

GAS FURNACES

ML296UHV(K)

MERIT® SERIES

Upflow / Horizontal | Tw-Stage Heat | Variable Speed Blower | Refrigerant Detection | 60Hz

RESIDENTIAL

PRODUCT SPECIFICATIONS (EHB)

AFUE - 96%

Input - 44,000 to 110,000 Btuh

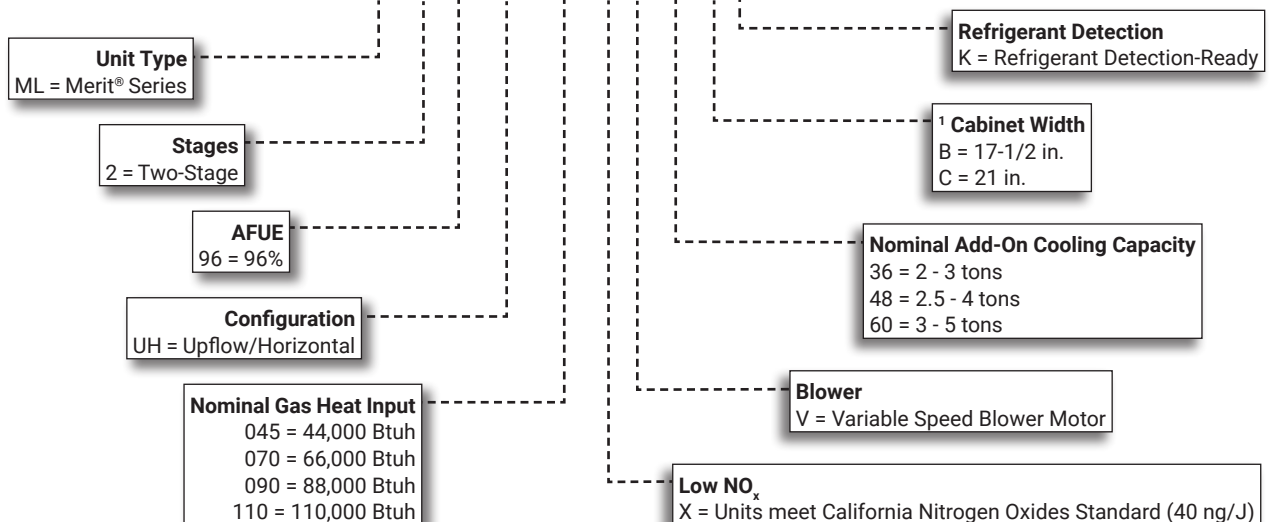
Nominal Add-on Cooling - 3 to 5 Tons

MERIT®
SERIES



MODEL NUMBER IDENTIFICATION

ML 2 96 UH 070 X V 36 B K



¹ Indoor coils with the same letter designation physically matches the furnace.

FEATURE HIGHLIGHTS

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



NOTE - ML296UHV(K) FURNACES CANNOT BE TWINNED!

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APPROVALS AND WARRANTY

APPROVALS

- AHRI Certified
- Certified by CSA International
- Tested and rated according to US DOE test procedures and FTC labeling regulations
- ENERGY STAR® certified units are designed to use less energy, help save money on utility bills, and help protect the environment
- 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, SJVAPCD and Bay Area
- These furnaces are approved by the California Energy Commission and meets California Nitrogen Oxides Standard (NOx) limits of 40 ng/J

WARRANTY

- Duralok Plus™ 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 for additional details.

FEATURES

APPLICATIONS

- Input capacities of 44,000, 66,000, 88,000 and 110,000 Btuh
- Energy efficiency (AFUE) - 96%
- Compact cabinet for upflow, horizontal-left or horizontal-right applications without any modifications
- Variable speed blower is ideal for zoning applications
- Removable bottom seal panel shipped in place for side return air is easily removed for bottom/end return air applications
- Utility room, alcove, closet, crawl space, basement or attic installation
- 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
- Each unit factory test operated to ensure proper operation

ZONING APPLICATIONS

- Units may be used with certain zoning systems
- Zone control panel must be able to interface and communicate with the variable speed blower motor in the unit
- Lennox® LZSV Variable Zoning System has this capability

HEATING SYSTEM

- 1 **Lennox Duralok Plus™ Heat Exchanger Assembly**
 - Lennox developed heat exchanger assembly consists of primary heat exchanger and secondary condenser coil assembly
 - Main multi-pass crimped seam design clamshell type
 - Constructed of heavy-gauge, aluminized steel
 - Designed for normal expansion and contraction with maximum efficiency and minimum resistance to air flow
- 2 **Secondary heat exchanger condenser coil constructed of aluminum fins fitted to stainless steel tubes**
 - Coil is factory tested for leaks
 - Condensate drain header box assembly located on front of coil
 - Compact size permits low overall design of furnace cabinet
 - Laboratory life cycle tested in excess of industry standards

FEATURES

HEATING SYSTEM (continued)

Lennox Designed Header Box

- Header box on end of condenser coil collects flue condensate for disposal through condensate drains
- Drains are located on each side of the cabinet for easy field installation of condensate drain trap
- Only one drain is used, the other drain is sealed
- Condensate drain trap is included with the unit for field installation

Lennox Designed Flue Condensate Trap Assembly

- Field installed outside the conditioned air stream
- Assembly can be mounted on either side of cabinet in upflow applications
- Assembly is mounted below the cabinet in horizontal applications
- Assembly can be mounted remotely (up to 5 ft. away) from unit
- See Dimension Drawing and Installation Instructions
- 90° street elbow furnished for ease of drain trap installation
- Drain connection can be made with field provided PVC pipe, PVC coupling, or vinyl tubing with hose clamp
- Drain cap on trap allows easy cleaning and winterizing

3 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 can be removed from the unit as a single component for ease of service

4 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 are constructed of nickel plated copper and are enclosed in high temperature Teflon® insulation for dependable operation

5 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

6 Two-Speed Combustion Air Inducer

- Permanent split capacitor (PSC) motor
- Heavy duty 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

7 Flame Rollout Switches (2)

- Factory installed on burner box
- Switch provides protection from abnormal operating conditions
- Manual reset

Limit Control

- Primary limit is accurately located on vestibule panel on all units
- Automatic reset

Optional Accessories

High Altitude Orifice Kits

- Required on all units for proper unit operation at altitudes from 7501 to 10,000 ft.
- Kits are available for natural gas and LPG/propane

High Altitude Pressure Switch Kit

- Required for proper unit operation on installations above 4500 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

Muffler (US Only)

- Significantly reduces outdoor operating sound levels
- Two-inch diameter muffler is optional for 070 through 110 input models

NOTE - Two-inch muffler is optional for the 110 input model with a maximum vent pipe length of up to 29 ft.

Three-inch diameter muffler is optional for 110 and 135 input models.

NOTE - Three-inch muffler is optional for the 110 input model with a minimum vent pipe length of 30 ft.

- Installed vertically in the exhaust piping
- See Optional Accessory Dimension Drawing

DIRECT VENT / NON-DIRECT VENT SEALED COMBUSTION SYSTEM

- Furnace features a “sealed combustion” system and can be installed in either Direct Vent or Non-Direct applications
- In Direct Vent applications, combustion air is supplied from outdoors and flue gases are discharged outdoors
- In Non-Direct Vent applications, combustion air is supplied from indoors and flue gases are discharged outdoors

NOTE - Lennox has approved the use of DuraVent® PolyPro®, Centrotherm InnoFlue® and ECCO Polypropylene Vent™ manufactured vent pipe and terminations as an alternative to PVC vent pipe. Must be ordered separately. Tested and listed to the ULC S636 standard in Canada.

- Tested and listed to the ULC S636 standard in Canada

FEATURES

DIRECT VENT / NON-DIRECT VENT SEALED COMBUSTION SYSTEM (continued)

- The polypropylene venting system must follow the uninsulated and unconditioned space vent lengths listed in the table on Page 15
- Refer to the Installation Instructions for additional details

Flue Coupling

- Assists with exhaust flue piping connection and servicing
- Includes flexible one 2 inch rubber coupling and two adjustable bands
- Approved for all Lennox 90% furnaces

Termination Kits

- Facilitates installation of combustion air intake pipe and flue exhaust pipe
- Refer to venting table in this bulletin to determine pipe size needed and proper termination kit required
- Certain Termination Kits are certified to ULC S636 standard for use in Canada only
- See Optional Accessories table and dimension drawings

Concentric - Direct Vent Applications

- 2 or 3 inch kit contains concentric termination assembly, reducer bushing and 45 degree elbow
- 2 inch kit for -045-070 models contains an outdoor exhaust accelerator
- Kit requires single hole penetration of roof or wall for installation
- Roof Termination Flashing Kit is available for use with 2 inch Kits
- CSA certified

Flush-Mount

- Kit contains flush-mount termination, accelerator, mounting template and hardware
- Kit may be used with 2, 2-1/2 or 3 in. pipe

Wall Assembly

Close Couple (US Only) - Direct Vent Applications

- 2 or 3 inch kit consists of close-couple, side-by-side PVC piping with galvanized steel wall cover plate for sealing and isolating piping penetration of the wall
- Piping spacing and length is sized for proper wall installations
- CSA certified

Close Couple WTK (Canada Only) - Direct Vent Applications

- 2 or 3 inch kit contains one insulated faceplate, one insulated exhaust pipe, elbow and fittings. Certified to ULC S636 standard

NOTE - Maintain a maximum of 6 inches between the inlet and outlet openings in the installation of the pipes

Roof Termination Flashing Kit

- For vertical venting through a roof
- 2 or 3 inch kit contains two neoprene rubber roof flashings
- Vent pipe and insulation not furnished

- Flashing Kit can also be used with Concentric Vent Termination Kits used in vertical venting rooftop applications

CONTROLS

8 SureLight® Integrated Two-Stage / Variable Speed Blower Furnace Control

- Advanced control communicates information about various operating parameters in the furnace to the optional Lennox® Communicating Thermostat to constantly maintain the highest level of comfort and performance available
- **Auto Configuration** - On start-up the control automatically sends a description of the unit to the optional Lennox® Communicating Thermostat to automatically configure the number of stages and features available
- Terminals for connecting a conventional heating/cooling thermostat are also provided on the control
- Control also features Innovative AirFlex™ technology which allows custom blower settings based on the application
- **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 |
|----------------------------------|-------------------------|
| Lennox® Communicating Thermostat | Two-Stage (65 and 100%) |
| Two-Stage (Conventional) | |
| Single-Stage (Conventional) | |

- **Safety Controls** - Flame sensor utilizes flame rectification for safe and reliable operation
- Should flame fail to ignite, control will initiate 4 re-attempts at ignition before locking out unit operation for 60 minutes
- Watchguard type circuit automatically resets ignition control after one hour of continuous thermostat demand after unit lockout, eliminating nuisance calls for service
- **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

FEATURES

CONTROLS (continued)

- When used with a two-stage thermostat, furnace will only initiate second stage operation with a second stage thermostat demand
 - **Heating Speeds** - A combination of DIP switch settings allow the following motor speed selection settings within the heating speed selected for fine tuning air volume:
 - Factory default
 - 6%, 12%, 18% or 24% increase
 - 6%, 12% or 18% decrease
 - See Blower Performance tables
 - **Cooling Speeds** - A combination of DIP switch settings allow the following motor speed selection settings within the cooling speed selected for fine tuning air volume:
 - Factory default
 - 10% increase
 - 10% decrease
 - See Blower Performance tables
 - **Blower Speed Ramping (Cooling Mode)** - DIP switch settings allow one of four blower speed profiles during cooling operation
 - **Profile A (factory setting)** - Motor runs at 50% for 30 seconds, then at 82% for 7-1/2 minutes, then at 100% (if needed) until demand is satisfied. Once demand is met, motor runs at 50% for 30 seconds, then ramps down to stop
 - **Profile B** - Motor runs at 82% for 7-1/2 minutes and then at 100% (if needed) until demand is satisfied. Once demand is met, motor ramps down to stop
 - **Profile C** - Motor runs at 100% until demand is satisfied. Once demand is met, motor runs at 100% for 60 seconds, then ramps down to stop
 - **Profile D** - Motor runs at 100% until demand is satisfied. Once demand is met, motor ramps down to stop
 - **Dehumidification (Active or Humiditrol® Option)** - A jumper on the control must be clipped to enable active dehumidification and/or operation with a Humiditrol® Whole-Home Dehumidification System
 - 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
 - A dehumidification signal from the thermostat reduces the cooling cfm to 70% of the requested cooling cfm
 - **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
 - The cooling blower speeds for first and second stage cooling will be dictated by the applicable DIP switch settings
 - **Lennox System Operations Monitor Connection** - Monitors outdoor unit operation (communicating mode)
 - **Blower On/Off Time (Heating)** - Blower on time is fixed at 30 seconds, blower off time is adjustable from 60, 90, 120 and 180 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
 - See Blower Speed Ramping (Cooling Mode) profiles for various blower off details
 - Controls evaporator humidity by controlling blower and compressor speed on two-stage outdoor units when used with the Lennox® Communicating Thermostat or the CS7500 Thermostat
 - **Continuous Blower Speed** - Adjustable continuous blower speed is a percentage of the high cooling speed selection
 - Two selectable options (via DIP switch settings) of 28% and 38% (default setting)
 - **Accessory Terminal** - One accessory terminal furnished for additional power supply requirements for 120 volt (less than 1 amp) powered air cleaners
 - One unpowered 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

