

HEAT PUMP OUTDOOR UNITS



**XP21**

DAVE LENNOX SIGNATURE® COLLECTION

R-410A - Two-Stage Compressor SilentComfort™ Technology - 60 Hz

**RESIDENTIAL  
PRODUCT SPECIFICATIONS**

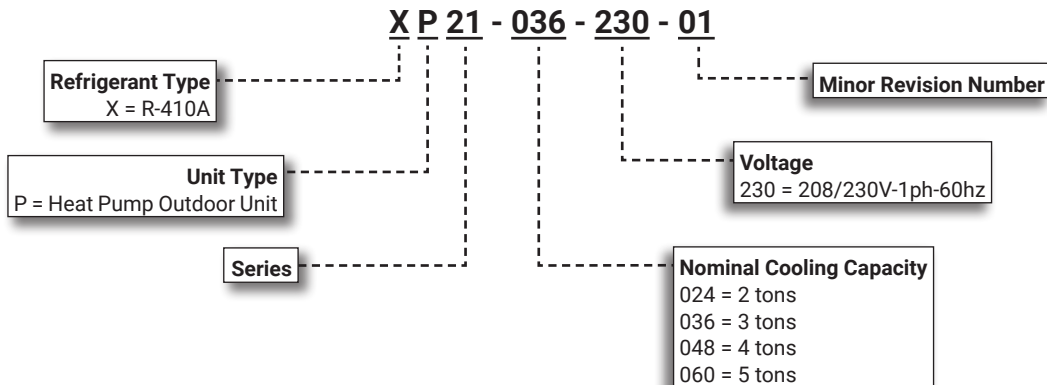
Bulletin No. 210853  
May 2020  
Supersedes February 2019



**SEER up to 19.20  
HSPF up to 9.70  
2 to 5 Tons**

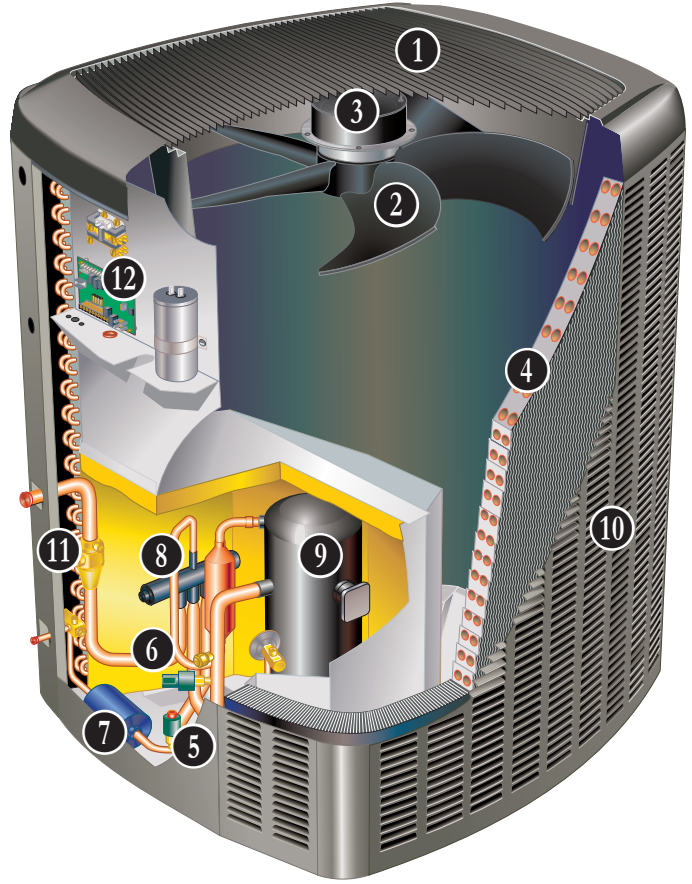
**Cooling Capacity - 24,200 to 57,500 Btuh  
Heating Capacity - 22,000 to 55,500 Btuh**

