

ML297DFV(K)**MERIT® SERIES**

Downflow | Two-Stage Heating | Variable Speed Blower | Refrigerant Detection | 60Hz

RESIDENTIAL**PRODUCT SPECIFICATIONS (EHB)****AFUE - 97%****Input - 66,000 to 110,000 Btuh****Nominal Add-on Cooling - 4 to 5 Tons****MERIT®
SERIES****MODEL NUMBER IDENTIFICATION****ML 2 97 DF 070 X V 48 B K**

Unit Type
ML = Merit® Series

Stages
2 = Two-Stage

AFUE
97 = 97%

Configuration
DF = Downflow

Nominal Gas Heat Input
070 = 66,000 Btuh
090 = 88,000 Btuh
110 = 110,000 Btuh

Refrigerant Detection
K = Refrigerant Detection-Ready

¹ Cabinet Width
B = 17-1/2 in.
C = 21 in.

Nominal Add-On Cooling Capacity
48 = 2.5 - 4 tons
60 = 3 - 5 tons

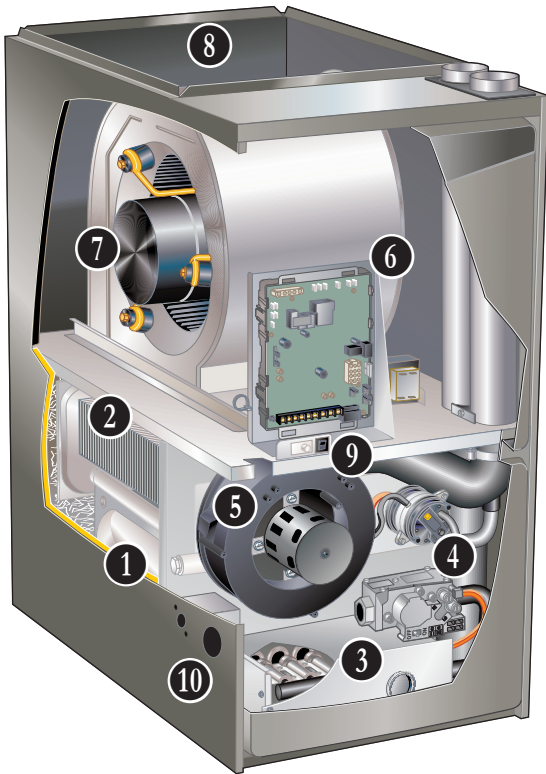
Blower
V = Variable Speed Blower Motor

Low NOX
X = Units meet California Nitrogen Oxides Standard (40ng/J)

¹ Downflow indoor coils with the same letter designation will physically match the furnace **supply air opening**.

FEATURE HIGHLIGHTS

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



NOTE - ML297DFV(K) FURNACES CANNOT BE TWINNED!

CONTENTS

Approvals And Warranty 3

Control Options 9

Dimensions 16

 - Furnace/Coil Combined Dimensions 18

 - Optional Accessories 17

 - Optional Accessories - Venting. 19

 - Unit 16

Features 3

Gas Heat Accessories 15

High Altitude Derate 15

Indoor Air Quality Product Options 9

Installation Clearances 11

Model Number Identification. 1

Optional Accessories 12

Specifications 11

Vent Lengths 14

 Vent Lengths - Exhaust Using Ventilated Attic/Crawlspace Intake Air. 15

 Vent Lengths - Uninsulated Exhaust Pipe In Unconditioned Space 13

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 66,000, 88,000 and 110,000 Btuh
- Energy efficiency (AFUE) - 97%
- Compact cabinet for downflow applications without any internal modifications
- Lennox add-on indoor coils, high-efficiency air cleaners and humidifiers can easily be added to furnace
- Variable speed blower is ideal for zoning applications
- Shipped factory assembled with 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 heat exchanger
 - 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 of complete heat exchanger assembly permits low overall design of furnace cabinet
 - Heat exchanger assembly has been 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
- The 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 unit for field installation

Lennox Designed Flue Condensate Trap Assembly

- Condensate trap assembly is mounted outside the conditioned air stream
- Assembly can be mounted on either side of cabinet. See 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 is removable from the unit as a single component for ease of service

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

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

5 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

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

ML297DFV(K) | Page 4

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 input model.

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

Right-Side Gas Entry Kit

- Converts furnace to right-side gas supply entry when left-side gas entry is restricted or not convenient

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
- The polypropylene venting system must follow the uninsulated and unconditioned space vent lengths listed in the table on Page 13
- 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

FEATURES

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

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 -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

Left Side Vent Kit

- Allows venting out the left side of the cabinet
- Kit contains left vent tube and seal plate

CONTROLS

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

- 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
- When used with a two-stage thermostat, furnace will only initiate second stage operation with a second stage thermostat demand

FEATURES

CONTROLS (continued)

- **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 9

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

7 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 cabinet 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
- 8 • 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
- 9 • Safety interlock switch automatically shuts off power to unit when blower compartment access door is removed
- 10 • Gas piping and electrical inlets are provided in both sides of cabinet

Coil Match-Up

- All Lennox downflow indoor coils will physically match the furnace supply air opening with the same letter designation (A, B, C, D) as in the furnace model number

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"

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

Crawl Space Vent Drain Kit

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

Downflow Combustible Flooring Base

- Required for heating only units installed on combustible floors
- Not required in add-on cooling applications
- See Dimension Drawing

FILTER (not furnished)

- Filter and provisions for external mounting must be field provided

Optional Accessories

Downflow Filter Cabinet

- Filter cabinet mounts directly on top of furnace
- "B and "C" width cabinets have two filters
- Filter rails are furnished
- Front access for servicing
- Cleanable filter(s) are furnished

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

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



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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® S Air Purification System			
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
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			
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
Thermostat Accessories			
¹ Discharge Air Temperature Sensor (For E40)			88K38
² Remote Outdoor Air Temperature Sensor (For dual-fuel and Humiditrol®)			X2658

¹ Optional for service diagnostics (E40).

² Remote Outdoor Temperature Sensor (X2658) is only available with E40 thermostat.

Sensor is used when not connected to the internet to display outdoor temperature. Weather information is provided by a weather service when connected to the internet.

Sensor is required in dual-fuel applications when the E40 is not connected to the internet to control changeover.

Sensor is required with Enhanced Dehumidification Accessory (EDA) applications.