FEATURES

CONTROLS (continued)

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 10

Transformer (75VA)

- Recommended when furnace is used with zoning or defrost thermostats and other 24V accessories requiring a higher VA rating
- Circuit breaker (furnished) is wired in series
- Replaces the standard 40VA transformer

BLOWER

9 Variable Speed Direct Drive Blower

- Each blower assembly statically and dynamically balanced
- Blower assembly easily removed for servicing

Variable Speed Blower Motor

- Variable speed motor maintains specified air volume from 0 through 0.8 in. w.g. (heating) and 0 through 1.0 in. w.g. (Cooling) static range
- Variable speed operation is achieved by the use of an ECM (Electronically Commutated Motor) motor
- Motor is controlled by furnace control
- Change in blower speed is easily accomplished by simple jumper change on the furnace control
- During start-up the blower motor slowly ramps up to normal operating speed to minimize noise and increase comfort
- At the end of a cooling or heating cycle the motor slowly ramps down after a short blower "off" delay
- If continuous blower operation has been selected, the variable speed motor will slowly ramp down until it reaches the airflow for that condition
- Motor is resiliently mounted
- See Blower Data tables

FEATURES

CABINET

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

Bottom/End Return Air Entry:

- Upflow/horizontal applications:
 - Remove furnished bottom seal panel from cabinet
- Side return-air entry (upflow applications only):
 - Corners are marked on either side of cabinet for return air cut-outs
- 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 Performance 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

Low Leakage Cabinet

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

Optional Accessories

Condensate Drain Heat Cable Kits

- Self-limiting wattage heat cable prevents condensate drain from freezing in unconditioned areas
- Available in 6 or 24 ft. lengths

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

Crawl Space Vent Drain Kit

- Allows venting through a crawl space for upflow and horizontal applications
- Kit for Canada is certified to ULC S636
- Includes 2 or 3 inch sanitary tee, 2 inch PVC assembly, PVC boot and clamp

Return Air Base

NOTE - On furnaces with side return air and condensate trap on the same side of the cabinet, a field fabricated transition or Return Air Base is required when using an IAQ product higher than 14-3/16 inches installed next to the unit and serviced from the front. IAQ products higher than 20 inches require a field fabricated transition.

NOTE - Must be used for 60C and 60D size 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
- Pre-painted steel to match the furnace
- See Dimension Drawing

Optional Accessories (continued)

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
- Rack has filter door for servicing
- Flanges on rack for duct connection
- Field installed
- See dimension drawing

Air Filter and Rack Kit for Upflow Side Return Air

NOTE - 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 servicing
- Flanges on rack for 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 /cm² output (dual lamp model)



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

CONTROL OPTIONS

E30 Smart Wi-Fi Thermostat

- 4 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



M30 Smart Wi-Fi Thermostat

- 4 Htg.-2 Clg.
- 7-day, universal, programmable, touchscreen thermostat
- Humidification / dehumidification / dewpoint measurement and control, Humiditol® control
- 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



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 |
|--|--------------------------------|---------------|--------------|
| PureAir® Air Purification System | | | |
| PCO3-16-16 | 17-1/2 x 8-3/4 x 26-1/2 | A/B/C | Y6598 |
| PCO3-20-16 | 21-1/8 x 8-3/4 x 26-1/2 | C/D | Y6595 |
| Healthy Climate® Media Air Cleaner | | | |
| 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 |
| HCXF16-16 (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 |
| HCXF16-11 (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 |
| HCXF20-16 (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 |
| HCXF20-11 (Expandable Filter) MERV 11 | 20 x 25 x 5 | --- | X8304 |
| Healthy Climate® Whole Home In Duct Air Purifiers | | | |
| HCWHAP1 | 8 x 7 x 16.5 | --- | 23V99 |
| Healthy Climate® Ultraviolet Germicidal Lights | | | |
| 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 |
| CONTROLS - ORDERING | | | |
| E30 Smart Wi-Fi Thermostat | 5 x 7-1/2 x 1 | --- | 20A65 |
| M30 Smart Wi-Fi Thermostat | 3-5/16 x 4-5/16 x 7/8 | --- | 15Z69 |
| Thermostat Accessories | | | |
| ¹ Discharge Air Temperature Sensor (For S40, E30) | | | 88K38 |
| ² Remote Outdoor Air Temperature Sensor (For dual-fuel and Humiditrol®) | | | X2658 |

¹ Optional for service diagnostics (E30).

² 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.

SPECIFICATIONS

| Gas | Model | ML296UH045XV36BK | ML296UH070XV36BK | |
|---------------------|---|--|---------------------|------------|
| Heating Performance | ¹ AFUE | 96% | 96% | |
| | High Fire | Input - Btuh | 44,000 | 66,000 |
| | | Output - Btuh | 42,000 | 62,000 |
| | | Temperature rise range - °F | 35 - 65 | 50 - 80 |
| | | Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane | 3.5 / 10.0 | 3.5 / 10.0 |
| | Low Fire | Input - Btuh | 29,000 | 43,000 |
| | | Output - Btuh | 28,000 | 41,000 |
| | | Temperature rise range - °F | 20 - 50 | 25 - 55 |
| | | Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane | 1.7 / 4.5 | 1.7 / 4.5 |
| | High static - in. w.g. | Heating | 0.8 | 0.8 |
| Cooling | | 1.0 | 1.0 | |
| Connections | Intake / Exhaust Pipe (PVC) | 2 / 2 | 2 / 2 | |
| | Gas pipe size IPS | 1/2 | 1/2 | |
| | Condensate Drain Trap (PVC pipe) - i.d. | 3/4 | 3/4 | |
| | with furnished 90° street elbow | 3/4 slip x 3/4 MIPT | 3/4 slip x 3/4 MIPT | |
| | with field supplied (PVC coupling) - o.d. | 3/4 slip x 3/4 MPT | 3/4 slip x 3/4 MPT | |
| Indoor Blower | Wheel diameter x width - in. | 10 x 9 | 10 x 9 | |
| | Motor output - hp | 1/2 | 1/2 | |
| | Tons of add-on cooling | 2 - 3 | 2 - 3 | |
| | Air Volume Range - cfm | 485 - 1370 | 500 - 1365 | |
| Electrical Data | Voltage | 120 volts - 60 hertz - 1 phase | | |
| | Blower motor full load amps | 7.7 | 7.7 | |
| | Maximum overcurrent protection | 15 | 15 | |
| Shipping Data | lbs. - 1 package | 130 | 138 | |

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

¹ 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 | Model | ML296UH090XV48CK | ML296UH110XV60CK | |
|------------------------|---|--|--------------------------------|------------|
| Heating Performance | ¹ AFUE | 96% | 96% | |
| | High Fire | Input - Btuh | 88,000 | 110,000 |
| | | Output - Btuh | 85,000 | 106,000 |
| | | Temperature rise range - °F | 45 - 75 | 45 - 75 |
| | | Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane | 3.5 / 10.0 | 3.5 / 10.0 |
| | Low Fire | Input - Btuh | 57,000 | 72,000 |
| | | Output - Btuh | 55,000 | 70,000 |
| | | Temperature rise range - °F | 30 - 60 | 35 - 65 |
| | | Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane | 1.7 / 4.5 | 1.7 / 4.5 |
| | High static - in. w.g. | Heating | 0.8 | 0.8 |
| Cooling | | 1.0 | 1.0 | |
| Connections | Intake / Exhaust Pipe (PVC) | 2 / 2 | 2 / 2 | |
| | Gas pipe size IPS | 1/2 | 1/2 | |
| | Condensate Drain Trap (PVC pipe) - i.d. | 3/4 | 3/4 | |
| | with furnished 90° street elbow | 3/4 slip x 3/4 MIPT | 3/4 slip x 3/4 MIPT | |
| | with field supplied (PVC coupling) - o.d. | 3/4 slip x 3/4 MPT | 3/4 slip x 3/4 MPT | |
| | Indoor Blower | Wheel diameter x width - in. | 11 x 11 | 11 x 11 |
| Motor output - hp | | 3/4 | 1 | |
| Tons of add-on cooling | | 2.5 - 4 | 3 - 5 | |
| Air Volume Range - cfm | | 680 - 1770 | 790 - 1955 | |
| Electrical Data | | Voltage | 120 volts - 60 hertz - 1 phase | |
| | Blower motor full load amps | 9.6 | 12.8 | |
| | Maximum overcurrent protection | 15 | 20 | |
| Shipping Data | lbs. - 1 package | 163 | 174 | |

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

¹ 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

NOTE - FURNACES CANNOT BE TWINNED!

| | | "B" Width Models | "C" Width Models | |
|---|--|----------------------------|------------------|-------|
| CABINET ACCESSORIES | | | | |
| Horizontal Suspension Kit - Horizontal only | | 51W10 | 51W10 | |
| Return Air Base - Upflow only | | 50W98 | 50W99 | |
| High Performance Economizer (Commercial Only) | | 10U53 | 10U53 | |
| CONDENSATE DRAIN KITS | | | | |
| Condensate Drain Heat Cable | 6 ft. | 26K68 | 26K68 | |
| | 24 ft. | 26K69 | 26K69 | |
| Crawl Space Vent Drain Kit | US | 51W18 | 51W18 | |
| | Canada | 15Z70 | 15Z70 | |
| CONTROLS | | | | |
| Transformer (75VA) | | 27J32 | 27J32 | |
| FILTER KITS | | | | |
| ¹ Air Filter and Rack Kit | Horizontal (end) | 87L96 | 87L97 | |
| | Size of filter - in. | 18 x 25 x 1 | 20 x 25 x 1 | |
| | Side Return | 44J22 | 44J22 | |
| | Ten Pack | 66K63 | 66K63 | |
| | Size of filter - in. | 16 x 25 x 1 | 16 x 25 x 1 | |
| TERMINATION KITS | | | | |
| See Installation Instructions for specific venting information. | | | | |
| Direct Vent | Concentric | US - 2 in. | 71M80 | 69M29 |
| | | 3 in. | --- | 60L46 |
| | | Canada - 2 in. | 44W92 | 44W92 |
| | | 3 in. | --- | 44W93 |
| | Flush-Mount | US - 2, 2-1/2 or 3 in. | 51W11 | 51W11 |
| | | Canada - 2, 2-1/2 or 3 in. | 51W12 | 51W12 |
| | Wall - Close Couple | US - 2 in. | 22G44 | --- |
| | | 3 in. | 44J40 | 44J40 |
| | Wall - Close Couple WTK | Canada - 2 in. | 30G28 | --- |
| | | 3 in. | 81J20 | 81J20 |
| | Roof Termination Flashing Kit (no vent pipe - 2 flashings) | 2 in. | 15F75 | 15F75 |
| | | 3 in. | 44J41 | 44J41 |
| VENTING | | | | |
| Flue Coupling | 2 in. | 17H92 | 17H92 | |

¹ Allows the thermostat to display outdoor temperature. Required in dual-fuel and EDA applications.

NOTE - Termination Kits (44W92, 44W93, 30G28, 51W12, 81J20) and Crawl Space Vent Drain Kit (15Z70) are certified to ULC S636 standard for use in Canada only.

INSTALLATION CLEARANCES

| | |
|------------------------|------------------------------|
| Sides | ¹ 0 inches (0 mm) |
| Rear | 0 inches (0 mm) |
| Top/Plenum | 1 inch (25 mm) |
| Front | 0 inches (0 mm) |
| Front (service/alcove) | 24 inches (610 mm) |
| Floor | ² Combustible |

NOTE - Air for combustion must conform to the methods outlined in the National Fuel Gas Code (NFPA 54/ANSI-Z223.1) or the National Standard of Canada CAN/CSA-B149.1 Natural Gas and Propane Installation Code".

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. In Canada flue sizing must conform to the methods outlined in National Standard of Canada CAN/CSA-B149.1.

¹ Allow proper clearances to accommodate condensate trap and vent pipe installation.

² Do not install the furnace directly on carpeting, tile, or other combustible materials other than wood flooring.

GAS HEAT ACCESSORIES

| 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 | Muffler (US Only) |
|-------|-----------------------------------|-------------------|--------------------------------|--------------------------------|---------------------------------------|---------------------------------------|---|
| | 4501 - 7500 ft. | 7501 - 10,000 ft. | 0 - 7500 ft. | 0 - 7500 ft. | 7501 - 10,000 ft. | 7501 - 10,000 ft. | |
| 045 | 14A47 | 14A50 | 11K51 | 77W09 | 73W37 | 11K46 | 15Y66 (2-inch) |
| 070 | 14A54 | 14A53 | 11K51 | 77W09 | 73W37 | 11K46 | 15Y66 (2-inch) |
| 090 | 14A57 | 14A54 | 11K51 | 77W09 | 73W37 | 11K46 | 15Y66 (2-inch) |
| 110 | 14A46 | 14A51 | 11K51 | 77W09 | 73W37 | 11K46 | ¹ 15Y66 (2-inch) 16A56 (3-inch) |

¹ Two-inch diameter muffler (15Y66) is optional for 110 input model with a maximum vent pipe length of up to 29 ft.

