

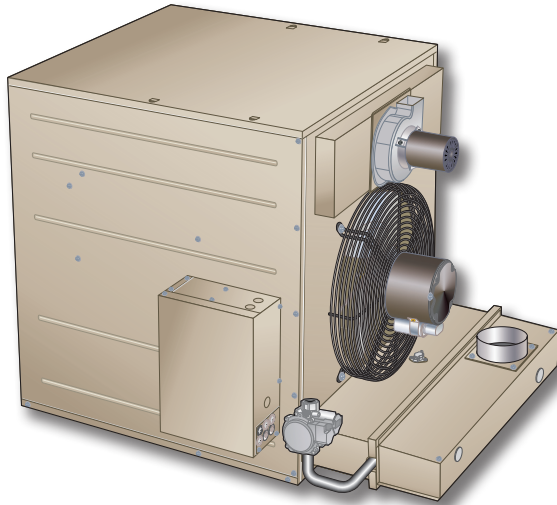


UNIT HEATERS
LS25-125-400

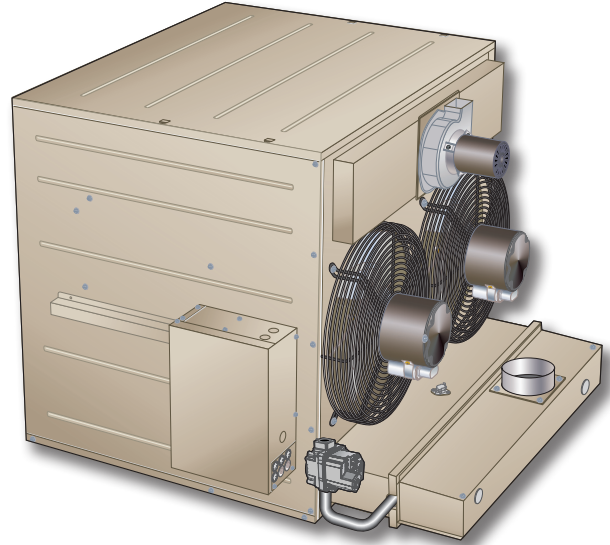
Unit Heaters
Separated Combustion - 60 Hz

Bulletin No. 210929
August 2021
Supersedes August 2020

COMMERCIAL
PRODUCT SPECIFICATIONS



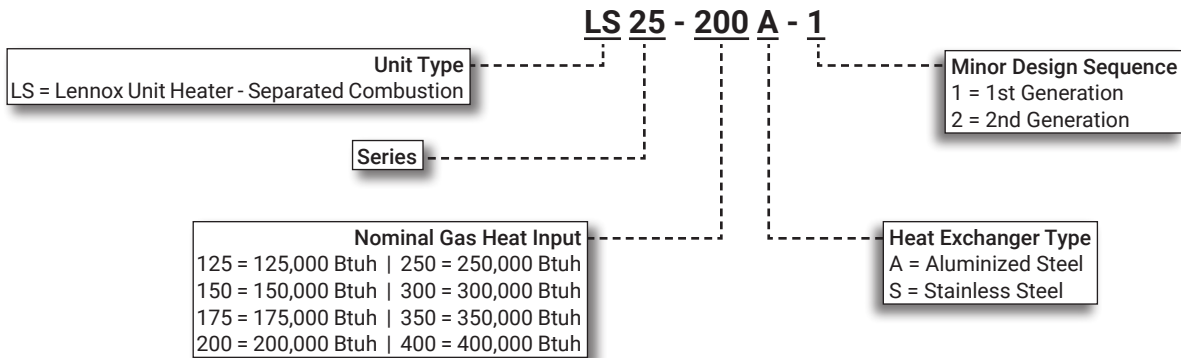
LS25-125-200
Single-Stage Heating



LS25-250-400
Two-Stage Heating

Steady-State Efficiency - 82%
Input - 125,000 to 400,000 Btuh

MODEL NUMBER IDENTIFICATION



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WARRANTY AND APPROVALS

WARRANTY

- Heat Exchanger - Stainless steel - fifteen year limited
- Heat Exchanger - Aluminized steel - ten year limited
- All other covered components - Limited one year

APPROVALS

- CSA International certified to ANSI Z83.8
- Certified for natural or LPG/Propane gas
- ISO 9001 Registered Manufacturing Quality System
- All models are ASHRAE 90.1 compliant

FEATURES AND BENEFITS

APPLICATIONS

- **Single Stage Heating** - LS25-125 through LS25-200
- **Two-Stage Heating** - LS25-250 through LS25-400
- Steady-state heating efficiencies - 82.0%
- Ideal for economical commercial heating systems
- Shipped completely assembled with controls factory installed and wired
- Factory to ensure proper operation and dependability
- Units may be vented horizontally or vertically

NOTE - Installer must locate unit and combustion air intake box, make unit gas supply, combustion air, flue, electrical connections and mount thermostat to complete job.

