

ML193UHE(K)**MERIT® SERIES**

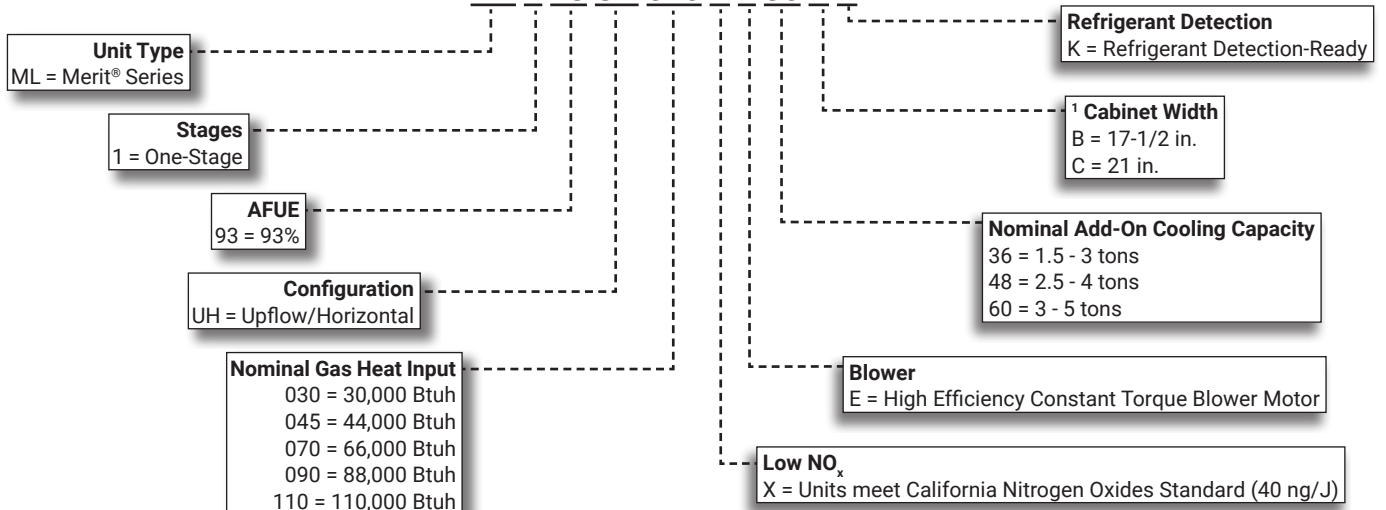
Upflow / Horizontal | Constant Torque Blower | Refrigerant Detection | 60Hz

RESIDENTIAL**PRODUCT SPECIFICATIONS (EHB)****AFUE - 93%****Input - 30,000 to 110,000 Btuh****Nominal Add-on Cooling - 3 to 5 Tons****MERIT®
SERIES****QUALIFIED ONLY IN**

U.S. SOUTH: AL, AZ, AR, CA, DC, DE, FL, GA, HI, KY, LA, MD, MS, NV, NM, NC, OK, SC, TN, TX, VA



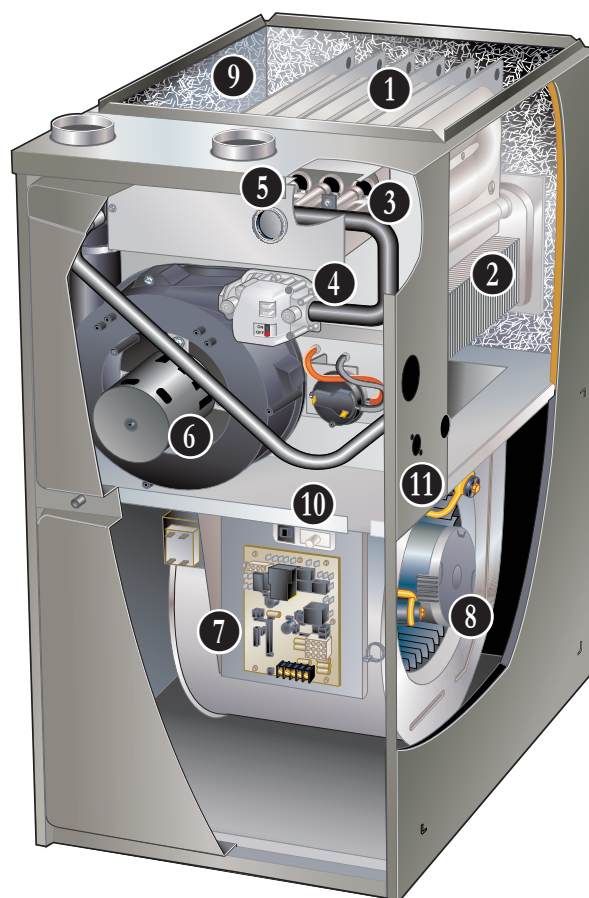
■ QUALIFIED

MODEL NUMBER IDENTIFICATION**ML 1 93 UH 070 X E 36 B K**

¹ Indoor coils with the same letter designation will physically match the furnace.

FEATURE HIGHLIGHTS

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



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APPROVALS AND WARRANTY

APPROVALS

- AHRI Certified
- Tested and rated according to US DOE test procedures and FTC labeling regulations
- ENERGY STAR® units are certified only in the U.S. South in certain states and 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 year 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 30,000, 44,000, 66,000, 88,000 and 110,000 Btuh
- Energy efficiency (AFUE) - 93%
- Compact cabinet for upflow, horizontal-left or horizontal-right applications without any modifications
- 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
- Factory test operated to ensure proper operation.

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

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

FEATURES

HEATING SYSTEM (continued)

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
- Can also 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 or PVC coupling
- 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

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 Gas Control Valve

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

5 Flame Rollout Switches (2)

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

Limit Control

- Primary limit is accurately located on header box on all units
- Automatic reset

6 Combustion Air Inducer

- Shaded pole heavy duty blower prepurges heat exchanger and safely vents flue products
- Operates only during heating cycle

Pressure Switch

- Proves Combustion Air Inducer operation before allowing gas valve to open

Optional Accessories

High Altitude Orifice Kits

- Required on all units for proper 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 030 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.

- 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® and Centrotherm InnoFlue® 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.

- The polypropylene venting system must follow the uninsulated and unconditioned space vent lengths listed in the table on Page 12
- Refer to the Installation Instructions for additional details

FEATURES

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

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

Vent 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
- See Optional Accessories table and dimension drawings

Concentric Termination Kit - Direct Vent Applications

- 2 or 3 inch kit contains concentric termination assembly, reducer bushing and 45° elbow
- 2 inch kit for -030-045-070 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 Termination Kit

- 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 Termination Kits

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
- Seals and isolates intake and exhaust piping penetration of 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

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

7 SureLight® Integrated Furnace Control

- Contains all necessary controls and relays to operate furnace
- Combustion air inducer is operated by the integrated furnace control. Prior to ignition, a pre-purge cycle for 15 seconds is initiated
- After the main burners are turned off, a post-purge cycle for 5 seconds is run
- Flame sensor assures safe and reliable operation
- Should loss of flame occur, the integrated furnace control will initiate 4 re-attempts at ignition before locking out unit operation for 60 minutes
- Watchguard type circuit automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance calls for service
- Display LED - Seven segment LED displays 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
- Fan control consists of adjustable blower timed-off delay (60, 90, 120, 180 seconds - factory setting 90 seconds) and fixed blower timed-on delay (30 seconds heating, 2 seconds cooling)
- For air-conditioning applications, blower is automatically energized on thermostat demand for cooling
- Two accessory terminals furnished for additional power supply requirements for 120 volt (less than 1 amp) power humidifiers and powered air cleaners
- One additional terminal is furnished for power supply requirements for 24V (less than 0.5 amp) low voltage accessories
- Ignition control has a single red LED to indicate status