Three-inch diameter muffler (16A56) is optional for 110 input model with a minimum vent pipe length of 30 ft.

HIGH ALTITUDE DERATE

NOTE - Units may be installed at altitudes up to 10,000 ft.

At altitudes above 4501 ft. the unit must be derated to match the manifold pressure information shown below.

Units installed at altitudes of 4501 to 10,000 ft. require a pressure switch change.

Units installed at altitudes of 7501 to 10,000 ft. require an orifice change.

See the Gas Heat Accessories table for ordering information.

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

NOTE - In Canada, certification for installations at elevations over 4500 feet is the jurisdiction of local authorities.

| Input | Gas | Manifold Pressure in. w.g. | | | | | | | | | | Supply Line Pressure in. w.g. 0 - 10,000 ft. | |
|-----------|-------------|----------------------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|-------------------|-----------|--|------|
| | | 0 - 4500 ft. | | 4501 - 5500 ft. | | 5501 - 6500 ft. | | 6501 - 7500 ft. | | 7501 - 10,000 ft. | | | |
| | | Low Fire | High Fire | Low Fire | High Fire | Low Fire | High Fire | Low Fire | High Fire | Low Fire | High Fire | Min. | Max. |
| All Sizes | Natural | 1.7 | 3.5 | 1.6 | 3.3 | 1.5 | 3.2 | 1.5 | 3.1 | 1.7 | 3.5 | 4.5 | 13.0 |
| | LPG/Propane | 4.5 | 10.0 | 4.2 | 9.4 | 4.0 | 9.1 | 3.9 | 8.9 | 4.5 | 10.0 | 11.0 | 13.0 |

OUTDOOR TERMINATION KIT USAGE

| Input Size | Vent Pipe Diameter (in.) | Standard Terminations | | | | Concentric Terminations | | |
|------------|--------------------------|-----------------------|----------------------------|----------------------------|--|----------------------------|----------------------------|----------------------------|
| | | Flush Mount Kit | Wall Kit | | Field Fabricated Exhaust Accelerator Size Required | Concentric Kit | | |
| | | | 2 inch | 3 inch | | 1-1/2 inch | 2 inch | 3 inch |
| | | | 51W11 (US) 5 51W12 (CA) | 22G44 (US) 5 30G28 (CA) | 44J40 (US) 5 81J20 (CA) | 71M80 (US) 5 44W92 (CA) | 69M29 (US) 5 44W92 (CA) | 60L46 (US) 5 44W93 (CA) |
| 045 | 1 1-1/2 | 4 YES | YES | 2 YES | 1-1/2 in. | 3 YES | --- | --- |
| | 2 | 4 YES | YES | 2 YES | 1-1/2 in. | 3 YES | --- | --- |
| | 2-1/2 | 4 YES | YES | 2 YES | 1-1/2 in. | 3 YES | --- | --- |
| | 3 | 4 YES | YES | 2 YES | 1-1/2 in. | 3 YES | --- | --- |
| 070 | 1 1-1/2 | 4 YES | YES | 2 YES | 1-1/2 in. | 3 YES | --- | --- |
| | 2 | 4 YES | YES | 2 YES | 1-1/2 in. | 3 YES | --- | --- |
| | 2-1/2 | 4 YES | YES | 2 YES | 1-1/2 in. | 3 YES | --- | --- |
| | 3 | 4 YES | YES | 2 YES | 1-1/2 in. | 3 YES | --- | --- |
| 090 | 2 | 4 YES | --- | YES | 2 in. | --- | YES | YES |
| | 2-1/2 | 4 YES | --- | YES | 2 in. | --- | YES | YES |
| | 3 | 4 YES | --- | YES | 2 in. | --- | YES | YES |
| 110 | 2 | YES | --- | YES | 2 in. | --- | YES | YES |
| | 2-1/2 | YES | --- | YES | 2 in. | --- | YES | YES |
| | 3 | YES | --- | YES | 2 in. | --- | YES | YES |

NOTE - Standard Terminations do not include any vent pipe or elbows external to the structure.

Any vent pipe or elbows external to the structure must be included in total vent length calculations. See Vent Length Tables.

¹ 2 in. to 1-1/2 in. reducer required, must be field provided.

² Requires field provided 1-1/2 in. outdoor exhaust accelerator.

³ Concentric Kits **71M80** and **44W92** include 1-1/2 in. outdoor exhaust accelerator, required when used with 045 and 070 input models. Accelerator is not used with 090, 110, 135 input models. When using 1-1/2 in. piping, the pipe must be transitioned to 2 in. pipe when used with the Concentric Kit.

⁴ Flush Mount Kit **51W11** and **51W12** includes 1-1/2 in. outdoor exhaust accelerator, required when used with 045, 070 and 090 input models. Accelerator is not used with 110 or 135 input models. When using 1-1/2 in. piping, the pipe must be transitioned to 2 in. pipe when used with the Flush Mount Kit.

⁵ Termination Kits **30G28**, **44W92**, **44W93**, **51W12** and **81J20** are certified to ULC S636 standard for use in Canada only.

VENT LENGTHS - UNINSULATED EXHAUST PIPE IN UNCONDITIONED SPACE

| ¹ Winter Design Temperatures | Vent Pipe Diameter | Unit Input Size | | | | | | | |
|------------------------------|--------------------|---|---------------------------------|-----|---------------------------------|-----|---------------------------------|-----|---------------------------------|
| | | 045 | | 070 | | 090 | | 110 | |
| | | ² Maximum Uninsulated Exhaust Vent Length (ft.) | | | | | | | |
| | | PVC | ³ PolyPro/ InnoFlue/ ECCO | PVC | ³ PolyPro/ InnoFlue/ ECCO | PVC | ³ PolyPro/ InnoFlue/ ECCO | PVC | ³ PolyPro/ InnoFlue/ ECCO |
| 32 to 21°F | 1-1/2 in. | 22 | N/A | 25 | N/A | N/A | N/A | N/A | N/A |
| | 2 in. | 21 | 18 | 33 | 30 | 46 | 42 | 30 | 30 |
| | 2-1/2 in. | 16 | N/A | 26 | N/A | 37 | N/A | 36 | N/A |
| | 3 in. | 12 | 12 | 21 | 21 | 30 | 30 | 29 | 29 |
| 20 to 1°F | 1-1/2 in. | 12 | N/A | 20 | N/A | N/A | N/A | N/A | N/A |
| | 2 in. | 11 | 9 | 19 | 17 | 28 | 25 | 27 | 24 |
| | 2-1/2 in. | 7 | N/A | 14 | N/A | 21 | N/A | 20 | N/A |
| | 3 in. | N/A | N/A | 9 | 9 | 16 | 16 | 14 | 14 |
| 0 to −20°F | 1-1/2 in. | 8 | N/A | 13 | N/A | N/A | N/A | N/A | N/A |
| | 2 in. | 6 | 4 | 12 | 10 | 19 | 16 | 18 | 15 |
| | 2-1/2 in. | N/A | N/A | 7 | N/A | 13 | N/A | 12 | N/A |
| | 3 in. | N/A | N/A | N/A | N/A | 8 | 8 | 7 | 7 |

¹ Refer to 99% Minimum Design Temperature table provided in the current edition of the ASHRAE Handbook-Fundamentals.

² Maximum Equivalent Vent Length permitted is defined as Total Length (linear feet) of vent pipe, plus equivalent length (ft.) of fittings, plus equivalent length (ft.) of termination.

VENTING NOTES - Concentric Terminations are equivalent to 5 ft. of straight pipe and should be included when measuring total pipe length.

One 90° elbow is equivalent to 5 feet of straight vent pipe.

Two 45° elbows are equal to one 90° elbow.

One 45° elbow is equivalent to 2.5 feet of straight vent pipe.

³ PolyPro® poly-propylene vent pipe is a registered trademark of DuraVent®.

InnoFlue® is a registered trademark of Centrotherm Eco Systems.

ECCO Polypropylene Vent™ is a registered trademark of ECCO Manufacturing™.

VENT LENGTHS - FEET

STANDARD TERMINATION AT ELEVATION 0 - 4500 ft.

| Pipe Size | | 1-1/2 in. | | | | 2 in. | | | | 2-1/2 in. | | | | 3 in. | | | |
|------------------|----|-----------|-----|-----|-----|-------|-----|-----|-----|-----------|-----|-----|-----|-------|-----|-----|-----|
| Input | | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 |
| No. of 90 ELL | 1 | 25 | 20 | N/A | N/A | 81 | 66 | 44 | 24 | 115 | 115 | 93 | 58 | 138 | 137 | 118 | 118 |
| | 2 | 20 | 15 | N/A | N/A | 76 | 61 | 39 | 19 | 110 | 110 | 88 | 53 | 133 | 132 | 113 | 113 |
| | 3 | 15 | 10 | N/A | N/A | 71 | 56 | 34 | 14 | 105 | 105 | 83 | 48 | 128 | 127 | 108 | 108 |
| | 4 | 10 | N/A | N/A | N/A | 66 | 51 | 29 | N/A | 100 | 100 | 78 | 43 | 123 | 122 | 103 | 103 |
| | 5 | N/A | N/A | N/A | N/A | 61 | 46 | 24 | N/A | 95 | 95 | 73 | 38 | 118 | 117 | 98 | 98 |
| | 6 | N/A | N/A | N/A | N/A | 56 | 41 | 19 | N/A | 90 | 90 | 68 | 33 | 113 | 112 | 93 | 93 |
| | 7 | N/A | N/A | N/A | N/A | 51 | 36 | 14 | N/A | 85 | 85 | 63 | 28 | 108 | 107 | 88 | 88 |
| | 8 | N/A | N/A | N/A | N/A | 46 | 31 | N/A | N/A | 80 | 80 | 58 | 23 | 103 | 102 | 83 | 83 |
| | 9 | N/A | N/A | N/A | N/A | 41 | 26 | N/A | N/A | 75 | 75 | 53 | 18 | 98 | 97 | 78 | 78 |
| | 10 | N/A | N/A | N/A | N/A | 36 | 21 | N/A | N/A | 70 | 70 | 48 | 13 | 93 | 92 | 73 | 73 |

STANDARD TERMINATION ELEVATION 4501 - 10,000 ft.

| Pipe Size | | 1-1/2 in. | | | | 2 in. | | | | 2-1/2 in. | | | | 3 in. | | | |
|------------------|----|-----------|-----|-----|-----|-------|-----|-----|-----|-----------|-----|-----|-----|-------|-----|-----|-----|
| Input | | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 |
| No. of 90 ELL | 1 | 25 | 20 | N/A | N/A | 81 | 66 | 44 | N/A | 115 | 115 | 93 | 58 | 138 | 137 | 118 | 118 |
| | 2 | 20 | 15 | N/A | N/A | 76 | 61 | 39 | N/A | 110 | 110 | 88 | 53 | 133 | 132 | 113 | 113 |
| | 3 | 15 | 10 | N/A | N/A | 71 | 56 | 34 | N/A | 105 | 105 | 83 | 48 | 128 | 127 | 108 | 108 |
| | 4 | 10 | N/A | N/A | N/A | 66 | 51 | 29 | N/A | 100 | 100 | 78 | 43 | 123 | 122 | 103 | 103 |
| | 5 | N/A | N/A | N/A | N/A | 61 | 46 | 24 | N/A | 95 | 95 | 73 | 38 | 118 | 117 | 98 | 98 |
| | 6 | N/A | N/A | N/A | N/A | 56 | 41 | 19 | N/A | 90 | 90 | 68 | 33 | 113 | 112 | 93 | 93 |
| | 7 | N/A | N/A | N/A | N/A | 51 | 36 | 14 | N/A | 85 | 85 | 63 | 28 | 108 | 107 | 88 | 88 |
| | 8 | N/A | N/A | N/A | N/A | 46 | 31 | N/A | N/A | 80 | 80 | 58 | 23 | 103 | 102 | 83 | 83 |
| | 9 | N/A | N/A | N/A | N/A | 41 | 26 | N/A | N/A | 75 | 75 | 53 | 18 | 98 | 97 | 78 | 78 |
| | 10 | N/A | N/A | N/A | N/A | 36 | 21 | N/A | N/A | 70 | 70 | 48 | 13 | 93 | 92 | 73 | 73 |

CONCENTRIC TERMINATION AT ELEVATION 0 - 4500 ft.

