

EL296DFE

ELITE® SERIES

Downflow - Two-Stage Heat - Constant Torque Blower - 60 Hz

RESIDENTIAL PRODUCT SPECIFICATIONS

Bulletin No. 210648 April 2024 Supersedes all previous versions

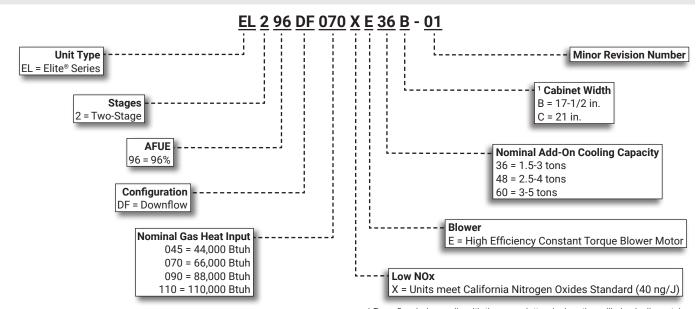






AFUE - Up to 96% Input - 44,000 to 110,000 Btuh Nominal Add-on Cooling - 1.5 to 5 Tons

MODEL NUMBER IDENTIFICATION



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



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APPROVALS AND WARRANTY

APPROVALS

- AHRI Certified
- · CSA International Certified
- Tested and rated according to US DOE test procedures and FTC labeling regulations
- Units are approved for installations from 0 4500 ft.
- 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

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 lifetime (twenty year transferable) 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

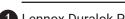
NOTE - Refer to Lennox® Basic Limited Warrenty at www.Lennox.com for additional details.

FEATURES

APPLICATIONS

- Input capacities of 44,000, 66,000, 88,000 and 110,000 Btuh
- Energy efficiency (AFUE) up to 96%
- Compact cabinet for downflow applications without any internal modifications to the unit
- Lennox add-on indoor coils, high-efficiency air cleaners and humidifiers can easily be added to furnace
- Shipped factory assembled with controls installed and wired
- Each unit 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



- 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

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
- 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, troublefree 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.

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.

Two-Speed Combustion Air Inducer

- Permanent split capacitor (PSC), heavy duty blower prepurges heat exchanger and safely vents flue products
- Operates only during heating cycle
- Dual pressure switches (low fire/high fire) prove blower operation before allowing gas valve to open

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
- Automatic reset

Optional Accessories

High Altitude Orifice Kits

- Required on all units for proper unit operation at altitudes from 7501 to 10,000 ft.
- 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

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 11.

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

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 -045-070 models contains an outdoor exhaust accelerator
- Kit requires single hole penetration of roof or wall for installation
- · Roof Termination Flashing Kit is available for use with 2 inch Kits
- CSA certified

Flush-Mount

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

Wall Assembly

Close Couple (US Only) - Direct Vent Applications

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

Close Couple WTK (Canada Only) - Direct Vent **Applications**

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

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

Roof Termination Flashing Kit

- For vertical venting through a roof
- 2 or 3 inch kit contains two neoprene rubber roof flashings
- Vent pipe and insulation not furnished
- Flashing Kit can also be used with Concentric Vent Termination Kits used in vertical venting rooftop applications

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 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
- · Safety Controls Flame sensor utilizes flame rectification for safe and reliable operation
- · Should loss of flame occur, the integrated furnace control will initiate 4 re-attempts at ignition before locking out unit operation for 60 minutes
- Watchguard type circuit automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance calls for service
- Thermostat Control For optimal performance, the use of a high-quality, digital two-stage thermostat with adjustable settings for first stage/second stage, on/off differentials and adjustable stage timers is recommended

Furnace Input Staging Options

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

- · Display LED Seven segment LED displays alphanumeric 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

CONTROLS (continued)

- When used with a two-stage thermostat, furnace will only initiate second stage operation with a second stage thermostat demand
- Second Stage Delay Used with single-stage thermostat only. See Furnace Input Staging Options table for details
- Blower On/Off Time (Heating) Blower on time is fixed at 30 seconds, blower off time is adjustable from 60, 90, 120 and 180 seconds (factory setting 90 seconds)
- Blower On/Off Time (Cooling) For air-conditioning applications, blower "on" time is 2 seconds following thermostat demand for cooling
- Blower "off" time in cooling mode is adjustable from 2 or 45 seconds (factory setting 45 seconds)
- For air-conditioning applications, blower is automatically energized on thermostat demand for cooling
- · Heating Speeds Low Heat or High Heat
- Cooling Speeds Low Cool or High Cool
- Continuous Speed Low Heat (factory setting) adjustable
- **Dehumidification** A jumper on the control must be clipped to enable dehumidification
- A humidity controlling thermostat or device is also required
- During a call for cooling, air volume is automatically reduced, forcing humidity removal by the air conditioner or heat pump system (single stage units or two-stage units running at 2nd stage)
- After the humidity has reached the desired set-point the cooling air volume returns to its designed rate
- Dual-Fuel Operation A jumper on the control must be clipped to enable operation with a single or two-stage heat pump
- The indoor blower is started without delay when a call for heat is received
- Two-Stage Compressor Operation A jumper on the control must be clipped to enable operation with a two-stage compressor
- Accessory Terminal One accessory terminal furnished for additional power supply requirements for 120 volt (less than 1 amp) powered air cleaners
- One un-powered pair of contacts are provided for humidifier connections and may be connected to 24V or 120V
- · Control is factory installed in the unit control box

