

ML14KP1**MERIT® SERIES**Single-Stage | Quantum™ Coil | **R-454B** | 3-Phase | 60Hz**COMMERCIAL****PRODUCT SPECIFICATIONS (EHB)**

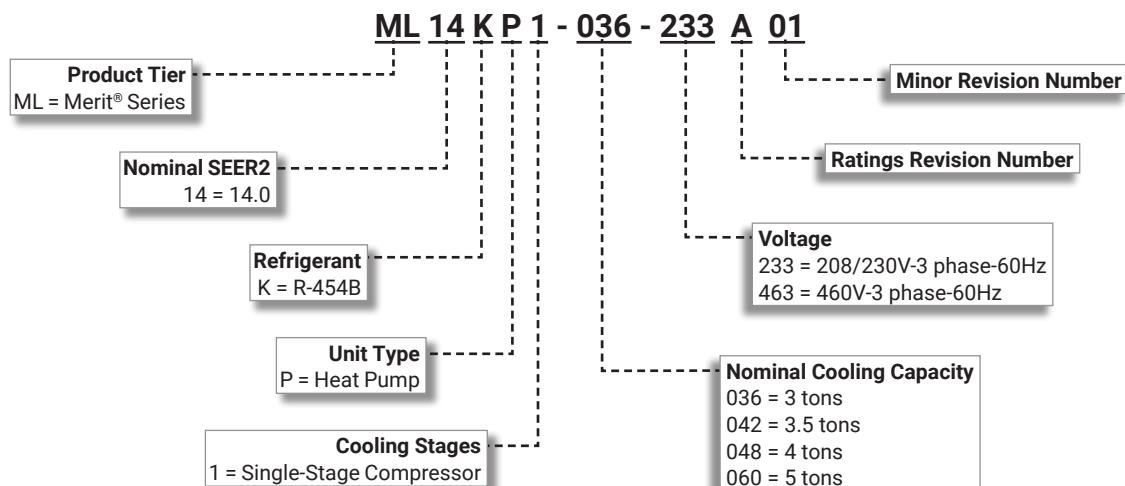
3 to 5 Tons

SEER2 up to 16.0

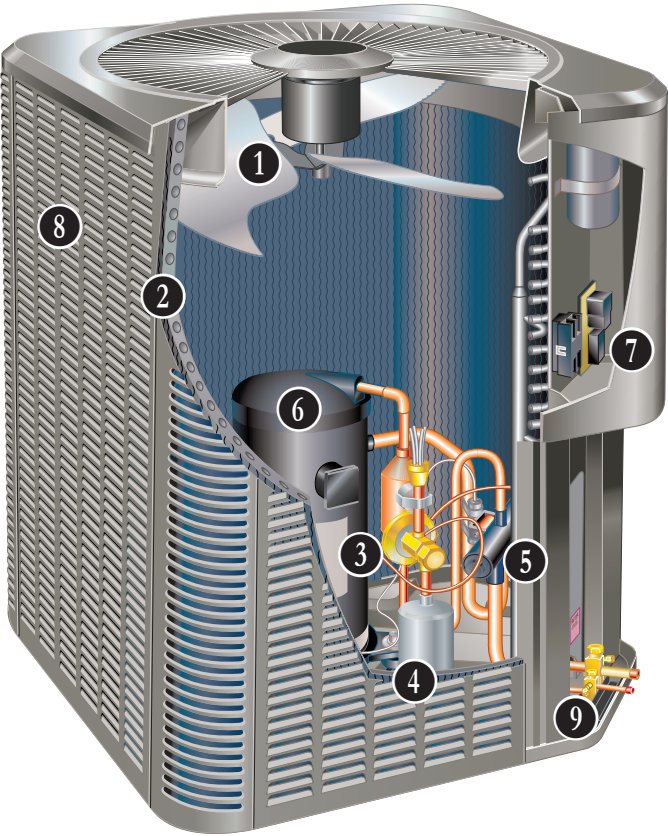
HSPF2 up to 8.2

Cooling Capacity | 35,400 to 58,000 Btuh

Heating Capacity | 35,400 to 60,000 Btuh

**MERIT®**
SERIES2025 COMPLIANT
REFRIGERANT**MODEL NUMBER IDENTIFICATION**

FEATURE HIGHLIGHTS



- 1. Outdoor Coil Fan
- 2. Quantum™ Coil
- 3. Expansion Valve - Outdoor Unit
- 4. High Capacity Liquid Line Drier
- 5. Four-Way Reversing Valve
- 6. Scroll Compressor
- 7. Defrost Control
- 8. Heavy Gauge Steel Cabinet
- 9. Refrigerant Line Access

