



## Endeavor™ Line Achiever® Series iM Air Conditioners



### RA14AZ

Cooling Efficiency up to: 16 SEER2/13 EER2

Nominal Sizes: 1½ to 5 Ton [5.28 to 17.6 kW]

Cooling Capacities: 17.1 to 55.5 kBTU [5.0 to 16.3 kW]



† A.F.U.E. (Annual Fuel Utilization Efficiency) calculated in accordance with Department of Energy test procedures.

***\*Proper sizing and installation of equipment is critical to achieve optimal performance. Split system air conditioners and heat pumps must be matched with appropriate coil components to meet Energy Star. Ask your Contractor for details or visit [www.energystar.gov](http://www.energystar.gov).***

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## Features and Benefits

- **Lighter Footprint & Less Environmental Impact from New 7mm Condenser Coil:** Provided by a decrease in refrigerant requirements and an overall weight reduction
- **Efficient Cooling:** Up to 16 SEER2/13 EER2
- **PlusOne® Expanded Value Space:** 3 in. – 4 in. – 5 in. service valve space – provides a minimum working area of 27-square inches for easier access
- **PlusOne® Triple Service Access:** 15 in. wide, industry leading corner service access – makes repairs easier and faster. The two fastener, removable corner allows optimal access to internal unit components. Individual louver panels come out once fastener is removed, for faster coil cleaning and easier cabinet reassembly
- **System Matching Simplicity:** Matches to all tiers of gas furnaces
- **Modern Cabinet Aesthetics:** High curb appeal with visually appealing design
- **Curved Louver Panels:** Provide ultimate coil protection, enhance cabinet strength, and increased cabinet rigidity
- **Diagnostic Service Window:** With two-fastener opening – provides access to the high and low pressure
- **External Gauge Port Access:** Allows easy connection of “low-loss” gauge ports
- **QR Code:** Provides technical information on demand for faster service calls
- **Fan Motor Harness:** With extra-long wires allows unit top to be removed without disconnecting fan wire

# Air Conditioners

<u>R</u>	<u>A</u>	<u>14</u>	<u>A</u>	<u>Z</u>	<u>24</u>	<u>A</u>	<u>J</u>	<u>1</u>	<u>N</u>	<u>A</u>	<u>LHP</u>
Brand	Product Category	SEER2	Region	Refrigerant	Capacity BTU/HR	Major Series	Voltage	Type	Controls	Minor Series	Option Code
R - Ruud	A - Air Conditioners	14 - 13.8/14.3 SEER2	A - All	Z - R-410A	18 - 18,000 [5.28 kW] 24 - 24,000 [7.03 kW] 30 - 30,000 [8.79 kW] 36 - 36,000 [10.55 kW] 42 - 42,000 [12.31 kW] 48 - 48,000 [14.07 kW] 60 - 60,000 [17.58 kW]	A - 1st Design	J - 1ph, 208-230/60	1 - Single Stage	N - Non-Communicating	A - 1st Design	LHP - W/H LPC

[ ] Designates Metric Conversions

AVAILABLE MODELS	DESCRIPTION
RA14AZ18AJ1NA	Endeavor™ Line Achiever® Series 1 1/2 ton 14.3 SEER2 Single-Stage iM Air Conditioner-208/230/1/60
RA14AZ18AJ1NALHP	Endeavor™ Line Achiever® Series 1 1/2 ton 14.3 SEER2 Single-Stage iM Air Conditioner w/ High/Low Pressure-208/230/1/60
RA14AZ24AJ1NA	Endeavor™ Line Achiever® Series 2 ton 14.3 SEER2 Single-Stage iM Air Conditioner-208/230/1/60
RA14AZ24AJ1NALHP	Endeavor™ Line Achiever® Series 2 ton 14.3 SEER2 Single-Stage iM Air Conditioner w/ High/Low Pressure-208/230/1/60
RA14AZ30AJ1NA	Endeavor™ Line Achiever® Series 2 1/2 ton 14.3 SEER2 Single-Stage iM Air Conditioner-208/230/1/60
RA14AZ30AJ1NALHP	Endeavor™ Line Achiever® Series 2 1/2 ton 14.3 SEER2 Single-Stage iM Air Conditioner w/ High/Low Pressure-208/230/1/60
RA14AZ36AJ1NA	Endeavor™ Line Achiever® Series 3 ton 14.3 SEER2 Single-Stage iM Air Conditioner-208/230/1/60
RA14AZ36AJ1NALHP	Endeavor™ Line Achiever® Series 3 ton 14.3 SEER2 Single-Stage iM Air Conditioner w/ High/Low Pressure-208/230/1/60
RA14AZ42AJ1NA	Endeavor™ Line Achiever® Series 3 1/2 ton 14.3 SEER2 Single-Stage iM Air Conditioner-208/230/1/60
RA14AZ42AJ1NALHP	Endeavor™ Line Achiever® Series 3 1/2 ton 14.3 SEER2 Single-Stage iM Air Conditioner w/ High/Low Pressure-208/230/1/60
RA14AZ48AJ1NA	Endeavor™ Line Achiever® Series 4 ton 14.3 SEER2 Single-Stage iM Air Conditioner-208/230/1/60
RA14AZ48AJ1NALHP	Endeavor™ Line Achiever® Series 4 ton 14.3 SEER2 Single-Stage iM Air Conditioner w/ High/Low Pressure-208/230/1/60
RA14AZ60AJ1NA	Endeavor™ Line Achiever® Series 5 ton 14.3 SEER2 Single-Stage iM Air Conditioner-208/230/1/60
RA14AZ60AJ1NALHP	Endeavor™ Line Achiever® Series 5 ton 14.3 SEER2 Single-Stage iM Air Conditioner w/ High/Low Pressure-208/230/1/60

STANDARD EQUIPMENT
R-410A Refrigerant
Scroll Compressor
Field Installed Filter Drier
Front Seating Service Valves
Internal Pressure Relief Valve
Internal Thermal Overload
Long Line capability
Low Ambient capability with Kit
3-4-5 Expanded Valve Space
Composite Basepan
2 Screw Control Box Access
15" Access to Internal Components
Quick release louver panel design
No fasteners to remove along bottom
Optimized Venturi Airflow
Powder coated paint
Rust resistant screws
QR code
External gauge ports
Service trays

