

# EL280UHE(K)

ELITE® SERIES

Upflow / Horizontal | Constant Torque Blower | Refrigerant Detection | 60Hz

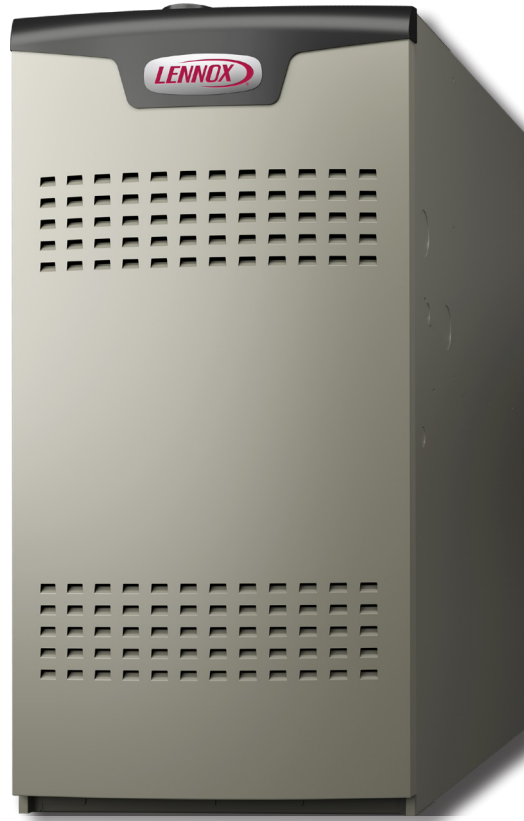


RESIDENTIAL  
PRODUCT SPECIFICATIONS (EHB)

AFUE - 80%

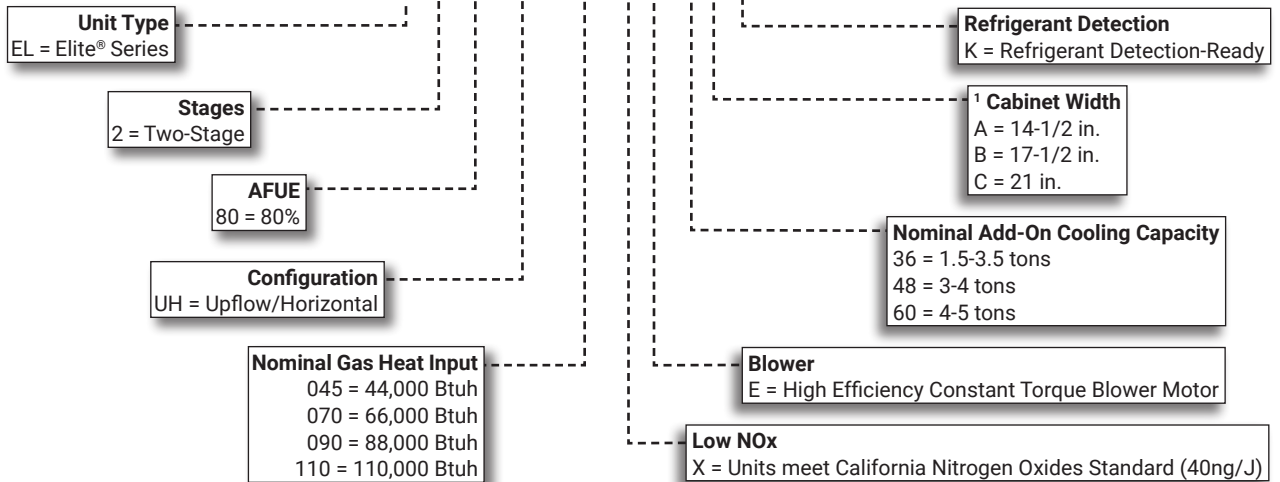
Input - 44,000 to 110,000 Btuh  
Nominal Add-on Cooling - 1.5 to 5 Tons

**ELITE**®  
SERIES



## MODEL NUMBER IDENTIFICATION

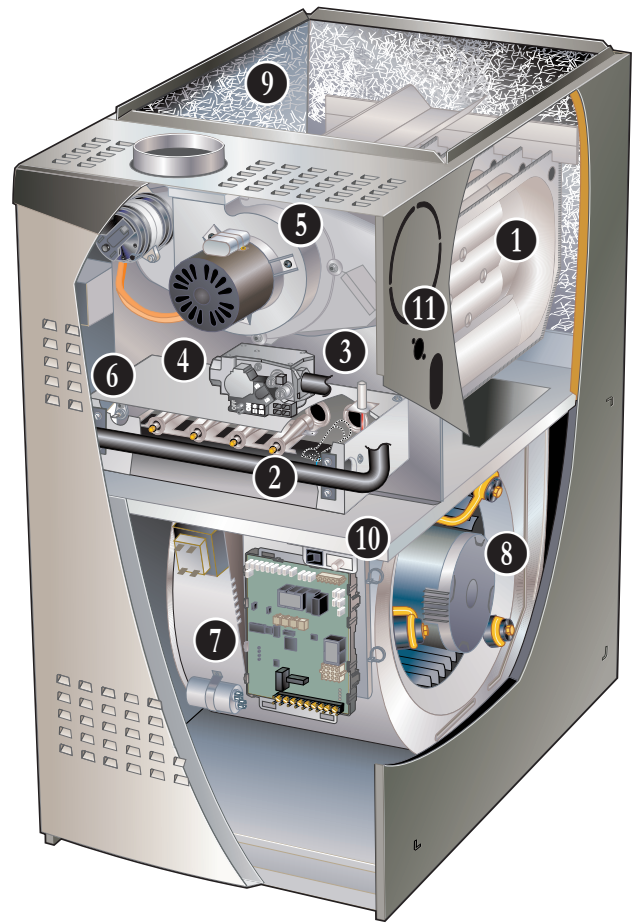
**EL 2 80 UH 090 X E 48 B K**



<sup>1</sup> Indoor coils with the same letter designation will physically match the furnace.

## FEATURE HIGHLIGHTS

1. Lennox Duralok™ Heat Exchanger
2. Inshot Burners
3. SureLight® Hot Surface Ignitor
4. Two-Stage Gas Control Valve
5. Two-Speed Combustion Air Inducer
6. Flame Rollout Switches
7. SureLight® Integrated Furnace Control
8. Power Saver™ Constant Torque Blower
9. Insulated Cabinet
10. Safety Interlock Switch
11. Gas Piping And Electrical Inlets



**NOTE - EL280UHE(K) FURNACES ARE NOT AVAILABLE IN CANADA!**  
**NOTE - EL280UHE(K) FURNACES CANNOT BE TWINNED!**

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## APPROVALS AND WARRANTY

### APPROVALS

- AHRI Certified
- CSA International Certified
- Tested and rated according to US DOE test procedures and FTC labeling regulations
- ISO 9001 Registered Manufacturing Quality System
- Blower data from unit tests conducted in Lennox Laboratory air test chamber
- All models meet UL 60335-2-40 Refrigerant Detector Requirements

**NOTE** - This furnace has not been CSA International design certified for installation in mobile homes, recreational vehicles, or outdoors.