CONTENTS

Approvals And Warranty 3

Dimensions 9

Expanded Sound Data 10

Features 3

Installation Clearances 10

Model Number Identification. 1

Optional Accessories - Order Separately 6

Optional Conventional Temperature Control Systems 7

Specifications 6

TXV Substitution - R-454B 11

TXV Usage. 11

APPROVALS AND WARRANTY

APPROVALS

- AHRI Standard 210-240-2023 certified
- AHRI Certified system match-ups and expanded ratings, visit 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 for additional details.

FEATURES

APPLICATIONS

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

NOTE - When heat pumps are used with gas furnaces, a dual-fuel compatible thermostat or zone control system with dual-fuel capabilities must be used (order separately).

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

NOTE - Total system refrigerant charge is dependent on outdoor unit size, indoor unit size and refrigerant line length.

NOTE - Refer to the unit-mounted charging sticker to determine correct amount of charge required.

1 Outdoor Coil Fan

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

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

3 Expansion Valve - Outdoor Unit

- Designed and sized for heat pump systems
- Sensing bulb senses suction temperature during heating cycle

High Pressure Switch

- Protects the system from high pressure conditions
- Automatic reset

FEATURES

REFRIGERATION SYSTEM (continued)

Low Pressure Switch

- Shuts off unit if suction pressure falls below setting
- Loss of charge and freeze-up protection
- Automatic reset

4 High Capacity Liquid Line Drier

- Factory installed in the liquid line
- Drier traps moisture or dirt that could contaminate the system
- 100% molecular-sieve, bead type drier

5 Four-Way Reversing Valve

- Rapid changeover of refrigerant flow direction from cooling to heating and vice versa
- Operates on pressure differential between outdoor unit and indoor coil

Optional Accessories

Check/Expansion Valve Kits

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

Freezestat

- Senses suction line temperature
- 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

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

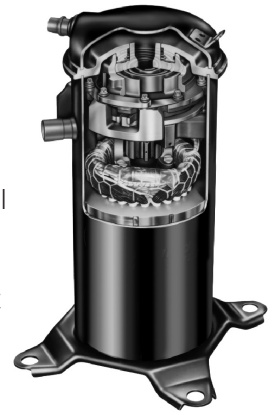
INDOOR REFRIGERANT DETECTION SYSTEM (RDS)

- 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

6 Single-Stage Scroll Compressor

- High efficiency with uniform suction flow
- Constant discharge flow, high volumetric efficiency and 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



Scroll Compressor Operation

- Two involute spiral scrolls matched together generate a series of crescent-shaped gas pockets between them
- During compression, one scroll remains stationary while the other scroll orbits around it
- Gas is drawn into the outer pocket, the pocket is sealed as the scroll rotates
- As the spiral movement continues, gas pockets are pushed to the center of the scrolls. Volume between the pockets is simultaneously reduced
- When the pocket reaches the center, gas is now at high pressure and is forced out of a port located in the center of the fixed scrolls
- During compression, several pockets are compressed simultaneously resulting in a smooth continuous compression cycle
- Continuous flank contact, maintained by centrifugal force, minimizes gas leakage and maximizes efficiency
- Compressor is tolerant to the effects of slugging and contaminants. If this occurs, scrolls separate, allowing liquid or contaminants to be worked toward the center and discharged

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 of fiberglass insulation
- Hook and loop fastening tape on all open edges

FEATURES

CONTROLS

7 Defrost Control

- Time/temperature defrost control
- Defrost cycle every 30, 60 or 90 minutes of compressor "on" time at outdoor coil temperatures below 42°F
- Factory setting - 90 minutes
- Anti-short cycle, timed-off control - 5 minutes
- Compressor delay - 30 seconds (field selectable) cycles the compressor in and out of defrost mode
- High and low pressure switch monitoring (five-trip lockout)
- Two diagnostic LEDs furnished for troubleshooting
- Conveniently located in control box

Optional Accessories

Compressor Low Ambient Cut-Off

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

Indoor Blower Off Delay Relay Kit

- Delays the indoor blower-off time during the cooling cycle

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. Low Ambient Control (speed control) (0°F)
(Available for 208/230V models only)

