

TECHNICAL SPECIFICATIONS FOR MODEL UEZ

COMMERCIAL/INDUSTRIAL/RESIDENTIAL HIGH-EFFICIENCY SEPARATED-COMBUSTION LOW-STATIC AXIAL FAN GAS-FIRED UNIT HEATER

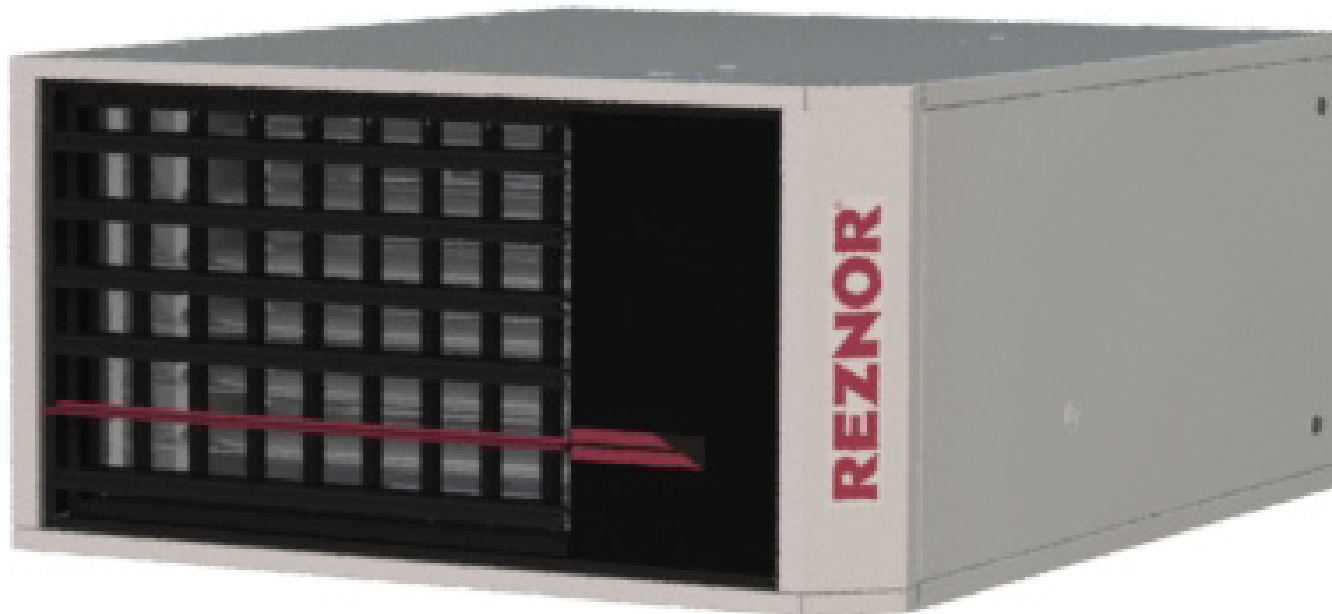


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In keeping with our policy of continuous product improvement, we reserve the right to alter, at any time, the design, construction, dimensions, weights, etc., of equipment information shown here.

TECHNICAL SPECIFICATIONS—CONTINUED

Unit Sizes

These heaters are available in seven unit sizes based on 55,000–305,000 BTUh input.

Features

- 115/1/60 voltage/phase/Hz
- 91–93% thermal efficient
- Integrated circuit board with seven-segment display
- Easily-viewed status-indicating LED
- Hinged access door panel with quarter-turn latch
- Improved cabinet design with removable front face
- Painted galvanized-steel cabinet with two-tone black and white glossy, scratch-resistant paint scheme
- Unit sizes 130–310 have patented single-burner combustion system and TCore® heat exchanger
- Factory-equipped for use with natural gas (propane conversion kit provided with each heater)
- 50–60°F temperature rise
- External terminal strip for 24V wiring
- Built in disconnect switch (20A @ 115V)
- Integrated horizontal louvers
- Four-point suspension standard on all unit sizes (unit sizes 55–110 may use two-point suspension)

Factory-Installed Options

Option	Description
AA1	Natural gas
AB1	Installations at ≤6000 (≤1830) elevation
AB14	Installations at >6000 (>1830) elevation
AC1	Aluminized-steel heat exchanger
AC2	409 SST heat exchanger
AK1	115/1/60 voltage
AL1	Open drip-proof motor
AL14	Totally-enclosed motor

