



R32

MULTI V™
**WALL-MOUNTED INDOOR UNIT
ENGINEERING MANUAL**



Art Cool™ Mirror Wall-Mounted
5,500 to 24,200 Btu/h



Standard Wall-Mounted
5,500 to 35,500 Btu/h

PROPRIETARY DATA NOTICE

This document, as well as all reports, illustrations, data, information, and other materials are the property of LG Electronics U.S.A., Inc., and are disclosed by LG Electronics U.S.A., Inc. only in confidence.

This document is for reference and product application purposes only and does not constitute design, engineering, or installation services.

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

UL® certification indicates that representative samples of this product have been evaluated by UL and found to comply with applicable standards. Certification does not imply endorsement by UL.

This product's performance has been tested and verified in accordance with AHRI Standards. Certification applies only to models listed in the AHRI Directory under AHRI Certified® program.

© LG Electronics U.S.A., Inc. . All rights reserved. UL® and the UL symbol are registered trademarks of UL LLC. AHRI Certified® and AHRI Certification symbol are registered certification marks of the Air-Conditioning, Heating, and Refrigeration Institute. All other trademarks are the property of their respective owners.

A summary list of safety precautions is on page 6.

For continual product development, LG Electronics U.S.A., Inc. reserves the right to change specifications without notice.

© LG Electronics U.S.A., Inc.

LG Air Conditioner Technical Solution (LATS) Software

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

NOTICE

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

Formats

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

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

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

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.

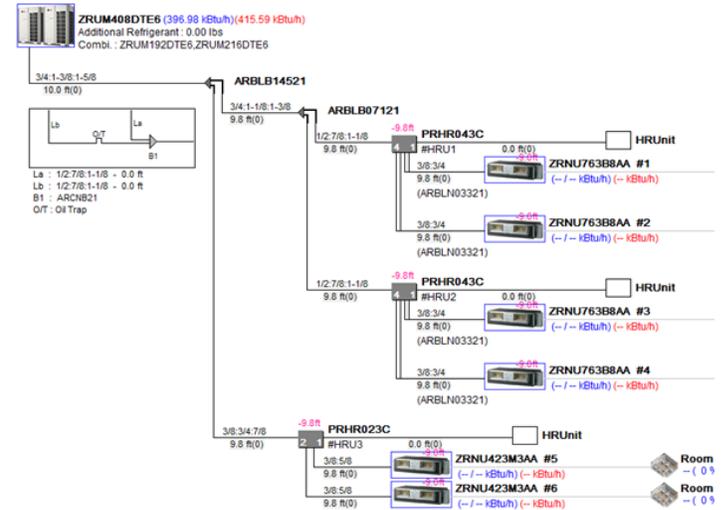
NOTICE

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.

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



LG AIR CONDITIONER TECHNICAL SOLUTION (LATS)



LATS Generates a Complete Project Report

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

Proper Design to Install Procedure

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

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

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-Branched will also need to be changed.
- Changes to outdoor unit and indoor unit capacities. Capacities changes will impact line length changes.
- Additional refrigerant charge quantity ("Trim Charge"). Trim charge will change if piping lengths and diameters change. The As Built version must reflect installed piping lengths to ensure correct trim charge.

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

NOTICE

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

LG Air Conditioner Technical Solution (LATS)	3-4
Table of Symbols	6
Unit Nomenclature	7
Additional Refrigerant Charge	8-9
Art Cool™ Mirror Wall-Mounted Indoor Units	10-40
<i>Mechanical Specifications</i>	11-12
<i>General Data</i>	13
<i>Electrical Data</i>	14
<i>Dimensions</i>	15-16
<i>Wiring Diagram</i>	17-18
<i>Refrigerant Flow Diagram</i>	19
<i>Air Velocity / Temperature Distribution</i>	20-33
<i>Acoustic Data</i>	34-37
<i>Capacity Tables</i>	38-39
<i>Accessories</i>	40
Standard Wall-Mounted Indoor Units	41-77
<i>Mechanical Specifications</i>	42-43
<i>General Data</i>	44-45
<i>Electrical Data</i>	46
<i>Dimensions</i>	47-49
<i>Wiring Diagram</i>	50-53
<i>Refrigerant Flow Diagram</i>	54
<i>Air Velocity / Temperature Distribution</i>	55-69
<i>Acoustic Data</i>	70-74
<i>Capacity Tables</i>	75-76
<i>Accessories</i>	77
Application Guidelines	78-85
<i>Selecting the Best Location</i>	79
<i>General Mounting</i>	80
<i>General Drain Piping Information</i>	81-82
<i>Wiring Guidelines</i>	83-84
<i>Controllers</i>	85
Limited Warranty	86

TABLE OF SYMBOLS

 A2L	Indicates that this appliance uses a flammable refrigerant. If the refrigerant leaks and 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.

¹Signal 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.

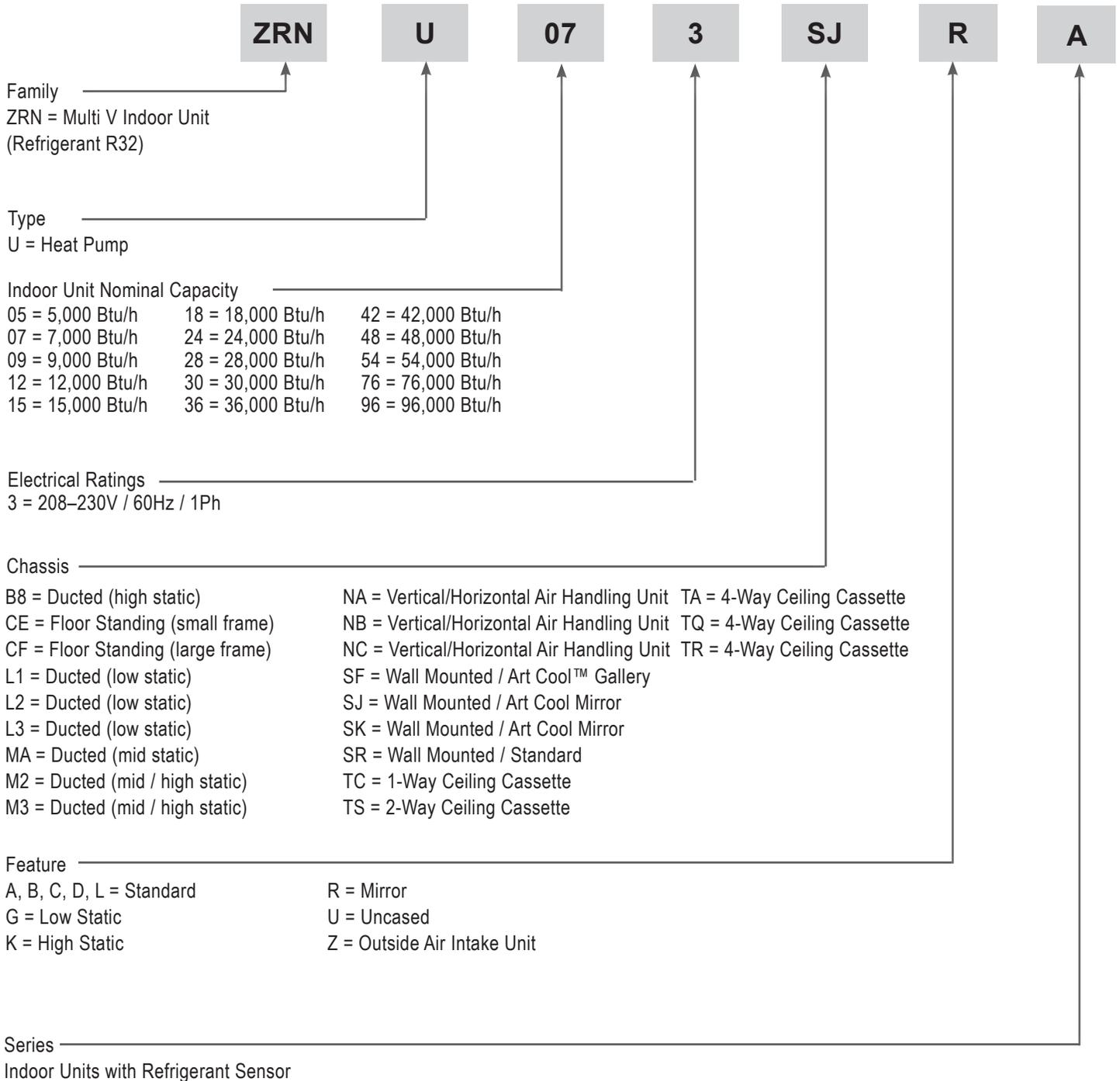
The amount of refrigerant depends on outdoor unit to indoor unit configuration. All refrigerant piping system components (copper piping, joints, and other fittings) must be selected and installed to conform with Refrigeration Safety Regulation standards. Use LG Air Conditioner Technical Solution (LATS)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



REFRIGERANT CHARGE WORKSHEET



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

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

System Tag or ID:		Job Name: _____		Date: _____		
		Project Manager: _____				
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	High Static Ducted	M2	7k to 24k		0.64	
18	High Static Ducted	M3	28k		1.10	
19	High Static Ducted	B8	36k to 96k		1.83	
20	Mid Static Ducted	M2	36k to 42k		0.95	
21	Mid Static Ducted	M3	48k		1.10	
22	Low Static Ducted, Low Static Ducted Bottom Return	L1	7k to 9k		0.26	
23	Low Static Ducted, Low Static Ducted Bottom Return	L2	12k to 18k		0.37	
24	Low Static Ducted, Low Static Ducted Bottom Return	L3	24k		0.49	
25	Vertical / Horizontal Air Handling Unit	NA	12k to 30k		0.86	
26	Vertical / Horizontal Air Handling Unit	NB	36k to 48k		1.68	
27	Vertical / Horizontal Air Handling Unit	NC	54k to 60k		1.68	
28	Floor Standing	CE (U)	7k to 15k		0.31	
29	Floor Standing	CF (U)	18k to 24k		0.68	
30	Heat Recovery Units (HRU): PRHR023C, 033C, 043C	—	—		1.0	
31	Heat Recovery Units (HRU): PRHR063C, 083C	—	—		2.0	
32	ADDITIONAL Refrigerant Charge Required (Sum of lines 1 – 31)					
33	Outdoor Unit Factory Refrigerant Charge (lbs.)	33A	ZRUM072*TE6	72k		16.53
		33B	ZRUM096*TE6	96k		20.94
		33C	ZRUM121*TE6	121k		20.94
		33D	ZRUM144*TE6	144k		26.46
		33E	ZRUM168*TE6	168k		26.46
		33F	ZRUM192*TE6	192k		30.86
		33G	ZRUM216*TE6	216k		37.48
		33H	ZRUM241*TE6	241k		37.48
33I	ZRUM264*TE6	264K		37.48		
34	Total FACTORY Outdoor Unit (ODU) Refrigerant Charge (Sum of factory refrigerant charges for all ODUs in the system)					
35	TOTAL SYSTEM CHARGE Sum of ADDITIONAL Refrigerant Charge Required (line 32) and Total FACTORY ODU Refrigerant Charge (line 34)					

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

REFRIGERANT CHARGE WORKSHEET

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

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

System Tag or ID:		Job Name: _____				
		Project Manager: _____			Date: _____	
Line #	Description	Chassis I.D.	Size	Quantity	CF (Ref.) ¹	Total (lbs.)
1	Linear feet of 1/4" liquid line tubing ²	—	—		0.013	
2	Linear feet of 3/8" liquid line tubing ²	—	—		0.036	
3	Linear feet of 1/2" liquid line tubing ²	—	—		0.069	
4	Linear feet of 5/8" liquid line tubing ²	—	—		0.103	
5	Linear feet of 3/4" liquid line tubing ²	—	—		0.158	
6	Linear feet of 7/8" liquid line tubing ²	—	—		0.210	
7	Linear feet of 1" liquid line tubing ²	—	—		0.284	
8	Standard + Art Cool Mirror	SJ	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	High Static Ducted	M2	7k to 24k		0.64	
18	High Static Ducted	M3	28k		1.10	
19	High Static Ducted	B8	36k to 96k		1.83	
20	Mid Static Ducted	M2	36k to 42k		0.95	
21	Mid Static Ducted	M3	48k		1.10	
22	Low Static Ducted, Low Static Ducted Bottom Return	L1	7k to 9k		0.26	
23	Low Static Ducted, Low Static Ducted Bottom Return	L2	12k to 18k		0.37	
24	Low Static Ducted, Low Static Ducted Bottom Return	L3	24k		0.49	
25	Vertical / Horizontal Air Handling Unit	NA	12k to 30k		0.86	
26	Vertical / Horizontal Air Handling Unit	NB	36k to 48k		1.68	
27	Vertical / Horizontal Air Handling Unit	NC	54k to 60k		1.68	
28	Floor Standing	CE (U)	7k to 15k		0.31	
29	Floor Standing	CF (U)	18k to 24k		0.68	
30	Heat Recovery Units (HRU): PRHR023C, 033C, 043C	—	—		1.0	
31	Heat Recovery Units (HRU): PRHR063C, 083C	—	—		2.0	
32	ADDITIONAL Refrigerant Charge Required (Sum of lines 1 – 31)					
33	Outdoor Unit Factory Refrigerant Charge (Choose One) (lbs.)	33A	ZRUN024GSS0	24,000	3.3	
		33B	ZRUM036GSS0	36,000	6	
		33C	ZRUM048GSS0	48,000	6	
		33D	ZRUM060GSS0	60,000	6.9	
34	Total FACTORY Outdoor Unit (ODU) Refrigerant Charge (Sum of factory refrigerant charges for all ODUs in the system)					
35	TOTAL SYSTEM CHARGE Sum of ADDITIONAL Refrigerant Charge Required (line 32) and Total FACTORY ODU Refrigerant Charge (line 34)					

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



ART COOL™ MIRROR WALL-MOUNTED

Mechanical Specifications on page 11

General Data on page 13

Electrical Data on page 14

Dimensions on page 15

Wiring Diagram on page 17

Refrigerant Flow Diagram on page 19

Air Velocity / Temperature Distribution on page 20

Acoustic Data on page 21

Capacity Tables on page 38

Accessories on page 40

Casing

Units are designed to mount on a vertical surface and come complete with an installation mounting guide and a separate hanging bracket. The unit case is manufactured with coated metal. Cold surfaces are covered with a coated polystyrene insulating material.

Finish

The unit case has a light gray / silver matte finish. The front surface of the unit has an architectural flat panel smoked mirror finish.

Fan Assembly and Control

The unit has a single, direct-drive, crossflow tangential Sirocco fan made of high strength ABS BSN-7530 polymeric resin. The fan motor is a Brushless Digitally Controlled (BLDC) design with permanently lubricated and sealed ball bearings. The fan motor includes thermal, overcurrent and low RPM protection. The fan / motor assembly is mounted on vibration attenuating rubber grommets. The fan impeller is statically and dynamically balanced. The fan speed is controlled using a microprocessor-based direct digital control algorithm that provides a high fan speed in cooling thermal ON and low fan speed in cooling thermal OFF, high fan speed in heating thermal ON and fan off in heating thermal OFF. The fan speeds can be field adjusted between low, medium, and high speeds. The fan speed algorithm provides a field-selectable fixed-speed or auto-speed setting that changes the fan speed to simulate natural airflow.

Air Filter

Return air is filtered with a removable, washable filter with anti-fungal treatment. Filter access is from the front of the unit without the use of tools.

Airflow Guide Vanes

5–15 MBh

The indoor unit is provided with a motorized oscillating guide vane that automatically changes the direction of up-and-down airflow. The indoor unit includes factory installed, manually adjustable guide vanes that control the side-to-side direction of supplied airflow.

18-24 MBh

The indoor unit is provided with a motorized sweeping guide vane that automatically changes the direction of airflow from side-to-side and up-and-down.

Microprocessor Control

The unit is provided with an integrated microprocessor controller capable of performing functions necessary to operate the system without the use of a wall-mounted controller. A temperature thermistor is factory mounted in the return air stream. All unit operation parameters, excluding the operating schedule, are stored in non-volatile memory resident on the unit microprocessor. Operating schedules are stored in select models of the optional, wall-mounted, local or central controllers.



The field-supplied communication cable between the indoor unit(s) and outdoor unit is to be a minimum of 18 AWG, 2 conductor, stranded, and shielded cable (RS-485), terminated via screw terminals on the control boards. The microprocessor control provides the following functions: auto addressing, self-diagnostics, auto restart following power restoration, test run, and will operate the indoor unit using one of five operation modes:

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

For Heat Recovery systems the Auto Changeover setting automatically switches control of the indoor unit between Cooling and Heating modes based on space temperature conditions. For Heat Pump systems, heated or cooled air delivery is dependent upon outdoor unit operating mode. In Heating mode, the microprocessor control will activate indoor unit operation when the indoor room temperature falls below set-point temperature. At which point, a signal is sent to the outdoor unit to begin the heating cycle. The indoor unit fan operation is delayed until coil pipe temperature reaches 76°F. Significant airflow is generated when pipe temperature reaches 80°F. A field-selectable option maintains fan operation for 30 minutes following cooling cycle operations. The unit is equipped with an infrared receiver designed to communicate with an LG wireless remote controller. In lieu of wireless remote or factory return air thermistor, screw terminals on the microprocessor circuit board accommodate various models of wall-mounted local controllers. The unit microprocessor is capable of accepting space temperature readings concurrently or individually from either:

1. Wall-mounted wired controller(s)
2. Factory-mounted return air thermistor

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

ART COOL MIRROR



Mechanical Specifications

Indoor units have built-in WiFi and can be controlled by LG ThinQ app on a smart device. A field-supplied WiFi network and smart device are required. The ThinQ app is free, and is available for Android™ and iOS. (Android is a trademark of Google LLC.)

Handling Condensate

The unit is designed for gravity draining of condensate. LG provides a factory insulated flexible drain hose. If condensate lift / pumps are needed for the application, they are to be field provided.

Condensate Drain Pan

The condensate drain pan is constructed of expandable polystyrene resin (EPS).

Coil

The indoor unit coil is constructed with grooved design copper tubes with slit coil fins, two (2) rows, eighteen (18) fins per inch.

Refrigerant Leak Detection

The indoor unit contains an R32 refrigerant leak sensor. The sensor is designed to control optional refrigerant piping shut-off valves if a leak is detected. Shut-off valve units are available as a separate LG accessory or included as components in LG Heat Recovery Unit accessories. The sensor can enable four individual controller displayed error codes for leak detection (CH230), sensor fault (CH228), 6 months life remaining (CH227) and end of life (CH229).

Table 2: Refrigerant Leak Sensor Specifications.

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

Controls Features

- Auto changeover (Heat Recovery only)
- Auto operation
- Auto clean (coil dry; requires wireless controller)
- External on/off control
- Dual thermistor control
- Dual setpoint control
- Filter life display
- Group control
- Forced operation
- Hot start
- Self diagnostics
- Timer (on/off)
- Weekly schedule
- Auto direction/swing (up/down)
- Wi-Fi (built-in)
- Auto Fan
- R32 leak detection sensor

Table 3: Art Cool Mirror Wall-Mounted (SJ, SK Frames) Indoor Unit General Data.

Model No.	ZRNU053SJRA	ZRNU073SJRA	ZRNU093SJRA	ZRNU123SJRA	ZRNU153SJRA	ZRNU183SKRA	ZRNU243SKRA
Cooling Mode Performance							
Capacity (Btu/h)	5,500	7,500	9,600	12,300	15,400	19,100	24,200
Max. Power Input ¹ (W)	30	30	30	30	30	53	53
L / M / H Power at Factory Default (W)	9 / 10 / 11	9 / 11 / 12	9 / 12 / 13	11 / 13 / 15	11 / 18 / 23	16 / 26 / 32	16 / 26 / 32
Heating Mode Performance							
Capacity (Btu/h)	6,100	8,500	10,900	13,600	17,100	21,500	25,600
Max. Power Input ¹ (W)	30	30	30	30	30	53	53
L / M / H Power at Factory Default (W)	9 / 10 / 11	9 / 11 / 12	9 / 12 / 13	11 / 13 / 15	11 / 18 / 23	16 / 26 / 32	16 / 26 / 39
Entering Mixed Air							
Cooling Max. (°F WB)	76	76	76	76	76	76	76
Heating Min. (°F DB)	59	59	59	59	59	59	59
Unit Data							
Refrigerant Type ²	R32	R32	R32	R32	R32	R32	R32
Refrigerant Control	EEV	EEV	EEV	EEV	EEV	EEV	EEV
Sound Pressure ³ dB(A) (H / M / L)	30 / 29 / 28	32 / 30 / 28	34 / 32 / 28	37 / 34 / 30	42 / 39 / 32	43 / 39 / 34	46 / 41 / 34
Sound Power ⁴ dB(A) (H)	54	54	55	55	58	63	63
Net Unit Weight (lbs.)	21.6	21.6	21.6	21.6	21.6	30.6	30.6
Shipping Weight (lbs.)	23.8	23.8	23.8	23.8	23.8	34.2	34.2
Communication Cable ⁵ (No. x AWG)	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18
Fan							
Type	Cross Flow	Cross Flow	Cross Flow	Cross Flow	Cross Flow	Cross Flow	Cross Flow
Quantity	1	1	1	1	1	1	1
Motor/Drive	Brushless Digitally Controlled / Direct						
Airflow Rate H / M / L (CFM)	240 / 230 / 208	254 / 240 / 208	275 / 254 / 208	300 / 254 / 240	371 / 336 / 240	494 / 424 / 371	537 / 449 / 371
Piping							
Liquid Line (in., O.D.)	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare
Vapor Line (in., O.D.)	3/8 Flare	3/8 Flare	3/8 Flare	3/8 Flare	1/2 Flare	1/2 Flare	1/2 Flare
Condensate Line (in., I.D.)	5/8	5/8	5/8	5/8	5/8	5/8	5/8

EEV: Electronic Expansion Valve

Power wiring is field supplied and must comply with the applicable local and national codes. See page 13 for detailed electrical data.

This unit comes with a dry nitrogen charge.

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

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

Current certified ratings are available at www.ahridirectory.org.

¹Maximum power Input is rated at maximum setting value.

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

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

⁴Sound Power levels are tested in a reverberation room under ISO Standard 3741.

⁵Communication cable between Main ODU to IDUs / HRUs to be 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the Main ODU chassis only. Ⓞ Do not ground the ODU to IDUs / HRUs communication cable at any other point. Wiring must comply with all applicable local and national codes.

ART COOL MIRROR



Electrical Data

Table 4: Art Cool Mirror Wall-Mounted Indoor Unit Electrical Data.

Model	Voltage Range	MCA	MOP	Rated Amps (A)	Power Supply			Power Input (W)		
					Hz	Volts	Phase	Max. Cooling	Max. Heating	L / M / H at Factory Default
<i>SJ Frames</i>										
ZRNU053SJRA	187-253	0.31	15	0.25	60	208-230	1	30	30	11 / 10 / 9
ZRNU073SJRA		0.31						30	30	12 / 11 / 9
ZRNU093SJRA		0.31						30	30	13 / 12 / 9
ZRNU123SJRA		0.31						30	30	15 / 13 / 11
ZRNU153SJRA		0.31						30	30	23 / 18 / 11
<i>SK Frames</i>										
ZRNU183SKRA	187-253	0.65	15	0.52	60	208-230	1	53	53	32 / 26 / 16
ZRNU243SKRA		0.65						53	53	39 / 26 / 16

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

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

Figure 2: SJ Frame Dimensions.

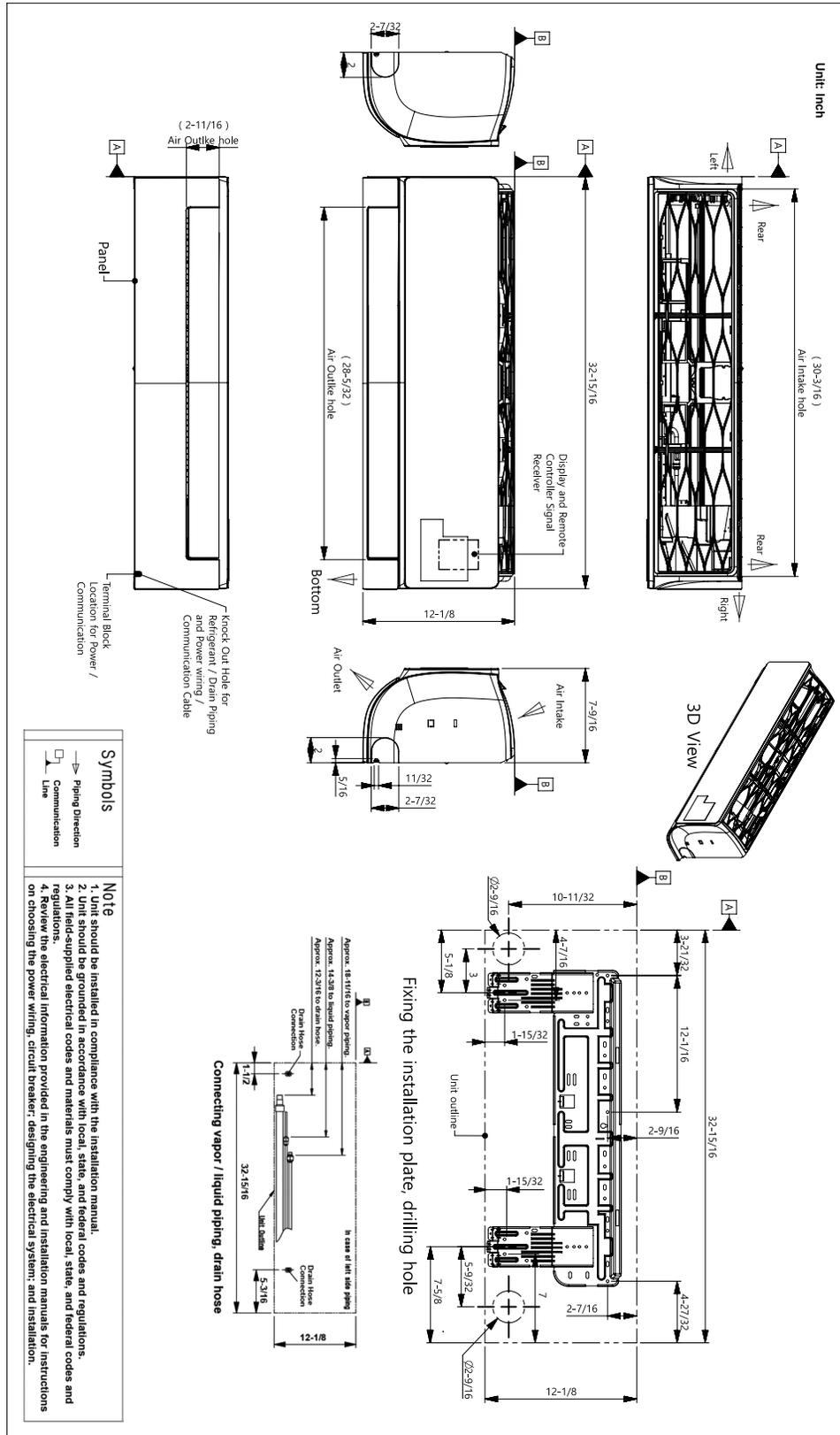
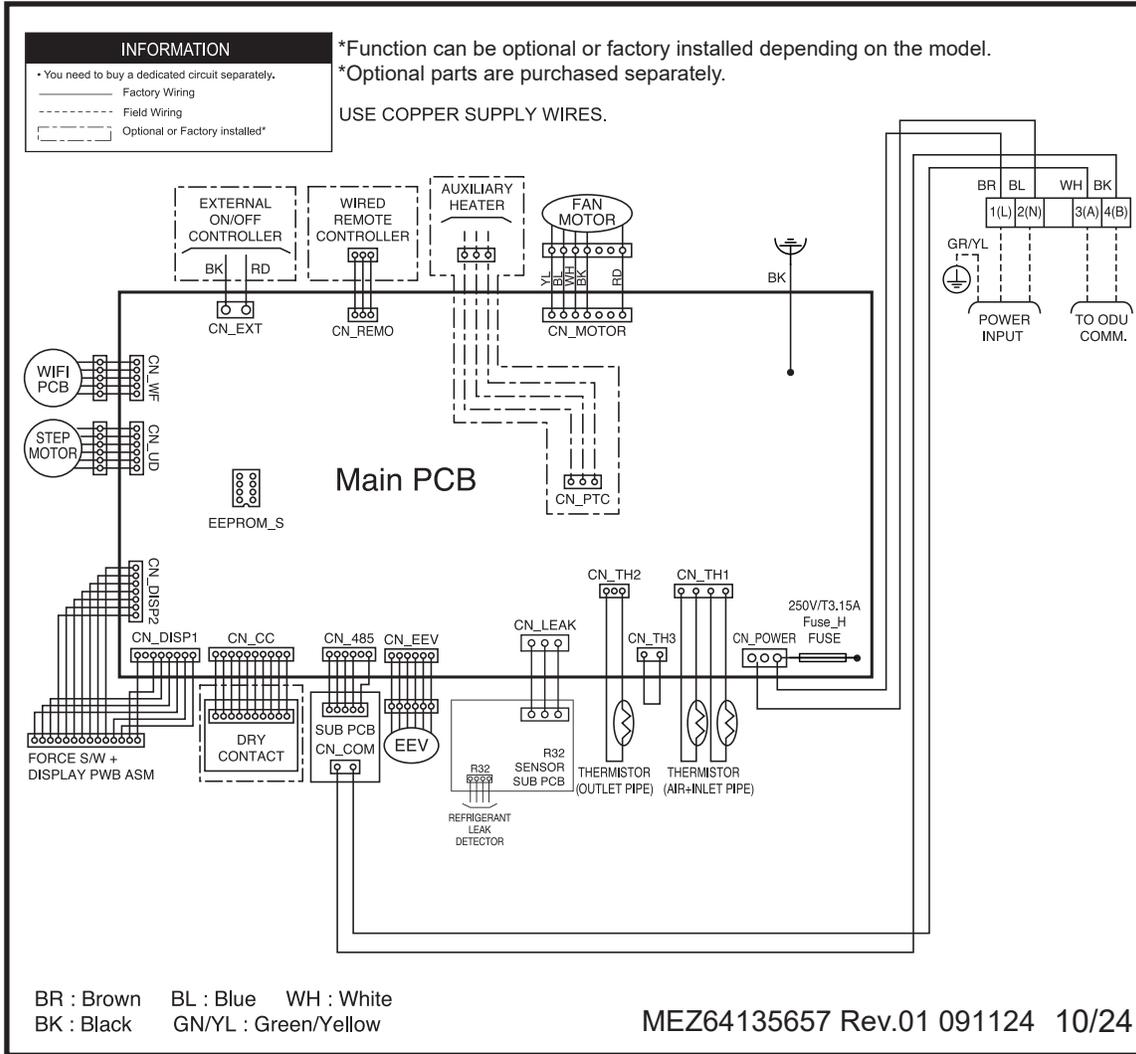


Figure 4: SJ and SK Frame Wiring Diagram.



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

ART COOL MIRROR



SJ and SK Frame Wiring Diagram

Table 5: SJ and SK Frame Wiring Diagram Legend.

Terminal	Purpose	Function
CN_EXT	External on/off controller	External on/off controller connection
CN_REMO	Remote controller	Remote control connection
CN_PTC	Auxiliary heater	Auxiliary heater connection
CN_MOTOR	Fan motor output	Motor output of BLDC
CN_POWER	AC Power supply	AC power line input for indoor controller
CN_TH1	Suction air temperature thermistor	Suction air temperature thermistor connection
CN_TH3	Evaporator outlet temperature thermistor	Evaporator outlet temperature thermistor connection
CN_TH2	Evaporator inlet temperature thermistor	Evaporator inlet temperature thermistor connection
CN_LEAK	Leak sensor	Leak sensor connection
CN_EEV	EEV output	EEV control output
CN_485	Communication	Connection between indoor and outdoor units
CN_CC	Dry Contact	Connection to Dry Contact (Optional)
CN_DISP1	Display	Display of indoor status
CN_DISP2	Display	Display of indoor status
CN_UD	Step motor	Step motor output
CN_WF	Wi-Fi module	Wi-Fi module connection
CN_DISP1	Display	Display of indoor status
CN_WF	Wi-Fi module	Wi-Fi module connection

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

Table 6: SJ and SK Frame DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub on each indoor unit
SW4	DRY CONTACT MODE	Variable	Auto	Sets operation mode for optional Dry Contact accessory. 1. Variable: Auto or Manual Mode can be set through 7-Day Programmable Controller or Wireless Remote Controller (factory default setting is Auto if there is no setting). 2. Auto: For Dry Contact, it is always Auto mode.
SW7	VENTILATOR INTERLOCK	Off	On	Selects ventilator interlock function for four-way ceiling cassette indoor units. 1. On: Automatic (vent relay will be turned on after ten [10] seconds of indoor unit operation). 2. Off: Manual (ventilator needs to be set through the controller).

