R32

MULTI V™ S

THREE-PHASE OUTDOOR UNIT ENGINEERING MANUAL



Variable Refrigerant Flow Heat Pump Outdoor Units 6.0 and 8.0 Tons

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A summary list of safety precautions is on page 4.

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

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TABLE OF SYMBOLS

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

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



R32 Refrigerant

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

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

⚠ WARNING

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

⚠ CAUTION

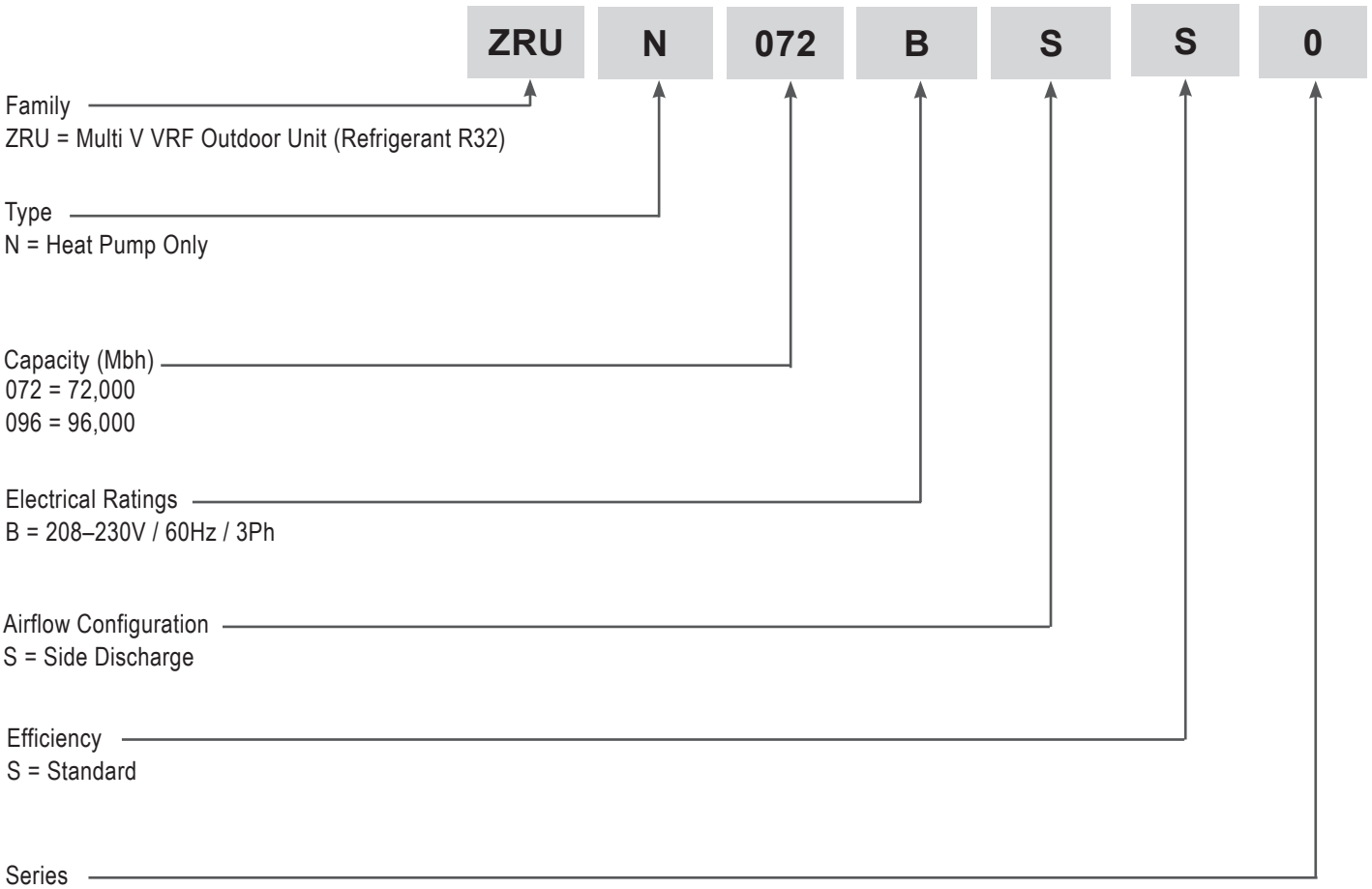
- *Piping wall thickness must comply with all applicable local, state, and federal regulations for the design pressures listed by the manufacturer. ⃠ Unapproved piping must not be used.*
- *To prevent piping from softening, ⃠ do not heat the piping more than necessary.*

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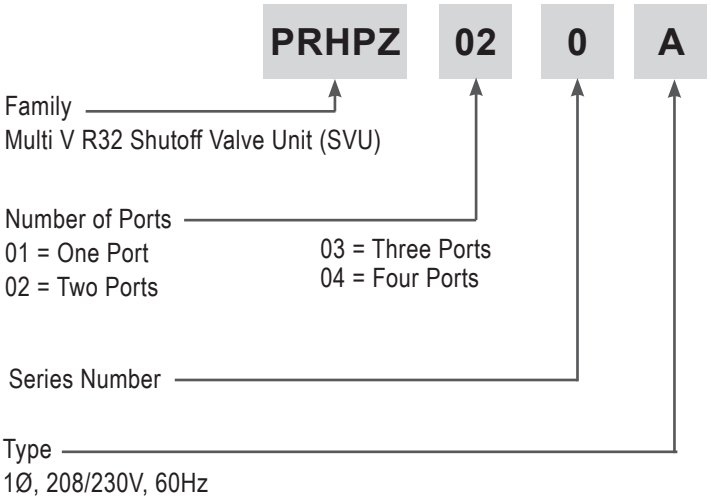
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NOMENCLATURE

Outdoor Units (ODU)



Shutoff Valve Units (SVU)



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LG AIR CONDITIONER TECHNICAL SOLUTION (LATS)

MULTI V S THREE-PHASE

LG Air Conditioner Technical Solution (LATS) Software

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

NOTICE

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

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



Formats

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

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

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

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

***Revit® is a registered mark of Autodesk, Inc.*

Features

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

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

The program can also:

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

NOTICE

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

NOTICE

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

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LATS Generates a Complete Project Report

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

Proper Design to Install Procedure

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

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

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

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

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

NOTICE

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.

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REFRIGERANT CHARGE WORKSHEET

MULTI V S THREE-PHASE

Multi V S Three-Phase System R32 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]	—	—		0.013	
2	Linear feet of 3/8" liquid line tubing[2]	—	—		0.036	
3	Linear feet of 1/2" liquid line tubing[2]	—	—		0.069	
4	Linear feet of 5/8" liquid line tubing[2]	—	—		0.103	
5	Linear feet of 3/4" liquid line tubing[2]	—	—		0.158	
6	Linear feet of 7/8" liquid line tubing[2]	—	—		0.210	
7	Linear feet of 1" liquid line tubing[2]	—	—		0.284	
8	Standard + Art Cool Mirror	SJ	5k to 15k		0.44	
9	Standard + Art Cool Mirror	SK	18k to 24k		0.51	
10	Standard	SR	30k to 36k		1.08	
11	1-Way Cassette	TC	7k to 18k		0.42	
12	2-Way Cassette	TS	18k to 24k		0.62	
13	4-Way 2' x 2' Cassette	TR	5k to 7k		0.33	
14	4-Way 2' x 2' Cassette	TR	9k to 12k		0.46	
15	4-Way 2' x 2' Cassette	TQ	15k to 18k		0.57	
16	4-Way 3' x 3' Cassette	TA	7k to 48k		1.23	
17	4-Way 3' x 3' Cassette	TB	7k to 15k		0.57	
18	High Static Ducted	M2	7k to 24k		0.64	
19	High Static Ducted	M3	28k		1.10	
20	High Static Ducted	B8	36k to 96k		1.83	
21	Mid Static Ducted	M2	36k to 42k		0.95	
22	Mid Static Ducted	M3	48k		1.10	
23	Low Static Ducted, Low Static Ducted Bottom Return	L1	7k to 9k		0.26	
24	Low Static Ducted, Low Static Ducted Bottom Return	L2	12k to 18k		0.37	
25	Low Static Ducted, Low Static Ducted Bottom Return	L3	24k		0.49	
26	Vertical / Horizontal Air Handling Unit	NA	12k to 30k		0.86	
27	Vertical / Horizontal Air Handling Unit	NB	36k to 48k		1.68	
28	Vertical / Horizontal Air Handling Unit	NC	54k to 60k		1.68	
29	Floor Standing	CE (U)	7k to 15k		0.31	
30	Floor Standing	CF (U)	18k to 24k		0.68	
31	**ADDITIONAL Refrigerant Charge Required** (Sum of lines 1 – 30					
32	Multi V S Three-Phase Outdoor Unit Factory Refrigerant Charge (Choose One) (lbs.)	ZRUN072BSS0	72,000		10.4	
		ZRUM096BSS0	96,000		10.4	
33	**FACTORY Outdoor Unit (ODU) Refrigerant Charge** (Factory refrigerant charge for the ODU in the system)					
34	**TOTAL SYSTEM CHARGE** Sum of ADDITIONAL Refrigerant Charge Required (line 31) and FACTORY ODU 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).

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OUTDOOR UNIT PRODUCT DATA

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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 R32. 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 10.4 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.

Figure 2: Multi V S Three-Phase Outdoor Unit.



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.

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 626 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).

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MECHANICAL SPECIFICATIONS

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.

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.

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GENERAL DATA

Specifications

MULTI V™ S
THREE-PHASE

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

Outdoor Unit Model No.		ZRUN072BSS0 6.0 Ton	ZRUN096BSS0 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)		23 to 122	23 to 122
Heating (°F WB)		-13 to +75	-13 to +75
Continuous Operating Range			
Cooling (°F DB)		23 to 118.4	23 to 118.4
Heating (°F WB)		23 to 61	23 to 61
Compressor			
Inverter Type / Quantity		Hermetically Sealed Scroll / 1	
Oil / Type		FW68L	
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 ~ 950	200 ~ 1,000
	Heating	200 ~ 950	200 ~ 1,000
External Static Pressure (in. WG)		0.12	0.12
Maximum Air Volume (CFM)		3,708 x 2	3,708 x 2
Unit Data			
Refrigerant Type		R32	R32
Refrigerant Control / Location		EEV / Indoor Unit	EEV / Indoor Unit
Max. Number Indoor Units / System[3]		13	16
Sound Pressure Levels dB(A)[4] (Cooling / Heating)		55 / 57	59 / 60
Net Unit Weight (lbs.)		345	345
Shipping Weight (lbs.)		376	376
Communication Cables[5,6]		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[7]			
Liquid Line Connection (in., OD)		Ø3/8 Braze	Ø3/8 Braze
Vapor Line Connection (in., OD)		Ø3/4 Braze	Ø3/4 Braze
Factory Charge lbs. of R32		10.4	10.4

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

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

[5]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.

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

[7]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.

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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	ZRUN072BSS0	1	17.6	2	1.2 x 2	24.4	40
8.0	ZRUN096BSS0	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.

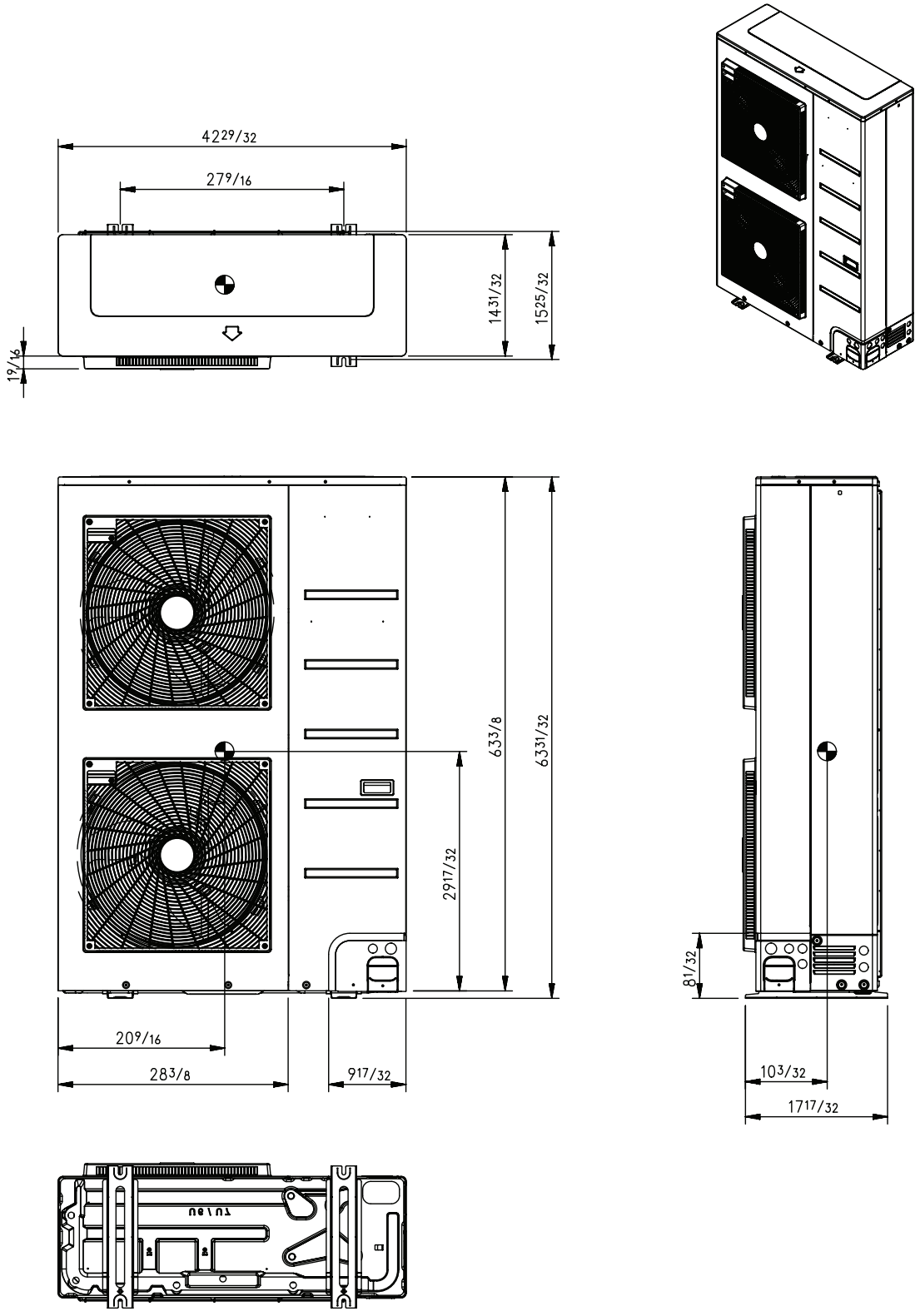
*SCCR rating: 5kA RMS Symmetrical.

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DIMENSIONS / CENTER OF GRAVITY

ZRUN072BSS0 and ZRUN096BSS0

MULTI V S THREE-PHASE

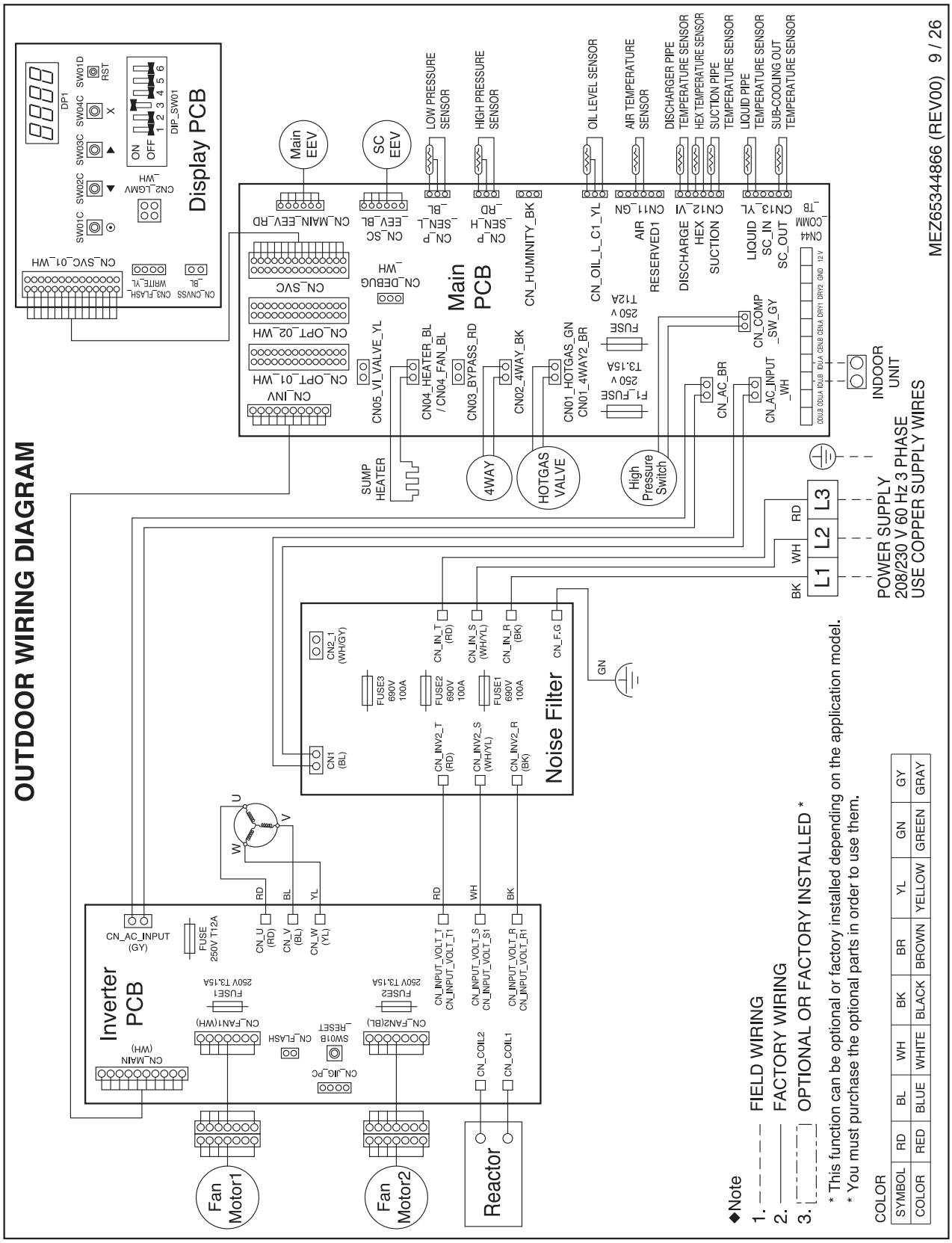


[Unit: inch]

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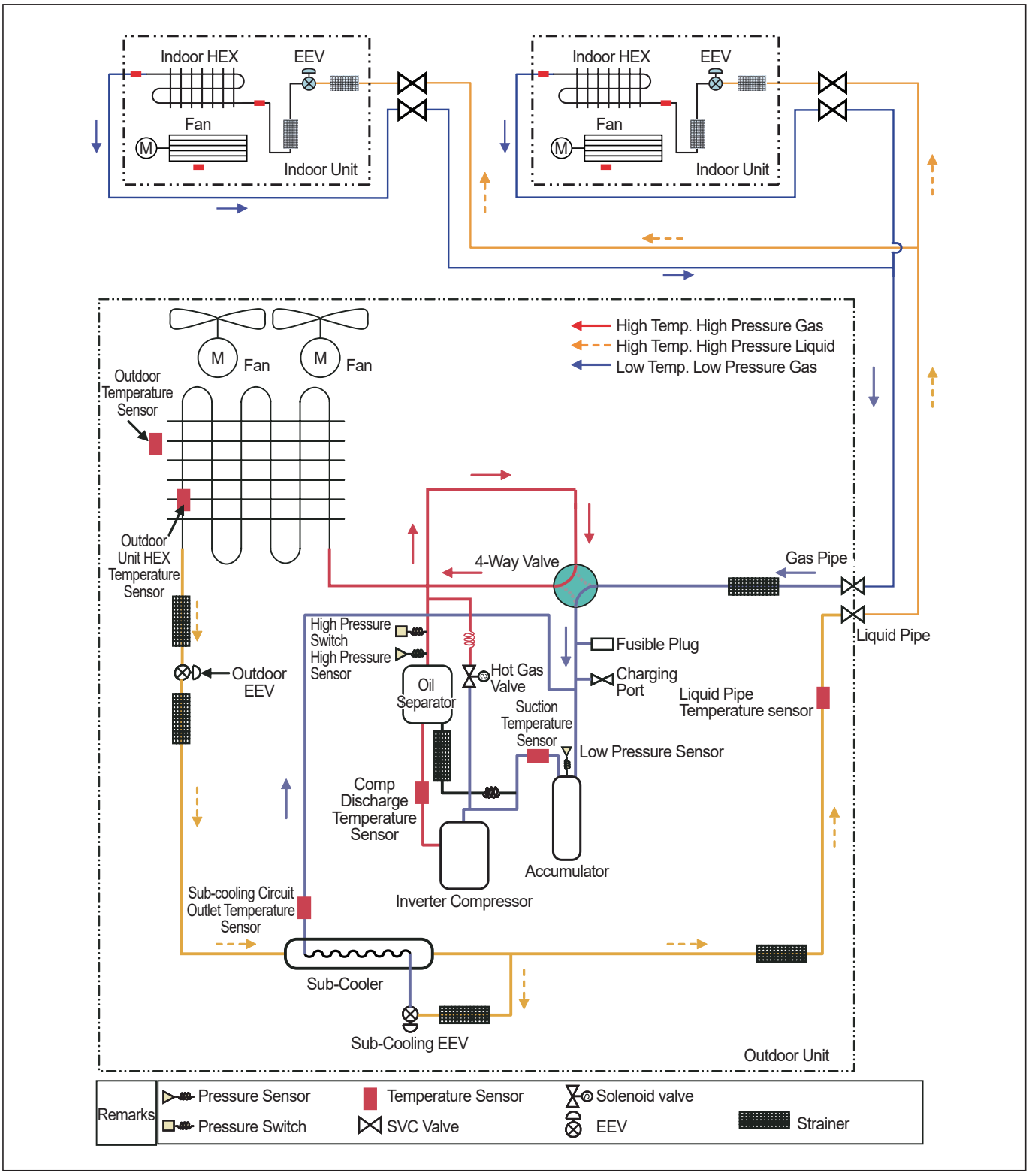
WIRING DIAGRAM

ZRUN072BSS0 and ZRUN096BSS0



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Cooling Operation



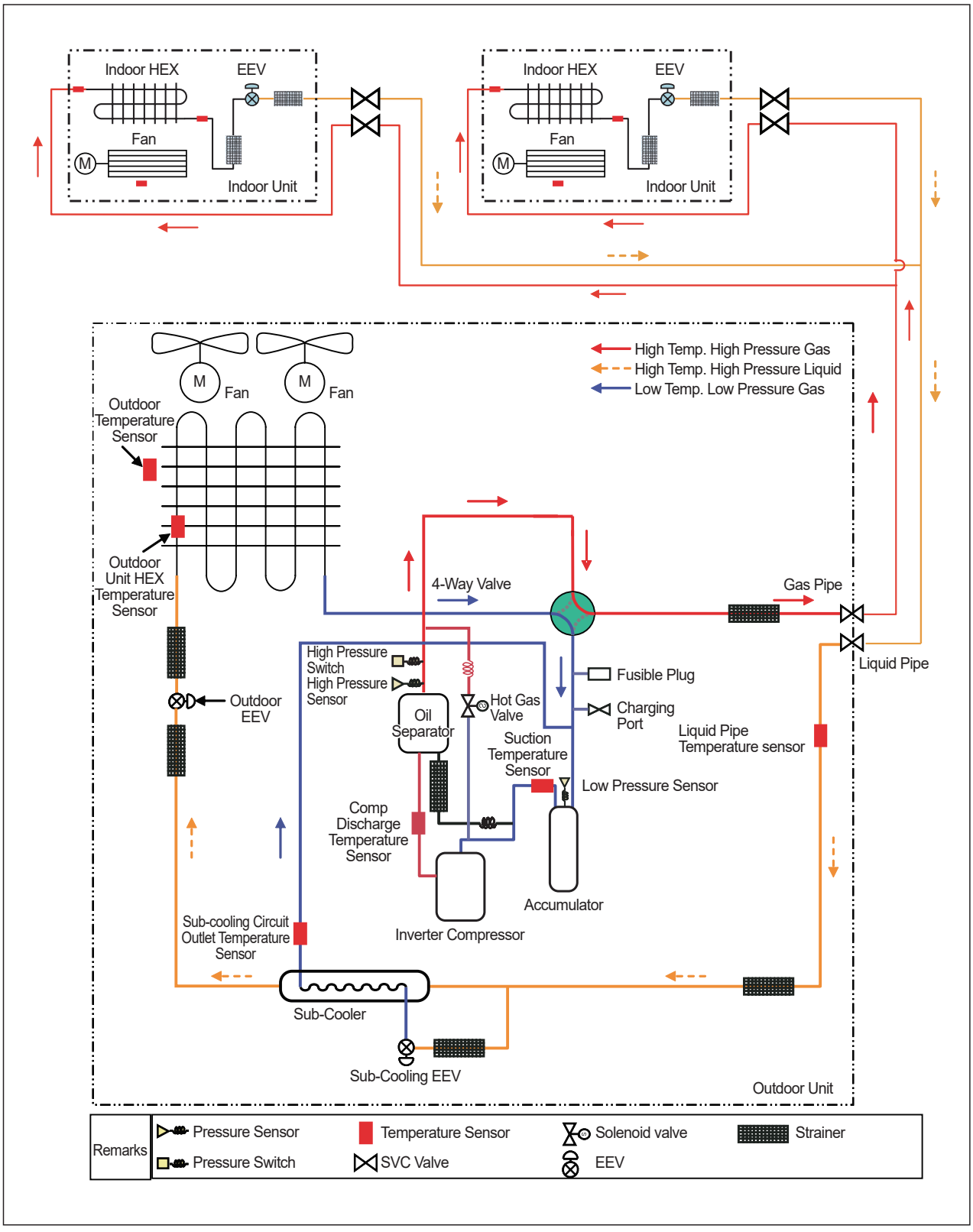
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REFRIGERANT FLOW DIAGRAMS

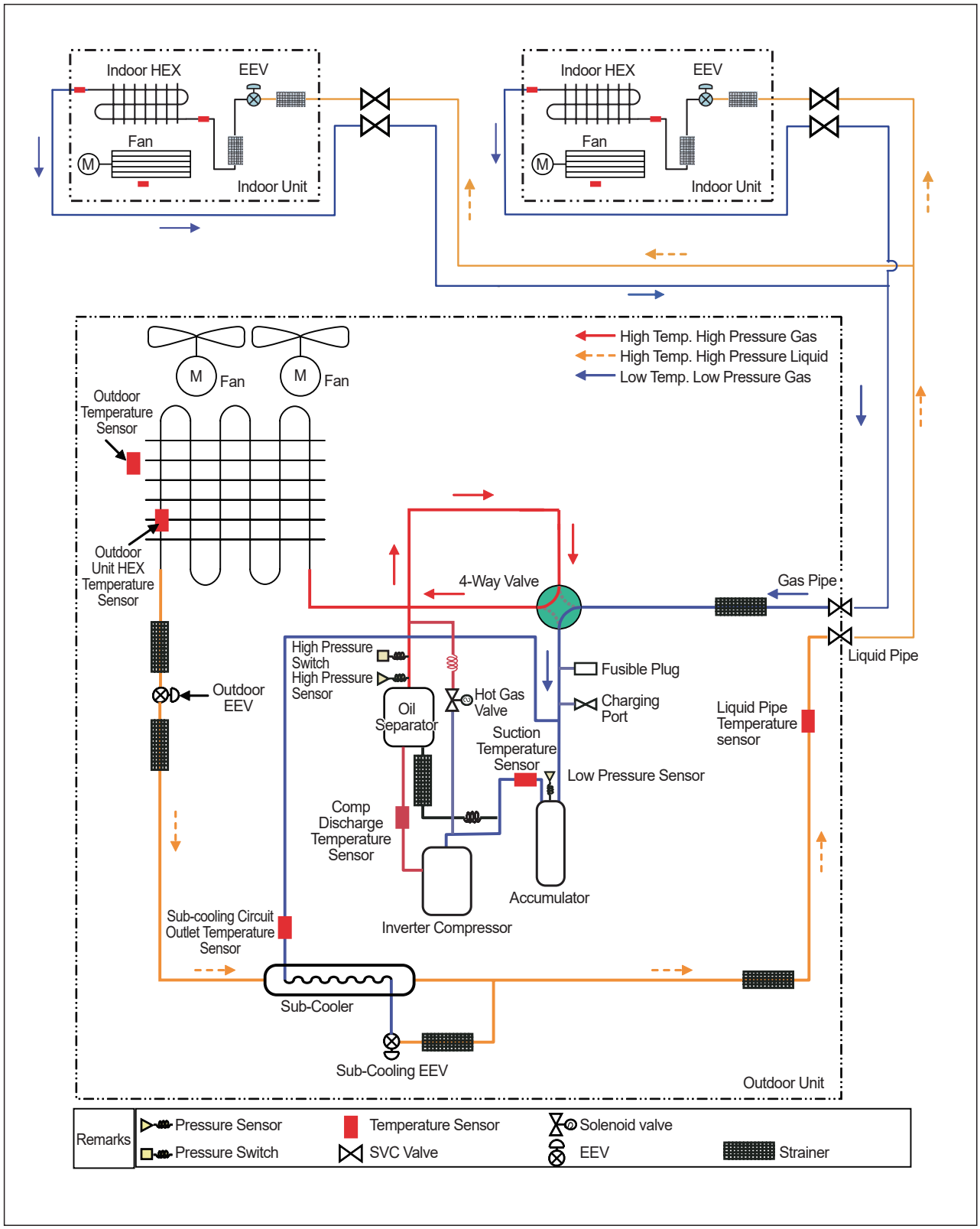
Heating Operation

Heating Operation



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Oil Return / Defrost Operation



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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 3: Sound Pressure Measurement Location.

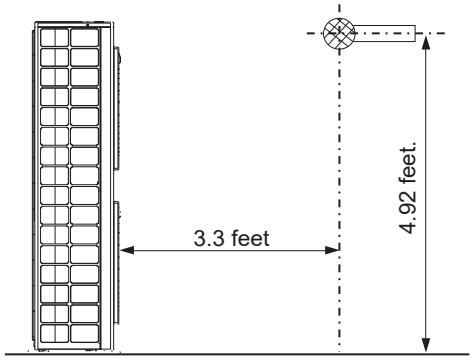
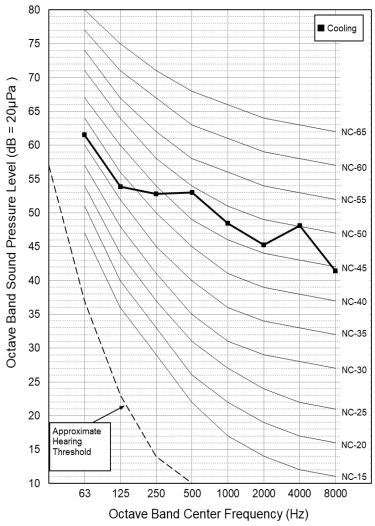


Table 3: Sound Pressure Levels.

Model Nos.	Cooling Operation	Heating Operation
ZRUN072BSS0	55 dB(A)	57 dB(A)
ZRUN096BSS0	59 dB(A)	60 dB(A)

Figure 4: ZRUN072BSS0 Cooling and Heating Sound Pressure Levels.

Cooling



Heating

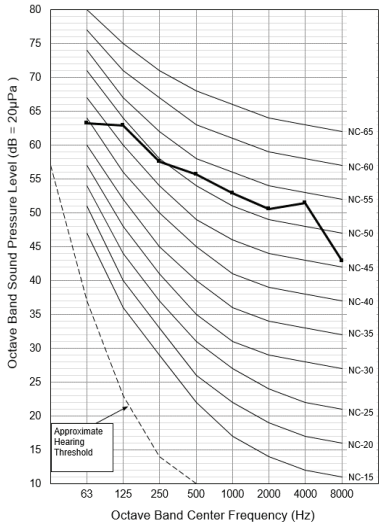
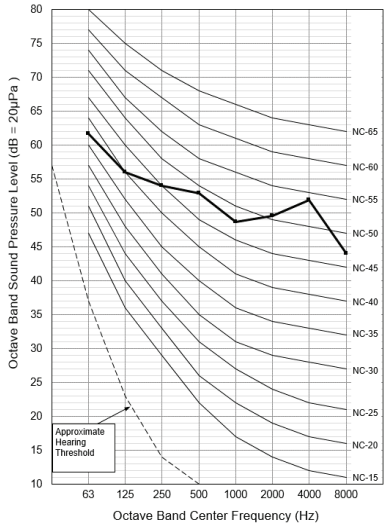
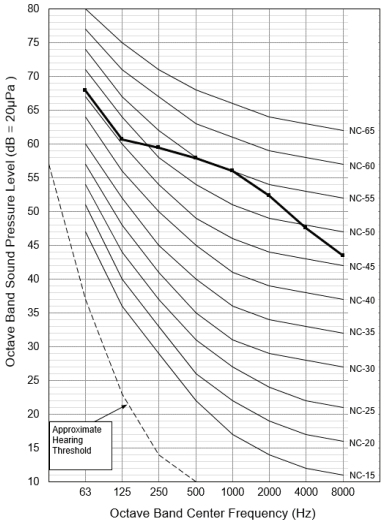


Figure 5: ZRUN096BSS0 Cooling and Heating Sound Pressure Levels.

Cooling



Heating



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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: Sound Power Levels.

Model Nos.	dB(A)
ZRUN072BSS0	72
ZRUN096BSS0	73

Figure 6: ZRUN072BSS0 Sound Power Levels.

