

REZNOR®

UNIT HEATER CATALOG

COMMERCIAL/INDUSTRIAL HEATERS
RESIDENTIAL GARAGE HEATERS

FUEL

Natural Gas

Propane

CAPACITIES

25 - 1,200 MBH

80% - 93% Thermal
Efficiency

380 - 16,750 CFM

AIR DELIVERY

Propeller Fan

Centrifugal Blower
(Ductable)



TIME TESTED. CONTRACTOR APPROVED.

REZTOR® IS YOUR GLOBAL LEADER IN HVAC TECHNOLOGY

BACKGROUND

Reznor was founded in 1888 to manufacture the “Reznor” reflector heater, which used a luminous flame gas burner developed by George Reznor. This technological breakthrough was an immediate success and hastened the expansion of gas heating in residential and commercial applications. Technological development and innovation have been the hallmarks of Reznor products through the years. As a result of this pioneering role in the heating, makeup air and ventilating equipment field, the products offered today are the most advanced in engineering design to satisfy a wide variety of applications.

SERVICES

Product service requirements are handled through contractors and/or distributors, with backup from local representatives and factory-based service team. Replacement parts inventories for both warranty and non-warranty requirements are maintained at service centers throughout the country and at the manufacturing facilities.

For the Reznor Representative in your area, call 800-695-1901.

ABOUT NORTEK GLOBAL HVAC

For more than 100 years, Nortek Global HVAC has brought the latest innovations in heating, cooling and ventilation to homes, businesses and every place in between. Our vast portfolio of residential and light commercial brands offers efficient and dependable products that live up to their trusted reputation. We're always looking for the next advancement in HVAC because innovation is not only our legacy, it is our future.

In addition to Reznor product, Nortek Global HVAC and its subsidiaries build and sell HVAC systems under the Maytag®, Frigidaire®, Mammoth® and Gibson® brands, among others.



When its cold outside, Reznor® brings the **heat**.

OUR LATEST INNOVATION

For more than 100 years, we've brought our customers the latest innovations in unit heater technology. Reznor's complete line of unit heaters come with added serviceability and installation features, increased monitoring capabilities and an aesthetically appealing design.

Reznor unit heaters are built compact to save space in any given application, and each unit includes an external gas connection for easier installation, single burner combustion system and transformer for 24-volt controls for easy hookup to a thermostat. Units also have the option for integration of downturn nozzles and vertical louvers.

Our most recent innovation helps to minimize downtime by making it easier to identify when a unit needs attention. An external LED is fixed to the bottom of each unit that blinks if there is a problem that needs service. When servicing a unit, the quarter turn latch on the hinged service door can be easily opened with a screwdriver, and the door remains attached to the chassis to prevent door drops that can cause injury and damage. Once inside the unit, the 7-segment display board shows a fault code to make troubleshooting quick and easy.



Why choose Reznor®?

With more than 130 years of experience in gas heating and air conditioning, Reznor manufactures a wide range of industrial and commercial HVAC solutions. Founded in 1888 in Pennsylvania, Reznor is a global leader thanks to its innovative and economical solutions for heating, cooling, ventilation and air quality.

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UEZ UNIT HEATER

HIGH EFFICIENCY, SEPARATED COMBUSTION, LOW STATIC AXIAL FAN COMMERCIAL/ INDUSTRIAL UNIT HEATERS

91 – 93% THERMAL EFFICIENCY



Reznor® Model UEZ gas-fired unit heaters are available in 14 sizes ranging from 131,000 to 305,000 BTUH gas input. Model UEZ heaters are approved for installation in the United States and Canada by ETL.

The MacroChannel® secondary heat exchanger has a 1/2" PVC pipe for attaching a coupling for ease of installation and cleaning of the required condensate drain. A 4" PVC cleanout cap that is drilled and tapped for a 1/2" NPT fitting is furnished with the heater for attaching the vent condensate drain.

Reznor model UEZ unit heaters offer a sleek design sure to complement any space. The UEZ features a two-tone black and white powder coated, scratch-resistant paint scheme with a single red louver. Each unit has clean rounded corners and edges with no visible screws or fasteners, and the bottom is embossed with the Reznor logo. Model UEZ unit heaters provide the same superior performance customers have relied on for more than 100 years along with added features that make servicing the unit easier, installation safer and improve monitoring capabilities.

STANDARD FEATURES AND BENEFITS

- Arranged for use with natural gas (propane conversion kit included with unit)
- 50-60°F temperature rise range
- Integrated circuit board with 7 segment display
- External status indicating LED
- Hinged door with ¼ turn latch
- Improved cabinet design with removable front face and two tone white and black powder paint.
- Reznor logo embossed on bottom of unit
- T_{CORE}³® 409 stainless steel primary heat exchanger with extruded aluminum MacroChannel secondary heat exchanger
- Patented^A single burner combustion system including a one-piece burner assembly
- 115V, 1 phase, 60 Hz Supply voltage
- 115V open fan motor with internal overload protection
- Transformer for 24-volt controls
- Multi-try direct ignition with timed lockout
- Fan relay (included on the circuit board)
- Single-stage natural gas valve
- Vibration/noise isolated fan motor
- Sealed control compartment houses all electrical components
- 48 frame, ball bearing, PSC venter motor
- 4-point Suspension
- Built-in disconnect switch (20A @ 115V Rating)
- External terminal strip for 24-volt wiring
- Sealed junction box for supply wiring
- External gas connection
- Fully gasketed door panel with safety door switch
- Full fan guard – engineered for safety

OPTIONAL FEATURES

- Totally enclosed fan motor (115v only)
- Horizontal or vertical combustion air/vent kit including concentric adapter^B
- Thermostat
- Thermostat guard with locking cover
- Vertical louvers
- Integrated 30° & 60° downturn nozzles
- Manual shutoff valves

NOTE: Model UEZ should not be used in applications where space temperature is set below 45°F.

^A U.S. Patent Numbers 6,889,686 & 8,113,269

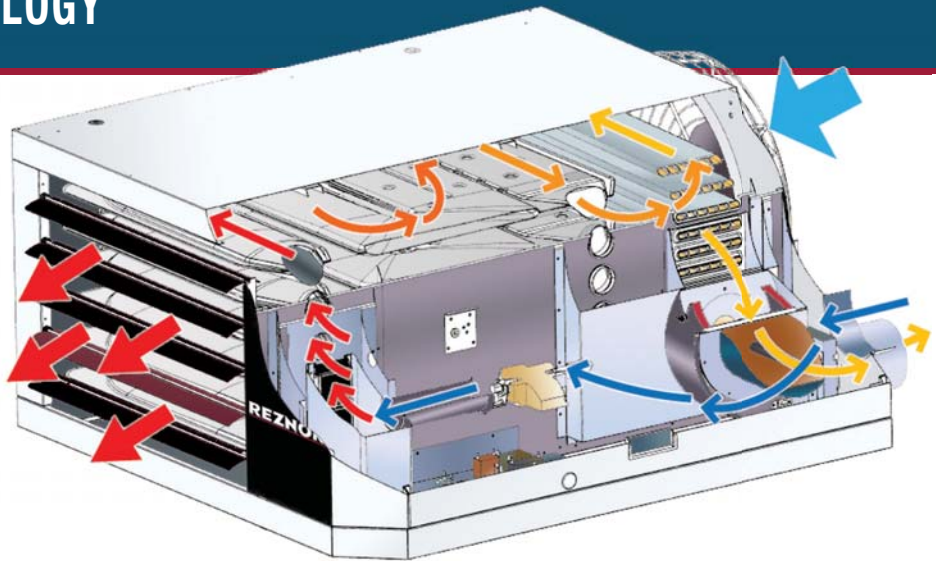
^B Selection of either a horizontal or vertical combustion air/vent kit is required.

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UEZ UNIT HEATER TECHNOLOGY

HOW IT WORKS

Diagram shows the air flow patterns for Model UEZ. Thin arrows show air flow from combustion air intake, across the burner, through primary and secondary heat exchangers and out exhaust vent. Larger arrows show air flow across the heat exchanger to provide heat to the space.



UEZ TECHNICAL DATA

Size		130	180	260	310
Input Heating Capacity	BTUH	131,000	175,000	260,000	305,000
	KW/H	38.4	51.2	76.1	89.3
Thermal Efficiency		93%	91%	92%	91%
Output Heating Capacity ^C	BTUH	121,830	159,250	239,200	277,550
	KW/H	35.7	46.6	70.0	81.3
Gas Connection (Inches) ^D	Natural	1/2	1/2	3/4	3/4
	Propane	1/2	1/2	3/4	3/4
Vent Connection Diameter (inches)		4	4	4	4
Combustion Air Inlet Diameter (inches)		6	6	6	6
Control Amps (24 - Volt)		1.0	1.0	1.0	1.0
Full-Load Amps (115V)		6.3	6.3	10	10
Maximum Over Current Protection (115V) ^E		15	15	20	20
Normal Power Consumption (watts)		657	657	1020	1020
Discharge Air Temperature Rise (°F)		50	60	50	60
Air Volume	CFM	2256	2458	4430	4283
	M ³ /minute	63.9	69.6	125.4	121.3
Discharge Air Opening Area (Ft. ²)		2.56	2.56	4.79	4.79
Outlet Velocity	FPM	883	962	924	894
	M/minute	269	293	282	272
Fan Motor HP ^F	Standard	1/4	1/4	1/2	1/2
	Optional Enclosed	1/4	1/4	1/2	1/2
Fan Motor RPM		1050	1050	1050	1050
Fan Diameter (inches)		18	18	24	24
Approximate Condensate Per Hour	gallons	1	1	2	2
	liters	3.8	3.8	7.6	7.6
Approximate Net Weight	lbs	242	262	380	427
	kg	110	119	172	194
Approximate Ship Weight	lbs	267	287	405	452
	kg	121	130	184	205

^C Output capacities shown are for units installed at elevations up to 2,000 ft. (600M).

^D Sizes shown are for gas connection to a single-stage gas valve, not gas supply line size.

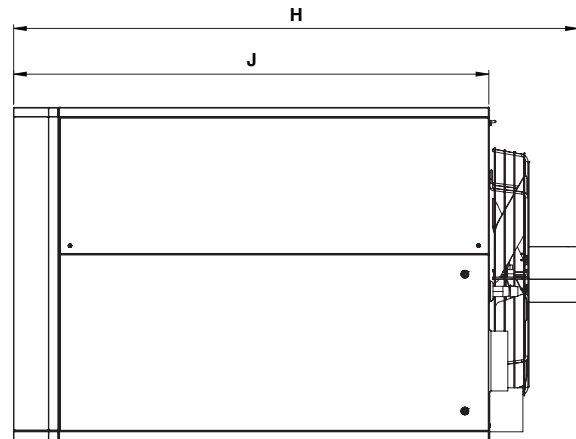
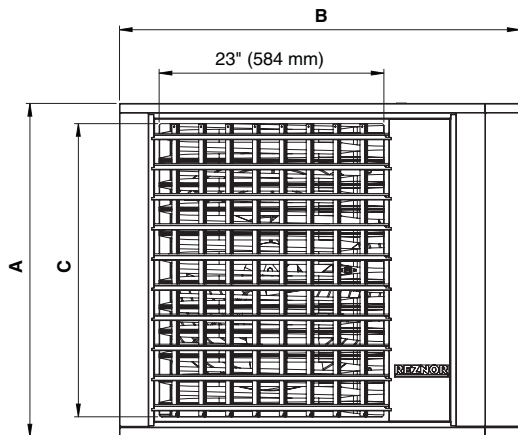
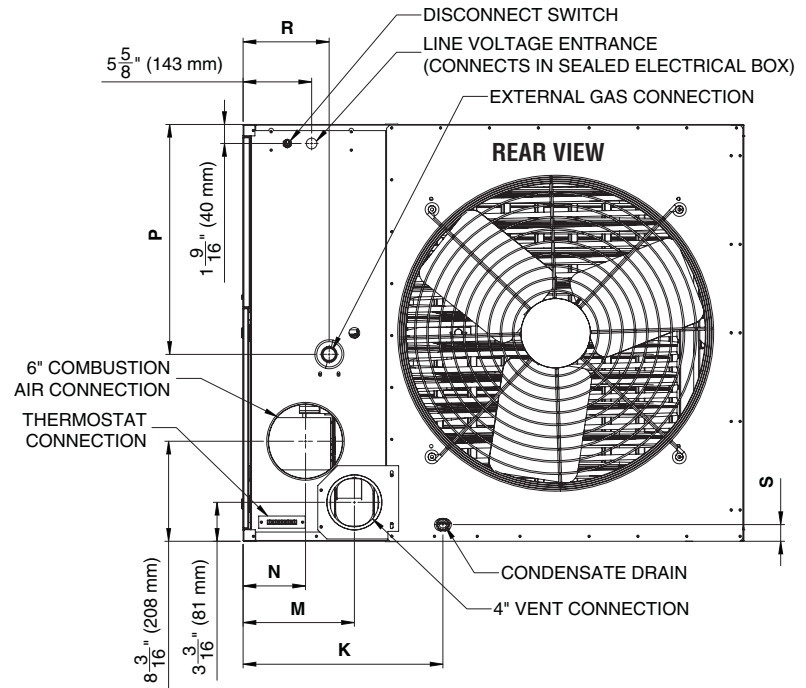
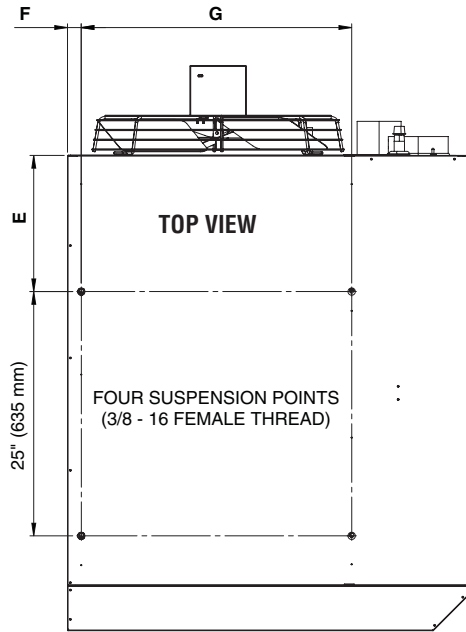
^E MOP = 2.25 x largest motor FLA + remaining load. Answer is rounded down to the next size of commercially available circuit breaker or fuse.

^F All other information in this table is based on a heater equipped with standard 115 Volt open fan motor.

UEZ DIMENSIONS

±1/16" (2MM)

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



CLEARANCES

Clearances required from combustible material unless otherwise noted.

Top		Flue Connector		Access Panel ^A		Non-Access Side		Bottom ^B		Rear ^C	
inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
4	102	6	152	18	457	2	51	1	25	18	457

^A Access Panel clearance required for access to controls for service.

^B Bottom clearance to combustible. Heater should be suspended a minimum of 5 feet (1.5M) above the floor.

^C Rear clearance required for airflow. Clearance should be measured from the fan motor.

UDZ UNIT HEATER

SEPARATED COMBUSTION, LOW STATIC AXIAL FAN COMMERCIAL/INDUSTRIAL UNIT HEATERS

82 - 83% THERMAL EFFICIENCY



Reznor® Model UDZ gas-fired unit heaters are available in 14 sizes ranging from 30,000 to 400,000 BTUH gas input. Model UDZ heaters are approved for installation in the United States and Canada by ETL.

Each size cabinet is easily suspended from either 2 or 4 suspension points. Or, an optional hanger kit for sizes 30-125 allows for ceiling mounting. The low voltage terminal strip on the outside of the cabinet makes connecting control wiring easy with no panels to remove. The addition of a “G” terminal to the strip, along with the new design of the circuit board, allows for fan only operation (without adding relays).

Reznor model UDZ unit heaters offer a sleek design sure to complement any space. The UDZ features a two-tone black and white powder coated, scratch-resistant paint scheme with a single red louver. Each unit has clean rounded corners and edges with no visible screws or fasteners, and the bottom is embossed with the Reznor logo. Model UDZ unit heaters provide the same superior performance customers have relied on for more than 100 years along with added features that make servicing the unit easier, installation safer and improve monitoring capabilities.

STANDARD FEATURES AND BENEFITS

- Sizes 30-400 MBTUH certified for commercial/industrial heating application
- Sizes 30-125 MBTUH carry an additional approval for use in residential garage/workshop heating applications
- 50-60°F Rise range
- Integrated circuit board with 7 segment display
- External status indicating LED
- Hinged door with ¼ turn latch
- Improved cabinet design with removable front face and two tone white and black powder paint.
- Reznor logo embossed on bottom of unit
- TCORE2® titanium stabilized aluminized steel heat exchanger
- Patented^A single burner combustion system including a one-piece burner assembly
- Built-in disconnect switch (20A @ 115V Rating)
- 115V, 1 phase, 60 Hz Supply voltage
- 115 Volt open fan motor with internal overload protection
- Transformer for 24-volt controls
- Sealed control compartment houses all electrical components
- Multi-try direct spark ignition with timed lockout
- Fan relay (included on the circuit board)
- Single-stage natural gas valve (field adjustable for operation to 10,000 ft. elevation)
- Vibration/noise isolated fan and venter motors – designed for low noise operation
- 2-pt and 4-pt Suspension – standard on all sizes
- External terminal strip for 24-volt wiring
- External gas pipe connection
- Sealed junction box for supply wiring
- Full fan guard
- Disconnect switch

OPTIONAL FEATURES

- Single-stage propane gas valve (field adjustable for operation to 10,000 ft.)
- Two-stage gas valve (sizes 60-400)
- 409 or 316 stainless steel heat exchangers
- Totally enclosed fan motor (sizes 30-400, 115v only)
- Horizontal or vertical combustion air/vent kit including concentric adapter
- Thermostat
- Thermostat guard with locking cover
- Integrated vertical louvers
- Integrated 30° & 60° downturn nozzles
- Gas conversion kits (natural and propane)
- Primary/secondary controls for zoning up to six units
- Ceiling suspension kit - Sizes 30-125
- Hanger kits for 1” pipe
- Stepdown transformer (for 208/115, 230/115 or 460/115 supply voltage)
- Manual shutoff valves

For installations where dirt, dust, and other air borne contamination is present in the indoor environment, it is recommended to use separated combustion units (Model UDZ). These models use air from outside the space for combustion. This will help reduce the build up of contaminants on the burner which would affect the combustion process. Refer to the installation manuals for recommended frequency of maintenance and cleaning.

^A U.S. Patent Number 6,889,686

REZNOR®

UDZ TECHNICAL DATA

Size		30	45	60	75	100	125	150
Input Heating Capacity	BTUH	30,000	45,000	60,000	75,000	105,000	120,000	150,000
	kw/h	(8.8)	(13.2)	(17.6)	(22.0)	(30.8)	(35.2)	(44.0)
Thermal Efficiency (%)		82	83	83	83	83	83	83
Output Heating Capacity ^C	BTUH	24,600	37,350	49,800	62,250	87,150	99,600	124,500
	kw/h	(7.2)	(10.9)	(14.6)	(18.2)	(25.5)	(29.2)	(36.5)
Gas Connection (inches) ^E	Natural	1/2	1/2	1/2	1/2	1/2	1/2	1/2
	Propane	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Vent Connection Size (inches diameter) ^F		4	4	4	4	4	4	5
Combustion Air Inlet (inches diameter) ^F		4	4	4	4	4	4	6
Control Amps (24 volt)		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Full-Load Amps (115 volt)		1.9	2.4	2.4	3.7	4.3	5.6	3.8
Maximum Over Current Protection (115V) ^G		15	15	15	15	15	15	15
Normal Power Consumption (watts)		109	155	155	228	292	370	392
Discharge Air Temperature Rise (°F)		50	55	60	60	60	60	60
Air Volume	CFM	456	629	769	961	1345	1537	1921
	M ³ /minute	(12.9)	(17.8)	(21.8)	(27.2)	(38.1)	(43.5)	(54.4)
Discharge Air Opening Area	ft ²	0.96	0.96	1.25	1.25	2.01	2.01	2.56
	M ²	(0.09)	(0.09)	(0.12)	(0.12)	(0.19)	(0.19)	(0.24)
Outlet Velocity	FPM	475	656	616	770	668	763	752
	M/minute	(145)	(200)	(188)	(235)	(204)	(233)	(229)
Fan Motor HP ^H	Open	0.02	0.03	0.03	0.06	1/30	1/20	1/6
	Enclosed	0.06	0.06	0.06	0.06	1/4	1/4	1/4
Fan Motor RPM		1550	1550	1550	1550	1050	1050	1050
Fan Diameter (inches)		10	10	12	12	16	16	18
Sound Level	dba @ 15 ft	40	40	40	49	54	55	51
Approximate Net Weight	lbs	58	63	71	77	102	107	179
	kg	26	29	32	35	46	49	81
Approximate Ship Weight	lbs	66	71	79	85	125	130	212
	kg	30	32	36	39	57	59	96

Size		175	200	225	250	300	350	400
Input Heating Capacity	BTUH	175,000	200,000	225,000	250,000	300,000	350,000	400,000
	kw/h	(51.3)	(58.6)	(65.9)	(73.3)	(87.9)	(102.6)	(117.2)
Thermal Efficiency (%)		83	83	83	83	83	83	83
Output Heating Capacity ^C	BTUH	145,250	166,000	186,750	207,500	249,000	290,500	332,000
	kw/h	(42.6)	(48.7)	(54.7)	(60.8)	(73.0)	(85.1)	(97.3)
Gas Connection (inches) ^E	Natural	1/2	1/2	3/4	3/4	3/4	3/4	3/4
	Propane	1/2	1/2	3/4	3/4	3/4	3/4	3/4
Vent Connection Size (inches diameter) ^F		5	5	5	5	6	6	6
Combustion Air Inlet (inches diameter) ^F		6	6	6	6	6	6	6
Control Amps (24 volt)		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Full-Load Amps (115 volt)		3.8	4.6	7.5	7.5	11.0	11.0	11.0
Maximum Over Current Protection (115V) ^G		15	15	15	15	20	20	20
Normal Power Consumption (watts)		392	491	747	747	1086	1086	1086
Discharge Air Temperature Rise (°F)		60	60	60	60	60	60	60
Air Volume	CFM	2242	2562	2882	3202	3843	4483	5123
	M ³ /minute	(63.5)	(72.5)	(81.6)	(90.7)	(108.8)	(126.9)	(145.1)
Discharge Air Opening Area	ft ²	2.56	2.56	3.51	3.51	4.79	4.79	4.79
	M ²	(0.24)	(0.24)	(0.33)	(0.33)	(0.45)	(0.45)	(0.45)
Outlet Velocity	FPM	877	1003	820	911	802	936	1069
	M/minute	(267)	(306)	(250)	(278)	(244)	(285)	(326)
Fan Motor HP ^H	Open	1/6	1/6	1/4	1/4	1/2	1/2	1/2
	Enclosed	1/4	1/4	1/4	1/4	1/2	1/2	1/2
Fan Motor RPM		1050	1050	1050	1050	1050	1050	1050
Fan Diameter (inches)		18	18	20	20	24	24	24
Sound Level	dba @ 15 ft	52	53	56	56	59	61	62
Approximate Net Weight	lbs	194	194	212	224	278	304	317
	kg	88	88	96	102	126	138	144
Approximate Ship Weight	lbs	227	227	255	267	331	357	370
	kg	103	103	116	121	150	162	168

^C ETL rating for altitudes to 2000 ft.

^E Size shown is for gas connection to a single stage gas valve, not supply line size.

^F Smaller and/or larger vent and combustion air pipe diameters may be allowed; refer to the Venting Installation Manual for Separated Combustion Units, Form I-V-SC. If vent diameter is different from vent connection, reducer/enlargers will be field-required.

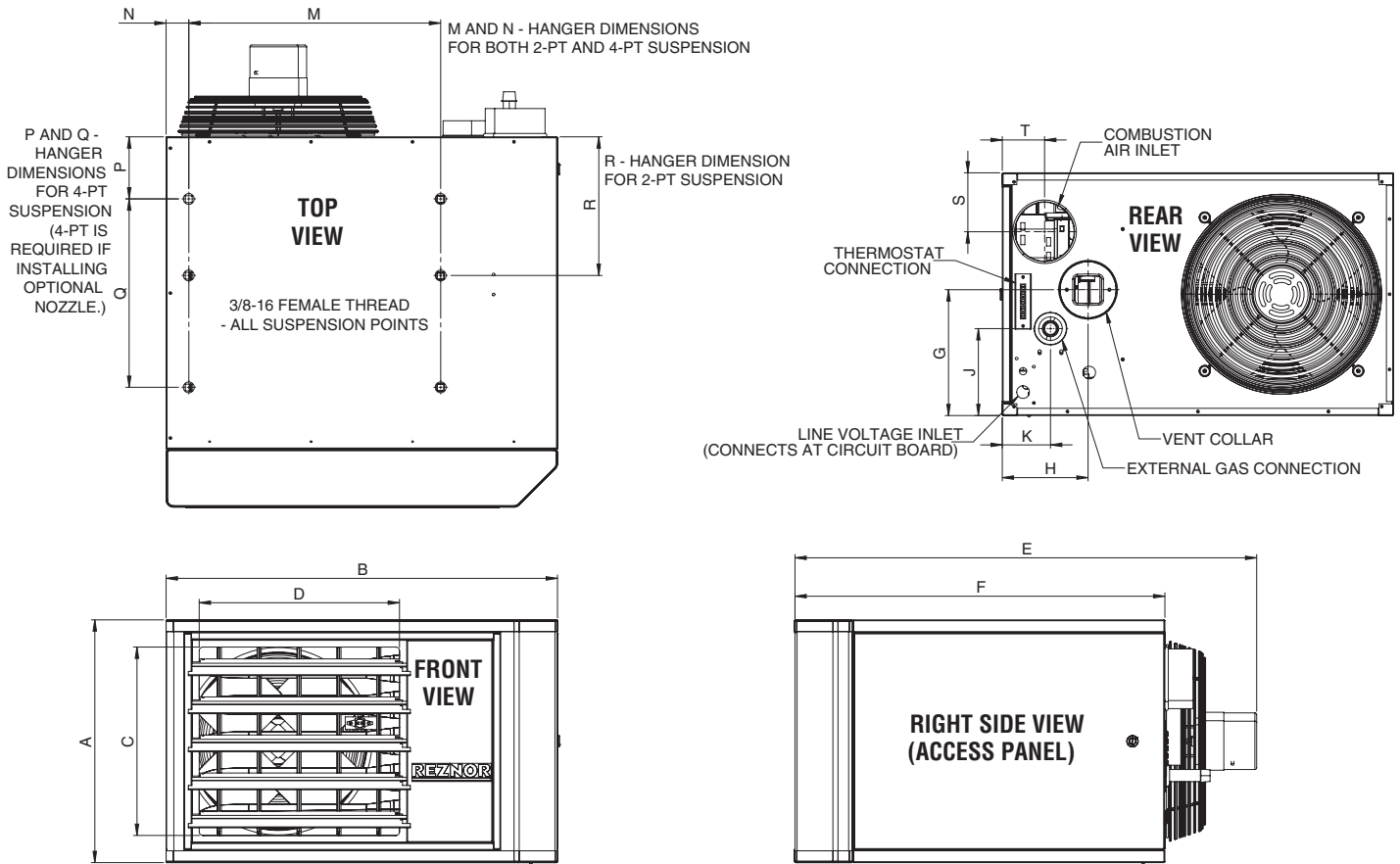
^G MOP = 2.25 x largest motor FLA + remaining load. Answer is rounded down to the next size of commercially available circuit breaker or fuse.

^H All other information in this table is based on a heater equipped with a standard 115 volt open fan motor.

UDZ DIMENSIONS

±1/16" (2MM)

UNIT SIZE	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T		
	INCHES (±1/16) (mm (± 2))																		
030, 045	13 3/4 (349)	27 (686)	10 (254)	13 13/16 (351)	29 3/4 (756)	25 9/16 (649)	6 (152)	5 15/16 (151)	3 1/2 (89)	3 11/32 (85)	17 3/8 (441)	1 9/16 (40)	4 9/32 (109)	13 (330)	9 9/16 (243)	3 3/4 (95)	2 15/16 (75)		
060	16 3/4 (425)		13 (330)		32 23/32 (831)		8 11/16 (221)		6 (152)							4 1/16 (103)			
075					31 29/32 (810)		15 5/16 (389)		8 29/32 (226)							5 15/32 (139)			
100					24 3/4 (629)		21 (533)		34 9/32 (871)							15 5/16 (389)		8 29/32 (226)	5 15/32 (139)
125					20 1/8 (511)		38 3/16 (970)		16 (406)							23 (584)		48 7/16 (1230)	40 (1016)
225,250	26 1/8 (664)	22 (559)	48 7/16 (1230)	13 1/16 (332)	9 (229)	8 1/16 (205)	4 5/16 (110)												
300,350,400	34 1/8 (867)	41 (1041)	30 (762)	48 29/32 (1243)	17 1/16 (433)	8 1/2 (216)	11 13/16 (300)	7 5/16 (186)	27 11/16 (703)	16 1/4 (413)	11 9/16 (294)	4 1/2 (114)							



CLEARANCES FROM COMBUSTIBLES

Size	Top		Flue Connector		Access Panel ^J		Non-Access Side		Bottom ^K		Rear ^L	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
30-125	1	25	6	152	18	457	1	25	1	25	18	457
150-400	4	102	6	152	18	457	2	51	1	25	18	457

^J Access Panel clearance is required for service clearance to controls

^K Suspend the heater so that the bottom is a minimum of 5' (1.5M) above the floor.

^L Rear clearance is required for air movement. Rear clearance should be measured from the fan motor.

Refer to Reznor website www.ReznorHVAC.com for venting/inlet air requirements for Reznor Separated Combustion Units

REZNOR

UBZ UNIT HEATER

SEPARATED COMBUSTION, HIGH STATIC BLOWER FAN COMMERCIAL/INDUSTRIAL UNIT HEATERS

82 - 83% THERMAL EFFICIENCY

Reznor® Model UBZ gas-fired unit heaters are available in 14 sizes ranging from 30,000 to 400,000 BTUH gas input. Model UBZ heaters are approved for installation in the United States and Canada by ETL.

