

HEAT PUMP OUTDOOR UNITS



RESIDENTIAL PRODUCT SPECIFICATIONS

XP14

ELITE® Series
R-410A - 60 Hz

Bulletin No. 210850
March 2019
Supersedes February 2019

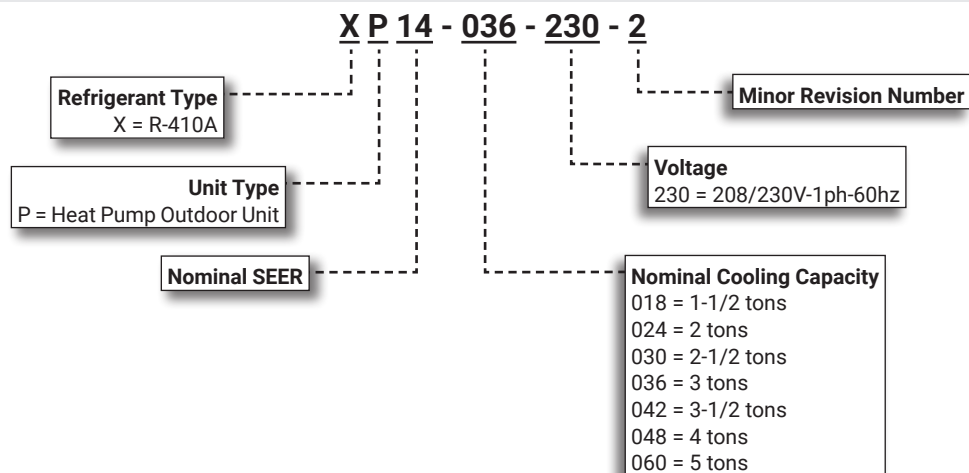
ELITE®
SERIES



SEER up to 16.00
HSPF up to 9.50
1.5 to 5 Tons

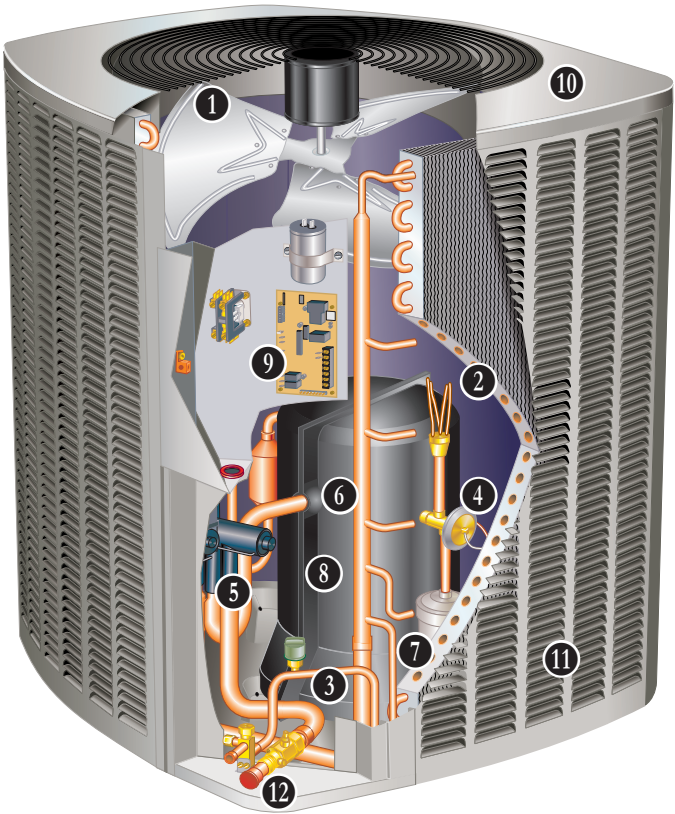
Cooling Capacity - 18,000 to 61,000 Btuh
Heating Capacity - 17,500 to 58,500 Btuh