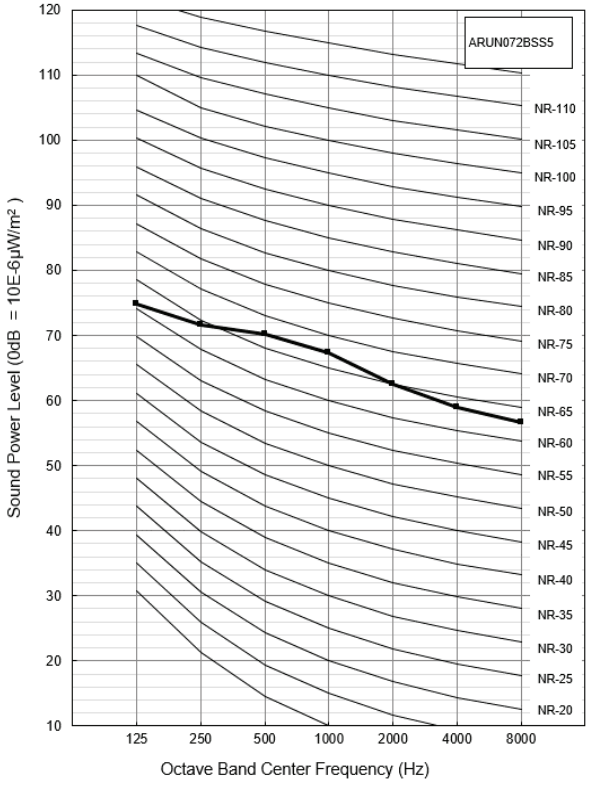
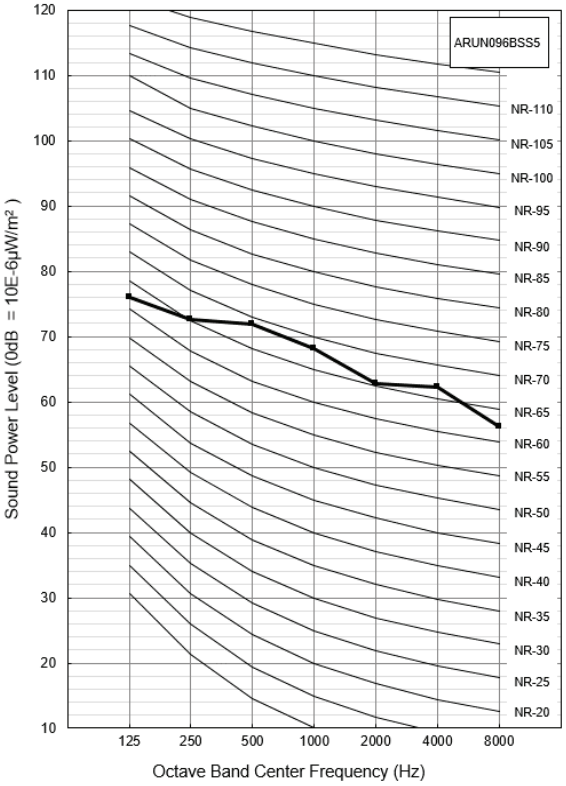


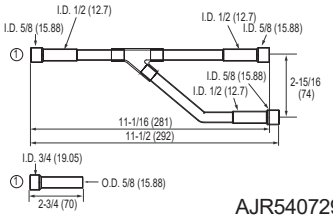
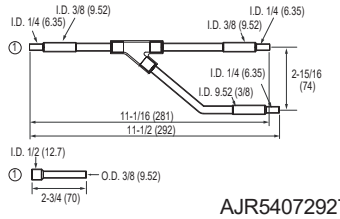
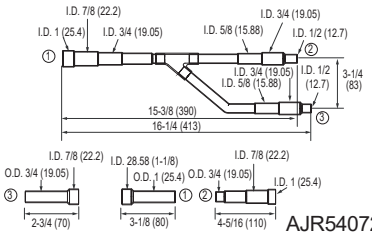
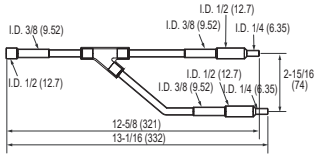
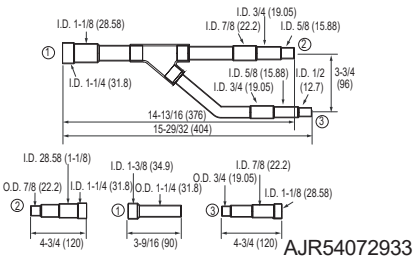
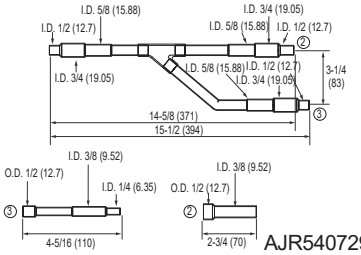
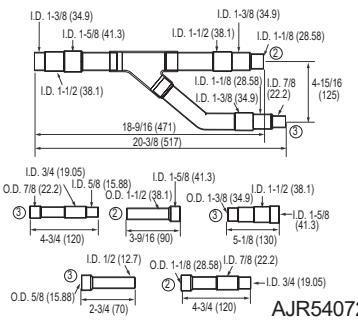
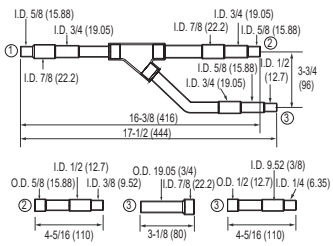
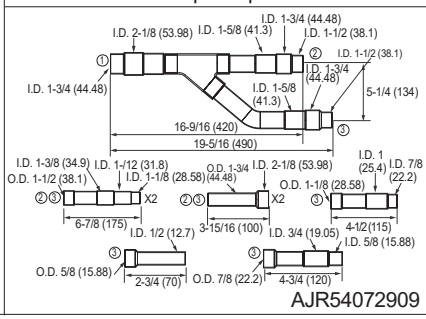
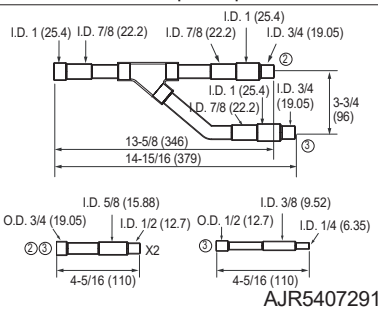
Figure 7: ZRUN048GSS0 Sound Power Levels



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Y-branches

(Unit: Inch [mm])

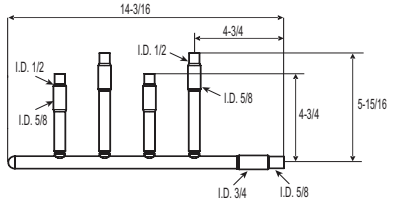
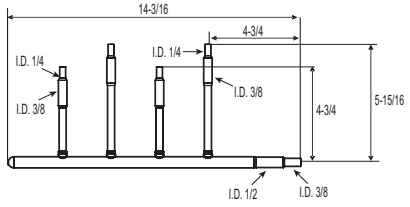
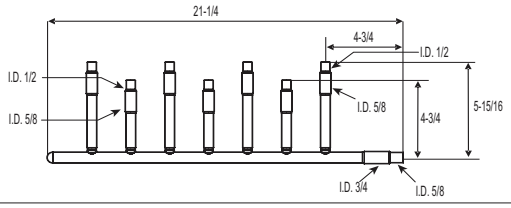
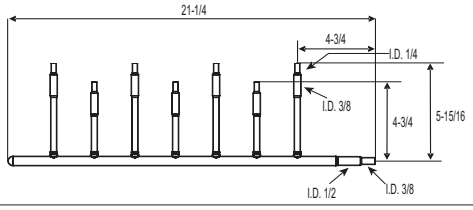
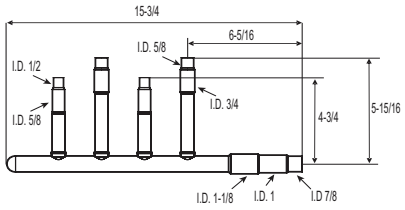
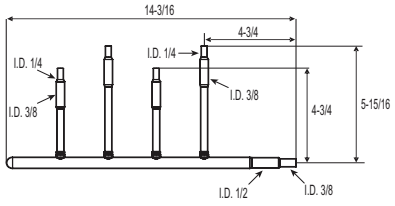
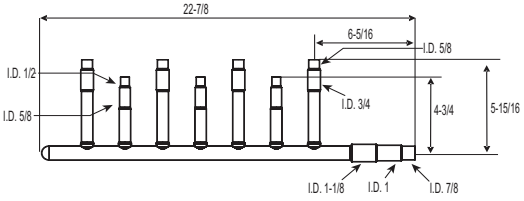
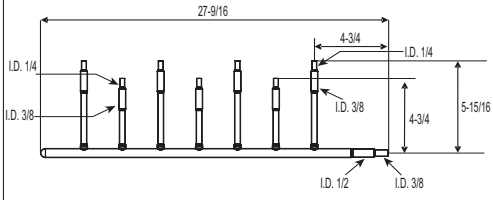
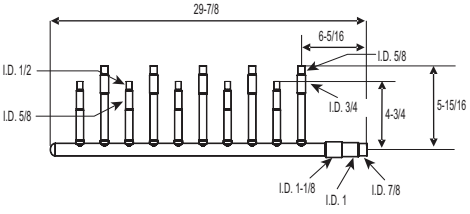
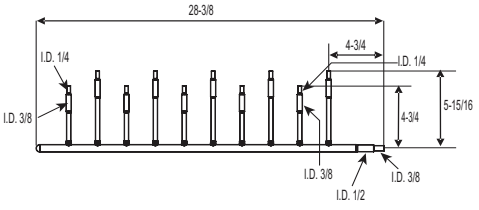
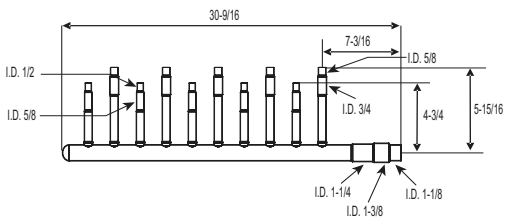
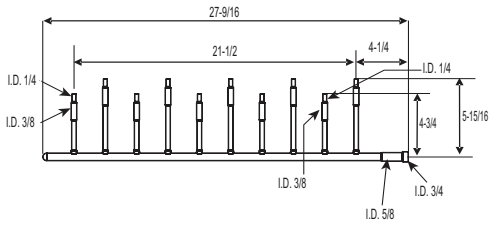
Models	Pipe	
	Vapor Pipe	Liquid Pipe
ARBLN01621	 AJR54072929	 AJR54072927
ARBLN03321	 AJR54072930	 AJR54072928
ARBLN07121	 AJR54072933	 AJR54072931
ARBLN14521	 AJR54072908	 AJR54072932
ARBLN23220	 AJR54072909	 AJR54072910

Outdoor Unit Product Data

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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		

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Controllers

Table 5: Controllers Table.

Central Controllers / Integration Solutions	AC EZ (Simple Controller)	○ PQCSZ250S0
	AC Smart 5	○ (PACS5A000)
	ACP i	○ (PACPIA000)
	PI-485	○ PMNFP14A1
Installation	Refrigerant Charging Kit	○ (Logical Operation)
Cycle Monitoring Devices	LGMV	○ PRCTIL0
	Mobile LGMV (Bluetooth)	○ PLGMVW100
Dry Contacts	Dry Contact With Economizer Interface	○ PDRYCB400
	Dry Contact for Thermostat 24V AC	○ PDRYCB320
	Dry Contact, Simple 24V AC	○ PDRYCB100
Special Functions	PDI (Power Distribution Indicator) Premium	○ PQNUD1S41
	DS (Data Saving) Module	○ PVDATN000
Other	Two-Relay Auxiliary Heat Kit	○ PRARH1
	Heat / Cool Selector Switch	○ PRDSBM

O: Unit Option

Accessories are ordered, purchased, and shipped separately; and field-installed.

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LG Monitoring View (LGMV) Diagnostic Software and Cable

LG Monitoring View (LGMV) is a maintenance and troubleshooting tool for Multi V™ air conditioning systems. LGMV formats are available for computer or mobile phone use.

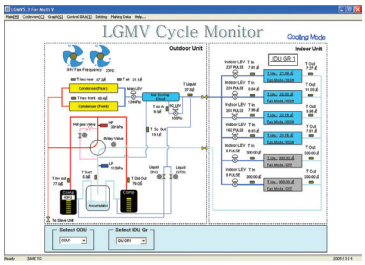
The main screen for LGMV allows the user to view the following real time data:

- 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
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 IDUs 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: Screen is changed to show the following:
   - Inverter compressor
     - Amps / Volts / Power Hz
     - Inverter control board fan Hz
   - Constant compressor
     - Current transducer value
     - Phase

Figure 8: Sample Cycleview (Computer View Example).



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

This software can be used to both pre-set-up 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. Contact your LG Sales Representative for system requirements and for more information.

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ThinQ

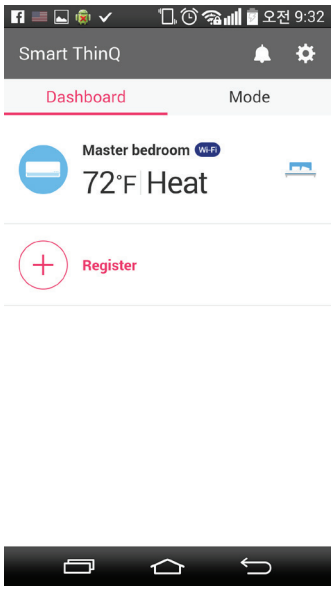
LG ThinQ is a built-in Wi-Fi module, along with a free smart phone app that provides monitoring and remote control capabilities for use with certain LG indoor units. The app has the following features and benefits:

- Sign in to the app using LG credentials, or using Google® or Facebook® login credentials. Users only have to log in to the app once; the app remembers login details for subsequent logins.
- View current temperature settings of the air conditioning unit and change temperature, fan speed, and air flow direction from anywhere in the house or at a remote location (through the use of wireless connection). Multiple users can control the household air conditioning unit remotely.
- Monitor filter usage of the unit.
- Set up weekly schedules to start and stop air conditioner activity.
- Set up the unit to run in different Modes, depending on the user's schedule. Set up specific temperatures for when the user is home, away on vacation, or sleeping.
- Troubleshoot problems, and view tips on general maintenance of the system using the Smart Diagnosis function.

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Contact your LG Sales Representative or visit www.lghvac.com for system requirements, how to download the app, a user's manual, or other information.

Figure 9: Example of an LG Smart ThinQ Screen (appearances my differ depending on version of software).



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SHUTOFF VALVE UNIT PRODUCT DATA

General Data on page 27
Electrical Data on page 28
Dimensions on page 29
Wiring Diagrams on page 31
Refrigerant Flow Diagrams on page 35
Fan Curve Values on page 37
Accessories on page 38



Figure 10: One-Port Shutoff Valve Unit.



Figure 11: Two-Port Shutoff Valve Unit.



Figure 12: Three-Port Shutoff Valve Unit.



Figure 13: Four-Port Shutoff Valve Unit.

Table 6: Shutoff Valve Unit Specifications.

Model			PRHPZ010A	PRHPZ020A	PRHPZ030A	PRHPZ040A
Number of Ports			1	2	3	4
Max. Connectable No. of Indoor Units			8	16	24	32
Max. Connectable No. of Indoor Units on each port			8	8	8	8
Max. Port Capacity (each port)		Btu/h	60,000	60,000	60,000	60,000
Max. Unit Capacity (sum of ports)		Btu/h	60,000	120,000	180,000	230,000
Net Weight		lbs.	14.9	42.1	45.4	48.1
Shipping Weight		lbs.	19.4	56.0	59.7	62.4
Net Dimensions (W x H x D)		Inches	13 x 8-25/32 x 11-27/64	37-1/2 x 10-5/8 x 24-5/8		
Shipping Dimensions (W x H x D)		Inches	26-17/32 x 11-15/16 x 14-1/32	42-13/32 x 13-45/64 x 29-7/8		
Refrigerant Type			R32	R32	R32	R32
Refrigerant Control			Motorized Valve			
Casing			Galvanized Steel Plate			
Connecting Pipes	To Indoor Units	Liquid Pipe (inches)	Ø3/8 – Ø1/4 Braze			
		Vapor Pipe (inches)	Ø5/8 – Ø1/2 Braze			
	To Outdoor Units	Liquid Pipe (inches)	N / A	Ø3/8 Braze	Ø1/2 Braze	Ø5/8 Braze
		Vapor Pipe (inches)	N / A	Ø7/8 Braze	Ø1-1/8 Braze	Ø1-1/8 Braze

NOTICE

The two-, three-, and 4-port shutoff valve units include refrigerant leak sensors and knockouts for enclosure ventilation applications. The single port units do not.

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Table 7: Shutoff Valve Unit Electrical Data.

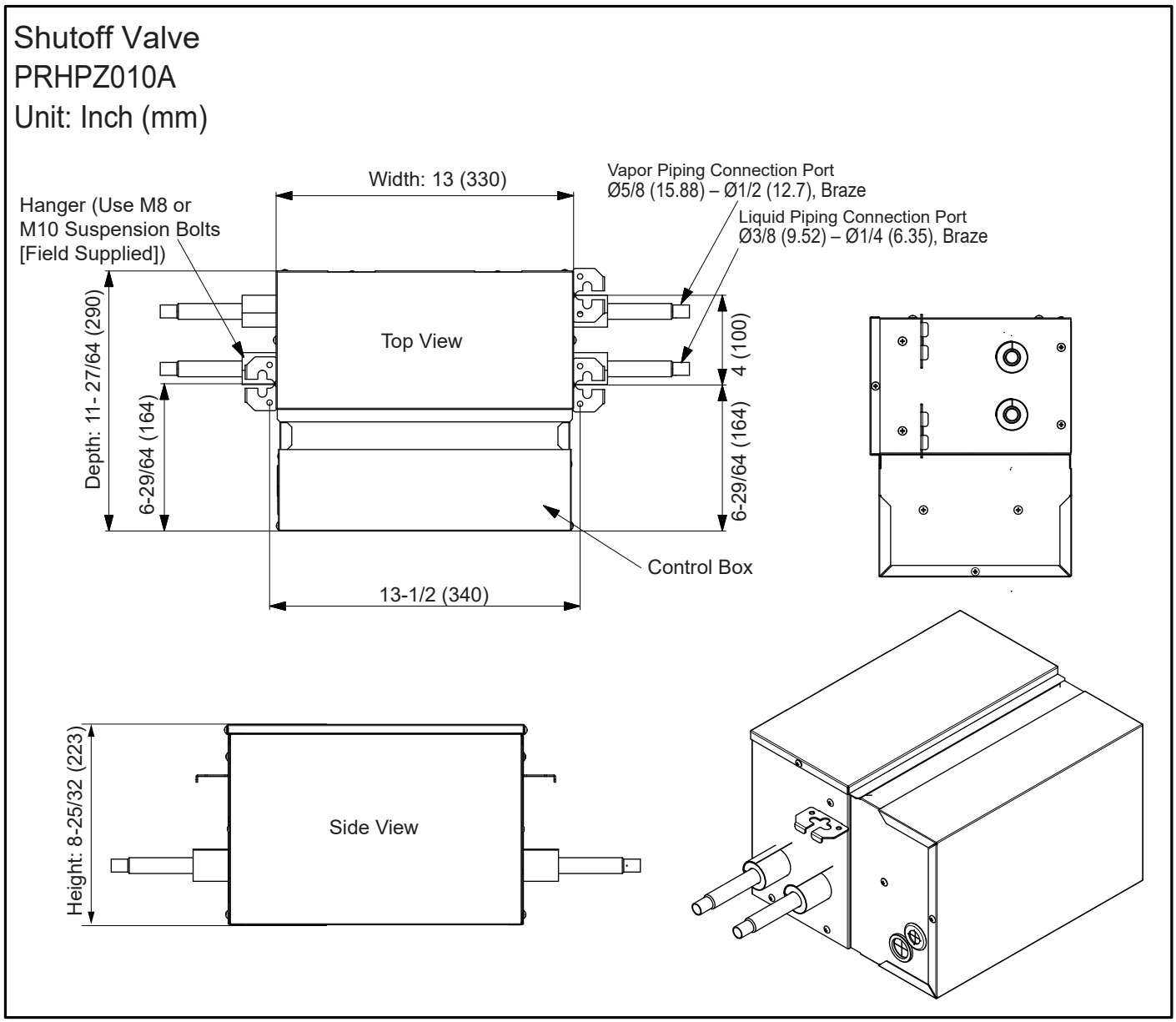
Unit Model No.	Voltage Range	Rated Amps	MCA	MFA	Power Supply			Power Input (W)	
					Hz	Volts	Phase	Cooling	Heating
PRHPZ010A	187-253	0.10	0.5	15	60	208-230	1	30	30
PRHPZ020A		0.28	0.875	15				49.2	46.6
PRHPZ030A		0.28	0.875	15				49.2	46.6
PRHPZ040A		0.28	0.875	15				49.2	46.6

MCA : Minimum Circuit Ampacity.
MFA : Maximum Fuse Amps.

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

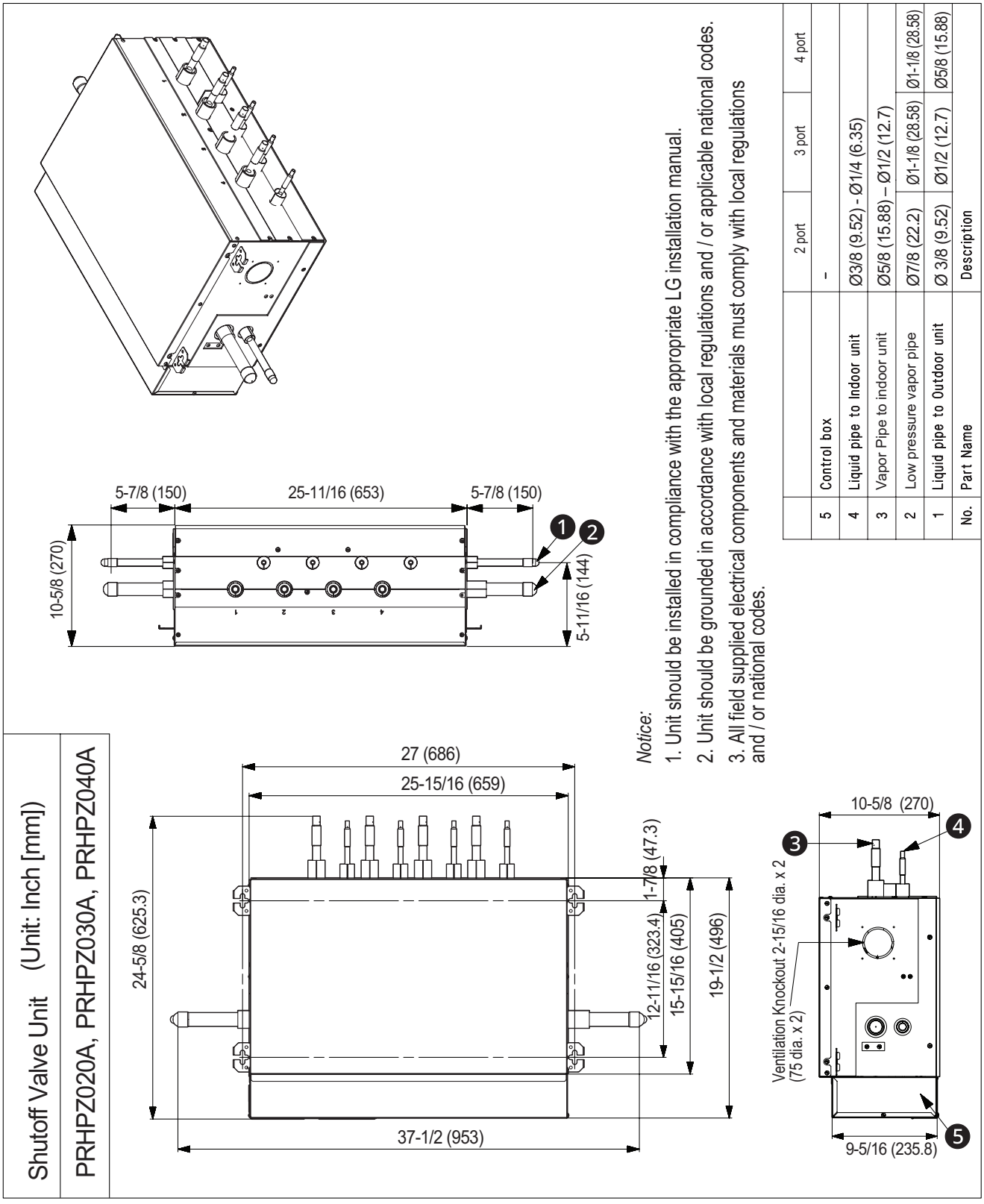
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Figure 14: PRHPZ010A Dimensions.



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Figure 15: PRHPZ020A, PRHPZ030A, and PRHPZ040A Dimensions.

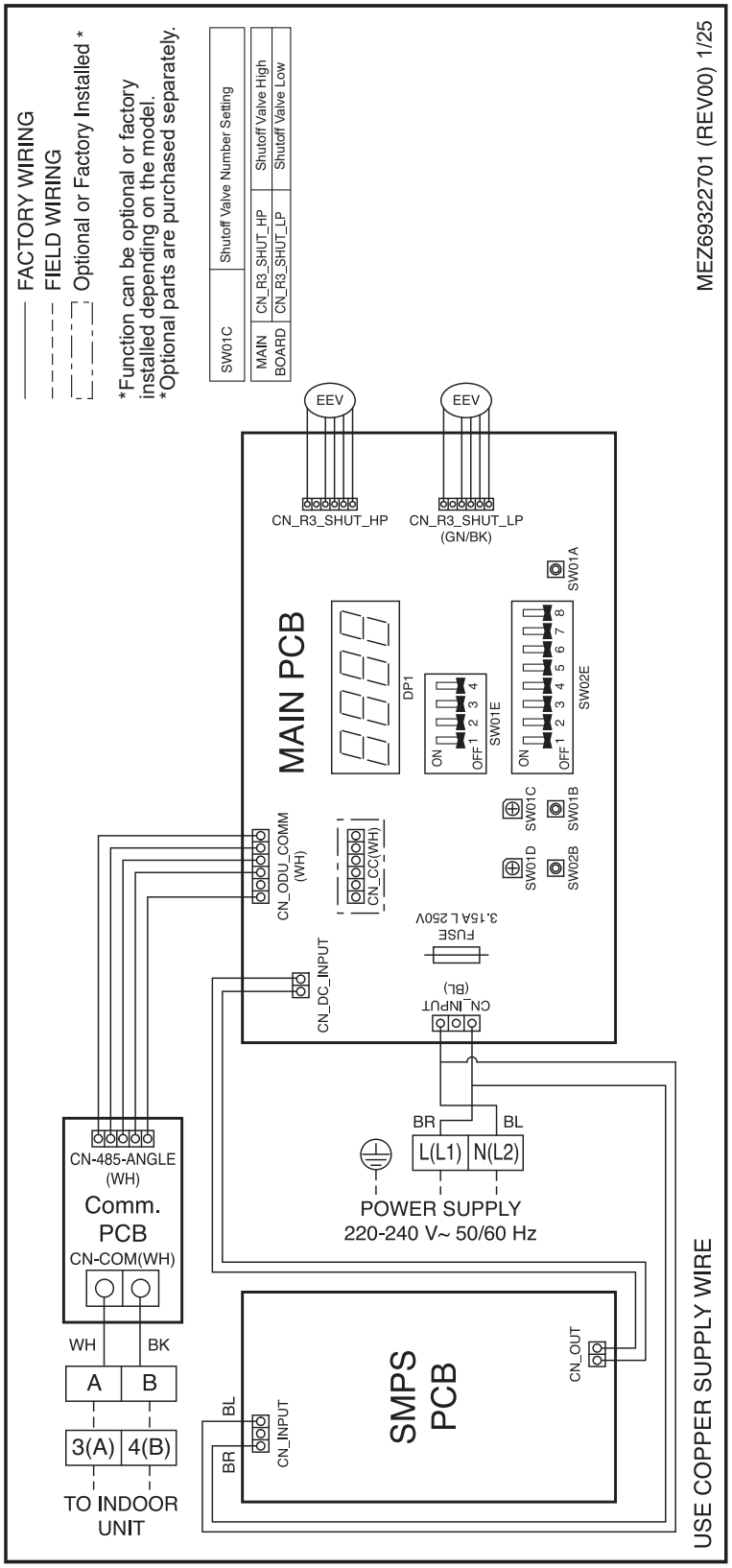


No.	Part Name	2 port	3 port	4 port
5	Control box	–		
4	Liquid pipe to Indoor unit	Ø3/8 (9.52)	Ø1/4 (6.35)	
3	Vapor Pipe to indoor unit	Ø5/8 (15.88)	Ø1/2 (12.7)	
2	Low pressure vapor pipe	Ø7/8 (22.2)	Ø1-1/8 (28.58)	Ø1-1/8 (28.58)
1	Liquid pipe to Outdoor unit	Ø 3/8 (9.52)	Ø1/2 (12.7)	Ø5/8 (15.88)

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Figure 16: PRHPZ010A Wiring Diagram.



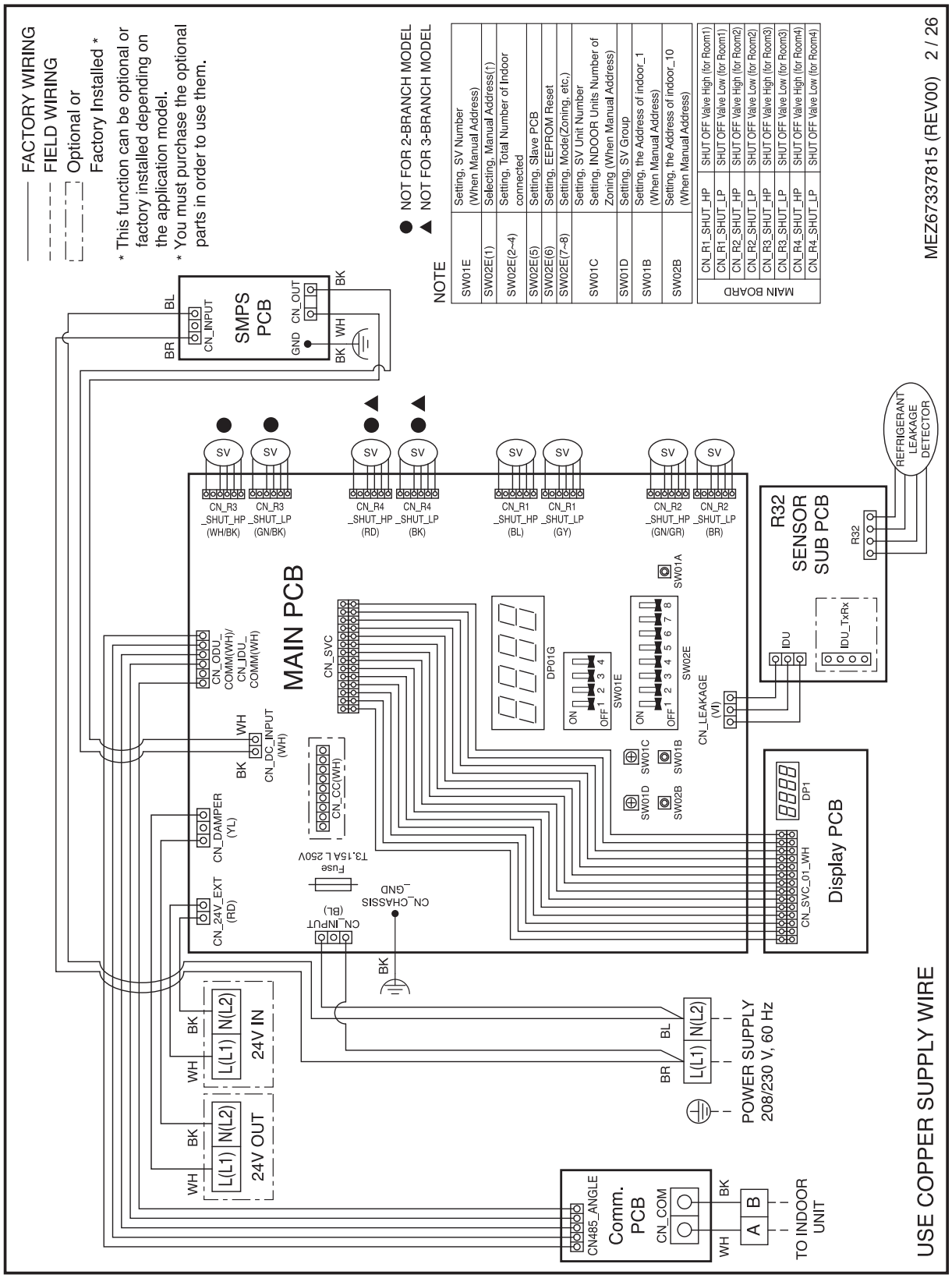
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Table 8: PRHPZ010A Wiring Diagram Legend

Terminal	Description
Main PCB	
CN_INPUT (BL)	Main Power
CN_DC_INPUT	Auxiliary Power PCB
CN_ODU_COMM (WH)	Communication PCB (RS-485)
CN_CC (WH)	Dry Contact
CN_R3_SHUT_HP(WH/BK)	Shutoff Valve High
CN_R3_SHUT_LP (GN/BK)	Shutoff Valve Low
DIP Switch Settings	
SW01E	Setting, Shutoff Valve Number (Manual Addressing)
SW02E(1)	Selecting Manual Address (↑)
SW02E(2~4)	Setting, Total Number of Indoor Units Connected
SW02E(5)	Setting, Sub PCB
SW02E(6)	Setting, EEPROM Reset
SW02E(7~8)	Setting, Mode (Zoning, etc.)
SW01A	Reset
SW01D	Setting, Shutoff Valve Group
SW01C	Setting, Shutoff Valve Unit Number
SW02B	Setting, the Address of indoor_10 (Manual Addressing)
SW01B	Setting, the Address of indoor_1 (Manual Addressing)

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Figure 17: PRHPZ020A, PRHPZ030A, and PRHPZ040A Wiring Diagram.



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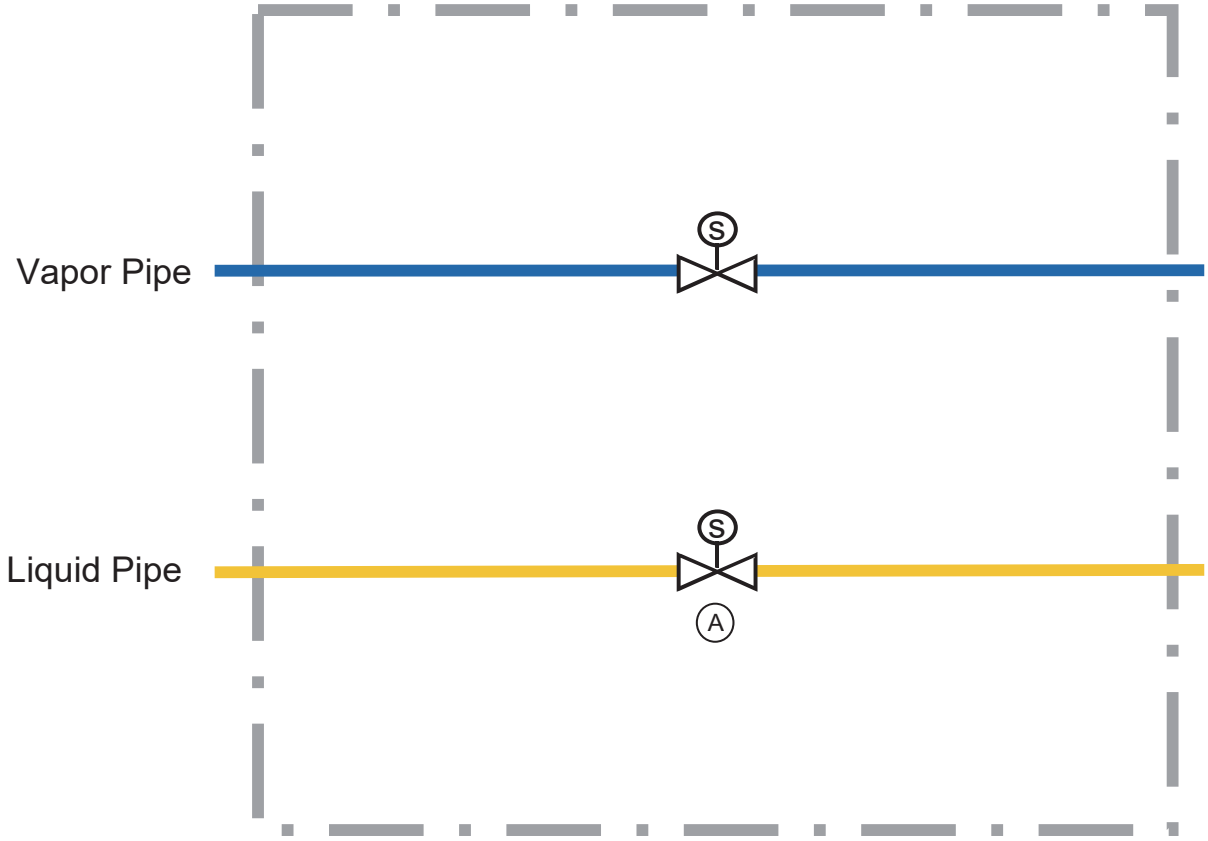
Table 9: PRHPZ020A, PRHPZ030A, and PRHPZ040A Wiring Diagram Legend.

