R32 SINGLE-ZONE STANDARD EFFICIENCY, MEGA, AND MEGA 115V WALL-MOUNTED ENGINEERING MANUAL



Standard Efficiency
KSSAE091A (9,000 Btu/h)
KSSAE121A (12,000 Btu/h

Mega
KSSAC091A (9,000 Btu/h)
KSSAC121A (12,000 Btu/h)



Standard Efficiency
KSSAE181A (18,000 Btu/h)
KSSAE241A (24,000 Btu/h)

Mega
KSSAC181A (18,000 Btu/h)
KSSAC241A (24,000 Btu/h)



Mega 115V
KSSAC091B (9,000 Btu/h)
KSSAC121B (12,000 Btu/h)

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

A summary list of safety precautions is on page 6.

Proper sizing and installation of equipment is critical to achieve optimal performance. Split system air conditioners and heat pumps (excluding ductless systems) must be matched with appropriate coil components to meet ENERGY STAR® criteria. Ask your contractor for details or visit www.energystar.gov.
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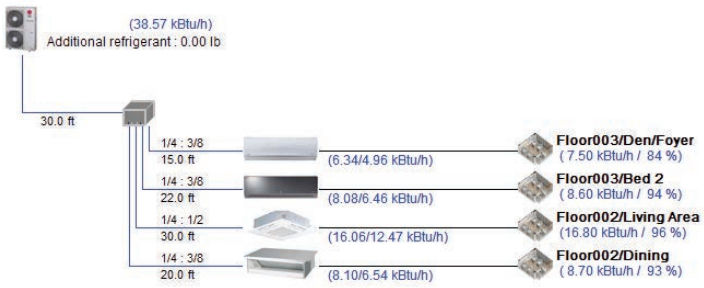
LG Air Conditioner Technical Solution (LATS) Software

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

NOTICE

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

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



Formats

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

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

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

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

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

Features

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

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

The program can also:

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

NOTICE

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

NOTICE

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

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

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

NOTICE

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

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TABLE OF SYMBOLS

A2L	*Indicates that this appliance uses a flammable refrigerant. If the refrigerant leaks and is exposed to an external ignition source, there is a risk of fire.*
DANGER	*Indicates a hazardous situation that, if not avoided, WILL RESULT IN DEATH OR SERIOUS INJURY.[1]*
WARNING	*Indicates a hazardous situation that, if not avoided, COULD RESULT IN DEATH OR SERIOUS INJURY.[1]*
CAUTION	*Indicates a hazardous situation that, if not avoided, COULD RESULT IN MINOR OR MODERATE INJURY.[1]*
NOTICE	*Indicates information considered important, but not hazard-related; indicates situations that may result in equipment or property damage accidents.[1]*
⃠	*This symbol indicates an action that should not be performed.*

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

A2L R32 Refrigerant

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

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

WARNING

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

CAUTION

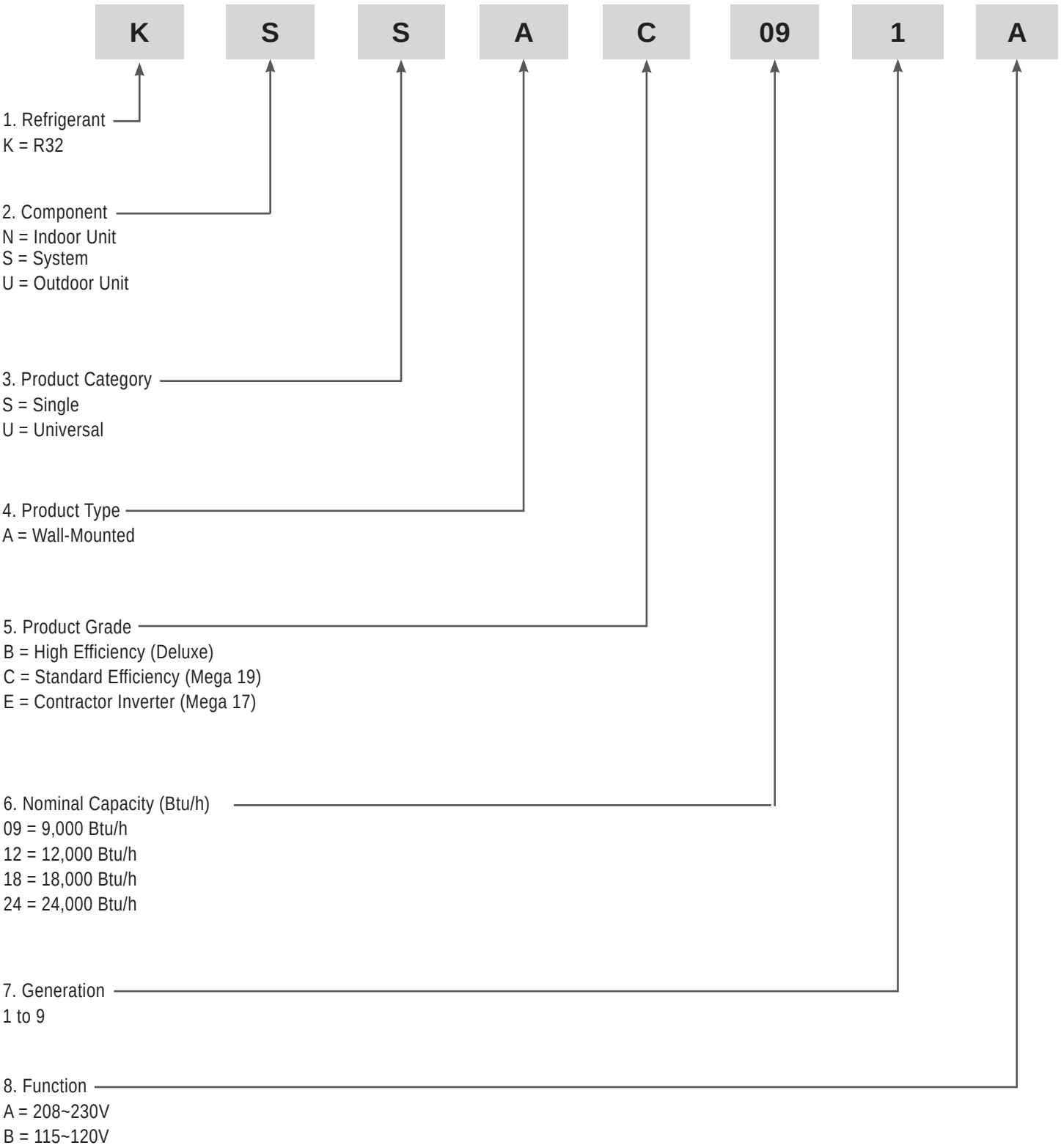
- *Piping wall thickness must comply with all applicable local, state, and federal regulations for the design pressures listed by the manufacturer. ⃠ Unapproved piping must not be used.*
- *To prevent piping from softening, ⃠ do not heat the piping more than necessary.*

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UNIT NOMENCLATURE



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PAIRING TABLE

The following tables show the available outdoor and indoor units, along with the factory provided controllers.

Table 1: Single Zone Standard Efficiency Wall-Mounted System Pairing Table.

Outdoor Unit Model	Indoor Unit Model	Controller
KUSAE091A, KUSAE121A 	KNSAE091A, KNSAE121A 	AKB76044207 
KUSAE181A, KUSAE241A 	KNSAE181A, KNSAE241A 	AKB76044207 

Table 2: Single Zone Mega Wall-Mounted System Pairing Table.

Outdoor Unit Model	Indoor Unit Model	Controller
KUSAC091A, KUSAC121A 	KNSAC091A, KNSAC121A 	AKB76044207 
KUSAC181A, KUSAC241A 	KNSAC181A, KNSAC241A 	AKB76044207 

Table 3: Single Zone Mega 115V Wall-Mounted System Pairing Table.

Outdoor Unit Model	Indoor Unit Model	Controller
KUSAC091B, KUSAC121B 	KNSAC091B, KNSAC121B 	AKB76044207 

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MECHANICAL SPECIFICATIONS

General

LG Single Zone Standard Efficiency, Mega, and Mega 115V Wall Mounted systems comprise of a single outdoor unit connected to a single indoor unit with a single refrigerant circuit.