Twinning

- Terminal furnished on furnace control for twinning two furnaces together

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

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

M30 Smart Wi-Fi Thermostat

- Wi-Fi-enabled, electronic 7-day, universal, multi-stage, programmable, touchscreen thermostat
- 4 Heat/2 Cool
- Auto-changeover
- Dual-fuel control with optional outdoor sensor
- Controls dehumidification during cooling mode and humidification during heating mode
- Offers enhanced capabilities including humidification / dehumidification / dewpoint measurement and control, Humiditrol® control, and equipment maintenance reminders
- Easy to read 4.3 in. color touchscreen (measured diagonally)
- LCD display with backlight shows the current and set temperature, time, inside relative humidity, system status (operating mode and schedules) and outside temperature (optional outdoor sensor required)
- Smooth Setback Recovery starts system early to achieve setpoint at start of program period
- Compressor short-cycle protection (5 minutes)
- Up to four separate schedules are available plus Schedule IQ™
- One-Touch Away Mode - A quick and easy way to set the cooling and heating setpoints while away



- Smart Away™ - Uses geo-fencing technology to determine when the homeowner is within a predetermined distance from the home to operate the system when leaving, away and arriving
- Wi-Fi remote monitoring and adjustment through a home wireless network for desktop PCs, laptops and apps for smartphones or tablets
- Smart home automation compatible with Amazon Alexa® and Google Assistant
- Service Dashboard features online real-time monitoring of installed Lennox® thermostats

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

Remote Outdoor Temperature Sensor

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

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



Thermostat

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

Blower Relay Kit

(For Use With Two-Stage Outdoor Units)

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

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

- Direct drive blower
- Statically and dynamically balanced
- Resiliently mounted
- Blower assembly easily removed for servicing

8 Power Saver™ Constant Torque Blower Motor

- DC Brushless Motor
- High Efficiency Constant Torque
- ECM (Electronically Commutated Motor)
- Motor is programmed to provide constant torque at each of the selectable speeds
- Motor is controlled by the Integrated Furnace Control
- Blower speeds are easily changed on the integrated furnace control
- See Blower Data tables

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
- 9 • Insulated with foil faced insulation on sides and back of heating compartment
- Sealed blower compartment
- Complete service access
- 10 • Safety interlock switch automatically shuts off power to unit when blower compartment access door is removed
- 11 • Gas piping and electrical inlets are provided in both sides of cabinet

Low Leakage Cabinet

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

Bottom/Side Return Air Entry:

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

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

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

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
- Includes 2 or 3 in. sanitary tee, 2 in. PVC assembly, PVC boot and clamp
- Kit for Canada is certified to ULC S636

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 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

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

SPECIFICATIONS

Gas Heating Performance	Model	ML193UH 030XE36BK	ML193UH 045XE36BK	ML193UH 070XE36BK	ML193UH 090XE36CK
AHRI Reference No.		20256877	20256878	20256879	20256880
¹ AFUE		93%	93%	93%	93%
Input - Btuh		30,000	44,000	66,000	88,000
Output - Btuh		29,000	42,000	63,000	84,000
Temperature rise range - °F		25 - 55	30 - 60	40 - 70	50 - 80
Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane		3.5 / 10	3.5 / 10.0	3.5 / 10.0	3.5 / 10
High static - in. w.g.		0.5	0.5	0.5	0.5
Connections Intake / Exhaust Pipe (PVC)		2 / 2	2 / 2	2 / 2	2 / 2
Gas pipe size IPS		1/2	1/2	1/2	1/2
Condensate Drain Trap (PVC pipe) - i.d.		3/4	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	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	3/4 slip x 3/4 MPT
Indoor Blower Wheel diameter x width - in.		10 x 8	10 x 8	10 x 8	10 x 8
Motor Type		DC Brushless	DC Brushless	DC Brushless	DC Brushless
Motor output - hp		1/2	1/2	1/2	1/2
Tons of add-on cooling		1.5 - 3	1.5 - 3	1.5 - 3	1.5 - 3
Air Volume Range - cfm		175 - 1435	355 - 1420	355 - 1430	405 - 1410
Electrical Data Voltage		120 volts - 60 hertz - 1 phase			
Blower motor full load amps		6.8	6.8	6.8	6.8
Maximum overcurrent protection		15	15	15	15
Shipping Data lbs. - 1 package		120	120	127	144

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 Heating Performance	Model	ML193UH090XE48CK	ML193UH110XE48CK	ML193UH110XE60CK
AHRI Reference No.		20256881	20256882	20256883
¹ AFUE		93%	93%	93%
Input - Btuh		88,000	110,000	110,000
Output - Btuh		84,000	104,000	105,000
Temperature rise range - °F		45 - 75	50 - 80	45 - 75
Gas Manifold Pressure (in. w.g.) Nat. Gas / LPG/Propane		3.5 / 10.0	3.5 / 10	3.5 / 10
High static - in. w.g.		0.5	0.5	0.5
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.		10 x 10	10 x 10	11-1/2 x 10
Motor Type		DC Brushless	DC Brushless	DC Brushless
Motor output - hp		3/4	3/4	1
Tons of add-on cooling		2.5 - 4	2.5 - 4	3 - 5
Air Volume Range - cfm		830 - 1710	850 - 1750	1085 - 2150
Electrical Data Voltage		120 volts - 60 hertz - 1 phase		
Blower motor full load amps		8.4	8.4	10.9
Maximum overcurrent protection		15	15	15
Shipping Data lbs. - 1 package		144	156	158

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 Code².

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.	
030	11U65	11U66	17H63	N/A	14C90	17H66	15Y66 (2-inch)
045	11U65	11U66	11K49	73W81	73W37	11K44	15Y66 (2-inch)
070	11U65	11U66	11K49	73W81	73W37	11K44	15Y66 (2-inch)
090	11U65	11U66	11K49	73W81	73W37	11K44	15Y66 (2-inch)
110	11U65	11U66	11K49	73W81	73W37	11K44	² 15Y66 (2-inch) 16A56 (3-inch)

² 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.		
All Sizes	Natural	3.5	3.3	3.2	3.1	3.5	4.5	13.0
	LPG/Propane	10.0	9.4	9.1	8.9	10.0	11.0	13.0

OPTIONAL ACCESSORIES				
			“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				
Blower Relay Kit (for two-stage outdoor units)			85W66	85W66
M30 Smart Wi-Fi Thermostat			15Z69	15Z69
Remote Outdoor Temperature Sensor			X2658	X2658
Transformer (75VA)			27J32	27J32
REFRIGERANT DETECTION SENSOR				
Refrigerant Detection System (RDS) Coil Sensor Kit (for indoor coil)			27A03	27A03
FILTER KITS				
¹ Air Filter and Rack Kit	Horizontal (end)	Size of filter - in.	87L96 - 18 x 25 x 1	87L97 - 20 x 25 x 1
	Side Return	Single	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 Cleanable polyurethane frame type filter.