SPECIFICATIONS

Gas Heating Performance	Model	ML297DF070XV48BK	ML297DF090XV60CK	ML297DF110XV60CK
	¹ AFUE	97%	97%	97%
High Fire	Input - Btuh	66,000	88,000	110,000
	Output - Btuh	64,000	86,000	108,000
	Temperature rise range - °F	35 - 65	40 - 70	45 - 75
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	3.5 / 10.0	3.5 / 10.0	3.5 / 10.0
Low Fire	Input - Btuh	43,000	57,000	72,000
	Output - Btuh	42,000	56,000	70,000
	Temperature rise range - °F	25 - 55	30 - 60	35 - 65
	Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane	1.7 / 4.5	1.7 / 4.5	1.7 / 4.5
High static - in. w.g.	Heating	0.8	0.8	0.8
	Cooling	1.0	1.0	1.0
Connections	Intake / Exhaust Pipe (PVC)	2 / 2	2 / 2	2 / 2
	Gas pipe size IPS	1/2	1/2	1/2
	Condensate Drain Trap (PVC pipe) - i.d.	3/4	3/4	3/4
	with furnished 90° street elbow	3/4 slip x 3/4 MIPT	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	3/4 slip x 3/4 MPT
Indoor Blower	Wheel diameter x width - in.	11.5 x 10	11 x 11	11 x 11
	Motor output - hp	3/4	1.0	1.0
	Tons of add-on cooling	4	5	5
	Air Volume Range - cfm	575 - 1800	750 - 1980	735 - 2010
Electrical Data	Voltage	120 volts - 60 hertz - 1 phase		
	Blower motor full load amps	10.1	12.8	12.8
	Maximum overcurrent protection	15	20	20
Shipping Data	lbs. - 1 package	136	152	163

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.

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 Clearance for installation on combustible floor if Optional Downflow Combustible Flooring Base is installed between furnace and combustible floor. Not required in add-on cooling applications if installed in accordance with local codes or National Fuel Gas Code ANSI-Z223.1 or CAN/CSA-149.1,.2. Do not install the furnace directly on carpeting, tile, or other combustible materials other than wood flooring.

OPTIONAL ACCESSORIES

NOTE - FURNACES CANNOT BE TWINNED!

		“B” Width Models	“C” Width Models	
CABINET ACCESSORIES				
Downflow Combustible Flooring Base		11M60	11M61	
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	
FILTERS				
¹ Downflow Filter Cabinet		51W07	51W08	
	No. and Size of filter - in.	(2) 16 x 20 x 1	(2) 16 x 20 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
		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	
² Left Side Vent Kit	2 or 3 in.	87W73	87W73	

¹ Cleanable polyurethane, frame-type filter.

² NOTE - The curved exhaust pipe furnished with the Left Side Vent Kit counts as one additional 2 in. diameter 90° elbow. When using 3 in. diameter pipe, the furnished curved exhaust pipe and field provided fittings to transition from 2 in. to 3 in. count as 20 feet of equivalent pipe on all units.

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.

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
			⁵ 51W11 (US) ⁵ 51W12 (CA)	⁵ 22G44 (US) ⁵ 30G28 (CA)	⁵ 44J40 (US) ⁵ 81J20 (CA)	⁵ 71M80 (US) ⁵ 44W92 (CA)	⁵ 69M29 (US) ⁵ 44W92 (CA)	⁵ 60L46 (US) ⁵ 44W93 (CA)
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 inch to 1-1/2 inch 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 070 input models. Accelerator is not used with 090, 110 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 070 and 090 input models. Accelerator is not used with 110 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						
		070		090		110	
		PVC	³ PolyPro/ InnoFlue/ ECCO	PVC	³ PolyPro/ InnoFlue/ ECCO	PVC	³ PolyPro/ InnoFlue/ ECCO
32 to 21°F	1-1/2 in.	20	N/A	N/A	N/A	N/A	N/A
	2 in.	33	30	46	42	30	30
	2-1/2 in.	26	N/A	37	N/A	36	N/A
	3 in.	21	21	30	30	29	29
20 to 1°F	1-1/2 in.	20	N/A	N/A	N/A	N/A	N/A
	2 in.	19	17	28	25	27	24
	2-1/2 in.	14	N/A	21	N/A	20	N/A
	3 in.	9	9	16	16	14	14
0 to -20°F	1-1/2 in.	13	N/A	N/A	N/A	N/A	N/A
	2 in.	12	10	19	16	18	15
	2-1/2 in.	7	N/A	13	N/A	12	N/A
	3 in.	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

STANDARD TERMINATION AT ELEVATION 0 - 4500 ft.

Pipe Size		1-1/2 in.			2 in.			2-1/2 in.			3 in.		
Input		070	090	110	070	090	110	070	090	110	070	090	110
No. of 90 ELL	1	15	N/A	N/A	51	29	9	100	78	43	122	103	103
	2	10	N/A	N/A	46	24	N/A	95	73	38	117	98	98
	3	N/A	N/A	N/A	41	19	N/A	90	68	33	112	93	93
	4	N/A	N/A	N/A	36	14	N/A	85	63	28	107	88	88
	5	N/A	N/A	N/A	31	9	N/A	80	58	23	102	83	83
	6	N/A	N/A	N/A	26	N/A	N/A	75	53	18	97	78	78
	7	N/A	N/A	N/A	21	N/A	N/A	70	48	13	92	73	73
	8	N/A	N/A	N/A	16	N/A	N/A	65	43	8	87	68	68
	9	N/A	N/A	N/A	11	N/A	N/A	60	38	N/A	82	63	63
	10	N/A	N/A	N/A	6	N/A	N/A	55	33	N/A	77	58	58

STANDARD TERMINATION ELEVATION 4501 - 10,000 ft.

Pipe Size		1-1/2 in.			2 in.			2-1/2 in.			3 in.		
Input		070	090	110	070	090	110	070	090	110	070	090	110
No. of 90 ELL	1	15	N/A	N/A	51	29	N/A	100	78	43	122	103	103
	2	10	N/A	N/A	46	24	N/A	95	73	38	117	98	98
	3	N/A	N/A	N/A	41	19	N/A	90	68	33	112	93	93
	4	N/A	N/A	N/A	36	14	N/A	85	63	28	107	88	88
	5	N/A	N/A	N/A	31	9	N/A	80	58	23	102	83	83
	6	N/A	N/A	N/A	26	N/A	N/A	75	53	18	97	78	78
	7	N/A	N/A	N/A	21	N/A	N/A	70	48	13	92	73	73
	8	N/A	N/A	N/A	16	N/A	N/A	65	43	8	87	68	68
	9	N/A	N/A	N/A	11	N/A	N/A	60	38	N/A	82	63	63
	10	N/A	N/A	N/A	N/A	N/A	N/A	55	33	N/A	77	58	58

CONCENTRIC TERMINATION AT ELEVATION 0 - 4500 ft.