<b>General Data</b>							
<b>GENERAL DATA</b>							
<b>MODEL NO.</b>	<b>RA14AZ18</b>	<b>RA14AZ24</b>	<b>RA14AZ30</b>	<b>RA14AZ36</b>	<b>RA14AZ42</b>	<b>RA14AZ48</b>	<b>RA14AZ60</b>
<b>Nominal Tonnage</b>	1.5	2.0	2.5	3.0	3.5	4.0	5.0
<b>Valve Connections</b>							
Liquid Line O.D. – in.	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Suction Line O.D. – in.	3/4	3/4	3/4	3/4	7/8	7/8	7/8
<b>Refrigerant (R410A) furnished oz.<sup>1</sup></b>	94	115	120	124	149	153	203
<b>Compressor Type</b>	Scroll						
<b>Outdoor Coil</b>							
Net face area – Outer Coil	10.9	13.3	14.3	16.4	19.5	19.5	32.5
Net face area – Inner Coil	10.5	12.9	13.9	15.9	18.8	18.8	—
Tube diameter – in.	0.276	0.276	0.276	0.276	0.276	0.276	0.375
Number of rows	2	2	2	2	2	2	1
Fins per inch	24	24	24	24	24	24	22
<b>Outdoor Fan</b>							
Diameter – in.	20	24	24	24	24	24	26
Number of blades	2	2	2	2	3	3	3
Motor hp	1/7	1/6	1/6	1/6	1/5	1/5	1/3
CFM	2156	2723	2830	2991	3655	3655	5178
RPM	1075	825	825	825	850	850	910
watts	152	161	165	145	214	214	271
<b>Shipping weight – lbs.</b>	151	185	197	217	259	250	294
<b>Operating weight – lbs.</b>	144	178	190	210	252	243	287
<b>Electrical Data</b>							
<b>Line Voltage Data (Volts-Phase-Hz)</b>	<b>208/230-1-60</b>	<b>208/230-1-60</b>	<b>208/230-1-60</b>	<b>208/230-1-60</b>	<b>208/230-1-60</b>	<b>208/230-1-60</b>	<b>208/230-1-60</b>
<b>Maximum overcurrent protection (amps)<sup>2</sup></b>	20	25	30	30	40	40	60
<b>Minimum circuit ampacity<sup>3</sup></b>	14	18	19	20	24	24	40
<b>Compressor</b>							
Rated load amps	9	12	14	13	18	18	26
Locked rotor amps	43	60	68	83	110	102	150
<b>Condenser Fan Motor</b>							
Full load amps	0.8	0.8	0.8	0.8	1.0	1.0	2.8
Locked rotor amps	1.5	1.5	1.7	1.7	2.6	2.6	—

<sup>1</sup>Refrigerant charge sufficient for 15 ft. length of refrigerant lines. For longer line set requirements see the installation instructions for information about set length and additional refrigerant charge required.

<sup>2</sup>HACR type circuit breaker or fuse.

<sup>3</sup>Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.

## Accessories

MODEL NO.	RA14AZ18	RA14AZ24	RA14AZ30	RA14AZ36	RA14AZ42	RA14AZ48	RA14AZ60
Compressor crankcase heater*	44-17402-44	44-17402-44	44-17402-44	44-17402-44	44-17402-45	44-17402-45	44-17402-45
Low ambient control	RXAD-A08	RXAD-A08	RXAD-A08	RXAD-A08	RXAD-A08	RXAD-A08	RXAD-A08
Compressor sound cover	68-23427-26	68-23427-26	68-23427-26	68-23427-26	68-23427-25	68-23427-25	68-23427-25
Compressor hard start kit	SK-A1	SK-A1	SK-A1	SK-A1	SK-A1	SK-A1	SK-A1
Compressor time delay	RXMD-B01	RXMD-B01	RXMD-B01	RXMD-B01	RXMD-B01	RXMD-B01	RXMD-B01
Low pressure control	RXAC-A07	RXAC-A07	RXAC-A07	RXAC-A07	RXAC-A07	RXAC-A07	RXAC-A07
High pressure control	RXAB-A07	RXAB-A07	RXAB-A07	RXAB-A07	RXAB-A07	RXAB-A07	RXAB-A07
Liquid Line Solenoid (24 VAC, 50/60 Hz)	Solenoid Valve	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC
	Solenoid Coil	61-AMG24V	61-AMG24V	61-AMG24V	61-AMG24V	61-AMG24V	61-AMG24V
Liquid Line Solenoid (120/240 VAC, 50/60 Hz)	Solenoid Valve	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC	200RD2T3TVLC
	Solenoid Coil	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V	61-AMG120/240V
Classic Top Cap w/Label	91-101123-21	91-101123-21	91-101123-21	91-101123-21	91-101123-21	91-101123-21	91-101123-21

\*Crankcase Heater recommended with Low Ambient Kit.