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)
030/ 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 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 030, 045 and 070 input models. Accelerator is not used with 090 or 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 030, 045, 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	Unit Input Size									
		030		045		070		090		110	
		Maximum Uninsulated Exhaust Vent Length (ft.)									
		PVC	PolyPro InnoFlue	PVC	PolyPro InnoFlue	PVC	PolyPro InnoFlue	PVC	PolyPro InnoFlue	PVC	PolyPro InnoFlue
32 to 21°F	1-1/2 in.	N/A	N/A	25	N/A	25	N/A	N/A	N/A	N/A	N/A
	2 in.	N/A	N/A	18	16	31	28	50	48	30	30
	2-1/2 in.	N/A	N/A	13	N/A	24	N/A	42	N/A	56	N/A
	3 in.	N/A	N/A	9	9	18	18	35	35	47	47
20 to 1°F	1-1/2 in.	N/A	N/A	15	N/A	20	N/A	N/A	N/A	N/A	N/A
	2 in.	N/A	N/A	9	8	18	16	32	29	30	30
	2-1/2 in.	N/A	N/A	5	N/A	13	N/A	24	N/A	34	N/A
	3 in.	N/A	N/A	N/A	N/A	8	8	19	19	26	26
0 to −20°F	1-1/2 in.	N/A	N/A	10	N/A	15	N/A	N/A	N/A	N/A	N/A
	2 in.	N/A	N/A	5	N/A	12	10	22	19	30	27
	2-1/2 in.	N/A	N/A	N/A	N/A	7	N/A	15	N/A	22	N/A
	3 in.	N/A	N/A	N/A	N/A	N/A	N/A	10	10	16	16

NOTE - Concentric terminations are equivalent to 5 ft. of straight pipe and should be included when measuring total pipe length.

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

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

InnoFlue® is a registered trademark of Centrotherm Eco Systems.

VENT LENGTHS

STANDARD TERMINATION AT ELEVATION 0 - 10,000 ft.

Pipe Size		1-1/2 in.				2 in.				2-1/2 in.				3 in.			
Input		030/ 045	070	090	110	030/ 045	070	090	110	030/ 045	070	090	110	030/ 045	070	090	110
No. of 90 ELL	1	25	20	N/A	N/A	81	66	44	24	115	100	68	43	137	137	118	118
	2	20	15	N/A	N/A	76	61	39	19	110	95	63	38	132	132	113	113
	3	15	10	N/A	N/A	71	56	34	14	105	90	58	33	127	127	108	108
	4	10	N/A	N/A	N/A	66	51	29	N/A	100	85	53	28	122	122	103	103
	5	N/A	N/A	N/A	N/A	61	46	24	N/A	95	80	48	23	117	117	98	98
	6	N/A	N/A	N/A	N/A	56	41	19	N/A	90	75	43	18	112	112	93	93
	7	N/A	N/A	N/A	N/A	51	36	14	N/A	85	70	38	13	107	107	88	88
	8	N/A	N/A	N/A	N/A	46	31	N/A	N/A	80	65	33	N/A	102	102	83	83
	9	N/A	N/A	N/A	N/A	41	26	N/A	N/A	75	60	28	N/A	97	97	78	78
	10	N/A	N/A	N/A	N/A	36	21	N/A	N/A	70	55	23	N/A	92	92	73	73

CONCENTRIC TERMINATION ELEVATION 0 - 10,000 ft.

Pipe Size		1-1/2 in.				2 in.				2-1/2 in.				3 in.			
Input		030/ 045	070	090	110	030/ 045	070	090	110	030/ 045	070	090	110	030/ 045	070	090	110
No. of 90 ELL	1	20	15	N/A	N/A	73	58	42	22	105	90	64	39	121	121	114	114
	2	15	10	N/A	N/A	68	53	37	17	100	85	59	34	116	116	109	109
	3	10	N/A	N/A	N/A	63	48	32	12	95	80	54	29	111	111	104	104
	4	N/A	N/A	N/A	N/A	58	43	27	N/A	90	75	49	24	106	106	99	99
	5	N/A	N/A	N/A	N/A	53	38	22	N/A	85	70	44	19	101	101	94	94
	6	N/A	N/A	N/A	N/A	48	33	17	N/A	80	65	39	14	96	96	89	89
	7	N/A	N/A	N/A	N/A	43	28	12	N/A	75	60	34	N/A	91	91	84	84
	8	N/A	N/A	N/A	N/A	38	23	N/A	N/A	70	55	29	N/A	86	86	79	79
	9	N/A	N/A	N/A	N/A	33	18	N/A	N/A	65	50	24	N/A	81	81	74	74
	10	N/A	N/A	N/A	N/A	28	13	N/A	N/A	60	45	19	N/A	76	76	69	69

NOTES - Additional vent pipe and elbows used to terminate vent pipe outside the structure must be included in the total vent length calculation.

Intake and exhaust pipes are sized separately.

Values in table are for separate intake or exhaust pipe lengths.

Both intake and exhaust pipe must be the same size diameter.

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

STANDARD TERMINATION AT ELEVATION 0 - 10,000 ft.

Pipe Size		1-1/2 in.				2 in.				2-1/2 in.				3 in.			
Input		030/ 045	070	090	110	030/ 045	070	090	110	030/ 045	070	090	110	030/ 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

NOTES - Additional vent pipe and elbows used to terminate vent pipe outside the structure must be included in the total vent length calculation.