MODEL NUMBER IDENTIFICATION



FEATURE HIGHLIGHTS

- 1. Outdoor Coil Fan
- 2. Copper Tube / Enhanced Fin Coil
- 3. High Pressure Switch
- 4. Low Pressure Switch
- 5. Expansion Valve - Outdoor Unit
- 6. Four-Way Reversing Valve
- 7. High Capacity Liquid Line Drier
- 8. Scroll Compressor
- 9. Defrost Control
- 10. Heavy Gauge Steel Cabinet
- 11. SmartHinge® Louvered Coil Protection
- 12. Refrigerant Line Access



CONTENTS

Approvals and Warranty	3
Dimensions	9
Features	3
Field Wiring	8
Installation.	8
Model Number Identification.	1
Sound Data	8
Specifications	7
TXV Usage.	10

APPROVALS AND WARRANTY

APPROVALS

- AHRI Certified to AHRI Standard 210/240
- For AHRI Certified system match-ups and expanded ratings, visit www.LennoxPROs.com
- ENERGY STAR® certified
- Sound rated to AHRI Standard 270-2008 test conditions
- Tested in the Lennox Research Laboratory environmental test room
- Rated according to U.S. Department of Energy (DOE) test procedures
- Units and components UL, 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 ten years in residential installations
 - Limited five years in non-residential installations
- All other covered components:
 - Limited five years in residential installations
 - Limited one year in non-residential installations

NOTE - Refer to Lennox Equipment Limited Warranty certificate included with unit for specific details.

FEATURES

APPLICATIONS

- 1.5 through 5 ton
- Sound levels as low as 71 dBA
- Single phase power supply
- Vertical air discharge
- Applicable to indoor air handlers or gas furnaces with indoor add-on coils
- Shipped completely factory assembled, piped, and wired
- Factory tested operated

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

NOTE - Installer must set heat pump, connect refrigerant lines, and make electrical connections to complete job.

REFRIGERATION SYSTEM

R-410A Refrigerant

- Non-chlorine, ozone friendly
- Unit is factory pre-charged

NOTE - Total system refrigerant charge is dependant 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 fan
- Vertical air discharge
- Fan motor is inherently protected
- Ball bearings
- Totally enclosed motor
- Fan guard constructed of corrosion-resistant PVC (polyvinyl chloride) coated steel

② Copper Tube/Enhanced Fin Coil

- Lennox designed and fabricated coil
- Ripple-edged aluminum fins
- Copper tube construction
- Lanced fins for maximum fin surface exposure
- Fin collars grip tubing for maximum contact area
- Flared shoulder tubing connections
- Silver soldering construction
- Factory tested under high pressure
- Entire coil accessible for cleaning

FEATURES

REFRIGERATION SYSTEM (continued)

- 3 **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
- 4 **Low Pressure Switch**
 - Shuts off unit if suction pressure falls below setting
 - Provides loss of charge and freeze-up protection
 - Automatic reset
- 5 **Expansion Valve - Outdoor Unit**
 - Designed and sized for heat pump systems
 - Sensing bulb senses evaporator suction temperature during heating cycle
- 6 **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 unit of the system
 - Factory installed
- 7 **High-Capacity Liquid Line Drier**
 - Factory installed in the liquid line
 - Drier traps moisture or dirt
 - 100% molecular-sieve, bead type, bi-flow drier

Optional Accessories

Check/Expansion Valve Kits

- Field installed on certain indoor units
- See TXV Usage table
- Chatleff style fitting

Freezestat

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

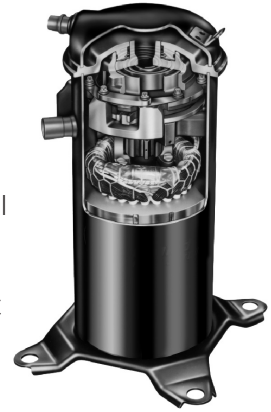
Refrigerant Line Kits

- 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

NOTE - Not available for -060 models and must be field fabricated.

