

## Features

- Horizontal unit heaters are low profile, compact in design and easy to install.
- Steady State Efficiencies of up to 81%.
- Ideal for economical heating systems in garages and non-confined living spaces.
- Shipped completely assembled with controls factory installed and wired.
- Hanging brackets are shipped loose for field installation.
- Each unit factory tested to ensure proper operation and dependability.
- Installer has only to locate unit, make unit gas supply, electrical connections and mount thermostat to complete the installation.

## Approvals

- Unit certified by CSA International.
- Units are certified for natural or LPG/propane gas (optional kit required for LPG/propane conversion).
- Units are approved for vertical or horizontal venting.

## Warranty

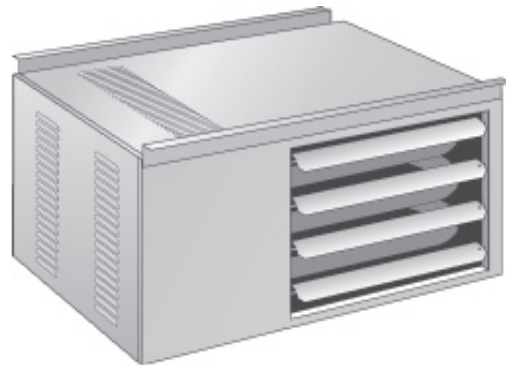
- Aluminized steel heat exchanger - limited ten year warranty.
- Solid-state ignition module - limited warranty for three years in residential applications, one year in non-residential applications.

All other covered components have a limited warranty of one year. Refer to the Equipment Limited Warranty certificate included with the equipment for details.

## Cabinet

- Constructed of pre-painted heavy gauge painted steel.
- Inside cabinet insulation keep outer cabinet surface temperatures low.
- Adjustable louvers are furnished on cabinet for control of air flow direction.
- Wiring junction box is conveniently located inside unit cabinet.
- Contains all electrical and safety controls.
- Hanging brackets for suspending unit are furnished for field installation.
- Unit may be turned over to change gas, electrical and flue positions. See dimension drawing.

Compact Unit Heater - horizontal  
Steady-State Efficiency - up to 81%  
Input - 30,000 to 75,000 Btuh  
Bulletin No. LF24-30-75-100 (05/08)



## Model Number Identification

	LF	24	-	45	A	-	P	
LF = Unit Type Unit Heater	Series							Gas Type (blank) = Natural Gas P = LPG/Propane Gas
Nominal Gas Heat Input 30 = 30,000 Btuh (8.8 kW) 45 = 45,000 Btuh (13.2 kW) 60 = 60,000 Btuh (17.6 kW) 75 = 75,000 Btuh (22.0 kW)								Heat Exchanger Type A = Aluminized Steel S = Stainless Steel

### Heating System

- 24 volt redundant combination gas control valve combines a manual main shutoff valve, pressure regulation and automatic electric valve (dual) into one compact combination control.
- Solid-state electronic direct spark ignition control provides positive main burner ignition.
- Spark is intermittent and occurs only when required.
- Separate electronic flame sensor control assures safe and reliable operation.
- Should loss of flame occur, flame sensor controls will initiate 3 attempts at re-ignition before locking out unit operation.
- Combustion air inducer prepurges heat exchanger and safely vents flue products.
- Pressure switch proves inducer operation before allowing gas valve to open.
- Combustion air inducer operates only during heating cycle.

### Tubular Aluminized Steel Heat Exchanger

- Tubular heat exchanger is constructed of aluminized steel for superior resistance to corrosion and oxidation.
- Curving design of heat exchanger allows complete exposure of heating surfaces to supply air stream.
- Round tube surfaces create minimum air resistance and allow air to surround all surfaces for excellent heat transfer.
- Compact design reduces space requirements in unit cabinet.
- Heat exchanger has been laboratory life cycle tested.

### Inshot Burners

- Aluminized steel inshot burners provide efficient trouble free operation.
- Burner venturi mixes air and gas in correct proportion for proper combustion.
- Burner assembly is removable from the unit as a single component for ease of service and each burner may be removed individually.