### California Only

- These furnaces **do not meet** the South Coast Air Quality Management District (SCAQMD) Rule 1111 and San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4905 NOx emission limit (14 ng/J) and cannot be installed within the SCAQMD and SJVAPCD areas
- All "X" model furnaces are approved by the California Energy Commission and meets California Nitrogen Oxides Standard (NOx) limits of 40 ng/J

### WARRANTY

- Duralok™ Aluminized Steel Heat Exchanger:
  - Limited twenty years in residential applications
  - Limited ten years in non-residential applications
- All other covered components:
  - Limited five years in residential installations
  - Limited one year in non-residential installations

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

## FEATURES

### APPLICATIONS

- Input capacities of 44,000, 66,000, 88,000 and 110,000 Btuh
- Energy efficiency (AFUE) - 80%
- Compact cabinet for upflow, horizontal-left or horizontal-right applications
- Lennox add-on indoor coils, high-efficiency air cleaners and humidifiers can easily be added to furnace
- Shipped factory assembled with all controls installed and wired
- Ready for installation in upflow or horizontal right-hand position without any modifications

**NOTE** - Horizontal left-hand requires repositioning of pressure switch.

- Removable bottom seal panel shipped in place for side return air is easily removed for bottom/end return air applications
- Each unit factory test operated to ensure proper operation

### HEATING SYSTEM

- 1 Lennox Duralok™ Heat Exchanger Assembly**
  - Heavy gauge aluminized steel heat exchanger
  - Crimped seam clamshell type design
  - Designed for normal expansion and contraction
  - Minimum resistance to air flow

- Laboratory life cycle tested in excess of industry standards
- Compact size of heat permits low overall design of furnace cabinet

- 2 Inshot Burners**

- Aluminized steel inshot burners provide efficient, trouble-free operation
- Burner venturi mixes air and gas in correct proportion for proper combustion
- Burner assembly is removable from the unit as a single component for ease of service

- 3 SureLight® Hot Surface Ignitor**

- Tough, reliable, long-life, trouble-free performance
- Silicon nitride ignitor
- Cemented to steatite block for protection against current leakage
- Ignition leads constructed of nickel plated copper enclosed in high temperature Teflon® insulation for dependable operation

- 4 Two-Stage Gas Control Valve**

- 24 volt redundant combination two-stage gas control valve combines manual shut off switch (On-Off), automatic electric valve (dual) and gas pressure regulation into a compact combination control

## FEATURES

### HEATING SYSTEM (continued)

- 5 Two-Speed Combustion Air Inducer**
- Heavy duty, permanent split capacitor (PSC) two-speed blower prepurges heat exchanger and safely vents flue products
  - Dual pressure switches (low fire/high fire) prove blower operation before allowing gas valve to open
  - Operates only during heating cycle
  - Direct access allows inducer assembly to be rotated 90° clockwise or counterclockwise to facilitate easy vent attachment

- 6 Flame Rollout Switches (2)**
- Factory installed on burner box
  - Switch provides protection from abnormal operating conditions
  - Manual reset

#### Limit Controls

- Primary limit factory installed on vestibule panel
- Secondary limit factory installed on blower housing
- Automatic reset

#### Optional Accessories

##### High Altitude Pressure Switch Kit

- Required on most units for proper unit operation at altitudes from 4501 to 10,000 ft.

##### Natural Gas to LPG/Propane Conversion Kit

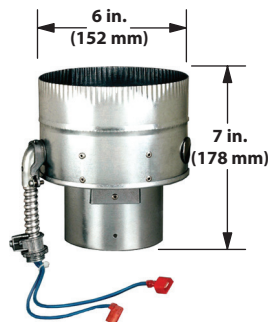
- Required for field changeover from natural gas to LPG/Propane

##### LPG/Propane to Natural Gas Conversion Kit

- Required for field changeover from LPG/Propane to natural gas

##### Vent Adaptor (Upflow Applications Only)

- Allows venting through a masonry chimney without the need of a flue liner
- Manual reset temperature sensor protects against abnormal operating conditions
- Sensor wiring may be routed from either side of adaptor
- Minimum winter design temperatures:
  - -10°F when used with interior masonry chimneys.
  - +5°F when used with exterior masonry chimneys



**NOTE** - Refer to Winter Design Temperatures Map on page 10 for application information. Also refer to the installation instructions for detailed information.

### BLOWER

- Direct drive blower
  - Statically and dynamically balanced
  - Resiliently mounted
  - Blower assembly easily removed for servicing
- 7 Power Saver™ Constant Torque Blower Motor**
- DC Brushless Motor
  - High Efficiency Constant Torque
  - ECM (Electronically Commutated Motor)
  - Motor is programmed to provide constant torque at each of the selectable speeds
  - Motor is controlled by the Integrated Furnace Control
  - Blower speeds are easily changed on the integrated furnace control
  - See blower data tables

### CONTROLS

- 8 SureLight® Integrated Two-Stage Furnace Control Board**
- Contains all necessary controls and relays to operate furnace
  - Combustion air inducer is operated by the integrated furnace control
  - Prior to ignition, a pre-purge cycle for 15 seconds is initiated
  - After the main burners are turned off, a post-purge cycle for 5 seconds is run
  - **Safety Controls** - Flame sensor utilizes flame rectification for safe and reliable operation
  - Should loss of flame occur, the integrated furnace control will initiate 4 re-attempts at ignition before locking out unit operation for 60 minutes
  - Watchguard type circuit automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance calls for service
  - **Thermostat Control** - For optimal performance, the use of a high-quality, digital two-stage thermostat with adjustable settings for first stage/second stage, on/off differentials and adjustable stage timers is recommended **Furnace Input Staging Options**

Thermostat Type	Input Staging Available
<b>Two-Stage (Conventional)</b>	Determined by thermostat demand
<b>Single-Stage (Conventional)</b>	2nd-stage heat ON delay (DIP switch setting) OFF - 7 minutes (factory) ON - 12 minutes

## FEATURES

### **CONTROLS (continued)**

- **Display LED** - Seven segment LED displays alpha-numeric information related to diagnostics as well as system operation and status
  - Diagnostic codes are held in non-volatile memory, immune from power interruptions
  - Holds up to ten diagnostic codes in order of occurrence for recall on demand
  - Port on blower door allows for easy viewing

### **DIP Switch Settings**

- **Select Thermostat Used** - Single-Stage or Two-Stage
- Two selectable second stage recognition times (7 and 12 minutes) are available on the control when the furnace is used with a single-stage thermostat
- When used with a two-stage thermostat, furnace will only initiate second stage operation with a second stage thermostat demand
- **Second Stage Delay** - Used with single-stage thermostat only. See Furnace Input Staging Options table for details
- **Blower On/Off Time (Heating)** - Blower on time is fixed at 30 seconds, blower off time is adjustable from 90, 120, 180 and 210 seconds (factory setting - 120 seconds)
- **Blower On/Off Time (Cooling)** - For air-conditioning applications, blower "on" time is 2 seconds following thermostat demand for cooling
- Blower "off" time in cooling mode is adjustable from 2 or 45 seconds (factory setting - 45 seconds)
- For air-conditioning applications, blower is automatically energized on thermostat demand for cooling
- **Heating Speeds** - Low Heat or High Heat
- **Cooling Speeds** - Low Cool or High Cool
- **Continuous Speed** - Low Heat (factory setting) - adjustable
- **Dehumidification** - A jumper on the control must be clipped to enable dehumidification
- A humidity controlling thermostat or device is also required
- During a call for cooling, air volume is automatically reduced, forcing humidity removal by the air conditioner or heat pump system (single stage units or two-stage units running at 2nd stage)
- After the humidity has reached the desired set-point the cooling air volume returns to its designed rate
- **Dual-Fuel Operation** - A jumper on the control must be clipped to enable operation with a single or two-stage heat pump
- The indoor blower is started without delay when a call for heat is received
- **Two-Stage Compressor Operation** - A jumper on the control must be clipped to enable operation with a two-stage compressor

- **Accessory Terminal** - One accessory terminal furnished for additional power supply requirements for 120 volt (less than 1 amp) powered air cleaners
- One un-powered pair of contacts are provided for humidifier connections and may be connected to 24V or 120V
- Control is factory installed in the unit control box

### **24 Volt Transformer (40VA)**

- Furnished and factory installed on outside of control box
- Circuit breaker (furnished) is wired in series

### **Field Wiring Make-up Box**

- Furnished for line voltage wiring
- Factory installed internally on left side of furnace
- Box may be installed internally on right side of furnace

### **Refrigeration Detection System (RDS)**

#### **(Part of the SureLight® Integrated Furnace Control)**

- Complies with UL 60335-2-40 approved standard
- Required for all systems using R-454B refrigerant
- Plug-in connection to the RDS Coil Sensor
- Supports up to two RDS Coil Sensors (factory setting)
- Used as an interface between indoor unit and thermostat to control system
- Ensures safe operation for systems equipped with R-454B refrigerant
- If R-454B refrigerant is detected, the refrigerant detection system will stop compressor and/or heating operation and operate the blower to reduce concentrations in the conditioned space
- Once safe levels are reached the HVAC system will resume normal operation
- Low GWP test button for troubleshooting
- Alarm/Zone relay interface can trigger an external alarm if R-454B refrigerant is detected and open all zone dampers (if part of a zoning system) if R-454B refrigerant is detected
- Power is disabled to non-communicating thermostats to prevent demand if R-454B refrigerant is detected
- On system start-up blower will run for five minutes and any thermostat demands are disabled