Pipe Size		1-1/2 in.			2 in.			2-1/2 in.			3 in.		
Input		070	090	110	070	090	110	070	090	110	070	090	110
No. of 90 ELL	1	N/A	N/A	N/A	43	27	7	90	74	39	106	99	99
	2	N/A	N/A	N/A	38	22	N/A	85	69	34	101	94	94
	3	N/A	N/A	N/A	33	17	N/A	80	64	29	96	89	89
	4	N/A	N/A	N/A	28	12	N/A	75	59	24	91	84	84
	5	N/A	N/A	N/A	23	7	N/A	70	54	19	86	79	79
	6	N/A	N/A	N/A	18	N/A	N/A	65	49	14	81	74	74
	7	N/A	N/A	N/A	13	N/A	N/A	60	44	9	76	69	69
	8	N/A	N/A	N/A	N/A	N/A	N/A	55	39	N/A	71	64	64
	9	N/A	N/A	N/A	N/A	N/A	N/A	50	34	N/A	66	59	59
	10	N/A	N/A	N/A	N/A	N/A	N/A	45	29	N/A	61	54	54

CONCENTRIC TERMINATION ELEVATION 4501 - 10,000 ft.

Pipe Size		1-1/2 in.			2 in.			2-1/2 in.			3 in.		
Input		070	090	110	070	090	110	070	090	110	070	090	110
No. of 90 ELL	1	N/A	N/A	N/A	43	27	N/A	90	74	39	106	99	99
	2	N/A	N/A	N/A	38	22	N/A	85	69	34	101	94	94
	3	N/A	N/A	N/A	33	17	N/A	80	64	29	96	89	89
	4	N/A	N/A	N/A	28	12	N/A	75	59	24	91	84	84
	5	N/A	N/A	N/A	23	7	N/A	70	54	19	86	79	79
	6	N/A	N/A	N/A	18	N/A	N/A	65	49	14	81	74	74
	7	N/A	N/A	N/A	13	N/A	N/A	60	44	9	76	69	69
	8	N/A	N/A	N/A	N/A	N/A	N/A	55	39	N/A	71	64	64
	9	N/A	N/A	N/A	N/A	N/A	N/A	50	34	N/A	66	59	59
	10	N/A	N/A	N/A	N/A	N/A	N/A	45	29	N/A	61	54	54

VENT LENGTHS - EXHAUST USING VENTILATED ATTIC/CRAWLSPACE INTAKE AIR

STANDARD TERMINATION AT ELEVATION 0 - 10,000 ft.

Pipe Size	Input	1-1/2 in.			2 in.			2-1/2 in.			3 in.		
		070	090	110	070	090	110	070	090	110	070	090	110
No. of 90 ELL	1	N/A	N/A	N/A	41	24	N/A	85	63	28	102	83	83
	2	N/A	N/A	N/A	36	19	N/A	80	58	23	97	78	78
	3	N/A	N/A	N/A	31	14	N/A	75	53	18	92	73	73
	4	N/A	N/A	N/A	26	9	N/A	70	48	13	87	68	68
	5	N/A	N/A	N/A	21	4	N/A	65	43	8	82	63	63
	6	N/A	N/A	N/A	16	N/A	N/A	60	38	3	77	58	58
	7	N/A	N/A	N/A	11	N/A	N/A	55	33	N/A	72	53	53
	8	N/A	N/A	N/A	6	N/A	N/A	50	28	N/A	67	48	48
	9	N/A	N/A	N/A	1	N/A	N/A	45	23	N/A	62	43	43
	10	N/A	N/A	N/A	N/A	N/A	N/A	40	18	N/A	57	38	38

GAS HEAT ACCESSORIES - ORDER SEPARATELY

Description	Altitude	Input		
		070	090	110
High Altitude Pressure Switch Kit	4501 - 7500 ft.	32C78	14A54	32L29
	7501 - 10,000 ft.	14A54	32C81	32L30
Natural Gas to LPG/Propane Kit	0 - 7500 ft.	11K51	11K51	11K51
LPG/Propane to Natural Gas Kit	0 - 7500 ft.	77W09	77W09	77W09
LPG/Propane High Altitude Orifice Kit	7501 - 10,000 ft.	11K46	11K46	11K46
Natural Gas High Altitude Orifice Kit	7501 - 10,000 ft.	73W37	73W37	73W37
Muffler (US Only)	- - -	15Y66 (2-inch)	15Y66 (2-inch)	15Y66 (2-inch)
Right-Side Gas Entry Kit	- - -	27U29	27U29	27U29

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.