***For Multi V wall mounted indoor units, DIP switches 1, 2, 5, 6, and 8 must be set to OFF.**

Figure 5: SJ and SK Frame Piping Diagram.

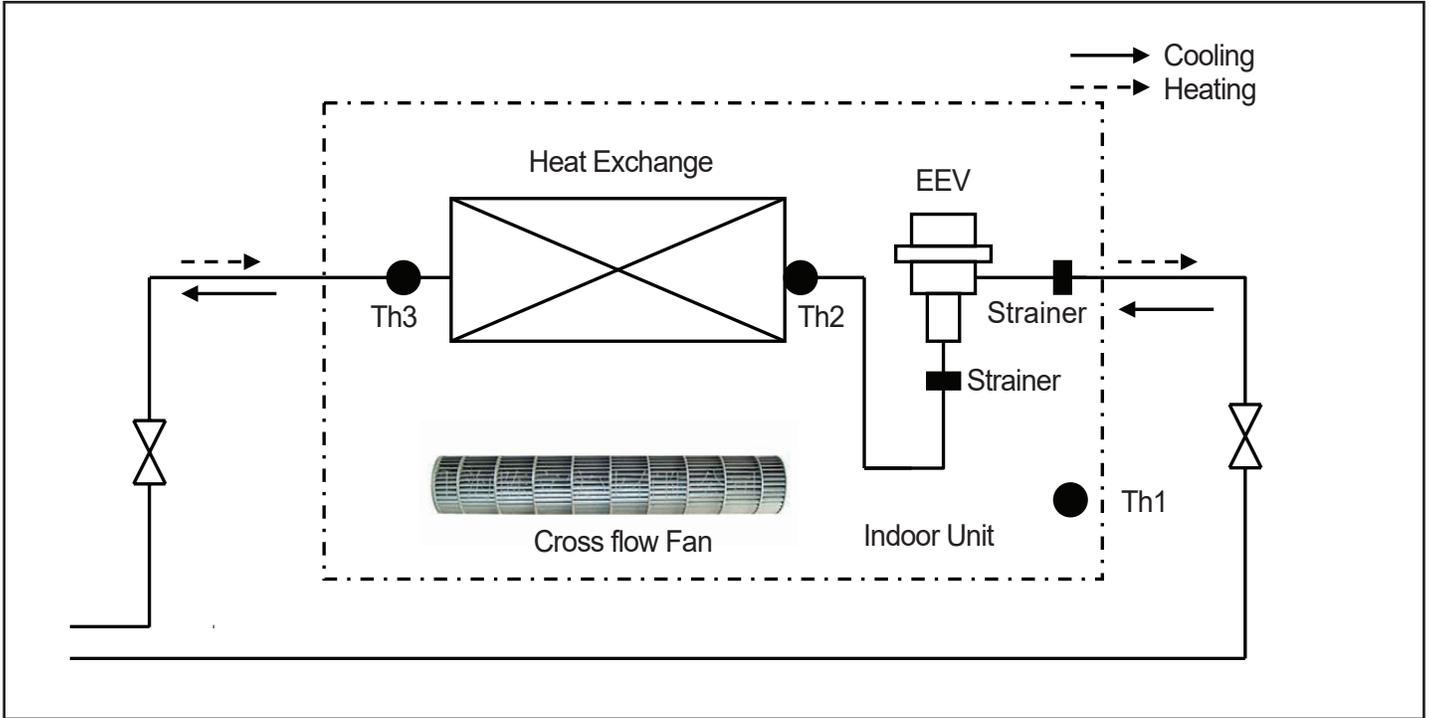


Table 7: SJ and SK Frame Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
<i>SJ Frames</i>		
ZRNU053SJRA	1/4 Flare	3/8 Flare
ZRNU073SJRA		
ZRNU093SJRA		
ZRNU123SJRA		
ZRNU153SJRA		1/2 Flare
<i>SK Frames</i>		
ZRNU183SKRA	1/4 Flare	1/2 Flare
ZRNU243SKRA		

Table 8: SJ and SK Frame Thermistors.

Thermistor	Description	PCB Connector
Th1	Suction Air Temperature Thermistor	CH-TH1 (White)
Th2	Evaporator Inlet Temperature Thermistor	
Th3	Evaporator Outlet Temperature Thermistor	CH-TH2 (Red)

ART COOL MIRROR



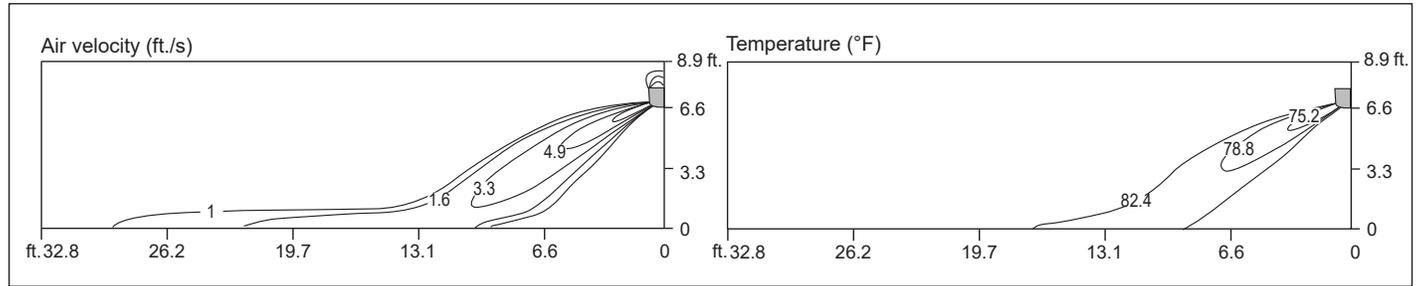
Air Velocity / Temperature Distribution

Figure 6: ZRNU053SJRA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

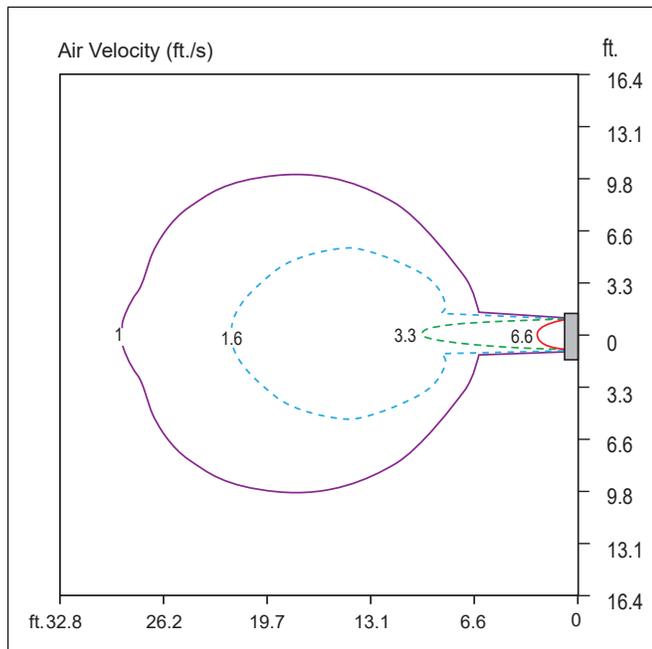
Discharge angle: 35°



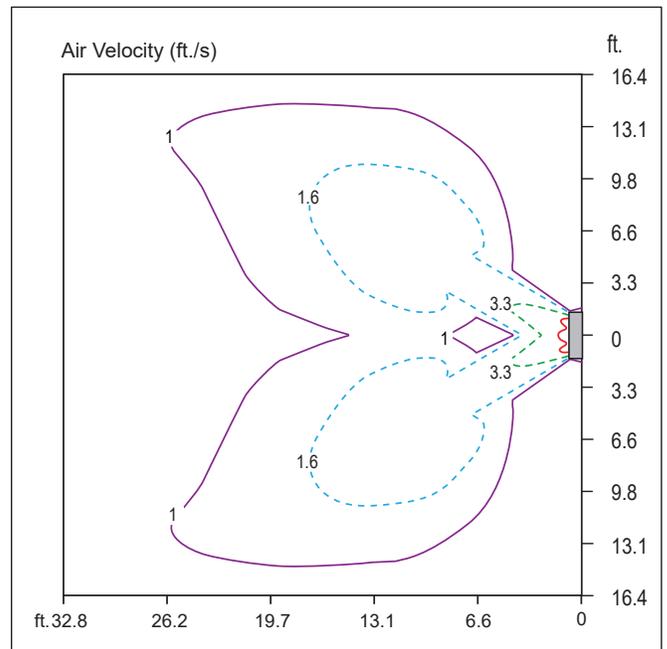
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 35°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 29.2 ft.
- Fan Speed : High



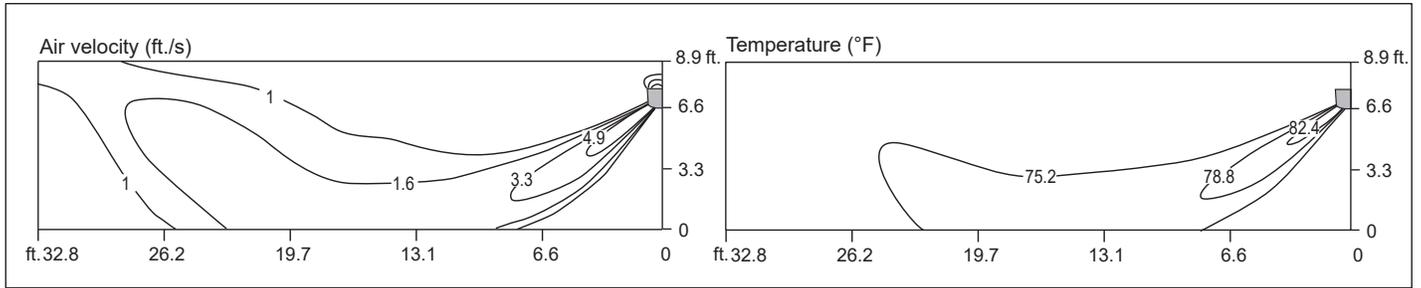
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 26.2 ft.
- Fan Speed : High

Figure 7: ZRNU053SJRA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

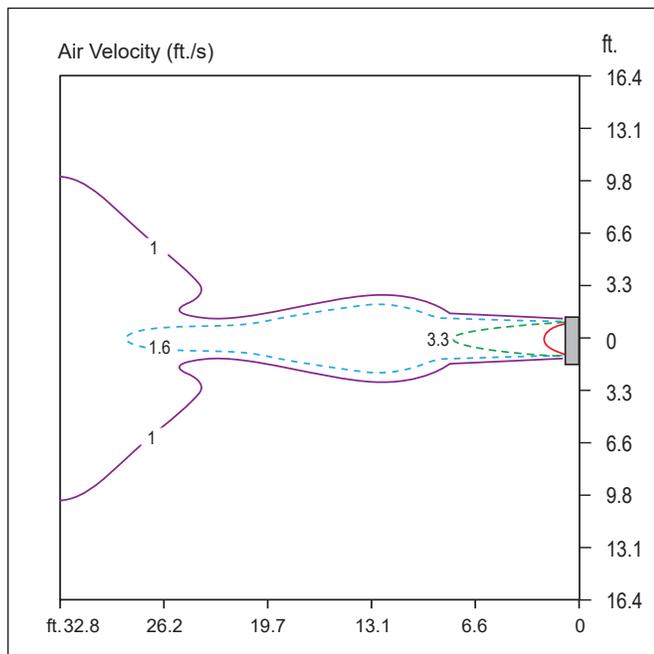
Discharge angle: 55°



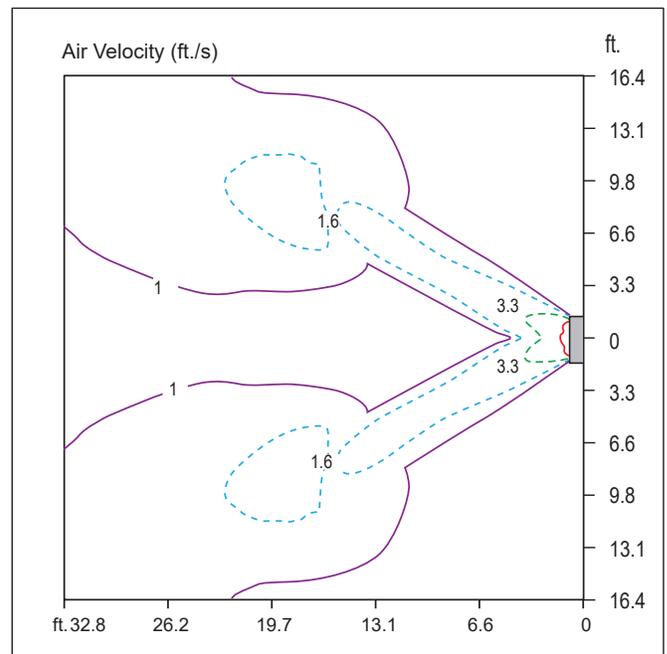
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 55°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 39.0 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 41.3 ft.
- Fan Speed : High

ART COOL MIRROR



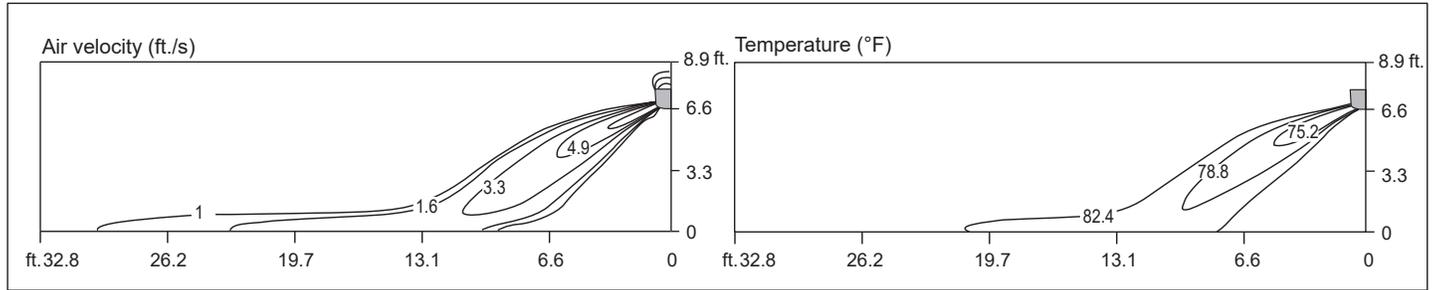
Air Velocity / Temperature Distribution

Figure 8: ZRNU073SJRA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

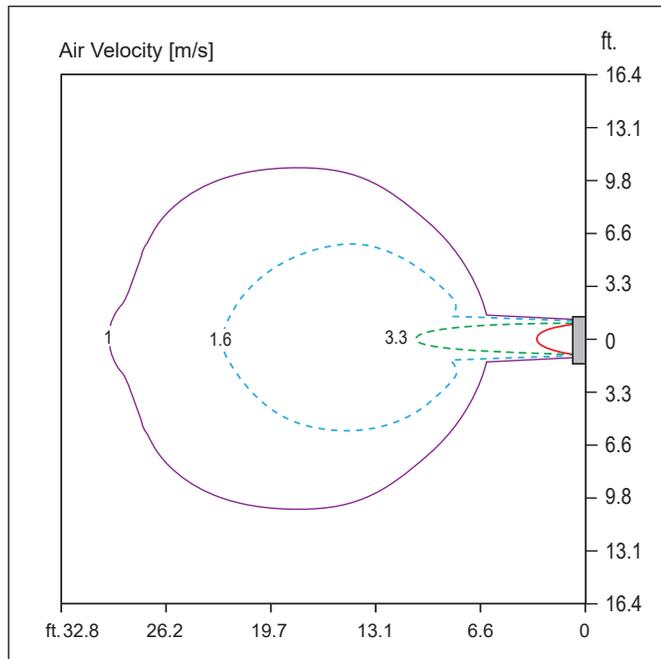
Discharge angle: 35°



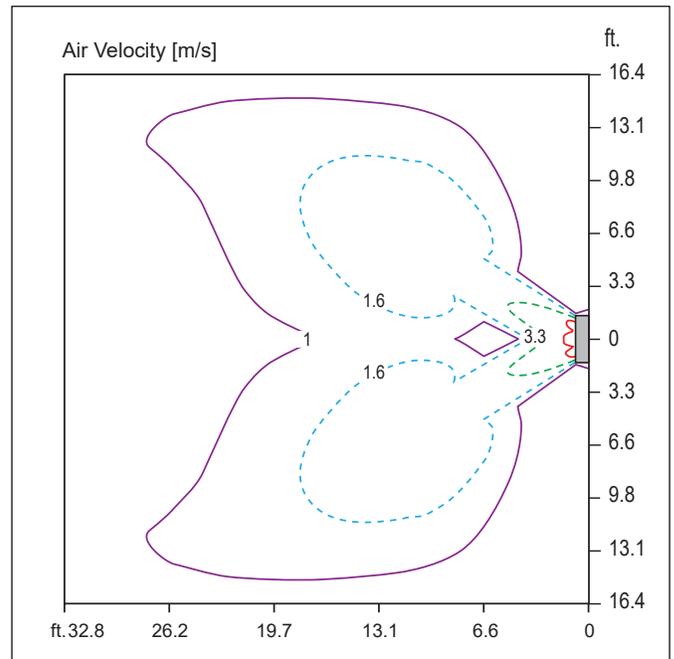
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 35°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 30.2 ft.
- Fan Speed : High



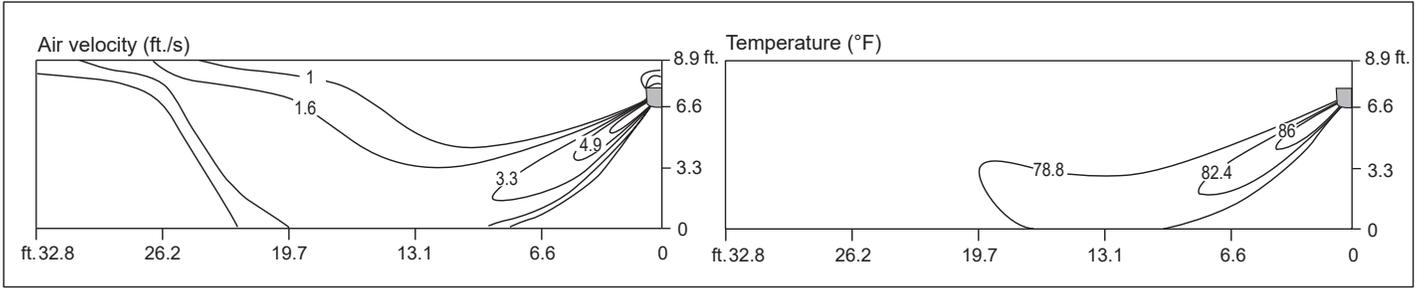
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 27.6 ft.
- Fan Speed : High

Figure 9: ZRNU073SJRA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

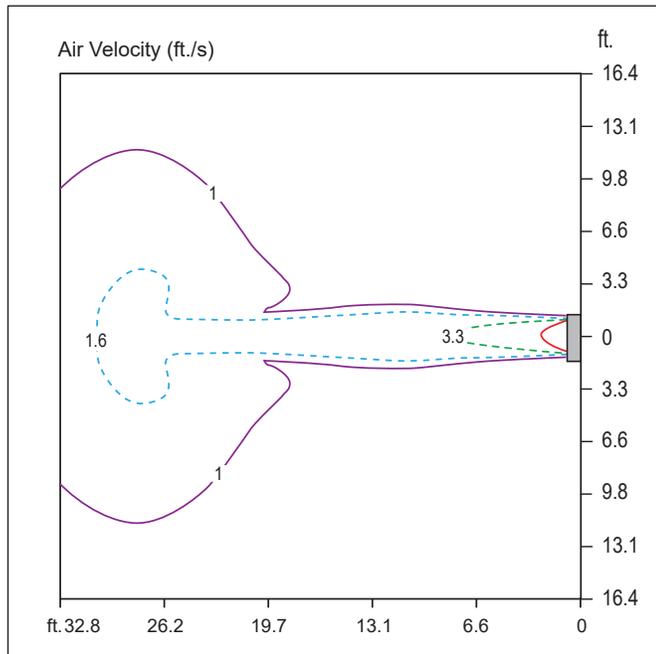
Discharge angle: 55°



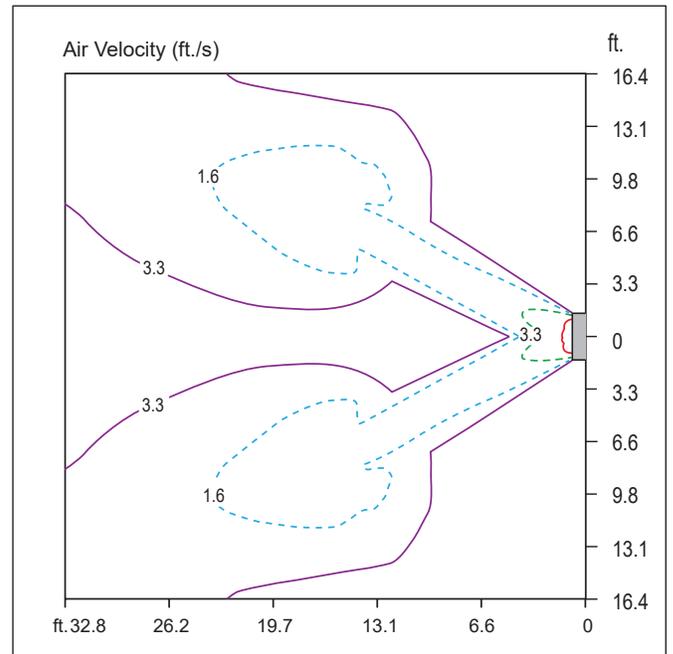
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 55°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 36.1 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 43.3 ft.
- Fan Speed : High

ART COOL MIRROR

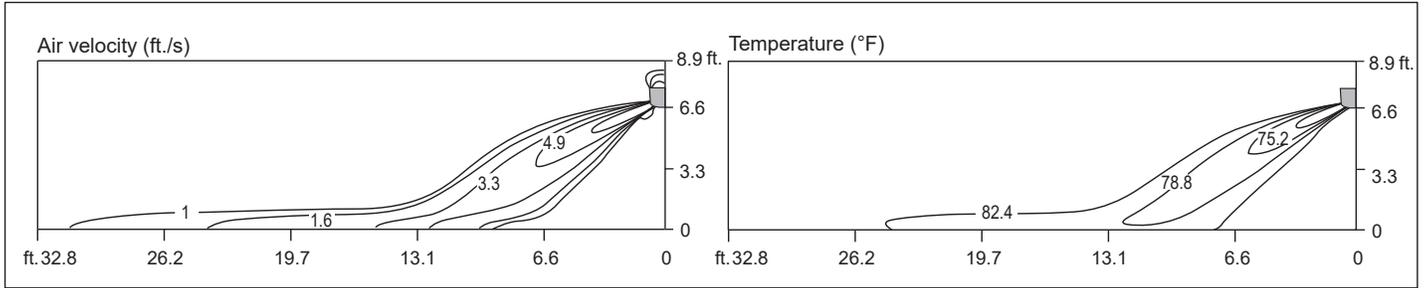
Air Velocity / Temperature Distribution

Figure 10: ZRNU093SJRA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

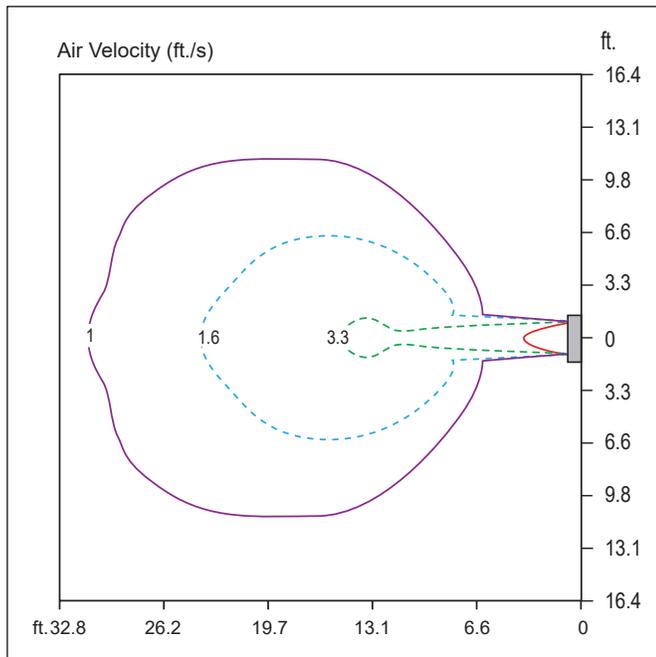
Discharge angle: 35°



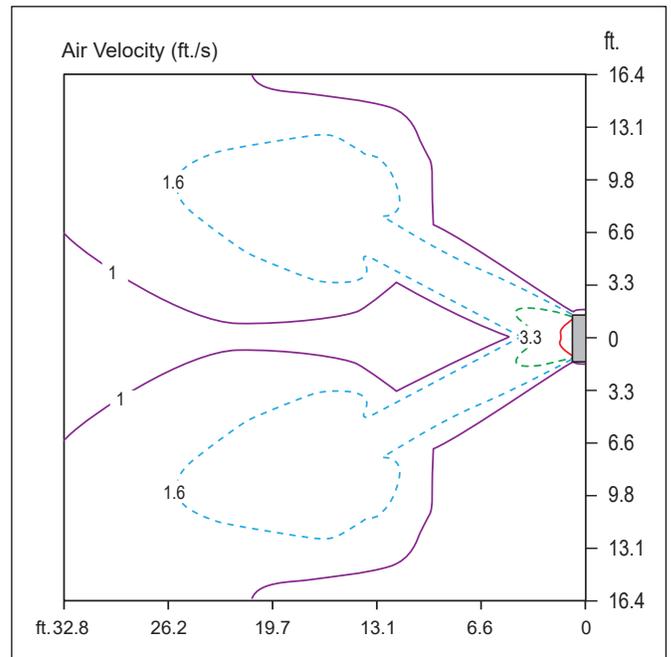
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 35°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 31.5 ft.
- Fan Speed : High



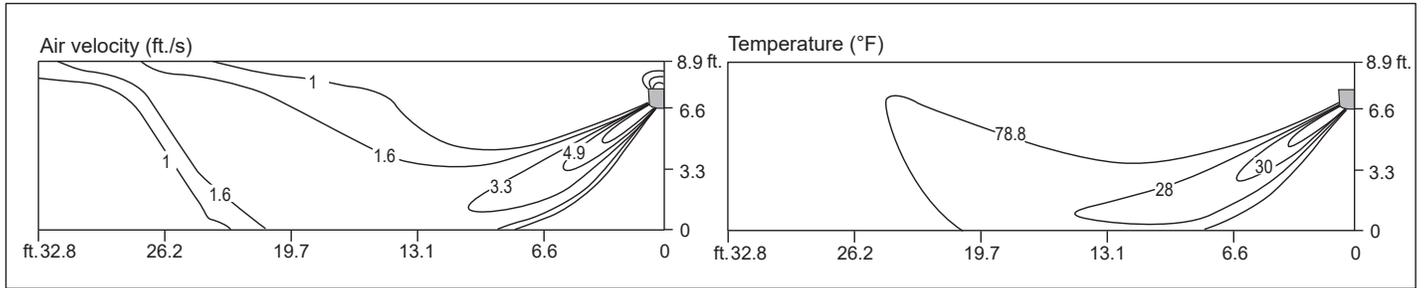
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 45.9 ft.
- Fan Speed : High

Figure 11: ZRNU093SJRA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

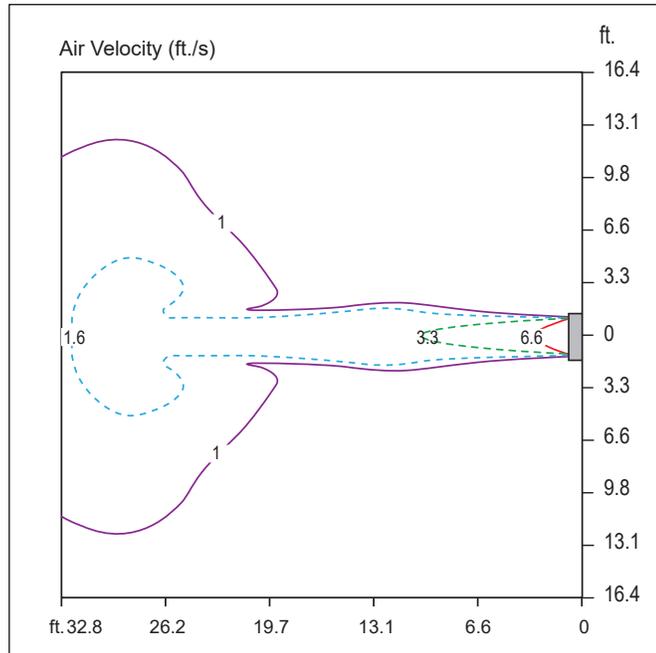
Discharge angle: 55°



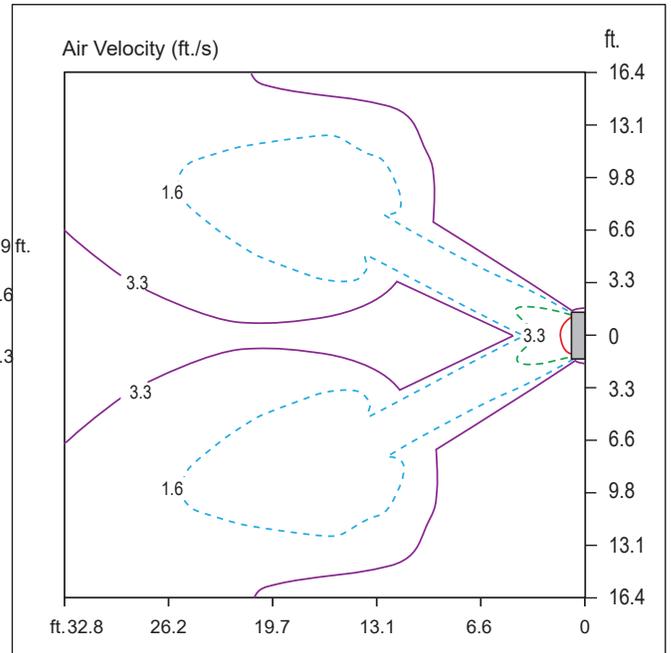
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 55°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 38.7 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 45.9 ft.
- Fan Speed : High