HEATING SYSTEM

Tubular Aluminized or Stainless Steel Heat Exchanger

- Tubular heat exchanger is constructed of aluminized or stainless steel for superior resistance to corrosion and oxidation
- Curved design allows complete exposure of heating surfaces to supply air stream
- Dimpled tubes for maximum heat transfer
- Compact design reduces space requirements in unit cabinet
- Heat exchanger has been laboratory life cycle tested

Inshot Burner Assembly

- Aluminized steel inshot burner provides 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

Single-Stage Gas Control Valve (LS25-125-200 models)

- 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

Two-Stage Gas Control Valve (LS25-250-400 models)

- 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

Separated Combustion

- Combustion air is separate from the air in the heated space
- Using outside air for combustion prevents dirt, lint, dust and other contaminants in the heated space from entering the combustion area of the unit heater
- Sealed combustion air and burner compartments for optimum performance and reliability
- Combustion air intake box may be rotated 180° to facilitate top or bottom combustion air piping installations

Combustion Air Inducer

- Prepurges heat exchanger
- Safely vents combustion products
- Operates only during heating cycle
- Blower motor has ball bearings and is thermally protected

Pressure Switch

- Pressure switch prevents unit operation in case of blocked inlet or flue outlet

Limit Control(s)

- Factory installed and accurately located
- Limit control has fixed temperature setting
- Protects heating system from abnormal operating conditions

Flame Rollout Switch

- Automatic reset switch is factory installed on front of the burner box

Optional Accessories

Natural Gas to LPG/Propane Conversion Kit

- Required for field changeover from natural gas to LPG/Propane

NOTE - See Optional Accessories - Gas Heat for proper kit selection at different elevations.

High Altitude Conversion Kit - Natural Gas

- Required on all units for proper unit operation at altitudes from 4001 to 10,000 ft. (US) and 6501 to 9500 ft. (Canada)

High Altitude Pressure Switch Kit

- Required for proper unit operation at various elevations

FEATURES AND BENEFITS

CONTROLS

Combination Direct Spark Ignition/Fan Timer Control

- Electronic direct spark ignition control provides positive and safe 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 5 attempts at re-ignition before locking out unit operation
- Control board contains all necessary controls and relays to operate unit
- Includes: Fan timer control - fan on 30 seconds (fixed), fan off 150 seconds (fixed), terminal strip for thermostat connections, diagnostic LED for troubleshooting
- Direct plug-in wiring harness

Transformer

- 120V/24V transformer furnished as standard

Optional Accessories

Remote Diagnostic LED Kit

- Allows for remote status updates and diagnosis of the unit

Thermostats

- For thermostat options, see Optional Conventional Temperature Control Systems on page 11

VENTING

- Units may be vented horizontally or vertically
 - **Vertical Venting** - LS25 units are approved for installation with single wall and type B-1 double wall vent pipe
 - **Horizontal Venting** - LS25 units are approved for installation with single wall or UL listed, Cat III stainless steel vent kits

Optional Accessories

Horizontal Vent Kits

- UL listed, Cat III stainless steel vent kits are available for upward or downward slope
- 4 and 5 in. vent kits snap together
- 6 in. vent kit include connection clamps
- Kits include unit transition, vent termination and wall thimble
- Upward slope kits have drain connection
- 5 in. downward slope kits have double male adaptor
- Provisions for hanging must be field supplied
- 45° or 90° elbow is available and required for certain size units where the combustion air inducer cannot be rotated 90°
- Straight pipe sections in various lengths are also available

NOTE - See Horizontal Vent Kits / Elbow table for Lennox-approved Horizontal Vent Kits and accessories.

NOTE - See drawings for additional information.

NOTE - See installation instructions for detailed venting requirements.

DIRECT DRIVE FAN(S)

- All models are equipped with efficient and quiet operating direct drive fan(s)
- LS25-125 through LS25-200 models have a single fan
- LS25-250 through LS25-400 models have two fans

CABINET

- Constructed of pre-painted steel
- Cabinet is ribbed for improved sound reduction
- Fan orifice opening is punched for improved airflow and sound performance
- Adjustable louvers are furnished on cabinet for control of air flow direction
- Wiring junction box is conveniently located outside unit cabinet for easy field wiring connections

Optional Accessories

Discharge Nozzles

- Directs discharge air from unit heater
- Available in 30°, 45°, 60° and 90° style
- Fully assembled from heavy-gauge steel
- Paint finish matches unit heater
- See Dimension Drawings