24 Volt Transformer (40VA)

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

Field Wiring Make-up Box

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

Optional Accessories

E30 Smart Wi-Fi Thermostat

- Wi-Fi enabled, electronic 7-day, universal, multi-stage, programmable, touchscreen thermostat
- · 3 Heat/2 Cool
- Auto-changeover
- 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 7 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 IO™
- 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 Apple HomeKit[™], Amazon Alexa[®], Google Assistant and IFTTT
- Service Dashboard features online real-time monitoring of installed Lennox[®] Communicating systems
- High Definition Color Display and Subbase, Smart Hub Controller, wallplate (for retrofit installations) furnished for easy installation
- See the Lennox® E30 Smart Wi-Fi Thermostat Product Specifications bulletin for more information

Remote Outdoor Temperature Sensor

- Used with Lennox® E30 Smart Thermostat
- When installed outdoors, sensor allows thermostat to display outdoor temperature



NOTE - The outdoor sensor is furnished as standard with Lennox® Communicating outdoor units, optional for conventional units.

Thermostat

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

CONTROLS (continued)

Optional Accessories (continued)

Furnace Twinning Panel

- Required to operate two identical furnaces simultaneously from a single thermostat
- For single stage conventional (1 heat/1 cool), multistage conventional (2 heat/2 cool) and heat pump (3 heat/2 cool) equipment
- Can be used with common or separate ducted systems
- Contains PC Control Board with terminal strip connections for thermostat and HVAC equipment
- LEDs indicate system operating status
- · Uses standard 18-gauge thermostat wire
- Power Supply: 24 VAC, 40VA (transformer not furnished)
- · Mounting base with hardware furnished
- Dimensions (H x W x D): 10 x 5 x 2 in.

NOTE - Only identical furnaces should be twinned in order to ensure that both furnace blowers start at the same time. If furnaces are not identical, back draft dampers can be installed in either the supply or return duct.

> Up to four identical furnaces can be twinned. Requires two panels that are wired together.

Furnace Twinning Kit

- Required to operate two furnaces simultaneously.
- · Kit consists of twinning relays, quick connect terminals and mounting hardware
- Used for two-stage heating/single-stage cooling with either a single-stage or two-stage thermostat

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 Relay Kit

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

BLOWER

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



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 SureLight® Integrated Furnace Control
- Blower speeds are easily changed on the integrated furnace control. See Blower Data tables

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



- 8 Insulated with foil faced insulation on sides and back of heating compartment and mat faced insulation in blower compartment.
 - Sealed blower compartment
 - Inner blower compartment access panel seals blower compartment from air leakage
 - · Cabinet door can be removed without any tools
 - · Complete service access



· 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"

CABINET (continued)

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

•		88. 7.151	EL 000DE0 45VE00D	EL COORECTOVE :CR	EL 000DE000VE :00	EL 000DE440VE004
Gas Heating				EL296DF070XE48B		
Performa	nce ——	AHRI Ref. No.	5625722	5625723	5940633	5625725
		¹ AFUE	96%	96%	96%	96%
	High	Input - Btuh	44,000	66,000	88,000	110,000
	Fire	Output - Btuh	43,000	64,000	85,000	106,000
		Temperature rise range - °F	35-65	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	3.5 / 10.0
	Low	Input - Btuh	29,000	43,000	57,000	72,000
	Fire	Output - Btuh	28,000	42,000	55,000	70,000
		Temperature rise range - °F	20 - 50	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	1.7 / 4.5
High stati	c - in. w.g.	•	0.5	0.5	0.5	0.5
Connection	ons	Intake / Exhaust Pipe (PVC)	2/2	2/2	2/2	2/2
in.		Gas pipe size IPS	1/2	1/2	1/2	1/2
C	condensate	Drain Trap (PVC pipe) - i.d.	3/4	3/4	3/4	3/4
	wit	th furnished 90° street elbow	3/4 slip x 3/4 Mipt			
,	with field su	upplied (PVC coupling) - o.d.	3/4 slip x 3/4 MPT			
Indoor	Whee	el nom. diameter x width - in.	10 x 8	11-1/2 x 10	10 x 10	11 x 11
Blower		Motor Type	DC Brushless	DC Brushless	DC Brushless	DC Brushless
		Motor output - hp	1/2	3/4	3/4	1
		Tons of add-on cooling	1.5 - 3	2 - 4	2 - 4	3 - 5
		Air Volume Range - cfm	485 - 1395	520 - 1770	760 - 1765	1045 - 2285
Electrical		Voltage		120 volts - 60 l	nertz - 1 phase	
Data		Blower motor full load amps	6.8	8.4	8.4	10.9
	Max	imum overcurrent protection	15	15	15	15
Shipping	Data	lbs 1 package	134	145	163	175

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

INSTALLATION CLEARANCE	S
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.