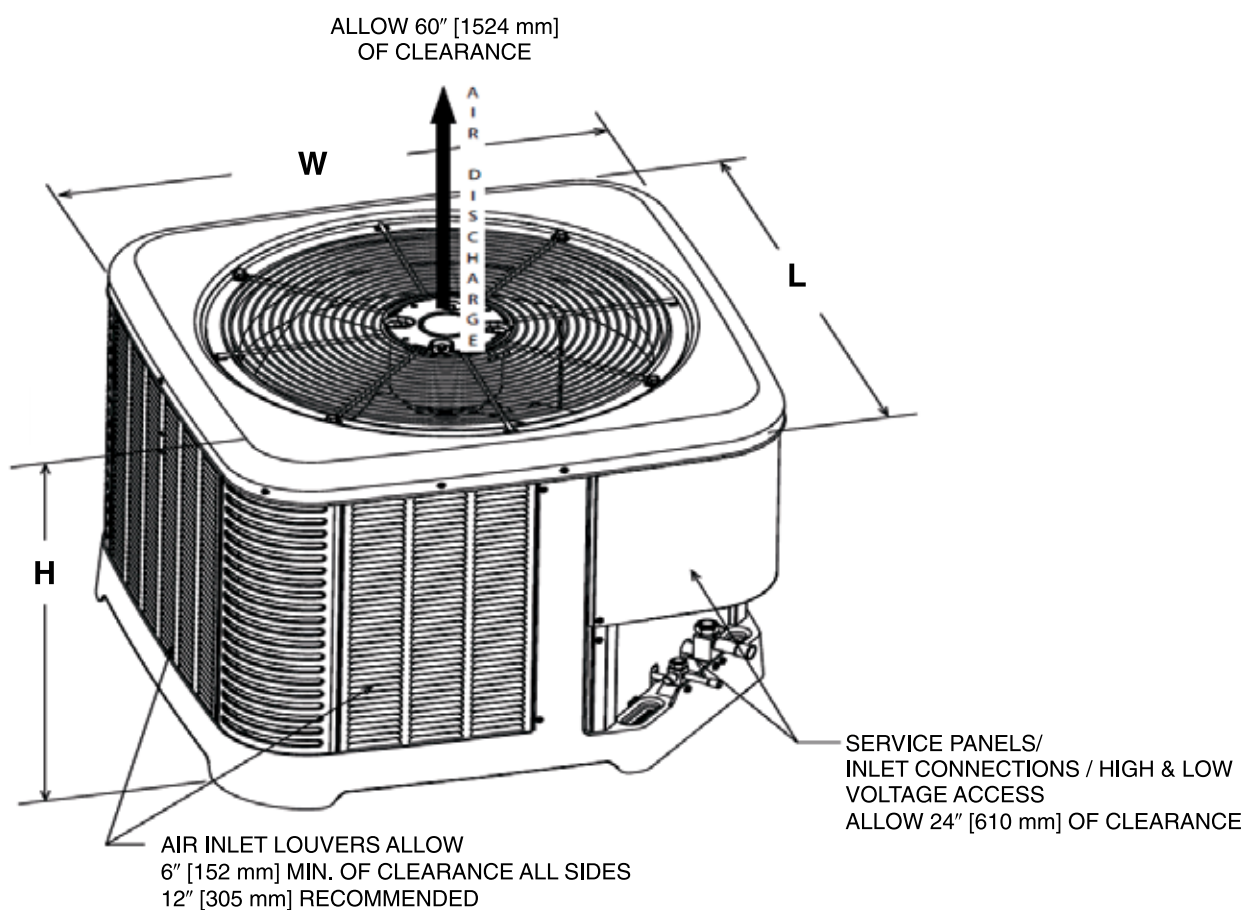
## Weighted Sound Power Level (dBA)

UNIT SIZE- VOLTAGE, SERIES	STANDARD RATING (DBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA without tone adjustment)						
		125	250	500	1000	2000	4000	8000
RA14AZ18	70.7	48.2	56.0	61.9	61.0	56.5	53.5	45.7
RA14AZ24	68.5	44.6	53.6	58.7	58.0	55.5	50.5	45.7
RA14AZ30	70.8	45.1	54.5	59.8	59.0	56.8	53.8	45.9
RA14AZ36	71.6	45.4	52.6	60.2	60.8	58.7	55.9	48.4
RA14AZ42	72.5	46.6	55.3	63.9	62.1	59.4	55.2	48.2
RA14AZ48	74.0	45.4	55.7	64.2	62.9	60.8	56.7	51.2
RA14AZ60	75.8	43.4	59.8	67.2	65.5	62.7	59.2	53.1

**NOTE:** Tested in accordance with AHRI Standard 270-08 (not listed in AHRI)

## Unit Dimensions

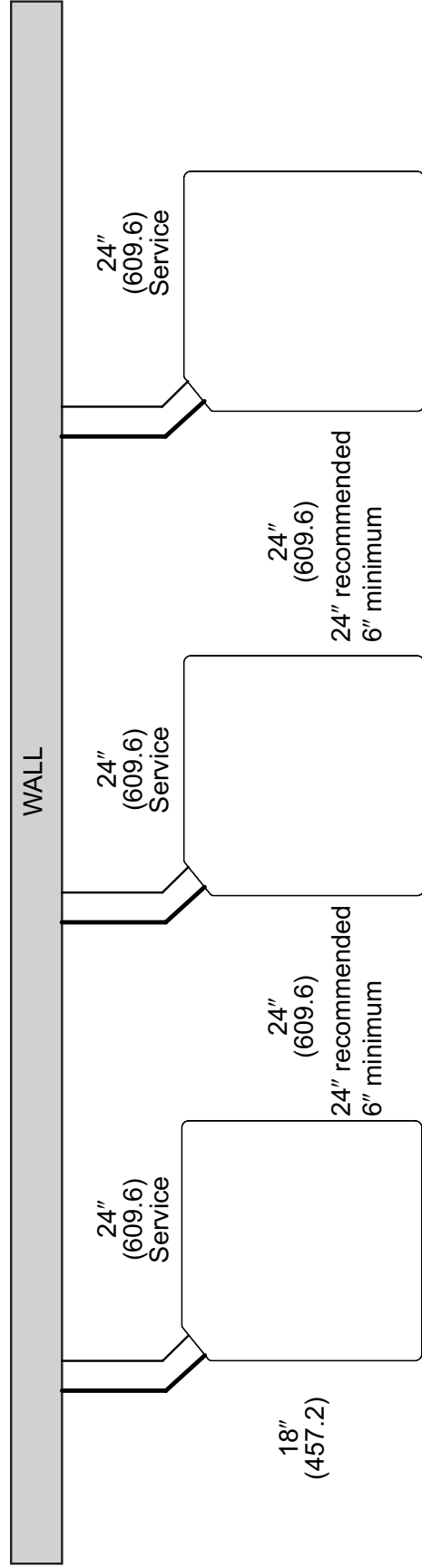
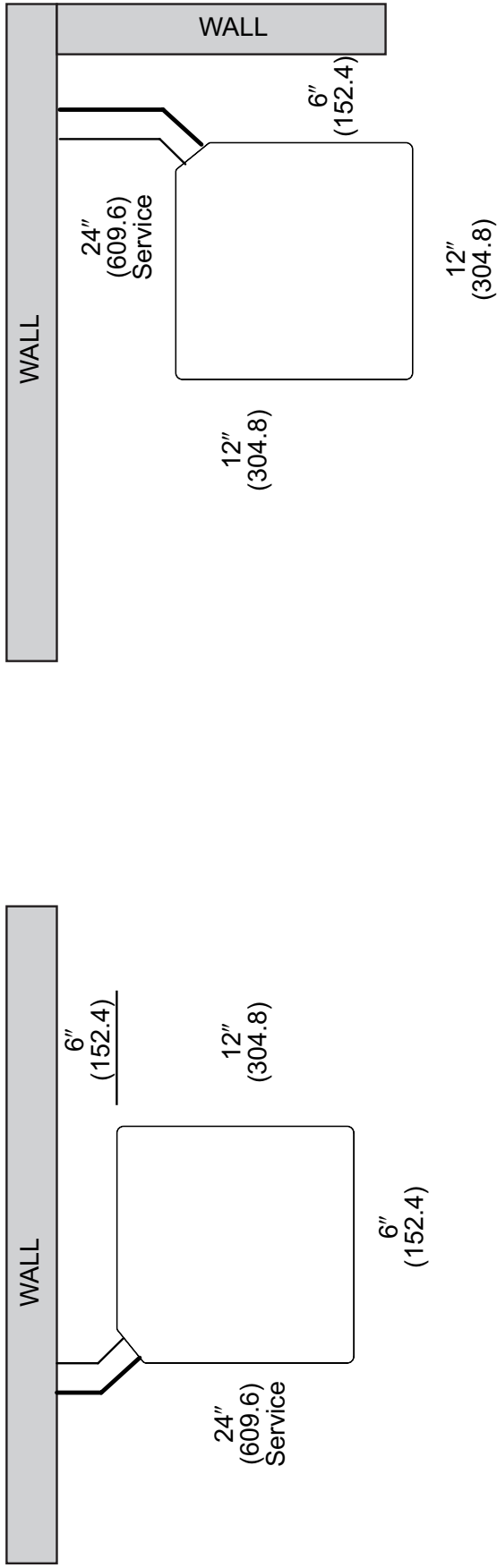
MODEL NO.	OPERATING						SHIPPING					
	H (Height)		L (Length)		W (Width)		H (Height)		L (Length)		W (Width)	
	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
RA14AZ18	25.00	635	29.75	756	29.75	756	26.50	673	32.38	822	32.38	822
RA14AZ24	25.00	635	33.75	857	33.75	857	26.50	673	36.38	924	36.38	924
RA14AZ30	27.00	686	33.75	857	33.75	857	28.50	724	36.38	924	36.38	924
RA14AZ36	31.00	787	33.75	857	33.75	857	32.50	826	36.38	924	36.38	924
RA14AZ42	35.00	889	33.75	857	33.75	857	36.50	927	36.38	924	36.38	924
RA14AZ48	35.00	889	33.75	857	33.75	857	36.50	927	36.38	924	36.38	924
RA14AZ60	51.00	1295	35.75	908	35.75	908	52.50	1334	38.38	975	38.38	975