**MODEL NUMBER IDENTIFICATION**



## FEATURE HIGHLIGHTS

1. Outdoor Coil Fan with SilentComfort™ Technology
2. SilentComfort™ Fan Guard
3. Variable-Speed Outdoor Fan Motor
4. Copper Tube / Enhanced Fin Coil
5. Expansion Valve - Outdoor Unit
6. High Pressure Switch
7. Low Pressure Switch
8. High Capacity Liquid Line Drier
9. Four-Way Reversing Valve
10. Two-Stage Scroll Compressor
11. SmartHinge™ Louvered Coil Protection
12. Refrigerant Line Connections and Access
13. iComfort® Communicating Control



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## APPROVALS AND WARRANTY

### APPROVALS

- AHRI Certified to AHRI Standard 210/240
- For AHRI Certified system match-ups and expanded ratings, visit [www.LennoxPROs.com](http://www.LennoxPROs.com)
- ENERGY STAR® certified
- Sound rated to AHRI Standard 270 or 370 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 ten 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

- 2 through 5 ton
- Sound levels as low as 67 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.

### Outdoor Coil Fan with SilentComfort™ Technology

- 1 • Specially-designed, SilentComfort™ fan guard uses Passive Vortex Suppression to reduce air noise
  - Constructed of corrosion-resistant PVC (polyvinyl chloride) coated steel
- 2 • Specially designed composite fan blades reduce operating sound levels
  - Direct drive fan
  - Vertical air discharge
  - All models have a variable-speed outdoor fan motor for quiet operation
  - Totally enclosed fan motor
  - Fan motor inherently protected
  - Fan service access accomplished by removal of fan guard



### Fan Operation

- Electronic sensor technology detects fan blockage
- High starting torque breaks up any accumulation of frost, ice, snow or debris on fan assembly
- Fan then resumes normal operation

## FEATURES

### REFRIGERATION SYSTEM (continued)

- 3 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
- 4 Expansion Valve - Outdoor Unit**
  - Designed and sized for heat pump systems
  - Sensing bulb senses evaporator suction temperature during heating cycle

**Discharge Temperature Switch**

  - Shuts off unit if operating conditions cause the compressor discharge line temperature to rise above setpoint
  - Protects compressor from excessive pressure / temperature
  - Automatic reset when temperature drops below setpoint
- 5 High Pressure Switch**
  - Protects the system from high pressure conditions
  - Automatic reset
- 6 Low Pressure Switch**
  - Shuts off unit if suction pressure falls below setting
  - Loss of charge and freeze-up protection
  - Automatic reset
- 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
- 8 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
  - Factory installed

### Optional Accessories

#### Expansion Valve Kits

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

#### Freezestat

- 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
- Installs on or near the discharge line of the evaporator or on the suction line

#### 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

#### 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 model and must be field fabricated.

## FEATURES

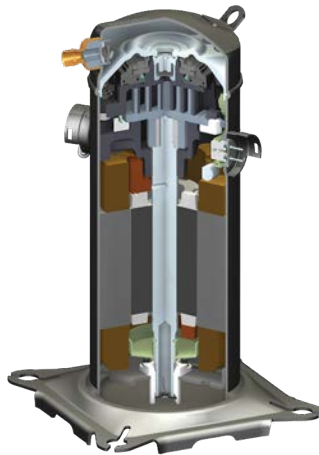
### COMPRESSOR

#### 9 Two-Stage Scroll Compressor

- High volumetric efficiency
- Uniform suction flow
- Constant discharge flow
- Quiet operation

#### 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
- During the compression process, there are several pockets in the scroll that are compressing gas
- Modulation is achieved by venting a portion of the gas in the first suction pocket back to the low side of the compressor thereby reducing the effective displacement of the compressor
- A 24-volt DC solenoid valve inside the compressor controls staging
- When the 3-way solenoid is energized it moves the lift ring assembly to block the ports and the compressor operates at full-load or 100% capacity
- When the solenoid is de-energized the lift ring assembly moves to unblock the compressor ports and the compressor operates at part-load or approximately 67% of its full-load capacity
- The “loading” and “unloading” of the two stage scroll is done “on the fly” without shutting off the single-speed compressor motor between stages
- Low gas pulses during compression reduces operational sound levels
- Compressor motor is internally protected from excessive current and temperature