COMPRESSOR

- 8 **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

Crankcase Heater (-036-042-048-060)

- Protects against refrigerant migration that can occur during low ambient operation

Compressor Sound Dampening System

- A polyethylene compressor cover containing a 2 inch thick batt of fiberglass insulation for better sound dampening
- All open edges are sealed with a one-inch wide hook and loop fastening tape

FEATURES

COMPRESSOR (continued)

Optional Accessories

Crankcase Heater (Optional for -018-024-030)

- Protects against refrigerant migration that can occur during low ambient operation

Compressor Hard Start Kit

- Single-phase units are equipped with a PSC compressor motor
- This type of motor normally doesn't need a potential relay and start capacitor
- For conditions such as low voltage kit may be required to increase the compressor starting torque

Compressor Low Ambient Cut-Off Switch

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

CONTROLS

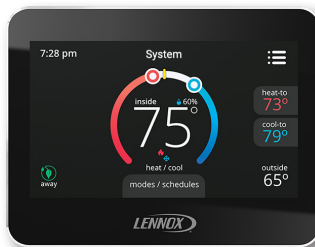
9 Defrost Control

- Time/temperature defrost control is furnished as standard equipment
- Control initiates a defrost cycle every 30, 60 or 90 minutes of compressor "on" time at outdoor coil temperatures below 42°F
- Factory setting is 90 minutes
- Anti-short cycle, timed-off control (5 minutes)
- Compressor delay (30 seconds, field selectable) for cycling the compressor in and out of the defrost mode
- High and low pressure switch monitoring with five-trip lockout
- Two diagnostic LEDs furnished as an aid in troubleshooting
- Conveniently located in control box
- Anti-short cycle (5 minutes) incorporated into the board
- Diagnostic LEDs furnished as an aid in troubleshooting
- Conveniently located in control box

Optional Accessories

iComfort® M30 Smart Wi-Fi Thermostat

- Wi-Fi-enabled, electronic 7-day, universal, multi-stage, programmable, touchscreen thermostat
- 4 Heat/2 Cool
- Auto-changeover
- Dual-fuel control with optional outdoor sensor
- Controls dehumidification during cooling mode and humidification during heating mode
- Offers enhanced capabilities including humidification / dehumidification / dewpoint measurement and control, Humiditrol® control, and equipment maintenance reminders



- Easy to read 4.3 in. color touchscreen (measured diagonally)
- LCD display with backlight shows the current and set temperature, time, inside relative humidity, system status (operating mode and schedules) and outside temperature (optional outdoor sensor required)
- Smooth Setback Recovery starts system early to achieve setpoint at start of program period
- Compressor short-cycle protection (5 minutes)
- Up to four separate schedules are available plus Schedule IQ™
- One-Touch Away Mode - A quick and easy way to set the cooling and heating setpoints while away
- Smart Away™ - Uses geo-fencing technology to determine when the homeowner is within a predetermined distance from the home to operate the system when leaving, away and arriving
- Wi-Fi remote monitoring and adjustment through a home wireless network for desktop PCs, laptops and apps for smartphones or tablets
- Smart home automation compatible with Amazon Alexa®, Google Assistant and IFTTT

NOTE - See the iComfort® M30 Smart Wi-Fi Thermostat Product Specifications bulletin in the Controls section for more information.

Remote Outdoor Temperature Sensor

- Used with the iComfort® M30 Smart Wi-Fi Thermostat
- Outdoor sensor allows thermostat to display outdoor temperature

NOTE - Sensor is required for the Enhanced Dehumidification Accessory (EDA)



Thermostat

- Thermostat is not furnished with unit
- Lennox Price Book for selection

Indoor Blower Off Delay Relay

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

Low Ambient Kit

- Air conditioners can operate down to 45°F outdoor air temperature without additional controls
- Allows unit to operate properly down to 30°F

NOTE - Crankcase heater (optional for -018-024-030 models) and freezestat should be installed on compressors equipped with a low ambient kit.

NOTE - A compressor lock-out thermostat should be added to terminate compressor operation below recommended operation conditions.