Field-Installed Options

Option	Description
CC2	Vertical vent terminal/combustion air kit
CC6	Horizontal vent terminal/combustion air kit
CC18	Universal vent terminal assembly, 2-inch diameter × 40 inches long
CC19	Horizontal vent terminal assembly, 3-inch diameter × 20 inches long
CC20	Universal vent terminal assembly, 3-inch diameter × 44 inches long
CC22	Low profile horizontal vent terminal assembly, 2-inch diameter
CC23	Low profile horizontal vent terminal assembly, 3-inch diameter
CC24	Horizontal vent terminal assembly, 2-inch diameter × 16 inches long
CC25	Universal vent terminal assembly, 2- or 3-inch diameter × 24 inches long
CD1	Vertical louvers, direct discharge air to provide wider throw pattern
CD2	Downturn nozzle, 25- to 65-degree variable air deflection range
CD3	Downturn nozzle, 50- to 90-degree variable air deflection range
CD4	Downturn nozzle, 25- to 65-degree variable air deflection range with vertical louvers
CE1	Manual shutoff valve, natural gas or propane

Option	Description
CG1	208V–115V stepdown transformer
CG4	230V–115V or 460V–115V stepdown transformer
CG5	575V–115V stepdown transformer
CK8	Adapts 3/8-inch hangers for two-point suspension from 1-inch threaded pipe
CK10	Adapts 3/8-inch hangers for four-point suspension from 1-inch threaded pipe
CL1	Single-stage thermostat
CL31, CL32	Multiple unit control: option CL31 includes components for one control unit and one additional unit—option CL32 includes components for each additional non-control unit
CM1	Locking cover for CL1 thermostat

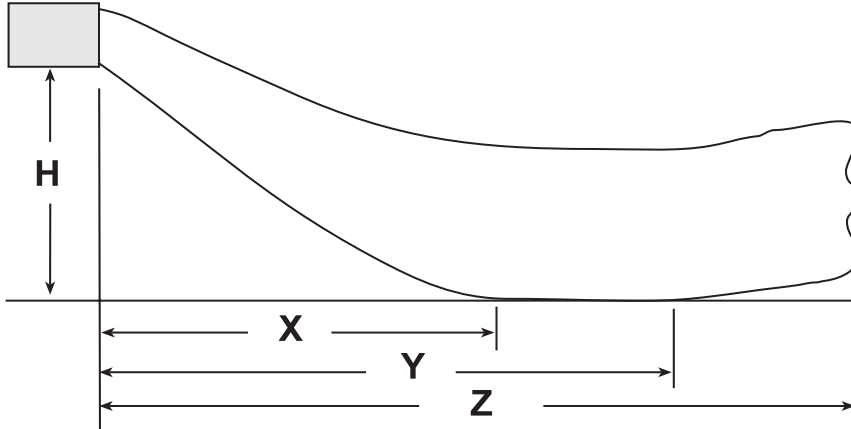
Technical Data

Parameter	Unit of Measure	Unit Size (MBTUh)						
		55	85	110	130	180	260	310
Input heating capacity	BTUh	55,000	85,000	110,000	131,000	175,000	260,000	305,000
	kW	16.1	24.9	32.2	38.4	51.2	76.1	89.3
Thermal efficiency	%	93			93	91	92	91
Output heating capacity*	BTUh	51,150	79,050	102,300	121,830	159,250	239,200	277,550
	kW	15.0	23.2	30.0	35.7	46.6	70.0	81.3
Gas connection, natural gas**	inch	1/2					3/4	
Gas connection, propane**		1/2					3/4	
Vent connection diameter		2			4			
Combustion air inlet diameter		2			6			
Control, 24V		1.0						
Full load amps, 115V	amp	1.6	2.2	4.4	6.3		10.0	
Maximum overcurrent protection, 115V***		15.0					20.0	
Normal power consumption	watt	180	240	403	657		1020	
Discharge air temperature rise	°F	50	55		50	60	50	60
Air volume	CFM	967	1206	1793	2256	2458	4430	4283
	meter ³ /minute	27.4	34.2	50.8	63.9	69.6	125.4	121.3
Discharge air opening area	feet ²	1.38	1.86	2.24	2.56		4.79	
	meter ²	0.13	0.17	0.21	0.20		0.50	
Output velocity	FPM	701	659	800	883	962	924	894
	meter/minute	214	201	244	269	293	282	272
Standard open fan motor size	HP	1/20		1/6	1/4		1/2	
Optional enclosed fan motor size		1/20		1/6	1/4		1/2	
Fan motor speed	RPM	1050						
Fan diameter	inch	12	16	18	18		24	
Approximate condensate per hour	gallon	1/2			1		2	
	liter	1.5			3.8		7.6	
*ETL ratings for elevations up to 2,000 feet.								
**Size shown is for gas connection to a single-stage gas valve—not supply line size.								
***MOCP = 2.25 × (largest motor FLA) + smallest motor FLA. Answer is rounded to the next lower standard circuit breaker size.								