- Compressor is installed in the unit on specially formulated, resilient rubber mounts for better sound dampening and vibration free operation

#### Crankcase Heater

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

### CABINET

- Heavy gauge steel construction
- Five station metal wash process
- Louvered heavy gauge steel panels
- Powder paint finish
- Compressor and control box located in a separate insulated compartment
- Compartment provides protection from the weather and keeps sound transmission at a minimum
- Control box conveniently located with all controls factory wired
- Large removable panel provides service access
- High density polyethylene unit support feet raise the unit off of the mounting surface, away from damaging moisture
- Drainage holes provided in base section

#### PermaGuard™ Unit Base

- Durable zinc-coated base section resists rust and corrosion

#### 10 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



#### Refrigerant Line Connections, Electrical Inlets and 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

### 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

## FEATURES

### CONTROLS

#### 12 iComfort® Communicating Control

- Advanced control communicates information about various operating parameters in the air conditioner to the optional iComfort® Communicating Thermostat to constantly maintain the highest level of comfort, performance and efficiency available
- Connections for connecting a conventional heating/cooling thermostat are also provided on the control
- Auto Configuration - On start-up the control automatically sends a description of the unit to the optional iComfort® Communicating Thermostat to automatically configure the number of stages and features available



#### Seven-Segment Display

- Seven-segment display shows information about outdoor unit type and capacity and also displays alerts for common fault conditions (electrical and mechanical)
- Control also features:
  - Compressor anti-short cycle delay (5 minutes)
  - High and low pressure switch monitoring with provisions for lockout
  - Five-Strike lockout protection protects compressor
  - Discharge line and sensor monitoring
  - Fan cycling operates outdoor fan for 5 minutes when outdoor ambient air temperature is between 15°F and 35°F and the compressor has been off for 25 to 30 minutes
    - Reduces the potential for ice buildup on the fan orifice ring. User selectable 5 minutes on or off (default setting)
  - Lennox Humiditrol® Whole Home Dehumidification System (EDA) compatible
  - EEPROM storage of all local configurations

#### Outdoor Air Temperature Sensor

- Used with iComfort® Communicating Thermostats
- Sensor allows thermostat to display outdoor temperature
- Sensor is auto-detected when connected to thermostat
- Also used for dual-fuel and Humiditrol® applications

#### IntelliFrost™ Adaptive Defrost Control

- Prevents frost build-up on the outdoor coils
- Uses outdoor ambient temperature, coil temperature, and compressor run-time input to initiate the defrost cycle
- Defrost control jumper settings are 50°F, 70°F, 90°F and MAX
- Default setting is 50°F
- Auto ON and Auto OFF defrost controls are based on the control's jumper setting:
  - If Auto OFF is set, the defrost cycle will run based on a fixed jumper setting of 50°F, 70°F, 90°F or MAX
  - If Auto ON is set, the defrost cycle will run based on the following:
    - Initial Unit Power-up or Cooling Demand
      - The defrost cycle will run based on the jumper setting after the unit's first power-up or first defrost cooling demand
    - Accumulated Heating Run-Time Between Defrost Cycles
      - If heating runtime is equal or less than 50 minutes, the defrost control setting will increase at the next defrost cycle based on the jumper setting
        - Example: If the jumper setting is 50°F or 70°F, the next defrost cycle will run at 90°F. If jumper setting is 90°F or MAX, the next defrost cycle will run at MAX.
      - If heating runtime is more than 60 minutes between defrost cycles and the jumper setting is 50°F, 70°F or 90°F, the defrost control setting for the next defrost cycle will run based on the jumper setting
        - Example: If the jumper setting is MAX, the next defrost cycle will decrease to 90°F.
    - If MAX is set, the defrost cycle will always operate at the MAX setting when accumulated compressor OFF time is longer than 30 minutes and ambient temperature is less than 35°F
    - If the ambient sensor temperature is higher than 40°F and the jumper is set to MAX, the defrost cycle will run at 90°F.
    - If the jumper is set at 50°F, 70°F or 90°F, the defrost cycle will run based on the jumper setting