Each size cabinet is easily suspended from 4 suspension points. The low voltage terminal strip on the outside of the cabinet makes connecting control wiring easy with no panels to remove. The addition of a “G” terminal to the strip, along with the new design of the circuit board, allows for fan only operation (without adding relays).

Reznor model UBZ unit heaters offer a sleek design sure to complement any space. The UBZ features a two-tone black and white powder coated, scratch-resistant paint scheme with a single red louver. Each unit has clean rounded corners and edges with no visible screws or fasteners, and the bottom is embossed with the Reznor logo. Model UBZ unit heaters provide the same superior performance customers have relied on for more than 100 years along with added features that make servicing the unit easier, installation safer and improve monitoring capabilities.

STANDARD FEATURES AND BENEFITS

- Certified for commercial/industrial heating application
- 45-75°F Rise range - Sizes 30-350
- 50-80°F Rise range - Size 400
- Integrated circuit board with 7 segment display
- External status indicating LED
- Hinged door with ¼ turn latch
- Improved cabinet design with removable front face and two tone white and black powder paint.
- Reznor logo embossed on bottom of unit
- T_{CORE}²® titanium stabilized aluminized steel heat exchanger
- Patented^A single burner combustion system including a one-piece burner assembly
- Built-in disconnect switch - Sizes 30-125, 20A @ 115V rating; Sizes 150-400 30A @ 115V rating
- 115V, 1 phase, 60 Hz Supply voltage
- 115 Volt open drip proof blower motor with internal overload protection - Sizes 30-125
- 115 Volt open drip proof blower motor with internal overloads and definite purpose motor contactor - Sizes 150-400
- Direct drive blower with multispeed taps - Sizes 30-125
- Adjustable belt drive blower - Sizes 150-400
- Transformer for 24-volt controls
- Sealed control compartment houses all electrical components
- Multi-try direct spark ignition with timed lockout
- Blower relay (included on the circuit board)
- Single-stage natural gas valve (field adjustable for operation to 10,000 ft. elevation)
- Vibration/noise isolated fan and venter motors ~ designed for low noise operation
- 4-pt Suspension ~ standard on all sizes
- External terminal strip for 24-volt wiring



- External gas pipe connection
- Sealed junction box for supply wiring
- Full fan guard
- Disconnect switch

OPTIONAL FEATURES

- Single-stage propane gas valve (field adjustable for operation to 10,000 ft.)
- Two-stage gas valve (sizes 60-400)
- 409 or 316 stainless steel heat exchangers
- Totally enclosed blower motor (sizes 30-400)
- Horizontal or vertical combustion air/vent kit including concentric adapter
- Thermostat / guard with locking cover
- Gas conversion kits (natural and propane)
- Primary/secondary controls for zoning up to six units
- Hanger kits for 1" pipe
- Stepdown transformer (for 208/115, 230/115 or 460/115 supply voltage)
- Manual shutoff valves
- Integrated 30° & 60° downturn nozzles
- Integrated vertical louvers

For installations where dirt, dust, and other air borne contamination is present in the indoor environment, it is recommended to use separated combustion units (Model UBZ). These models use air from outside the space for combustion. This will help reduce the build up of contaminants on the burner which would affect the combustion process. Refer to the installation manuals for recommended frequency of maintenance and cleaning.

^A U.S. Patent Number 6,889,686

UBZ TECHNICAL DATA

Size		30	45	60	75	100	125	150
Input Heating Capacity	BTUH	30,000	45,000	60,000	75,000	105,000	120,000	150,000
	kw/h	8.8	13.2	17.6	22.0	30.8	35.2	43.9
Thermal Efficiency (%)		82	82	82	82	83	83	83
Output Heating Capacity ^D	BTUH	24,600	36,900	49,200	61,500	87,150	99,600	124,500
	kw/h	7.2	10.8	14.4	18.0	25.6	29.2	36.4
Gas Connection (inches) ^E	Natural	1/2	1/2	1/2	1/2	1/2	1/2	1/2
	Propane	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Vent Connection Size (inches diameter) ^F		4	4	4	4	4	4	5
Combustion Air Inlet (inches diameter) ^F		4	4	4	4	4	4	6
Control Amps (24 volt)		1.0	1.0	1.0	1.0	1.0	1.0	1.0
FLA (with standard HP 115V motor)		3.7	3.7	7.1	7.3	13.2	13.2	5.9
Maximum OCP (115V) ^G		15	15	15	15	30	30	15
Minimum Discharge Air Temperature Rise	°F	45	45	45	45	45	45	45
Maximum Discharge Air Temperature Rise	°F	75	75	75	75	75	75	75
Maximum Air Volume	CFM	506	759	1012	1265	1793	2049	2562
	M ³ /minute	14.3	21.5	28.7	35.8	50.8	58.0	72.5
Minimum Air Volume	CFM	304	456	607	759	1076	1230	1537
	M ³ /minute	8.6	12.9	17.2	21.5	30.5	34.8	43.5
Discharge Air Opening Area	Ft ²	0.96	0.96	1.25	1.25	2.01	2.01	2.56
	M ²	0.09	0.09	0.12	0.12	0.19	0.19	0.24
Maximum Output Velocity	FPM	527	791	810	1012	892	1020	1001
	M ³ /minute	159	239	239	299	267	305	305
Minimum Output Velocity	FPM	316	475	486	607	535	612	600
	M ³ /minute	96	143	143	179	160	183	183
Standard Blower Motor HP		1/6	1/6	1/3	1/3	3/4	3/4	1/4
Blower Size	inches	9 X 6	9 X 6	9 X 6	9 X 6	10 X 10	10 X 10	12 x 12
Approximate Net Weight	lbs	85	90	103	109	169	172	301
	kg	39	41	47	49	77	78	137
Approximate Ship Weight	lbs	95	100	115	121	183	188	323
	kg	43	45	52	55	83	85	147

Size		175	200	225	250	300	350	400
Input Heating Capacity	BTUH	175,000	200,000	225,000	250,000	300,000	350,000	400,000
	kw/h	51.2	58.6	65.9	73.2	87.8	102.5	117.1
Thermal Efficiency (%)		83	83	83	83	83	83	82
Output Heating Capacity ^D	BTUH	145,250	166,000	186,750	207,500	249,000	290,500	328,000
	kw/h	42.5	48.6	54.7	60.8	72.9	85.1	96.0
Gas Connection (inches) ^E	Natural	1/2	1/2	3/4	3/4	3/4	3/4	3/4
	Propane	1/2	1/2	3/4	3/4	3/4	3/4	3/4
Vent Connection Size (inches diameter) ^F		5	5	5	5	6	6	6
Combustion Air Inlet (inches diameter) ^F		6	6	6	6	6	6	6
Control Amps (24 volt)		1.0	1.0	1.0	1.0	1.0	1.0	1.0
FLA (with standard HP 115V motor)		6.3	10.5	12.7	12.7	17.7	27.3	27.3
Maximum OCP (115V) ^G		15	25	30	30	40	60	60
Minimum Discharge Air Temperature Rise	°F	45	45	45	45	45	45	50
Maximum Discharge Air Temperature Rise	°F	75	75	75	75	75	75	80
Maximum Air Volume	CFM	2989	3416	3843	4270	5123	5977	6185
	M ³ /minute	84.6	96.7	108.8	120.9	145.1	169.2	175.1
Minimum Air Volume	CFM	1793	2049	2306	2562	3074	3586	4100
	M ³ /minute	50.8	58.0	65.3	72.5	87.0	101.5	116.1
Discharge Air Opening Area	Ft ²	2.56	2.56	3.51	3.51	4.79	4.79	4.79
	M ²	0.24	0.24	0.33	0.33	0.45	0.45	0.45
Maximum Output Velocity	FPM	1168	1334	1095	1217	1070	1248	1291
	M ³ /minute	356	407	334	371	326	380	393
Minimum Output Velocity	FPM	700	800	657	730	642	749	856
	M ³ /minute	213	244	200	223	196	228	261
Standard Blower Motor HP		1/2	1/2	3/4	3/4	1-1/2	2	2
Blower Size	inches	12 x 12	12 x 12	15 x 11	15 x 11	15 x 15	15 x 15	15 x 15
Approximate Net Weight	lbs	321	321	386	401	459	495	507
	kg	146	146	175	182	208	225	230
Approximate Ship Weight	lbs	343	343	410	425	485	521	537
	kg	156	156	186	193	220	236	244

^D ETL rating for altitudes to 2000 ft.

^E Size shown is for gas connection to a single stage gas valve, not supply line size.

^F Smaller and/or larger vent and combustion air pipe diameters may be allowed; refer to the Venting Installation Manual for Separated

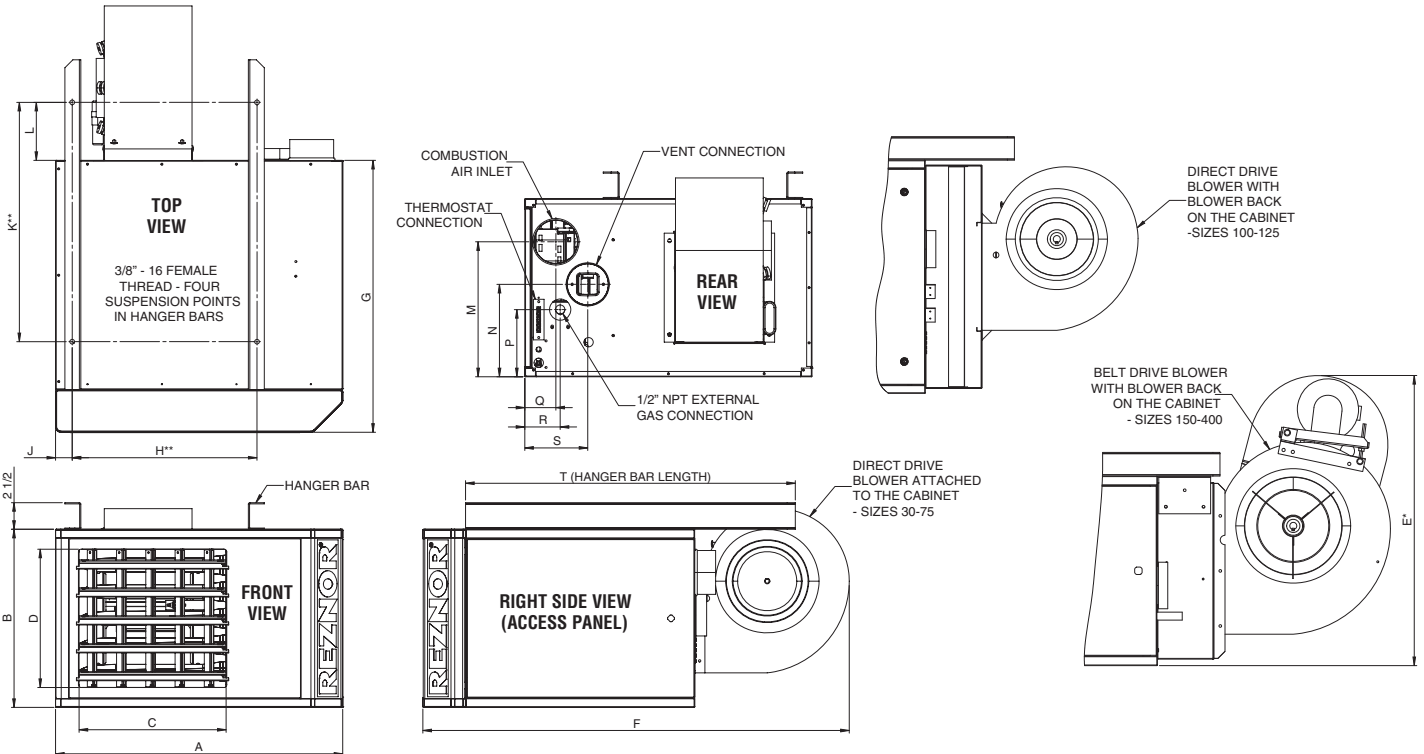
Combustion Units, Form I-UD-V-SC. If vent diameter is different from vent connection, reducer/enlargers will be field-required.

^G MOP = 2.25 x largest motor FLA + remaining load. Answer is rounded down to the next size of commercially available circuit breaker or fuse.

UBZ DIMENSIONS

±1/16" (2MM)

UNIT SIZE	INCHES (±1/16) (mm (± 2))																										
	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T										
030, 045	27 (686)	13 3/4 (349)	13 13/16 (351)	10 (254)	17 3/16 (437)	40 3/32 (1018)	25 17/32 (649)	17 3/8 (441)	1 9/16 (40)	22 1/2 (572)	6 15/32 (164)	10 (254)	6 (152)	3 1/2 (89)	2 21/32 (74)	5 31/32 (152)	3 5/16 (84)	31 (787)									
060		16 3/4 (425)		13 (330)	18 11/16 (475)						8 15/32 (139)	12 11/16 (322)	8 11/16 (221)	6 5/16 (160)		3 5/16 (84)	5 29/32 (150)										
075		24 3/4 (629)		21 (533)	24 1/16 (611)						8 15/32 (215)	19 5/16 (491)	15 5/16 (389)	9 9/16 (243)		3 5/16 (84)	5 29/32 (150)										
100		38 3/16 (970)		20 1/8 (511)	23 (584)						16 (406)	30 31/32 (786)	64 3/4 (1645)	40 (1016)		25 11/16 (653)	1 13/32 (36)		24 1/2 (622)	3 29/32 (99)	13 1/2 (343)	8 1/2 (216)	5 7/16 (138)	4 3/16 (106)	6 1/2 (165)	8 3/16 (208)	42 (1067)
125																				48 1/8 (1222)	47 5/8 (1210)	8 15/32 (215)	19 5/16 (491)				
150,175	41 (1041)	26 1/8 (664)	30 (762)	22 (559)	37 1/32 (941)	68 1/8 (1730)	27 11/16 (703)	25 11/16 (653)	1 13/32 (36)	24 1/2 (622)	5 29/32 (150)	18 1/16 (459)	13 1/16 (332)	9 (229)	4 1/2 (114)	7 5/16 (186)	8 1/2 (216)	42 (1067)									
200		34 1/8 (867)		41 7/32 (1047)	30 31/32 (786)	64 3/4 (1645)					40 (1016)	25 11/16 (653)	1 13/32 (36)	24 1/2 (622)					3 29/32 (99)	13 1/2 (343)	8 1/2 (216)	5 7/16 (138)					
225,250		34 1/8 (867)		41 7/32 (1047)	30 31/32 (786)	64 3/4 (1645)					40 (1016)	25 11/16 (653)	1 13/32 (36)	24 1/2 (622)					3 29/32 (99)	13 1/2 (343)	8 1/2 (216)	5 7/16 (138)					
300,350,400	41 (1041)	34 1/8 (867)	30 (762)	41 7/32 (1047)	68 1/8 (1730)	27 11/16 (703)	25 11/16 (653)	1 13/32 (36)	24 1/2 (622)	3 29/32 (99)	13 1/2 (343)	8 1/2 (216)	5 7/16 (138)	4 1/2 (114)	7 5/16 (186)	8 1/2 (216)	42 (1067)										

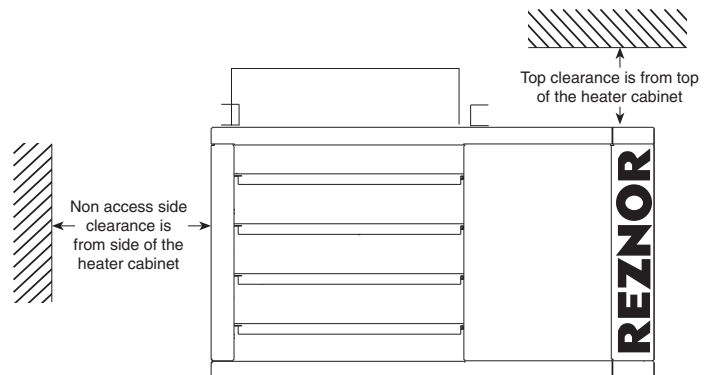


CLEARANCES FROM COMBUSTIBLES

Size	Top		Flue Connector		Access Panel ^H		Non-Access Side		Bottom ^J		Rear ^K	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
30-125	6	152	6	152	18	457	24	610	1	25	18	457
150-400	14	356	6	152	18	457	24	610	1	25	18	457

^H Access Panel clearance is required for service clearance to controls
^J Suspend the heater so that the bottom is a minimum of 5' (1.5M) above the floor.
^K Rear clearance is measured from the back of the blower.

Refer to Reznor website www.ReznorHVAC.com for venting/inlet air requirements for Reznor Separated Combustion Units



UDX UNIT HEATER

POWER VENTED, LOW STATIC AXIAL FAN COMMERCIAL/INDUSTRIAL UNIT HEATERS

82 - 83% THERMAL EFFICIENCY

Reznor® Model UDX gas-fired unit heaters are available in 14 sizes ranging from 30,000 to 400,000 BTUH gas input. Model UDX heaters are approved for installation in the United States and Canada by ETL.

Each size cabinet is easily suspended from either 2 or 4 suspension points. Or, an optional hanger kit for Sizes 30-125 allows for ceiling mounting. The low voltage terminal strip on the outside of the cabinet makes connecting control wiring easy with no panels to remove. The addition of a "G" terminal to the strip, along with the new design of the circuit board, allows for fan only operation (without adding relays).

Reznor model UDX unit heaters feature a two-tone black and white powder coated, scratch-resistant paint scheme. Each unit has clean rounded corners and edges with no visible screws or fasteners. Model UDX unit heaters provide the same superior performance customers have relied on for more than 100 years along with added features that make servicing the unit easier, installation safer and improve monitoring capabilities.



STANDARD FEATURES AND BENEFITS

- Sizes 30-400 MBTUH certified for commercial/industrial heating application
- Sizes 30-125 MBTUH carry an additional approval for use in residential garage/workshop heating applications
- 50-60°F Rise range
- Integrated circuit board with 7 segment display
- External status indicating LED
- Hinged door with ¼ turn latch
- Improved cabinet design with removable front face and two tone white and black powder paint.
- T_{CORE}²® titanium stabilized aluminized steel heat exchanger
- Patented^A single burner combustion system including a one-piece burner assembly
- 115V, 1 phase, 60 Hz Supply voltage
- 115 Volt open fan motor with internal overload protection
- Transformer for 24-volt controls
- Multi-try direct spark ignition with timed lockout
- Fan relay (included on the circuit board)
- Single-stage natural gas valve (field adjustable for operation to 10,000 ft. elevation^B)
- Vibration/noise isolated fan and venter motors – designed for low noise operation
- 2-pt and 4-pt Suspension – standard on all sizes
- External terminal strip for 24-volt wiring
- External gas pipe connection
- Full fan guard

OPTIONAL FEATURES

- Single-stage propane gas valve (field adjustable for operation to 10,000 ft.)
- Two-stage gas valve (sizes 60-400)
- 409 or 316 stainless steel heat exchangers
- Totally enclosed fan motor (sizes 30-400, 115v only)
- Vent cap
- Thermostat
- Integrated vertical louvers
- Integrated 30° & 60° downturn nozzles
- Gas conversion kits (natural and propane)
- Primary/secondary controls for zoning up to six units
- Ceiling suspension kit - Sizes 30-125
- Hanger kits for 1" pipe
- Stepdown transformer (for 208/115, 230/115 or 460/115 supply voltage)
- Manual shutoff valves

For installations where dirt, dust, and other air borne contamination is present in the indoor environment, it is recommended to use separated combustion units (Model UDZ). These models use air from outside the space for combustion. This will help reduce the build up of contaminants on the burner which would affect the combustion process. Refer to the installation manuals for recommended frequency of maintenance and cleaning.

^A U.S. Patent Number 6,889,686

^B Pressure switch change required for installations above 6,000 ft.

UDX TECHNICAL DATA

Size		30	45	60	75	100	125	150
Input Heating Capacity	BTUH	30,000	45,000	60,000	75,000	105,000	120,000	150,000
	kw/h	8.8	13.2	17.6	22.0	30.8	35.2	43.9
Thermal Efficiency (%)		82	83	83	83	83	83	83
Output Heating Capacity ^C	BTUH	24,600	37,350	49,800	62,250	87,150	99,600	124,500
	kw/h	7.2	11.0	14.6	18.3	25.6	29.2	36.4
Gas Connection (inches) ^D	Natural	1/2	1/2	1/2	1/2	1/2	1/2	1/2
	Propane	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Vent Connection Size (inches diameter) ^E		4	4	4	4	4	4	5
Control Amps (24 volt)		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Full-Load Amps (115 volt)		1.9	2.4	2.4	3.7	4.3	5.6	3.8
Maximum Over Current Protection (115V) ^F		15	15	15	15	15	15	15
Normal Power Consumption (watts)		109	155	155	217	276	354	392
Discharge Air Temperature Rise (°F)		50	55	60	60	60	60	60
Air Volume	CFM	456	629	769	961	1345	1537	1921
	M ³ /minute	12.9	17.8	21.8	27.5	36.7	45.9	54.4
Discharge Air Opening Area	ft ²	0.96	0.96	1.25	1.25	2.01	2.01	2.56
	M ²	0.09	0.09	0.12	0.12	0.19	0.19	0.24
Outlet Velocity	FPM	475	656	616	770	668	763	752
	M/minute	145	200	188	238	196	245	229
Fan Motor HP ^G	Open	0.02	0.03	0.03	0.06	1/30	1/20	1/6
	Enclosed	0.06	0.06	0.06	0.06	1/4	1/4	1/4
Fan Motor RPM		1550	1550	1550	1550	1050	1050	1050
Fan Diameter (inches)		10	10	12	12	16	16	18
Sound Level	dba @ 15 ft	40	40	40	49	54	55	51
Approximate Net Weight	lbs	57	62	71	76	101	106	178
	kg	26	28	32	34	46	48	81
Approximate Ship Weight	lbs	63	68	76	81	120	125	206
	kg	29	31	34	37	54	57	93

Size		175	200	225	250	300	350	400
Input Heating Capacity	BTUH	175,000	200,000	225,000	250,000	300,000	350,000	400,000
	kw/h	51.2	58.6	65.9	73.2	87.8	102.5	117.1
Thermal Efficiency (%)		83	83	83	83	83	83	83
Output Heating Capacity ^C	BTUH	145,250	166,000	186,750	207,500	249,000	290,500	332,000
	kw/h	42.5	48.6	54.7	60.8	72.9	85.1	97.2
Gas Connection (inches) ^D	Natural	1/2	1/2	3/4	3/4	3/4	3/4	3/4
	Propane	1/2	1/2	3/4	3/4	3/4	3/4	3/4
Vent Connection Size (inches diameter) ^E		5	5	5	5	6	6	6
Control Amps (24 volt)		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Full-Load Amps (115 volt)		3.8	4.6	7.5	7.5	11.0	11.0	11.0
Maximum Over Current Protection (115V) ^F		15	15	15	15	20	20	20
Normal Power Consumption (watts)		392	491	747	747	1086	1086	1086
Discharge Air Temperature Rise (°F)		60	60	60	60	60	60	60
Air Volume	CFM	2242	2562	2882	3202	3843	4483	5123
	M ³ /minute	63.5	72.5	81.6	90.7	108.8	126.9	145.1
Discharge Air Opening Area	ft ²	2.56	2.56	3.51	3.51	4.79	4.79	4.79
	M ²	0.24	0.24	0.33	0.33	0.45	0.45	0.45
Outlet Velocity	FPM	877	1003	820	911	802	936	1069
	M/minute	267	306	250	278	244	285	326
Fan Motor HP ^G	Open	1/6	1/6	1/4	1/4	1/2	1/2	1/2
	Enclosed	1/4	1/4	1/4	1/4	1/2	1/2	1/2
Fan Motor RPM		1050	1050	1050	1050	1050	1050	1050
Fan Diameter (inches)		18	18	20	20	24	24	24
Sound Level	dba @ 15 ft	52	53	56	56	59	61	62
Approximate Net Weight	lbs	193	193	211	223	277	303	316
	kg	88	88	96	101	126	137	143
Approximate Ship Weight	lbs	221	221	247	259	323	348	360
	kg	100	100	112	117	147	158	163

^C ETL rating for altitudes to 2000 ft.

^D Size shown is for gas connection to a single stage gas valve, not supply line size.

^E Smaller or larger vent pipe diameters may be allowed; refer to the Venting Installation Manual, Form I-V-PV. If vent diameter is different from vent connection, reducer/enlargers will be field-required.

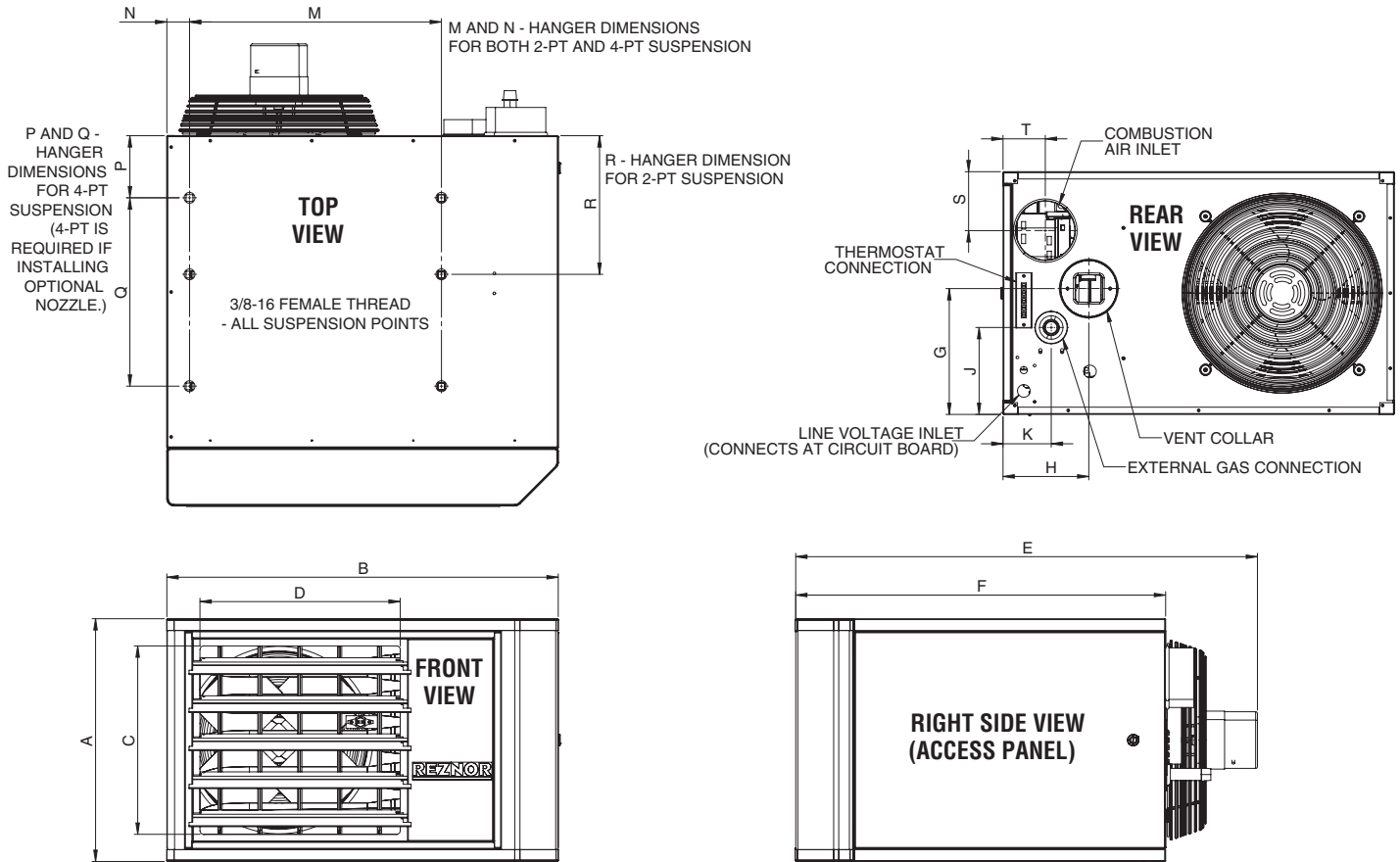
^F MOP = 2.25 x largest motor FLA + remaining load. Answer is rounded down to the next size of commercially available circuit breaker or fuse.

^G All other information in this table is based on a heater equipped with a standard 115 volt open fan motor.

UDX DIMENSIONS

±1/16" (2MM)

UNIT SIZE	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T
	INCHES (±1/16) (mm (± 2))																
030, 045	13 3/4 (349)		10 (254)		29 3/4 (756)		6 (152)		3 1/2 (89)							3 3/4 (95)	
060					32 23/32 (831)												
075	16 3/4 (425)	27 (686)	13 (330)	13 13/16 (351)	31 29/32 (810)	25 9/16 (649)	8 11/16 (221)	5 15/16 (151)	6 (152)	3 11/32 (85)	17 3/8 (441)	1 9/16 (40)	4 9/32 (109)	13 (330)	9 9/16 (243)	4 1/16 (103)	2 15/16 (75)
100																	
125	24 3/4 (629)		21 (533)		34 9/32 (871)		15 5/16 (389)		8 29/32 (226)							5 15/32 (139)	
150,175,200	20 1/8 (511)	38 3/16 (970)	16 (406)		48 7/16 (1230)	40 (1016)	9 5/8 (244)	8 5/16 (211)	5 3/8 (137)	6 1/2 (165)	25 11/16 (652)				16 3/8 (416)	5 1/2 (140)	4 1/4 (108)
225,250	26 1/8 (664)		22 (559)	23 (584)			13 1/16 (332)		9 (229)			1 13/32 (36)	8 1/8 (206)	22 3/16 (564)		8 1/16 (205)	4 5/16 (110)
300,350,400	34 1/8 (867)	41 (1041)	30 (762)		48 29/32 (1243)		17 1/16 (433)	8 1/2 (216)	11 13/16 (300)	7 5/16 (186)	27 11/16 (703)				16 1/4 (413)	11 9/16 (294)	4 1/2 (114)



CLEARANCES FROM COMBUSTIBLES

Size	Top		Flue Connector		Access Panel ^J		Non-Access Side		Bottom ^K		Rear ^L	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
30-125	1	25	6	152	18	457	1	25	1	25	18	457
150-400	4	102	6	152	18	457	2	51	1	25	18	457

^J Access Panel clearance is required for service clearance to controls
^K Suspend the heater so that the bottom is a minimum of 5' (1.5M) above the floor.
^L Rear clearance is required for air movement. Rear clearance should be measured from the fan motor.