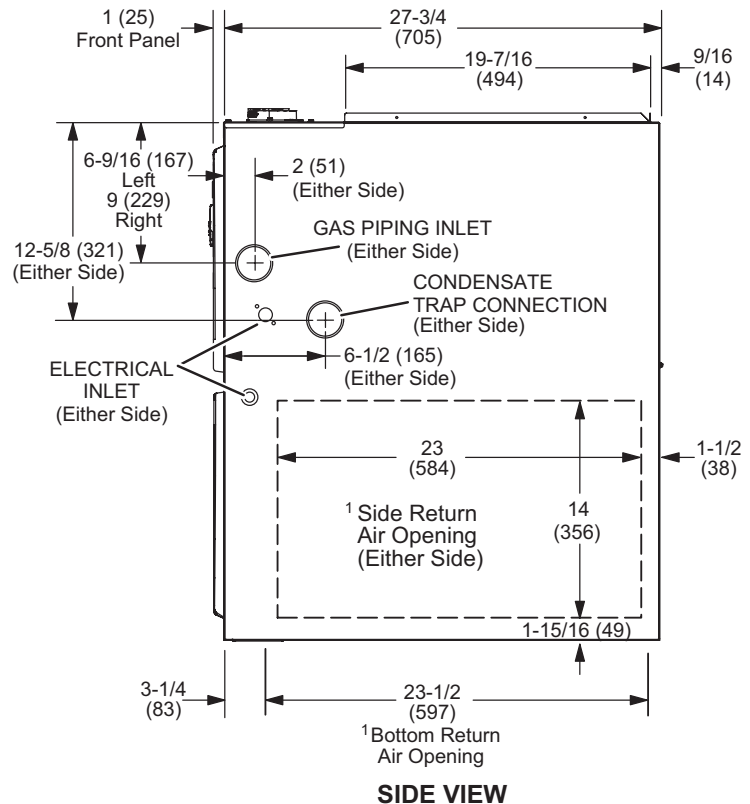
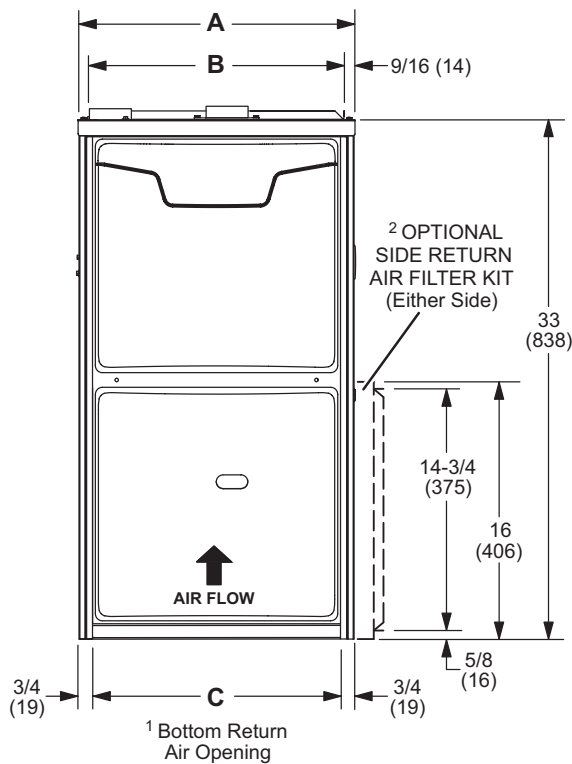
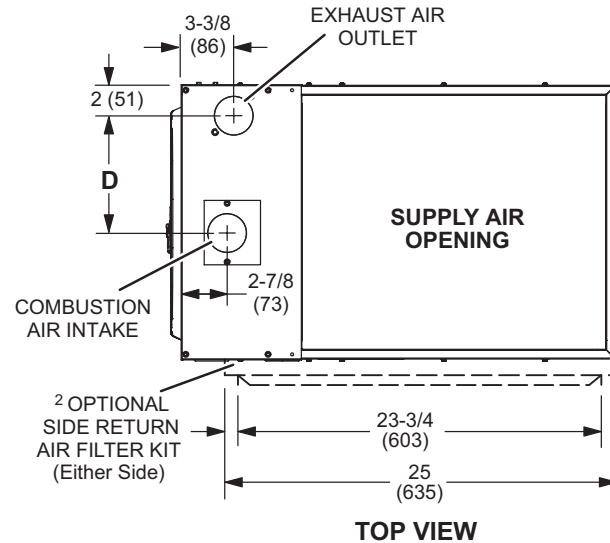
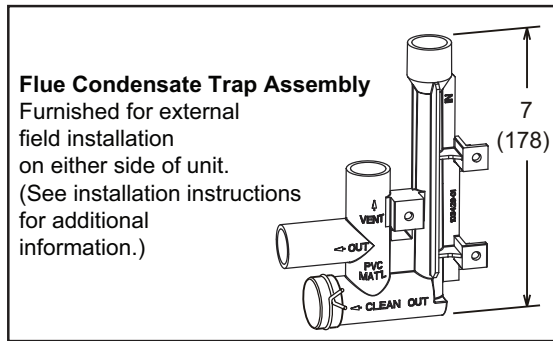
DIMENSIONS

UNIT - UPFLOW POSITION

¹ NOTE - 60C size units that require air volumes over 1800 cfm must have one of the following:

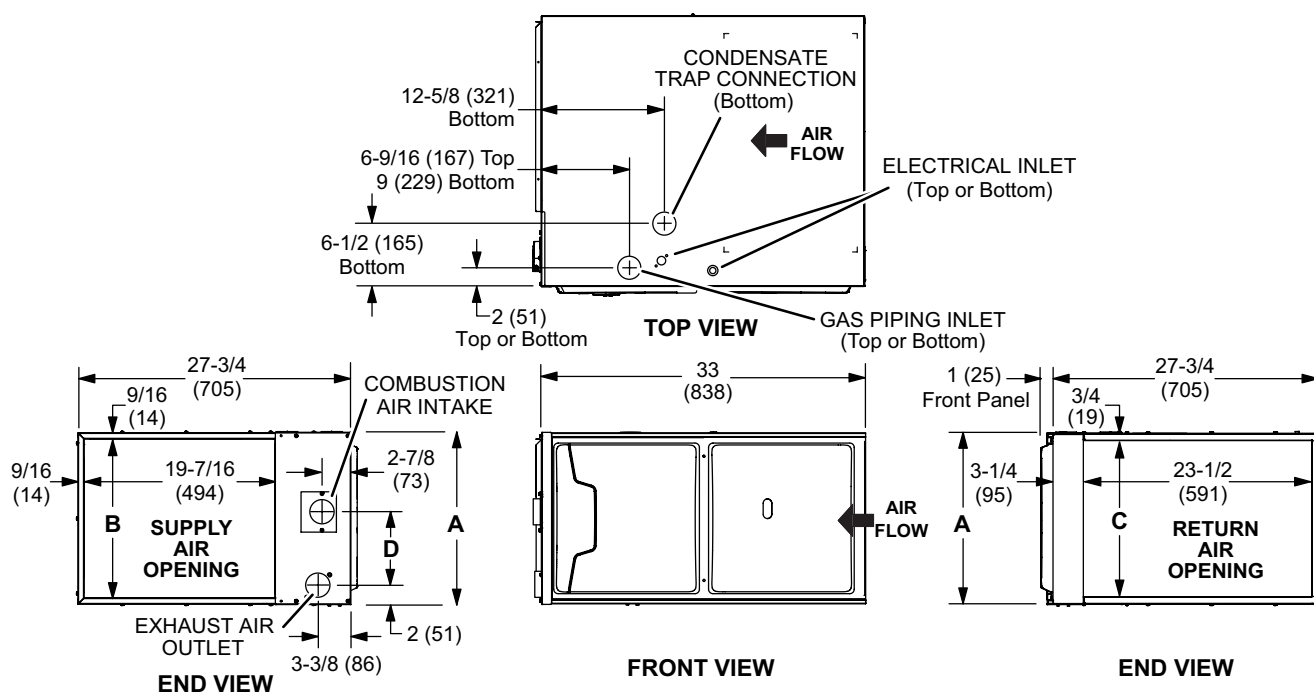
1. Single side return air and Optional Return Air Base with transition that must accommodate required 20 x 25 x 1 inch (508 x 635 x 25 mm) air filter to maintain proper velocity.
 2. Bottom return air.
 3. Return air from both sides.
 4. Bottom and one side return air.
- See Blower Performance Tables for additional information.