### Limit Control

- Limit control has fixed temperature setting and protects heating system from abnormal operating conditions.

### Combustion Air Inducer

- Prepurges heat exchanger and safely vents combustion products.
- Blower motor has sleeve bearings and is thermally protected.
- Pressure switch prevents unit operation in case of blockage of combustion air inlet or flue outlet.

## Controls

The following controls are furnished as standard equipment: 24 volt main gas valve with 100% safety shutoff, direct spark ignition, main shutoff valve, gas pressure regulation (natural gas models) 115/24v transformer, low voltage terminal strip, solid-state control board with LED diagnostics, fan timer control-fan on (45 seconds - fixed fan off (150 seconds - fixed).

## Direct Drive Fan

All models are equipped with efficient and quiet operating direct drive propeller type fan with permanently lubricated fan motor.

## Optional Accessories - Must be Ordered Extra

LPG/Propane Conversion Kit

Conversion kit is required for field change over from natural gas. See Specifications tables.

## High Altitude Information

All units may be fired at full input up to 2000 ft. (610 m) above sea level. LF24-30 and LF24-60 units may be fired at full input up to 7500 ft. (2285 m). LF24-45 units may be fired at full input up to 6500 ft. (1980 m) at altitudes above 6501 ft. (1980 m) units are adjusted by derating manifold pressure, see below. LF24-75 units installed above 2500 ft. (760 m) are adjusted by derating manifold pressure. See table below for correct pressure. If any unit is installed at an altitude greater than 7500 ft. (2285 m) unit must be derated 4% for each additional 100 ft. (305 m) above 7500 ft. (2285 m). Thus, at an altitude of 8500 feet (2895 m), an LF24-75 would require an additional derate of 4%.

Note: - This is the only permissible derate for the units.

Model Number	Manifold Pressure - in. w.c. (Pa)									
	2500-3500 ft. (760-1065 m)		3501-4500 ft. (1065-1370 m)		4501-5500 ft. (1370-1675 m)		5501-6500 ft. (1675-1980 m)		6501-7500 ft. (1980-2285 m)	
	Natural Gas	LPG/ Propane	Natural Gas	LPG/ Propane	Natural Gas	LPG/ Propane	Natural Gas	LPG/ Propane	Natural Gas	LPG/ Propane
LF24 - 30	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment
LF24 - 60	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment
LF24 - 45	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment	No Adjustment
LF24 - 75	3.5 (845)	9.5 (2362)	3.4 (845)	9.2 (2287)	3.3 (820)	8.9 (2212)	3.2 (795)	8.6 (2138)	3.1 (770)	8.3 (2063)

## Specifications - LF24-30 to LF24-75

Gas Heating Performance	Model No.	LF24 - 30A	LF24 - 45A	LF24 - 60A	LF24 - 75A
		Heating Capacity Input - Btuh (kW)	30,000 (8.8)	45,000 (13.2)	60,000 (17.6)
	Heating Capacity Output - Btuh (kW)	24,300 (7.1)	36,500 (70.7)	48,300 (14.1)	60,300 (17.6)
	Steady State Efficiency	81.0%	81.0%	80.0%	80.0%
	Temperature Rise - °F (°C)	42 (23)	45 (23)	55 (31)	60 (33)
Connections - in.	Flue size (round) - Vertical Venting	<sup>1</sup> 3 (76)	<sup>1</sup> 3 (76)	<sup>2</sup> 4 (102)	<sup>2</sup> 4 (102)
	Horizontal Venting - Residential	<sup>3</sup> 4 (102)	<sup>3</sup> 4 (102)	<sup>4</sup> 5 (127)	<sup>4</sup> 5 (127)
	Gas Piping Size	1/2 (13)	1/2 (13)	1/2 (13)	1/2 (13)
Fan Data	Number of fans	1	1	1	1
	Fan Diameter - in. (mm)	10 (254)	10 (254)	14 (356)	14 (356)
	Number of blades	4	4	3	4
	Motor Output - hp (W)	1/20 (37)	1/20 (37)	1/10 (75)	1/10 (75)
	Amps	1.7	1.7	4.1	4.1
	rpm	1650	1650	1050	1050
	Air Volume - cfm (L/s)	535 (250)	750 (355)	830 (390)	950 (450)
Air throw at 8 ft. (2.4) mounting height - ft. (m)	25 (7.6)	25 (7.6)	40 (12.2)	40 (12.2)	
Electrical Characteristics		115 volts - 60 hertz - 1 phase			
Shipping Weight - lbs. (kg) 1 package		60 (27)	63 (29)	87 (40)	91 (41)
OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA					
LPG/Propane Kit		201.05	201.05	201.05	201.05