[ ] Designates Metric Conversions

ST-A1226-02-00

# CLEARANCES

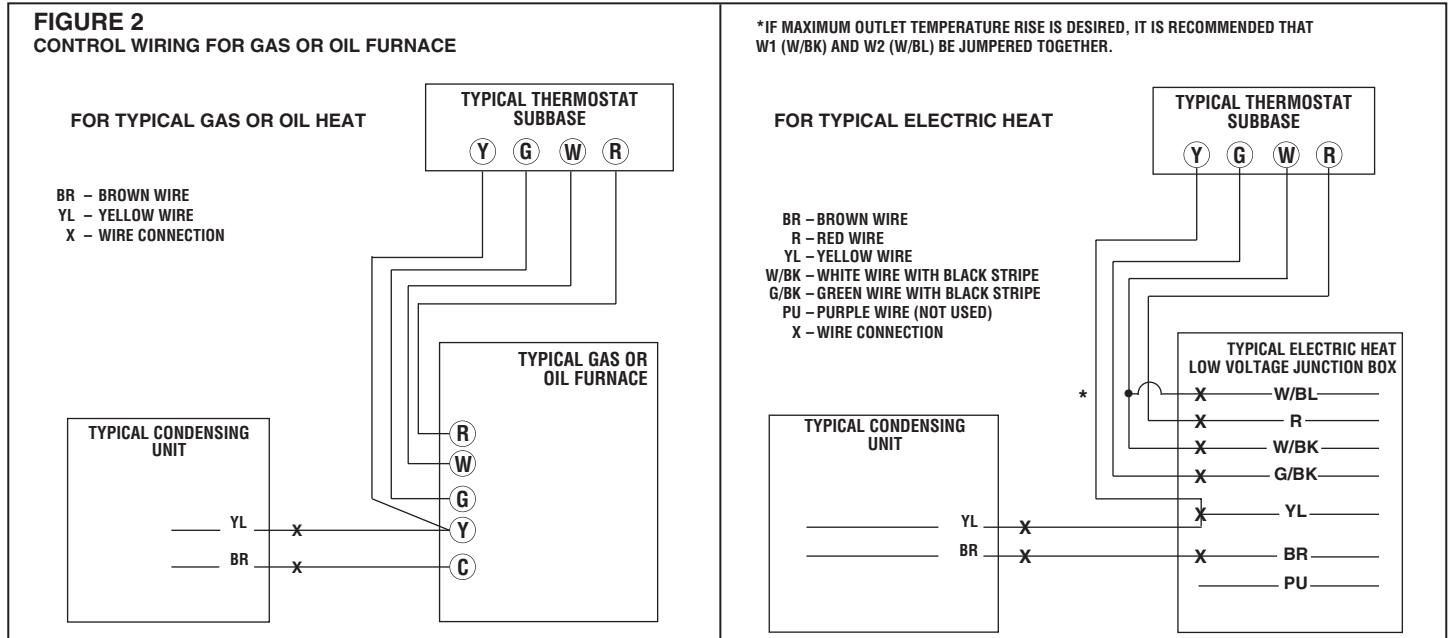


**NOTE: NUMBERS IN ( ) = mm**

**IMPORTANT:** When installing multiple units in an alcove, roof well or partially enclosed area, ensure there is adequate ventilation to prevent re-circulation of discharge air.



## Control Wiring



## Application Guidelines

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01 -in. wc.
2. Minimum outdoor operation air temperature for cooling mode without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature is 125°F (51.7°C).
4. For reliable operation, unit should be level in all horizontal planes.
5. Use only copper wire for electric connections at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
6. Do not apply capillary tube indoor coils to these units.
7. Factory-supplied filter drier must be installed.