ART COOL MIRROR



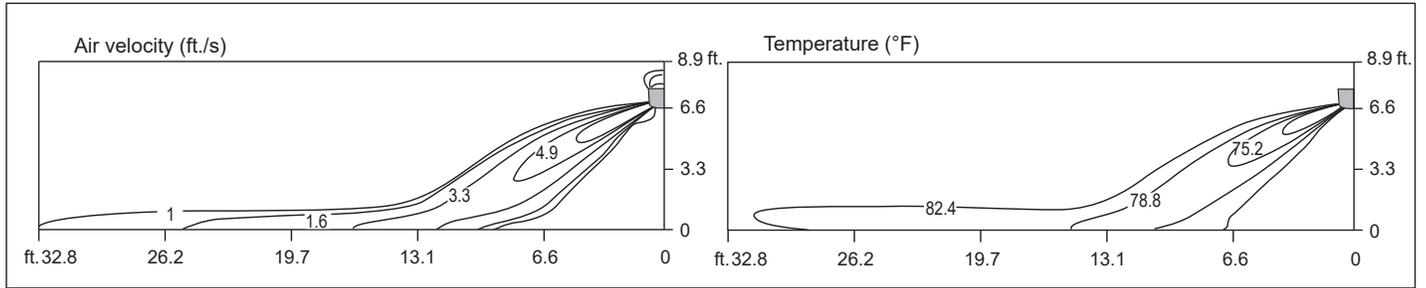
Air Velocity / Temperature Distribution

Figure 12: ZRNU123SJRA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

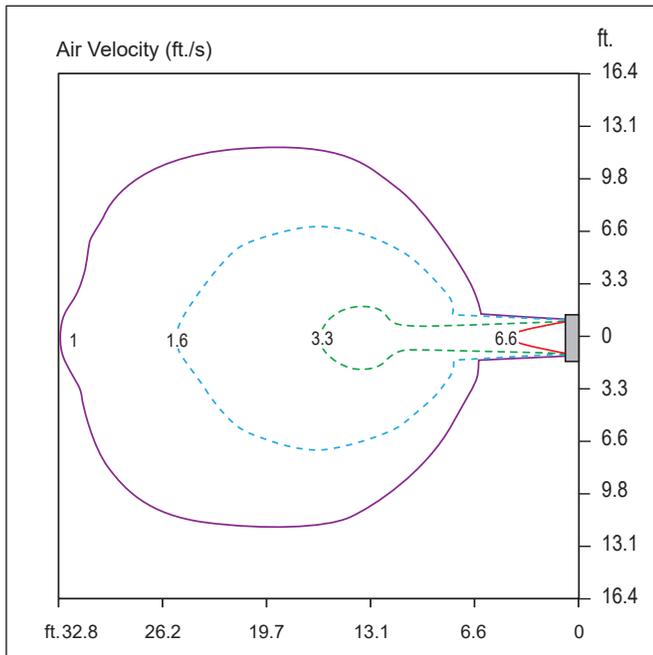
Discharge angle: 35°



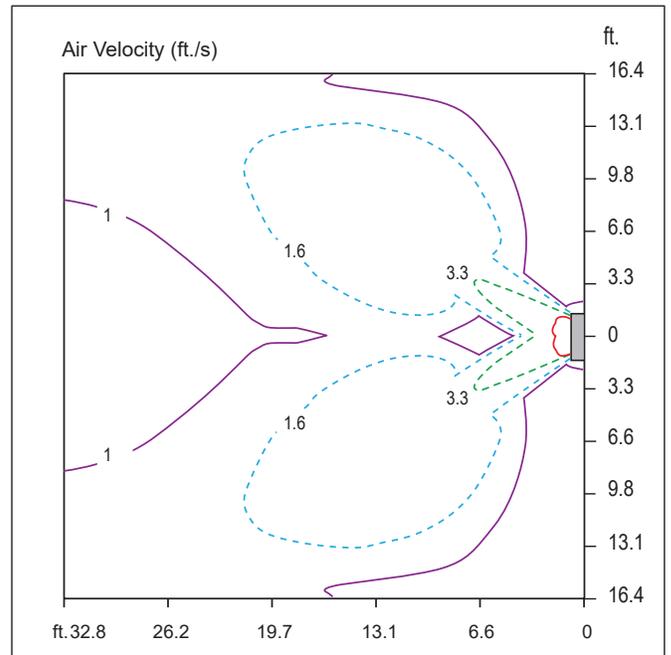
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 35°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 32.8 ft.
- Fan Speed : High



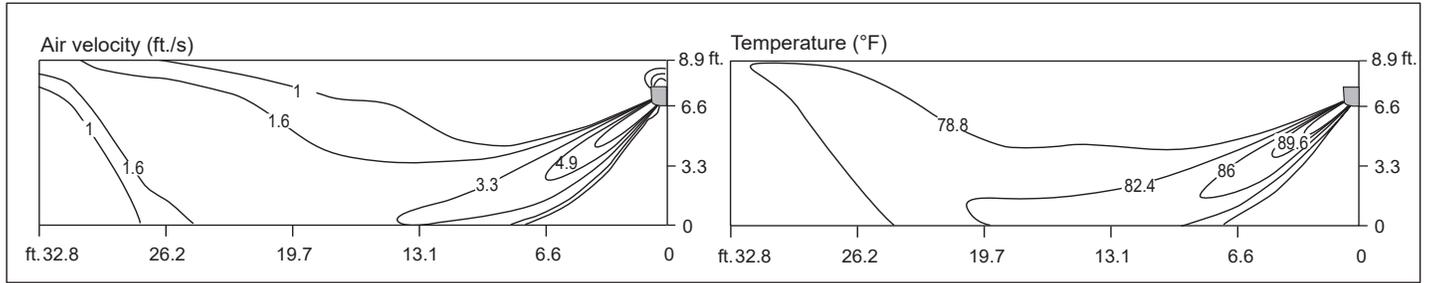
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 46.9 ft.
- Fan Speed : High

Figure 13: ZRNU123SJRA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

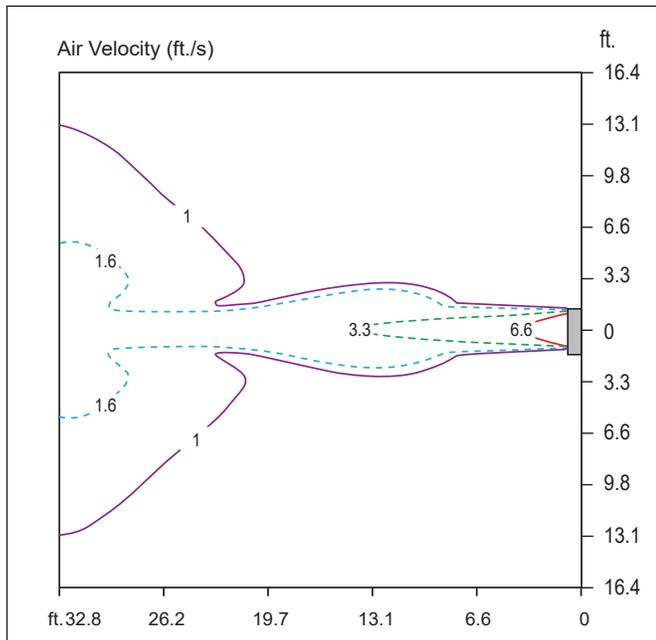
Discharge angle: 55°



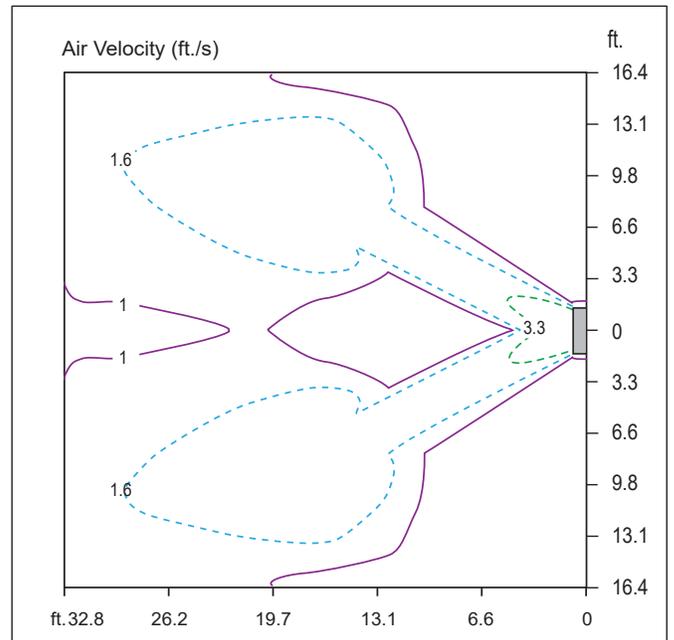
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 55°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 42.6 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 46.9 ft.
- Fan Speed : High

ART COOL MIRROR



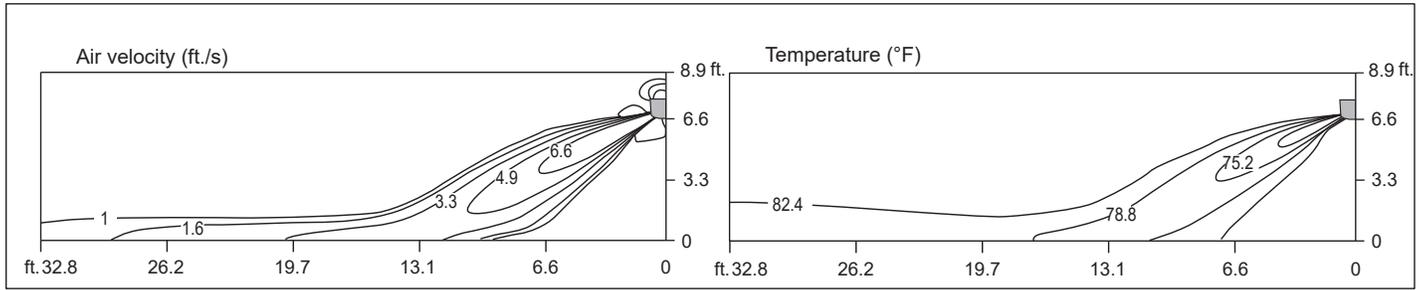
Air Velocity / Temperature Distribution

Figure 14: ZRNU153SJRA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

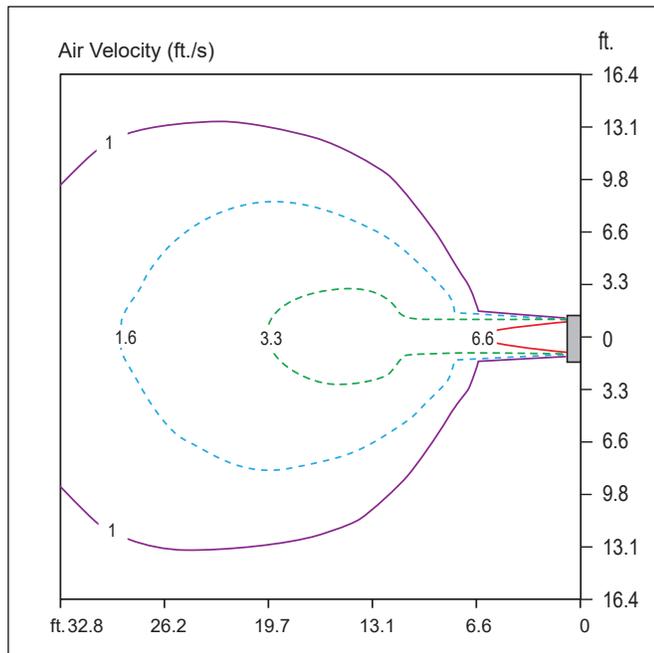
Discharge angle: 35°



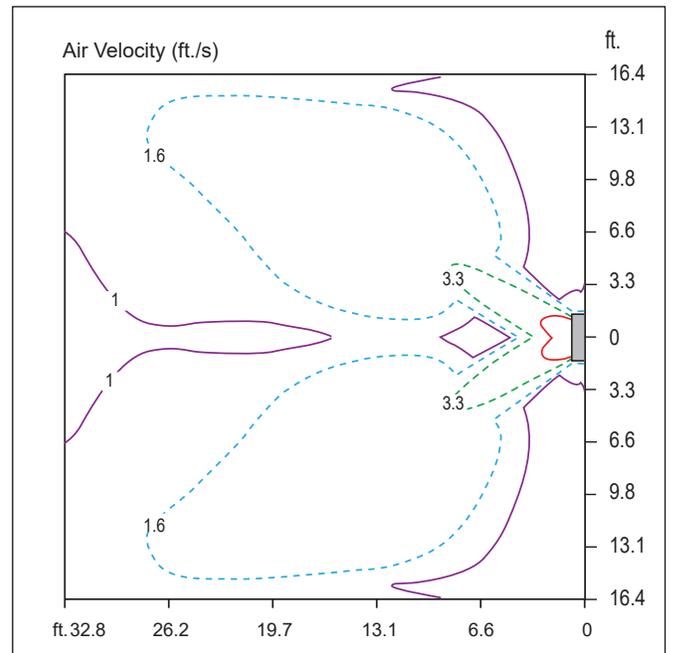
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 35°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 37.7 ft.
- Fan Speed : High



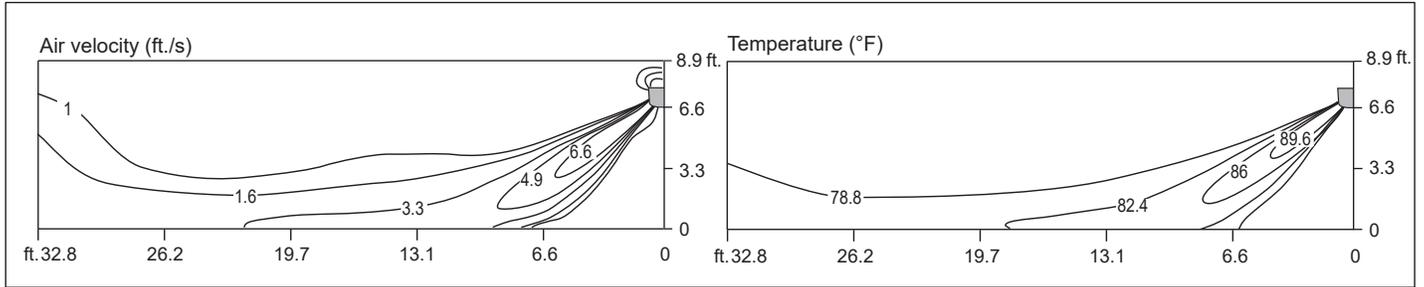
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 54.8 ft.
- Fan Speed : High

Figure 15: ZRNU153SJRA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

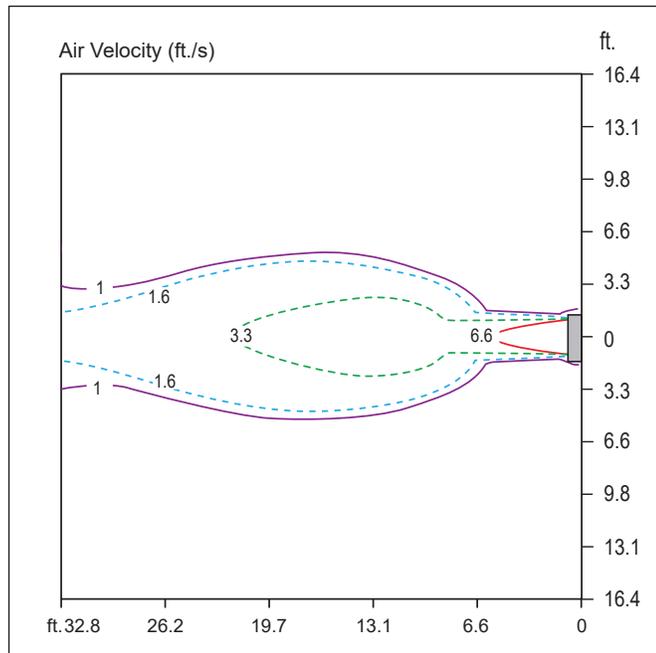
Discharge angle: 55°



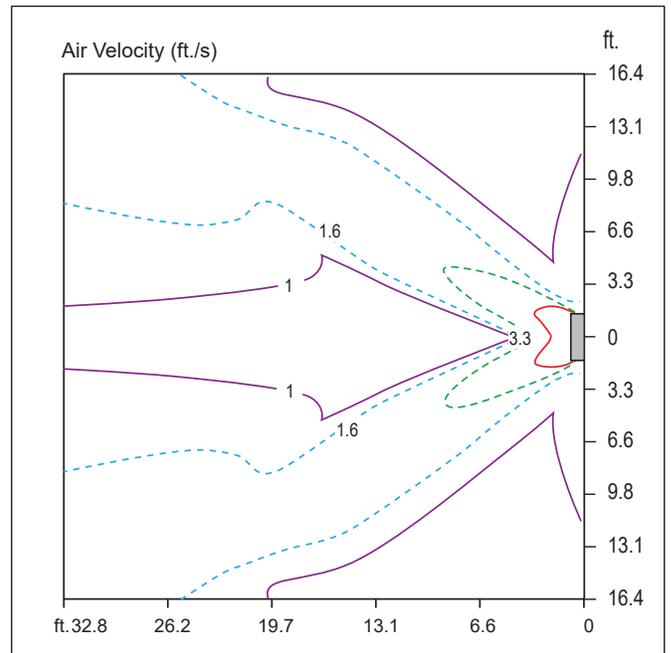
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 55°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 59.1 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 61.7 ft.
- Fan Speed : High

ART COOL MIRROR



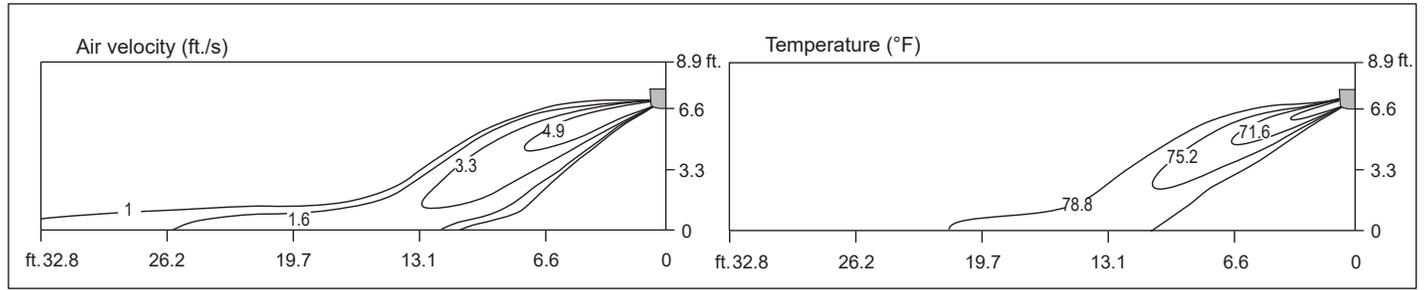
Air Velocity / Temperature Distribution

Figure 16: ZRNU183SKRA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

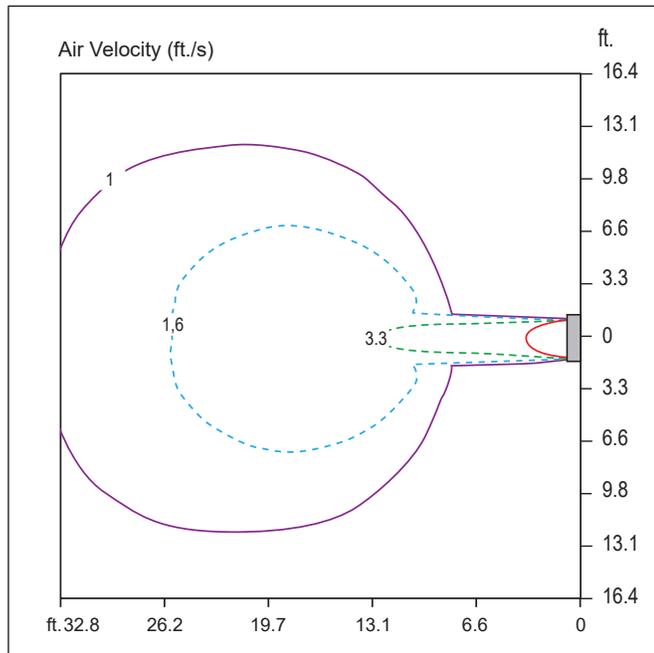
Discharge angle: 25°



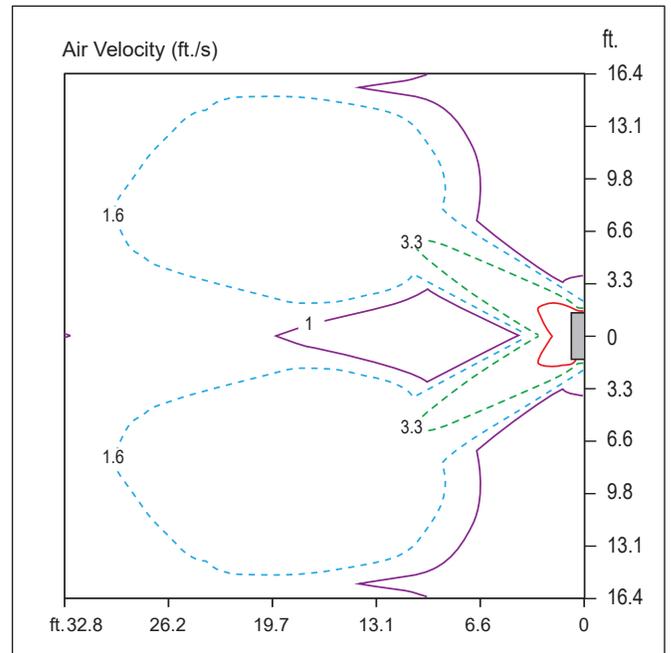
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 25°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 34.1 ft.
- Fan Speed : High



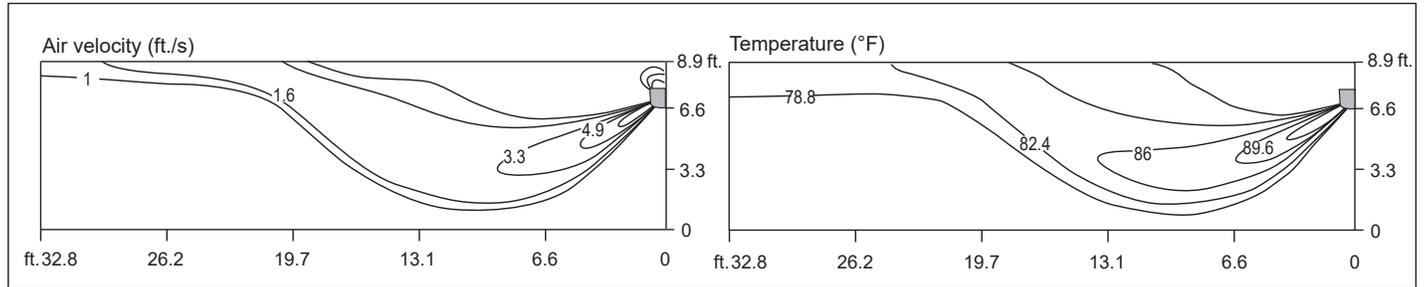
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 49.9 ft.
- Fan Speed : High

Figure 17: ZRNU183SKRA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

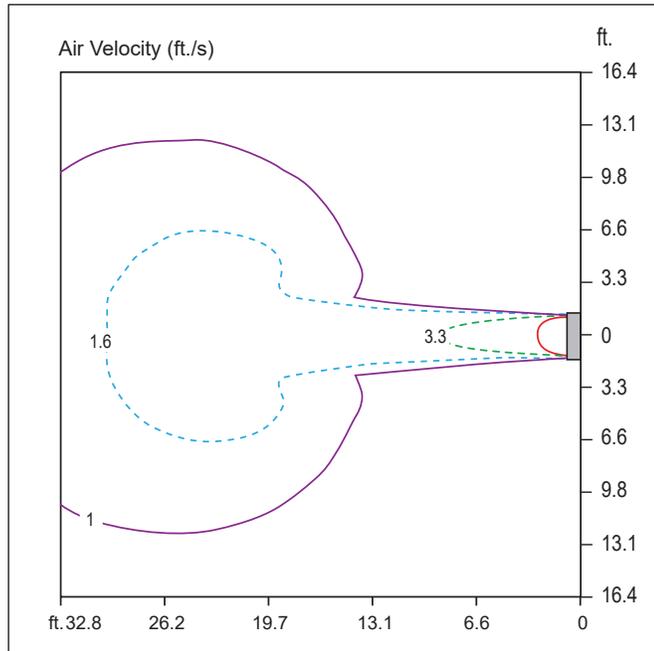
Discharge angle: 45°



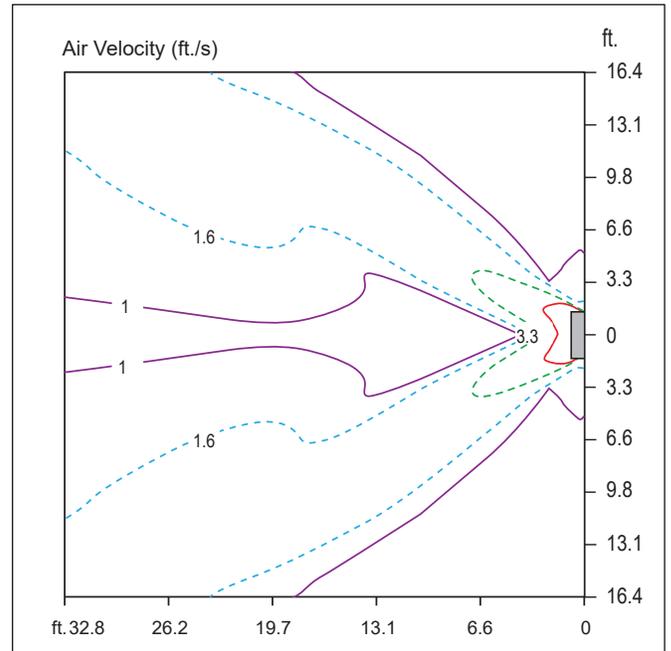
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 45°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 38.1 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 59.7 ft.
- Fan Speed : High

ART COOL MIRROR

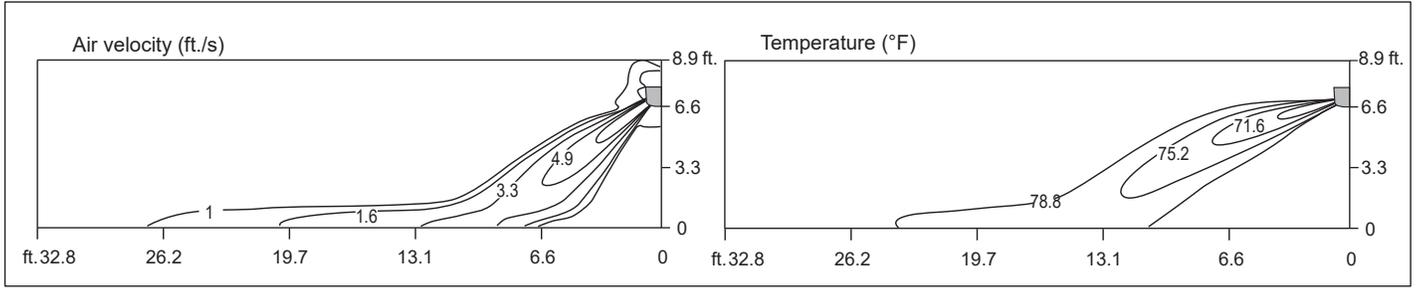
Air Velocity / Temperature Distribution

Figure 18: ZRNU243SKRA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

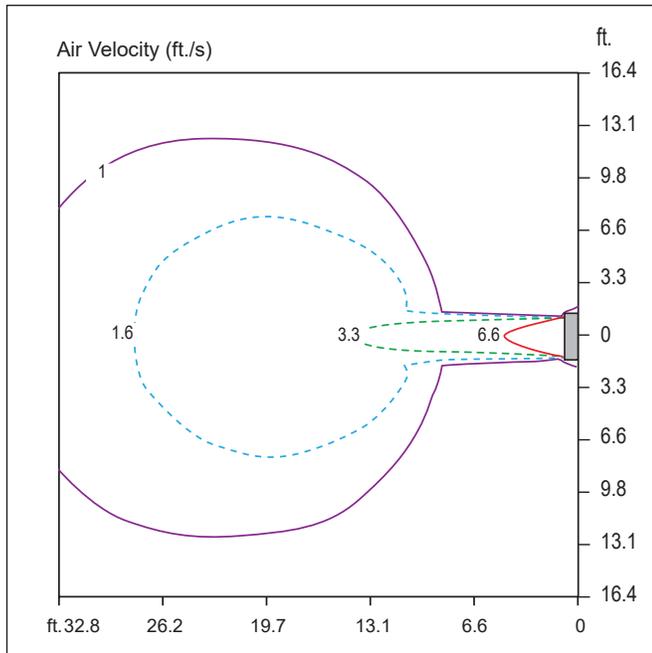
Discharge angle: 25°



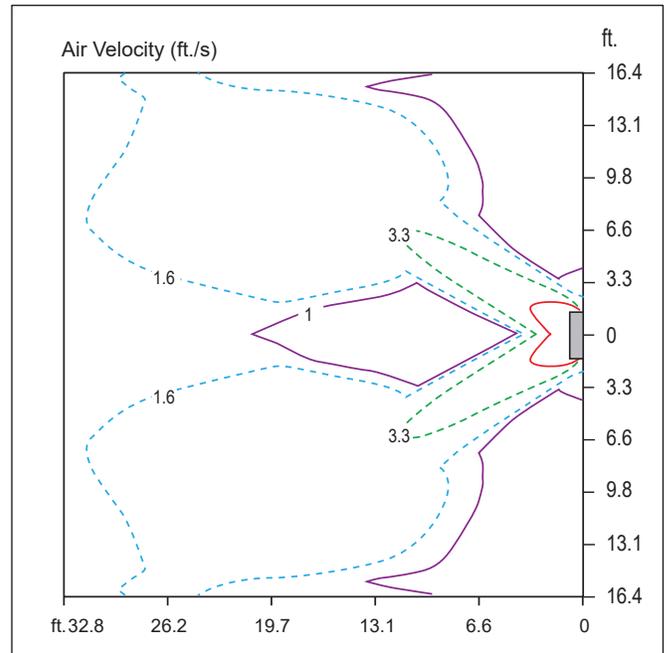
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 25°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 36.7 ft.
- Fan Speed : High



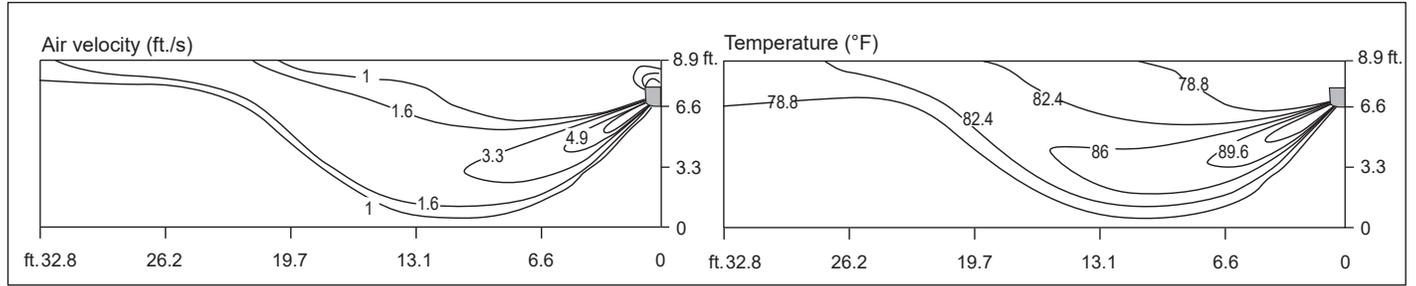
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 54.1 ft.
- Fan Speed : High

Figure 19: ZRNU243SKRA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

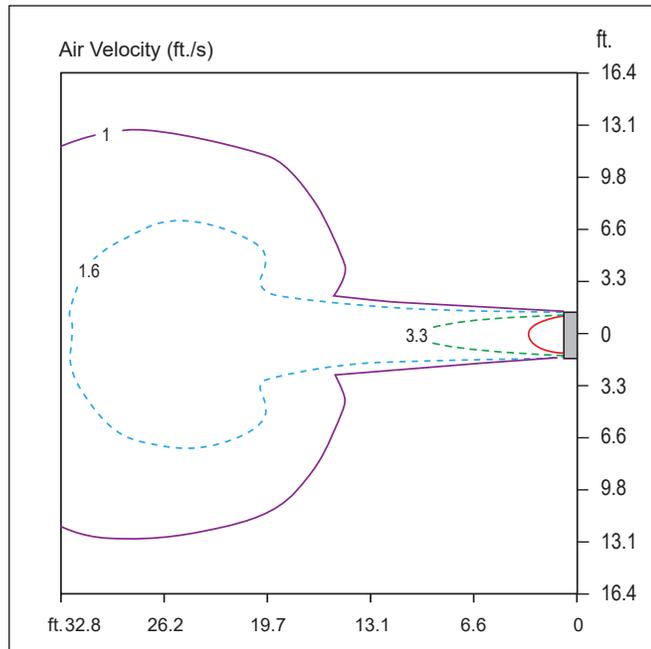
Discharge angle: 45°



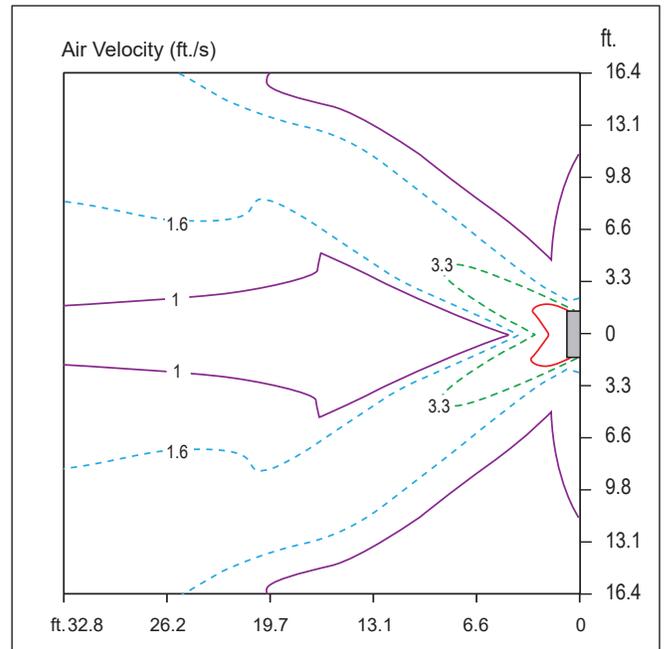
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 45°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 39.7 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 49.9 ft.
- Fan Speed : High

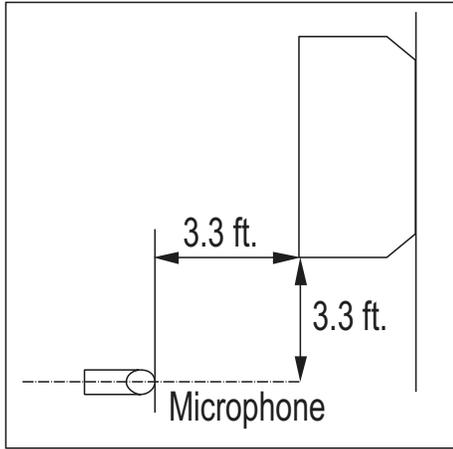
ART COOL MIRROR



Acoustic Data

Sound Pressure Levels

Figure 20: Sound Pressure Measurement Location.



