5	51.9	1.92	61.7	2.31	72.0	2.68	76.7	2.92	81.9	3.14	91.7	3.59	101.6	4.00
	10	51.9	1.97	61.7	2.38	72.0	2.76	76.7	3.00	81.9	3.23	91.7	3.69	101.6	4.11
	14	51.9	2.05	61.7	2.46	72.0	2.86	76.7	3.11	81.9	3.35	91.7	3.83	101.6	4.26
	20	51.9	2.12	61.7	2.55	72.0	2.98	76.7	3.23	81.9	3.47	91.7	3.97	101.6	4.43
	25	51.9	2.19	61.7	2.63	72.0	3.07	76.7	3.32	81.9	3.56	91.7	4.08	101.6	4.56
	30	51.9	2.25	61.7	2.70	72.0	3.17	76.7	3.42	81.9	3.66	91.7	4.20	101.6	4.70
	35	51.9	2.31	61.7	2.78	72.0	3.26	76.7	3.51	81.9	3.76	91.7	4.31	101.6	4.83
	40	51.9	2.38	61.7	2.85	72.0	3.34	76.7	3.61	81.9	3.86	91.7	4.43	101.6	4.96
	45	51.9	2.41	61.7	2.89	72.0	3.39	76.7	3.66	81.9	3.91	91.7	4.49	101.6	5.03
	50	51.9	2.44	61.7	2.93	72.0	3.44	76.7	3.71	81.9	3.97	91.7	4.55	101.6	5.10
	55	51.9	2.48	61.7	2.98	72.0	3.50	76.7	3.77	81.9	4.04	91.7	4.64	101.6	5.19
	60	51.9	2.57	61.7	3.08	72.0	3.62	76.7	3.91	81.9	4.21	91.7	4.80	101.6	5.40
	65	51.9	2.61	61.7	3.14	72.0	3.70	76.7	3.98	81.9	4.29	91.7	4.89	101.6	5.52
	70	51.9	2.68	61.7	3.23	72.0	3.81	76.7	4.11	81.9	4.47	91.7	5.27	101.6	6.10
	75	51.9	2.73	61.7	3.29	72.0	3.99	76.7	4.38	81.9	4.76	91.7	5.61	101.6	6.44
	80	51.9	2.99	61.7	3.73	72.0	4.55	76.7	4.97	81.9	5.43	91.7	6.45	101.6	7.19
	85	51.9	3.19	61.7	3.97	72.0	4.85	76.7	5.31	81.9	5.82	91.7	6.87	101.6	7.38
	90	51.9	3.59	61.7	4.50	72.0	5.48	**76.7**	**6.03**	81.9	6.61	91.7	7.55	99.9	7.82
	95	51.9	3.81	61.7	4.76	72.0	5.86	**76.7**	**6.40**	81.9	7.03	91.7	7.82	97.8	8.03
	100	51.9	4.11	61.7	5.14	72.0	6.31	76.7	6.86	81.9	7.31	91.7	8.14	95.6	8.29
	105	51.9	4.68	61.7	5.88	72.0	7.03	76.7	7.36	81.9	7.84	90.6	8.46	92.8	8.70
	110	51.9	5.31	61.7	6.70	72.0	7.46	76.7	7.86	81.9	8.45	87.4	8.77	87.9	9.15
	115	51.9	5.68	61.7	7.16	72.0	7.71	76.7	8.26	76.7	8.65	77.2	8.97	77.2	9.51
	118	51.9	6.03	61.7	7.61	66.0	8.24	67.4	7.84	66.8	7.34	67.2	7.61	66.6	8.07
	122	51.9	6.52	54.4	7.18	52.6	6.28	53.8	5.93	53.5	5.55	54.0	5.77	53.6	6.13

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping. 0 ft. level difference between outdoor and indoor units.

Nominal cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB), and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).

COOLING CAPACITY DATA

ARUN096BSS5

96,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp. (°F DB)	Indoor Air Temp. °F DB/°F WB													
		68/57		73/61		79/64		80/67		85/70		88/73		91/76	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
70%	-9.9	45.4	1.49	54.0	1.77	63.0	2.08	67.3	2.23	71.6	2.38	80.1	2.72	89.1	3.05
	-4	45.4	1.57	54.0	1.87	63.0	2.20	67.3	2.35	71.6	2.51	80.1	2.87	89.1	3.21
	0	45.4	1.63	54.0	1.94	63.0	2.29	67.3	2.45	71.6	2.61	80.1	2.99	89.1	3.34
	5	45.4	1.69	54.0	2.01	63.0	2.37	67.3	2.54	71.6	2.70	80.1	3.10	89.1	3.46
	10	45.4	1.74	54.0	2.07	63.0	2.44	67.3	2.61	71.6	2.78	80.1	3.18	89.1	3.56
	14	45.4	1.81	54.0	2.15	63.0	2.53	67.3	2.70	71.6	2.88	80.1	3.30	89.1	3.69
	20	45.4	1.87	54.0	2.22	63.0	2.61	67.3	2.79	71.6	2.98	80.1	3.41	89.1	3.82
	25	45.4	1.92	54.0	2.28	63.0	2.67	67.3	2.87	71.6	3.06	80.1	3.49	89.1	3.92
	30	45.4	1.97	54.0	2.34	63.0	2.74	67.3	2.94	71.6	3.15	80.1	3.58	89.1	4.02
	35	45.4	2.03	54.0	2.40	63.0	2.81	67.3	3.02	71.6	3.23	80.1	3.67	89.1	4.14
	40	45.4	2.08	54.0	2.46	63.0	2.88	67.3	3.10	71.6	3.31	80.1	3.77	89.1	4.24
	45	45.4	2.11	54.0	2.50	63.0	2.93	67.3	3.15	71.6	3.37	80.1	3.83	89.1	4.31
	50	45.4	2.15	54.0	2.54	63.0	2.98	67.3	3.20	71.6	3.42	80.1	3.90	89.1	4.38
	55	45.4	2.18	54.0	2.59	63.0	3.03	67.3	3.25	71.6	3.49	80.1	3.97	89.1	4.47
	60	45.4	2.25	54.0	2.68	63.0	3.14	67.3	3.37	71.6	3.61	80.1	4.12	89.1	4.64
	65	45.4	2.28	54.0	2.73	63.0	3.19	67.3	3.44	71.6	3.68	80.1	4.19	89.1	4.71
	70	45.4	2.34	54.0	2.80	63.0	3.29	67.3	3.54	71.6	3.80	80.1	4.34	89.1	5.01
	75	45.4	2.38	54.0	2.85	63.0	3.35	67.3	3.66	71.6	3.97	80.1	4.64	89.1	5.31
	80	45.4	2.57	54.0	3.15	63.0	3.81	67.3	4.16	71.6	4.50	80.1	5.13	89.1	5.89
	85	45.4	2.73	54.0	3.35	63.0	4.06	67.3	4.43	71.6	4.85	80.1	5.47	89.1	6.14
	90	45.4	3.06	54.0	3.78	63.0	4.59	67.3	5.01	71.6	5.48	80.1	6.09	89.1	6.66
	95	45.4	3.24	54.0	4.02	63.0	4.89	**67.3**	**5.35**	71.6	5.82	80.1	6.41	89.1	6.86
	100	45.4	3.50	54.0	4.34	63.0	5.27	67.3	5.77	71.6	5.99	80.1	6.71	89.1	7.05
	105	45.4	3.97	54.0	4.95	63.0	5.81	67.3	6.15	71.6	6.51	80.1	7.07	89.1	7.47
	110	45.4	4.47	54.0	5.61	63.0	6.15	67.3	6.53	71.6	7.06	80.1	7.36	86.6	8.03
	115	45.4	4.80	54.0	5.98	63.0	6.36	67.3	6.90	71.6	7.26	80.1	7.58	81.6	8.55
	118	45.4	5.10	54.0	6.35	63.0	6.76	67.3	7.31	65.1	7.26	67.2	6.43	66.6	7.25
	122	45.4	5.50	54.0	6.88	56.2	6.46	53.8	6.01	52.2	5.50	54.0	4.88	53.6	5.51
60%	-9.9	39.0	1.29	46.3	1.50	54.0	1.76	57.4	1.88	61.3	2.02	69.0	2.29	76.3	2.56
	-4	39.0	1.36	46.3	1.58	54.0	1.86	57.4	1.98	61.3	2.14	69.0	2.42	76.3	2.70
	0	39.0	1.42	46.3	1.65	54.0	1.93	57.4	2.06	61.3	2.22	69.0	2.52	76.3	2.81
	5	39.0	1.47	46.3	1.71	54.0	2.00	57.4	2.14	61.3	2.30	69.0	2.61	76.3	2.91
	10	39.0	1.51	46.3	1.75	54.0	2.06	57.4	2.20	61.3	2.37	69.0	2.68	76.3	3.00
	14	39.0	1.57	46.3	1.82	54.0	2.13	57.4	2.28	61.3	2.45	69.0	2.78	76.3	3.11
	20	39.0	1.61	46.3	1.88	54.0	2.20	57.4	2.36	61.3	2.53	69.0	2.87	76.3	3.21
	25	39.0	1.65	46.3	1.94	54.0	2.26	57.4	2.43	61.3	2.60	69.0	2.95	76.3	3.30
	30	39.0	1.69	46.3	1.99	54.0	2.32	57.4	2.49	61.3	2.66	69.0	3.02	76.3	3.39
	35	39.0	1.73	46.3	2.05	54.0	2.38	57.4	2.55	61.3	2.73	69.0	3.10	76.3	3.48
	40	39.0	1.78	46.3	2.10	54.0	2.44	57.4	2.62	61.3	2.80	69.0	3.18	76.3	3.57
	45	39.0	1.80	46.3	2.12	54.0	2.46	57.4	2.64	61.3	2.83	69.0	3.21	76.3	3.60
	50	39.0	1.81	46.3	2.13	54.0	2.48	57.4	2.67	61.3	2.85	69.0	3.24	76.3	3.63
	55	39.0	1.84	46.3	2.17	54.0	2.53	57.4	2.72	61.3	2.90	69.0	3.30	76.3	3.70
	60	39.0	1.90	46.3	2.25	54.0	2.62	57.4	2.82	61.3	3.01	69.0	3.41	76.3	3.85
	65	39.0	1.92	46.3	2.28	54.0	2.67	57.4	2.87	61.3	3.06	69.0	3.49	76.3	3.92
	70	39.0	1.97	46.3	2.34	54.0	2.74	57.4	2.94	61.3	3.15	69.0	3.59	76.3	4.07
	75	39.0	2.01	46.3	2.38	54.0	2.79	57.4	3.00	61.3	3.25	69.0	3.80	76.3	4.33
	80	39.0	2.13	46.3	2.61	54.0	3.13	57.4	3.41	61.3	3.70	69.0	4.25	76.3	4.90
	85	39.0	2.27	46.3	2.77	54.0	3.32	57.4	3.63	61.3	3.96	69.0	4.48	76.3	5.05
	90	39.0	2.54	46.3	3.13	54.0	3.76	57.4	4.11	61.3	4.44	69.0	5.00	76.3	5.51
	95	39.0	2.69	46.3	3.31	54.0	3.99	**57.4**	**4.38**	61.3	4.71	69.0	5.23	76.3	5.81
	100	39.0	2.89	46.3	3.56	54.0	4.30	57.4	4.71	61.3	4.92	69.0	5.55	76.3	6.05
	105	39.0	3.29	46.3	4.06	54.0	4.75	57.4	5.03	61.3	5.35	69.0	5.90	76.3	6.60
	110	39.0	3.70	46.3	4.60	54.0	5.13	57.4	5.33	61.3	5.78	69.0	6.30	76.3	7.20
	115	39.0	3.96	46.3	4.91	54.0	5.33	57.4	5.64	61.3	5.99	69.0	6.66	76.3	7.69
	118	39.0	4.19	46.3	5.21	54.0	5.66	57.4	6.00	61.3	6.37	67.2	6.43	66.6	7.25
	122	39.0	4.52	46.3	5.63	54.0	6.13	53.6	6.08	51.9	5.63	54.0	4.88	53.6	5.51

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB), and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).

COOLING CAPACITY DATA

MULTI V S THREE-PHASE

ARUN096BSS5

96,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp. (°F DB)	Indoor Air Temp. °F DB/°F WB													
		68/57		73/61		79/64		80/67		85/70		88/73		91/76	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
50%	-9.9	32.4	1.11	38.6	1.31	45.0	1.46	48.0	1.58	51.0	1.70	57.4	1.88	63.4	2.09
	-4	32.4	1.17	38.6	1.38	45.0	1.54	48.0	1.66	51.0	1.79	57.4	1.99	63.4	2.20
	0	32.4	1.22	38.6	1.43	45.0	1.60	48.0	1.73	51.0	1.86	57.4	2.06	63.4	2.29
	5	32.4	1.26	38.6	1.49	45.0	1.66	48.0	1.79	51.0	1.93	57.4	2.14	63.4	2.37
	10	32.4	1.30	38.6	1.53	45.0	1.71	48.0	1.84	51.0	1.98	57.4	2.20	63.4	2.44
	14	32.4	1.35	38.6	1.58	45.0	1.77	48.0	1.91	51.0	2.06	57.4	2.28	63.4	2.53
	20	32.4	1.40	38.6	1.63	45.0	1.85	48.0	1.98	51.0	2.12	57.4	2.36	63.4	2.63
	25	32.4	1.44	38.6	1.67	45.0	1.91	48.0	2.04	51.0	2.18	57.4	2.43	63.4	2.71
	30	32.4	1.48	38.6	1.72	45.0	1.97	48.0	2.09	51.0	2.24	57.4	2.50	63.4	2.79
	35	32.4	1.52	38.6	1.76	45.0	2.02	48.0	2.15	51.0	2.30	57.4	2.57	63.4	2.86
	40	32.4	1.56	38.6	1.81	45.0	2.07	48.0	2.20	51.0	2.35	57.4	2.63	63.4	2.93
	45	32.4	1.58	38.6	1.83	45.0	2.10	48.0	2.23	51.0	2.38	57.4	2.67	63.4	2.97
	50	32.4	1.60	38.6	1.86	45.0	2.13	48.0	2.27	51.0	2.42	57.4	2.71	63.4	3.02
	55	32.4	1.64	38.6	1.89	45.0	2.16	48.0	2.30	51.0	2.45	57.4	2.76	63.4	3.07
	60	32.4	1.67	38.6	1.94	45.0	2.23	48.0	2.39	51.0	2.54	57.4	2.85	63.4	3.19
	65	32.4	1.69	38.6	1.98	45.0	2.27	48.0	2.42	51.0	2.57	57.4	2.90	63.4	3.24
	70	32.4	1.74	38.6	2.01	45.0	2.32	48.0	2.49	51.0	2.64	57.4	2.98	63.4	3.34
	75	32.4	1.76	38.6	2.05	45.0	2.37	48.0	2.52	51.0	2.69	57.4	3.03	63.4	3.41
	80	32.4	1.81	38.6	2.16	45.0	2.54	48.0	2.74	51.0	2.95	57.4	3.39	63.4	3.87
	85	32.4	1.93	38.6	2.28	45.0	2.69	48.0	2.91	51.0	3.14	57.4	3.61	63.4	4.13
	90	32.4	2.15	38.6	2.56	45.0	3.03	48.0	3.27	51.0	3.53	57.4	4.07	63.4	4.67
	95	32.4	2.27	38.6	2.71	45.0	3.20	**48.0**	**3.48**	51.0	3.75	57.4	4.33	63.4	4.96
	100	32.4	2.39	38.6	2.86	45.0	3.39	48.0	3.68	51.0	3.97	57.4	4.60	63.4	5.27
	105	32.4	2.61	38.6	3.16	45.0	3.75	48.0	4.06	51.0	4.39	57.4	5.10	63.4	5.86
	110	32.4	2.88	38.6	3.49	45.0	4.16	48.0	4.52	51.0	4.89	57.4	5.69	63.4	6.55
	115	32.4	3.09	38.6	3.75	45.0	4.47	48.0	4.86	51.0	5.27	57.4	6.14	63.4	7.06
	118	32.4	3.33	38.6	4.07	45.0	4.85	48.0	5.28	51.0	5.73	57.4	6.43	63.4	7.25
	122	32.4	3.68	38.6	4.50	45.0	5.37	48.0	5.87	51.0	5.63	54.0	4.88	53.6	5.51

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

Cooling with the Low Ambient Wind Baffle (sold separately) is covered to -9.9°F.

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping. 0 ft. level difference between outdoor and indoor units.

Nominal cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB), and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).