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

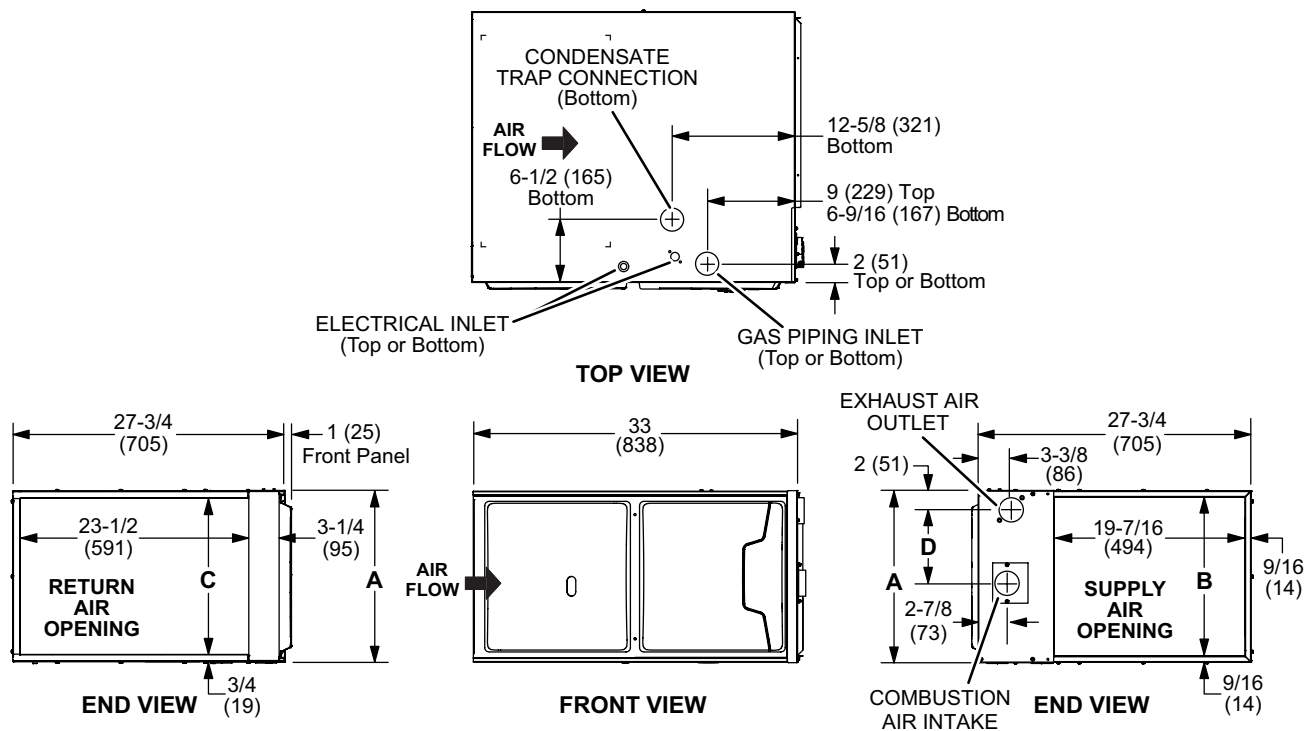


Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
ML193UH030XE36BK ML193UH045XE36BK ML193UH070XE36BK	17-1/2	446	16-3/8	416	16	406	7-5/8	194
ML193UH090XE36CK ML193UH090XE48CK ML193UH110XE48CK ML193UH110XE60C	21	533	19-7/8	505	19-1/2	495	9-3/8	238

LEFT-HAND AIR DISCHARGE

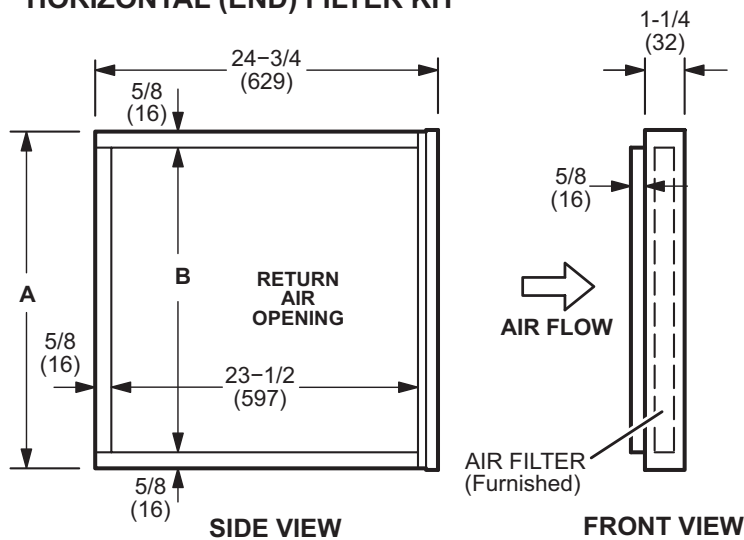


RIGHT-HAND AIR DISCHARGE



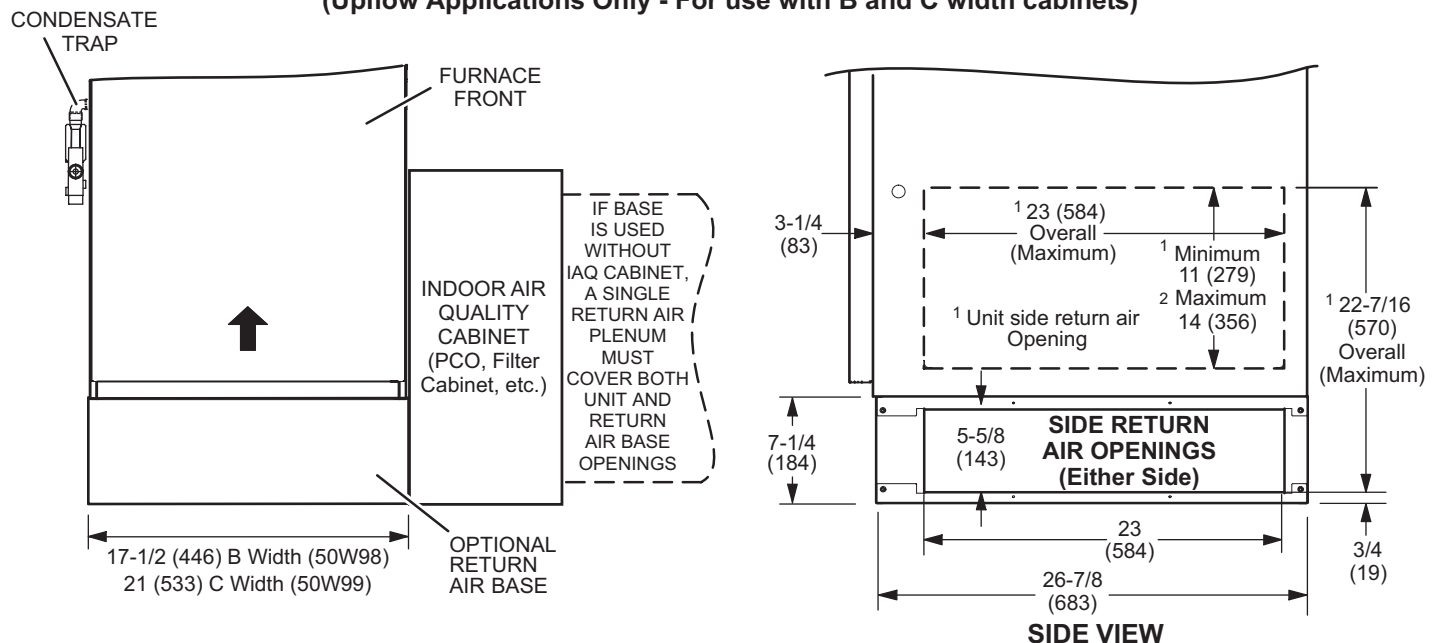
Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
ML193UH030XE36BK ML193UH045XE36BK ML193UH070XE36BK	17-1/2	446	16-3/8	416	16	406	7-5/8	194
ML193UH090XE36CK ML193UH090XE48CK ML193UH110XE48CK ML193UH110XE60CK	21	533	19-7/8	505	19-1/2	495	9-3/8	238