UBX UNIT HEATER

POWER VENTED, HIGH STATIC BLOWER FAN COMMERCIAL/INDUSTRIAL UNIT HEATERS

82 - 83% THERMAL EFFICIENCY

Reznor® Model UBX gas-fired unit heaters are available in 14 sizes ranging from 30,000 to 400,000 BTUH gas input. Model UBX heaters are approved for installation in the United States and Canada by ETL.

Each size cabinet is easily suspended from 4 suspension points. The low voltage terminal strip on the outside of the cabinet makes connecting control wiring easy with no panels to remove. The addition of a “G” terminal to the strip, along with the new design of the circuit board, allows for fan only operation (without adding relays).

Reznor model UBX unit heaters feature a two-tone black and white powder coated, scratch-resistant paint scheme. Each unit has clean rounded corners and edges with no visible screws or fasteners. Model UBX unit heaters provide the same superior performance customers have relied on for more than 100 years along with added features that make servicing the unit easier, installation safer and improve monitoring capabilities.



STANDARD FEATURES AND BENEFITS

- Certified for commercial/industrial heating application
- 45-75°F Rise range - Sizes 30-350
- 50-80°F Rise range - Size 400
- Integrated circuit board with 7 segment display
- External status indicating LED
- Hinged Door with ¼ turn latch
- Improved cabinet design with removable front face and two tone white and black powder paint
- T_{CORE}²® titanium stabilized aluminized steel heat exchanger
- Patented^A single burner combustion system including a one-piece burner assembly
- 115V, 1 phase, 60 Hz Supply voltage
- 115 Volt open drip proof blower motor with internal overload protection - Sizes 30-125
- 115 Volt open drip proof blower motor with internal overloads and definite purpose motor contactor - Sizes 150-400
- Direct drive blower with multispeed taps - Sizes 30-125
- Adjustable belt drive blower - Sizes 150-400
- Transformer for 24-volt controls
- Integrated circuit board with diagnostic indicator lights
- Multi-try direct spark ignition with timed lockout
- Blower relay (included on the circuit board)
- Single-stage natural gas valve (field adjustable for operation to 10,000 ft. elevation^B)
- Vibration/noise isolated fan and venter motors – designed for low noise operation
- 4-pt Suspension – standard on all sizes
- External terminal strip for 24-volt wiring
- External gas pipe connection

OPTIONAL FEATURES

- Single-stage propane gas valve (field adjustable for operation to 10,000 ft.)
- Two-stage gas valve (sizes 60-400)
- 409 or 316 stainless steel heat exchangers
- Totally enclosed blower motor (sizes 150-400)
- Vent cap
- Thermostat
- Integrated 30° & 60° downturn nozzles
- Integrated vertical louvers
- Gas conversion kits (natural and propane)
- Primary/secondary controls for zoning up to six units
- Duct Flange
- Polytube adapters
- Hanger kits for 1" pipe
- Stepdown transformer (for 208/115, 230/115 or 460/115 supply voltage)
- Manual shutoff valves

For installations where dirt, dust, and other airborne contamination is present in the indoor environment, it is recommended to use separated combustion units (Model UBZ). These models use air from outside the space for combustion. This will help reduce the build up of contaminants on the burner which would affect the combustion process. Refer to the installation manuals for recommended frequency of maintenance and cleaning.

^A U.S. Patent Number 6,889,686

^B Pressure switch change required for installations above 6,000 ft.

UBX TECHNICAL DATA

Size		30	45	60	75	100	125	150
Input Heating Capacity	BTUH	30,000	45,000	60,000	75,000	105,000	120,000	150,000
	kw/h	8.8	13.2	17.6	22.0	30.8	35.2	43.9
Thermal Efficiency (%)		82	82	82	82	83	83	83
Output Heating Capacity ^C	BTUH	24,600	36,900	49,200	61,500	87,150	99,600	124,500
	kw/h	7.2	10.8	14.4	18.0	25.6	29.2	36.4
Gas Connection (inches) ^D	Natural	1/2	1/2	1/2	1/2	1/2	1/2	1/2
	Propane	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Vent Connection Size (inches diameter) ^E		4	4	4	4	4	4	5
Control Amps (24 volt)		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Full Load Amps (with standard HP 115V motor)		3.7	3.7	7.1	7.1	13.0	13.0	5.9
Maximum Over Current Protection (115V) ^F		15	15	15	15	30	30	15
Minimum Discharge Air Temperature Rise	°F	45	45	45	45	45	45	45
Maximum Discharge Air Temperature Rise	°F	75	75	75	75	75	75	75
Maximum Air Volume	CFM	506	759	1012	1265	1793	2049	2562
	M ³ /minute	14.3	21.5	28.7	35.8	50.8	58.0	72.5
Minimum Air Volume	CFM	304	456	607	759	1076	1230	1537
	M ³ /minute	8.6	12.9	17.2	21.5	30.5	34.8	43.5
Discharge Air Opening Area	Ft ²	0.96	0.96	1.25	1.25	2.01	2.01	2.56
	M ²	0.09	0.09	0.12	0.12	0.19	0.19	0.24
Maximum Output Velocity	FPM	527	791	810	1012	892	1020	1001
	M ³ /minute	159	239	239	299	267	305	305
Minimum Output Velocity	FPM	316	475	486	607	535	612	600
	M ³ /minute	96	143	143	179	160	183	183
Standard Blower Motor HP		1/6	1/6	1/3	1/3	3/4	3/4	1/4
Blower Size	inches	9 X 6	9 X 6	9 X 6	9 X 6	10 X 10	10 X 10	12 x 12
Approximate Net Weight	lbs	84	89	102	108	168	171	300
	kg	38	40	46	49	76	78	136
Approximate Ship Weight	lbs	94	99	114	120	182	187	322
	kg	43	45	52	54	83	85	146

Size		175	200	225	250	300	350	400
Input Heating Capacity	BTUH	175,000	200,000	225,000	250,000	300,000	350,000	400,000
	kw/h	51.2	58.6	65.9	73.2	87.8	102.5	117.1
Thermal Efficiency (%)		83	83	83	83	83	83	82
Output Heating Capacity ^C	BTUH	145,250	166,000	186,750	207,500	249,000	290,500	328,000
	kw/h	42.5	48.6	54.7	60.8	72.9	85.1	96.0
Gas Connection (inches) ^D	Natural	1/2	1/2	3/4	3/4	3/4	3/4	3/4
	Propane	1/2	1/2	3/4	3/4	3/4	3/4	3/4
Vent Connection Size (inches diameter) ^E		5	5	5	5	6	6	6
Control Amps (24 volt)		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Full Load Amps (with standard HP 115V motor)		9.6	10.5	12.7	12.7	17.7	27.3	27.3
Maximum Over Current Protection (115V) ^F		20	25	30	30	40	60	60
Minimum Discharge Air Temperature Rise	°F	45	45	45	45	45	45	50
Maximum Discharge Air Temperature Rise	°F	75	75	75	75	75	75	80
Maximum Air Volume	CFM	2989	3416	3843	4270	5123	5977	6185
	M ³ /minute	84.6	96.7	108.8	120.9	145.1	169.2	175.1
Minimum Air Volume	CFM	1793	2049	2306	2562	3074	3586	4100
	M ³ /minute	50.8	58.0	65.3	72.5	87.0	101.5	116.1
Discharge Air Opening Area	Ft ²	2.56	2.56	3.51	3.51	4.79	4.79	4.79
	M ²	0.24	0.24	0.33	0.33	0.45	0.45	0.45
Maximum Output Velocity	FPM	1168	1334	1095	1217	1070	1248	1291
	M ³ /minute	356	407	334	371	326	380	393
Minimum Output Velocity	FPM	700	800	657	730	642	749	856
	M ³ /minute	213	244	200	223	196	228	261
Standard Blower Motor HP		1/2	1/2	3/4	3/4	1-1/2	2	2
Blower Size	inches	12 x 12	12 x 12	15 x 11	15 x 11	15 x 15	15 x 15	15 x 15
Approximate Net Weight	lbs	320	320	385	400	458	494	506
	kg	145	145	175	181	208	224	230
Approximate Ship Weight	lbs	342	342	409	424	484	520	536
	kg	155	155	186	192	220	236	243

^C ETL rating for altitudes to 2000 ft.

^D Size shown is for gas connection to a single stage gas valve, not supply line size.

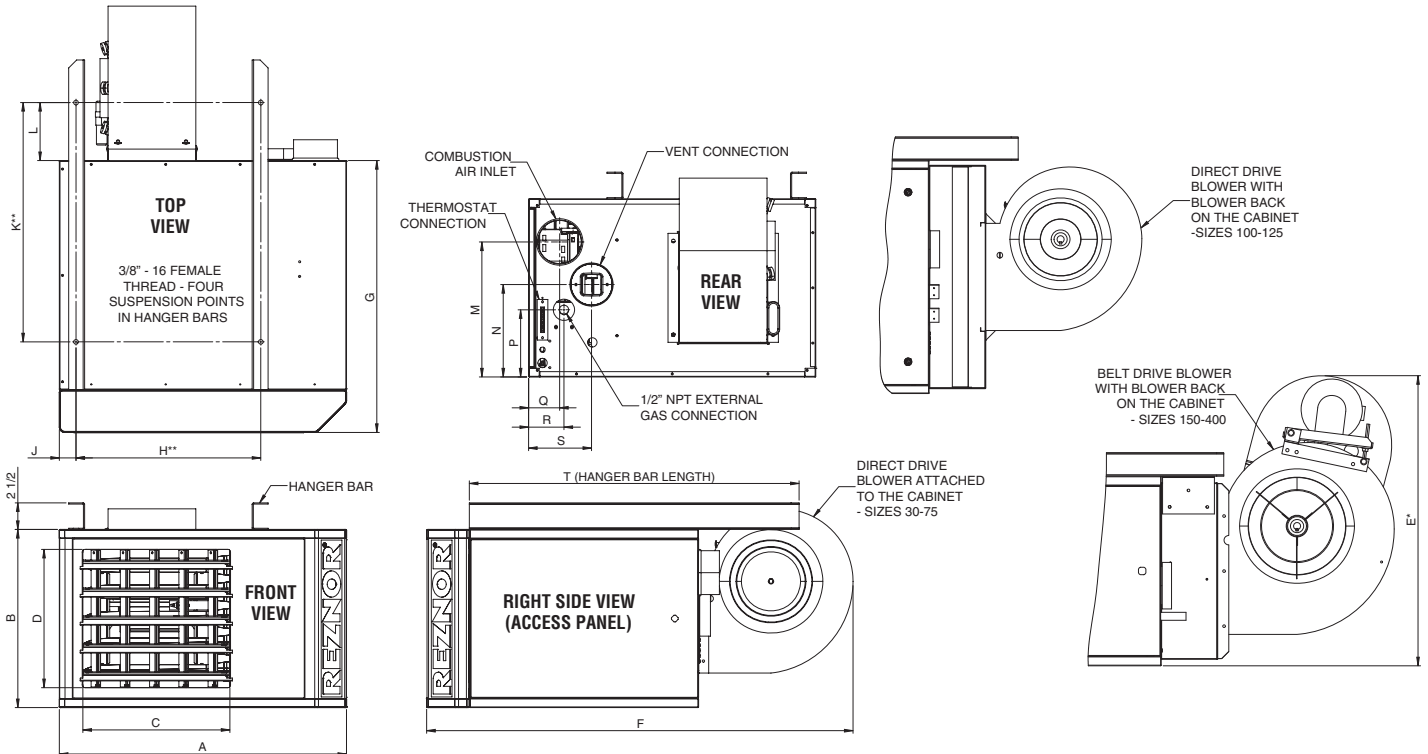
^E Smaller or larger vent pipe diameters may be allowed; refer to the Venting Installation Manual, Form I-UD-V-VP. If vent diameter is different from vent connection, reducer/enlargers will be field-required.

^F MOP = 2.25 x largest motor FLA + remaining load. Answer is rounded down to the next size of commercially available circuit breaker or fuse.

UBX DIMENSIONS

±1/16" (2MM)

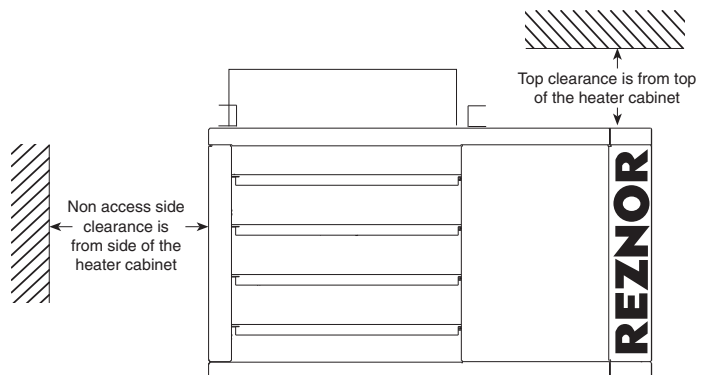
UNIT SIZE	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	S	T	
	INCHES (±1/16) (mm (± 2))																	
030, 045		13 3/4 (349)		10 (254)	17 3/16 (437)						6 15/32 (164)	10 (254)	6 (152)	3 1/2 (89)		5 31/32 (152)	3 5/16 (84)	
060		16 3/4 (425)		13 (330)	18 11/16 (475)	40 3/32 (1018)					5 15/32 (139)	12 11/16 (322)	8 11/16 (221)	6 5/16 (160)				
075	27 (686)		13 13/16 (351)				25 17/32 (649)	17 3/8 (441)	1 9/16 (40)	22 1/2 (572)					2 21/32 (74)			31 (787)
100		24 3/4 (629)		21 (533)	24 1/16 (611)	48 1/8 (1222)					8 15/32 (215)	19 5/16 (491)	15 5/16 (389)	9 9/16 (243)		3 5/16 (84)	5 29/32 (150)	
125						47 5/8 (1210)					7 15/32 (190)							
150,175		20 1/8 (511)		16 (406)	30 31/32 (786)	64 3/4 (1645)					3 29/32 (99)	13 1/2 (343)	8 1/2 (216)	5 7/16 (138)				
200	38 3/16 (970)		23 (584)				40 (1016)	25 11/16 (653)	1 13/32 (36)	24 1/2 (622)		14 9/16 (370)	9 9/16 (243)		4 3/16 (106)	6 1/2 (165)	8 3/16 (208)	
225,250		26 1/8 (664)		22 (559)	37 1/32 (941)						5 29/32 (150)	18 1/16 (459)	13 1/16 (332)	9 (229)				
300,350,400	41 (1041)	34 1/8 (867)		30 (762)	41 7/32 (1047)	68 1/8 (1730)		27 11/16 (703)		23 1/2 (597)	1 13/32 (36)	22 9/16 (573)	17 1/16 (433)	11 13/16 (300)	4 1/2 (114)	7 5/16 (186)	8 1/2 (216)	42 (1067)



CLEARANCES FROM COMBUSTIBLES

Size	Top		Flue Connector		Access Panel ^H		Non-Access Side		Bottom ^J		Rear ^K	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
30-125	6	152	6	152	18	457	24	610	1	25	18	457
150-400	14	356	6	152	18	457	24	610	1	25	18	457

^H Access Panel clearance is required for service clearance to controls
^J Suspend the heater so that the bottom is a minimum of 5' (1.5M) above the floor.
^K Rear clearance is measured from the back of the blower.



F SERIES

GAS-FIRED, GRAVITY-VENTED, FAN-TYPE UNIT HEATER FOR COMMERCIAL/INDUSTRIAL USE

25,000 - 400,000 BTUH

Reznor® Series 100, Model F gas-fired, gravity-vented unit heaters are designed for 80% thermal efficiency and are designed for use with natural or propane gas, as specified, in sizes from 25,000 to 400,000 BTUH gas input.

Model F unit heaters are designed for ceiling suspension with a propeller fan for air delivery. A terminal strip connector facilitates field connection to a remote 24-volt thermostat for automatic operation. Each unit is provided with a fan control and all required limit safety controls, including an energy cutoff (ECO) device and a blocked vent switch.

These units are approved for installation in The United States and Canada by the Canadian Standards Association (CSA).

NOTE: When installing gravity vented appliances check local and state codes for requirements. Some states require the addition of spark pilot Option AH2 or AH3.

The Energy Policy Act of 2005 mandated that beginning August of 2008, no Gravity Vented Unit Heaters may be sold without an Intermittent Ignition Device (No Standing Pilot- Spark Ignition Only) AND, (either an automatic shutoff vent damper or a power vent exhaust). Your state may have already enacted this restriction in their local codes. Please take note of this when placing orders for gravity vented units. **NOTE:** Regulated combination redundant gas valve consists of combination pilot solenoid valve, electric gas valve, pilot filter, pressure regulator, pilot shutoff, and manual shutoff, all in one body. Gas supply pressure must not exceed 0.5 psi (8 oz. or 14" w.c.). Minimum inlet pressure for natural gas is 5" w.c.; minimum inlet pressure for propane gas is 11" w.c.

WARNING: Gas-fired appliances are not designed for use in hazardous atmospheres containing flammable vapors or combustible dust, or atmospheres containing chlorinated or halogenated hydrocarbons.

STANDARD FEATURES AND BENEFITS

- Orifices for natural gas
- Aluminized steel heat exchanger
- Aluminized steel burner rack with stainless steel insert
- Spark ignited, intermittent safety pilot with electronic flame supervision
- Single-stage combination gas valve (field adjustable for high altitude operation)
- 115/1/60 supply voltage
- 115 volt fan motor with internal overload protection
- Fan and limit safety controls
- Energy cutoff (ECO) device
- Blocked vent shutoff system
- 24-volt control voltage transformer
- Individually adjustable horizontal louvers
- Full safety fan guard
- Terminal strip connector for 24-volt field wiring
- Convenient bottom burner access
- 2-point 3/8"-16 threaded hang

FACTORY INSTALLED OPTIONS

- Equipped for propane gas
- E-3 (409) stainless steel heat exchanger and burner

- Two-stage gas control (50% low fire) - Sizes 75-400
- Spark ignited, intermittent safety pilot with electronic flame supervision with timed lockout (timed lockout is required for propane gas)
- Burner air shutters
- 208/230 single phase supply voltage - Sizes 125-400
- 208/230 three phase supply voltage - Sizes 125-400
- 460 three phase supply voltage - Sizes 125-400
- 575 three phase supply voltage - Sizes 125-400
- Alternate motor HP and drive - Sizes 125-400
- Totally enclosed blower motor - Sizes 125-400
- Low ambient fan control relay

FIELD INSTALLED OPTIONS

- Power venter
- Vertical louvers
- Downturn air nozzle, 25-65° or 50-90° variable air deflector range (includes 4-point suspension kit)
- Thermostat and relay kits
- Air recirculation kits
- Manual summer/winter switch
- Multiple heater control
- 4-point suspension kit



REZNOR®

F SERIES

FIELD INSTALLED OPTIONS continued

- Unit-mounted thermostat bracket
- Step down transformer 230/115 or 460/115
- Burner air shutters
- Low ambient fan control relay kit
- Hanger kit to suspend from 1" pipe (2 or 4 point suspension)
- Single-stage and two-stage thermostats
- Thermostat guard with locking cover
- Manual shutoff valve and union
- Gas conversion kit

NOTE: Not certified for residential use. Installations in public garages or airplane hangars are permitted when in accordance with ANSI Z223.1 and NFPA 54 Codes or CAN1-B149 Codes and enforcing authorities.

F MODEL TECHNICAL DATA

Size	25		50		75		100		125	
Heating Input - BTUH (kW)	25,000	(7.3)	50,000	(14.7)	75,000	(22.0)	100,000	(29.3)	125,000	(36.6)
Thermal Output - BTUH (kW) (80%) ^A	20,000	(5.9)	40,000	(11.7)	60,000	(17.6)	80,000	(23.4)	100,000	(29.3)
Vent Outlet Diameter	4" Rd		4" Rd		5" Oval		6" Oval		7" Oval	
Gas Connection - Natural Gas ^B	1/2"		1/2"		1/2"		1/2"		1/2"	
Control Amps (24 - Volt)	0.33		0.33		0.33		0.33		0.33	
Full-Load Amps (115 Volt)	0.8		1.3		1.9		2.8		2.9	
Normal Consumption (watts)	60		95		135		195		205	
Throw at 8' (2.4M) Mntg Ht - ft (M) ^C	35	(11)	39	(12)	48	(15)	60	(18)	73	(22)
Motor HP ^D	Standard		1/50		1/35		1/15		1/30	
	Optional Enclosed		-		1/15		1/15		1/8	
Motor RPM	1550		1550		1550		1050		1050	
Fan Diameter - inches (mm)	10	(254)	10	(254)	12	(305)	14	(356)	16	(406)
Air Volume - CFM (M ³ /hr)	380	(646)	650	(1,104)	980	(1,665)	1,250	(2,124)	1,600	(2,718)
Outlet Velocity - FPM (M/s)	423	(2.1)	853	(4.3)	1,166	(5.9)	1,358	(6.9)	1,330	(6.8)
Approximate Net Weight - lbs (kg)	72	(33)	79	(36)	88	(40)	97	(44)	127	(58)
Approximate Shipping Weight - lbs (kg)	89	(40)	96	(44)	107	(49)	118	(54)	150	(68)

^A For U.S. installations, ratings for altitudes to 2000 ft.. Above 2000 ft., derate by 4% for each 1000 ft. above sea level.

^A For Canadian installations, ratings for altitudes to 2000 ft. High altitude units (2001-4500 ft.) are derated by 10% of maximum input.

^B Gas connection for propane is 1/2" for all sizes. Sizes shown are for gas connection to a single-stage gas valve; NOT gas supply line size.

^C Additional mounting heights shown later in this catalog.

^D All other information in this table is based on a heater equipped with a standard 115v motor. (The standard motor for a Model 25 is an enclosed motor; all other standard motors are open motors. Optional enclosed motors are available in 115v only.)

F MODEL TECHNICAL DATA continued

Size	165		200		250		300		400	
Heating Input - BTUH (kW)	165,000	(48.4)	200,000	(58.6)	250,000	(73.3)	300,000	(87.9)	400,000	(117.2)
Thermal Output - BTUH (kW) (80%) ^A	132,000	(38.7)	160,000	(46.9)	200,000	(58.6)	240,000	(70.3)	320,000	(93.8)
Vent Outlet Diameter	8" Oval		8" Oval		10" Oval		10" Oval		12" Oval	
Gas Connection - Natural Gas ^B	1/2"		1/2"		1/2"		3/4"		3/4"	
Control Amps (24 - Volt)	0.23		0.23		0.23		0.2		0.2	
Full-Load Amps (115 Volt)	4		4		2.5		4		7	
Normal Consumption (watts)	275		300		280		375		565	
Throw at 8' (2.4M) Mntg Ht - ft (M) ^C	78	(24)	85	(26)	96	(29)	108	(33)	120	(37)
Motor HP ^D	Standard	1/20		1/20		1/6		1/4		1/2
	Optional Enclosed	1/8		1/6		1/6		1/2		1/2
Motor RPM	1050		1050		850		850		850	
Fan Diameter - inches (mm)	16	(406)	20	(508)	22	(559)	22	(559)	24	(610)
Air Volume - CFM (M ³ /hr)	2,200	(3738)	2,800	(4757)	3,360	(5708)	3,800	(6456)	4,940	(8393)
Outlet Velocity - FPM (M/s)	1,100	(5.6)	1,217	(6.2)	1,182	(6.0)	1,426	(7.2)	1,420	(7.2)
Approximate Net Weight - lbs (kg)	149	(68)	170	(77)	204	(93)	221	(100)	276	(125)

A For U.S. installations, ratings for altitudes to 2000 ft.. Above 2000 ft., derate by 4% for each 1000 ft. above sea level.

A For Canadian installations, ratings for altitudes to 2000 ft. High altitude units (2001-4500 ft.) are derated by 10% of maximum input.

B Gas connection for propane is 1/2" for all sizes. Sizes shown are for gas connection to a single-stage gas valve; NOT gas supply line size.

C Additional mounting heights shown later in this catalog.

D All other information in this table is based on a heater equipped with a standard 115v motor. (The standard motor for a Model 25 is an enclosed motor; all other standard motors are open motors. Optional enclosed motors are available in 115v only.)

F MODEL DIMENSIONS

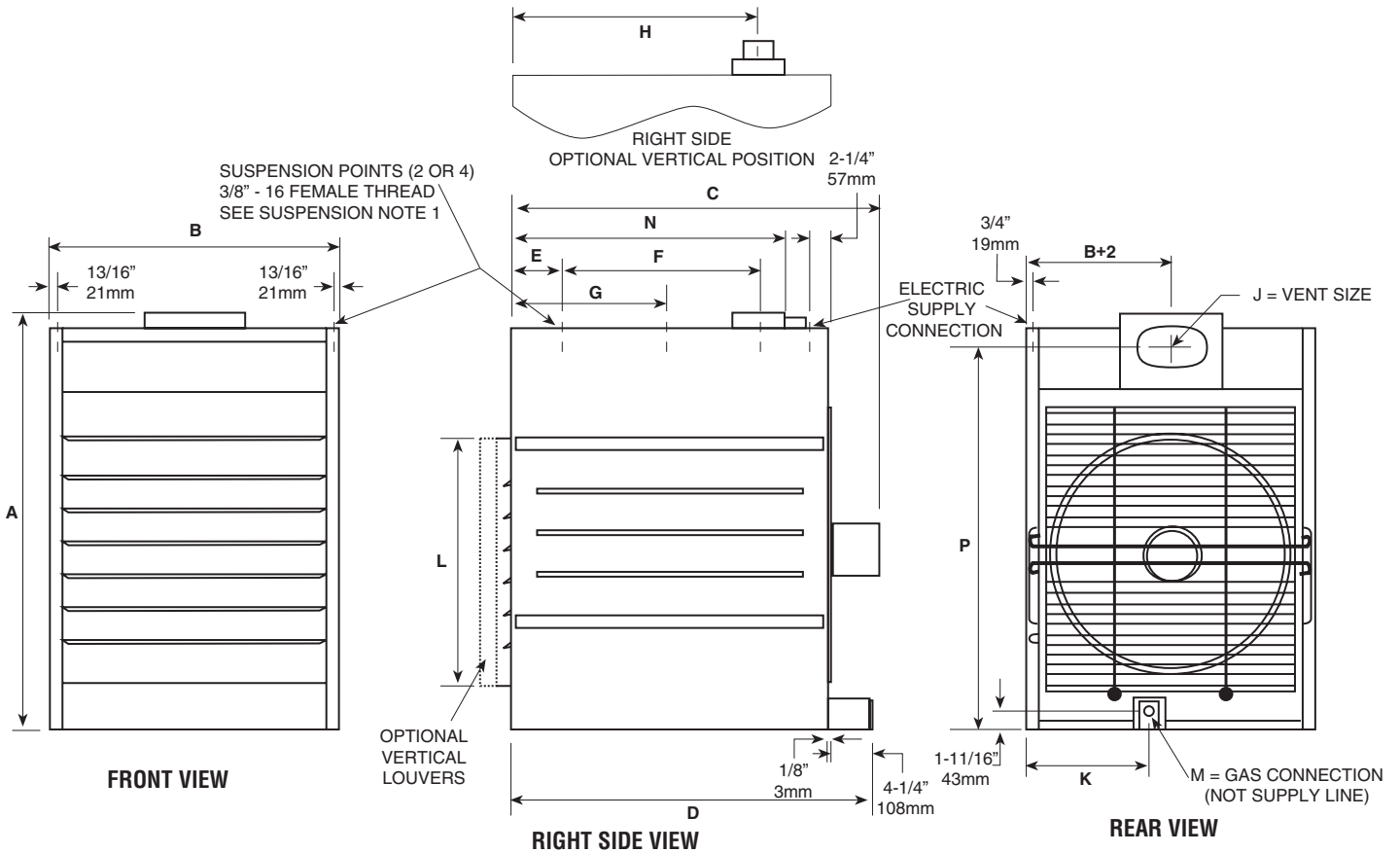
±1/16" (2MM)

Size		A	B	C	D	E	F	G	H	J	K	L	M - in.		N	P
													Nat	Pro		
25,50	in	30 1/8	13 1/2	27	31 1/2	5 7/8	14 1/2	14	19	4 Rnd	10 1/4	16	1/2	1/2	21 1/2	27 5/8
	(mm)	(765)	(343)	(686)	(800)	(149)	(368)	(356)	(483)	--	(260)	(406)	--	--	(546)	(702)
75	in	30 1/8	15 1/2	27	31 1/2	5 7/8	14 1/2	14	19	5 Oval	10 1/2	16	1/2	1/2	21 1/2	27 5/8
	(mm)	(765)	(394)	(686)	(800)	(149)	(368)	(356)	(483)	--	(267)	(406)	--	--	(546)	(702)
100	in	30 1/8	17 1/2	30 1/2	31 1/2	5 7/8	14 1/2	14	19	6 Oval	12 7/8	16	1/2	1/2	21 1/2	27 5/8
	(mm)	(765)	(445)	(775)	(800)	(149)	(368)	(356)	(483)	--	(327)	(406)	--	--	(546)	(702)
125	in	32	23 1/4	30 1/2	31 1/2	5 7/8	14 1/2	14	19	7 Oval	14 1/2	16	1/2	1/2	21 1/2	28 1/2
	(mm)	(813)	(591)	(775)	(800)	(149)	(368)	(356)	(483)	--	(368)	(406)	--	--	(546)	(724)
165	in	40 1/8	20 1/4	35 1/2	36	4 7/8	19 1/2	15 3/4	23 3/8	8 Oval	14 1/4	24	1/2	1/2	27	36 3/4
	(mm)	(1,019)	(514)	(902)	(914)	(124)	(495)	(400)	(594)	--	(362)	(610)	--	--	(686)	(933)
200	in	40 1/8	23 1/4	36 1/4	36	4 7/8	19 1/2	15 3/4	23 3/8	8 Oval	14 3/8	24	1/2	1/2	27	36 3/4
	(mm)	(1,019)	(591)	(921)	(914)	(124)	(495)	(400)	(594)	--	(365)	(610)	--	--	(686)	(933)
250	in	43 1/2	28 3/4	36 1/4	36	4 7/8	19 1/2	15 3/4	21 3/4	10 Oval	12 3/8	24	1/2	1/2	27	38 3/8
	(mm)	(1,105)	(730)	(921)	(914)	(124)	(495)	(400)	(552)	--	(314)	(610)	--	--	(686)	(975)
300	in	43 1/2	28 3/4	36 3/4	36	4 7/8	19 1/2	15 3/4	21 3/4	10 Oval	12 3/8	24	3/4	1/2	27	38 3/8
	(mm)	(1,105)	(730)	(933)	(914)	(124)	(495)	(400)	(552)	--	(314)	(610)	--	--	(686)	(975)
400	in	43 1/2	37	37 1/4	36	4 7/8	19 1/2	15 3/4	21 3/4	12 Oval	13	24	3/4	1/2	27	38 3/8
	(mm)	(1,105)	(940)	(946)	(914)	(124)	(495)	(400)	(552)	--	(330)	(610)	--	--	(686)	(975)

Units, bottom clearance exceeding 12" minimum is not required but may be desirable.