Terminal	Description
Main PCB	
CN_24V_EXT(RD)	24V In (Field Supply)
CN_DAMPER(YL)	24V Out (For Relay)
CN_DC_INPUT(WH)	Auxiliary Power PCB
CN_ODU_COMM(WH) / CN_IDU_COMM(WH)	Communication PCB (RS-485)
CN_R3_SHUT_HP(WH/BK)	Shutoff Valve High (for Room 3)
CN_R3_SHUT_LP (GN/BK)	Shutoff Valve Low (for Room 3)
CN_R4_SHUT_HP(RD)	Shutoff Valve High (for Room 4)
CN_R4_SHUT_LP(BK)	Shutoff Valve Low (for Room 4)
CN_R1_SHUT_HP(BL)	Shutoff Valve High (for Room 1)
CN_R1_SHUT_LP(GY)	Shutoff Valve Low (for Room 1)
CN_R2_SHUT_HP(GN/GR)	Shutoff Valve High (for Room 2)
CN_R2_SHUT_LP(BR)	Shutoff Valve Low (for Room 2)
CN_LEAKAGE(VI)	Leak Detector
CN_SVC	Display PCB
CN_CC(WH)	Dry Contact
CN_CHASSIS_GND	PCB Functional Ground
CN_INPUT(BL)	Main Power
DIP Switch Settings	
SW01E	Setting, Shutoff Valve Number (Manual Addressing)
SW02E(1)	Selecting Manual Address (↑)
SW02E(2~4)	Setting, Total Number of Indoor Units Connected
SW02E(5)	Setting, Sub PCB
SW02E(6)	Setting, EEPROM Reset
SW02E(7~8)	Setting, Mode (Zoning, etc.)
SW01A	Reset
SW01D	Setting, Shutoff Valve Group
SW01C	Setting, Shutoff Valve Unit Number
	Setting, Indoor Units Zone Number (Manual Addressing)
SW02B	Setting, Address of Indoor_10 (Manual Addressing)
SW01B	Setting, Address of Indoor_1 (Manual Addressing)

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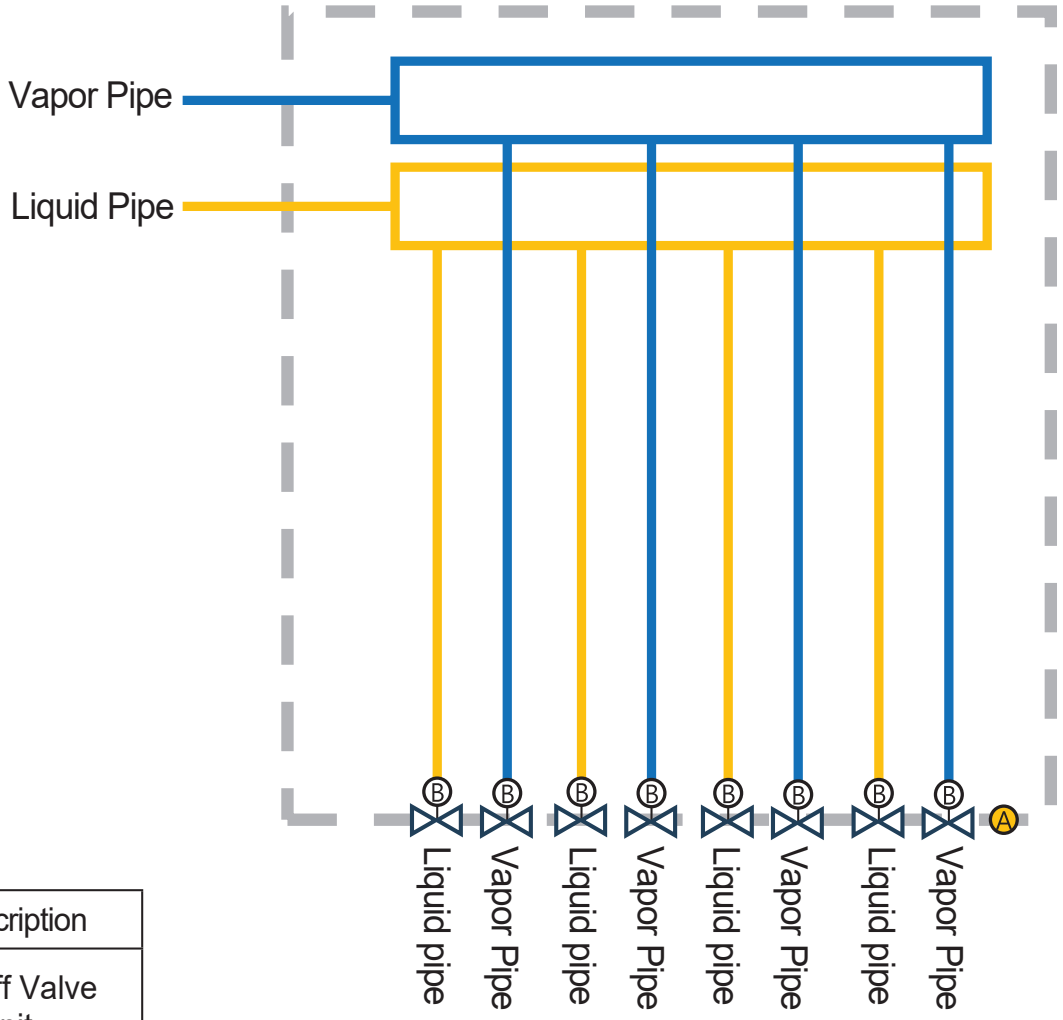
REFRIGERANT FLOW DIAGRAMS

Figure 18: PRHPZ010A Refrigerant Flow Diagram.



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Figure 19: PRHPZ020A, PRHPZ030A, and PRHPZ040A Refrigerant Flow Diagram.



Symbol	Description
Ⓑ	Shutoff Valve Unit

Ⓐ :Closes to block refrigerant flow when a leak is detected.

NOTICE

Refrigerant diagram above represents the PRHPZ040A model. Appearances will differ depending on model.

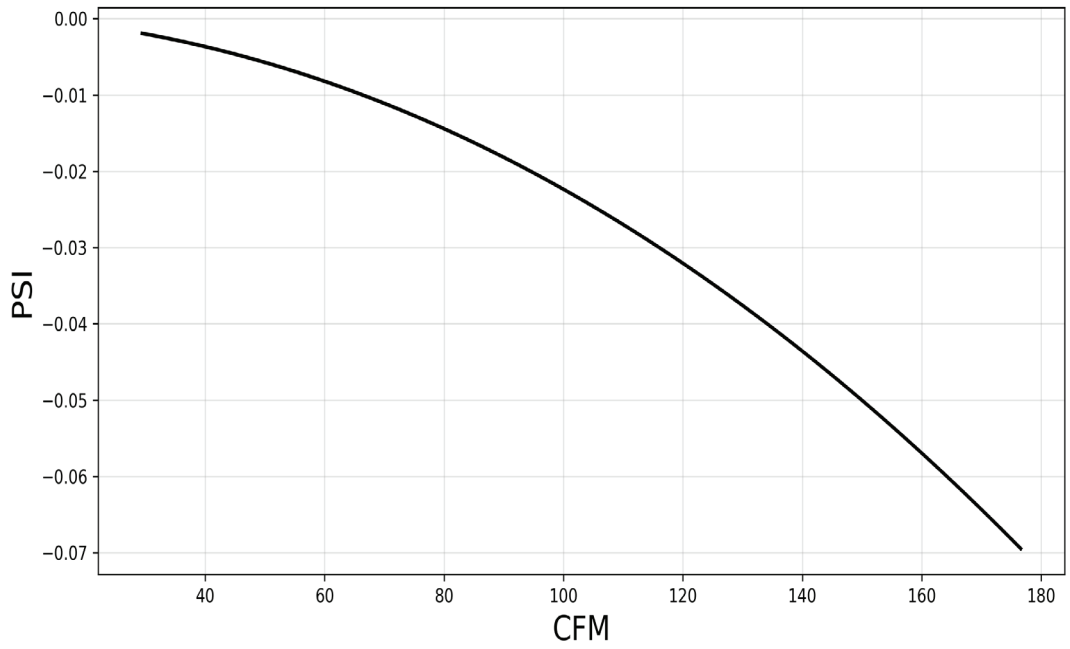
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FAN CURVE VALUES

Enclosure Ventilation (UL 60335-2-40: 2022 Edition 4)

- The ventilation airflow must be set higher than 11.11 CFM (18.87m³/h), and the internal negative pressure must be set higher than 0.08 in. w.g. (20 Pa).
- The internal pressure of the Shutoff Valve Unit must not drop more than 1.4 in. w.g (350 Pa) below the surrounding ambient pressure.

CFM / PSI Performance Curve



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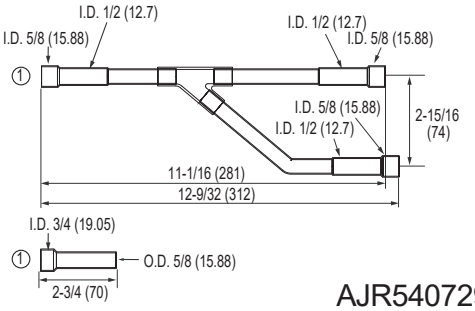
Table 10: Ventilation Accessories Overview (Sold Separately).

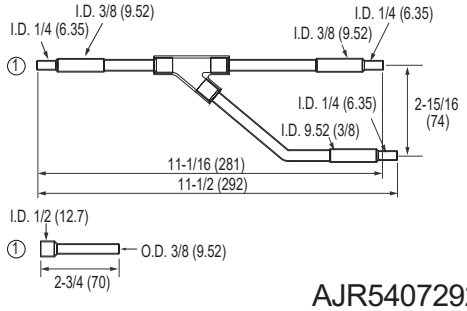
Accessory	Model Number
Ventilation Flange only for 2-3-4 ports	PTVK430
Simple Dry Contact (1 contact, 24 VAC external power) only for 2-3-4-ports	PDRYCB100

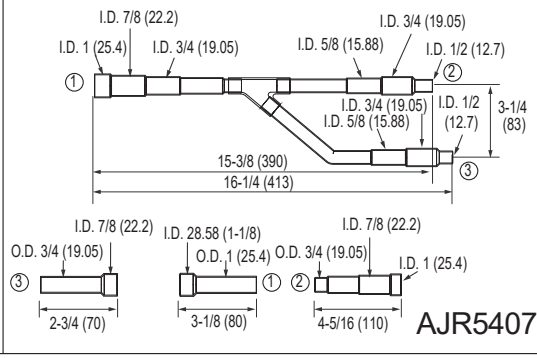
Combining Shutoff Valve Unit Ports for Large Indoor Units

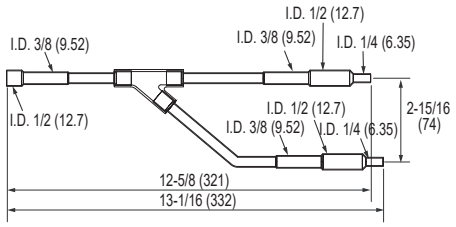
It is necessary to combine two ports when installing a single indoor unit with a capacity exceeding 54,000 Btu/h. Two neighboring shutoff valve ports are combined using a reverse Y-branch that is then connected to the one large indoor unit.

(Unit: Inch [mm])

<table>
<tr><th>Models</th><th colspan="2">Pipe</th></tr>
<tr><td rowspan="2">ARBLN01621</td><td>Vapor Pipe</td><td>Liquid Pipe</td></tr>
<tr><td>

AJR54072929</td><td>

AJR54072927</td></tr>
<tr><td rowspan="2">ARBLN03321</td><td>Vapor Pipe</td><td>Liquid Pipe</td></tr>
<tr><td>

AJR54072930</td><td>

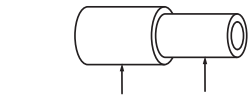
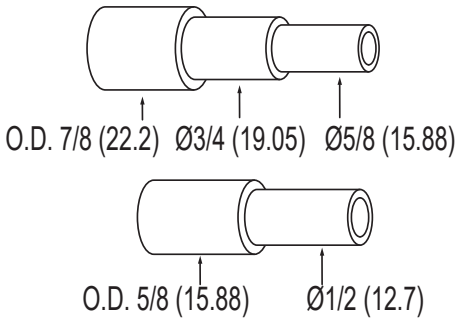
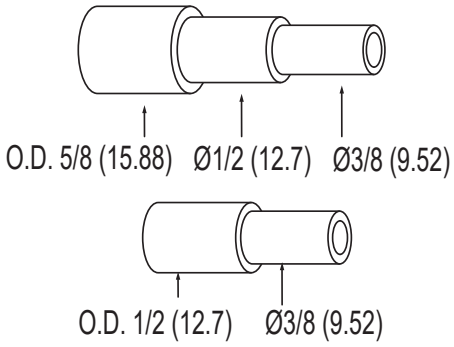
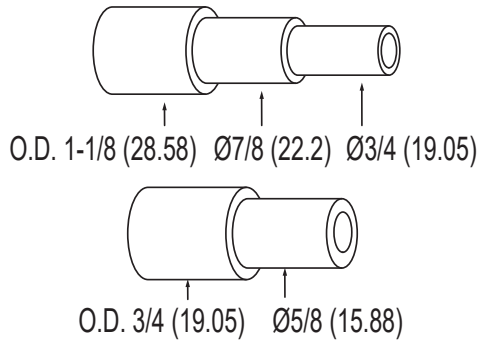
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Reducers

It may be necessary to install a reducer if the indoor unit piping or outdoor unit piping is too large or too small for the shutoff valve unit connections.

Unit: Inches (mm)

Model		Liquid Piping	Vapor Piping
Shutoff Valve Unit Reducer	PRHPZ020A		
	PRHPZ030A PRHPZ040A		

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PERFORMANCE DATA

Cooling Capacity Data on page 41
Heating Capacity Data on page 51
Correction Factors on page 57

COOLING CAPACITY

ZRUN072BSS0

Table 11: ZRUN072BSS0 Cooling Capacities.

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%	-4	62.7	1.83	74.5	2.23	86.6	2.64	89.8	2.85	91.1	3.08	94.3	3.53	96.5	3.64
	0	62.7	1.91	74.5	2.32	86.6	2.75	89.8	2.97	91.1	3.20	94.3	3.67	96.5	3.79
	5	62.7	1.98	74.5	2.40	86.6	2.85	89.8	3.07	91.1	3.32	94.3	3.80	96.5	3.93
	10	62.7	2.04	74.5	2.47	86.6	2.93	89.8	3.16	91.1	3.41	94.3	3.91	96.5	4.04
	14	62.7	2.11	74.5	2.56	86.6	3.04	89.8	3.28	91.1	3.54	94.3	4.05	96.5	4.19
	20	62.7	2.15	74.5	2.60	86.6	3.08	89.8	3.33	91.1	3.59	94.3	4.11	96.5	4.25
	25	62.7	2.18	74.5	2.63	86.6	3.12	89.8	3.37	91.1	3.63	94.3	4.16	96.5	4.30
	30	62.7	2.21	74.5	2.67	86.6	3.16	89.8	3.41	91.1	3.67	94.3	4.20	96.5	4.35
	35	62.7	2.23	74.5	2.70	86.6	3.19	89.8	3.45	91.1	3.71	94.3	4.25	96.5	4.40
	40	62.7	2.26	74.5	2.73	86.6	3.23	89.8	3.49	91.1	3.76	94.3	4.30	96.5	4.45
	45	62.7	2.28	74.5	2.76	86.6	3.27	89.8	3.53	91.1	3.79	94.3	4.35	96.5	4.50
	50	62.7	2.30	74.5	2.79	86.6	3.30	89.8	3.56	91.1	3.83	94.3	4.39	96.5	4.54
	55	62.7	2.34	74.5	2.84	86.6	3.36	88.5	3.64	89.8	3.91	93.0	4.47	95.2	4.58
	60	62.7	2.42	74.5	2.94	85.4	3.50	86.6	3.78	87.6	4.06	90.7	4.61	93.0	4.63
	65	62.7	2.47	74.5	3.00	84.1	3.56	85.4	3.86	86.3	4.14	89.4	4.76	91.7	4.80
	70	62.7	2.38	74.5	2.89	82.5	3.55	83.4	3.91	84.7	4.29	87.8	4.76	90.1	4.81
	75	62.7	2.44	74.5	3.08	81.2	3.80	82.2	4.19	83.4	4.60	86.5	4.99	88.8	5.03
	80	62.7	2.77	74.5	3.51	79.0	4.35	79.9	4.80	81.2	5.28	84.3	5.42	86.5	5.47
	85	62.7	2.95	74.5	3.74	77.7	4.65	79.0	5.12	79.9	5.60	83.0	5.64	85.2	5.69
	90	62.7	3.34	73.3	4.25	75.5	5.28	76.4	5.83	77.7	6.04	80.7	6.08	83.0	6.14
	95	63.4	3.54	72.7	4.53	75.0	5.63	**76.3**	**6.23**	77.3	6.25	80.3	6.31	82.6	6.37
	100	63.4	3.83	71.5	4.90	73.7	6.11	75.0	6.55	76.0	6.59	79.3	6.65	81.6	6.71
	105	63.4	4.32	69.5	5.54	71.8	6.89	72.9	7.05	74.0	7.08	76.6	7.15	77.7	7.22
	110	63.4	4.85	66.7	6.24	69.5	7.51	69.7	7.55	70.7	7.57	72.2	7.65	72.5	7.72
	115	63.1	5.61	64.2	7.18	64.2	7.92	64.2	7.92	64.2	7.92	65.2	7.93	65.5	7.95
	118	54.9	4.76	55.9	6.08	55.9	6.66	55.9	6.72	55.9	6.72	56.7	6.73	56.5	6.74
	122	43.8	3.61	44.8	4.63	44.6	5.07	44.7	5.08	44.8	5.09	45.6	5.10	45.5	5.12
120%	-4	57.1	1.73	68.1	2.10	79.2	2.48	84.9	2.68	88.6	2.89	92.7	3.31	94.6	3.42
	0	57.1	1.80	68.1	2.18	79.2	2.58	84.9	2.78	88.6	3.00	92.7	3.44	94.6	3.56
	5	57.1	1.86	68.1	2.26	79.2	2.68	84.9	2.89	88.6	3.11	92.7	3.57	94.6	3.69
	10	57.1	1.92	68.1	2.32	79.2	2.75	84.9	2.97	88.6	3.20	92.7	3.67	94.6	3.79
	14	57.1	1.99	68.1	2.41	79.2	2.85	84.9	3.08	88.6	3.32	92.7	3.80	94.6	3.93
	20	57.1	2.02	68.1	2.45	79.2	2.89	84.9	3.12	88.6	3.36	92.7	3.86	94.6	3.99
	25	57.1	2.04	68.1	2.47	79.2	2.93	84.9	3.16	88.6	3.40	92.7	3.90	94.6	4.04
	30	57.1	2.07	68.1	2.50	79.2	2.96	84.9	3.20	88.6	3.44	92.7	3.95	94.6	4.08
	35	57.1	2.10	68.1	2.53	79.2	3.00	84.9	3.24	88.6	3.48	92.7	3.99	94.6	4.13
	40	57.1	2.12	68.1	2.57	79.2	3.04	84.9	3.28	88.6	3.53	92.7	4.05	94.6	4.19
	45	57.1	2.15	68.1	2.60	79.2	3.07	84.9	3.32	88.6	3.57	92.7	4.09	94.6	4.23
	50	57.1	2.17	68.1	2.63	79.2	3.11	84.9	3.36	88.6	3.61	92.7	4.14	94.6	4.28
	55	57.1	2.21	68.1	2.67	79.2	3.16	84.9	3.43	87.7	3.68	91.4	4.21	93.6	4.31
	60	57.1	2.28	68.1	2.77	79.2	3.30	84.2	3.56	85.2	3.82	89.1	4.34	91.1	4.42
	65	57.1	2.33	68.1	2.83	79.2	3.36	83.0	3.63	84.2	3.90	87.8	4.48	90.1	4.52
	70	57.1	2.28	68.1	2.77	79.2	3.41	81.4	3.75	82.3	4.12	86.2	4.57	88.2	4.62
	75	57.1	2.34	68.1	2.95	79.2	3.65	80.1	4.03	81.4	4.41	84.9	4.79	87.2	4.82
	80	57.1	2.66	68.1	3.36	77.0	4.17	77.9	4.61	78.9	5.06	82.7	5.20	84.6	5.25
	85	57.1	2.83	68.1	3.59	75.7	4.46	76.7	4.92	77.9	5.37	81.4	5.42	83.7	5.46
	90	57.1	3.21	68.1	4.08	73.5	5.06	74.4	5.60	75.4	5.79	79.2	5.84	81.1	5.90
	95	57.7	3.40	68.9	4.35	73.0	5.41	**74.0**	**5.98**	75.2	6.00	78.7	6.06	81.0	6.11
	100	57.7	3.68	68.9	4.70	71.7	5.86	73.0	6.29	74.0	6.33	77.7	6.38	79.7	6.44
	105	57.7	4.15	67.8	5.32	69.8	6.61	70.9	6.76	71.9	6.80	75.4	6.86	76.7	6.92
	110	57.7	4.66	66.0	5.99	68.2	7.21	68.4	7.25	69.4	7.27	71.6	7.34	71.8	7.41
	115	56.1	5.39	63.6	6.89	63.6	7.60	63.6	7.60	63.6	7.60	65.2	7.62	65.5	7.63
	118	50.1	4.76	55.3	5.84	55.4	6.39	55.4	6.45	55.4	6.45	56.8	6.46	56.5	6.47
	122	40.0	3.61	44.4	4.44	44.1	4.87	44.3	4.88	44.4	4.88	45.6	4.90	45.5	4.92

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 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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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COOLING CAPACITY

ZRUN072BSS0

MULTI V S THREE-PHASE

Table 12: ZRUN072BSS0 Cooling Capacities, continued.

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%	-4	52.9	1.59	63.1	1.92	73.3	2.28	78.4	2.47	83.5	2.64	92.0	3.02	94.0	3.13
	0	52.9	1.66	63.1	2.00	73.3	2.37	78.4	2.57	83.5	2.75	92.0	3.14	94.0	3.25
	5	52.9	1.72	63.1	2.07	73.3	2.45	78.4	2.66	83.5	2.85	92.0	3.25	94.0	3.37
	10	52.9	1.77	63.1	2.13	73.3	2.52	78.4	2.74	83.5	2.93	92.0	3.35	94.0	3.47
	14	52.9	1.83	63.1	2.21	73.3	2.62	78.4	2.84	83.5	3.04	92.0	3.47	94.0	3.60
	20	52.9	1.86	63.1	2.24	73.3	2.66	78.4	2.88	83.5	3.08	92.0	3.53	94.0	3.65
	25	52.9	1.88	63.1	2.27	73.3	2.69	78.4	2.91	83.5	3.12	92.0	3.57	94.0	3.70
	30	52.9	1.90	63.1	2.30	73.3	2.72	78.4	2.94	83.5	3.16	92.0	3.62	94.0	3.74
	35	52.9	1.93	63.1	2.33	73.3	2.76	78.4	2.98	83.5	3.21	92.0	3.68	94.0	3.81
	40	52.9	1.96	63.1	2.37	73.3	2.80	78.4	3.03	83.5	3.25	92.0	3.73	94.0	3.85
	45	52.9	1.99	63.1	2.40	73.3	2.84	78.4	3.07	83.5	3.31	92.0	3.79	94.0	3.92
	50	52.9	2.02	63.1	2.44	73.3	2.89	78.4	3.13	83.5	3.36	92.0	3.85	94.0	3.98
	55	52.9	2.05	63.1	2.49	73.3	2.95	78.4	3.19	83.5	3.43	90.7	3.92	92.7	4.02
	60	52.9	2.12	63.1	2.58	73.3	3.07	78.4	3.32	83.5	3.56	88.4	4.04	90.4	4.08
	65	52.9	2.17	63.1	2.63	73.3	3.13	78.4	3.38	83.5	3.63	87.1	4.17	89.1	4.21
	70	52.9	2.19	63.1	2.66	73.3	3.27	78.4	3.60	81.9	3.95	85.5	4.39	87.5	4.43
	75	52.9	2.24	63.1	2.83	73.3	3.50	78.4	3.86	80.7	4.23	84.2	4.59	86.2	4.63
	80	52.4	2.55	62.5	3.23	72.6	4.00	76.7	4.42	77.6	4.86	81.1	4.99	83.0	5.03
	85	52.4	2.71	62.5	3.45	72.6	4.28	75.4	4.71	76.4	5.15	79.8	5.20	81.7	5.24
	90	52.4	3.07	62.5	3.92	72.3	4.86	73.2	5.37	74.1	5.56	77.6	5.60	79.5	5.65
	95	52.4	3.26	62.5	4.17	71.0	5.18	**71.9**	**5.73**	72.9	5.75	76.3	5.81	78.2	5.86
	100	52.4	3.53	62.5	4.51	70.0	5.62	71.0	6.03	71.9	6.07	75.3	6.12	77.2	6.18
	105	52.4	3.98	62.5	5.10	67.9	6.34	68.8	6.49	69.7	6.52	73.1	6.58	75.0	6.64
	110	52.4	4.47	62.5	5.75	65.8	6.91	66.0	6.95	66.9	6.97	69.0	7.04	69.3	7.11
	115	52.4	5.17	62.5	6.61	63.0	7.29	63.0	7.29	63.2	7.29	64.5	7.30	64.8	7.32
	118	50.6	4.71	54.3	5.60	54.8	6.13	54.8	6.18	55.1	6.18	56.2	6.20	55.9	6.21
	122	40.4	3.57	43.6	4.26	43.7	4.67	43.8	4.68	44.1	4.68	45.1	4.70	45.0	4.72
100%	-4	46.5	1.40	55.4	1.69	64.4	2.00	69.0	2.18	75.8	2.36	85.0	2.72	89.8	2.84
	0	46.5	1.46	55.4	1.76	64.4	2.08	69.0	2.27	75.8	2.46	85.0	2.83	89.8	2.95
	5	46.5	1.51	55.4	1.82	64.4	2.16	69.0	2.35	75.8	2.55	85.0	2.94	89.8	3.06
	10	46.5	1.55	55.4	1.87	64.4	2.22	69.0	2.42	75.8	2.62	85.0	3.02	89.8	3.15
	14	46.5	1.61	55.4	1.94	64.4	2.30	69.0	2.51	75.8	2.71	85.0	3.13	89.8	3.26
	20	46.5	1.66	55.4	2.01	64.4	2.37	69.0	2.58	75.8	2.80	85.0	3.22	89.8	3.35
	25	46.5	1.70	55.4	2.06	64.4	2.44	69.0	2.64	75.8	2.87	85.0	3.30	89.8	3.43
	30	46.5	1.74	55.4	2.11	64.4	2.50	69.0	2.70	75.8	2.94	85.0	3.37	89.8	3.51
	35	46.5	1.77	55.4	2.14	64.4	2.54	69.0	2.74	75.8	2.99	85.0	3.43	89.8	3.57
	40	46.5	1.80	55.4	2.18	64.4	2.58	69.0	2.79	75.8	3.04	85.0	3.48	89.8	3.62
	45	46.5	1.84	55.4	2.23	64.4	2.63	69.0	2.85	75.8	3.10	85.0	3.56	89.8	3.70
	50	46.5	1.88	55.4	2.27	64.4	2.68	69.0	2.90	75.8	3.17	85.0	3.63	89.8	3.77
	55	46.5	1.91	55.4	2.31	64.4	2.74	69.0	2.96	75.8	3.23	85.0	3.69	88.8	3.83
	60	46.5	1.97	55.4	2.39	64.4	2.85	69.0	3.08	75.8	3.36	84.7	3.81	86.3	3.90
	65	46.5	2.01	55.4	2.45	64.4	2.90	69.0	3.14	75.8	3.42	83.4	3.93	85.3	4.01
	70	46.5	2.07	55.4	2.52	64.4	3.10	69.0	3.41	75.8	3.80	81.9	4.22	83.4	4.29
	75	46.5	2.12	55.4	2.68	64.4	3.32	69.0	3.66	75.8	4.07	80.6	4.42	82.5	4.47
	80	46.5	2.41	55.4	3.06	64.4	3.79	69.0	4.19	75.8	4.67	78.4	4.80	80.0	4.86
	85	46.5	2.57	55.4	3.26	64.4	4.05	69.0	4.47	75.5	4.95	77.1	5.00	79.0	5.06
	90	46.5	2.91	55.4	3.71	64.4	4.60	69.0	5.09	73.0	5.34	74.9	5.39	76.5	5.46
	95	46.5	3.09	55.4	3.95	64.4	4.91	**69.0**	**5.43**	72.0	5.53	73.6	5.59	75.5	5.67
	100	46.5	3.33	55.4	4.26	64.4	5.31	67.8	5.70	70.8	5.82	72.6	5.87	74.3	5.96
	105	46.5	3.75	55.4	4.80	64.0	5.97	65.9	6.11	68.7	6.23	70.4	6.29	72.2	6.37
	110	46.5	4.19	55.4	5.39	63.3	6.48	64.7	6.52	66.0	6.64	67.1	6.70	68.3	6.80
	115	46.5	4.81	55.4	6.15	60.2	6.79	62.1	6.79	63.7	6.89	64.2	6.90	64.5	6.95
	118	46.5	4.85	48.6	5.77	52.4	5.71	54.1	5.76	55.4	5.85	55.9	5.86	55.7	5.90
	122	39.8	4.39	39.0	4.39	41.8	4.35	43.2	4.36	44.4	4.43	44.9	4.44	44.8	4.48

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 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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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COOLING CAPACITY

ZRUN072BSS0

Table 13: ZRUN072BSS0 Cooling Capacities, continued.