TECHNICAL SPECIFICATIONS—CONTINUED

Heater Throw Distances with Standard Horizontal Louvers

The graphic shows throw patterns and the table lists throw distances for heaters suspended at varying mounting heights. The louver angles listed are relative to the top of the heater.



- H** = Distance from bottom of heater to the floor
- X** = Distance from heater to start of floor coverage
- Y** = Distance to end of floor coverage
- Z** = Distance at which air velocity drops below 50 feet (15.2 meters) per minute

H* (Feet (Meters))	Distance* or Angle	Unit Size (MBTUh)							
		55	85	110	130	180	260	310	
		Feet (Meters)							
5 (1.5)	X	13 (4)	11 (3)	12 (4)	—				
	Y	17 (5)	15 (5)	17 (5)					
	Z	37 (11)	44 (13)	49 (15)					
	Downward louver angle	15°							
8 (2.4)	X	11 (3)	14 (4)	13 (4)	13 (4)	16 (5)	15 (5)	17 (5)	
	Y	16 (5)	17 (5)	21 (6)	24 (7)	30 (9)	28 (9)	31 (9)	
	Z	35 (11)	42 (13)	46 (14)	73 (22)	93 (28)	94 (29)	105 (32)	
	Downward louver angle	27°	22°		26°	20°	24°	20°	
10 (3.0)	X	13 (4)	13 (4)	14 (4)	14 (4)	17 (5)	16 (5)	18 (6)	
	Y	17 (5)			24 (7)	31 (9)	28 (9)	32 (10)	
	Z	33 (10)	38 (12)	43 (13)	69 (21)	91 (28)	89 (27)	103 (31)	
	Downward louver angle	32°	27°		32°	25°	29°	25°	
12 (3.7)	X	—	16 (5)	14 (4)		18 (6)	17 (5)	19 (6)	
	Y		19 (6)	17 (5)	24 (7)	31 (9)	28 (9)	32 (10)	
	Z		35 (11)	41 (12)	64 (20)	88 (27)	85 (26)	98 (30)	
	Downward louver angle		32°			39°	30°	34°	30°
14 (4.3)	X	—	14 (4)			19 (6)	17 (5)	20 (6)	
	Y		17 (5)	18 (6)	22 (7)	30 (9)	27 (8)	32 (10)	
	Z		30 (9)	41 (12)	59 (18)	84 (26)	80 (24)	95 (29)	
	Downward louver angle		39°	36°	45°	34°	40°	34°	
16 (4.9)	X	—	13 (4)				19 (6)	17 (5)	21 (6)
	Y		20 (6)				29 (9)	25 (8)	31 (9)
	Z		53 (16)				79 (24)	74 (23)	90 (27)
	Downward louver angle		51°				39°	45°	38°
18 (5.5)	X	—	11 (3)				19 (6)	16 (5)	20 (6)
	Y		17 (5)				28 (9)	24 (7)	30 (9)
	Z		44 (13)				74 (23)	66 (20)	85 (26)
	Downward louver angle		58°				44°	51°	43°

*See graphic above.

Certification

These unit heaters are listed by Intertek for use in industrial and commercial installations in the United States and Canada. In addition, unit sizes 55, 85, and 110 are listed in the United States and Canada as utility heaters for use in non-living spaces that are attached to, adjacent to, or part of a structure that contains space for family living quarters.