## FEATURES

### CONTROLS (continued)

#### Optional Accessories

#### iComfort® S30 Ultra-Smart Wi-Fi Thermostat (part of the iComfort® Residential Communicating Control System)

- Recognizes and connects to all iComfort® Communicating products to automatically configure and control the heating/cooling system (based on user-specified settings) for the highest level of comfort, performance and efficiency
- Recognizes model and serial number information for iComfort® Communicating products to simplify system setup
- Wi-Fi remote temperature monitoring and adjustment through a home wireless network for desktop PCs, laptops and apps for smartphones or tablets
- Smart home automation compatible with Apple HomeKit™, Amazon Alexa®, Google Assistant and IFTTT
- Service alerts and reminders sent via text message or e-mail
- Dealer Dashboard features online real-time monitoring of installed iComfort® Communicating systems
- Simple easy-to-use touchscreen allows complete system configuration
- Scheduled maintenance alerts, system warnings and troubleshooting are also displayed on thermostat screen
- Easy to read 7 inch high definition color display (measured diagonally)
- Conventional outdoor units (not iComfort® Communicating) can easily be added and controlled by the iComfort® S30 Thermostat
- Installer setup screens allow quick and simple system configuration without a manual, Installer can also run tests on complete system or individual components for easy maintenance and troubleshooting
- Serial communications bus (RSBus), with less wiring than a conventional heating/cooling system, allows system communication
- Uses 4-wire, 18-gauge standard thermostat wiring
- High Definition Color Display with Subbase, Smart Hub Controller, wallplate (for retrofit installations) furnished for easy installation

**NOTE** - See the iComfort® S30 Thermostat Product Specifications bulletin in the Controls section for more information.

#### Thermostat

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



#### Blower Relay Kit

(for use with furnaces equipped with constant torque blower motors)

- Allows furnace blower speed changes when matched with two-stage heat pumps

#### Compressor Hard Start Kit

- Single-phase units are equipped with a PSC compressor motor
- This type of motor normally does not need a potential relay and start capacitor
- In cases of low voltage, kit may be required to increase the compressor starting torque

#### Indoor Blower Off Delay Relay

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

**NOTE** - Required if outdoor unit is used with a conventional heating-cooling thermostat and air handler (not iComfort® Communicating control). See furnace or air handler specifications to determine if relay is needed.

#### Indoor Blower Speed Relay Kit

- Relay kit provides the option of changing blower speeds on standard permanent split capacitor (PSC) multi-tap blower motors during cooling operation
- Provides optimum humidity control conditions by automatically reducing indoor blower speed during continuous fan operation or low stage compressor operation to reduce humidity levels

#### Low Ambient Kit

- Heat pump can operate in the cooling mode down to 45°F outdoor air temperature without additional controls
- Allows unit to operate properly down to 30°F in the cooling mode

**NOTE** - Crankcase heater and freestat should be installed on compressors equipped with a low ambient kit.

**NOTE** - A Compressor Low Ambient Cut-Off should be added to terminate compressor operation below recommended operation conditions.