| Pipe Size | | 1-1/2 in. | | | | 2 in. | | | | 2-1/2 in. | | | | 3 in. | | | |
|------------------|----|-----------|-----|-----|-----|-------|-----|-----|-----|-----------|-----|-----|-----|-------|-----|-----|-----|
| Input | | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 |
| No. of 90 ELL | 1 | 20 | 15 | N/A | N/A | 73 | 58 | 42 | 22 | 105 | 105 | 89 | 54 | 121 | 121 | 114 | 114 |
| | 2 | 15 | 10 | N/A | N/A | 68 | 53 | 37 | 17 | 100 | 100 | 84 | 49 | 116 | 116 | 109 | 109 |
| | 3 | 10 | N/A | N/A | N/A | 63 | 48 | 32 | 12 | 95 | 95 | 79 | 44 | 111 | 111 | 104 | 104 |
| | 4 | N/A | N/A | N/A | N/A | 58 | 43 | 27 | N/A | 90 | 90 | 74 | 39 | 106 | 106 | 99 | 99 |
| | 5 | N/A | N/A | N/A | N/A | 53 | 38 | 22 | N/A | 85 | 85 | 69 | 34 | 101 | 101 | 94 | 94 |
| | 6 | N/A | N/A | N/A | N/A | 48 | 33 | 17 | N/A | 80 | 80 | 64 | 29 | 96 | 96 | 89 | 89 |
| | 7 | N/A | N/A | N/A | N/A | 43 | 28 | 12 | N/A | 75 | 75 | 59 | 24 | 91 | 91 | 84 | 84 |
| | 8 | N/A | N/A | N/A | N/A | 38 | 23 | N/A | N/A | 70 | 70 | 54 | 19 | 86 | 86 | 79 | 79 |
| | 9 | N/A | N/A | N/A | N/A | 33 | 18 | N/A | N/A | 65 | 65 | 49 | 14 | 81 | 81 | 74 | 74 |
| | 10 | N/A | N/A | N/A | N/A | 28 | 13 | N/A | N/A | 60 | 60 | 44 | N/A | 76 | 76 | 69 | 69 |

CONCENTRIC TERMINATION ELEVATION 4501 - 10,000 ft.

| Pipe Size | | 1-1/2 in. | | | | 2 in. | | | | 2-1/2 in. | | | | 3 in. | | | |
|------------------|----|-----------|-----|-----|-----|-------|-----|-----|-----|-----------|-----|-----|-----|-------|-----|-----|-----|
| Input | | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 |
| No. of 90 ELL | 1 | 20 | 15 | N/A | N/A | 73 | 58 | 42 | N/A | 105 | 105 | 89 | 54 | 121 | 121 | 114 | 114 |
| | 2 | 15 | 10 | N/A | N/A | 68 | 53 | 37 | N/A | 100 | 100 | 84 | 49 | 116 | 116 | 109 | 109 |
| | 3 | 10 | N/A | N/A | N/A | 63 | 48 | 32 | N/A | 95 | 95 | 79 | 44 | 111 | 111 | 104 | 104 |
| | 4 | N/A | N/A | N/A | N/A | 58 | 43 | 27 | N/A | 90 | 90 | 74 | 39 | 106 | 106 | 99 | 99 |
| | 5 | N/A | N/A | N/A | N/A | 53 | 38 | 22 | N/A | 85 | 85 | 69 | 34 | 101 | 101 | 94 | 94 |
| | 6 | N/A | N/A | N/A | N/A | 48 | 33 | 17 | N/A | 80 | 80 | 64 | 29 | 96 | 96 | 89 | 89 |
| | 7 | N/A | N/A | N/A | N/A | 43 | 28 | 12 | N/A | 75 | 75 | 59 | 24 | 91 | 91 | 84 | 84 |
| | 8 | N/A | N/A | N/A | N/A | 38 | 23 | N/A | N/A | 70 | 70 | 54 | 19 | 86 | 86 | 79 | 79 |
| | 9 | N/A | N/A | N/A | N/A | 33 | 18 | N/A | N/A | 65 | 65 | 49 | 14 | 81 | 81 | 74 | 74 |
| | 10 | N/A | N/A | N/A | N/A | 28 | 13 | N/A | N/A | 60 | 60 | 44 | N/A | 76 | 76 | 69 | 69 |

VENT LENGTHS (EXHAUST) - VENTILATED ATTIC OR CRAWLSPACE INTAKE AIR - FEET

STANDARD TERMINATION AT ELEVATION 0 - 4500 ft.

| Pipe Size | | 1-1/2 in. | | | | 2 in. | | | | 2-1/2 in. | | | | 3 in. | | | |
|------------------|----|-----------|-----|-----|-----|-------|-----|-----|-----|-----------|-----|-----|-----|-------|-----|-----|-----|
| Input | | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 |
| No. of 90 ELL | 1 | 20 | 15 | N/A | N/A | 71 | 56 | 34 | 14 | 100 | 100 | 78 | 43 | 118 | 117 | 98 | 98 |
| | 2 | 15 | 10 | N/A | N/A | 66 | 51 | 29 | 9 | 95 | 95 | 73 | 38 | 113 | 112 | 93 | 93 |
| | 3 | 10 | N/A | N/A | N/A | 61 | 46 | 24 | 4 | 90 | 90 | 68 | 33 | 108 | 107 | 88 | 88 |
| | 4 | N/A | N/A | N/A | N/A | 56 | 41 | 19 | N/A | 85 | 85 | 63 | 28 | 103 | 102 | 83 | 83 |
| | 5 | N/A | N/A | N/A | N/A | 51 | 36 | 14 | N/A | 80 | 80 | 58 | 23 | 98 | 97 | 78 | 78 |
| | 6 | N/A | N/A | N/A | N/A | 46 | 31 | 9 | N/A | 85 | 75 | 63 | 18 | 93 | 92 | 73 | 73 |
| | 7 | N/A | N/A | N/A | N/A | 41 | 26 | 4 | N/A | 70 | 70 | 48 | 13 | 88 | 87 | 68 | 68 |
| | 8 | N/A | N/A | N/A | N/A | 36 | 21 | N/A | N/A | 65 | 65 | 43 | 8 | 83 | 82 | 63 | 63 |
| | 9 | N/A | N/A | N/A | N/A | 31 | 16 | N/A | N/A | 60 | 60 | 38 | 3 | 78 | 77 | 58 | 58 |
| | 10 | N/A | N/A | N/A | N/A | 26 | 11 | N/A | N/A | 55 | 55 | 33 | N/A | 73 | 72 | 53 | 53 |

STANDARD TERMINATION ELEVATION 4501 - 10,000 ft.

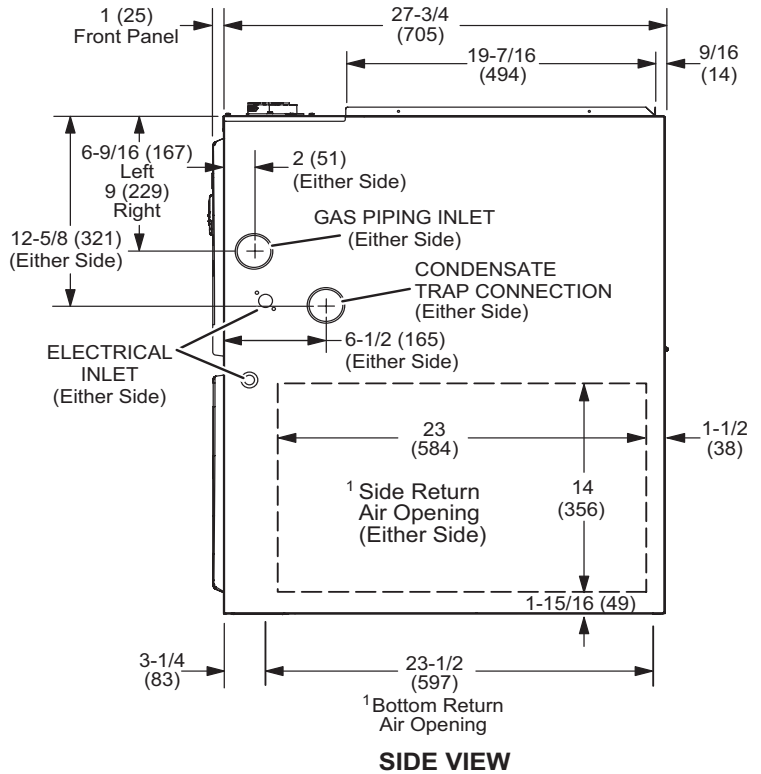
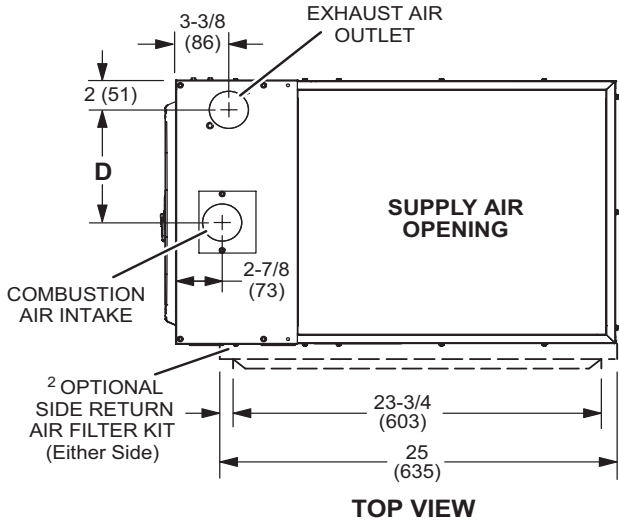
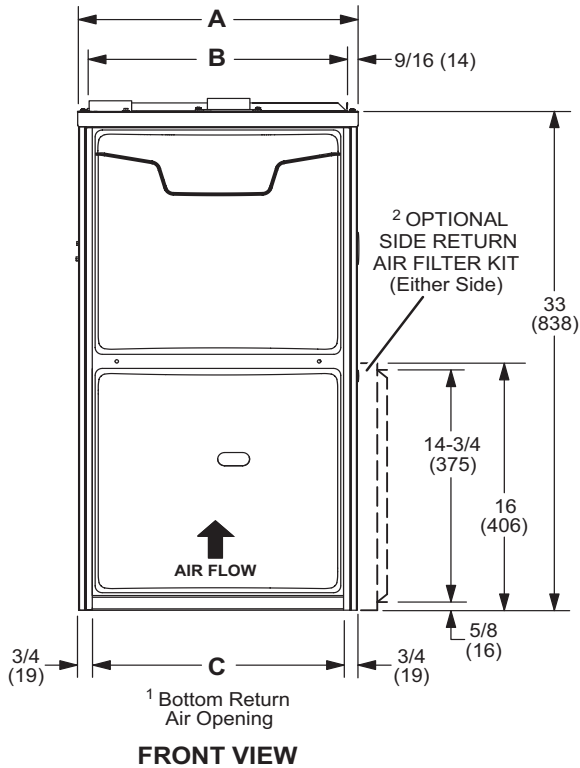
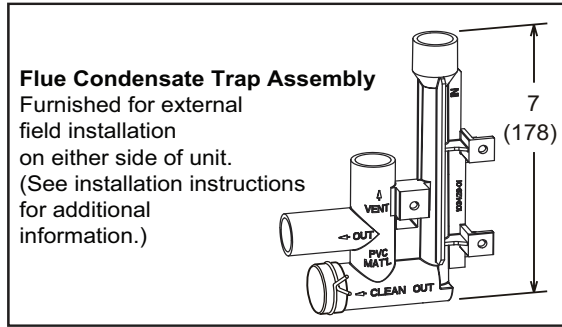
| Pipe Size | | 1-1/2 in. | | | | 2 in. | | | | 2-1/2 in. | | | | 3 in. | | | |
|------------------|----|-----------|-----|-----|-----|-------|-----|-----|-----|-----------|-----|-----|-----|-------|-----|-----|-----|
| Input | | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 | 045 | 070 | 090 | 110 |
| No. of 90 ELL | 1 | 20 | 15 | N/A | N/A | 71 | 56 | 34 | N/A | 100 | 100 | 78 | 43 | 118 | 117 | 98 | 98 |
| | 2 | 15 | 10 | N/A | N/A | 66 | 51 | 29 | N/A | 95 | 95 | 73 | 38 | 113 | 112 | 93 | 93 |
| | 3 | 10 | N/A | N/A | N/A | 61 | 46 | 24 | N/A | 90 | 90 | 68 | 33 | 118 | 107 | 88 | 88 |
| | 4 | N/A | N/A | N/A | N/A | 56 | 41 | 19 | N/A | 85 | 85 | 63 | 28 | 113 | 102 | 83 | 83 |
| | 5 | N/A | N/A | N/A | N/A | 51 | 36 | 14 | N/A | 80 | 80 | 58 | 23 | 98 | 97 | 78 | 78 |
| | 6 | N/A | N/A | N/A | N/A | 46 | 31 | 9 | N/A | 85 | 85 | 53 | 18 | 93 | 92 | 73 | 73 |
| | 7 | N/A | N/A | N/A | N/A | 41 | 26 | 4 | N/A | 70 | 70 | 48 | 13 | 98 | 87 | 68 | 68 |
| | 8 | N/A | N/A | N/A | N/A | 36 | 21 | N/A | N/A | 65 | 65 | 43 | 8 | 93 | 82 | 63 | 63 |
| | 9 | N/A | N/A | N/A | N/A | 31 | 16 | N/A | N/A | 60 | 60 | 38 | 3 | 78 | 77 | 58 | 58 |
| | 10 | N/A | N/A | N/A | N/A | 26 | 11 | N/A | N/A | 55 | 55 | 33 | N/A | 73 | 72 | 53 | 53 |

DIMENSIONS - UNIT - UPFLOW POSITION

¹ 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.