HORIZONTAL (END) FILTER KIT



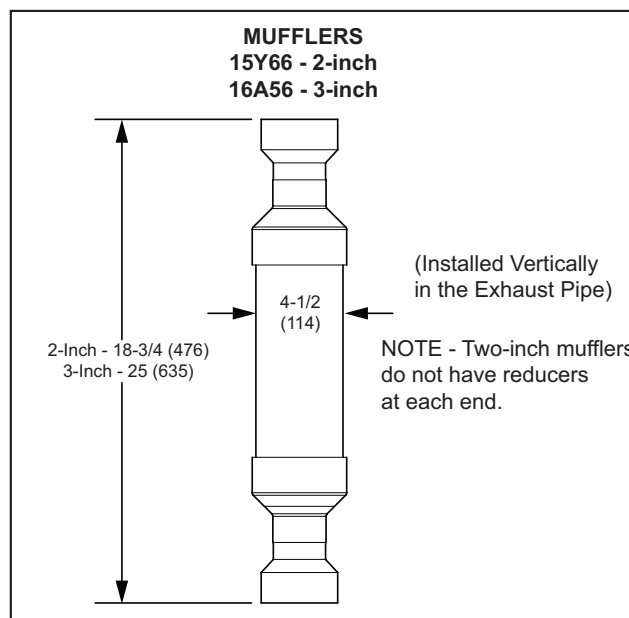
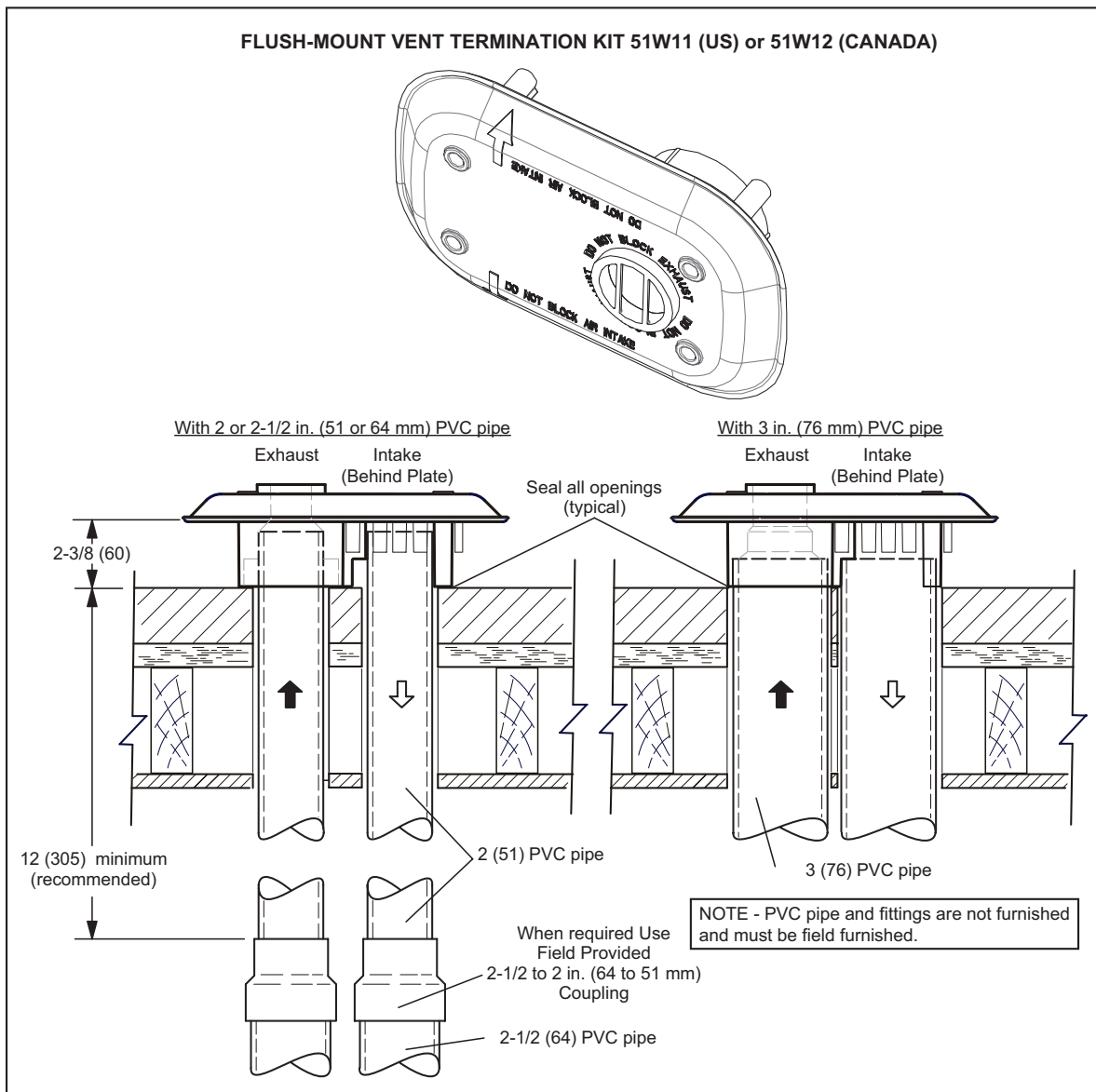
Furnace Cabinet Width	Catalog Number	A		B	
		in.	mm	in.	mm
B	87L96	18	457	16-3/4	425
C	87L97	21	533	18-3/4	476

OPTIONAL RETURN AIR BASE (Upflow Applications Only - For use with B and C width cabinets)

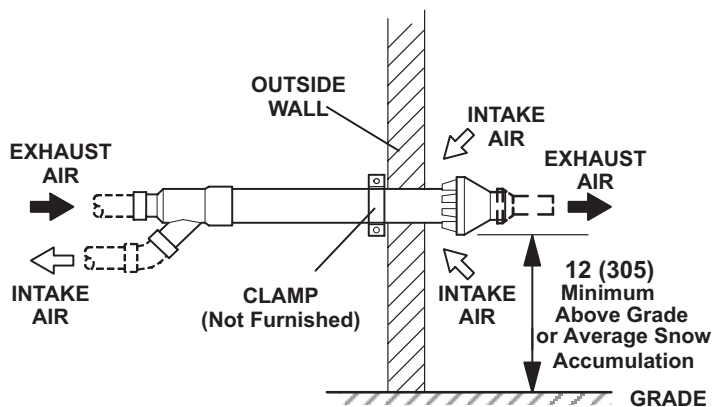


NOTE- Optional Side Return Air Filter Kits are not for use with Optional Return Air Base.

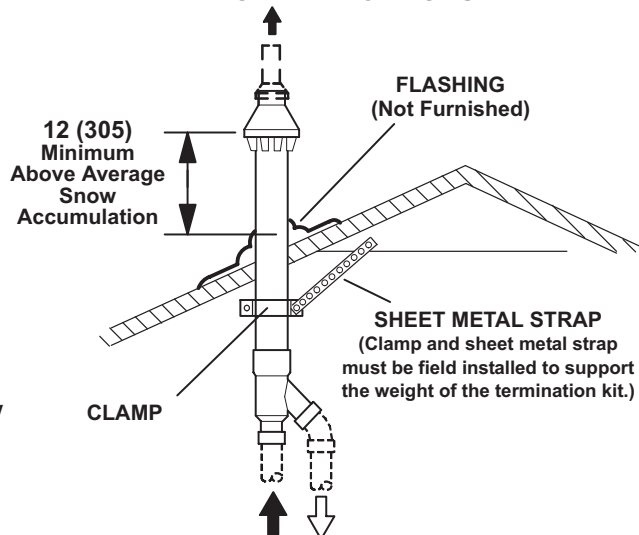
- ¹ Both the unit return air opening and the base return air opening must be covered by a single plenum or IAQ cabinet. Minimum unit side return air opening dimensions for units requiring 1800 cfm or more of air (W x H): 23 x 11 in. (584 x 279 mm). The opening can be cut as needed to accommodate plenum 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.



