



**RESIDENTIAL  
PRODUCT SPECIFICATIONS**

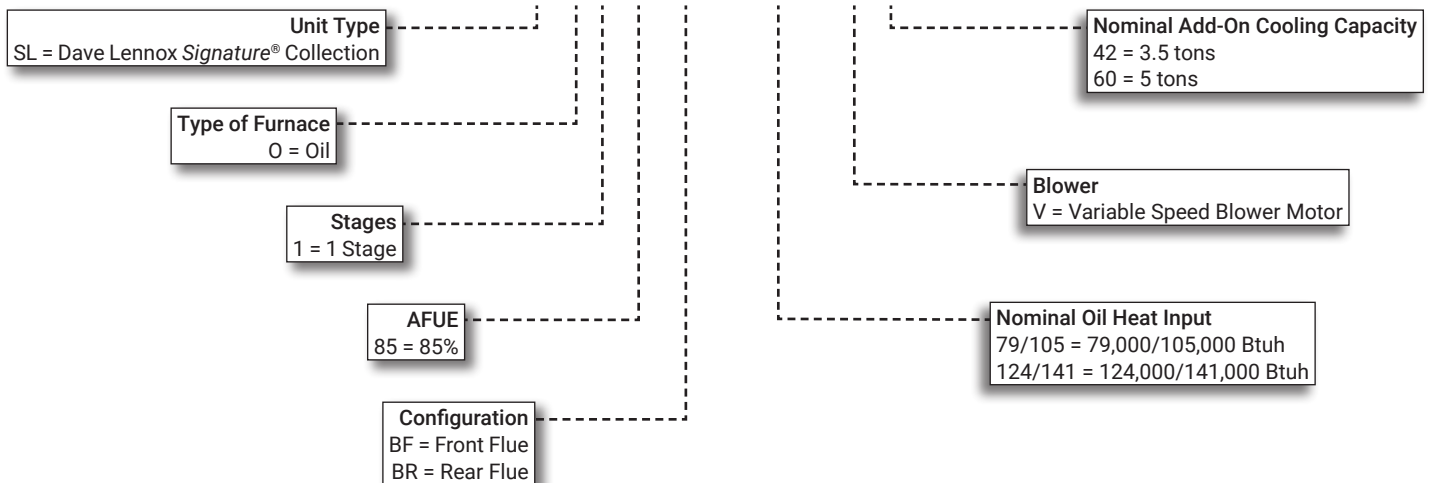
Bulletin No. 210677  
February 2019  
Supersedes August 2015