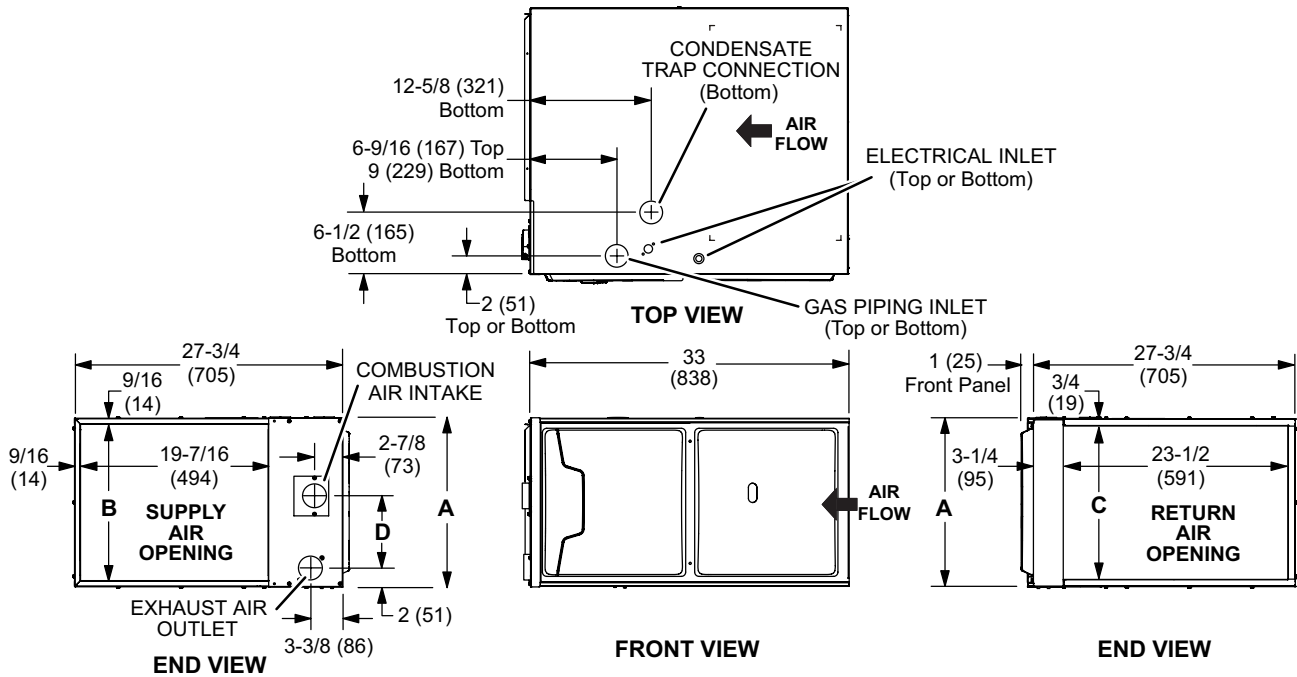
² Optional Side Return Air Filter Kit is not for use with the Optional Return Air Base.



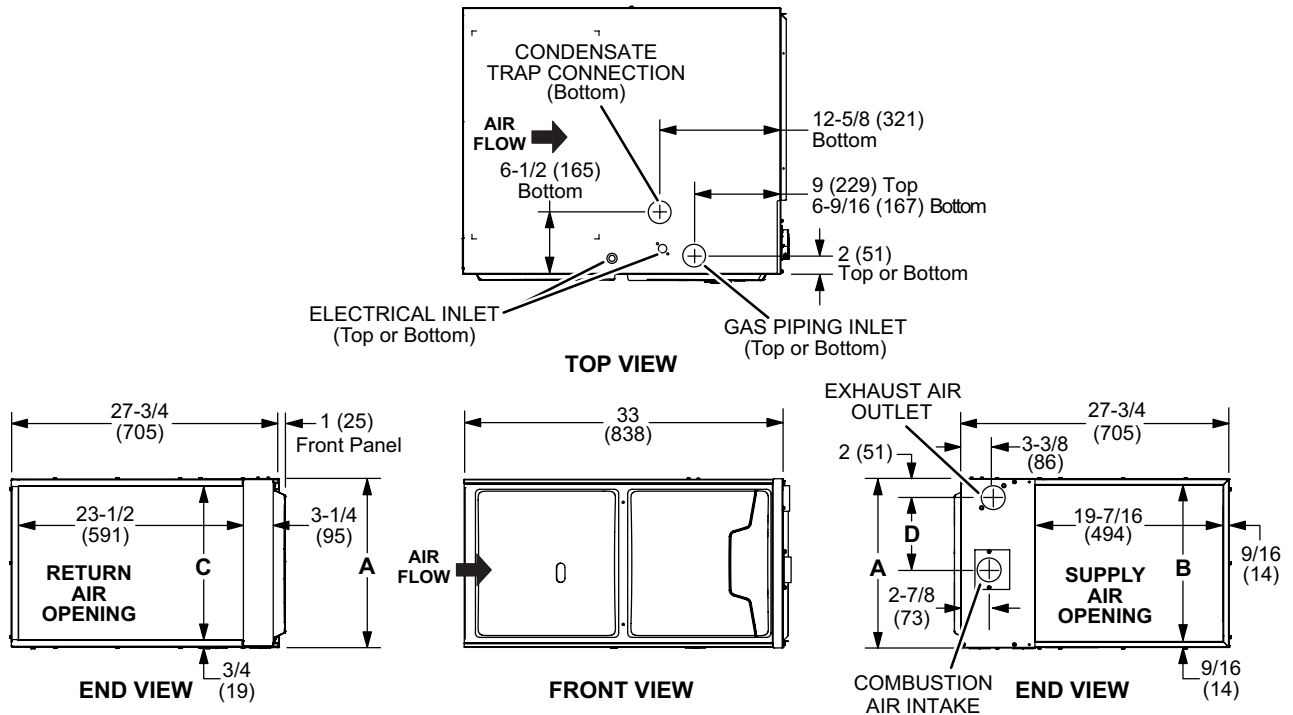
| Model No. | A | | B | | C | | D | |
|--------------------------------------|--------|-----|--------|-----|--------|-----|-------|-----|
| | in. | mm | in. | mm | in. | mm | in. | mm |
| ML296UH045XV36BK ML296UH070XV36BK | 17-1/2 | 446 | 16-3/8 | 416 | 16 | 406 | 7-5/8 | 194 |
| ML296UH090XV48CK ML296UH110XV60CK | 21 | 533 | 19-7/8 | 505 | 19-1/2 | 495 | 9-3/8 | 238 |

DIMENSIONS - UNIT - HORIZONTAL POSITION

LEFT-HAND AIR DISCHARGE



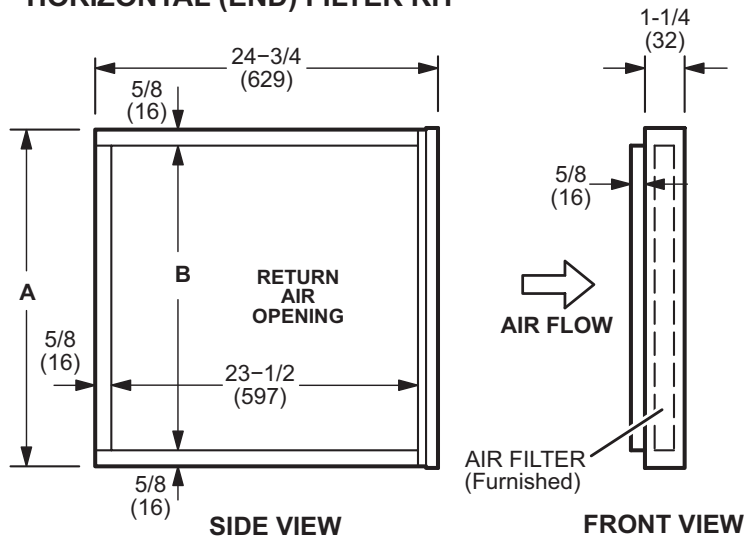
RIGHT-HAND AIR DISCHARGE



| Model No. | A | | B | | C | | D | |
|--------------------------------------|--------|-----|--------|-----|--------|-----|-------|-----|
| | in. | mm | in. | mm | in. | mm | in. | mm |
| ML296UH045XV36BK ML296UH070XV36BK | 17-1/2 | 446 | 16-3/8 | 416 | 16 | 406 | 7-5/8 | 194 |
| ML296UH090XV48CK ML296UH110XV60CK | 21 | 533 | 19-7/8 | 505 | 19-1/2 | 495 | 9-3/8 | 238 |

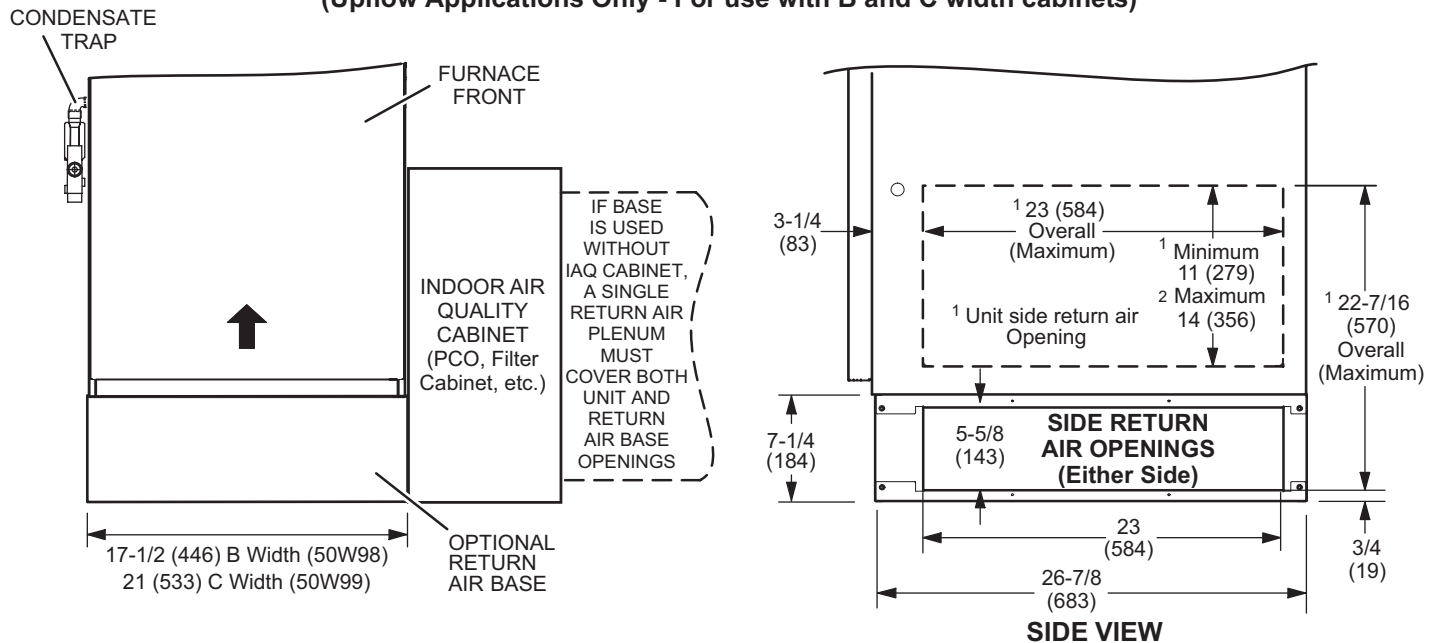
DIMENSIONS - OPTIONAL ACCESSORIES

HORIZONTAL (END) FILTER KIT



| Furnace Cabinet Width | Catalog Number | A | | B | |
|-----------------------|----------------|-----|-----|--------|-----|
| | | in. | mm | in. | mm |
| 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 B and C width cabinets)

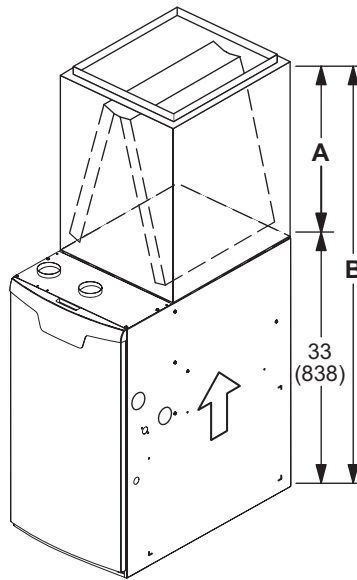


NOTE- Optional Side Return Air Filter Kits are not for use with Optional Return Air Base.

¹ 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.

² To minimize pressure drop, the largest opening height possible, up to 14 in. (356 mm), is preferred.