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

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/CGA-149.1,.2. Do not install the furnace directly on carpeting, tile, or other combustible materials other than wood flooring.

			"B" Width Models	"C" Width Models				
CABINET ACCE	SSORIES							
	bustible Flooring Base		11M60	11M61				
CONTROLS	545							
	it (for two-stage outdoor units)		85W66	85W66				
Furnace Twinning	_ · _ · _ · _ · _ · _ · _ · _ · _ · _ ·		Y3653	Y3653				
Furnace Twinnin			16W72	16W72				
Transformer (75	<u> </u>		27J32	27J32				
E30 Smart Wi-F	`		20A65	20A65				
	r Temperature Sensor		X2658	X2658				
CONDENSATE [·			- 1200				
Condensate Dra		6 ft.	26K68	26K68				
		24 ft.	26K69	26K69				
Crawl Space Ve	nt Drain Kit	US	51W18	51W18				
		Canada	15Z70	15 Z 70				
FILTERS		'						
¹ Downflow Filte	er 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 I	nstructions for specific venting inforr	mation.						
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	2 in.	15F75	15F75				
	(no vent pipe - 2 flashings)	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.

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.

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.

OUTDO	OOR TERM	INATION K	IT USAGE					
			Standard Te	erminations		Conc	entric Termina	tions
Immus	Vent	Flush Mount	Wal	l Kit	Field Fabricated		Concentric Kit	
Input Size	Pipe Diameter	Kit	2 inch	2 inch 3 inch		1-1/2 inch	2 inch	3 inch
	(in.)	51W11 (US) 51W12 (CA)	22G44 (US) 5 30G28 (CA)	44J40 (US) 5 81J20 (CA)	Accelerator Size Required	71M80 (US) 5 44W92 (CA)	69M29 (US) 5 44W92 (CA)	60L46 (US) 5 44W93 (CA)
	¹ 1-1/2	⁴ YES	YES	² YES	1-1/2 in.	³ YES		
045	2	⁴ YES	YES	² YES	1-1/2 in.	³ YES		
045	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		
	¹ 1-1/2	⁴ YES	YES	² YES	1-1/2 in.	³ YES		
070	2	⁴ YES	YES	² YES	1-1/2 in.	³ YES		
070	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		
	2	⁴ YES		YES	2 in.		YES	YES
090	2-1/2	⁴ YES		YES	2 in.		YES	YES
	3	⁴ YES		YES	2 in.		YES	YES
	2	YES		YES	2 in.		YES	YES
110	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.

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

VENT LENG	THS - UN	IINSULA	TED EXH	AUST PIF	PE IN UN	CONDITIO	ONED SPA	ACE	
					Unit Inp	out Size			
1 Winter Decian	Vent Dine	04	45	0	70	0:	90	1	10
¹ Winter Design Temperatures	Vent Pipe Diameter		2	Maximum l	Jninsulated	Exhaust Ver	t Length (ft.)	
		PVC	PolyPro InnoFlue	PVC	PolyPro InnoFlue	PVC	PolyPro InnoFlue	PVC	PolyPro InnoFlue
	1-1/2 in.	22	N/A	20	N/A	N/A	N/A	N/A	N/A
20 to 21°F	2 in.	21	18	33	30	46	42	30	30
32 to 21°F	2-1/2 in.	16	N/A	26	N/A	37	N/A	36	N/A
	3 in.	12	12	21	21	30	30	29	29
	1-1/2 in.	12	N/A	20	N/A	N/A	N/A	N/A	N/A
20 to 1°F	2 in.	11	9	19	17	28	25	27	24
20 10 1 F	2-1/2 in.	7	N/A	14	N/A	21	N/A	20	N/A
	3 in.	N/A	N/A	9	9	16	16	14	14
	1-1/2 in.	8	N/A	13	N/A	N/A	N/A	N/A	N/A
0 to -20°F	2 in.	6	4	12	10	19	16	18	15
0 to -20 F	2-1/2 in.	N/A	N/A	7	N/A	13	N/A	12	N/A
	3 in.	N/A	N/A	N/A	N/A	8	8	7	7

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

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.