### **Optional Accessories**

#### **Thermostat**

- Thermostat is not furnished with unit
- See page 8

## FEATURES

### CABINET

- Low-profile, narrow width cabinet allows easy installation
- Heavy-gauge, cold rolled steel construction
- Pre-painted finish
- Flue outlet on top of cabinet for upflow applications, can be relocated to either side of cabinet for horizontal applications
- Flanges provided on supply air opening for ease of plenum connection or alignment with indoor coil
- 9 • Insulated with foil faced insulation on sides and back of heating compartment and mat faced insulation in blower compartment
- Sealed blower compartment
- Inner blower compartment access panel seals blower compartment from air leakage
- Cabinet door can be removed without any tools
- Complete service access
- 10 • Safety interlock switch automatically shuts off power to unit when inner blower compartment access panel is removed
- 11 • Gas piping and electrical inlets are provided in both sides of cabinet

#### Low Leakage Cabinet

- All models have less than 2% air leakage and meet ANSI/ASHRAE Standard 193-2010 "Method of Test for Determining the Air Tightness of HVAC Equipment"

#### Bottom/Side Return Air Entry:

- Upflow/horizontal with bottom return air entry:
  - Remove furnished bottom seal panel from cabinet
- Upflow only with side return-air entry:
  - Corners are marked on either side of cabinet for return air cut-out
- See dimension drawings

**NOTE** - 60C size units that require air volumes over 1800 cfm must have one of the following:

- Single side return air and Optional Return Air Base with transition that must accommodate required 20 x 25 x 1 inch air filter to maintain proper velocity
- Bottom return air
- Return air from both sides
- Bottom and one side return air
- See Blower Data Tables for additional information

#### Coil Match-Up

- All furnaces exactly match Lennox cased upflow indoor coils and horizontal indoor coils with same letter designation (A, B, C, D) in model number
- No adaptor required
- Engaging holes furnished on cabinet for alignment
- Lennox uncased coils match furnaces without any overhang but require an optional adaptor base or field fabricated transition to match furnace opening
- See coil bulletin for additional information

### CABINET (continued)

#### Optional Accessories

##### Horizontal Suspension Kit

- Provides suspension of unit and indoor coil in horizontal applications
- Allows complete service access
- Consists of corner mounted hanging brackets with vibration isolators, return air end support rail and hardware for assembly
- Metal hanging straps must be field provided

##### Return Air Base

- A field fabricated transition or Return Air Base is required when using an IAQ product higher than 14-3/16 in. installed next to the unit and serviced from the front. IAQ products higher than 20 in. require a field fabricated transition
- Base must be used for 60C models with air volumes over 1800 cfm in upflow applications when only one side return is required
- Cabinet is shipped flat for easy field assembly and is pre-painted steel to match the furnace. See Dimension Drawing

##### High Performance Economizer (Commercial Applications Only)

- Designed for applications requiring outdoor air to be utilized in a commercial HVAC system. Allows the entry of fresh outdoor air for free cooling, reducing the requirement for mechanical cooling
- Heavy gauge galvanized steel cabinet lined with thick fiberglass insulation
- Mixed air sensor, outdoor air sensor and 24VAC transformer furnished
- Approved for California Title 24 building standards.
- ASHRAE 90.1-2010 compliant
- See separate Product Specifications bulletin for additional information and available control and sensor options

## FEATURES

### **FILTER (not furnished)**

- Filter and provisions for external mounting must be field provided

### **Optional Accessories**

#### **Air Filter and Rack Kit for Horizontal Return Air (End)**

##### **Applications**

- Washable or vacuum cleanable polyurethane frame type filter and external end return air rack available for field installation
- Rack has filter door for easy filter servicing
- Flanges on rack allow easy duct connection
- See dimension drawing

#### **Air Filter and Rack Kit for Upflow Side Return Air**

- Applications - Not for use with Return Air Base
- Washable or vacuum cleanable polyurethane frame type filter and external side return air rack available for field installation
- Available in single and ten pack kits
- Rack has filter door for easy filter servicing
- Flanges on rack allow easy duct connection
- Field installs on either side of unit cabinet (See dimension drawing) Washable or vacuum cleanable polyurethane frame type filter and external end return air rack available for field installation
- Rack has filter door for easy filter servicing
- Flanges on rack allow easy duct connection
- See dimension drawing

#### **Air Filter and Rack Kit for Upflow Side Return Air**

- Applications - Not for use with Return Air Base
- Washable or vacuum cleanable polyurethane frame type filter and external side return air rack available for field installation
- Available in single and ten pack kits
- Rack has filter door for easy filter servicing
- Flanges on rack allow easy duct connection
- Field installs on either side of unit cabinet (See dimension drawing)

## INDOOR AIR QUALITY PRODUCT OPTIONS

### Healthy Climate® PureAir® Air Purification System

- Filtration - The Carbon Clean 16® (MERV 16) media filter captures more than 95% of particles 0.3 microns and larger and more than 90% of particles 0.01 microns and larger
- Highest airflow performance and lowest pressure drop when compared to a leading brand.
- Long life filters up to 1 year



### Healthy Climate® Media Air Cleaner

- High performance in a narrow 7 in. cabinet
- Available with MERV 11, 13, or 16 rated filters
- Multi-position heavy gauge steel cabinet will support furnace/coil or air handler and associated duct work
- Tool-less entry
- Tool-less assembly for quick installation



### Healthy Climate® Whole Home In Duct Air Purifiers

- Compact Duct Mounted Design
- Effective against odors and VOC's
- Certified Ozone free
- UVC lamp and carbon cells



### Healthy Climate® Ultraviolet Germicidal Lights

- Compact duct mounted design
- Single or dual applications
- Certified ozone free
- Effective against odors to help keep the system clean
- Safety Interlocks (Additional UVC Compliance Kit for UL 60335-2-40 is available for A2L applications)
- Low power consumption
- Available for 24V or 110/230V
- Up to 1340 microwatts /cm<sup>2</sup> output (dual lamp model)



**NOTE** - Please refer to the individual Product Specifications for these products for full information.

## CONTROL OPTIONS

### E40 Smart Wi-Fi Thermostat

- 3 Htg.-2 Clg.
- 7-day, universal, programmable, touchscreen thermostat
- Controls dehumidification during cooling mode and humidification during heating mode
- Smooth Setback Recovery and compressor short-cycle protection
- One-Touch Away Mode, Smart Away™ (geo-fencing), equipment maintenance reminders and scheduling
- Smart home automation compatible with Apple HomeKit™, Amazon Alexa® and Google Assistant
- Lennox® Home App controls temperature, fan operation, set programs/schedules and set Away mode on a smartphone
- Lennox Smart Tech App allows the installer to commission the system and remotely turn the system on and off during setup or service call on a smartphone



### M40 Smart Wi-Fi Thermostat

- 3 Htg.-2 Clg.
- 7-day, universal, programmable, touchscreen thermostat
- Smooth Setback Recovery and compressor short-cycle protection
- One-Touch Away Mode, Smart Away™ (geo-fencing), equipment maintenance reminders and scheduling
- Smart home automation compatible with Apple HomeKit™, Amazon Alexa®, Google Assistant and Matter
- Lennox® Home App controls temperature, fan operation, set programs/schedules and set Away mode on a smartphone
- Lennox Smart Tech App allows the installer to commission the system and remotely turn the system on and off during setup or service call on a smartphone