# Refrigerant Line Size Information

14.3 SEER2 SINGLE-STAGE AIR CONDITIONERS																	
UNIT SIZE	ALLOWABLE LIQUID LINE SIZE	ALLOWABLE SUCTION LINE SIZE	APPLY LONG LINE GUIDELINES IF LINEAR LINE LENGTH EXCEEDS THOSE SHOWN BELOW (FEET) (-JA14AZ)	EQUIVALENT LENGTH (FEET)													
				< 25	26-50	51-75	76-100	101-125	126-150	151-175	176-200	201-225	226-250				
				MAXIMUM VERTICAL RISE (OUTDOOR UNIT BELOW INDOOR UNIT) * / CAPACITY MULTIPLIER													
1.5 Ton **SEE NOTE 3	1/4"	5/8"	N/A	25 / 1.00	50 / 0.99	62 / 0.98	43 / 0.98	24 / 0.97	5 / 0.97	NR	NR	NR	NR	NR	NR	NR	
	5/16"	5/8"	223	25 / 1.00	50 / 0.99	75 / 0.98	98 / 0.98	93 / 0.97	88 / 0.97	83 / 0.96	78 / 0.96	73 / 0.95	68 / 0.94	100 / 0.94	100 / 0.94	100 / 0.94	
	3/8"	5/8"	148	25 / 1.00	50 / 0.99	75 / 0.98	100 / 0.98	100 / 0.97	100 / 0.97	100 / 0.97	100 / 0.96	100 / 0.96	100 / 0.95	100 / 0.94	100 / 0.94	100 / 0.94	
	1/4"	3/4"***	N/A	25 / 1.00	50 / 1.00	62 / 0.99	43 / 0.99	24 / 0.99	5 / 0.99	NR	NR	NR	NR	NR	NR	NR	NR
	5/16"	3/4"***	223	25 / 1.00	50 / 1.00	75 / 0.99	98 / 0.99	93 / 0.99	88 / 0.99	83 / 0.99	78 / 0.98	73 / 0.98	68 / 0.98	100 / 0.98	100 / 0.98	100 / 0.98	100 / 0.98
	3/8"	3/4"***	148	25 / 1.00	50 / 1.00	75 / 1.00	100 / 0.99	100 / 0.99	100 / 0.99	100 / 0.99	100 / 0.99	100 / 0.98	100 / 0.98	100 / 0.98	100 / 0.98	100 / 0.98	100 / 0.98
2 Ton	1/4"	5/8"	N/A	25 / 0.99	50 / 0.98	21 / 0.97	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
	5/16"	5/8"	213	25 / 0.99	50 / 0.98	75 / 0.97	87 / 0.96	77 / 0.95	69 / 0.94	61 / 0.93	53 / 0.92	45 / 0.91	37 / 0.90	100 / 0.90	100 / 0.90	100 / 0.90	
	3/8"	5/8"	142	25 / 0.99	50 / 0.98	75 / 0.97	100 / 0.96	100 / 0.95	100 / 0.94	98 / 0.93	95 / 0.92	92 / 0.91	89 / 0.90	100 / 0.90	100 / 0.90	100 / 0.90	
	1/4"	3/4"	N/A	25 / 1.00	50 / 1.00	21 / 0.99	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
	5/16"	3/4"	213	25 / 1.00	50 / 1.00	75 / 0.99	87 / 0.99	77 / 0.98	69 / 0.98	61 / 0.98	53 / 0.97	45 / 0.97	37 / 0.96	100 / 0.96	100 / 0.96	100 / 0.96	
	3/8"	3/4"	142	25 / 1.00	50 / 1.00	75 / 0.99	100 / 0.99	100 / 0.98	100 / 0.98	100 / 0.98	98 / 0.98	95 / 0.97	93 / 0.97	90 / 0.96	100 / 0.96	100 / 0.96	
2.5 Ton	5/16"	5/8"	N/A	25 / 0.99	50 / 0.98	75 / 0.96	70 / 0.94	59 / 0.93	48 / 0.91	36 / 0.90	NR	NR	NR	NR	NR	NR	
	3/8"	5/8"	117	25 / 0.99	50 / 0.98	75 / 0.96	100 / 0.94	98 / 0.93	94 / 0.91	90 / 0.90	NR	NR	NR	NR	NR	NR	
	5/16"	3/4"	175	25 / 1.00	50 / 0.99	75 / 0.99	70 / 0.98	59 / 0.98	48 / 0.97	36 / 0.96	25 / 0.96	13 / 0.95	NR	NR	NR	NR	
	3/8"	3/4"	117	25 / 1.00	50 / 0.99	75 / 0.99	100 / 0.98	98 / 0.98	94 / 0.97	90 / 0.96	86 / 0.96	82 / 0.95	78 / 0.95	100 / 0.95	100 / 0.95	100 / 0.95	
	5/16"	5/8"	N/A	25 / 0.99	50 / 0.97	66 / 0.94	49 / 0.92	32 / 0.90	NR	NR	NR	NR	NR	NR	NR	NR	
	3/8"	5/8"	85	25 / 0.99	50 / 0.97	75 / 0.94	95 / 0.92	89 / 0.90	NR	NR	NR	NR	NR	NR	NR	NR	
3 Ton	5/16"	3/4"	128	25 / 1.00	50 / 0.99	66 / 0.98	49 / 0.98	32 / 0.97	15 / 0.96	NR	NR	NR	NR	NR	NR	NR	
	3/8"	3/4"	85	25 / 1.00	50 / 0.99	75 / 0.98	95 / 0.98	89 / 0.97	84 / 0.96	78 / 0.95	72 / 0.94	67 / 0.93	61 / 0.93	100 / 0.93	100 / 0.93	100 / 0.93	
	1/2"	3/4"	43	25 / 1.00	50 / 0.99	75 / 0.98	100 / 0.98	100 / 0.97	100 / 0.96	100 / 0.96	100 / 0.94	100 / 0.93	100 / 0.93	100 / 0.93	100 / 0.93	100 / 0.93	
	5/16"	7/8"	128	25 / 1.00	50 / 1.00	66 / 1.00	49 / 0.99	32 / 0.99	15 / 0.99	NR	NR	NR	NR	NR	NR	NR	
	3/8"	7/8"	85	25 / 1.00	50 / 1.00	75 / 1.00	95 / 0.99	89 / 0.99	84 / 0.99	78 / 0.98	72 / 0.98	67 / 0.98	61 / 0.97	100 / 0.97	100 / 0.97	100 / 0.97	
	1/2"	7/8"	43	25 / 1.00	50 / 1.00	75 / 1.00	100 / 0.99	100 / 0.99	100 / 0.99	100 / 0.99	100 / 0.98	100 / 0.98	100 / 0.98	100 / 0.98	100 / 0.98	100 / 0.98	
3.5 Ton	3/8"	3/4"	102	25 / 0.99	50 / 0.98	75 / 0.97	88 / 0.96	80 / 0.95	72 / 0.94	65 / 0.92	57 / 0.91	49 / 0.90	NR	NR	NR	NR	
	1/2"	3/4"	51	25 / 0.99	50 / 0.98	75 / 0.97	100 / 0.96	100 / 0.95	100 / 0.94	100 / 0.92	100 / 0.91	100 / 0.90	NR	NR	NR	NR	
	3/8"	7/8"	102	25 / 1.00	50 / 1.00	75 / 0.99	88 / 0.99	80 / 0.99	72 / 0.98	65 / 0.97	57 / 0.97	49 / 0.96	42 / 0.96	100 / 0.96	100 / 0.96	100 / 0.96	
	1/2"	7/8"	51	25 / 1.00	50 / 1.00	75 / 0.99	100 / 0.99	100 / 0.99	100 / 0.99	100 / 0.98	100 / 0.97	100 / 0.96	100 / 0.96	100 / 0.96	100 / 0.96	100 / 0.96	
	3/8"	3/4"	102	25 / 0.99	50 / 0.98	75 / 0.97	88 / 0.96	80 / 0.95	72 / 0.94	65 / 0.92	57 / 0.91	49 / 0.90	NR	NR	NR	NR	
	1/2"	7/8"	51	25 / 0.99	50 / 0.98	75 / 0.97	100 / 0.96	100 / 0.95	100 / 0.94	100 / 0.92	100 / 0.91	100 / 0.90	NR	NR	NR	NR	