Installation Codes

- These units must be installed in accordance with local building codes. In the absence of local codes, in the United States, the unit must be installed in accordance with the *National Fuel Gas Code* (ANSI Z223.1, latest edition). A Canadian installation must be in accordance with the *Natural Gas and Propane Installation Code* (CSA B149, latest edition). This code is available from CSA Information Services, 1-800-463-6727. Local authorities having jurisdiction should be consulted before installation is made to verify local codes and installation procedure requirements.
- Installations in aircraft hangars should be in accordance with *Standard for Aircraft Hangars* (ANSI/NFPA No. 409, latest edition). Installations in public garages should be in accordance with *Standard for Parking Structures* (ANSI/NFPA No. 88A, latest edition). Installations in repair garages should be in accordance with *Standard for Repair Garages* (ANSI/NFPA No. 88B, latest edition). In Canada, installations in aircraft hangars should be in accordance with the requirements of the enforcing authorities, and in public garages, in accordance with the CSA B149 code.
- If the heater is being installed in the Commonwealth of Massachusetts, installation must be performed by a licensed plumber or licensed gas fitter.

Clearances

Units must be located so that clearances are provided for with regards to combustion air space, inspection, and service and for proper spacing from combustible construction. Clearance to combustibles is defined as the minimum distance from the heater to a surface or object for which it is necessary to ensure that a surface temperature of 90°F (50°C) above the surrounding ambient temperature is not exceeded.

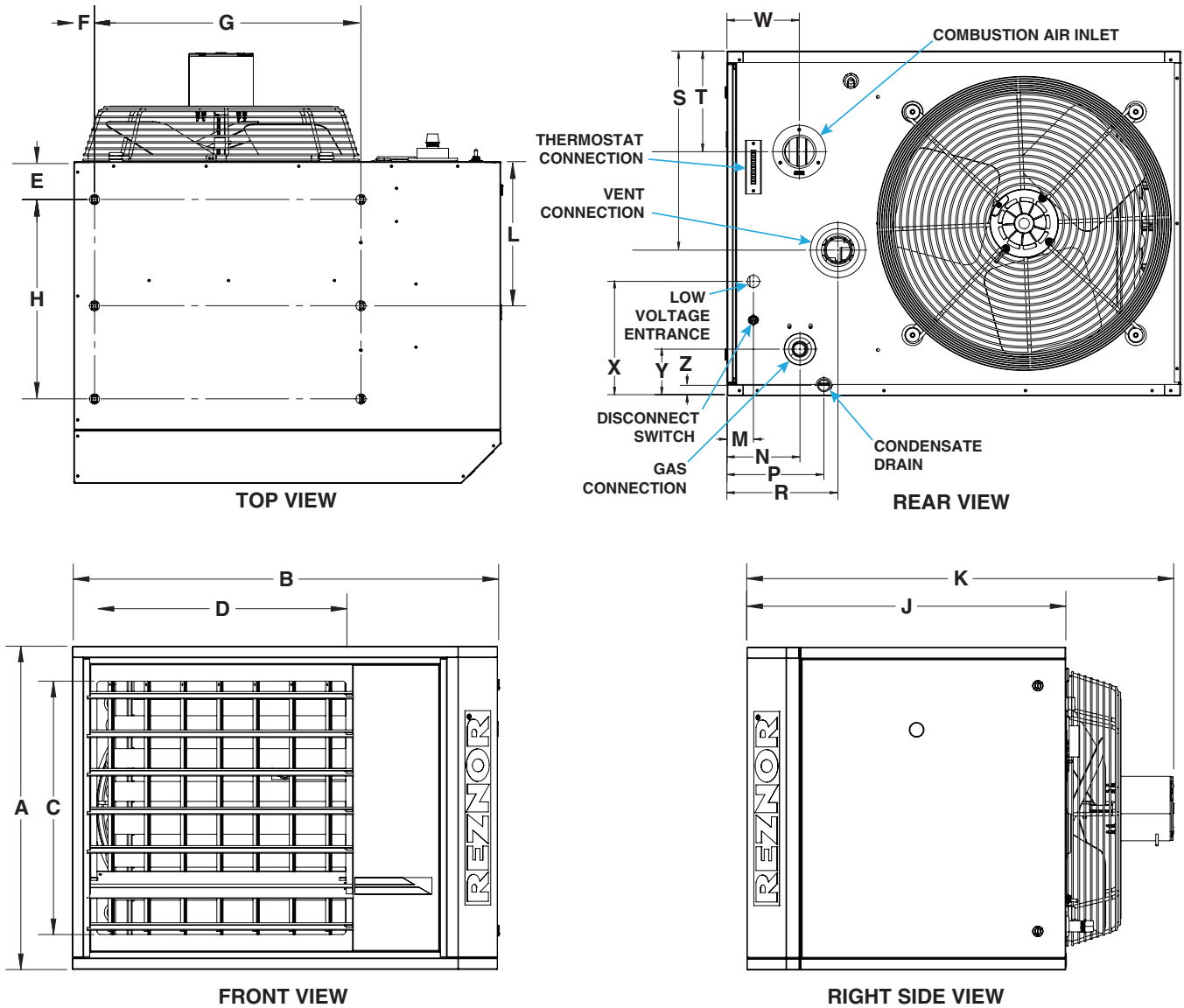
Heater Surface	Minimum Clearance (Inches (mm))
Top	4 (102)
Flue connector	6 (152)
Access panel	18 (457)
Non-access side	2 (51)
Bottom*	1 (25)
Rear**	18 (457)
Front	Refer to values for variable X (distance from heater to start of floor coverage) in Heater Throw Distances with Standard Horizontal Louvers section
*Suspend the heater so that the bottom is a minimum of 5 feet (1.5 meters) above the floor.	
**Measure rear clearance from the fan motor.	