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%	-4	41.9	1.25	49.9	1.50	58.2	1.77	62.2	1.90	66.2	2.03	74.2	2.34	82.2	2.57
	0	41.9	1.30	49.9	1.56	58.2	1.84	62.2	1.98	66.2	2.11	74.2	2.43	82.2	2.67
	5	41.9	1.35	49.9	1.61	58.2	1.91	62.2	2.05	66.2	2.19	74.2	2.52	82.2	2.77
	10	41.9	1.39	49.9	1.66	58.2	1.96	62.2	2.11	66.2	2.25	74.2	2.60	82.2	2.85
	14	41.9	1.44	49.9	1.72	58.2	2.03	62.2	2.19	66.2	2.34	74.2	2.69	82.2	2.95
	20	41.9	1.49	49.9	1.79	58.2	2.11	62.2	2.27	66.2	2.43	74.2	2.79	82.2	3.07
	25	41.9	1.53	49.9	1.84	58.2	2.17	62.2	2.34	66.2	2.51	74.2	2.87	82.2	3.16
	30	41.9	1.57	49.9	1.90	58.2	2.24	62.2	2.41	66.2	2.60	74.2	2.95	82.2	3.25
	35	41.9	1.62	49.9	1.95	58.2	2.30	62.2	2.48	66.2	2.67	74.2	3.04	82.2	3.36
	40	41.9	1.67	49.9	2.01	58.2	2.37	62.2	2.56	66.2	2.75	74.2	3.13	82.2	3.45
	45	41.9	1.71	49.9	2.06	58.2	2.43	62.2	2.62	66.2	2.82	74.2	3.20	82.2	3.53
	50	41.9	1.75	49.9	2.10	58.2	2.48	62.2	2.68	66.2	2.88	74.2	3.27	82.2	3.61
	55	41.9	1.77	49.9	2.14	58.2	2.52	62.2	2.73	66.2	2.93	74.2	3.34	82.2	3.65
	60	41.9	1.83	49.9	2.22	58.2	2.62	62.2	2.84	66.2	3.05	74.2	3.46	81.6	3.69
	65	41.9	1.87	49.9	2.27	58.2	2.68	62.2	2.89	66.2	3.11	74.2	3.53	81.0	3.87
	70	41.9	1.92	49.9	2.33	58.2	2.77	62.2	3.05	66.2	3.33	74.2	3.94	79.5	4.16
	75	41.9	1.95	49.9	2.44	58.2	2.97	62.2	3.27	66.2	3.58	74.2	4.11	78.2	4.34
	80	41.9	2.19	49.9	2.76	58.2	3.39	62.2	3.73	66.2	4.09	74.2	4.54	76.1	4.72
	85	41.9	2.33	49.9	2.94	58.2	3.62	62.2	3.98	66.2	4.37	73.3	4.78	74.9	4.92
	90	41.9	2.63	49.9	3.33	58.2	4.11	62.2	4.53	66.2	4.97	71.2	5.23	72.7	5.31
	95	41.9	2.80	49.9	3.54	58.2	4.38	**62.2**	**4.83**	66.2	5.31	69.9	5.43	71.5	5.50
	100	41.9	2.90	49.9	3.69	58.2	4.56	62.2	5.02	66.2	5.42	69.0	5.66	70.2	5.73
	105	41.9	3.36	49.9	4.28	58.2	5.16	62.2	5.50	65.5	5.82	66.9	6.07	67.8	6.15
	110	41.9	3.85	49.9	4.93	58.2	5.66	62.2	5.94	62.8	6.31	63.7	6.52	64.2	6.59
	115	41.9	4.17	49.9	5.35	54.5	5.96	59.0	6.21	59.8	6.51	60.4	6.65	60.7	6.74
	118	41.9	4.43	48.6	5.77	47.5	5.01	51.4	5.27	52.1	5.52	52.6	5.64	52.4	5.71
	122	39.8	4.39	39.0	4.39	37.8	3.81	41.0	3.99	41.7	4.18	42.2	4.28	42.2	4.34
80%	-4	37.3	1.08	44.4	1.30	51.8	1.51	55.1	1.64	58.8	1.77	65.9	2.02	73.0	2.25
	0	37.3	1.13	44.4	1.36	51.8	1.57	55.1	1.71	58.8	1.84	65.9	2.11	73.0	2.35
	5	37.3	1.17	44.4	1.41	51.8	1.63	55.1	1.77	58.8	1.91	65.9	2.18	73.0	2.43
	10	37.3	1.20	44.4	1.45	51.8	1.68	55.1	1.82	58.8	1.97	65.9	2.25	73.0	2.50
	14	37.3	1.24	44.4	1.50	51.8	1.74	55.1	1.89	58.8	2.04	65.9	2.33	73.0	2.59
	20	37.3	1.29	44.4	1.55	51.8	1.81	55.1	1.96	58.8	2.11	65.9	2.41	73.0	2.69
	25	37.3	1.33	44.4	1.60	51.8	1.87	55.1	2.02	58.8	2.17	65.9	2.48	73.0	2.77
	30	37.3	1.37	44.4	1.64	51.8	1.93	55.1	2.08	58.8	2.23	65.9	2.55	73.0	2.86
	35	37.3	1.41	44.4	1.69	51.8	1.98	55.1	2.13	58.8	2.29	65.9	2.62	73.0	2.94
	40	37.3	1.45	44.4	1.73	51.8	2.03	55.1	2.19	58.8	2.35	65.9	2.69	73.0	3.02
	45	37.3	1.47	44.4	1.75	51.8	2.06	55.1	2.23	58.8	2.38	65.9	2.73	73.0	3.06
	50	37.3	1.49	44.4	1.78	51.8	2.09	55.1	2.25	58.8	2.41	65.9	2.77	73.0	3.10
	55	37.3	1.51	44.4	1.81	51.8	2.13	55.1	2.29	58.8	2.46	65.9	2.82	73.0	3.15
	60	37.3	1.56	44.4	1.87	51.8	2.20	55.1	2.38	58.8	2.56	65.9	2.92	73.0	3.28
	65	37.3	1.58	44.4	1.91	51.8	2.25	55.1	2.42	58.8	2.61	65.9	2.97	73.0	3.36
	70	37.3	1.63	44.4	1.96	51.8	2.32	55.1	2.50	58.8	2.72	65.9	3.21	73.0	3.71
	75	37.3	1.66	44.4	2.00	51.8	2.43	55.1	2.66	58.8	2.90	65.9	3.41	73.0	3.91
	80	37.3	1.82	44.4	2.27	51.8	2.77	55.1	3.02	58.8	3.30	65.9	3.92	73.0	4.37
	85	37.3	1.94	44.4	2.41	51.8	2.95	55.1	3.23	58.8	3.54	65.9	4.18	73.0	4.48
	90	37.3	2.18	44.4	2.74	51.8	3.33	55.1	3.67	58.8	4.02	65.9	4.59	71.8	4.75
	95	37.3	2.32	44.4	2.90	51.8	3.56	**55.1**	**3.89**	58.8	4.28	65.9	4.75	70.3	4.88
	100	37.3	2.50	44.4	3.12	51.8	3.84	55.1	4.17	58.8	4.45	65.9	4.95	68.7	5.04
	105	37.3	2.85	44.4	3.57	51.8	4.27	55.1	4.47	58.8	4.77	65.1	5.14	66.7	5.29
	110	37.3	3.23	44.4	4.07	51.8	4.53	55.1	4.78	58.8	5.14	62.8	5.33	63.1	5.56
	115	37.3	3.45	44.4	4.35	51.8	4.68	55.1	5.02	55.1	5.26	55.5	5.45	55.5	5.78
	118	37.3	3.67	44.4	4.63	47.5	5.01	48.4	4.77	48.0	4.46	48.3	4.63	47.9	4.91
	122	37.3	3.96	39.1	4.36	37.8	3.81	38.7	3.61	38.5	3.38	38.8	3.51	38.5	3.73

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 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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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COOLING CAPACITY

ZRUN072BSS0

MULTI V™ S
THREE-PHASE

Table 14: ZRUN072BSS0 Cooling Capacities, continued.

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%	-4	32.7	0.96	38.8	1.14	45.3	1.34	48.4	1.43	51.4	1.52	57.6	1.75	64.1	1.95
	0	32.7	0.99	38.8	1.18	45.3	1.39	48.4	1.49	51.4	1.59	57.6	1.82	64.1	2.03
	5	32.7	1.03	38.8	1.22	45.3	1.44	48.4	1.54	51.4	1.64	57.6	1.88	64.1	2.11
	10	32.7	1.06	38.8	1.26	45.3	1.48	48.4	1.59	51.4	1.69	57.6	1.94	64.1	2.17
	14	32.7	1.10	38.8	1.31	45.3	1.54	48.4	1.64	51.4	1.75	57.6	2.01	64.1	2.25
	20	32.7	1.14	38.8	1.35	45.3	1.58	48.4	1.70	51.4	1.81	57.6	2.07	64.1	2.32
	25	32.7	1.17	38.8	1.38	45.3	1.62	48.4	1.74	51.4	1.86	57.6	2.12	64.1	2.38
	30	32.7	1.20	38.8	1.42	45.3	1.66	48.4	1.79	51.4	1.91	57.6	2.18	64.1	2.45
	35	32.7	1.23	38.8	1.46	45.3	1.71	48.4	1.84	51.4	1.97	57.6	2.23	64.1	2.51
	40	32.7	1.26	38.8	1.50	45.3	1.75	48.4	1.88	51.4	2.01	57.6	2.29	64.1	2.58
	45	32.7	1.28	38.8	1.52	45.3	1.78	48.4	1.92	51.4	2.05	57.6	2.33	64.1	2.62
	50	32.7	1.30	38.8	1.55	45.3	1.81	48.4	1.95	51.4	2.08	57.6	2.37	64.1	2.66
	55	32.7	1.33	38.8	1.58	45.3	1.84	48.4	1.98	51.4	2.12	57.6	2.41	64.1	2.72
	60	32.7	1.37	38.8	1.63	45.3	1.91	48.4	2.05	51.4	2.19	57.6	2.50	64.1	2.82
	65	32.7	1.39	38.8	1.66	45.3	1.94	48.4	2.09	51.4	2.24	57.6	2.55	64.1	2.87
	70	32.7	1.43	38.8	1.70	45.3	2.00	48.4	2.15	51.4	2.31	57.6	2.64	64.1	3.05
	75	32.7	1.45	38.8	1.73	45.3	2.04	48.4	2.22	51.4	2.41	57.6	2.82	64.1	3.23
	80	32.7	1.56	38.8	1.92	45.3	2.32	48.4	2.53	51.4	2.74	57.6	3.12	64.1	3.58
	85	32.7	1.66	38.8	2.04	45.3	2.47	48.4	2.69	51.4	2.95	57.6	3.32	64.1	3.73
	90	32.7	1.86	38.8	2.30	45.3	2.79	48.4	3.05	51.4	3.33	57.6	3.70	64.1	4.05
	95	32.7	1.97	38.8	2.44	45.3	2.97	**48.4**	**3.25**	51.4	3.54	57.6	3.90	64.1	4.17
	100	32.7	2.13	38.8	2.64	45.3	3.21	48.4	3.51	51.4	3.64	57.6	4.08	64.1	4.29
	105	32.7	2.41	38.8	3.01	45.3	3.53	48.4	3.74	51.4	3.96	57.6	4.30	64.1	4.54
	110	32.7	2.72	38.8	3.41	45.3	3.74	48.4	3.97	51.4	4.29	57.6	4.47	62.2	4.88
	115	32.7	2.92	38.8	3.64	45.3	3.87	48.4	4.19	51.4	4.42	57.6	4.61	58.7	5.20
	118	32.7	3.10	38.8	3.86	45.3	4.11	48.4	4.44	46.8	4.42	48.3	3.91	47.9	4.41
	122	32.7	3.34	38.8	4.18	40.4	3.92	38.6	3.65	37.5	3.34	38.8	2.96	38.5	3.35
60%	-4	28.0	0.83	33.3	0.96	38.8	1.13	41.3	1.21	44.0	1.30	49.6	1.47	54.8	1.64
	0	28.0	0.86	33.3	1.00	38.8	1.17	41.3	1.25	44.0	1.35	49.6	1.53	54.8	1.71
	5	28.0	0.89	33.3	1.04	38.8	1.22	41.3	1.30	44.0	1.40	49.6	1.58	54.8	1.77
	10	28.0	0.92	33.3	1.07	38.8	1.25	41.3	1.34	44.0	1.44	49.6	1.63	54.8	1.82
	14	28.0	0.95	33.3	1.11	38.8	1.30	41.3	1.39	44.0	1.49	49.6	1.69	54.8	1.89
	20	28.0	0.98	33.3	1.15	38.8	1.34	41.3	1.43	44.0	1.54	49.6	1.75	54.8	1.95
	25	28.0	1.00	33.3	1.18	38.8	1.37	41.3	1.47	44.0	1.58	49.6	1.79	54.8	2.01
	30	28.0	1.03	33.3	1.21	38.8	1.41	41.3	1.51	44.0	1.62	49.6	1.84	54.8	2.06
	35	28.0	1.05	33.3	1.24	38.8	1.44	41.3	1.55	44.0	1.66	49.6	1.88	54.8	2.12
	40	28.0	1.08	33.3	1.28	38.8	1.48	41.3	1.59	44.0	1.71	49.6	1.93	54.8	2.17
	45	28.0	1.09	33.3	1.29	38.8	1.49	41.3	1.61	44.0	1.72	49.6	1.95	54.8	2.19
	50	28.0	1.10	33.3	1.30	38.8	1.51	41.3	1.62	44.0	1.73	49.6	1.97	54.8	2.21
	55	28.0	1.12	33.3	1.32	38.8	1.54	41.3	1.65	44.0	1.76	49.6	2.01	54.8	2.25
	60	28.0	1.15	33.3	1.37	38.8	1.59	41.3	1.71	44.0	1.83	49.6	2.07	54.8	2.34
	65	28.0	1.17	33.3	1.39	38.8	1.62	41.3	1.74	44.0	1.86	49.6	2.12	54.8	2.38
	70	28.0	1.20	33.3	1.43	38.8	1.67	41.3	1.79	44.0	1.92	49.6	2.18	54.8	2.47
	75	28.0	1.22	33.3	1.45	38.8	1.70	41.3	1.83	44.0	1.98	49.6	2.31	54.8	2.64
	80	28.0	1.30	33.3	1.58	38.8	1.90	41.3	2.07	44.0	2.25	49.6	2.59	54.8	2.98
	85	28.0	1.38	33.3	1.68	38.8	2.02	41.3	2.21	44.0	2.41	49.6	2.72	54.8	3.07
	90	28.0	1.55	33.3	1.90	38.8	2.29	41.3	2.50	44.0	2.70	49.6	3.04	54.8	3.35
	95	28.0	1.64	33.3	2.01	38.8	2.43	**41.3**	**2.66**	44.0	2.86	49.6	3.18	54.8	3.53
	100	28.0	1.76	33.3	2.16	38.8	2.62	41.3	2.87	44.0	2.99	49.6	3.37	54.8	3.68
	105	28.0	2.00	33.3	2.47	38.8	2.89	41.3	3.06	44.0	3.25	49.6	3.58	54.8	4.01
	110	28.0	2.25	33.3	2.80	38.8	3.12	41.3	3.24	44.0	3.51	49.6	3.83	54.8	4.38
	115	28.0	2.41	33.3	2.99	38.8	3.24	41.3	3.43	44.0	3.64	49.6	4.05	54.8	4.68
	118	28.0	2.55	33.3	3.17	38.8	3.44	41.3	3.65	44.0	3.87	48.3	3.91	47.9	4.41
	122	28.0	2.75	33.3	3.42	38.8	3.73	38.6	3.70	37.3	3.42	38.8	2.96	38.5	3.35

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 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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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LG

COOLING CAPACITY

ZRUN072BSS0

Table 15: ZRUN072BSS0 Cooling Capacities, continued.

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
50%	-4	23.3	0.71	27.7	0.84	32.3	0.94	34.5	1.01	36.7	1.09	41.3	1.21	45.6	1.34
	0	23.3	0.74	27.7	0.87	32.3	0.98	34.5	1.05	36.7	1.13	41.3	1.26	45.6	1.39
	5	23.3	0.77	27.7	0.90	32.3	1.01	34.5	1.09	36.7	1.17	41.3	1.30	45.6	1.44
	10	23.3	0.79	27.7	0.93	32.3	1.04	34.5	1.12	36.7	1.21	41.3	1.34	45.6	1.48
	14	23.3	0.82	27.7	0.96	32.3	1.08	34.5	1.16	36.7	1.25	41.3	1.39	45.6	1.54
	20	23.3	0.85	27.7	0.99	32.3	1.12	34.5	1.20	36.7	1.29	41.3	1.44	45.6	1.60
	25	23.3	0.87	27.7	1.02	32.3	1.16	34.5	1.24	36.7	1.32	41.3	1.48	45.6	1.65
	30	23.3	0.90	27.7	1.04	32.3	1.20	34.5	1.27	36.7	1.36	41.3	1.52	45.6	1.69
	35	23.3	0.92	27.7	1.07	32.3	1.23	34.5	1.31	36.7	1.40	41.3	1.56	45.6	1.74
	40	23.3	0.95	27.7	1.10	32.3	1.26	34.5	1.34	36.7	1.43	41.3	1.60	45.6	1.78
	45	23.3	0.96	27.7	1.11	32.3	1.28	34.5	1.36	36.7	1.45	41.3	1.62	45.6	1.81
	50	23.3	0.97	27.7	1.13	32.3	1.30	34.5	1.38	36.7	1.47	41.3	1.65	45.6	1.83
	55	23.3	0.99	27.7	1.15	32.3	1.32	34.5	1.40	36.7	1.49	41.3	1.68	45.6	1.87
	60	23.3	1.02	27.7	1.18	32.3	1.36	34.5	1.45	36.7	1.54	41.3	1.73	45.6	1.94
	65	23.3	1.03	27.7	1.20	32.3	1.38	34.5	1.47	36.7	1.56	41.3	1.76	45.6	1.97
	70	23.3	1.06	27.7	1.22	32.3	1.41	34.5	1.51	36.7	1.61	41.3	1.81	45.6	2.03
	75	23.3	1.07	27.7	1.24	32.3	1.44	34.5	1.53	36.7	1.64	41.3	1.84	45.6	2.07
	80	23.3	1.10	27.7	1.32	32.3	1.54	34.5	1.67	36.7	1.79	41.3	2.06	45.6	2.35
	85	23.3	1.17	27.7	1.39	32.3	1.64	34.5	1.77	36.7	1.91	41.3	2.20	45.6	2.51
	90	23.3	1.31	27.7	1.55	32.3	1.84	34.5	1.99	36.7	2.15	41.3	2.48	45.6	2.84
	95	23.3	1.38	27.7	1.65	32.3	1.95	**34.5**	**2.11**	36.7	2.28	41.3	2.63	45.6	3.02
	100	23.3	1.45	27.7	1.74	32.3	2.06	34.5	2.24	36.7	2.41	41.3	2.80	45.6	3.20
	105	23.3	1.59	27.7	1.92	32.3	2.28	34.5	2.47	36.7	2.67	41.3	3.10	45.6	3.56
	110	23.3	1.75	27.7	2.12	32.3	2.53	34.5	2.75	36.7	2.97	41.3	3.46	45.6	3.98
	115	23.3	1.88	27.7	2.28	32.3	2.72	34.5	2.95	36.7	3.20	41.3	3.73	45.6	4.29
	118	23.3	2.03	27.7	2.47	32.3	2.95	34.5	3.21	36.7	3.49	41.3	3.91	45.6	4.41
	122	23.3	2.24	27.7	2.73	32.3	3.26	34.5	3.57	36.7	3.42	38.8	2.96	38.5	3.35
25%	-4	11.6	0.26	13.9	0.31	16.2	0.35	17.3	0.37	18.3	0.40	20.6	0.45	22.8	0.50
	0	11.6	0.27	13.9	0.32	16.2	0.36	17.3	0.39	18.3	0.42	20.6	0.46	22.8	0.52
	5	11.6	0.28	13.9	0.33	16.2	0.37	17.3	0.40	18.3	0.43	20.6	0.48	22.8	0.53
	10	11.6	0.29	13.9	0.34	16.2	0.38	17.3	0.41	18.3	0.45	20.6	0.50	22.8	0.55
	14	11.6	0.30	13.9	0.36	16.2	0.40	17.3	0.43	18.3	0.46	20.6	0.51	22.8	0.57
	20	11.6	0.31	13.9	0.37	16.2	0.42	17.3	0.45	18.3	0.48	20.6	0.53	22.8	0.59
	25	11.6	0.32	13.9	0.38	16.2	0.43	17.3	0.46	18.3	0.49	20.6	0.55	22.8	0.61
	30	11.6	0.33	13.9	0.39	16.2	0.44	17.3	0.47	18.3	0.50	20.6	0.56	22.8	0.63
	35	11.6	0.34	13.9	0.40	16.2	0.45	17.3	0.48	18.3	0.52	20.6	0.58	22.8	0.64
	40	11.6	0.35	13.9	0.41	16.2	0.47	17.3	0.50	18.3	0.53	20.6	0.59	22.8	0.66
	45	11.6	0.36	13.9	0.41	16.2	0.47	17.3	0.50	18.3	0.54	20.6	0.60	22.8	0.67
	50	11.6	0.36	13.9	0.42	16.2	0.48	17.3	0.51	18.3	0.54	20.6	0.61	22.8	0.68
	55	11.6	0.37	13.9	0.43	16.2	0.49	17.3	0.52	18.3	0.55	20.6	0.62	22.8	0.69
	60	11.6	0.38	13.9	0.44	16.2	0.50	17.3	0.54	18.3	0.57	20.6	0.64	22.8	0.72
	65	11.6	0.38	13.9	0.44	16.2	0.51	17.3	0.54	18.3	0.58	20.6	0.65	22.8	0.73
	70	11.6	0.39	13.9	0.45	16.2	0.52	17.3	0.56	18.3	0.59	20.6	0.67	22.8	0.75
	75	11.6	0.40	13.9	0.46	16.2	0.53	17.3	0.57	18.3	0.61	20.6	0.68	22.8	0.77
	80	11.6	0.41	13.9	0.49	16.2	0.57	17.3	0.62	18.3	0.66	20.6	0.76	22.8	0.87
	85	11.6	0.43	13.9	0.51	16.2	0.61	17.3	0.66	18.3	0.71	20.6	0.81	22.8	0.93
	90	11.6	0.48	13.9	0.58	16.2	0.68	17.3	0.74	18.3	0.79	20.6	0.92	22.8	1.05
	95	11.6	0.51	13.9	0.61	16.2	0.72	**17.3**	**0.78**	18.3	0.84	20.6	0.97	22.8	1.12
	100	11.6	0.54	13.9	0.64	16.2	0.76	17.3	0.83	18.3	0.89	20.6	1.04	22.8	1.19
	105	11.6	0.59	13.9	0.71	16.2	0.84	17.3	0.91	18.3	0.99	20.6	1.15	22.8	1.32
	110	11.6	0.65	13.9	0.79	16.2	0.94	17.3	1.02	18.3	1.10	20.6	1.28	22.8	1.47
	115	11.6	0.69	13.9	0.84	16.2	1.00	17.3	1.09	18.3	1.19	20.6	1.38	22.8	1.59
	118	11.6	0.75	13.9	0.92	16.2	1.09	17.3	1.19	18.3	1.29	20.6	1.45	22.8	1.63
	122	11.6	0.83	13.9	1.01	16.2	1.21	17.3	1.32	18.3	1.40	20.6	1.52	22.8	1.68

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 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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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COOLING CAPACITY

ZRUN096BSS0

MULTI V™ S
THREE-PHASE

Table 16: ZRUN096BSS0 Cooling Capacities.

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%	-4	83.7	2.68	99.4	3.25	115.5	3.86	119.8	4.16	121.5	4.49	125.7	5.15	128.7	5.32
	0	83.7	2.79	99.4	3.38	115.5	4.02	119.8	4.33	121.5	4.67	125.7	5.36	128.7	5.54
	5	83.7	2.89	99.4	3.51	115.5	4.16	119.8	4.49	121.5	4.84	125.7	5.55	128.7	5.74
	10	83.7	2.97	99.4	3.61	115.5	4.28	119.8	4.62	121.5	4.98	125.7	5.71	128.7	5.90
	14	83.7	3.08	99.4	3.74	115.5	4.44	119.8	4.79	121.5	5.16	125.7	5.92	128.7	6.12
	20	83.7	3.13	99.4	3.80	115.5	4.50	119.8	4.86	121.5	5.24	125.7	6.00	128.7	6.20
	25	83.7	3.18	99.4	3.85	115.5	4.55	119.8	4.92	121.5	5.30	125.7	6.07	128.7	6.28
	30	83.7	3.22	99.4	3.90	115.5	4.61	119.8	4.98	121.5	5.36	125.7	6.14	128.7	6.35
	35	83.7	3.26	99.4	3.95	115.5	4.66	119.8	5.04	121.5	5.42	125.7	6.21	128.7	6.43
	40	83.7	3.30	99.4	3.99	115.5	4.72	119.8	5.10	121.5	5.48	125.7	6.29	128.7	6.50
	45	83.7	3.33	99.4	4.03	115.5	4.77	119.8	5.15	121.5	5.54	125.7	6.35	128.7	6.57
	50	83.7	3.37	99.4	4.07	115.5	4.82	119.8	5.21	121.5	5.60	125.7	6.41	128.7	6.64
	55	83.7	3.42	99.4	4.15	115.5	4.91	118.1	5.32	119.8	5.71	124.0	6.53	127.0	6.68
	60	83.7	3.53	99.4	4.29	113.8	5.11	115.4	5.52	116.8	5.93	121.0	6.73	124.0	6.76
	65	83.7	3.61	99.4	4.39	112.1	5.21	113.8	5.63	115.1	6.04	119.2	6.95	122.2	7.01
	70	83.7	3.47	99.4	4.22	110.0	5.19	111.3	5.71	113.0	6.26	117.1	6.96	120.1	7.03
	75	83.7	3.56	99.4	4.49	108.3	5.55	109.6	6.13	111.3	6.72	115.4	7.29	118.4	7.34
	80	83.7	4.04	99.4	5.12	105.3	6.35	106.6	7.01	108.3	7.70	112.4	7.91	115.4	7.98
	85	83.7	4.30	99.4	5.47	103.6	6.78	105.3	7.48	106.6	8.17	110.7	8.24	113.7	8.31
	90	83.7	4.88	97.7	6.21	100.6	7.70	101.9	8.52	103.6	8.81	107.7	8.88	110.7	8.97
	95	84.6	5.17	97.0	6.61	100.0	8.22	**101.7**	**9.09**	103.0	9.13	107.1	9.21	110.1	9.30
	100	84.6	5.60	95.3	7.15	98.3	8.92	100.0	9.57	101.3	9.62	105.8	9.71	108.8	9.80
	105	84.6	6.31	92.7	8.09	95.7	10.06	97.2	10.29	98.7	10.34	102.1	10.44	103.6	10.54
	110	84.6	7.08	88.9	9.12	92.6	10.97	92.9	11.02	94.3	11.06	96.2	11.17	96.6	11.27
	115	84.1	8.20	85.7	10.49	85.7	11.56	85.7	11.56	85.7	11.56	86.9	11.58	87.3	11.61
	118	73.2	6.95	74.5	8.89	74.6	9.72	74.6	9.81	74.6	9.81	75.7	9.83	75.3	9.85
	122	58.4	5.27	59.7	6.76	59.4	7.40	59.6	7.42	59.7	7.43	60.8	7.45	60.7	7.48
120%	-4	76.1	2.52	90.9	3.06	105.6	3.62	113.1	3.91	118.2	4.21	123.6	4.83	126.1	4.99
	0	76.1	2.63	90.9	3.18	105.6	3.77	113.1	4.07	118.2	4.38	123.6	5.03	126.1	5.19
	5	76.1	2.72	90.9	3.30	105.6	3.91	113.1	4.21	118.2	4.54	123.6	5.21	126.1	5.38
	10	76.1	2.80	90.9	3.40	105.6	4.02	113.1	4.33	118.2	4.67	123.6	5.36	126.1	5.54
	14	76.1	2.90	90.9	3.52	105.6	4.17	113.1	4.49	118.2	4.84	123.6	5.55	126.1	5.74
	20	76.1	2.95	90.9	3.57	105.6	4.23	113.1	4.56	118.2	4.91	123.6	5.63	126.1	5.82
	25	76.1	2.99	90.9	3.61	105.6	4.28	113.1	4.62	118.2	4.97	123.6	5.70	126.1	5.89
	30	76.1	3.02	90.9	3.66	105.6	4.33	113.1	4.68	118.2	5.03	123.6	5.76	126.1	5.96
	35	76.1	3.06	90.9	3.70	105.6	4.38	113.1	4.74	118.2	5.09	123.6	5.83	126.1	6.04
	40	76.1	3.10	90.9	3.75	105.6	4.43	113.1	4.79	118.2	5.15	123.6	5.91	126.1	6.11
	45	76.1	3.14	90.9	3.79	105.6	4.48	113.1	4.85	118.2	5.21	123.6	5.97	126.1	6.18
	50	76.1	3.17	90.9	3.83	105.6	4.53	113.1	4.90	118.2	5.27	123.6	6.04	126.1	6.25
	55	76.1	3.22	90.9	3.90	105.6	4.62	113.1	5.01	116.9	5.37	121.8	6.15	124.8	6.30
	60	76.1	3.33	90.9	4.04	105.6	4.81	112.3	5.20	113.6	5.59	118.8	6.34	121.4	6.45
	65	76.1	3.40	90.9	4.13	105.6	4.90	110.6	5.30	112.3	5.69	117.1	6.55	120.1	6.60
	70	76.1	3.33	90.9	4.05	105.6	4.98	108.5	5.48	109.8	6.01	115.0	6.68	117.6	6.75
	75	76.1	3.41	90.9	4.31	105.6	5.33	106.8	5.88	108.5	6.45	113.3	7.00	116.3	7.05
	80	76.1	3.88	90.9	4.91	102.6	6.10	103.9	6.73	105.2	7.40	110.3	7.60	112.8	7.66
	85	76.1	4.13	90.9	5.25	100.9	6.51	102.2	7.18	103.9	7.85	108.5	7.91	111.5	7.98
	90	76.1	4.68	90.9	5.96	98.0	7.40	99.3	8.18	100.5	8.46	105.5	8.53	108.1	8.61
	95	76.9	4.96	91.8	6.35	97.3	7.90	**98.6**	**8.73**	100.3	8.76	104.9	8.85	108.0	8.93
	100	76.9	5.37	91.8	6.86	95.6	8.56	97.3	9.19	98.6	9.24	103.6	9.32	106.2	9.41
	105	76.9	6.05	90.4	7.77	93.1	9.66	94.6	9.88	95.8	9.93	100.6	10.02	102.3	10.11
	110	76.9	6.80	88.0	8.75	90.9	10.53	91.2	10.58	92.5	10.62	95.4	10.72	95.8	10.82
	115	74.8	7.87	84.8	10.07	84.8	11.10	84.8	11.10	84.8	11.10	86.9	11.12	87.3	11.14
	118	66.8	6.95	73.8	8.53	73.9	9.34	73.9	9.42	73.9	9.42	75.7	9.44	75.4	9.45
	122	53.4	5.27	59.2	6.49	58.9	7.11	59.0	7.12	59.2	7.13	60.8	7.15	60.7	7.18

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 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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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LG

COOLING CAPACITY

ZRUN096BSS0

Table 17: ZRUN096BSS0 Cooling Capacities, continued.

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%	-4	70.6	2.32	84.2	2.80	97.8	3.32	104.6	3.60	111.4	3.86	122.7	4.40	125.3	4.57
	0	70.6	2.42	84.2	2.92	97.8	3.46	104.6	3.75	111.4	4.02	122.7	4.58	125.3	4.75
	5	70.6	2.51	84.2	3.02	97.8	3.58	104.6	3.88	111.4	4.16	122.7	4.75	125.3	4.93
	10	70.6	2.58	84.2	3.11	97.8	3.69	104.6	4.00	111.4	4.28	122.7	4.89	125.3	5.07
	14	70.6	2.67	84.2	3.22	97.8	3.82	104.6	4.14	111.4	4.44	122.7	5.06	125.3	5.25
	20	70.6	2.71	84.2	3.27	97.8	3.88	104.6	4.20	111.4	4.51	122.7	5.15	125.3	5.33
	25	70.6	2.74	84.2	3.32	97.8	3.93	104.6	4.25	111.4	4.56	122.7	5.22	125.3	5.40
	30	70.6	2.78	84.2	3.36	97.8	3.97	104.6	4.30	111.4	4.62	122.7	5.29	125.3	5.47
	35	70.6	2.82	84.2	3.41	97.8	4.03	104.6	4.36	111.4	4.69	122.7	5.37	125.3	5.56
	40	70.6	2.86	84.2	3.46	97.8	4.09	104.6	4.42	111.4	4.75	122.7	5.44	125.3	5.63
	45	70.6	2.90	84.2	3.51	97.8	4.15	104.6	4.49	111.4	4.83	122.7	5.53	125.3	5.72
	50	70.6	2.95	84.2	3.57	97.8	4.22	104.6	4.56	111.4	4.91	122.7	5.62	125.3	5.81
	55	70.6	3.00	84.2	3.64	97.8	4.30	104.6	4.66	111.4	5.00	121.0	5.72	123.6	5.87
	60	70.6	3.10	84.2	3.77	97.8	4.48	104.6	4.84	111.4	5.20	117.9	5.90	120.5	5.95
	65	70.6	3.16	84.2	3.85	97.8	4.56	104.6	4.94	111.4	5.30	116.2	6.10	118.8	6.15
	70	70.6	3.19	84.2	3.88	97.8	4.78	104.6	5.26	109.2	5.77	114.0	6.41	116.6	6.47
	75	70.6	3.27	84.2	4.14	97.8	5.11	104.6	5.64	107.5	6.18	112.3	6.71	114.9	6.76
	80	69.8	3.72	83.3	4.71	96.8	5.85	102.2	6.45	103.5	7.09	108.1	7.28	110.7	7.35
	85	69.8	3.96	83.3	5.03	96.8	6.25	100.5	6.88	101.8	7.52	106.4	7.59	109.0	7.65
	90	69.8	4.49	83.3	5.72	96.3	7.09	97.6	7.84	98.9	8.11	103.4	8.18	106.0	8.26
	95	69.8	4.76	83.3	6.09	94.7	7.57	**95.9**	**8.37**	97.2	8.40	101.7	8.48	104.3	8.56
	100	69.8	5.15	83.3	6.58	93.4	8.21	94.7	8.81	95.9	8.86	100.4	8.94	103.0	9.02
	105	69.8	5.81	83.3	7.45	90.5	9.26	91.7	9.48	93.0	9.52	97.5	9.61	99.9	9.70
	110	69.8	6.52	83.3	8.39	87.7	10.10	87.9	10.15	89.2	10.18	92.0	10.28	92.4	10.38
	115	69.8	7.55	83.3	9.65	84.0	10.64	84.0	10.64	84.3	10.64	86.0	10.66	86.4	10.68
	118	67.5	6.88	72.4	8.18	73.1	8.95	73.1	9.03	73.4	9.03	74.9	9.05	74.6	9.06
	122	53.9	5.22	58.1	6.22	58.3	6.81	58.4	6.83	58.8	6.84	60.1	6.86	60.0	6.89
100%	-4	62.0	2.05	73.9	2.47	85.8	2.92	92.0	3.19	101.1	3.45	113.4	3.98	119.7	4.14
	0	62.0	2.13	73.9	2.57	85.8	3.04	92.0	3.32	101.1	3.59	113.4	4.14	119.7	4.31
	5	62.0	2.21	73.9	2.66	85.8	3.15	92.0	3.44	101.1	3.72	113.4	4.29	119.7	4.47
	10	62.0	2.27	73.9	2.74	85.8	3.24	92.0	3.53	101.1	3.83	113.4	4.41	119.7	4.60
	14	62.0	2.35	73.9	2.84	85.8	3.36	92.0	3.66	101.1	3.96	113.4	4.57	119.7	4.76
	20	62.0	2.42	73.9	2.93	85.8	3.47	92.0	3.77	101.1	4.09	113.4	4.71	119.7	4.90
	25	62.0	2.49	73.9	3.01	85.8	3.56	92.0	3.85	101.1	4.19	113.4	4.82	119.7	5.01
	30	62.0	2.55	73.9	3.08	85.8	3.65	92.0	3.94	101.1	4.30	113.4	4.93	119.7	5.12
	35	62.0	2.59	73.9	3.13	85.8	3.70	92.0	4.00	101.1	4.37	113.4	5.01	119.7	5.21
	40	62.0	2.63	73.9	3.18	85.8	3.76	92.0	4.07	101.1	4.44	113.4	5.09	119.7	5.29
	45	62.0	2.69	73.9	3.25	85.8	3.84	92.0	4.16	101.1	4.53	113.4	5.19	119.7	5.40
	50	62.0	2.74	73.9	3.31	85.8	3.92	92.0	4.24	101.1	4.62	113.4	5.30	119.7	5.51
	55	62.0	2.78	73.9	3.37	85.8	4.00	92.0	4.33	101.1	4.72	113.4	5.39	118.5	5.59
	60	62.0	2.88	73.9	3.50	85.8	4.16	92.0	4.49	101.1	4.90	113.0	5.56	115.1	5.69
	65	62.0	2.94	73.9	3.57	85.8	4.24	92.0	4.59	101.1	4.99	111.3	5.74	113.8	5.86
	70	62.0	3.03	73.9	3.68	85.8	4.52	92.0	4.98	101.1	5.55	109.1	6.16	111.3	6.27
	75	62.0	3.10	73.9	3.92	85.8	4.84	92.0	5.34	101.1	5.94	107.5	6.45	110.0	6.53
	80	62.0	3.53	73.9	4.46	85.8	5.54	92.0	6.11	101.1	6.82	104.5	7.00	106.6	7.10
	85	62.0	3.75	73.9	4.77	85.8	5.92	92.0	6.52	100.7	7.23	102.8	7.30	105.3	7.39
	90	62.0	4.25	73.9	5.42	85.8	6.72	92.0	7.43	97.3	7.80	99.8	7.86	102.0	7.98
	95	62.0	4.51	73.9	5.77	85.8	7.17	**92.0**	**7.93**	96.0	8.08	98.1	8.16	100.7	8.27
	100	62.0	4.87	73.9	6.22	85.8	7.76	90.4	8.33	94.4	8.50	96.9	8.58	99.0	8.70
	105	62.0	5.47	73.9	7.01	85.4	8.72	87.9	8.92	91.5	9.10	93.9	9.18	96.2	9.31
	110	62.0	6.12	73.9	7.87	84.4	9.47	86.3	9.52	88.0	9.69	89.4	9.79	91.1	9.93
	115	62.0	7.03	73.9	8.99	80.3	9.91	82.8	9.91	84.9	10.06	85.7	10.08	86.0	10.15
	118	62.0	7.09	64.8	8.43	69.9	8.34	72.1	8.41	73.9	8.54	74.6	8.55	74.3	8.61
	122	53.1	6.42	52.0	6.41	55.7	6.35	57.6	6.36	59.2	6.46	59.9	6.48	59.8	6.54

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 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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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COOLING CAPACITY

ZRUN096BSS0

MULTI V™ S
THREE-PHASE

Table 18: ZRUN096BSS0 Cooling Capacities, continued.