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 its setpoint
- Opens at 29°F and closes at 58°F

Thermostats

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

Mild Weather Kit

- Units can operate in the heating mode at outdoor air temperatures up to 75°F
- Field installed kit allows heating operation above 75°F

Outdoor Thermostat Kit

- Outdoor thermostat locks out some of the electric heating elements on indoor units where two-stage control is applicable
- Outdoor thermostat maintains the heating load on low power input as long as possible before allowing the full power load to come on the line

8 CABINET

- Heavy gauge steel cabinet
- Pre-painted powder paint cabinet finish
- Louvered heavy gauge steel panels
- Control box conveniently located with all controls factory wired
- Corner patch plate allows compressor access
- Drainage holes provided in base section

Zinc-Coated Steel Unit Base

- Resists rust and corrosion

9 Refrigerant Line Connections, Electrical Inlets, Service Valves

- Sweat connection vapor and liquid lines
- Located on corner of unit cabinet
- Fully serviceable brass service valves
- Vapor 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 cabinet for easy access
- 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
- Raises unit off mounting surface
- Four feet furnished per order number

SPECIFICATIONS												
Size		036		042		048		060				
Nominal Tonnage		3		3.5		4		5				
Sound Rating Number		75		78		79		79				
Connections (sweat)		Liquid line (OD) - in.		3/8		3/8		3/8				
		Vapor line (OD) - in.		7/8		7/8		1-1/8				
Refrigerant (15 ft. Line Set)		¹ R-454B charge furnished		7 lbs. 2 oz.		8 lbs. 5 oz.		8 lbs. 6 oz.				
Indoor Unit Expansion Valve (TXV)		26Z70		26Z71		26Z71		26Z72				
Outdoor Coil		Net face area - ft. ²		Outer coil		22.2		24.93				
				Inner coil		24.93		24.93				
						21.5		24.13				
				Tube diameter - in.		5/16		5/16				
				Rows		2		2				
		Fins - in.		22		22		22				
Outdoor Fan		HP		1/6		1/3		1/3				
		Diameter - in.		22		22		22				
		Blades		3		3		3				
		Cfm		3590		4110		4110				
		Rpm		839		625		825				
		Watts		200		213		213				
				224								
Shipping Data - lbs.		220		250		250		260				
ELECTRICAL DATA												
Line voltage data (Volts-3 Phase-60Hz)				208/230V	460V	208/230V	460V	208/230V	460V			
² Maximum overcurrent protection (MOCP) amps				25	10	20	10	25	10			
³ Minimum circuit ampacity (MCA)				15.4	7.4	12.3	6.5	16.4	7.9			
Compressor				Rated Load Amps	12.2	5.8	9.6	4.9	12.8			
				Locked Rotor Amps	97.5	44.3	90	36	120.4			
Fan Motor				Full Load Amps	1.4	1.4	2.6	2.6	2.6			
OPTIONAL ACCESSORIES - ORDER SEPARATELY												
Compressor Low Ambient Cut-Off		45F08	•		•		•		•			
Compressor Sound Cover		18J42	•		•		•		•			
Freezestat		3/8 in.	93G35	•		•		•		•		
Indoor Blower Off Delay Relay		58M81	•		•		•		•			
⁴ Low Ambient Kit (Fan Cycling) (30°F)		34M72	•		•		•		•			
⁴ Low Ambient Control (0°F) (208/230V only)		Speed Control	X5867	•	---	•	---	•	---	•	---	
Mild Weather Kit		11B97	•		•		•		•			
Monitor Kit - Service Light		76F53	•		•		•		•			
Outdoor Thermostat Kit		10Z23	•		•		•		•			
Refrigerant Line Sets		3/8 x 7/8 3/8 30 ft.	89J60	•		•		•		•		
		3/8 x 7/8 3/8 40 ft.	89J61	•		•		•		•		
Liquid x Suction OD		3/8 x 7/8 3/8 50 ft.	89J62									
Insulation Thickness		3/8 x 1-1/8 3/8 50 ft.	73P91							•		
Length												
Unit Stand-Off Kit		94J45	•		•		•		•		•	

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

¹ 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.

² HACR type breaker or fuse.

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

⁴ Freezestat is recommended with Low Ambient Kit.