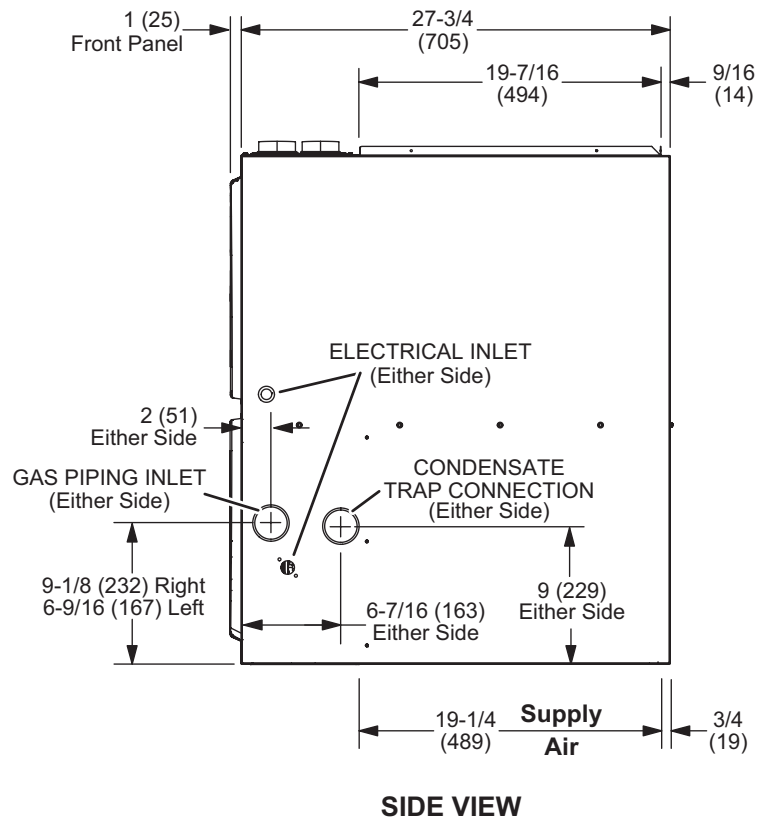
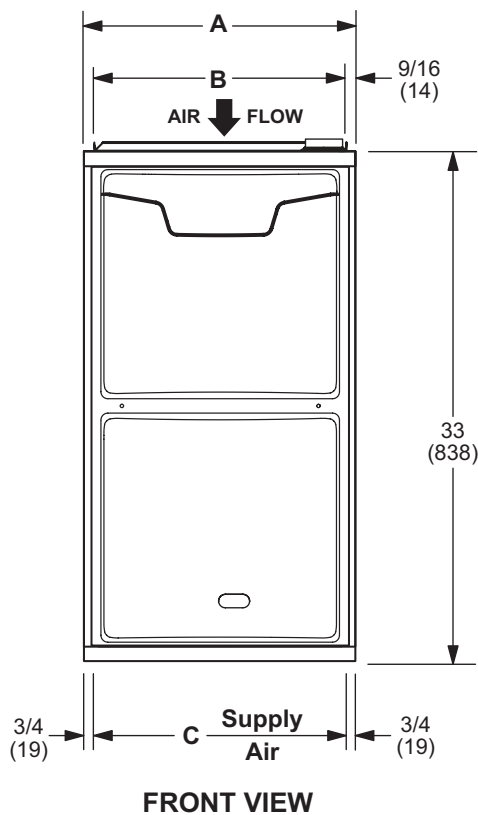
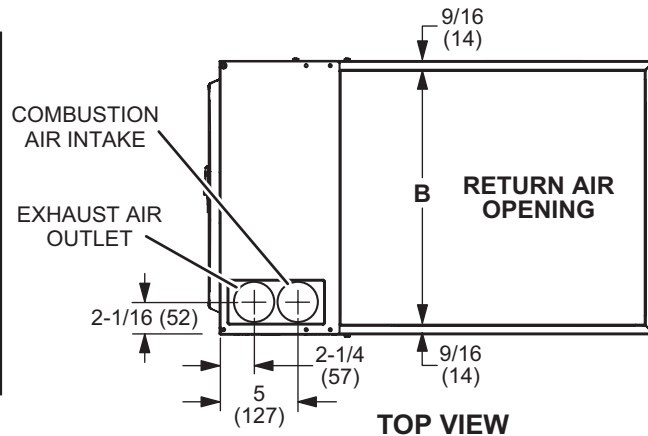
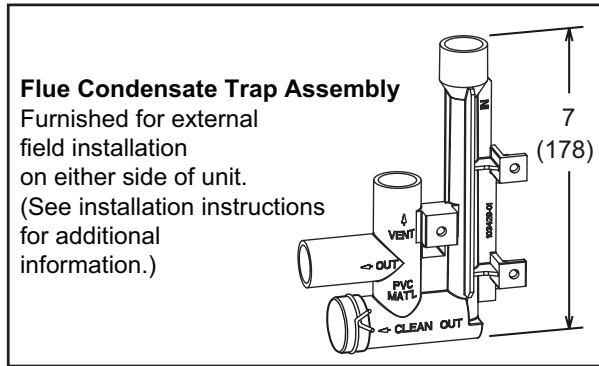
Units installed at altitudes of 7501 to 10,000 ft. require an orifice change.

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.

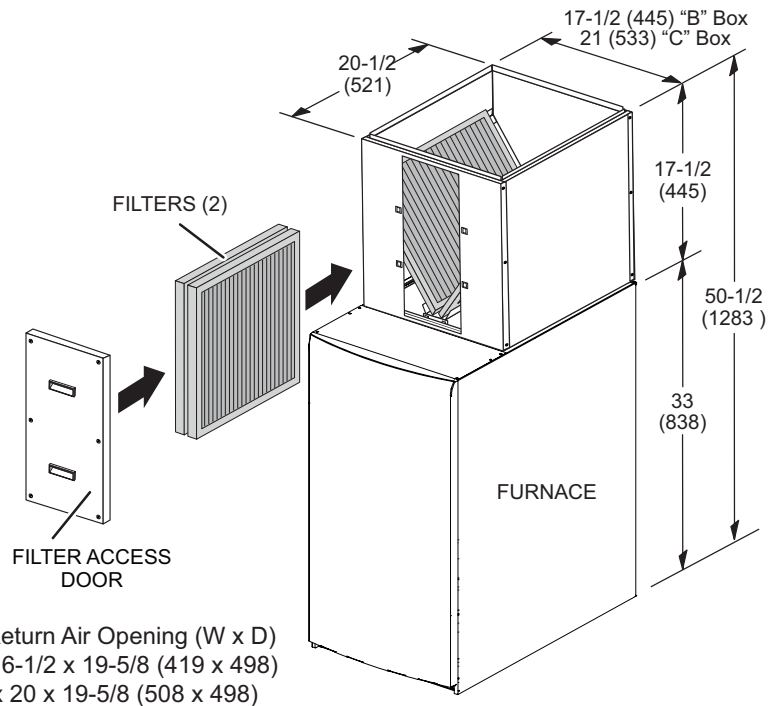
Input	Gas	Manifold Pressure in. w.g.										Supply Line Pressure in. w.g. 0 - 10,000 ft.	
		0 - 4500 ft.		4501 - 5500 ft.		5501 - 6500 ft.		6501 - 7500 ft.		7501 - 10,000 ft.			
		Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire	Min.	Max.
All Sizes	Natural	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