- Measurements are taken 3.3 feet away from the front of the unit.
- Sound pressure levels are measured in dB(A) with a tolerance of ± 3 .
- Data is valid under nominal operating conditions.
- Sound pressure levels are tested in an anechoic chamber under ISO Standard 3745.
- Reference acoustic pressure: 0dB = 20 μ Pa.
- Operating Conditions:
 - Power source: 220V/60 Hz
 - Sound level will vary depending on a range of factors including the construction (acoustic absorption coefficient) of a particular room in which the unit was installed.

Table 9: Art Cool Mirror Wall-Mounted Indoor Unit Sound Pressure Levels.

Model	Sound Pressure Levels dB(A)		
	High Fan Speed	Medium Fan Speed	Low Fan Speed
<i>SJ Frames</i>			
ZRNU053SJRA	30	29	28
ZRNU073SJRA	32	30	28
ZRNU093SJRA	34	32	28
ZRNU123SJRA	37	34	30
ZRNU153SJRA	42	39	32
<i>SK Frames</i>			
ZRNU183SKRA	43	39	34
ZRNU243SKRA	46	41	34

Figure 21: ZRNU053SJRA, ZRNU073SJRA, and ZRNU093SJRA Sound Pressure Level Diagrams.

ZRNU053SJRA

ZRNU073SJRA

ZRNU093SJRA

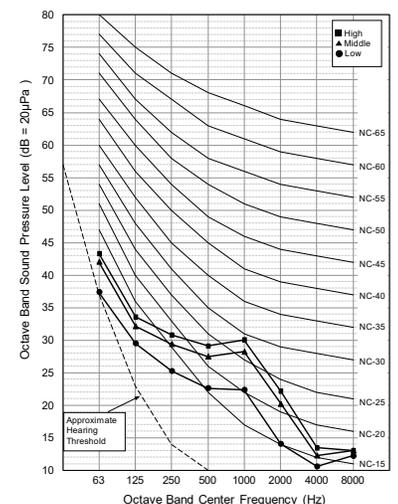
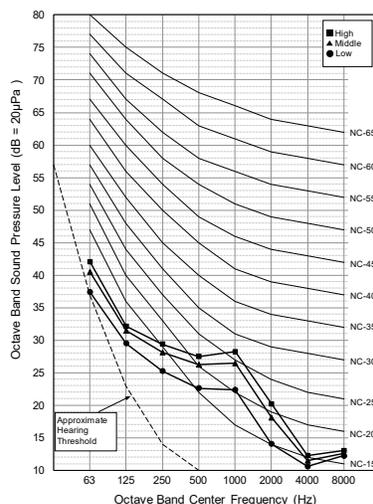
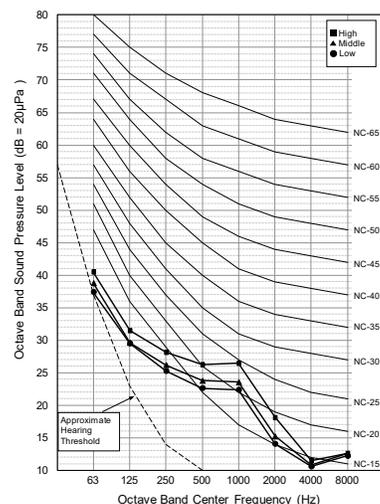
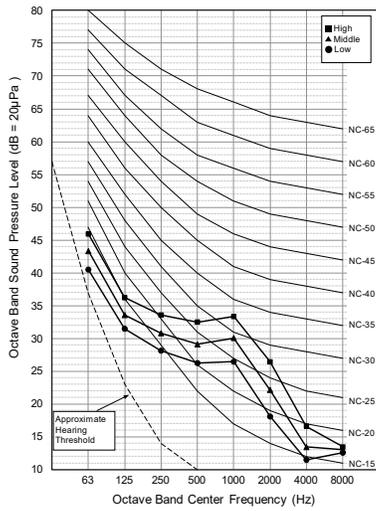
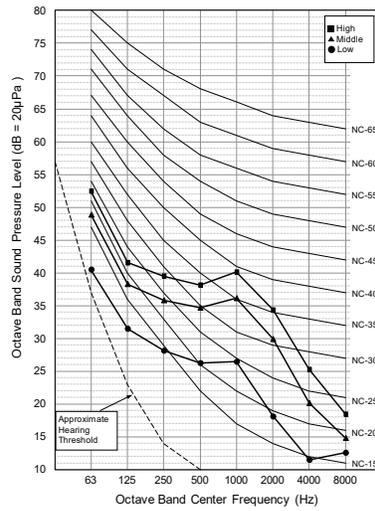


Figure 22: ZRNU123SJRA, ZRNU153SJRA, and ZRNU183SKRA Sound Pressure Level Diagrams.

ZRNU123SJRA



ZRNU153SJRA



ZRNU183SKRA

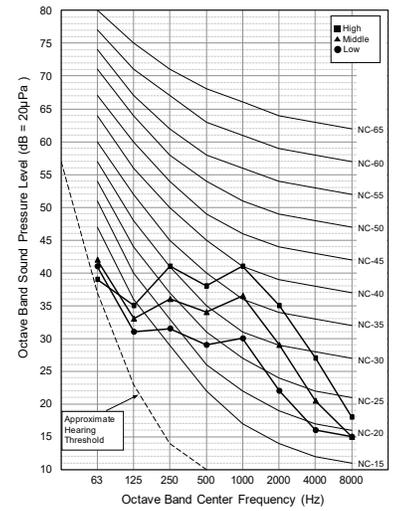
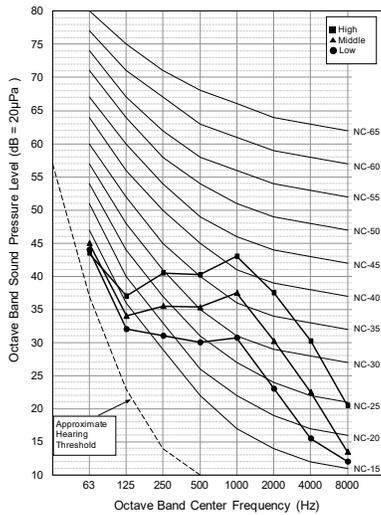


Figure 23: ZRNU243SKRA Sound Pressure Level Diagram.

ZRNU243SKRA



ART COOL MIRROR



Acoustic Data

Sound Power Levels

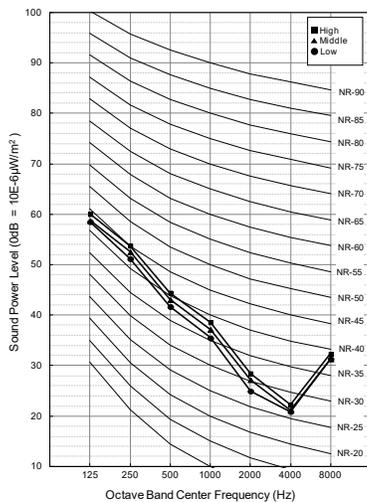
Table 10: Art Cool Mirror Wall-Mounted Indoor Unit Sound Power Levels.

Model	Sound Power Levels dB(A)
	High Fan Speed
<i>SJ Frames</i>	
ZRNU053SJRA	54
ZRNU073SJRA	54
ZRNU093SJRA	55
ZRNU123SJRA	55
ZRNU153SJRA	58
<i>SK Frames</i>	
ZRNU183SKRA	63
ZRNU243SKRA	65

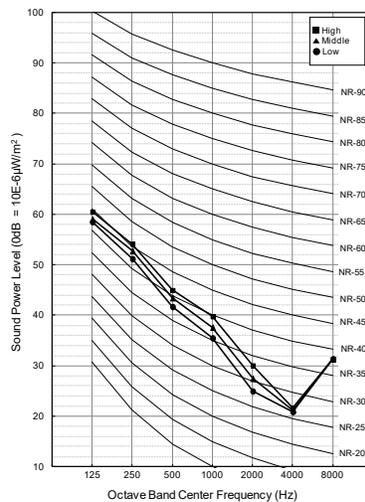
- Data is valid under diffuse field conditions.
- Data is valid under nominal operating conditions.
- Sound power level is measured using rated conditions and tested in a reverberation chamber under ISO Standard 3741.
- Sound level will vary depending on a range of factors such as construction (acoustic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

Figure 24: ZRNU053SJRA, ZRNU073SJRA, and ZRNU093SJRA Sound Power Level Diagrams.

ZRNU053SJRA



ZRNU073SJRA



ZRNU093SJRA

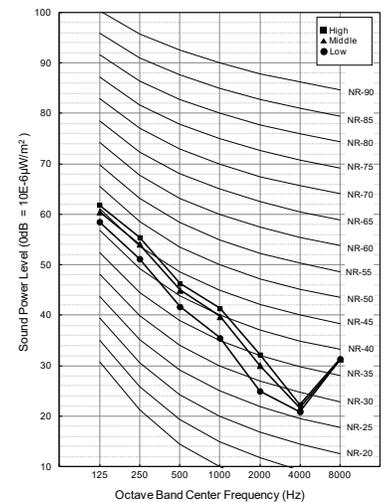
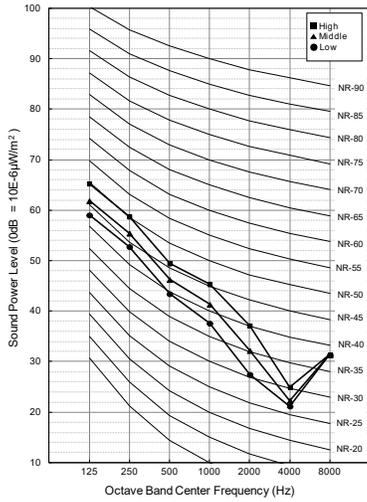
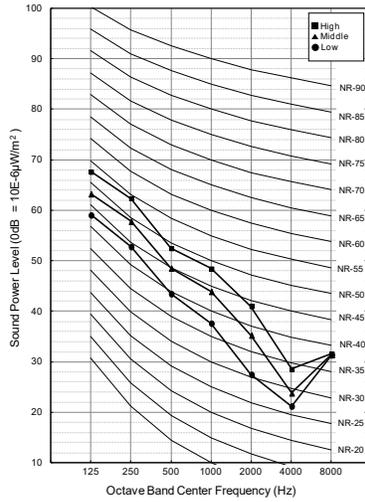


Figure 25: ZRNU123SJRA, ZRNU153JRA, and ZRNU183SKRA Sound Power Level Diagrams.

ZRNU123SJRA



ZRNU153JRA



ZRNU183SKRA

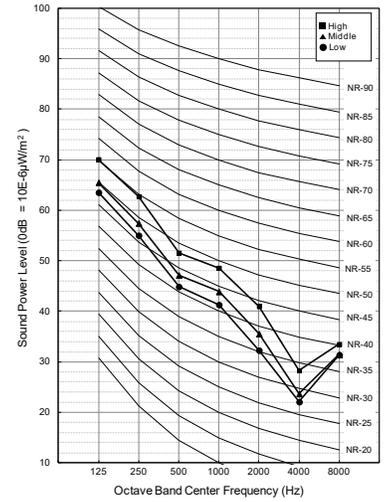
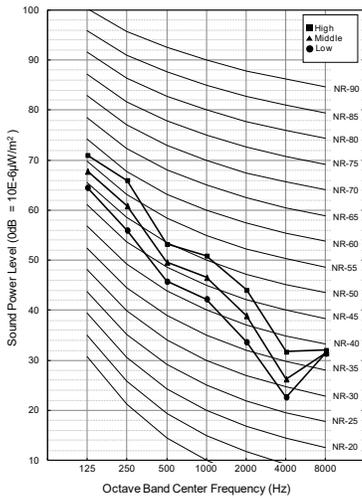


Figure 26: ZRNU243SKRA Sound Power Level Diagram.

ZRNU243SKRA



ART COOL MIRROR



Cooling Capacity Table

Table 11: Art Cool Mirror Wall-Mounted Indoor Unit Cooling Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp. (°F DB)	Indoor Air Temperature (°F DB / WB)													
		68 / 57		73 / 61		79 / 64		80 / 67		85 / 70		88 / 73		91 / 76	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
<i>SJ Frames</i>															
ZRNU053SJRA / 5.5	95	3.6	3.7	4.4	4.3	5.0	4.6	5.5	4.9	5.9	5.1	6.0	4.9	6.1	4.6
ZRNU073SJRA / 7.5	95	4.9	4.7	6.0	5.4	6.8	5.7	7.5	6.1	8.0	6.3	8.2	6.0	8.3	5.7
ZRNU093SJRA / 9.6	95	6.3	5.6	7.7	6.4	8.6	6.8	9.6	7.3	10.3	7.6	10.5	7.2	10.6	6.8
ZRNU123SJRA / 12.3	95	8.1	6.7	9.8	7.7	11.1	8.2	12.3	8.7	13.2	9.1	13.4	8.6	13.6	8.2
ZRNU153SJRA / 15.4	95	10.1	8.4	12.3	9.7	13.9	10.4	15.4	11.0	16.5	11.5	16.8	10.9	17.1	10.3
<i>SK Frames</i>															
ZRNU183SKRA / 19.1	95	12.6	10.4	15.3	12.0	17.2	12.7	19.1	13.6	20.5	14.1	20.9	13.4	21.2	12.6
ZRNU243SKRA / 24.2	95	15.9	13.0	19.4	15.0	21.8	15.9	24.2	17.0	25.9	17.7	26.4	16.8	26.8	15.8

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

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

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

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

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

Table 12: Art Cool Mirror Wall-Mounted Indoor Unit Heating Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp.		Indoor Air Temperature (°F DB)							
			59	61	64	67	70	73	76	80
	°F DB	°F WB	TC	TC	TC	TC	TC	TC	TC	TC
<i>SJ Frames</i>										
ZRNU053SJRA / 5.5	47	43	6.8	6.8	6.7	6.4	6.1	5.9	5.6	5.3
ZRNU073SJRA / 7.5	47	43	9.5	9.4	9.4	8.9	8.5	8.3	7.8	7.4
ZRNU093SJRA / 9.6	47	43	12.2	12.1	12.0	11.5	10.9	10.6	10.0	9.5
ZRNU123SJRA / 12.3	47	43	15.2	15.1	15.0	14.3	13.6	13.2	12.5	11.9
ZRNU153SJRA / 15.4	47	43	19.2	19.0	18.8	18.0	17.1	16.6	15.7	15.0
<i>SK Frames</i>										
ZRNU183SKRA / 19.1	47	43	24.1	23.9	23.7	22.6	21.5	20.9	19.8	18.8
ZRNU243SKRA / 24.2	47	43	28.7	28.4	28.2	26.9	25.6	24.8	23.6	22.4

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

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

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

Current certified ratings are available at www.ahridirectory.org.

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

ART COOL MIRROR



Accessories

Table 13: Accessories Overview (Sold Separately).

Accessory	Model Number
Auxiliary Heater Kit ¹ For Use With All Art Cool Mirror Wall-Mounted Indoor Units	PRARS1
WiFi Module For Use With All Art Cool Mirror Wall-Mounted Indoor Units	PWFMDD200

¹If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

STANDARD WALL MOUNTED



Mechanical Specifications on page 42

General Data on page 44

Electrical Data on page 46

Dimensions on page 47

Wiring Diagram on page 50

Refrigerant Flow Diagram on page 54

Air Velocity / Temperature Distribution on page 55

Acoustic Data on page 70

Capacity Tables on page 75

Accessories on page 77

STANDARD WALL-MOUNTED



Mechanical Specifications

Casing

Units are designed to mount on a vertical surface and come complete with an installation mounting guide and a separate hanging bracket. The unit case is manufactured with coated metal. Cold surfaces are covered with a coated polystyrene insulating material.

Finish

The unit case is manufactured using ABS polymeric resin and has a pearl white finish.

Fan Assembly and Control

The unit has a single, direct-drive, crossflow tangential Sirocco fan made of high strength ABS BSN-7530 polymeric resin. The fan motor is a Brushless Digitally Controlled (BLDC) design with permanently lubricated and sealed ball bearings. The fan motor includes thermal, overcurrent and low RPM protection. The fan/motor assembly is mounted on vibration attenuating rubber grommets. The fan impeller is statically and dynamically balanced. The fan speed is controlled using a microprocessor-based direct digital control algorithm that provides a high fan speed in cooling thermal ON and low fan speed in cooling thermal OFF, high fan speed in heating thermal ON and fan off in heating thermal OFF. The fan speeds can be field adjusted between low, medium, and high speeds. The fan speed algorithm provides a field-selectable fixed-speed or auto-speed setting that changes the fan speed to simulate natural airflow.

Air Filter

Return air is filtered with a removable, washable filter with anti-fungal treatment. Filter access is from the front of the unit without the use of tools.

Airflow Guide Vanes

5–15 MBh

The indoor unit is provided with a motorized oscillating guide vane that automatically changes the direction of up-and-down airflow. The indoor unit includes factory installed, manually adjustable guide vanes that control the side-to-side direction of supplied airflow.

18-36 MBh

The indoor unit is provided with a motorized sweeping guide vane that automatically changes the direction of airflow from side-to-side and up-and-down.

Microprocessor Control

The unit is provided with an integrated microprocessor controller capable of performing functions necessary to operate the system without the use of a wall-mounted controller. A temperature thermistor is factory mounted in the return air stream. All unit operation parameters, excluding the operating schedule, are stored in non-volatile memory resident on the unit microprocessor. Operating schedules are stored in select models of the optional, wall-mounted, local or central controllers.



The field-supplied communication cable between the indoor unit(s) and outdoor unit is to be a minimum of 18 AWG, 2 conductor, stranded, and shielded cable (RS-485), terminated via screw terminals on the control boards. The microprocessor control provides the following functions: auto addressing, self-diagnostics, auto restart following power restoration, test run, and will operate the indoor unit using one of five operation modes:

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

For Heat Recovery systems the Auto Changeover setting automatically switches control of the indoor unit between Cooling and Heating modes based on space temperature conditions.

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

In Heating mode, the microprocessor control will activate indoor unit operation when the indoor room temperature falls below set-point temperature. At which point, a signal is sent to the outdoor unit to begin the heating cycle. The indoor unit fan operation is delayed until coil pipe temperature reaches 76°F. Significant airflow is generated when pipe temperature reaches 80°F. A field-selectable option maintains fan operation for 30 minutes following cooling cycle operations. The unit is equipped with an infrared receiver designed to communicate with an LG wireless remote controller. In lieu of wireless remote or factory return air thermistor, screw terminals on the microprocessor circuit board accommodates various models of wall-mounted local controllers. The unit microprocessor is capable of accepting space temperature readings concurrently or individually from either:

1. Wall-mounted wired controller(s)
2. Factory-mounted return air thermistor

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

Indoor units have built-in WiFi and can be controlled by LG ThinQ app on a smart device. A field-supplied WiFi network and smart device are required. LG ThinQ app is free, and is available for Android™ and iOS. (Android is a trademark of Google LLC.)

Handling Condensate

The unit is designed for gravity draining of condensate. LG provides a factory insulated flexible drain hose. If condensate lift/pumps are needed for the application, they are to be field provided.

Condensate Drain Pan

The condensate drain pan is constructed of expandable polystyrene resin (EPS).

Coil

The indoor unit coil is constructed with grooved design copper tubes with slit coil fins, two (2) rows, eighteen (18) fins per inch.

Refrigerant Leak Detection

The indoor unit contains an R32 refrigerant leak sensor. The sensor is designed to control optional refrigerant piping shut-off valves if a leak is detected. Shut-off valve units are available as a separate LG accessory or included as components in LG Heat Recovery Unit accessories. The sensor can enable four individual controller displayed error codes for leak detection (CH230), sensor fault (CH228), 6 months life remaining (CH227) and end of life (CH229).

Table 14: Refrigerant Leak Sensor Specifications.

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

Controls Features

- Auto changeover (Heat Recovery only)
- Auto operation
- Auto clean (coil dry; requires wireless controller)
- External on/off control
- Dual thermistor control
- Dual set-point control
- Filter life display
- Group control
- Forced operation
- Hot start
- Self diagnostics
- Timer (on/off)
- Weekly schedule
- Auto direction/swing (up/down)
- Fan speed control
- Jet cool (fast cooling)
- Wi-Fi
- Auto Fan
- R32 leak detection sensor

STANDARD WALL-MOUNTED



General Data

Table 15: Standard Wall-Mounted (SJ, SK Frames) Indoor Unit General Data.

Model No.	ZRNU053SJSA	ZRNU073SJSA	ZRNU093SJSA	ZRNU123SJSA	ZRNU153SJSA	ZRNU183SKSA	ZRNU243SKSA
<i>Cooling Mode Performance</i>							
Capacity (Btu/h)	5,500	7,500	9,600	12,300	15,400	19,100	24,200
Max. Power Input ¹ (W)	30	30	30	30	30	53	53
L / M / H Power at Factory Default (W)	9 / 10 / 11	9 / 11 / 12	9 / 12 / 13	11 / 13 / 15	11 / 18 / 23	16 / 26 / 32	16 / 26 / 39
<i>Heating Mode Performance</i>							
Capacity (Btu/h)	6,100	8,500	10,900	13,600	17,100	21,500	25,600
Max Power Input ¹ (W)	30	30	30	30	30	53	53
L / M / H Power at Factory Default (W)	9 / 10 / 11	9 / 11 / 12	9 / 12 / 13	11 / 13 / 15	11 / 18 / 23	16 / 26 / 32	16 / 26 / 39
<i>Entering Mixed Air</i>							
Cooling Max. (°F WB)	76	76	76	76	76	76	76
Heating Min. (°F DB)	59	59	59	59	59	59	59
<i>Unit Data</i>							
Refrigerant Type ²	R32	R32	R32	R32	R32	R32	R32
Refrigerant Control	EEV	EEV	EEV	EEV	EEV	EEV	EEV
Sound Pressure ³ dB(A) (H / M / L)	30 / 29 / 28	32 / 30 / 28	34 / 32 / 28	37 / 34 / 30	42 / 39 / 32	43 / 39 / 34	46 / 41 / 34
Sound Power ⁴ dB(A) (H)	54	54	55	55	58	63	63
Net Unit Weight (lbs.)	19.6	19.6	19.6	19.6	19.6	28.7	28.7
Shipping Weight (lbs.)	21.8	21.8	21.8	21.8	21.8	31.7	31.7
Communication Cable ⁵ (No. x AWG)	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18	2 x 18
<i>Fan</i>							
Type	Cross Flow	Cross Flow	Cross Flow	Cross Flow	Cross Flow	Cross Flow	Cross Flow
Quantity	1	1	1	1	1	1	1
Motor / Drive	Brushless Digitally Controlled / Direct						
Airflow Rate H / M / L (CFM)	240 / 230 / 208	254 / 240 / 208	275 / 254 / 208	300 / 254 / 240	371 / 336 / 240	494 / 424 / 371	537 / 449 / 371
<i>Piping</i>							
Liquid Line (in., O.D.)	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare	1/4 Flare
Vapor Line (in., O.D.)	3/8 Flare	3/8 Flare	3/8 Flare	3/8 Flare	1/2 Flare	1/2 Flare	1/2 Flare
Condensate Line (in., I.D.)	5/8	5/8	5/8	5/8	5/8	5/8	5/8

EEV: Electronic Expansion Valve

Power wiring is field supplied and must comply with the applicable local and national codes. See page 45 for detailed electrical data.

This unit comes with a dry nitrogen charge.

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

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

¹Maximum power Input is rated at maximum setting value.

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

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

⁴Sound Power levels are tested in a reverberation room under ISO Standard 3741.

⁵Communication cable between Main ODU to IDUs / HRUs to be 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the Main ODU chassis only. Ⓞ Do not ground the ODU to IDUs / HRUs communication cable at any other point. Wiring must comply with all applicable local and national codes.



Table 16: Standard Wall-Mounted (SR Frames) Indoor Unit General Data.

Model No.	ZRNU303SRSA	ZRNU363SRSA
<i>Cooling Mode Performance</i>		
Capacity (Btu/h)	30,000	35,500
Max. Power Input ¹ (W)	67	104
L / M / H Power at Factory Default (W)	31 / 43 / 54	36 / 51 / 85
<i>Heating Mode Performance</i>		
Capacity (Btu/h)	32,000	37,000
Max Power Input ¹ (W)	65	123
L / M / H Power at Factory Default (W)	23 / 30 / 45	30 / 45 / 65
<i>Entering Mixed Air</i>		
Cooling Max. (°F WB)	76	76
Heating Min. (°F DB)	59	59
<i>Unit Data</i>		
Refrigerant Type ²	R32	R32
Refrigerant Control	EEV	EEV
Sound Pressure ³ dB(A) (H / M / L)	46 / 42 / 38	51 / 46 / 42
Net Unit Weight (lbs.)	20.1	20.1
Shipping Weight (lbs.)	22.8	22.8
Communication Cable ⁴ (No. x AWG)	2 x 18	2 x 18
<i>Fan</i>		
Type	Cross Flow	Cross Flow
Quantity	1	1
Motor / Drive	Brushless Digitally Controlled / Direct	
Airflow Rate H / M / L (CFM)	742 / 600 / 459	883 / 742 / 600
<i>Piping</i>		
Liquid Line (in., O.D.)	1/4 Flare	3/8 Flare
Vapor Line (in., O.D.)	1/2 Flare	5/8 Flare
Condensate Line (in., I.D.)	5/8	5/8

EEV: Electronic Expansion Valve

Power wiring is field supplied and must comply with the applicable local and national codes. See page 45 for detailed electrical data.

This unit comes with a dry nitrogen charge.

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

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

¹Maximum power Input is rated at maximum setting value.

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

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

⁴Communication cable between Main ODU to IDUs / HRUs to be 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the Main ODU chassis only. Ⓞ Do not ground the ODU to IDUs / HRUs communication cable at any other point. Wiring must comply with all applicable local and national codes.

STANDARD WALL-MOUNTED



Electrical Data

Table 17: Standard Wall-Mounted Indoor Unit Electrical Data.

Model	Voltage Range	MCA	MOP	Rated Amps (A)	Power Supply			Power Input (W)		
					Hz	Volts	Phase	Max. Cooling	Max. Heating	H / M / L at Factory Default
<i>SJ Frames</i>										
ZRNU053SJSA	187-253	0.31	15	0.25	60	208-230	1	30	30	11 / 10 / 9
ZRNU073SJSA		0.31						30	30	12 / 11 / 9
ZRNU093SJSA		0.31						30	30	13 / 12 / 9
ZRNU123SJSA		0.31						30	30	15 / 13 / 11
ZRNU153SJSA		0.31						30	30	23 / 18 / 11
<i>SK Frames</i>										
ZRNU183SKSA	187-253	0.65	15	0.52	60	208-230	1	53	53	32 / 26 / 16
ZRNU243SKSA		0.65						53	53	39 / 26 / 16
<i>SR Frames</i>										
ZRNU303SRSA	187-253	1.13	15	0.90	60	208-230	1	65	65	45 / 30 / 23
ZRNU363SRSA		1.13		0.9				123	123	65 / 45 / 30

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

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

STANDARD WALL-MOUNTED

SK Frame Dimensions

Figure 28: SK Frame Dimensions.