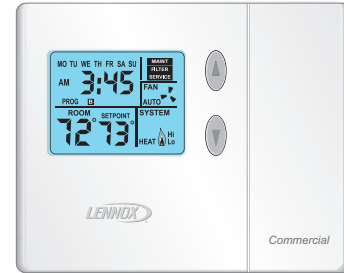
OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

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

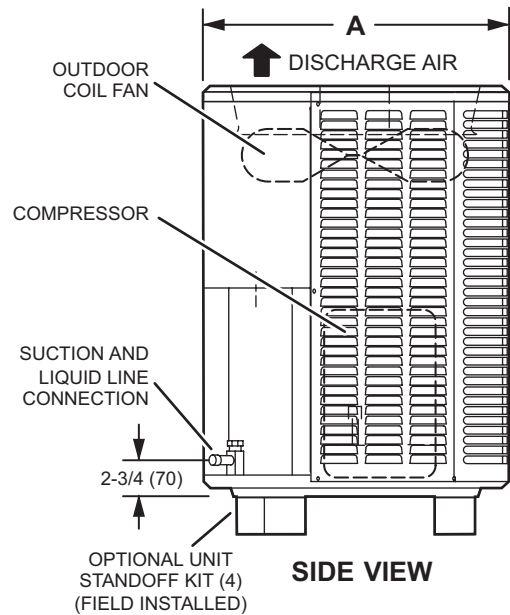
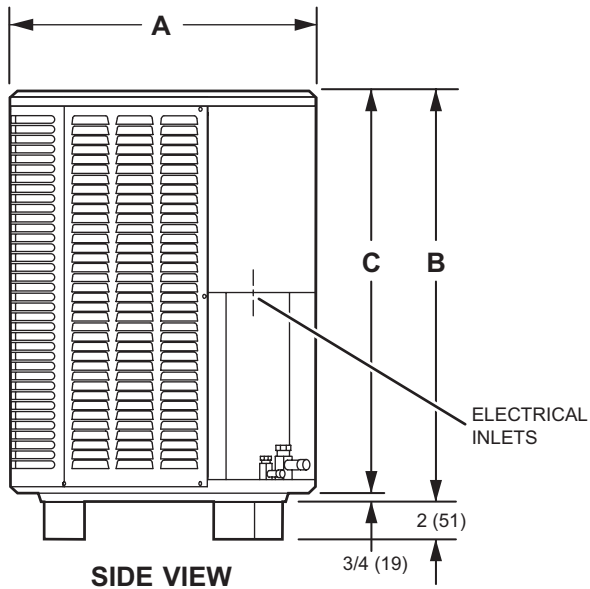
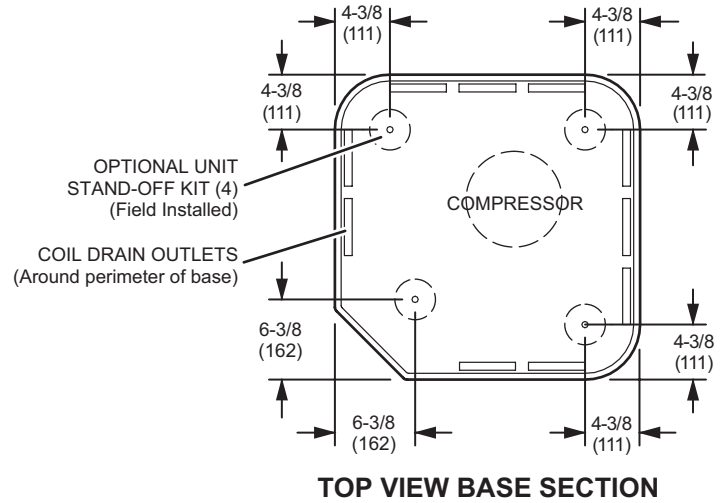
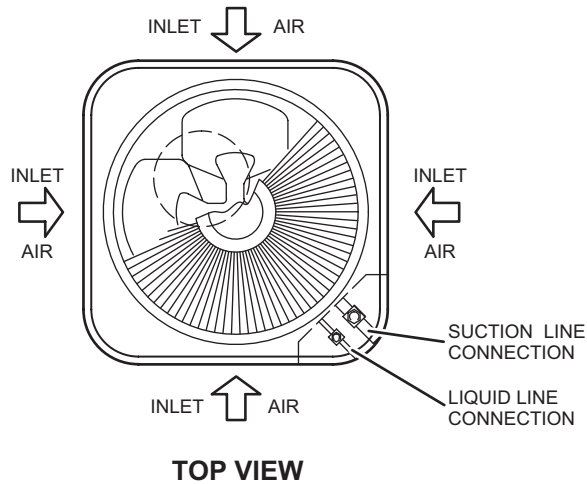
OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Description		Catalog No.
CS7500 Commercial 7-Day Programmable Thermostat		
CS7500 7-Day Thermostat		24K41
Sensors/Accessories	¹ Remote non-adjustable wall-mount 20k	47W36
	¹ Remote non-adjustable wall-mount 10k	47W37
	Remote non-adjustable discharge air (duct mount)	19L22
	Outdoor temperature sensor	X2658
CS3000 5-2 Day Programmable		
CS3000 5-2 Day Thermostat		11Y05
Sensor/Accessories	Remote non-adjustable wall mount 10k averaging	47W37
	Thermostat wall mounting plate	X2659
L40 Smart Wi-Fi Thermostat Programmable		
L40 Smart Wi-Fi Thermostat		27V51
Universal Thermostat Guard with Lock (clear)		
Inside Dimensions (H x W) 5 7/8 x 8 3/8 in.		39P21