<sup>1</sup>2-1/8 x 3 in. (54 mm x 76 mm) diameter adaptor is furnished with unit for flue connection.

<sup>2</sup>2 x 4 in. (51 mm x 102 mm) diameter adaptor is furnished with unit for flue connection.

<sup>3</sup>3 x 4 in. (76 x 102 mm) vent adaptor required (not furnished) for horizontal venting in residential applications.

<sup>4</sup>4 x 5 in. (102 x 127 mm) vent adaptor required (not furnished) for horizontal venting in residential applications.

## Installation Clearances - In. (mm)

Top	1 (25)
Side opposite access panel	1 (25)
Access Panel Side	18 (457)
Back	18 (457)
Bottom	0 (0)
Flue	6 (152)

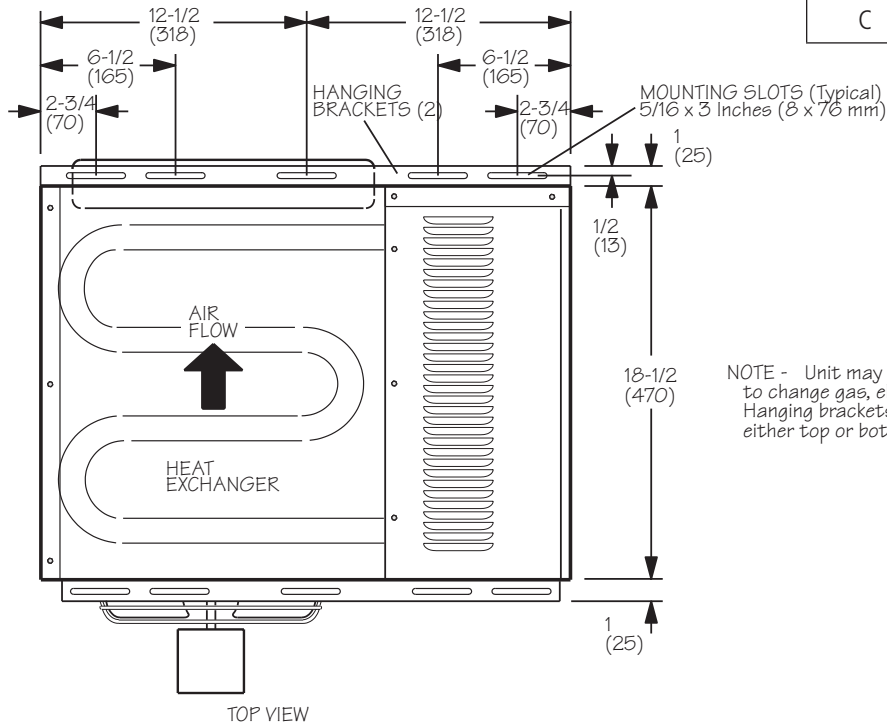
NOTE: - Provide adequate clearance for servicing.  
See Installation Instructions for further installation considerations.

## Maximum Vent Connector Lengths

Number of Elbows	Maximum Length of Straight Vent Pipe	
	ft.	m
1	25	7.6
2	20	6.1
3	15	4.6
4	10	3.0
5	5	1.5

# Dimensions - In. (mm)

Model	LF24-30A LF24-45A	LF24-60A LF24-75A
A	12 (305)	17 (432)
B	5-1/2 (140)	6-1/2 (165)
C	4-1/4 (108)	6-3/4 (171)



NOTE - Unit may be rotated 180° for bottom to change gas, electrical and flue positions. Hanging brackets may be installed on either top or bottom of unit.