#### 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

## SPECIFICATIONS

|  |                                      | Model No.    | XP21-024       | XP21-036      | XP21-048       | XP21-060      |
|--|--------------------------------------|--------------|----------------|---------------|----------------|---------------|
| <b>General Data</b>  | Nominal Tonnage                      |              | 2              | 3             | 4              | 5             |
| <b>Connections (sweat)</b>                                 | Liquid line (o.d.) - in.             |              | 3/8            | 3/8           | 3/8            | 3/8           |
|  | Vapor line (o.d.) - in.              |              | 7/8            | 7/8           | 7/8            | 1-1/8         |
| <b>Refrigerant</b>   | <sup>1</sup> R-410A charge furnished |              | 10 lbs. 10 oz. | 9 lbs. 12 oz. | 12 lbs. 10 oz. | 12 lbs. 7 oz. |
| <b>Outdoor Coil</b>  | Net face area - sq. ft.              | Outer coil   | 20.73          | 20.73         | 27.21          | 27.21         |
|  |                                      | Inner Coil   | 20.08          | 20.08         | 26.36          | 26.36         |
|  | Tube diameter - in.                  | 5/16         | 5/16           | 5/16          | 5/16           |               |
|  | No. of rows                          | 2            | 2              | 2             | 2              |               |
|  | Fins per inch                        | 22           | 22             | 22            | 22             |               |
| <b>Outdoor Fan</b>   | Diameter - in.                       |              | 26             | 26            | 26             | 26            |
|  | No. of blades                        |              | 5              | 5             | 5              | 5             |
|  | Motor hp (W)                         |              | 1/3            | 1/3           | 1/3            | 1/3           |
|  | Cfm - 1st stage                      |              | 2500           | 3100          | 3825           | 3950          |
|  |                                      | 2nd stage    | 2900           | 3500          | 4230           | 4400          |
|  | Rpm - 1st stage                      |              | 430            | 525           | 600            | 625           |
|  |                                      | 2nd stage    | 500            | 600           | 675            | 700           |
|  | Watts - 1st stage                    |              | 50             | 90            | 135            | 150           |
| 2nd stage  |                                      | 75           | 125            | 185           | 200            |               |
| <b>Shipping Data - lbs. - 1 pkg.</b>                       |                                      |              | 297            | 303           | 346            | 381           |
| <b>ELECTRICAL DATA</b>                                     |                                      |              |                |               |                |               |
| <b>Line voltage data - 60hz</b>                            |                                      |              | 208/230V-1ph   | 208/230V-1ph  | 208/230V-1ph   | 208/230V-1ph  |
| <sup>2</sup> <b>Maximum overcurrent protection (amps)</b>  |                                      |              | 25             | 35            | 45             | 60            |
| <sup>3</sup> <b>Minimum circuit ampacity</b>               |                                      |              | 16.6           | 21.1          | 28.5           | 38            |
| <b>Compressor</b>  | Rated load amps                      |              | 11.7           | 15.3          | 21.2           | 28.8          |
|  | Locked rotor amps                    |              | 58             | 83            | 104            | 153           |
|  | Power factor                         |              | 0.98           | 0.98          | 0.98           | 0.98          |
| <b>Outdoor Coil Fan Motor - Full load amps</b>             |                                      |              | 2.0            | 2.0           | 2.0            | 2.0           |
| <b>CONTROLS</b>  |                                      |              |                |               |                |               |
| <b>iComfort® S30 Thermostat</b>                            |                                      | <b>12U67</b> | •              | •             | •              | •             |
| <b>OPTIONAL ACCESSORIES - ORDER SEPARATELY</b>             |                                      |              |                |               |                |               |
| <b>Blower Relay Kit (for constant torque gas furnaces)</b> |                                      | <b>85W66</b> | •              | •             | •              | •             |
| <b>Compressor Hard Start Kit</b>                           |                                      | <b>63W22</b> | •              |               |                |               |
|  |                                      | <b>63W23</b> |                | •             |                |               |
|  |                                      | <b>10J42</b> |                |               | •              |               |
|  |                                      | <b>63W24</b> |                |               |                | •             |
| <b>Compressor Low Ambient Cut-Off</b>                      |                                      | <b>45F08</b> | •              | •             | •              | •             |
| <b>Freezestat</b>  | 3/8 in. tubing                       | <b>93G35</b> | •              | •             | •              | •             |
|  | 5/8 in. tubing                       | <b>50A93</b> | •              | •             | •              | •             |
| <b>Indoor Blower Off Delay Relay</b>                       |                                      | <b>58M81</b> | •              | •             | •              | •             |
| <sup>4</sup> <b>Low Ambient Kit</b>                        |                                      | <b>68M04</b> | •              | •             | •              | •             |
| <b>Indoor Blower Speed Relay Kit</b>                       |                                      | <b>40K58</b> | •              | •             | •              | •             |
| <b>Mild Weather Kit</b>                                    |                                      | <b>40K58</b> | •              | •             | •              | •             |
| <b>Monitor Kit - Service Light</b>                         |                                      | <b>76F53</b> | •              | •             | •              | •             |
| <b>Outdoor Thermostat Kit</b>                              | Thermostat                           | <b>10Z23</b> | •              | •             | •              | •             |
|  | Mounting Box                         | <b>31461</b> | •              | •             | •              | •             |
| <b>Refrigerant Line Sets</b>                               | L15-65-30 L15-65-40                  |              | •              | •             | •              |               |
|  | L15-65-50                            |              |                |               |                |               |
|  | Field Fabricate                      |              |                |               |                | •             |
| <sup>5</sup> <b>Snow Guards</b>                            |                                      | <b>X8782</b> | •              | •             | •              | •             |