**AFUE - Up to 87%**  
**Heating Input - 79,000 to 141,000 Btuh**  
**Nominal Add-on Cooling - 3 to 5 Ton**

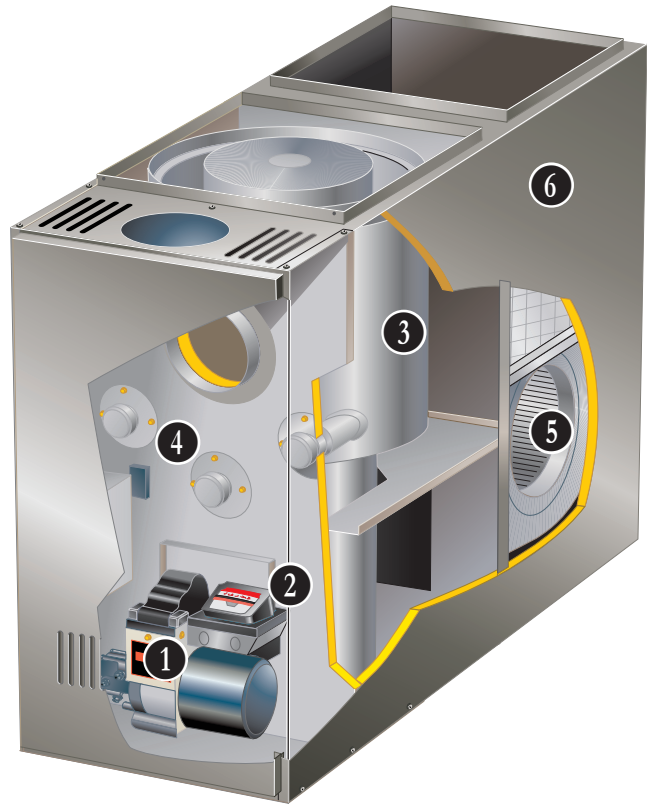
**MODEL NUMBER IDENTIFICATION**

**SL O 1 85 BF 124/141 V 60**



## FEATURE HIGHLIGHTS

1. Beckett™ NX Oil Burner
2. Advanced Burner Control
3. EZ Clean Heat Exchanger
4. Strategically Placed Cleaning Ports
5. Variable Speed Direct Drive Blower
6. Heavy Gauge Steel Cabinet



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## APPROVALS AND WARRANTY

### APPROVALS

- AHRI Certified
- ETL-Intertek listed
- Tested and rated according to US DOE test procedures and FTC labeling regulations
- Oil furnaces comply with US DOE Fan Efficiency Rating (FER) regulations
- ENERGY STAR® certified units are designed to use less energy, help save money on utility bills, and help protect the environment

### WARRANTY

- Heat Exchanger:
  - Limited lifetime (twenty year transferable) in residential applications
  - Limited ten years in non-residential applications
- Oil Burner and all other covered components:
  - Limited ten years in residential installations
  - Limited one year in non-residential installations

**NOTE** - Refer to Lennox Equipment Limited Warranty certificate included with unit for specific details.

## FEATURES

### APPLICATIONS

- Compact cabinet allows installation in a basement, closet, recreation or utility room
- Suitable for installation in a residence, small business or commercial establishment
- Approved for reduced clearances to combustibles
- Lennox add-on indoor coils, high-efficiency air cleaners and humidifiers can easily be added to furnace
- Quiet operating blowers have sufficient capacity to handle add-on cooling air volume requirements
- Shipped factory assembled including the oil burner, with all controls installed and wired
- Factory test operated to ensure proper operation

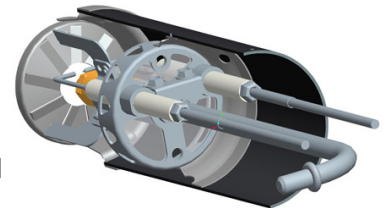
**NOTE** - Units are not approved for zoning applications.

### HEATING SYSTEM

- 1 **Beckett™ NX Oil Burner**
  - Smooth operating, high-pressure atomizing type burner blends oil and air to attain maximum efficiency

#### **Advanced Air Tube Technology**

- Burner maximizes fuel/air mixing, flame retention, and minimizes excess air by regulating flow zones in the air tube
- Furnace remains cleaner and more efficient with improved heat transfer
- Burner produces a narrower, shorter flame shape than typical flame-retention burners for high-efficiency heating
- Heavy duty motor drives quiet operating blower wheel and fuel pump
- Air turbo injector directs combustion air for smooth ignition
- Flame retention head is designed to agitate and mix oil and air for complete combustion and highest efficiency
- 120VAC primary safety control and ceramic glazed electrodes which provide a safe continuous flame
- Factory installed cadmium sulfide cell flame detector and primary safety control that provides complete shutdown in case of flame failure
- All burner parts are easily removable for servicing
- Burner is U.L. approved, C.S.A. certified and certified according to ANSI Standard 296.6
- Burner is factory installed in the unit, wired and fire tested



**NOTE** - Units are shipped for lower heating capacity operation.  
Nozzle must be field provided for field conversion to higher heating capacity.