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%	-4	55.9	1.82	66.5	2.19	77.6	2.58	83.0	2.78	88.3	2.97	99.0	3.42	109.7	3.75
	0	55.9	1.90	66.5	2.27	77.6	2.69	83.0	2.89	88.3	3.09	99.0	3.56	109.7	3.90
	5	55.9	1.97	66.5	2.36	77.6	2.78	83.0	2.99	88.3	3.20	99.0	3.69	109.7	4.05
	10	55.9	2.02	66.5	2.43	77.6	2.86	83.0	3.08	88.3	3.29	99.0	3.79	109.7	4.16
	14	55.9	2.10	66.5	2.51	77.6	2.97	83.0	3.19	88.3	3.41	99.0	3.93	109.7	4.31
	20	55.9	2.17	66.5	2.61	77.6	3.08	83.0	3.32	88.3	3.55	99.0	4.07	109.7	4.48
	25	55.9	2.24	66.5	2.69	77.6	3.17	83.0	3.42	88.3	3.67	99.0	4.19	109.7	4.62
	30	55.9	2.30	66.5	2.77	77.6	3.26	83.0	3.52	88.3	3.79	99.0	4.30	109.7	4.75
	35	55.9	2.37	66.5	2.85	77.6	3.36	83.0	3.62	88.3	3.90	99.0	4.43	109.7	4.90
	40	55.9	2.44	66.5	2.94	77.6	3.46	83.0	3.74	88.3	4.02	99.0	4.57	109.7	5.04
	45	55.9	2.50	66.5	3.01	77.6	3.54	83.0	3.82	88.3	4.12	99.0	4.67	109.7	5.16
	50	55.9	2.55	66.5	3.07	77.6	3.62	83.0	3.91	88.3	4.21	99.0	4.78	109.7	5.27
	55	55.9	2.58	66.5	3.12	77.6	3.69	83.0	3.99	88.3	4.29	99.0	4.87	109.7	5.32
	60	55.9	2.68	66.5	3.25	77.6	3.83	83.0	4.14	88.3	4.46	99.0	5.06	108.7	5.38
	65	55.9	2.73	66.5	3.31	77.6	3.91	83.0	4.22	88.3	4.54	99.0	5.15	108.0	5.65
	70	55.9	2.80	66.5	3.40	77.6	4.05	83.0	4.46	88.3	4.87	99.0	5.75	106.0	6.07
	75	55.9	2.85	66.5	3.56	77.6	4.33	83.0	4.77	88.3	5.23	99.0	6.00	104.3	6.34
	80	55.9	3.20	66.5	4.03	77.6	4.95	83.0	5.45	88.3	5.97	99.0	6.63	101.4	6.90
	85	55.9	3.40	66.5	4.30	77.6	5.29	83.0	5.81	88.3	6.38	97.8	6.98	99.8	7.18
	90	55.9	3.84	66.5	4.87	77.6	6.00	83.0	6.62	88.3	7.26	94.9	7.64	96.9	7.75
	95	55.9	4.10	66.5	5.17	77.6	6.40	**83.0**	**7.06**	88.3	7.75	93.2	7.93	95.3	8.04
	100	55.9	4.23	66.5	5.39	77.6	6.66	83.0	7.34	88.3	7.92	92.0	8.27	93.6	8.36
	105	55.9	4.90	66.5	6.25	77.6	7.53	83.0	8.03	87.3	8.49	89.1	8.87	90.3	8.98
	110	55.9	5.63	66.5	7.21	77.6	8.26	83.0	8.67	83.8	9.21	84.9	9.52	85.6	9.63
	115	55.9	6.10	66.5	7.81	72.7	8.70	78.7	9.08	79.8	9.50	80.5	9.71	80.9	9.84
	118	55.9	6.47	64.8	8.43	63.3	7.32	68.5	7.70	69.5	8.06	70.1	8.24	69.8	8.35
	122	53.1	6.42	52.0	6.41	50.4	5.57	54.7	5.82	55.6	6.11	56.3	6.25	56.2	6.34
80%	-4	49.7	1.58	59.1	1.90	69.0	2.21	73.5	2.40	78.4	2.59	87.9	2.96	97.3	3.29
	0	49.7	1.64	59.1	1.98	69.0	2.30	73.5	2.50	78.4	2.69	87.9	3.08	97.3	3.43
	5	49.7	1.70	59.1	2.05	69.0	2.38	73.5	2.59	78.4	2.79	87.9	3.19	97.3	3.55
	10	49.7	1.75	59.1	2.11	69.0	2.45	73.5	2.66	78.4	2.87	87.9	3.28	97.3	3.65
	14	49.7	1.82	59.1	2.19	69.0	2.54	73.5	2.76	78.4	2.98	87.9	3.40	97.3	3.79
	20	49.7	1.89	59.1	2.27	69.0	2.64	73.5	2.86	78.4	3.08	87.9	3.52	97.3	3.93
	25	49.7	1.94	59.1	2.33	69.0	2.73	73.5	2.95	78.4	3.16	87.9	3.62	97.3	4.05
	30	49.7	2.00	59.1	2.40	69.0	2.81	73.5	3.04	78.4	3.25	87.9	3.73	97.3	4.17
	35	49.7	2.05	59.1	2.47	69.0	2.89	73.5	3.12	78.4	3.34	87.9	3.83	97.3	4.29
	40	49.7	2.11	59.1	2.53	69.0	2.97	73.5	3.20	78.4	3.43	87.9	3.93	97.3	4.40
	45	49.7	2.14	59.1	2.56	69.0	3.01	73.5	3.25	78.4	3.47	87.9	3.99	97.3	4.46
	50	49.7	2.17	59.1	2.60	69.0	3.05	73.5	3.29	78.4	3.52	87.9	4.04	97.3	4.53
	55	49.7	2.20	59.1	2.64	69.0	3.11	73.5	3.35	78.4	3.59	87.9	4.12	97.3	4.60
	60	49.7	2.28	59.1	2.73	69.0	3.22	73.5	3.47	78.4	3.73	87.9	4.26	97.3	4.79
	65	49.7	2.31	59.1	2.79	69.0	3.28	73.5	3.54	78.4	3.81	87.9	4.34	97.3	4.90
	70	49.7	2.38	59.1	2.86	69.0	3.38	73.5	3.65	78.4	3.97	87.9	4.68	97.3	5.42
	75	49.7	2.42	59.1	2.92	69.0	3.55	73.5	3.89	78.4	4.23	87.9	4.98	97.3	5.71
	80	49.7	2.65	59.1	3.32	69.0	4.04	73.5	4.42	78.4	4.82	87.9	5.73	97.3	6.38
	85	49.7	2.83	59.1	3.52	69.0	4.31	73.5	4.71	78.4	5.17	87.9	6.10	97.3	6.55
	90	49.7	3.18	59.1	4.00	69.0	4.87	73.5	5.35	78.4	5.87	87.9	6.71	95.8	6.94
	95	49.7	3.38	59.1	4.23	69.0	5.20	**73.5**	**5.68**	78.4	6.24	87.9	6.94	93.7	7.13
	100	49.7	3.65	59.1	4.56	69.0	5.61	73.5	6.09	78.4	6.49	87.9	7.23	91.6	7.36
	105	49.7	4.16	59.1	5.22	69.0	6.24	73.5	6.53	78.4	6.96	86.8	7.51	89.0	7.72
	110	49.7	4.71	59.1	5.95	69.0	6.62	73.5	6.98	78.4	7.50	83.8	7.79	84.2	8.12
	115	49.7	5.04	59.1	6.36	69.0	6.84	73.5	7.34	73.5	7.68	74.0	7.96	74.0	8.45
	118	49.7	5.35	59.1	6.76	63.3	7.32	64.6	6.96	64.0	6.51	64.4	6.76	63.9	7.17
	122	49.7	5.79	52.2	6.37	50.4	5.57	51.6	5.27	51.3	4.93	51.7	5.12	51.4	5.44

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 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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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LG

COOLING CAPACITY

ZRUN096BSS0

Table 19: ZRUN096BSS0 Cooling Capacities, continued.

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%	-4	43.5	1.40	51.8	1.66	60.4	1.95	64.5	2.09	68.6	2.23	76.8	2.55	85.4	2.85
	0	43.5	1.45	51.8	1.72	60.4	2.03	64.5	2.17	68.6	2.32	76.8	2.65	85.4	2.97
	5	43.5	1.50	51.8	1.79	60.4	2.10	64.5	2.25	68.6	2.40	76.8	2.75	85.4	3.08
	10	43.5	1.55	51.8	1.84	60.4	2.16	64.5	2.32	68.6	2.47	76.8	2.83	85.4	3.16
	14	43.5	1.60	51.8	1.91	60.4	2.24	64.5	2.40	68.6	2.56	76.8	2.93	85.4	3.28
	20	43.5	1.66	51.8	1.97	60.4	2.31	64.5	2.48	68.6	2.65	76.8	3.02	85.4	3.39
	25	43.5	1.70	51.8	2.02	60.4	2.37	64.5	2.55	68.6	2.72	76.8	3.10	85.4	3.48
	30	43.5	1.75	51.8	2.07	60.4	2.43	64.5	2.61	68.6	2.79	76.8	3.18	85.4	3.57
	35	43.5	1.80	51.8	2.13	60.4	2.50	64.5	2.68	68.6	2.87	76.8	3.26	85.4	3.67
	40	43.5	1.84	51.8	2.19	60.4	2.56	64.5	2.75	68.6	2.94	76.8	3.35	85.4	3.76
	45	43.5	1.87	51.8	2.22	60.4	2.60	64.5	2.80	68.6	2.99	76.8	3.40	85.4	3.82
	50	43.5	1.91	51.8	2.26	60.4	2.64	64.5	2.84	68.6	3.04	76.8	3.46	85.4	3.89
	55	43.5	1.94	51.8	2.30	60.4	2.69	64.5	2.89	68.6	3.09	76.8	3.52	85.4	3.97
	60	43.5	1.99	51.8	2.38	60.4	2.79	64.5	3.00	68.6	3.21	76.8	3.66	85.4	4.12
	65	43.5	2.03	51.8	2.42	60.4	2.83	64.5	3.05	68.6	3.27	76.8	3.72	85.4	4.19
	70	43.5	2.08	51.8	2.49	60.4	2.92	64.5	3.14	68.6	3.37	76.8	3.85	85.4	4.45
	75	43.5	2.11	51.8	2.53	60.4	2.97	64.5	3.25	68.6	3.52	76.8	4.12	85.4	4.71
	80	43.5	2.28	51.8	2.80	60.4	3.38	64.5	3.69	68.6	4.00	76.8	4.56	85.4	5.22
	85	43.5	2.42	51.8	2.97	60.4	3.60	64.5	3.93	68.6	4.31	76.8	4.85	85.4	5.45
	90	43.5	2.72	51.8	3.36	60.4	4.08	64.5	4.45	68.6	4.87	76.8	5.41	85.4	5.91
	95	43.5	2.87	51.8	3.57	60.4	4.34	**64.5**	**4.75**	68.6	5.17	76.8	5.69	85.4	6.09
	100	43.5	3.11	51.8	3.85	60.4	4.68	64.5	5.12	68.6	5.32	76.8	5.96	85.4	6.26
	105	43.5	3.52	51.8	4.39	60.4	5.16	64.5	5.46	68.6	5.78	76.8	6.27	85.4	6.63
	110	43.5	3.97	51.8	4.98	60.4	5.46	64.5	5.79	68.6	6.27	76.8	6.53	83.0	7.13
	115	43.5	4.26	51.8	5.31	60.4	5.65	64.5	6.12	68.6	6.45	76.8	6.73	78.2	7.59
	118	43.5	4.53	51.8	5.64	60.4	6.00	64.5	6.49	62.4	6.45	64.4	5.71	63.9	6.44
	122	43.5	4.88	51.8	6.11	53.9	5.73	51.5	5.34	50.0	4.88	51.7	4.33	51.4	4.89
60%	-4	37.4	1.21	44.4	1.40	51.8	1.65	55.0	1.76	58.7	1.90	66.1	2.15	73.1	2.40
	0	37.4	1.26	44.4	1.46	51.8	1.71	55.0	1.83	58.7	1.97	66.1	2.23	73.1	2.50
	5	37.4	1.30	44.4	1.51	51.8	1.78	55.0	1.90	58.7	2.04	66.1	2.31	73.1	2.59
	10	37.4	1.34	44.4	1.56	51.8	1.83	55.0	1.95	58.7	2.10	66.1	2.38	73.1	2.66
	14	37.4	1.39	44.4	1.61	51.8	1.89	55.0	2.02	58.7	2.18	66.1	2.47	73.1	2.76
	20	37.4	1.43	44.4	1.67	51.8	1.96	55.0	2.09	58.7	2.25	66.1	2.55	73.1	2.85
	25	37.4	1.47	44.4	1.72	51.8	2.01	55.0	2.15	58.7	2.31	66.1	2.62	73.1	2.93
	30	37.4	1.50	44.4	1.77	51.8	2.06	55.0	2.21	58.7	2.37	66.1	2.68	73.1	3.01
	35	37.4	1.54	44.4	1.82	51.8	2.11	55.0	2.27	58.7	2.43	66.1	2.75	73.1	3.09
	40	37.4	1.58	44.4	1.86	51.8	2.17	55.0	2.33	58.7	2.49	66.1	2.83	73.1	3.17
	45	37.4	1.59	44.4	1.88	51.8	2.18	55.0	2.35	58.7	2.51	66.1	2.85	73.1	3.20
	50	37.4	1.61	44.4	1.89	51.8	2.20	55.0	2.37	58.7	2.53	66.1	2.87	73.1	3.23
	55	37.4	1.63	44.4	1.93	51.8	2.25	55.0	2.41	58.7	2.58	66.1	2.93	73.1	3.28
	60	37.4	1.69	44.4	1.99	51.8	2.32	55.0	2.50	58.7	2.68	66.1	3.03	73.1	3.41
	65	37.4	1.71	44.4	2.03	51.8	2.37	55.0	2.54	58.7	2.72	66.1	3.09	73.1	3.48
	70	37.4	1.75	44.4	2.08	51.8	2.43	55.0	2.61	58.7	2.80	66.1	3.18	73.1	3.61
	75	37.4	1.78	44.4	2.11	51.8	2.48	55.0	2.67	58.7	2.89	66.1	3.37	73.1	3.85
	80	37.4	1.89	44.4	2.31	51.8	2.78	55.0	3.03	58.7	3.28	66.1	3.78	73.1	4.35
	85	37.4	2.02	44.4	2.46	51.8	2.95	55.0	3.23	58.7	3.51	66.1	3.98	73.1	4.49
	90	37.4	2.26	44.4	2.78	51.8	3.34	55.0	3.65	58.7	3.95	66.1	4.44	73.1	4.89
	95	37.4	2.39	44.4	2.94	51.8	3.55	**55.0**	**3.89**	58.7	4.18	66.1	4.65	73.1	5.15
	100	37.4	2.57	44.4	3.16	51.8	3.82	55.0	4.19	58.7	4.37	66.1	4.93	73.1	5.37
	105	37.4	2.92	44.4	3.60	51.8	4.22	55.0	4.46	58.7	4.75	66.1	5.23	73.1	5.86
	110	37.4	3.28	44.4	4.09	51.8	4.55	55.0	4.74	58.7	5.13	66.1	5.60	73.1	6.39
	115	37.4	3.51	44.4	4.36	51.8	4.73	55.0	5.01	58.7	5.31	66.1	5.92	73.1	6.83
	118	37.4	3.72	44.4	4.63	51.8	5.02	55.0	5.32	58.7	5.66	64.4	5.71	63.9	6.44
	122	37.4	4.01	44.4	5.00	51.8	5.44	51.4	5.40	49.8	5.00	51.7	4.33	51.4	4.89

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 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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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COOLING CAPACITY

ZRUN096BSS0

MULTI V™ S
THREE-PHASE

Table 20: ZRUN096BSS0 Cooling Capacities, continued.

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
50%	-4	31.1	1.04	37.0	1.22	43.1	1.37	46.0	1.48	48.9	1.59	55.0	1.76	60.8	1.95
	0	31.1	1.08	37.0	1.27	43.1	1.42	46.0	1.53	48.9	1.65	55.0	1.83	60.8	2.03
	5	31.1	1.12	37.0	1.32	43.1	1.48	46.0	1.59	48.9	1.71	55.0	1.90	60.8	2.11
	10	31.1	1.15	37.0	1.36	43.1	1.52	46.0	1.64	48.9	1.76	55.0	1.95	60.8	2.17
	14	31.1	1.20	37.0	1.41	43.1	1.57	46.0	1.70	48.9	1.83	55.0	2.03	60.8	2.25
	20	31.1	1.24	37.0	1.45	43.1	1.64	46.0	1.76	48.9	1.89	55.0	2.10	60.8	2.33
	25	31.1	1.28	37.0	1.49	43.1	1.69	46.0	1.81	48.9	1.93	55.0	2.16	60.8	2.40
	30	31.1	1.31	37.0	1.52	43.1	1.75	46.0	1.86	48.9	1.98	55.0	2.22	60.8	2.47
	35	31.1	1.35	37.0	1.56	43.1	1.79	46.0	1.91	48.9	2.04	55.0	2.28	60.8	2.54
	40	31.1	1.38	37.0	1.60	43.1	1.84	46.0	1.96	48.9	2.09	55.0	2.34	60.8	2.60
	45	31.1	1.40	37.0	1.63	43.1	1.86	46.0	1.98	48.9	2.12	55.0	2.37	60.8	2.64
	50	31.1	1.42	37.0	1.65	43.1	1.89	46.0	2.01	48.9	2.15	55.0	2.41	60.8	2.68
	55	31.1	1.45	37.0	1.68	43.1	1.92	46.0	2.04	48.9	2.18	55.0	2.45	60.8	2.72
	60	31.1	1.48	37.0	1.73	43.1	1.98	46.0	2.12	48.9	2.25	55.0	2.53	60.8	2.83
	65	31.1	1.50	37.0	1.76	43.1	2.01	46.0	2.15	48.9	2.29	55.0	2.57	60.8	2.88
	70	31.1	1.54	37.0	1.79	43.1	2.06	46.0	2.21	48.9	2.35	55.0	2.65	60.8	2.97
	75	31.1	1.56	37.0	1.82	43.1	2.10	46.0	2.24	48.9	2.39	55.0	2.69	60.8	3.03
	80	31.1	1.60	37.0	1.92	43.1	2.25	46.0	2.44	48.9	2.62	55.0	3.01	60.8	3.44
	85	31.1	1.71	37.0	2.03	43.1	2.39	46.0	2.59	48.9	2.78	55.0	3.21	60.8	3.66
	90	31.1	1.91	37.0	2.27	43.1	2.69	46.0	2.91	48.9	3.13	55.0	3.62	60.8	4.15
	95	31.1	2.01	37.0	2.41	43.1	2.85	**46.0**	**3.09**	48.9	3.33	55.0	3.84	60.8	4.40
	100	31.1	2.12	37.0	2.54	43.1	3.01	46.0	3.27	48.9	3.53	55.0	4.09	60.8	4.68
	105	31.1	2.32	37.0	2.81	43.1	3.33	46.0	3.61	48.9	3.90	55.0	4.53	60.8	5.20
	110	31.1	2.56	37.0	3.10	43.1	3.69	46.0	4.01	48.9	4.34	55.0	5.05	60.8	5.81
	115	31.1	2.74	37.0	3.33	43.1	3.97	46.0	4.31	48.9	4.68	55.0	5.45	60.8	6.27
	118	31.1	2.96	37.0	3.61	43.1	4.31	46.0	4.69	48.9	5.09	55.0	5.71	60.8	6.44
	122	31.1	3.26	37.0	3.99	43.1	4.77	46.0	5.21	48.9	5.00	51.7	4.33	51.4	4.89
25%	-4	15.5	0.38	18.5	0.45	21.6	0.51	23.0	0.55	24.4	0.59	27.5	0.65	30.4	0.72
	0	15.5	0.40	18.5	0.47	21.6	0.53	23.0	0.57	24.4	0.61	27.5	0.68	30.4	0.75
	5	15.5	0.41	18.5	0.49	21.6	0.55	23.0	0.59	24.4	0.63	27.5	0.70	30.4	0.78
	10	15.5	0.43	18.5	0.50	21.6	0.56	23.0	0.61	24.4	0.65	27.5	0.72	30.4	0.80
	14	15.5	0.44	18.5	0.52	21.6	0.58	23.0	0.63	24.4	0.68	27.5	0.75	30.4	0.83
	20	15.5	0.46	18.5	0.54	21.6	0.61	23.0	0.65	24.4	0.70	27.5	0.78	30.4	0.86
	25	15.5	0.47	18.5	0.55	21.6	0.63	23.0	0.67	24.4	0.72	27.5	0.80	30.4	0.89
	30	15.5	0.49	18.5	0.56	21.6	0.65	23.0	0.69	24.4	0.73	27.5	0.82	30.4	0.92
	35	15.5	0.50	18.5	0.58	21.6	0.66	23.0	0.71	24.4	0.75	27.5	0.85	30.4	0.94
	40	15.5	0.51	18.5	0.59	21.6	0.68	23.0	0.72	24.4	0.77	27.5	0.87	30.4	0.96
	45	15.5	0.52	18.5	0.60	21.6	0.69	23.0	0.73	24.4	0.78	27.5	0.88	30.4	0.98
	50	15.5	0.53	18.5	0.61	21.6	0.70	23.0	0.75	24.4	0.80	27.5	0.89	30.4	0.99
	55	15.5	0.54	18.5	0.62	21.6	0.71	23.0	0.76	24.4	0.81	27.5	0.91	30.4	1.01
	60	15.5	0.55	18.5	0.64	21.6	0.73	23.0	0.78	24.4	0.83	27.5	0.94	30.4	1.05
	65	15.5	0.55	18.5	0.65	21.6	0.75	23.0	0.80	24.4	0.85	27.5	0.95	30.4	1.06
	70	15.5	0.57	18.5	0.66	21.6	0.76	23.0	0.82	24.4	0.87	27.5	0.98	30.4	1.10
	75	15.5	0.58	18.5	0.67	21.6	0.78	23.0	0.83	24.4	0.89	27.5	1.00	30.4	1.12
	80	15.5	0.59	18.5	0.71	21.6	0.83	23.0	0.90	24.4	0.97	27.5	1.11	30.4	1.27
	85	15.5	0.63	18.5	0.75	21.6	0.89	23.0	0.96	24.4	1.03	27.5	1.19	30.4	1.36
	90	15.5	0.71	18.5	0.84	21.6	1.00	23.0	1.08	24.4	1.16	27.5	1.34	30.4	1.53
	95	15.5	0.75	18.5	0.89	21.6	1.05	**23.0**	**1.14**	24.4	1.23	27.5	1.42	30.4	1.63
	100	15.5	0.78	18.5	0.94	21.6	1.11	23.0	1.21	24.4	1.31	27.5	1.51	30.4	1.73
	105	15.5	0.86	18.5	1.04	21.6	1.23	23.0	1.34	24.4	1.44	27.5	1.68	30.4	1.93
	110	15.5	0.95	18.5	1.15	21.6	1.37	23.0	1.48	24.4	1.61	27.5	1.87	30.4	2.15
	115	15.5	1.01	18.5	1.23	21.6	1.47	23.0	1.60	24.4	1.73	27.5	2.02	30.4	2.32
	118	15.5	1.10	18.5	1.34	21.6	1.60	23.0	1.74	24.4	1.88	27.5	2.11	30.4	2.38
	122	15.5	1.21	18.5	1.48	21.6	1.76	23.0	1.93	24.4	2.05	27.5	2.22	30.4	2.45

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 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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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LG

HEATING CAPACITY

ZRUN072BSS0

Table 21: ZRUN072BSS0 Heating Capacities.

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%	-21.6	-22.0	36.3	1.96	36.1	2.23	35.9	2.63	35.7	3.02	35.5	3.40	35.2	3.89	35.0	4.17	34.8	4.54
	-17.1	-17.5	40.0	2.48	39.8	2.71	39.4	3.06	39.2	3.38	38.9	3.71	38.5	4.20	38.2	4.44	37.8	4.76
	-12.6	-13.0	43.7	3.01	43.4	3.20	43.0	3.48	42.6	3.75	42.3	4.02	41.9	4.51	41.4	4.72	40.9	4.98
	-7.0	-7.6	48.3	3.66	47.9	3.80	47.4	4.01	47.0	4.21	46.6	4.41	46.0	4.90	45.5	5.06	44.7	5.26
	-4.0	-4.4	50.8	4.01	50.4	4.13	49.7	4.30	49.3	4.46	48.8	4.62	48.3	5.11	47.6	5.24	46.8	5.41
	0.0	-0.4	54.1	4.48	53.6	4.56	52.9	4.68	52.4	4.79	51.9	4.90	51.2	5.39	50.5	5.48	49.5	5.60
	5.0	4.5	58.2	5.06	57.7	5.10	56.8	5.15	56.2	5.20	55.7	5.25	54.9	5.74	54.1	5.79	52.9	5.85
	10.0	9.0	62.3	5.64	61.7	5.64	60.8	5.62	60.1	5.61	59.5	5.60	58.7	6.09	57.6	6.09	56.3	6.10
	17.0	15.0	68.1	6.46	67.4	6.39	66.3	6.29	65.5	6.18	64.8	6.08	63.9	6.57	62.7	6.52	61.1	6.44
	20.0	19.0	73.9	6.81	73.3	6.71	72.3	6.57	71.5	6.43	70.6	6.29	69.5	6.78	68.6	6.70	65.6	6.59
	25.0	23.0	83.5	7.39	83.1	7.25	82.5	7.04	81.5	6.84	80.4	6.64	78.9	7.13	78.5	7.01	73.3	6.84
	30.0	28.0	93.2	7.98	93.0	7.79	92.7	7.52	91.4	7.25	90.2	6.99	88.4	7.48	88.3	7.31	80.9	7.09
	35.0	32.0	102.8	8.56	102.8	8.33	102.8	7.99	101.4	7.66	100.0	7.34	93.9	7.03	88.3	6.86	80.9	6.64
	40.0	36.0	102.8	8.13	102.8	7.82	102.8	7.37	101.4	7.11	100.0	6.86	93.9	6.57	88.3	6.41	80.9	6.20
	45.0	41.0	102.8	7.13	102.8	6.98	102.8	6.75	101.4	6.56	100.0	6.36	93.9	6.10	88.3	5.95	80.9	5.74
	47.0	43.0	102.8	6.85	102.8	6.70	102.8	6.49	101.4	6.30	100.0	6.11	93.9	5.86	88.3	5.72	80.9	5.52
	50.0	46.0	102.8	6.59	102.8	6.46	102.8	6.25	101.4	6.07	100.0	5.89	93.9	5.65	88.3	5.50	80.9	5.31
	55.0	51.0	102.8	6.19	102.8	6.06	102.8	5.86	101.4	5.70	100.0	5.53	93.9	5.30	88.3	5.17	80.9	4.99
	60.0	56.0	102.8	5.76	102.8	5.63	102.8	5.45	101.4	5.30	100.0	5.14	93.9	4.93	88.3	4.80	80.9	4.64
120%	-21.6	-22.0	36.0	2.41	35.9	2.61	35.6	2.92	35.4	3.18	35.2	3.45	34.9	3.62	34.7	3.65	34.5	3.70
	-17.1	-17.5	39.3	2.76	39.1	2.93	38.8	3.19	38.5	3.42	38.1	3.65	37.5	3.80	37.0	3.83	36.3	3.87
	-12.6	-13.0	42.6	3.10	42.4	3.24	42.0	3.46	41.5	3.66	41.1	3.86	40.1	3.98	39.3	4.01	38.1	4.03
	-7.0	-7.6	46.7	3.53	46.4	3.64	45.9	3.80	45.3	3.96	44.7	4.11	43.3	4.21	42.1	4.22	40.4	4.24
	-4.0	-4.4	48.9	3.75	48.6	3.85	48.0	3.98	47.3	4.12	46.7	4.25	45.1	4.34	43.6	4.34	41.6	4.35
	0.0	-0.4	51.8	4.06	51.4	4.13	50.8	4.23	50.0	4.33	49.2	4.43	47.4	4.50	45.6	4.50	43.2	4.50
	5.0	4.5	55.5	4.44	55.0	4.48	54.4	4.53	53.4	4.60	52.5	4.66	50.3	4.70	48.1	4.69	45.2	4.68
	10.0	9.0	59.2	4.82	58.6	4.83	57.9	4.83	56.8	4.86	55.7	4.89	53.2	4.91	50.6	4.89	47.2	4.86
	17.0	15.0	64.3	5.36	63.7	5.32	62.8	5.26	61.6	5.23	60.3	5.21	57.2	5.19	54.1	5.16	50.1	5.12
	20.0	19.0	70.7	5.59	70.1	5.53	69.2	5.44	67.5	5.39	65.9	5.35	62.4	5.32	58.9	5.28	54.3	5.23
	25.0	23.0	81.4	5.97	80.7	5.88	79.7	5.74	77.4	5.66	75.1	5.58	71.0	5.52	66.9	5.48	61.5	5.41
	30.0	28.0	92.0	6.35	91.3	6.23	90.3	6.05	87.4	5.93	84.4	5.81	79.6	5.73	74.9	5.67	68.6	5.60
	35.0	32.0	102.7	6.73	102.0	6.58	100.9	6.35	97.3	6.19	93.7	6.03	88.3	5.93	82.9	5.87	75.7	5.78
	40.0	36.0	102.7	6.61	102.0	6.48	100.9	6.28	97.3	6.14	93.7	6.00	88.3	5.90	82.9	5.82	75.7	5.72
	45.0	41.0	102.7	6.49	102.0	6.38	100.9	6.20	97.3	6.08	93.7	5.97	88.3	5.87	82.9	5.78	75.7	5.66
	47.0	43.0	102.7	6.44	102.0	6.32	100.9	6.15	97.3	6.03	93.7	5.91	88.3	5.82	82.9	5.73	75.7	5.61
	50.0	46.0	102.7	6.20	102.0	6.09	100.9	5.92	97.3	5.81	93.7	5.70	88.3	5.60	82.9	5.52	75.7	5.41
	55.0	51.0	102.7	5.82	102.0	5.71	100.9	5.56	97.3	5.45	93.7	5.35	88.3	5.26	82.9	5.18	75.7	5.07
	60.0	56.0	102.7	5.41	102.0	5.31	100.9	5.17	97.3	5.07	93.7	4.97	88.3	4.89	82.9	4.82	75.7	4.72
110%	-21.6	-22.0	35.8	3.07	35.7	3.22	35.4	3.45	35.2	3.70	35.0	3.95	34.7	4.41	34.6	4.79	34.3	5.29
	-17.1	-17.5	39.4	3.33	39.2	3.46	38.9	3.65	38.4	3.87	37.8	4.09	37.2	4.51	36.6	4.85	35.9	5.29
	-12.6	-13.0	43.0	3.59	42.8	3.70	42.3	3.86	41.5	4.05	40.6	4.23	39.6	4.60	38.7	4.91	37.6	5.29
	-7.0	-7.6	47.5	3.92	47.2	3.99	46.6	4.11	45.4	4.26	44.1	4.41	42.6	4.72	41.3	4.99	39.6	5.28
	-4.0	-4.4	49.9	4.09	49.5	4.15	48.9	4.25	47.4	4.38	46.0	4.51	44.2	4.78	42.7	5.03	40.7	5.28
	0.0	-0.4	53.2	4.32	52.7	4.37	52.0	4.43	50.2	4.53	48.4	4.64	46.4	4.87	44.5	5.08	42.1	5.28
	5.0	4.5	57.2	4.61	56.6	4.63	55.8	4.66	53.7	4.73	51.5	4.80	49.1	4.97	46.9	5.15	43.9	5.28
	10.0	9.0	61.2	4.90	60.6	4.90	59.6	4.89	57.1	4.92	54.7	4.96	51.8	5.08	49.2	5.21	45.7	5.27
	17.0	15.0	66.8	5.31	66.1	5.27	65.0	5.20	62.0	5.19	59.0	5.18	55.5	5.22	52.4	5.31	48.2	5.27
	20.0	19.0	72.6	5.48	71.4	5.43	69.2	5.34	66.1	5.31	62.9	5.28	60.0	5.29	57.5	5.35	52.9	5.27
	25.0	23.0	82.3	5.77	80.3	5.69	76.3	5.57	72.8	5.50	69.3	5.44	67.5	5.39	66.1	5.42	60.8	5.26
	30.0	28.0	92.0	6.06	89.2	5.96	83.4	5.80	79.6	5.70	75.7	5.60	75.0	5.50	74.7	5.48	68.7	5.26
	35.0	32.0	101.6	6.35	98.1	6.22	92.7	6.02	88.4	5.89	84.1	5.76	79.2	5.60	74.7	5.44	68.7	5.23
	40.0	36.0	101.6	6.15	98.1	6.06	92.7	5.91	88.4	5.81	84.1	5.71	79.2	5.57	74.7	5.41	68.7	5.21
	45.0	41.0	101.6	5.95	98.1	5.89	92.7	5.80	88.4	5.74	84.1	5.67	79.2	5.53	74.7	5.39	68.7	5.19
	47.0	43.0	101.6	5.90	98.1	5.84	92.7	5.75	88.4	5.69	84.1	5.62	79.2	5.48	74.7	5.34	68.7	5.15
	50.0	46.0	101.6	5.68	98.1	5.63	92.7	5.54	88.4	5.48	84.1	5.41	79.2	5.28	74.7	5.14	68.7	4.96
	55.0	51.0	101.6	5.33	98.1	5.28	92.7	5.20	88.4	5.14	84.1	5.08	79.2	4.96	74.7	4.83	68.7	4.65
	60.0	56.0	101.6	4.96	98.1	4.91	92.7	4.84	88.4	4.78	84.1	4.73	79.2	4.61	74.7	4.49	68.7	4.33

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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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HEATING CAPACITY

ZRUN072BSS0

MULTI V S THREE-PHASE

Table 22: ZRUN072BSS0 Heating Capacities, continued.