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

 $Innoflue^{\text{\scriptsize 8}}$ is a registered trademark of Centrotherm Eco Systems.

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 045 and 070 input models. Accelerator is not used with 090, 110, 135 input models. When using 1-1/2 in. piping, the pipe must be transitioned to 2 in. pipe when used with the Concentric Kit.

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

NOTE - Each elbow is 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 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.

VENT LENGTHS

STANDARD TERMINATION AT ELEVATION 0 - 4500 ft.

Pip	e Size		1-1/2	2 in.			2 i	n.			2-1/2	2 in.			3 i	n.	
	Input	045	070	090	110	045	070	090	110	045	070	090	110	045	070	090	110
	1	20	15	N/A	N/A	71	56	34	14	105	105	83	48	128	127	108	108
	2	15	10	N/A	N/A	66	51	29	9	100	100	78	43	123	122	103	103
	3	10	N/A	N/A	N/A	61	46	24	4	95	95	73	38	118	117	98	98
	4	N/A	N/A	N/A	N/A	56	41	19	N/A	90	90	68	33	113	112	93	93
No. of	5	N/A	N/A	N/A	N/A	51	36	14	N/A	85	85	63	28	108	107	88	88
90 ELL	6	N/A	N/A	N/A	N/A	46	31	9	N/A	80	80	58	23	101	102	83	83
	7	N/A	N/A	N/A	N/A	41	26	4	N/A	75	75	53	18	98	97	78	78
	8	N/A	N/A	N/A	N/A	36	21	N/A	N/A	70	70	48	13	93	92	73	73
	9	N/A	N/A	N/A	N/A	31	16	N/A	N/A	65	65	43	8	88	87	68	68
	10	N/A	N/A	N/A	N/A	26	11	N/A	N/A	60	60	38	3	83	82	63	63

STANDARD TERMINATION ELEVATION 4501 - 10,000 ft.

Pip	e Size		1-1/2	2 in.			2 i	n.			2-1/2	2 in.		3 in.				
	Input	045	070	090	110	045	070	090	110	045	070	090	110	045	070	090	110	
	1	20	15	N/A	N/A	71	56	34	N/A	105	105	83	48	128	127	108	108	
	2	15	10	N/A	N/A	66	51	29	N/A	100	100	78	43	123	122	103	103	
	3	10	N/A	N/A	N/A	61	46	24	N/A	95	95	73	38	118	117	98	98	
No. of	4	N/A	N/A	N/A	N/A	56	41	19	N/A	90	90	68	33	113	112	93	93	
	5	N/A	N/A	N/A	N/A	51	36	14	N/A	85	85	63	28	108	107	88	88	
90 ELL	6	N/A	N/A	N/A	N/A	46	31	9	N/A	80	80	58	23	103	102	83	83	
	7	N/A	N/A	N/A	N/A	41	26	4	N/A	75	75	53	18	98	97	78	78	
	8	N/A	N/A	N/A	N/A	36	21	N/A	N/A	70	70	48	13	93	92	73	73	
	9	N/A	N/A	N/A	N/A	31	16	N/A	N/A	65	65	43	8	88	87	68	68	
	10	N/A	N/A	N/A	N/A	26	11	N/A	N/A	60	60	38	3	83	82	63	63	

CONCENTRIC TERMINATION AT ELEVATION 0 - 4500 ft.

Pip	e Size		1-1/2	2 in.			2 i	n.			2-1/2	2 in.			3 i	n.	
	Input	045	070	090	110	045	070	090	110	045	070	090	110	045	070	090	110
	1	15	10	N/A	N/A	63	48	32	12	95	95	79	44	111	111	104	104
	2	10	N/A	N/A	N/A	58	43	27	7	90	90	74	39	106	106	99	99
	3	N/A	N/A	N/A	N/A	53	38	22	2	85	85	69	34	101	91	94	94
	4	N/A	N/A	N/A	N/A	48	33	17	N/A	80	80	64	29	96	96	89	89
No. of	5	N/A	N/A	N/A	N/A	43	28	12	N/A	75	75	59	24	91	91	84	84
90 ELL	6	N/A	N/A	N/A	N/A	38	23	7	N/A	70	70	54	19	96	86	79	79
	7	N/A	N/A	N/A	N/A	33	18	2	N/A	65	65	49	14	81	81	74	74
	8	N/A	N/A	N/A	N/A	28	13	N/A	N/A	60	60	44	9	76	76	69	69
	9	N/A	N/A	N/A	N/A	23	8	N/A	N/A	55	55	39	4	71	71	64	64
	10	N/A	N/A	N/A	N/A	18	3	N/A	N/A	50	50	34	N/A	66	66	59	59

CONCENTRIC TERMINATION ELEVATION 4501 - 10,000 ft.

