

# ML13KC1

MERIT® SERIES

Single-Stage | Quantum™ Coil | R-454B | 3-Phase | 60Hz

COMMERCIAL  
PRODUCT SPECIFICATIONS (EHB)



3 to 5 Tons

SEER2 up to 15.5

Cooling Capacity | 31,800 to 59,000 Btuh



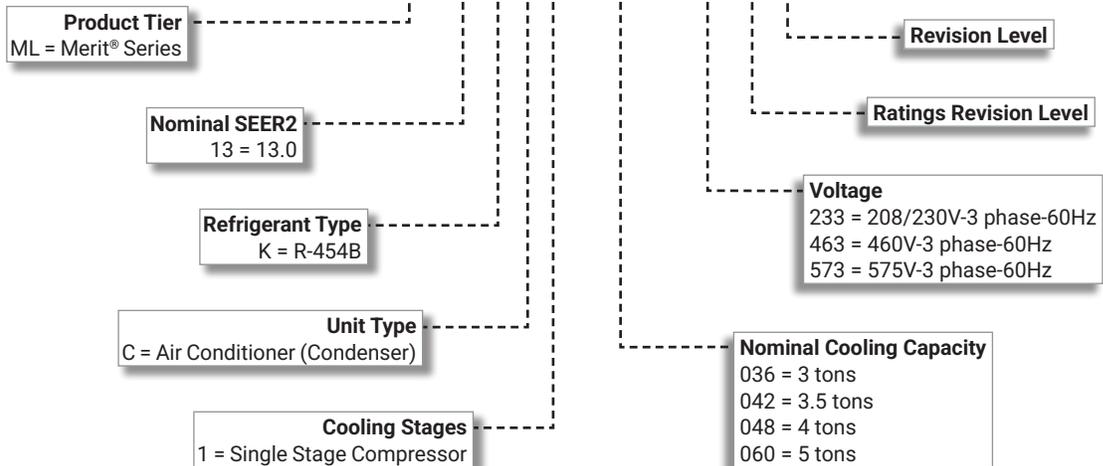
## MERIT® SERIES



2025 COMPLIANT  
REFRIGERANT

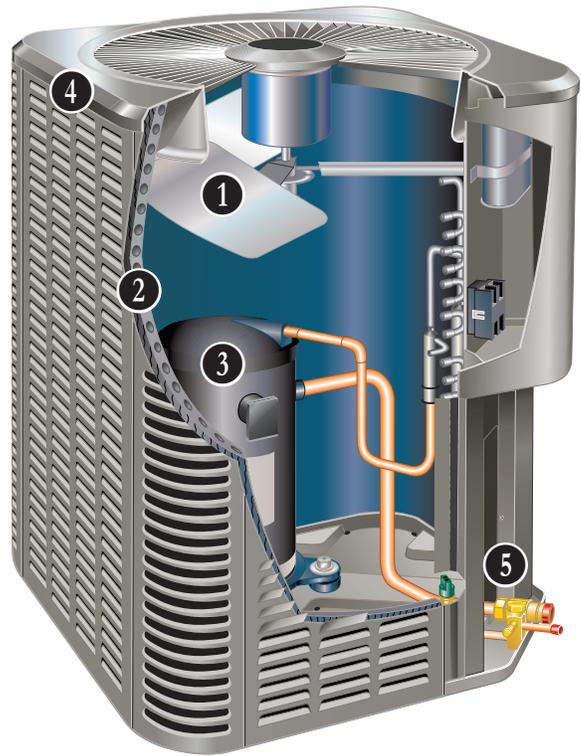
### MODEL NUMBER IDENTIFICATION

**ML 13 K C 1 - 036 - 233 A 01**



## FEATURE HIGHLIGHTS

1. Outdoor Coil Fan
2. Quantum™ Coil
3. Scroll Compressor
4. Heavy Gauge Steel Cabinet
5. Refrigerant Line Connections and Access