F MODEL DIMENSIONS continued

±1/16" (2MM)



CLEARANCES FROM COMBUSTIBLES (Required Clearances (inches))

Size	Top ^E		Flue Connector		Sides		Bottom ^F		Rear ^G	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
25-125	2	51	6	152	18	457	12	305	24	610
165-400	6	152	6	152	18	457	12	305	24	610

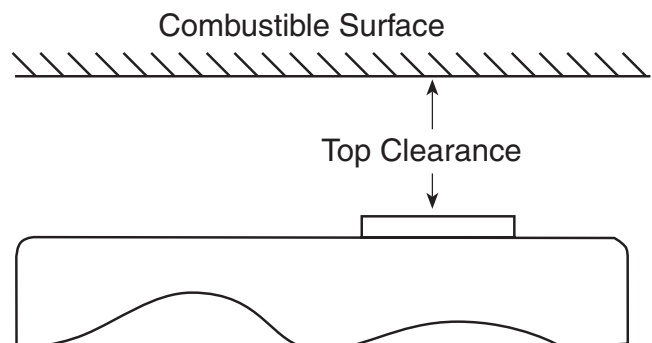
^E Measure top clearance as illustrated below.

^F When supplied with optional downturn nozzle, bottom clearance is 42". For service purposes on standard units, bottom clearance exceeding 12" minimum is not required but may be desirable.

^G For service purposes only, rear must have 24" clearance.

SUSPENSION NOTES:

- 1) Use dimension "G" for 2-point suspension and "E" and "F" for 4-point suspension.
- 2) Factory equipped with 2-point suspension; 4-point is optional.



B SERIES

GAS-FIRED, GRAVITY-VENTED, BLOWER-TYPE UNIT HEATER FOR COMMERCIAL/INDUSTRIAL USE

25,000 - 400,000 BTUH

Reznor® Series 100, Model B gas-fired gravity-vented unit heaters are designed for 80% thermal efficiency and are designed for use with natural or propane gas, as specified, in sizes from 25,000 to 400,000 BTUH gas input.

Model B unit heaters are designed for ceiling suspension with a centrifugal blower for air delivery. Sizes 25-100 are equipped with a direct drive blower motor with multi-speed taps capable of handling up to .50" w.c. of external static pressure. Sizes 125-400 are standard equipped with a blower using an adjustable belt drive and motor capable of handling external static pressure up to .25" w.c. Optional motors and drives are available to increase the blower capability to handle up to .50" w.c. of external static pressure.

A terminal strip connector facilitates field connection to a remote 24-volt thermostat for automatic operation. Each unit is provided with a fan control and all required limit safety controls, including an energy cutoff (ECO) device and a blocked vent switch. These units are approved for installation in The United States and Canada by the Canadian Standards Association (CSA). Canadian units require the selection of a totally enclosed motor. (An open motor may be selected for a heater to be installed in Canada only when the heater will be equipped with a Reznor field-installed blower cabinet.)

The Energy Policy Act of 2005 mandated that beginning August of 2008, no Gravity Vented Unit Heaters may be sold without an Intermittent Ignition Device (No Standing Pilot- Spark Ignition Only) AND, (either an automatic shutoff vent damper or a power vent exhaust). Your state may have already enacted this restriction in their local codes. Please take note of this when placing orders for gravity vented units.



STANDARD FEATURES AND BENEFITS

- Orifices for natural gas
- Aluminized steel heat exchanger
- Aluminized steel burner rack with stainless steel insert
- Spark ignited, intermittent safety pilot with electronic flame supervision
- Single-stage combination gas valve (field adjustable for high altitude operation)
- 115/1/60 supply voltage - Sizes 25-300
- 230/1/60 supply voltage - Size 400
- ODP motor with internal overload (U.S. installations)
- Totally enclosed blower motor (Canadian installations)
- Motor contactor - Sizes 300 and 400
- Direct drive blower with multi-speed taps - Sizes 25-100
- Adjustable belt drive blower - Sizes 125 - 400
- Fan and limit safety controls
- Blocked vent shutoff system
- Energy cutoff (ECO) device
- 24-volt control voltage transformer
- Horizontal/Vertical vent outlet
- Horizontal louvers or Duct adapter
- Terminal strip connector for 24-volt field wiring
- Convenient bottom burner access
- 4-point 3/8"-16 threaded hanger connections

FACTORY INSTALLED OPTIONS

- Equipped for propane gas
- E-3 (409) stainless steel heat exchanger and burner

- Two-stage gas control (50% low fire) - Sizes 75-400
- Spark ignited, intermittent safety pilot with electronic flame supervision with timed lockout (timed lockout is required for propane gas)
- Burner air shutters
- 208/230 single & three phase supply voltage - Sizes 125-400
- 460 & 575 three phase supply voltage - Sizes 125-400
- Alternate motor HP and drive - Sizes 125-400
- Totally enclosed blower motor - Sizes 125-400

FIELD INSTALLED OPTIONS

- Power venter
- Vertical louvers
- Downturn air nozzle, 25-65° or 50-90° variable air deflector range
- Thermostat and relay kits
- Air recirculation kits
- Manual summer/winter switch
- Filter cabinet with 1" or 2" filters
- Polytube adapter - Models 75-400
- Multiple heater control
- Hanger kits to suspend from 1" pipe or to use with vibration isolation suspension
- Unit-mounted thermostat bracket
- Step down transformer 230/115 or 460/115 - Sizes 25-100
- Burner air shutters
- Low ambient fan control relay kit
- Belt guard and/or blower inlet guard
- Single-stage and two-stage thermostats

B SERIES

FIELD INSTALLED OPTIONS continued

- Thermostat guard with locking cover
- Manual shutoff valve and union
- Gas conversion kit

NOTE: When installing gravity vented appliances check local and state codes for requirements. Some states require the addition of spark pilot Option AH2 or AH3.

NOTE: Regulated combination redundant gas valve consists of combination pilot solenoid valve, electric gas valve, pilot filter, pressure regulator, pilot shutoff, and manual shutoff, all in one body. Gas supply pressure must not exceed 0.5 psi (8 oz. or 14" w.c.). Minimum inlet pressure for natural gas is 5" w.c.; minimum inlet pressure for propane gas is 11" w.c.

B MODEL TECHNICAL DATA

Size	25		50		75		100		125	
Heating Input - BTUH (kW)	25,000	(7.3)	50,000	(14.7)	75,000	(22.0)	100,000	(29.3)	125,000	(36.6)
Thermal Output - BTUH (kW) (80%) ^A	20,000	(5.9)	40,000	(11.7)	60,000	(17.6)	80,000	(23.4)	100,000	(29.3)
Vent Outlet Diameter	4" Rd		4" Rd		5" Oval		6" Oval		7" Oval	
Gas Connection - Natural Gas ^B	1/2"		1/2"		1/2"		1/2"		1/2"	
Control Amps (24 - Volt)	0.33		0.33		0.33		0.33		0.33	
Full-Load Amps (115 Volt)	2.9		2.9		5.3		5.3		6	
Normal Consumption (watts) - (60°F rise and .25" w.c. ESP)	140		175		340		430		500	
Maximum Air Volume - CFM (M ³ /hr)	410	(697)	820	(1393)	1,230	(2,090)	1,645	(2,795)	2,055	(3,491)
Minimum Air Volume - CFM (M ³ /hr)	245	(416)	490	(832)	740	(1,257)	985	(1,673)	1,235	(2,098)
Standard Motor Horsepower	1/6		1/6		1/3		1/3		1/3	
Blower Size (inches)	9x6		9x6		9x6		9x9		10x10	
Approximate Net Wt - lbs (kg)	93	(42)	100	(45)	114	(52)	126	(57)	176	(80)
Approximate Shipping Wt - lbs (kg)	193	(88)	206	(93)	229	(104)	241	(109)	318	(144)

Size	165		200		250		300		400	
Heating Input - BTUH (kW)	165,000	(48.4)	200,000	(58.6)	250,000	(73.3)	300,000	(87.9)	400,000	(117.2)
Thermal Output - BTUH (kW) (80%) ^A	132,000	(38.7)	160,000	(46.9)	200,000	(58.6)	240,000	(70.3)	320,000	(93.8)
Vent Outlet Diameter	8" Oval		8" Oval		10" Oval		10" Oval		12" Oval	
Gas Connection - Natural Gas ^B	1/2"		1/2"		1/2"		3/4"		3/4"	
Control Amps (24 - Volt)	0.23		0.23		0.23		0.2		0.2	
Full-Load Amps (115 Volt)	9		9		11		13		230V-9.1	
Normal Consumption (watts) - (60°F rise and .25" w.c. ESP)	710		750		1000		1320		1650	
Maximum Air Volume - CFM (M ³ /hr)	2,715	(4613)	3,290	(5590)	4,115	(6,991)	4,935	(8,384)	6,500	(11,043)
Minimum Air Volume - CFM (M ³ /hr)	1,625	(2761)	1,975	(3355)	2,465	(4,188)	2,960	(5,029)	3,900	(6,626)
Standard Motor Horsepower	1/2		1/2		3/4		1		1	
Blower Size (inches)	12x9		15x11		15x11		15x11		15x15	
Approximate Net Wt - lbs (kg)	201	(91)	235	(107)	273	(124)	296	(134)	390	(177)
Approximate Shipping Wt - lbs (kg)	343	(156)	385	(175)	431	(196)	454	(206)	561	(254)

^A For U.S. installations, ratings for altitudes to 2000 ft.. Above 2000 ft., derate by 4% for each 1000 ft. above sea level.

^A For Canadian installations, ratings for altitudes to 2000 ft. High altitude units (2001-4500 ft.) are derated by 10% of maximum input.

^B Gas connection for propane is 1/2" for all sizes. Sizes shown are for gas connection to a single-stage gas valve; NOT gas supply line size.

B MODEL DIMENSIONS

±1/16" (2MM)

Size		A	B	C ^C	D	E	F ^D	G ^{E F}	H	J	K	L ^{E G}
25	in	30 1/8	13 1/2	43 1/2	31 1/2	5 7/8	14 1/2	61 1/2	19	4 Rnd	10 1/4	15 7/8
	mm	(765)	(343)	(1,105)	(800)	(149)	(368)	(1,562)	(483)	--	(260)	(403)
50	in	30 1/8	13 1/2	50	31 1/2	5 7/8	14 1/2	61 1/2	19	4 Rnd	10 1/4	15 7/8
	mm	(765)	(343)	(1,270)	(800)	(149)	(368)	(1,562)	(483)	--	(260)	(403)
75	in	30 1/8	15 1/2	50	31 1/2	5 7/8	14 1/2	61 1/2	19	5 Oval	10 1/2	15 7/8
	mm	(765)	(394)	(1,270)	(800)	(149)	(368)	(1,562)	(483)	--	(267)	(403)
100	in	30 1/8	17 1/2	50	31 1/2	5 7/8	14 1/2	61 1/2	19	6 Oval	12 7/8	15 7/8
	mm	(765)	(445)	(1,270)	(800)	(149)	(368)	(1,562)	(483)	--	(327)	(403)
125	in	32	23 1/4	47 1/2	31 1/2	5 7/8	14 7/8	66	18	7 Oval	14 1/2	15 7/8
	mm	(813)	(591)	(1,207)	(800)	(149)	(378)	(1,676)	(457)	--	(368)	(403)
165	in	40 1/8	20 1/4	61	36	4 7/8	19 1/2	76 1/8	23 3/8	8 Oval	14 1/4	23 7/8
	mm	(1,019)	(514)	(1,549)	(914)	(124)	(495)	(1,934)	(594)	--	(362)	(606)
200	in	40 1/8	23 1/4	66 1/2	36	4 7/8	19 1/2	76 1/8	23 3/8	8 Oval	14 3/8	23 7/8
	mm	(1,019)	(591)	(1,689)	(914)	(124)	(495)	(1,934)	(594)	--	(365)	(606)
250	in	43 1/2	28 3/4	66 1/2	36	4 7/8	19 1/2	76 1/8	21 7/8	10 Oval	12 3/8	23 7/8
	mm	(1,105)	(730)	(1,689)	(914)	(124)	(495)	(1,934)	(556)	--	(314)	(606)
300	in	43 1/2	28 3/4	66 1/2	36	4 7/8	19 1/2	76 1/8	21 7/8	10 Oval	12 3/8	23 7/8
	mm	(1,105)	(730)	(1,689)	(914)	(124)	(495)	(1,934)	(556)	--	(314)	(606)
400	in	43 1/2	37	66 1/2	36	4 7/8	19 1/2	76 1/8	21 7/8	12 Oval	13	23 7/8
	mm	(1,105)	(940)	(1,689)	(914)	(124)	(495)	(1,934)	(556)	--	(330)	(606)

Size		M		N ^E	P ^E	R ^E	S ^E	T ^G	U ^G	V ^E	W ^E	X ^H	Y	Z
		Nat	Pro											
25	in	1/2	1/2	3 3/4	21	17 3/4	5 1/4	10 3/4	8 1/2	14 3/4	6 1/4	31 1/4	21 1/2	27 5/8
	mm	--	--	(95)	(533)	(451)	(133)	(273)	(216)	(375)	(159)	(794)	(546)	(702)
50	in	1/2	1/2	3 3/4	21	17 3/4	5 1/4	10 3/4	8 1/2	14 3/4	6 1/4	31 1/4	21 1/2	27 5/8
	mm	--	--	(95)	(533)	(451)	(133)	(273)	(216)	(375)	(159)	(794)	(546)	(702)
75	in	1/2	1/2	2 3/4	21	17 3/4	5 1/4	12 3/4	8 1/2	14 3/4	6 1/4	31 1/4	21 1/2	27 5/8
	mm	--	--	(70)	(533)	(451)	(133)	(324)	(216)	(375)	(159)	(794)	(546)	(702)
100	in	1/2	1/2	1 3/4	21	17 3/4	5 1/4	14 3/4	8 1/2	14 3/4	6 1/4	31 1/4	21 1/2	27 5/8
	mm	--	--	(44)	(533)	(451)	(133)	(375)	(216)	(375)	(159)	(794)	(546)	(702)
125	in	1/2	1/2	1 3/8	26	17 3/4	5 1/4	20 1/2	8 1/2	20 1/2	6 1/4	35 3/4	21 1/2	28 1/2
	mm	--	--	(35)	(660)	(451)	(133)	(521)	(216)	(521)	(159)	(908)	(546)	(724)
165	in	1/2	1/2	2 7/8	26	25 1/4	7 1/4	17 1/2	11 1/2	20 1/2	8	36 3/4	27	36 3/4
	mm	--	--	(73)	(660)	(641)	(184)	(445)	(292)	(521)	(203)	(933)	(686)	(933)
200	in	1/2	1/2	1 3/8	26	25 1/4	7 1/4	20 1/2	11 1/2	20 1/2	8	36 3/4	27	36 3/4
	mm	--	--	(35)	(660)	(641)	(184)	(521)	(292)	(521)	(203)	(933)	(686)	(933)
250	in	1/2	1/2	5 7/8	40 1/2	25 1/4	7 1/4	26	11 1/2	26	8	36 3/4	27	38 3/8
	mm	--	--	(149)	(1,029)	(641)	(184)	(660)	(292)	(660)	(203)	(933)	(686)	(975)
300	in	3/4	1/2	5 7/8	40 1/2	25 1/4	7 1/4	26	11 1/2	26	8	36 3/4	27	38 3/8
	mm	--	--	(149)	(1,029)	(641)	(184)	(660)	(292)	(660)	(203)	(933)	(686)	(975)
400	in	3/4	1/2	6 3/4	50 1/2	25 1/4	7 1/4	34 1/4	11 1/2	34 1/4	8	36 3/4	27	38 3/8
	mm	--	--	(171)	(1,283)	(641)	(184)	(870)	(292)	(870)	(203)	(933)	(686)	(975)

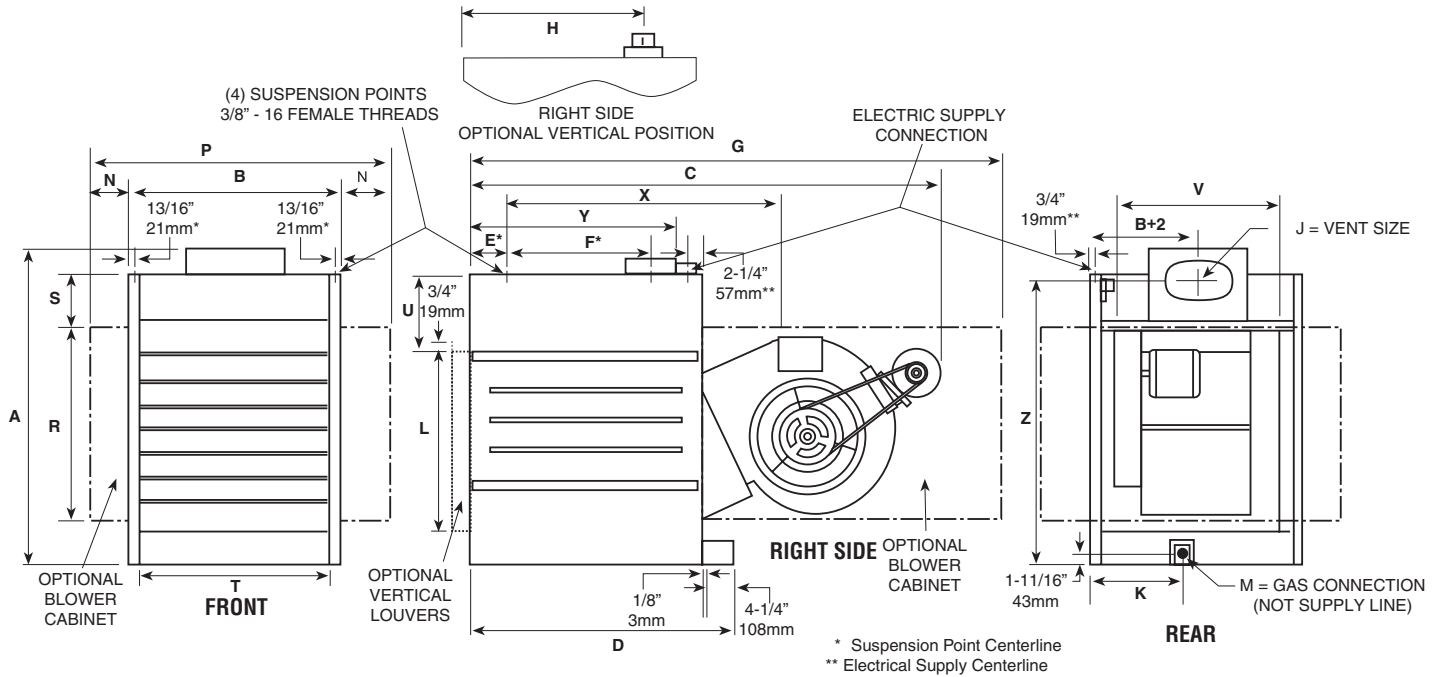
NOTES:

- C Deduct 6-5/8" on Models 50, 75 & 100 when equipped with direct drive motor.
- D Use with 4-point suspension without blower cabinet.
- E When equipped with optional blower cabinet.
- F Dimension includes a 3/4" flange on rear of blower cabinet.
- G When equipped with optional duct flange.
- H Use with 4-point suspension with blower cabinet.
- J Contactor is standard on Models 300 & 400; optional on other sizes.
- K Contactor location with optional 3 phase motors on Models 50, 75, 100 & 125.



B MODEL DIMENSIONS continued

±1/16" (2MM)



CLEARANCES FROM COMBUSTIBLES (Required Clearances)

Top & Flue Connector	6"
Sides	18"
Bottom	12"
(when supplied with optional downturn nozzle, bottom clearance is 42"). For service purposes, in standard units, bottom clearance exceeding 12" minimum is not required, but may be desirable.	
Rear	24"
For service purposes the back of the unit must have 24" clearance.	

FILTERS FOR OPTIONAL BLOWER CABINET

Size	Quantity	Filter Size
25-125	1	20 x 20
165-200	1	16 x 25
	1	20 x 25
250-300	2	16 x 20
	2	20 x 20
400	2	16 x 25
	2	20 x 25
1" or 2" permanent filters		

LDAP SERIES

INDIRECT FIRED, INDOOR, DOWNFLOW, PACKAGED HEATER

400,000 – 1,200,000 BTUH

83% EFFICIENCY

Reznor® Model LDAP Series Packaged Downflow Heaters are available in three sizes - 400 MBH, 800 MBH and 1200 MBH. Model LDAP 400 has one heat section; Model LDAP 800 has two heat sections; and Model LDAP 1200 has three heat sections. All Model LDAP heaters are 83% thermal efficient for use with either natural or propane gas.



Each heat section features the Reznor T_{CORE}²® heat exchanger and single burner combustion system. Other features include a single-stage gas valve, multi-try direct spark ignition with timed lockout, pressure switch to verify venter flow, resiliently isolated venter motor, resiliently isolated axial fan and motor assembly, a high temperature limit control, a destratification fan control, and a built-in disconnect switch. Operation is controlled through an integrated circuit board. The circuit board monitors heater operation and has LED diagnostic indicator lights to identify abnormalities in control functions.

Cabinet has four suspension points for hanging or may be wall mounted. Designed for ease of installation with an external 24-volt terminal strip and gas line connection.

Model LDAP heaters are certified by the ETL Testing Agency for commercial and industrial installations in United States and Canada.

All Model LDAP high bay packaged heaters are design certified by ETL for use in industrial and commercial installations.

These heaters must be installed in accordance with local building codes. In the absence of local codes, in the United States, the heater must be installed in accordance with the National Fuel Gas Code, ANSI Z223.1. A Canadian installation must be in accordance with the CSA B149 Installation Codes.

STANDARD FEATURES AND BENEFITS

- 83% Thermal efficient
- 55°F Temperature rise range
- Patented^A combustion system
- Titanium stabilized aluminized steel heat exchanger(s)
- 208 or 230 Single phase supply voltage
- Open fan motor(s) with internal overload protection
- Transformer for 24-volt controls
- Integrated circuit board(s) with diagnostic indicator lights
- Multi-try direct ignition with timed lockout
- Single-stage natural gas valve (field adjustable for operation to 10,000 ft / 3,045M elevation)
- Destratification adjustable fan control (air economizer)
- High temperature limit controls
- Vibration/noise isolated fan and venter motors
- 4-point Suspension
- Built-in disconnect switch
- External terminal strip for 24-volt wiring
- External gas connection
- Full fan guard(s)
- Ready for field connection to Building Automation Systems

FACTORY INSTALLED OPTIONS

- Single-stage, propane gas valve (field adjustable to 10,000 ft. / 3045M elevation)
- Two-stage natural or propane gas valve - Size 400 only
- 409 Stainless steel heat exchanger(s)

FIELD INSTALLED OPTIONS

- Manual Shutoff Valve
- Multiple Heater Control
- High Altitude Adjustment Kit (above 6,000 ft. / 1,830 M)
- 4-Way Louvers
- Multiple Position Discharge Nozzles
- Vent Cap
- 1" Pipe Coupling (Swivel) Hanger Kit
- Thermostats

^A U.S. Patent Number 6,889,686

REZNOR®

LDAP TECHNICAL DATA

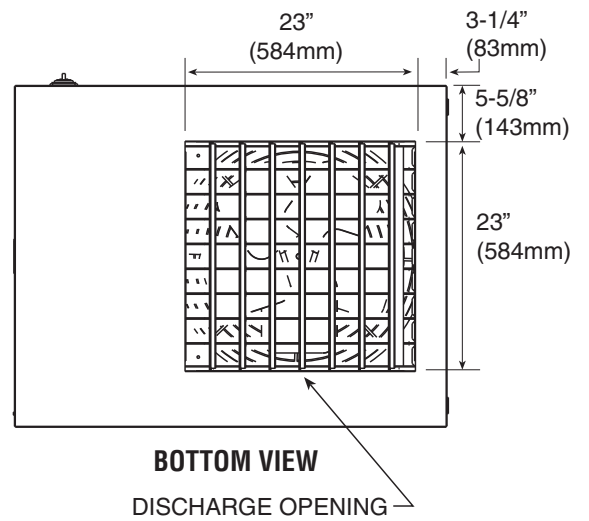
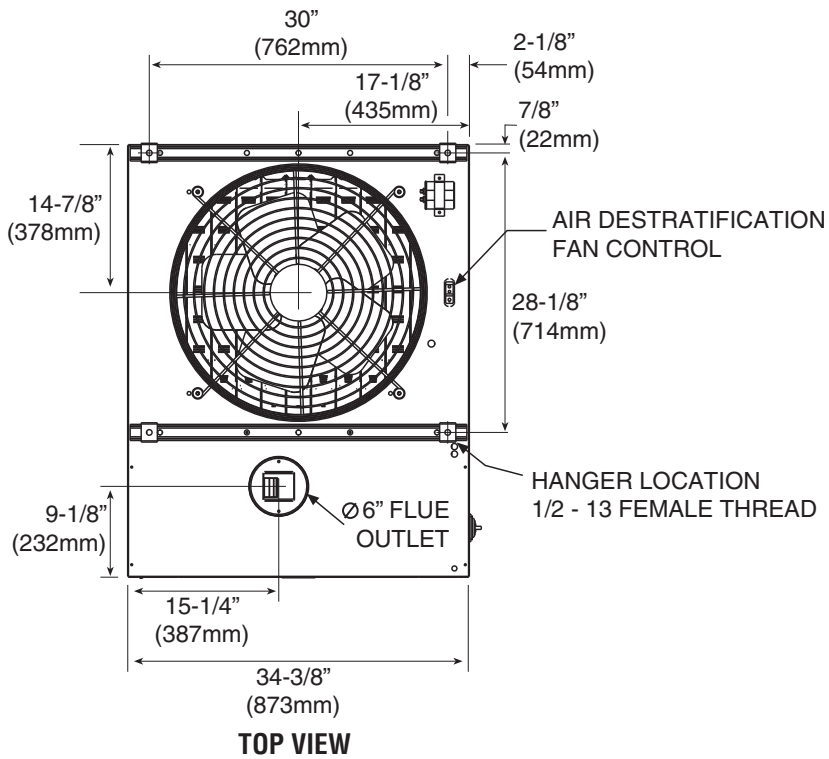
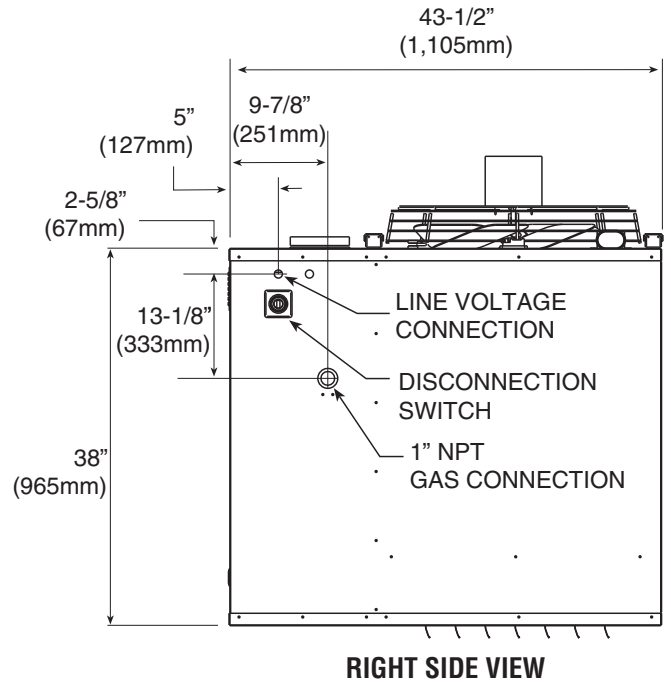
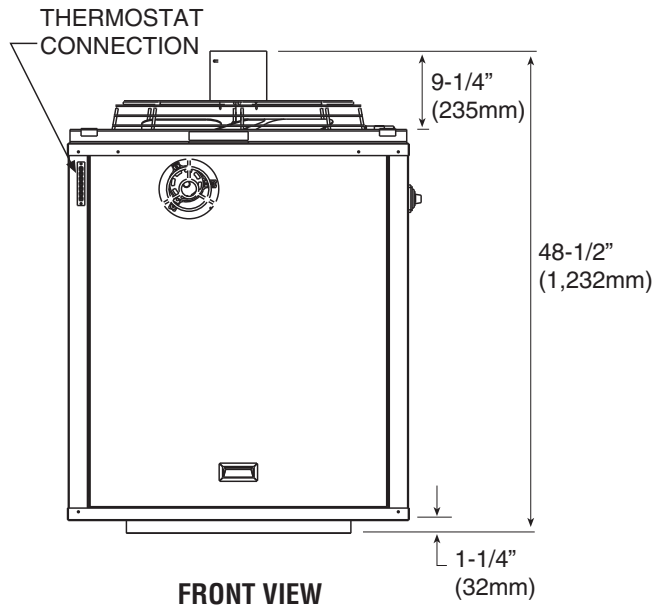
Size		400		800		1200	
Input Heating Capacity	BTUH (kW/h)	400,000	(117.1)	800,000	(234.2)	1,200,000	(351.4)
Thermal Efficiency (%)		83		83		83	
Output Heating Capacity	BTUH (kW/h)	332,000	(97.2)	664,000	(194.4)	996,000	(291.6)
Gas Connection (inches)		1		1-1/4		1-1/4	
Vent Connection Diameter (inches)		6		8		8	
Control Amps (24 volt)		1.0		2.0		3.0	
Full-Load Amps (208 volt)		5.6		13.6		19.4	
Full-Load Amps (230 volt)		5.5		12.8		18.5	
Normal Power Consumption @ 208V (watts)		1150		2448		3730	
Normal Power Consumption @ 230V (watts)		1230		2597		3959	
Discharge Air Temperature Rise (°F)		55		55		55	
Air Volume	CFM (M ³ /minute)	5,589	(158)	11,178	(317)	16,768	(475)
Discharge Air Opening Area	ft ² (M ²)	3.67	(0.34)	7.35	(0.68)	11.02	(1.02)
Outlet Velocity	FPM (M/minute)	1521	(464)	1521	(464)	1521	(464)
Air Volume (Destratification @ Medium Speed)	CFM (M ³ /minute)	4,650	(132)	9,300	(263)	13,950	(395)
Outlet Velocity (Destratification @ Medium Speed)	FPM (M/minute)	1266	(386)	1266	(386)	1266	(386)
Air Volume (Destratification @ Low Speed)	CFM (M ³ /minute)	3,250	(92)	6,500	(184)	9,750	(276)
Outlet Velocity (Destratification @ Low Speed)	FPM	885	(270)	885	(270)	885	(270)
Fan Motor HP (Quantity)		1 (1)		1 (2)		1 (3)	
Fan Motor RPM		1050		1050		1050	
Fan Diameter (Inches)		24		24		24	
Approximate Net Weight	lbs (kg)	375	(170)	805	(365)	1195	(542)
Approximate Ship Weight	lbs (kg)	672	(305)	1309	(594)	1847	(838)

CLEARANCES

Size	Top ^A		Flue Connector		Front (Access Panel)		Rear		Disconnect Side		Side		Bottom	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
400	12	(305)	6	(152)	18	(457)	2	(51)	18	(457)	2	(51)	18	(457)
800	12	(305)	6	(152)	18	(457)	2	(51)	18	(457)	2	(51)	18	(457)
1200	12	(305)	6	(152)	18	(457)	2	(51)	18	(457)	2	(51)	18	(457)

A Top clearance on size 400 measured from fan motor. Top clearance on sizes 800 and 1200 measured from flue collector.