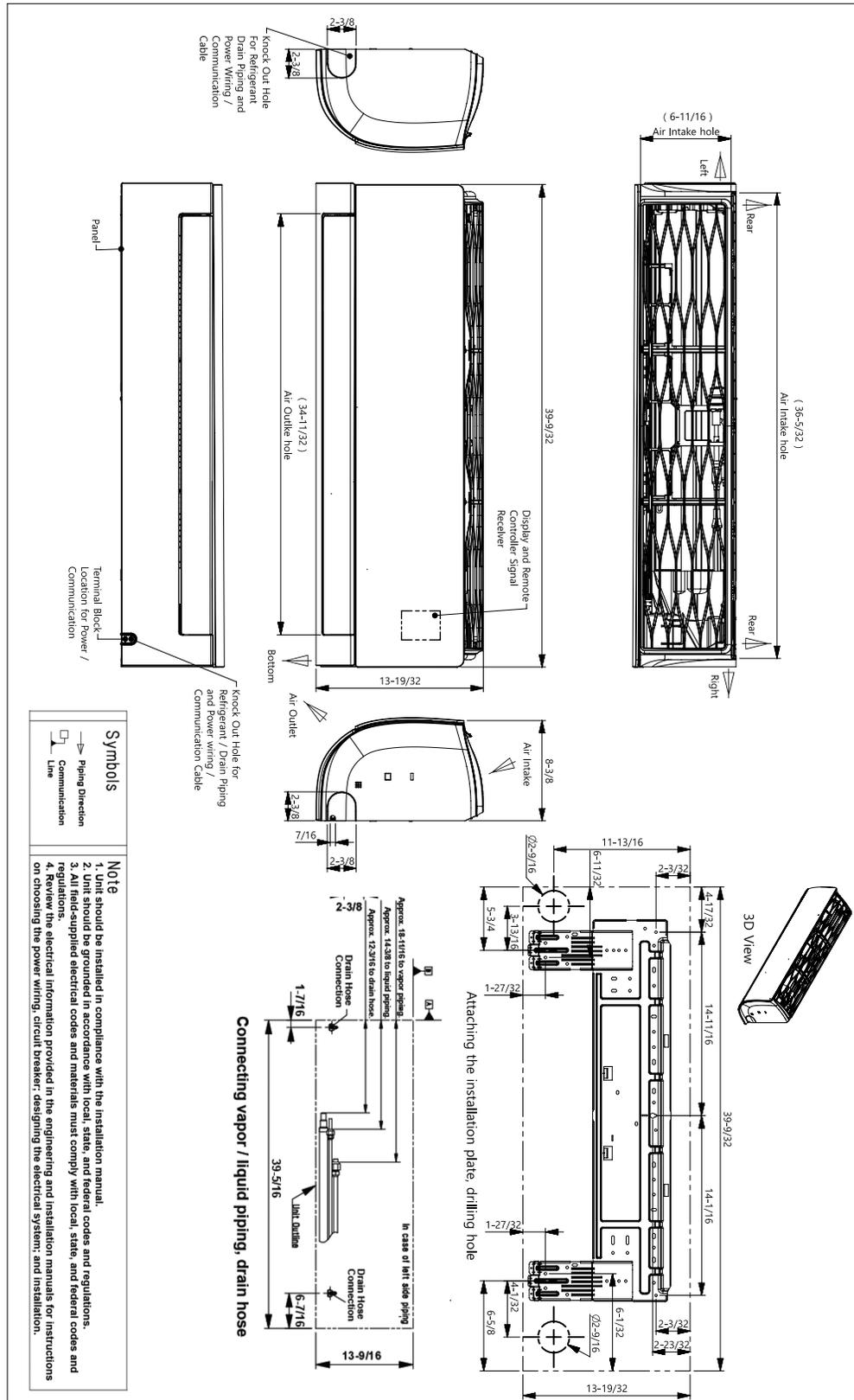
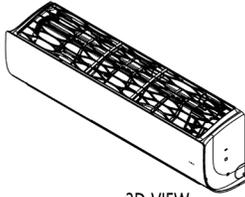
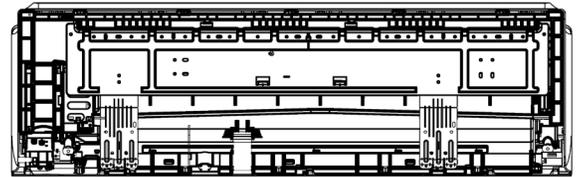
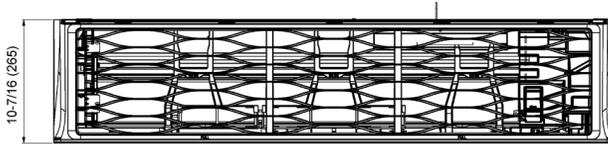


Figure 29: SR Frame Dimensions.

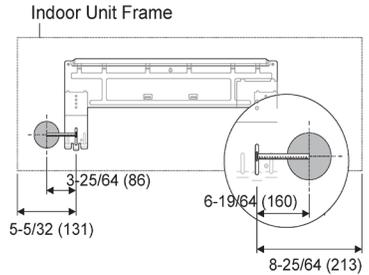
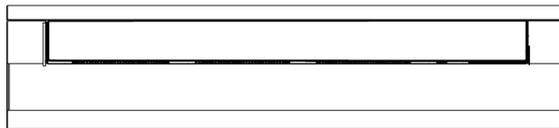
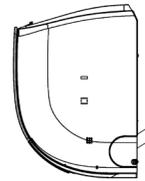
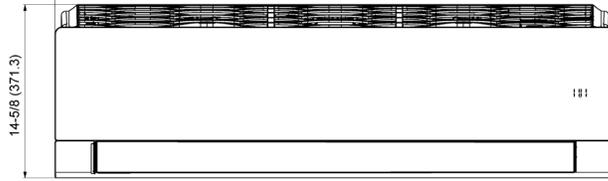
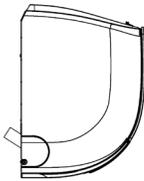
Unit: Inch (mm)
SR Frame



3D VIEW



47-1/4 (1,200)



Note:

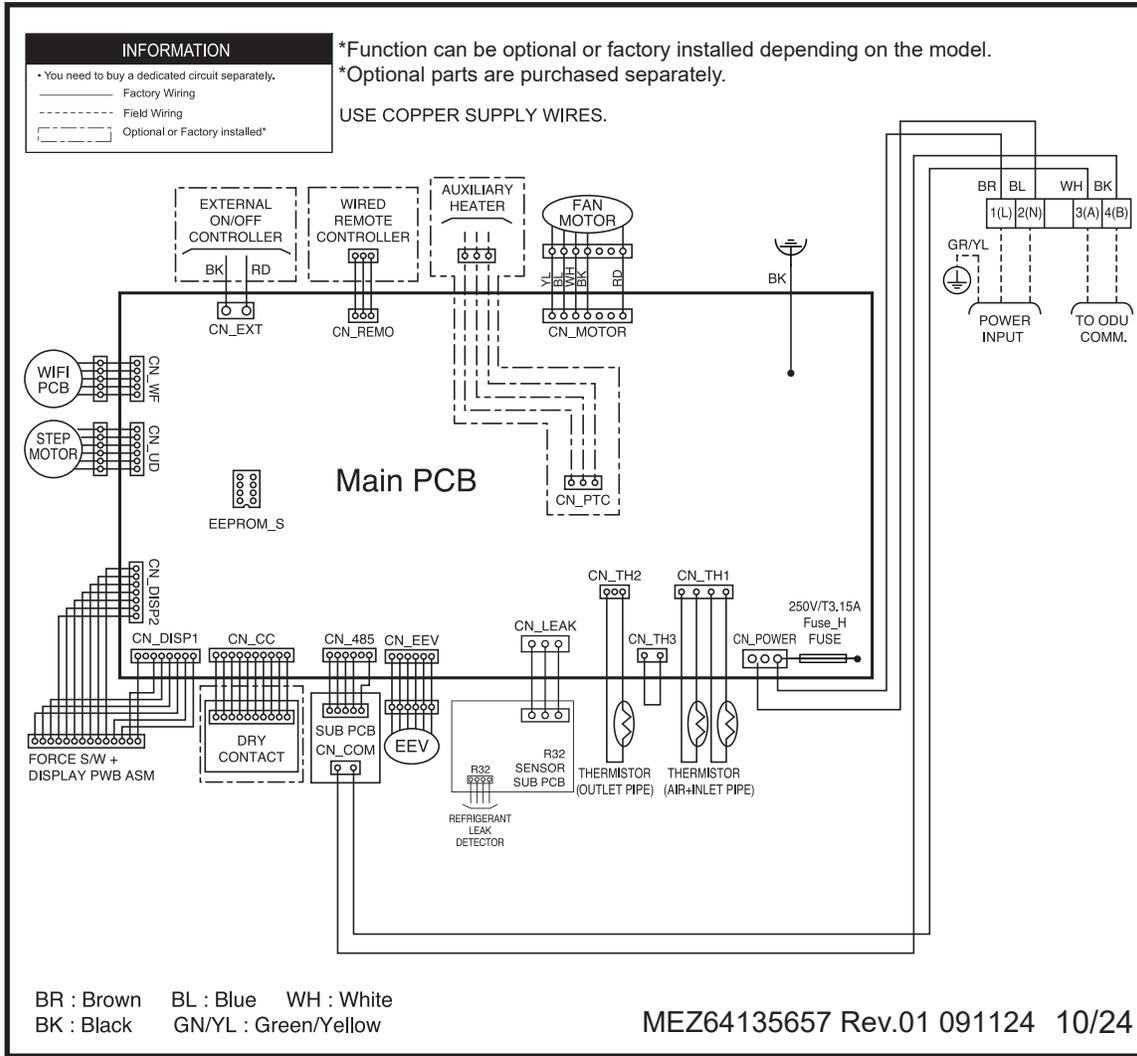
1. Unit should be installed in compliance with the installation manual.
2. Unit should be grounded in accordance with the local regulations or applicable national codes.
3. All electrical components and materials to be supplied from the site must comply with the local regulations or international codes.

STANDARD WALL-MOUNTED



SJ and SK Frame Wiring Diagram

Figure 30: SJ and SK Frame Wiring Diagram.



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

Table 18: SJ and SK Frame Wiring Diagram Legend.

Terminal	Purpose	Function
CN_EXT	External on/off controller	External on/off controller connection
CN_REMO	Remote controller	Remote control connection
CN_PTC	Auxiliary heater	Auxiliary heater connection
CN_MOTOR	Fan motor output	Motor output of BLDC
CN_POWER	AC Power supply	AC power line input for indoor controller
CN_TH1	Suction air temperature thermistor	Suction air temperature thermistor connection
CN_TH3	Evaporator outlet temperature thermistor	Evaporator outlet temperature thermistor connection
CN_TH2	Evaporator inlet temperature thermistor	Evaporator inlet temperature thermistor connection
CN_LEAK	Leak sensor	Leak sensor connection
CN_EEV	EEV output	EEV control output
CN_485	Communication	Connection between indoor and outdoor units
CN_CC	Dry Contact	Connection to Dry Contact (Optional)
CN_DISP1	Display	Display of indoor status
CN_DISP2	Display	Display of indoor status
CN-UD	Step motor	Step motor output
CN_WF	Wi-Fi module	Wi-Fi module connection
CN_DISP1	Display	Display of indoor status
CN_WF	Wi-Fi module	Wi-Fi module connection

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

Table 19: SJ and SK Frame DIP Switch Settings.

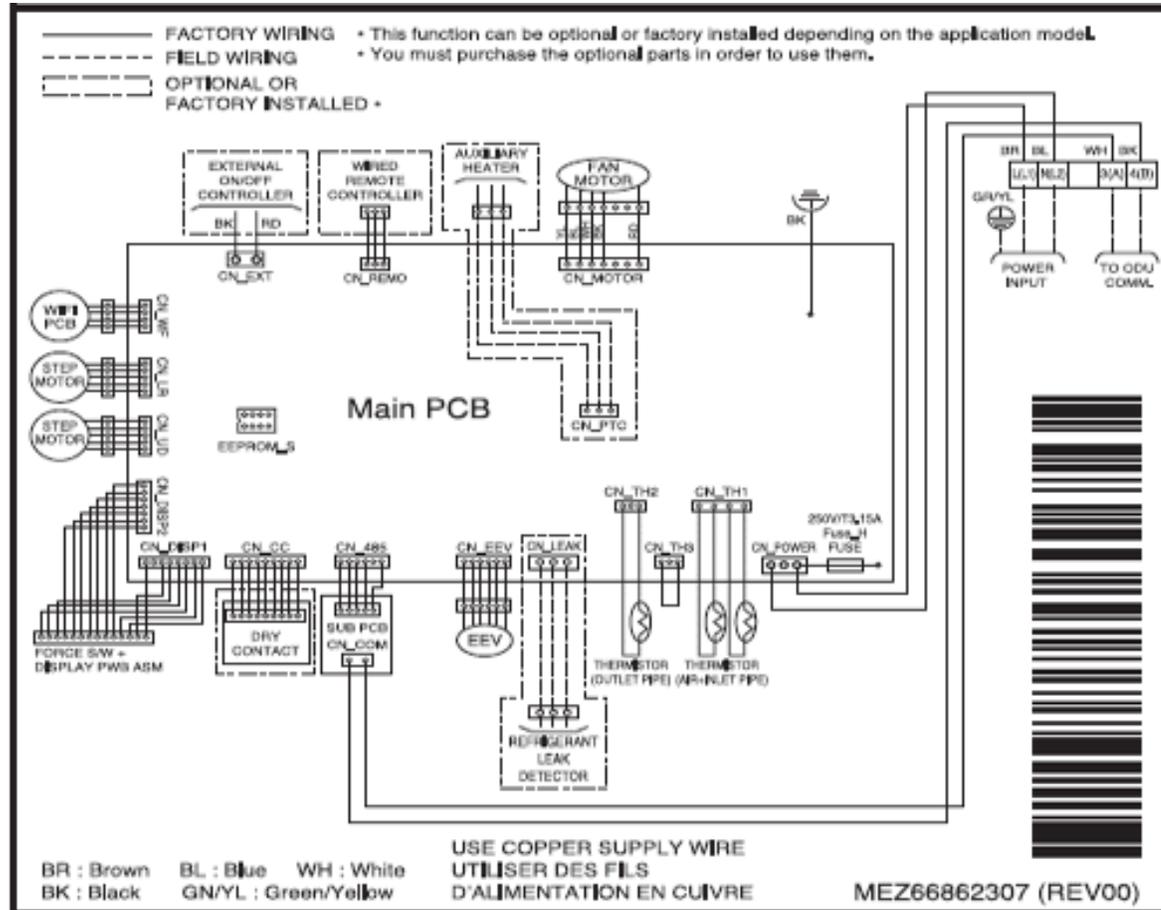
DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub on each indoor unit
SW4	DRY CONTACT MODE	Variable	Auto	Sets operation mode for optional Dry Contact accessory. 1. Variable: Auto or Manual Mode can be set through 7-Day Programmable Controller or Wireless Remote Controller (factory default setting is Auto if there is no setting). 2. Auto: For Dry Contact, it is always Auto mode.
SW7	VENTILATOR INTERLOCK	Off	On	Selects ventilator interlock function for four-way ceiling cassette indoor units. 1. On: Automatic (vent relay will be turned on after ten [10] seconds of indoor unit operation). 2. Off: Manual (ventilator needs to be set through the controller).

***For Multi V wall mounted indoor units, DIP switches 1, 2, 5, 6, and 8 must be set to OFF.**

STANDARD WALL-MOUNTED

SR Frame Wiring Diagram

Figure 31: SR Frame Wiring Diagram.



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

R32 MULTI V Wall-Mounted Indoor Unit Engineering Manual

Table 20: SR Frame Wiring Diagram Legend.

Terminal	Purpose	Function
CN_EXT	External on/off controller	External on/off controller connection
CN_REMO	Remote controller	Remote control connection
CN_PTC	Auxiliary heater	Auxiliary heater connection
CN_MOTOR	Fan motor output	Motor output of BLDC
CN_POWER	AC Power supply	AC power line input for indoor controller
CN_TH1	Suction air temperature thermistor	Suction air temperature thermistor connection
CN_TH3	Evaporator outlet temperature thermistor	Evaporator outlet temperature thermistor connection
CN_TH2	Evaporator inlet temperature thermistor	Evaporator inlet temperature thermistor connection
CN_LEAK	Leak sensor	Leak sensor connection
CN_EEV	EEV output	EEV control output
CN_485	Communication	Connection between indoor and outdoor units
CN_CC	Dry Contact	Connection to Dry Contact (Optional)
CN_DISP1	Display	Display of indoor status
CN_DISP2	Display	Display of indoor status
CN-UD	Step motor	Step motor output
CN_WF	Wi-Fi module	Wi-Fi module connection
CN_DISP1	Display	Display of indoor status
CN_WF	Wi-Fi module	Wi-Fi module connection

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

Table 21: SR Frame DIP Switch Settings.

DIP Switch Setting		Off	On	Remarks
SW3	GROUP CONTROL	Main	Sub	Group control setting using 7-Day Programmable Controller; selects Main / Sub on each indoor unit
SW4	DRY CONTACT MODE	Variable	Auto	Sets operation mode for optional Dry Contact accessory. 1. Variable: Auto or Manual Mode can be set through 7-Day Programmable Controller or Wireless Remote Controller (factory default setting is Auto if there is no setting). 2. Auto: For Dry Contact, it is always Auto mode.
SW7	VENTILATOR INTERLOCK	Off	On	Selects ventilator interlock function for four-way ceiling cassette indoor units. 1. On: Automatic (vent relay will be turned on after ten [10] seconds of indoor unit operation). 2. Off: Manual (ventilator needs to be set through the controller).

***For Multi V wall mounted indoor units, DIP switches 1, 2, 5, 6, and 8 must be set to OFF.**

STANDARD WALL-MOUNTED

SJ, SK, SR Frame Refrigerant Flow Diagram

Figure 32: SJ, SK, SR Frame Piping Diagram.

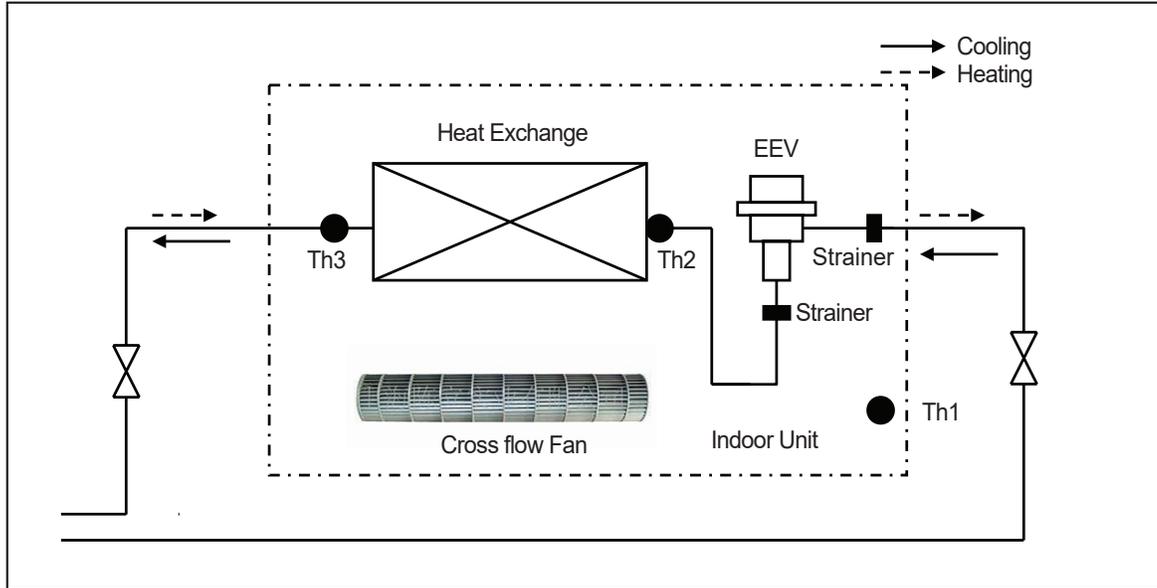


Table 22: SJ, SK, SR Frame Refrigerant Pipe Connection Port Diameters.

Model	Liquid (inch)	Vapor (inch)
<i>SJ Frames</i>		
ZRNU053SJSA	1/4 Flare	3/8 Flare
ZRNU073SJSA		
ZRNU093SJSA		
ZRNU123SJSA		
ZRNU153SJSA		
<i>SK Frames</i>		
ZRNU183SKSA	1/4 Flare	1/2 Flare
ZRNU243SKSA		
<i>SR Frames</i>		
ZRNU303SRSA	1/4 Flare	1/2 Flare
ZRNU363SRSA	3/8 Flare	5/8 Flare

Table 23: SJ, SK, SR Frame Thermistors.

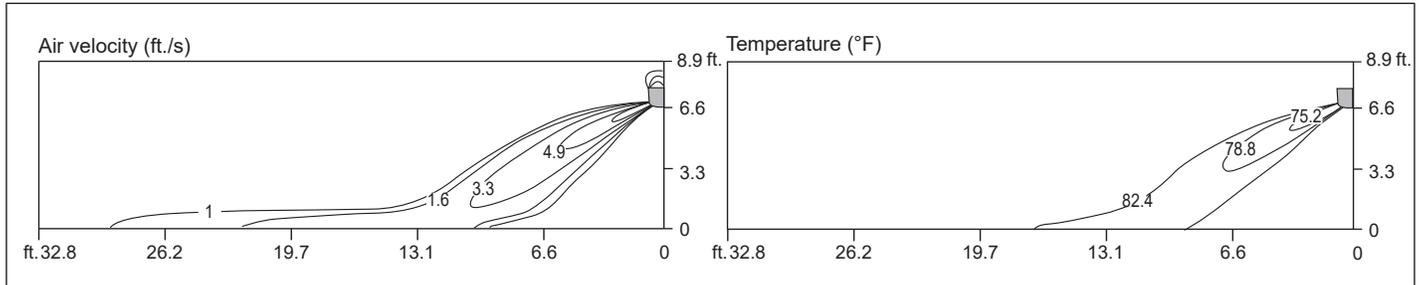
Thermistor	Description	PCB Connector
Th1	Suction Air Temperature Thermistor	CH-TH1 (White)
Th2	Evaporator Inlet Temperature Thermistor	
Th3	Evaporator Outlet Temperature Thermistor	CH-TH2 (Red)

Figure 33: ZRNU053SJSA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

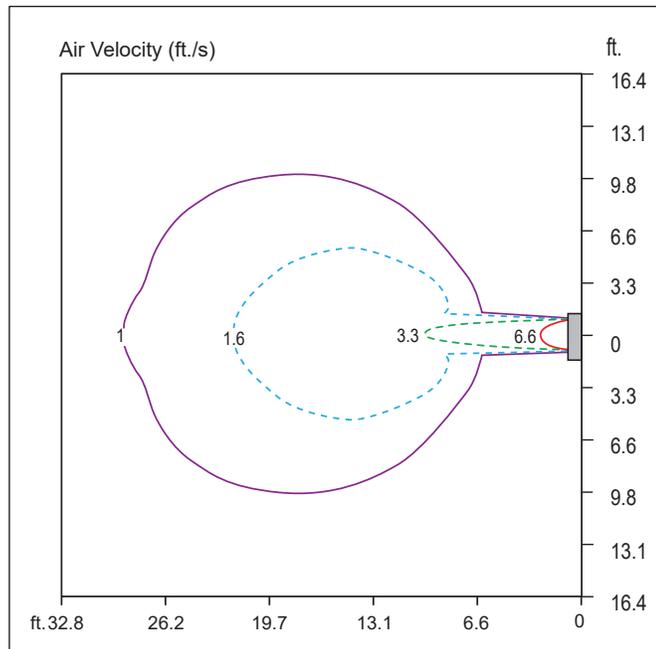
Discharge angle: 35°



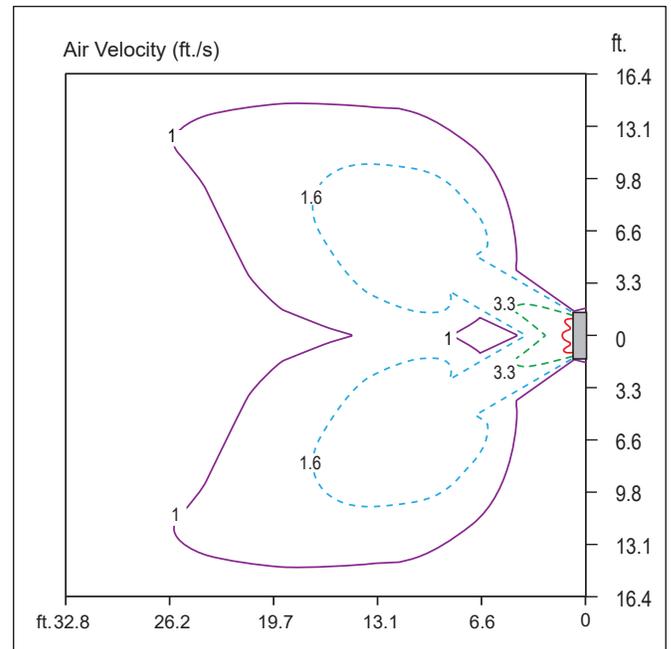
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 35°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 29.2 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 26.2 ft.
- Fan Speed : High

STANDARD WALL-MOUNTED



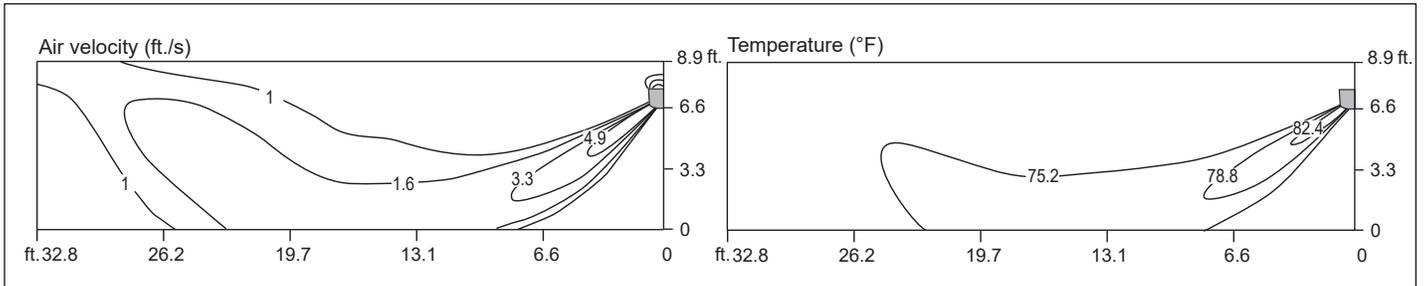
Air Velocity / Temperature Distribution

Figure 34: ZRNU053SJSA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

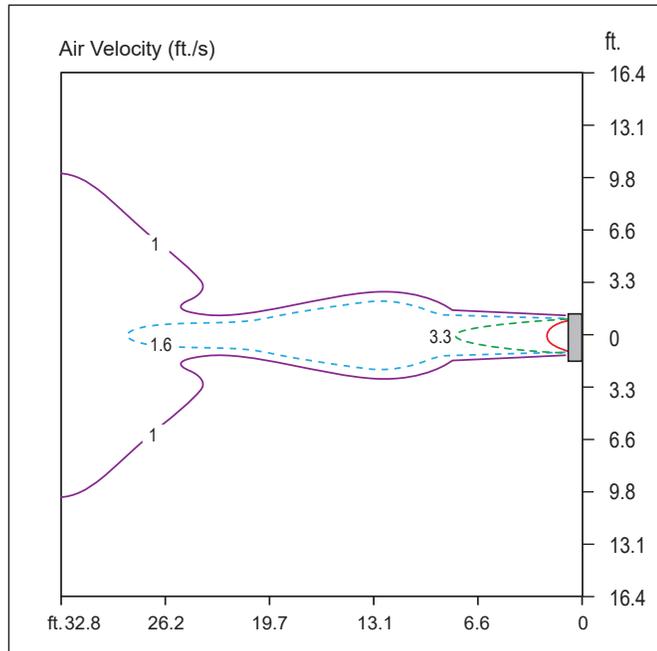
Discharge angle: 55°



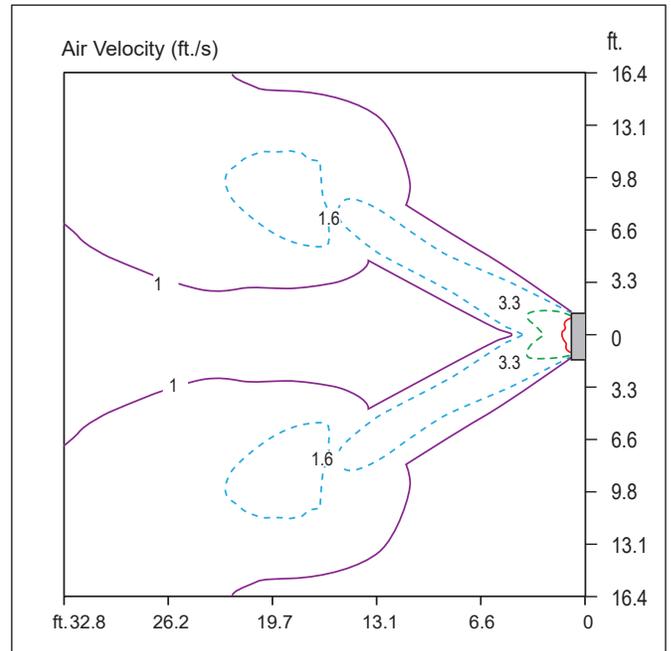
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 55°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 39.0 ft.
- Fan Speed : High



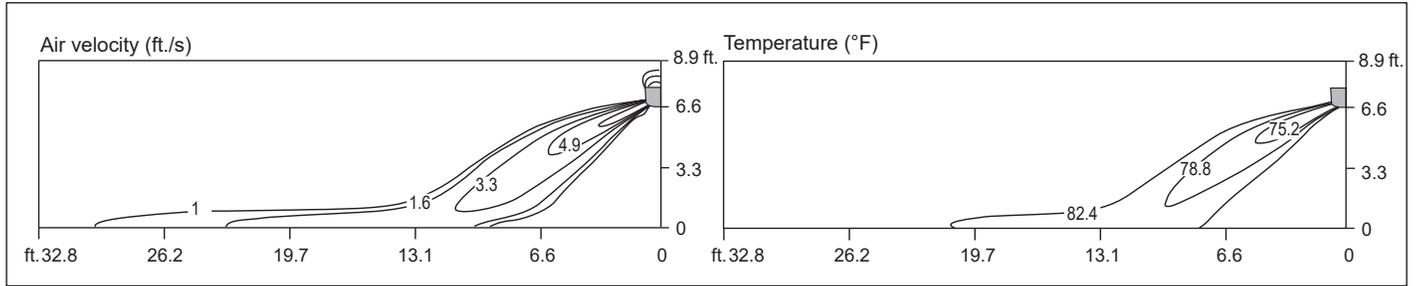
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 41.3 ft.
- Fan Speed : High

Figure 35: ZRNU073SJSJA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

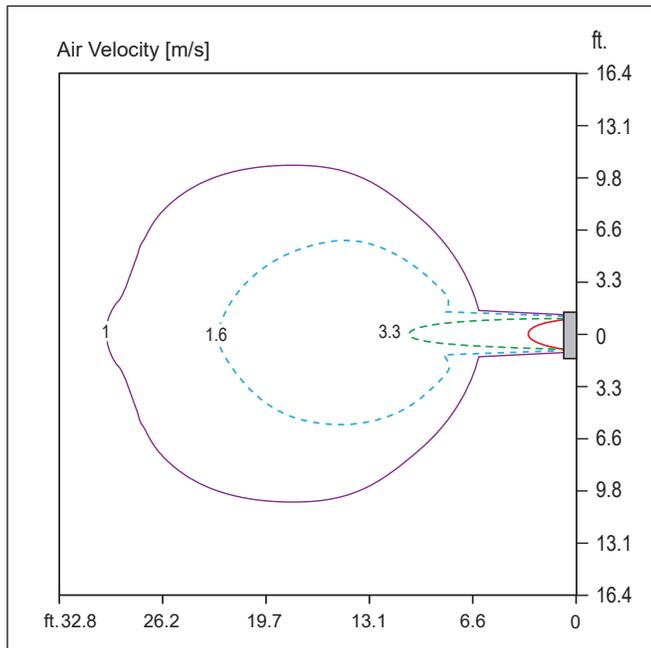
Discharge angle: 35°



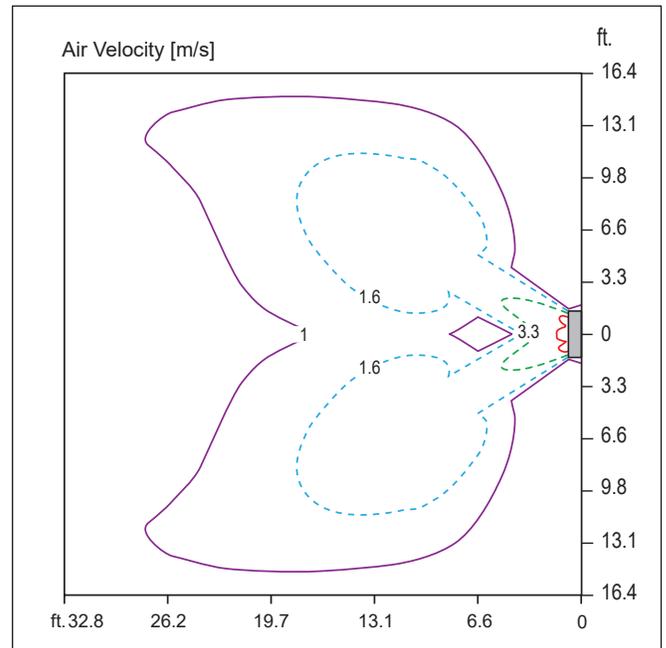
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 35°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 30.2 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 27.6 ft.
- Fan Speed : High