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

<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 line set length and additional refrigerant charge required.

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

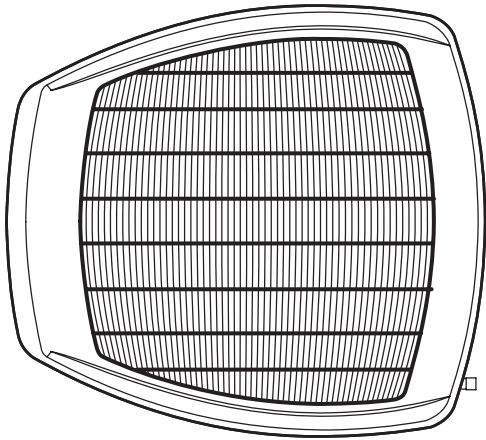
<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

<sup>4</sup> Compressor Low Ambient Cut-Off and Freezestat are recommended with Low Ambient Kit.

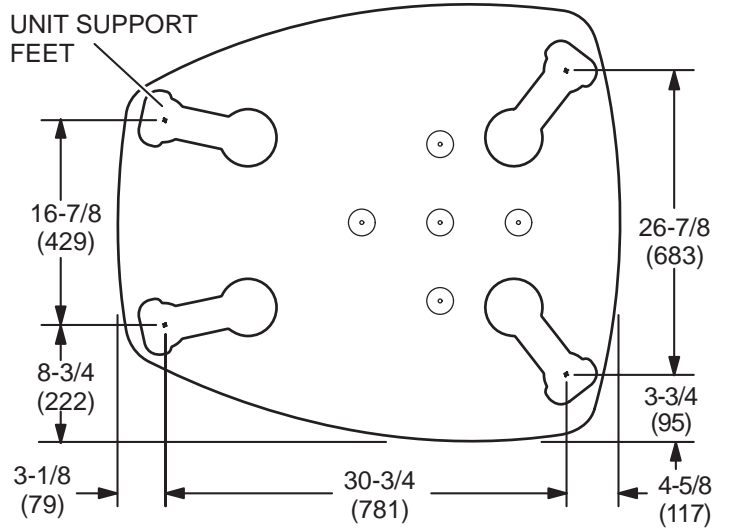
<sup>5</sup> Adds 11-1/2 inches (292 mm) to unit height.