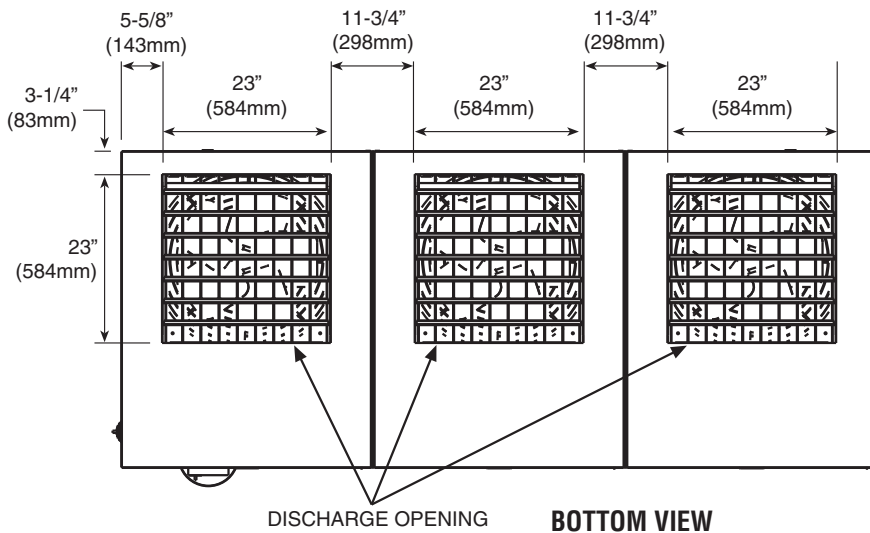
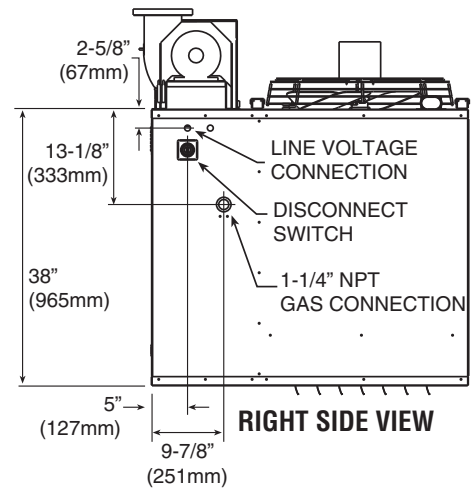
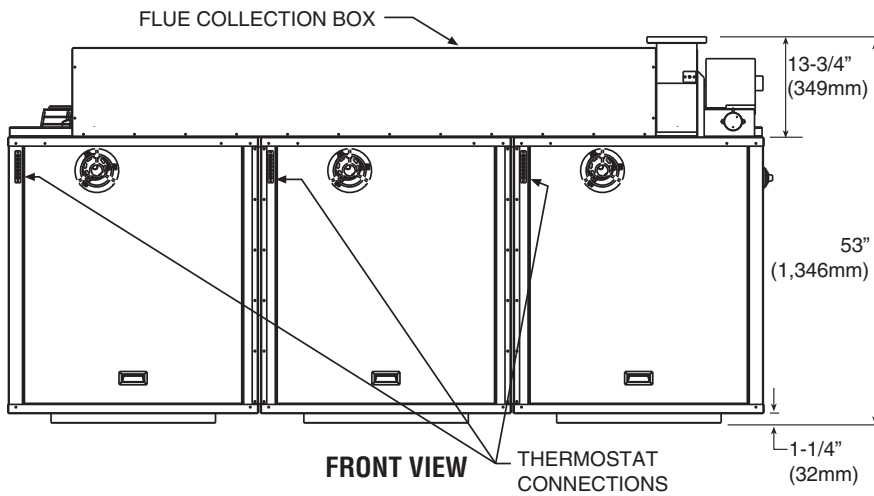
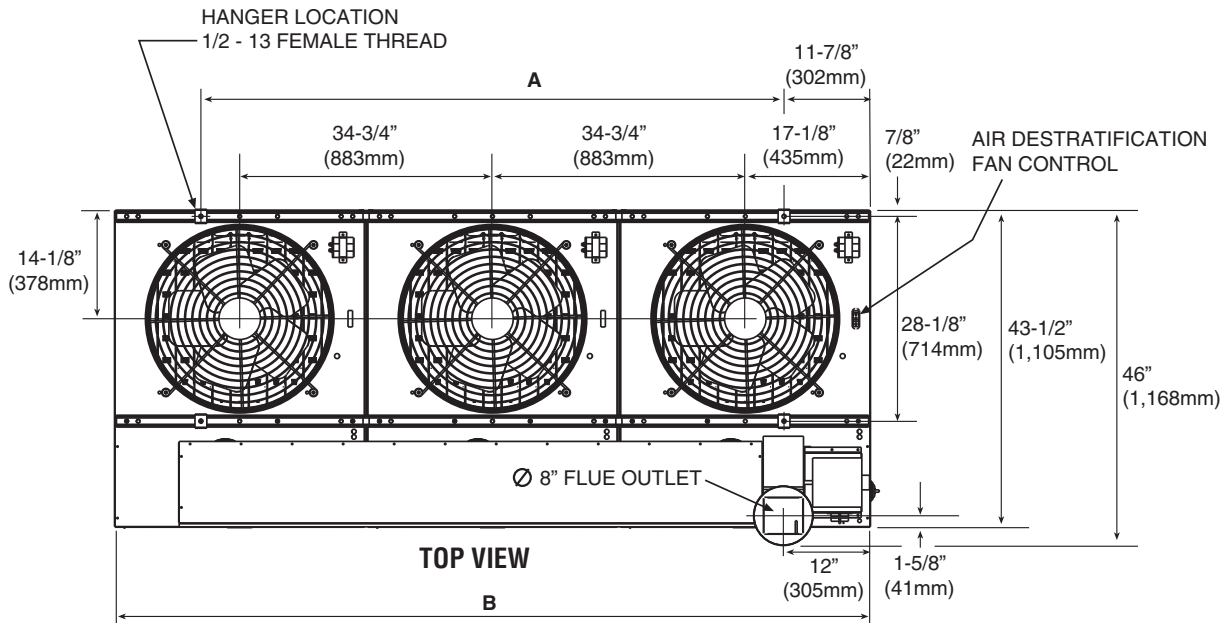
LDAP 400 DIMENSIONS



More dimensions shown on following pages

LDAP 800 & 1200 DIMENSIONS

Model LDAP 1200 is illustrated. Model LDAP 800 has two heat sections. Model LDAP 800 is the same as the layout shown without the middle section.

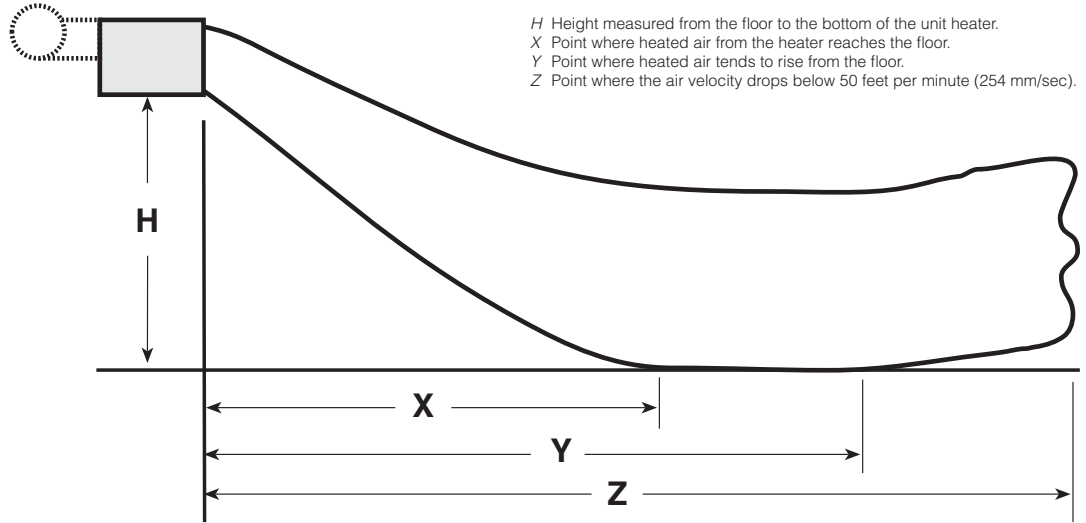


Size	A		B	
	inches	mm	inches	mm
800	46	(1,168)	69	(1,753)
1200	80	(2,032)	103 3/4	(2,635)

Dimensions for Optional Air Discharge Nozzle shown in Accessory Section

THROW/FLOOR COVERAGE

Applies to both
Model UDZ and Model UDX



DIMENSIONS IN FEET

Size	30				45				60				75				100				125				150			
Mounting Height	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle
5	6	14	30	-21°	7	16	40	-20°	8	18	45	-16°	9	20	57	-14°	9	20	59	-18°	10	22	65	-14°	--	--	--	--
8	7	13	26	-39°	9	16	37	-34°	10	18	42	-29°	12	22	54	-25°	11	21	56	-28°	12	23	63	-24°	13	24	73	-26°
10	6	11	22	-52°	9	15	33	-43°	10	17	39	-37°	12	22	52	-32°	12	20	52	-36°	13	24	60	-30°	14	24	69	-32°
12	--	--	--	--	8	12	27	-55°	10	16	34	-46°	12	21	48	-39°	11	19	47	-44°	14	23	57	-36°	14	24	64	-39°
14	--	--	--	--	--	--	--	--	9	14	29	-56°	12	19	44	-46°	11	17	42	-51°	14	22	53	-43°	14	22	59	-45°
16	--	--	--	--	--	--	--	--	--	--	--	--	11	17	38	-54°	10	14	34	-58°	13	20	47	-50°	13	20	53	-51°
18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	17	40	-57°	11	17	44	-58°

Size	175				200				225				250				300				350				400							
Mounting Height	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle
8	15	28	90	-22°	16	30	93	-20°	14	27	86	-24°	16	29	93	-21°	15	28	94	-24°	17	31	105	-20°	18	34	113	-17°				
10	17	29	87	-27°	17	31	91	-25°	15	27	82	-30°	17	30	90	-26°	16	28	89	-29°	18	32	103	-25°	20	35	110	-21°				
12	18	29	84	-32°	18	31	88	-30°	16	27	78	-35°	18	30	87	-31°	17	28	85	-34°	19	32	98	-30°	21	36	108	-25°				
14	18	28	79	-37°	19	30	84	-34°	16	26	73	-41°	18	30	83	-36°	17	27	80	-40°	20	32	95	-34°	23	35	105	-29°				
16	18	27	74	-42°	19	29	79	-39°	16	24	67	-47°	19	28	78	-41°	17	25	74	-45°	21	31	90	-38°	23	35	101	-33°				
18	17	26	68	-48°	19	28	74	-44°	14	22	60	-53°	18	27	72	-46°	16	24	66	-51°	20	30	85	-43°	23	35	97	-37°				

DIMENSIONS IN METRIC

Size	30				45				60				75				100				125				150							
Mounting Height	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle
1.5	1.8	4.3	9.1	-21°	2.1	4.9	12.2	-20°	2.4	5.5	13.7	-16°	2.7	6.1	17.4	-14°	2.7	6.1	18.0	-18°	3.0	6.7	19.8	-14°	--	--	--	--				
2.4	2.1	4.0	7.9	-39°	2.7	4.9	11.3	-34°	3.0	5.5	12.8	-29°	3.7	6.7	16.5	-25°	3.4	6.4	17.1	-28°	3.7	7.0	19.2	-24°	4.0	7.3	22.3	-26°				
3.0	1.8	3.4	6.7	-52°	2.7	4.6	10.1	-43°	3.0	5.2	11.9	-37°	3.7	6.7	15.8	-32°	3.7	6.1	15.8	-36°	4.0	7.3	18.3	-30°	4.3	7.3	21.0	-32°				
3.7	--	--	--	--	2.4	3.7	8.2	-55°	3.0	4.9	10.4	-46°	3.7	6.4	14.6	-39°	3.4	5.8	14.3	-44°	4.3	7.0	17.4	-36°	4.3	7.3	19.5	-39°				
4.3	--	--	--	--	--	--	--	--	2.7	4.3	8.8	-56°	3.7	5.8	13.4	-46°	3.4	5.2	12.8	-51°	4.3	6.7	16.2	-43°	4.3	6.7	18.0	-45°				
4.9	--	--	--	--	--	--	--	--	--	--	--	--	3.4	5.2	11.6	-54°	3.0	4.3	10.4	-58°	4.0	6.1	14.3	-50°	4.0	6.1	16.2	-51°				
5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.4	5.2	12.2	-57°	3.4	5.2	13.4	-58°				

Size	175				200				225				250				300				350				400							
Mounting Height	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle	X	Y	Z	Lvr. Angle
2.4	4.6	8.5	27.4	-22°	4.9	9.1	28.3	-20°	4.3	8.2	26.2	-24°	4.9	8.8	28.3	-21°	4.6	8.5	28.7	-24°	5.2	9.4	32.0	-20°	5.5	10.4	34.4	-17°				
3.0	5.2	8.8	26.5	-27°	5.2	9.4	27.7	-25°	4.6	8.2	25.0	-30°	5.2	9.1	27.4	-26°	4.9	8.5	27.1	-29°	5.5	9.8	31.4	-25°	6.1	10.7	33.5	-21°				
3.7	5.5	8.8	25.6	-32°	5.5	9.4	26.8	-30°	4.9	8.2	23.8	-35°	5.5	9.1	26.5	-31°	5.2	8.5	25.9	-34°	5.8	9.8	29.9	-30°	6.4	11.0	32.9	-25°				
4.3	5.5	8.5	24.1	-37°	5.8	9.1	25.6	-34°	4.9	7.9	22.3	-41°	5.5	9.1	25.3	-36°	5.2	8.2	24.4	-40°	6.1	9.8	29.0	-34°	7.0	10.7	32.0	-29°				
4.9	5.5	8.2	22.6	-42°	5.8	8.8	24.1	-39°	4.9	7.3	20.4	-47°	5.8	8.5	23.8	-41°	5.2	7.6	22.6	-45°	6.4	9.4	27.4	-38°	7.0	10.7	30.8	-33°				
5.5	5.2	7.9	20.7	-48°	5.8	8.5	22.6	-44°	4.3	6.7	18.3	-53°	5.5	8.2	21.9	-46°	4.9	7.3	20.1	-51°	6.1	9.1	25.9	-43°	7.0	10.7	29.6	-37°				

Louver angle listed in the table is relative to the top of the unit heater.

THROW/FLOOR COVERAGE

Applies to both Model UDZ and Model UDX (See illustration on page 30)

DIMENSIONS IN FEET

Size		Low Speed																75°F Rise																			
		30				45				60				75				100				125				150											
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle				
5		7	15	38	-27°	7	17	44	-20°	11	26	78	-15°	11	24	74	-13°	10	23	74	-16°	10	22	69	-14°	--	--	--	--	--	--	--					
8		7	13	32	-44°	9	17	40	-34°	14	26	76	-23°	13	26	72	-23°	13	25	72	-25°	12	24	65	-24°	9	16	44	-39°	--	--	--					
10		7	11	25	-56°	9	16	37	-42°	15	27	72	-29°	15	25	69	-28°	14	25	69	-31°	13	24	62	-31°	9	14	38	-48°	--	--	--					
12		--	--	--	--	9	14	31	-52°	16	26	70	-34°	15	25	65	-34°	14	24	66	-37°	14	23	58	-37°	7	11	30	-58°	--	--	--					
14		--	--	--	--	--	--	--	--	16	25	65	-40°	15	24	62	-40°	14	23	62	-43°	14	21	54	-43°	--	--	--	--	--	--	--					
16		--	--	--	--	--	--	--	--	15	24	60	-46°	15	23	56	-46°	14	21	57	-49°	12	19	47	-51°	--	--	--	--	--	--	--					
18		--	--	--	--	--	--	--	--	14	22	53	-52°	14	21	50	-52°	12	18	51	-56°	11	17	40	-57°	--	--	--	--	--	--	--					
Size		Medium Speed																60°F Rise																			
		30				45				60				75				100				125				150											
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle
5		7	16	43	-24°	9	21	60	-15°	12	28	91	-13°	11	27	84	-11°	11	27	86	-13°	12	29	96	-10°	--	--	--	--	--	--	--					
8		9	16	38	-38°	11	23	57	-26°	16	30	89	-21°	15	29	82	-19°	15	28	83	-21°	16	31	94	-18°	13	24	74	-28°	--	--	--					
10		8	14	33	-48°	13	22	54	-32°	17	30	86	-26°	16	30	79	-25°	17	29	81	-26°	18	32	92	-23°	13	22	62	-35°	--	--	--					
12		8	12	28	-56°	13	21	51	-39°	18	31	83	-31°	17	30	77	-30°	17	29	78	-32°	19	32	89	-27°	13	21	57	-42°	--	--	--					
14		--	--	--	--	12	20	46	-46°	18	30	79	-36°	18	29	74	-34°	18	29	74	-37°	20	32	87	-32°	12	19	51	-49°	--	--	--					
16		--	--	--	--	11	17	40	-53°	19	29	75	-41°	18	28	70	-39°	18	27	70	-42°	20	31	83	-36°	11	16	43	-57°	--	--	--					
18		--	--	--	--	--	--	--	--	17	28	69	-46°	18	26	65	-44°	17	26	64	-47°	20	30	78	-40°	--	--	--	--	--	--	--					
Size		High Speed																45°F Rise																			
		30				45				60				75				100				125				150											
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle
5		8	19	51	-20°	11	28	81	-11°	13	30	105	-11°	12	30	97	-09°	13	32	110	-10°	13	33	113	-7°	--	--	--	--	--	--	--					
8		10	19	48	-31°	15	29	79	-19°	17	33	103	-19°	17	33	95	-16°	18	34	108	-17°	19	36	111	-13°	18	32	107	-19°	--	--	--					
10		11	19	44	-39°	16	30	78	-24°	19	34	100	-23°	19	33	94	-20°	20	36	106	-21°	21	37	109	-17°	19	34	104	-24°	--	--	--					
12		11	17	40	-46°	17	30	75	-29°	21	35	98	-27°	20	34	92	-25°	22	36	104	-25°	23	39	107	-21°	21	34	102	-28°	--	--	--					
14		9	15	33	-56°	18	30	72	-34°	22	34	95	-31°	21	34	89	-29°	23	36	102	-29°	24	39	105	-25°	22	34	98	-32°	--	--	--					
16		--	--	--	--	19	29	69	-39°	23	33	91	-35°	22	33	86	-33°	24	36	99	-33°	25	40	103	-29°	22	33	94	-36°	--	--	--					
18		--	--	--	--	18	28	64	-44°	21	33	86	-40°	22	33	83	-37°	23	36	95	-37°	26	39	101	-32°	21	33	89	-41°	--	--	--					
Size		75°F Rise																80°F Rise																			
		175				200				225				250				300				350				400											
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle
8		12	22	69	-30°	13	24	76	-27°	13	24	82	-29°	14	27	95	-26°	12	21	70	-32°	13	25	82	-27°	15	28	95	-24°	--	--	--					
10		12	22	65	-37°	14	24	72	-33°	12	21	66	-38°	16	27	91	-31°	12	21	65	-39°	14	25	77	-33°	16	28	92	-29°	--	--	--					
12		13	21	59	-43°	14	23	68	-39°	12	20	60	-45°	16	27	86	-37°	12	19	58	-47°	14	24	72	-40°	17	28	88	-34°	--	--	--					
14		11	19	52	-51°	14	22	62	-46°	11	18	53	-52°	16	25	80	-43°	10	17	50	-55°	14	22	66	-46°	17	27	82	-39°	--	--	--					
16		--	--	--	--	12	20	53	-53°	--	--	--	--	16	23	73	-49°	--	--	--	--	13	20	57	-53°	17	26	76	-45°	--	--	--					
18		--	--	--	--	--	--	--	--	--	--	--	--	14	21	64	-56°	--	--	--	--	--	--	--	--	16	24	69	-50°	--	--	--					
Size		60°F Rise																70°F Rise																			
		175				200				225				250				300				350				400											
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle
8		15	29	92	-22°	16	31	100	-21°	16	29	100	-24°	19	34	127	-20°	16	28	100	-24°	18	33	119	-20°	17	31	111	-21°	--	--	--					
10		16	29	89	-28°	18	31	97	-25°	16	30	96	-29°	20	35	123	-24°	17	29	96	-29°	19	34	116	-25°	18	32	107	-26°	--	--	--					
12		17	29	85	-33°	19	31	93	-30°	17	30	92	-34°	21	36	120	-28°	18	29	92	-34°	21	34	113	-29°	19	32	103	-31°	--	--	--					
14		17	28	80	-38°	20	30	89	-34°	18	28	87	-38°	22	35	116	-32°	18	28	87	-39°	22	34	109	-33°	20	31	99	-35°	--	--	--					
16		17	27	75	-43°	20	29	84	-39°	18	27	80	-44°	23	35	111	-37°	18	27	81	-44°	22	33	104	-37°	20	31	93	-40°	--	--	--					
18		17	25	69	-48°	19	29	79	-44°	17	26	74	-49°	23	34	106	-41°	17	25	73	-50°	22	32	98	-41°	20	29	88	-44°	--	--	--					
Size		45°F Rise																50°F Rise																			
		175				200				225				250				300				350				400											
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle
8		22	41	146	-15°	23	43	157	-13°	23	43	168	-16°	26	48	198	-14°	21	39	146	-17°	24	45	169	-14°	24	44	169	-14°	--	--	--					
10		24	43	144	-19°	25	46	155	-17°	26	45	166	-19°	29	50	196	-17°	23	41	143	-21°	26	47	167	-18°	26	46	167	-17°	--	--	--					
12		26	43	141	-22°	27	47	152	-20°	28	45	163	-22°	31	52	194	-20°	25	42	140	-25°	28	48	165	-21°	28	48	165	-20°	--	--	--					
14		28	44	137	-23°	29	48	150	-23°	30	46	160	-25°	32	54	191	-22°	26	42	137	-28°	30	49	162	-24°	31	48	162	-23°	--	--	--					
16		29	44	134	-28°	31	48	147	-26°	31	47	157	-29°	34	53	189	-25°	27	42	133	-31°	32	48	159	-26°	32	49	159	-26°	--	--	--					
18		29	44	131	-32°	31	49	144	-29°	31	47	153	-32°	34	54	185	-28°	28	41	129	-34°	33	49	156	-29°	32	49	156	-29°	--	--	--					

THROW/FLOOR COVERAGE

Applies to both Model UDZ and Model UDX (See illustration on page 30)