FEATURES

CONTROLS (continued)

Optional Accessories (continued)

Low Pressure Switch Bypass Thermostat

- For use in applications where the heat pump is operated in outdoor ambient temperatures below 15°F
- Prevents nuisance trips from the low pressure switch
- Wired in parallel with the low pressure switch

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

Monitor Kit - Service Light

- Ambient compensating thermistor
- Service light thermostat
- For thermostats requiring indicator light inputs
- For use with thermostats requiring input for indicator lights

Outdoor Thermostat Kit

- An outdoor thermostat can be used to lock out some of the electric heating elements on indoor units where two-stage control is applicable
- Outdoor thermostat maintains the heating load on the low power input as long as possible before allowing the full power load to come on the line
- Thermostat kit and Mounting Box must be ordered separately

CABINET

- 10 • Heavy gauge steel construction
- Pre-painted cabinet finish
- Louvered heavy gauge steel panels surround unit on all four sides
- Control box is conveniently located with all controls factory wired
- Corner patch plate allows compressor access
- Drainage holes are provided in base section
- High density polyethylene unit support feet raise the unit off of the mounting surface, away from damaging moisture

PermaGuard™ Unit Base

- Durable zinc-coated base section resists rust and corrosion

- 11 • SmartHinge® Louvered Coil Protection

- Steel louvered panels provides complete coil protection
- Panels are hinged to allow easy cleaning and servicing of coils
- Panels may be completely removed
- Interlocking tabs and slots assure tight fit on cabinet



- 12 • Refrigerant Line Connections, Electrical Inlets and Service Valves

- Sweat connection vapor 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

Optional Accessories

Snow Guard

- For use in locations where the possibility of heavy snow or freezing rain accumulation may occur
- Heavy gauge powder coated steel guard
- Deflects snow and ice away from the outdoor fan
- Prevents build-up on the fan guard

NOTE - Snow Guards for 018-024-030-036 models are only available in Canada.

SPECIFICATIONS									
General Data		Model No.	XP14-018	XP14-024	XP14-030	XP14-036	XP14-042	XP14-048	XP14-060
Nominal Tonnage			1.5	2	2.5	3	3.5	4	5
Connections (sweat)	Liquid line o.d. - in.		3/8	3/8	3/8	3/8	3/8	3/8	3/8
	Vapor line o.d. - in.		3/4	3/4	3/4	7/8	7/8	7/8	1-1/8
¹ Refrigerant	R-410A charge furnished		5 lbs. 11 oz.	5 lbs. 14 oz.	5 lbs. 10 oz.	9 lbs. 6 oz.	11 lbs. 14 oz.	10 lbs. 7 oz.	12 lbs. 5 oz.
Outdoor Coil	Net face area	Outer coil	21.00	21.00	21.00	18.67	24.93	24.93	29.09
	sq. ft.	Inner coil	---	---	---	18.01	24.13	24.13	28.16
	Tube diameter - in.		5/16	5/16	5/16	5/16	5/16	5/16	5/16
	No. of rows		1	1	1	2	2	2	2
Outdoor Fan	Fins per inch		22	22	22	22	22	22	22
	Diameter - in.		22	22	22	22	26	26	26
	No. of Blades		3	3	3	3	4	4	4
	Motor hp		1/6	1/6	1/6	1/6	1/3	1/3	1/3
	Cfm		2670	2670	2890	2870	4347	4347	4550
	Rpm		867	867	847	839	843	843	830
	Watts		168	177	200	205	299	299	307
Shipping Data - lbs. 1 package			213	213	213	236	310	312	339
ELECTRICAL DATA									
Line voltage data - 60 hz - 1ph			208/230V	208/230V	208/230V	208/230V	208/230V	208/230V	208/230V
² Maximum overcurrent protection (amps)			20	30	30	30	40	50	50
³ Minimum circuit ampacity			12.2	17.9	17.4	18.7	24.2	29.0	29.4
Compressor	Rated Load Amps		9.0	13.5	13.1	14.08	17.92	21.76	22.1
	Locked Rotor Amps		48	58	64	77	112	117	125
	Power Factor		0.98	0.98	0.98	0.99	0.99	0.99	0.99
Outdoor Fan Motor	Full Load Amps		1.0	1.1	1.1	1.1	1.8	1.8	1.8
	Locked Rotor Amps		1.9	1.9	1.9	1.9	2.9	2.1	2.1
CONTROLS									
iComfort® M30 Smart Wi-Fi Thermostat		15Z69	•	•	•	•	•	•	•
Remote Outdoor Temperature Sensor		X2658	•	•	•	•	•	•	•
OPTIONAL ACCESSORIES - ORDER SEPARATELY									
Compressor Crankcase Heater		93M04	•	•	•	Factory	Factory	Factory	Factory
Compressor Hard Start Kit	Copeland	10J42	•	•	•	•	•	•	
	LG	88M91							•
Compressor Low Ambient Cut-Off		45F08	•	•	•	•	•	•	•
Freezestat	3/8 in. tubing	93G35	•	•	•	•	•	•	•
	5/8 in. tubing	50A93	•	•	•	•	•	•	•
Indoor Blower Off Delay Relay		58M81	•	•	•	•	•	•	•
⁴ Low Ambient Kit		54M89	•	•	•	•	•	•	•
Low Pressure Switch Bypass Thermostat		13W07	•	•	•	•	•	•	•
Mild Weather Kit		33M07	•	•	•	•	•	•	•
Monitor Kit - Service Light		76F53	•	•	•	•	•	•	•
Outdoor Thermostat Kit	Thermostat	10Z23	•	•	•	•	•	•	•
	Mounting Box	31461	•	•	•	•	•	•	•
Refrigerant Line Sets	L15-41-20	L15-41-30	•	•	•				
	L15-41-40	L15-41-50							
	L15-65-30	L15-65-40				•	•	•	
		L15-65-50							
		Field Fabricate							•
⁵ Snow Guards	35-1/2 x 31 in. (Canada only)		X8780	•	•	•			
	39-1/2 x 35-5/8 in.		Y1033				•	•	•