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## APPROVALS AND WARRANTY

### **APPROVALS**

- AHRI Standard 210/240-2023 certified
- AHRI Certified system match-ups and expanded ratings, visit [www.LennoxPros.com](http://www.LennoxPros.com)
- Sound rated to AHRI Standard 270-2008 test conditions
- Tested in Lennox' Research Laboratory environmental test room
- Rated According to U.S. Department of Energy (DOE) test procedures
- Unit and components ETL, NEC and CEC bonded for grounding to meet safety standards for servicing
- ETL certified (U.S. and Canada)
- ISO 9001 Registered Manufacturing Quality System

### **WARRANTY**

- Compressor - Limited five years
- All other covered components - Limited one year

**NOTE** - Refer to Lennox® Basic Limited Warranty at [www.Lennox.com](http://www.Lennox.com) for additional details.

## FEATURES

### **APPLICATIONS**

- 3 through 5 tons
- 208/230V, 460V, or 575V-3ph models
- Sound levels as low as 76 dBA
- Applicable to indoor air handlers or gas furnaces with indoor add-on coils
- Shipped completely factory assembled, piped and wired

### **REFRIGERATION SYSTEM**

#### **R-454B Refrigerant**

- Low GWP (Global Warming Potential)
- Zero ODP (Ozone Depletion Potential)
- Low Toxicity/Lower Flammability - A2L
- Unit is factory pre-charged

#### **1 Outdoor Coil Fan**

- Direct drive fan
- Vertical air discharge
- Totally enclosed fan motor
- Ball bearings
- Inherently protected
- Louvered steel fan guard

#### **2 Quantum™ Coil**

- Lennox designed and fabricated coil
- Enhanced aluminum alloy tube/enhanced fin coil
- Superior corrosion resistance
- Ripple-edged aluminum fins
- Aluminum tube construction
- Lanced fins for maximum fin surface exposure
- Fin collars grip tubing for maximum contact area
- Flared shoulder tubing connections
- Factory tested under high pressure
- Entire coil is accessible for cleaning

#### **High Capacity Liquid Line Drier**

- Furnished with unit for field installation
- Drier traps moisture or dirt that could contaminate the system
- 100% molecular-sieve, bead type drier

#### **High Pressure Switch**

- Protects the system from high pressure conditions that can be a result of fan failure or a blocked/dirty coil.
- Automatic reset

#### **Low Pressure Switch**

- Protects the compressor from low pressure conditions such as low refrigerant charge, or low/no indoor airflow
- Shuts off the outdoor unit if suction pressure falls below setting
- Automatic reset

## FEATURES

### **REFRIGERATION SYSTEM (continued)**

#### **Optional Accessories**

##### **Expansion Valve Kits**

- Field installed on indoor units (if required)
- See TXV Usage table
- Chatleff-style fitting

##### **Freezestat**

- Protects the system from ice buildup on the indoor coil due to conditions such as low/no airflow, or low refrigerant charge
- Cycles compressor off when suction line temperature falls below freezestat setpoint
- Opens at 29°F and closes at 58°F
- Installs on or near the discharge line of the evaporator or on the suction line

##### **Loss of Charge Switch Kit**

- Protects compressor from damage from low/no refrigerant charge conditions
- SPST, normally-closed
- Automatic reset

##### **Refrigerant Line Kits**

- Refrigerant lines are shipped refrigeration clean
- Lines are cleaned, dried, pressurized and sealed at factory
- Suction line fully insulated
- Lines are stubbed at both ends

### **INDOOR REFRIGERANT DETECTION SYSTEM (RDS)**

- Complies with UL 60335-2-40 approved standard
- Required for all systems using R-454B refrigerant
- Factory or field installed on all indoor units
- Consists of a RDS refrigerant detection sensor and a mitigation control in the indoor unit
- Ensures safe operation for systems equipped with R-454B refrigerant
- Indoor sensor will detect any R-454B refrigerant
- If R-454B refrigerant is detected, the refrigerant detection system will stop compressor operation and operate the blower to reduce concentrations in the conditioned space
- Once safe levels are reached the HVAC system will resume normal operation
- Refer to indoor unit Product Specifications documents for additional details