- NOTES:**
- Do not exceed 200 ft linear line length.
  - \*Do not exceed 100 ft vertical separation if outdoor unit is above indoor unit.
  - \*\*3/4" suction line should only be used for 1.5 ton systems if outdoor unit is below or at same level as indoor to assure proper oil return.
  - Always use the smallest liquid line allowable to minimize refrigerant charge.
  - Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
  - Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

## Refrigerant Line Size Information (Con't.)

14.3 SEER2 SINGLE-STAGE AIR CONDITIONERS													
UNIT SIZE	ALLOWABLE LIQUID LINE SIZE	ALLOWABLE SUCTION LINE SIZE	APPLY LONG LINE GUIDELINES IF LINEAR LINE LENGTH EXCEEDS THOSE SHOWN BELOW (FEET)	EQUIVALENT LENGTH (FEET)									
				< 25	26-50	51-75	76-100	101-125	126-150	151-175	176-200	201-225	226-250
				MAXIMUM VERTICAL RISE (OUTDOOR UNIT BELOW INDOOR UNIT) * / CAPACITY MULTIPLIER									
4 Ton	3/8"	3/4"	110	25 / 0.99	50 / 0.98	75 / 0.96	77 / 0.95	67 / 0.93	57 / 0.92	46 / 0.91	NR	NR	NR
	1/2"	3/4"	55	25 / 0.99	50 / 0.98	75 / 0.96	100 / 0.95	100 / 0.93	100 / 0.92	100 / 0.91	NR	NR	NR
	3/8"	7/8"	110	25 / 1.00	50 / 0.99	75 / 0.99	77 / 0.98	67 / 0.97	57 / 0.97	46 / 0.96	36 / 0.96	26 / 0.95	15 / 0.95
	1/2"	7/8"	55	25 / 1.00	50 / 0.99	75 / 0.99	100 / 0.98	100 / 0.97	100 / 0.97	100 / 0.96	100 / 0.96	99 / 0.95	97 / 0.95
	3/8"	3/4"	0	25 / 0.99	50 / 0.97	75 / 0.94	61 / 0.92	46 / 0.90	NR	NR	NR	NR	NR
	1/2"	3/4"	0	25 / 0.99	50 / 0.97	75 / 0.94	100 / 0.92	100 / 0.90	NR	NR	NR	NR	NR
5 Ton	3/8"	7/8"	0	25 / 1.00	50 / 0.99	75 / 0.98	61 / 0.97	46 / 0.96	32 / 0.95	18 / 0.94	NR	NR	NR
	1/2"	7/8"	0	25 / 1.00	50 / 0.99	75 / 0.98	100 / 0.97	100 / 0.96	100 / 0.95	97 / 0.94	95 / 0.94	92 / 0.93	89 / 0.92
	3/8"	1-1/8"	0	25 / 1.01	50 / 1.01	75 / 1.00	61 / 1.00	46 / 0.99	32 / 0.99	18 / 0.99	NR	NR	NR
	1/2"	1-1/8"	0	25 / 1.01	50 / 1.01	75 / 1.00	100 / 1.00	100 / 0.99	100 / 0.99	97 / 0.99	95 / 0.99	92 / 0.99	89 / 0.98

**NOTES:**

- 1) Do not exceed 200 ft linear line length.
- 2) \*Do not exceed 100 ft vertical separation if outdoor unit is above indoor unit.
- 3) \*\*3/4" suction line should only be used for 1.5 ton systems if outdoor unit is below or at same level as indoor to assure proper oil return.
- 4) Always use the smallest liquid line allowable to minimize refrigerant charge.
- 5) Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
- 6) Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