This system is a Duct-Free Split system that can operate in either cooling or heating mode. The system shall be capable of changing mode within a maximum time of three (3) minutes to ensure indoor temperature can be properly maintained.

The system is manufactured in a facility registered to ISO 9001 and ISO 14001, which is a set of standards applying to environmental protection set by the International Organization for Standardization (ISO). Wiring in these units are in accordance with the National Electrical Code (NEC).

Temperature Ranges

Standard Efficiency and Mega

Operating ranges for outdoor unit of 14°F to 118°F (DB) for cooling; 5°F to 65°F (WB) for heating.

Operating ranges for indoor unit of 53°F to 75°F (WB) for cooling; 60°F to 86°F (DB) for heating.

Mega 115V

Operating ranges for outdoor unit of 14°F to 118°F (DB) for cooling; 5°F to 65°F (WB) for heating.

Operating ranges for indoor unit of 53°F to 75°F (WB) for cooling; 60°F to 86°F (DB) for heating.

Casing / Frame

Outdoor unit is constructed with pre-coated metal (PCM).

Indoor unit is constructed of heavy duty Acrylonitrile Butadiene Styrene (ABS) and High Impact Polystyrene (HIPS) plastic.

Refrigerant System

The refrigeration system consists of a single refrigeration circuit and uses R32 refrigerant. The outdoor unit is provided with factory installed components, including a refrigerant strainer, check valves, oil separator, accumulator, four-way reversing valve, EEV, high and low side charging ports, service valves, and interconnecting piping.

Refrigeration Oil Control

Heat Pump outdoor units have a centrifugal oil separator and controls to ensure sufficient oil supply is maintained, and that oil does not travel with the refrigerant.

Compressors

The outdoor unit is equipped with one hermetic, digitally controlled, inverter driven, twin-rotary compressor to modulate capacity (modulation in 1 Hz increments).

Frequency ranges for the Standard Efficiency, Mega, and Mega 115V outdoor units are:

9k Btu/h = 10 to 70 Hz (cooling); 10 to 94 Hz (heating)

12k Btu/h = 10 to 78 Hz (cooling); 10 to 98 Hz (heating)

18 Btu/h = 10 to 70 Hz (cooling); 10 to 105 Hz (heating)

24k Btu/h = 10 to 87 Hz (cooling); 10 to 110 Hz (heating)

Over-current protection and vibration isolation are integrated with the compressor.

Outdoor Unit Coil

Heat Pump outdoor unit coils are of a nonferrous construction with louvered fins on copper tubing, and are protected with an integral coil guard. Coil fins have a factory applied corrosion resistant GoldFin™ material with hydrophilic coating.

Fans and Motors

The outdoor unit includes one direct drive, variable speed propeller type fan.

The Brushless Digitally Controlled (BLDC) fan motor has inherent protection, permanently lubricated bearings, and variable speed with a maximum speed up to 950 rpm.

Raised guards are provided to limit contact with moving parts.

The outdoor unit has horizontal discharge airflow.

Figure 2: Standard Efficiency and Mega Systems (18,000 and 24,000 Btu/h)



Electrical

The Standard Efficiency and Mega models are available in a 208-230V 60 Hz, 1-phase power supply. The Mega 115V models are available in a 115V 60 Hz, 1-phase power supply. The units are capable of operating within voltage limits of ±10% rated voltage, and include overcurrent protection.

Air Filter

Return air inlet has a factory-supplied primary removable, washable filter. Filters are accessed from the front of the unit without the use of tools.

Controls

The unit is factory wired with necessary electrical control components, integral microprocessors, printed circuit boards, thermistors, sensors, terminal blocks, and lugs for power wiring.

Microprocessor-based algorithms provide component protection, soft-start capability, refrigeration system pressure, temperature, defrost, and ambient control.

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Table 4: Single Zone Standard Efficiency System Specifications.

System (Model) (Indoor Unit / Outdoor Unit)		KSSAE091A (KNSAE091A / KUSAE091A)	KSSAE121A (KNSAE121A / KUSAE121A)	KSSAE181A (KNSAE181A / KUSAE181A)	KSSAE241A (KNSAE241A / KUSAE241A)
Cooling Capacity (Min/Rated/Max) (Btu/h)		3,070~9,000~11,980	3,070~11,000~13,780	3,685~18,000~19,600	3,685~21,200~24,500
Cooling Power Input[1] (Min/Rated/Max) (kW)		0.2~0.75~1.4	0.2~0.917~1.540	0.238~1.500~2.180	0.240~1.767~2.800
EER2 (@95°F)		12.0	12.0	12.0	12.0
SEER2		18.0	18.0	18.0	18.0
Heating Capacity (Min/Rated/Max) (Btu/h)		3,070~10,900~12,930	3,070~12,000~13,780	3,685~19,000~23,000	3,685~22,000~25,260
Heating Power Input[1] (Min/Rated/Max) (kW)		0.195~0.885~1.5	0.195~1.02~1.64	0.238~1.60~2.45	0.24~2.02~2.60
COP (@47°F)		3.60	3.44	3.47	3.18
HSPF2		8.7	8.5	8.9	8.3
Rated Low Heating Capacity (Btu/h)					
Outdoor 17°F (WB)/Indoor 70°F (DB)		6,900	8,000	11,600	13,500
Low COP (@17°F)		2.55	2.50	2.40	2.40
Maximum Heating Capacity (Btu/h)					
Outdoor 17°F (WB)/Indoor 70°F (DB)		9,810 (90%)	10,560 (88%)	15,800 (83%)	17,700 (80%)
Outdoor 5°F (WB)/Indoor 70°F (DB)		7,700 (71%)	8,400 (70%)	13,300 (70%)	13,800 (63%)
ENERGY STAR / Cold Climate		Yes / No	Yes / No	Yes / No	Yes / No
Power Supply (To ODU; V / Hz / Ø)[2]		208-230 / 60 / 1			
Power Supply Wiring (Outdoor Unit) (No. x AWG)[2]		3 x 14	3 x 14	3 x 12	3 x 12
Power / Communication Cable (ODU to IDU) (No. x AWG)[3]		4 x 14			
Indoor Unit Data					
Operating Range	Cooling (°F WB)	53 to 75			
	Heating (°F DB)	60 to 86			
Temperature Setting Range	Cooling (°F)	64 to 86			
	Heating (°F)	60 to 86			
Sound Pressure[4] dB(A)	Cooling (H/M/L/SL)	42 / 36 / 28 / 21	42 / 36 / 28 / 21	48 / 43 / 38 / 32	48 / 43 / 38 / 32
	Heating (H/M/L)	42 / 36 / 28	42 / 36 / 28	48 / 43 / 38	48 / 43 / 38
Net Dimensions (W x H x D) (in.)		32-15/16 × 12-1/8 × 7-7/16		39-9/32 × 13-19/32 × 8-9/32	
Shipping Dimensions (W x H x D) (in.)		35-5/16 × 15-11/32 × 10		42-1/16 × 16-23/32 × 10-31/32	
Net / Shipping Weight (lbs.)		19.2 / 22	19.2 / 22	26 / 30	26 / 30
Exterior Color Codes		Munsell 7.5BG 10/2 (RAL 9016)		Munsell 7.5BG 10/2 (RAL 9016)	
Fan Type x Qty.		Cross Flow x 1	Cross Flow x 1	Cross Flow x 1	Cross Flow x 1
Fan Motor Output (W) x Qty.		30 x 1	30 x 1	58 x 1	58 x 1
Fan Motor / Drive		Brushless Digitally Controlled / Direct			
Airflow Rate Max/H/M/L (CFM)	Cooling	459 / 353 / 264 / 148	459 / 353 / 264 / 148	689 / 512 / 459 / 371	689 / 512 / 459 / 371
	Heating	459 / 353 / 254 / 198	459 / 353 / 254 / 198	653 / 565 / 477 / 388	653 / 565 / 477 / 388
Dehumidification Rate (pts./hr.)		2.32	2.75	3.38	3.38

EEV: Electronic Expansion Valve IDU: Indoor Unit ODU: Outdoor Unit

This data is rated 0 feet above sea level with 24.6 feet of refrigerant line per indoor unit and a 0 foot level difference outdoor and indoor units.

Cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB) and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).
Heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and 59ºF wet bulb (WB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

[1]Power Input is rated at high speed.

[2]Power wiring to the ODU is field supplied, solid or stranded, and must comply with the applicable local and national codes.