SPECIFICATIONS **LS25-125 to LS25-200**

General Data	Model No. - Stainless Steel	LS25-125S	LS25-150S	LS25-175S	LS25-200S
	Model No. - Aluminized Steel	LS25-125A	LS25-150A	LS25-175A	LS25-200A
Heat Input Type		1 Stage	1 Stage	1 Stage	1 Stage
Heating Performance	Input - Btuh	125,000	150,000	175,000	200,000
	Output - Btuh	102,500	123,000	143,500	164,000
	Steady State Efficiency (Natural)	82%	82%	82%	82%
	Temperature Rise - °F	50	62	58	59
Connections	Flue size - in. (round)	5	5	5	5
	Combustion Air Size (round)	4	4	4	4
	Gas Piping Size - in.	1/2	1/2	1/2	1/2
Fan Data	Number of fans	1	1	1	1
	Fan Diameter - in.	16	16	18	18
	Number of blades	4	4	5	5
	Motor Output - hp	1/5	1/5	1/3	1/3
	rpm	1075	1075	1075	1075
	Air Volume - cfm	1950	1950	2350	2650
Weight Data	Net Weight - lbs. (kg)	157 (71)	167 (76)	182 (83)	192 (87)
	Shipping Weight - lbs. (kg)	177 (80)	187 (85)	200 (91)	212 (96)

ELECTRICAL DATA

Voltage	115 volts - 60 hertz - 1 phase			
Fan motor full load amps	5.0	5.0	7.0	7.0
Maximum overcurrent protection	15	15	15	15

OPTIONAL ACCESSORIES - ORDER SEPARATELY

Remote Diagnostic LED Kit		22C99	22C99	22C99	22C99
Discharge Nozzle	30°	18K66	18K66	18K67	18K67
	45°	18K72	18K72	18K78	18K78
	60°	18K87	18K87	18K88	18K88
	90°	18K93	18K93	18K98	18K98

¹ 1-3/4 in. x 2-3/4 in. rectangular (unit) to 5 in. diameter (flue) adaptor is furnished with unit for flue connection.

SPECIFICATIONS

LS25-250 to LS25-400

General Data			Model No. - Stainless Steel	LS25-250S	LS25-300S	LS25-350S	LS25-400S
			Model No. - Aluminized Steel	LS25-250A	LS25-300A	LS25-350A	LS25-400A
Heat Input Type			2 Stage	2 Stage	2 Stage	2 Stage	2 Stage
Heating Performance	Input Btuh	High Heat	250,000	300,000	350,000	400,000	
		Low Heat	162,500	195,000	225,000	280,000	
	Output Btuh - Natural	2nd Stage	205,000	246,000	287,000	328,000	
		Steady State Efficiency - Natural	82%	82%	82%	82%	
Temperature Rise - °F			51	57	58	65	
Connections	Flue size - in. (round)		5	5	6	6	
	Combustion Air Size (round)		4	4	5	5	
	Gas Piping Size - in.		3/4	3/4	3/4	3/4	
Fan Data	Number of fans		2	2	2	2	
	Fan Diameter - in.		16	16	18	18	
	Number of blades		4	4	5	5	
	Motor Output - hp		(2) 1/5	(2) 1/5	(2) 1/3	(2) 1/3	
	rpm		1075	1075	1075	1075	
	Air Volume - cfm		4000	4000	5500	5500	
Weight Data	Net Weight - lbs. (kg)		306 (139)	326 (148)	340 (154)	380 (172)	
	Shipping Weight - lbs. (kg)		326 (148)	346 (157)	360 (163)	400 (181)	

ELECTRICAL DATA

Voltage		115 volts - 60 hertz - 1 phase			
Fan motor full load amps		8.0	8.0	11.0	11.0
Maximum overcurrent protection		15	15	15	15

OPTIONAL ACCESSORIES - ORDER SEPARATELY

Remote Diagnostic LED Kit		22C99	22C99	22C99	22C99
Discharge Nozzle	30°	18K68	18K68	18K70	18K70
	45°	18K81	18K81	18K83	18K83
	60°	18K89	18K89	18K91	18K91
	90°	18K99	18K99	18L06	18L06

¹ 1-3/4 in. x 2-3/4 in. rectangular (unit) to 5 in. diameter (flue) adaptor is furnished with unit for flue connection.

² 1-3/4 in. x 2-3/4 in. rectangular (unit) to 6 in. diameter (flue) adaptor is furnished with unit for flue connection.

