

**OF20 SERIES — LO-BOY  
OIL FURNACES**

**OF20**

Bulletin #210006

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**\*79.8% to 80.6% A.F.U.E.**

**105,000 to 210,000 (30.8 to 61.5 kW) Btuh Input**

**1-1/2 thru 5 Tons (5.3 thru 17.6 kW) Nominal Add-On Cooling**

\*Isolated Combustion System Rating For Non-Weatherized Furnaces



Heat Exchanger

**Typical Applications**

Basement Installation  
Flue at front Model

Basement Installation  
Flue at Rear Model

**FEATURES**

**Applications** — Lennox OF20 series lo-boy oil furnaces are available in three models with input capacities of 105,000, 120,000, 140,000, 154,000, 175,000 and 210,000 Btuh (30.8, 35.2, 41.0, 45.1, 51.3 and 61.5 kW). All models feature dual heating inputs/outputs. OF20Q5-175/210R model is not available in Canada. "R" models feature rear flue connection. Units are applicable to residential or commercial applications. Lennox direct expansion evaporator units with high efficiency condensing units, electronic air cleaners and power humidifiers can be added to the lo-boy units. Furnace cabinet is constructed of heavy gauge steel with a durable baked-on paint finish. Large front and rear doors provide complete service access. Powerful blowers have sufficient capacity to handle cooling air volume requirements. Rugged heat exchanger and high performance oil burner combine to provide maximum efficiency. Units are shipped completely assembled ready for installation. Installer has only to set unit in desired location, install draft control, mount thermostat, duct, flue, oil line and electrical connections to complete a low cost installation.

**Tested and Certified** — Units have been rated and tested according to U.S. Department of Energy (DOE) test procedures and Federal Trade Commission (FTC) labeling regulations. Units are also U.L. listed and ratings are certified by GAMA and C.S.A.

**Equipment Warranty** — Heat Exchangers have a limited lifetime warranty. Oil burners and all other covered components have a limited warranty for five years. Refer to the Lennox Equipment Limited Warranty certificate included with the equipment for details.

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

**(Continued)**

## FEATURES

**Combustion Chamber** — All models have a factory installed, specially designed Alumina Silica combustion chamber. Combustion chamber can withstand temperatures of up to 2300°F (1260°C) resulting in more complete combustion and higher efficiencies.

**Oil Burner** — Smooth operating high pressure atomizing type burner blends oil and air to attain maximum efficiency. Heavy duty motor drives quiet operating blower wheel and fuel pump. Flame retention head is designed to agitate and mix oil and air for complete combustion and highest efficiency. Burner has 10,000 volt ignition transformer and ceramic glazed electrodes which provide a safe continuous flame. Equipped with a 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 insuring proper operation. Dual input/output models are shipped for higher heating capacity operation. Nozzle is furnished for field conversion to lower heating capacities.

**Rugged Cabinet** — Constructed of heavy gauge steel with a baked-on enamel paint finish. Entire heating section is lined with foil faced fiberglass insulation keeping cabinet surface temperatures low. Removal of louvered heating section front door allows access to oil burner, inspection door and control compartment. Control compartment is totally enclosed to provide a safe, compact, clean and quiet control area. Large blower access door at rear of cabinet gives complete service access to blower and air filters. Oil line and electrical inlet openings are provided in left side of cabinet. See dimension drawing for details.

**Flame Inspection Door** — Conveniently located at the front of the unit. Large enough opening for normal inspection mirror. Hinged door is spring loaded so it cannot be left open.

**Barometric Draft Control** — Furnished as standard equipment and field installed in flue pipe.

**Powerful Blowers** — All models are equipped with variable speed direct drive blowers. Motor is resiliently mounted and has integral overload protection. Change in blower speed is easily accomplished by simple wiring change. Blower wheel is statically and dynamically balanced.

**Air Filters** — Units are equipped with large cleanable frame type filters. Easily removed when servicing is required.

**Fan and Limit Control** — Factory installed on vestibule panel in control compartment. Time-start fan control assures proper blower operation and has adjustable blower off temperature setting. Control turns fan on 60 to 90 seconds after thermostat demand. Limit control has fixed temperature setting and protects unit from abnormal operating conditions.

**Transformer and Terminal Strip** — 24 volt control transformer and low voltage terminal strip are furnished as standard and factory installed.

**Blower Cooling Relay** — Furnished with the unit and factory installed on the wiring junction box. Relay activates blower operation during cooling cycle.