### **COMPRESSOR**

#### **3 Single-Stage Scroll Compressor**

- High volumetric efficiency
- Uniform suction flow
- Constant discharge flow
- High efficiency
- Quiet operation
- Low gas pulses during compression reduces operational sound levels.
- Compressor motor is internally protected from excessive current and temperature
- Muffler in discharge line reduces operating sound levels
- Compressor is installed in the unit on resilient rubber mounts for vibration free operation

#### **Compressor Crankcase Heater**

- Prevents migration of liquid refrigerant into compressor and ensures proper compressor lubrication

#### **Optional Accessories**

##### **Compressor Sound Cover**

- Reinforced vinyl compressor cover
- 1-1/2 inch thick batt fiberglass insulation
- All open edges are sealed with a one-inch wide hook and loop fastening tape

##### **Compressor Low Ambient Cut-Off Switch**

- Non-adjustable switch (low ambient cut-out)
- Prevents compressor operation when outdoor temperature is below 35°F

##### **Compressor Time-Off Control**

- Kit prevents compressor short-cycling
- Allows time for suction and discharge pressure to equalize.
- Permits compressor start-up in an unloaded condition.
- Automatic reset with 5 minute delay between compressor shut-off and start-up

## FEATURES

### CABINET

- 4 • Heavy gauge steel construction
- Louvered heavy gauge steel panels surround unit on all four sides
- Pre-painted powder paint cabinet finish
- Control box is conveniently located with all controls factory wired
- Corner patch plate allows access to compressor components
- Drainage holes are provided in base section for moisture removal

#### Zinc-Coated Steel Unit Base

- Resists rust and corrosion

### 5 Refrigerant Line Connections, Electrical Inlets, Service Valves

- Sweat connection suction and liquid lines
- Located on corner of unit cabinet
- Suction valve can be fully shut off, while liquid valve may be front seated to manage refrigerant charge while servicing system
- Refrigerant line connections and field wiring inlets are located in one central area of the cabinet
- See dimension drawing

#### Braze-Free/Press Fitting Flexibility

- Units can accommodate braze-free or press fittings for installation versatility

### Optional Accessories

#### Unit Stand-Off Kit

- Black high density polyethylene feet raise unit off of mounting surface
- Four feet are furnished per order number

### CONTROLS

#### Optional Accessories

#### Low Ambient Kit

- Heat pumps can operate in cooling mode down to 45°F outdoor air temperature without additional controls
- Two low ambient control options are available for field installation:
  1. Low Ambient Control Kit (30°F)
  2. Electronic Head Pressure Controller (0°F). Transformer included.

**NOTE** - Freezestat should be installed on compressors equipped with a low ambient kit.

#### Freezestat

- Installs on or near the suction line of the indoor coil or on the suction line
- Senses suction line temperature and cycles the compressor off when suction line temperature falls below it's setpoint
- Opens at 29°F and closes at 58°F

#### Thermostats

- For thermostat options, see Optional Conventional Temperature Control Systems on page 8

## SOUND DATA

Size	Octave Band Sound Power Levels dBA, re 10 <sup>-12</sup> Watts Center Frequency - HZ							<sup>1</sup> Sound Rating Number (dBA)	<sup>2</sup> Estimated Sound Pressure Level at Distance From Unit (dBA at distance in ft.)				
	125	250	500	1000	2000	4000	8000		3	5	10	15	50
036	58	67.5	71.5	70.5	66.5	61.5	55	76	69	64	58	55	44
042	56	65	71	71.5	67.5	62	55	76	69	64	58	55	44
048	61.5	68	73.5	72.5	69	64	56.5	78	71	66	60	57	46
060	63.5	70	75	75	70.5	68	61	80	73	68	62	59	48

NOTE - the octave sound power data does not include tonal correction.

<sup>1</sup> Tested according to AHRI Standard 270-2008 test conditions.