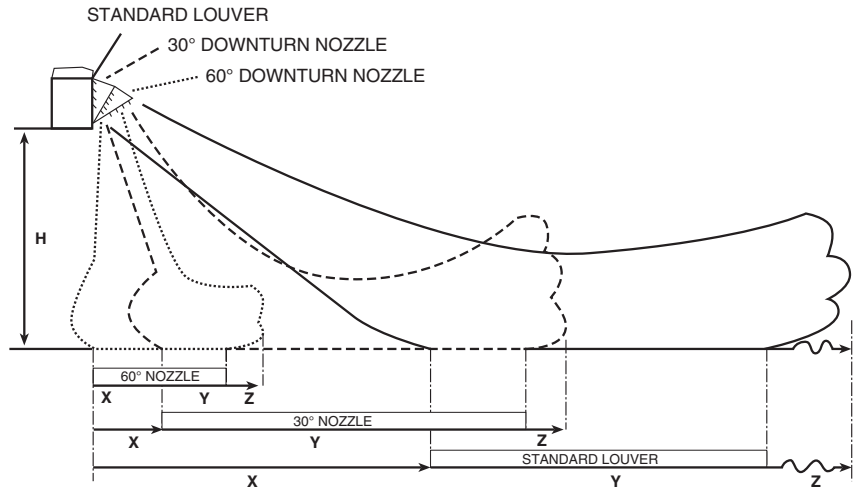
DIMENSIONS IN METRIC

Size		Low Speed																42°C Rise															
		30				45				60				75				100				125				150							
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle				
1.5		2.1	4.6	11.6	-27°	2.1	5.2	13.4	-20°	3.4	7.9	23.8	-15°	3.4	7.3	22.6	-13°	3.0	7.0	22.6	-16°	3.0	6.7	21.0	-14°	--	--	--	--	--	--	--	--
2.4		2.1	4.0	9.8	-44°	2.7	5.2	12.2	-34°	4.3	7.9	23.2	-23°	4.0	7.9	21.9	-23°	4.0	7.6	21.9	-25°	3.7	7.3	19.8	-24°	2.7	4.9	13.4	-39°	2.7	4.3	11.6	-48°
3.0		2.1	3.4	7.6	-56°	2.7	4.9	11.3	-42°	4.6	8.2	21.9	-29°	4.6	7.6	21.0	-28°	4.3	7.6	21.0	-31°	4.0	7.3	18.9	-31°	2.7	4.3	11.6	-48°	2.7	4.3	11.6	-48°
3.7		--	--	--	--	2.7	4.3	9.4	-52°	4.9	7.9	21.3	-34°	4.6	7.6	19.8	-34°	4.3	7.3	20.1	-37°	4.3	7.0	17.7	-37°	2.1	3.4	9.1	-58°	2.1	3.4	9.1	-58°
4.3		--	--	--	--	--	--	--	--	4.9	7.6	19.8	-40°	4.6	7.3	18.9	-40°	4.3	7.0	18.9	-43°	4.3	6.4	16.5	-43°	--	--	--	--	--	--	--	--
4.9		--	--	--	--	--	--	--	--	4.6	7.3	18.3	-46°	4.6	7.0	17.1	-46°	4.3	6.4	17.4	-49°	3.7	5.8	14.3	-51°	--	--	--	--	--	--	--	--
5.5		--	--	--	--	--	--	--	--	4.3	6.7	16.2	-52°	4.3	6.4	15.2	-52°	3.7	5.5	15.5	-56°	3.4	5.2	12.2	-57°	--	--	--	--	--	--	--	--
Size		Medium Speed																33°C Rise															
		30				45				60				75				100				125				150							
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle				
1.5		2.1	4.9	13.1	-24°	2.7	6.4	18.3	-15°	3.7	8.5	27.7	-13°	3.4	8.2	25.6	-11°	3.4	8.2	26.2	-13°	3.7	8.8	29.3	-10°	--	--	--	--	--	--	--	--
2.4		2.7	4.9	11.6	-38°	3.4	7.0	17.4	-26°	4.9	9.1	27.1	-21°	4.6	8.8	25.0	-19°	4.6	8.5	25.3	-21°	4.9	9.4	28.7	-18°	4.0	7.3	22.6	-28°	4.0	7.3	22.6	-28°
3.0		2.4	4.3	10.1	-48°	4.0	6.7	16.5	-32°	5.2	9.1	26.2	-26°	4.9	9.1	24.1	-25°	5.2	8.8	24.7	-26°	5.5	9.8	28.0	-23°	4.0	6.7	18.9	-35°	4.0	6.7	18.9	-35°
3.7		2.4	3.7	8.5	-56°	4.0	6.4	15.5	-39°	5.5	9.4	25.3	-31°	5.2	9.1	23.5	-30°	5.2	8.8	23.8	-32°	5.8	9.8	27.1	-27°	4.0	6.4	17.4	-42°	4.0	6.4	17.4	-42°
4.3		--	--	--	--	3.7	6.1	14.0	-46°	5.5	9.1	24.1	-36°	5.5	8.8	22.6	-34°	5.5	8.8	22.6	-37°	6.1	9.8	26.5	-32°	3.7	5.8	15.5	-49°	3.7	5.8	15.5	-49°
4.9		--	--	--	--	3.4	5.2	12.2	-53°	5.8	8.8	22.9	-41°	5.5	8.5	21.3	-39°	5.5	8.2	21.3	-42°	6.1	9.4	25.3	-36°	3.4	4.9	13.1	-57°	3.4	4.9	13.1	-57°
5.5		--	--	--	--	--	--	--	--	5.2	8.5	21.0	-46°	5.5	7.9	19.8	-44°	5.2	7.9	19.5	-47°	6.1	9.1	23.8	-40°	--	--	--	--	--	--	--	--
Size		High Speed																25°C Rise															
		30				45				60				75				100				125				150							
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle				
1.5		2.4	5.8	15.5	-20°	3.4	8.5	24.7	-11°	4.0	9.1	32.0	-11°	3.7	9.1	29.6	-09°	4.0	9.8	33.5	-10°	4.0	10.1	34.4	-7°	--	--	--	--	--	--	--	--
2.4		3.0	5.8	14.6	-31°	4.6	8.8	24.1	-19°	5.2	10.1	31.4	-19°	5.2	10.1	29.0	-16°	5.5	10.4	32.9	-17°	5.8	11.0	33.8	-13°	5.5	9.8	32.6	-19°	5.5	9.8	32.6	-19°
3.0		3.4	5.8	13.4	-39°	4.9	9.1	23.8	-24°	5.8	10.4	30.5	-23°	5.8	10.1	28.7	-20°	6.1	11.0	32.3	-21°	6.4	11.3	33.2	-17°	5.8	10.4	31.7	-24°	5.8	10.4	31.7	-24°
3.7		3.4	5.2	12.2	-46°	5.2	9.1	22.9	-29°	6.4	10.7	29.9	-27°	6.1	10.4	28.0	-25°	6.7	11.0	31.7	-25°	7.0	11.9	32.6	-21°	6.4	10.4	31.1	-28°	6.4	10.4	31.1	-28°
4.3		2.7	4.6	10.1	-56°	5.5	9.1	21.9	-34°	6.7	10.4	29.0	-31°	6.4	10.4	27.1	-29°	7.0	11.0	31.1	-29°	7.3	11.9	32.0	-25°	6.7	10.4	29.9	-32°	6.7	10.4	29.9	-32°
4.9		--	--	--	--	5.8	8.8	21.0	-39°	7.0	10.1	27.7	-35°	6.7	10.1	26.2	-33°	7.3	11.0	30.2	-33°	7.6	12.2	31.4	-29°	6.7	10.1	28.7	-36°	6.7	10.1	28.7	-36°
5.5		--	--	--	--	5.5	8.5	19.5	-44°	6.4	10.1	26.2	-40°	6.7	10.1	25.3	-37°	7.0	11.0	29.0	-37°	7.9	11.9	30.8	-32°	6.4	10.1	27.1	-41°	6.4	10.1	27.1	-41°
Size		42°C Rise																44°C Rise															
		175				200				225				250				300				350				400							
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle				
2.4		3.7	6.7	21.0	-30°	4.0	7.3	23.2	-27°	4.0	7.3	25.0	-29°	4.3	8.2	29.0	-26°	3.7	6.4	21.3	-32°	4.0	7.6	25.0	-27°	4.6	8.5	29.0	-26°	4.6	8.5	29.0	-26°
3.0		3.7	6.7	19.8	-37°	4.3	7.3	21.9	-33°	3.7	6.4	20.1	-38°	4.9	8.2	27.7	-31°	3.7	6.4	19.8	-39°	4.3	7.6	23.5	-33°	4.9	8.5	28.0	-31°	4.9	8.5	28.0	-31°
3.7		4.0	6.4	18.0	-43°	4.3	7.0	20.7	-39°	3.7	6.1	18.3	-45°	4.9	8.2	26.2	-37°	3.7	5.8	17.7	-47°	4.3	7.3	21.9	-40°	5.2	8.5	26.8	-37°	5.2	8.5	26.8	-37°
4.3		3.4	5.8	15.8	-51°	4.3	6.7	18.9	-46°	3.4	5.5	16.2	-52°	4.9	7.6	24.4	-43°	3.0	5.2	15.2	-55°	4.3	6.7	20.1	-46°	5.2	8.2	25.0	-43°	5.2	8.2	25.0	-43°
4.9		--	--	--	--	3.7	6.1	16.2	-53°	--	--	--	--	4.9	7.0	22.3	-49°	--	--	--	--	4.0	6.1	17.4	-53°	5.2	7.9	23.2	-49°	5.2	7.9	23.2	-49°
5.5		--	--	--	--	--	--	--	--	--	--	--	--	4.3	6.4	19.5	-56°	--	--	--	--	--	--	--	--	4.9	7.3	21.0	-56°	4.9	7.3	21.0	-56°
Size		33°C Rise																39°C Rise															
		175				200				225				250				300				350				400							
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle				
2.4		4.6	8.8	28.0	-22°	4.9	9.4	30.5	-21°	4.9	8.8	30.5	-24°	5.8	10.4	38.7	-20°	4.9	8.5	30.5	-24°	5.5	10.1	36.3	-20°	5.2	9.4	33.8	-21°	5.2	9.4	33.8	-21°
3.0		4.9	8.8	27.1	-28°	5.5	9.4	29.6	-25°	4.9	9.1	29.3	-29°	6.1	10.7	37.5	-24°	5.2	8.8	29.3	-29°	5.8	10.4	35.4	-25°	5.5	9.8	32.6	-26°	5.5	9.8	32.6	-26°
3.7		5.2	8.8	25.9	-33°	5.8	9.4	28.3	-30°	5.2	9.1	28.0	-34°	6.4	11.0	36.6	-28°	5.5	8.8	28.0	-34°	6.4	10.4	34.4	-29°	5.8	9.8	31.4	-31°	5.8	9.8	31.4	-31°
4.3		5.2	8.5	24.4	-38°	6.1	9.1	27.1	-34°	5.5	8.5	26.5	-38°	6.7	10.7	35.4	-32°	5.5	8.5	26.5	-39°	6.7	10.4	33.2	-33°	6.1	9.4	30.2	-35°	6.1	9.4	30.2	-35°
4.9		5.2	8.2	22.9	-43°	6.1	8.8	25.6	-39°	5.5	8.2	24.4	-44°	7.0	10.7	33.8	-37°	5.5	8.2	24.7	-44°	6.7	10.1	31.7	-37°	6.1	9.4	28.3	-40°	6.1	9.4	28.3	-40°
5.5		5.2	7.6	21.0	-48°	5.8	8.8	24.1	-44°	5.2	7.9	22.6	-49°	7.0	10.4	32.3	-41°	5.2	7.6	22.3	-50°	6.7	9.8	29.9	-41°	6.1	8.8	26.8	-44°	6.1	8.8	26.8	-44°
Size		25°C Rise																28°C Rise															
		175				200				225				250				300				350				400							
Mounting Height		X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle	X	Y	Z	Louver Angle				
2.4		6.7	12.5	44.5	-15°	7.0	13.1	47.9	-13°	7.0	13.1	51.2	-16°	7.9	14.6	60.4	-14°	6.4	11.9	44.5	-17°	7.3	13.7	51.5	-14°	7.3	13.4	51.5	-14°				
3.0		7.3	13.1	43.9	-19°	7.6	14.0	47.2	-17°	7.9	13.7	50.6	-19°	8.8	15.2	59.7	-17°	7.0	12.5	43.6	-21°	7.9	14.3	50.9	-18°	7.9	14.0	50.9	-17°				
3.7		7.9	13.1	43.0	-22°	8.2	14.3	46.3	-20°	8.5	13.7	49.7	-22°	9.4	15.8	59.1	-20°	7.6	12.8	42.7	-25°	8.5	14.6	50.3	-21°	8.5	14.6	50.3	-20°				
4.3		8.5	13.4	41.8	-25°	8.8	14.6	45.7	-23°	9.1	14.0	48.8	-25°	9.8	16.5	58.2	-22°	7.9	12.8	41.8	-28°	9.1	14.9	49.4	-24°	9.4	14.6	49.4	-23°				

THROW/FLOOR COVERAGE

Applies to Model F Sizes 125-400

NOTE: Data based on 80°F entering air and 60°F rise through the unit. Standard louvers set at maximum deflection are effective as indicated when ceiling height above heater is not over 4 ft. For higher mounting height or where spot heating is required, choose outlet and mounting height giving coverage to floor. Mounting close to the ceiling provides maximum heat utilization.



H Height measured from the floor to the bottom of the unit heater.
 X Point where heated air from the heater reaches the floor.
 Y Point where heated air tends to rise from the floor.
 Z Point where the air velocity drops below 50 feet per minute (254 mm/sec).

DIMENSIONS IN FEET

With Standard Horizontal Louvers																			
Mounting Height	F125			F165			F200			F250			F300			F400			
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	
8	14	24	65	14	35	75	13	38	83	12	44	94	12	36	105	12	55	118	
10	16	22	58	16	32	72	15	36	78	15	40	88	14	38	96	14	53	112	
12	18	20	54	18	30	66	17	34	72	17	38	84	16	35	90	16	49	108	
14	--	--	--	--	--	--	--	20	31	68	19	33	77	18	30	85	18	45	100
16	--	--	--	--	--	--	--	--	--	22	30	72	20	27	80	20	40	92	
18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23	35	85	--	

With Downturn Nozzle with 25-65° Range of Air Deflection (30° Nozzle)																		
Mounting Height	F125			F165			F200			F250			F300			F400		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
10	10	22	28	10	24	33	10	31	45	8	40	53	8	38	51	--	--	--
12	13	18	26	12	22	30	12	29	43	10	38	50	10	36	48	10	50	70
14	16	16	22	15	20	25	14	26	40	12	36	47	13	34	44	12	47	66
16	--	--	--	--	--	--	16	23	36	14	33	42	15	31	40	14	43	62
18	--	--	--	--	--	--	18	20	30	16	28	36	18	26	34	16	38	58
20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	34	53
22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21	30	46

With Downturn Nozzle with 50-90° Range of Air Deflection (60° Nozzle)																		
Mounting Height	F125			F165			F200			F250			F300			F400		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
12	0	8	20	0	8	22	0	8	25	0	12	30	0	10	28	--	--	--
16	0	10	18	0	10	20	0	10	23	0	14	28	0	12	26	0	12	32
20	0	14	16	0	14	18	0	12	21	0	16	26	0	14	24	0	14	30
24	--	--	--	--	--	--	0	14	18	0	18	24	0	16	20	0	16	28
28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	18	26
32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	20	24
36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	22	22

DIMENSIONS IN METRIC

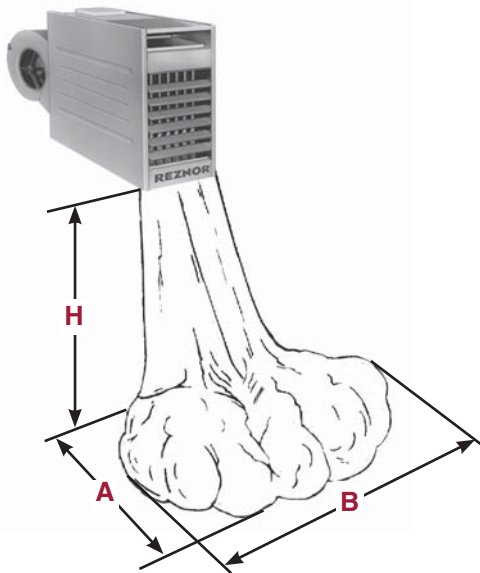
With Standard Horizontal Louvers																		
Mounting Height	F125			F165			F200			F250			F300			F400		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
2.4	4.3	7.3	19.8	4.3	10.7	22.9	4.0	11.6	25.3	3.7	13.4	28.7	3.7	11.0	32.0	3.7	16.8	36.0
3.0	4.9	6.7	17.7	4.9	9.8	21.9	4.6	11.0	23.8	4.6	12.2	26.8	4.3	11.6	29.3	4.3	16.2	34.1
3.7	5.5	6.1	16.5	5.5	9.1	20.1	5.2	10.4	21.9	5.2	11.6	25.6	4.9	10.7	27.4	4.9	14.9	32.9
4.3	--	--	--	--	--	--	6.1	9.4	20.7	5.8	10.1	23.5	5.5	9.1	25.9	5.5	13.7	30.5
4.9	--	--	--	--	--	--	--	--	--	6.7	9.1	21.9	6.1	8.2	24.4	6.1	12.2	28.0
5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.0	10.7	25.9

With Downturn Nozzle with 25-65° Range of Air Deflection (30° Nozzle)																		
Mounting Height	F125			F165			F200			F250			F300			F400		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
3.0	3.0	6.7	8.5	3.0	7.3	10.1	3.0	9.4	13.7	2.4	12.2	16.2	2.4	11.6	15.5	--	--	--
3.7	4.0	5.5	7.9	3.7	6.7	9.1	3.7	8.8	13.1	3.0	11.6	15.2	3.0	11.0	14.6	3.0	15.2	21.3
4.3	4.9	4.9	6.7	4.6	6.1	7.6	4.3	7.9	12.2	3.7	11.0	14.3	4.0	10.4	13.4	3.7	14.3	20.1
4.9	--	--	--	--	--	--	4.9	7.0	11.0	4.3	10.1	12.8	4.6	9.4	12.2	4.3	13.1	18.9
5.5	--	--	--	--	--	--	5.5	6.1	9.1	4.9	8.5	11.0	5.5	7.9	10.4	4.9	11.6	17.7
6.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.5	10.4	16.2
6.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.4	9.1	14.0

With Downturn Nozzle with 50-90° Range of Air Deflection (60° Nozzle)																		
Mounting Height	F125			F165			F200			F250			F300			F400		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
3.7	0.0	2.4	6.1	0.0	2.4	6.7	0.0	2.4	7.6	0.0	3.7	9.1	0.0	3.0	8.5	--	--	--
4.9	0.0	3.0	5.5	0.0	3.0	6.1	0.0	3.0	7.0	0.0	4.3	8.5	0.0	3.7	7.9	0.0	3.7	9.8
6.1	0.0	4.3	4.9	0.0	4.3	5.5	0.0	3.7	6.4	0.0	4.9	7.9	0.0	4.3	7.3	0.0	4.3	9.1
7.3	--	--	--	--	--	--	0.0	4.3	5.5	0.0	5.5	7.3	0.0	4.9	6.1	0.0	4.9	8.5
8.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0	5.5	7.9
9.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0	6.1	7.3
11.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0	6.7	6.7

THROW/FLOOR COVERAGE

Applies to Model B Sizes 125-400 Floor Coverage with 50-90 degree Variable Air Deflection Downturn Nozzle



Blower Model	CFM	Mounting Height - H															
		12 ft		16 ft		20 ft		24 ft		28 ft		32 ft		36 ft		40 ft	
		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
125	1545	20	22	18	20	16	18	--	--	--	--	--	--	--	--	--	--
165	2090	24	26	22	24	20	22	--	--	--	--	--	--	--	--	--	--
200	2470	--	--	26	28	24	26	20	22	--	--	--	--	--	--	--	--
250	3090	--	--	30	32	28	30	24	26	--	--	--	--	--	--	--	--
300	3710	--	--	--	--	32	34	30	32	28	30	26	28	24	26	--	--
400	4950	--	--	--	--	36	38	34	36	32	34	30	32	28	30	24	26

Blower Model	M ³ /hr	Mounting Height - H															
		3.7M		4.9M		6.1M		7.3M		8.5M		9.8M		11.0M		12.2M	
		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
125	2625	6.1	6.7	5.5	6.1	4.9	5.5	--	--	--	--	--	--	--	--	--	--
165	3551	7.3	7.9	6.7	7.3	6.1	6.7	--	--	--	--	--	--	--	--	--	--
200	4196	--	--	7.9	8.5	7.3	7.9	6.1	6.7	--	--	--	--	--	--	--	--
250	5250	--	--	9.1	9.8	8.5	9.1	7.3	7.9	--	--	--	--	--	--	--	--
300	6303	--	--	--	--	9.8	10.4	9.1	9.8	8.5	9.1	7.9	8.5	7.3	7.9	--	--
400	8410	--	--	--	--	11.0	11.6	10.4	11.0	9.8	10.4	9.1	9.8	8.5	9.1	7.3	7.9

KEY:

A = Throw

B = Spread (Side to side coverage with standard louvers)

H = Mounting Height

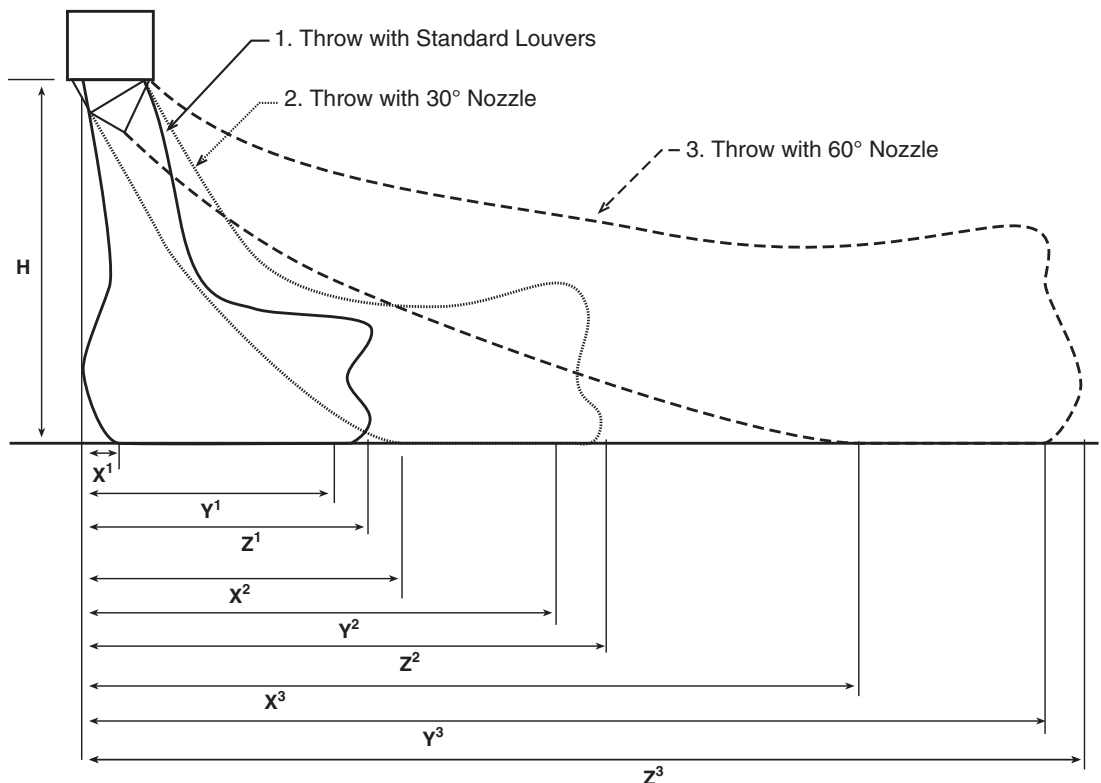
NOTES: Data based on 80°F entering air temperature and 60°F rise through the unit. Standard horizontal louver set for maximum down deflection. Table and drawing show approximate floor coverage at various mounting heights. **NOTE** that throw "A" and sideward spread "B" are increased as mounting height is reduced, due to floor bounce effect. Conversely the floor coverage reduces as mounting height increases. Horizontal louvers can be used to spread throw area "A" forward from the heater, and vertical louvers can be used to increase sideward spread "B". Vertical louvers set at maximum deflection will increase spread "B" approximately 10 feet, but will reduce maximum mounting height 4 feet.

EXAMPLE: B200 at 20 ft. mounting height with standard louver setting gives a floor coverage of "A" = 24' x "B" = 26'. Using vertical louvers set at maximum sideward spread, the maximum mounting height would be 16 feet, and the floor coverage would be "A" = 26' and "B" = 28' plus 10' or 38'.

Applies to Model LDAP (in heat mode)

NOTES:

"Z" is the point where the air velocity drops below 50 feet (15.2M) per minute. Throws listed are with standard louvers facing one direction and fully open. Throw pattern changes with louver angle, 2-way louver direction, and or optional 4-way louvers.



THROW/FLOOR COVERAGE

Applies to Model LDAP (in heat mode) continued

Mounting Height		Standard Louvers						30° Degree Nozzle						60° Degree Nozzle					
H		X ¹		Y ¹		Z ¹		X ²		Y ²		Z ²		X ³		Y ³		Z ³	
Ft.	M	Ft.	M	Ft.	M	Ft.	M	Ft.	M	Ft.	M	Ft.	M	Ft.	M	Ft.	M	Ft.	M
20	6.1	5	(1.5)	55	(16.8)	134	(40.8)	40	(12.2)	90	(27.4)	146	(44.5)	70	(21.3)	125	(38.1)	158	(48.2)
30	9.1	8	(2.4)	53	(16.2)	121	(36.9)	44	(13.4)	86	(26.2)	133	(40.5)	76	(23.2)	119	(36.3)	145	(44.2)
40	12.2	12	(3.7)	49	(14.9)	109	(33.2)	47	(14.3)	81	(24.7)	120	(36.6)	=	=	=	=	=	=
50	15.2	17	(5.2)	45	(13.7)	96	(29.3)	=	=	=	=	=	=	=	=	=	=	=	=

SOUND DATA

Sound (in dBA) for Models UDX and UDZ at various distances.

Size	5 Feet	10 Feet	15 Feet
	1.5 meters	3.0 meters	4.6 meters
30	59	47	40
45	59	47	40
60	59	47	40
75	69	55	49
100	N/A	58	54
125	N/A	59	55
150	N/A	55	51
175	N/A	55	52
200	N/A	56	53
225	N/A	59	56
250	N/A	59	56
300	N/A	62	59
350	N/A	64	61
400	N/A	65	62

Sound (in dBA) for Models UBX and UBZ at a distance of 15 feet (4.6 meters).

Blower Speed	Size					
	30	45	60	75	100	125
Low	57	50	59	60	59	59
Medium	58	53	62	63	63	63
High	60	57	64	64	66	66

Temperature Rise	Size							
	150	175	200	225	250	300	350	400 *
75°F (24°C)	51	56	58	61	63	64	65	67
60°F (16°C)	56	59	62	63	66	70	72	71
45°F (7°C)	62	69	71	71	75	76	78	79

* NOTE: The temperature rises of the Model 400 are 80°F (27°C), 70°F (21°C), and 50°F (10°C).

Sound for Model LDAP at various distances.

Size	DISTANCE (FT.)														
	20			25			30			35			40		
	db	Pa	µbar	db	Pa	µbar	db	Pa	µbar	db	Pa	µbar	db	Pa	µbar
400	69	0.058	0.580	65	0.037	0.371	62	0.026	0.258	60	0.019	0.189	57	0.015	0.145
800	72	0.080	0.800	68	0.051	0.512	65	0.036	0.356	62	0.026	0.261	60	0.020	0.200
1200	74	0.100	1.000	70	0.064	0.640	67	0.044	0.444	64	0.033	0.327	62	0.025	0.250

µbar = microbar

Pa = Pascal

BLOWER CHARTS

MODELS UBX AND UBZ

Blower Chart for Sizes 150 - 400 (Standard motor and drive shown shaded)

UBX and UBZ	TEMP RISE °F	CFM	Nozzle Option with Louvers				EXTERNAL Static Pressure					
			30°		60°		0"		.25"		.50"	
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
150	45°	2562	730	0.43	730	0.43	730	0.43	840	0.55	930	0.68
	60°	1921	520	0.25	520	0.25	520	0.25	655	0.35	780	0.43
	75°	1537	405	0.17	405	0.17	405	0.17	--	--	--	--
175	45°	2989	910	0.68	910	0.68	910	0.68	960	0.83	1055	0.98
	60°	2242	660	0.44	660	0.44	660	0.44	775	0.51	865	0.63
	75°	1793	545	0.28	545	0.28	545	0.28	665	0.38	--	--
200	45°	3416	1020	0.91	1020	0.91	1020	0.91	1090	1.07	1160	1.24
	60°	2562	730	0.49	730	0.49	730	0.49	885	0.63	935	0.76
	75°	2049	600	0.34	600	0.34	600	0.34	720	0.45	830	0.51
225	45°	3843	740	1.05	740	1.05	740	1.05	845	1.22	885	1.40
	60°	2882	530	0.60	530	0.60	530	0.60	670	0.74	730	0.89
	75°	2306	430	0.42	430	0.42	430	0.42	565	0.54	640	0.66
250	45°	4270	900	1.30	900	1.30	900	1.30	935	1.49	980	1.69
	60°	3202	660	0.73	660	0.73	660	0.73	730	0.88	790	1.04
	75°	2562	570	0.56	570	0.56	570	0.56	610	0.69	685	0.83
300	45°	5123	990	2.04	990	2.04	990	2.04	1020	2.29	1070	2.55
	60°	3843	735	1.29	735	1.29	735	1.29	795	1.49	865	1.71
	75°	3074	600	0.95	600	0.95	600	0.95	--	--	--	--
350	45°	5977	1040	2.95	1040	2.95	1040	2.95	1075	3.24	1130	3.54
	60°	4483	800	1.80	800	1.80	800	1.80	850	2.04	930	2.28
	75°	3586	630	1.33	630	1.33	630	1.33	720	1.45	--	--
400	45°	6185	1055	3.56	1055	3.56	1055	3.56	1090	3.86	1170	4.17
	60°	4392	790	1.98	790	1.98	790	1.98	875	2.17	1020	2.42
	75°	4100	675	1.76	675	1.76	675	1.76	750	1.99	--	--

Sizes 30 to 125 do not show a standard drive because they have a Direct drive blower with multispeed/Multitap. They are available in 115/1/60 voltage only.

MODEL B WITH BELT DRIVE MOTOR

Model B unit heaters are designed to handle up to .5" w.c. of static pressure with temperature rises as shown from 45°F to 75°F. The following chart indicates the CFM, the motor HP, and the optional drive required to achieve the desired temperature rise with external pressures from 0 to .5" w.c.

Drive Option Key (see chart on next page):

AM —	The "AM" drive will provide the selected CFM and temperature rise when installed with the total external static pressure listed but MAY require field-adjustment of the blower speed (CFM). Check the temperature rise and the motor amps. If adjustment is needed, follow "Blower Speed Adjustment" instructions in the heater installation manual.	STD	The standard drive as set at the factory provides the selected CFM and temperature rise when installed with the external static pressure listed.
		STD	The standard drive will provide the selected CFM and temperature rise when installed with the total external static pressure listed but REQUIRES field-adjustment of the blower speed (CFM). Follow the "Blower Speed Adjustment" instructions in the heater installation manual.
N.R.	The temperature rise and static pressure combination is not recommended for the heater size.		

NOTES: (1) Sizes 50-100 do not show a standard drive because they have a standard direct drive blower motor.

(2) If the unit includes an optional blower cabinet, see the chart below for pressure drop information.