HEATING CAPACITY DATA

ARUN072BSS5

72,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp.		Indoor Air Temp. °F DB															
			59		61		64		67		70		73		76		80	
	°F DB	°F WB	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
130	-12.6	-13.0	58.1	3.75	57.5	4.10	56.5	4.62	55.9	5.11	55.3	5.59	54.8	6.14	54.5	6.44	54.2	6.83
	-7.0	-7.6	66.2	4.40	65.5	4.74	64.4	5.25	63.7	5.71	63.0	6.18	62.5	6.66	62.2	6.91	61.7	7.24
	-4.0	-4.4	71.1	4.79	70.3	5.13	69.1	5.63	68.4	6.08	67.6	6.53	67.1	6.98	66.7	7.19	66.3	7.48
	0.0	-0.4	77.1	5.28	76.2	5.61	75.0	6.10	74.2	6.53	73.3	6.96	72.7	7.36	72.4	7.54	71.9	7.78
	5.0	4.5	84.6	5.88	83.7	6.20	82.3	6.68	81.4	7.09	80.5	7.51	79.8	7.84	79.4	7.98	78.9	8.15
	10.0	9.0	92.1	6.49	91.1	6.80	89.6	7.26	88.6	7.66	87.6	8.05	86.9	8.33	86.5	8.41	85.9	8.53
	15.0	14.0	99.5	7.08	98.4	7.38	96.8	7.83	95.7	8.21	94.6	8.58	93.8	8.77	93.4	8.76	92.7	8.73
	20.0	19.0	106.5	7.70	105.6	7.99	104.2	8.43	103.0	8.58	101.7	8.74	98.5	8.56	93.0	8.38	85.6	8.14
	25.0	23.0	108.0	8.47	108.2	8.59	108.3	8.76	106.7	8.64	105.1	8.53	98.7	8.16	92.9	7.98	85.1	7.74
	30.0	28.0	108.2	8.78	108.2	8.75	108.2	8.71	106.6	8.41	105.1	8.10	98.7	7.75	92.9	7.58	85.1	7.35
	35.0	32.0	108.2	8.95	108.2	8.71	108.2	8.36	106.6	8.02	105.1	7.67	98.7	7.35	92.9	7.18	85.1	6.95
	40.0	36.0	108.2	8.59	108.2	8.27	108.2	7.79	106.6	7.52	105.1	7.25	98.7	6.95	92.9	6.78	85.1	6.55
	45.0	41.0	108.2	7.63	108.2	7.47	108.2	7.23	106.6	7.03	105.1	6.82	98.7	6.54	92.9	6.37	85.1	6.15
	47.0	43.0	108.2	7.43	108.2	7.28	108.2	7.04	106.6	6.84	**105.1**	**6.64**	98.7	6.36	92.9	6.20	85.1	5.99
	50.0	46.0	108.2	7.16	108.2	7.01	108.2	6.78	106.6	6.59	105.1	6.39	98.7	6.13	92.9	5.98	85.1	5.77
	55.0	51.0	108.2	6.72	108.2	6.58	108.2	6.36	106.6	6.18	105.1	6.00	98.7	5.75	92.9	5.61	85.1	5.41
	60.0	56.0	108.2	6.25	108.2	6.12	108.2	5.92	106.6	5.75	105.1	5.58	98.7	5.35	92.9	5.22	85.1	5.03
120	-12.6	-13.0	56.6	4.30	56.3	4.57	55.7	4.98	55.3	5.34	54.9	5.70	54.4	5.93	54.2	5.98	53.8	6.05
	-7.0	-7.6	65.4	4.92	64.7	5.19	63.8	5.60	63.2	5.96	62.5	6.32	62.0	6.55	61.7	6.60	61.3	6.67
	-4.0	-4.4	70.2	5.29	69.5	5.56	68.5	5.97	67.8	6.33	67.1	6.69	66.6	6.92	66.2	6.97	65.8	7.04
	0.0	-0.4	76.1	5.74	75.4	6.02	74.3	6.43	73.5	6.79	72.8	7.15	72.2	7.37	71.8	7.43	71.4	7.49
	5.0	4.5	83.5	6.31	82.7	6.59	81.5	7.00	80.7	7.36	79.9	7.72	79.2	7.95	78.8	8.00	78.3	8.07
	10.0	9.0	90.9	6.88	90.1	7.16	88.8	7.57	87.9	7.93	87.0	8.29	86.3	8.52	85.8	8.57	85.3	8.64
	15.0	14.0	98.2	7.44	97.2	7.72	95.9	8.13	94.9	8.49	93.9	8.85	91.6	9.03	87.7	8.99	82.5	8.94
	20.0	19.0	105.4	8.02	104.4	8.30	103.0	8.71	100.8	8.74	98.6	8.76	92.9	8.60	87.2	8.55	79.7	8.49
	25.0	23.0	108.0	8.88	107.3	8.87	106.2	8.85	102.4	8.59	98.6	8.33	92.9	8.18	87.2	8.12	79.7	8.04
	30.0	28.0	108.0	8.90	107.3	8.68	106.2	8.35	102.4	8.12	98.6	7.90	92.9	7.76	87.2	7.69	79.7	7.60
	35.0	32.0	108.0	8.32	107.3	8.13	106.2	7.85	102.4	7.66	98.6	7.46	92.9	7.33	87.2	7.25	79.7	7.15
	40.0	36.0	108.0	7.74	107.3	7.59	106.2	7.35	102.4	7.19	98.6	7.03	92.9	6.91	87.2	6.82	79.7	6.70
	45.0	41.0	108.0	7.18	107.3	7.05	106.2	6.86	102.4	6.73	98.6	6.59	92.9	6.49	87.2	6.39	79.7	6.26
	47.0	43.0	108.0	6.99	107.3	6.86	106.2	6.68	102.4	6.55	**98.6**	**6.42**	92.9	6.31	87.2	6.22	79.7	6.09
	50.0	46.0	108.0	6.73	107.3	6.61	106.2	6.43	102.4	6.31	98.6	6.18	92.9	6.08	87.2	5.99	79.7	5.87
	55.0	51.0	108.0	6.31	107.3	6.20	106.2	6.03	102.4	5.92	98.6	5.80	92.9	5.71	87.2	5.62	79.7	5.51
	60.0	56.0	108.0	5.87	107.3	5.77	106.2	5.61	102.4	5.50	98.6	5.40	92.9	5.31	87.2	5.23	79.7	5.12
110	-12.6	-13.0	55.5	5.19	55.3	5.40	55.1	5.70	54.8	6.04	54.6	6.38	54.1	7.01	53.9	7.52	53.5	8.21
	-7.0	-7.6	63.7	5.81	63.4	6.01	62.9	6.32	62.6	6.66	62.2	7.00	61.7	7.63	61.4	8.14	61.0	8.83
	-4.0	-4.4	68.7	6.18	68.2	6.38	67.6	6.69	67.2	7.03	66.8	7.37	66.2	8.00	65.9	8.51	65.4	9.19
	0.0	-0.4	74.8	6.63	74.2	6.84	73.4	7.15	72.9	7.48	72.4	7.82	71.8	8.45	71.5	8.97	71.0	9.65
	5.0	4.5	82.4	7.20	81.7	7.41	80.6	7.72	80.0	8.06	79.5	8.39	78.4	8.84	77.1	8.96	75.3	9.12
	10.0	9.0	90.0	7.77	89.1	7.98	87.8	8.29	87.2	8.63	86.5	8.96	82.9	8.85	78.8	8.68	73.3	8.46
	15.0	14.0	97.5	8.33	96.4	8.54	94.9	8.85	91.7	8.82	88.5	8.80	83.3	8.57	78.6	8.30	72.3	7.93
	20.0	19.0	106.9	9.13	103.1	9.02	97.5	8.87	93.0	8.64	88.5	8.41	83.3	8.15	78.6	7.90	72.3	7.56
	25.0	23.0	106.9	8.97	103.1	8.78	97.5	8.49	93.0	8.24	88.5	7.98	83.3	7.74	78.6	7.51	72.3	7.20
	30.0	28.0	106.9	8.51	103.1	8.29	97.5	7.97	93.0	7.76	88.5	7.55	83.3	7.34	78.6	7.12	72.3	6.83
	35.0	32.0	106.9	7.86	103.1	7.69	97.5	7.45	93.0	7.29	88.5	7.12	83.3	6.93	78.6	6.73	72.3	6.47
	40.0	36.0	106.9	7.21	103.1	7.10	97.5	6.93	93.0	6.81	88.5	6.70	83.3	6.52	78.6	6.34	72.3	6.11
	45.0	41.0	106.9	6.58	103.1	6.51	97.5	6.42	93.0	6.34	88.5	6.27	83.3	6.11	78.6	5.95	72.3	5.74
	47.0	43.0	106.9	6.41	103.1	6.34	97.5	6.25	93.0	6.17	**88.5**	**6.10**	83.3	5.95	78.6	5.80	72.3	5.59
	50.0	46.0	106.9	6.17	103.1	6.11	97.5	6.02	93.0	5.95	88.5	5.88	83.3	5.73	78.6	5.58	72.3	5.38
	55.0	51.0	106.9	5.79	103.1	5.73	97.5	5.65	93.0	5.58	88.5	5.52	83.3	5.38	78.6	5.24	72.3	5.05
	60.0	56.0	106.9	5.38	103.1	5.33	97.5	5.25	93.0	5.19	88.5	5.13	83.3	5.00	78.6	4.87	72.3	4.70

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

HEATING CAPACITY DATA

MULTI V S THREE-PHASE

ARUN072BSS5

72,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp.		Indoor Air Temp. °F DB															
			59		61		64		67		70		73		76		80	
	°F DB	°F WB	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
100	-12.6	-13.0	55.1	4.73	54.9	5.08	54.5	5.61	54.4	6.10	54.4	6.58	53.9	7.30	53.6	7.70	53.3	8.23
	-7.0	-7.6	63.2	5.52	62.9	5.81	62.5	6.24	62.2	6.71	61.9	7.18	61.4	7.91	61.1	8.29	60.7	8.79
	-4.0	-4.4	68.0	5.99	67.7	6.24	67.3	6.62	66.9	7.08	66.5	7.53	66.0	8.27	65.6	8.64	65.2	9.13
	0.0	-0.4	73.8	6.57	73.4	6.78	73.0	7.09	72.6	7.53	72.1	7.97	71.3	8.64	70.6	8.81	69.6	9.04
	5.0	4.5	80.9	7.30	80.6	7.45	80.1	7.68	79.2	8.10	78.3	8.52	75.2	8.74	72.2	8.71	68.1	8.67
	10.0	9.0	87.2	8.02	86.1	8.12	84.6	8.27	82.8	8.51	81.0	8.75	76.2	8.61	71.8	8.40	65.8	8.12
	15.0	14.0	94.1	8.79	92.1	8.78	89.0	8.76	85.0	8.70	81.0	8.64	76.2	8.19	71.8	7.94	65.8	7.61
	20.0	19.0	98.0	8.83	94.4	8.74	89.0	8.60	85.0	8.38	81.0	8.15	76.2	7.72	71.8	7.48	65.8	7.17
	25.0	23.0	98.0	8.84	94.4	8.48	89.0	7.94	85.0	7.80	81.0	7.67	76.2	7.26	71.8	7.03	65.8	6.73
	30.0	28.0	98.0	8.24	94.4	7.93	89.0	7.48	85.0	7.33	81.0	7.18	76.2	6.79	71.8	6.58	65.8	6.30
	35.0	32.0	98.0	7.63	94.4	7.39	89.0	7.02	85.0	6.86	81.0	6.70	76.2	6.33	71.8	6.13	65.8	5.86
	40.0	36.0	98.0	7.03	94.4	6.84	89.0	6.56	85.0	6.39	81.0	6.22	76.2	5.87	71.8	5.68	65.8	5.43
	45.0	41.0	98.0	6.44	94.4	6.31	89.0	6.11	85.0	5.93	81.0	5.74	76.2	5.41	71.8	5.24	65.8	5.00
	47.0	43.0	98.0	6.27	94.4	6.14	89.0	5.95	85.0	5.77	**81.0**	**5.59**	76.2	5.27	71.8	5.10	65.8	4.87
	50.0	46.0	98.0	6.04	94.4	5.91	89.0	5.73	85.0	5.56	81.0	5.38	76.2	5.07	71.8	4.91	65.8	4.69
	55.0	51.0	98.0	5.67	94.4	5.55	89.0	5.38	85.0	5.21	81.0	5.05	76.2	4.76	71.8	4.61	65.8	4.40
	60.0	56.0	98.0	5.27	94.4	5.16	89.0	5.00	85.0	4.85	81.0	4.70	76.2	4.43	71.8	4.29	65.8	4.10
90	-12.6	-13.0	54.9	5.39	54.7	5.65	54.3	6.04	54.2	6.57	54.1	7.09	53.7	7.46	53.4	7.80	53.1	8.26
	-7.0	-7.6	62.9	6.01	62.6	6.27	62.2	6.66	62.0	7.18	61.7	7.71	61.2	8.07	60.9	8.42	60.5	8.87
	-4.0	-4.4	67.7	6.38	67.4	6.64	67.0	7.03	66.6	7.55	66.2	8.08	65.7	8.29	65.4	8.30	64.9	8.31
	0.0	-0.4	73.4	6.84	73.1	7.10	72.7	7.49	72.2	7.90	71.6	8.31	68.9	8.28	65.9	8.25	61.9	8.21
	5.0	4.5	81.3	7.41	80.3	7.67	78.8	8.06	76.5	8.17	74.2	8.28	69.8	8.16	65.6	7.94	59.9	7.65
	10.0	9.0	88.8	8.19	85.8	8.24	81.3	8.30	77.8	8.28	74.2	8.25	69.8	7.86	65.6	7.51	59.9	7.04
	15.0	14.0	89.8	8.30	86.4	8.29	81.3	8.26	77.8	8.07	74.2	7.88	69.8	7.45	65.6	7.12	59.9	6.67
	20.0	19.0	89.8	8.35	86.4	8.19	81.3	7.93	77.8	7.68	74.2	7.43	69.8	7.03	65.6	6.71	59.9	6.29
	25.0	23.0	89.8	7.86	86.4	7.70	81.3	7.46	77.8	7.23	74.2	7.00	69.8	6.62	65.6	6.32	59.9	5.91
	30.0	28.0	89.8	7.36	86.4	7.21	81.3	6.99	77.8	6.77	74.2	6.56	69.8	6.21	65.6	5.92	59.9	5.54
	35.0	32.0	89.8	6.87	86.4	6.73	81.3	6.52	77.8	6.32	74.2	6.12	69.8	5.80	65.6	5.53	59.9	5.16
	40.0	36.0	89.8	6.37	86.4	6.24	81.3	6.05	77.8	5.87	74.2	5.68	69.8	5.39	65.6	5.13	59.9	4.79
	45.0	41.0	89.8	5.88	86.4	5.76	81.3	5.59	77.8	5.42	74.2	5.25	69.8	4.98	65.6	4.74	59.9	4.42
	47.0	43.0	89.8	5.73	86.4	5.61	81.3	5.44	77.8	5.27	**74.2**	**5.11**	69.8	4.85	65.6	4.61	59.9	4.30
	50.0	46.0	89.8	5.51	86.4	5.40	81.3	5.24	77.8	5.08	74.2	4.92	69.8	4.67	65.6	4.44	59.9	4.14
	55.0	51.0	89.8	5.18	86.4	5.07	81.3	4.92	77.8	4.77	74.2	4.62	69.8	4.38	65.6	4.17	59.9	3.89
	60.0	56.0	89.8	4.81	86.4	4.72	81.3	4.57	77.8	4.43	74.2	4.30	69.8	4.08	65.6	3.88	59.9	3.61
80	-12.6	-13.0	54.7	5.43	54.4	5.72	54.1	6.15	53.8	6.46	53.5	6.76	53.3	7.37	53.3	7.36	53.3	7.33
	-7.0	-7.6	62.6	6.05	62.4	6.33	62.0	6.76	61.7	7.07	61.4	7.38	60.5	7.35	59.3	7.33	57.6	7.31
	-4.0	-4.4	67.4	6.42	67.1	6.70	66.7	7.13	66.3	7.25	65.9	7.37	62.1	7.33	58.7	7.32	54.0	7.30
	0.0	-0.4	73.9	7.02	72.8	7.16	71.3	7.37	68.9	7.36	66.4	7.35	62.3	7.27	58.6	7.15	53.7	7.00
	5.0	4.5	79.1	7.38	76.6	7.37	72.9	7.35	69.7	7.34	66.4	7.32	62.3	7.00	58.6	6.78	53.7	6.50
	10.0	9.0	80.4	7.35	77.4	7.34	72.9	7.33	69.7	7.22	66.4	7.11	62.3	6.65	58.6	6.44	53.7	6.17
	15.0	14.0	80.4	7.36	77.4	7.32	72.9	7.27	69.7	7.00	66.4	6.73	62.3	6.31	58.6	6.11	53.7	5.84
	20.0	19.0	80.4	7.16	77.4	7.03	72.9	6.84	69.7	6.59	66.4	6.34	62.3	5.95	58.6	5.76	53.7	5.50
	25.0	23.0	80.4	6.72	77.4	6.60	72.9	6.42	69.7	6.19	66.4	5.96	62.3	5.60	58.6	5.41	53.7	5.16
	30.0	28.0	80.4	6.29	77.4	6.18	72.9	6.01	69.7	5.79	66.4	5.58	62.3	5.25	58.6	5.07	53.7	4.83
	35.0	32.0	80.4	5.86	77.4	5.75	72.9	5.59	69.7	5.39	66.4	5.19	62.3	4.90	58.6	4.73	53.7	4.50
	40.0	36.0	80.4	5.43	77.4	5.33	72.9	5.17	69.7	4.99	66.4	4.81	62.3	4.56	58.6	4.39	53.7	4.16
	45.0	41.0	80.4	5.00	77.4	4.91	72.9	4.77	69.7	4.60	66.4	4.43	62.3	4.21	58.6	4.05	53.7	3.84
	47.0	43.0	80.4	4.87	77.4	4.78	72.9	4.64	69.7	4.48	**66.4**	**4.32**	62.3	4.10	58.6	3.94	53.7	3.73
	50.0	46.0	80.4	4.69	77.4	4.60	72.9	4.47	69.7	4.31	66.4	4.16	62.3	3.95	58.6	3.80	53.7	3.60
	55.0	51.0	80.4	4.40	77.4	4.32	72.9	4.19	69.7	4.05	66.4	3.90	62.3	3.71	58.6	3.56	53.7	3.38
	60.0	56.0	80.4	4.10	77.4	4.02	72.9	3.90	69.7	3.76	66.4	3.63	62.3	3.45	58.6	3.31	53.7	3.14