## FEATURES

### HEATING SYSTEM (continued)

#### 2 Advanced Burner Control



- 120 VAC primary safety control
- Controls the oil burner motor and igniter
- Control features:
  - Welded Relay Protection
  - Limited Reset and Limited Recycle
  - Reset Button - Resets burner if a restricted lockout is present
  - Three Status Lights for System Monitoring and Diagnostics:
    - **Yellow** - Pump Prime Mode
    - **Green** - Flame sensing (flashing = 60 second recycle)
    - **Red** - Restricted Lockout (flashing = Soft lockout) "Strike three" lockout protection to avoid nuisance calls
  - Valve-On Delay / Motor-Off Delay
  - Lockout Time - 15 Seconds
  - Interrupted or Intermittent Duty Ignition
  - Technician Pump Priming Mode
  - Disable Function

#### 3 EZ Clean Heat Exchanger

- Streamlined drum type heat exchanger exposes maximum surface area to the air stream with minimum air resistance
- Constructed of heavy gauge steel for maximum service life

#### 4 Strategically placed ports allow easy cleaning

- Heavy gauge mounting channels are provided in cabinet base for support of heat exchanger

#### Combustion Chamber

- Specially designed alumina silica ceramic fiber combustion chamber
- Combustion chamber can withstand temperatures of up to 2550°F resulting in more complete combustion and higher efficiencies

#### Flame Inspection Tube

- Conveniently located at the front of the unit.
- Opening is large enough for normal inspection mirror

#### Barometric Draft Control

- Furnished as standard equipment
- Field installed in flue pipe

### Optional Accessories

#### Air Intake Kit

- Provides an inlet connection to burner for outdoor combustion air

#### Oil Filter

- Recommended for proper oil filtration
- See Specifications table for order number

#### Two-Stage Oil Pump

- See Specifications table for order number

### BLOWER

#### 5 Variable Speed Direct Drive Blower

- Each blower assembly statically and dynamically balanced
- Variable speed blower motor for quiet operation
- Blower assembly easily removed for servicing
- Change in blower speed is easily accomplished by simple jumper change on blower control
- See Blower Performance tables

### CABINET

- 6 • Heavy gauge steel
- Pre-painted, textured finish
- Entire heating section is lined with foil faced fiberglass insulation keeping cabinet surface temperatures low
- Large blower access door for complete service access to blower
- Blower compartment is completely insulated
- Removal of louvered heating section door allows access to oil burner, inspection door and control compartment
- Door is equipped with handhold for ease of removal
- Control compartment is totally enclosed to provide a safe, compact and clean area
- Oil line and electrical inlet openings are provided in sides of cabinet, see dimension drawing
- Lo-boy units have a lower profile than standard upflow oil furnaces
- Units are configured with both the supply and return air openings on the top of the unit

#### Flue Outlet

- Flue outlet is located on top of cabinet on front flue models and can be relocated to either side of cabinet
- Rear flue models allow the flue to be installed away from indoor coils and air cleaners
- See dimension drawing

#### Filter

- Units are equipped with large, cleanable, frame-type filters
- Easily removed when service is required

## FEATURES

### **CONTROLS**

#### **Electronic Blower Control**

- **HEAT** and **COOL** settings (with four different air volume selections for cooling and two selection for heating) are made by jumper pins on board
- **ADJUST** jumper pin allows approximately 15% higher, normal or 15% lower motor speed selection within **COOL** speeds selected for fine tuning air volume
- See Blower Data Tables.

#### **Single Stage Cooling Airflow Ramp Up**

- At the beginning of a call for cooling, the variable speed blower will run at 82% of rated airflow for 7.5 minutes (passive dehumidification mode)
- After 7.5 minutes, the motor will increase to 100% of the rated airflow
- When the call for cooling is satisfied, the blower ramps back down to 82% of the selected cooling airflow for 1 minute, then shuts off

#### **Two-Stage Cooling Airflow Ramp Up**

- At the beginning of a call for 1st stage cooling, the variable speed blower will run at 57% of rated airflow for 7.5 minutes of the 1st stage cooling demand (passive dehumidification mode)
- After 7.5 minutes, the motor will increase to 70% of the rated airflow until 1st stage cooling demand is satisfied
- If 1st stage cooling is not satisfied a call for 2nd stage cooling is made
- The blower motor runs for 100% of rated air volume until the demand is satisfied
- When the call for cooling is satisfied, the blower ramps back down to 57% of the selected cooling airflow for 1 minute, then shuts off