Pip	e Size		1-1/2	2 in.			2 i	n.			2-1/2	2 in.			3 i	n.	
	Input	045	070	090	110	045	070	090	110	045	070	090	110	045	070	090	110
	1	15	10	N/A	N/A	63	48	32	N/A	95	95	79	44	111	111	104	94
	2	10	N/A	N/A	N/A	58	43	27	N/A	90	90	74	39	106	106	99	99
	3	N/A	N/A	N/A	N/A	53	38	22	N/A	85	85	69	34	101	101	94	94
No. of	4	N/A	N/A	N/A	N/A	48	33	17	N/A	80	80	64	29	96	96	89	89
	5	N/A	N/A	N/A	N/A	43	28	12	N/A	75	75	59	24	91	91	84	84
90 ELL	6	N/A	N/A	N/A	N/A	38	23	7	N/A	70	70	54	19	86	86	79	79
	7	N/A	N/A	N/A	N/A	33	18	2	N/A	65	65	49	14	81	81	74	74
	8	N/A	N/A	N/A	N/A	28	13	N/A	N/A	60	60	44	9	76	76	69	69
	9	N/A	N/A	N/A	N/A	23	8	N/A	N/A	55	55	39	4	71	71	64	64
	10	N/A	N/A	N/A	N/A	18	3	N/A	N/A	50	50	34	N/A	66	66	59	59

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VENT LENGTHS - EXHAUST USING VENTILATED ATTIC/CRAWLSPACE INTAKE AIR

STANDARD TERMINATION AT ELEVATION 0 - 10,000 ft.

Pip	e Size		1-1/2	2 in.			2 i	n.			2-1/2	2 in.			3 i	n.	
	Input	045	070	090	110	045	070	090	110	045	070	090	110	045	070	090	110
	1	15	10	N/A	N/A	61	46	24	4	90	90	68	33	108	107	88	88
	2	10	N/A	N/A	N/A	56	41	19	N/A	85	85	63	28	103	102	83	83
	3	N/A	N/A	N/A	N/A	51	36	14	N/A	80	80	58	23	98	97	78	78
	4	N/A	N/A	N/A	N/A	46	31	9	N/A	85	75	63	18	93	92	73	73
No. of	5	N/A	N/A	N/A	N/A	41	26	4	N/A	70	70	48	13	88	87	68	68
90 ELL	6	N/A	N/A	N/A	N/A	36	21	N/A	N/A	65	65	43	8	83	82	63	63
	7	N/A	N/A	N/A	N/A	31	16	N/A	N/A	60	60	38	3	78	77	58	58
	8	N/A	N/A	N/A	N/A	26	11	N/A	N/A	55	55	33	N/A	73	72	53	53
	9	N/A	N/A	N/A	N/A	21	6	N/A	N/A	50	50	28	N/A	68	67	48	48
	10	N/A	N/A	N/A	N/A	16	1	N/A	N/A	45	45	23	N/A	63	62	43	43

GAS	HEAT	ACCE	122	RIFS
UAS		AUUL		

Input		Altitude 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	
	4501 - 7500 ft.	7501 - 10,000 ft.	0 - 7500 ft.	0 - 7500 ft.	7501- 10,000 ft.	7501- 10,000 ft.	
045	14A47	14A50	11K51	77W09	73W37	11K46	
070	14A55	14A56	11K51	77W09	73W37	11K46	
090	14A54	14A53	11K51	77W09	73W37	11K46	
110	14A46	14A51	11K51	77W09	73W37	11K46	

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.

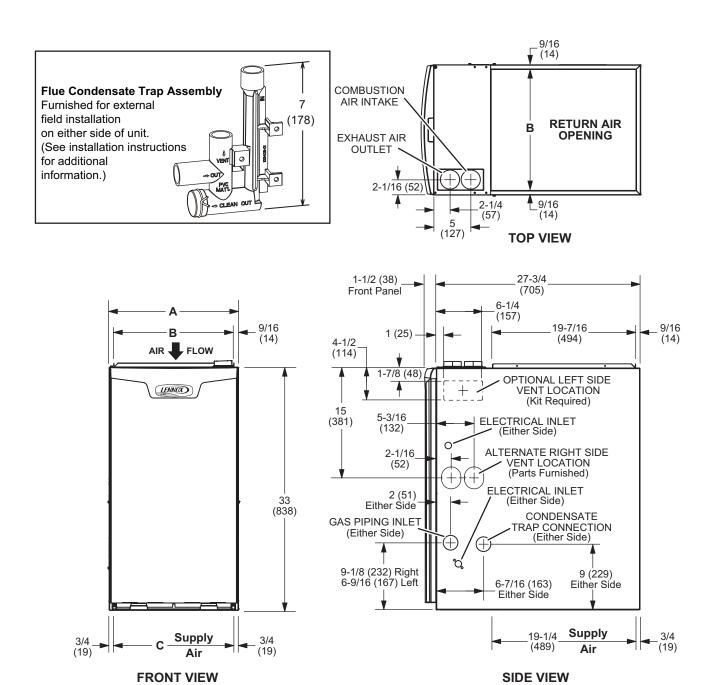
See the Gas Heat Accessories table for ordering information.