**NOTE** - Please refer to the individual Product Specifications for these products for full information.

## INDOOR AIR QUALITY PRODUCT OPTIONS - ORDERING

**NOTE - Refer to the individual Product Specifications documents for additional accessories and maintenance items.**

Description	Dimensions	Furnace Width	Order Number
<b>PureAir® S Air Purification System</b>			
PCO3S-16-16	17-1/2 x 8-3/4 x 26-1/2	A/B/C	Y8904
PCO3S-20-16	21-1/8 x 8-3/4 x 26-1/2	C/D	Y8903
<b>Healthy Climate® Media Air Cleaner</b>			
HCC16-28 (Cabinet)	17-1/2 x 28-1/2 x 7	A/B/C	Y2920
HCC16-28 (Cabinet) 4-pack	17-1/2 x 28-1/2 x 7	---	Y2921
HCF16-16 (Filter) MERV 16	16 x 25 x 5	---	X6672
HCF16-16 (Expandable Filter) MERV 16	16 x 25 x 5	---	X8306
HCF16-13 MERV 13	16 x 25 x 5	---	19L16
HCF16-11 (Filter) MERV 11	16 x 25 x 5	---	X6670
HCF16-11 (Expandable Filter) MERV 11	16 x 25 x 5	---	X8303
HCC20-28 (Cabinet)	21 x 28-1/2 x 7	C/D	X6661
HCC20-28 (Cabinet) 4-pack	21 x 28-1/2 x 7	---	X7751
HCF20-16 (Filter) MERV 16	20 x 25 x 5	---	X6675
HCF20-16 (Expandable Filter) MERV 16	20 x 25 x 5	---	X8307
HCF20-13 MERV 13	20 x 25 x 5	---	19L17
HCF20-11 (Filter) MERV 11	20 x 25 x 5	---	X6673
HCF20-11 (Expandable Filter) MERV 11	20 x 25 x 5	---	X8304
<b>Healthy Climate® Whole Home In Duct Air Purifiers</b>			
HCWHAP1	8 x 7 x 16.5	---	23V99
<b>Healthy Climate® Ultraviolet Germicidal Lights</b>			
UVC-24V (24V) 17-1/2 in.	Ballast 4-3/4 x 2-1/4 x 2	---	X9423
UVC-41W-S (110/230V) 17-1/2 in.	Ballast 11-3/4 x 2-3/4 x 1-5/8	---	X9424
UVC-41W-D (110/230V) 17-1/2 in.	Ballast 11-3/4 x 2-3/4 x 1-5/8	---	X9425
<b>CONTROLS - ORDERING</b>			
E40 Smart Wi-Fi Thermostat	3-3/8 x 5-3/8 x 1	---	30L26
Lennox® Smart Room Sensor	4 x 5-1/2 x 3	---	22V25
Lennox® Smart Air Quality Monitor	3-5/8 x 4-3/8 x 1-3/8	---	21P02
Lennox® Wireless Extender	4 x 5-1/2 x 2-1/2	---	22V26
M40 Smart Wi-Fi Thermostat	3-5/16 x 4-5/16 x 7/8	---	30L27
<b>Thermostat Accessories</b>			
<sup>1</sup> Discharge Air Temperature Sensor (For S40, E40)			88K38
<sup>2</sup> Remote Outdoor Air Temperature Sensor (For dual-fuel and Humiditrol®)			X2658

<sup>1</sup> Optional for service diagnostics (E40).

<sup>2</sup> Remote Outdoor Air Temperature Sensor is used with conventional (non-Lennox® Communicating) outdoor units (sensor is furnished with Lennox® Communicating outdoor units). Allows the thermostat to display outdoor temperature. Required in dual-fuel and Humiditrol® applications.

## 99% WINTER DESIGN TEMPERATURES FOR THE CONTIGUOUS UNITED STATES



This map is a necessarily generalized guide to temperatures in the contiguous United States. Temperatures shown for areas such as mountainous regions and large urban centers may not be accurate. The data used to develop this map was taken from the 1993 ASHRAE Fundamentals Handbook (Chapter 24, Table 1: Climate Conditions for the United States).

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## INSTALLATION CLEARANCES

### UPFLOW POSITION

Vent Type	Type B1	Type C
Sides	0 (0)	<sup>1</sup> 0 (0)
Rear	0 (0)	0 (0)
Top	1 (25)	1 (25)
Front	2-1/4 (57)	2-1/4 (57)
Front (service/alcove)	24 (610)	24 (610)
Floor	Combustible	Combustible
Flue	1 (25)	6 (152)

NOTE - Air for combustion must conform to the methods outlined in the National Fuel Gas Code (NFPA 54/ANSI-Z223.1).

NOTE - In the U.S. flue sizing must conform to the methods outlined in the current National Fuel Gas Code (NFPA 54/ANSI-Z223.1) or applicable provisions of local building codes.

<sup>1</sup> Left side requires 4 in. if single wall vent is used on 14-1/2 in. "A" width cabinets, 2 in. on 17-1/2 in. "B" width cabinets.

### HORIZONTAL POSITION

Vent Type	Type B1	Type C
End	<sup>1</sup> 2	<sup>1</sup> 2
Rear	0 (0)	0 (0)
Top	<sup>1</sup> 0 (0)	<sup>1</sup> 0 (0)
Front	2-1/4 (57)	2-1/4 (57)
Front (service)	24 (610)	24 (610)
Floor	Combustible	Combustible
Flue	1 (25)	6 (152)

NOTE - Air for combustion must conform to the methods outlined in the National Fuel Gas Code (NFPA 54/ANSI-Z223.1).

NOTE - In the U.S. flue sizing must conform to the methods outlined in the current National Fuel Gas Code (NFPA 54/ANSI-Z223.1) or applicable provisions of local building codes.

<sup>1</sup> Line contact installation permissible between jacket top or sides and building joists.

## SPECIFICATIONS

Gas Heating Performance	Model	EL280UH045E36AK	EL280UH070E36AK	EL280UH090E36BK
	<b>Model No. - Low NOx</b>	---	<b>EL280UH070XE36AK</b>	---
	<sup>1</sup> AFUE	80%	80%	80%
<b>High Fire</b>	Input - Btuh	44,000	66,000	88,000
	Output - Btuh	35,000	54,000	71,000
	Temperature rise range - °F	30 - 60	30 - 60	35 - 65
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	3.5 / 10.0	3.5 / 10.0	3.5 / 10.0
<b>Low Fire</b>	Input - Btuh	29,000	43,000	57,000
	Output - Btuh	23,000	35,000	47,000
	Temperature rise range - °F	20 - 50	20 - 50	25 - 55
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	1.7 / 4.5	1.7 / 4.5	1.7 / 4.5
<b>High static - in. w.g.</b>	Heating	0.5	0.5	0.5
	Cooling	0.5	0.5	0.5
<b>Connections</b>	Flue connection - in. round	4	4	4
	Gas pipe size IPS	1/2	1/2	1/2
<b>Indoor Blower</b>	Wheel diameter x width - in.	10 x 8	10 x 8	10 x 9
	Motor output - hp	1/2	1/2	1/2
	Tons of add-on cooling	1.5 - 3.5	2 - 3.5	2 - 3.5
	Air Volume Range - cfm	250 - 1500	350 - 1375	350 - 1600
<b>Electrical Data</b>	Voltage	120 volts - 60 hertz - 1 phase		
	Blower motor full load amps	6.4	6.4	6.4
	Maximum overcurrent protection	15	15	15
<b>Shipping Data</b>	lbs. - 1 package	111	121	136

NOTE - Filters and provisions for mounting are not furnished and must be field provided.