STANDARD WALL-MOUNTED

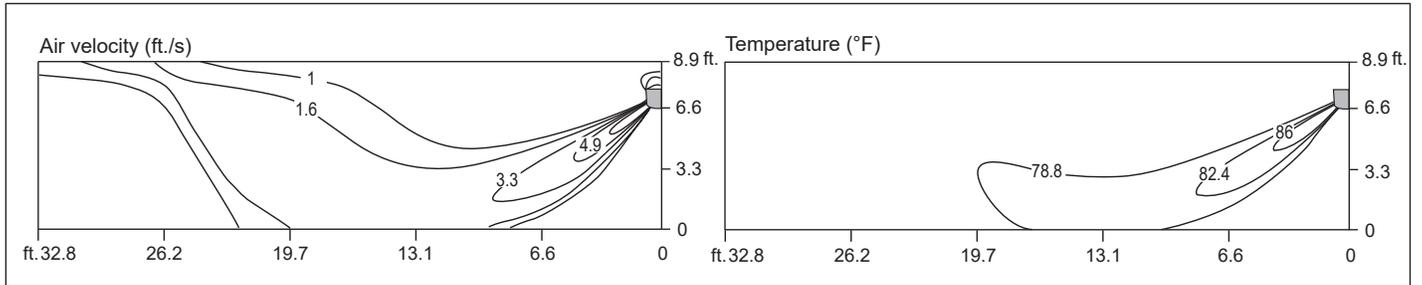


Air Velocity / Temperature Distribution

Figure 36: ZRNU073SJSA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating Side View

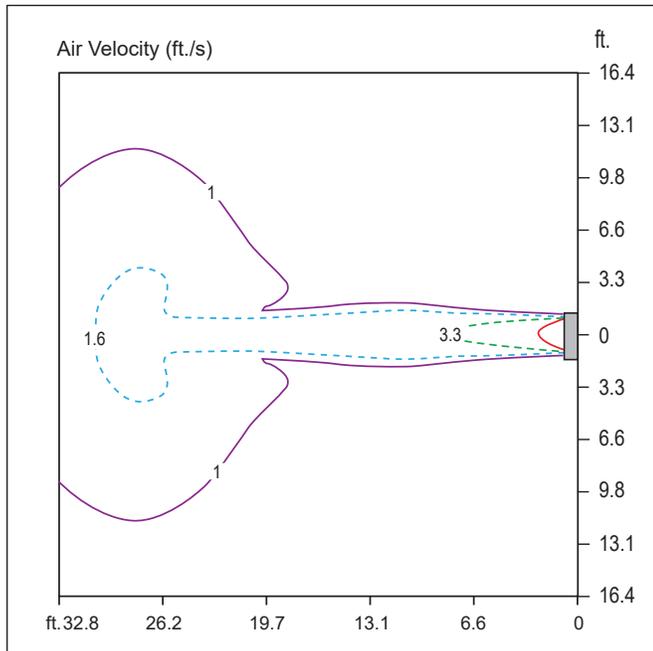
Discharge angle: 55°



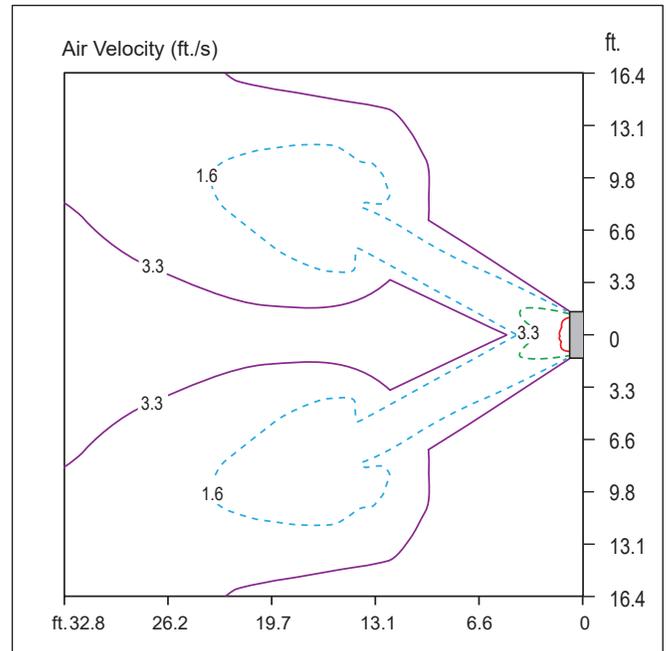
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 55°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 36.1 ft.
- Fan Speed : High



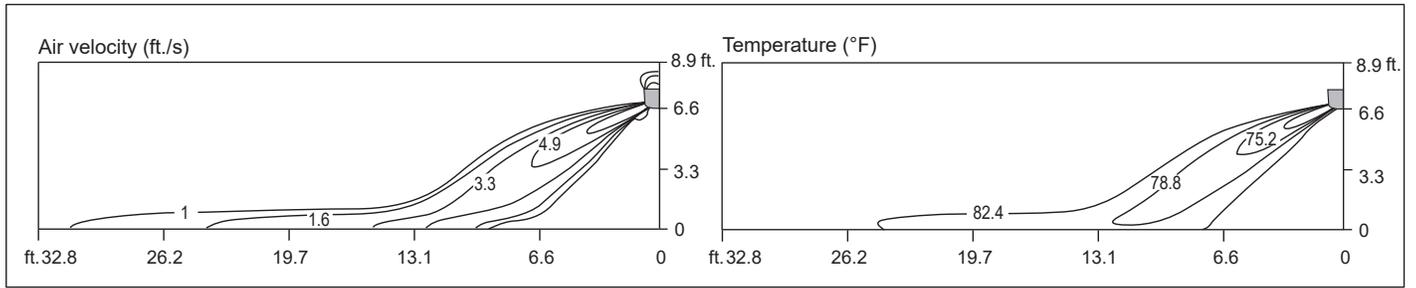
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 43.3 ft.
- Fan Speed : High

Figure 37: ZRNU093SJS Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

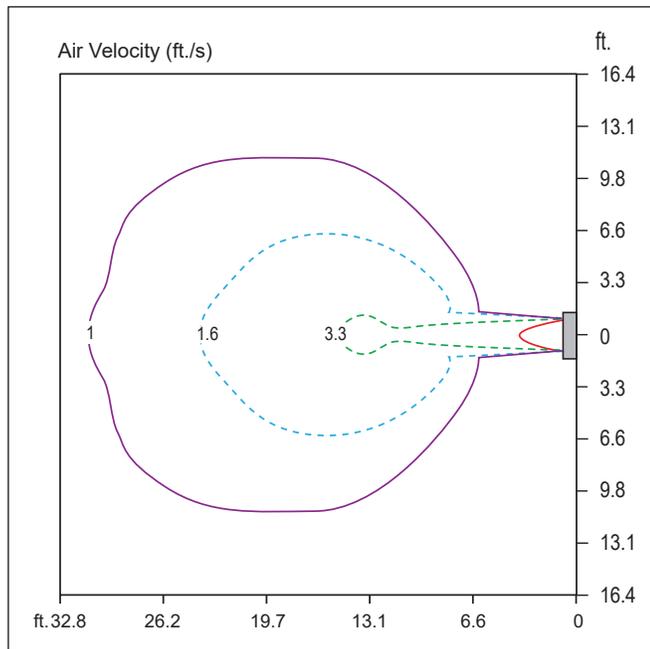
Discharge angle: 35°



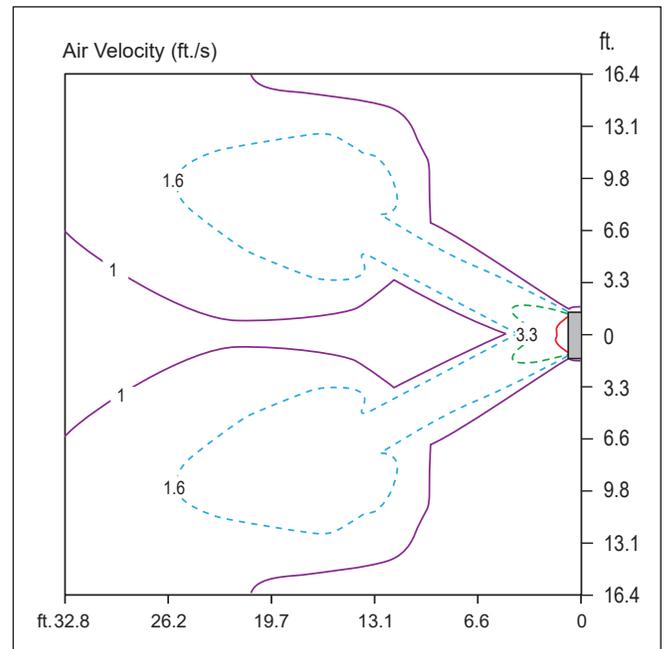
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 35°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 31.5 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 45.9 ft.
- Fan Speed : High

STANDARD WALL-MOUNTED



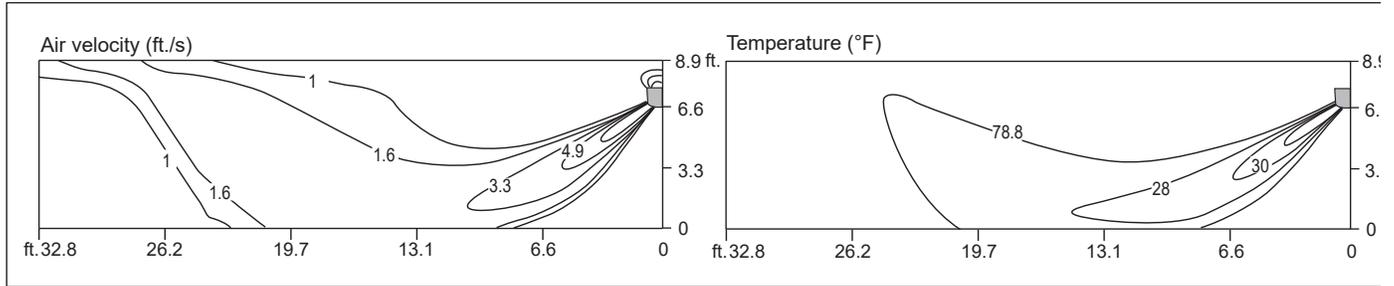
Air Velocity / Temperature Distribution

Figure 38: ZRNU093SJSA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

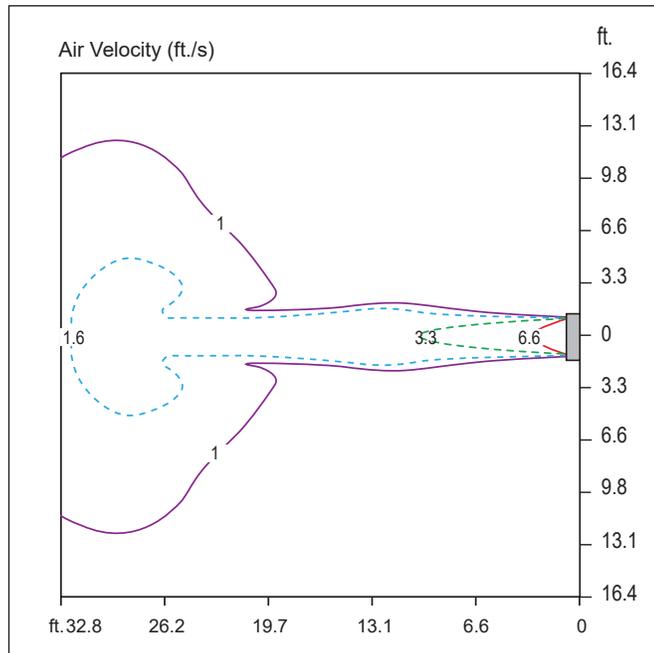
Discharge angle: 55°



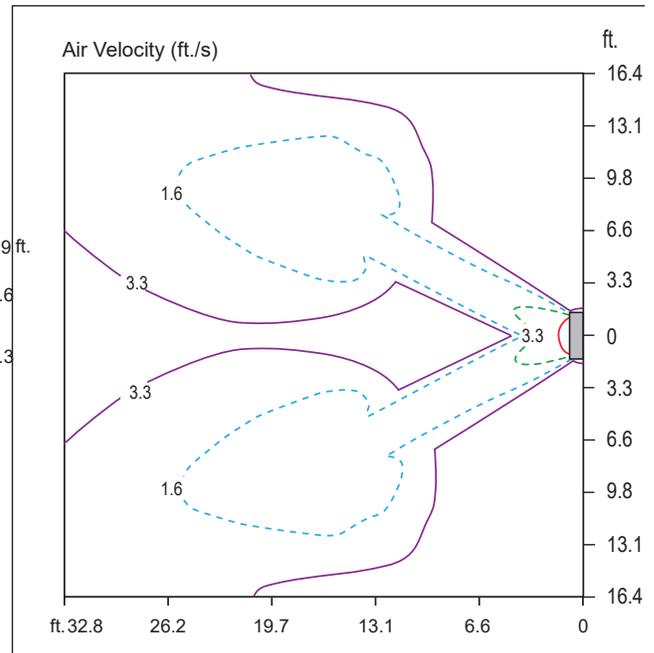
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 55°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 38.7 ft.
- Fan Speed : High



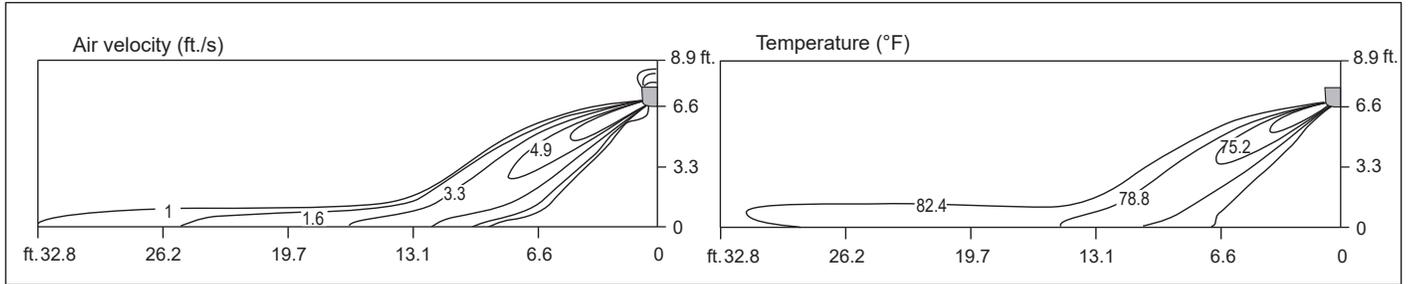
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 45.9 ft.
- Fan Speed : High

Figure 39: ZRNU123SJSA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

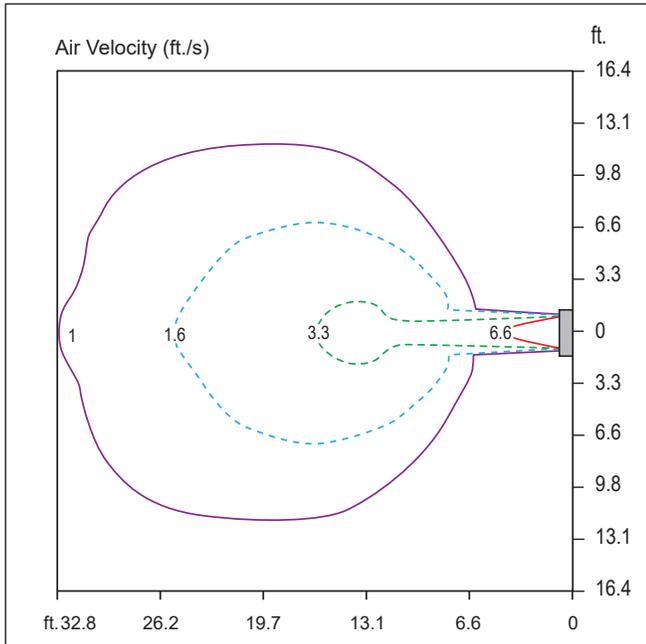
Discharge angle: 35°



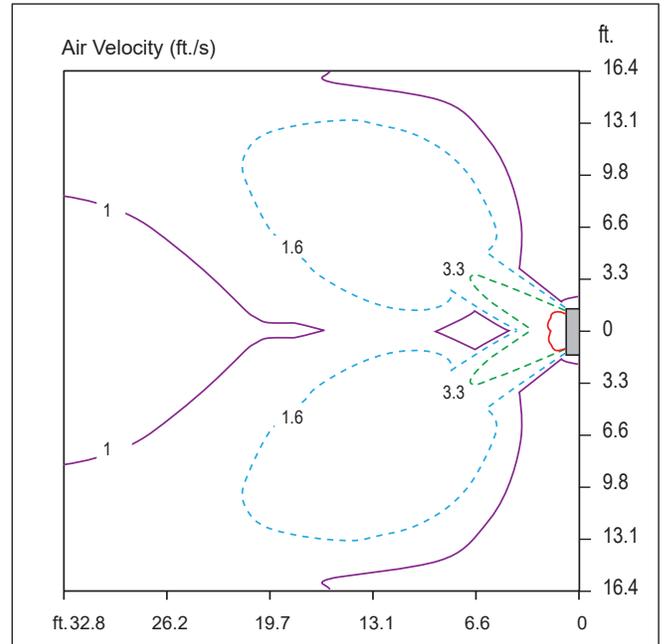
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 35°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 32.8 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 46.9 ft.
- Fan Speed : High

STANDARD WALL-MOUNTED



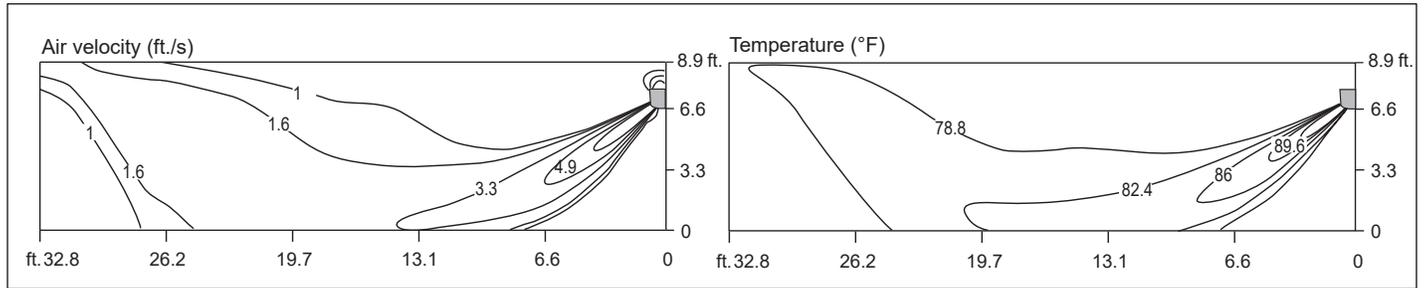
Air Velocity / Temperature Distribution

Figure 40: ZRNU123SJS Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

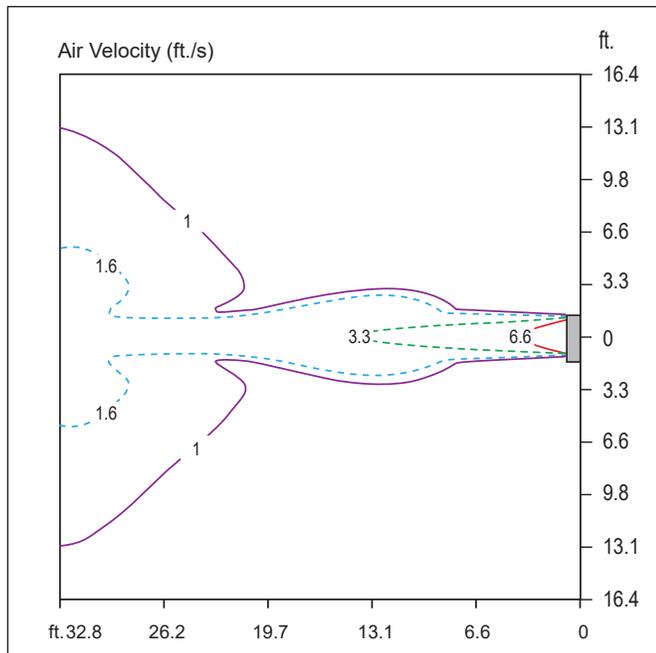
Discharge angle: 55°



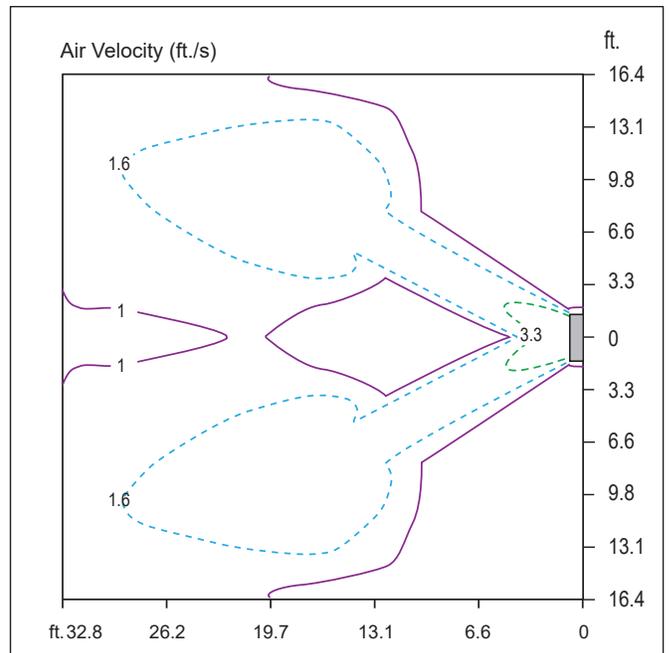
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 55°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 42.6 ft.
- Fan Speed : High



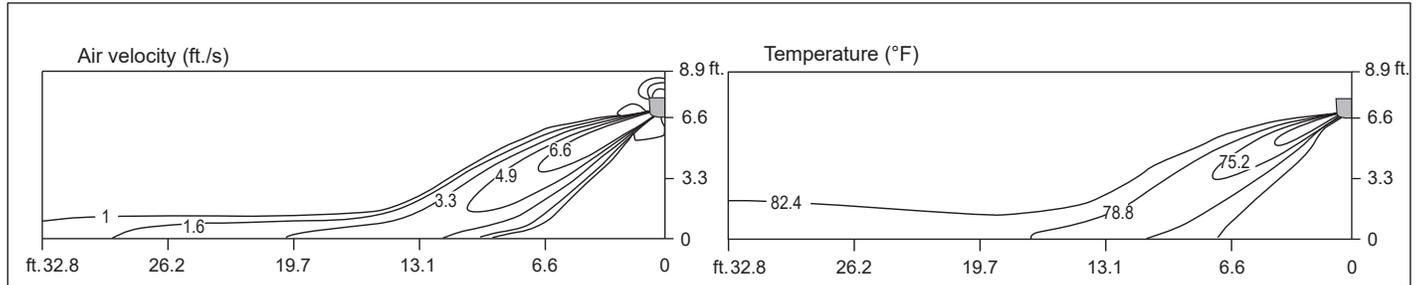
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 46.9 ft.
- Fan Speed : High

Figure 41: ZRNU153SJSJA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

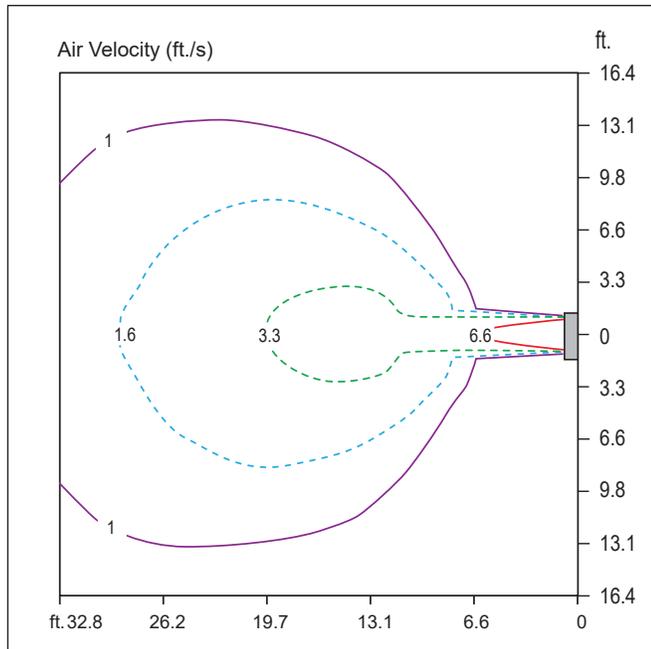
Discharge angle: 35°



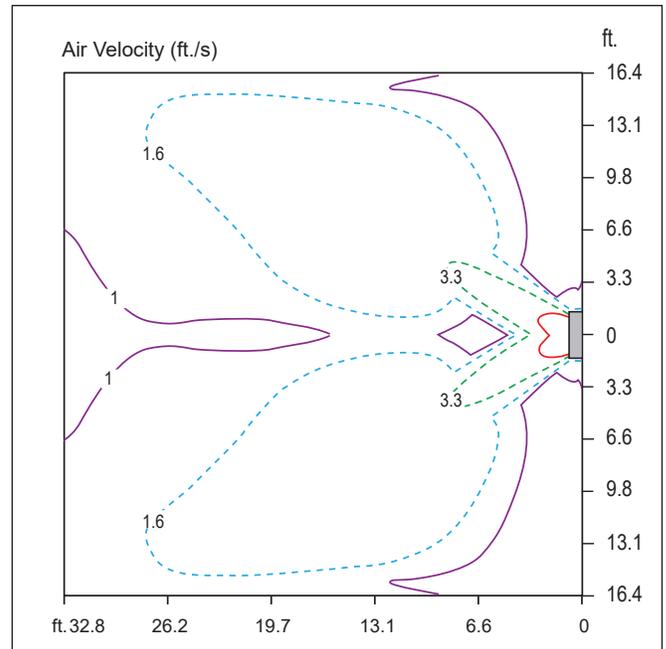
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 35°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 37.7 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 54.8 ft.
- Fan Speed : High

STANDARD WALL-MOUNTED

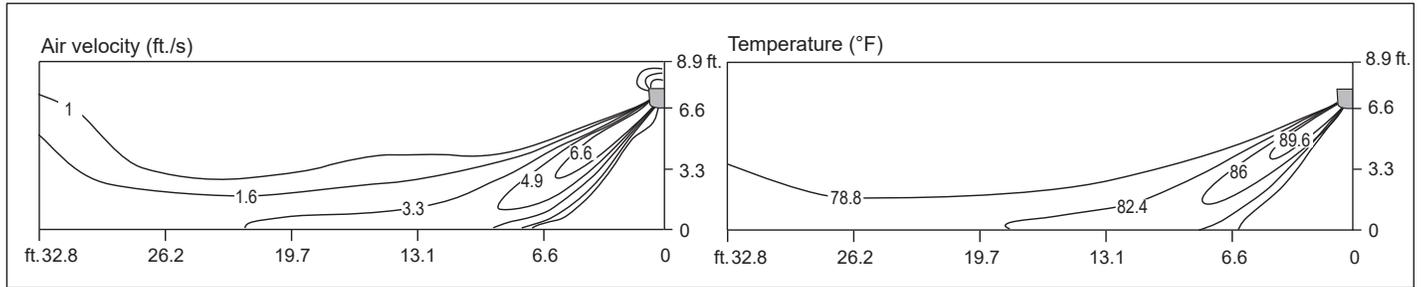


Air Velocity / Temperature Distribution

Figure 42: ZRNU153SJSA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating Side View

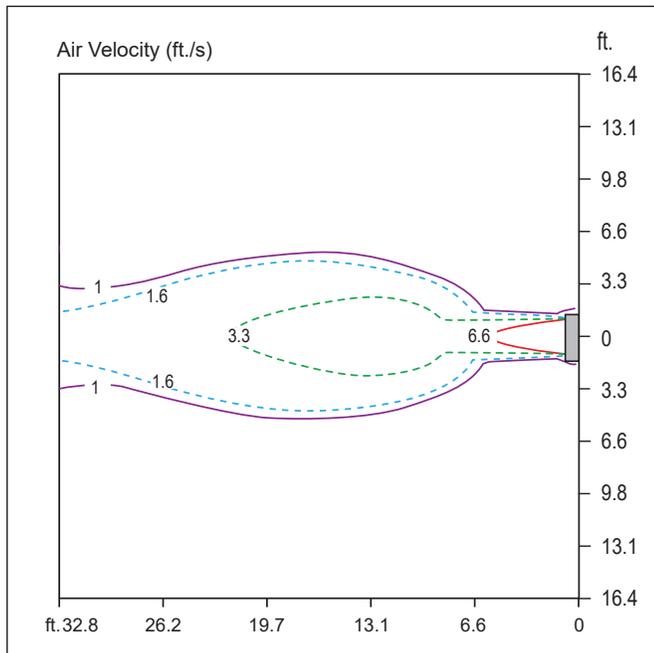
Discharge angle: 55°



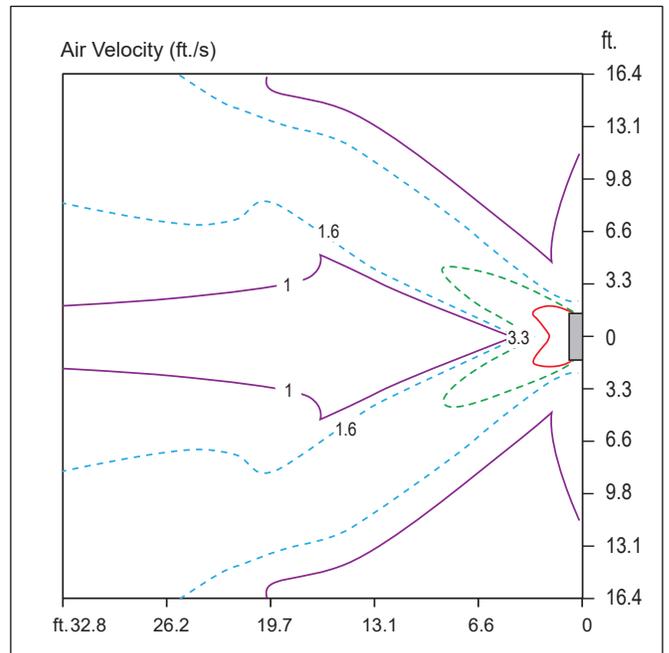
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 55°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 59.1 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 61.7 ft.
- Fan Speed : High