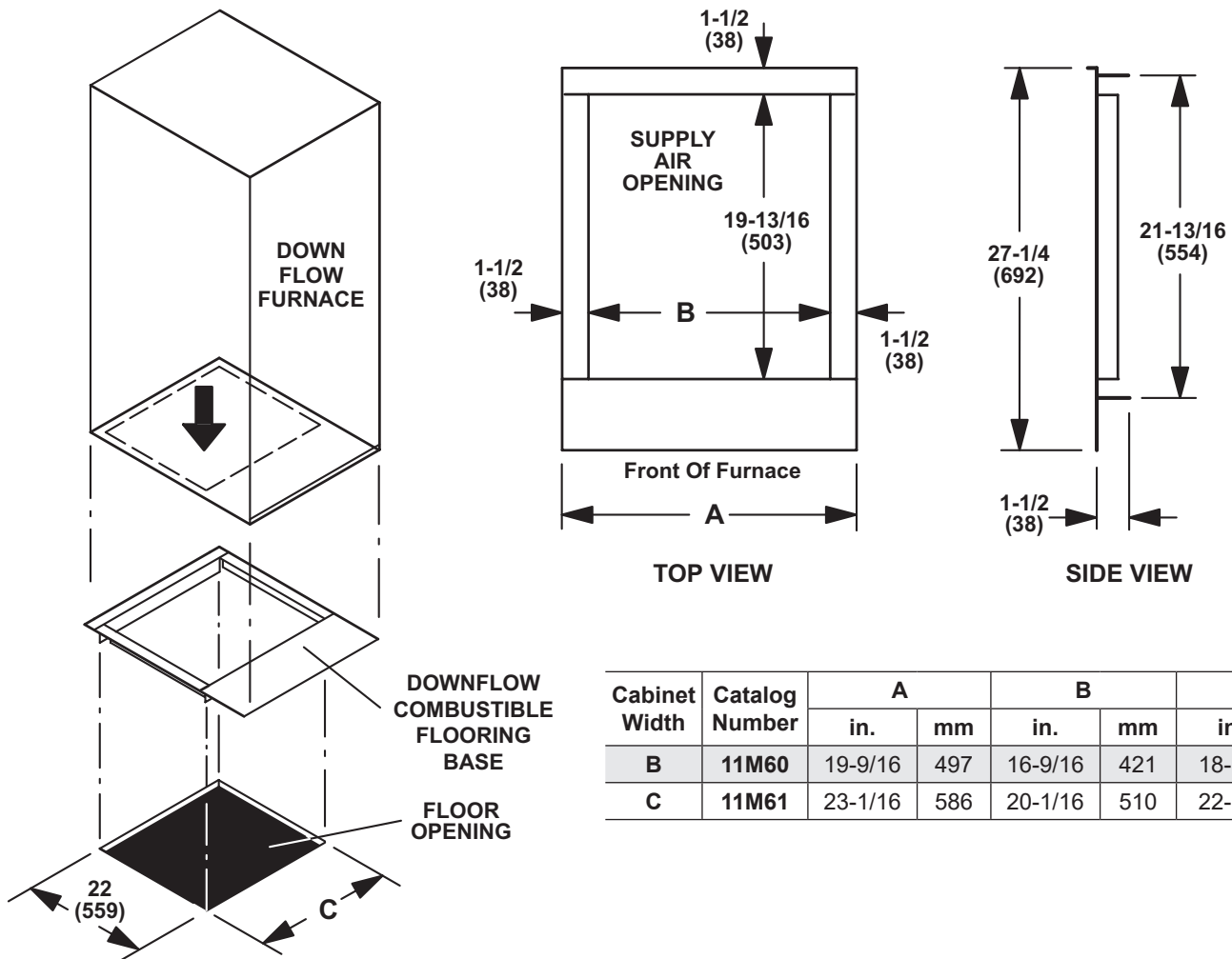
Model	A		B		C	
	in.	mm	in.	mm	in.	mm
ML297DF070XV48BK	17-1/2	446	16-3/8	416	16	406
ML297DF090XV60CK ML297DF110XV60CK	21	533	19-7/8	505	19-1/2	495