**CONCENTRIC WALL
TERMINATION APPLICATIONS**



**CONCENTRIC ROOF
TERMINATION APPLICATIONS**

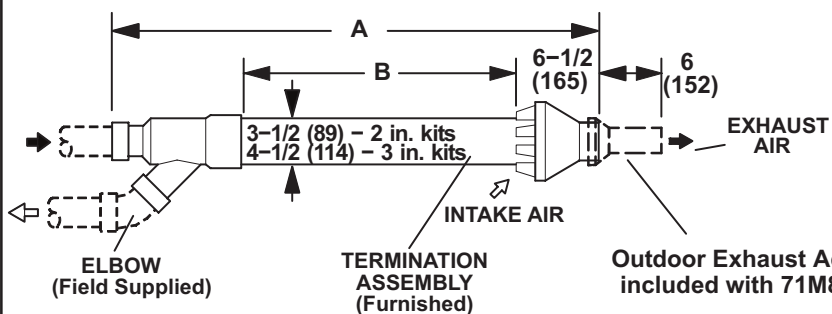


71M80 / 69M29 / 44W92 – 2 inch kits

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

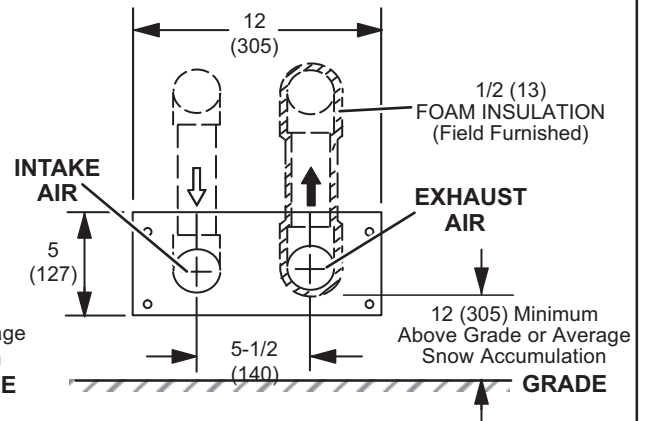
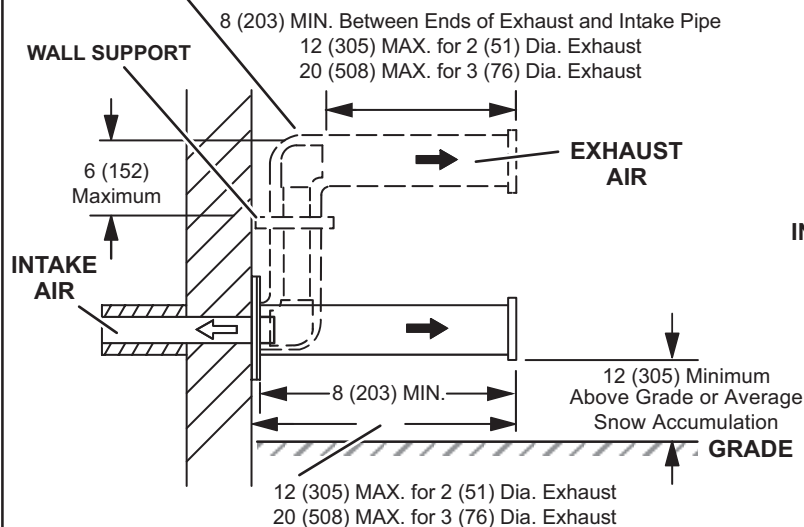
NOTE – Typical illustration for dimensions only. Design may vary depending on kit ordered.

**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.

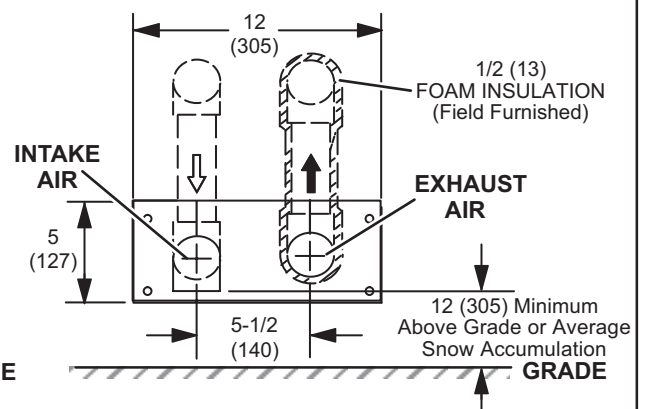
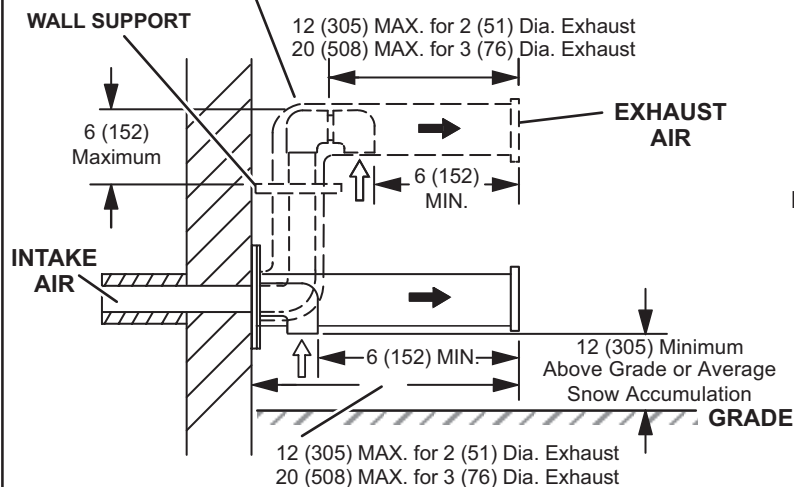


**WALL TERMINATION KITS (CLOSE-COUPLE)
EXTENDED VENT FOR GRADE CLEARANCE
2 inch (51 mm) 30G28 (WTK Canada)
3 inch (76 mm) 81J20 (WTK Canada)**

See Installation Instructions for additional information.

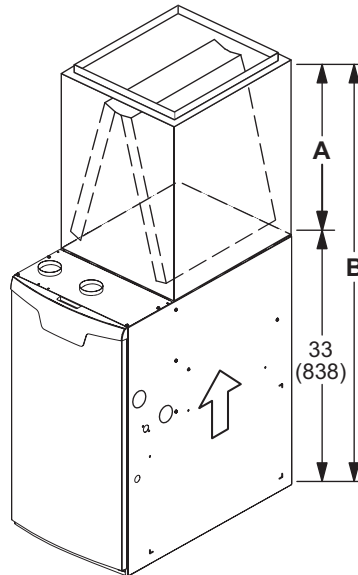
Note - Field provided reducer may be required to adapt different vent pipe sizes to termination.