<sup>2</sup> Estimated sound pressure level at distance based on AHRI Standard 275-2010 method for equipment located on the ground, roof, or on side of building wall with no adjacent reflective surface within 9.8 feet. Sound pressure levels will increase based on changes to assumptions. For other applications, refer to AHRI Standard 275.

## SPECIFICATIONS

Size		036	042	048	060	
<b>Nominal Tonnage</b>		3	3.5	4	5	
<b>Sound Rating Number</b>	dBA	76	76	78	80	
<b>Connections (Sweat)</b>	Liquid line (OD) - in.	3/8	3/8	3/8	3/8	
	Suction line (OD) - in.	7/8	7/8	7/8	1-1/8	
<b>Compressor Type</b>		1-Stage Scroll	1-Stage Scroll	1-Stage Scroll	1-Stage Scroll	
<b>Refrigerant (15 ft. Line Set)</b>	<sup>1</sup> R-454B charge furnished	5 lbs. 10 oz.	6 lbs. 2 oz.	7 lbs. 10 oz.	6 lbs. 8 oz.	
<b>Indoor Unit Expansion Valve (TXV)</b>		<b>26Z70</b>	<b>26Z71</b>	<b>26Z71</b>	<b>26Z72</b>	
<b>Outdoor Coil</b>	Net face area - ft. <sup>2</sup>	Outer coil	18.67	21.00	16.33	21.00
		Inner coil	---	---	16.33	20.25
		Tube diameter - in.	5/16	5/16	5/16	5/16
		Rows	1	1	2	2
		Fins - in.	26	26	22	22
<b>Outdoor Fan</b>		HP	1/6	1/3	1/4	1/6
		Diameter - in.	22	22	22	22
		Blades	3	3	3	4
		Cfm	2800	2985	2875	3250
		Rpm	825	1985	2875	3250
		Watts	190	150	160	280
<b>Shipping Data - lbs.</b>		161	195	215	218	

## ELECTRICAL DATA

Line voltage data (Volts-3 Phase-60Hz)		208/230V	460V	575V	208/230V	460V	208/230V	460V	575V	208/230V	460V	575V
<sup>2</sup> Maximum overcurrent protection (MOCP) amps		25	10	10	25	15	25	15	10	35	15	15
<sup>3</sup> Minimum circuit ampacity (MCA)		17.0	6.9	6.1	17.8	9.8	16.9	8.9	7.1	21.7	9.7	8.7
<b>Compressor</b>	Rated load amps	12.8	5.1	4.5	12.2	5.8	12.2	6.4	5.1	16.0	7.0	6.4
	Locked rotor amps	97.5	44.3	27.1	102.8	50	120.4	50	41	156.4	69	47.8
<b>Fan Motor</b>	Full load amps	1	.5	.45	2.6	2.6	1.7	0.9	0.7	1.7	0.9	0.7
	Locked rotor amps	1.9	1.2	0.7	---	---	3.2	2.3	1.6	3.2	2.3	1.6

## OPTIONAL ACCESSORIES - ORDER SEPARATELY

<b>Compressor Low Ambient Cut-Off Switch</b>	<b>45F08</b>	•	•	•	•							
<b>Compressor Sound Cover</b>	<b>18J42</b>	•	•	•	•							
<b>Compressor Timed-Off Control</b>	<b>47J27</b>	•	•	•	•							
<b>Freezestat</b>	3/8 in. <b>93G35</b>	•	•	•	•							
<b>Loss of Charge Switch Kit</b>	<b>84M23</b>	•	•	•	•							
<sup>4</sup> <b>Low Ambient Kit (Fan Cycling) (30°F)</b>	<b>34M72</b>	•	•	•	•							
<sup>4</sup> <b>Electronic Head Pressure Controller (0°F) (208/230V, 460V only)</b>	<b>X5867</b>	•	•	---	•	•	•	•	---	•	•	---
<b>Refrigerant Line Sets</b>	3/8 x 7/8   3/8   30 ft. <b>89J60</b>	•	•	•	•							
	Liquid x Suction OD   3/8 x 7/8   3/8   50 ft. <b>89J62</b>	•	•	•	•							
<b>Insulation Thickness   Length</b>	3/8 x 1-1/8   3/8   50 ft. <b>73P91</b>	•	•	•	•							
<b>Unit Stand-Off Kit</b>	<b>94J45</b>	•	•	•	•							

NOTE - Extremes of operating range are plus 10% and minus 5% of line voltage.