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

¹ Refrigerant charge sufficient for 15 ft. length of refrigerant lines. For longer line set requirements see the Installation Instructions for information about line set length and additional refrigerant charge required.

² HACR type circuit breaker or fuse.

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

⁴ Crankcase Heater and Freezestat are recommended with Low Ambient Kit.

⁵ Adds 11-1/2 inches (292 mm) to unit height.

SOUND DATA

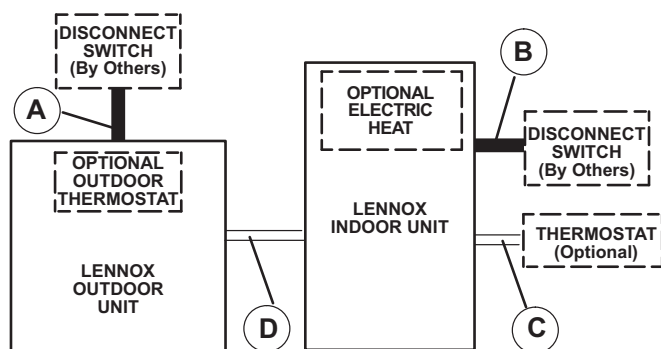
¹ Unit Model	Octave Band Sound Power Levels dBA, re 10 ⁻¹² Watts Center Frequency - HZ							¹ Sound Rating Number (dBA)	² Estimated Sound Pressure Level at Distance From Unit (dBA at distance in ft.)				
	125	250	500	1000	2000	4000	8000		3	5	10	15	50
018	70.5	67.5	69.5	66.5	59.5	53.5	47.5	71	64	59	53	50	39
024	71	68	68.5	65.5	60	54.5	48.5	71	64	59	53	50	39
030	71.5	66.5	67.5	65.5	59.5	54.5	48.5	71	64	59	53	50	39
036	80.5	70.5	69.5	65.5	60.5	55	51	71	64	59	53	50	39
042	82	70.5	70	67	63.5	55.5	52.5	71	64	59	53	50	39
048	80.5	70.5	70	66.5	61.5	55.5	53.5	73	66	61	55	52	41
060	82	69.5	69	67.5	63.5	66	53.5	73	66	61	55	52	41

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.

FIELD WIRING



A - Two Wire Power (see Electrical Data)

B - Two or Three Wire Power (size to heater capacity)

C - Twelve Wire Low Voltage 18 ga. minimum

Fourteen Wire Low Voltage with Optional Outdoor Thermostat

D - Eight Wire Low Voltage 18 ga. minimum

Ten Wire Low Voltage with Optional Outdoor Thermostat

NOTE - Field Wiring Not Furnished.

All wiring must conform to NEC or CEC and local electrical codes.