DIMENSIONS - FURNACE/COIL COMBINED DIMENSIONS

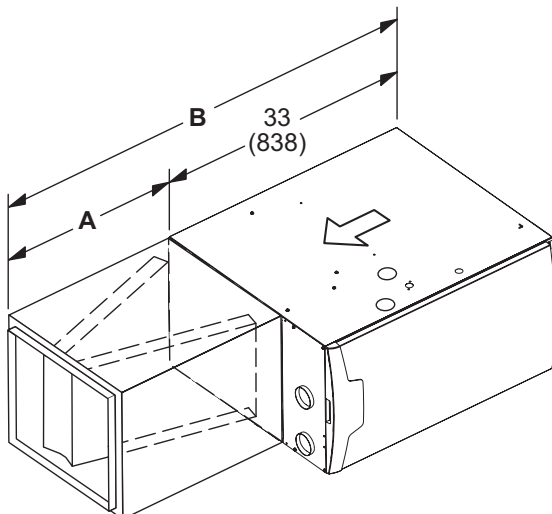


UPFLOW POSITION - CASED

| Model | | A | | B | |
|---------------|-----------------|--------|-----|--------|------|
| CK40CT | C35/CX35 | in. | mm | in. | mm |
| CK40CT-18/24A | C35/CX35-18/24A | 16-1/2 | 419 | 49-1/2 | 1257 |
| CK40CT-18/24B | C35/CX35-18/24B | | | | |
| CK40CT-24A | C35/CX35-24A | 18-1/2 | 470 | 51-1/2 | 1308 |
| CK40CT-24B | C35/CX35-24B | | | | |
| CK40CT-30A | C35/CX35-30A | 22-1/2 | 572 | 55-1/2 | 1410 |
| CK40CT-30B | C35/CX35-30B | | | | |
| CK40CT-30/36A | C35/CX35-30/36A | 24-1/2 | 622 | 57-1/2 | 1461 |
| CK40CT-30/36B | C35/CX35-30/36B | | | | |
| CK40CT-30/36C | C35/CX35-30/36C | | | | |
| CK40CT-36A | C35/CX35-36A | 24-1/2 | 622 | 57-1/2 | 1461 |
| CK40CT-36B | C35/CX35-36B | | | | |
| CK40CT-48B | C35/CX35-48B | 27-1/2 | 699 | 60-1/2 | 1537 |
| CK40CT-48C | C35/CX35-48C | | | | |
| CK40CT-49C | C35/CX35-49C | 29-1/2 | 749 | 62-1/2 | 1588 |
| CK40CT-50/60C | C35/CX35-50/60C | 27-1/2 | 699 | 60-1/2 | 1537 |
| CK40CT-60C | CX35-60C | 31-1/2 | 800 | 64-1/2 | 1638 |

UPFLOW POSITION - UNCASD

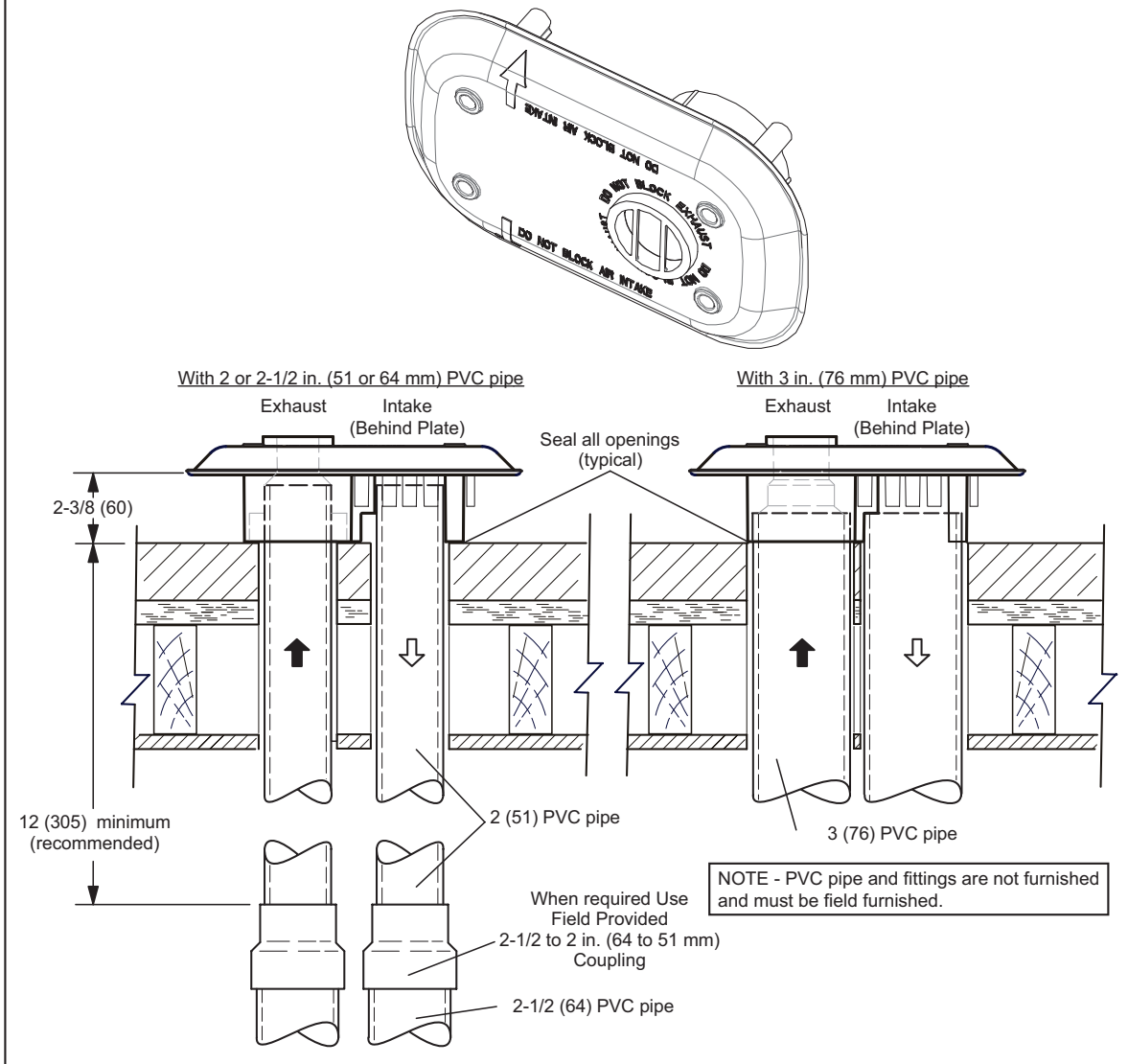
| Model | | A | | B | |
|---------------|------------|--------|-----|--------|------|
| CK40UT | C35 | in. | mm | in. | mm |
| CK40UT-18/24A | C35-18/24A | 14-1/8 | 359 | 47-1/8 | 1197 |
| CK40UT-18/24B | C35-18/24B | | | | |
| CK40UT-24A | C35-24A | 16-3/8 | 416 | 49-3/8 | 1254 |
| CK40UT-24B | C35-24B | | | | |
| CK40UT-30A | C35-30A | 20-3/4 | 527 | 53-3/4 | 1365 |
| CK40UT-30B | C35-30B | | | | |
| CK40UT-30/36A | C35-30/36A | 22-1/4 | 565 | 55-1/4 | 1403 |
| CK40UT-30/36B | C35-30/36B | | | | |
| CK40UT-30/36C | C35-30/36C | | | | |
| CK40UT-36A | C35-36A | 22-3/8 | 568 | 55-3/8 | 1407 |
| CK40UT-36B | C35-36B | | | | |
| CK40UT-48B | C35-48B | 26-1/4 | 667 | 59-1/4 | 1505 |
| CK40UT-48C | C35-48C | | | | |
| CK40UT-49C | C35-49C | 28-1/2 | 724 | 61-1/2 | 1562 |
| CK40UT-50/60C | C35-50/60C | 25-7/8 | 657 | 58-7/8 | 1495 |
| CK40UT-60C | C35-60C | 30-5/8 | 778 | 63-5/8 | 1616 |



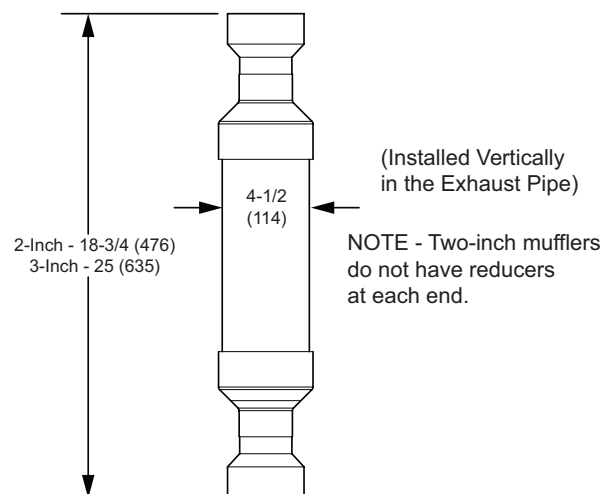
HORIZONTAL POSITION

| Model | | A | | B | |
|---------------|--------------|--------|-----|--------|------|
| CK40HT | CHX35 | in. | mm | in. | mm |
| CK40HT-18A | CHX35-18A | | | | |
| CK40HT-24A | CHX35-24A | | | | |
| CK40HT-24B | CHX35-24B | | | | |
| CK40HT-30B | CHX35-30B | | | | |
| CK40HT-36A | CHX35-36A | 26-1/2 | 673 | 59-1/2 | 1511 |
| CK40HT-36B | CHX35-36B | | | | |
| CK40HT-36C | CHX35-36C | | | | |
| CK40HT-42C | CHX35-42C | | | | |
| CK40HT-48C | CHX35-48C | | | | |
| CK40CT-30A | CHX35-30A | 31-1/2 | 880 | 64-1/2 | 1638 |
| CK40CT-42B | CHX35-42B | | | | |
| CK40CT-48B | CHX35-48B | | | | |
| CK40CT-51/61C | CHX35-51/61C | | | | |

FLUSH-MOUNT VENT TERMINATION KIT 51W11 (US) or 51W12 (CANADA)

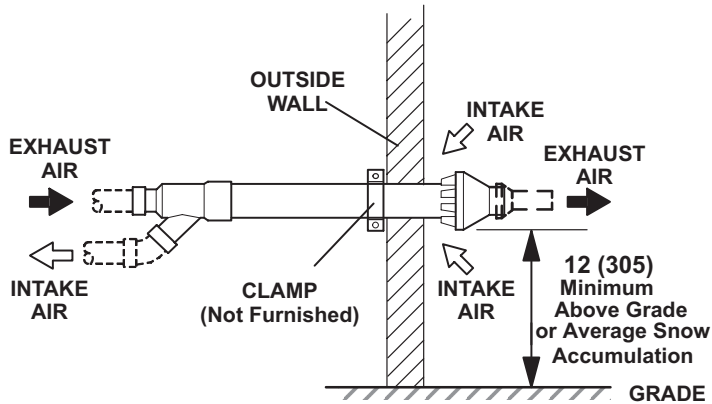


MUFFLERS
15Y66 - 2-inch
16A56 - 3-inch

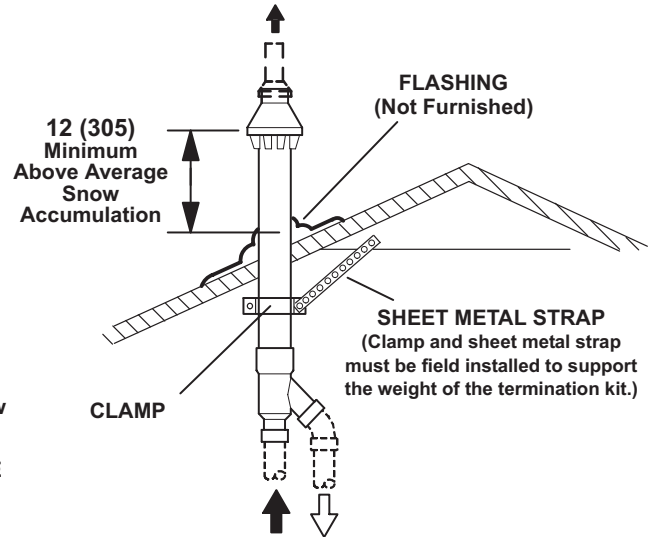


DIMENSIONS - OPTIONAL ACCESSORIES - VENTING

CONCENTRIC WALL TERMINATION APPLICATIONS



CONCENTRIC ROOF TERMINATION APPLICATIONS

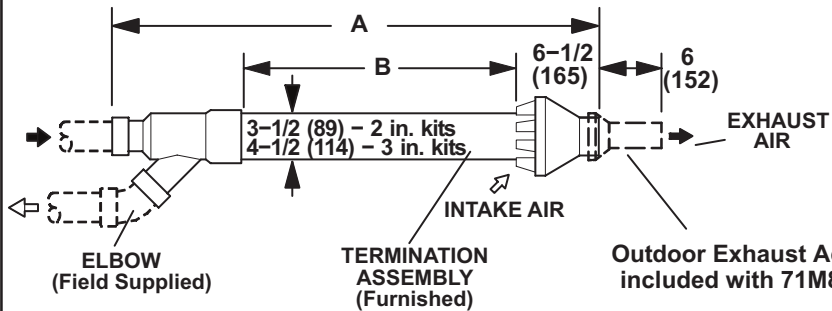


71M80 / 69M29 / 44W92 – 2 inch kits

60L46 / 44W93 – 3 inch kits

See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt different vent pipe sizes to termination.



| Cat. No. | A | | B | |
|-------------------|--------|-----|---------|-----|
| | in. | mm | in. | mm |
| 71M80 69M29 | 33-3/8 | 848 | 16-3/4 | 425 |
| 44W92 (Canada) | 29 | 737 | 15-1/2 | 394 |
| 60L46 | 38-7/8 | 987 | 21-3/16 | 538 |
| 44W93 (Canada) | 36-1/8 | 918 | 19-1/2 | 495 |

NOTE – Typical illustration for dimensions only. Design may vary depending on kit ordered.