OPTIONAL ACCESSORIES - GAS HEAT

NATURAL GAS TO LPG/PROPANE CONVERSION KITS

US			CANADA		
Model No.	LS25-125- to -200	LS25-250 to -400	Model No.	LS25-125- to -200	LS25-250 to -400
0-3000 ft.	18L12	19K27	0-4500 ft.	18L12	19K27
3001-5000 ft.	18L12	19K28	4501-7500 ft.	18L12	19K28
5001-7000 ft.	19A51	19K30	7501-9500 ft.	19A51	19K30
7001-9000 ft.	19A51	19K31			
9001-10,000 ft.	19A52	19K32			

HIGH ALTITUDE CONVERSION KITS - NATURAL GAS ONLY

US			CANADA		
Model No.	LS25-125- to -200	LS25-250 to -400	Model No.	LS25-125- to -200	LS25-250 to -400
4001-5000 ft.	19A53	Factory	6501-7500 ft.	19A53	Factory
5001-8000 ft.	19A53	19K36	7501-9500 ft.	19A53	19K36
8001-10,000 ft.	19A54	19K44			

HIGH ALTITUDE PRESSURE SWITCH KITS

Model No.	LS25-125	LS25-150	LS25-175	LS25-200	LS25-250	LS25-300	LS25-350	LS25-400
0-2000 ft.	Factory	Factory	Factory	Factory	Factory	Factory	Factory	Factory
2001-3000 ft.	Factory	Factory	20K52	20X73	Factory	20X71	Factory	20X70
3001-4000 ft.	20X72	20X72	20X72	20K51	20J95	20X71	20X70	20X70
4001-5000 ft.	20X72	20X72	20X72	20K51	20J95	20J94	20X70	20X69
5001-6000 ft.	20X72	20X72	20J95	20J95	20J95	20J94	20X69	20X69
6001-7000 ft.	20J95	20J95	20J95	20J95	20J94	20J94	20X69	20X69
7001-8000 ft.	20J95	20J95	20J95	20J95	20J94	20J94	20X69	20X68
8001-9000 ft.	20J95	20J95	20J95	20J95	20J94	20X69	20X68	20X68
9001-10,000 ft.	20J95	20J95	20J95	20J95	20J94	20X69	20X68	20X68

HORIZONTAL VENT KITS AND ELBOW

Unit Heater Model No.	Vent Diameter (in.)	Upslope Vent Kit Catalog No.	Downslope Catalog No.	45° Elbow Catalog No.	90° Elbow Catalog No.	¹ Minimum Vent Length (ft.)
LS25-125 LS25-150	4	75W63	75W67	87W80 (Optional)	75W71 (Optional)	5
LS25-175 LS25-200 LS25-250 LS25-300	5	75W64	75W68	87W81 (Optional)	75W72 (Optional)	5
LS25-350 LS25-400	6	75W65	75W69	87W82 (Optional)	75W73 (Optional)	5

¹ Length does not include termination (or elbow where applicable). NOTE - Elbow is required where shown to facilitate connection of horizontal vent kit to flue outlet.

STRAIGHT VENT PIPE - FOR HORIZONTAL VENTING

Unit Heater	Vent Diameter (in.)	Length (in.)	Catalog No.
LS25-125 LS25-150	4	6	75W77
	4	12	75W78
	4	36	75W79
LS25-175 LS25-200 LS25-250 LS25-300	5	6	75W80
	5	12	75W81
	5	36	75W82
LS25-350 LS25-400	6	12	75W83
	6	36	75W84

THROW DATA

Model No.	¹ Effective Throw feet
LS25-125, LS25-150	50
LS25-175, LS25-200	60
LS25-250, LS25-300	70
LS25-350, LS25-400	80

NOTE - Adjustable horizontal louvers on unit allow a variation in throw and spread.

¹ Throw terminates where velocity reaches 50 ft. per minute.

¹ RECOMMENDED MOUNTING HEIGHT

Model No.	Feet
LS25-125, LS25-150	8-16
LS25-175, LS25-200	8-20
LS25-250, LS25-300	12-26
LS25-350, LS25-400	12-28

¹ Recommended maximum mounting height from floor to bottom of unit. At heights greater than shown air throw distance and air temperature at floor level is affected.

INSTALLATION CLEARANCES

Top	6 inches	152 mm
Sides	18 inches	457 mm
Rear	18 inches	457 mm
Bottom	1 inch	25 mm
Flue	6 inches	152 mm

NOTE - Allow 24 in. (610 mm) for servicing and control box access on the control box side of the unit.