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%	-21.6	-22.0	35.7	2.50	35.5	2.86	35.3	3.39	35.1	3.76	34.9	4.12	34.6	4.64	34.4	4.95	34.2	5.37
	-17.1	-17.5	38.0	2.95	38.7	3.26	38.1	3.73	37.6	4.00	37.1	4.35	36.5	4.75	36.0	5.02	35.3	5.38
	-12.6	-13.0	40.4	3.39	41.9	3.66	40.9	4.07	40.1	4.25	39.3	4.58	38.4	4.86	37.6	5.08	36.4	5.39
	-7.0	-7.6	43.3	3.95	45.9	4.16	44.4	4.49	43.3	4.55	42.1	4.87	40.7	4.99	39.5	5.17	37.9	5.40
	-4.0	-4.4	44.9	4.25	48.0	4.43	46.3	4.71	44.9	4.72	43.6	5.02	42.0	5.07	40.5	5.21	38.6	5.40
	0.0	-0.4	47.0	4.65	50.9	4.79	48.8	5.01	47.2	4.94	45.6	5.22	43.7	5.16	41.9	5.27	39.6	5.41
	5.0	4.5	49.7	5.15	54.4	5.24	51.9	5.38	50.0	5.21	48.1	5.48	45.8	5.28	43.7	5.34	40.9	5.42
	10.0	9.0	56.2	5.64	58.0	5.69	55.0	5.76	52.8	5.58	50.5	5.73	47.9	5.41	45.4	5.42	42.1	5.43
	17.0	15.0	65.3	6.34	62.9	6.32	59.4	6.28	56.7	6.18	**54.0**	**6.09**	50.8	5.58	47.9	5.52	43.9	5.44
	20.0	19.0	69.9	6.41	67.4	6.35	64.5	6.33	62.2	6.29	59.3	6.12	55.8	5.65	52.6	5.56	48.2	5.45
	25.0	23.0	77.7	6.52	74.8	6.41	73.0	6.41	71.5	6.29	68.2	6.18	64.1	5.77	60.4	5.64	55.4	5.46
	30.0	28.0	85.4	6.63	82.3	6.46	81.5	6.49	80.8	6.36	77.0	6.23	72.5	5.89	68.2	5.71	62.6	5.47
	35.0	32.0	93.1	6.74	89.7	6.52	84.6	6.20	80.8	6.06	77.0	5.92	72.5	5.59	68.2	5.41	62.6	5.18
	40.0	36.0	93.1	6.33	89.7	6.16	84.6	5.91	80.8	5.75	77.0	5.60	72.5	5.28	68.2	5.11	62.6	4.89
	45.0	41.0	93.1	5.92	89.7	5.80	84.6	5.61	80.8	5.45	77.0	5.28	72.5	4.97	68.2	4.81	62.6	4.60
	47.0	43.0	93.1	5.77	89.7	5.66	84.6	5.48	80.8	5.31	**77.0**	**5.15**	72.5	4.85	68.2	4.70	62.6	4.49
	50.0	46.0	93.1	5.56	89.7	5.45	84.6	5.28	80.8	5.12	77.0	4.96	72.5	4.68	68.2	4.52	62.6	4.32
	55.0	51.0	93.1	5.22	89.7	5.11	84.6	4.95	80.8	4.80	77.0	4.66	72.5	4.39	68.2	4.25	62.6	4.06
	60.0	56.0	93.1	4.85	89.7	4.75	84.6	4.61	80.8	4.47	77.0	4.33	72.5	4.08	68.2	3.95	62.6	3.77
90%	-21.6	-22.0	35.5	3.22	35.4	3.41	35.2	3.70	34.9	4.08	34.7	4.47	34.5	4.74	34.3	4.99	34.0	5.33
	-17.1	-17.5	37.4	3.43	37.1	3.60	36.5	3.84	36.1	4.18	35.7	4.52	35.1	4.74	34.7	4.95	34.1	5.23
	-12.6	-13.0	39.3	3.65	38.7	3.78	37.9	3.99	37.2	4.28	36.6	4.57	35.8	4.75	35.1	4.92	34.1	5.14
	-7.0	-7.6	41.6	3.91	40.8	4.02	39.6	4.17	38.7	4.40	37.7	4.63	36.6	4.75	35.6	4.87	34.2	5.03
	-4.0	-4.4	42.9	4.05	41.9	4.14	40.5	4.27	39.4	4.47	38.4	4.67	37.1	4.75	35.9	4.84	34.2	4.96
	0.0	-0.4	44.6	4.24	43.4	4.31	41.7	4.40	40.4	4.56	39.2	4.71	37.7	4.76	36.2	4.81	34.3	4.88
	5.0	4.5	46.7	4.48	45.3	4.51	43.2	4.57	41.7	4.67	40.2	4.77	38.4	4.76	36.7	4.77	34.3	4.78
	10.0	9.0	48.8	4.72	47.1	4.72	44.7	4.73	43.0	4.78	41.3	4.82	39.1	4.76	37.1	4.73	34.4	4.67
	17.0	15.0	51.7	5.05	49.8	5.01	46.8	4.96	44.8	4.93	42.7	4.90	40.2	4.77	37.7	4.67	34.5	4.53
	20.0	19.0	59.5	5.19	57.2	5.14	53.9	5.06	51.5	5.00	49.1	4.94	46.2	4.77	43.4	4.64	39.7	4.47
	25.0	23.0	72.4	5.43	69.7	5.35	65.6	5.22	62.7	5.11	59.8	4.99	56.3	4.78	52.9	4.60	48.3	4.36
	30.0	28.0	85.4	5.67	82.2	5.55	77.3	5.38	73.9	5.22	70.5	5.05	66.4	4.78	62.3	4.56	56.9	4.26
	35.0	32.0	85.4	5.55	82.2	5.44	77.3	5.27	73.9	5.11	70.5	4.95	66.4	4.69	62.3	4.47	56.9	4.17
	40.0	36.0	85.4	5.44	82.2	5.33	77.3	5.16	73.9	5.01	70.5	4.85	66.4	4.60	62.3	4.38	56.9	4.08
	45.0	41.0	85.4	5.32	82.2	5.21	77.3	5.05	73.9	4.90	70.5	4.75	66.4	4.51	62.3	4.29	56.9	4.00
	47.0	43.0	85.4	5.27	82.2	5.17	77.3	5.01	73.9	4.86	70.5	4.71	66.4	4.47	62.3	4.25	56.9	3.96
	50.0	46.0	85.4	5.08	82.2	4.98	77.3	4.82	73.9	4.68	70.5	4.54	66.4	4.30	62.3	4.09	56.9	3.81
	55.0	51.0	85.4	4.77	82.2	4.67	77.3	4.53	73.9	4.39	70.5	4.26	66.4	4.04	62.3	3.84	56.9	3.58
	60.0	56.0	85.4	4.43	82.2	4.35	77.3	4.21	73.9	4.09	70.5	3.96	66.4	3.76	62.3	3.57	56.9	3.33
80%	-21.6	-22.0	35.4	3.24	35.2	3.46	35.0	3.77	34.8	4.00	34.6	4.23	34.3	4.83	34.1	5.15	31.9	5.57
	-17.1	-17.5	37.0	3.41	36.6	3.59	36.1	3.87	35.7	4.06	35.3	4.24	34.8	4.76	34.3	5.03	32.0	5.40
	-12.6	-13.0	38.6	3.57	38.1	3.73	37.3	3.96	36.6	4.11	36.0	4.26	35.2	4.69	34.5	4.92	32.1	5.23
	-7.0	-7.6	40.6	3.78	39.8	3.90	38.7	4.07	37.8	4.18	36.9	4.28	35.8	4.61	34.8	4.78	32.2	5.01
	-4.0	-4.4	41.7	3.89	40.8	3.99	39.4	4.13	38.4	4.21	37.4	4.29	36.1	4.56	34.9	4.71	32.3	4.90
	0.0	-0.4	43.1	4.03	42.0	4.11	40.4	4.22	39.2	4.26	38.0	4.30	36.5	4.50	35.1	4.61	32.4	4.75
	5.0	4.5	44.9	4.22	43.6	4.26	41.7	4.32	40.2	4.32	38.8	4.32	37.0	4.43	35.3	4.48	32.5	4.56
	10.0	9.0	46.7	4.40	45.2	4.41	42.9	4.42	41.2	4.38	39.6	4.33	37.4	4.35	35.6	4.36	32.7	4.37
	17.0	15.0	49.2	4.66	47.4	4.62	44.7	4.56	42.7	4.46	40.7	4.36	38.1	4.24	35.9	4.18	32.8	4.10
	20.0	19.0	59.4	4.77	57.2	4.71	53.9	4.63	51.5	4.50	49.1	4.37	46.0	4.20	43.3	4.11	39.7	3.99
	25.0	23.0	76.4	4.95	73.6	4.86	69.3	4.73	66.2	4.56	63.2	4.38	59.2	4.12	55.7	3.98	51.0	3.80
	30.0	28.0	76.4	4.84	73.6	4.76	69.3	4.62	66.2	4.46	63.2	4.29	59.2	4.04	55.7	3.90	51.0	3.72
	35.0	32.0	76.4	4.74	73.6	4.65	69.3	4.52	66.2	4.36	63.2	4.20	59.2	3.97	55.7	3.82	51.0	3.64
	40.0	36.0	76.4	4.63	73.6	4.55	69.3	4.42	66.2	4.26	63.2	4.10	59.2	3.89	55.7	3.74	51.0	3.55
	45.0	41.0	76.4	4.53	73.6	4.44	69.3	4.31	66.2	4.16	63.2	4.01	59.2	3.81	55.7	3.66	51.0	3.47
	47.0	43.0	76.4	4.49	73.6	4.40	69.3	4.27	66.2	4.13	63.2	3.98	59.2	3.78	55.7	3.63	51.0	3.44
	50.0	46.0	76.4	4.32	73.6	4.24	69.3	4.12	66.2	3.97	63.2	3.83	59.2	3.64	55.7	3.50	51.0	3.31
	55.0	51.0	76.4	4.06	73.6	3.98	69.3	3.86	66.2	3.73	63.2	3.59	59.2	3.41	55.7	3.28	51.0	3.11
	60.0	56.0	76.4	3.77	73.6	3.70	69.3	3.59	66.2	3.47	63.2	3.34	59.2	3.18	55.7	3.05	51.0	2.89

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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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HEATING CAPACITY

ZRUN072BSS0

Table 23: ZRUN072BSS0 Heating Capacities, continued.

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%	-21.6	-22.0	35.2	3.48	35.0	3.58	34.8	3.73	34.6	4.11	34.4	4.49	34.1	5.01	33.9	5.33	31.7	5.75
	-17.1	-17.5	36.7	3.58	36.4	3.66	35.9	3.78	35.4	4.10	35.0	4.43	34.5	4.89	34.1	5.16	31.8	5.53
	-12.6	-13.0	38.2	3.69	37.7	3.74	36.9	3.83	36.3	4.10	35.7	4.37	34.9	4.76	34.3	4.99	31.9	5.30
	-7.0	-7.6	40.1	3.82	39.4	3.85	38.2	3.89	37.4	4.10	36.5	4.30	35.5	4.60	34.5	4.78	32.0	5.03
	-4.0	-4.4	41.1	3.89	40.2	3.90	38.9	3.93	37.9	4.09	36.9	4.26	35.7	4.52	34.7	4.67	32.1	4.88
	0.0	-0.4	42.5	3.98	41.4	3.98	39.9	3.97	38.7	4.09	37.5	4.21	36.1	4.41	34.8	4.52	32.2	4.68
	5.0	4.5	44.2	4.10	42.9	4.07	41.1	4.03	39.6	4.09	38.2	4.15	36.6	4.27	35.0	4.34	32.3	4.43
	10.0	9.0	45.8	4.21	44.4	4.16	42.2	4.08	40.6	4.08	38.9	4.09	37.0	4.13	35.2	4.15	32.5	4.18
	17.0	15.0	48.2	4.38	46.5	4.29	43.9	4.16	41.9	4.08	39.9	4.00	37.7	3.93	35.5	3.89	32.6	3.84
	20.0	19.0	54.4	4.45	52.4	4.34	49.5	4.19	47.3	4.08	45.0	3.96	42.5	3.85	40.1	3.78	36.8	3.69
	25.0	23.0	64.7	4.56	62.4	4.44	58.9	4.25	56.2	4.07	53.5	3.90	50.6	3.71	47.7	3.59	43.8	3.44
	30.0	28.0	64.7	4.42	62.4	4.30	58.9	4.12	56.2	3.95	53.5	3.78	50.6	3.60	47.7	3.47	43.8	3.31
	35.0	32.0	64.7	4.28	62.4	4.16	58.9	3.99	56.2	3.83	53.5	3.67	50.6	3.48	47.7	3.35	43.8	3.16
	40.0	36.0	64.7	4.12	62.4	4.01	58.9	3.85	56.2	3.70	53.5	3.55	50.6	3.36	47.7	3.21	43.8	3.01
	45.0	41.0	64.7	3.97	62.4	3.87	58.9	3.71	56.2	3.57	53.5	3.42	50.6	3.24	47.7	3.08	43.8	2.86
	47.0	43.0	64.7	3.94	62.4	3.83	58.9	3.68	56.2	3.54	53.5	3.40	50.6	3.22	47.7	3.05	43.8	2.83
	50.0	46.0	64.7	3.79	62.4	3.69	58.9	3.54	56.2	3.41	53.5	3.27	50.6	3.10	47.7	2.94	43.8	2.73
	55.0	51.0	64.7	3.56	62.4	3.47	58.9	3.33	56.2	3.20	53.5	3.07	50.6	2.91	47.7	2.76	43.8	2.56
	60.0	56.0	64.7	3.31	62.4	3.22	58.9	3.09	56.2	2.97	53.5	2.85	50.6	2.70	47.7	2.57	43.8	2.38
60%	-21.6	-22.0	32.6	3.20	32.4	3.31	32.2	3.46	32.0	3.84	31.8	4.21	31.6	4.74	31.4	5.05	31.2	5.48
	-17.1	-17.5	34.3	3.30	34.0	3.38	33.5	3.49	33.1	3.82	32.7	4.14	32.2	4.60	31.8	4.87	31.3	5.23
	-12.6	-13.0	36.0	3.39	35.5	3.44	34.8	3.53	34.1	3.80	33.5	4.07	32.8	4.46	32.2	4.69	31.4	4.99
	-7.0	-7.6	38.1	3.50	37.4	3.53	36.3	3.57	35.5	3.78	34.6	3.98	33.6	4.29	32.7	4.46	31.5	4.69
	-4.0	-4.4	39.2	3.56	38.4	3.58	37.2	3.60	36.2	3.76	35.1	3.93	34.0	4.20	32.9	4.34	31.6	4.53
	0.0	-0.4	40.7	3.65	39.8	3.64	38.3	3.63	37.1	3.75	35.9	3.87	34.5	4.07	33.3	4.17	31.7	4.31
	5.0	4.5	42.6	3.75	41.5	3.72	39.7	3.67	38.3	3.73	36.8	3.79	35.2	3.92	33.7	3.97	31.8	4.04
	10.0	9.0	44.5	3.85	43.2	3.80	41.2	3.71	39.5	3.71	37.8	3.71	35.9	3.76	34.2	3.77	31.9	3.77
	17.0	15.0	47.2	3.99	45.6	3.90	43.1	3.77	41.1	3.68	39.1	3.59	36.8	3.55	34.8	3.48	32.1	3.39
	20.0	19.0	50.3	4.06	48.5	3.95	46.0	3.79	43.8	3.67	41.7	3.55	39.2	3.45	37.1	3.36	34.2	3.23
	25.0	23.0	55.4	4.16	53.5	4.03	50.7	3.83	48.3	3.65	45.9	3.47	43.2	3.30	40.9	3.16	37.7	2.96
	30.0	28.0	55.4	4.02	53.5	3.89	50.7	3.69	48.3	3.51	45.9	3.34	43.2	3.17	40.9	3.02	37.7	2.82
	35.0	32.0	55.4	3.88	53.5	3.74	50.7	3.54	48.3	3.38	45.9	3.22	43.2	3.04	40.9	2.88	37.7	2.68
	40.0	36.0	55.4	3.73	53.5	3.59	50.7	3.38	48.3	3.23	45.9	3.08	43.2	2.89	40.9	2.73	37.7	2.52
	45.0	41.0	55.4	3.58	53.5	3.43	50.7	3.21	48.3	3.08	45.9	2.94	43.2	2.75	40.9	2.58	37.7	2.36
	47.0	43.0	55.4	3.54	53.5	3.40	50.7	3.19	48.3	3.05	45.9	2.92	43.2	2.72	40.9	2.56	37.7	2.34
	50.0	46.0	55.4	3.41	53.5	3.28	50.7	3.07	48.3	2.94	45.9	2.81	43.2	2.62	40.9	2.47	37.7	2.26
	55.0	51.0	55.4	3.20	53.5	3.07	50.7	2.88	48.3	2.76	45.9	2.64	43.2	2.46	40.9	2.31	37.7	2.12
	60.0	56.0	55.4	2.98	53.5	2.86	50.7	2.68	48.3	2.57	45.9	2.45	43.2	2.29	40.9	2.15	37.7	1.97
50%	-21.6	-22.0	30.1	2.75	30.0	2.85	29.8	3.00	29.6	3.38	29.5	3.76	29.1	4.28	28.6	4.60	27.9	5.02
	-17.1	-17.5	32.4	3.26	32.1	3.30	31.9	3.60	31.4	3.88	31.0	4.16	30.5	4.63	29.7	4.82	28.9	5.18
	-12.6	-13.0	34.8	3.76	34.2	3.76	34.0	4.20	33.2	4.38	32.5	4.55	32.0	4.98	30.8	5.05	29.9	5.34
	-7.0	-7.6	37.6	4.39	36.8	4.32	36.6	4.94	35.5	5.00	34.3	5.05	33.8	5.42	32.2	5.32	31.1	5.54
	-4.0	-4.4	39.2	4.73	38.2	4.63	38.0	5.34	36.6	5.33	35.3	5.31	34.8	5.65	33.0	5.47	31.1	5.42
	0.0	-0.4	41.2	5.18	40.0	5.03	39.8	5.88	38.2	5.77	36.7	5.67	36.1	5.96	34.0	5.67	31.1	5.28
	5.0	4.5	43.8	5.74	42.3	5.53	42.1	6.54	40.2	6.32	38.3	6.11	36.1	5.73	34.0	5.45	31.1	5.07
	10.0	9.0	46.3	6.31	44.7	6.04	42.1	5.64	40.2	5.45	38.3	5.26	36.1	4.94	34.0	4.69	31.1	4.36
	17.0	15.0	46.3	5.43	44.7	5.20	42.1	4.86	40.2	4.69	38.3	4.52	36.1	4.25	34.0	4.03	31.1	3.74
	20.0	19.0	46.3	5.16	44.7	4.94	42.1	4.62	40.2	4.45	38.3	4.29	36.1	4.03	34.0	3.83	31.1	3.55
	25.0	23.0	46.3	4.72	44.7	4.52	42.1	4.22	40.2	4.07	38.3	3.92	36.1	3.68	34.0	3.49	31.1	3.23
	30.0	28.0	46.3	4.28	44.7	4.10	42.1	3.83	40.2	3.69	38.3	3.54	36.1	3.33	34.0	3.16	31.1	2.92
	35.0	32.0	46.3	3.84	44.7	3.68	42.1	3.44	40.2	3.31	38.3	3.17	36.1	2.99	34.0	2.82	31.1	2.61
	40.0	36.0	46.3	3.40	44.7	3.26	42.1	3.05	40.2	2.93	38.3	2.80	36.1	2.64	34.0	2.49	31.1	2.30
	45.0	41.0	46.3	2.98	44.7	2.85	42.1	2.67	40.2	2.56	38.3	2.45	36.1	2.31	34.0	2.18	31.1	2.00
	47.0	43.0	46.3	2.86	44.7	2.74	42.1	2.57	40.2	2.46	38.3	2.35	36.1	2.22	34.0	2.09	31.1	1.92
	50.0	46.0	46.3	2.75	44.7	2.64	42.1	2.47	40.2	2.37	38.3	2.26	36.1	2.14	34.0	2.01	31.1	1.85
	55.0	51.0	46.3	2.58	44.7	2.48	42.1	2.32	40.2	2.22	38.3	2.12	36.1	2.01	34.0	1.89	31.1	1.74
	60.0	56.0	46.3	2.40	44.7	2.31	42.1	2.16	40.2	2.07	38.3	1.98	36.1	1.86	34.0	1.76	31.1	1.61

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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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HEATING CAPACITY

ZRUN096BSS0

MULTI V S THREE-PHASE

Table 24: ZRUN096BSS0 Heating Capacities.

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%	-21.6	-22.0	48.5	3.08	48.3	3.50	48.0	4.14	47.7	4.74	47.4	5.34	47.1	6.11	46.8	6.55	46.5	7.13
	-17.1	-17.5	52.0	3.90	51.7	4.26	51.3	4.80	50.9	5.32	50.6	5.83	50.1	6.60	49.7	6.98	49.2	7.48
	-12.6	-13.0	55.4	4.72	55.1	5.02	54.6	5.47	54.1	5.90	53.7	6.32	53.2	7.09	52.7	7.41	52.0	7.83
	-7.0	-7.6	59.7	5.75	59.3	5.97	58.6	6.31	58.1	6.62	57.6	6.93	57.0	7.70	56.3	7.94	55.4	8.26
	-4.0	-4.4	62.1	6.30	61.6	6.48	60.8	6.75	60.3	7.01	59.7	7.26	59.0	8.03	58.3	8.23	57.3	8.49
	0.0	-0.4	65.1	7.03	64.6	7.16	63.7	7.35	63.1	7.52	62.5	7.70	61.8	8.47	60.9	8.61	59.7	8.80
	5.0	4.5	69.0	7.95	68.3	8.01	67.3	8.09	66.7	8.17	66.0	8.24	65.2	9.02	64.1	9.09	62.8	9.19
	10.0	9.0	72.8	8.87	72.1	8.85	71.0	8.83	70.2	8.81	69.5	8.79	68.6	9.56	67.4	9.57	65.8	9.58
	17.0	15.0	78.2	10.15	77.4	10.04	76.1	9.87	75.2	9.71	74.4	9.56	73.3	10.33	71.9	10.24	70.1	10.12
	20.0	19.0	88.1	10.70	87.4	10.55	86.3	10.32	85.3	10.10	84.3	9.88	82.9	10.66	81.3	10.53	78.9	10.35
	25.0	23.0	104.6	11.61	104.1	11.39	103.4	11.06	102.1	10.75	100.8	10.43	98.9	11.20	97.0	11.01	93.6	10.74
	30.0	28.0	121.0	12.53	120.8	12.24	120.5	11.81	118.8	11.39	117.2	10.98	114.9	11.75	112.6	11.48	108.2	11.13
	35.0	32.0	137.5	13.45	137.5	13.09	137.5	12.55	135.6	12.04	133.7	11.52	125.6	11.04	118.1	10.78	108.2	10.43
	40.0	36.0	137.5	12.76	137.5	12.29	137.5	11.58	135.6	11.18	133.7	10.77	125.6	10.32	118.1	10.07	108.2	9.74
	45.0	41.0	137.5	11.19	137.5	10.96	137.5	10.60	135.6	10.30	133.7	10.00	125.6	9.59	118.1	9.34	108.2	9.02
	47.0	43.0	137.5	10.76	137.5	10.53	137.5	10.19	135.6	9.90	133.7	9.61	125.6	9.21	118.1	8.98	108.2	8.67
	50.0	46.0	137.5	10.36	137.5	10.14	137.5	9.81	135.6	9.53	133.7	9.25	125.6	8.87	118.1	8.65	108.2	8.35
	55.0	51.0	137.5	9.72	137.5	9.52	137.5	9.21	135.6	8.95	133.7	8.68	125.6	8.33	118.1	8.12	108.2	7.84
	60.0	56.0	137.5	9.04	137.5	8.85	137.5	8.57	135.6	8.32	133.7	8.08	125.6	7.74	118.1	7.55	108.2	7.29
120%	-21.6	-22.0	48.2	3.79	48.0	4.11	47.7	4.58	47.4	5.00	47.1	5.41	46.7	5.68	46.5	5.74	46.2	5.82
	-17.1	-17.5	51.0	4.27	50.8	4.54	50.4	4.95	50.0	5.32	49.5	5.68	48.8	5.91	48.2	5.96	47.3	6.02
	-12.6	-13.0	53.8	4.74	53.5	4.97	53.1	5.32	52.5	5.64	52.0	5.95	50.8	6.15	49.8	6.18	48.5	6.23
	-7.0	-7.6	57.4	5.34	57.0	5.51	56.4	5.78	55.7	6.03	55.0	6.28	53.4	6.44	51.9	6.46	50.0	6.49
	-4.0	-4.4	59.3	5.65	58.8	5.80	58.2	6.03	57.4	6.24	56.6	6.46	54.8	6.60	53.1	6.61	50.8	6.62
	0.0	-0.4	61.8	6.08	61.3	6.19	60.6	6.36	59.7	6.53	58.8	6.70	56.6	6.80	54.6	6.81	51.8	6.81
	5.0	4.5	64.9	6.61	64.4	6.67	63.6	6.77	62.6	6.88	61.5	6.99	58.9	7.06	56.4	7.05	53.1	7.04
	10.0	9.0	68.1	7.14	67.5	7.16	66.6	7.18	65.4	7.24	64.2	7.29	61.2	7.32	58.3	7.30	54.4	7.26
	17.0	15.0	72.5	7.88	71.8	7.83	70.8	7.76	69.4	7.73	68.0	7.71	64.4	7.69	60.9	7.64	56.2	7.59
	20.0	19.0	83.3	8.20	82.6	8.12	81.5	8.00	79.5	7.94	77.5	7.89	73.4	7.84	69.2	7.79	63.7	7.72
	25.0	23.0	101.3	8.73	100.5	8.60	99.3	8.41	96.4	8.30	93.5	8.18	88.3	8.10	83.1	8.04	76.3	7.95
	30.0	28.0	119.3	9.26	118.5	9.08	117.2	8.83	113.3	8.65	109.4	8.48	103.2	8.36	97.0	8.29	88.8	8.18
	35.0	32.0	137.4	9.79	136.4	9.57	135.0	9.24	130.2	9.01	125.3	8.78	118.1	8.62	110.9	8.53	101.3	8.41
	40.0	36.0	137.4	9.93	136.4	9.73	135.0	9.42	130.2	9.22	125.3	9.01	118.1	8.86	110.9	8.74	101.3	8.59
	45.0	41.0	137.4	10.07	136.4	9.89	135.0	9.62	130.2	9.43	125.3	9.25	118.1	9.10	110.9	8.96	101.3	8.78
	47.0	43.0	137.4	10.11	136.4	9.93	135.0	9.66	130.2	9.48	125.3	9.29	118.1	9.14	110.9	9.00	101.3	8.82
	50.0	46.0	137.4	9.74	136.4	9.56	135.0	9.30	130.2	9.13	125.3	8.95	118.1	8.80	110.9	8.67	101.3	8.49
	55.0	51.0	137.4	9.14	136.4	8.98	135.0	8.73	130.2	8.57	125.3	8.40	118.1	8.26	110.9	8.14	101.3	7.97
	60.0	56.0	137.4	8.50	136.4	8.35	135.0	8.12	130.2	7.97	125.3	7.81	118.1	7.68	110.9	7.57	101.3	7.41
110%	-21.6	-22.0	47.9	4.82	47.7	5.06	47.4	5.41	47.1	5.81	46.8	6.20	46.5	6.93	46.2	7.52	45.9	8.32
	-17.1	-17.5	51.3	5.17	51.0	5.37	50.6	5.68	49.9	6.03	49.3	6.37	48.5	7.03	47.9	7.54	47.0	8.24
	-12.6	-13.0	54.6	5.52	54.3	5.69	53.8	5.95	52.7	6.25	51.7	6.55	50.5	7.12	49.5	7.56	48.1	8.16
	-7.0	-7.6	58.8	5.96	58.4	6.09	57.7	6.28	56.2	6.52	54.8	6.76	53.0	7.24	51.5	7.58	49.5	8.06
	-4.0	-4.4	61.0	6.19	60.6	6.30	59.8	6.45	58.1	6.67	56.4	6.88	54.4	7.31	52.6	7.59	50.2	8.01
	0.0	-0.4	64.0	6.51	63.5	6.58	62.6	6.69	60.6	6.86	58.5	7.03	56.1	7.39	54.0	7.61	51.2	7.94
	5.0	4.5	67.7	6.90	67.1	6.93	66.2	6.99	63.7	7.11	61.2	7.22	58.4	7.50	55.8	7.63	52.4	7.85
	10.0	9.0	71.5	7.29	70.8	7.29	69.7	7.28	66.8	7.35	64.0	7.42	60.6	7.61	57.6	7.65	53.6	7.76
	17.0	15.0	76.7	7.84	75.9	7.78	74.6	7.70	71.2	7.69	67.7	7.69	63.8	7.76	60.2	7.68	55.4	7.64
	20.0	19.0	86.6	8.07	85.1	7.99	83.1	7.87	79.3	7.84	75.5	7.80	72.2	7.83	69.3	7.69	63.8	7.59
	25.0	23.0	103.0	8.46	100.4	8.34	97.4	8.17	92.9	8.08	88.4	7.99	86.2	7.93	84.6	7.71	77.9	7.50
	30.0	28.0	119.5	8.85	115.8	8.70	111.6	8.47	106.4	8.33	101.3	8.19	100.3	8.04	99.9	7.73	92.0	7.42
	35.0	32.0	136.0	9.24	131.2	9.05	124.0	8.76	118.3	8.57	112.5	8.38	105.9	8.15	99.9	7.92	92.0	7.61
	40.0	36.0	136.0	9.24	131.2	9.10	124.0	8.88	118.3	8.73	112.5	8.58	105.9	8.36	99.9	8.13	92.0	7.83
	45.0	41.0	136.0	9.23	131.2	9.14	124.0	9.00	118.3	8.90	112.5	8.79	105.9	8.57	99.9	8.35	92.0	8.05
	47.0	43.0	136.0	9.27	131.2	9.18	124.0	9.04	118.3	8.93	112.5	8.83	105.9	8.61	99.9	8.39	92.0	8.09
	50.0	46.0	136.0	8.93	131.2	8.84	124.0	8.71	118.3	8.61	112.5	8.50	105.9	8.29	99.9	8.08	92.0	7.79
	55.0	51.0	136.0	8.38	131.2	8.30	124.0	8.17	118.3	8.08	112.5	7.98	105.9	7.78	99.9	7.58	92.0	7.31
	60.0	56.0	136.0	7.79	131.2	7.72	124.0	7.60	118.3	7.51	112.5	7.42	105.9	7.24	99.9	7.05	92.0	6.80

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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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HEATING CAPACITY

ZRUN096BSS0

Table 25: ZRUN096BSS0 Heating Capacities, continued.