[3]All power wiring/communication cables from outdoor unit to indoor unit are field supplied and are to be minimum 14 AWG, 4-conductor, stranded, shielded or unshielded (if shielded, must be grounded to chassis at outdoor unit only) and must comply with applicable local and national codes.

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

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GENERAL DATA

Table 5: Single Zone Standard Efficiency Specifications, continued.

System (Model) (Indoor Unit / Outdoor Unit)		KSSAE091A (KNSAE091A / KUSAE091A)	KSSAE121A (KNSAE121A / KUSAE121A)	KSSAE181A (KNSAE181A / KUSAE181A)	KSSAE241A (KNSAE241A / KUSAE241A)
Outdoor Unit Data					
Operating Range	Cooling (°F DB)	14 to 118			
	Heating (°F WB)	5 to 65			
Sound Pressure[1] dB(A) (Cool/Heat)		50 / 50	50 / 50	55 / 55	55 / 55
Max. External Static Pressure (in.wg)		0.0284	0.0284	0.0387	0.0387
Net Dimensions (W x H x D) (in.)		28-7/32 × 19-1/2 × 9-1/16		34-1/4 × 25-19/32 × 13	
Shipping Dimensions (W x H x D) (in.)		33-1/32 × 20-15/16 × 12-3/4		40-15/16 × 27-15/16 × 17-29/32	
Net / Shipping Weight (lbs.)		55.3 / 60	55.3 / 60	92.6 / 102.5	92.6 / 102.5
Exterior Color Codes		Munsell 9.54Y 8.34/1.31 (RAL 9001)		Munsell 9.54Y 8.34/1.31 (RAL 9001)	
Fan Type x Qty.		Propeller x 1	Propeller x 1	Propeller x 1	Propeller x 1
Fan Motor Output (W) x Qty.		43 x 1	43 x 1	85 x 1	85 x 1
Fan Motor / Drive		Brushless Digitally Controlled / Direct			
Airflow Rate Max. (CFM)		953	953	1,730	1,730
Compressor (Type x Qty.)		Twin Rotary x 1	Twin Rotary x 1	Twin Rotary x 1	Twin Rotary x 1
Heat Exchanger					
Material and Fin Coating		Copper Tube / Aluminum Fin (Gold Fin™ Coating on Outdoor Unit Coil; N/A on Indoor Unit Coil)			
Rows / Columns / Fin per inch x Qty.		Outdoor Unit: (2 x 22 x 18) x 1; Indoor Unit: (2 x 15 x 21) x 1		Outdoor Unit: (2 x 28 x 18) x 1; Indoor Unit: (2 x 16 x 20) x 1	
Refrigerant					
Type[2] / Control		R32 / EEV			
Pre-Charge (oz.)		24.7	24.7	38.8	38.8
Additional Charge (oz./ft.)		0.16	0.16	0.22	0.22
Piping					
Liquid (in.)	Connection / Pipe Size	1/4 Flare / 1/4 Flare	1/4 Flare / 1/4 Flare	1/4 Flare / 1/4 Flare	1/4 Flare / 1/4 Flare
Vapor (in.)	Connection / Pipe Size	3/8 Flare / 3/8 Flare	3/8 Flare / 3/8 Flare	1/2 Flare / 1/2 Flare	1/2 Flare / 1/2 Flare
Condensation Line (O.D., I.D., in.)		27/32, 5/8	27/32, 5/8	27/32, 5/8	27/32, 5/8
Pipe Length[3] (Min./Standard/Max.) (ft.)		9.8 / 24.6 / 49.2	9.8 / 24.6 / 49.2	9.8 / 24.6 / 65.6	9.8 / 24.6 / 65.6
Piping Length[3] (no add'l refrigerant, ft.)		24.6	24.6	24.6	24.6
Max Elevation Difference (ft.)		23	23	32.8	32.8

EEV: Electronic Expansion Valve IDU: Indoor Unit ODU: Outdoor Unit

This data is rated 0 feet above sea level with 24.6 feet of refrigerant line per indoor unit and a 0 foot level difference outdoor and indoor units.

Cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB) and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).
Heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and 59ºF wet bulb (WB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

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

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

[3]Piping lengths are equivalent.

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Table 6: Single Zone Mega System Specifications.

System (Model) (Indoor Unit / Outdoor Unit)		KSSAC091A (KNSAC091A / KUSAC091A)	KSSAC121A (KNSAC121A / KUSAC121A)	KSSAC181A (KNSAC181A / KUSAC181A)	KSSAC241A (KNSAC241A / KUSAC241A)
Cooling Capacity (Min/Rated/Max) (Btu/h)		3,070~9,000~11,980	3,070~11,000~13,780	3,685~18,000~19,600	3,685~21,200~24,500
Cooling Power Input[1] (Min/Rated/Max) (kW)		0.20~0.72~1.33	0.20~0.894~1.44	0.238~1.44~2.10	0.24~1.723~2.70
EER2 (@95°F)		12.5	12.3	12.5	12.3
SEER2		21.0	20.0	21.0	20.0
Heating Capacity (Min/Rated/Max) (Btu/h)		3,070~10,900~12,930	3,070~12,000~13,780	3,685~19,000~23,000	3,685~22,000~25,260
Heating Power Input[1] (Min/Rated/Max) (kW)		0.195~0.838~1.40	0.195~0.965~1.55	0.238~1.50~2.35	0.24~1.894~2.50
COP (@47°F)		3.80	3.63	3.70	3.39
HSPF2		9.2	9.0	9.4	8.8
Rated Low Heating Capacity (Btu/h)					
Outdoor 17°F (WB)/Indoor 70°F (DB)		6,900	8,000	11,600	13,500
Low COP (@17°F)		2.65	2.65	2.65	2.55
Maximum Heating Capacity (Btu/h)					
Outdoor 17°F (WB)/Indoor 70°F (DB)		9,810 (90%)	10,560 (88%)	15,800 (83%)	17,700 (80%)
Outdoor 5°F (WB)/Indoor 70°F (DB)		7,700 (71%)	8,400 (70%)	13,300 (70%)	13,800 (63%)
ENERGY STAR / Cold Climate		Yes / Yes	Yes / Yes	Yes / Yes	Yes / No
Power Supply (To ODU; V / Hz / Ø)[2]		208-230/60/1			
Power Supply Wiring (Outdoor Unit) (No. x AWG)[2]		3 x 14	3 x 14	3 x 12	3 x 12
Power / Communication Cable (ODU to IDU) (No. x AWG)[3]		4 x 14			
Indoor Unit Data					
Operating Range	Cooling (°F WB)	53 to 75			
	Heating (°F DB)	60 to 86			
Temperature Setting Range	Cooling (°F)	64 to 86			
	Heating (°F)	60 to 86			
Sound Pressure[4] dB(A)	Cooling (H/M/L/SL)	42 / 36 / 28 / 21	42 / 36 / 28 / 21	48 / 43 / 38 / 32	48 / 43 / 38 / 32
	Heating (H/M/L)	42 / 36 / 28	42 / 36 / 28	48 / 43 / 38	48 / 43 / 38
Net Dimensions (W x H x D) (in.)		32-15/16 × 12-1/8 × 7-7/16		39-9/32 × 13-19/32 × 8-9/32	
Shipping Dimensions (W x H x D) (in.)		35-5/16 × 15-11/32 × 10		42-1/16 × 16-23/32 × 10-31/32	
Net / Shipping Weight (lbs.)		19.2 / 22	19.2 / 22	26 / 30	26 / 30
Exterior Color Codes		Munsell 7.5BG 10/2 (RAL 9016)		Munsell 7.5BG 10/2 (RAL 9016)	
Fan Type x Qty.		Cross Flow x 1	Cross Flow x 1	Cross Flow x 1	Cross Flow x 1
Fan Motor Output (W) x Qty.		30 x 1	30 x 1	58 x 1	58 x 1
Fan Motor / Drive		Brushless Digitally Controlled / Direct			
Airflow Rate Max./H/M/L (CFM)	Cooling	459 / 353 / 264 / 148	459 / 353 / 264 / 148	689 / 512 / 459 / 371	689 / 512 / 459 / 371
	Heating	459 / 353 / 254 / 198	459 / 353 / 254 / 198	653 / 565 / 477 / 388	653 / 565 / 477 / 388
Dehumidification Rate (pts./hr.)		2.32	2.75	3.38	3.38

EEV: Electronic Expansion Valve IDU: Indoor Unit ODU: Outdoor Unit

This data is rated 0 feet above sea level with 24.6 feet of refrigerant line per indoor unit and a 0 foot level difference outdoor and indoor units.

Cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB) and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).
Heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and 59ºF wet bulb (WB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

[1]Power Input is rated at high speed.

[2]Power wiring to the ODU is field supplied, solid or stranded, and must comply with the applicable local and national codes.

[3]All power wiring/communication cables from outdoor unit to indoor unit are field supplied and are to be minimum 14 AWG, 4-conductor, stranded, shielded or unshielded (if shielded, must be grounded to chassis at outdoor unit only) and must comply with applicable local and national codes.

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

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GENERAL DATA

Table 7: Single Zone Mega System Specifications, continued.

System (Model) (Indoor Unit / Outdoor Unit)		KSSAC091A (KNSAC091A / KUSAC091A)	KSSAC121A (KNSAC121A / KUSAC121A)	KSSAC181A (KNSAC181A / KUSAC181A)	KSSAC241A (KNSAC241A / KUSAC241A)
Outdoor Unit Data					
Operating Range	Cooling (°F DB)	14 to 118			
	Heating (°F WB)	5 to 65			
Sound Pressure[1] dB(A) (Cool/Heat)		50 / 50	50 / 50	55 / 55	55 / 55
Max. External Static Pressure (in. wg)		0.0284	0.0284	0.0387	0.0387
Net Dimensions (W x H x D) (in.)		28-7/32 × 19-1/2 × 9-1/16		34-1/4 × 25-19/32 × 13	
Shipping Dimensions (W x H x D) (in.)		33-1/32 × 20-15/16 × 12-3/4		40-15/16 × 27-15/16 × 17-29/32	
Net / Shipping Weight (lbs.)		55.3 / 60	55.3 / 60	92.6 / 102.5	92.6 / 102.5
Exterior Color Codes		Munsell 9.54Y 8.34/1.31 (RAL 9001)		Munsell 9.54Y 8.34/1.31 (RAL 9001)	
Fan Type x Qty.		Propeller x 1	Propeller x 1	Propeller x 1	Propeller x 1
Fan Motor Output (W) x Qty.		43 x 1	43 x 1	85 x 1	85 x 1
Fan Motor / Drive		Brushless Digitally Controlled/Direct			
Airflow Rate Max. (CFM)		953	953	1,730	1,730
Compressor (Type x Qty.)		Twin Rotary x 1	Twin Rotary x 1	Twin Rotary x 1	Twin Rotary x 1
Heat Exchanger					
Material and Fin Coating		Copper Tube / Aluminum Fin (Gold Fin™ Coating on Outdoor Unit Coil; N/A on Indoor Unit Coil)			
Rows / Columns / Fin per inch x Qty.		Outdoor Unit: (2 x 22 x 18) x 1; Indoor Unit: (2 x 15 x 21) x 1		Outdoor Unit: (2 x 28 x 18) x 1; Indoor Unit: (2 x 16 x 20) x 1	
Refrigerant					
Type[2] / Control		R32 / EEV			
Pre-Charge (oz.)		24.7	24.7	38.8	38.8
Additional Charge (oz./ft.)		0.16	0.16	0.22	0.22
Piping					
Liquid (in.)	Connection / Pipe Size	1/4 Flare / 1/4 Flare	1/4 Flare / 1/4 Flare	1/4 Flare / 1/4 Flare	1/4 Flare / 1/4 Flare
Vapor (in.)	Connection / Pipe Size	3/8 Flare / 3/8 Flare	3/8 Flare / 3/8 Flare	1/2 Flare / 1/2 Flare	1/2 Flare / 1/2 Flare
Condensation Line (OD, ID, in.)		27/32, 5/8	27/32, 5/8	27/32, 5/8	27/32, 5/8
Pipe Length[3] (Min./Standard/Max.) (ft.)		9.8 / 24.6 / 49.2	9.8 / 24.6 / 49.2	9.8 / 24.6 / 65.6	9.8 / 24.6 / 65.6
Piping Length[3] (no add'l refrigerant, ft.)		24.6	24.6	24.6	24.6
Max. Elevation Difference (ft.)		23	23	32.8	32.8

EEV: Electronic Expansion Valve IDU: Indoor Unit ODU: Outdoor Unit

This data is rated 0 feet above sea level with 24.6 feet of refrigerant line per indoor unit and a 0 foot level difference outdoor and indoor units.

Cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB) and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).
Heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and 59ºF wet bulb (WB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

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

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

[3]Piping lengths are equivalent.

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Table 8: Single Zone Mega 115V System Specifications.

System (Model) (Indoor Unit / Outdoor Unit)		KSSAC091B (KNSAC091B / KUSAC091B)	KSSAC121B (KNSAC121B / KUSAC121B)
Cooling Capacity (Min/Rated/Max) (Btu/h)		3,070~9,000~11,980	3,070~11,000~13,780
Cooling Power Input[1] (Min/Rated/Max) (kW)		0.20~0.72~1.33	0.20~0.894~1.44
EER2 (@95°F)		12.5	12.3
SEER2		21.0	20.0
Heating Capacity (Min/Rated/Max) (Btu/h)		3,070~10,900~12,930	3,070~12,000~13,780
Heating Power Input[1] (Min/Rated/Max) (kW)		0.195~0.838~1.40	0.195~0.965~1.55
COP (@47°F)		3.80	3.63
HSPF2		9.2	9.0
Rated Low Heating Capacity (Btu/h)			
Outdoor 17°F (WB)/Indoor 70°F (DB)		6,900	8,000
Low COP (@17°F)		2.65	2.65
Maximum Heating Capacity (Btu/h)			
Outdoor 17°F (WB)/Indoor 70°F (DB)		9,810 (90%)	10,560 (88%)
Outdoor 5°F (WB)/Indoor 70°F (DB)		7,700 (71%)	8,400 (70%)
ENERGY STAR / Cold Climate		Yes / Yes	Yes / Yes
Power Supply (To ODU; V / Hz / Ø)[2]		115/60/1	
Power Supply Wiring (Outdoor Unit) (No. x AWG)[2]		3 x 14	
Power / Communication Cable (ODU to IDU) (No. x AWG)[3]		4 x 14	
Indoor Unit Data			
Operating Range	Cooling (°F WB)	53 to 75	
	Heating (°F DB)	60 to 86	
Temperature Setting Range	Cooling (°F)	64 to 86	
	Heating (°F)	60 to 86	
Sound Pressure[4] dB(A)	Cooling (H/M/L/SL)	42 / 36 / 28 / 21	42 / 36 / 28 / 21
	Heating (H/M/L)	42 / 36 / 28	42 / 36 / 28
Net Dimensions (W x H x D) (in.)		32-15/16 × 12-1/8 × 7-7/16	
Shipping Dimensions (W x H x D) (in.)		35-5/16 × 15-11/32 × 10	
Net / Shipping Weight (lbs.)		19.2 / 22	19.2 / 22
Exterior Color Codes		Munsell 7.5BG 10/2 (RAL 9016)	
Fan Type x Qty.		Cross Flow x 1	Cross Flow x 1
Fan Motor Output (W) x Qty.		30 x 1	30 x 1
Fan Motor / Drive		Brushless Digitally Controlled / Direct	
Airflow Rate Max./H/M/L (CFM)	Cooling	459 / 353 / 264 / 148	459 / 353 / 264 / 148
	Heating	459 / 353 / 254 / 198	459 / 353 / 254 / 198
Dehumidification Rate (pts./hr.)		2.32	2.75

EEV: Electronic Expansion Valve IDU: Indoor Unit ODU: Outdoor Unit

This data is rated 0 feet above sea level with 24.6 feet of refrigerant line per indoor unit and a 0 foot level difference outdoor and indoor units.

Cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB) and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).
Heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and 59ºF wet bulb (WB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

[1]Power Input is rated at high speed.

[2]Power wiring to the ODU is field supplied, solid or stranded, and must comply with the applicable local and national codes.

[3]All power wiring/communication cables from outdoor unit to indoor unit are field supplied and are to be minimum 14 AWG, 4-conductor, stranded, shielded or unshielded (if shielded, must be grounded to chassis at outdoor unit only) and must comply with applicable local and national codes.