WALL TERMINATION KITS (CLOSE-COUPLE) EXTENDED VENT FOR GRADE CLEARANCE

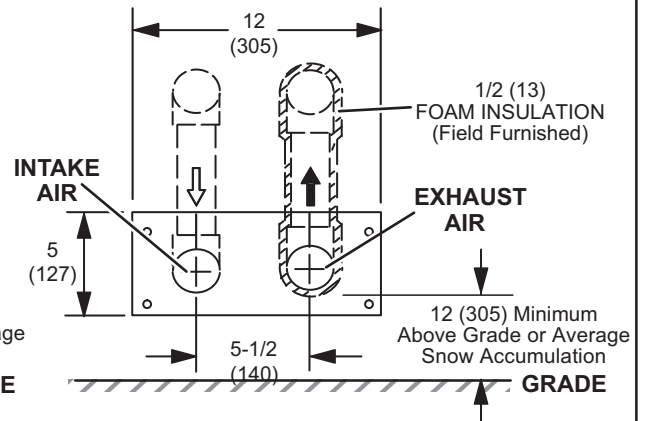
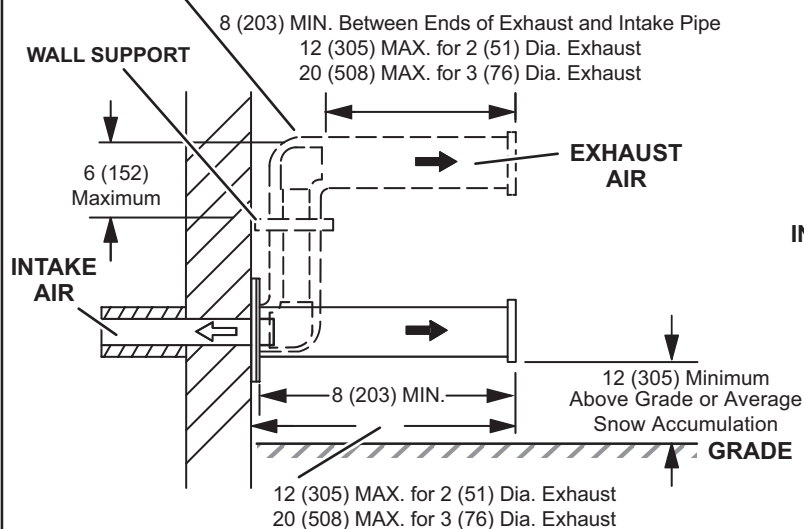
2 inch (51 mm) 22G44 (US)

3 inch (76 mm) 44J40 (US)

See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt different vent pipe sizes to termination.

If Intake and Exhaust Pipe is less than 12 in. (305 mm) above snow accumulation or other obstructions, field fabricated piping must be installed.



WALL TERMINATION KITS (CLOSE-COUPLE) EXTENDED VENT FOR GRADE CLEARANCE

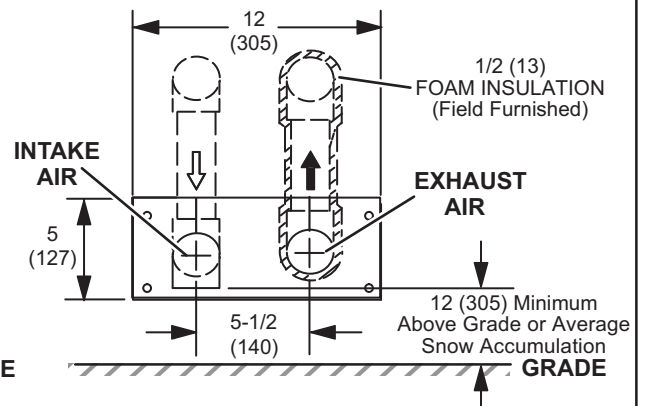
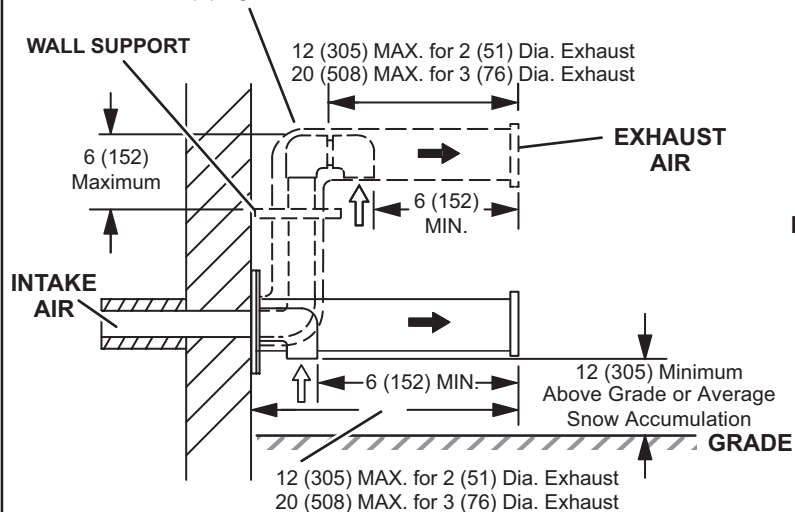
2 inch (51 mm) 30G28 (WTK Canada)

3 inch (76 mm) 81J20 (WTK Canada)

See Installation Instructions for additional information.

Note - Field provided reducer may be required to adapt different vent pipe sizes to termination.

If Intake and Exhaust Pipe is less than 12 in. (305 mm) above snow accumulation or other obstructions, field fabricated piping must be installed.



BLOWER DATA

ML296UH045XV36BK BLOWER PERFORMANCE (less filter)

BOTTOM RETURN AIR, SINGLE SIDE RETURN AIR OR SIDE RETURN AIR WITH OPTIONAL RETURN AIR BASE

0 through 0.8 in. w.g. (Heating) and 0 through 1.0 in. w.g. (Cooling) External Static Pressure Range

| “ADJUST” Switch Positions | Speed Switch Positions | | | | | | | |
|---------------------------------|---------------------------------|---------|-----------------------|------|---------------------------------|---------|----------|-------------------|
| | Second Stage “HEAT” Speed - cfm | | | | Second Stage “COOL” Speed - cfm | | | |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| + | 765 | 860 | 960 | 1050 | 885 | 1095 | 1210 | 1370 |
| ¹ NORM | 690 | 775 | 855 | 950 | 800 | 990 | 1115 | 1255 |
| — | 610 | 710 | 770 | 845 | 710 | 880 | 995 | 1115 |
| “ADJUST” Switch Positions | First Stage “HEAT” Speed - cfm | | | | First Stage “COOL” Speed - cfm | | | |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| + | 700 | 790 | 855 | 925 | 615 | 780 | 900 | 980 |
| ¹ NORM | 640 | 705 | 780 | 840 | 565 | 690 | 800 | 895 |
| — | 550 | 645 | 700 | 755 | 500 | 615 | 715 | 790 |

¹ Factory default jumper setting.

NOTES - The effect of static pressure is included in air volumes shown.

First stage HEAT is approximately **91%** of the same second stage HEAT speed position.

First stage COOL (two-stage air conditioning units only) is approximately **70%** of the same second stage COOL speed position.

Continuous Fan Only speed is approximately **38%** of the same second stage COOL speed position.

Lennox® LZSV Variable Zoning System Applications - Minimum blower speed is 300 cfm.

ML296UH045XV36BK BLOWER MOTOR WATTS (COOLING)

| Jumper Speed Positions | | Motor Watts @ Various External Static Pressures - in. wg. | | | | | | | | | | | | | | | | | |
|---|-------|---|-----|-----|-----|-----|-----|-----|-----|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | First Stage | | | | | | | | Second Stage | | | | | | | | | |
| | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| “+” (Plus) SETTING (“Adjust” Jumper at “+” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 35 | 58 | 79 | 99 | 125 | 148 | 168 | 197 | 89 | 112 | 140 | 171 | 193 | 222 | 247 | 267 | 295 | 321 |
| | Tap C | 73 | 98 | 120 | 141 | 169 | 187 | 212 | 242 | 147 | 181 | 209 | 243 | 277 | 301 | 333 | 350 | 390 | 409 |
| | Tap B | 98 | 123 | 148 | 174 | 196 | 225 | 248 | 274 | 199 | 237 | 268 | 302 | 341 | 371 | 403 | 431 | 459 | 498 |
| | Tap A | 121 | 146 | 182 | 208 | 236 | 261 | 287 | 319 | 282 | 321 | 360 | 394 | 438 | 474 | 501 | 530 | 529 | 526 |
| “NORM” (Normal) SETTING (“Adjust” Jumper at “NORM” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 42 | 61 | 77 | 98 | 118 | 140 | 167 | 191 | 60 | 93 | 116 | 141 | 172 | 196 | 219 | 248 | 271 | 294 |
| | Tap C | 42 | 74 | 95 | 126 | 148 | 169 | 194 | 219 | 116 | 146 | 174 | 211 | 237 | 259 | 291 | 315 | 349 | 369 |
| | Tap B | 61 | 94 | 122 | 149 | 175 | 200 | 223 | 249 | 161 | 195 | 229 | 260 | 289 | 321 | 346 | 375 | 408 | 435 |
| | Tap A | 98 | 125 | 150 | 174 | 201 | 223 | 254 | 284 | 222 | 256 | 292 | 324 | 363 | 399 | 426 | 455 | 483 | 515 |
| “—” (Minus) SETTING (“Adjust” Jumper at “—” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 33 | 47 | 66 | 85 | 104 | 125 | 149 | 167 | 51 | 77 | 98 | 120 | 143 | 167 | 193 | 214 | 242 | 260 |
| | Tap C | 46 | 63 | 80 | 101 | 129 | 152 | 171 | 201 | 91 | 113 | 144 | 172 | 194 | 219 | 245 | 271 | 299 | 321 |
| | Tap B | 59 | 87 | 112 | 133 | 157 | 184 | 205 | 231 | 126 | 154 | 186 | 209 | 233 | 265 | 293 | 322 | 342 | 377 |
| | Tap A | 73 | 99 | 130 | 152 | 176 | 200 | 223 | 249 | 169 | 201 | 233 | 265 | 284 | 327 | 349 | 386 | 408 | 444 |

BLOWER DATA

ML296UH070XV36BK BLOWER PERFORMANCE (less filter)

BOTTOM RETURN AIR, SINGLE SIDE RETURN AIR OR SIDE RETURN AIR WITH OPTIONAL RETURN AIR BASE

0 through 0.8 in. w.g. (Heating) and 0 through 1.0 in. w.g. (Cooling) External Static Pressure Range

| “ADJUST” Switch Positions | Speed Switch Positions | | | | | | | |
|---------------------------------|---------------------------------|---------|-----------------------|------|---------------------------------|---------|----------|-------------------|
| | Second Stage “HEAT” Speed - cfm | | | | Second Stage “COOL” Speed - cfm | | | |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| + | 955 | 1025 | 1085 | 1175 | 920 | 1095 | 1235 | 1330 |
| ¹ NORM | 880 | 935 | 990 | 1070 | 840 | 990 | 1120 | 1200 |
| — | 790 | 840 | 890 | 965 | 750 | 885 | 1000 | 1075 |
| “ADJUST” Switch Positions | First Stage “HEAT” Speed - cfm | | | | First Stage “COOL” Speed - cfm | | | |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| + | 865 | 925 | 980 | 1055 | 655 | 780 | 850 | 945 |
| ¹ NORM | 795 | 845 | 900 | 975 | 580 | 700 | 765 | 850 |
| — | 715 | 770 | 805 | 865 | 515 | 630 | 690 | 760 |

¹ Factory default jumper setting.

NOTES - The effect of static pressure is included in air volumes shown.

First stage HEAT is approximately **90%** of the same second stage HEAT speed position.

First stage COOL (two-stage air conditioning units only) is approximately **70%** of the same second stage COOL speed position.

Continuous Fan Only speed is approximately **38%** of the same second stage COOL speed position.