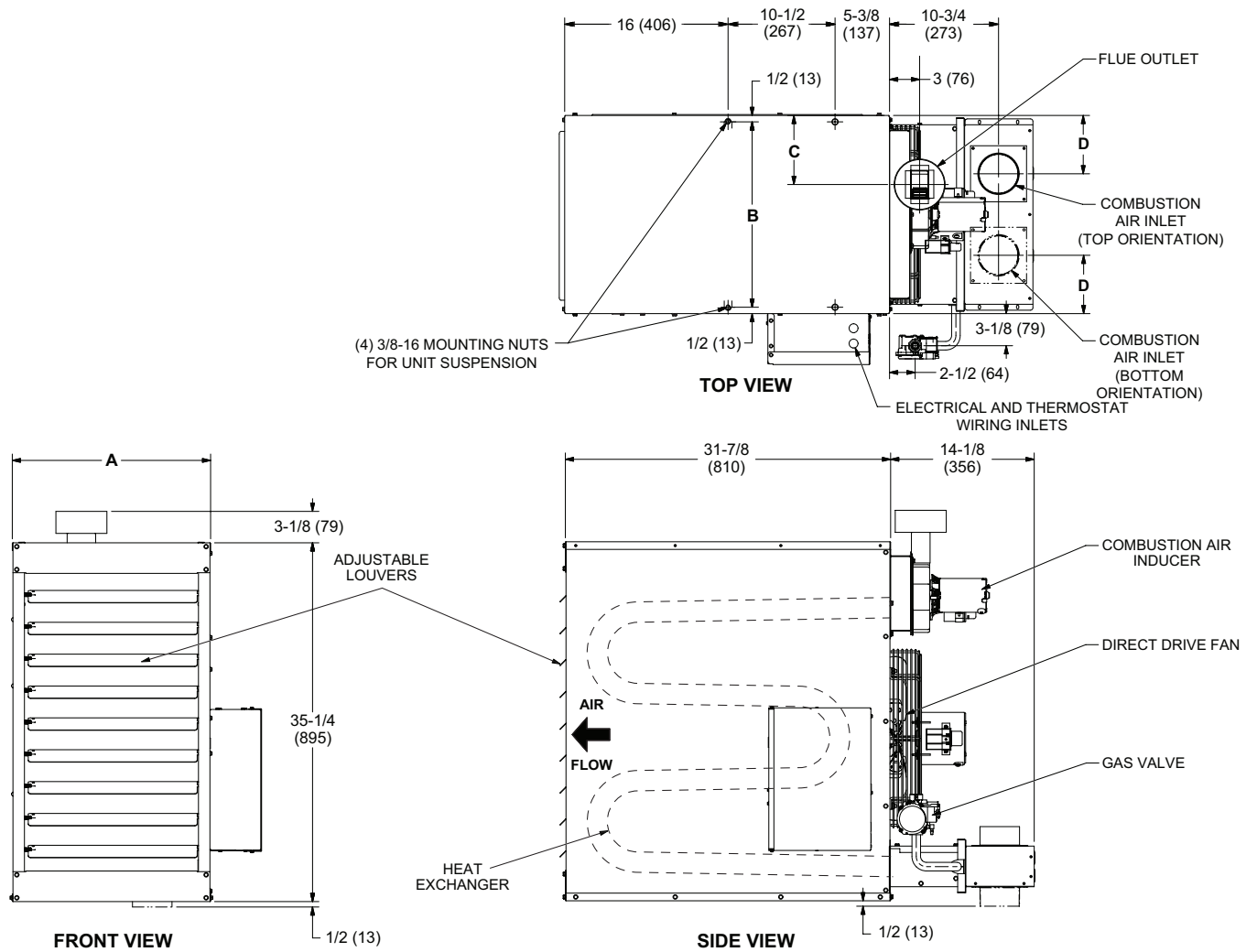
See Installation Instructions for further installation considerations.

MAXIMUM HORIZONTAL VENT LENGTHS

No. of Elbows	LS25-125, LS25-150, LS25-175, LS25-200, LS25-350, LS25-400	LS25-250, LS25-300
	Feet	Feet
1	25	35
2	20	30
3	15	25
4	10	20
5	5	15
6	---	10
7	---	5