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

HEATING CAPACITY DATA

ARUN072BSS5

72,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp.		Indoor Air Temp. °F DB															
			59		61		64		67		70		73		76		80	
	°F DB	°F WB	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
70	-12.6	-13.0	54.3	5.75	54.1	5.88	53.8	6.09	53.5	6.60	53.2	7.11	52.2	7.09	50.5	7.08	48.3	7.06
	-7.0	-7.6	62.0	6.36	62.0	6.50	62.0	6.70	59.1	6.90	56.3	7.09	53.2	7.07	50.2	7.06	46.1	7.05
	-4.0	-4.4	67.5	6.73	65.3	6.87	62.0	7.07	59.1	7.07	56.3	7.07	53.2	7.05	50.2	7.05	46.1	7.04
	0.0	-0.4	68.1	7.11	65.6	7.10	62.0	7.08	59.1	7.07	56.3	7.06	53.2	6.86	50.2	6.75	46.1	6.59
	5.0	4.5	68.1	7.07	65.6	7.05	62.0	7.03	59.1	6.92	56.3	6.81	53.2	6.50	50.2	6.37	46.1	6.21
	10.0	9.0	68.1	7.03	65.6	7.01	62.0	6.98	59.1	6.71	56.3	6.43	53.2	6.13	50.2	6.00	46.1	5.83
	15.0	14.0	68.1	7.12	65.6	6.92	62.0	6.62	59.1	6.34	56.3	6.06	53.2	5.77	50.2	5.64	46.1	5.45
	20.0	19.0	68.1	6.66	65.6	6.47	62.0	6.19	59.1	5.93	56.3	5.67	53.2	5.40	50.2	5.26	46.1	5.06
	25.0	23.0	68.1	6.20	65.6	6.03	62.0	5.77	59.1	5.53	56.3	5.30	53.2	5.04	50.2	4.88	46.1	4.68
	30.0	28.0	68.1	5.74	65.6	5.59	62.0	5.35	59.1	5.13	56.3	4.92	53.2	4.67	50.2	4.51	46.1	4.29
	35.0	32.0	68.1	5.29	65.6	5.15	62.0	4.93	59.1	4.73	56.3	4.54	53.2	4.31	50.2	4.14	46.1	3.91
	40.0	36.0	68.1	4.83	65.6	4.70	62.0	4.51	59.1	4.33	56.3	4.16	53.2	3.94	50.2	3.76	46.1	3.53
	45.0	41.0	68.1	4.39	65.6	4.27	62.0	4.10	59.1	3.94	56.3	3.79	53.2	3.59	50.2	3.40	46.1	3.16
	47.0	43.0	68.1	4.27	65.6	4.16	62.0	3.99	59.1	3.84	**56.3**	**3.69**	53.2	3.49	50.2	3.31	46.1	3.08
	50.0	46.0	68.1	4.11	65.6	4.01	62.0	3.85	59.1	3.70	56.3	3.55	53.2	3.36	50.2	3.19	46.1	2.96
	55.0	51.0	68.1	3.86	65.6	3.76	62.0	3.61	59.1	3.47	56.3	3.33	53.2	3.16	50.2	2.99	46.1	2.78
	60.0	56.0	68.1	3.59	65.6	3.50	62.0	3.36	59.1	3.23	56.3	3.10	53.2	2.93	50.2	2.78	46.1	2.59
60	-12.6	-13.0	50.4	5.37	50.1	5.51	49.6	5.72	48.9	6.23	48.3	6.74	45.5	6.72	43.0	6.70	39.6	6.68
	-7.0	-7.6	58.3	5.99	56.3	6.13	53.3	6.33	50.8	6.52	48.3	6.71	45.5	6.69	43.0	6.68	39.6	6.66
	-4.0	-4.4	58.3	6.36	56.3	6.50	53.3	6.70	50.8	6.70	48.3	6.69	45.5	6.59	43.0	6.39	39.6	6.13
	0.0	-0.4	58.3	6.74	56.3	6.73	53.3	6.72	50.8	6.63	48.3	6.55	45.5	6.31	43.0	6.10	39.6	5.81
	5.0	4.5	58.3	6.72	56.3	6.71	53.3	6.69	50.8	6.44	48.3	6.18	45.5	5.95	43.0	5.74	39.6	5.45
	10.0	9.0	58.3	6.83	56.3	6.68	53.3	6.46	50.8	6.13	48.3	5.81	45.5	5.58	43.0	5.37	39.6	5.10
	15.0	14.0	58.3	6.52	56.3	6.33	53.3	6.05	50.8	5.75	48.3	5.45	45.5	5.22	43.0	5.02	39.6	4.75
	20.0	19.0	58.3	6.08	56.3	5.90	53.3	5.62	50.8	5.35	48.3	5.08	45.5	4.85	43.0	4.65	39.6	4.38
	25.0	23.0	58.3	5.65	56.3	5.47	53.3	5.21	50.8	4.96	48.3	4.71	45.5	4.49	43.0	4.29	39.6	4.02
	30.0	28.0	58.3	5.22	56.3	5.05	53.3	4.79	50.8	4.57	48.3	4.34	45.5	4.12	43.0	3.93	39.6	3.67
	35.0	32.0	58.3	4.79	56.3	4.63	53.3	4.37	50.8	4.17	48.3	3.98	45.5	3.75	43.0	3.56	39.6	3.31
	40.0	36.0	58.3	4.37	56.3	4.20	53.3	3.95	50.8	3.78	48.3	3.61	45.5	3.39	43.0	3.20	39.6	2.95
	45.0	41.0	58.3	3.95	56.3	3.79	53.3	3.55	50.8	3.40	48.3	3.25	45.5	3.04	43.0	2.85	39.6	2.61
	47.0	43.0	58.3	3.85	56.3	3.69	53.3	3.46	50.8	3.31	**48.3**	**3.17**	45.5	2.96	43.0	2.78	39.6	2.54
	50.0	46.0	58.3	3.71	56.3	3.56	53.3	3.33	50.8	3.19	48.3	3.05	45.5	2.85	43.0	2.68	39.6	2.45
	55.0	51.0	58.3	3.48	56.3	3.34	53.3	3.13	50.8	2.99	48.3	2.86	45.5	2.67	43.0	2.51	39.6	2.30
	60.0	56.0	58.3	3.23	56.3	3.10	53.3	2.91	50.8	2.78	48.3	2.66	45.5	2.49	43.0	2.34	39.6	2.14
50	-12.6	-13.0	48.8	4.76	47.0	4.89	44.3	5.10	42.3	5.61	40.3	6.13	37.9	6.09	35.7	6.06	32.8	6.03
	-7.0	-7.6	48.8	5.37	47.0	5.51	44.3	5.72	42.3	5.90	40.3	6.09	37.9	5.93	35.7	5.64	32.8	5.26
	-4.0	-4.4	48.8	5.74	47.0	5.88	44.3	6.09	42.3	6.08	40.3	6.07	37.9	5.72	35.7	5.44	32.8	5.06
	0.0	-0.4	48.8	6.13	47.0	6.12	44.3	6.09	42.3	5.95	40.3	5.81	37.9	5.45	35.7	5.18	32.8	4.82
	5.0	4.5	48.8	6.25	47.0	6.08	44.3	5.84	42.3	5.65	40.3	5.45	37.9	5.12	35.7	4.86	32.8	4.52
	10.0	9.0	48.8	6.11	47.0	5.86	44.3	5.47	42.3	5.28	40.3	5.10	37.9	4.79	35.7	4.55	32.8	4.23
	15.0	14.0	48.8	5.70	47.0	5.46	44.3	5.10	42.3	4.92	40.3	4.75	37.9	4.46	35.7	4.23	32.8	3.93
	20.0	19.0	48.8	5.27	47.0	5.05	44.3	4.72	42.3	4.55	40.3	4.39	37.9	4.12	35.7	3.91	32.8	3.63
	25.0	23.0	48.8	4.85	47.0	4.65	44.3	4.34	42.3	4.19	40.3	4.03	37.9	3.79	35.7	3.59	32.8	3.33
	30.0	28.0	48.8	4.43	47.0	4.25	44.3	3.97	42.3	3.82	40.3	3.67	37.9	3.46	35.7	3.27	32.8	3.03
	35.0	32.0	48.8	4.01	47.0	3.85	44.3	3.60	42.3	3.46	40.3	3.32	37.9	3.12	35.7	2.95	32.8	2.73
	40.0	36.0	48.8	3.59	47.0	3.44	44.3	3.22	42.3	3.09	40.3	2.96	37.9	2.79	35.7	2.64	32.8	2.43
	45.0	41.0	48.8	3.19	47.0	3.06	44.3	2.86	42.3	2.74	40.3	2.62	37.9	2.47	35.7	2.33	32.8	2.14
	47.0	43.0	48.8	3.10	47.0	2.98	44.3	2.79	42.3	2.67	**40.3**	**2.55**	37.9	2.41	35.7	2.27	32.8	2.09
	50.0	46.0	48.8	2.99	47.0	2.87	44.3	2.69	42.3	2.57	40.3	2.46	37.9	2.32	35.7	2.19	32.8	2.01
	55.0	51.0	48.8	2.81	47.0	2.69	44.3	2.52	42.3	2.41	40.3	2.31	37.9	2.18	35.7	2.05	32.8	1.88
	60.0	56.0	48.8	2.61	47.0	2.50	44.3	2.34	42.3	2.24	40.3	2.14	37.9	2.02	35.7	1.91	32.8	1.75

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

HEATING CAPACITY DATA

MULTI V S THREE-PHASE

ARUN096BSS5

96,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp.		Indoor Air Temp. °F DB															
			59		61		64		67		70		73		76		80	
	°F DB	°F WB	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
130	-12.6	-13.0	77.5	6.08	76.6	6.65	75.4	7.50	74.5	8.28	73.7	9.07	73.1	9.97	72.7	10.45	72.2	11.08
	-7.0	-7.6	88.3	7.14	87.3	7.69	85.9	8.52	84.9	9.27	84.0	10.02	83.3	10.81	82.9	11.21	82.3	11.74
	-4.0	-4.4	94.8	7.78	93.7	8.32	92.2	9.13	91.2	9.86	90.1	10.59	89.4	11.32	89.0	11.67	88.4	12.13
	0.0	-0.4	102.8	8.56	101.7	9.09	100.0	9.89	98.9	10.60	97.8	11.30	97.0	11.95	96.5	12.23	95.8	12.62
	5.0	4.5	112.8	9.55	111.6	10.06	109.7	10.84	108.5	11.51	107.3	12.18	106.4	12.73	105.9	12.94	105.2	13.23
	10.0	9.0	122.8	10.53	121.5	11.03	119.5	11.78	118.1	12.42	116.8	13.06	115.9	13.51	115.3	13.65	114.5	13.83
	15.0	14.0	132.6	11.49	131.2	11.98	129.0	12.71	127.6	13.32	126.1	13.93	125.1	14.23	124.5	14.21	123.6	14.17
	20.0	19.0	142.0	12.49	140.8	12.97	138.9	13.68	137.3	13.93	135.6	14.17	131.4	13.89	124.0	13.60	114.1	13.21
	25.0	23.0	144.0	13.75	144.2	13.94	144.5	14.22	142.3	14.02	140.2	13.83	131.7	13.24	123.9	12.95	113.5	12.56
	30.0	28.0	144.2	14.24	144.2	14.20	144.2	14.14	142.2	13.64	140.2	13.14	131.7	12.58	123.9	12.30	113.5	11.92
	35.0	32.0	144.2	14.53	144.2	14.14	144.2	13.56	142.2	13.00	140.2	12.45	131.7	11.93	123.9	11.65	113.5	11.27
	40.0	36.0	144.2	13.93	144.2	13.42	144.2	12.64	142.2	12.20	140.2	11.76	131.7	11.27	123.9	10.99	113.5	10.63
	45.0	41.0	144.2	12.39	144.2	12.13	144.2	11.74	142.2	11.40	140.2	11.06	131.7	10.61	123.9	10.34	113.5	9.98
	47.0	43.0	144.2	12.06	144.2	11.80	144.2	11.42	142.2	11.10	**140.2**	**10.77**	131.7	10.33	123.9	10.07	113.5	9.72
	50.0	46.0	144.2	11.61	144.2	11.37	144.2	11.00	142.2	10.69	140.2	10.37	131.7	9.95	123.9	9.69	113.5	9.36
	55.0	51.0	144.2	10.90	144.2	10.67	144.2	10.33	142.2	10.03	140.2	9.74	131.7	9.34	123.9	9.10	113.5	8.78
	60.0	56.0	144.2	10.14	144.2	9.92	144.2	9.60	142.2	9.33	140.2	9.05	131.7	8.68	123.9	8.46	113.5	8.17
120	-12.6	-13.0	75.5	6.98	75.0	7.42	74.3	8.09	73.7	8.67	73.2	9.25	72.6	9.63	72.2	9.71	71.7	9.82
	-7.0	-7.6	87.1	7.98	86.3	8.42	85.1	9.09	84.2	9.67	83.4	10.25	82.7	10.63	82.3	10.71	81.7	10.82
	-4.0	-4.4	93.5	8.58	92.7	9.02	91.3	9.69	90.4	10.27	89.5	10.85	88.8	11.23	88.3	11.31	87.7	11.42
	0.0	-0.4	101.5	9.32	100.5	9.76	99.1	10.43	98.1	11.01	97.1	11.59	96.3	11.97	95.8	12.05	95.1	12.16
	5.0	4.5	111.3	10.24	110.3	10.69	108.7	11.35	107.6	11.94	106.5	12.52	105.7	12.89	105.1	12.98	104.4	13.09
	10.0	9.0	121.2	11.17	120.1	11.61	118.4	12.28	117.2	12.86	116.0	13.45	115.0	13.82	114.5	13.90	113.7	14.01
	15.0	14.0	130.9	12.08	129.7	12.52	127.8	13.19	126.5	13.77	125.3	14.35	122.1	14.66	116.9	14.59	110.0	14.51
	20.0	19.0	140.5	13.02	139.2	13.46	137.3	14.13	134.4	14.18	131.4	14.22	123.8	13.96	116.3	13.88	106.2	13.77
	25.0	23.0	144.0	14.41	143.0	14.39	141.5	14.36	136.5	13.94	131.4	13.52	123.8	13.27	116.3	13.17	106.2	13.05
	30.0	28.0	144.0	14.44	143.0	14.08	141.5	13.55	136.5	13.18	131.4	12.81	123.8	12.58	116.3	12.47	106.2	12.32
	35.0	32.0	144.0	13.50	143.0	13.20	141.5	12.74	136.5	12.42	131.4	12.11	123.8	11.90	116.3	11.77	106.2	11.60
	40.0	36.0	144.0	12.57	143.0	12.31	141.5	11.93	136.5	11.67	131.4	11.40	123.8	11.21	116.3	11.07	106.2	10.88
	45.0	41.0	144.0	11.64	143.0	11.44	141.5	11.13	136.5	10.91	131.4	10.70	123.8	10.52	116.3	10.37	106.2	10.16
	47.0	43.0	144.0	11.33	143.0	11.13	141.5	10.83	136.5	10.62	**131.4**	**10.42**	123.8	10.25	116.3	10.09	106.2	9.89
	50.0	46.0	144.0	10.92	143.0	10.72	141.5	10.43	136.5	10.23	131.4	10.03	123.8	9.87	116.3	9.72	106.2	9.52
	55.0	51.0	144.0	10.25	143.0	10.06	141.5	9.79	136.5	9.60	131.4	9.42	123.8	9.26	116.3	9.12	106.2	8.94
	60.0	56.0	144.0	9.53	143.0	9.36	141.5	9.11	136.5	8.93	131.4	8.76	123.8	8.61	116.3	8.48	106.2	8.31
110	-12.6	-13.0	74.0	8.42	73.8	8.75	73.5	9.25	73.1	9.80	72.8	10.35	72.2	11.38	71.8	12.21	71.3	13.32
	-7.0	-7.6	84.9	9.42	84.5	9.75	83.9	10.25	83.4	10.80	82.9	11.35	82.3	12.38	81.8	13.21	81.3	14.32
	-4.0	-4.4	91.5	10.02	91.0	10.35	90.1	10.85	89.6	11.40	89.0	11.95	88.3	12.98	87.9	13.81	87.3	14.92
	0.0	-0.4	99.7	10.76	98.9	11.09	97.8	11.59	97.2	12.14	96.5	12.69	95.8	13.72	95.3	14.55	94.6	15.66
	5.0	4.5	109.8	11.69	108.9	12.02	107.5	12.52	106.7	13.07	106.0	13.62	104.5	14.34	102.8	14.54	100.4	14.80
	10.0	9.0	120.0	12.61	118.8	12.95	117.1	13.45	116.2	14.00	115.4	14.55	110.5	14.36	105.0	14.09	97.7	13.73
	15.0	14.0	129.9	13.52	128.6	13.85	126.5	14.35	122.3	14.32	118.0	14.28	111.1	13.90	104.8	13.46	96.4	12.87
	20.0	19.0	142.6	14.81	137.5	14.64	130.0	14.38	124.0	14.02	118.0	13.65	111.1	13.23	104.8	12.82	96.4	12.27
	25.0	23.0	142.6	14.55	137.5	14.24	130.0	13.77	124.0	13.36	118.0	12.95	111.1	12.57	104.8	12.19	96.4	11.68
	30.0	28.0	142.6	13.80	137.5	13.45	130.0	12.93	124.0	12.59	118.0	12.26	111.1	11.90	104.8	11.56	96.4	11.09
	35.0	32.0	142.6	12.75	137.5	12.48	130.0	12.09	124.0	11.82	118.0	11.56	111.1	11.24	104.8	10.92	96.4	10.50
	40.0	36.0	142.6	11.70	137.5	11.52	130.0	11.24	124.0	11.05	118.0	10.86	111.1	10.58	104.8	10.29	96.4	9.91
	45.0	41.0	142.6	10.68	137.5	10.57	130.0	10.41	124.0	10.29	118.0	10.17	111.1	9.92	104.8	9.66	96.4	9.31
	47.0	43.0	142.6	10.39	137.5	10.29	130.0	10.13	124.0	10.02	**118.0**	**9.90**	111.1	9.65	104.8	9.40	96.4	9.07
	50.0	46.0	142.6	10.01	137.5	9.91	130.0	9.76	124.0	9.65	118.0	9.53	111.1	9.30	104.8	9.06	96.4	8.73
	55.0	51.0	142.6	9.39	137.5	9.30	130.0	9.16	124.0	9.06	118.0	8.95	111.1	8.73	104.8	8.50	96.4	8.20
	60.0	56.0	142.6	8.74	137.5	8.65	130.0	8.52	124.0	8.42	118.0	8.32	111.1	8.12	104.8	7.90	96.4	7.62