<sup>1</sup> Refrigerant charge sufficient for the line set length listed in parenthesis. For longer line set requirements see the Installation Instructions or unit Charging Label for information about line set length and additional refrigerant charge required.

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

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

<sup>4</sup> Freezestat is recommended with Low Ambient Kit.

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

### CS7500 Commercial 7-Day Programmable Thermostat



- Premium Universal Thermostat
- Full Color Touchscreen Interface
- Up To 4 Heat / 3 Cool
- Built-In Sensors For Temperature and Humidity
- Remote Sensors Options For Temperature, Discharge Air, Outdoor Air
- 5-2 or 7-Day Scheduling
- Smooth Setback Recovery
- Heat/Cool Auto-Changeover
- FDD, ASHRAE, IECC Compliant

### CS3000 Commercial 5-2 Day Programmable Thermostat



- Conventional Multi-Stage Thermostat
- Intuitive Display
- Push-Button Operation
- Up To 2 Heat / 2 Cool
- Built-In Temperature Sensor
- Remote Temperature Sensing
- Up to 5-2 Day Scheduling
- Smooth Setback Recovery
- Heat/Cool Auto-changeover

### L40 Smart Wi-Fi Programmable Thermostat



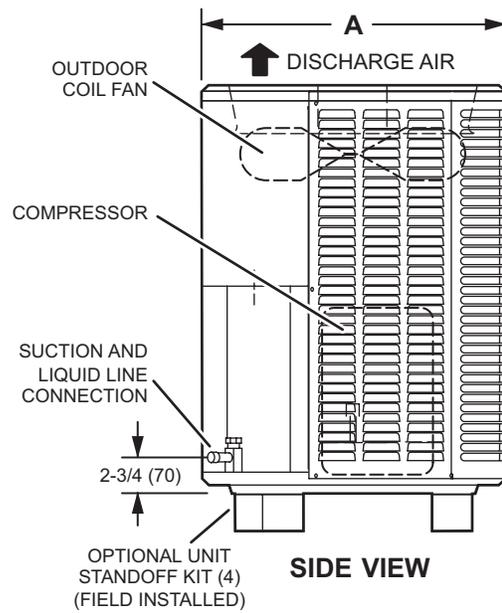
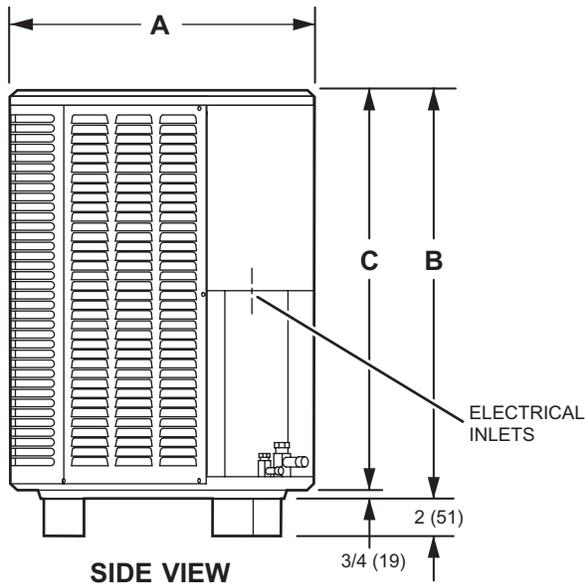
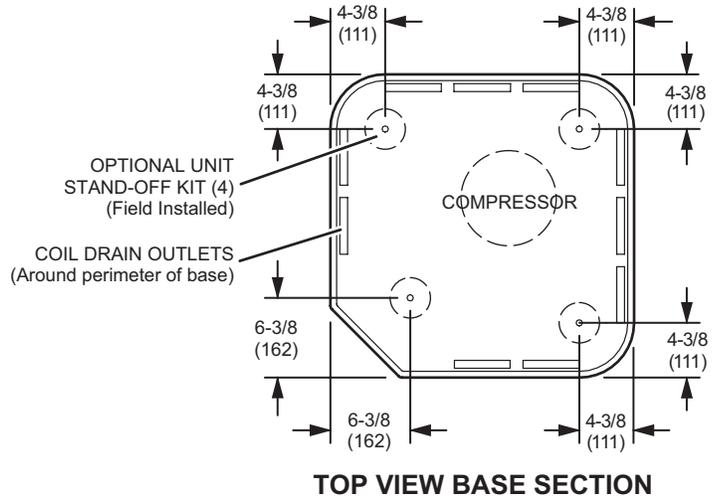
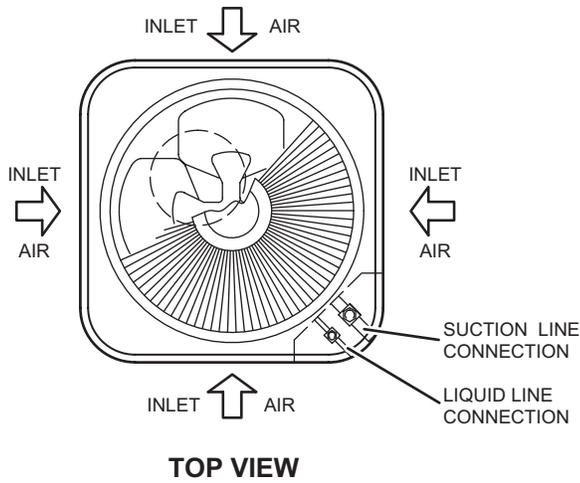
- Two-Stage Heating / One-Stage Cooling
- Universal - Gas, electric and heat pumps for single-stage heating or cooling systems (including dual-fuel operation)
- Intuitive Touchscreen Interface
- Automatic Changeover between Heating and Cooling