DOWNFLOW FILTER CABINET

**"B AND "C" WIDTH FURNACES
(Two Filters)**



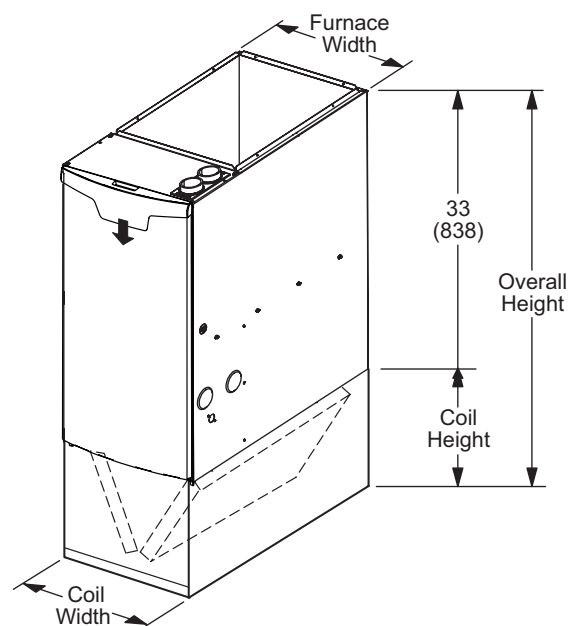
DOWNFLOW COMBUSTIBLE FLOORING BASE



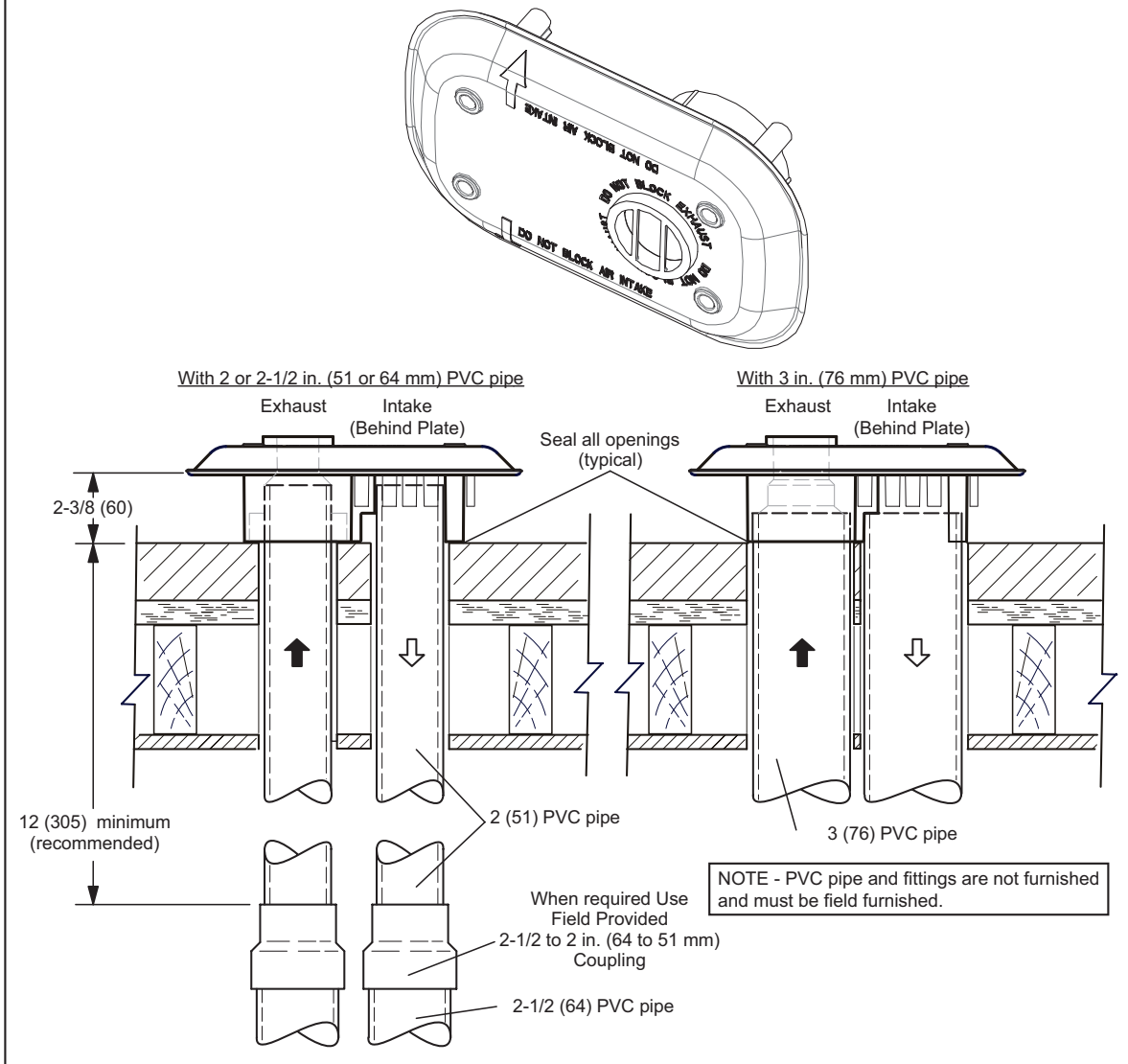
DIMENSIONS

FURNACE/COIL COMBINED DIMENSIONS

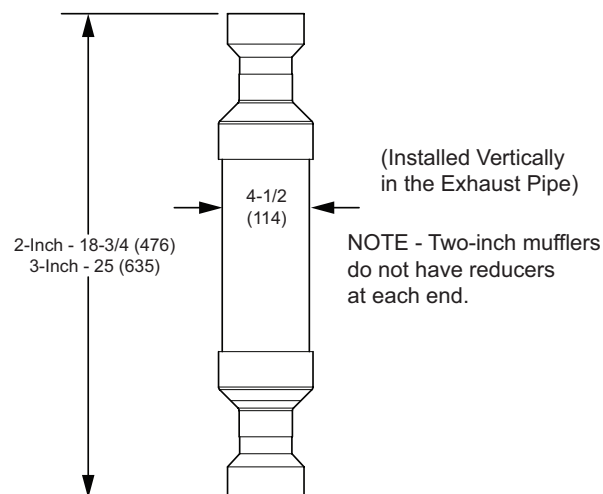
Model	Coil/Furnace Width		Coil Height		Overall Height	
	in.	mm	in.	mm	in.	mm
CK40DT						
CK40DT-24B	17-1/2	445	18	457	51	1295
CK40DT-30/36B	17-1/2	445	23-1/2	597	56-1/2	1435
CK40DT-30/36C	21	533	23-1/2	597	56-1/2	1435
CK40DT-42B	17-1/2	445	23-1/2	597	56-1/2	1435
CK40DT-48C	21	533	27-1/2	699	60-1/2	1537
CK40CT-50/60C	21	533	27-1/2	699	60-1/2	1537



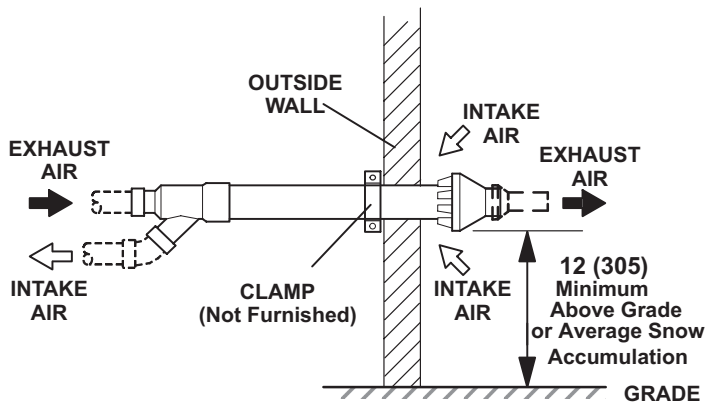
FLUSH-MOUNT VENT TERMINATION KIT 51W11 (US) or 51W12 (CANADA)