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

HEATING CAPACITY DATA

ARUN096BSS5

96,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp.		Indoor Air Temp. °F DB															
			59		61		64		67		70		73		76		80	
	°F DB	°F WB	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
100	-12.6	-13.0	73.5	7.68	73.2	8.25	72.7	9.10	72.6	9.89	72.5	10.68	71.9	11.85	71.5	12.49	71.0	13.35
	-7.0	-7.6	84.2	8.95	83.9	9.42	83.3	10.13	83.0	10.89	82.6	11.65	81.9	12.83	81.5	13.45	80.9	14.26
	-4.0	-4.4	90.6	9.72	90.3	10.13	89.7	10.75	89.2	11.49	88.7	12.22	87.9	13.42	87.5	14.02	86.9	14.81
	0.0	-0.4	98.3	10.66	97.9	11.00	97.3	11.51	96.7	12.22	96.2	12.94	95.1	14.02	94.1	14.29	92.8	14.66
	5.0	4.5	107.9	11.84	107.5	12.09	106.8	12.46	105.6	13.15	104.4	13.83	100.3	14.18	96.2	14.13	90.8	14.07
	10.0	9.0	116.2	13.02	114.8	13.18	112.8	13.42	110.4	13.80	108.0	14.19	101.7	13.96	95.7	13.63	87.8	13.18
	15.0	14.0	125.5	14.27	122.8	14.25	118.7	14.21	113.4	14.12	108.0	14.03	101.7	13.29	95.7	12.89	87.8	12.35
	20.0	19.0	130.6	14.33	125.9	14.18	118.7	13.95	113.4	13.59	108.0	13.23	101.7	12.53	95.7	12.14	87.8	11.63
	25.0	23.0	130.6	14.34	125.9	13.76	118.7	12.88	113.4	12.66	108.0	12.44	101.7	11.77	95.7	11.41	87.8	10.93
	30.0	28.0	130.6	13.36	125.9	12.87	118.7	12.13	113.4	11.90	108.0	11.66	101.7	11.02	95.7	10.68	87.8	10.22
	35.0	32.0	130.6	12.38	125.9	11.99	118.7	11.39	113.4	11.13	108.0	10.87	101.7	10.27	95.7	9.95	87.8	9.52
	40.0	36.0	130.6	11.40	125.9	11.10	118.7	10.65	113.4	10.37	108.0	10.09	101.7	9.52	95.7	9.22	87.8	8.81
	45.0	41.0	130.6	10.45	125.9	10.23	118.7	9.91	113.4	9.61	108.0	9.32	101.7	8.78	95.7	8.50	87.8	8.12
	47.0	43.0	130.6	10.17	125.9	9.96	118.7	9.65	113.4	9.36	**108.0**	**9.07**	101.7	8.55	95.7	8.27	87.8	7.90
	50.0	46.0	130.6	9.79	125.9	9.59	118.7	9.29	113.4	9.01	108.0	8.74	101.7	8.23	95.7	7.97	87.8	7.61
	55.0	51.0	130.6	9.19	125.9	9.00	118.7	8.72	113.4	8.46	108.0	8.20	101.7	7.73	95.7	7.48	87.8	7.14
	60.0	56.0	130.6	8.55	125.9	8.37	118.7	8.11	113.4	7.87	108.0	7.62	101.7	7.19	95.7	6.95	87.8	6.64
90	-12.6	-13.0	73.2	8.75	72.9	9.17	72.4	9.81	72.3	10.66	72.2	11.51	71.6	12.10	71.2	12.65	70.7	13.39
	-7.0	-7.6	83.9	9.75	83.5	10.17	83.0	10.81	82.6	11.66	82.3	12.51	81.6	13.10	81.2	13.65	80.6	14.39
	-4.0	-4.4	90.3	10.35	89.9	10.77	89.3	11.41	88.8	12.26	88.3	13.11	87.6	13.45	87.1	13.47	86.5	13.49
	0.0	-0.4	97.9	11.09	97.5	11.51	96.9	12.15	96.2	12.82	95.5	13.49	91.9	13.44	87.9	13.39	82.5	13.33
	5.0	4.5	108.4	12.02	107.0	12.44	105.0	13.07	102.0	13.25	98.9	13.44	93.1	13.24	87.4	12.89	79.9	12.41
	10.0	9.0	118.4	13.30	114.4	13.36	108.4	13.47	103.7	13.43	98.9	13.39	93.1	12.75	87.4	12.18	79.9	11.42
	15.0	14.0	119.8	13.47	115.2	13.44	108.4	13.40	103.7	13.10	98.9	12.79	93.1	12.09	87.4	11.55	79.9	10.82
	20.0	19.0	119.8	13.56	115.2	13.28	108.4	12.87	103.7	12.47	98.9	12.06	93.1	11.41	87.4	10.89	79.9	10.20
	25.0	23.0	119.8	12.75	115.2	12.49	108.4	12.11	103.7	11.73	98.9	11.35	93.1	10.74	87.4	10.25	79.9	9.59
	30.0	28.0	119.8	11.95	115.2	11.70	108.4	11.34	103.7	10.99	98.9	10.64	93.1	10.08	87.4	9.61	79.9	8.98
	35.0	32.0	119.8	11.14	115.2	10.92	108.4	10.58	103.7	10.25	98.9	9.93	93.1	9.41	87.4	8.96	79.9	8.37
	40.0	36.0	119.8	10.33	115.2	10.13	108.4	9.81	103.7	9.52	98.9	9.22	93.1	8.74	87.4	8.32	79.9	7.76
	45.0	41.0	119.8	9.54	115.2	9.35	108.4	9.06	103.7	8.79	98.9	8.52	93.1	8.08	87.4	7.69	79.9	7.17
	47.0	43.0	119.8	9.29	115.2	9.10	108.4	8.82	103.7	8.56	**98.9**	**8.29**	93.1	7.87	87.4	7.49	79.9	6.98
	50.0	46.0	119.8	8.95	115.2	8.77	108.4	8.50	103.7	8.24	98.9	7.99	93.1	7.58	87.4	7.21	79.9	6.72
	55.0	51.0	119.8	8.40	115.2	8.23	108.4	7.98	103.7	7.74	98.9	7.50	93.1	7.11	87.4	6.77	79.9	6.31
	60.0	56.0	119.8	7.81	115.2	7.65	108.4	7.42	103.7	7.19	98.9	6.97	93.1	6.61	87.4	6.29	79.9	5.86
80	-12.6	-13.0	72.9	8.81	72.6	9.28	72.1	9.98	71.8	10.48	71.4	10.98	71.0	11.96	71.0	11.93	71.0	11.90
	-7.0	-7.6	83.5	9.81	83.2	10.28	82.7	10.98	82.3	11.48	81.9	11.98	80.7	11.92	79.0	11.90	76.8	11.86
	-4.0	-4.4	89.9	10.41	89.5	10.88	89.0	11.58	88.4	11.76	87.9	11.95	82.8	11.90	78.2	11.87	72.1	11.84
	0.0	-0.4	98.5	11.39	97.1	11.62	95.1	11.96	91.8	11.94	88.6	11.92	83.1	11.79	78.1	11.61	71.5	11.36
	5.0	4.5	105.4	11.97	102.2	11.95	97.3	11.93	92.9	11.90	88.6	11.88	83.1	11.35	78.1	11.01	71.5	10.55
	10.0	9.0	107.1	11.93	103.2	11.91	97.3	11.89	92.9	11.71	88.6	11.53	83.1	10.79	78.1	10.45	71.5	10.00
	15.0	14.0	107.1	11.93	103.2	11.88	97.3	11.79	92.9	11.36	88.6	10.92	83.1	10.23	78.1	9.91	71.5	9.47
	20.0	19.0	107.1	11.61	103.2	11.41	97.3	11.10	92.9	10.69	88.6	10.29	83.1	9.65	78.1	9.34	71.5	8.92
	25.0	23.0	107.1	10.91	103.2	10.72	97.3	10.42	92.9	10.05	88.6	9.67	83.1	9.09	78.1	8.78	71.5	8.38
	30.0	28.0	107.1	10.21	103.2	10.02	97.3	9.75	92.9	9.40	88.6	9.05	83.1	8.52	78.1	8.23	71.5	7.84
	35.0	32.0	107.1	9.51	103.2	9.33	97.3	9.07	92.9	8.75	88.6	8.42	83.1	7.96	78.1	7.67	71.5	7.30
	40.0	36.0	107.1	8.81	103.2	8.64	97.3	8.40	92.9	8.10	88.6	7.80	83.1	7.39	78.1	7.12	71.5	6.75
	45.0	41.0	107.1	8.12	103.2	7.96	97.3	7.73	92.9	7.46	88.6	7.19	83.1	6.83	78.1	6.57	71.5	6.22
	47.0	43.0	107.1	7.90	103.2	7.75	97.3	7.53	92.9	7.27	**88.6**	**7.00**	83.1	6.65	78.1	6.40	71.5	6.06
	50.0	46.0	107.1	7.61	103.2	7.47	97.3	7.25	92.9	7.00	88.6	6.74	83.1	6.41	78.1	6.16	71.5	5.83
	55.0	51.0	107.1	7.14	103.2	7.01	97.3	6.81	92.9	6.57	88.6	6.33	83.1	6.01	78.1	5.78	71.5	5.48
	60.0	56.0	107.1	6.64	103.2	6.52	97.3	6.33	92.9	6.11	88.6	5.89	83.1	5.59	78.1	5.38	71.5	5.09

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

HEATING CAPACITY DATA

MULTI V S THREE-PHASE

ARUN096BSS5

96,000 Btu/h 208-230V Three-Phase Outdoor Units

Combination (%)	Outdoor air temp.		Indoor Air Temp. °F DB															
			59		61		64		67		70		73		76		80	
	°F DB	°F WB	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
70	-12.6	-13.0	72.4	9.32	72.1	9.54	71.7	9.88	71.3	10.71	71.0	11.54	69.6	11.50	67.4	11.48	64.4	11.46
	-7.0	-7.6	82.7	10.32	82.7	10.54	82.6	10.88	78.8	11.19	75.1	11.50	71.0	11.47	66.9	11.45	61.5	11.43
	-4.0	-4.4	90.0	10.92	87.0	11.14	82.6	11.48	78.8	11.48	75.1	11.48	71.0	11.44	66.9	11.43	61.5	11.42
	0.0	-0.4	90.8	11.54	87.5	11.52	82.6	11.48	78.8	11.47	75.1	11.45	71.0	11.13	66.9	10.95	61.5	10.70
	5.0	4.5	90.8	11.47	87.5	11.44	82.6	11.40	78.8	11.23	75.1	11.06	71.0	10.54	66.9	10.34	61.5	10.08
	10.0	9.0	90.8	11.41	87.5	11.37	82.6	11.32	78.8	10.88	75.1	10.44	71.0	9.95	66.9	9.74	61.5	9.46
	15.0	14.0	90.8	11.56	87.5	11.23	82.6	10.74	78.8	10.29	75.1	9.84	71.0	9.37	66.9	9.14	61.5	8.85
	20.0	19.0	90.8	10.80	87.5	10.50	82.6	10.05	78.8	9.63	75.1	9.21	71.0	8.76	66.9	8.53	61.5	8.21
	25.0	23.0	90.8	10.06	87.5	9.78	82.6	9.37	78.8	8.98	75.1	8.59	71.0	8.17	66.9	7.92	61.5	7.59
	30.0	28.0	90.8	9.32	87.5	9.07	82.6	8.68	78.8	8.33	75.1	7.98	71.0	7.58	66.9	7.32	61.5	6.97
	35.0	32.0	90.8	8.58	87.5	8.35	82.6	8.00	78.8	7.68	75.1	7.36	71.0	6.99	66.9	6.71	61.5	6.35
	40.0	36.0	90.8	7.84	87.5	7.63	82.6	7.32	78.8	7.03	75.1	6.74	71.0	6.39	66.9	6.11	61.5	5.72
	45.0	41.0	90.8	7.12	87.5	6.94	82.6	6.66	78.8	6.40	75.1	6.14	71.0	5.82	66.9	5.52	61.5	5.13
	47.0	43.0	90.8	6.93	87.5	6.75	82.6	6.48	78.8	6.23	75.1	5.98	71.0	5.66	66.9	5.38	61.5	4.99
	50.0	46.0	90.8	6.68	87.5	6.50	82.6	6.24	78.8	6.00	75.1	5.76	71.0	5.46	66.9	5.18	61.5	4.81
	55.0	51.0	90.8	6.27	87.5	6.10	82.6	5.86	78.8	5.63	75.1	5.41	71.0	5.12	66.9	4.86	61.5	4.51
	60.0	56.0	90.8	5.83	87.5	5.68	82.6	5.45	78.8	5.24	75.1	5.03	71.0	4.76	66.9	4.52	61.5	4.19
60	-12.6	-13.0	67.2	8.72	66.8	8.94	66.1	9.28	65.3	10.11	64.4	10.94	60.6	10.90	57.3	10.87	52.9	10.84
	-7.0	-7.6	77.7	9.72	75.1	9.94	71.1	10.28	67.7	10.58	64.4	10.89	60.6	10.86	57.3	10.83	52.9	10.80
	-4.0	-4.4	77.7	10.32	75.1	10.54	71.1	10.88	67.7	10.87	64.4	10.86	60.6	10.69	57.3	10.37	52.9	9.94
	0.0	-0.4	77.7	10.94	75.1	10.93	71.1	10.91	67.7	10.76	64.4	10.62	60.6	10.24	57.3	9.89	52.9	9.43
	5.0	4.5	77.7	10.90	75.1	10.89	71.1	10.86	67.7	10.44	64.4	10.02	60.6	9.65	57.3	9.31	52.9	8.85
	10.0	9.0	77.7	11.09	75.1	10.85	71.1	10.48	67.7	9.95	64.4	9.43	60.6	9.06	57.3	8.72	52.9	8.27
	15.0	14.0	77.7	10.57	75.1	10.27	71.1	9.82	67.7	9.33	64.4	8.85	60.6	8.48	57.3	8.14	52.9	7.70
	20.0	19.0	77.7	9.86	75.1	9.57	71.1	9.12	67.7	8.68	64.4	8.24	60.6	7.87	57.3	7.54	52.9	7.11
	25.0	23.0	77.7	9.17	75.1	8.88	71.1	8.45	67.7	8.04	64.4	7.64	60.6	7.28	57.3	6.96	52.9	6.53
	30.0	28.0	77.7	8.47	75.1	8.19	71.1	7.77	67.7	7.41	64.4	7.05	60.6	6.68	57.3	6.37	52.9	5.95
	35.0	32.0	77.7	7.78	75.1	7.51	71.1	7.09	67.7	6.77	64.4	6.45	60.6	6.09	57.3	5.78	52.9	5.37
	40.0	36.0	77.7	7.09	75.1	6.82	71.1	6.42	67.7	6.14	64.4	5.86	60.6	5.50	57.3	5.20	52.9	4.79
	45.0	41.0	77.7	6.41	75.1	6.15	71.1	5.76	67.7	5.52	64.4	5.28	60.6	4.93	57.3	4.63	52.9	4.24
	47.0	43.0	77.7	6.24	75.1	5.99	71.1	5.61	67.7	5.38	64.4	5.14	60.6	4.80	57.3	4.51	52.9	4.12
	50.0	46.0	77.7	6.01	75.1	5.77	71.1	5.40	67.7	5.18	64.4	4.95	60.6	4.62	57.3	4.34	52.9	3.97
	55.0	51.0	77.7	5.64	75.1	5.41	71.1	5.07	67.7	4.86	64.4	4.65	60.6	4.34	57.3	4.08	52.9	3.73
	60.0	56.0	77.7	5.25	75.1	5.03	71.1	4.72	67.7	4.52	64.4	4.32	60.6	4.03	57.3	3.79	52.9	3.47
50	-12.6	-13.0	65.0	7.72	62.6	7.94	59.1	8.28	56.4	9.11	53.8	9.94	50.6	9.88	47.6	9.84	43.7	9.78
	-7.0	-7.6	65.0	8.72	62.6	8.94	59.1	9.28	56.4	9.58	53.8	9.89	50.6	9.63	47.6	9.16	43.7	8.53
	-4.0	-4.4	65.0	9.32	62.6	9.54	59.1	9.87	56.4	9.86	53.8	9.85	50.6	9.28	47.6	8.82	43.7	8.22
	0.0	-0.4	65.0	9.95	62.6	9.92	59.1	9.88	56.4	9.65	53.8	9.43	50.6	8.85	47.6	8.41	43.7	7.83
	5.0	4.5	65.0	10.13	62.6	9.87	59.1	9.48	56.4	9.16	53.8	8.85	50.6	8.31	47.6	7.89	43.7	7.34
	10.0	9.0	65.0	9.92	62.6	9.50	59.1	8.87	56.4	8.57	53.8	8.27	50.6	7.77	47.6	7.38	43.7	6.86
	15.0	14.0	65.0	9.25	62.6	8.86	59.1	8.27	56.4	7.99	53.8	7.71	50.6	7.24	47.6	6.87	43.7	6.38
	20.0	19.0	65.0	8.56	62.6	8.20	59.1	7.66	56.4	7.39	53.8	7.12	50.6	6.69	47.6	6.34	43.7	5.88
	25.0	23.0	65.0	7.87	62.6	7.54	59.1	7.05	56.4	6.79	53.8	6.54	50.6	6.15	47.6	5.83	43.7	5.40
	30.0	28.0	65.0	7.19	62.6	6.89	59.1	6.44	56.4	6.20	53.8	5.96	50.6	5.61	47.6	5.31	43.7	4.91
	35.0	32.0	65.0	6.51	62.6	6.24	59.1	5.84	56.4	5.61	53.8	5.38	50.6	5.07	47.6	4.79	43.7	4.43
	40.0	36.0	65.0	5.83	62.6	5.59	59.1	5.23	56.4	5.02	53.8	4.81	50.6	4.53	47.6	4.28	43.7	3.94
	45.0	41.0	65.0	5.17	62.6	4.96	59.1	4.65	56.4	4.45	53.8	4.25	50.6	4.01	47.6	3.78	43.7	3.48
	47.0	43.0	65.0	5.04	62.6	4.83	59.1	4.52	56.4	4.33	53.8	4.14	50.6	3.91	47.6	3.68	43.7	3.38
	50.0	46.0	65.0	4.85	62.6	4.65	59.1	4.36	56.4	4.17	53.8	3.99	50.6	3.76	47.6	3.55	43.7	3.26
	55.0	51.0	65.0	4.55	62.6	4.37	59.1	4.09	56.4	3.92	53.8	3.74	50.6	3.53	47.6	3.33	43.7	3.06
	60.0	56.0	65.0	4.23	62.6	4.06	59.1	3.80	56.4	3.64	53.8	3.48	50.6	3.28	47.6	3.10	43.7	2.84