# Refrigerant Line Size Information

14.3 SEER2 SINGLE-STAGE AIR CONDITIONERS																			
UNIT SIZE	ALLOWABLE LIQUID LINE SIZE (MM [IN.])	ALLOWABLE SUCTION LINE SIZE (MM [IN.])	APPLY LONG LINE GUIDELINES IF LINEAR LINE LENGTH EXCEEDS THOSE SHOWN BELOW (METERS) (-)JA14AZ	EQUIVALENT LENGTH (METERS)															
				< 8	8-15	16-23	24-30	31-38	39-46	47-53	54-61	62-69	70-76						
				MAXIMUM VERTICAL RISE (OUTDOOR UNIT BELOW INDOOR UNIT) * / CAPACITY MULTIPLIER															
5.3 KW [1.5 Ton] **SEE NOTE 3	6.35 [1/4]	15.88 [5/8]	N/A	8 / 1.00	15 / 0.99	19 / 0.98	13 / 0.98	7 / 0.97	2 / 0.97	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	7.94 [5/16]	15.88 [5/8]	68	8 / 1.00	15 / 0.99	23 / 0.98	30 / 0.98	28 / 0.97	27 / 0.97	25 / 0.96	22 / 0.95	21 / 0.94	19 / 0.93	16 / 0.92	14 / 0.91	11 / 0.90	11 / 0.90	11 / 0.90	11 / 0.90
	9.53 [3/8]	15.88 [5/8]	45	8 / 1.00	15 / 0.99	23 / 0.98	30 / 0.98	30 / 0.97	30 / 0.97	30 / 0.96	30 / 0.95	30 / 0.94	30 / 0.93	29 / 0.92	28 / 0.91	27 / 0.90	27 / 0.90	27 / 0.90	27 / 0.90
	6.35 [1/4]	19.05 [3/4]**	N/A	8 / 1.00	15 / 1.00	19 / 0.99	13 / 0.99	7 / 0.99	2 / 0.99	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	7.94 [5/16]	19.05 [3/4]**	68	8 / 1.00	15 / 1.00	23 / 0.99	30 / 0.99	28 / 0.99	27 / 0.99	25 / 0.99	22 / 0.98	21 / 0.98	19 / 0.98	16 / 0.97	14 / 0.97	11 / 0.96	11 / 0.96	11 / 0.96	11 / 0.96
7.0 KW [2 Ton]	6.35 [1/4]	15.88 [5/8]	N/A	8 / 0.99	15 / 0.98	6 / 0.97	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	7.94 [5/16]	15.88 [5/8]	59	8 / 0.99	15 / 0.98	23 / 0.97	27 / 0.96	23 / 0.95	21 / 0.94	19 / 0.93	16 / 0.92	14 / 0.91	11 / 0.90	11 / 0.90	11 / 0.90	11 / 0.90	11 / 0.90	11 / 0.90	11 / 0.90
	9.53 [3/8]	15.88 [5/8]	39	8 / 0.99	15 / 0.98	23 / 0.97	30 / 0.96	30 / 0.95	30 / 0.94	30 / 0.93	29 / 0.92	28 / 0.91	27 / 0.90	27 / 0.90	27 / 0.90	27 / 0.90	27 / 0.90	27 / 0.90	27 / 0.90
	6.35 [1/4]	19.05 [3/4]	N/A	8 / 1.00	15 / 1.00	6 / 0.99	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	7.94 [5/16]	19.05 [3/4]	59	8 / 1.00	15 / 1.00	23 / 0.99	27 / 0.99	23 / 0.98	21 / 0.98	19 / 0.98	16 / 0.97	14 / 0.97	11 / 0.96	11 / 0.96	11 / 0.96	11 / 0.96	11 / 0.96	11 / 0.96	11 / 0.96
8.8 KW [2.5 Ton]	6.35 [1/4]	19.05 [3/4]	39	8 / 1.00	15 / 1.00	23 / 0.99	30 / 0.99	30 / 0.99	30 / 0.98	30 / 0.98	29 / 0.97	28 / 0.97	27 / 0.96	26 / 0.96	25 / 0.95	24 / 0.95	24 / 0.95	24 / 0.95	24 / 0.95
	7.94 [5/16]	15.88 [5/8]	N/A	8 / 0.99	15 / 0.98	23 / 0.96	21 / 0.94	18 / 0.93	15 / 0.91	11 / 0.90	NR	NR	NR	NR	NR	NR	NR	NR	NR
	9.53 [3/8]	15.88 [5/8]	36	8 / 0.99	15 / 0.98	23 / 0.96	30 / 0.94	30 / 0.93	29 / 0.91	27 / 0.90	NR	NR	NR	NR	NR	NR	NR	NR	NR
	7.94 [5/16]	19.05 [3/4]	53	8 / 1.00	15 / 0.99	23 / 0.99	21 / 0.98	18 / 0.98	15 / 0.97	11 / 0.96	8 / 0.96	4 / 0.95	NR	NR	NR	NR	NR	NR	NR
	9.53 [3/8]	19.05 [3/4]	36	8 / 1.00	15 / 0.99	23 / 0.99	30 / 0.98	30 / 0.98	29 / 0.97	27 / 0.96	26 / 0.96	25 / 0.95	24 / 0.95	24 / 0.95	24 / 0.95	24 / 0.95	24 / 0.95	24 / 0.95	24 / 0.95
10.6 KW [3 Ton]	6.35 [1/4]	15.88 [5/8]	N/A	8 / 0.99	15 / 0.97	20 / 0.94	15 / 0.92	10 / 0.90	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	7.94 [5/16]	15.88 [5/8]	26	8 / 0.99	15 / 0.97	23 / 0.94	29 / 0.92	27 / 0.90	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	9.53 [3/8]	19.05 [3/4]	39	8 / 1.00	15 / 0.99	20 / 0.98	15 / 0.98	10 / 0.97	5 / 0.96	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	7.94 [5/16]	19.05 [3/4]	26	8 / 1.00	15 / 0.99	23 / 0.98	29 / 0.98	27 / 0.97	26 / 0.96	24 / 0.95	22 / 0.94	20 / 0.93	19 / 0.93	19 / 0.93	19 / 0.93	19 / 0.93	19 / 0.93	19 / 0.93	19 / 0.93
	12.70 [1/2]	19.05 [3/4]	13	8 / 1.00	15 / 0.99	23 / 0.98	30 / 0.98	30 / 0.97	30 / 0.96	30 / 0.95	30 / 0.94	30 / 0.93	30 / 0.93	30 / 0.93	30 / 0.93	30 / 0.93	30 / 0.93	30 / 0.93	30 / 0.93
12.3 KW [3.5 Ton]	6.35 [1/4]	19.05 [3/4]**	68	8 / 1.00	15 / 1.00	23 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99
	7.94 [5/16]	19.05 [3/4]**	45	8 / 1.00	15 / 1.00	23 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99	30 / 0.99
	9.53 [3/8]	19.05 [3/4]**	N/A	8 / 0.99	15 / 0.98	6 / 0.97	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	7.94 [5/16]	15.88 [5/8]	59	8 / 0.99	15 / 0.98	23 / 0.97	27 / 0.96	23 / 0.95	21 / 0.94	19 / 0.93	16 / 0.92	14 / 0.91	11 / 0.90	11 / 0.90	11 / 0.90	11 / 0.90	11 / 0.90	11 / 0.90	11 / 0.90
	9.53 [3/8]	19.05 [3/4]**	31	8 / 1.00	15 / 1.00	23 / 0.99	27 / 0.99	24 / 0.99	22 / 0.98	20 / 0.97	17 / 0.97	15 / 0.96	13 / 0.96	13 / 0.96	13 / 0.96	13 / 0.96	13 / 0.96	13 / 0.96	13 / 0.96