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%	-21.6	-22.0	47.7	3.92	47.5	4.49	47.2	5.33	46.9	5.90	46.7	6.48	46.3	7.28	46.0	7.78	45.7	8.44
	-17.1	-17.5	49.6	4.36	50.4	4.85	49.7	5.59	49.1	6.05	48.4	6.58	47.7	7.45	47.1	7.88	46.3	8.45
	-12.6	-13.0	51.6	4.79	53.3	5.22	52.1	5.86	51.2	6.19	50.2	6.68	49.1	7.63	48.1	7.99	46.8	8.46
	-7.0	-7.6	54.0	5.34	56.9	5.68	55.1	6.18	53.8	6.36	52.5	6.81	50.8	7.84	49.4	8.12	47.5	8.48
	-4.0	-4.4	55.3	5.63	58.8	5.92	56.8	6.36	55.2	6.45	53.7	6.88	51.8	7.96	50.1	8.18	47.9	8.49
	0.0	-0.4	57.0	6.02	61.4	6.25	58.9	6.59	57.1	6.58	55.2	6.97	53.0	8.11	51.0	8.28	48.3	8.50
	5.0	4.5	59.1	6.50	64.6	6.65	61.6	6.89	59.4	6.74	57.2	7.09	54.6	8.30	52.2	8.39	48.9	8.51
	10.0	9.0	65.7	6.98	67.8	7.06	64.4	7.18	61.8	7.00	59.2	7.20	56.2	8.49	53.3	8.51	49.5	8.53
	17.0	15.0	75.0	7.66	72.2	7.63	68.1	7.59	65.1	7.47	**62.0**	**7.36**	58.4	8.76	54.9	8.67	50.4	8.55
	20.0	19.0	83.2	8.15	80.2	8.07	76.8	8.19	74.5	8.14	71.5	7.92	67.3	8.88	63.3	8.74	58.1	8.56
	25.0	23.0	97.0	8.96	93.5	8.79	91.2	9.19	90.2	9.01	87.2	8.86	82.1	9.07	77.3	8.86	70.9	8.57
	30.0	28.0	110.8	9.77	106.8	9.52	105.7	10.19	105.9	9.99	103.0	9.79	96.9	9.26	91.3	8.97	83.7	8.59
	35.0	32.0	124.6	10.58	120.0	10.24	113.2	9.73	108.1	9.51	103.0	9.29	96.9	8.78	91.3	8.50	83.7	8.13
	40.0	36.0	124.6	9.94	120.0	9.67	113.2	9.28	108.1	9.03	103.0	8.79	96.9	8.30	91.3	8.03	83.7	7.68
	45.0	41.0	124.6	9.30	120.0	9.10	113.2	8.82	108.1	8.55	103.0	8.29	96.9	7.81	91.3	7.56	83.7	7.22
	47.0	43.0	124.6	9.07	120.0	8.88	113.2	8.61	108.1	8.35	**103.0**	**8.09**	96.9	7.63	91.3	7.38	83.7	7.05
	50.0	46.0	124.6	8.74	120.0	8.56	113.2	8.29	108.1	8.04	103.0	7.79	96.9	7.34	91.3	7.11	83.7	6.79
	55.0	51.0	124.6	8.20	120.0	8.03	113.2	7.78	108.1	7.55	103.0	7.31	96.9	6.89	91.3	6.67	83.7	6.37
	60.0	56.0	124.6	7.63	120.0	7.47	113.2	7.23	108.1	7.02	103.0	6.80	96.9	6.41	91.3	6.20	83.7	5.93
90%	-21.6	-22.0	47.5	5.06	47.3	5.36	47.0	5.81	46.7	6.41	46.5	7.02	46.1	7.44	45.9	7.84	45.5	8.37
	-17.1	-17.5	50.0	5.31	49.6	5.57	48.8	5.96	48.3	6.50	47.7	7.03	47.0	7.38	46.4	7.72	45.6	8.16
	-12.6	-13.0	52.6	5.57	51.8	5.79	50.7	6.12	49.8	6.58	48.9	7.04	47.9	7.32	46.9	7.59	45.7	7.96
	-7.0	-7.6	55.7	5.89	54.6	6.06	52.9	6.31	51.7	6.68	50.5	7.05	49.0	7.24	47.6	7.44	45.8	7.70
	-4.0	-4.4	57.4	6.06	56.1	6.20	54.1	6.41	52.7	6.73	51.3	7.05	49.6	7.20	48.0	7.36	45.8	7.56
	0.0	-0.4	59.6	6.28	58.1	6.39	55.8	6.55	54.1	6.81	52.4	7.06	50.4	7.15	48.4	7.25	45.9	7.38
	5.0	4.5	62.4	6.57	60.6	6.63	57.8	6.72	55.8	6.90	53.8	7.07	51.4	7.08	49.0	7.11	45.9	7.15
	10.0	9.0	65.2	6.85	63.1	6.87	59.8	6.90	57.5	6.99	55.2	7.08	52.4	7.01	49.6	6.97	46.0	6.92
	17.0	15.0	69.2	7.25	66.6	7.20	62.6	7.14	59.9	7.11	57.1	7.09	53.8	6.92	50.5	6.78	46.1	6.60
	20.0	19.0	79.6	7.42	76.6	7.35	72.0	7.24	68.9	7.17	65.7	7.10	61.8	6.87	58.1	6.70	53.0	6.46
	25.0	23.0	96.9	7.70	93.2	7.59	87.7	7.41	83.9	7.26	80.0	7.11	75.3	6.81	70.7	6.56	64.6	6.23
	30.0	28.0	114.2	7.99	109.9	7.83	103.4	7.59	98.9	7.35	94.3	7.12	88.8	6.74	83.4	6.42	76.2	6.01
	35.0	32.0	114.2	8.08	109.9	7.91	103.4	7.67	98.9	7.43	94.3	7.20	88.8	6.82	83.4	6.50	76.2	6.07
	40.0	36.0	114.2	8.16	109.9	8.00	103.4	7.75	98.9	7.52	94.3	7.28	88.8	6.90	83.4	6.57	76.2	6.13
	45.0	41.0	114.2	8.25	109.9	8.08	103.4	7.84	98.9	7.60	94.3	7.37	88.8	6.99	83.4	6.65	76.2	6.20
	47.0	43.0	114.2	8.29	109.9	8.12	103.4	7.87	98.9	7.63	94.3	7.40	88.8	7.02	83.4	6.68	76.2	6.22
	50.0	46.0	114.2	7.98	109.9	7.82	103.4	7.58	98.9	7.35	94.3	7.12	88.8	6.76	83.4	6.43	76.2	5.99
	55.0	51.0	114.2	7.49	109.9	7.34	103.4	7.11	98.9	6.90	94.3	6.69	88.8	6.34	83.4	6.04	76.2	5.62
	60.0	56.0	114.2	6.97	109.9	6.83	103.4	6.62	98.9	6.42	94.3	6.22	88.8	5.90	83.4	5.61	76.2	5.23
80%	-21.6	-22.0	47.3	5.10	47.1	5.43	46.8	5.93	46.6	6.29	46.3	6.64	45.9	7.59	45.7	8.08	42.6	8.74
	-17.1	-17.5	49.5	5.26	49.0	5.55	48.3	5.98	47.8	6.28	47.2	6.58	46.5	7.40	45.9	7.83	42.8	8.40
	-12.6	-13.0	51.6	5.42	50.9	5.66	49.8	6.03	49.0	6.27	48.2	6.52	47.1	7.21	46.2	7.57	42.9	8.06
	-7.0	-7.6	54.3	5.62	53.3	5.81	51.7	6.10	50.5	6.27	49.3	6.44	47.8	6.97	46.5	7.26	43.1	7.63
	-4.0	-4.4	55.7	5.72	54.5	5.89	52.7	6.13	51.3	6.26	50.0	6.40	48.2	6.85	46.7	7.09	43.2	7.40
	0.0	-0.4	57.7	5.87	56.2	5.99	54.0	6.17	52.4	6.26	50.8	6.34	48.8	6.68	47.0	6.86	43.4	7.10
	5.0	4.5	60.1	6.05	58.3	6.12	55.7	6.23	53.8	6.25	51.9	6.27	49.4	6.47	47.3	6.58	43.5	6.72
	10.0	9.0	62.5	6.22	60.4	6.25	57.4	6.29	55.2	6.24	52.9	6.20	50.1	6.26	47.6	6.29	43.7	6.33
	17.0	15.0	65.8	6.47	63.4	6.43	59.7	6.37	57.1	6.23	54.4	6.10	51.0	5.97	48.0	5.90	43.9	5.80
	20.0	19.0	79.4	6.58	76.5	6.51	72.1	6.40	68.9	6.23	65.7	6.06	61.6	5.84	57.9	5.73	53.0	5.57
	25.0	23.0	102.2	6.76	98.4	6.64	92.8	6.46	88.6	6.22	84.5	5.99	79.2	5.63	74.5	5.44	68.2	5.19
	30.0	28.0	102.2	6.83	98.4	6.70	92.8	6.52	88.6	6.28	84.5	6.05	79.2	5.70	74.5	5.50	68.2	5.24
	35.0	32.0	102.2	6.89	98.4	6.77	92.8	6.58	88.6	6.34	84.5	6.11	79.2	5.77	74.5	5.56	68.2	5.29
	40.0	36.0	102.2	6.96	98.4	6.83	92.8	6.63	88.6	6.40	84.5	6.16	79.2	5.84	74.5	5.62	68.2	5.34
	45.0	41.0	102.2	7.02	98.4	6.89	92.8	6.69	88.6	6.45	84.5	6.22	79.2	5.91	74.5	5.68	68.2	5.38
	47.0	43.0	102.2	7.05	98.4	6.92	92.8	6.71	88.6	6.48	84.5	6.25	79.2	5.93	74.5	5.71	68.2	5.40
	50.0	46.0	102.2	6.79	98.4	6.66	92.8	6.47	88.6	6.24	84.5	6.02	79.2	5.72	74.5	5.50	68.2	5.20
	55.0	51.0	102.2	6.37	98.4	6.25	92.8	6.07	88.6	5.86	84.5	5.65	79.2	5.36	74.5	5.16	68.2	4.88
	60.0	56.0	102.2	5.93	98.4	5.81	92.8	5.64	88.6	5.45	84.5	5.25	79.2	4.99	74.5	4.80	68.2	4.54

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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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HEATING CAPACITY

ZRUN096BSS0

MULTI V S THREE-PHASE

Table 26: ZRUN096BSS0 Heating Capacities, continued.

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%	-21.6	-22.0	47.0	5.46	46.9	5.62	46.6	5.86	46.3	6.45	46.0	7.05	45.6	7.87	45.4	8.37	42.3	9.03
	-17.1	-17.5	49.1	5.54	48.6	5.66	48.0	5.85	47.4	6.37	46.9	6.88	46.2	7.60	45.6	8.04	42.5	8.61
	-12.6	-13.0	51.1	5.61	50.4	5.71	49.4	5.85	48.5	6.28	47.7	6.71	46.7	7.33	45.9	7.70	42.7	8.19
	-7.0	-7.6	53.6	5.70	52.6	5.76	51.1	5.84	50.0	6.17	48.8	6.51	47.4	6.99	46.2	7.28	42.8	7.67
	-4.0	-4.4	55.0	5.75	53.8	5.79	52.1	5.84	50.7	6.12	49.3	6.40	47.8	6.81	46.4	7.06	42.9	7.40
	0.0	-0.4	56.8	5.82	55.4	5.82	53.4	5.83	51.7	6.04	50.1	6.25	48.3	6.57	46.6	6.76	43.1	7.02
	5.0	4.5	59.1	5.90	57.4	5.87	54.9	5.83	53.0	5.94	51.1	6.06	48.9	6.27	46.9	6.39	43.2	6.56
	10.0	9.0	61.3	5.98	59.4	5.92	56.5	5.82	54.2	5.85	52.0	5.88	49.5	5.97	47.1	6.02	43.4	6.10
	17.0	15.0	64.5	6.10	62.2	5.99	58.7	5.81	56.0	5.72	53.3	5.62	50.4	5.54	47.5	5.50	43.7	5.45
	20.0	19.0	72.8	6.15	70.2	6.01	66.2	5.81	63.2	5.66	60.2	5.51	56.9	5.36	53.6	5.28	49.3	5.17
	25.0	23.0	86.6	6.23	83.5	6.06	78.8	5.80	75.2	5.56	71.6	5.32	67.7	5.06	63.8	4.91	58.6	4.70
	30.0	28.0	86.6	6.23	83.5	6.06	78.8	5.81	75.2	5.57	71.6	5.33	67.7	5.07	63.8	4.89	58.6	4.66
	35.0	32.0	86.6	6.22	83.5	6.05	78.8	5.80	75.2	5.57	71.6	5.33	67.7	5.06	63.8	4.87	58.6	4.60
	40.0	36.0	86.6	6.19	83.5	6.03	78.8	5.78	75.2	5.55	71.6	5.33	67.7	5.05	63.8	4.82	58.6	4.52
	45.0	41.0	86.6	6.16	83.5	6.00	78.8	5.76	75.2	5.53	71.6	5.31	67.7	5.03	63.8	4.77	58.6	4.43
	47.0	43.0	86.6	6.18	83.5	6.02	78.8	5.78	75.2	5.56	71.6	5.33	67.7	5.05	63.8	4.79	58.6	4.45
	50.0	46.0	86.6	5.96	83.5	5.80	78.8	5.57	75.2	5.35	71.6	5.14	67.7	4.87	63.8	4.62	58.6	4.29
	55.0	51.0	86.6	5.59	83.5	5.44	78.8	5.23	75.2	5.02	71.6	4.82	67.7	4.57	63.8	4.33	58.6	4.02
	60.0	56.0	86.6	5.20	83.5	5.06	78.8	4.86	75.2	4.67	71.6	4.48	67.7	4.25	63.8	4.03	58.6	3.74
60%	-21.6	-22.0	43.6	5.03	43.4	5.19	43.1	5.43	42.8	6.02	42.6	6.62	42.2	7.44	42.0	7.94	41.7	8.60
	-17.1	-17.5	45.8	5.10	45.4	5.22	44.8	5.41	44.3	5.92	43.7	6.44	43.1	7.16	42.5	7.59	41.9	8.16
	-12.6	-13.0	48.1	5.16	47.5	5.25	46.5	5.39	45.7	5.82	44.8	6.26	43.9	6.88	43.1	7.24	42.0	7.72
	-7.0	-7.6	50.9	5.24	50.0	5.29	48.6	5.37	47.4	5.70	46.3	6.03	44.9	6.52	43.7	6.80	42.2	7.17
	-4.0	-4.4	52.5	5.28	51.4	5.31	49.8	5.36	48.4	5.63	47.0	5.91	45.4	6.34	44.1	6.57	42.3	6.88
	0.0	-0.4	54.5	5.33	53.2	5.34	51.3	5.34	49.6	5.54	48.0	5.75	46.1	6.08	44.5	6.26	42.4	6.49
	5.0	4.5	57.0	5.40	55.5	5.37	53.2	5.32	51.2	5.43	49.3	5.54	47.1	5.77	45.1	5.87	42.5	6.00
	10.0	9.0	59.6	5.47	57.8	5.40	55.0	5.30	52.8	5.32	50.5	5.34	48.0	5.45	45.7	5.48	42.7	5.51
	17.0	15.0	63.1	5.57	60.9	5.45	57.7	5.27	55.0	5.16	52.3	5.06	49.2	5.01	46.5	4.93	42.9	4.83
	20.0	19.0	67.2	5.61	64.9	5.47	61.5	5.25	58.6	5.10	55.7	4.94	52.4	4.82	49.6	4.70	45.7	4.53
	25.0	23.0	74.1	5.68	71.6	5.50	67.8	5.23	64.6	4.98	61.4	4.73	57.8	4.51	54.7	4.31	50.4	4.05
	30.0	28.0	74.1	5.67	71.6	5.48	67.8	5.20	64.6	4.95	61.4	4.71	57.8	4.47	54.7	4.26	50.4	3.98
	35.0	32.0	74.1	5.64	71.6	5.44	67.8	5.14	64.6	4.91	61.4	4.68	57.8	4.42	54.7	4.19	50.4	3.89
	40.0	36.0	74.1	5.60	71.6	5.39	67.8	5.07	64.6	4.85	61.4	4.63	57.8	4.34	54.7	4.10	50.4	3.78
	45.0	41.0	74.1	5.54	71.6	5.32	67.8	4.98	64.6	4.77	61.4	4.57	57.8	4.26	54.7	4.00	50.4	3.66
	47.0	43.0	74.1	5.57	71.6	5.34	67.8	5.00	64.6	4.79	61.4	4.58	57.8	4.28	54.7	4.02	50.4	3.68
	50.0	46.0	74.1	5.36	71.6	5.14	67.8	4.82	64.6	4.62	61.4	4.42	57.8	4.12	54.7	3.87	50.4	3.54
	55.0	51.0	74.1	5.03	71.6	4.83	67.8	4.52	64.6	4.33	61.4	4.14	57.8	3.87	54.7	3.63	50.4	3.33
	60.0	56.0	74.1	4.68	71.6	4.49	67.8	4.21	64.6	4.03	61.4	3.85	57.8	3.60	54.7	3.38	50.4	3.09
50%	-21.6	-22.0	40.3	4.32	40.1	4.48	39.9	4.72	39.7	5.31	39.4	5.90	38.9	6.73	38.2	7.23	37.4	7.89
	-17.1	-17.5	43.4	5.12	42.9	5.19	42.7	5.66	42.1	6.09	41.4	6.53	40.8	7.28	39.7	7.58	38.7	8.14
	-12.6	-13.0	46.5	5.91	45.7	5.90	45.5	6.60	44.4	6.88	43.4	7.15	42.8	7.83	41.2	7.93	40.0	8.39
	-7.0	-7.6	50.3	6.90	49.2	6.79	48.9	7.77	47.4	7.85	45.9	7.93	45.2	8.51	43.1	8.36	41.7	8.70
	-4.0	-4.4	52.4	7.43	51.1	7.27	50.8	8.39	49.0	8.37	47.3	8.35	46.5	8.88	44.1	8.59	41.7	8.51
	0.0	-0.4	55.1	8.14	53.5	7.90	53.3	9.23	51.1	9.07	49.0	8.90	48.2	9.37	45.4	8.90	41.7	8.29
	5.0	4.5	58.6	9.02	56.6	8.69	56.3	10.28	53.8	9.94	51.3	9.60	48.2	9.01	45.4	8.56	41.7	7.96
	10.0	9.0	62.0	9.91	59.7	9.49	56.3	8.86	53.8	8.56	51.3	8.26	48.2	7.76	45.4	7.37	41.7	6.85
	17.0	15.0	62.0	8.53	59.7	8.17	56.3	7.63	53.8	7.37	51.3	7.10	48.2	6.68	45.4	6.33	41.7	5.88
	20.0	19.0	62.0	8.11	59.7	7.76	56.3	7.25	53.8	7.00	51.3	6.74	48.2	6.34	45.4	6.01	41.7	5.57
	25.0	23.0	62.0	7.41	59.7	7.10	56.3	6.63	53.8	6.39	51.3	6.15	48.2	5.79	45.4	5.48	41.7	5.08
	30.0	28.0	62.0	6.72	59.7	6.44	56.3	6.02	53.8	5.79	51.3	5.57	48.2	5.24	45.4	4.96	41.7	4.59
	35.0	32.0	62.0	6.03	59.7	5.78	56.3	5.40	53.8	5.19	51.3	4.98	48.2	4.69	45.4	4.44	41.7	4.10
	40.0	36.0	62.0	5.34	59.7	5.12	56.3	4.79	53.8	4.60	51.3	4.40	48.2	4.15	45.4	3.92	41.7	3.61
	45.0	41.0	62.0	4.67	59.7	4.48	56.3	4.20	53.8	4.02	51.3	3.84	48.2	3.63	45.4	3.42	41.7	3.14
	47.0	43.0	62.0	4.49	59.7	4.31	56.3	4.03	53.8	3.86	51.3	3.69	48.2	3.48	45.4	3.28	41.7	3.02
	50.0	46.0	62.0	4.33	59.7	4.15	56.3	3.89	53.8	3.72	51.3	3.56	48.2	3.36	45.4	3.16	41.7	2.91
	55.0	51.0	62.0	4.06	59.7	3.90	56.3	3.65	53.8	3.49	51.3	3.34	48.2	3.15	45.4	2.97	41.7	2.73
	60.0	56.0	62.0	3.78	59.7	3.62	56.3	3.39	53.8	3.25	51.3	3.10	48.2	2.93	45.4	2.76	41.7	2.54

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).

Grey shading indicates reference data. When operating at this temperature, these values can be different if the system is not running consistently.

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NOTICE

The correction factors shown below are calculated in the LATS 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 27: Outdoor Unit Frost Accumulation Factor (Heating)[1].

Entering DB (ºF)	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.

NOTICE

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.

NOTICE

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

Table 28: 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

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

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ELECTRICAL

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Electrical Connections on page 60

Shutoff Valve Unit Wiring Connections on page 61

GENERAL POWER WIRING / COMMUNICATION CABLE GUIDELINES

General Power Wiring / Communications Cable Guidelines

- Follow manufacturer's circuit diagrams displayed on the inside of the control box covers.
- Have a separate power supply for the indoor units.
- Provide a circuit breaker switch between the power source and the outdoor unit.
- Confirm power source specifications.
- Confirm that the electrical capacity is sufficient.
- Starting current must be maintained ±10 percent of the rated current marked on the name plate.
- Confirm wiring / cable thickness specifications:

1. Power wiring is field supplied. Wire size is selected based on the larger MCA value, and must comply with the applicable local and national codes.
2. Communication cable between ODU to IDUs is to be 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the ODU chassis only. ⃠ Do not ground the ODU to IDUs communication cable at any other point. Wiring must comply with all applicable local and national codes.

- It is recommended that a circuit breaker is installed, especially if conditions could become wet or moist.
- Include a disconnect in the power wiring system, add an air gap contact separation of at least 1/8 inch in each active (phase) conductor.
- Any openings where the field wiring enters the cabinet must be completely sealed.

⚠ WARNING

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

NOTICE

- *Terminal screws may loosen during transport. Properly tighten the terminal connections during installation or risk equipment malfunction or property damage.*
- *Loose wiring may cause unit malfunction, the wires to burnout or the terminal to overheat and catch fire. There is a risk of equipment malfunction or property damage.*
- *Confirm that the electrical capacity is sufficient. A voltage drop may cause magnetic switch vibration, fuse breaks, or disturbance to the normal function of an overload protection device.*

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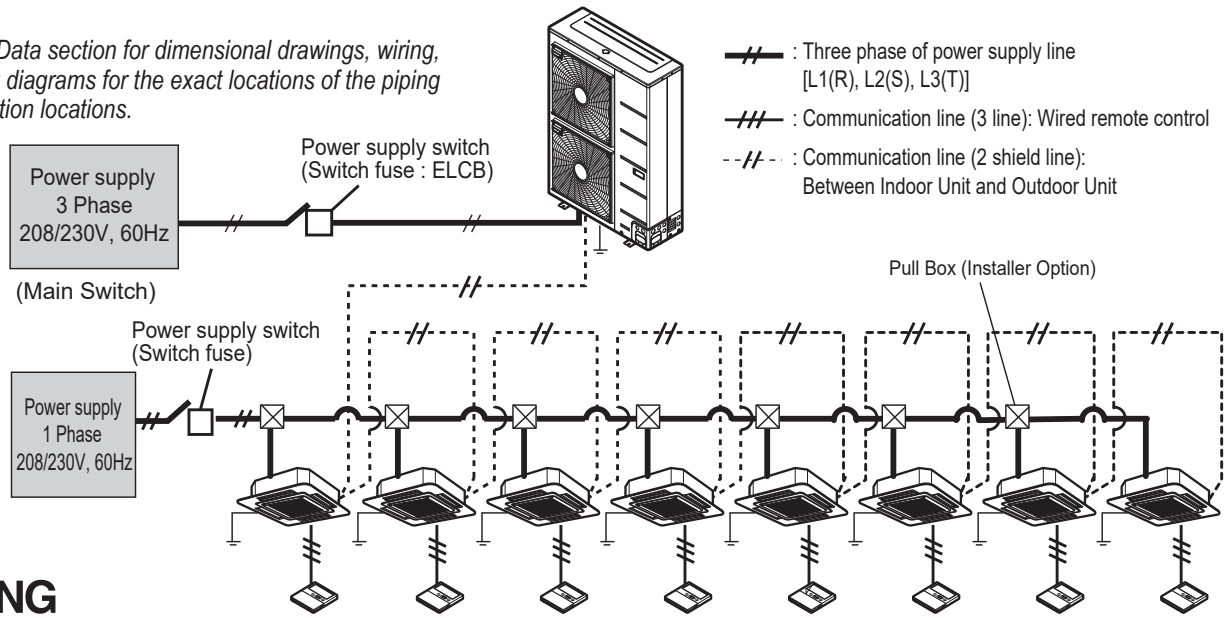
DANGER

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

Figure 20: Power Wiring / Communications Cable Connections--ZRUN072BSS0 and ZRUN096BSS0 Heat Pump Systems.

NOTICE

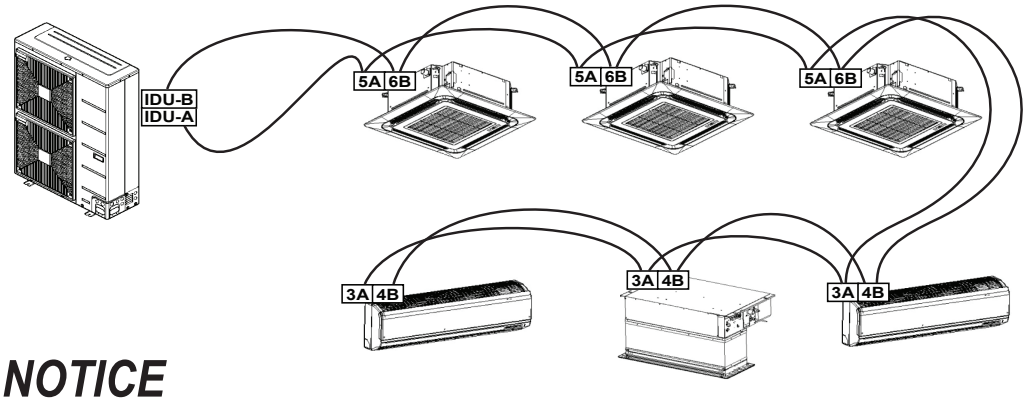
Refer to the Product Data section for dimensional drawings, wiring, and refrigerant piping diagrams for the exact locations of the piping and electrical connection locations.



WARNING

- *Ground wiring is required to prevent accidental electrical shock during current leakage, communication problems from electrical noise, and motor current leakage. Always ground indoor units to help prevent electrical shock accidents or communication signal disruption. ⃠ 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.*
- *Operating the system in reversed phase can damage the compressor or 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.*
- *The GND terminal at the main PCB is a negative terminal for dry contact, not a ground. Inadequate connections may generate heat, cause a fire, and physical injury or death.*

Figure 21: Daisy Chain Power Wiring / Communications Cable Example--ZRUN072BSS0 and ZRUN096BSS0 Heat Pump Systems.



NOTICE

- *Maintain polarity throughout the communication network. The system will malfunction if not properly wired.*
- *If the system operates in reversed phase, it may 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 may break the compressor and other unit components.*

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SHUTOFF VALVE UNIT WIRING CONNECTIONS

Shutoff Valve Unit Power Wiring and Communications Cable Connections

1. Open the shutoff valve unit control box cover (see image below).
2. Insert the power wiring / communications cable from the outdoor unit using the access holes.
3. Connect each wire to its appropriate terminal on the shutoff valve unit control board. Verify that the color and terminal numbers from the outdoor unit wiring match the color and terminal numbers on the shutoff valve unit.
4. Secure the power wiring / communications cable.

NOTICE

All communication and power wiring must be connected to the terminals using connectors certified or recognized according to UL and CSA standards.

Figure 22: Accessing the One-Port Shutoff Valve Unit Control Box.

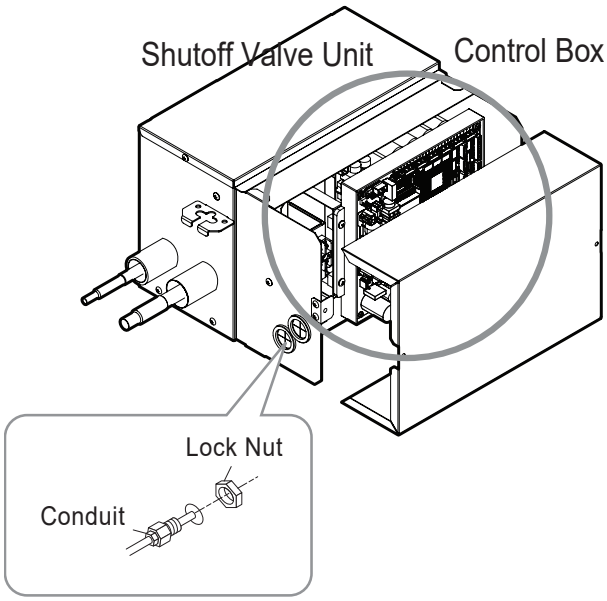


Figure 23: One-Port Shutoff Valve Control Box Connections.

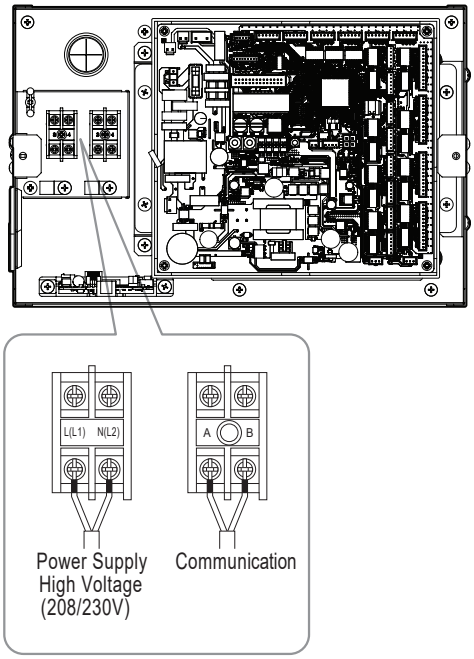


Figure 24: Close Up of the One-Port Shutoff Valve Unit to Outdoor Unit Terminal Block Connections.

Shutoff Valve Unit				(Main) Outdoor Unit									
Terminal Block			Terminal Block	SODU		IDU		INTERNET		DRY1	DRY2	GND	12 V
L(L1)	N(L2)	⏚	A	B	B	A	B	A	B	A	-	-	-	-

Power Supply

Communication Cable
(Shutoff Valve Unit to Outdoor Unit)

⚠ WARNING

Ensure that all wiring is tightly connected and that the terminal screws are not loose. Loose wiring can cause the terminal to overheat, resulting in fire, physical injury, or death.

NOTICE

Ensure that all wiring is tightly connected and that the terminal screws are not loose. Loose wiring can cause the terminal malfunction.

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SHUTOFF VALVE UNIT WIRING CONNECTIONS

Figure 25: Accessing the Two-, Three-, and Four-Port Shutoff Valve Unit Control Box.

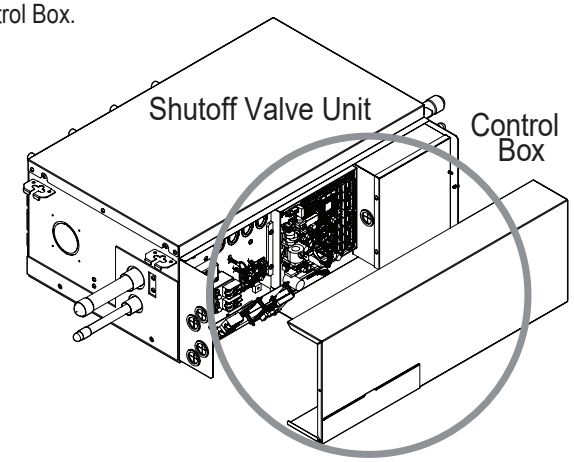
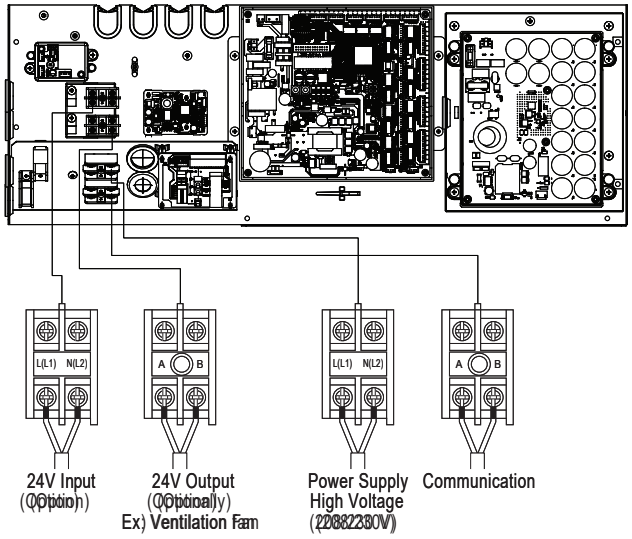


Figure 26: Two-, Three-, and Four-Port Shutoff Valve Control Box Connections.



⚠ WARNING

Ensure that all wiring is tightly connected and that the terminal screws are not loose. Loose wiring can cause the terminal to overheat, resulting in fire, physical injury, or death.

NOTICE

Ensure that all wiring is tightly connected and that the terminal screws are not loose. Loose wiring can cause the terminal malfunction.

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PIPING LIMITATIONS AND PLACEMENT CONSIDERATIONS

Piping Limitations on page 64
Selecting the Best Location for Outdoor Unit(s) on page 66
Outdoor Unit Clearance Requirements on page 69
Installing Outdoor Units Indoors on page 71
Selecting the Best Location for the Shutoff Valve Unit(s) on page 73

PIPING LIMITATIONS

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

NOTICE

Various tools are available to assist in properly designing LG R32 split systems. Refer to the "R32 Application Guide"; the "Simple Calculator for Capacity, Refrigerant Charge and ESP"; the "LG Air Conditioner Technical Solutions" (LATS) software program; and the local LG Sales Representative.

Figure 27: Typical Multi V S Three-Phase Heat Pump System Building Layout Listing the Piping Limitations — When the Outdoor Unit is Above the Indoor Units.

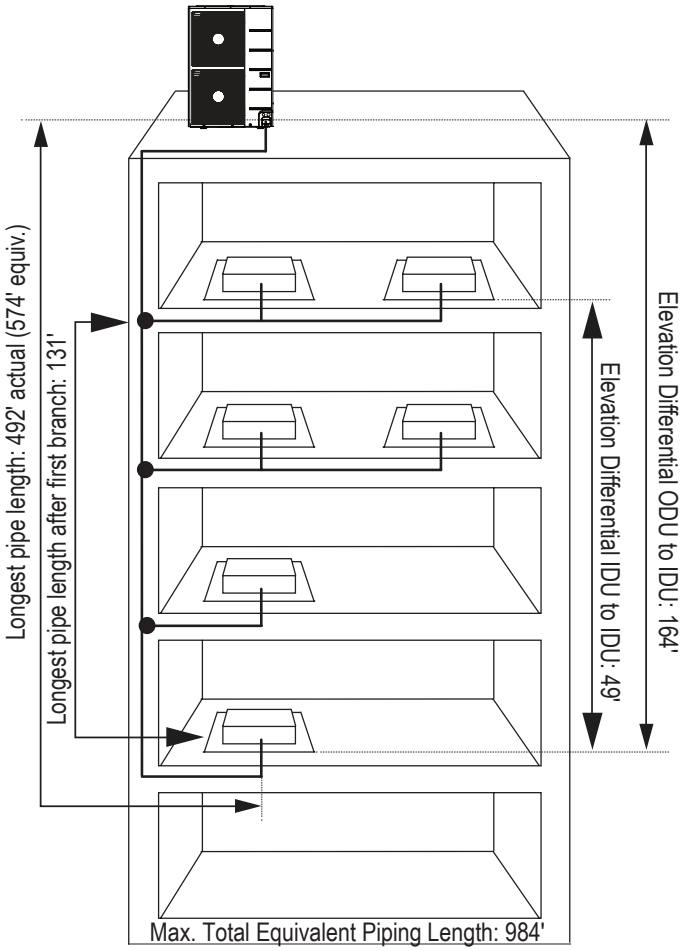


Figure 28: Typical Multi V S Three-Phase Heat Pump System Building Layout Listing the Piping Limitations — When the Outdoor Unit is Below the Indoor Units.

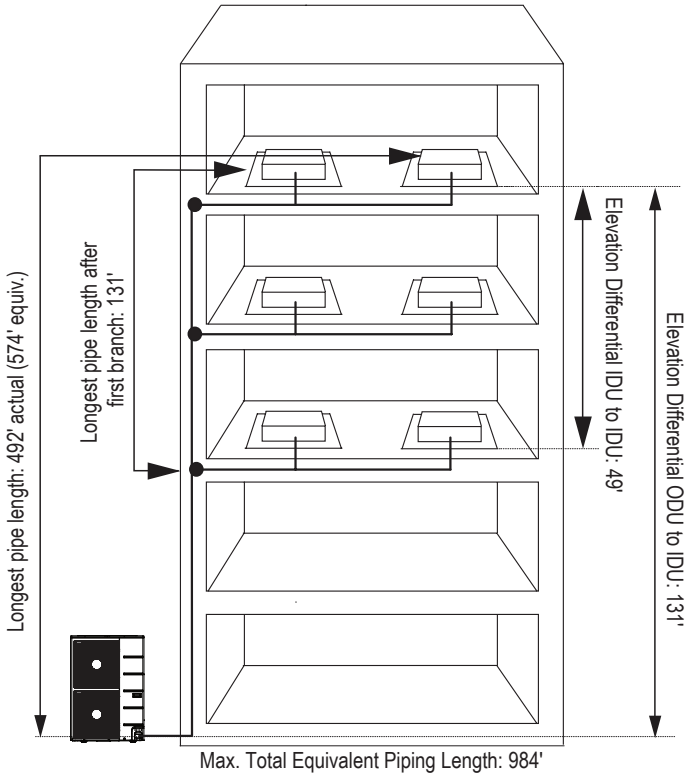


Table 29: Piping Limitations for Multi V S Three-Phase Heat Pump Operation (See next page).

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.

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PIPING LIMITATIONS

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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).