- Up to four separate schedules are available plus Schedule IQ™ (available in Lennox® Home App)
- One-Touch Away Mode
- Smooth Setback Recovery (SSR)
- Compressor Short-Cycle Protection
- Maintenance Reminders
- ENERGY STAR® certified - Factory preset program settings conform to EPA ENERGY STAR® recommended setpoints
- Control temperature, fan operation, set programs/schedules and set Away mode in the Lennox® Home App
- All thermostat commissioning and settings are made in the Lennox® Smart Tech App
- Smart home automation compatible with Amazon Alexa® and Google Assistant
- Works with Control4® and Building36® integration

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Description	Catalog No.
<b>CS7500 Commercial 7-Day Programmable Thermostat</b>	
CS7500 7-Day Thermostat	<b>24K41</b>
Sensors/Accessories	<b>47W36</b>
	<sup>1</sup> Remote non-adjustable wall-mount 20k
	<sup>1</sup> Remote non-adjustable wall-mount 10k
	Remote non-adjustable discharge air (duct mount)
	Outdoor temperature sensor
<b>CS3000 5-2 Day Programmable</b>	
CS3000 5-2 Day Thermostat	<b>11Y05</b>
Sensor/Accessories	<b>47W37</b>
	Remote non-adjustable wall mount 10k averaging
	Thermostat wall mounting plate
<b>L40 Smart Wi-Fi Thermostat Programmable</b>	
L40 Smart Wi-Fi Thermostat	<b>27V51</b>
<b>Universal Thermostat Guard with Lock (clear)</b>	
	Inside Dimensions (H x W) 5 7/8 x 8 3/8 in.
	<b>39P21</b>

<sup>1</sup> Remote wall-mount sensors can be applied in any of the following combinations:  
 One Sensor - (1) 47W36, Two Sensors - (2) 47W37, Three Sensors - (2) 47W36 and (1) 47W37  
 Four Sensors - (4) 47W36, Five Sensors - (3) 47W36 and (2) 47W37