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

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

Nominal capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Nominal heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

MAXIMUM HEATING CAPACITY DATA

ARUN072BSS5 and ARUN096BSS5

72,000 Btu/h and 96,000 Btu/h 208-230V 3-Phase Outdoor Units

Table 5: ARUN072BSS5 Maximum Heating Capacity.

Combination (%)	Outdoor air temp.		Indoor Air Temp. °F DB															
			59		61		64		67		70		73		76		80	
	°F DB	°F WB	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
100	-12.6	-13.0	63.7	9.07	63.2	9.26	62.3	9.53	62.4	10.00	62.6	10.46	62.1	10.81	61.7	10.95	61.3	11.14
	-7.0	-7.6	71.6	9.48	71.3	9.66	70.8	9.94	70.5	10.34	70.2	10.74	69.6	10.96	69.3	11.05	65.8	10.70
	-4.0	-4.4	76.5	9.73	76.2	9.91	75.7	10.18	75.2	10.55	74.8	10.91	73.4	10.89	71.4	10.62	65.8	10.26
	0.0	-0.4	82.3	10.04	81.9	10.21	81.4	10.48	80.4	10.66	79.4	10.83	76.0	10.50	71.8	10.20	65.8	9.79
	5.0	4.5	88.2	10.56	87.7	10.68	86.9	10.85	84.0	10.58	81.0	10.31	76.2	9.97	71.8	9.68	65.8	9.29
	10.0	9.0	96.3	10.75	93.4	11.00	89.0	10.71	85.0	10.24	81.0	9.78	76.2	9.44	71.8	9.16	65.8	8.80
	15.0	14.0	98.0	10.76	94.4	10.50	89.0	10.11	85.0	9.69	81.0	9.26	76.2	8.92	71.8	8.66	65.8	8.31
	20.0	19.0	98.0	10.10	94.4	9.86	89.0	9.50	85.0	9.11	81.0	8.73	76.2	8.38	71.8	8.13	65.8	7.80
	25.0	23.0	98.0	9.44	94.4	9.22	89.0	8.89	85.0	8.55	81.0	8.20	76.2	7.85	71.8	7.62	65.8	7.30
	30.0	28.0	98.0	8.79	94.4	8.59	89.0	8.29	85.0	7.98	81.0	7.67	76.2	7.33	71.8	7.10	65.8	6.80
	35.0	32.0	98.0	8.13	94.4	7.95	89.0	7.69	85.0	7.42	81.0	7.15	76.2	6.80	71.8	6.59	65.8	6.30
	40.0	36.0	98.0	7.48	94.4	7.32	89.0	7.08	85.0	6.85	81.0	6.62	76.2	6.27	71.8	6.07	65.8	5.80
	45.0	41.0	98.0	6.84	94.4	6.70	89.0	6.49	85.0	6.30	81.0	6.10	76.2	5.75	71.8	5.57	65.8	5.32
	47.0	43.0	98.0	6.66	94.4	6.52	89.0	6.32	85.0	6.13	81.0	5.94	76.2	5.60	71.8	5.42	65.8	5.18
	50.0	46.0	98.0	6.41	94.4	6.28	89.0	6.09	85.0	5.90	81.0	5.72	76.2	5.39	71.8	5.22	65.8	4.99
	55.0	51.0	98.0	6.02	94.4	5.90	89.0	5.71	85.0	5.54	81.0	5.37	76.2	5.06	71.8	4.90	65.8	4.68
	60.0	56.0	98.0	5.60	94.4	5.48	89.0	5.31	85.0	5.15	81.0	4.99	76.2	4.71	71.8	4.55	65.8	4.35

Table 6: ARUN096BSS5 Maximum Heating Capacity.

Combination (%)	Outdoor air temp.		Indoor Air Temp. °F DB															
			59		61		64		67		70		73		76		80	
	°F DB	°F WB	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW	TC MBh	PI kW
100	-12.6	-13.0	85.0	13.97	84.2	14.26	83.1	14.68	83.2	15.40	83.4	16.11	82.7	16.65	82.3	16.87	81.8	17.16
	-7.0	-7.6	95.4	14.61	95.0	14.89	94.5	15.31	94.0	15.93	93.6	16.55	92.8	16.88	92.4	17.03	87.8	16.48
	-4.0	-4.4	102.0	14.99	101.5	15.27	100.9	15.68	100.3	16.25	99.7	16.81	97.9	16.78	95.2	16.36	87.8	15.80
	0.0	-0.4	109.7	15.46	109.2	15.73	108.6	16.14	107.2	16.42	105.8	16.69	101.3	16.17	95.7	15.71	87.8	15.09
	5.0	4.5	117.6	16.26	116.9	16.45	115.9	16.72	112.0	16.30	108.0	15.88	101.7	15.36	95.7	14.91	87.8	14.32
	10.0	9.0	128.4	16.56	124.5	16.95	118.7	16.49	113.4	15.78	108.0	15.07	101.7	14.54	95.7	14.12	87.8	13.55
	15.0	14.0	130.6	16.58	125.9	16.18	118.7	15.58	113.4	14.93	108.0	14.27	101.7	13.74	95.7	13.34	87.8	12.80
	20.0	19.0	130.6	15.55	125.9	15.18	118.7	14.63	113.4	14.04	108.0	13.44	101.7	12.91	95.7	12.53	87.8	12.01
	25.0	23.0	130.6	14.54	125.9	14.21	118.7	13.70	113.4	13.17	108.0	12.63	101.7	12.10	95.7	11.73	87.8	11.25
	30.0	28.0	130.6	13.54	125.9	13.23	118.7	12.77	113.4	12.29	108.0	11.82	101.7	11.28	95.7	10.94	87.8	10.48
	35.0	32.0	130.6	12.53	125.9	12.25	118.7	11.84	113.4	11.42	108.0	11.01	101.7	10.47	95.7	10.14	87.8	9.71
	40.0	36.0	130.6	11.52	125.9	11.28	118.7	10.91	113.4	10.55	108.0	10.20	101.7	9.66	95.7	9.35	87.8	8.94
	45.0	41.0	130.6	10.54	125.9	10.32	118.7	10.00	113.4	9.70	108.0	9.40	101.7	8.86	95.7	8.57	87.8	8.19
	47.0	43.0	130.6	10.26	125.9	10.05	118.7	9.73	113.4	9.44	108.0	9.15	101.7	8.62	95.7	8.35	87.8	7.97
	50.0	46.0	130.6	9.88	125.9	9.68	118.7	9.37	113.4	9.09	108.0	8.81	101.7	8.31	95.7	8.04	87.8	7.68
	55.0	51.0	130.6	9.27	125.9	9.08	118.7	8.80	113.4	8.54	108.0	8.27	101.7	7.80	95.7	7.54	87.8	7.21
	60.0	56.0	130.6	8.62	125.9	8.45	118.7	8.18	113.4	7.94	108.0	7.69	101.7	7.25	95.7	7.02	87.8	6.70

TC = Total Capacity (MBh). PI = Power Input (kW) (includes compressor and outdoor fan).

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

Capacity as rated: 0 ft. above sea level with 25 ft. of refrigerant piping.
0 ft. level difference between outdoor and indoor units.

Maximum capacity based on full-load (maximum) compressor operation rather than part-load operation as published in nominal capacity tables.

CORRECTION FACTORS

Defrost Correction Factor on page 43
Elevation Correction Factors on page 43

Note:

The correction factors shown below are calculated in the LATS Multi V software program.

Defrost Correction Factor for Heating Operation

Capacity tables do not take into consideration capacity reduction when frost has accumulated on the condenser coil, nor during defrost operation. Integrated heating capacity values can be obtained as follows:

Formula: A = B x C

Where: A = Integrated heating capacity
B = Heating capacity value given in table of capacity characteristics
C = Integrated correction factor for frost accumulation

Table 7: Outdoor Unit Frost Accumulation Factor (Heating)[1].

Entering DB (°F)	19.4	23.0	26.6	32.0	37.4	41.0	44.6
Derate factor	0.98	0.95	0.93	0.86	0.93	0.96	1.0

[1]At 85% outdoor air relative humidity.

Note:

There will be temporary reduction in capacity when snow piles up on the outside surface of the outdoor unit heat exchanger. The level of capacity reduction depends on a number of factors, for example, outdoor temperature (°F DB), relative humidity (RH), and the amount of frost present.

Elevation Correction Factors

For each outdoor unit, calculate the equivalent length of the liquid line from the outdoor unit to the farthest indoor unit. Also, determine the elevation difference of farthest indoor unit above or below the outdoor unit. Find corresponding cooling capacity correction factor in the table below. Multiply the cooling correction factor by standard cooling capacity. The resultant is the NET cooling capacity.

Note:

The correction factors shown below are calculated in the LATS Multi V software program.

Table 8: Cooling Correction Factors.

Elevation Differences (ft.)	Equivalent Length (ELF)[1]											
	25	33	66	98	131	164	197	230	263	295	328	≥361
HU—Indoor units above Outdoor Unit (ft.)												
0	1.00	0.99	0.97	0.95	0.93	0.91	0.88	0.87	0.85	0.83	0.83	0.82
25	1.00	0.99	0.97	0.95	0.93	0.91	0.88	0.87	0.85	0.83	0.83	0.82
33	-	0.99	0.97	0.95	0.93	0.91	0.88	0.86	0.85	0.83	0.82	0.82
66	-	-	0.96	095	0.93	0.90	0.88	0.86	0.85	0.83	0.82	0.82
98	-	-	-	0.94	0.92	0.90	0.88	0.86	0.84	0.83	0.82	0.82
131	-	-	-	-	0.92	0.90	0.88	0.86	0.84	0.83	0.82	0.82
164	-	-	-	-	-	0.90	0.88	0.86	0.84	0.83	0.82	0.82
HL—Outdoor Unit Above Indoor Units (ft.)												
0	1.00	0.99	0.97	0.95	0.93	0.91	0.90	0.87	0.88	0.84	0.86	0.84
25	1.00	0.99	0.97	0.95	0.93	0.91	0.90	0.87	0.88	0.84	0.86	0.84
33	-	0.99	0.98	0.95	0.93	0.91	0.90	0.88	0.88	0.84	0.86	0.84
66	-	-	0.98	0.95	0.93	0.91	0.90	0.88	0.88	0.84	0.86	0.84
98	-	-	-	0.96	0.93	0.91	0.90	0.88	0.89	0.84	0.86	0.84
131	-	-	-	-	0.93	0.91	0.90	0.88	0.89	0.84	0.86	0.84

* ELF = Equivalent Pipe Length—Sum of the actual pipe length plus allocations for pressure drop through elbows, valves, and other fittings in equivalent length.

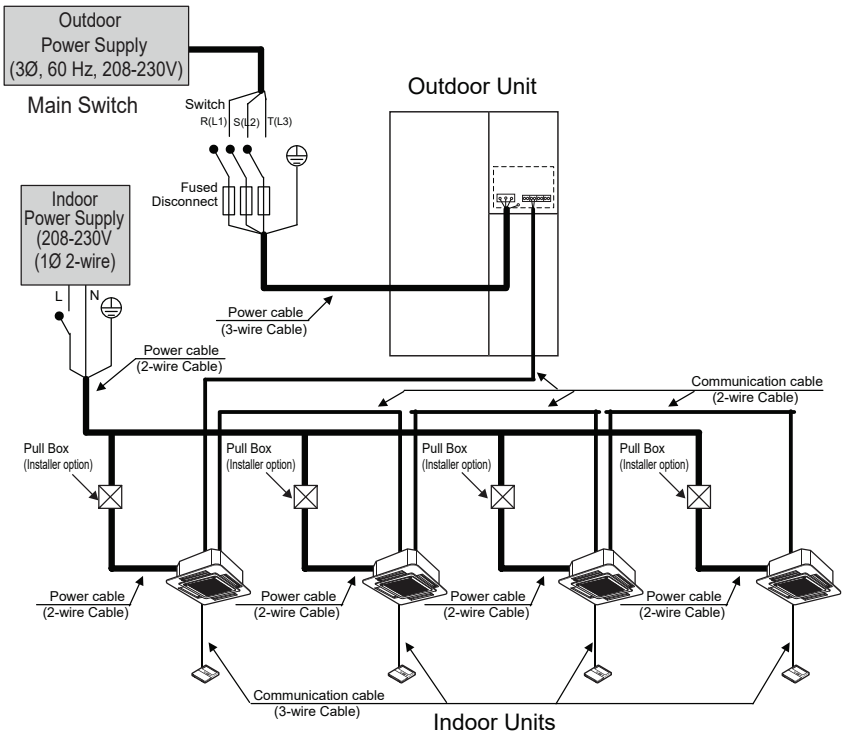
ELECTRICAL CONNECTIONS

ELECTRICAL CONNECTIONS

Note:

Refer to the Product Data section for dimensional drawings, wiring, and refrigerant piping diagrams for the exact locations of the piping and electrical connection locations.

Figure 15: Multi V S Three-Phase Power Wiring / Communications Cable Connections Example.