¹ 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



Size	A Width and Depth		B Height		C	
	in.	mm	in.	mm	in.	mm
036	32-1/4	819	33-1/4	845	32-1/2	826
042	32-1/4	819	37-1/4	946	36-1/2	927
048	32-1/4	819	37-1/4	946	36-1/2	927
060	32-1/4	819	43-1/4	1099	42-1/2	1080

EXPANDED SOUND DATA

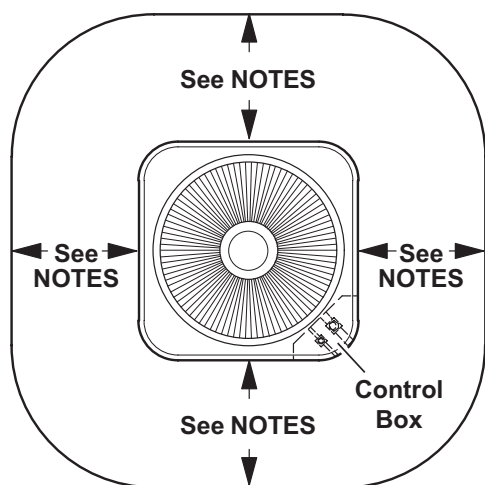
Size	Octave Band Sound Power Levels dBA, re 10 ⁻¹² Watts Center Frequency - HZ							¹ Sound Rating Number (dBA)	² Estimated Sound Pressure Level at Distance From Unit (dBA at distance in ft.)				
	125	250	500	1000	2000	4000	8000		3	5	10	15	50
036	59	68	71.5	68.5	66	61	54	75	68	63	57	54	43
042	62	71.0	74.5	72.5	70	63	55.5	78	71	66	60	57	46
048	61	70.5	75.5	73.0	70	64	56.0	79	72	67	61	58	47
060	61.5	70.0	73.0	71	71	68	63	79	73	68	62	59	48

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

¹ Tested according to AHRI Standard 270-2008 test conditions.

² 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.

INSTALLATION CLEARANCES



NOTES:

- Service Clearance – 30 in. (762 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
- 24 in. (610 mm) required between two units

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	26Z70
042	26Z71
048	26Z71
060	26Z72

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	26Z71	26Z70
036	3	48	4	26Z71	26Z70
036	3	49	4	26Z71	26Z70
036	3	50/60	4/5	26Z71	26Z70
036	3	51/61	4/5	26Z71	26Z70
036	3	60	5	26Z72	26Z70
042	3.5	24	2	26Z70	26Z71
042	3.5	30	2.5	26Z70	26Z71
042	3.5	30/36	2.5/3	26Z70	26Z71
042	3.5	36	3	26Z70	26Z71
042	3.5	60	5	26Z72	26Z71
048	4	30/36	2.5/3	26Z70	26Z71
048	4	36	3	26Z70	26Z71
048	4	60	5	26Z72	26Z71
060	5	50/60	4/5	26Z71	26Z72
060	5	51/61	4/5	26Z71	26Z72

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
Optional Conventional Temperature Control Systems	Added L40 Smart Thermostat option.



Visit us at www.lennox.com

For the latest technical information, 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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