<sup>1</sup> Annual Fuel Utilization Efficiency based on DOE test procedures and according to FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

## SPECIFICATIONS

Gas Heating Performance	Model	EL280UH090E48BK	EL280UH110E48CK	EL280UH110E60CK
	<b>Model No. - Low NOx</b>	<b>EL280UH090XE48BK</b>	---	<b>EL280UH110XE60CK</b>
	<sup>1</sup> AFUE	80%	80%	80%
<b>High Fire</b>	Input - Btuh	88,000	110,000	110,000
	Output - Btuh	72,000	89,000	88,000
	Temperature rise range - °F	30 - 60	35 - 65	30 - 60
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	3.5 / 10.0	3.5 / 10.0	3.5 / 10.0
<b>Low Fire</b>	Input - Btuh	57,000	72,000	72,000
	Output - Btuh	46,000	58,000	59,000
	Temperature rise range - °F	20 - 50	25 - 55	20 - 50
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	1.7 / 4.5	1.7 / 4.5	1.7 / 4.5
<b>High static - in. w.g.</b>	Heating	0.5	0.5	0.5
	Cooling	0.5	0.5	0.5
<b>Connections</b>	Flue connection - in. round	4	4	4
	Gas pipe size IPS	1/2	1/2	1/2
<b>Indoor Blower</b>	Wheel diameter x width - in.	10 x 10	10 x 10	11-1/2 x 10
	Motor output - hp	3/4	3/4	1
	Tons of add-on cooling	3 - 4	3 - 4	4 - 5
	Air Volume Range - cfm	765 - 1800	865 - 1780	1100 - 2200
<b>Electrical Data</b>	Voltage	120 volts - 60 hertz - 1 phase		
	Blower motor full load amps	9.3	9.3	12.3
	Maximum overcurrent protection	15	15	15
<b>Shipping Data</b>	lbs. - 1 package	140	152	156

NOTE - Filters and provisions for mounting are not furnished and must be field provided.

<sup>1</sup> Annual Fuel Utilization Efficiency based on DOE test procedures and according to FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

**OPTIONAL ACCESSORIES - ORDER SEPARATELY**

		<b>“A” Width Models</b>	<b>“B” Width Models</b>	<b>“C” Width Models</b>	
<b>CABINET</b>					
<b>Horizontal Suspension Kit - Horizontal only</b>		<b>51W10</b>	<b>51W10</b>	<b>51W10</b>	
<b>Return Air Base - Upflow only</b>		<b>65W75</b>	<b>50W98</b>	<b>50W99</b>	
<b>High Performance Economizer (Commercial only)</b>		<b>10U53</b>	<b>10U53</b>	<b>10U53</b>	
<b>CONTROLS</b>					
<b>Transformer (75VA)</b>		<b>27J32</b>	<b>27J32</b>	<b>27J32</b>	
<b>FILTERS</b>					
<sup>1</sup> <b>Air Filter and Rack Kit</b>	Horizontal (end)	<b>87L95</b>	<b>87L96</b>	<b>87L97</b>	
		Size of filter - in.	14 x 25 x 1	18 x 25 x 1	20 x 25 x 1
	Side Return	Single	<b>44J22</b>	<b>44J22</b>	<b>44J22</b>
		Ten Pack	<b>66K63</b>	<b>66K63</b>	<b>66K63</b>
	Size of filter - in.	16 x 25 x 1	16 x 25 x 1	16 x 25 x 1	
<b>VENTING</b>					
<b>Vent Adaptor – 6 in. conn. size upflow applications only</b>		<b>18M79</b>	<b>18M79</b>	<b>18M79</b>	

<sup>1</sup> Cleanable polyurethane, frame-type filter.

## GAS HEAT ACCESSORIES - ORDER SEPARATELY

Input	High Altitude Pressure Switch Kit			Natural Gas to LPG/Propane Kit	LPG/Propane to Natural Gas Kit	Natural Gas High Altitude Orifice Kit	LPG/Propane High Altitude Orifice Kit
	0 - 4500 ft.	4501 - 7500 ft.	7501 - 10,000 ft.	0 - 7500 ft.	0 - 7500 ft.	7501 - 10,000 ft.	7501 - 10,000 ft.
<b>045</b>	No Change	91W53	73W35	11K51	77W09	73W37	11K46
<b>070</b>	No Change	91W53	73W35	11K51	77W09	73W37	11K46
<b>090</b>	No Change	91W53	73W35	11K51	77W09	73W37	11K46
<b>110</b>	No Change	91W53	73W35	11K51	77W09	73W37	11K46

## HIGH ALTITUDE DERATE

NOTE - Units may be installed at altitudes up to 4500 ft. above sea level without any modifications.

At altitudes above 4500 ft. units must be derated to match information in the shaded area shown below.

NOTE - This is the only permissible derate for these units.

Input	Gas Manifold Pressure (Outlet) in. w.g.											
	0 - 4500 Feet				4501 - 7500 Feet				7501 - 10,000 ft.			
	Natural Gas		LPG/Propane		Natural Gas		LPG/Propane		<sup>1</sup> Natural Gas		LPG/Propane	
	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire
<b>045</b>	3.5	1.7	10	4.5	3.2	1.5	10	4.5	3.5	1.7	10	4.5
<b>070</b>	3.5	1.7	10	4.5	3.2	1.5	10	4.5	3.5	1.7	10	4.5
<b>090</b>	3.5	1.7	10	4.5	3.2	1.5	10	4.5	3.5	1.7	10	4.5
<b>110</b>	3.5	1.7	10	4.5	3.2	1.5	10	4.5	3.5	1.7	10	4.5

<sup>1</sup> Natural Gas High Altitude Orifice Kit required.

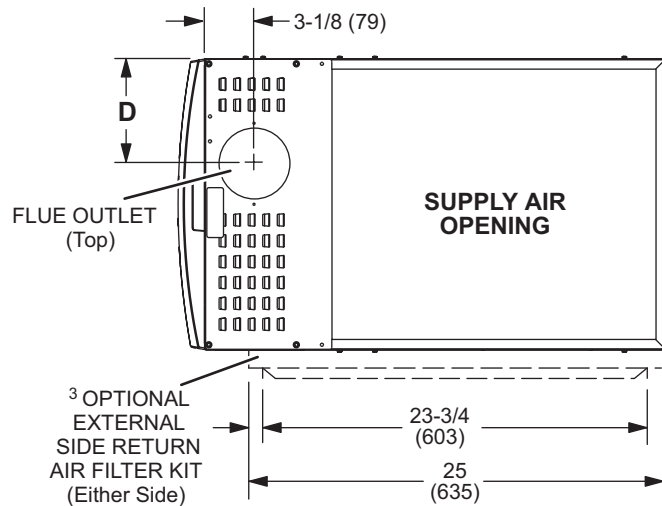
# DIMENSIONS

# UNIT - UPFLOW POSITION

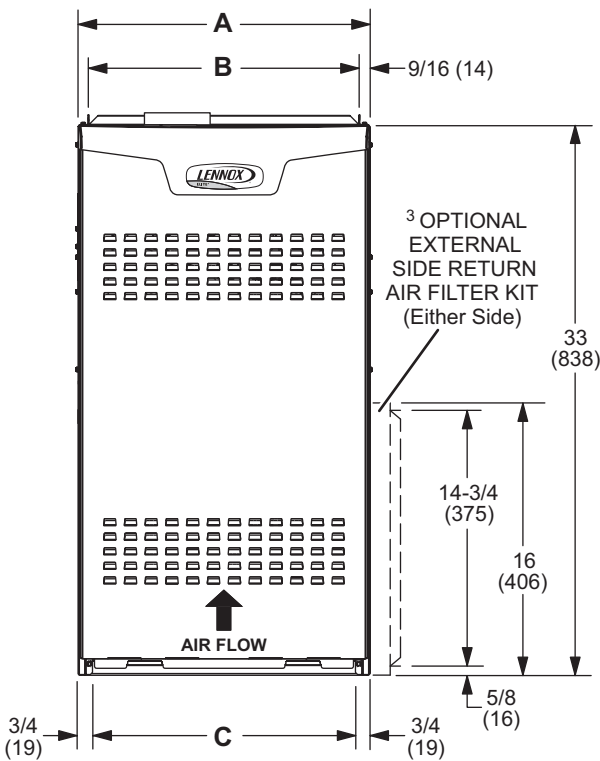
- <sup>1</sup> NOTE - 60C size units that require air volumes over 1800 cfm must have one of the following:
1. Single side return air and Optional Return Air Base with transition that must accommodate required 20 x 25 x 1 inch (508 x 635 x 25 mm) air filter to maintain proper velocity.
  2. Bottom return air.
  3. Return air from both sides.
  4. Bottom and one side return air.
- See Blower Performance Tables for additional information.