⚠DANGER

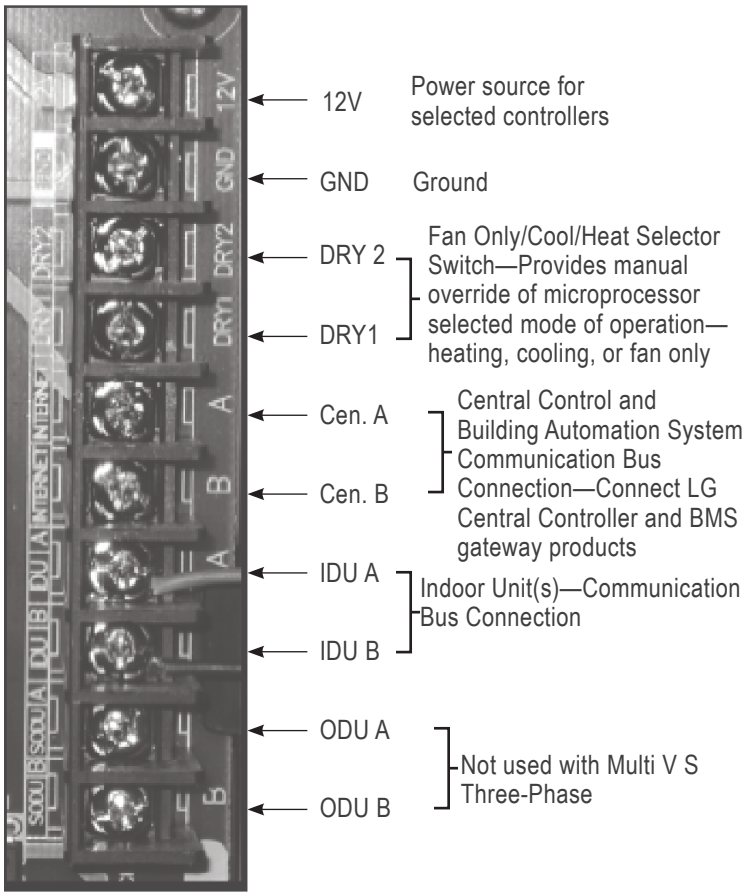
Refer to electrical data table for full load ampere ratings. Properly size all circuit breakers / fuses, wiring and field provided components per local codes. There is risk of fire, electric shock, explosion, physical injury or death.

- For power wiring, use solid or stranded that must comply with all local and national electrical codes.
- Connect the communications cable between indoor units using a daisy chain configuration only. “Star” or “home run” control wiring connections involving soldering or wire caps are not permitted.
- Communication cable between outdoor unit to indoor units must be a minimum of 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the outdoor unit chassis only. ⃠ Do not ground the outdoor unit to indoor units communication cable at any other point. Wiring must comply with all applicable local and national codes.
- Provide separate conduits for control wiring and power wiring.
- Power and communications cables must not be routed in the same conduit and must be routed in a manner that keeps them a minimum of two (2) inches apart.
- Connect outdoor unit terminal IDU-A to the odd numbered indoor unit terminal. Terminal “A” on the indoor units can be tagged 3(A) or 5(A).
- Connect outdoor unit terminal IDU-B to indoor unit terminal “B”. Terminal “B” on the indoor units can be tagged 3(B) or 5(B).
- Maximum allowed length of indoor unit communication cable is 984 feet.

⚠ WARNING

- *Ground wiring is required to prevent accidental electrical shock during current leakage. ⃠ Do not connect the ground line to the pipes.*
- *Install a main shutoff switch that interrupts all power sources simultaneously.*
- *If the system operates in reversed phase, it will break the compressors and other components.*
- *If there is a possibility of reversed phase, phase loss, momentary blackout, or the power goes on and off while the system is operating, install a field-supplied phase loss protection circuit. Operating the system in reverse phase will break the compressor and other unit components.*
- *The GND terminal at the main PCB is a negative terminal for dry contact, not a ground.*

Figure 16: Communications Wiring Terminals (Appearance will Vary)..



Note:

- *Ground wiring is required to prevent communication problems from electrical noise and motor current leakage.*
- *Make sure that the terminal numbers match (A to A, B to B).*
- *Communication cable between outdoor unit to indoor units must be 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the outdoor unit chassis only. ⃠ Do not ground the outdoor unit to indoor units communication cable at any other point. Wiring must comply with all applicable local and national codes.*
- *Maintain polarity throughout the communication network.*

Figure 17: Multi V S Three-Phase ARUN072BSS5 / ARUN096BSS5 Electrical Component Location.

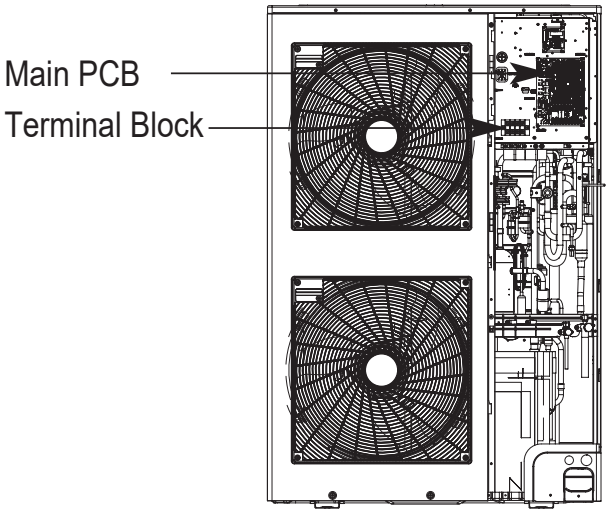
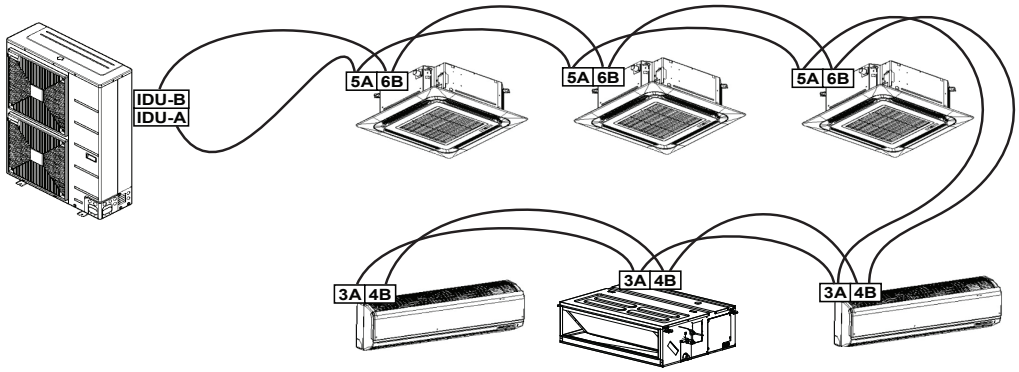


Figure 18: Multi V Three-Phase ARUN072BSS5 / ARUN096BSS5 for Heat Pump Operation (Daisy-Chain Power Wiring / Communications Cable Example).



⚠ WARNING

- *Ground wiring is required to prevent accidental electrical shock during current leakage. ⃠ Do not connect the ground line to the pipes. There is risk of fire, electric shock, explosion, physical injury or death.*
- *Install a main shutoff switch that interrupts all power sources simultaneously. There is risk of fire, electric shock, explosion, physical injury or death.*
- *Communication cable between outdoor unit to indoor units must be 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the outdoor unit chassis only. ⃠ Do not ground the outdoor unit to indoor units communication cable at any other point. Wiring must comply with all applicable local and national codes. Inadequate connections will generate heat, cause a fire, and physical injury or death.*
- *The GND terminal at the main PCB is a negative terminal for dry contact, not a ground. Inadequate connections will generate heat, cause a fire, and physical injury or death.*

Note:

- *Ground wiring is required to prevent communication problems from electrical noise and motor current leakage.*
- *Maintain polarity throughout the communication network. The system will malfunction if not properly wired.*
- *If the system operates in reversed phase, it will break the compressors and other components.*
- *If there is a possibility of reversed phase, phase loss, momentary blackout, or the power goes on and off while the system is operating, install a field-supplied phase loss protection circuit. Operating the system in reverse phase will break the compressor and other unit components.*

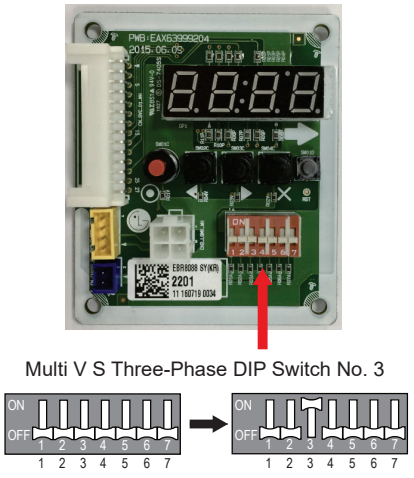
Generation 4 Indoor Units

LG's indoor units are designated Generation 4 (Gen 4). For Gen 4 indoor units to operate with Gen 4 indoor unit features, the air conditioning system must meet the following requirements:

- All indoor units and the air unit must be Gen 4 or higher.
- The air unit must have Gen 4 or higher software factory or field installed.
- Air unit DIP switch 3 must be set to ON (factory default setting is OFF).
- All controllers must support Gen 4 indoor unit features.

The figure at right shows the outdoor unit DIP switch. The air unit, indoor units, and controllers in a system must be Gen 4 compatible or the system will not operate with Gen 4 indoor unit features.

Figure 19: Location and Setting of Multi V S Three-Phase Outdoor Unit DIP Switch 3.



PIPING LIMITATIONS AND PLACEMENT CONSIDERATIONS

PIPING LIMITATIONS

The following pages present Multi V S Three-Phase piping limitations and are for illustrative purposes only. Designers MUST use LATS when designing LG VRF systems.

Figure 20: Typical Multi V S Three-Phase Heat Pump System Building Layout Listing the Piping Limitations — When the Outdoor Unit is Above the Indoor Units.

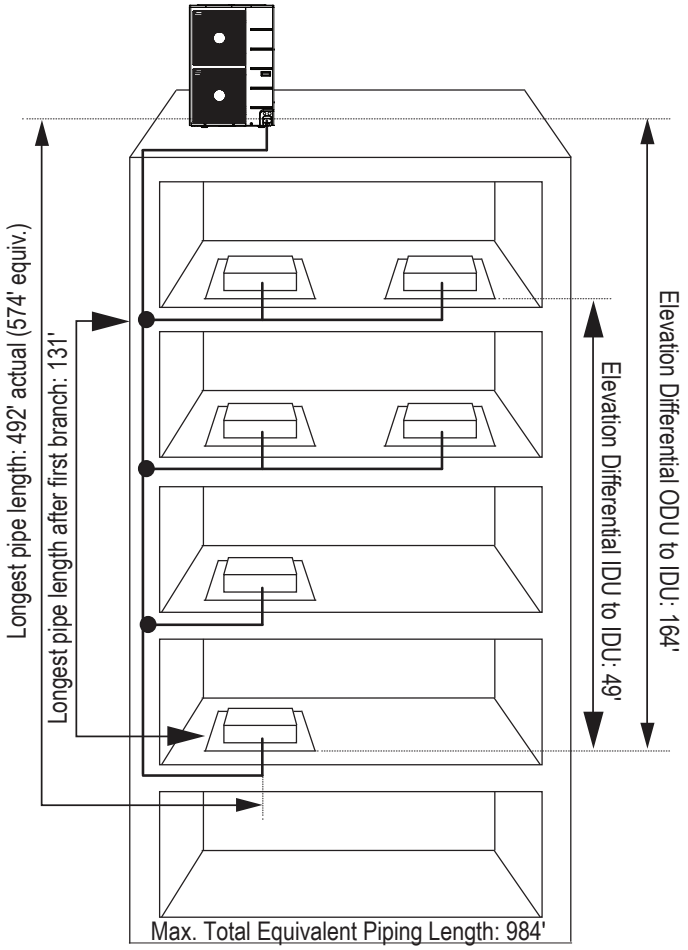


Figure 21: Typical Multi V S Three-Phase Heat Pump System Building Layout Listing the Piping Limitations — When the Outdoor Unit is Below the Indoor Units.

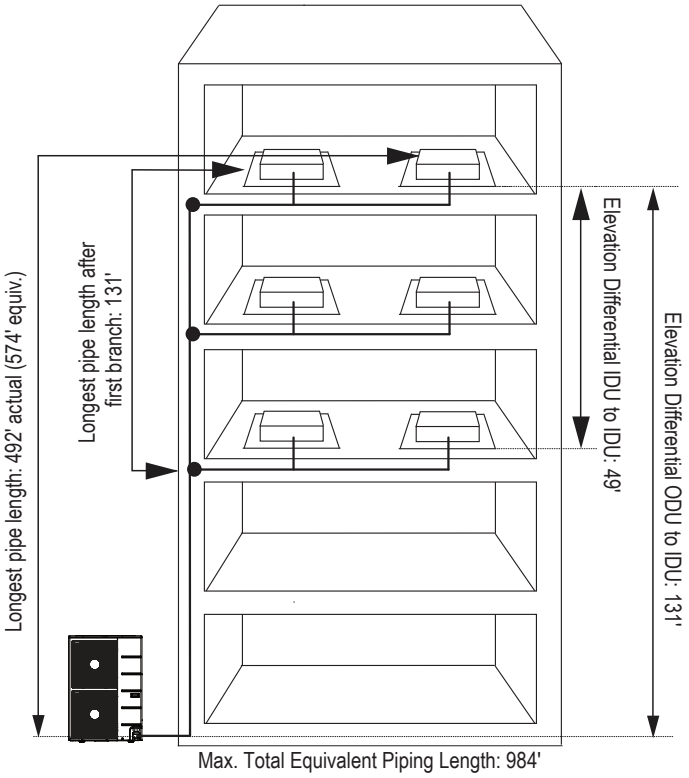


Table 9: Piping Limitations for Multi V S Three-Phase Heat Pump Operation (See next page).

Length	Total pipe length	Longest actual pipe length	Equivalent pipe length1
	A + ΣB + ΣC ≤984 feet	≤492 feet	≤574 feet
ℓ	Longest pipe length after first branch		
	≤131 feet		
Elevation1	Elevation differential (Outdoor unit ↔ Indoor unit)		
	When the Outdoor unit is Positioned Higher than the Indoor Units	When the Outdoor unit is Positioned Lower than the Indoor Units	
	≤164 feet	≤131 feet	
Elevation2	Elevation differential (Indoor unit ↔ Indoor unit)		
	≤49 feet		
Distance between fittings and indoor units	≥20 inches		
Distance between fittings and Y-Branches / Headers	≥20 inches		
Distance between two Y-Branches / Headers	≥20 inches		

[1]Assume equivalent pipe length of Y-branch is 1.6 feet, and equivalent pipe length of header is 3.3 feet.

PIPING LIMITATIONS

The following pages present Multi V S Three-Phase piping limitations and are for illustrative purposes only. Designers MUST use LATS when designing LG VRF systems.

Example of Pipe Sizing

Example: Seven (7) indoor units connected

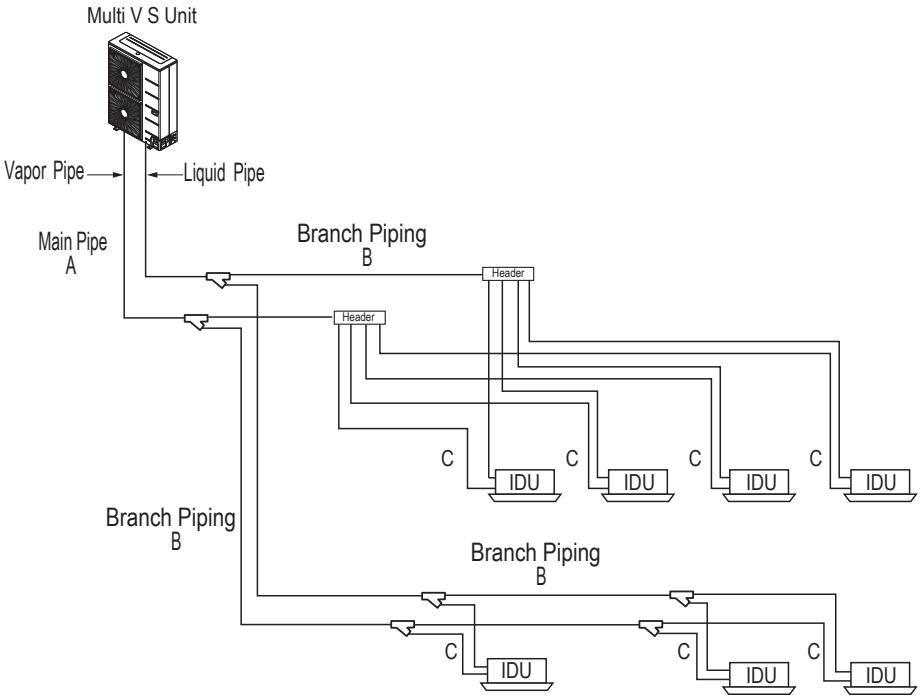
Multi V S Three-Phase Outdoor Unit.

IDU: Indoor Units.

A: Main Pipe from Multi V S Three-Phase Outdoor Unit to Y-branches.

B: Branch Piping.

C: Branch Piping to Indoor Unit (IDU).