Lennox® LZSV Variable Zoning System Applications - Minimum blower speed is 300 cfm.

ML296UH070XV36BK BLOWER MOTOR WATTS (COOLING)

| Jumper Speed Positions | | Motor Watts @ Various External Static Pressures - in. wg. | | | | | | | | | | | | | | | | | |
|---|-------|---|-----|-----|-----|-----|-----|-----|-----|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | First Stage | | | | | | | | Second Stage | | | | | | | | | |
| | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| “+” (Plus) SETTING (“Adjust” Jumper at “+” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 56 | 79 | 101 | 124 | 146 | 164 | 192 | 214 | 110 | 139 | 167 | 190 | 223 | 249 | 268 | 297 | 321 | 347 |
| | Tap C | 72 | 103 | 126 | 151 | 174 | 199 | 222 | 243 | 163 | 196 | 230 | 260 | 295 | 318 | 353 | 381 | 414 | 438 |
| | Tap B | 94 | 118 | 147 | 170 | 197 | 221 | 246 | 274 | 220 | 256 | 295 | 328 | 362 | 392 | 433 | 461 | 498 | 520 |
| | Tap A | 110 | 146 | 173 | 200 | 224 | 255 | 280 | 306 | 272 | 311 | 348 | 387 | 418 | 457 | 496 | 529 | 529 | 525 |
| “NORM” (Normal) SETTING (“Adjust” Jumper at “NORM” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 45 | 66 | 89 | 109 | 132 | 151 | 174 | 196 | 88 | 115 | 146 | 170 | 190 | 219 | 243 | 263 | 287 | 312 |
| | Tap C | 63 | 87 | 112 | 135 | 158 | 180 | 199 | 226 | 127 | 158 | 187 | 221 | 250 | 277 | 301 | 329 | 357 | 389 |
| | Tap B | 79 | 107 | 130 | 153 | 173 | 198 | 219 | 241 | 180 | 210 | 245 | 278 | 306 | 340 | 372 | 392 | 421 | 460 |
| | Tap A | 93 | 123 | 154 | 176 | 202 | 228 | 252 | 272 | 217 | 250 | 288 | 320 | 355 | 388 | 415 | 445 | 471 | 498 |
| “—” (Minus) SETTING (“Adjust” Jumper at “—” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 45 | 61 | 77 | 97 | 117 | 144 | 162 | 190 | 76 | 99 | 123 | 145 | 170 | 194 | 214 | 236 | 262 | 290 |
| | Tap C | 48 | 70 | 96 | 114 | 137 | 157 | 182 | 207 | 99 | 126 | 157 | 184 | 208 | 234 | 260 | 281 | 312 | 335 |
| | Tap B | 61 | 82 | 104 | 129 | 150 | 174 | 196 | 222 | 133 | 162 | 194 | 224 | 251 | 280 | 305 | 333 | 357 | 386 |
| | Tap A | 68 | 98 | 123 | 147 | 173 | 195 | 218 | 241 | 188 | 211 | 229 | 258 | 277 | 307 | 327 | 354 | 379 | 404 |

BLOWER DATA

ML296UH090XV48CK BLOWER PERFORMANCE (less filter)

BOTTOM RETURN AIR, SINGLE SIDE RETURN AIR OR SIDE RETURN AIR WITH OPTIONAL RETURN AIR BASE

0 through 0.8 in. w.g. (Heating) and 0 through 1.0 in. w.g. (Cooling) External Static Pressure Range

| “ADJUST” Switch Positions | Speed Switch Positions | | | | | | | |
|---------------------------------|---------------------------------|---------|-----------------------|------|---------------------------------|---------|----------|-------------------|
| | Second Stage “HEAT” Speed - cfm | | | | Second Stage “COOL” Speed - cfm | | | |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| + | 1205 | 1290 | 1330 | 1555 | 1135 | 1355 | 1525 | 1765 |
| ¹ NORM | 1075 | 1155 | 1200 | 1410 | 1080 | 1270 | 1435 | 1655 |
| — | 970 | 1040 | 1085 | 1250 | 940 | 1115 | 1255 | 1460 |
| “ADJUST” Switch Positions | First Stage “HEAT” Speed - cfm | | | | First Stage “COOL” Speed - cfm | | | |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| + | 1125 | 1205 | 1245 | 1475 | 830 | 985 | 1095 | 1260 |
| ¹ NORM | 1040 | 1110 | 1135 | 1345 | 765 | 920 | 1040 | 1195 |
| — | 935 | 1000 | 1030 | 1210 | 675 | 795 | 900 | 1040 |

¹ Factory default jumper setting.

NOTES - The effect of static pressure is included in air volumes shown.

First stage HEAT is approximately **95%** of the same second stage HEAT speed position.

First stage COOL (two-stage air conditioning units only) is approximately **70%** of the same second stage COOL speed position.

Continuous Fan Only speed is approximately **38%** of the same second stage COOL speed position.

Lennox® LZSV Variable Zoning System Applications - Minimum blower speed is 380 cfm.

ML296UH090XV48CK BLOWER MOTOR WATTS (COOLING)

| Jumper Speed Positions | | Motor Watts @ Various External Static Pressures - in. wg. | | | | | | | | | | | | | | | | | |
|---|-------|---|-----|-----|-----|-----|-----|-----|-----|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | First Stage | | | | | | | | Second Stage | | | | | | | | | |
| | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| “+” (Plus) SETTING (“Adjust” Jumper at “+” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 71 | 94 | 117 | 144 | 164 | 186 | 207 | 234 | 135 | 165 | 194 | 219 | 243 | 274 | 299 | 330 | 351 | 378 |
| | Tap C | 94 | 121 | 146 | 169 | 193 | 214 | 245 | 266 | 208 | 240 | 270 | 302 | 329 | 361 | 392 | 422 | 449 | 481 |
| | Tap B | 122 | 154 | 174 | 204 | 228 | 260 | 282 | 305 | 284 | 314 | 351 | 382 | 412 | 451 | 484 | 517 | 550 | 578 |
| | Tap A | 174 | 202 | 229 | 262 | 286 | 315 | 343 | 372 | 441 | 481 | 514 | 550 | 584 | 623 | 659 | 701 | 735 | 768 |
| “NORM” (Normal) SETTING (“Adjust” Jumper at “NORM” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 67 | 86 | 105 | 125 | 145 | 169 | 186 | 211 | 130 | 154 | 178 | 199 | 225 | 250 | 273 | 297 | 324 | 345 |
| | Tap C | 87 | 110 | 131 | 153 | 176 | 197 | 221 | 241 | 187 | 213 | 242 | 265 | 290 | 314 | 346 | 371 | 404 | 430 |
| | Tap B | 114 | 140 | 163 | 182 | 209 | 229 | 257 | 281 | 248 | 273 | 301 | 330 | 358 | 380 | 412 | 451 | 473 | 507 |
| | Tap A | 156 | 183 | 208 | 232 | 254 | 278 | 304 | 332 | 368 | 397 | 428 | 459 | 491 | 519 | 552 | 582 | 611 | 652 |
| “—” (Minus) SETTING (“Adjust” Jumper at “—” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 43 | 66 | 88 | 109 | 132 | 152 | 170 | 193 | 93 | 116 | 139 | 164 | 194 | 218 | 239 | 264 | 286 | 315 |
| | Tap C | 59 | 84 | 109 | 133 | 156 | 176 | 199 | 223 | 134 | 164 | 187 | 215 | 242 | 268 | 295 | 322 | 346 | 366 |
| | Tap B | 79 | 102 | 131 | 155 | 177 | 207 | 223 | 252 | 170 | 196 | 230 | 255 | 284 | 311 | 338 | 369 | 394 | 419 |
| | Tap A | 113 | 138 | 162 | 188 | 215 | 242 | 266 | 294 | 254 | 283 | 315 | 345 | 376 | 416 | 447 | 475 | 510 | 535 |

BLOWER DATA

ML296UH110XV60CK BLOWER PERFORMANCE (less filter)

BOTTOM RETURN AIR, SINGLE SIDE RETURN AIR OR SIDE RETURN AIR WITH OPTIONAL RETURN AIR BASE

NOTE - Air volumes in **bold** (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

0 through 0.8 in. w.g. (Heating) and 0 through 1.0 in. w.g. (Cooling) External Static Pressure Range

| “ADJUST” Switch Positions | Speed Switch Positions | | | | | | | |
|---------------------------------|---------------------------------|-------------|-----------------------|-------------|---------------------------------|---------|-------------|-------------------|
| | Second Stage “HEAT” Speed - cfm | | | | Second Stage “COOL” Speed - cfm | | | |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| + | 1680 | 1805 | 1950 | 2105 | 1405 | 1620 | 1820 | 2055 |
| ¹ NORM | 1550 | 1665 | 1800 | 1950 | 1255 | 1455 | 1655 | 1860 |
| — | 1400 | 1505 | 1625 | 1750 | 1145 | 1335 | 1515 | 1700 |
| “ADJUST” Switch Positions | First Stage “HEAT” Speed - cfm | | | | First Stage “COOL” Speed - cfm | | | |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| | Low | Med-Low | ¹ Med-High | High | Low | Med-Low | Med-High | ¹ High |
| + | 1290 | 1390 | 1505 | 1615 | 1015 | 1165 | 1325 | 1485 |
| ¹ NORM | 1170 | 1270 | 1375 | 1475 | 905 | 1055 | 1200 | 1335 |
| — | 1070 | 1160 | 1250 | 1345 | 800 | 950 | 1080 | 1220 |

¹ Factory default jumper setting.

NOTES - The effect of static pressure is included in air volumes shown.

First stage HEAT is approximately **75%** of the same second stage HEAT speed position.

First stage COOL (two-stage air conditioning units only) is approximately **70%** of the same second stage COOL speed position.

Continuous Fan Only speed is approximately **38%** of the same second stage COOL speed position.

Lennox® LZSV Variable Zoning System Applications - Minimum blower speed is 460 cfm.

ML296UH110XV60CK BLOWER MOTOR WATTS (COOLING)

| Jumper Speed Positions | | Motor Watts @ Various External Static Pressures - in. wg. | | | | | | | | | | | | | | | | | |
|---|-------|---|-----|-----|-----|-----|-----|-----|-----|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | First Stage | | | | | | | | Second Stage | | | | | | | | | |
| | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| “+” (Plus) SETTING (“Adjust” Jumper at “+” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 90 | 110 | 135 | 155 | 179 | 207 | 228 | 246 | 196 | 225 | 258 | 286 | 318 | 347 | 380 | 404 | 427 | 456 |
| | Tap C | 120 | 142 | 172 | 196 | 223 | 251 | 274 | 301 | 286 | 321 | 360 | 391 | 424 | 452 | 484 | 515 | 549 | 585 |
| | Tap B | 162 | 197 | 221 | 251 | 280 | 303 | 334 | 360 | 379 | 418 | 457 | 494 | 529 | 567 | 602 | 642 | 674 | 713 |
| | Tap A | 220 | 251 | 284 | 312 | 343 | 372 | 401 | 434 | 539 | 580 | 625 | 661 | 696 | 742 | 783 | 823 | 866 | 902 |
| “NORM” (Normal) SETTING (“Adjust” Jumper at “NORM” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 72 | 94 | 117 | 141 | 160 | 184 | 207 | 231 | 147 | 177 | 207 | 231 | 261 | 289 | 310 | 342 | 366 | 399 |
| | Tap C | 98 | 126 | 147 | 172 | 196 | 223 | 244 | 267 | 210 | 244 | 276 | 306 | 334 | 362 | 395 | 422 | 453 | 486 |
| | Tap B | 134 | 160 | 187 | 211 | 237 | 261 | 289 | 313 | 296 | 334 | 369 | 405 | 434 | 474 | 506 | 538 | 568 | 600 |
| | Tap A | 176 | 200 | 232 | 258 | 287 | 317 | 345 | 370 | 411 | 457 | 488 | 531 | 565 | 597 | 638 | 672 | 705 | 748 |
| “—” (Minus) SETTING (“Adjust” Jumper at “—” Setting) | | | | | | | | | | | | | | | | | | | |
| “COOL” Speed | Tap D | 54 | 83 | 103 | 123 | 147 | 166 | 187 | 206 | 113 | 138 | 169 | 193 | 217 | 246 | 270 | 293 | 320 | 343 |
| | Tap C | 79 | 103 | 127 | 149 | 175 | 193 | 215 | 239 | 166 | 198 | 228 | 251 | 280 | 310 | 340 | 364 | 396 | 419 |
| | Tap B | 105 | 136 | 159 | 184 | 207 | 230 | 256 | 278 | 231 | 266 | 294 | 325 | 359 | 392 | 419 | 447 | 480 | 514 |
| | Tap A | 129 | 154 | 185 | 211 | 237 | 263 | 290 | 312 | 316 | 349 | 386 | 423 | 453 | 490 | 519 | 552 | 583 | 614 |

REVISIONS

| Sections | Description of Change |
|-------------|---------------------------------|
| Blower Data | Updated speed tap descriptions. |



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