#### **Passive and Active Dehumidification**

- For situations where humidity control is an issue, the variable speed motor can operate at 82% of the rated airflow for 7.5 minutes
- After 7.5 minutes the blower operates at 100% of rated air volume
- For additional dehumidification the variable speed motor control provides for connection of a thermostat with humidity control or a humidistat on the HUM terminal
- When connected, the dehumidify jumper on the control must be removed
- The control should be wired to open during high humidity, which will reduce blower airflow

#### **Continuous Blower Operation**

- Continuous blower operation allows the blower to operate at 50% of rated cooling air volume without any cooling or heating demand (Fan "On" setting on thermostat)

#### **Powered Air Cleaner Connections**

- Terminals are provided on the control for connection of a 120-volt powered air cleaner
- EAC terminal is energized whenever the thermostat calls for heat, cooling, or continuous blower

#### **Limit Control**

- Factory installed on vestibule panel
- Control has fixed temperature setting and protects unit from abnormal operating conditions

#### **Transformer**

- 24 volt (40VA) control transformer with circuit breaker is furnished as standard and factory installed

### **Optional Accessories**

#### **Thermostat**

- Thermostat (programmable/non-programmable) is not furnished with unit
- See Thermostat bulletins in Controls Section and Lennox Price Book for selection

## SPECIFICATIONS

Oil Heating Performance	Model Number	Front Flue Rear Flue	SLO185BF79/105V42	SLO185BF124/141V60
			SLO185BR79/105V42	SLO185BR124/141V60
Input - Btuh		Low Fire	79,000	124,000
		<sup>1</sup> High Fire	105,000	141,000
Output - Btuh		Low Fire	67,000	104,000
		<sup>1</sup> High Fire	87,000	118,000
		<sup>2</sup> AFUE - Low Fire Front Flue	86%	85%
		<sup>2</sup> AFUE - High Fire Front Flue	85%	85%
		<sup>2</sup> AFUE - Low Fire Rear Flue	87%	85%
		<sup>2</sup> AFUE - High Fire Rear Flue	85%	85%
		Flue Size Diameter - in.	6	6
		Temperature rise range	50 - 80°F	45 - 70°F Front Flue 50 - 80°F Rear Flue
Oil Burner	Nozzle rating - US gph	Low Fire	.50	.75
		<sup>1</sup> High Fire	.65	.85
		Nozzle spray angle	60° hollow	60° hollow
		Oil Burner Pump	1 Stage	1 Stage
		Oil Burner Pump Pressure - psig	150	145
Indoor Blower		Blower Motor Output - hp	1/2	1
		Nominal add-on cooling - Tons	2.5 thru 4	3 thru 5
		Blower wheel nom. diameter x width - in.	10 x 9	12 x 10
<sup>3</sup> Filter		Number of filters	1	1
		Size of filters - in.	18 x 19 x 1	19 x 21 x 1
Shipping weight - lbs. 1 package			225 (Front Flue) 230 (Rear Flue)	270
Electrical		Characteristics	120V-60hz-1ph	120V-60hz-1ph
		Maximum Overcurrent Protection (amps)	15	15
<b>OPTIONAL ACCESSORIES - ORDER SEPARATELY</b>				
Air Intake Kit			<b>11F44</b>	<b>11F44</b>
Oil Filters	10 micron with mounting bracket		<b>53P92</b>	<b>53P92</b>
	Filter restriction indicator gauge		<b>53P90</b>	<b>53P90</b>
Two-Stage Oil Pump		with solenoid	<b>71M18</b>	<b>71M18</b>

<sup>1</sup> Nozzle is furnished for field conversion to higher heating input.

<sup>2</sup> Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

<sup>3</sup> Cleanable flame type filters furnished.