Weights

Type	Unit Size (MBTUh)						
	55	85	110	130	180	260	310
	Pounds (kg)						
Unit	85 (39)	103 (47)	123 (56)	230 (104)	245 (111)	360 (163)	395 (179)
Shipping	120 (55)	148 (68)	162 (74)	255 (116)	270 (123)	385 (175)	420 (191)

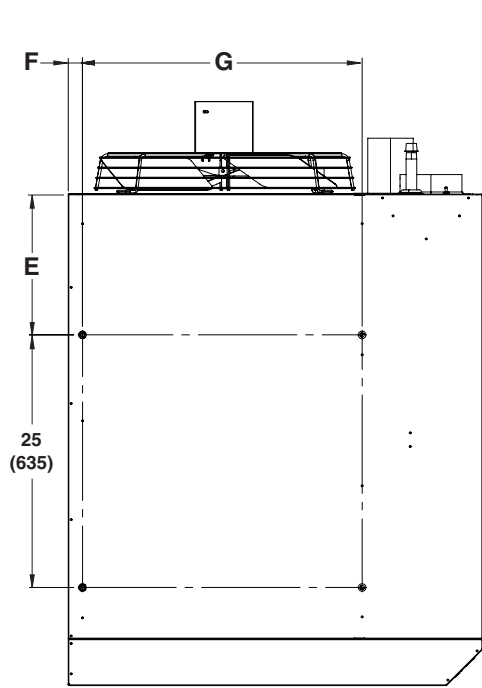
TECHNICAL SPECIFICATIONS—CONTINUED

Dimensions

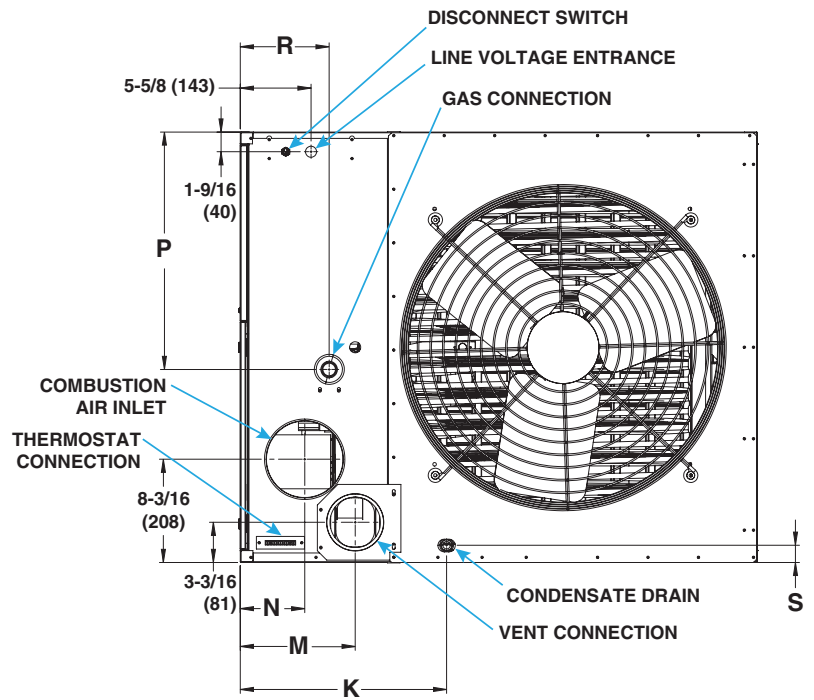


Unit Size (MBTUh)	Dimension (See Graphic Above)						
	A	B	C	D	E*	F*	G*
	Inches (mm)						
55	17-5/8 (448)	28-1/4 (718)	12-1/2 (318)	15-7/8 (403)	2-27/32 (72)	1-9/16 (40)	18-1/8 (460)
85	21 (533)	30-1/4 (768)	16-7/8 (429)	17-7/8 (454)			20-1/8 (511)
110	24-1/2 (622)	32-1/4 (819)	19-1/4 (489)	18-7/8 (479)			
H*		J	K	L*	M	N	P
55	15 (381)	24-1/4 (616)	31 (787)	12 (305)	2 (51)	3-3/16 (81)	4-7/8 (124)
85			33 (838)		1-7/8 (48)		6-7/8 (175)
110			10-7/8 (276)	5-3/16 (132)	6-7/8 (175)		
R		S	T	W	X	Y	Z
55	6 (152)	7-1/4 (184)	3-1/4 (83)	3-3/16 (81)	6-1/8 (156)	2-1/4 (57)	3/4 (19)