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

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GENERAL DATA

Table 9: Single Zone Mega 115V System Specifications, continued.

System (Model) (Indoor Unit / Outdoor Unit)		KSSAC091B (KNSAC091B / KUSAC091B)	KSSAC121B (KNSAC121B / KUSAC121B)
Outdoor Unit Data			
Operating Range	Cooling (°F DB)	14 to 118	
	Heating (°F WB)	5 to 65	
Sound Pressure[1] dB(A) (Cool/Heat)		50 / 50	50 / 50
Max. External Static Pressure (in.wg)		0.0284	0.0284
Net Dimensions (W x H x D) (in.)		28-7/32 × 19-1/2 × 9-1/16	
Shipping Dimensions (W x H x D) (in.)		33-1/32 × 20-15/16 × 12-3/4	
Net / Shipping Weight (lbs.)		55.3 / 60	55.3 / 60
Exterior Color Codes		Munsell 9.54Y 8.34/1.31 (RAL 9001)	
Fan Type x Qty.		Propeller x 1	Propeller x 1
Fan Motor Output (W) x Qty.		43 x 1	43 x 1
Fan Motor / Drive		Brushless Digitally Controlled/Direct	
Airflow Rate Max. (CFM)		953	953
Compressor (Type x Qty.)		Twin Rotary x 1	Twin Rotary x 1
Heat Exchanger			
Material and Fin Coating		Copper Tube / Aluminum Fin (Gold Fin™ Coating on Outdoor Unit Coil; N/A on Indoor Unit Coil)	
Rows / Columns / Fin per inch x Qty.		Outdoor Unit: (2 x 22 x 18) x 1; Indoor Unit: (2 x 15 x 21) x 1	
Refrigerant			
Type[2] / Control		R32 / EEV	
Pre-Charge (oz.)		24.7	24.7
Additional Charge (oz./ft.)		0.16	0.16
Piping			
Liquid (in.)	Connection / Pipe Size	1/4 Flare / 1/4 Flare	1/4 Flare / 1/4 Flare
Vapor (in.)	Connection / Pipe Size	3/8 Flare / 3/8 Flare	3/8 Flare / 3/8 Flare
Condensation Line (OD, ID, in.)		27/32, 5/8	27/32, 5/8
Pipe Length[3] (Min./Standard/Max.) (ft.)		9.8 / 24.6 / 49.2	9.8 / 24.6 / 49.2
Piping Length[3] (no add'l refrigerant, ft.)		24.6	24.6
Max Elevation Difference (ft.)		23	23

EEV: Electronic Expansion Valve IDU: Indoor Unit ODU: Outdoor Unit

This data is rated 0 feet above sea level with 24.6 feet of refrigerant line per indoor unit and a 0 foot level difference outdoor and indoor units.

Cooling capacity rating obtained with air entering the indoor unit at 80ºF dry bulb (DB) and 67ºF wet bulb (WB) and outdoor ambient conditions of 95ºF dry bulb (DB) and 75ºF wet bulb (WB).
Heating capacity rating obtained with air entering the indoor unit at 70ºF dry bulb (DB) and 59ºF wet bulb (WB) and outdoor ambient conditions of 47ºF dry bulb (DB) and 43ºF wet bulb (WB).

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

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

[3]Piping lengths are equivalent.

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Table 10: Single Zone Standard Efficiency Wall-Mounted Electrical Data Table.

Nominal Tons	Unit Model No.	Phase	Hertz	Voltage	Voltage Range (Min. to Max.)	MCA	MOP	LRA	Compressor Quantity	Compressor Motor RLA		Condenser Fan Motor		Indoor Unit Fan Motor	
										Cool	Heat	W x Qty.	FLA	W	FLA
3/4	KSSAE091A	1	60	208 - 230	187 - 253	10.0	15.0	7.5	1	4.7	6.7	43 x1	0.6	30	0.4
1	KSSAE121A					10.0	15.0	7.5		4.7	6.7	43 x1	0.6	30	0.4
1-1/2	KSSAE181A					15.0	20.0	14		9.6	10.0	85 x 1	0.6	58	0.4
2	KSSAE241A					15.0	20.0	14		9.6	10.0	85 x 1	0.6	58	0.4

Voltage tolerance is ±10%.

Maximum allowable voltage unbalance is 2%.

MCA = Minimum Circuit Ampacity.

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

LRA = Locked Rotor Amps

RLA = Rated Load Amps

OFM: Outdoor Fan Motor

IFM : Indoor Fan Motor

FLA = Full Load Amps

Short Circuit Current Rating (SCCR) is 5,000A

Table 11: Single Zone Mega Wall-Mounted Electrical Data Table.

Nominal Tons	Unit Model No.	Phase	Hertz	Voltage	Voltage Range (Min. to Max.)	MCA	MOP	LRA	Compressor Quantity	Compressor Motor RLA		Condenser Fan Motor		Indoor Unit Fan Motor	
										Cool	Heat	W x Qty.	FLA	W	FLA
3/4	KSSAC091A	1	60	208 - 230	187 - 253	10.0	15.0	7.5	1	4.7	6.7	43 x 1	0.6	30	0.4
1	KSSAC121A					10.0	15.0	7.5		4.7	6.7	43 x 1	0.6	30	0.4
1-1/2	KSSAC181A					15.0	20.0	14		9.6	10.0	85 x 1	0.6	58	0.4
2	KSSAC241A					15.0	20.0	14		9.6	10.0	85 x 1	0.6	58	0.4

Voltage tolerance is ±10%.

Maximum allowable voltage unbalance is 2%.

MCA = Minimum Circuit Ampacity.

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

LRA = Locked Rotor Amps

RLA = Rated Load Amps

OFM: Outdoor Fan Motor

IFM : Indoor Fan Motor

FLA = Full Load Amps

Short Circuit Current Rating (SCCR) is 5,000A

Table 12: Single Zone Mega 115V Wall-Mounted Electrical Data Table.

Nominal Tons	Unit Model No.	Phase	Hertz	Voltage	Voltage Range (Min. to Max.)	MCA	MOP	LRA	Compressor Quantity	Compressor Motor RLA		Condenser Fan Motor		Indoor Unit Fan Motor	
										Cool	Heat	W x Qty.	FLA	W	FLA
3/4	KSSAC091B	1	60	115	98 - 132	15.0	20.0	12.5	1	9.5	11.0	43 x 1	0.7	30	0.4
1	KSSAC121B					15.0	20.0	12.5		9.5	11.0	43 x 1	0.7	30	0.4

Voltage tolerance is ±10%.

Maximum allowable voltage unbalance is 2%.

MCA = Minimum Circuit Ampacity.

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

LRA = Locked Rotor Amps

RLA = Rated Load Amps

OFM: Outdoor Fan Motor

IFM : Indoor Fan Motor

FLA = Full Load Amps

Short Circuit Current Rating (SCCR) is 5,000A

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FUNCTIONS, CONTROLS, OPTIONS

Table 13: Single Zone Standard Efficiency, Mega, and Mega 115V System Functions, Controls, Options Table.