<sup>2</sup> Flue outlet may be horizontal but furnace must be vented vertically

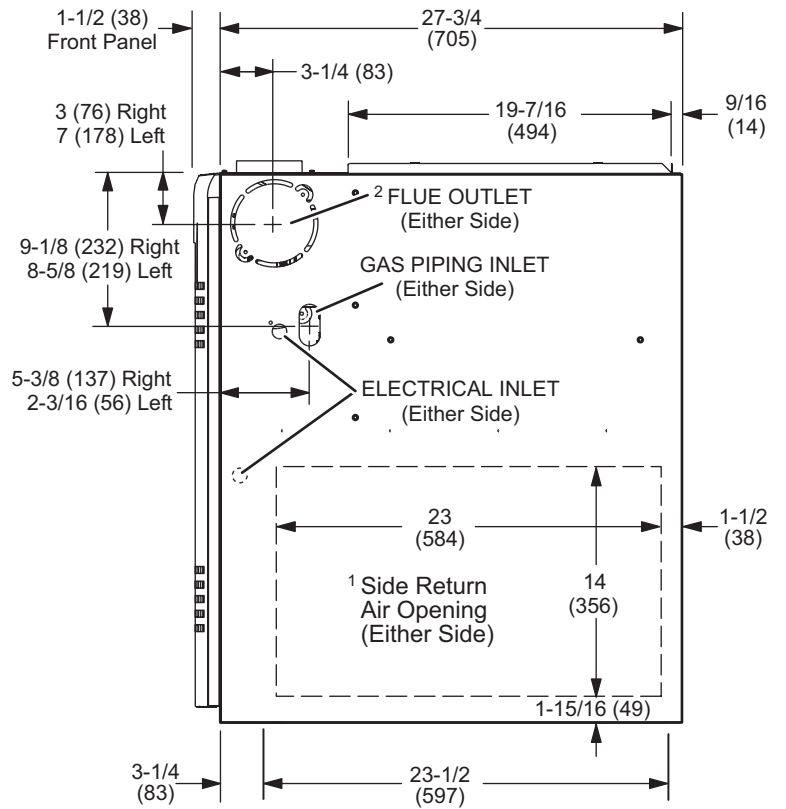
<sup>3</sup> Optional External Side Return Air Filter Kit is not for use with the optional Return Air Base.



**TOP VIEW**



**FRONT VIEW**

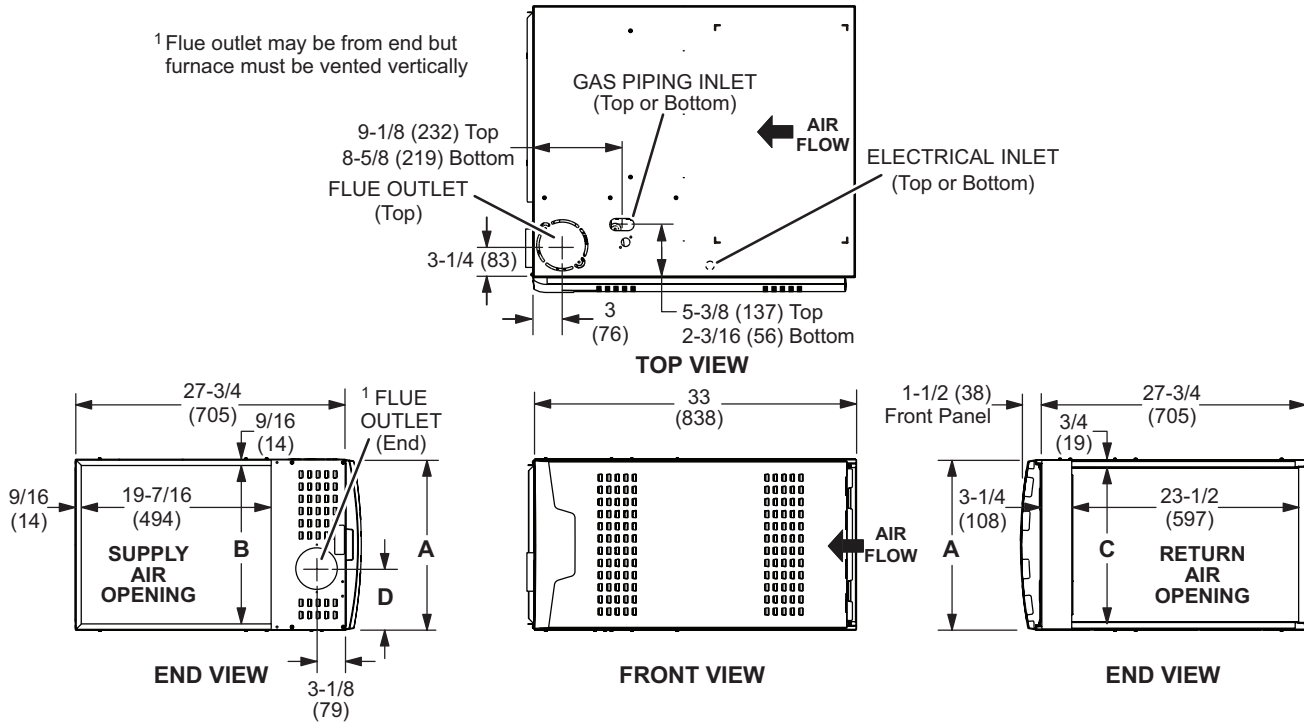


**SIDE VIEW**

Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
EL280UH045E36AK EL280UH070E36AK	14-1/2	368	13-3/8	340	13	330	4-3/4	121
EL280UH090E36BK EL280UH090E48BK	17-1/2	446	16-3/8	416	16	406	6-1/4	159
EL280UH110E48CK EL280UH110E60CK	21	533	19-7/8	504	19-1/2	495	8	203