85		10-11/16 (271)	3-11/16 (94)		10-11/16 (271)	2-3/4 (70)	
110		7-7/8 (200)	14-1/8 (359)		7-7/8 (200)	5-1/8 (130)	

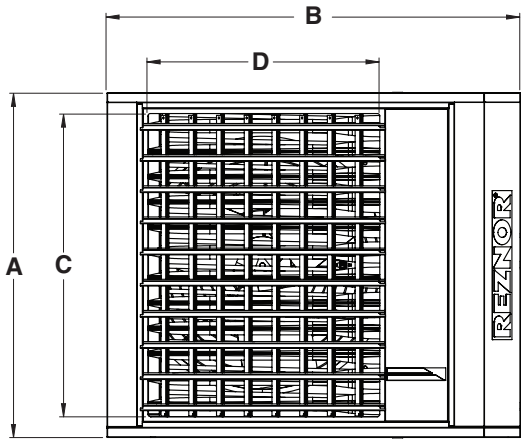
*Heater suspension points (3/8-16 FEM).



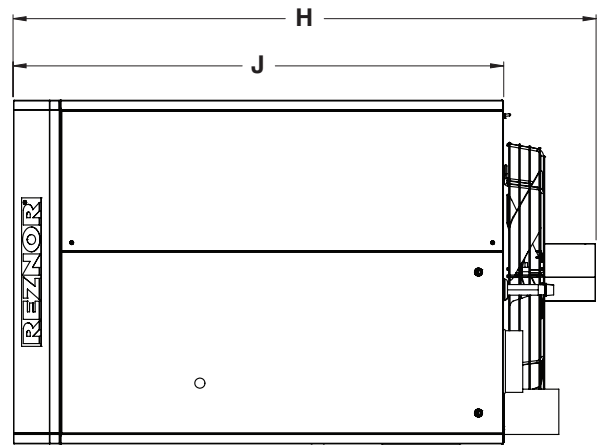
TOP VIEW



REAR VIEW



FRONT VIEW



RIGHT SIDE VIEW

Unit Size	Dimension (See Graphic Above)				
	A	B	C	D	E*
	Inches (mm)				
130, 180	20-1/8 (511)	39-3/16 (995)	16 (406)	23 (584)	11-31/32 (304)
260, 310	34-1/8 (867)	41 (1041)	30 (762)		13-31/32 (355)
	F*	G*	H	J	K
130, 180	2-3/8 (60)	25-11/16 (652)	55-13/32 (1407)	46-1/32 (1169)	15-19/32 (396)
260, 310	1-13/32 (36)	27-11/16 (703)	58 (1473)	48-21/32 (1236)	16-15/32 (418)
	M	N	P	R	S
130, 180	8-5/16 (211)	4-5/16 (110)	5-1/16 (129)	6-9/32 (160)	1-3/4 (45)
260, 310	9-3/32 (231)	5-3/32 (129)	18-13/16 (478)	7-1/32 (179)	1-3/8 (35)

*Heater suspension points (3/8-16 FEM).