## BLOWER DATA

### SLO185BF79/105V42 BLOWER PERFORMANCE 0 through 0.50 in. w.g. External Static Pressure Range

"ADJUST" Jumper Setting	Jumper Speed Positions					
	"HEAT" Speed		"COOL" Speed			
	.65 High Fire	.50 Low Fire				
	B	D	A	B	C	D
	cfm	cfm	cfm	cfm	cfm	cfm
+	N/A	N/A	1500	1400	1200	950
NORM	1450	1200	1400	1200	1000	800
-	N/A	N/A	1200	1050	860	650

NOTE - Continuous Fan air volume is 50% of COOL speed.

### SLO185BR79/105V42 BLOWER PERFORMANCE 0 through 0.50 in. w.g. External Static Pressure Range

"ADJUST" Jumper Setting	Jumper Speed Positions					
	"HEAT" Speed		"COOL" Speed			
	.65 High Fire	.50 Low Fire				
	A	D	A	B	C	D
	cfm	cfm	cfm	cfm	cfm	cfm
+	N/A	N/A	1500	1400	1200	950
NORM	1550	1200	1400	1200	1000	800
-	N/A	N/A	1200	1050	860	650

NOTE - Continuous Fan air volume is 50% of COOL speed.

### SLO185BF124/141V60 BLOWER PERFORMANCE 0 through 0.50 in. w.g. External Static Pressure Range

"ADJUST" Jumper Setting	Jumper Speed Positions					
	"HEAT" Speed		"COOL" Speed			
	.85 High Fire	.75 Low Fire				
	B	C	A	B	C	D
	cfm	cfm	cfm	cfm	cfm	cfm
+	N/A	N/A	2100	2000	1800	1350
NORM	1730	1550	2000	1800	1600	1200
-	N/A	N/A	1650	1500	1350	950

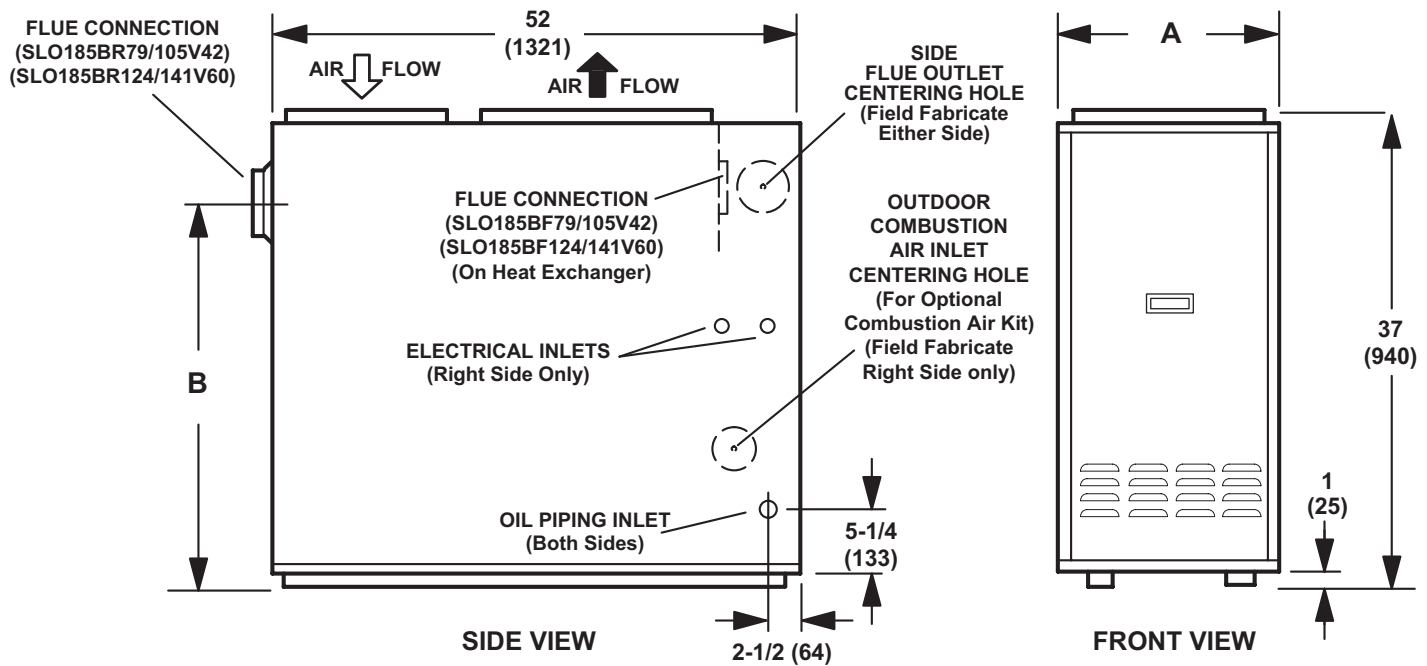
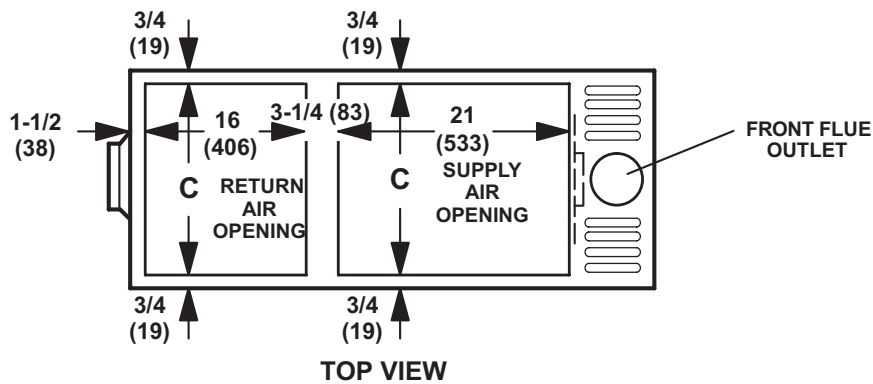
NOTE - Continuous Fan air volume is 50% of COOL speed.