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.

			Manifold Pressure in. w.g.										Supply Line	
Input Gas	0 - 4500 ft. 450		4501 -	501 - 5500 ft. 5501		5501 - 6500 ft. 650		6501 - 7500 ft.		7501 - 10,000 ft.		Pressure in. w.g. 0 - 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	
All Sizes	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	

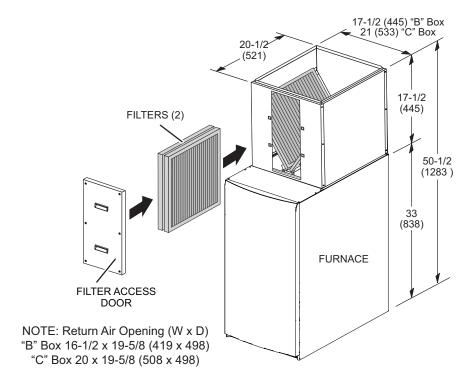
DIMENSIONS UNIT



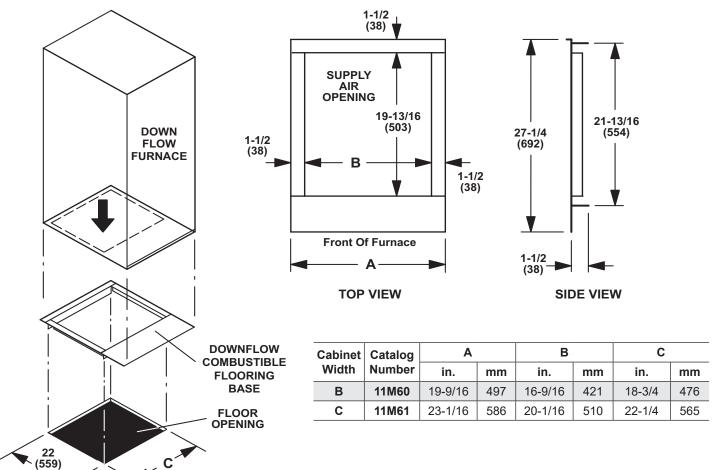
Model No.	A		E	3	С		
	in.	mm	in.	mm	in.	mm	
EL296DF045XE36B EL296DF070XE48B	17-1/2	446	16-3/8	416	16	406	
EL296DF090XE48C EL296DF110XE60C	21	533	19-7/8	505	19-1/2	495	