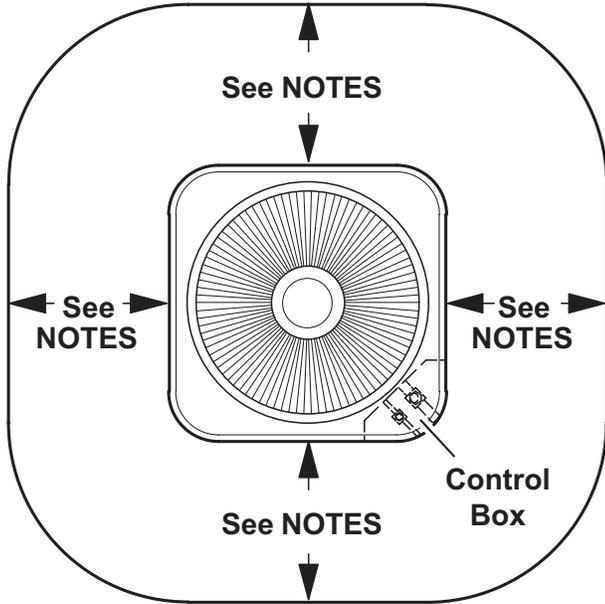
# DIMENSIONS - UNIT



Size	A Width and Depth		B Height		C	
	inches	mm	inches	mm	inches	mm
036	28-1/4	718	33-1/4	845	32-1/2	826
042	28-1/4	718	37-1/4	946	36-1/2	927
048	28-1/4	718	29-1/4	743	28-1/2	724
060	28-1/4	718	37-1/4	946	36-1/2	927

# INSTALLATION CLEARANCES

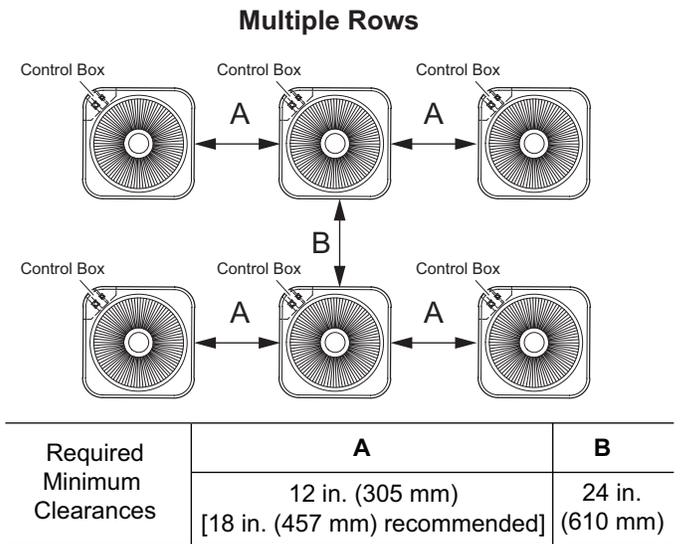
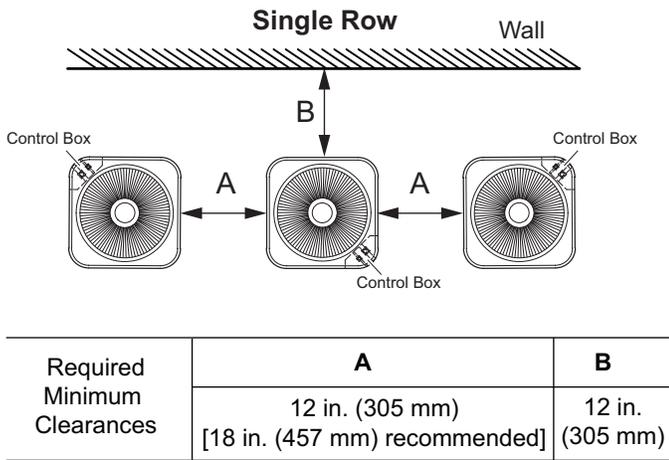
## SINGLE-UNIT INSTALLATION



### Single-Unit Installation Notes:

- Service Clearance - 24 in. (610 mm) on one of the sides adjacent to the Control Box.
- One of other three sides must be 36 in. (914 mm).
- One of the two remaining sides may be 12 in. (305 mm).
- The remaining side may be 6 in. (152 mm).
- 48 in. (1219 mm) clearance required on top of unit.