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



DIMENSIONS

FURNACE/COIL COMBINED DIMENSIONS

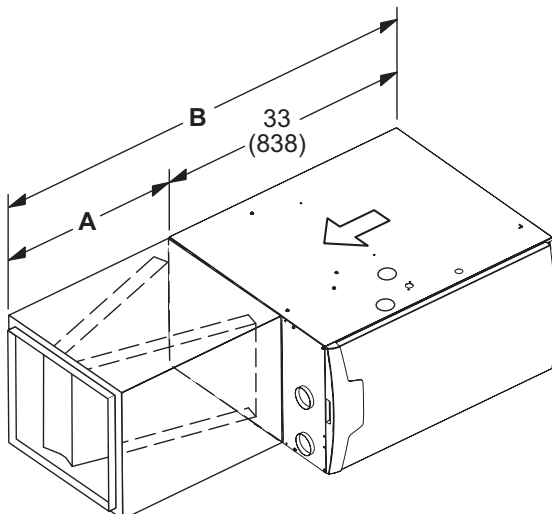


UPFLOW POSITION - CASED

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 - UNCASED

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				
CK40CT-42B	CHX35-42B	31-1/2	880	64-1/2	1638
CK40CT-48B	CHX35-48B				
CK40CT-51/61C	CHX35-51/61C				

BLOWER DATA

ML193UH030XE36BK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1403	327	1145	190	972	125	770	72	619	47
0.20	1386	335	1122	197	947	130	736	77	587	51
0.30	1361	345	1094	204	916	138	699	81	511	56
0.40	1343	353	1060	213	887	144	656	87	475	60
0.50	1308	365	1028	221	864	150	625	92	431	64
0.60	1299	369	1004	228	793	158	533	98	375	69
0.70	1265	383	975	237	786	164	515	102	---	---
0.80	1238	390	943	245	741	171	486	107	---	---
0.90	1192	408	915	252	706	178	417	112	---	---
1.00	1167	418	877	261	653	186	363	119	---	---

ML193UH045XE36BK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1375	333	1259	265	1115	195	889	116	732	79
0.20	1347	342	1227	274	1082	203	850	123	689	85
0.30	1321	353	1199	283	1048	211	811	129	641	90
0.40	1294	362	1171	292	1017	219	773	136	592	96
0.50	1267	372	1143	301	984	226	731	143	544	101
0.60	1241	380	1114	309	952	234	689	149	496	106
0.70	1212	390	1085	318	918	242	646	155	445	110
0.80	1185	400	1056	326	886	250	604	160	386	115
0.90	1159	409	1027	336	852	258	562	165	345	120
1.00	1132	418	996	345	814	264	520	170	309	124

ML193UH070XE36BK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1392	323	1273	256	1131	188	905	112	748	76
0.20	1367	333	1245	266	1101	197	867	119	704	82
0.30	1340	343	1216	275	1068	205	828	126	659	89
0.40	1313	354	1188	284	1035	214	788	133	607	95
0.50	1286	364	1159	293	1001	221	747	140	559	100
0.60	1259	372	1129	302	970	230	705	147	514	105
0.70	1231	382	1102	312	936	238	665	153	468	110
0.80	1202	392	1073	320	902	246	626	159	422	116
0.90	1175	402	1043	329	866	254	588	164	372	121
1.00	1147	411	1012	338	831	261	549	170	322	125

BLOWER DATA

ML193UH090XE36CK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1442	303	1320	241	1172	178	939	108	776	73
0.20	1413	315	1289	251	1138	187	898	115	729	80
0.30	1382	326	1259	261	1105	196	859	122	682	86
0.40	1356	336	1231	271	1072	205	817	129	629	93
0.50	1327	346	1200	281	1037	213	774	136	576	99
0.60	1301	357	1170	291	1002	222	729	143	524	104
0.70	1273	367	1139	301	967	230	682	150	477	108
0.80	1240	376	1108	310	931	239	638	156	428	113
0.90	1213	387	1076	319	891	247	596	161	375	118
1.00	1184	398	1044	329	851	255	556	166	338	123

ML193UH090XE48CK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1686	386	1477	273	1356	221	1275	191	1150	149
0.20	1651	398	1438	284	1315	232	1233	201	1103	158
0.30	1615	411	1399	294	1273	241	1189	210	1059	167
0.40	1583	423	1362	305	1236	251	1147	218	1009	176
0.50	1550	434	1324	315	1194	260	1101	227	958	184
0.60	1515	447	1283	325	1151	270	1049	236	903	192
0.70	1479	458	1240	335	1103	279	1000	244	857	199
0.80	1446	469	1195	345	1057	288	957	253	816	206
0.90	1407	480	1150	355	1012	297	916	261	773	214
1.00	1368	492	1111	365	977	305	881	269	726	221

ML193UH110XE48CK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Various Blower Speeds									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	1726	384	1510	276	1387	222	1303	191	1180	151
0.20	1696	395	1476	285	1356	231	1268	200	1140	159
0.30	1666	406	1450	296	1319	240	1231	209	1102	167
0.40	1634	418	1375	305	1282	251	1191	216	1055	175
0.50	1607	429	1369	315	1238	261	1154	225	1009	184
0.60	1569	441	1336	326	1202	269	1101	235	963	191
0.70	1539	452	1301	336	1158	279	1066	244	903	199
0.80	1507	463	1262	345	1112	288	1014	253	860	208
0.90	1484	478	1225	355	1081	295	968	262	816	215
1.00	1445	490	1190	364	1031	306	936	268	775	221

BLOWER DATA

ML193UH110XE60CK PERFORMANCE (Less Filter)

External Static Pressure in. w.g.	Air Volume / Watts at Different Blower Speeds																			
	Bottom Return Air, Side Return Air with Return Air from Both Sides or Return Air from Bottom and One Side.										Single Side Return Air – Air volumes in bold (over 1800 cfm) require Optional Return Air Base and field fabricated transition to accommodate 20 x 25 x 1 in. air filter in order to maintain proper air velocity.									
	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)		High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.10	2082	641	1854	465	1679	357	1577	304	1400	225	2070	588	1838	418	1671	325	1563	276	1382	207
0.20	2051	656	1818	479	1640	370	1537	317	1356	237	2034	608	1802	432	1625	338	1527	289	1336	217
0.30	2018	673	1778	492	1602	383	1498	328	1316	247	1998	624	1760	448	1583	350	1473	302	1288	227
0.40	1987	688	1742	504	1570	398	1458	340	1273	258	1959	636	1711	459	1538	363	1434	312	1245	237
0.50	1953	703	1707	518	1532	409	1419	351	1228	269	1924	653	1675	471	1482	371	1386	323	1188	247
0.60	1920	718	1671	531	1498	423	1380	363	1185	279	1899	669	1639	484	1448	384	1343	334	1139	253
0.70	1887	732	1639	544	1463	434	1342	374	1142	289	1851	682	1592	493	1409	398	1302	345	1089	262
0.80	1855	746	1606	557	1427	446	1305	386	1095	300	1812	695	1557	509	1368	407	1262	355	1042	272
0.90	1824	760	1575	570	1390	457	1265	398	1040	309	1772	706	1519	521	1327	419	1217	365	996	283
1.00	1792	774	1541	585	1351	468	1224	410	989	317	1741	724	1472	529	1284	430	1166	375	945	292



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