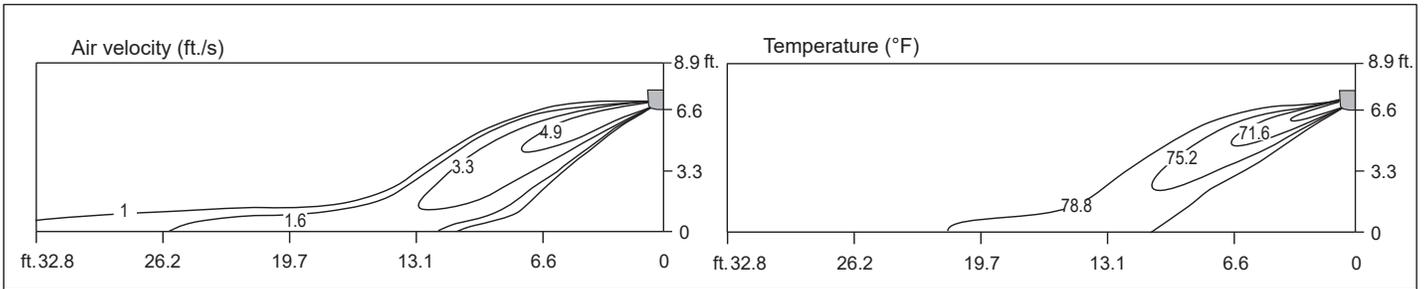


Figure 43: ZRNU183SKSA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

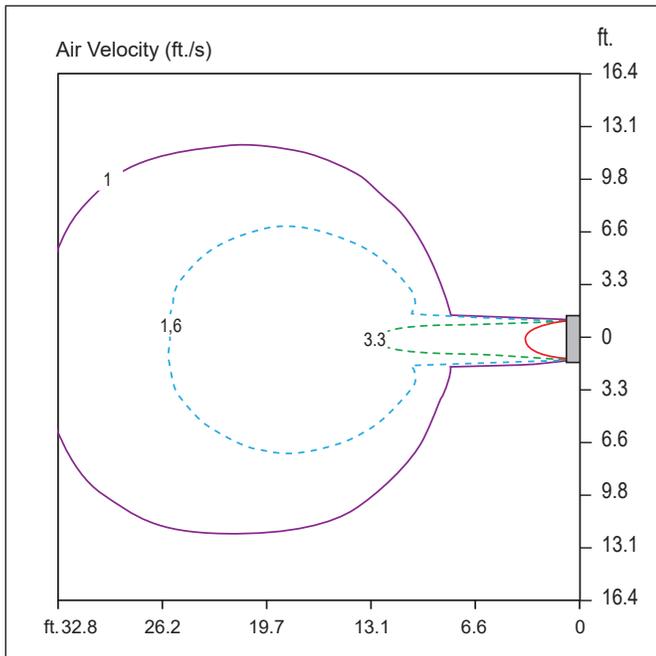
Discharge angle: 25°



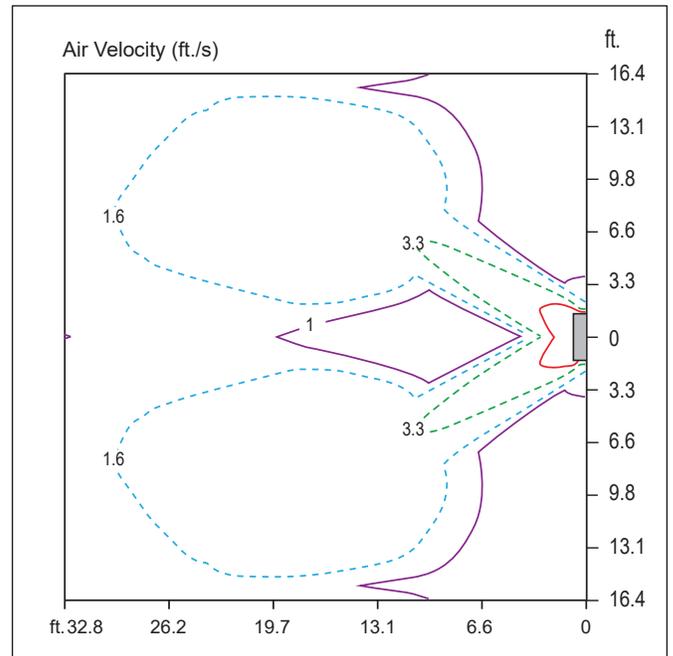
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 25°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 34.1 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 49.9 ft.
- Fan Speed : High

STANDARD WALL-MOUNTED



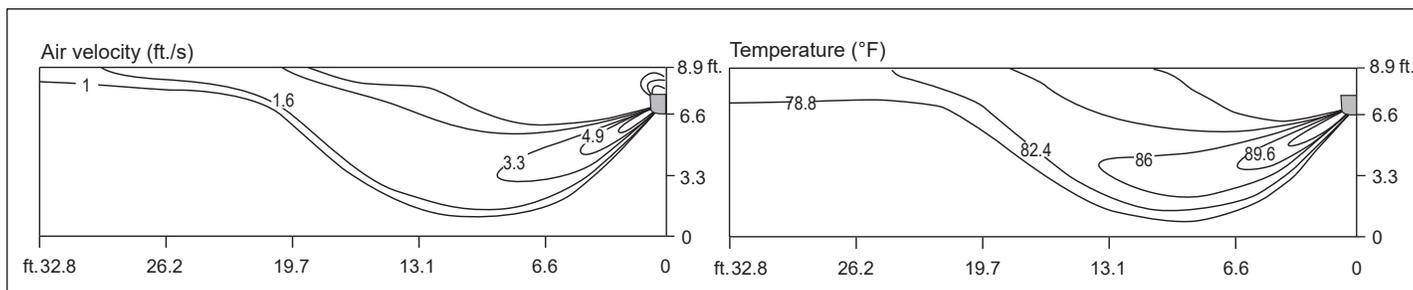
Air Velocity / Temperature Distribution

Figure 44: ZRNU183SKSA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

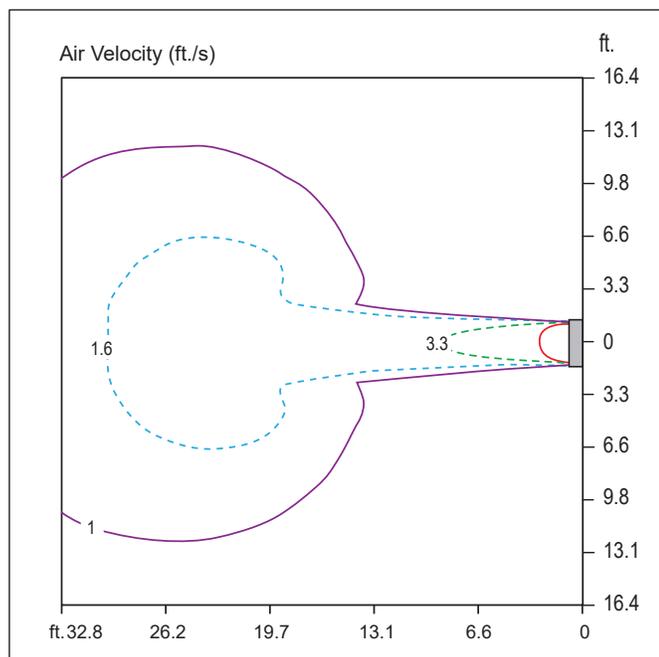
Discharge angle: 45°



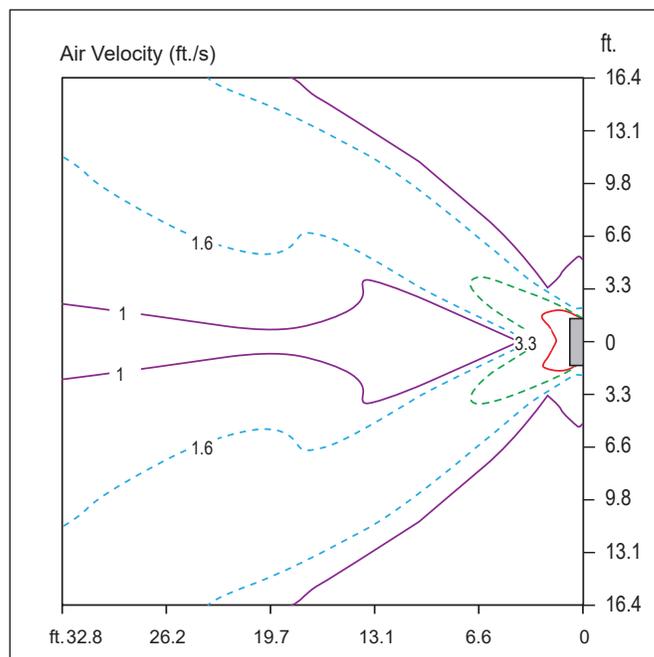
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 45°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 38.1 ft.
- Fan Speed : High



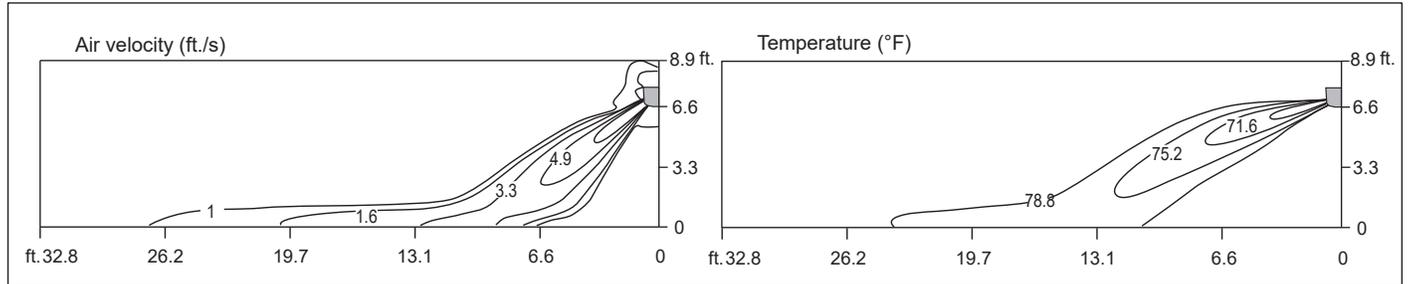
- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 59.7 ft.
- Fan Speed : High

Figure 45: ZRNU243SKSA Indoor Unit Cooling Air Velocity / Temperature Distribution Graphs.

Cooling

Side View

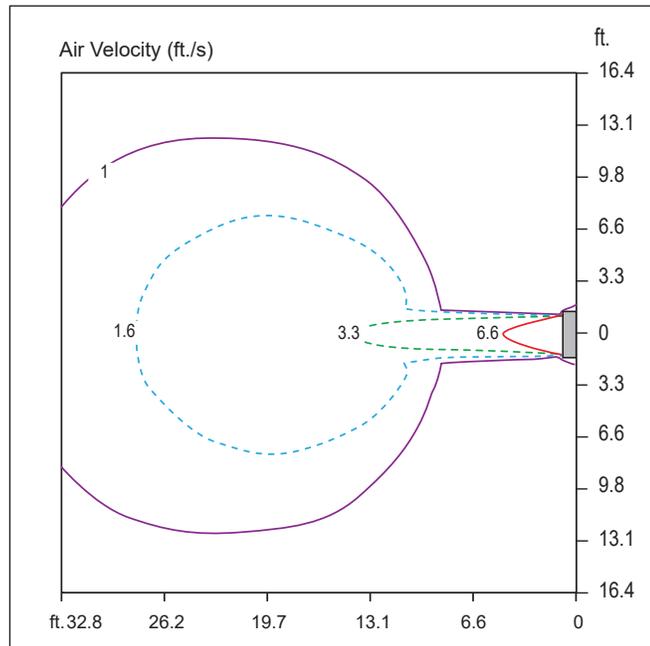
Discharge angle: 25°



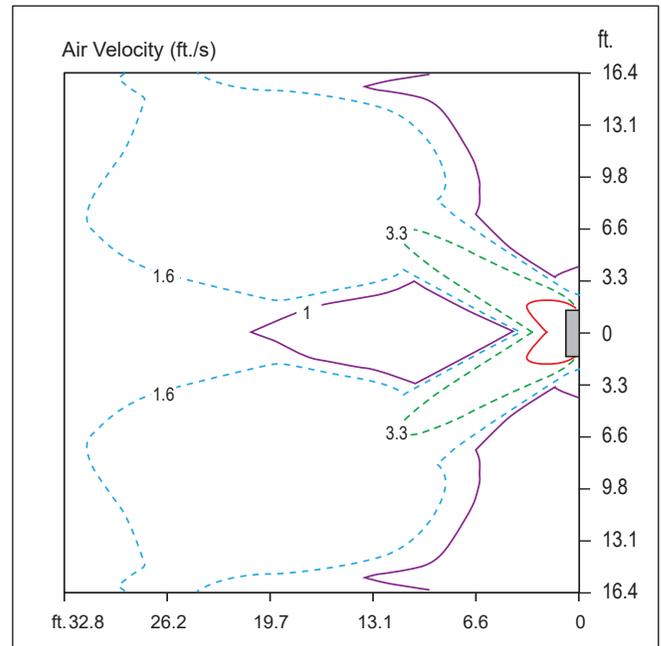
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 25°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 36.7 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 54.1 ft.
- Fan Speed : High

STANDARD WALL-MOUNTED



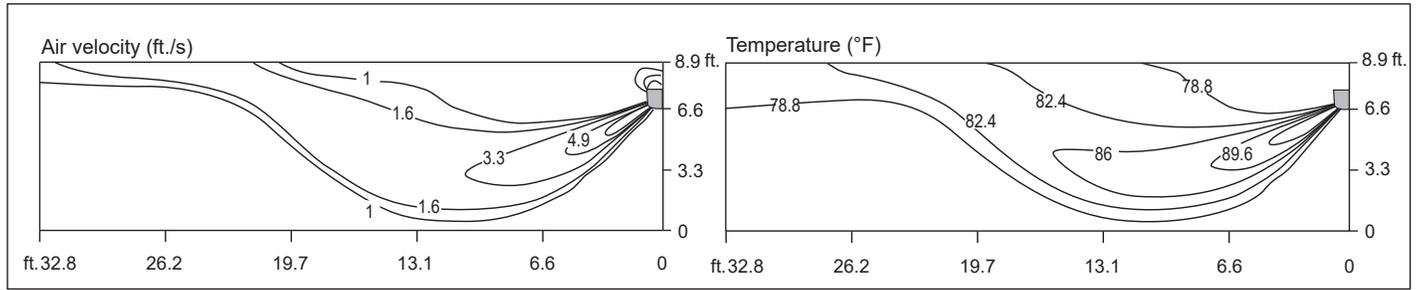
Air Velocity / Temperature Distribution

Figure 46: ZRNU243SKSA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

Heating

Side View

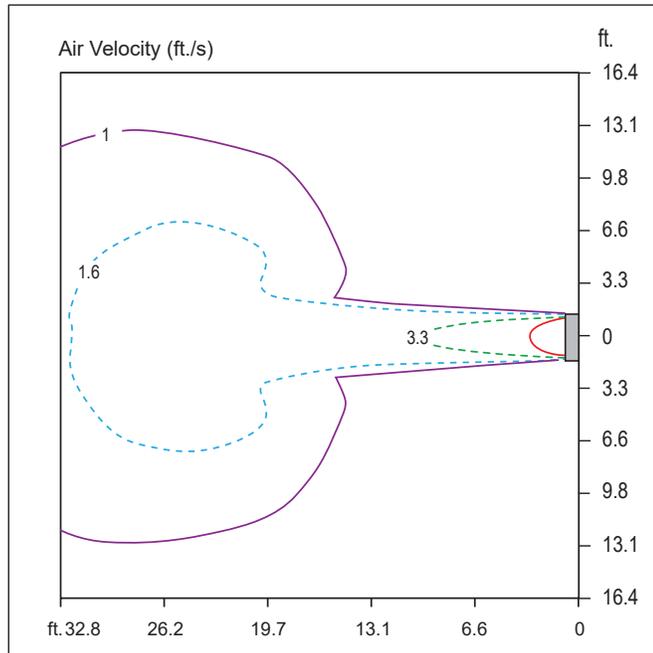
Discharge angle: 45°



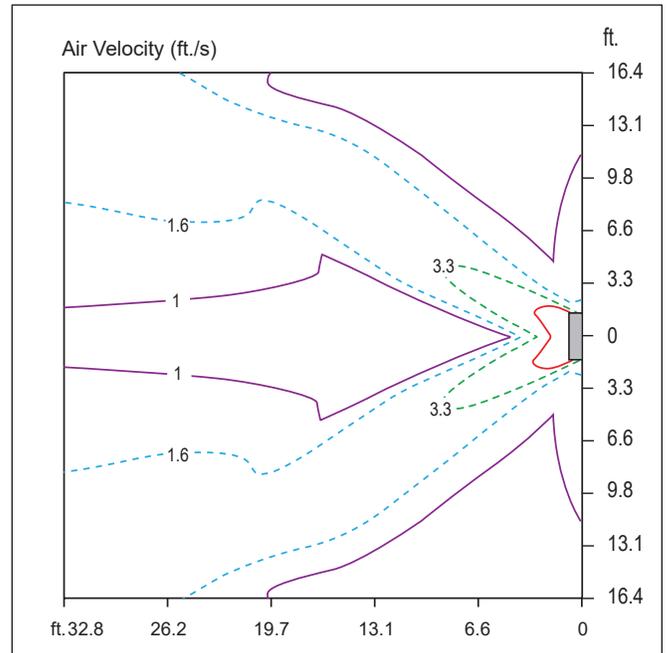
- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Fan Speed : High

Top View

Discharge angle: 45°



- Vertical Louver : Center
- Vertical Louver Angle : 0°
- Air Speed 1 ft./s Range : 39.7 ft.
- Fan Speed : High



- Vertical Louver : Left and Right
- Vertical Louver Angle : 50°
- Air Speed 1 ft./s Range : 49.9 ft.
- Fan Speed : High

Figure 47: ZRNU303SRSA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.

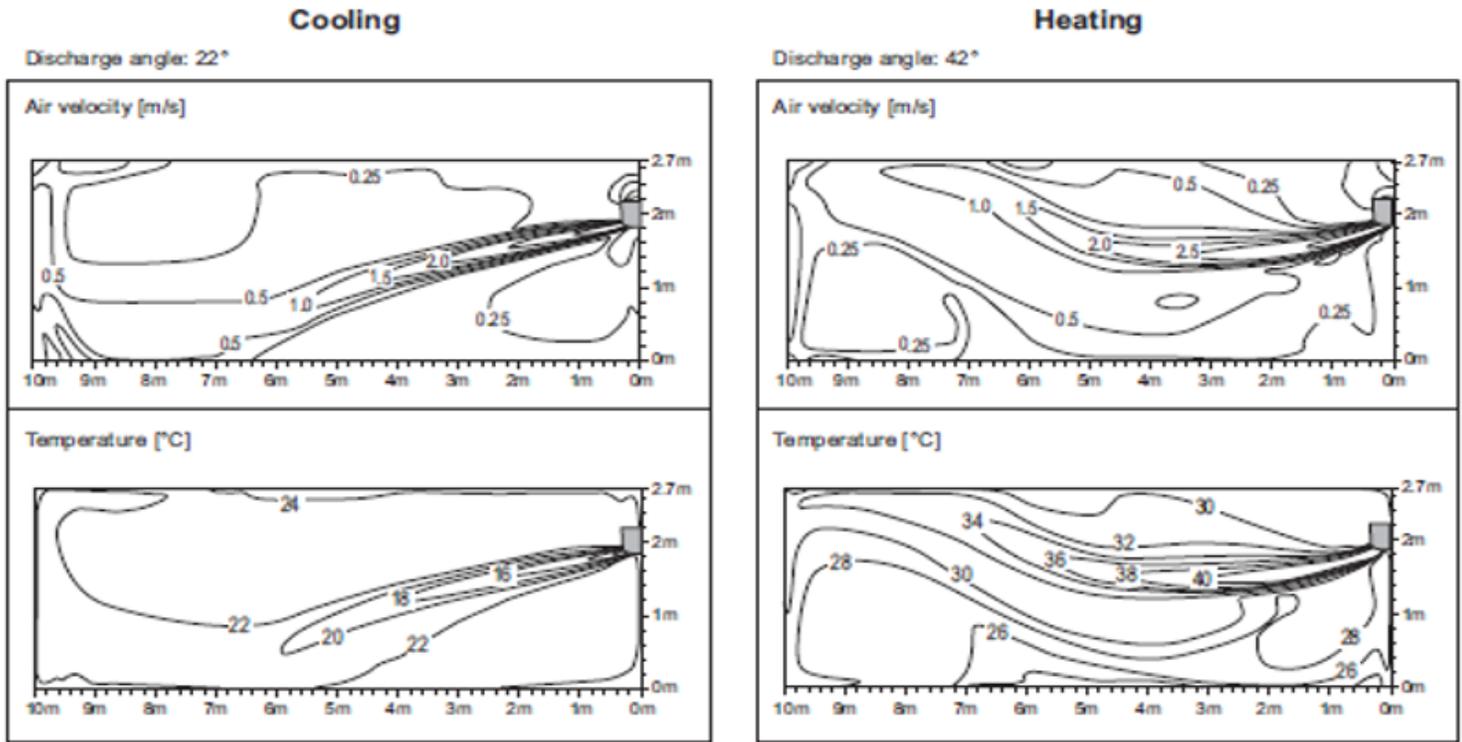
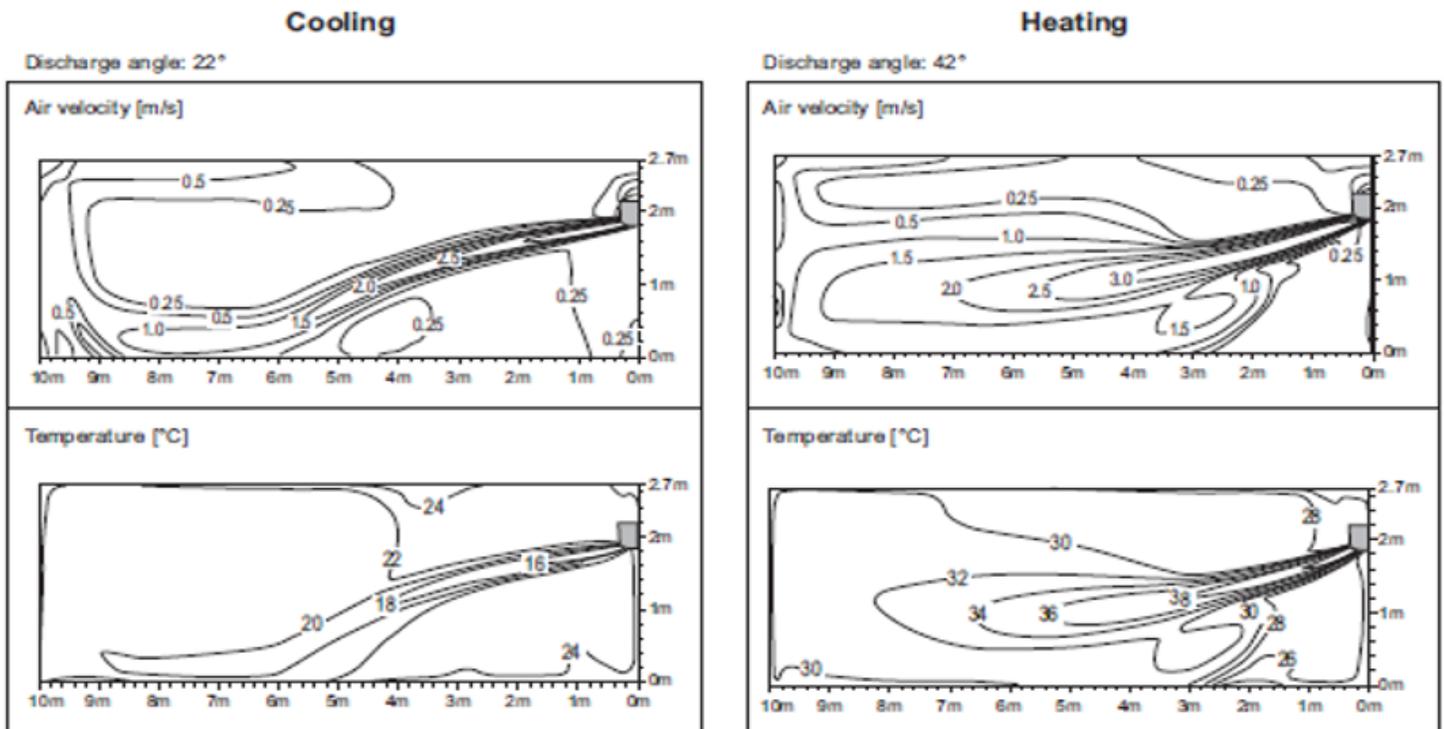


Figure 48: ZRNU363SRSA Indoor Unit Heating Air Velocity / Temperature Distribution Graphs.



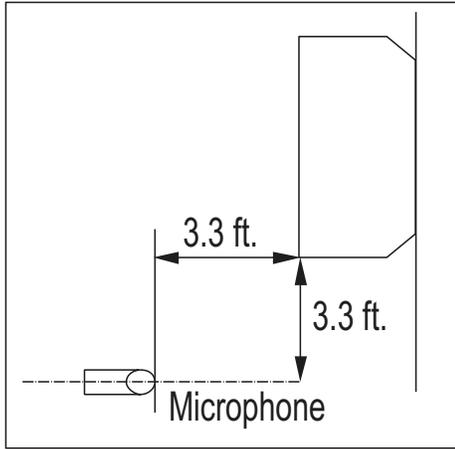
STANDARD WALL-MOUNTED



Acoustic Data

Sound Pressure Levels

Figure 49: Sound Pressure Measurement Location.



- Measurements are taken 3.3 feet away from the front of the unit.
- Sound pressure levels are measured in dB(A) with a tolerance of ± 3 .
- Data is valid under nominal operating conditions.
- Sound pressure levels are tested in an anechoic chamber under ISO Standard 3745.
- Reference acoustic pressure: 0dB = 20 μ Pa.
- Operating Conditions:
 - Power source: 220V/60 Hz
 - Sound level will vary depending on a range of factors including the construction (acoustic absorption coefficient) of a particular room in which the unit was installed.

Table 24: Standard Wall-Mounted Indoor Unit Sound Pressure Levels.

Model	Sound Pressure Levels dB(A)		
	High Fan Speed	Medium Fan Speed	Low Fan Speed
<i>SJ Frames</i>			
ZRNU053SJSA	30	29	28
ZRNU073SJSA	32	30	28
ZRNU093SJSA	34	32	28
ZRNU123SJSA	37	34	30
ZRNU153SJSA	42	39	32
<i>SK Frames</i>			
ZRNU183SKSA	43	39	34
ZRNU243SKSA	46	41	34
<i>SR Frames</i>			
ZRNU303SRSA	46	42	38
ZRNU363SRSA	51	46	42

Figure 51: ZRNU053SJSA, ZRNU073SJSA, and ZRNU093SJSA Sound Pressure Level Diagrams.

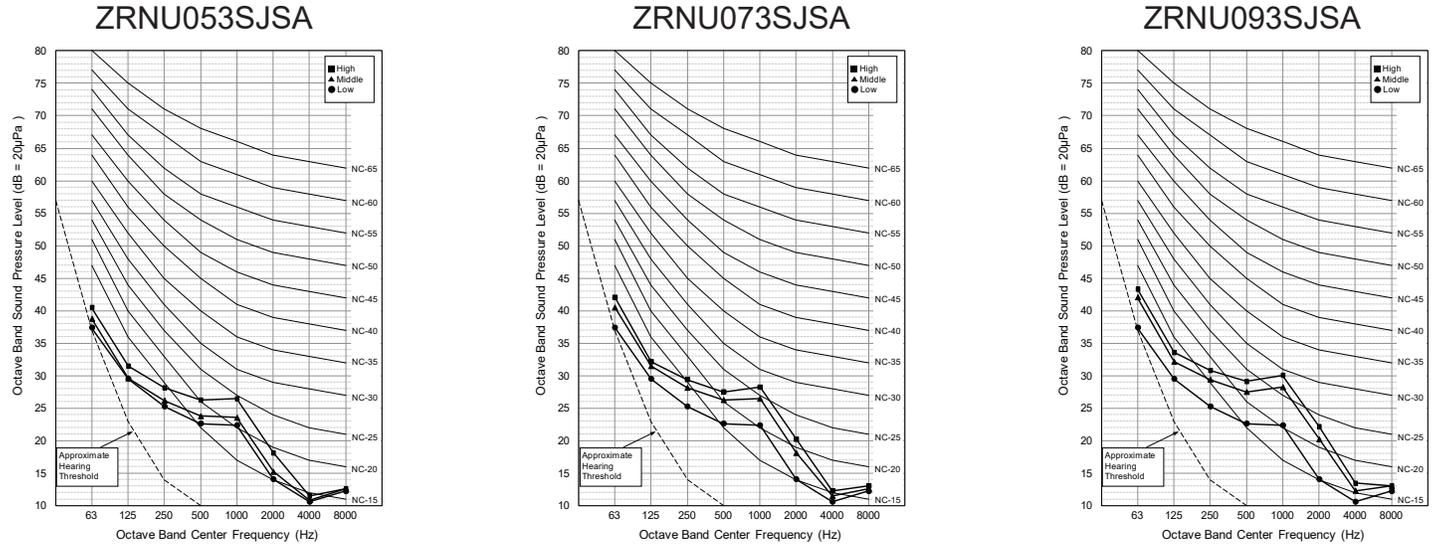
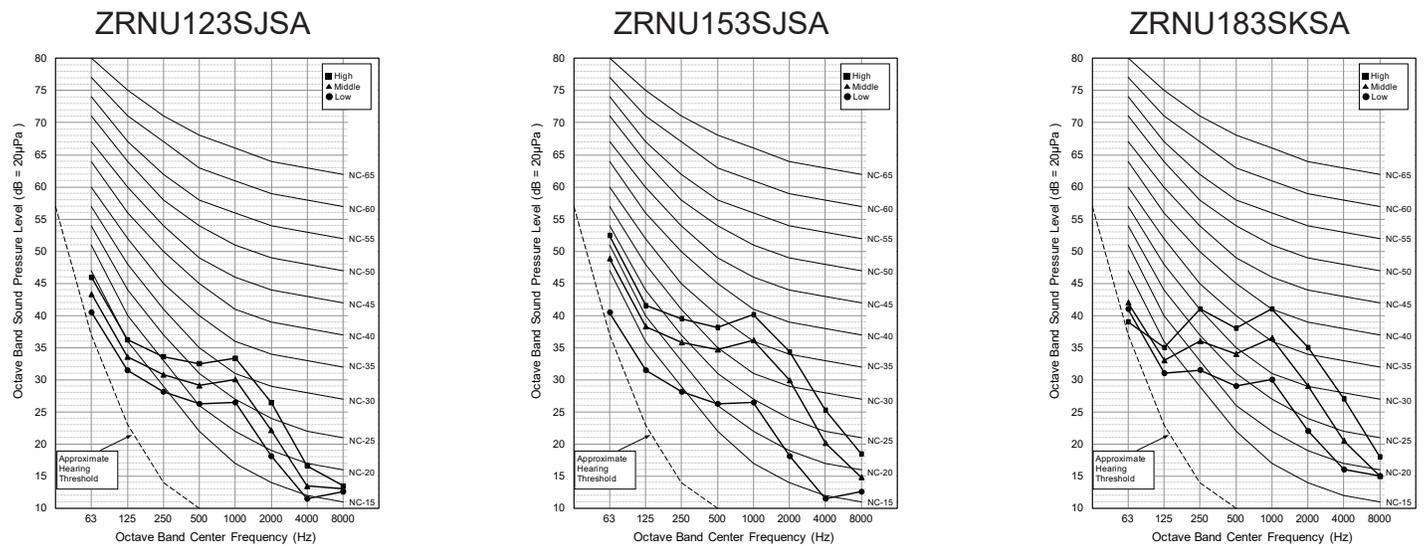


Figure 50: ZRNU123SJSA, ZRNU153SJSA, and ZRNU183SKSA Sound Pressure Level Diagrams.



STANDARD WALL-MOUNTED



Acoustic Data

Sound Pressure Levels

Figure 52: ZRNU243SKSA Sound Pressure Level Diagram.

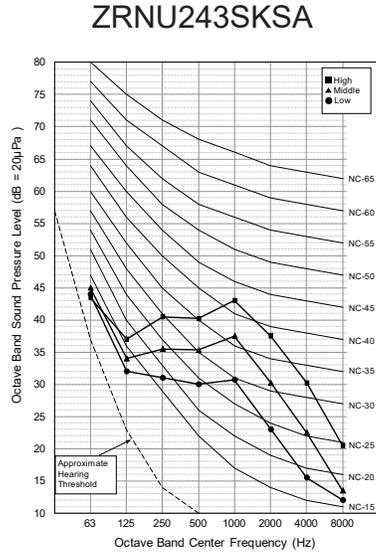


Figure 53: ZRNU303SRSA, ZRNU363SRSA Sound Pressure Level Diagram.