## MULTI-UNIT INSTALLATIONS



### Multi-Unit Installation Notes:

- Recommended service clearance of 24 in. (610 mm) on one side.
- 48 in. (1219 mm) clearance required on top of the unit.

## TXV USAGE

All Lennox coils and air handlers are shipped with a factory installed TXV. In most cases, no substitution is needed. If a different size TXV is required, it will be listed in the "TXV SUBSTITUTION" table by size. The correct TXV must be ordered separately and field installed.

Size	Order Number
036	<b>26Z70</b>
042	<b>26Z71</b>
048	<b>26Z71</b>
060	<b>26Z72</b>

## AHRI STANDARD 210-240-2023

Standard Ratings relating to cooling or heating capacities shall be net values, including the effects of circulating-fan heat, but not including supplementary electric heat. Power input used for calculating efficiency shall be the Total Power.

Standard Ratings of units which do not have indoor air-circulating fans furnished as part of the model, i.e., Coil-only System, shall be established by subtracting from the total cooling capacity 1,505 Btu/h per 1,000 SCFM, and by adding the same amount to the heating capacity for non-mobile-home, non-Space Constrained units. Total Power for both heating and cooling shall be increased by 441 W per 1,000 SCFM of indoor air circulated.

## TXV SUBSTITUTION - R-454B

A general guide for replacing the factory installed R-454B TXV if the indoor unit (coil/air handler) is larger or smaller than the outdoor unit.

Outdoor Unit		Indoor Unit		Indoor TXV Furnished	Indoor TXV Replacement
Size	Tons	Size	Tons		
036	3	42	3.5	<b>26Z71</b>	<b>26Z70</b>
036	3	48	4	<b>26Z71</b>	<b>26Z70</b>
036	3	49	4	<b>26Z71</b>	<b>26Z70</b>
036	3	50/60	4/5	<b>26Z71</b>	<b>26Z70</b>
036	3	51/61	4/5	<b>26Z71</b>	<b>26Z70</b>
036	3	60	5	<b>26Z72</b>	<b>26Z70</b>
042	3.5	24	2	<b>26Z70</b>	<b>26Z71</b>
042	3.5	30	2.5	<b>26Z70</b>	<b>26Z71</b>
042	3.5	30/36	2.5/3	<b>26Z70</b>	<b>26Z71</b>
042	3.5	36	3	<b>26Z70</b>	<b>26Z71</b>
042	3.5	60	5	<b>26Z72</b>	<b>26Z71</b>
048	4	30/36	2.5/3	<b>26Z70</b>	<b>26Z71</b>
048	4	36	3	<b>26Z70</b>	<b>26Z71</b>
048	4	60	5	<b>26Z72</b>	<b>26Z71</b>
060	5	50/60	4/5	<b>26Z71</b>	<b>26Z72</b>
060	5	51/61	4/5	<b>26Z71</b>	<b>26Z72</b>

### TXV Ranges:

**26Z70** - 1.5 to 3 ton systems - Use on 3 ton (036) and lower systems.

**26Z71** - 3.5-4 ton systems - Use on 4 ton (048) and down to 3.5 ton (042) systems.

**26Z72** - 5 ton systems - Use on 5 ton (060) systems only.

## REVISIONS

Sections	Description of Change
Installation Clearances	Added information for Multi-Unit installation clearances.



Visit us at [www.Lennox.com](http://www.Lennox.com)

For the latest technical information, [www.LennoxCommercial.com](http://www.LennoxCommercial.com)

Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

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