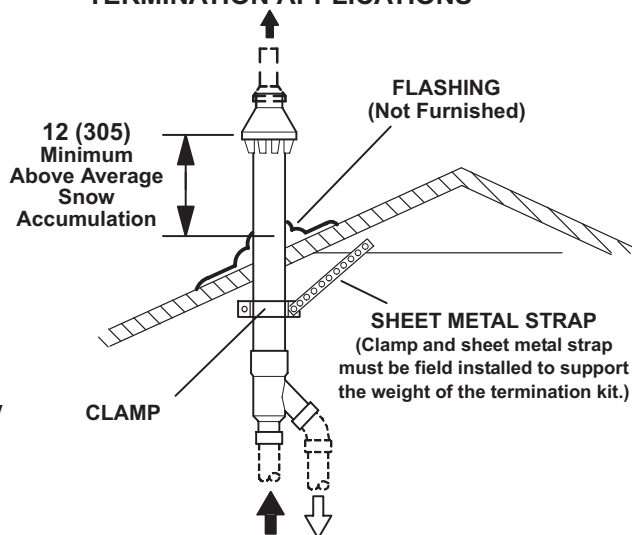
MUFFLERS
15Y66 - 2-inch
16A56 - 3-inch



**CONCENTRIC WALL
TERMINATION APPLICATIONS**



**CONCENTRIC ROOF
TERMINATION APPLICATIONS**

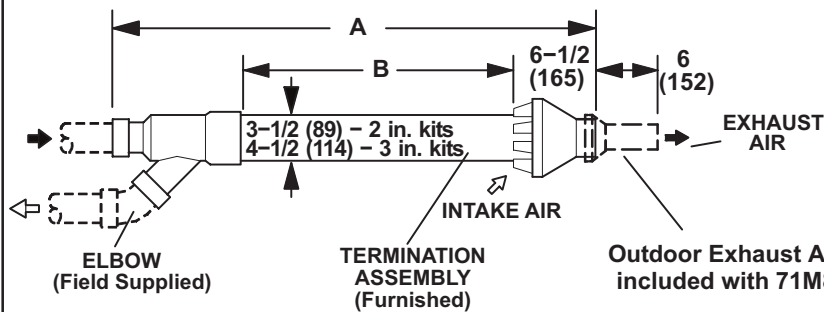


71M80 / 69M29 / 44W92 – 2 inch kits

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

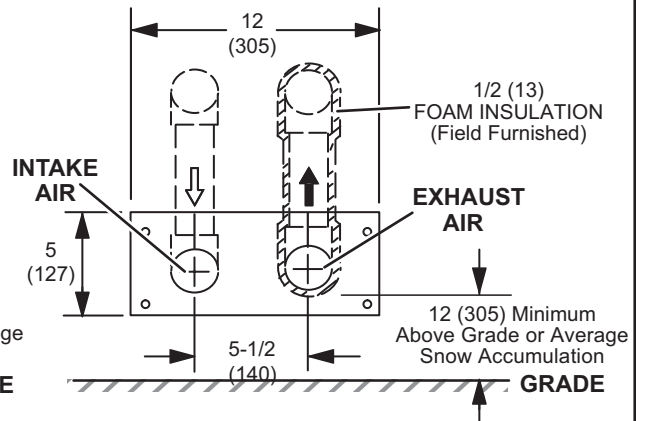
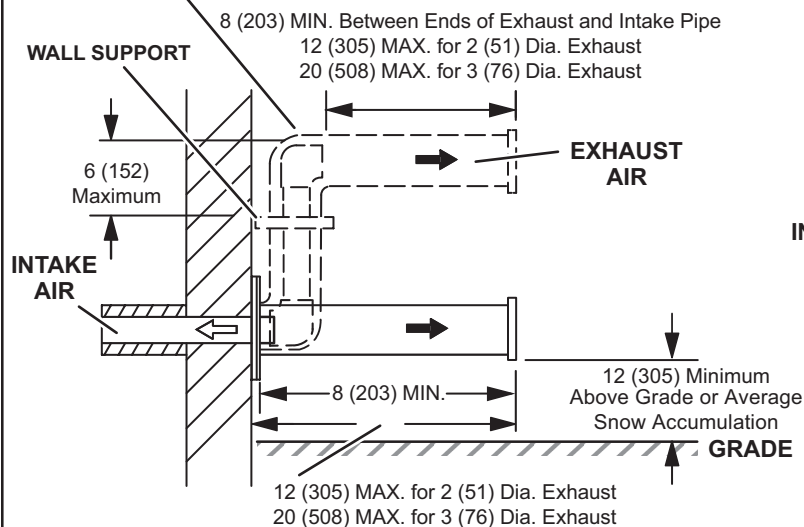
NOTE – Typical illustration for dimensions only. Design may vary depending on kit ordered.

**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.

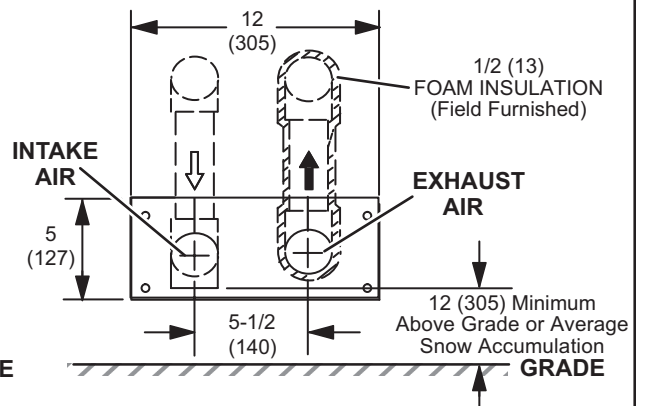
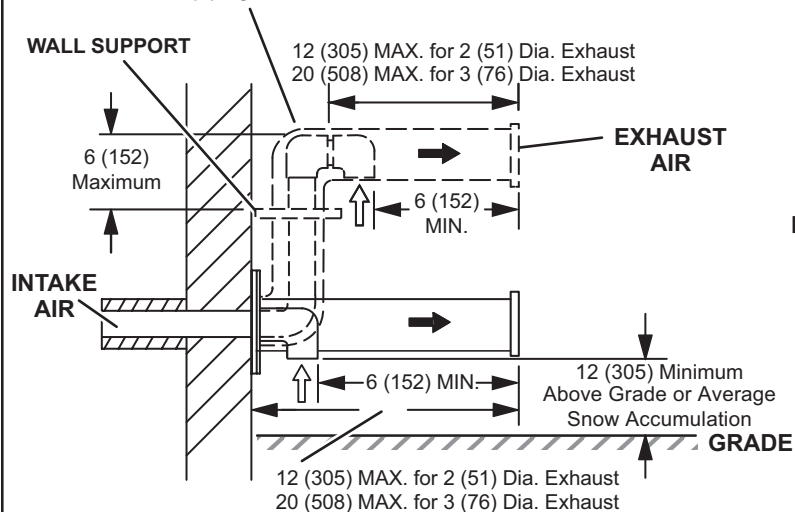


**WALL TERMINATION KITS (CLOSE-COUPLE)
EXTENDED VENT FOR GRADE CLEARANCE
2 inch (51 mm) 30G28 (WTK Canada)
3 inch (76 mm) 81J20 (WTK Canada)**

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

ML297DF070XV48BK BLOWER PERFORMANCE (less filter)

BOTTOM 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
+	1110	1305	1430	1700	1110	1340	1575	1800
¹ NORM	995	1175	1315	1520	995	1230	1420	1650
—	880	1055	1170	1365	880	1085	1290	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
+	860	1020	1140	1340	740	915	1055	1255
¹ NORM	795	910	1030	1230	660	820	940	1120
—	680	825	910	1085	575	735	850	995

¹ Factory default jumper setting.