TECHNICAL SPECIFICATIONS—CONTINUED

Halogenated Hydrocarbons

Halogenated hydrocarbons are a family of chemical compounds characterized by the presence of halogen elements (fluorine, chlorine, bromine, etc.). These compounds are used in refrigerants, cleaning agents, and solvents and are heavier than air, a fact that should be kept in mind when determining the installation location of heaters and building exhaust systems.

⚠ CAUTION ⚠

CORROSION HAZARD: Halogenated hydrocarbons, when exposed to flame, precipitate with any condensation present in the heater to form hydrochloric acid, which readily attacks all metals, including 300 grade stainless steel. Care should be taken to separate these vapors from the combustion process. An outside air supply **MUST BE** provided to the burner whenever the presence of these compounds is suspected.

Gas Supply Pressure

- The unit is equipped for a maximum gas supply pressure of 1/2 psi, 3.5 kPa, or 14 IN WC for natural gas or propane. The minimum supply pressure, as measured while the unit is operating at full fire, is 5 IN WC for natural gas or 11 IN WC for propane.
- Supply pressure higher than 1/2 psi requires the installation of an additional service regulator external to the unit.
- **Pressure testing supply piping:** For test pressures **above** 1/2 psi, disconnect the heater and manual valve from the gas supply line to be tested and cap or plug the supply line. For test pressures **below** 1/2 psi, before testing, close the manual valve on the heater.

Gas Supply Piping

- All piping must be in accordance with requirements outlined in the *National Fuel Gas Code* (ANSI/Z223.1, latest edition) or the *Natural Gas and Propane Installation Code* (CSA-B149.1, latest edition).
- The heater is orificed for operation with natural gas having a heating value of 1,000 (±50) BTU per cubic foot or with propane gas having a heating value of 2,500 (±100) BTU per cubic foot. Sizing of gas supply lines depends on piping capacity and is based on cubic feet per hour based on a 0.3 IN WC pressure drop, a 0.6 specific gravity for natural gas at 1,000 BTU per cubic feet, and a 1.6 specific gravity for propane at 2,550 BTU per cubic feet. If the gas at the installation does not meet this specification, consult the factory for proper orificing.
- Variables for sizing gas supply lines are listed in the table below. When sizing supply lines, consider the possibility of future expansion and increased requirements (refer to the *National Fuel Gas Code* for additional information).

Pipe Length (Feet)	Natural Gas						Propane					
	Pipe Diameter (Inches)											
	1/2	3/4	1	1-1/4	1-1/2	2	1/2	3/4	1	1-1/4	1-1/2	2
	Cubic Feet per Hour											
20	92	190	350	730	1100	2100	56	116	214	445	671	1281
30	73	152	285	590	890	1650	45	93	174	360	543	1007
40	63	130	245	500	760	1450	38	79	149	305	464	885
50	56	115	215	440	670	1270	34	70	131	268	409	775
60	50	105	195	400	610	1105	31	64	119	244	372	674
70	46	96	180	370	560	1050	28	59	110	226	342	641
80	43	90	170	350	530	990	26	55	104	214	323	604
90	40	84	160	320	490	930	24	51	98	195	299	567
100	38	79	150	305	460	870	23	48	92	186	281	531
125	34	72	130	275	410	780	21	44	79	168	250	476
150	31	64	120	250	380	710	19	39	73	153	232	433
175	28	59	110	225	350	650	17	36	67	137	214	397
200	26	55	100	210	320	610	16	34	61	128	195	372

Vent Connections

⚠ WARNING ⚠

All separated-combustion units MUST BE equipped with both combustion air and exhaust piping to the outdoors.

⚠ CAUTION ⚠

Concentric horizontal and vertical vent/combustion air systems are the only venting/combustion air systems approved for these units.

NOTE: IMPORTANT: For unit sizes 55, 85, and 110, install the venting system in accordance with the venting system manufacturer's instructions. For unit sizes 130, 180, 260, and 310, install the venting system in accordance with the installation manual provided with the unit.

⚠ DANGER ⚠

FIRE OR EXPLOSION HAZARD

- Failure to follow safety warnings exactly could result in serious injury, death, or property damage.
- Improper installation, adjustment, alteration, service, or maintenance can cause serious injury, death, or property damage.
- Installation and service must be performed by a qualified installer, service agency, or the gas supplier.
- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Leave the building immediately.
- Immediately call your gas supplier from a phone remote from the building. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

For more information on Reznor HVAC products:

- Contact your local Reznor representative at 1-800-695-1901
- Refer to the manuals and additional consumer materials found at www.reznorhvac.com