NOTICE

- *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.*

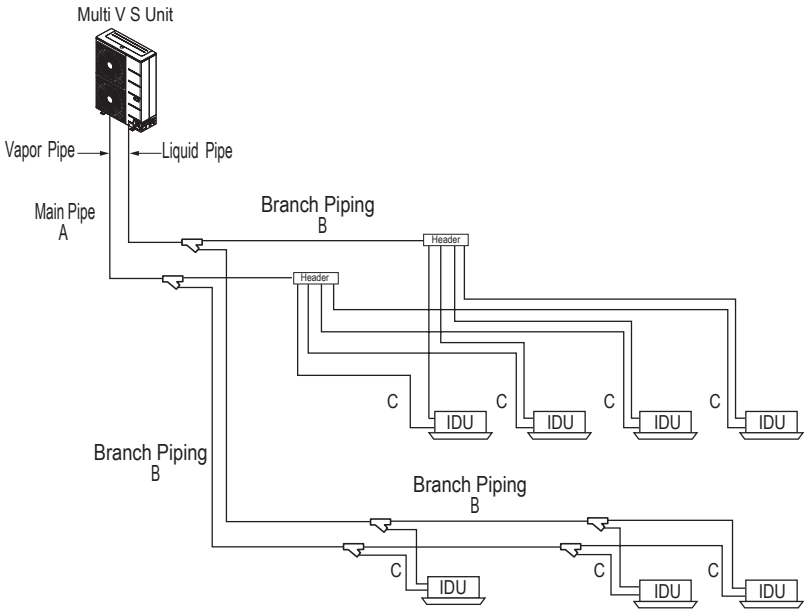


Table 30: Main Pipe (A) Diameters from Multi V S Three-Phase to First Y-branch.

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	3/4Ø	1/2Ø	7/8Ø

Table 31: 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 32: 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.

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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.*

⚠ WARNING

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.

Install a fence to prevent pests from crawling into the unit or unauthorized individuals from accessing it. Pests and unauthorized individuals can damage internal components which can cause a fire, electric shock, physical injury or death. Follow the placement guidelines set forth in "Clearance Requirements".

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

Dos

- *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 Nots

- *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).*

NOTICE

The indoor units may 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.*

Outdoor Unit Condensate Drain Piping

Outdoor unit requires condensate drain piping. Condensate drain pipe is constructed with materials approved by local code. See pages 67-70 for information in reference to outdoor unit placement.

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SELECTING THE BEST LOCATION FOR THE OUTDOOR UNIT(S)

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 will 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.

NOTICE

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.

Tie-Downs, Lightning Protection, and Wind Protection

Tie-Downs

- The strength of the roof must be checked before installing the outdoor units.
- The strength of the outdoor unit frames is adequate to be used with field-provided wind restraint tie-downs.
- If the installation site is prone to high winds or earthquakes, when installing on the wall or roof, securely anchor the mounting base using a field-provided tie-down configuration approved by a local professional engineer.
- The overall tie-down configuration must be approved by a local professional engineer.

NOTICE

Always refer to local code when using a wind restraint system.

Lightning Protection

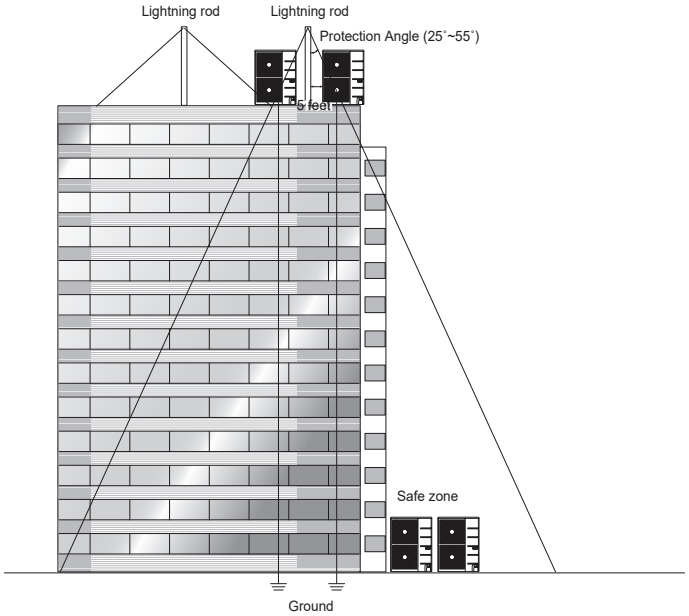
- To protect the outdoor unit from lightning, it must be placed within the specified lightning safety zone.

Table 33: Safety Zone Specifications.

Building Height (feet)	66	98	148	197
Protection Angle (˚)	55	45	35	25

- Power cable and communication cable must be installed five (5) feet away from lightning rod.
- A high-resistance ground system must be included to protect against induced lightning or indirect strike.

Figure 29: Lightning Protection Diagram (Outdoor Unit Appearances Differ According to Model).



NOTICE

If the building does not include lightning protection, the outdoor unit will be damaged from a lightning strike. Inform the customer of this possibility in advance.

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Oceanside Applications

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 30: Prevailing Wind Direction.

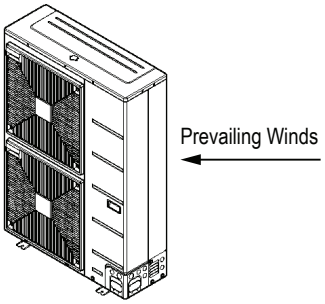
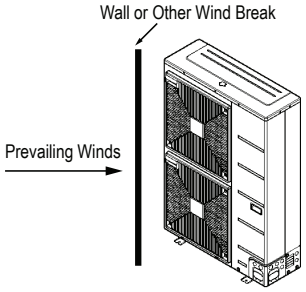


Figure 31: Leeward Side of the Building.



Figure 32: Wind Break.



Oceanside Application Precautions

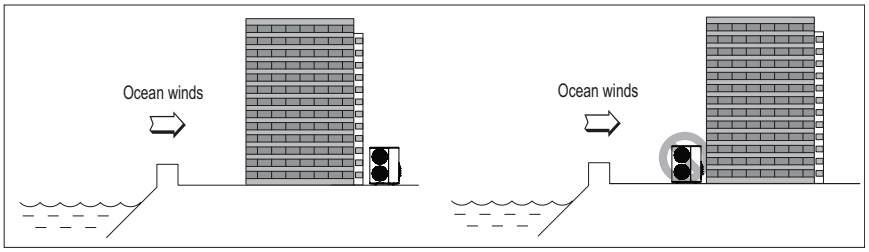
NOTICE

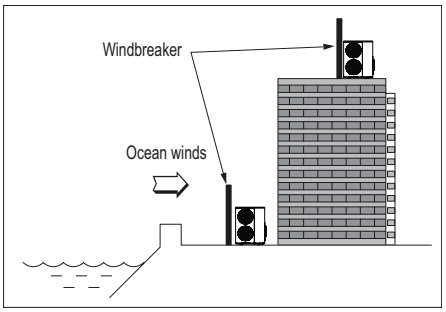
Ocean winds will cause corrosion, particularly on the condenser and evaporator fins, which, in turn could cause product malfunction or inefficient performance.

- ⃠ 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 windbreak strong enough to block any winds. Windbreaker height and width must be more than 150% of the outdoor unit, and be installed at least 14 to 28 inches away from the outdoor unit to allow for airflow (depending on the location and outdoor unit size).

Figure 33: Oceanside Placement Using a Building as Shield, and Placement Using a Windbreak.





NOTICE

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

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OUTDOOR UNIT CLEARANCE REQUIREMENTS

Minimum Clearance Requirements for Multi V S Three-Phase ZRUN072BSS0 / ZRUN096BSS0 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.

NOTICE

- ⃠ *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 34: Improper Outdoor Unit Placement.

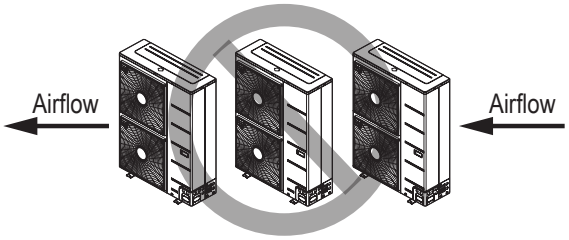


Figure 35: Proper Outdoor Unit Placement and Clearances.

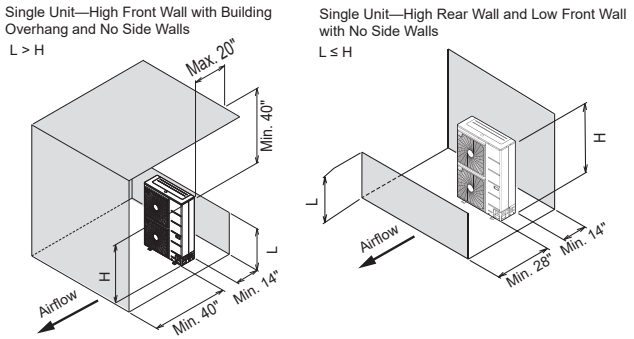
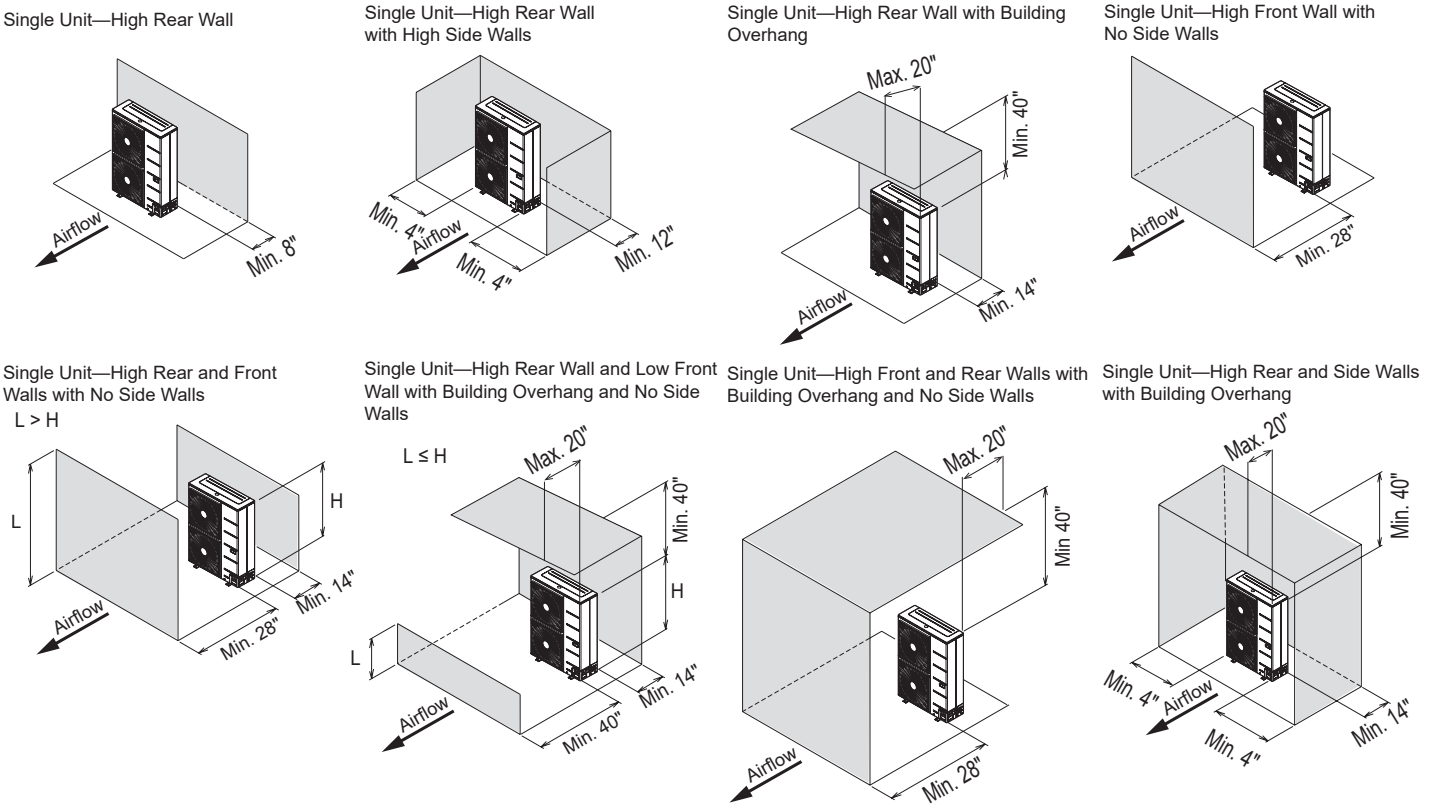


Figure 36: Proper Outdoor Unit Placement and Clearances, continued.



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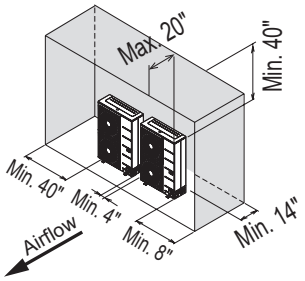
OUTDOOR UNIT CLEARANCE REQUIREMENTS

NOTICE

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

Figure 37: 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

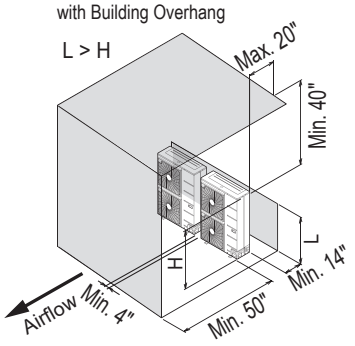
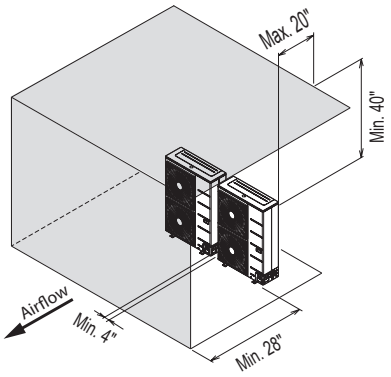
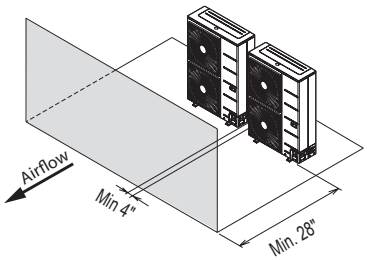


Figure 38: Proper Outdoor Unit Placement and Clearances, continued.

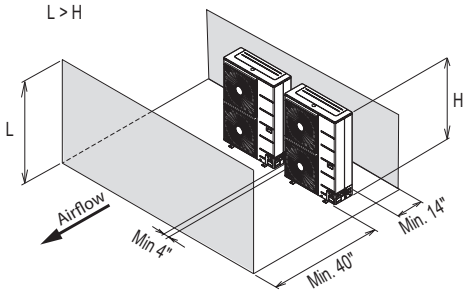
Side by Side —High Front Wall with Building Overhang and No Side or Rear Walls



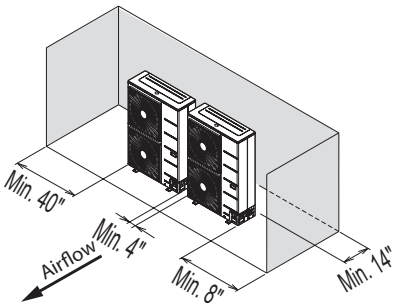
Side by Side—High Front Wall with No Side Walls



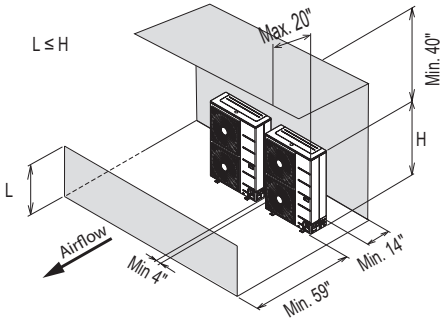
Side by Side—High Front and Rear Walls with No Side Walls



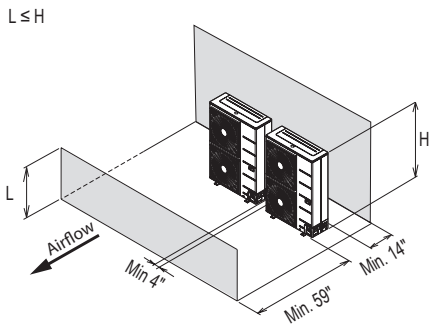
Side by Side—High Rear and Side Walls



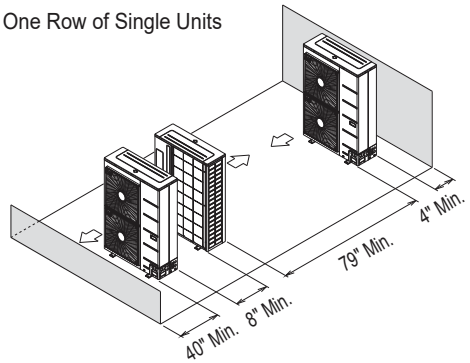
Side by Side—High Rear Wall and Low Front Wall with Building Overhang and No Side Walls



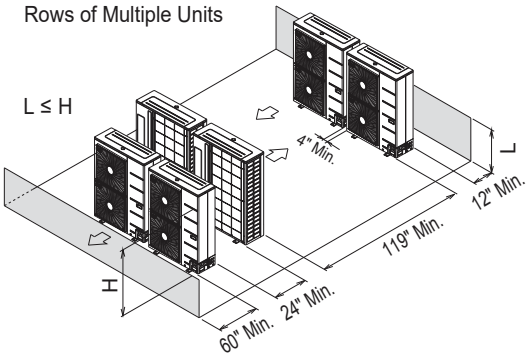
Side by Side—High Rear Wall and Low Front Wall with No Side Walls



One Row of Single Units



Rows of Multiple Units



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LG

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 lower than the product's minimum operating temperature, 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.

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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.

⚠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 walk-ways, which will create unsafe conditions.

NOTICE

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.

NOTICE

For detailed placement considerations and installation requirements for indoor units, refer to its Indoor Unit Engineering and / or Installation Manuals.

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PLACEMENT CONSIDERATIONS

Selecting the Best Location / Clearance Requirements for the Shutoff Valve Unit(s)

Select an installation space for the shutoff valve unit that meets the following conditions:

- Install the shutoff valve unit indoors in a level and upright position.
- Ensure there is enough space in the installation area for service access.
- Install the shutoff valve unit in a location where any sound it generates will not disturb occupants in the surrounding rooms.
- Install so that the refrigerant piping and electrical wiring system are easily accessible.

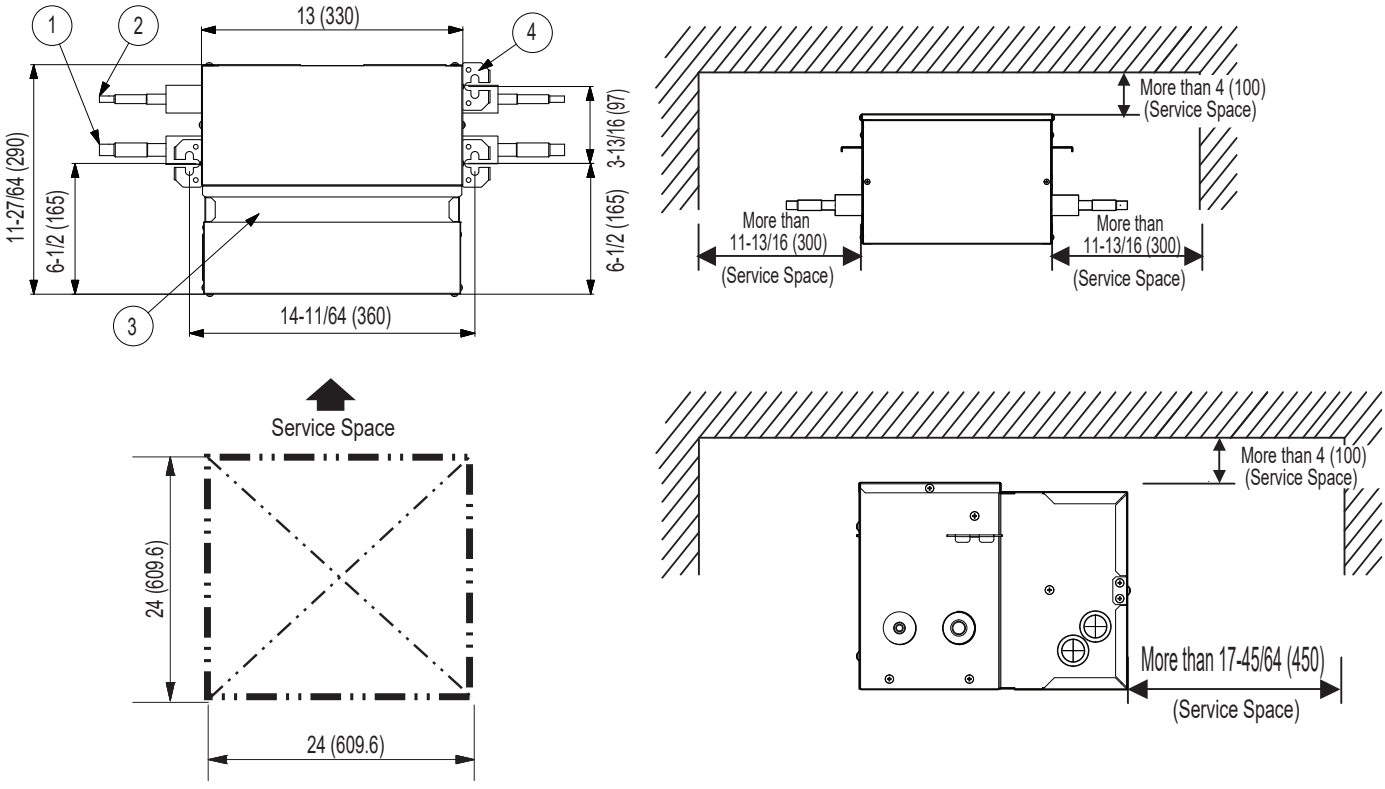
Dont's

- *Refrigerant pipes must not exceed lengths specified by LG Electronics.*
- *Do not install the shutoff valve unit in a location where rain may enter.*
- *Do not install the shutoff valve unit in a location where it would be subjected to strong radiant heat from heat sources.*
- *Avoid an installation environment with no more than 80% high humidity, or where oil splattering and / or vapor spray will occur.*
- *Avoid an installation environment where high-frequency electric noise could occur.*

Figure 39: PRHPZ010A Clearance Requirements.

One-Port Shutoff Valve Units

Unit: Inch (mm)



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PLACEMENT CONSIDERATIONS

Selecting the Best Location / Clearance Requirements for the Shutoff Valve Unit(s)

Figure 40: PRHPZ010A Clearance Requirements, Continued.

One-Port Shutoff Valve Units

Unit: Inch (mm)

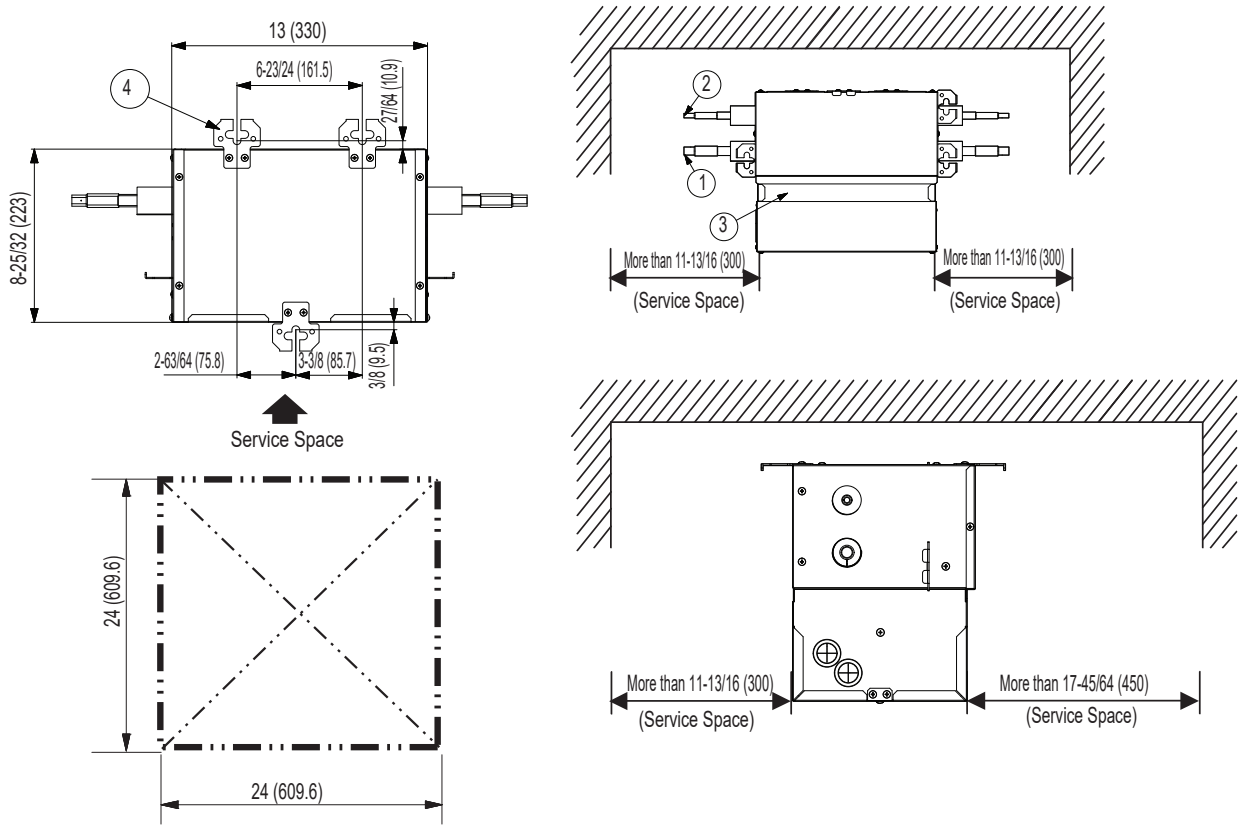


Table 34: PRHPZ010A Shutoff Valve Unit Components and Legend.

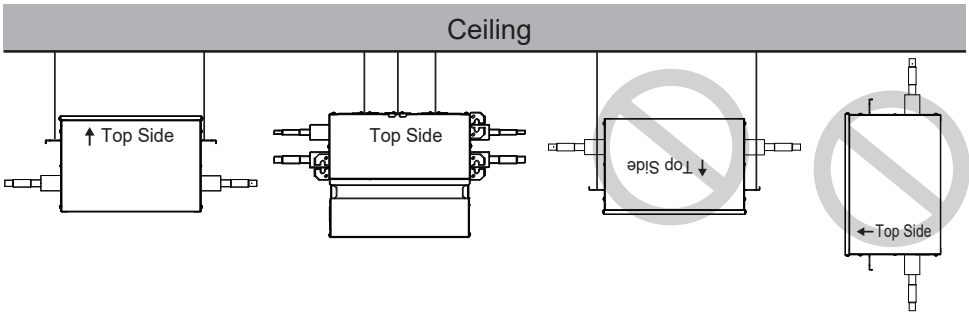
Part No.	Part Name	Connection Size (in.) / Type
		PRHPZ010A
1	Vapor Pipe Connection Port	Ø5/8 Braze – Ø1/2 Braze
2	Liquid Pipe Connection Port	Ø3/8 Braze – Ø1/4 Braze
3	Control Box	–
4	Hanger Bracket	M8 or M10 Suspension Bolt

[1]Include an access panel at the side of the shutoff valve unit where the control box is located.

NOTICE

Use the hanger accessories (included) when rotating the Shutoff Valve Units 90° in certain installations.

Figure 41: Install the One-Shutoff Valve Unit Top Side Up or Towards the Front.



NOTICE

The one-port shutoff valve unit must be installed so that the top side faces up or towards the front. If the shutoff valve unit is installed incorrectly, it may fail.

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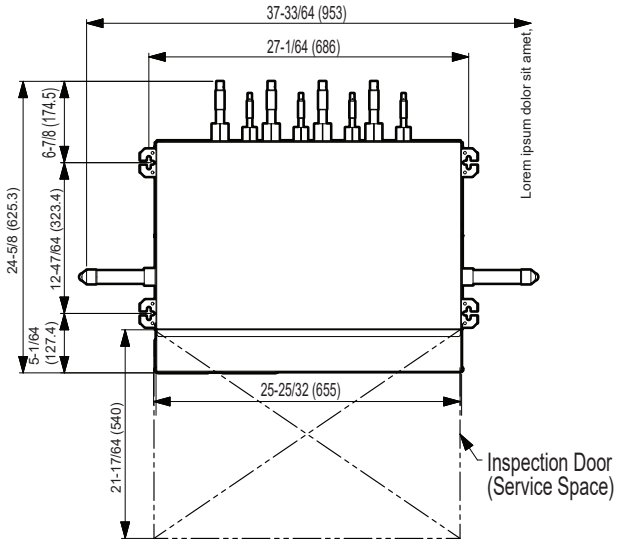
PLACEMENT CONSIDERATIONS

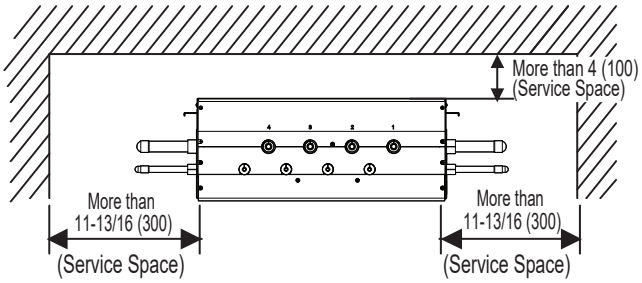
Selecting the Best Location / Clearance Requirements for the Shutoff Valve Unit(s)

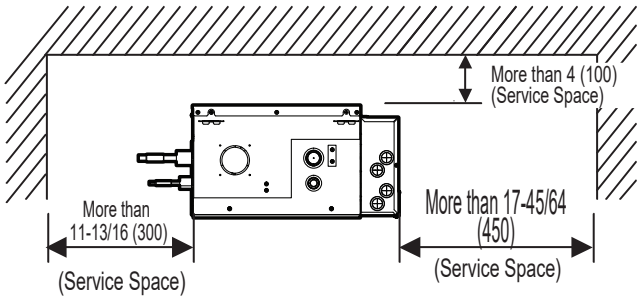
Figure 42: PRHPZ020A, PRHPZ030A, and PRHPZ040A Clearance Requirements.

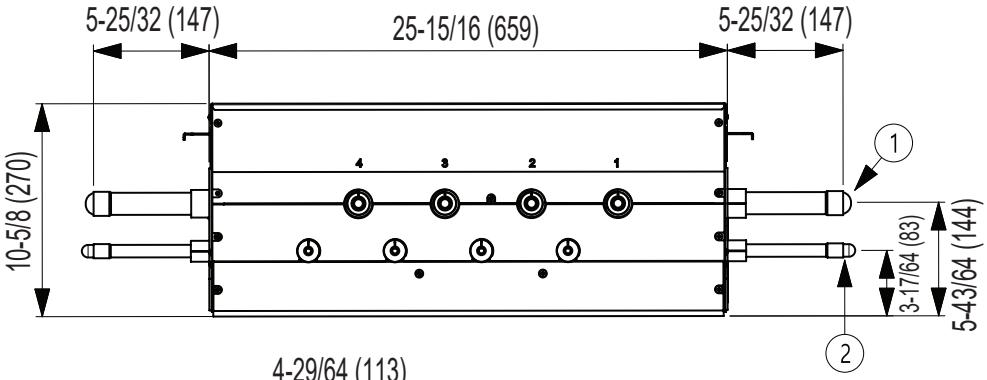
Two-, Three-, and Four-Port Shutoff Valve Units

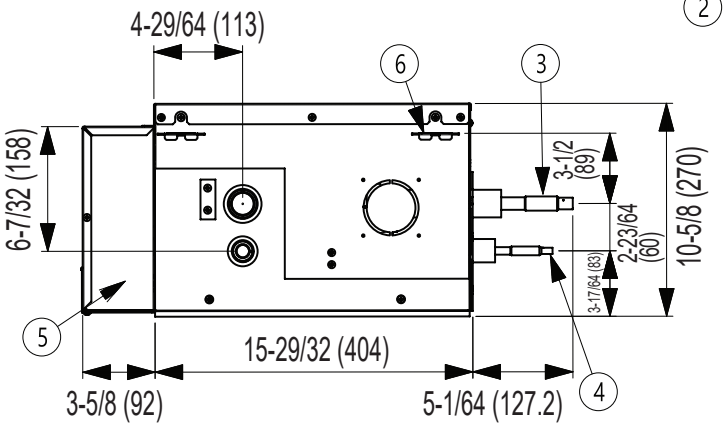
Unit: Inch (mm)











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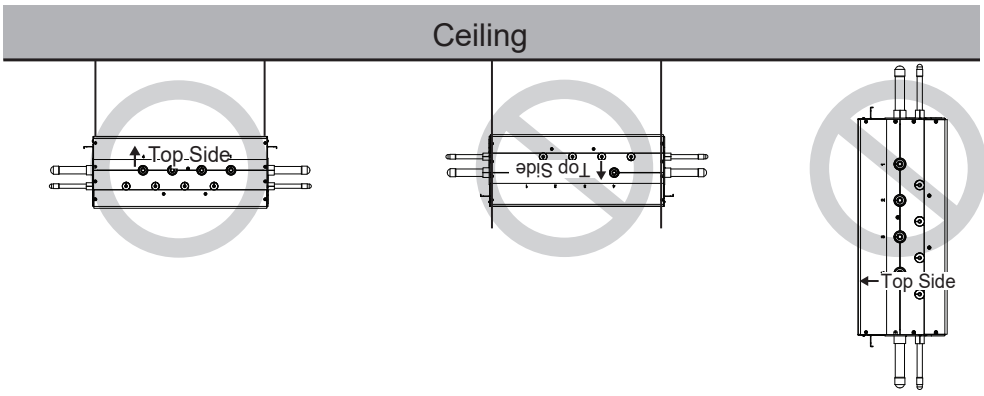
Selecting the Best Location / Clearance Requirements for the Shutoff Valve Unit(s)

Table 35: PRHPZ020A, PRHPZ030A, and PRHPZ040A Shutoff Valve Unit Components and Legend.

Part No.	Part Name	Connection Size (in.) / Type		
		PRHPZ020A	PRHPZ030A	PRHPZ040A
1	Outdoor Unit Vapor Pipe Connection Port	Ø7/8 Braze	Ø1-1/8 Braze	Ø1-1/8 Braze
2	Outdoor Unit Liquid Pipe Connection Port	Ø3/8 Braze	Ø1/2 Braze	Ø5/8 Braze
3	Indoor Unit Vapor Pipe Connection Port	Ø5/8 Braze – Ø1/2 Braze		
4	Indoor Unit Liquid Pipe Connection Port	Ø3/8 Braze – Ø1/4 Braze		
5	Control Box	–	–	–
6	Hanger Bracket	M8 or M10 Suspension Bolt		

[1]Include an access panel at the side of the shutoff valve unit where the control box is located.
[2]If reducers are used, service space must be increased equal to the dimensions of the reducer.

Figure 43: Install the Shutoff Valve Unit Top Side Up.



NOTICE

The two-, three- and four-port shutoff valve units must be installed so that the top side faces up. If these shutoff valve unit is installed incorrectly, they may fail.

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LIMITED WARRANTY (USA)

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

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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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EM_Multi_V_S_3Phase_R32_11_2026
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