Note:

- *Always reference the LATS Multi V software report.*
- *Connection piping from branch to branch cannot exceed the main pipe diameter (A) used by the outdoor unit.*
- *Install the Headers so that the pipe distances between the between the connected indoor units are minimized. Large differences in pipe distances can cause indoor unit performances to fluctuate.*
- *Indoor units must be installed at a lower position than the Header.*
- ⃠ *Y-branches cannot be used after Headers.*

Table 10: Main Pipe (A) Diameters from Multi V S Three-Phase to First Y-branch.

ODU Capacity (ton)	Pipe diameter when pipe length is ≤295 Feet Equivalent		Pipe diameter when pipe length is ≥295 Feet Equivalent	
	Liquid pipe (inches OD)	Vapor pipe (inches OD)	Liquid pipe (inches OD)	Vapor pipe (inches OD)
6.0	3/8Ø	3/4Ø	1/2Ø	7/8Ø
8.0	3/8Ø	7/8Ø	1/2Ø	1-1/8Ø

Table 11: Branch Pipe (B) Diameters from Y-branch to Y-branch / Header..

Downstream Total Capacity of IDUs (Btu/h)[1]	Liquid pipe (inches OD)	Vapor pipe (inches OD)
≤19,100	1/4Ø	1/2Ø
≤54,600	3/8Ø	5/8Ø
≤76,400	3/8Ø	3/4Ø
≤124,200	3/8Ø	7/8Ø

Table 12: Indoor Unit Connecting Pipe from Branch (C).

Indoor Unit Capacity[1]	Liquid pipe (inches OD)	Vapor pipe (inches OD)
≤19,100	1/4Ø	1/2Ø
≤54,600	3/8Ø	5/8Ø
≤76,400	3/8Ø	3/4Ø
≤95,900	3/8Ø	7/8Ø

[1]9,600-24,200 Btu/h 4-way 3 feet x 3 feet Cassette and 15,400-24,200 Btu/h High Static Ducted indoor units have Ø3/8 (liquid) and Ø5/8 (vapor).

Conditional Applications

Conditional applications are computed in LATS. See below for an explanation of when pipes are upsized.

If the equivalent length between the first Y-branch to the farthest indoor unit is >131 feet (up to 295 feet maximum):

- Pipe segment diameters between the first Y-branch and the second Y-branch must be sized up by one. This applies to both liquid and vapor pipes. If the next size up is not available, or if the piping segment diameters are the same as main pipe (A) diameters, sizing up is not possible.
- While calculating the entire refrigerant pipe length, pipe lengths for ΣB must be multiplied by two: A+(ΣBx2)+ΣC ≤984 feet.
- Length of pipe (C) from each indoor unit to the closest Y-branch or header ≤131 ft.
- [Length of pipe from outdoor unit to farthest indoor unit (A+B+C)] - [Length of pipe from outdoor unit to closest indoor unit (A+B+C)] ≤131 feet.

If the pipe (B) diameters after the first branch are bigger than the main pipe (A) diameters, pipe (B) must be changed to match main pipe (A) sizes.

SELECTING THE BEST LOCATION FOR THE OUTDOOR UNIT(S)

Selecting the Best Location for the Outdoor Unit(s)

⚠ DANGER

- ⃠ *Do not install the unit in an area where combustible gas will generate, flow, stagnate, or leak. These conditions can cause a fire, resulting in bodily injury or death.*
- ⃠ *Do not install the unit in a location where acidic solution and spray (sulfur) are often used as it can cause bodily injury or death.*
- ⃠ *Do not use the unit in environments where oil, steam, or sulfuric gas are present as it can cause bodily injury or death.*

⚠ CAUTION

When deciding on a location to place the outdoor unit, be sure to choose an area where run-off from defrost will not accumulate and freeze on side-walks or driveways which will create unsafe conditions. Properly install and insulate any drain hoses to prevent the hose from freezing, cracking, leaking, and causing unsafe conditions from frozen condensate.

⚠ WARNING

Install a fence to prevent vermin from crawling into the unit or unauthorized individuals from accessing it. Vermin and unauthorized individuals will cause a fire, electric shock, physical injury or death. Follow the placement guidelines set forth in "Clearance Requirements".

Note:

Install a fence to prevent vermin from crawling into the unit or unauthorized individuals from accessing it. Vermin and unauthorized individuals will damage the unit. Follow the placement guidelines set forth in "Clearance Requirements".

Select a location for installing the outdoor unit that will meet the following conditions:

- Where there is enough strength to bear the weight of the outdoor unit.
- A location that allows for optimum air flow and is easily accessible for inspection, maintenance, and service.
- Where piping between the outdoor unit and indoor unit(s) are within allowable limits.
- Include space for drainage to ensure condensate flows properly out of the unit when it is in heating mode. ⃠ Avoid placing the outdoor unit in a low-lying area where water could accumulate.
- If the outdoor unit is installed in a highly humid environment (near an ocean, lake, etc.), ensure that the site is well-ventilated and has a lot of natural light (Example: Install on a rooftop).

⃠ Do Not's

- *Where it will be subjected to direct thermal radiation from other heat sources, or an area that would expose the outdoor unit to heat or steam like discharge from boiler stacks, chimneys, steam relief ports, other air conditioning units, kitchen vents, plumbing vents, and other sources of extreme temperatures.*
- *Where high-frequency electrical noise / electromagnetic waves will not affect operation.*
- *Where operating sound from the unit will disturb inhabitants of surrounding buildings.*
- *Where the unit will be exposed to direct, strong winds.*
- *Where the discharge of one outdoor unit will blow into the inlet side of an adjacent unit (when installing multiple outdoor units).*

Planning for Snow and Ice

To ensure the outdoor unit operates properly, certain measures are required in locations where there is a possibility of heavy snowfall or severe windchill or cold:

1. Prepare for severe winter wind chills and heavy snowfall, even in areas of the country where these are unusual phenomena.
2. Position the outdoor unit so that its airflow fans are not buried by direct, heavy snowfall. If snow piles up and blocks the airflow, the system will malfunction.
3. Remove any snow that has accumulated four (4) inches or more on the top of the outdoor unit.
4. In climates that can experience significant snow buildup, mount the outdoor unit on a raised, field-provided platform or stand. The raised support platform must be high enough to allow the unit to remain above possible snow drifts, and must be higher than the maximum anticipated snowfall for the location.
5. Design the mounting base to prevent snow accumulation on the platform in front or back of the unit frame.
6. Provide a field fabricated snow protection hood to keep snow and ice and/or drifting snow from accumulating on the coil surfaces.
7. Install a hail guard kit and air guide accessories (sold separately) to prevent snow or rain from accumulating on the fan inlet / outlet guards.
8. Consider tie-down requirements in case of high winds or where required by local codes.

⚠ CAUTION

When deciding on a location to place the outdoor unit, be sure to choose an area where run-off from defrost will not accumulate and freeze on sidewalks or driveways, which will create unsafe conditions. Properly install and insulate any drain hoses to prevent the hose from freezing, cracking, leaking, and causing unsafe conditions from frozen condensate.

SELECTING THE BEST LOCATION FOR THE OUTDOOR UNIT(S)

Planning for Snow and Ice, continued.

Note:

Choose an area where run-off from defrost mode will not accumulate and freeze on sidewalks or driveways. Properly install and insulate any drain hoses to prevent the hose from freezing, cracking, leaking, and damaging the outdoor unit.

Note:

The system will take longer to provide heat, or heating performance will be reduced in winter if the outdoor unit is installed:

1. *In a narrow, shady location.*
2. *Near a location that has a lot of ground moisture.*
3. *In a highly humid environment.*
4. *In an area in which condensate does not drain properly.*

Wind Protection

If the outdoor unit is placed on a roof, position it with the compressor end (no coil surface) in the direction of the prevailing wind as shown in the figure at right. In cooler climates, it can be beneficial to position the unit in direct sunlight to assist with defrost operations.

If the outdoor unit is not placed on a roof, place it on the leeward side of the building or in a location where the unit will not be exposed to constant wind.

If placement exposes the unit to constant wind activity, construct a wind break in front of the unit. Follow the placement guidelines set forth in “Clearance Requirements”.

Figure 22: Prevailing Wind Direction.

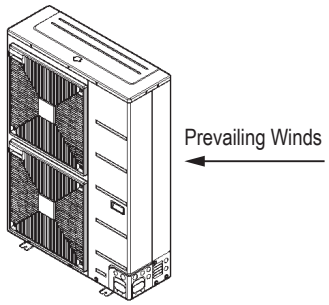
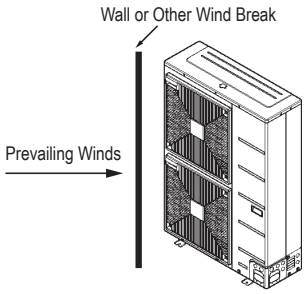


Figure 23: Leeward Side of the Building.

Figure 24: Wind Break.



Tie-Downs and Wind Restraints

The strength of Multi V frames is adequate to be used with field-provided wind restraint tie-downs. The overall tie-down configuration must be approved by a local professional engineer. Always refer to local code when designing a wind restraint system.

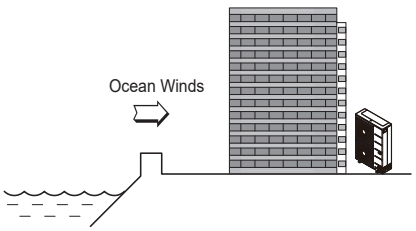
Mounting Platform

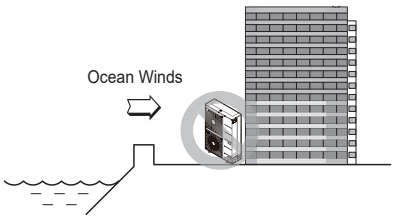
The underlying structure or foundation must be designed to support the weight of the unit. ⃠ Avoid placing the unit in a low lying area where water will accumulate.

Oceanside Installation Precautions

Note:

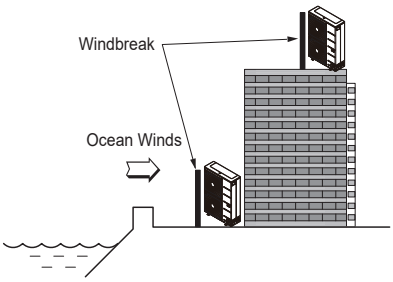
Ocean winds will cause corrosion, particularly on the condenser and evaporator fins, which, in turn could cause product malfunction or inefficient performance.





- ⃠ Avoid installing the outdoor unit where it would be directly exposed to ocean winds.
- Install the outdoor unit on the side of the building opposite from direct ocean winds.
- Select a location with good drainage.
- Periodically clean dust or salt particles off of the heat exchanger with water.

If the outdoor unit must be placed in a location where it would be subjected to direct ocean winds, install a concrete windbreaker strong enough to block any winds. Windbreaker height and width must be more than 150% of the outdoor unit, and be installed at least 27-1/2 inches away from the outdoor unit to allow for airflow.



Note:

Additional anti-corrosion treatment will need to be applied to the outdoor unit at oceanside locations.

OUTDOOR UNIT CLEARANCE REQUIREMENTS

Minimum Clearance Requirements for Multi V S Three-Phase ARUN072BSS5 / ARUN096BSS5 Outdoor Units

Proper clearance for the outdoor unit coil is critical for proper unit operation. When installing the outdoor unit, consider service, inlet and outlet and minimum allowable space requirements. The figures below and on the next page illustrate clearance requirements for various installation scenarios. Use the hot isle / cold isle approach when placing multiple units in close proximity to each other. Outdoor unit fans draw air from the back of the unit and discharges out the front. Place units back to back and face to face.

Note:

- ⃠ *Do not place the unit where animals and/or plants will be in the path of the warm air, or where the warm air and / or noise will disturb neighbors.*
- *Installation clearances must comply with local building codes.*
- *All figures not to scale.*
- ⃠ *Never place multiple units facing back to front or front to back as shown immediately below, left or high and low system pressure problems will occur.*

Figure 25: Improper Outdoor Unit Placement.

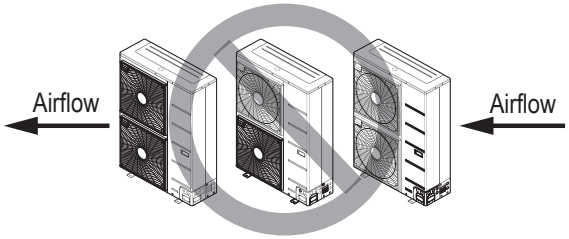


Figure 26: Proper Outdoor Unit Placement and Clearances.

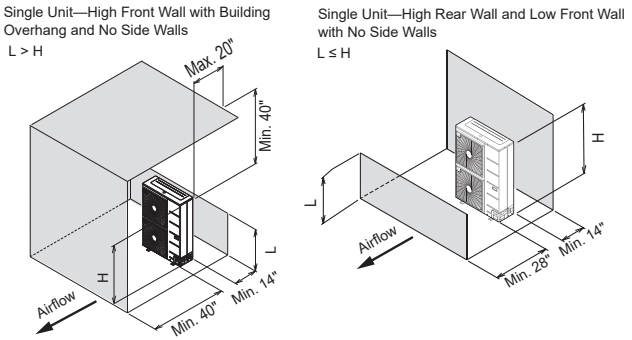
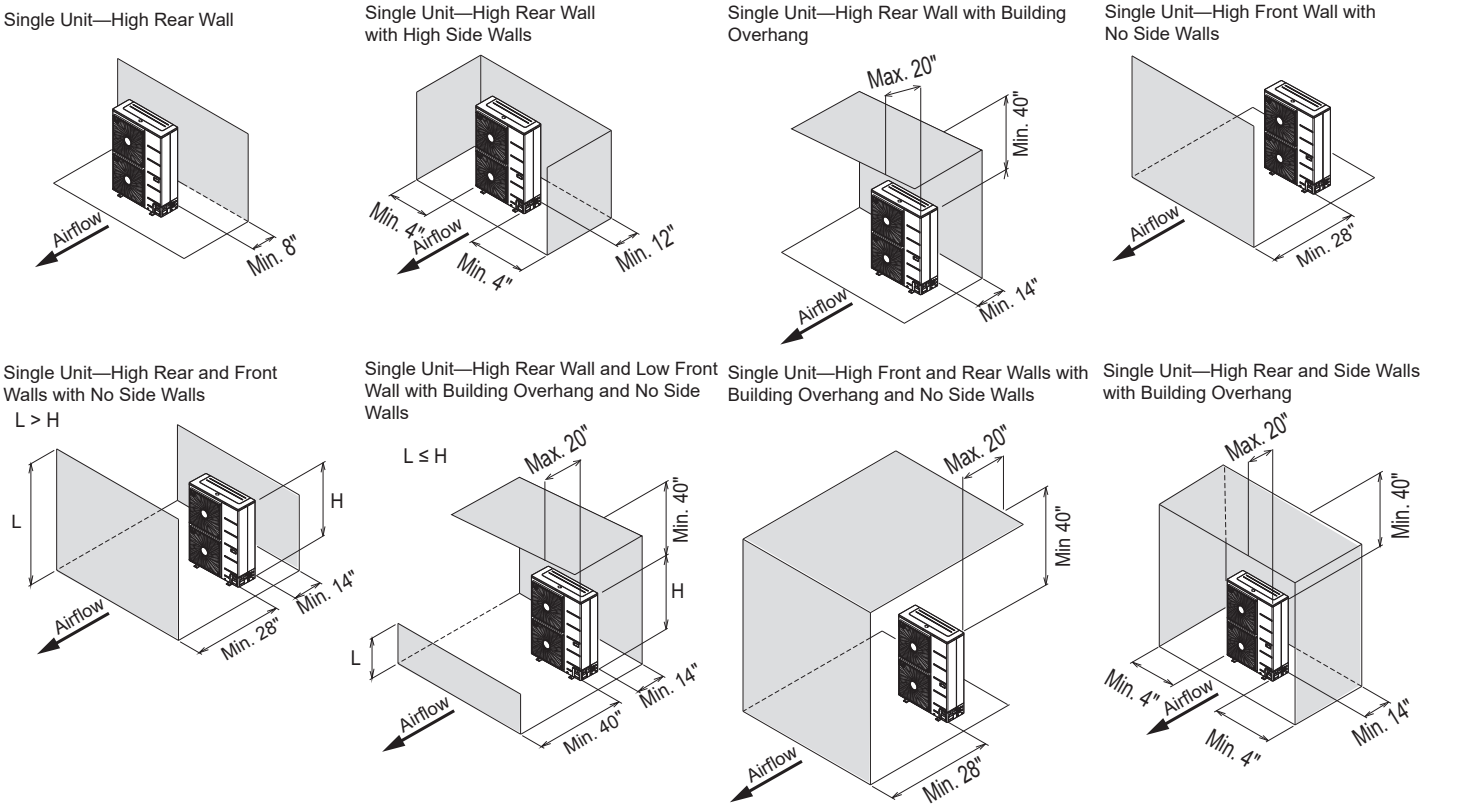


Figure 27: Proper Outdoor Unit Placement and Clearances, continued.