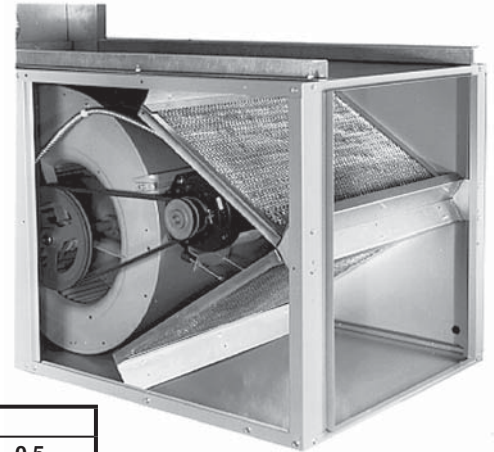
BLOWER CHARTS

MODEL B WITH BELT DRIVE MOTOR continued

Temp. Rise	Heater Size																			
	25		50		75		100		125		165		200		250		300		400	
	Filter Thickness																			
	1"	2"	1"	2"	1"	2"	1"	2"	1"	2"	1"	2"	1"	2"	1"	2"	1"	2"	1"	2"
75°F	0.004	0.007	0.01	0.015	0.018	0.032	0.032	0.055	0.05	0.075	0.018	0.03	0.026	0.045	0.017	0.028	0.024	0.038	0.026	0.045
70°F	0.004	0.008	0.01	0.018	0.023	0.034	0.036	0.058	0.055	0.1	0.021	0.035	0.03	0.052	0.019	0.031	0.027	0.045	0.03	0.052
65°F	0.005	0.009	0.011	0.019	0.024	0.04	0.041	0.069	0.065	0.12	0.024	0.04	0.035	0.06	0.023	0.036	0.03	0.053	0.035	0.06
60°F	0.005	0.009	0.014	0.023	0.028	0.047	0.052	0.087	0.085	0.14	0.028	0.047	0.041	0.07	0.025	0.042	0.035	0.061	0.041	0.07
55°F	0.006	0.01	0.016	0.027	0.034	0.057	0.065	0.105	0.1	0.16	0.033	0.057	0.047	0.08	0.03	0.051	0.041	0.072	0.047	0.08
50°F	0.006	0.01	0.018	0.029	0.041	0.069	0.07	0.12	0.13	N.R.	0.04	0.068	0.057	0.095	0.035	0.062	0.04	0.085	0.057	0.095
45°F	0.007	0.011	0.024	0.04	0.05	0.086	0.092	0.16	0.18	N.R.	0.049	0.082	0.07	0.14	0.043	0.074	0.065	0.12	0.07	0.14

OPTIONAL BLOWER/FILTER CABINET FOR MODELS B

- Shipped separately for field assembly and installation
- Filter Rack (less filters)
- Filter Rack with 1" or 2" Permanent Filters



Model B	Temp Rise °F	CFM	Total External Static Pressure ("w.c.)													
			0		0.1		0.2		0.3		0.4		0.5			
			Drive	HP	Drive	HP	Drive	HP	Drive	HP	Drive	HP	Drive	HP	Drive	HP
Size 125	75	1235	AM4	1/3	AM4	1/3	STD	1/3	STD	1/3	AM7	1/3	AM8	1/3		
	70	1320	STD	1/3	STD	1/3	STD	1/3	AM7	1/3	AM8	1/3	AM9	1/2		
	60	1540	STD	1/3	STD	1/3	AM7	1/3	AM8	1/2	AM9	1/2	AM10	1/2		
	50	1850	AM7	1/2	AM8	1/2	AM9	1/2	AM9	1/2	AM10	1/2	AM11	3/4		
	45	2055	AM8	1/2	AM9	3/4	AM10	3/4	AM11	3/4	AM11	3/4	AM13	3/4		
Size 165	75	1630	AM3	1/2	STD	1/2	STD	1/2	STD	1/2	AM7	1/2	AM8	1/2		
	70	1750	AM3	1/2	STD	1/2	STD	1/2	AM6	1/2	AM7	1/2	AM8	1/2		
	60	2040	STD	1/2	STD	1/2	AM7	1/2	AM7	3/4	AM8	3/4	AM8	3/4		
	50	2440	AM7	3/4	AM7	3/4	AM8	3/4	AM9	3/4	AM10	1	AM11	1		
	45	2715	AM9	1	AM9	1	AM10	1	AM11	1	AM11	1	AM12	1		
Size 200	75	1975	STD	1/2	STD	1/2	STD	1/2	STD	1/2	AM4	1/2	AM5	3/4		
	70	2115	STD	1/2	STD	1/2	STD	1/2	STD	1/2	AM4	1/2	AM5	3/4		
	60	2470	STD	1/2	STD	1/2	AM3	1/2	AM4	3/4	AM5	3/4	AM6	3/4		
	50	2960	AM3	3/4	AM4	3/4	AM4	3/4	AM5	1	AM6	1	AM6	1		
	45	3290	AM4	1	AM4	1	AM5	1	AM6	1	AM6	1	AM7	1 1/2		
Size 250	75	2470	AM2	1/2	AM2	1/2	STD	3/4	STD	3/4	AM5	3/4	AM5	3/4		
	70	2645	AM2	1/2	STD	3/4	STD	3/4	STD	3/4	AM5	3/4	AM6	3/4		
	60	3085	STD	3/4	STD	3/4	AM5	3/4	AM5	1	AM6	1	AM7	1		
	50	3700	AM5	1	AM5	1 1/2	AM6	1 1/2	AM7	1 1/2	AM7	1 1/2	AM8	1 1/2		
	45	4115	AM6	1 1/2	AM7	1 1/2	AM7	2	AM8	2	AM8	2	AM8	2		
Size 300	75	2960	STD	1	STD	1	STD	1	STD	1	AM6	1	AM6	1		
	70	3170	STD	1	STD	1	STD	1	STD	1	AM6	1	AM7	1 1/2		
	60	3700	STD	1	STD	1	AM6	1 1/2	AM7	1 1/2	AM7	1 1/2	AM8	1 1/2		
	50	4440	AM7	2	AM8	2	AM8	2	AM9	2	AM9	3	AM10	3		
	45	4935	AM9	3	AM9	3	AM9	3	AM10	3	AM11	3	AM11	3		
Size 400	75	3950	AM2	1 1/2	STD	1 1/2	STD	1 1/2	STD	1 1/2	STD	1 1/2	AM6	1 1/2		
	70	4230	STD	1 1/2	STD	1 1/2	STD	1 1/2	STD	1 1/2	AM6	1 1/2	AM6	1 1/2		
	60	4935	STD	1 1/2	STD	1 1/2	STD	1 1/2	AM6	2	AM7	2	AM7	2		
	50	5925	AM7	3	AM8	3	AM8	3	AM9	3	AM9	3	AM9	3		
	45	6580	AM9	5	AM9	5	AM10	5	AM11	5	AM11	5	AM12	5		

(3) KEY TO DRIVE OPTIONS

AM1	401-450 RPM
AM2	451-500 RPM
AM3	501-550 RPM
AM4	551-600 RPM
AM5	601-650 RPM
AM6	651-700 RPM
AM7	701-750 RPM
AM8	751-800 RPM
AM9	801-850 RPM
AM10	851-900 RPM
AM11	901-950 RPM
AM12	951-1000 RPM
AM13	1001-1050 RPM
AM14	1051-1100 RPM
AM15	1101-1150 RPM
AM16	1151-1200 RPM
AM17	1201-1250 RPM

MOTOR FULL LOAD AMP TABLE

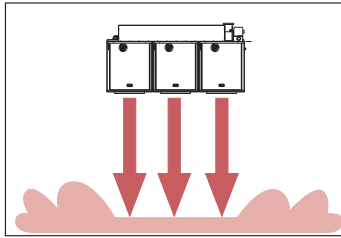
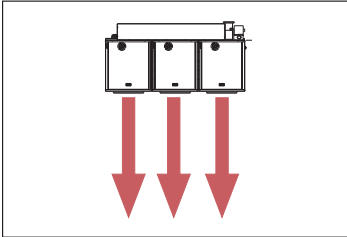
HP	Type	FLA	RPM	V	PH	HP	Type	FLA	RPM	V	PH	HP	Type	FLA	RPM	V	PH
0.25	Open	5.1	1750	120	1	0.75	Open	11	1750	120	1	1.5	TEFC	16.4	1750	120	1
		2.1	1750	208	1			6.3	1750	208	1			9.5	1750	208	1
		2.3	1750	230	1			5.5	1750	240	1			8.2	1750	230	1
		1.1	1750	208	3			2.9	1750	208	3			4.3	1750	208	3
		1.4	1750	230	3			2.6	1750	240	3			4.4	1750	230	3
		0.75	1750	460	3			1.3	1750	460	3			2.2	1750	460	3
0.25	TEFC	3.6	1750	120	1	0.75	TEFC	11	1750	120	1	2	Open	1.6	1750	575	3
		2.2	1750	208	1			5.4	1750	208	1			20.4	1750	120	1
		1.9	1750	230	1			5.5	1750	230	1			10	1750	208	1
		1.6	1750	208	3			2	1750	208	3			10.2	1750	230	1
		1.4	1750	230	3			2.2	1750	230	3			7	1750	208	3
		0.7	1750	460	3			1.1	1750	460	3			6.6	1750	230	3
0.33	Open	5.5	1750	120	1	1	Open	0.8	1750	575	3	2	TEFC	3.5	1750	460	3
		3.2	1750	208	1			13	1750	120	1			2.1	1750	575	3
		2.8	1750	230	1			7.5	1750	208	1			24	1750	120	1
		1.4	1750	208	3			6.5	1750	240	1			12	1750	230	1
		1.6	1750	230	3			3.7	1750	208	3			6.5	1750	208	3
		0.8	1750	460	3			3.2	1750	240	3			5.8	1750	230	3
0.33	TEFC	4.6	1750	120	1	1	TEFC	1.6	1750	460	3	3	Open	2.9	1750	460	3
		2.3	1750	208	1			1.1	1750	575	3			2.3	1750	575	3
		2.4	1750	230	1			13	1750	120	1			14	3600	208	1
		1.2	1750	208	3			6.5	1750	230	1			12.4	3600	230	1
		1.2	1750	230	3			3.3	1750	208	3			9	3600	208	3
		0.6	1750	460	3			3.4	1750	230	3			8.6	3600	230	3
0.5	Open	8.8	1750	120	1	1.5	Open	1.7	1750	460	3	3	TEFC	4.3	3600	460	3
		5.1	1750	208	1			1.4	1750	575	3			3.6	3600	575	3
		4.4	1750	230	1			15	1750	120	1			30	3600	120	1
		3	1750	208	3			8.3	1750	208	1			15	3600	230	1
		2.5	1750	230	3			7.5	1750	230	1			8.5	3600	208	3
		1	1750	460	3			5.6	1750	208	3			8.2	3600	230	3
0.5	TEFC	7	1750	120	1	1.5	Open	5	1750	230	3	3	TEFC	4.1	3600	460	3
		3.4	1750	208	1			2.7	1750	460	3			3	3600	575	3
		3.5	1750	230	1			1.6	1750	575	3						
		2.3	1750	208	3												
		2	1750	230	3												
		1	1750	460	3												
0.7	1750	575	3														

LDAP SERIES

THE INDOOR AIR ECONOMIZER FEATURE ON MODEL LDAP PROVIDES “FREE” HEAT.

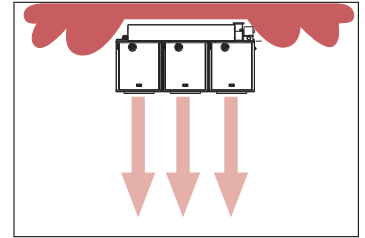
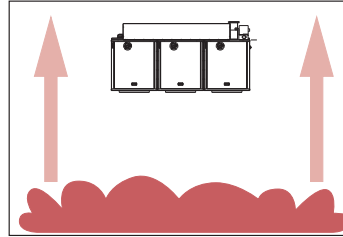
HERE’S HOW IT WORKS...

Step 1: Wall mounted thermostat calls for heat.



Step 2: Down discharge Model LDAP directs heating to the floor. As George Reznor used to say, “Because we live on the floor, not on the ceiling.”

Step 3: Thermostat setting is reached, shutting off heater. Heated air naturally rises.



Step 4: Instead of heat remaining at the ceiling or escaping through the roof, a monitor (separate from the wall mounted thermostat) on Model LDAP senses the buildup of heat at the ceiling. This monitor triggers the fans at a slower speed to destratify the air and send “free” heat back to the floor.

Another benefit of Model LDAP:

Using the fan(s) in the summer can improve working conditions by alleviating stagnant air conditions and creating a cooling effect for the occupants.

SUSPENDING THE HEATER

Ceiling Suspension

WARNINGS: Check the supporting structure to be used to verify that it has sufficient load carrying capacity to support the weight of the heater. Suspend the heater only from the threaded nut retainers or with a manufacturer provided kit. Do NOT suspend from the heater cabinet.

See dimensional drawings for hanger locations, and install the ½”-13 spring nuts in the strut that is attached to the top of the unit. Comply with the requirements shown below when using threaded rod. If ordered with swivel connectors for 1” pipe, Option CK10, attach the swivels to the spring nuts according to illustration shown below and suspend with 1” pipe.

Locate the hardware kit shipped with the heater. The kit contains spring nuts, hex nuts, “U”-shape fittings, and lock washers for suspending the heater. It also includes louvers and the compression springs needed to install them.

When the heater is lifted for suspension, support the bottom of the heater with the crate bottom. If the bottom is not supported, damage could occur. After hanging or mounting, verify that any screws used for holding shipping brackets were reinstalled in the cabinet.

WARNING: All heaters must be level for proper operation. Do not place or add additional weight to the suspended heater.

Wall Mounting

Guidelines for Wall Mounting Model LDAP Heaters

Mounting is the responsibility of the installer. Verify that the supporting structure has sufficient load-carrying capacity to support the weight.

Prior to installation, be sure that the method of support is in agreement with all local building codes. Check for service platform requirements.

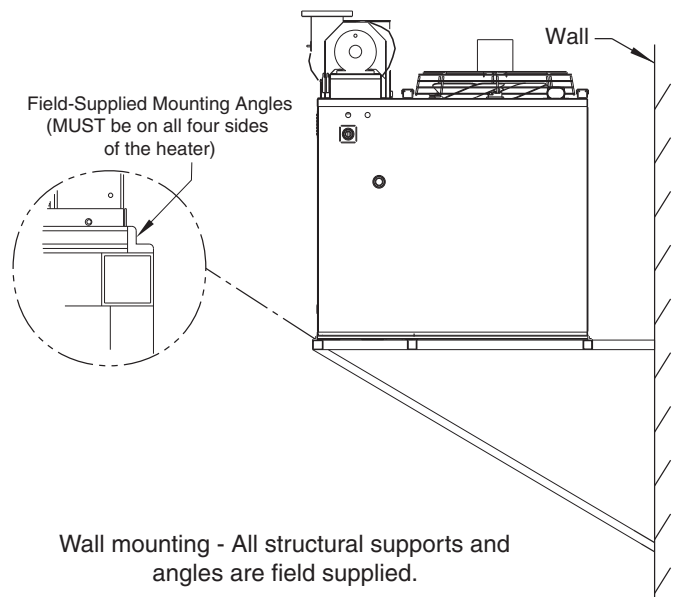
Maintain a minimum of 2” (51mm) clearance from the discharge air openings to structural supports. Additional clearance will be required if an optional nozzle is to be field installed.

Determining the need for installing vibration or noise isolation is the responsibility of the installer.

To prevent potential movement, field-supplied angles must be placed around the perimeter of the heater to anchor it to the structural supports.

Structural supports must be placed as shown to prevent damage to the heater.

All structural supports must be noncombustible materials.



Wall mounting - All structural supports and angles are field supplied.

OPTIONS AND ACCESSORIES

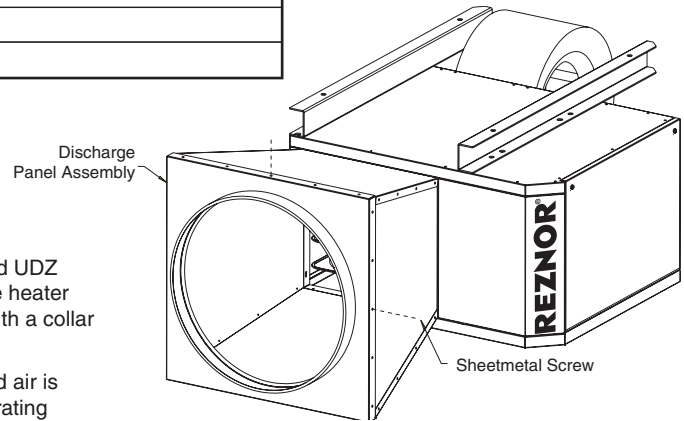
APPLY TO UNIT HEATER MODELS AS LISTED

Stepdown Transformers (Models F & B)								
Model	Unit Size							
	25	50	75	100	125-200	250	300	400
F (heater only)	.25	.25	.25	.50	.50	.50	.50	1.00
F with Field-installed Optional Venter	.25	.50	.50	.50	.75	.50	.75	1.00
B (heater only)	.50	.50	1.0	1.0				
B with Field-installed Optional Venter	.50	.50	1.0	1.0				

OPTIONAL POLYTUBE OUTLET ADAPTER - APPLY TO MODELS UDX/UDZ

The optional polytube adapter is designed to adapt suspended Model UDX and UDZ blower type unit heaters for use with polytube ductwork. Directly in line with the heater discharge, the adapter is installed on the front of the heater and is equipped with a collar for attaching the field-supplied polytube.

The most common application of polytube ductwork for distribution of tempered air is in greenhouses. Polytubes are also used in industrial buildings to improve operating efficiency by recovering stratified air and reducing the need for complete area heating.



Size	CFM at 60°F Temp Rise	Polytube Diameter (inches)	Approximate Free Area (square inches)	Suggested Hole Sizes and Locations					
				Holes	Length of Polytube				
					50 Ft	75 Ft	100 Ft	125 Ft	150 Ft
75*	960	18	115	Quantity	75	75	75	75	75
				Diameter (inches)	1	1	1	1	1
				Spacing (inches)	8	12	16	20	24
100*	1345	18	160	Quantity	48	48	48	48	48
				Diameter (inches)	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
				Spacing (inches)	12 1/2	18 3/4	25	31 1/4	37 1/2
125*	1540	18	185	Quantity	50	50	50	50	50
				Diameter (inches)	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
				Spacing (inches)	12	18	24	30	36
150	1920	24	230	Quantity	40	40	40	40	45
				Diameter (inches)	2	2	2	2	1 7/8
				Spacing (inches)	15	22 1/2	30	37 1/2	40
175	2240	24	270	Quantity	50	50	80	80	80
				Diameter (inches)	1 7/8	1 7/8	1 1/2	1 1/2	1 1/2
				Spacing (inches)	12	18	15	18 3/4	22 1/2
200	2560	24	300	Quantity	50	50	50	50	50
				Diameter (inches)	2	2	2	2	2
				Spacing (inches)	12	18	24	30	36
225	2880	24	340	Quantity	42	42	42	42	42
				Diameter (inches)	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
				Spacing (inches)	14	21	28	35	42
250	3200	24	380	Quantity	50	50	50	60	60
				Diameter (inches)	2 1/4	2 1/4	2 1/4	2	2
				Spacing (inches)	12	18	24	25	30
300	3840	24	460	Quantity	60	60	75	75	75
				Diameter (inches)	2 1/4	2 1/4	2	2	2
				Spacing (inches)	10	15	16	20	24
350	4480	24	540	Quantity	50	50	50	50	50
				Diameter (inches)	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
				Spacing (inches)	12	18	24	30	36
400	5120	24	600	Quantity	60	60	75	75	75
				Diameter (inches)	2 1/2	2 1/2	2 1/4	2 1/4	2 1/4
				Spacing (inches)	10	15	16	20	24

* Required direct drive blower speed.

Size	Speed
75	Low
100	Low
125	Medium

OPTIONS AND ACCESSORIES

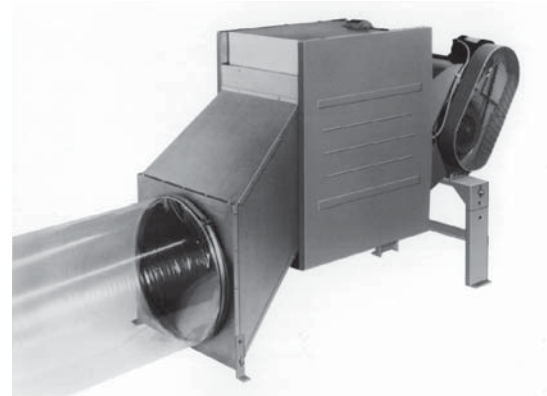
APPLY TO UNIT HEATER MODELS AS LISTED

OPTIONAL POLYTUBE OUTLET ADAPTER - APPLY TO MODEL B

The optional outlet nozzle is designed to allow the attachment of polytube-type air distribution for use in greenhouse and industrial buildings. Outlet on suspended heater may be either above, below, or directly in line with the heater discharge. A kit is available to floor mount the heater with outlet below the heater discharge (see illustration). Model B standard blower and drive are designed to handle rated CFM at .25 w.c. ESP, and will inflate a 24" tube up to 150 ft. long. See table for proper free area, minimum number of holes and sizes. Units may be used for greenhouse heating and ventilating or in industrial applications requiring high mounting heights or spot heating by means of polytube distribution.

The total open or free area of the polytube is important. Polytube suppliers have a great deal of flexibility in placement and sizing of holes. Too small of a free area will cause overheating. Excessive open area may not permit the tube to inflate. See the table below for a guide in hole size and location. Spacing and hole size may be varied, but free area must not be less than shown for the heater being installed.

Greenhouse Application - For greenhouse use, the number of units required is generally based on an airflow volume of 1-1/2 to 2 CFM per square foot of house floor area. Depending on the heat loss requirements of the house type, location, and desired temperature above ambient, the ventilation requirements determine the number of distribution systems required and the heat loss determines the BTUH heater size required. As a general rule, a single system will serve a maximum house width of 30 ft. and a length of 150 ft.



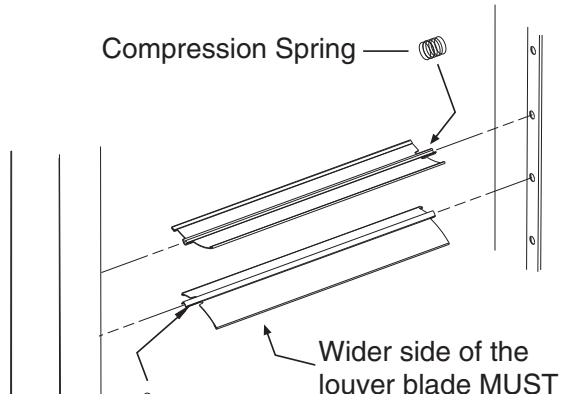
Photograph shows polytube outlet. The outlet nozzle requires field assembly and installation on the standard unit in place of the top front panel and louvers. The heater manufacturer does not supply tubing. Tubing can be ordered from a local greenhouse supply distributor. Two such suppliers are FOF Products, Inc. P. O. Box E, 1505 Racine Street, Delevan, WI 53115 and ACME Engineering Co., P.O. Box 978, Muskogee, OK 74402.

Size	CFM at .25" ESP	Polytube Diameter (inches)	Minimum Free Area (sq. in.)	Suggested Hole Sizes and Locations					
				Holes	Length of Polytube				
					50 Ft	75 Ft	100 Ft	125 Ft	150 Ft
75	925	18	110	Number	37 pairs	75 pairs	75 pairs	--	--
				Diameter	1-1/2"	1"	1"	--	--
				Spacing	16"	12"	16"	--	--
100	1235	18	145	Number	50 pairs	50 pairs	100 pairs	94 pairs	--
				Diameter	1-1/2"	1-1/2"	1"	1"	--
				Spacing	12"	18"	12"	16"	--
125	1540	18	185	Number	40 pairs	60 pairs	60 pairs	125 pairs	--
				Diameter	1-7/8"	1-1/2"	1-1/2"	1"	--
				Spacing	15"	15"	20"	12"	--
130	1600	24	190	Number	40 pairs	60 pairs	60 pairs	125 pairs	--
				Diameter	1-7/8"	1-1/2"	1-1/2"	1"	--
				Spacing	15"	15"	20"	12"	--
165	2035	24	240	Number	50 pairs	50 pairs	75 pairs	75 pairs	75 pairs
				Diameter	1-7/8"	1-7/8"	1-1/2"	1-1/2"	1-1/2"
				Spacing	12"	18"	16"	20"	24"
200	2465	24	300	Number	42 pairs	42 pairs	60 pairs	60 pairs	100 pairs
				Diameter	2-1/4"	2-1/4"	1-7/8"	1-7/8"	1-1/2"
				Spacing	14"	21"	20"	25"	18"
250	3085	24	360	Number	40 pairs	60 pairs	60 pairs	60 pairs	60 pairs
				Diameter	2-1/2"	2"	2"	2"	2"
				Spacing	15"	15"	20"	25"	30"
300	3700	24	425	Number	75 pairs	75 pairs	75 pairs	75 pairs	75 pairs
				Diameter	2"	2"	2"	2"	2"
				Spacing	9"	12"	16"	20"	24"
400	4935	24	550	Number	60 pairs	60 pairs	60 pairs	100 pairs	100 pairs
				Diameter	2-1/2"	2-1/2"	2-1/2"	1-7/8"	1-7/8"
				Spacing	10"	15"	20"	15"	18"

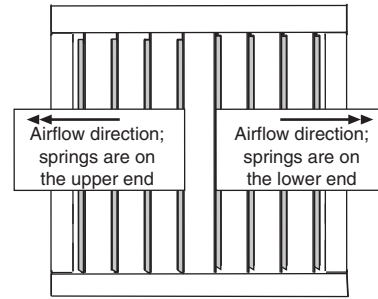
CAUTION: To prevent overheating of the blower unit heater and to ensure correct air distribution, the minimum hole area must be provided as shown in the table for each size. If more holes are used, do not exceed 1.25 times the minimum area shown to ensure proper tube inflation.

Conversion Table (Diameter to Area)	
Diameter of the Hole (inches)	Area of the Hole (square inches)
2-1/2	4.91
2-1/4	3.98
2	3.14
1-7/8	2.76
1-1/2	1.76
1	0.785

MODEL LDAP DISCHARGE AIR OPTIONS



Airflow direction depends on how the louvers are installed



INSTALLING LOUVERS

After the unit is suspended/mounted, install the air directional louvers or optional nozzle. If an optional nozzle is being installed, follow the instructions included with the nozzle. If a nozzle is not being used, install the louvers in the discharge opening(s).

Louvers and springs are in the hardware kit shipped with the heater.

Before actually installing the louvers, note the louver curve and determine how the louvers should be positioned to provide the optimal throw pattern. Opening is square so louvers may be installed in any direction. Louvers may be installed with the curve all the same direction (either way) or the right half one way and left the other as illustrated above.

LOUVER INSTALLATION INSTRUCTIONS

- 1) With the wider section of the louver facing out of the heater, place one of the compression springs over the tab on the notched end of a louver. The end of the louver with the spring will fit in any direction in the square opening. How the louver turns depends on which end of the louver is inserted first.
- 2) Depending on the throw pattern selected, push the louver tab with the spring into a hole in the discharge opening and insert the louver tab on the other end into the corresponding hole on the opposite side.
- 3) Airflow direction depends on how the louvers are installed (see illustration above).

FOUR-WAY DISCHARGE LOUVERS (Option CD32)

Option CD32 consists of additional louvers that are installed perpendicular to the standard individually adjustable louvers. By installing the optional perpendicular louvers, the two sets of louvers can be adjusted to direct airflow in any of the four directions, enabling the installer to select and increase or decrease the coverage area.

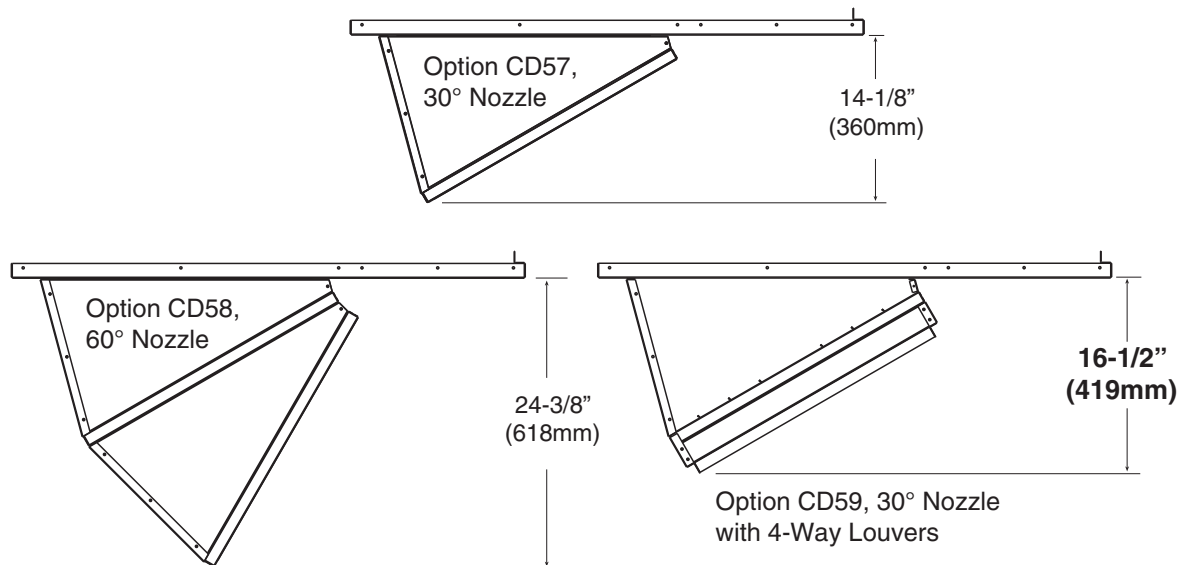
MULTIPLE POSITION DISCHARGE NOZZLE

Option CD57 is a 30° angle discharge nozzle. Option CD58 is a 60° angle discharge nozzle. Option CD59 is a 30° angle discharge nozzle with 4-way louvers. A nozzle may be installed at each discharge air opening in any direction.

NOTE: Do not install 4-way louvers with a 60° nozzle.

Nozzles should be attached after the unit is suspended. Follow the installation instructions in the nozzle package.

Standard louvers are installed in the nozzle opening as shown in the photo on the left.



Option CD58,
60° Discharge Nozzle



REZNOR® SEPARATED COMBUSTION SYSTEMS

Following is an overall description of Separated Combustion Systems as it relates to Models UDZ and UBZ. For more specific separated combustion venting information, especially as it relates to Model UEZ, please see the appropriate installation manual.

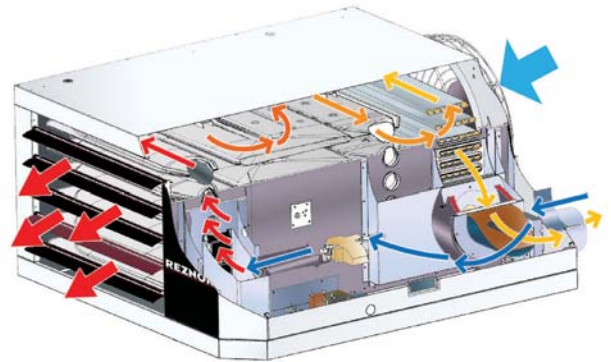
The manufacturer of Reznor heating equipment, for years, has pioneered in separated combustion system technology, eliminating "open flame" combustion problems. This has resulted in a complete line of Reznor products using the separated combustion principle-

- air for combustion is mechanically induced from outside the building, preventing dirt, lint, dust or other contaminants in the indoor atmosphere from entering the burner and combustion zone of the furnace,
- the airflow is metered to provide optimum and efficient combustion that is unaffected by negative building pressure or wind,
- after combustion, the air is exhausted back to the outdoor atmosphere.

Reznor separated combustion products provide all of the benefits while requiring only one building penetration. See the venting illustrations below.

Use only approved vent terminals. No other venting arrangements are approved or certified for use with Models UDZ, UBZ or UEZ heaters. Either the horizontal vent/combustion air terminal kit (Option CC6 or Option CC14) or the vertical vent/combustion air terminal kit (Option CC2) is required.

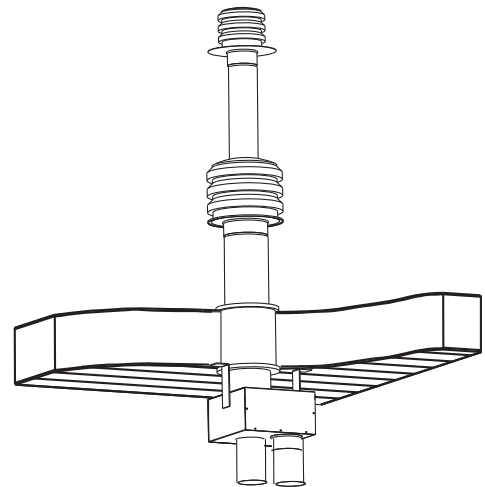
Refer to Venting Installation Manual Form I-UBX-UDX-UDX-UDZ for Models UBX & UDX; Form I-UBX-UDX-UDX-UDZ for Models UBZ & UDZ; Form I-UEZ for Model UEZ. Or contact your Reznor Representative at 800-695-1901 for more detailed information.



VERTICAL VENTING OF SEPARATED COMBUSTION UNIT THROUGH ROOF

- See the illustration to the right for a typical installation of one vertical vent terminal and concentric adapter. If vertical vent (Option CC2) is selected, a vertical vent terminal/combustion-air inlet assembly is provided.