System Type		**Standard Efficiency**	Mega	Mega 115V
Airflow	Air Supply Outlet	1	1	1
	Airflow Direction Control (Left/Right)	Manual	Manual	Manual
	Airflow Direction Control (Up/Down)	Six (6) Steps	Six (6) Steps	Six (6) Steps
	Auto Swing (Up /Down)	√	√	√
	Fan Speed Steps (Fan/Cool/Heat)	6 / 6 / 6	6 / 6 / 6	6 / 6 / 6
	Natural Wind (Auto Wind)	√	√	√
	Jet Cool/Heat (Power Wind)	√ / √	√ / √	√ / √
	Auto Fan (Fan Speed Auto)	√ / √	√ / √	√ / √
	Comfort Air	√	√	√
Filter	Prefilter (Washable)[1]	√	√	√
Reliability	Hot Start	√	√	√
	Self Diagnosis / Smart Diagnosis	√ / √	√ / √	√ / √
	Defrost/Deicing	√	√	√
	Dry (Dehumidification) Operation	√	√	√
Convenience	Auto Changeover	√	√	√
	Auto Cleaning (Coil Dry)	√	√	√
	Auto Restart	√	√	√
	Child Lock[2]	o	o	o
	Forced Operation	√	√	√
	Sleep Mode	√ 12 Hour	√ 12 Hour	√ 12 Hour
	Timer 24 Hour (On/Off) / 7 Hour (Off)[2]	√ / -	√ / -	√ / -
	Timer (Weekly)[2]	√	√	√
	Two Thermistor Control[2]	√	√	√
	Overheating Protection	√	√	√
	Low Heating	√	√	√
	Smart Care	√	√	√
	Night Mode	√	√	√
	Indoor Unit Display Type	Number Display	Number Display	Number Display
	Indoor Unit Display Light	On / Off	On / Off	On / Off
	Energy Control	Active Energy Control	Active Energy Control	Active Energy Control
	Mode Lock	√ Cooling Only or Heating Only		
	Temperature Control	Thermistor	Thermistor	Thermistor
	Network Solution (LGAP)	√	√	√
Controllers	Program Controllers (MultiSITE CRC)	○ (PREMTBVC2/C3/C4)	○ (PREMTBVC2/C3/C4)	○ (PREMTBVC2/C3/C4)
	Standard III Remote Controllers	○ (PREMTB101/BB11)	○ (PREMTB101/BB11)	○ (PREMTB101/BB11)
	Deluxe Remote Controller	○ (PREMTA201)	○ (PREMTA201)	○ (PREMTA201)
	Wireless Handheld Remote Controller	○ AKB76044207	○ AKB76044207	○ AKB76044207
	Dry Contact	○ (PDRYCB100/PDRYCB300/PDRYCB320/PDRYCB400)		
	WiFi[3]	○ Embedded	○ Embedded	○ Embedded

√: Standard Feature
O: Unit Option
X: Not Available

[1]Primary washable filter.

[2]Requires wired zone controller.

[3]If shown as "Embedded", this function is included in product. The function Wi-Fi is only compatible with 2.4 GHz band. (802.11 b/g/n). When Dry Contact Mode active, Wi-Fi Function can not be used. When changing from Wi-Fi mode to dry contact mode, normal operation resumes in approximately 3 minutes.

[4]Not all controllers can support all features. Contact your LG representative for details.

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LG Monitoring View (LGMV) Diagnostic Software and Cable

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

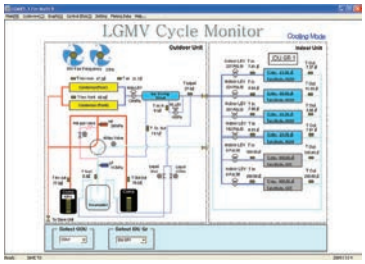
The main screen for LGMV allows the user to view the following real time data:

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

Additional screens can be accessed by tabs on the main screen

1. Cycleview: Graphic of internal components including
   - Compressors showing actual speeds
   - EEVs
   - Indoor Units
   - Liquid injection valves
   - Temperature and pressure sensors
   - Four-way reversing valve
   - Outdoor fans showing status and speeds
2. Graph:
   Full screen graph of actual high and low pressures and high and low pressure limits. A sliding bar enables user to go back in time and view data.
3. Control IDU: Enables user to turn on all IDUs default setpoints of 86°F in heat mode or 64°F in cool mode.
4. Setting: Converts metric values to imperial values.
5. Making Data: Recording of real time data to a separate file created to be stored on the user's computer.
6. Loading Data: Recorded data from a saved ".CSV" file can be loaded to create an LGMV session.
7. Electrical Data: Screen is changed to show the following:
   - Inverter compressor
     - Amps / Volts / Power Hz
     - Inverter control board fan Hz
   - Constant compressor
     - Current transducer value
     - Phase

Figure 3: Sample Cycleview (Computer View Example).



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

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

LGMV is available in different formats. Contact your LG Sales Representative for system requirements and for more information.

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ACCESSORIES

ThinQ

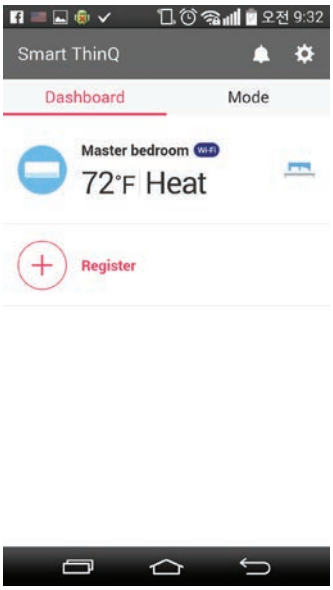
LG ThinQ is a built-in Wi-Fi module, along with a free smart phone app that provides monitoring and remote control capabilities for certain LG single zone systems. The app has the following features and benefits:

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

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

Figure 4: Example of an LG Smart ThinQ Screen (appearances my differ depending on version of software).

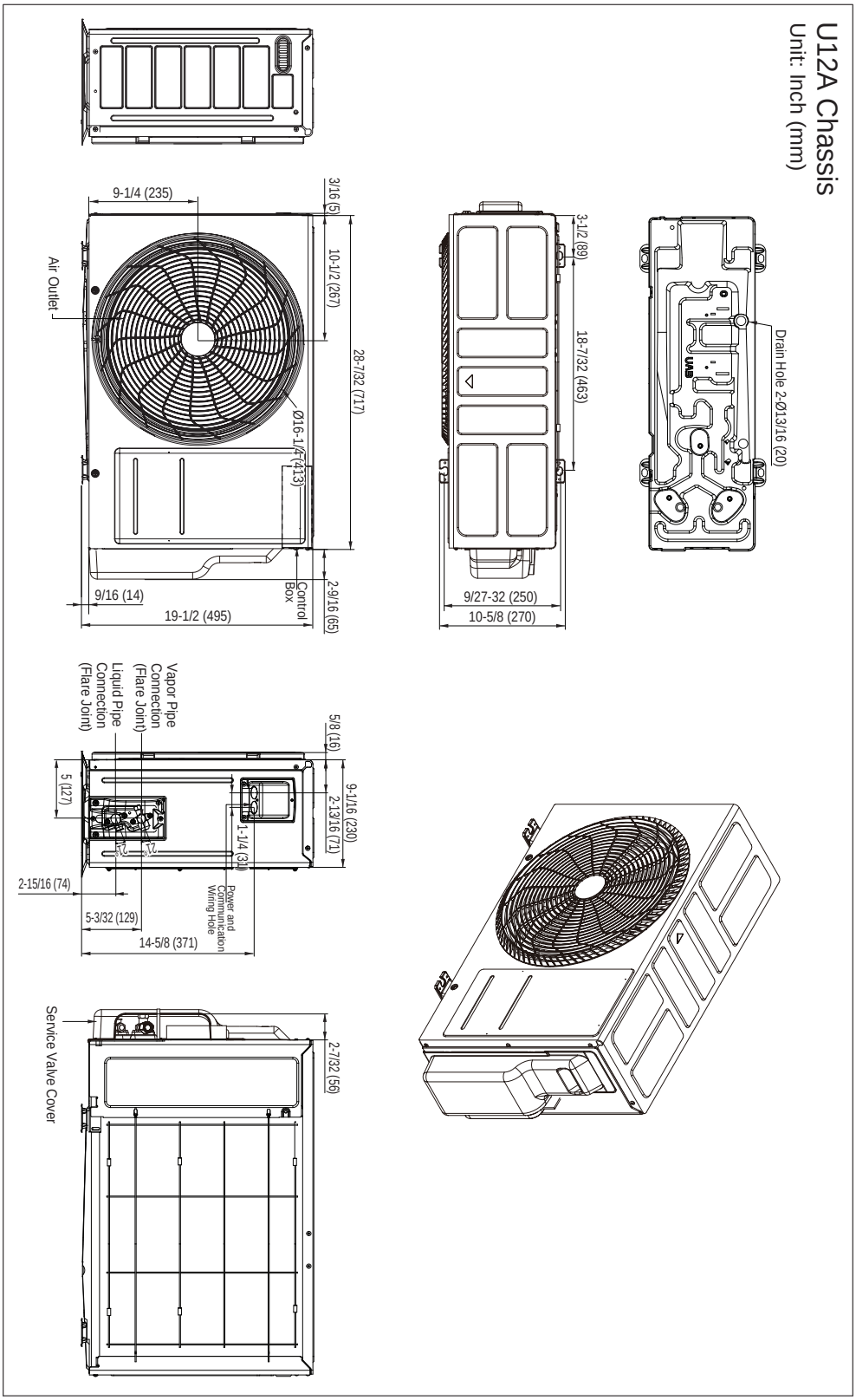


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OUTDOOR UNIT DIMENSIONS

Standard Efficiency KUSAE091A and KUSAE121A, Mega KUSAC091A and KUSAC121A, and Mega 115V KUSAC091B and KUSAC121B

Figure 5: Standard Efficiency KUSAE091A and KUSAE121A, Mega KUSAC091A and KUSAC121A, and Mega 115V KUSAC091B and KUSAC121B Outdoor Unit Dimensions.