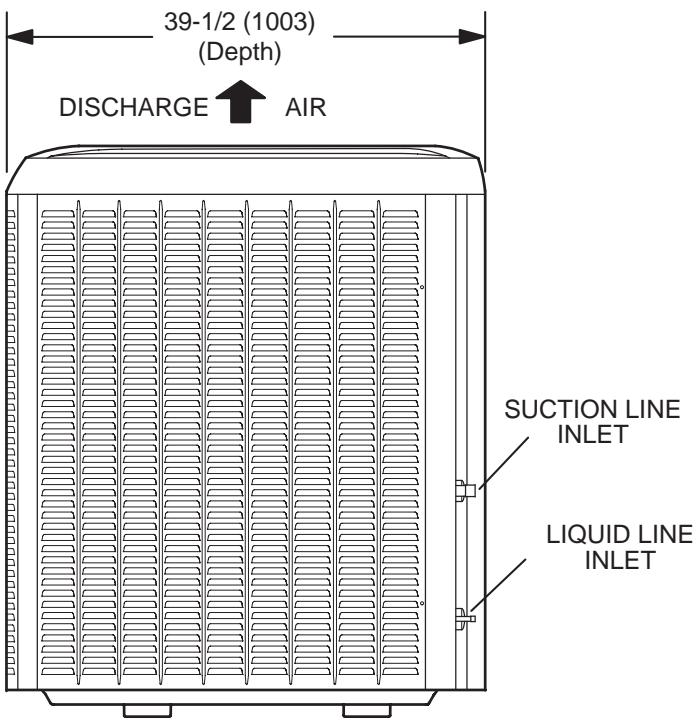
# DIMENSIONS



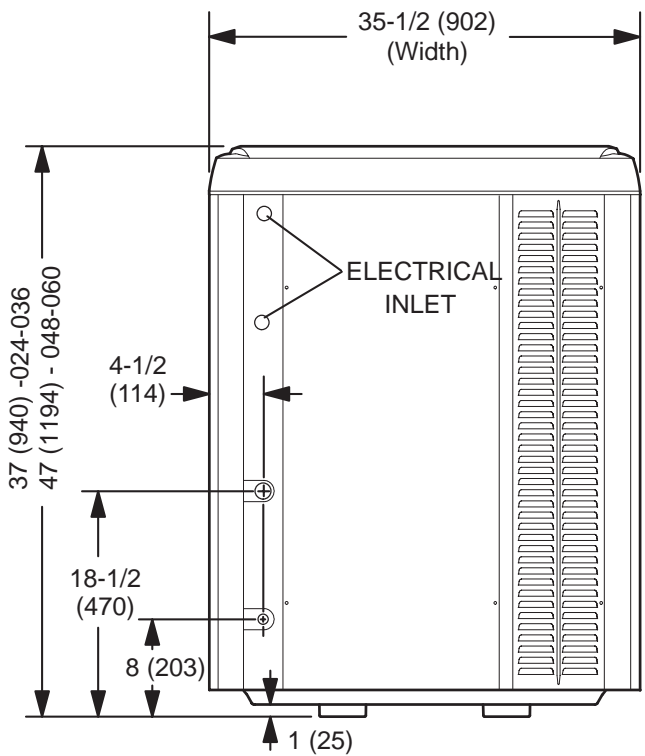
TOP VIEW



TOP VIEW BASE SECTION  
(Large Base)



SIDE VIEW

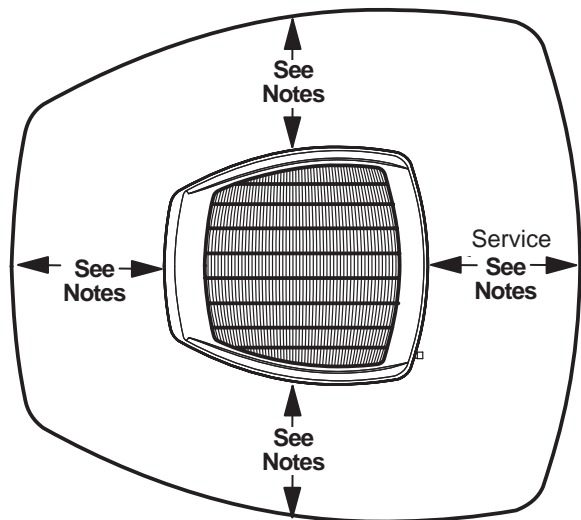


ACCESS VIEW

## INSTALLATION CLEARANCES

### NOTE:

- One of these 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)
- Service Clearance – 30 in. (762 mm)
- 48 in. (1219 mm) clearance required on top of unit
- 24 in. (610 mm) required between two units