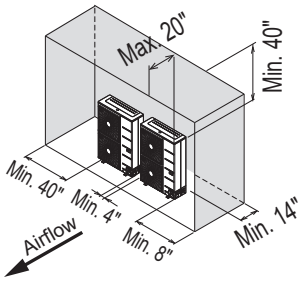
OUTDOOR UNIT CLEARANCE REQUIREMENTS

Note:

- *Installation clearances must comply with local building codes.*
- *All figures not to scale.*

Figure 28: Proper Outdoor Unit Placement and Clearances, continued.

Side by Side—High Rear and Side Walls with Building Overhang



Side by Side—High Rear and Front Walls with Building Overhang

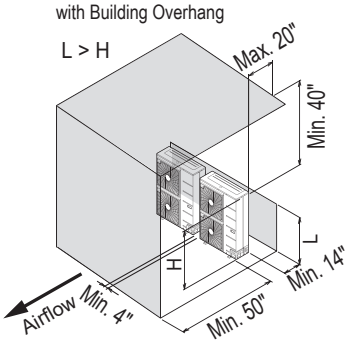
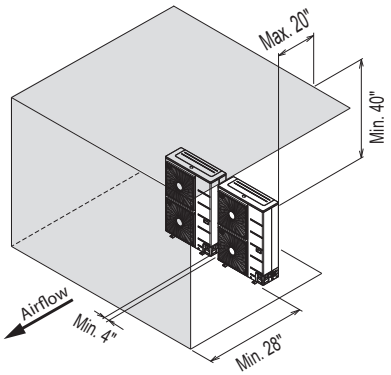
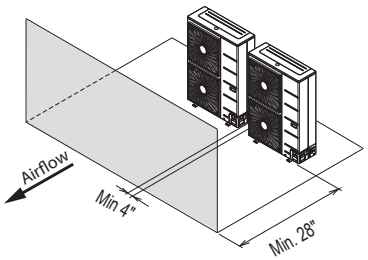


Figure 29: Proper Outdoor Unit Placement and Clearances, continued.

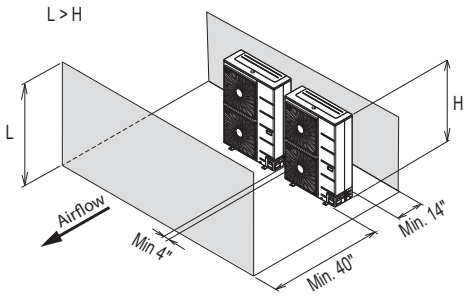
Side by Side —High Front Wall with Building Overhang and No Side or Rear Walls



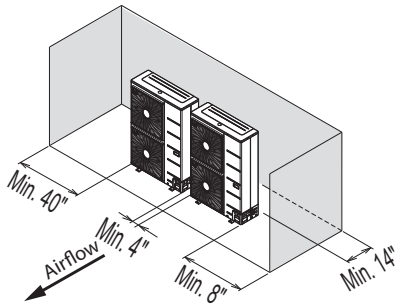
Side by Side—High Front Wall with No Side Walls



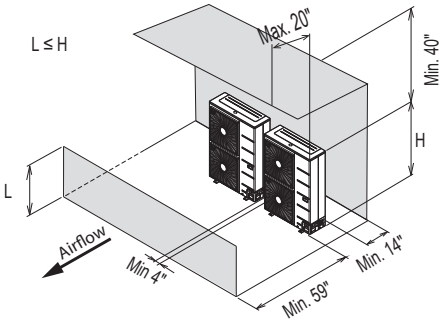
Side by Side—High Front and Rear Walls with No Side Walls



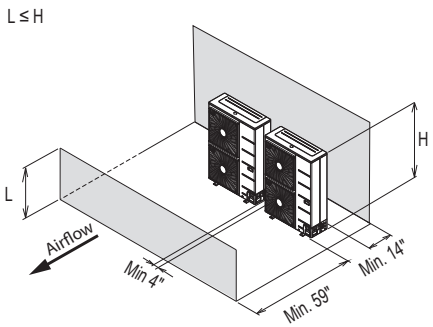
Side by Side—High Rear and Side Walls



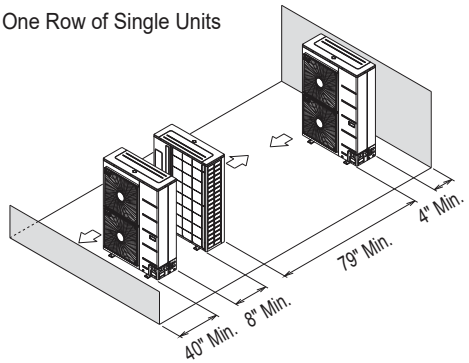
Side by Side—High Rear Wall and Low Front Wall with Building Overhang and No Side Walls



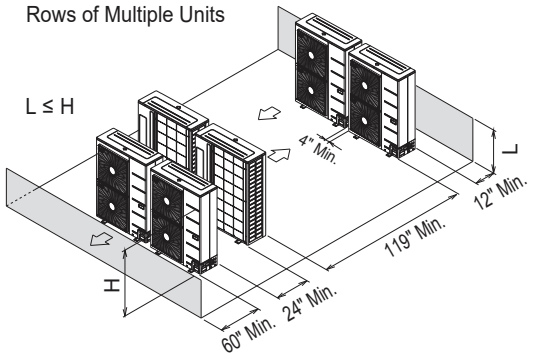
Side by Side—High Rear Wall and Low Front Wall with No Side Walls



One Row of Single Units



Rows of Multiple Units



INSTALLING OUTDOOR UNITS INDOORS

Installing Outdoor Units Indoors

LG Multi V outdoor units are engineered to be mounted outdoors and include technology designed to minimize the negative effects of winter weather's freezing rain, sleet, and snow. Some building projects, however, necessitate placing the HVAC outdoor units indoors:

- Lack of ground space.
- Lack of an appropriate outdoor location that meets system design requirements.
- When mounting on the roof is not an option due to a lack of roof space.
- Roof warranty will be voided if mechanical equipment is placed on the membrane.
- On retrofit projects, a former chiller / boiler / air handler equipment room, mechanical area, or penthouse already exists.
- Where a project has vertical, self-contained VAV air handlers on each floor (in lieu of a centralized mechanical room).
- To curtail the potential need for redundant zone heating devices such as wall-fin radiators or duct heaters.
- In extremely cold environments where there is a significant amount of run-time at temperatures well below freezing outside the outdoor unit ambient air temperature range published in this engineering manual.

Benefits of Installing Outdoor Units Indoors

- Shelters the outdoor unit from direct exposure to prevailing winds that decrease the heating capability of the outdoor unit.
- Protects equipment from freezing precipitation and / or potential ice build-up that could hinder unit operation.
- Maintains coil heat transfer efficiency by reducing the number of and shortening the cycle time for defrost operation.
- Easier maintenance and servicing during inclement weather.
- When mounted in a fully enclosed space, limiting the ambient air temperature will allow the Multi V system designer to eliminate oversizing the outdoor unit to compensate for loss of capacity at low ambient temperatures.
- Can also curtail the need to provide inefficient redundant zone heating devices such as wall-fin radiators and second-stage ancillary heating devices.

Design Considerations Include:

- Enclosure types and elements such as louvers, rain hoods, dampers and controls, heating methods and sizing of heating devices
- Heating strategies
- Duct design
- Condensate handling

General Guidelines

- Follow ASHRAE 62.1 design guidelines.
- Depending on the project / application, a roof over the outdoor units in combination with a wind break could be all that is necessary.
- Consider the potential for snow accumulation near louvers / roof openings. Outside air intakes and discharge ducts/louvers must be engineered to clear anticipated snow accumulation levels by at least one (1) foot.
- In situations where operation is anticipated at temperatures of -13°F and lower, ancillary heat must be provided to heat the outdoor unit coils to assure continuous compressor operation and heating.

It will be necessary to use an air guide accessory to prevent discharge air from short-cycling back to the coil inlet.

- Another option is to field manufacture ductwork and mount on top of the unit to encompass the outdoor unit fan discharge and connect to the exterior discharge grille on the building.
- ⃠ Avoid using a single duct on multi-fan units to prevent short cycling. Provide a dedicated duct for each outdoor unit fan discharge.
- Consider the direction of prevailing winds and opening placement. If possible, locate inlet openings upwind of discharge openings and other exhaust outlets.
- When inlet and outlet openings are placed on the same wall, minimum distance between the two openings must be approximately three (3) feet (minimum distance varies significantly with variations in outlet opening face velocity).
- If roof-mounted ventilation openings are used, strategically locate the inlet ventilation opening(s) upwind of the outlet opening(s).
- Discharge and supply ductwork must be designed to avoid weather related long periods of water entrainment and the potential for microbial growth.

Installing Outdoor Units Indoors, continued.

Provide a means to drain the condensate generated during heating mode and defrost cycle in addition to rainwater that infiltrates the inlet louver enclosed area.

- Install a field-provided drain pan under the outdoor units and provide a path to a nearby floor drain.
- If the ambient air temperature is expected to drop below 32°F in the enclosure, heat the bottom surface of the pan, drain line, and floor drain so that the condensate does not freeze before reaching the drain.

Note:

If the outdoor unit is installed indoors, its efficiency can drop and the system pressure can increase. This can cause the unit to short circuit, thus damaging the compressor and other components in the system.

Allow for ventilation intake and exhaust air based on maximum outdoor unit fan capacity.

- Select the size, type and orientation of architectural louvers with adequate "net free area" face velocity to ensure the total external static pressure from the outdoor unit fan does not exceed design limitations (see specification data tables).
- No obstructions must be placed in front of the louver that could hamper the free flow (throw) of air.
- Roof top openings and / or discharge and supply louvers must be equipped with screens to prevent bird and insect infiltration.

As always, the best solution for each project balances acceptable heating performance (considering local weather conditions), capital costs, life cycle energy consumption, and limitations set forth by local building codes. For more detailed information on how to design indoor spaces for LG Multi V outdoor units, see the white paper "Air-Source VRF Mechanical Room Design Considerations for Outdoor Unit Placement in Enclosures" on www.lghvac.com.

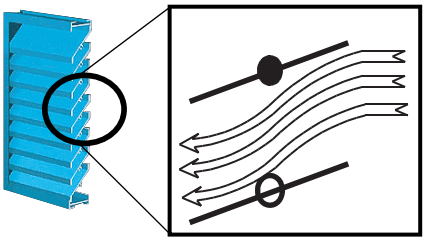
Note:

For detailed placement considerations and installation requirements for indoor units, refer to the specific Engineering and / or Installation Manuals.

Air Guide / Louver Recommendations for Outdoor Unit Enclosure

1. Outdoor Unit Enclosure: Manual Door Open Type.
2. Louver Angle: No More Than 20° Horizontally.
3. Space Between Louvers: More than 4 inches (Recommend).
4. Louver Shape: Wing or Plane Type.
5. Opening Ratio: At Least 80%.
6. Verify the static pressure range of the outdoor unit fan. Select the louvers to ensure the static pressure range from the outdoor unit fan does not exceed design limitations.
7. Consider the enclosure and static pressure loss if an insect screen is to be installed..

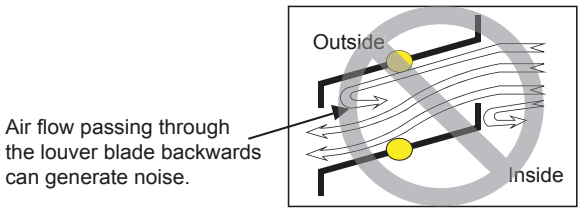
Figure 30: Proper Louver Example.



Note:

- *Open Rate and Inlet must be taken into consideration when designing the louvered outdoor unit enclosure.*
- *⃠ Do not use "S" type louvers.*
- *⃠ Do not use bent / damaged louvers; bent / damaged louvers impact air circulation.*

Figure 31: Improper S-Type Louver Example.

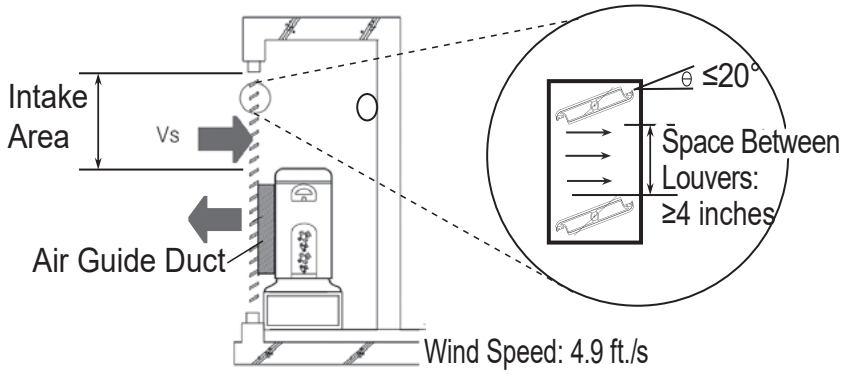


Note:

If the Louver Open Rate is Too Small

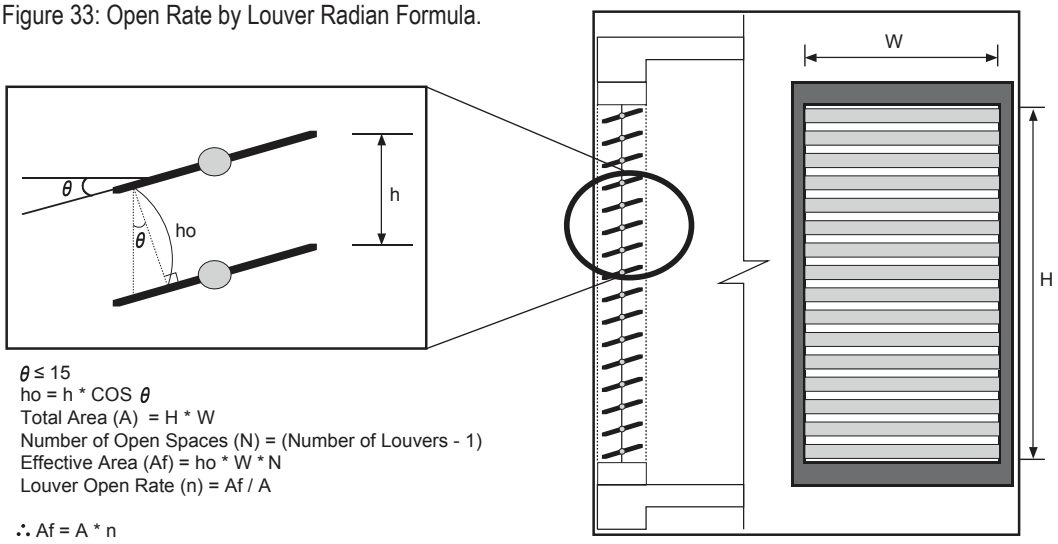
1. *Noise can occur because of the increased air velocity passing through the louver blade.*
2. *Noise can occur from louver blade vibrations.*
3. *A drop in outdoor unit fan performance (excess static pressure can cause a drop in outdoor unit performance and heat exchanger efficiency).*
4. *If the louver open rate is too small or there is insufficient air flow exchange, the air conditioner might stop operating.*

Figure 32: General Air Guide / Louver Diagram.



Open Rate by Louver Radian

Figure 33: Open Rate by Louver Radian Formula.



$\theta \leq 15$
$ho = h * COS\ \theta$
Total Area (A) = H * W
Number of Open Spaces (N) = (Number of Louvers - 1)
Effective Area (Af) = ho * W * N
Louver Open Rate (n) = Af / A

$\therefore Af = A * n$

Effective Cross Section Area

Minimum Outdoor Unit Clearances / Air Intake Area

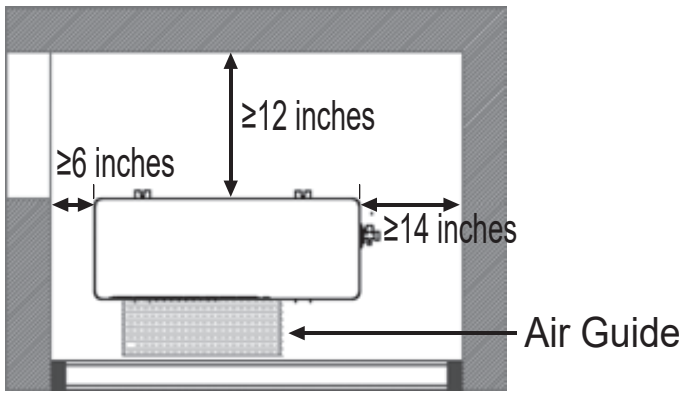
Note:

If an air guide / louvers are installed, ensure there is / are sufficient outdoor unit clearances / air intake area. If the clearances / air intake area do / does not follow manufacturer's guidelines, it can cause a reduction in outdoor unit efficiency and / or product malfunction / nonoperation.

Table 13: Minimum Air Intake Area.

Model Nos.	Minimum Intake Area (ft.^{2})
ARUN072BSS5 / ARUN096BSS5	15.5

Figure 34: Outdoor Unit Clearances When Air Guide / Louvers Are Installed.



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To access additional technical documentation such as submittals, indoor unit engineering manuals, installation, service, product data performance, general best practice, and building ventilation manuals, as well as white papers, catalogs, LATS software programs, and more, log in to www.lghvac.com.

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