INSTALLATION

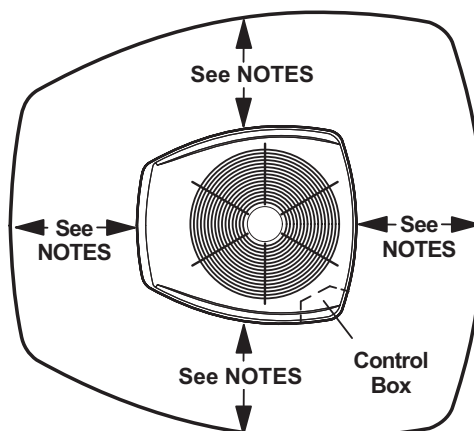
NOTES:

Service clearance of 30 in. (762 mm) must be maintained on one of the sides adjacent to the control box.

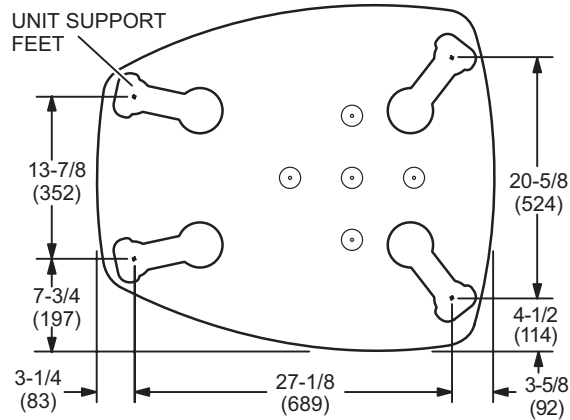
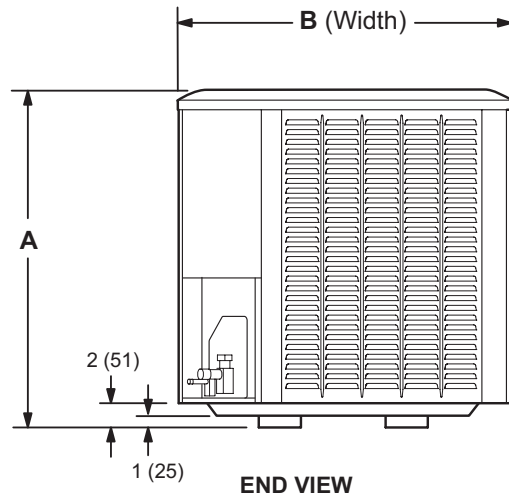
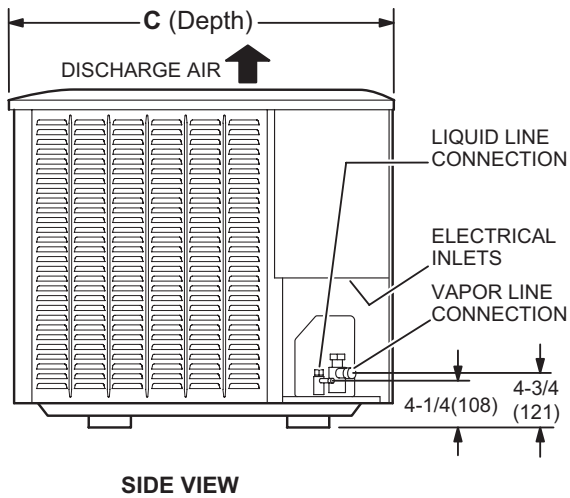
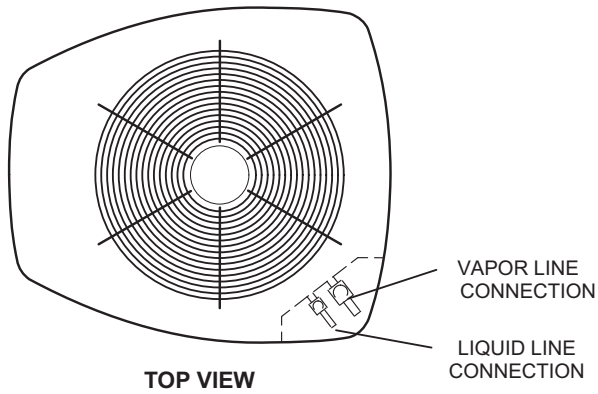
Clearance to one of the other three sides must be 36 in. (914 mm)

Clearance to one of the remaining two sides may be 12 in. (305 mm) and the final side may be 6 in. (152 mm).