## SOUND DATA

| 1 Unit Model | Octave Band Sound Power Levels dBA, re 10 <sup>-12</sup> Watts<br>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 |
| 024          | 61  | 64   | 61   | 55.5 | 49   | 41.5 | 45.5 | 67                          | 60  | 55 | 49 | 46 | 35 |
| 036          | 65.5  | 68   | 65.5 | 60.5 | 54   | 46   | 50.5 | 72                          | 65  | 60 | 54 | 51 | 40 |
| 048          | 60  | 64.5 | 68.5 | 66   | 62   | 56.5 | 48.5 | 73                          | 66  | 61 | 55 | 52 | 41 |
| 060          | 57  | 64.5 | 68   | 67   | 62.5 | 56   | 49.5 | 73                          | 66  | 61 | 55 | 52 | 41 |

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.

## FIELD WIRING

**A** - Two Wire Power

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

**C** - **iComfort® Communicating Thermostat:**

- Four Wire, 18AWG (RSBus)

**C** - **Conventional Thermostat:**

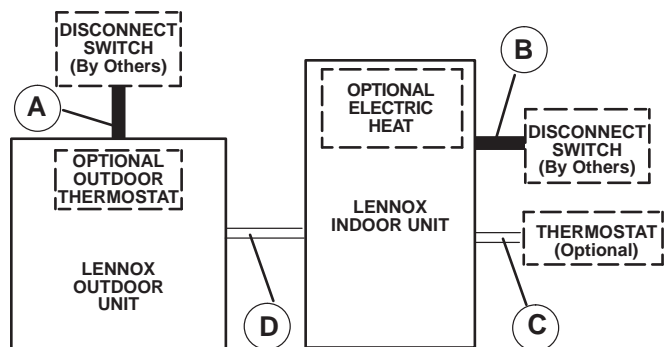
- Eight Wire Low Voltage, 18AWG
- Ten Wire Low Voltage, 18AWG with Optional Outdoor Thermostat

**D** - **iComfort® Communicating Thermostat:**

- Two Wire, **18AWG** (RSBus) unshielded thermostat cable for low voltage **Smart Hub power terminals** (R, C, + and -)
- Two Wire, **18 to 22AWG** (RSBus) shielded thermostat cable recommended for **Smart Hub communications terminals** (I+, I-, A and B)

**D** - **Conventional Thermostat:**

- Twelve Wire Low Voltage, 18AWG
- Fourteen Wire Low Voltage, 18AWG with Optional Outdoor Thermostat



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

NOTE - Field wiring is not furnished.

## TXV USAGE

Use this table for C35, CH23, CH35 and CR33 Field Installed TXV Match-Ups.

| Model No. | Order No. |
|-----------|-----------|
| XP21-024  | 12J18     |
| XP21-036  | 12J19     |
| XP21-048  | 12J20     |
| XP21-060  | 12J20     |

CX35 and CHX35 coils and all Lennox air handlers are shipped with a factory installed TXV. In most cases, no change out of the valve is needed.

If a change out is required it will be listed in the "TXV SUBSTITUTION" table by size. The correct TXV must be ordered separately and field installed.

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

CH23 and CR33 - Use the expansion valve listed.

## 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       | TXV         |
|--------------|------|-------------|------|-----------|-------------|
| Size         | Tons | Size        | Tons | Furnished | Replacement |
| 024          | 2    | 38          | 3.5  | 12J19     | 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 |
|----------------------|-----------------------|
| Most Popular Matches | Section removed.      |



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