### SLO185BR124/141V60 BLOWER PERFORMANCE 0 through 0.50 in. w.g. External Static Pressure Range

"ADJUST" Jumper Setting	Jumper Speed Positions					
	"HEAT" Speed		"COOL" Speed			
	.85 High Fire	.75 Low Fire				
	B	D	A	B	C	D
	cfm	cfm	cfm	cfm	cfm	cfm
+	N/A	N/A	2100	2000	1800	1350
NORM	1730	1450	2000	1800	1600	1200
-	N/A	N/A	1650	1500	1350	950

NOTE - Continuous Fan air volume is 50% of COOL speed.

## DIMENSIONS



Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
SLO185BF79/105V42	19-1/2	495	---	---	18	457
SLO185BR79/105V42	19-1/2	495	27-5/8	702	18	457
SLO185BF124/141V60	22-1/2	572	---	---	21	533
SLO185BR124/141V60	22-1/2	572	27-5/8	702	21	533

## INSTALLATION CLEARANCES

Approved for closet or alcove installation. When installing in a confined space, two ventilation openings must be provided into the space; one 6 in. (152 mm.) from the top and one 6 in. (152 mm.) from the bottom. Each opening should be 8 x 16 inches (203 x 406 mm).

Sides of cabinet	6 in.	152 mm
Rear of cabinet	24 in.	610 mm
Front of cabinet	4 in.	102 mm
Service Clearance (Front)	24 in.	610 mm
Service Clearance (Rear)	24 in.	610 mm
Floor	0 in.	0 mm
Top of plenum	2 in.	51 mm
Plenum sides	3 in.	76 mm
Flue pipe horizontal	9 in.	229 mm
Horizontal warm air duct within 3 feet (1 m) of furnace	2 in.	51 mm









## REVISIONS

Sections	Description of Change
Optional Accessories	Removed Oil Filter, 10 micron without mounting bracket ( <b>81P89</b> ). It is discontinued. Removed Replacement cartridge - 10 micron, 45 gph ( <b>53P93</b> ). It is discontinued. Removed Two-Stage Oil Pump without solenoid ( <b>65A44</b> ). It is discontinued.



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For the latest technical information, [www.LennoxPros.com](http://www.LennoxPros.com)

Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

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