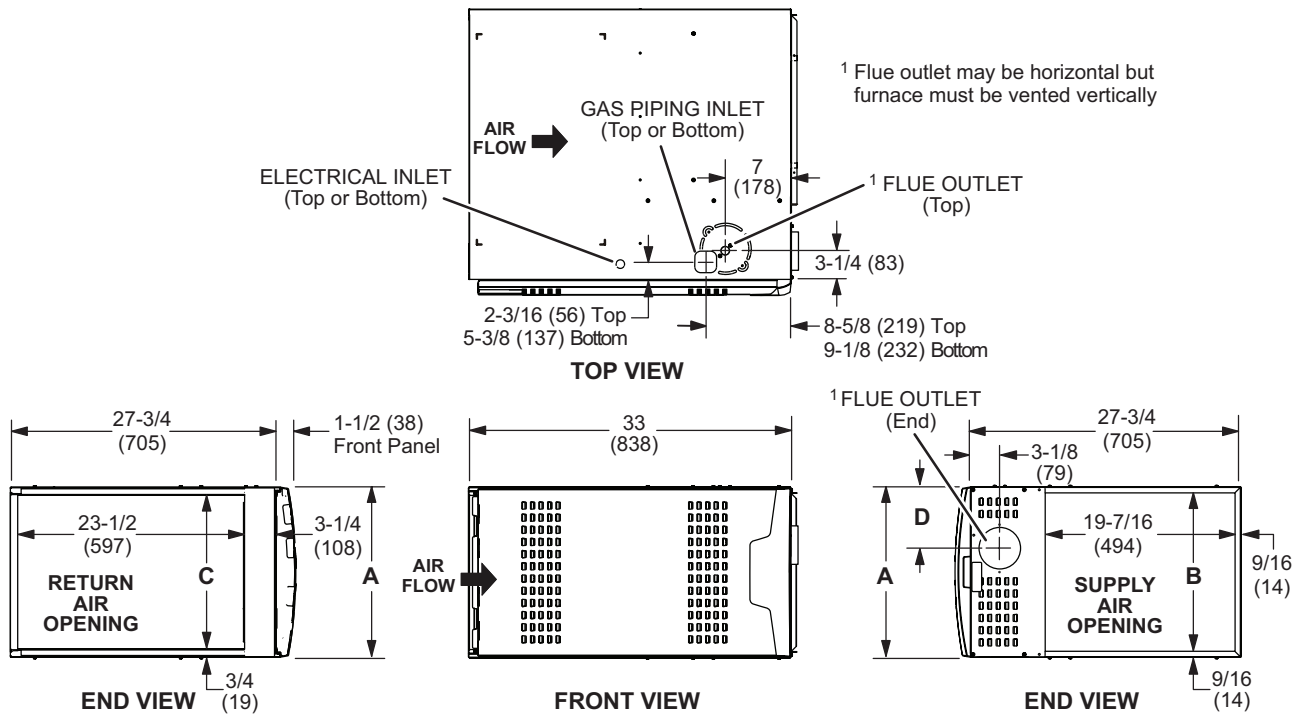
**LEFT-HAND AIR DISCHARGE**

<sup>1</sup> Flue outlet may be from end but furnace must be vented vertically



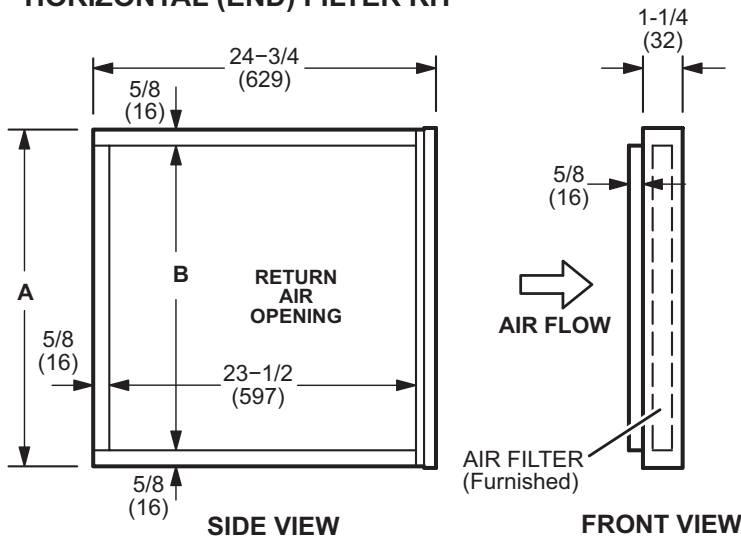
**RIGHT-HAND AIR DISCHARGE**

<sup>1</sup> Flue outlet may be horizontal but furnace must be vented vertically



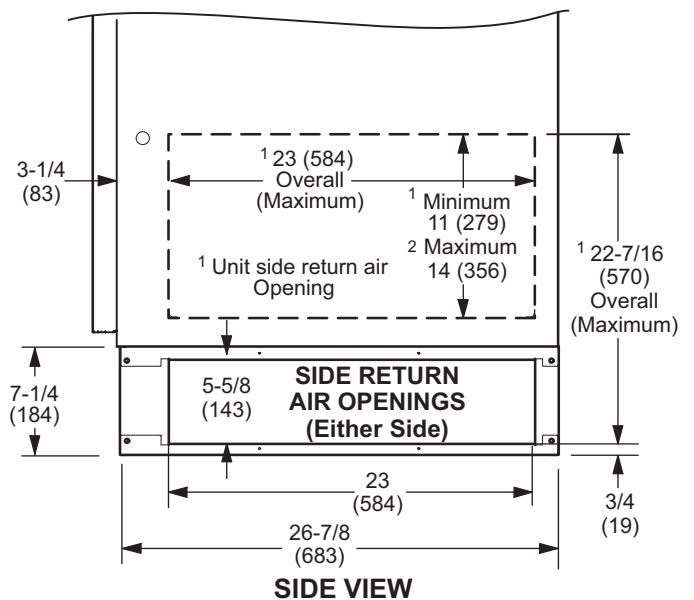
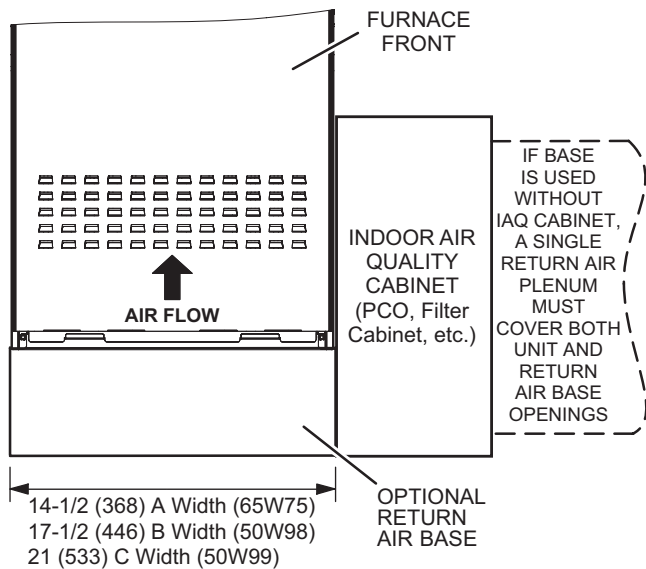
Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
EL280UH045E36AK EL280UH070E36AK	14-1/2	368	13-3/8	340	13	330	4-3/4	121
EL280UH090E36BK EL280UH090E48BK	17-1/2	446	16-3/8	416	16	406	6-1/4	159
EL280UH110E48CK EL280UH110E60CK	21	533	19-7/8	504	19-1/2	495	8	203

**HORIZONTAL (END) FILTER KIT**



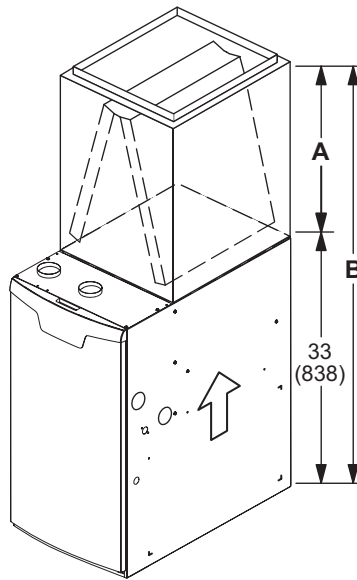
Furnace Cabinet Width	Catalog Number	A		B	
		in.	mm	in.	mm
A	87L95	14	356	12-3/4	324
B	87L96	18	457	16-3/4	425
C	87L97	21	533	18-3/4	476

**Optional Return Air Base  
(Upflow Applications Only - For use with A, B and C width cabinets)**



**NOTE- Optional Side Return Air Filter Kits are not for use with Optional Return Air Base.**

- <sup>1</sup> Both the unit return air opening and the base return air opening must be covered by a single plenum or IAQ cabinet. Minimum unit side return air opening dimensions for units requiring 1800 cfm or more of air (W x H): 23 x 11 in. (584 x 279 mm). The opening can be cut as needed to accommodate plenum or IAQ cabinet while maintaining dimensions shown. Side return air openings must be cut in the field. There are cutting guides stenciled on the cabinet for the side return air opening. The size of the opening must not extend beyond the markings on the furnace cabinet.
- <sup>2</sup> To minimize pressure drop, the largest opening height possible, up to 14 in. (356 mm), is preferred.