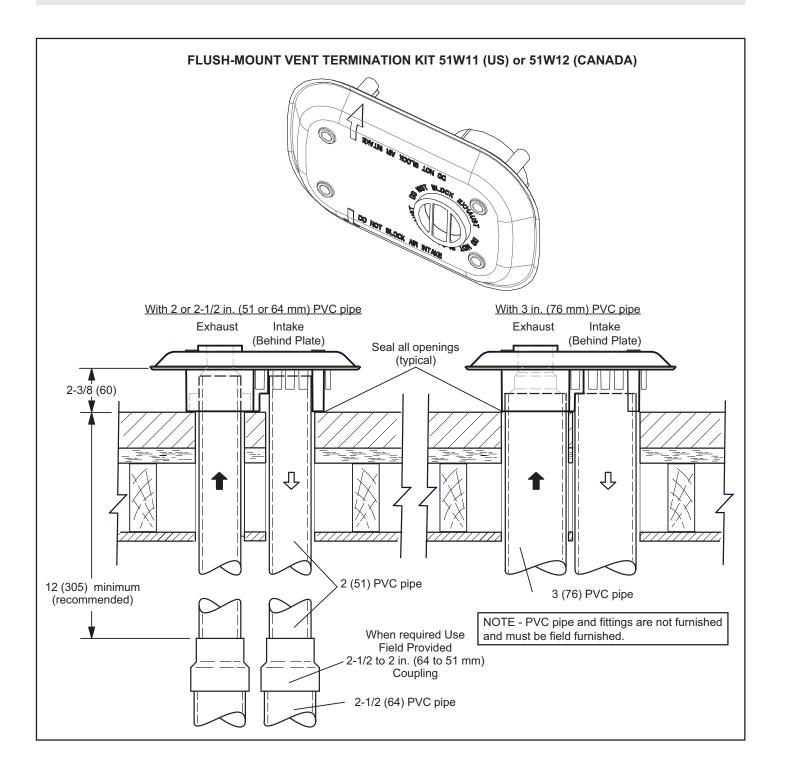
DOWNFLOW FILTER CABINET

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

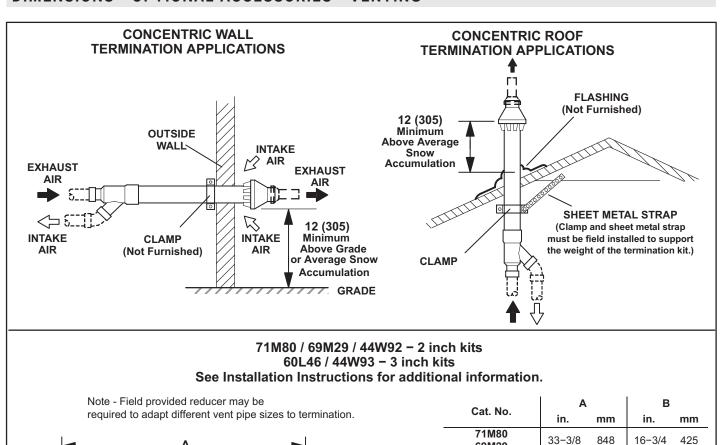


DOWNFLOW COMBUSTIBLE FLOORING BASE





DIMENSIONS - OPTIONAL ACCESSORIES - VENTING



EXHAUST

Outdoor Exhaust Accelerator

included with 71M80/44W92

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

AIR

6-1/2

(165)

INTAKE AIR

3-1/2 (89) - 2 in. kits 4-1/2 (114) - 3 in. kits

(Field Supplied)

TERMINATION

ASSEMBLY

(Furnished)

69M29

44W92

(Canada)

60L46

44W93

(Canada)

29

38-7/8

36-1/8

737

987

918

15-1/2

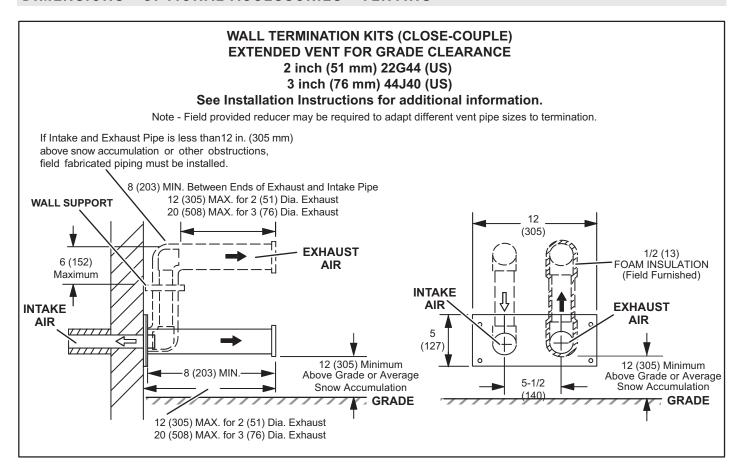
19-1/2

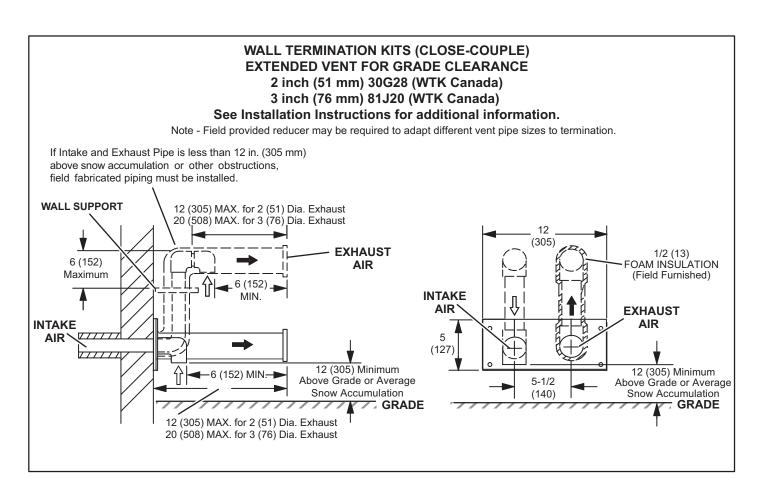
21-3/16 538

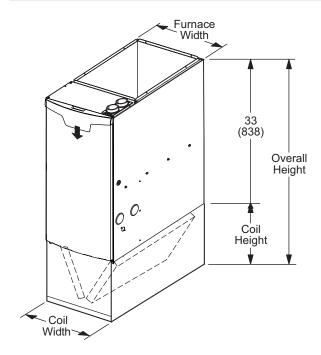
394

495

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Model Number	Coil Width		Furn Wid		Co Heiç		Overall Height	
Number	in.	mm	in.	mm	in.	mm	in.	mm
CRX35-24B-F	17-1/2	445	17-1/2	445	18	457	51	1295
CRX35-30/36B-F	17-1/2	445	17-1/2	445	23-1/2	597	56-1/2	1435
CRX35-30/36C-F	21	533	21	533	23-1/2	597	56-1/2	1435
CRX35-42B-F	17-1/2	445	17-1/2	445	23-1/2	597	56-1/2	1435
CRX35-48C-F	21	533	21	533	27-1/2	699	60-1/2	1537
CRX35-50/60C-F	21	533	21	533	27-1/2	699	60-1/2	1537