DIMENSIONS

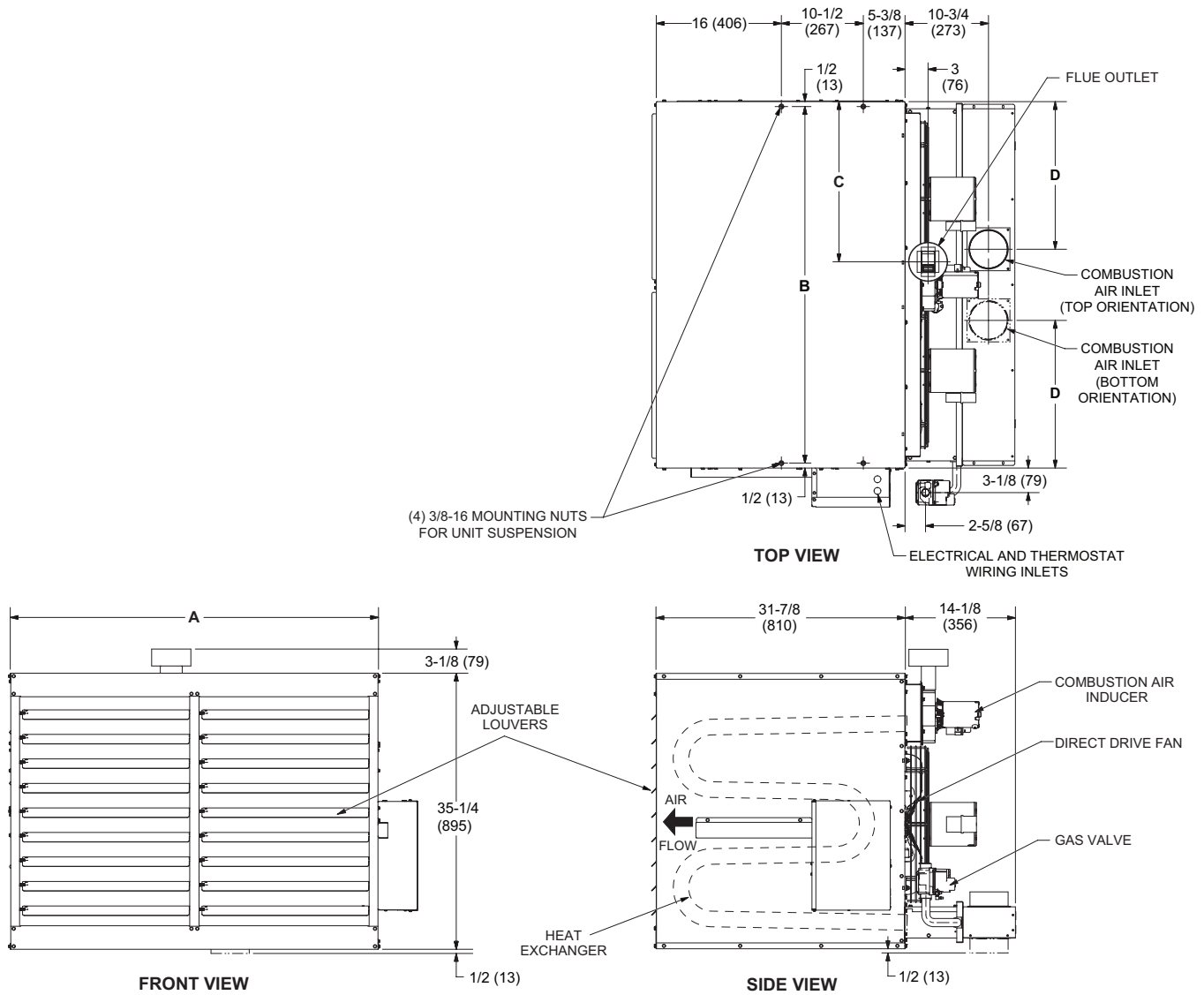
LS25-125-150-175-200 (SINGLE FAN)



Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
LS25-125 LS25-150	19-1/2	495	18-1/2	470	6-3/4	171	5-3/4	146
LS25-175 LS25-200	25	635	23-3/4	603	9-1/2	241	6-1/8	156

DIMENSIONS

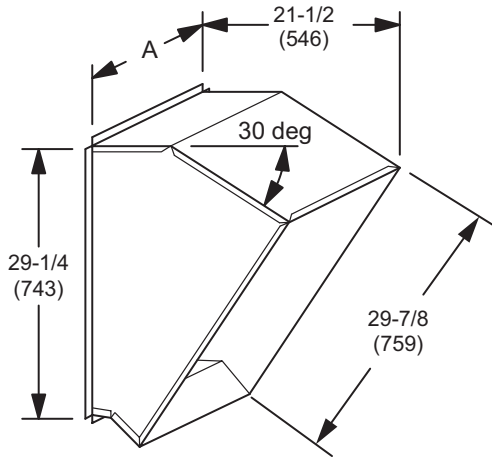
LS25-250-300-350-400 (DUAL FANS)



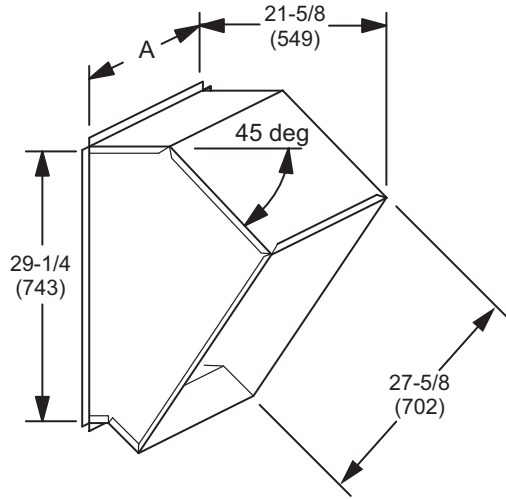
Model No.	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
LS25-250 LS25-300	37-5/8	956	36-1/2	927	15-7/8	403	12-1/2	318
LS25-350 LS25-400	47	1194	45-3/4	1162	20-1/2	521	18-7/8	479