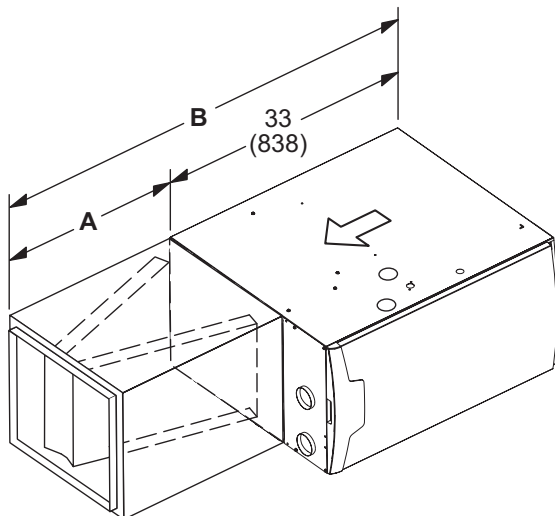


**UPFLOW POSITION - CASED**

Model	A		B	
	in.	mm	in.	mm
<b>CK40CT</b>				
CK40CT-18/24A CK40CT-18/24B	16-1/2	419	49-1/2	1257
CK40CT-24A CK40CT-24B	18-1/2	470	51-1/2	1308
CK40CT-30A CK40CT-30B	22-1/2	572	55-1/2	1410
CK40CT-30/36A CK40CT-30/36B CK40CT-30/36C	24-1/2	622	57-1/2	1461
CK40CT-36A CK40CT-36B CK40CT-36C	24-1/2	622	57-1/2	1461
CK40CT-48B CK40CT-48C	27-1/2	699	60-1/2	1537
CK40CT-49C	29-1/2	749	62-1/2	1588
CK40CT-50/60C	27-1/2	699	60-1/2	1537
CK40CT-60C	31-1/2	800	64-1/2	1638

**UPFLOW POSITION - UNCASED**

Model	A		B	
	in.	mm	in.	mm
<b>CK40UT</b>				
CK40UT-18/24A CK40UT-18/24B	14-1/8	359	47-1/8	1197
CK40UT-24A CK40UT-24B	16-3/8	416	49-3/8	1254
CK40UT-30A CK40UT-30B	20-3/4	527	53-3/4	1365
CK40UT-30/36A CK40UT-30/36B CK40UT-30/36C CK40UT-36C	22-1/4	565	55-1/4	1403
CK40UT-36A CK40UT-36B	22-3/8	568	55-3/8	1407
CK40UT-48B CK40UT-48C	26-1/4	667	59-1/4	1505
CK40UT-49C	28-1/2	724	61-1/2	1562
CK40UT-50/60C	25-7/8	657	58-7/8	1495
CK40UT-60C	30-5/8	778	63-5/8	1616



**HORIZONTAL POSITION**

Model	A		B	
	in.	mm	in.	mm
<b>CK40HT</b>				
CK40HT-18A CK40HT-24A CK40HT-24B CK40HT-30B CK40HT-36A CK40HT-36B CK40HT-36C CK40HT-42C CK40HT-48C	26-1/2	673	59-1/2	1511
CK40CT-30A CK40CT-42B CK40CT-48B CK40CT-51/61C	31-1/2	880	64-1/2	1638

## BLOWER DATA

### EL280UH045E36AK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1436	310	1199	175	1022	113	875	79	875	82
0.20	1431	315	1166	183	987	120	747	68	714	62
0.30	1413	324	1138	192	938	129	696	76	514	49
0.40	1378	337	1104	199	905	137	640	81	448	55
0.50	1350	345	1070	206	858	146	588	87	367	60
0.60	1321	357	1031	215	824	152	533	93	311	65
0.70	1292	366	993	226	773	159	488	98	272	69
0.80	1267	378	969	233	737	165	426	104	232	73
0.90	1239	385	926	243	691	173	382	108	-	-
1.00	1210	394	891	250	649	179	-	-	-	-

### EL280UH070E36AK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1449	325	1328	256	1183	189	946	111	782	75
0.20	1419	335	1297	266	1148	197	904	118	736	81
0.30	1391	345	1267	276	1114	206	862	124	689	87
0.40	1363	356	1236	285	1081	214	822	131	639	93
0.50	1334	366	1206	294	1047	223	780	138	594	98
0.60	1307	376	1177	304	1013	231	740	145	548	104
0.70	1279	386	1146	313	981	239	700	151	506	109
0.80	1250	397	1115	322	946	246	661	158	451	115
0.90	1222	406	1084	331	913	254	624	163	399	120
1.00	1193	415	1054	339	881	262	588	169	357	125

### EL280UH090E36BK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.1	1537	284	1409	226	1249	167	1002	103	829	70
0.2	1499	295	1369	236	1206	176	951	109	770	77
0.3	1464	307	1331	247	1164	185	900	117	709	84
0.4	1428	318	1294	257	1125	195	847	125	641	91
0.5	1395	330	1259	267	1084	204	791	132	573	97
0.6	1361	340	1222	278	1041	213	738	140	527	103
0.7	1329	352	1184	288	993	223	688	146	458	109
0.8	1293	363	1145	298	946	231	638	153	381	115
0.9	1256	374	1104	308	909	239	589	159	333	120
1	1218	385	1066	318	862	248	533	166	312	123

## BLOWER DATA

### EL280UH090E48BK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1724	384	1514	271	1392	218	1308	189	1182	148
0.20	1691	399	1477	284	1354	230	1268	200	1139	158
0.30	1659	412	1442	295	1317	242	1229	211	1097	168
0.40	1629	427	1408	308	1280	253	1189	221	1048	177
0.50	1599	440	1372	320	1239	264	1145	231	999	187
0.60	1569	453	1336	332	1195	274	1097	240	955	195
0.70	1536	466	1298	343	1153	285	1050	249	908	203
0.80	1503	479	1256	353	1111	295	1008	258	864	211
0.90	1469	491	1218	364	1070	304	970	266	819	218
1.00	1432	503	1181	374	1031	313	931	275	784	226

### EL280UH110E48CK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1785	355	1565	251	1438	204	1351	177	1217	139
0.20	1749	369	1524	264	1396	216	1307	188	1170	148
0.30	1714	383	1486	276	1355	226	1264	198	1122	158
0.40	1679	397	1447	288	1315	238	1220	208	1076	168
0.50	1644	411	1408	300	1272	249	1176	218	1023	177
0.60	1610	425	1369	312	1229	259	1129	228	972	186
0.70	1576	437	1328	323	1186	270	1080	238	922	196
0.80	1538	448	1287	335	1139	280	1034	248	871	203
0.90	1500	461	1246	346	1096	290	988	257	824	212
1.00	1464	474	1206	357	1053	300	943	266	780	218

## BLOWER DATA

### EL280UH110E60CK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Different Blower Speeds																			
	Bottom Return Air, Side Return Air from Both Sides or Return Air from Bottom and One Side.										Single Side Return Air - Air volumes in <b>bold</b> (over 1800 cfm) require Optional Return Air Base and field fabricated transition to accommodate 20 x 25 x 1 in. air filter in order to maintain proper air velocity.									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)		High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	2173	601	1934	431	1772	335	1654	281	1468	206	<b>2164</b>	<b>611</b>	<b>1911</b>	<b>430</b>	1762	336	1647	279	1473	201
0.20	2147	613	1900	444	1736	346	1626	290	1445	214	<b>2126</b>	<b>631</b>	<b>1876</b>	<b>444</b>	1718	350	1608	294	1424	212
0.30	2109	630	1873	456	1701	356	1585	303	1361	227	<b>2092</b>	<b>646</b>	<b>1839</b>	<b>458</b>	1673	361	1563	306	1373	226
0.40	2085	643	1833	471	1657	369	1547	314	1343	235	<b>2055</b>	<b>662</b>	1800	474	1638	374	1520	317	1324	237
0.50	2050	658	1800	485	1626	379	1503	327	1298	246	<b>2016</b>	<b>678</b>	1764	488	1594	388	1477	328	1275	247
0.60	2019	672	1771	495	1579	393	1480	338	1256	256	<b>1986</b>	<b>691</b>	1727	501	1556	401	1440	339	1230	259
0.70	1983	689	1734	509	1543	404	1401	348	1211	265	<b>1967</b>	<b>705</b>	1684	515	1521	411	1394	352	1172	270
0.80	1953	703	1693	524	1502	416	1381	361	1176	277	<b>1916</b>	<b>720</b>	1656	526	1480	425	1350	364	1141	278
0.90	1925	715	1663	535	1470	426	1343	372	1118	289	<b>1895</b>	<b>734</b>	1618	538	1440	437	1310	376	1092	290
1.00	1898	728	1643	544	1441	434	1304	383	1078	297	<b>1845</b>	<b>752</b>	1577	553	1396	450	1267	389	1046	301



## REVISIONS

Sections	Description of Change
Control Options	Updated to reflect latest product offering.
Dimensions	Updated Furnace/Coil Combined Dimensions to add latest product offering.
Optional Accessories	Removed optional Twinning Panel.



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