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

First stage HEAT is approximately **73%** 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.

ML297DF070XV48BK 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	Low	88	109	132	154	178	199	213	238	169	208	244	270	310	343	378	401	432	457
	Med-Low	120	147	172	198	220	254	274	304	276	326	370	398	437	470	492	531	558	598
	Med-High	152	180	220	254	281	318	344	380	428	472	526	574	611	659	706	745	788	820
	High	237	284	324	352	390	424	456	474	604	663	721	775	825	869	908	915	881	864
“NORM” (Normal) SETTING (“Adjust” Jumper at “NORM” Setting)																			
“COOL” Speed	Low	54	74	92	109	129	147	163	191	137	162	189	219	254	278	312	341	369	400
	Med-Low	100	115	140	165	190	210	230	255	203	250	297	327	374	399	432	454	486	513
	Med-High	129	159	179	209	236	270	293	329	340	376	418	450	495	533	567	613	637	674
	High	184	232	264	285	335	365	406	419	469	537	589	634	669	724	770	818	833	840
“—” (Minus) SETTING (“Adjust” Jumper at “—” Setting)																			
“COOL” Speed	Tap D	49	63	73	98	116	135	155	168	111	135	162	186	206	236	257	283	306	339
	Tap C	87	109	132	154	177	199	212	238	156	187	226	258	288	325	353	385	409	441
	Tap B	105	127	153	176	196	223	243	269	244	290	335	364	402	435	465	485	516	556
	Tap A	141	164	195	224	263	282	321	347	375	403	444	481	526	570	612	656	680	718

BLOWER DATA

ML297DF090XV60CK BLOWER PERFORMANCE (less filter)

BOTTOM RETURN AIR, RETURN AIR FROM BOTH SIDES OR RETURN AIR FROM BOTTOM AND ONE SIDE

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
+	1395	1555	1695	1825	1335	1600	1750	1980
¹ NORM	1275	1395	1585	1670	1225	1450	1630	1830
—	1145	1265	1405	1525	1120	1270	1450	1660
“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
+	1130	1230	1365	1475	955	1115	1265	1450
¹ NORM	1040	1130	1250	1340	855	1005	1150	1285
—	910	1025	1130	1210	750	890	1060	1170

¹ Factory default jumper setting.

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

First stage HEAT is approximately **80%** 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.

ML297DF090XV60CK 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	Low	79	107	131	163	189	219	242	268	180	209	264	290	335	375	416	454	491	531
	Med-Low	108	144	162	207	242	262	293	323	299	366	399	449	483	532	584	605	644	680
	Med-High	156	187	233	261	279	329	368	401	409	471	521	562	606	650	688	716	762	800
	High	218	270	307	360	390	431	489	517	609	660	712	763	816	878	909	944	976	979
“NORM” (Normal) SETTING (“Adjust” Jumper at “NORM” Setting)																			
“COOL” Speed	Low	64	98	114	147	168	191	207	239	144	180	215	246	285	317	350	386	420	477
	Med-Low	86	111	140	170	200	232	259	282	219	270	308	361	390	431	489	517	555	590
	Med-High	118	152	195	223	254	283	306	344	304	365	420	450	510	544	592	640	665	698
	High	161	188	240	267	308	349	386	415	489	541	594	634	681	707	764	798	840	870
“—” (Minus) SETTING (“Adjust” Jumper at “—” Setting)																			
“COOL” Speed	Low	48	90	97	132	146	164	171	210	109	146	167	210	243	265	295	326	359	390
	Med-Low	69	101	120	152	175	201	218	249	155	181	232	259	299	340	376	402	438	476
	Med-High	94	123	150	185	220	250	278	296	205	267	304	353	390	430	486	515	563	587
	High	126	159	202	231	259	292	318	356	337	405	453	483	543	582	613	658	692	734

BLOWER DATA

ML297DF110XV60CK BLOWER PERFORMANCE (less filter)

BOTTOM 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
+	1595	1795	1955	2010	1335	1585	1790	2010
¹ NORM	1450	1615	1795	1865	1220	1440	1630	1865
—	1290	1460	1610	1680	1100	1275	1475	1680
“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
+	1165	1305	1465	1547	920	1095	1265	1440
¹ NORM	1055	1185	1315	1404	830	965	1130	1290
—	930	1070	1180	1272	735	860	1035	1155

¹ Factory default jumper setting.

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

First stage HEAT is approximately **73%** 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.

ML297DF110XV60CK 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	Low	80	110	129	157	184	217	241	267	186	222	261	290	339	373	411	453	491	526
	Med-Low	113	147	166	202	240	271	302	337	280	333	374	429	469	511	548	594	619	677
	Med-High	159	198	225	256	301	325	365	390	427	496	531	587	632	665	721	742	781	805
	High	215	246	292	333	381	407	468	499	635	697	740	797	832	888	932	970	999	1016
“NORM” (Normal) SETTING (“Adjust” Jumper at “NORM” Setting)																			
“COOL” Speed	Low	61	94	108	139	159	186	202	234	137	178	207	244	280	312	350	383	418	475
	Med-Low	88	117	140	165	196	232	259	283	214	244	291	331	380	405	467	497	539	583
	Med-High	112	147	172	209	250	283	317	345	321	348	418	447	505	546	597	632	668	716
	High	170	206	239	269	313	344	382	426	507	562	590	646	686	725	765	799	840	880
“—” (Minus) SETTING (“Adjust” Jumper at “—” Setting)																			
“COOL” Speed	Tap D	42	79	86	120	134	155	164	200	112	147	166	202	240	271	302	337	368	401
	Tap C	67	99	115	144	167	197	215	245	165	201	232	262	305	334	373	417	451	479
	Tap B	97	123	153	186	216	247	275	303	219	272	308	360	391	432	479	514	559	588
	Tap A	118	158	183	219	260	292	327	354	355	408	446	506	545	585	634	657	706	738

REVISIONS

Sections	Description of Change
Optional Accessories	Added Right Side Gas Entry Kit



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