### OPTIONAL ACCESSORIES (Must Be Ordered Extra)

**Thermostat (Not Furnished)** — Heating thermostat is not furnished and must be ordered extra. See Thermostats bulletin in Accessories Section (U.S. only) and Lennox Price Book. For all season applications heating-cooling thermostat is available with the condensing unit.

## SPECIFICATIONS

Model Number		OF20Q3-105/120 OF20Q3-105/120R	OF20Q5-140/154 OF20Q5-140/154R	●OF20Q5-175/210R
Input — Btuh (kW) low/high		105,000/120,000 (30.8/35.2)	140,000/154,000 (41.0/45.1)	175,000/210,000 (51.3/61.5)
Output — Btuh (kW) low/high		85,000/96,000 (24.9/28.1) — non "R" model — 84,000/95,000 (24.6/27.8) — "R" model —	115,000/124,000 (33.7/36.3)	142,000/166,000 (41.6/48.6)
*A.F.U.E. (low/high)		80.0%	80.0%	80.6%/79.8%
Nozzle Rating — gph (L/hr) and spray angle		.75 (2.8) — 80° (-105 input) .85 (3.2) — 80° (-120 input)	1.00 (3.8) — 80° (-140 input) 1.10 (4.2) — 80° (-154 input)	1.25 (4.7) — 80° (-175 input) 1.50 (5.7) — 80° (-210 input)
Flue Size Diameter — in. (mm)		6 (152)		
Oil Burner Pump		1 Stage	1 Stage	1 Stage
Optional 2 Stage Fuel Pump		34H74		
Blower wheel nominal diameter x width	in.	10 x 10 (front flue) 10 x 8 (rear flue)	12 x 10	12 x 10
	mm	254 x 254 (front flue) 254 x 203 (rear flue)	305 x 254	305 x 254
Blower Motor Output — hp (W)		1/3 (249)	3/4 (560)	3/4 (560)
Nominal cooling that can be added — Tons (kW)		1-1/2 thru 3 (5.3 thru 10.6)	3 thru 5 (10.6 thru 17.6)	3 thru 5 (10.6 thru 17.6)
Number and size of filters	in.	(1) 18 x 20 x 1	(1) 20 x 20 x 1	(1) 16 x 24 x 1
	mm	(1) 457 x 508 x 25	(1) 508 x 508 x 25	(1) 406 x 610 x 25
Shipping weight — lbs. (kg) 1 package		250 (113)	285 (129)	295 (134)
Electrical Characteristics		115 — 60 hertz — 1 phase		

\*Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

●Not available in Canada.

## BLOWER DATA

### OF20Q3-105/120(R) BLOWER PERFORMANCE

External Static Pressure		Air Volume at Various Blower Speeds					
		High		Medium		Low	
in. w.g.	Pa	cfm	L/s	cfm	L/s	cfm	L/s
.20	50	1520	715	1360	640	1120	530
.30	75	1430	675	1300	615	1080	510
.40	100	1330	630	1190	560	1000	470
.50	125	1220	575	1030	485	900	425

NOTE — All air data is measured external to the unit with the air filter in place.

### OF20Q5-140/154(R) BLOWER PERFORMANCE

External Static Pressure		Air Volume at Various Blower Speeds					
		High		Medium		Low	
in. w.g.	Pa	cfm	L/s	cfm	L/s	cfm	L/s
.20	50	2200	1040	1860	880	1370	645
.30	75	2100	990	1800	850	1360	640
.40	100	2030	960	1770	835	1350	635
.50	125	2000	945	1700	800	1310	620

NOTE — All air data is measured external to the unit with the air filter in place.

### OF20Q5-175/210R BLOWER PERFORMANCE

External Static Pressure		Air Volume at Various Blower Speeds					
		High		Medium		*Low	
in. w.g.	Pa	cfm	L/s	cfm	L/s	cfm	L/s
.20	50	2300	1085	1640	775	1320	620
.30	75	2250	1060	1635	770	1310	620
.40	100	2200	1040	1625	765	1300	615
.50	125	2160	1020	1600	755	1285	605

NOTE — All air data is measured external to the unit with the air filter in place.