ACCESSORY DIMENSIONS

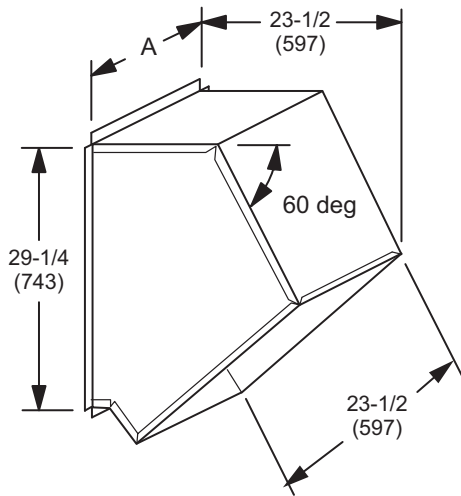
30° Discharge Nozzle



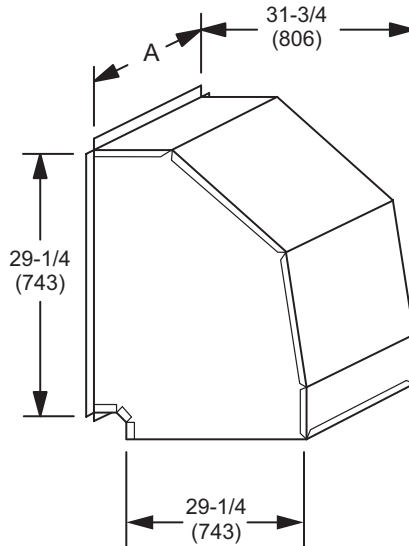
45° Discharge Nozzle



60° Discharge Nozzle



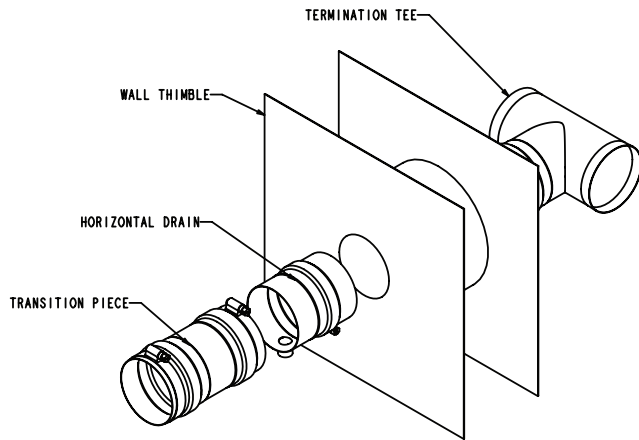
90° Discharge Nozzle



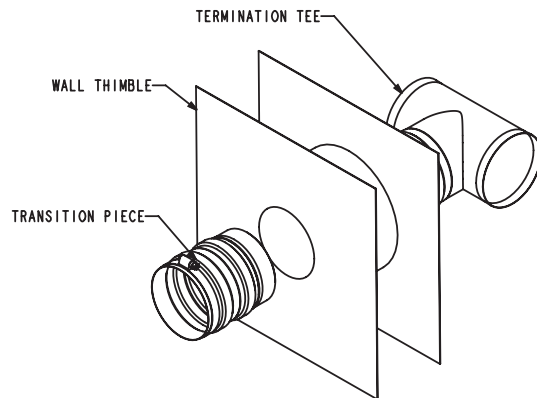
Model Usage	A	
	in.	mm
LS25-125 LS25-150	17-1/4	464
LS25-175 LS25-200	22-3/4	578
LS25-250 LS25-300	33-1/2	851
LS25-350 LS25-400	44-3/4	1137

VENT KITS AND ACCESSORIES

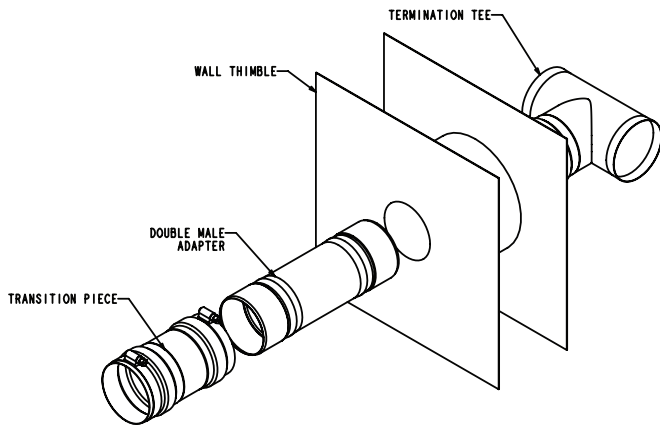
HORIZONTAL VENT KITS (UPSLOPE)