- NOTES:**
- 1) Do not exceed 61m linear line length.
  - 2) \*Do not exceed 30m vertical separation if outdoor unit is above indoor unit.
  - 3) \*\*19.05mm suction line should only be used for 1.5 ton systems if outdoor unit is below or at same level as indoor to assure proper oil return.
  - 4) Always use the smallest liquid line allowable to minimize refrigerant charge.
  - 5) Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
  - 6) Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

## Refrigerant Line Size Information (Con't.)

14.3 SEER2 SINGLE-STAGE AIR CONDITIONERS													
UNIT SIZE	ALLOWABLE LIQUID LINE SIZE (MM [IN.])	ALLOWABLE SUCTION LINE SIZE (MM [IN.])	APPLY LONG LINE GUIDELINES IF LINEAR LINE LENGTH EXCEEDS THOSE SHOWN BELOW (METERS)	EQUIVALENT LENGTH (METERS)									
				< 25	26-50	51-75	76-100	101-125	126-150	151-175	176-200	201-225	226-250
				MAXIMUM VERTICAL RISE (OUTDOOR UNIT BELOW INDOOR UNIT) * / CAPACITY MULTIPLIER									
14.1 kW [4 Ton]	9.53 [3/8]	19.05 [3/4]	34	8 / 0.99	15 / 0.98	23 / 0.96	24 / 0.95	20 / 0.93	17 / 0.92	14 / 0.91	NR	NR	NR
	12.7 [1/2]	19.05 [3/4]	17	8 / 0.99	15 / 0.98	23 / 0.96	30 / 0.95	30 / 0.93	30 / 0.92	30 / 0.91	NR	NR	NR
	9.53 [3/8]	22.23 [7/8]	34	8 / 1.00	15 / 0.99	23 / 0.99	24 / 0.98	20 / 0.97	17 / 0.97	14 / 0.96	11 / 0.96	8 / 0.95	5 / 0.95
	12.7 [1/2]	22.23 [7/8]	17	8 / 1.00	15 / 0.99	23 / 0.99	30 / 0.98	30 / 0.97	30 / 0.97	30 / 0.96	30 / 0.96	30 / 0.95	30 / 0.95
	9.53 [3/8]	19.05 [3/4]	0	8 / 0.99	15 / 0.97	23 / 0.94	19 / 0.92	14 / 0.90	NR	NR	NR	NR	NR
	12.7 [1/2]	19.05 [3/4]	0	8 / 0.99	15 / 0.97	23 / 0.94	30 / 0.92	30 / 0.90	NR	NR	NR	NR	NR
17.6 kW [5 Ton]	9.53 [3/8]	22.23 [7/8]	0	8 / 1.00	15 / 0.99	23 / 0.98	19 / 0.97	14 / 0.96	10 / 0.95	5 / 0.94	NR	NR	NR
	12.7 [1/2]	22.23 [7/8]	0	8 / 1.00	15 / 0.99	23 / 0.98	30 / 0.97	30 / 0.96	30 / 0.95	30 / 0.94	29 / 0.94	28 / 0.93	27 / 0.92
	9.53 [3/8]	28.58 [1-1/8]	0	8 / 1.01	15 / 1.01	23 / 1.00	19 / 1.00	14 / 0.99	10 / 0.99	5 / 0.99	NR	NR	NR
	12.7 [1/2]	28.58 [1-1/8]	0	8 / 1.01	15 / 1.01	23 / 1.00	30 / 1.00	30 / 0.99	30 / 0.99	30 / 0.99	29 / 0.99	28 / 0.99	27 / 0.98

**NOTES:**

- 1) Do not exceed 61m linear line length.
- 2) \*Do not exceed 30m vertical separation if outdoor unit is above indoor unit.
- 3) \*\*\*19.05mm suction line should only be used for 1.5 ton systems if outdoor unit is below or at same level as indoor to assure proper oil return.
- 4) Always use the smallest liquid line allowable to minimize refrigerant charge.
- 5) Applications shaded in light gray indicate capacity multipliers between 0.90 and 0.96 which are not recommended, but are allowed.
- 6) Applications shaded in dark gray are not recommended due to excessive liquid or suction pressure drop.

## Performance Data @ AHRI Standard Conditions – Cooling

DESIGNATED TESTED COMBINATION (DTC)							
OUTDOOR UNIT	INDOOR COIL	TOTAL CAPACITY BTU/H [KW]	NET SENSIBLE BTU/H [KW]	NET LATENT BTU/H [KW]	SEER2	EER2	INDOOR CFM [L/s]
RA14AZ18AJ1	RCFZ2417STAN	17,100 [5.0]	13,100 [3.8]	4,000 [1.2]	14.3	11.7	600 [283.2]
RA14AZ24AJ1	RCFZ2417STAN	22,800 [6.7]	17,500 [5.1]	5,300 [1.6]	14.3	11.7	725 [342.2]
RA14AZ30AJ1	RCFZ3617STAN	28,600 [8.4]	21,800 [6.4]	6,800 [2.0]	14.3	11.7	900 [424.8]
RA14AZ36AJ1	RCFZ3617STAN	34,200 [10.0]	26,200 [7.7]	8,000 [2.3]	14.3	11.7	1,025 [483.7]
RA14AZ42AJ1	RCFZ4821STAN	38,500 [11.3]	29,500 [8.6]	9,000 [2.6]	14.3	11.7	1,300 [613.5]
RA14AZ48AJ1	RCFZ4821STAN	45,000 [13.2]	34,500 [10.1]	10,500 [3.1]	13.8	11.2	1,425 [672.5]
RA14AZ60AJ1	RCFZ6024STAN	56,000 [16.4]	42,900 [12.6]	13,100 [3.8]	13.8	11.2	1,600 [755.1]

**NOTE:** This data includes DTC (Designated Test Combination) ratings and is for reference purposes only. A full listing of official ratings and system match-ups, along with downloadable certificates, can be accessed from the AHRI website: [www.ahrirectory.org](http://www.ahrirectory.org).

[ ] Designates Metric Conversions





**GENERAL TERMS OF LIMITED WARRANTY\***

Ruud will furnish a replacement for any part of this product which fails in normal use and service within the applicable period stated, in accordance with the terms of the limited warranty.

**\*For complete details of the Limited and Conditional Warranties, including applicable terms and conditions, contact your local contractor or the Manufacturer for a copy of the product warranty certificate.**

Conditional Parts  
(Registration Required)..... Ten (10) Years

**Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.**

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*In keeping with its policy of continuous progress and product improvement, Ruud reserves the right to make changes without notice.*

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