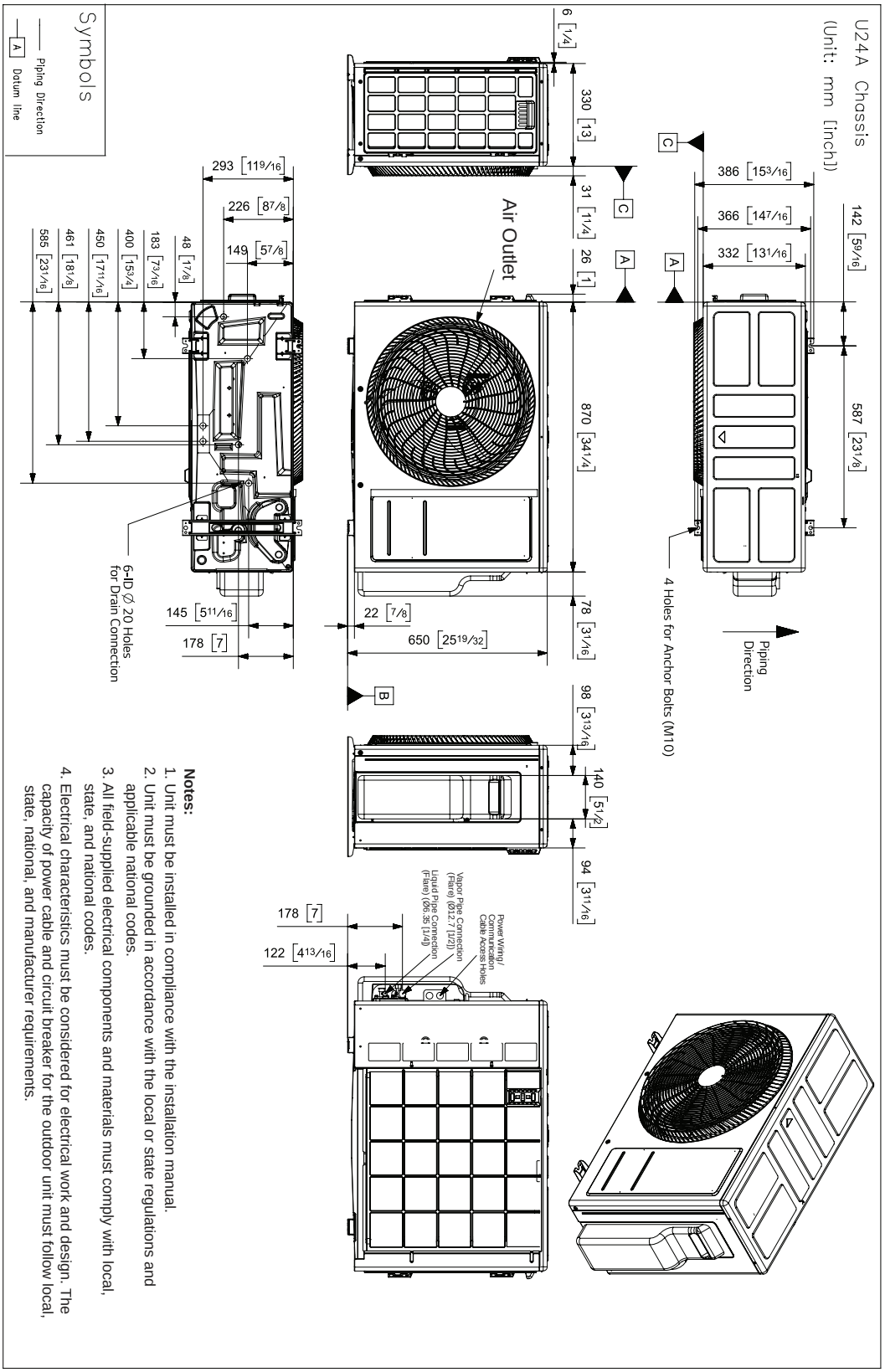


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OUTDOOR UNIT DIMENSIONS

Standard Efficiency KUSAE181A and KUSAE241A, and Mega KUSAC181A and KUSAC241A

Figure 6: Standard Efficiency KUSAE181A and KUSAE241A, and Mega KUSAC181A and KUSAC241A Outdoor Unit Dimensions.



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OUTDOOR UNIT CENTER OF GRAVITY / CORNER WEIGHT

Figure 7: Center of Gravity and Corner Weight Dimensions Diagram.

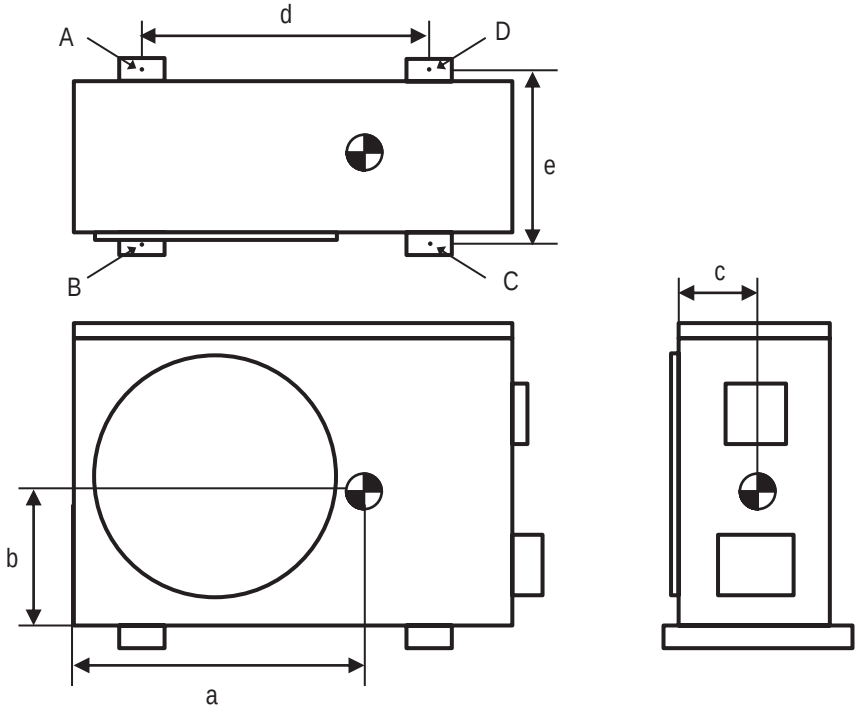


Table 14: Center of Gravity and Corner Weight Dimensions.