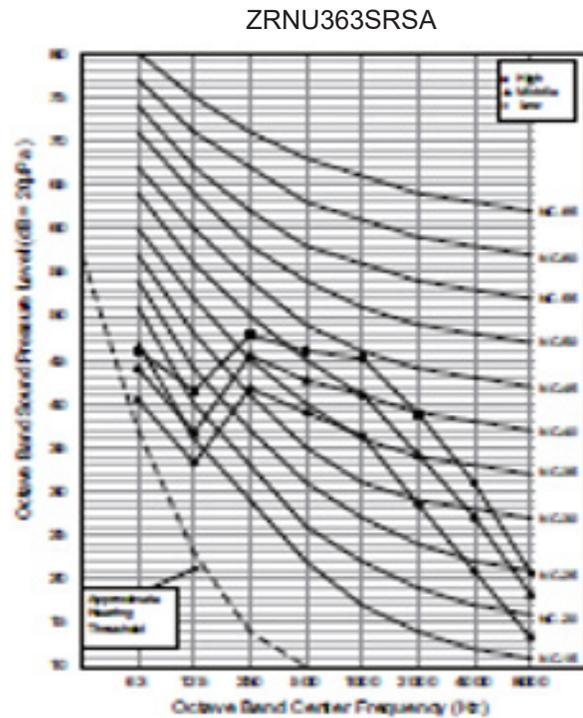
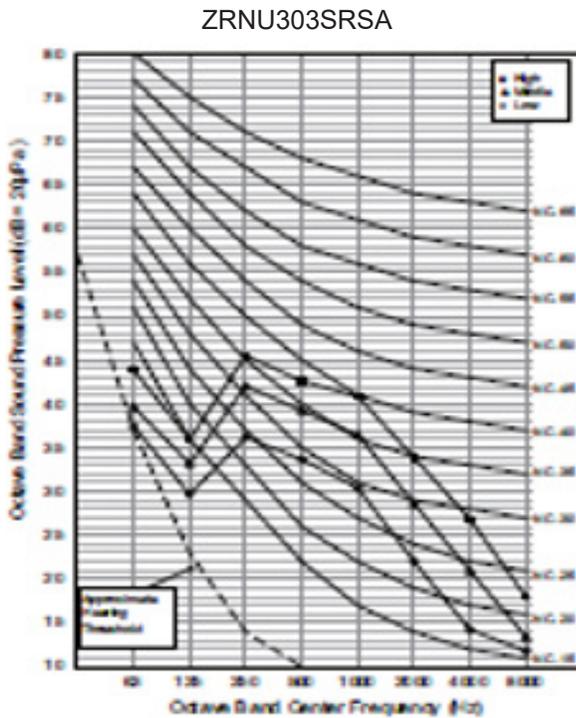
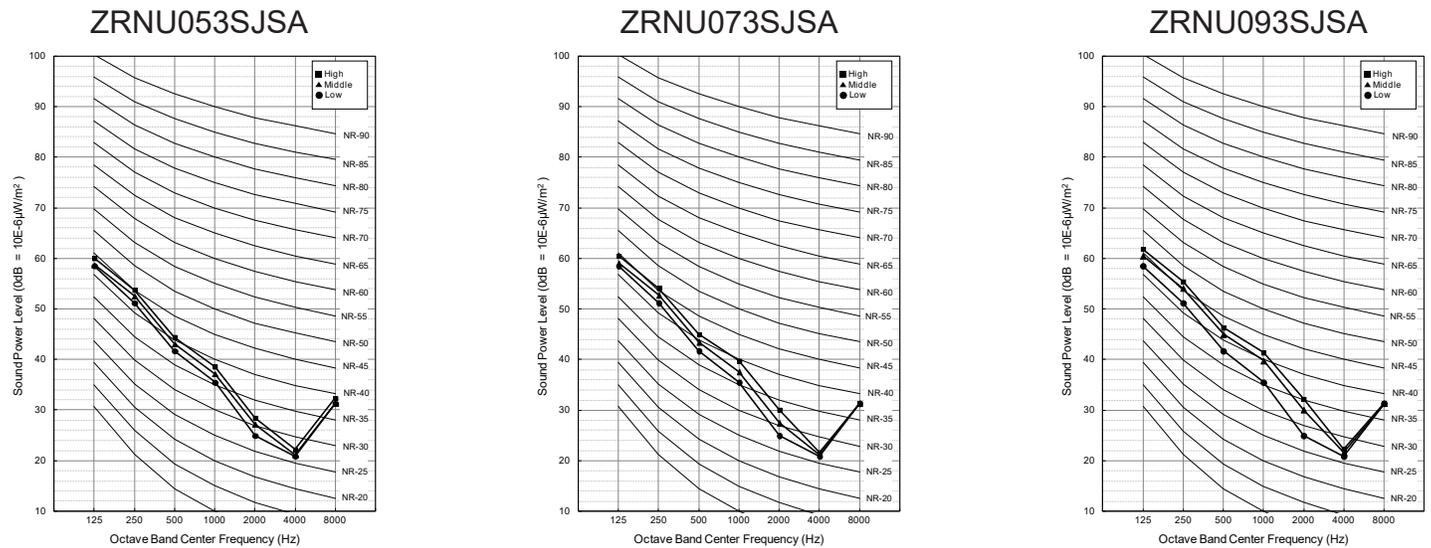


Table 25: Standard Wall-Mounted Indoor Unit Sound Power Levels.

Model	Sound Power Levels dB(A)
	High Fan Speed
<i>SJ Frames</i>	
ZRNU053SJSA	54
ZRNU073SJSA	54
ZRNU093SJSA	55
ZRNU123SJSA	55
ZRNU153SJSA	58
<i>SK Frames</i>	
ZRNU183SKSA	63
ZRNU243SKSA	65

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

Figure 54: ZRNU053SJSA, ZRNU073SJSA, and ZRNU093SJSA Sound Power Level Diagrams.



STANDARD WALL-MOUNTED



Acoustic Data

Sound Power Levels

Figure 55: ZRNU123SJSJA, ZRNU153SJSJA, and ZRNU183SKSA Sound Power Level Diagrams.

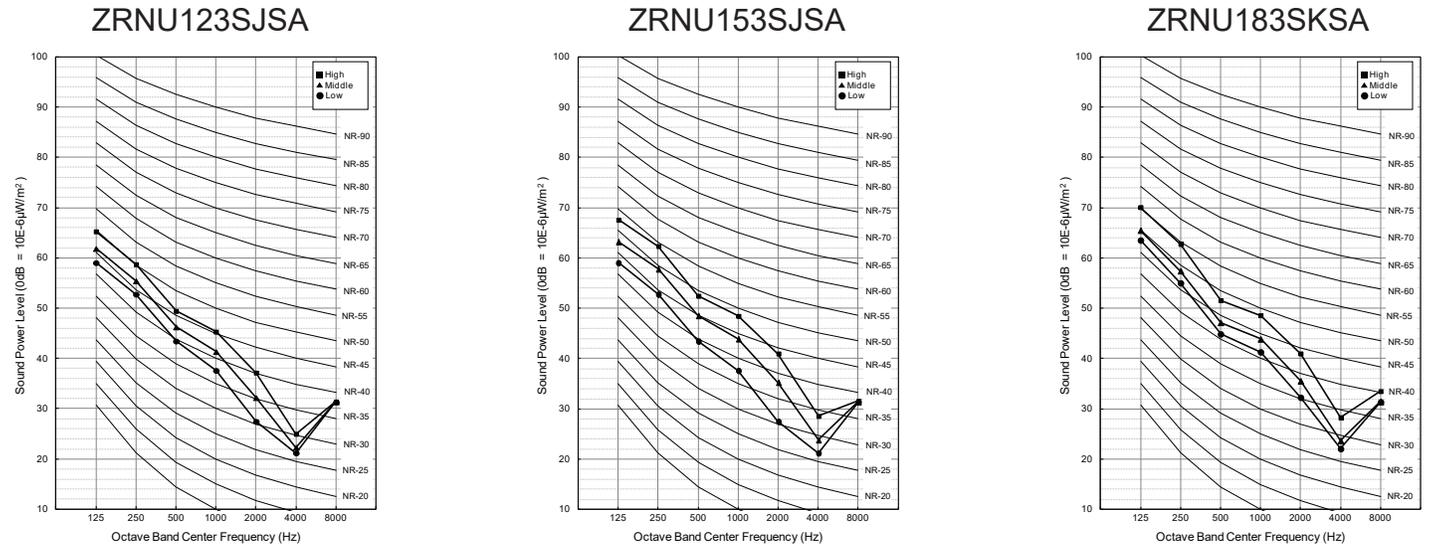


Figure 56: ZRNU243SKSA Sound Power Level Diagram.

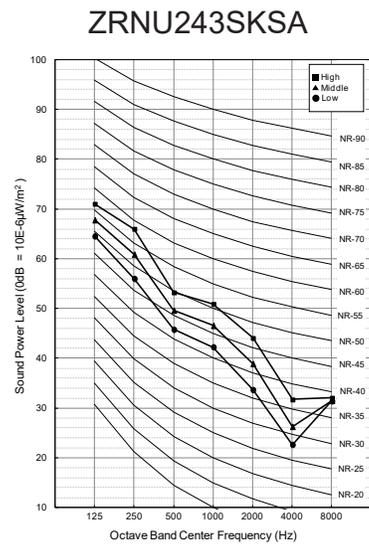


Table 26: Standard Wall-Mounted Indoor Unit Cooling Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp. (°F DB)	Indoor Air Temperature (°F DB / WB)													
		68 / 57		73 / 61		79 / 64		80 / 67		85 / 70		88 / 73		91 / 76	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
<i>SJ Frames</i>															
ZRNU053SJSA / 5.5	95	3.6	3.7	4.4	4.3	5.0	4.6	5.5	4.9	5.9	5.1	6.0	4.9	6.1	4.6
ZRNU073SJSA / 7.5	95	4.9	4.7	6.0	5.4	6.8	5.7	7.5	6.1	8.0	6.3	8.2	6.0	8.3	5.7
ZRNU093SJSA / 9.6	95	6.3	5.6	7.7	6.4	8.6	6.8	9.6	7.3	10.3	7.6	10.5	7.2	10.6	6.8
ZRNU123SJSA / 12.3	95	8.1	6.7	9.8	7.7	11.1	8.2	12.3	8.7	13.2	9.1	13.4	8.6	13.6	8.2
ZRNU153SJSA / 15.4	95	10.1	8.4	12.3	9.7	13.9	10.4	15.4	11.0	16.5	11.5	16.8	10.9	17.1	10.3
<i>SK Frames</i>															
ZRNU183SKSA / 19.1	95	12.6	10.4	15.3	12.0	17.2	12.7	19.1	13.6	20.5	14.1	20.9	13.4	21.2	12.6
ZRNU243SKSA / 24.2	95	15.9	13.0	19.4	15.0	21.8	15.9	24.2	17.0	25.9	17.7	26.4	16.8	26.8	15.8
<i>SR Frames</i>															
ZRNU303SRSA / 30	95	20.1	17.7	24.2	19.4	28.0	21.2	30.0	21.5	32.1	22.5	32.4	21.2	33.1	19.5
ZRNU363SRSA / 36	95	23.9	20.4	28.3	22.5	33.1	24.2	35.5	24.9	37.9	26.0	38.6	24.2	38.9	22.5

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

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

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

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

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

STANDARD WALL-MOUNTED



Heating Capacity Table

Table 27: Standard Wall-Mounted Indoor Unit Heating Capacity Table.

Model No. / Capacity Index	Outdoor Air Temp.		Indoor Air Temperature (°F DB)							
			59	61	64	67	70	73	76	80
	°F DB	°F WB	TC	TC	TC	TC	TC	TC	TC	TC
<i>SJ Frames</i>										
ZRNU053SJSA / 5.5	47	43	6.8	6.8	6.7	6.4	6.1	5.9	5.6	5.3
ZRNU073SJSA / 7.5	47	43	9.5	9.4	9.4	8.9	8.5	8.3	7.8	7.4
ZRNU093SJSA / 9.6	47	43	12.2	12.1	12.0	11.5	10.9	10.6	10.0	9.5
ZRNU123SJSA / 12.3	47	43	15.2	15.1	15.0	14.3	13.6	13.2	12.5	11.9
ZRNU153SJSA / 15.4	47	43	19.2	19.0	18.8	18.0	17.1	16.6	15.7	15.0
<i>SK Frames</i>										
ZRNU183SKSA / 19.1	47	43	24.1	23.9	23.7	22.6	21.5	20.9	19.8	18.8
ZRNU243SKSA / 24.2	47	43	28.7	28.4	28.2	26.9	25.6	24.8	23.6	22.4
<i>SR Frames</i>										
ZRNU303SRSA / 30	47	43	-	36.2	34.1	32.1	31.1	30.0	28.0	-
ZRNU363SRSA / 36	47	43	-	41.6	39.2	36.9	35.8	34.5	32.1	-

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

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

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

Current certified ratings are available at www.ahridirectory.org.

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

Table 28: Accessories Overview (Sold Separately).

Accessory	Model Number
Auxiliary Heater Kit ¹ For Use With All Standard Wall-Mounted Indoor Units	PRARS1
WiFi Module For Use With All Standard Wall-Mounted Indoor Units	PWFMD200

¹If a Third-Party Dry Contact and an LG internal heater or an LG Auxiliary Heater Kit is installed, supplemental heat capability cannot be controlled by the Third-Party Thermostat.

APPLICATION GUIDELINES

Selecting the Best Location on page 79

General Mounting on page 80

General Drain Piping Information on page 81

Wiring Guidelines on page 83

Controllers on page 85

Selecting the Best Location

Do's

- Place the unit where air circulation will not be blocked.
- Place the unit where drainage can be obtained easily and to minimize the length of the condensate drain piping.
- Place the unit where noise prevention is taken into consideration.
- Ensure there is sufficient space from the ceiling and floor.
- Ensure there is sufficient maintenance space.
- Locate the indoor unit in a location where it can be easily connected to the outdoor unit / heat recovery unit.

Do Not's

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

WARNING

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

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

NOTICE

- Indoor units (IDUs) must not be placed in an environment where the IDUs will be exposed to harmful volatile organic compounds (VOCs) or in environments where there is improper air make up or supply or inadequate ventilation. If there are concerns about VOCs in the environment where the IDUs are installed, proper air make up or supply and / or adequate ventilation should be provided.
- If the unit is installed near a body of water, the installation parts are at risk of corroding. Appropriate anti-corrosion methods must be taken for the unit and all installation parts.

Installing in an Area Exposed to Unconditioned Air

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

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

Figure 57: Minimum Clearance Requirements For SJ, SK, SR Frame Wall-Mounted Indoor Units.

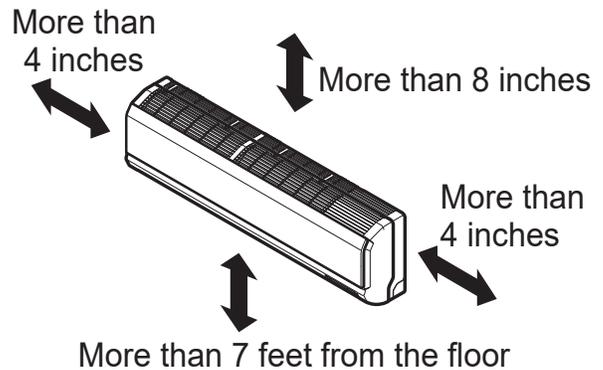
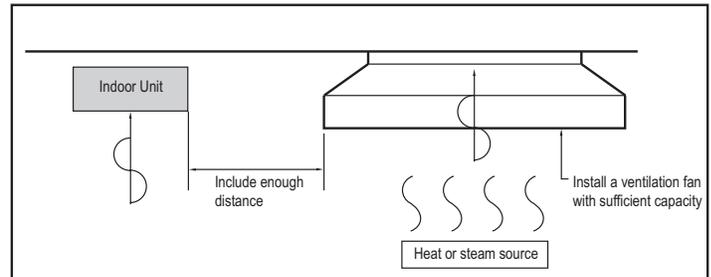


Figure 58: Installing Near a Heat or Steam Source.



General Mounting

General Mounting

Wall mounted indoor units have several options on how the piping and wiring can be routed (see figures at right and below). Whichever way the piping and wiring are routed out of the indoor units, the mounting wall on which the indoor unit is installed must be strong and solid enough to protect it from vibration.

- Mount the installation plate on the wall using the Type "A" screws. If mounting the unit on concrete, consider using anchor bolts.
- Always mount the installation plate horizontally. Measure the wall and mark the centerline using thread and a level.

Figure 59: Choice of SJ, SK, SR Frame Piping / Wiring Routes.

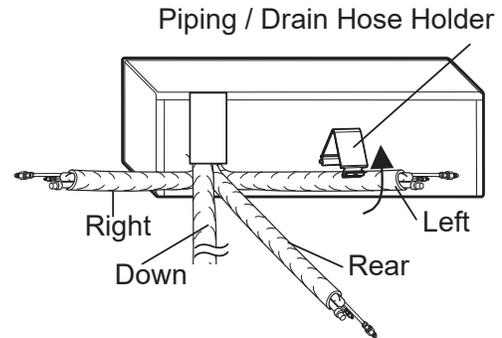


Figure 60: SJ Frame Wall-Mounted Installation Plate.

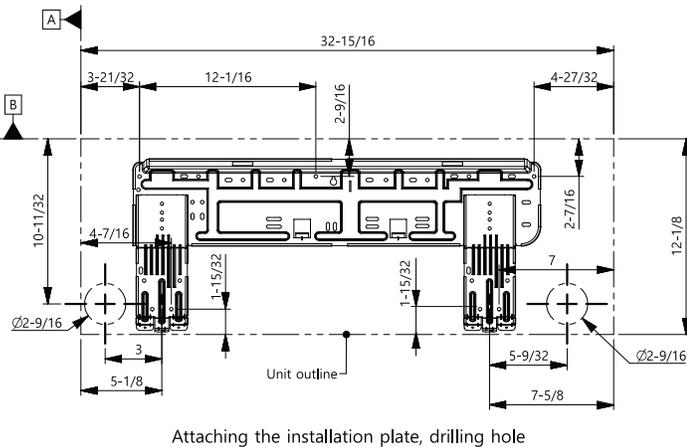


Figure 61: SK Frame Wall-Mounted Installation Plate.

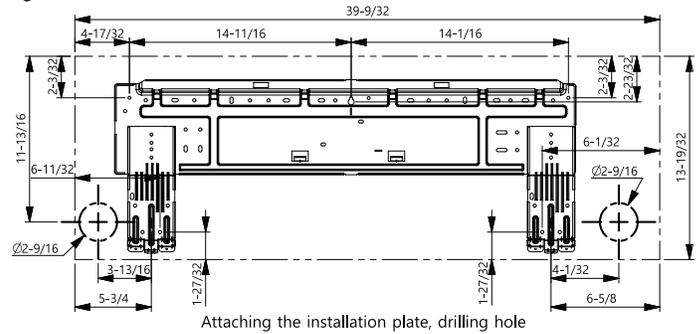
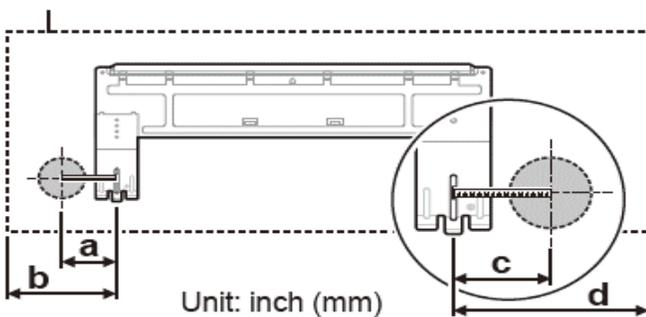


Figure 62: SR Frame Wall-Mounted Installation Plate.

Framework of Indoor Unit



	a	b	c	d
Type B	8 5/8 (219)	10 15/32 (266)	6 27/64 (163)	8 25/64 (213)
Type C	3 25/64 (86)	5 5/32 (131)	6 19/64 (160)	8 25/64 (213)

General Drain Piping Information

All wall-mounted indoor units generate water during cooling operation, therefore, properly handling this condensation must be considered. Wall-mounted indoor units apply the gravity drain method, but a field-supplied condensate pump can be installed (optional, sold separately). Depending on the location of the indoor unit, condensation can be drained directly to the outside of the building, or a common indoor unit drainage piping system can be installed.

NOTICE

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

Drain Hose

Wall-mounted indoor units have a built-in drain hose. If necessary, the drain hose can be extended. When the bottom surface of the indoor unit is at an elevation below the receiving drain line connection, install an inverted trap at the top of the condensate pump discharge riser before connection to the drain pipe.

When the receiving drain line is mounted horizontal, connect the inverted trap to the top half of the pipe. The connection point of the inverted trap to the drain pipe must always be to the top half of the pipe and must never be over 45° either side of the upper most point of the horizontal drain line.

If connecting to a vertical drain line, connect the IDU condensate pump discharge line using a Y-45 fitting with the double end of the Y-45 fitting facing up. When connecting to a vertical drain line include an inverted trap at the top of the IDU condensate pump discharge riser before connection to the Y-45 fitting.

Drain Piping

- Drain piping must have down slope (1/50 to 1/100).
- Any holes through the ceilings, walls, etc., must be large enough to accommodate the drain piping and insulation.
- ⊘ To prevent reversal flow, do not install with an up / down slope.
- ⊘ Do not exert extra force on the drain port on the indoor unit during drain piping connection.

Drain Leak Test

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

Drain Pipe Insulation

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

NOTICE

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

Figure 64: Diagram of an Indoor Unit Gravity Drain.

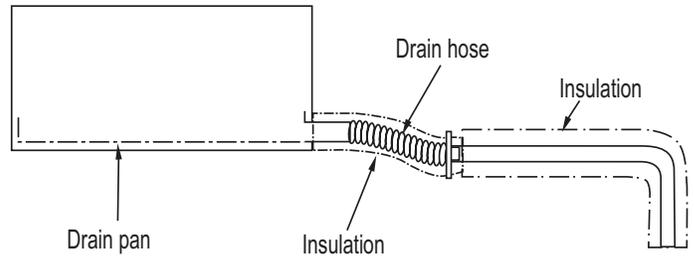
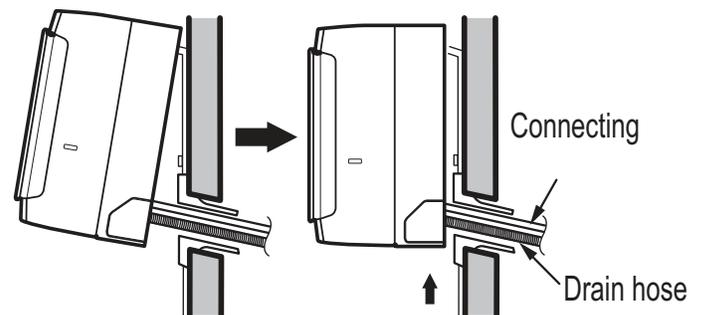


Table 29: Wall-Mounted Indoor Unit Drain Piping Specifications.

Indoor Unit	Drain Type	Drain Pipe Dia. (ID, in.)
SJ Frame Wall-Mounted	Gravity	Ø5/8
SK Frame Wall-Mounted		
SR Frame Wall-Mounted		

Figure 63: Drain Piping Slope.



APPLICATION GUIDELINES

General Drain Piping Information

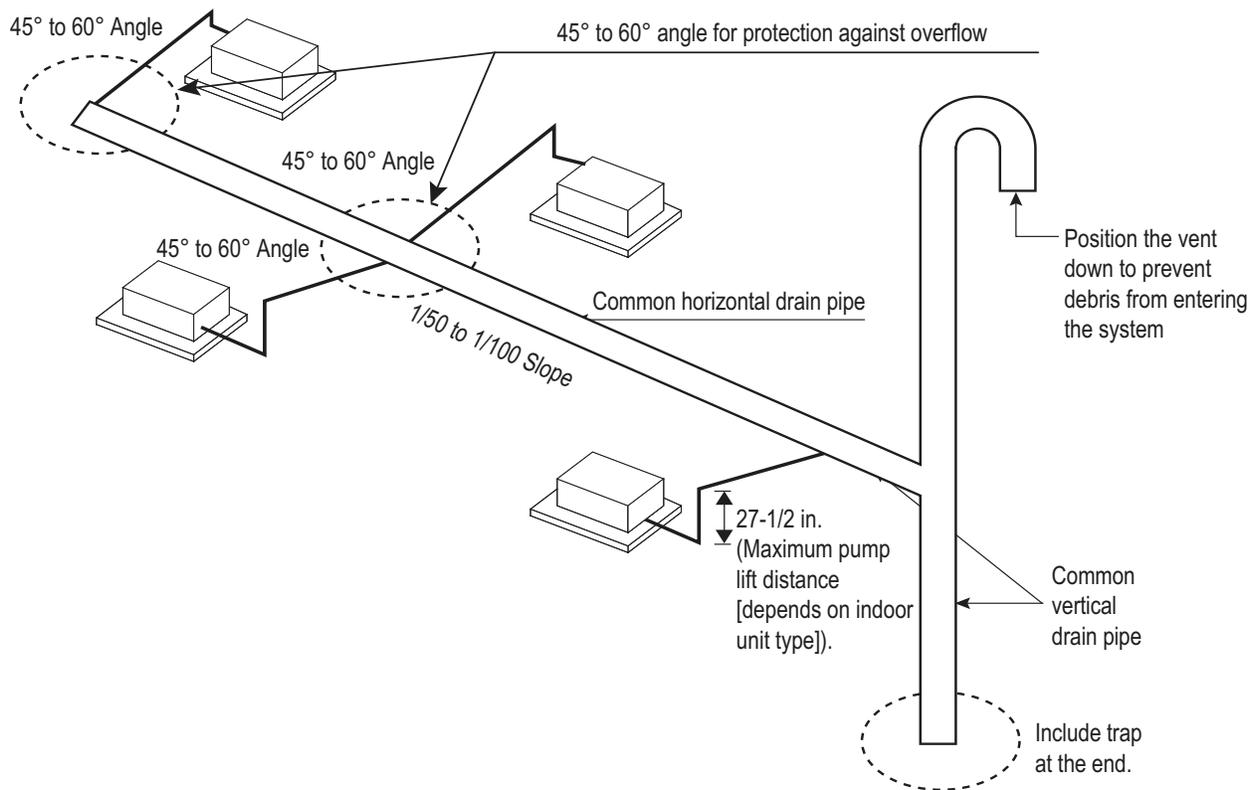
Common Indoor Unit Drainage System

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

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

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

Figure 65: Example of a Common Indoor Unit Drainage System.



NOTICE

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

General Power Wiring / Communications Cable Guidelines

- Follow manufacturer’s circuit diagrams displayed on the inside of the control box cover.
- Have a separate power supply for the indoor units.
- Provide a circuit breaker switch between the power source and the indoor unit.
- Confirm power source specifications.
- Confirm that the electrical capacity is sufficient.
- Starting current must be maintained ± 10 percent of the rated current marked on the name plate.
- Confirm wiring / cable thickness specifications:
 - Power wiring is field supplied. Wire size is selected based on the larger MCA value, and must comply with the applicable local and national codes.
 - Communication cable between main ODU to IDUs / HRUs to be 18 AWG, 2-conductor, twisted, stranded, shielded. Ensure the communication cable shield is properly grounded to the main ODU chassis only. Ⓞ Do not ground the ODU to IDUs / HRUs 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 unit 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.*
- *A voltage drop may cause the following problems:*
 - *Magnetic switch vibration, fuse breaks, or disturbance to the normal function of an overload protection device.*
 - *Compressor will not receive the proper starting current.*

Power Wiring and Communications Cable Connections

1. Insert the power wiring / communications cable from the outdoor unit or heat recovery unit (Heat Recovery systems only) through the access hole of the indoor unit (ground wire must be longer than the other wires / cables) and to the control board using the designated path. If a control board cover is present, detach it.
2. Connect each wire to its appropriate terminal on the indoor unit control board. Verify that the color and terminal numbers from the outdoor unit or heat recovery unit (Heat Recovery systems only) wiring match the color and terminal numbers on the indoor unit.
3. Secure the power wiring / communications cable to the control board. If a control board cover is present, reattach it.

Figure 66: Location of Power Wiring / Communications Cable Terminals in SJ, SK, SR Frame Indoor Units.

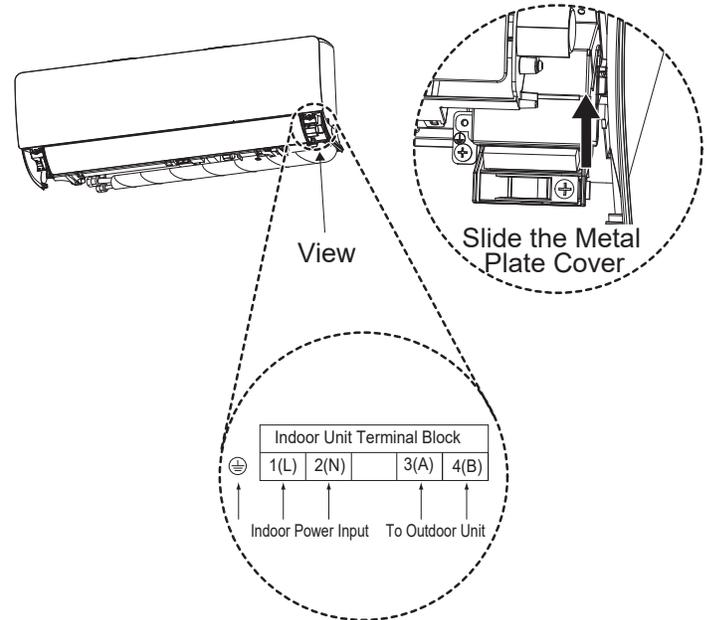
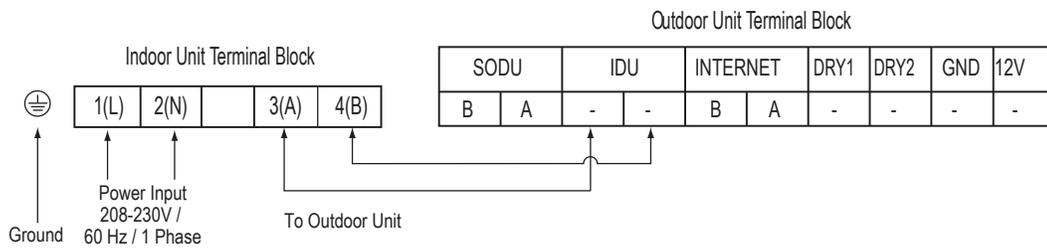


Figure 67: SJ, SK, SR Wall-Mounted Indoor Unit Wiring / Cable Connections.

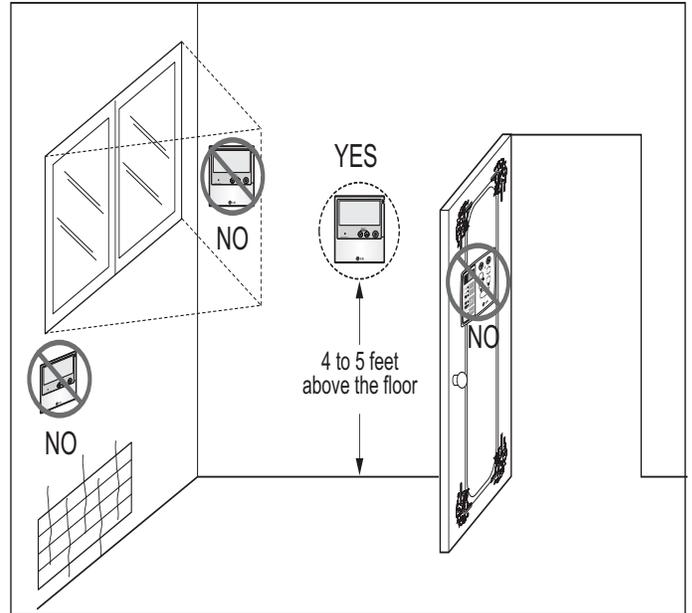


Wired Controller Placement

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

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

Figure 68: Proper Location for the Wired Controller.



Assigning the Thermistor for Temperature Detection

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

Optional WiFi Control

WiFi control is an option for wall-mounted indoor units. WiFi control requires the optional WiFi module PWFMD200 and the ThinQ app on a compatible device such as a smartphone. Install the WiFi module by connecting it to the CN_WF / CN_WiFi connector on the indoor unit motherboard. Refer to the ThinQ manual for operation details.

LIMITED WARRANTY (USA)

MULTI V™

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

Inverter



LG Electronics, U.S.A., Inc.
Air Conditioning Technologies
4300 North Point Parkway
Alpharetta, Georgia 30022
www.lghvac.com

EM_MultiV_WallMounted_IndoorUnits_R32_12_25
Supersedes: EM_MultiV_WallMounted_IndoorUnits_R32_05_25
EM_MultiV_WallMounted_IndoorUnits_R32_12_24