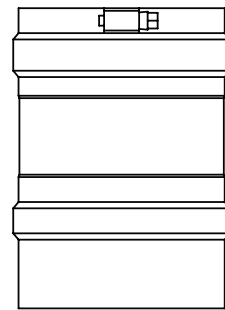
4 AND 6 INCH HORIZONTAL VENT KITS (DOWNSLOPE)



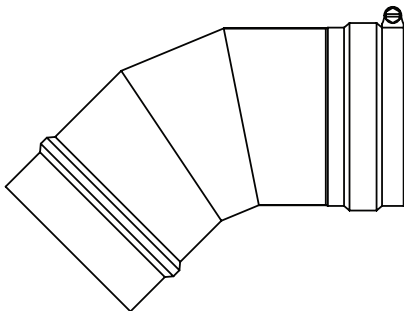
5 INCH HORIZONTAL VENT KIT (DOWNSLOPE)



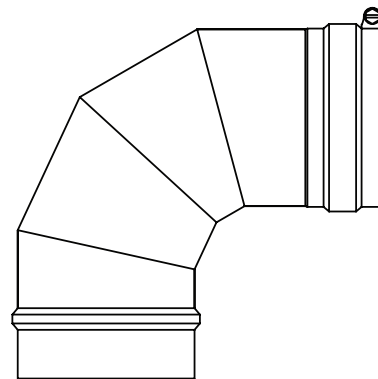
STRAIGHT PIPE (Typical)



45° ELBOW (Typical)



90° ELBOW (Typical)



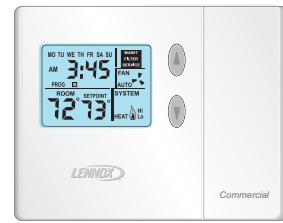
OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

ComfortSense® 7500 Commercial 7-Day Programmable Thermostat



- Four-Stage Heating / Two-Stage Cooling
- Universal Multi-Stage
- Intuitive Touchscreen Interface
- Automatic Changeover between Heating and Cooling
- Full Seven-Day Programming
- Four Time Periods Per Day
- Temperature and Humidity Control
- One-Touch Away Mode
- Holiday Scheduling
- Smooth Setback Recovery (SSR)
- Performance Reports
- Notifications/Reminders
- Dehumidification/Humiditrol® Control for Split Systems and Rooftop Units
- Economizer Relay Control
- Backlit Display
- Wallplate Furnished
- FDD, ASHRAE and IECC Compliant

ComfortSense® 3000 Commercial 5-2 Day Programmable Thermostat



- Two-Stage Heating / Two-Stage Cooling
- Conventional Systems
- Intuitive Interface
- 5-2 Day Programming
- Program Hold
- Remote Indoor Temperature Sensing
- Smooth Setback Recovery (SSR)
- Economizer Relay Control
- Maintenance/Filter/Service Reminders
- Backlit Display
- Wallplate Furnished
- Simple Up and Down Temperature Control

ComfortSense® Non-Programmable Thermostat



- One-Stage Heating / Cooling
- Conventional Systems
- Intuitive Interface
- Manual Changeover
- Backlit Display
- Simple Up and Down Temperature Control

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Description	Model No.	Catalog No.
ComfortSense® 7500 Commercial 7-Day Programmable Thermostat	C0STAT06FF2L	17G74
Universal thermostat locking guard (clear)	C0MISC15AE1-	39P21
Temperature Sensors	¹ Remote non-adjustable wall-mount 20k	C0SNZN01AE2-
	¹ Remote non-adjustable wall-mount 10k	C0SNZN73AE1-
	Remote non-adjustable discharge air (duct mount)	C0SND000AE1-
	Outdoor temperature sensor	C0SNSR03AE1-
		47W36
		47W37
		19L22
		X2658
¹ Remote wall-mount sensors can be applied in any of the following combinations: One Sensor - (1) 47W36 Two Sensors - (2) 47W37 Three Sensors - (2) 47W36 and (1) 47W37 Four Sensors - (4) 47W36 Five Sensors - (3) 47W36 and (2) 47W37		
ComfortSense® 3000 Commercial 5-2 Day Programmable Thermostat	C0STAT05FF1L	11Y05
Thermostat wall mounting plate	C0MISC17AE1-	X2659
Temperature Sensor	Remote non-adjustable wall mount 10k averaging	C0SNZN73AE1-
ComfortSense® Non-Programmable Thermostat	C0STAT12AE1L	51M32
	Thermostat wall mounting plate	C0MISC17AE1-
Temperature Sensor	Outdoor temperature sensor	C0SNSR03AE1-
		X2658

REVISIONS

Sections	Description of Change
Optional Accessories - Gas Heat	Updated.
High Altitude Pressure Switch Kits	Updated.
Maximum Horizontal Vent Lengths	Footnotes updated.
Optional Accessories	Remote Diagnostic LED Kit
Vent Adaptor Kits	Updated.



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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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