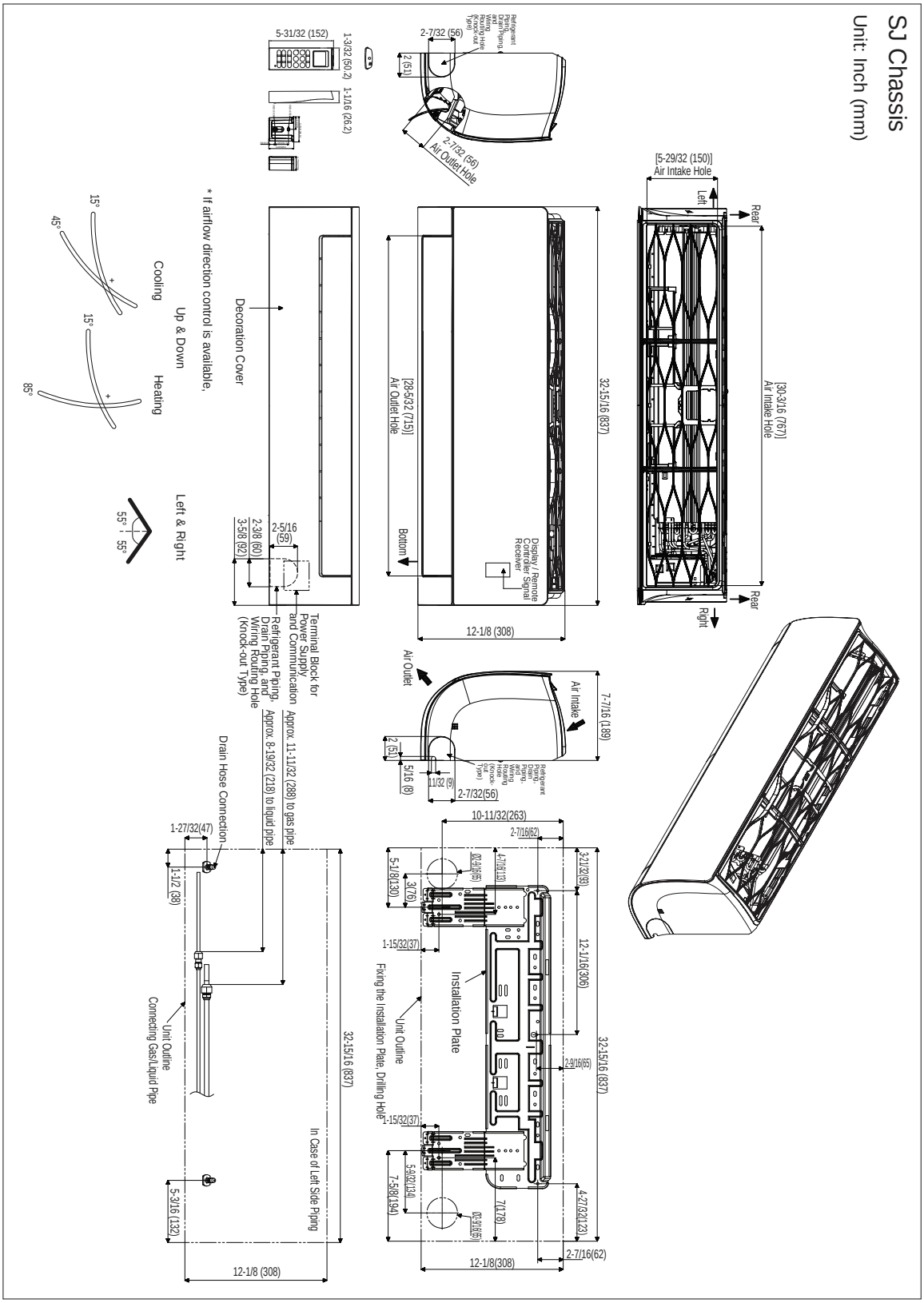
Model	Weight (lb.)		Center of Gravity (inch)			Leg (inch)		Corner Weight (lb.)			
	Shipping	Net	a	b	c	d	e	A	B	C	D
Standard Efficiency											
KUSAE091A, KUSAE121A	60.0	55.3	18-11/16	8-5/8	4-7/16	18-7/32	10-3/32	3.5	5.7	23.1	23.0
KUSAE181A, KUSAE241A	102.5	92.6	22-1/4	10-1/4	5-29/32	23-1/16	14-13/32	10.9	14.9	35.4	31.4
Mega											
KUSAC091A, KUSAC121A	60.0	55.3	18-11/16	8-5/8	4-7/16	18-7/32	10-3/32	3.5	5.7	23.1	23.0
KUSAC181A, KUSAC241A	102.5	92.6	22-1/4	10-1/4	5-29/32	23-1/16	14-13/32	10.9	14.9	35.4	31.4
Mega 115V											
KUSAC091B, KUSAC121B	60.0	55.3	18-11/16	8-5/8	4-7/16	18-7/32	10-3/32	3.5	5.7	23.1	23.0

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INDOOR UNIT DIMENSIONS

Standard Efficiency KNSAE091A and KNSAE121A, Mega KNSAC091A and KNSAC121A, and Mega 115V KNSAC091B and KNSAC121B

Figure 8: Standard Efficiency KNSAE091A and KNSAE121A, Mega KNSAC091A and KNSAC121A, and Mega 115V KNSAC091B and KNSAC121B Indoor Unit Dimensions.

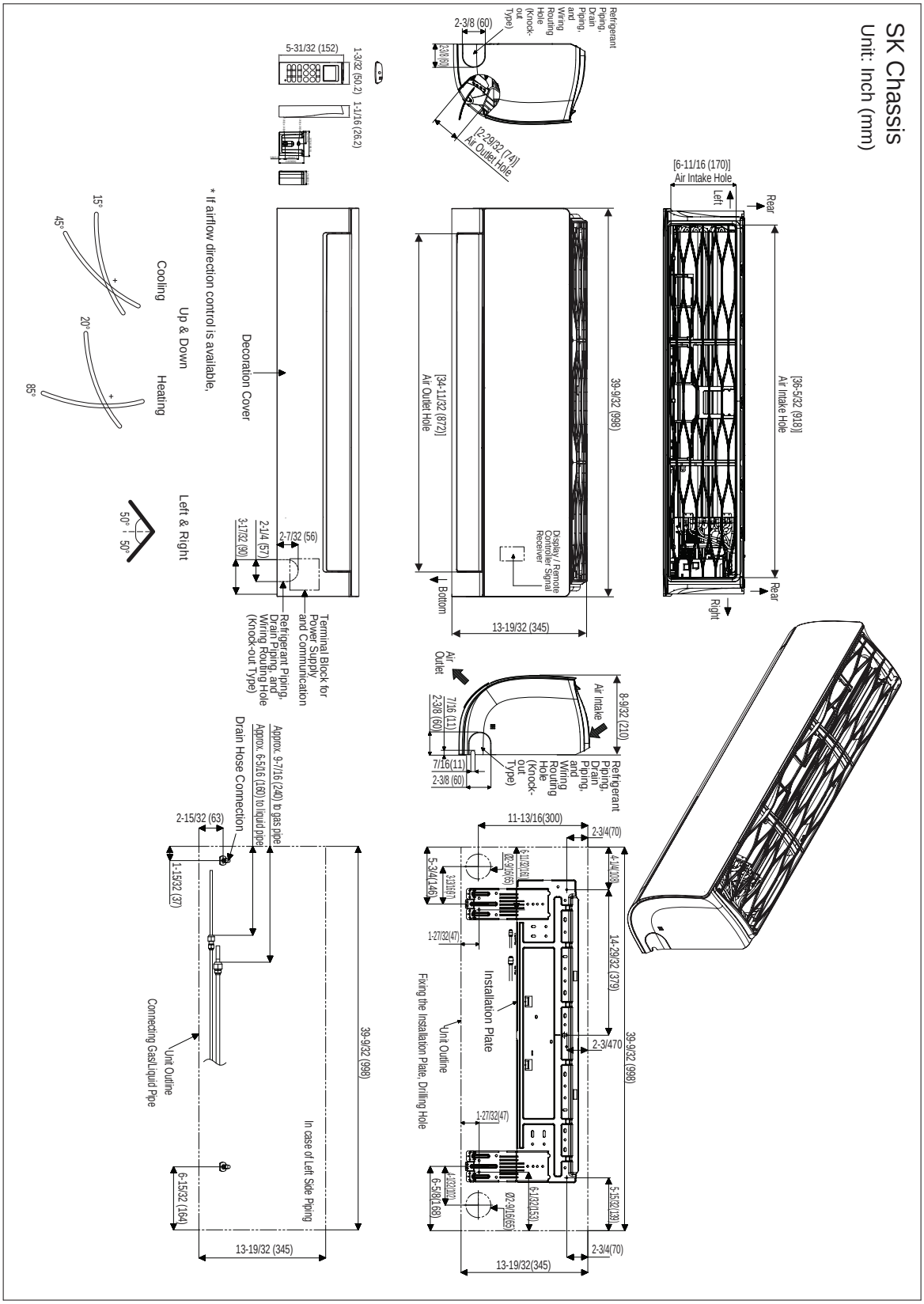


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INDOOR UNIT DIMENSIONS

Standard Efficiency KNSAE181A and KNSAE241A, and Mega KNSAC181A and KNSAC241A

Figure 9: Standard Efficiency KNSAE181A and KNSAE241A, and Mega KNSAC181A and KNSAC241A Indoor Unit Dimensions.



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