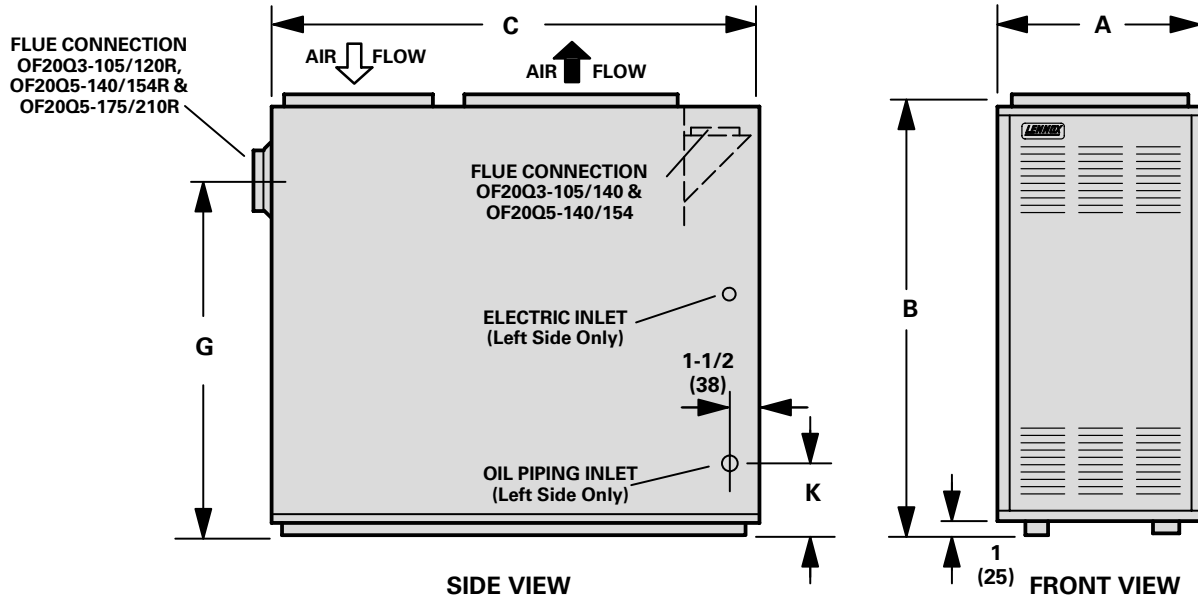
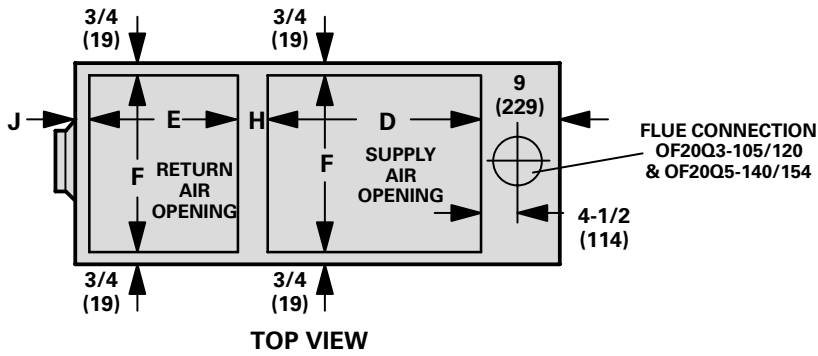
\*Low speed not recommended for heating.

## INSTALLATION CLEARANCES — inches (mm)

Sides of cabinet	6 (152)
Rear of cabinet	24 (610)
Front of cabinet	24 (610)
Floor	0 (0)
Top of plenum	2 (51)
Plenum sides	2 (51)
Flue pipe	18 (457)
Horizontal warm air duct within 6 feet (1.8m) of furnace	2 (51)

C.S.A. Approved for alcove installation

**DIMENSIONS — inches (mm)**



Model No.		A	B	C	D	E	F	G	H	J	K
OF20Q3-105/120	in.	19-1/2	37-1/4	50	18	18	18	----	3	1-1/2	3
	mm	495	946	1270	457	457	457	----	76	38	76
OF20Q3-105/120R	in.	19-1/2	37-1/4	50	18	18	18	28	3	1-1/2	6-1/2
	mm	495	946	1270	457	457	457	711	76	38	165
OF20Q5-140/154	in.	22-1/2	37-1/4	52	20	18	21	----	3	1-1/2	3
	mm	572	946	1321	508	457	533	----	76	38	76
OF20Q5-140/154R	in.	22-1/2	37-1/4	52	20	18	21	28	3	1-1/2	6-1/2
	mm	572	946	1321	508	457	533	711	76	38	165
OF20Q5-175/210R	in.	24	39-1/4	55	20	20	22-1/2	29	4	2-7/8	3
	mm	610	997	1397	508	508	572	737	102	73	76