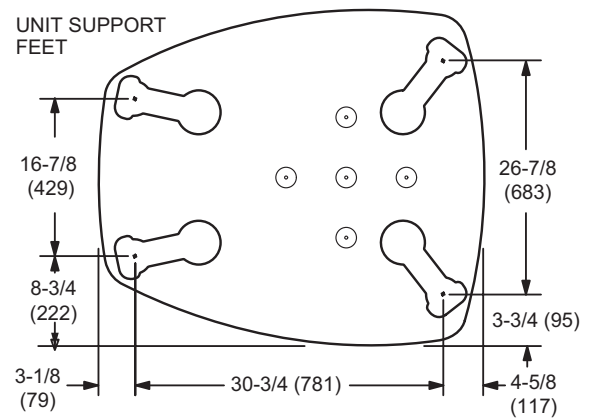
A clearance of 24 in. must be maintained between two units. 48 in. (1219 mm) clearance required on top of unit.



DIMENSIONS



**XP14-018 TO -036 BASE SECTION
(Medium Base)**



**XP14-042 TO -060 BASE SECTION
(Large Base)**

Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
XP14-018	39	991	30-1/2	775	35	889
XP14-024	39	991	30-1/2	775	35	889
XP14-030	39	991	30-1/2	775	35	889
XP14-036	35	889	30-1/2	775	35	889
XP14-042	39	991	35-1/2	902	39-1/2	1003
XP14-048	39	991	35-1/2	902	39-1/2	1003
XP14-060	45	1143	35-1/2	902	39-1/2	1003

TXV USAGE

Use this table for C35, CH23, CH35 and CR33 Field Installed TXV Match-Ups (if a valid match)

Model No.	Order No.
XP14-018	12J18
XP14-024	12J18
XP14-030	12J18
XP14-036	12J19
XP14-042	12J20
XP14-048	12J20
XP14-060	12J20

CX35 and CHX35 coils and all Lennox air handlers are shipped with a factory installed TXV.

C35 and CH35 coils - Replace the factory installed orifice with the expansion valve listed.

CH23 and CR33 - Use the expansion valve listed.

MOST POPULAR MATCHES

Outdoor Model No.	Outdoor Model No
XP14-018	CBX25UH-018
XP14-024	CBX25UH-024
XP14-030	CBX25UH-030
XP14-036	CBX25UH-036
XP14-042	CBX25UH-042
XP14-048	CBX25UH-048
XP14-060	CBX25UH-060

TXV SUBSTITUTION

A general guide for replacing the factory installed TXV if the indoor unit (coil/air handler) is larger than the outdoor unit.

Outdoor Unit		Indoor Unit		TXV Furnished	TXV Replacement
Size	Tons	Size	Tons		
030	2.5	42	3.5	12J20	12J18
030	2.5	43	3.5	12J20	12J18
030	2.5	44/48	4	12J20	12J18

TXV Ranges:

12J18 - 1.5 to 2.5 ton systems - Use on 2.5 ton and lower systems.

12J19 - 3 ton systems - Use down to 2 ton systems.

12J20 - 3.5 to 5 ton systems - Use down to 3 ton systems.

AHRI STANDARD 210/240

Cooling or heating capacities are net values, including the effects of blower motor heat, and do not include supplementary heat. Power input is the total power input to the compressor(s) and fan(s), plus any controls and other items required as part of the system for normal operation.

Units which do not have an indoor air-circulating blower furnished as part of the model, i.e., split system with indoor coil only, is established by subtracting from the total cooling capacity 1250 Btu/h per 1,000 cfm, and by adding the same amount to the heating capacity. Total power input for both heating and cooling is increased by 365 W per 1,000 cfm of indoor air circulated.

REVISIONS

Sections	Description of Change
Optional Accessories	Added iComfort® M30 Smart Thermostat.



Visit us at www.lennox.com

For the latest technical information, www.LennoxPROs.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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