BLOWER DATA

EL296DF045XE36B PERFORMANCE (Less Filter)

External				Air Volume	/ Watts at \	/arious Blo	wer Speeds	;		
Static Pressure	High (Black)		Medium-High (Brown)		Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
in. w.g.	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.00	1466	371	1313	266	1198	207	963	119	902	97
0.10	1434	383	1275	277	1169	217	921	126	860	106
0.20	1401	395	1237	288	1140	227	879	134	817	115
0.30	1363	398	1211	297	1101	238	833	140	773	122
0.40	1300	383	1179	308	1070	243	798	151	733	131
0.50	1228	367	1151	316	1036	256	755	156	692	136
0.60	1146	343	1105	319	1005	263	710	163	645	144
0.70	1058	318	1038	309	971	272	672	170	598	154
0.80	930	286	942	284	909	272	614	179	557	158
0.90	807	251	811	251	799	251	569	184	518	163
1.00	645	222	669	224	630	216	532	189	473	169

EL296DF070XE48B PERFORMANCE (Less Filter)

External				Air Volume	/ Watts at \	/arious Blo	wer Speeds	;		
Static Pressure	High (Black)		Medium-High (Brown)			Medium (Blue)		m-Low low)	Low (Red)	
in. w.g.	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.00	1743	468	1546	327	1377	231	1271	187	1055	105
0.10	1709	485	1510	339	1336	240	1226	196	991	114
0.20	1675	501	1474	350	1294	249	1180	204	927	122
0.30	1638	513	1437	362	1244	261	1127	215	863	130
0.40	1601	529	1386	376	1187	270	1082	226	797	139
0.50	1563	541	1353	388	1139	282	1033	232	727	147
0.60	1511	539	1310	401	1100	293	979	245	661	155
0.70	1445	525	1272	410	1048	304	940	255	604	159
0.80	1339	499	1234	421	1013	313	862	264	531	174
0.90	1243	470	1161	424	952	326	811	272	481	182
1.00	1119	439	1092	414	907	330	763	281	435	192

EL296DF090XE48C PERFORMANCE (Less Filter)

External				Air Volume	/ Watts at \	arious Blo	wer Speeds	3			
Static Pressure	High (Black)		Medium-High (Brown)			Medium (Blue)		Medium-Low (Yellow)		Low (Red)	
in. w.g.	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	
0.00	1792	429	1553	294	1420	225	1348	194	1228	146	
0.10	1750	446	1520	308	1389	240	1306	206	1179	158	
0.20	1708	463	1487	323	1359	254	1265	217	1130	171	
0.30	1685	477	1456	339	1326	264	1228	230	1090	182	
0.40	1630	478	1421	350	1274	281	1192	239	1046	192	
0.50	1558	462	1394	363	1246	291	1157	251	989	202	
0.60	1458	432	1354	373	1209	300	1114	264	952	210	
0.70	1371	408	1312	381	1177	314	1079	271	913	220	
0.80	1231	368	1234	366	1138	324	1038	282	861	230	
0.90	1118	343	1093	336	1093	327	997	291	843	237	
1.00	1008	315	976	309	987	306	952	292	794	242	

BLOWER DATA

EL296DF110XE60C PERFORMANCE (Less Filter)

External				Air Volume	/ Watts at \	/arious Blo	wer Speeds	;		
Static Pressure		gh ack)		m-High own)		lium ue)		m-Low low)		DW ed)
in. w.g.	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
0.00	2211	681	1962	459	1799	351	1679	302	1494	214
0.10	2174	694	1920	474	1754	365	1631	312	1441	225
0.20	2136	706	1877	488	1709	379	1583	322	1387	237
0.30	2095	718	1832	500	1658	391	1530	332	1323	247
0.40	2058	734	1792	512	1617	403	1487	345	1276	256
0.50	2006	742	1745	525	1570	413	1433	354	1223	265
0.60	1940	727	1704	538	1523	426	1379	368	1168	276
0.70	1863	702	1665	550	1479	436	1340	377	1110	290
0.80	1765	669	1622	563	1439	445	1288	388	1061	293
0.90	1673	642	1582	572	1398	454	1254	397	1013	304
1.00	1559	599	1522	568	1354	466	1214	407	949	311

REVISIONS	
Sections	Description of Change
Optional Accessories	Added 75VA Transformer.











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