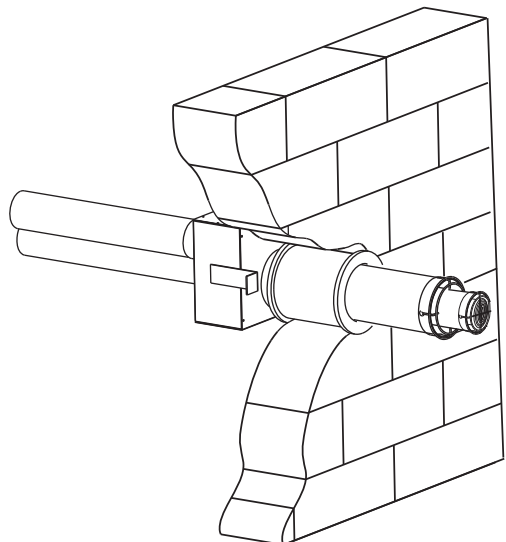
NOTE: Illustration for typical installation example only. Vent terminals may vary based on heater size and model.



HORIZONTAL VENTING OF SEPARATED COMBUSTION UNIT THROUGH WALL

- See the illustration to the right for a typical installation of a single horizontal vent terminal and concentric adapter. When Option CC6 is ordered, one horizontal vent terminal/combustion air inlet assembly is provided.

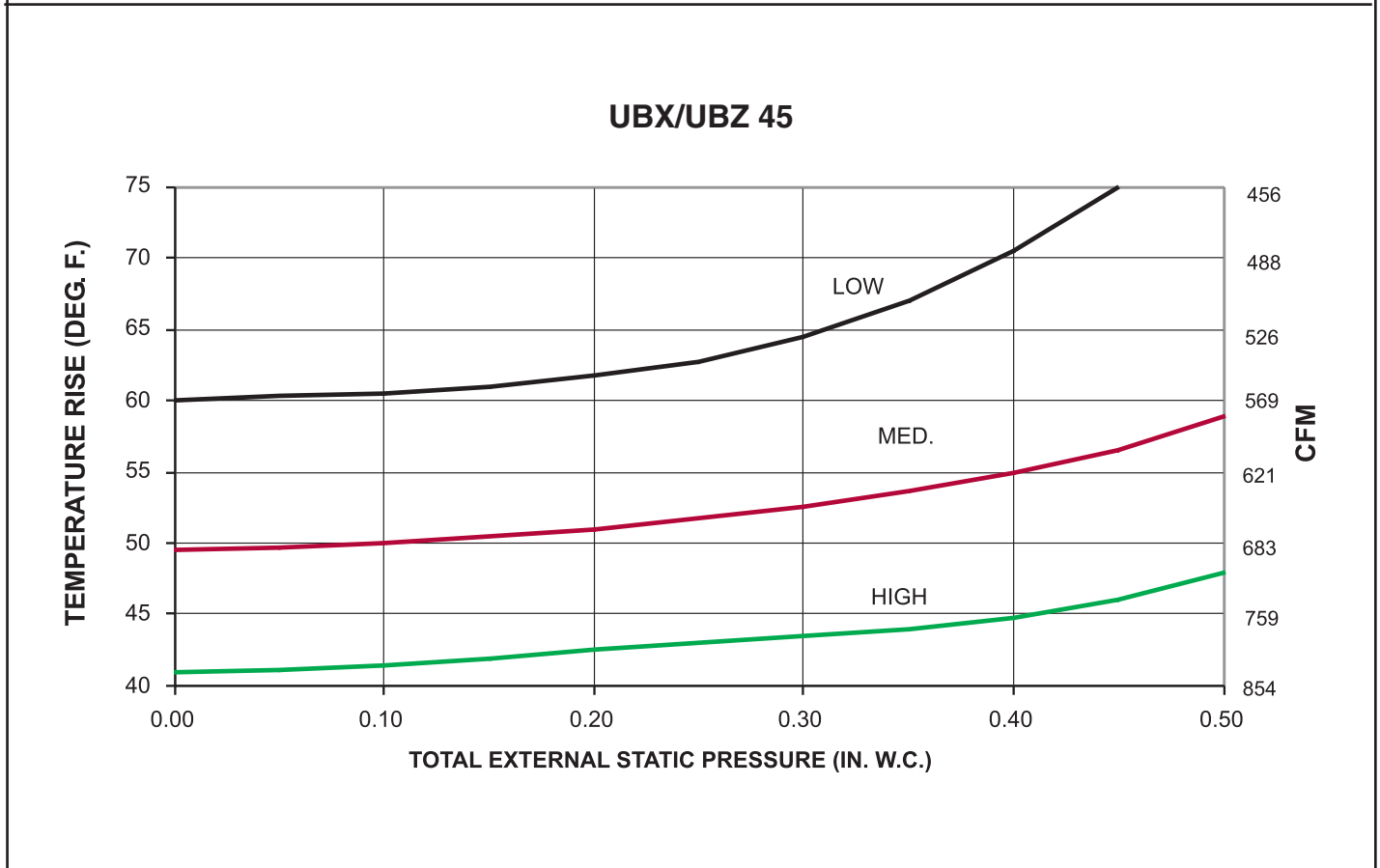
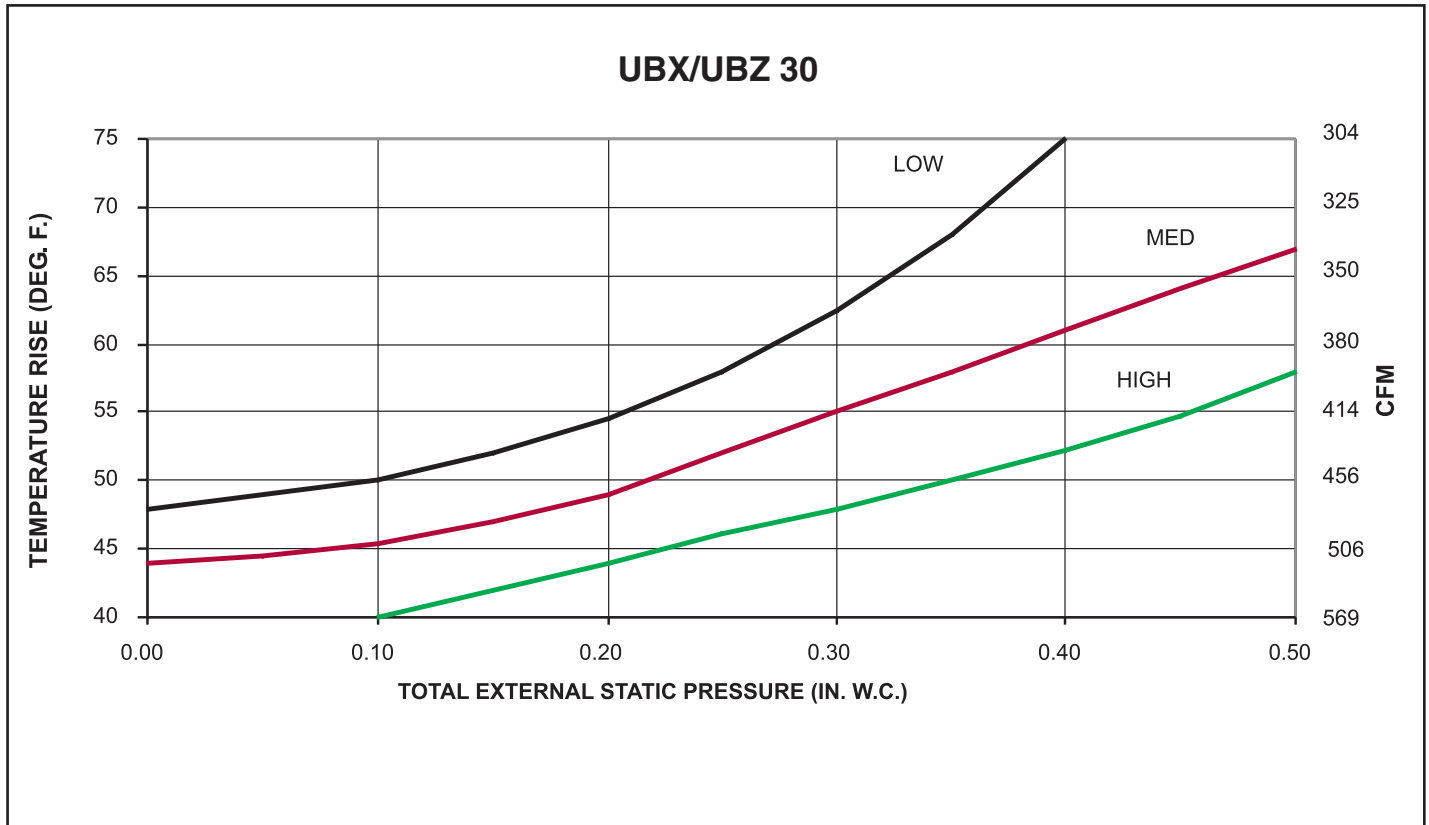
NOTE: Illustration for typical installation example only. Vent terminals may vary based on heater size and model.



For installations where dirt, dust, and other air borne contamination is present in the indoor environment, it is recommended to use separated combustion units (UDZ, UBZ). These models use air from outside the space for combustion. This will help reduce the build up of contaminants on the burner which would affect the combustion process. Refer to the installation manuals for recommended frequency of maintenance and cleaning.

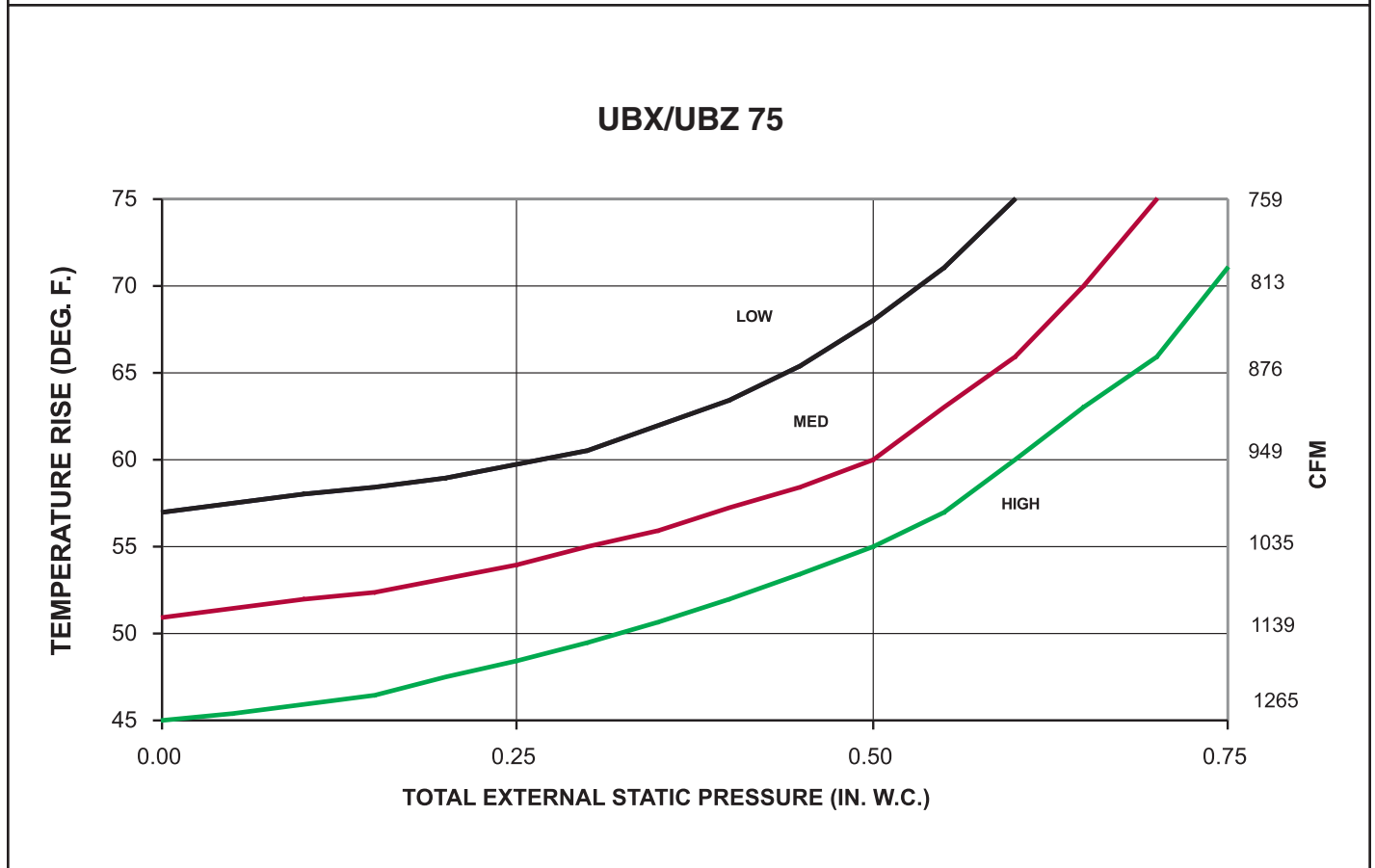
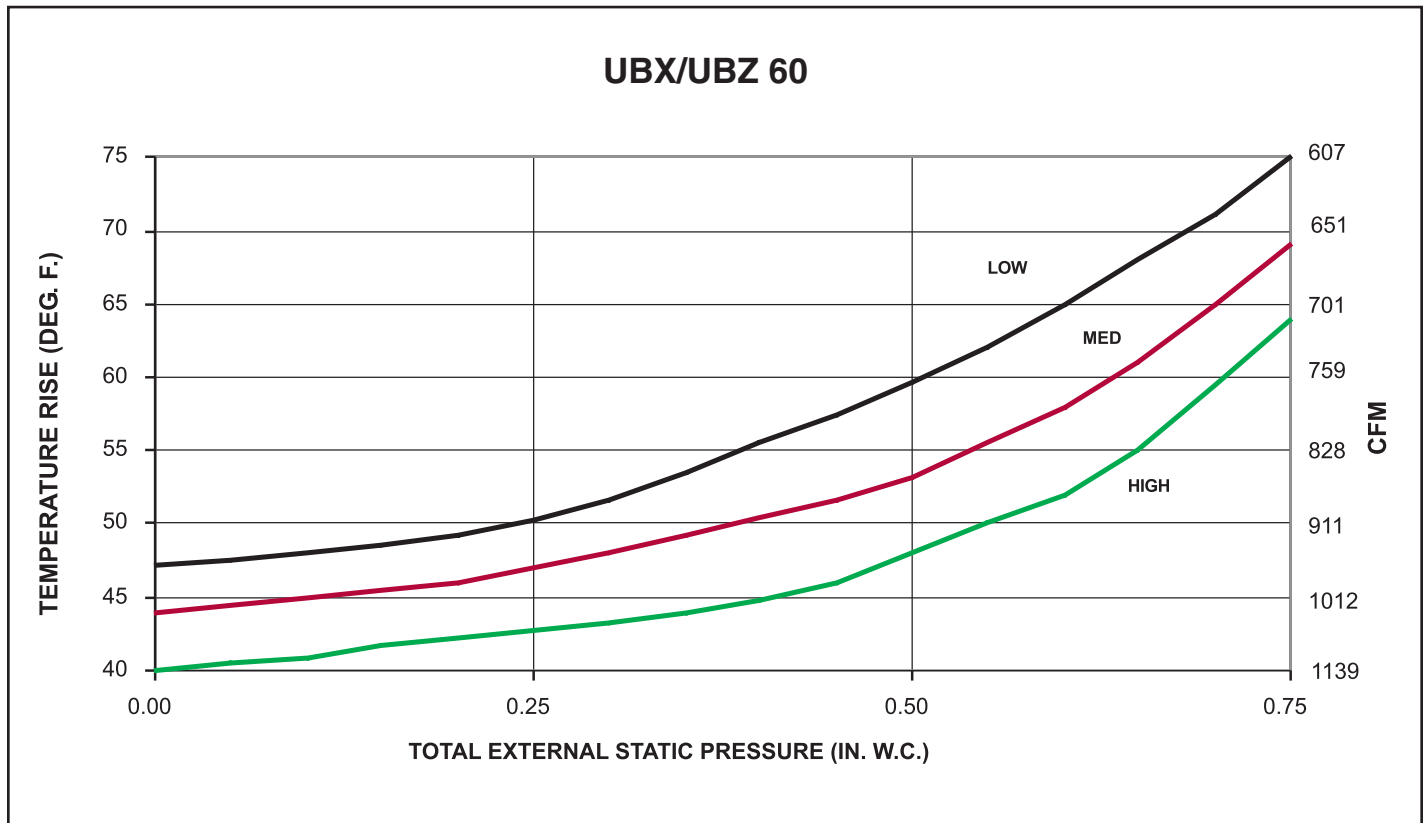
BLOWER CHARTS - MODELS UBX AND UBZ

BLOWER CURVES FOR SIZES 30 - 45 (DIRECT DRIVE BLOWER MOTORS)



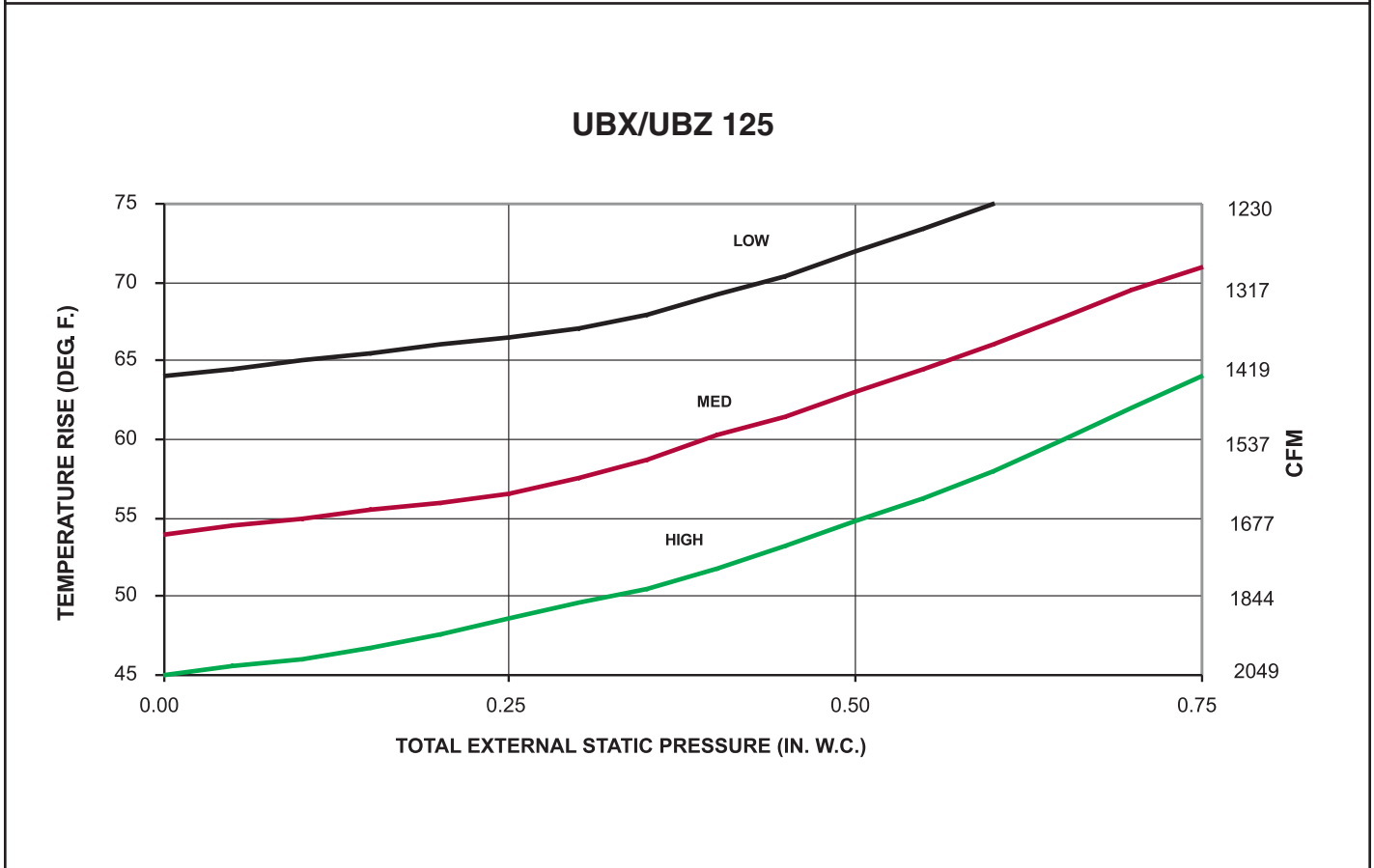
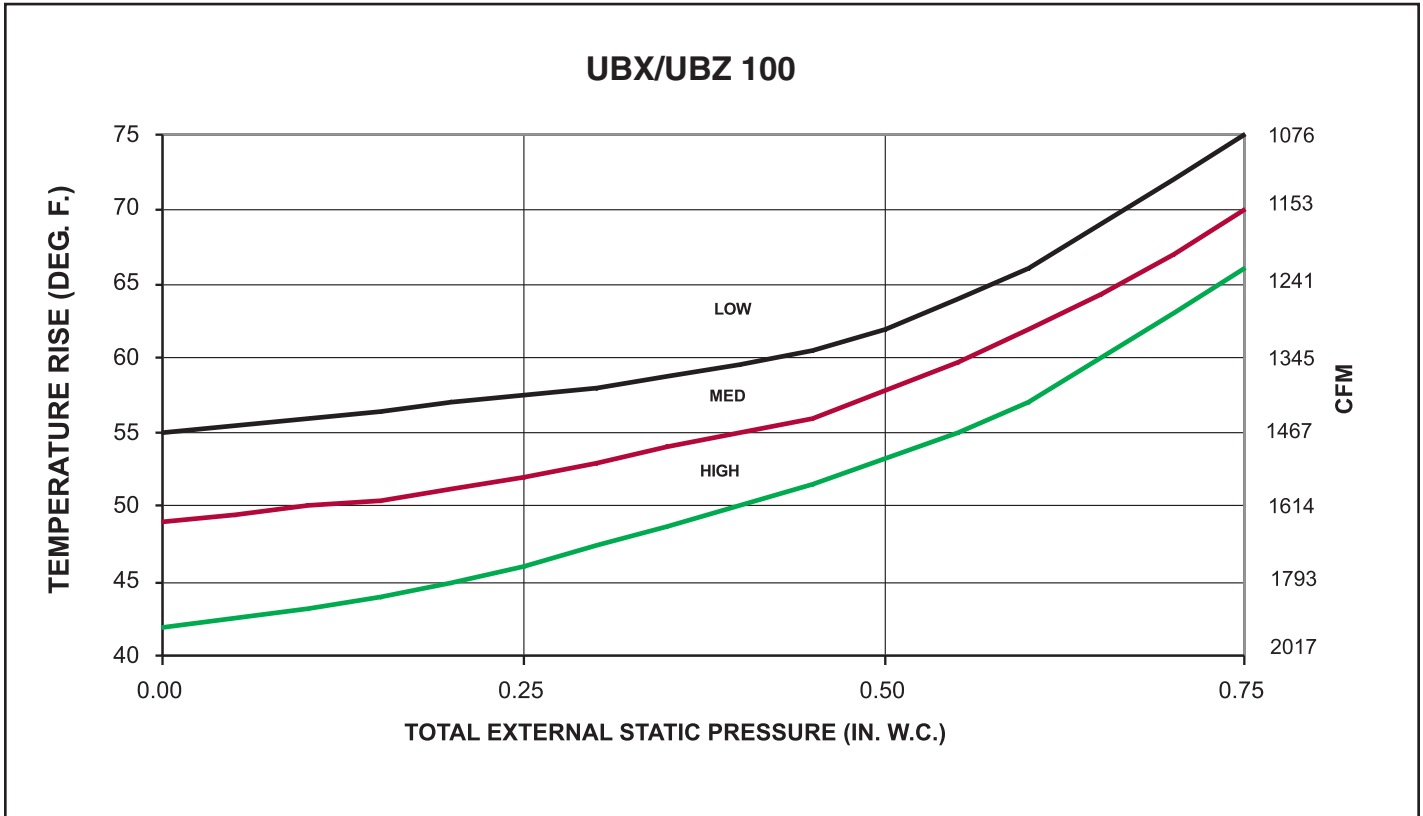
BLOWER CHARTS - MODELS UBX AND UBZ

BLOWER CURVES FOR SIZES 60 - 75 (DIRECT DRIVE BLOWER MOTORS)



BLOWER CHARTS - MODELS UBX AND UBZ

BLOWER CURVES FOR SIZES 100 - 125 (DIRECT DRIVE BLOWER MOTORS)



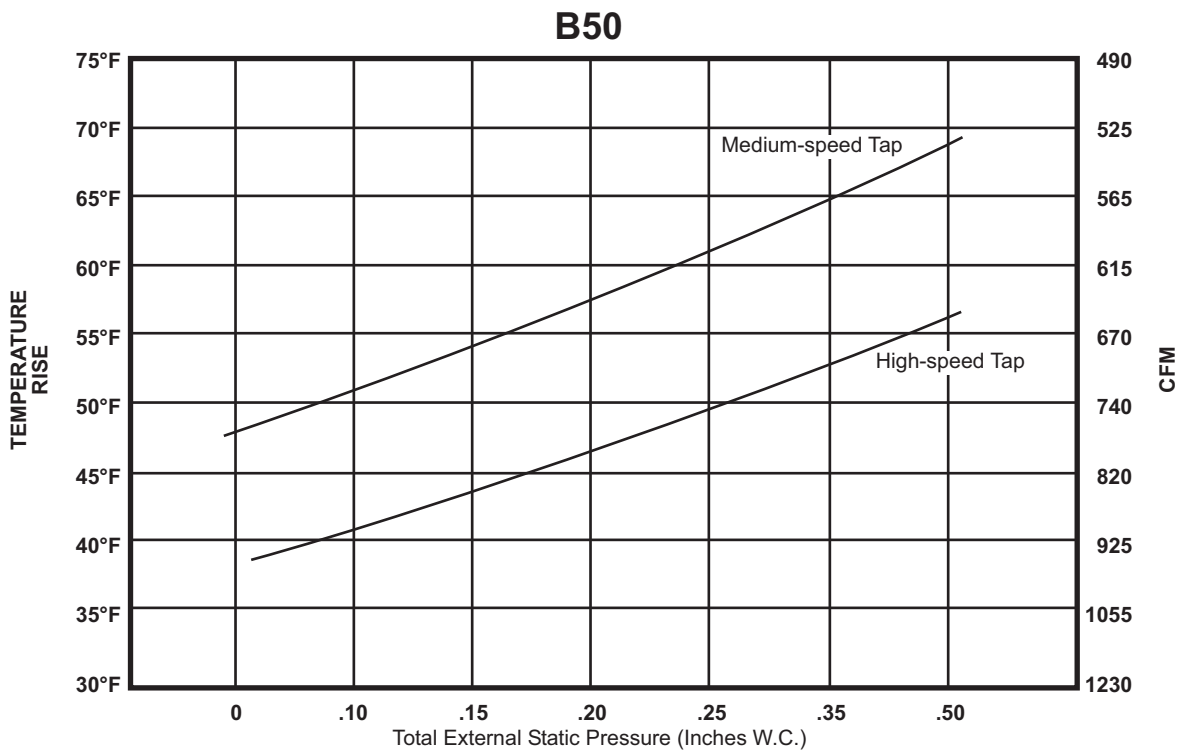
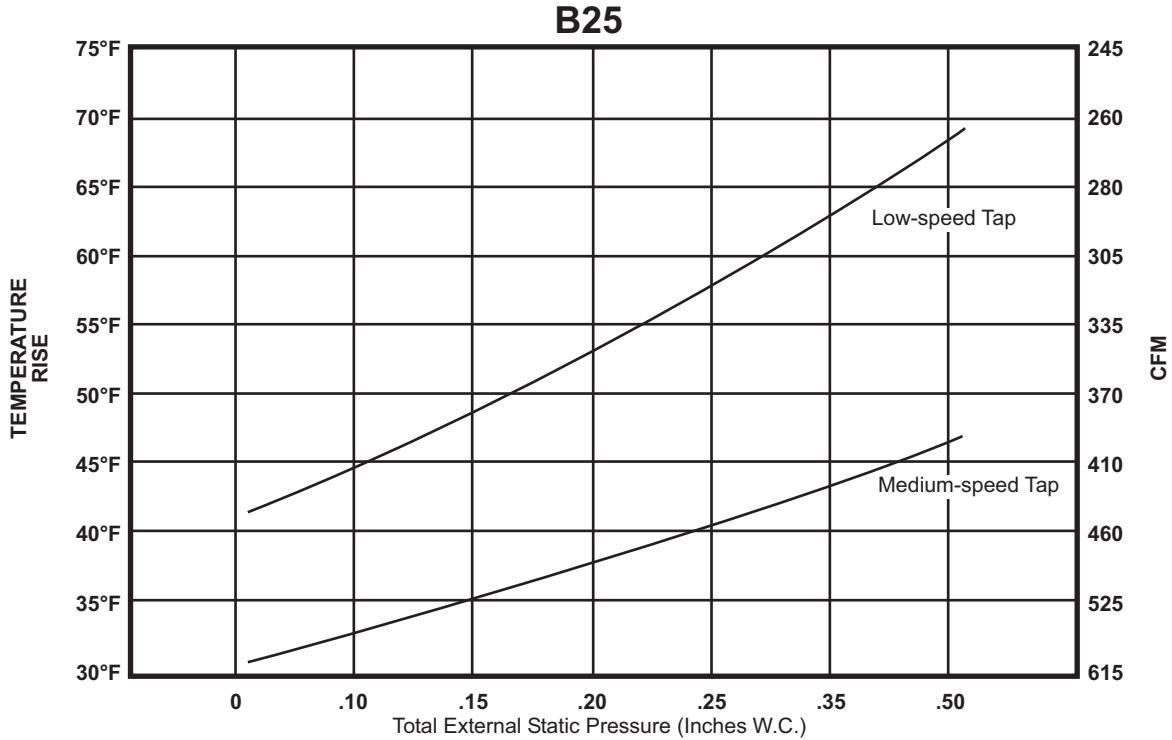
BLOWER CURVES

MODEL B WITH DIRECT DRIVE MOTOR

The blower curves for Models B (Sizes 25, 50, 75 and 100) with direct drive motors indicate the temperature rise available for each size of heater at a given total external static pressure. These units are designed and certified for total external static pressures up to .5" w.c. and temperature rises from 45°-75°F.

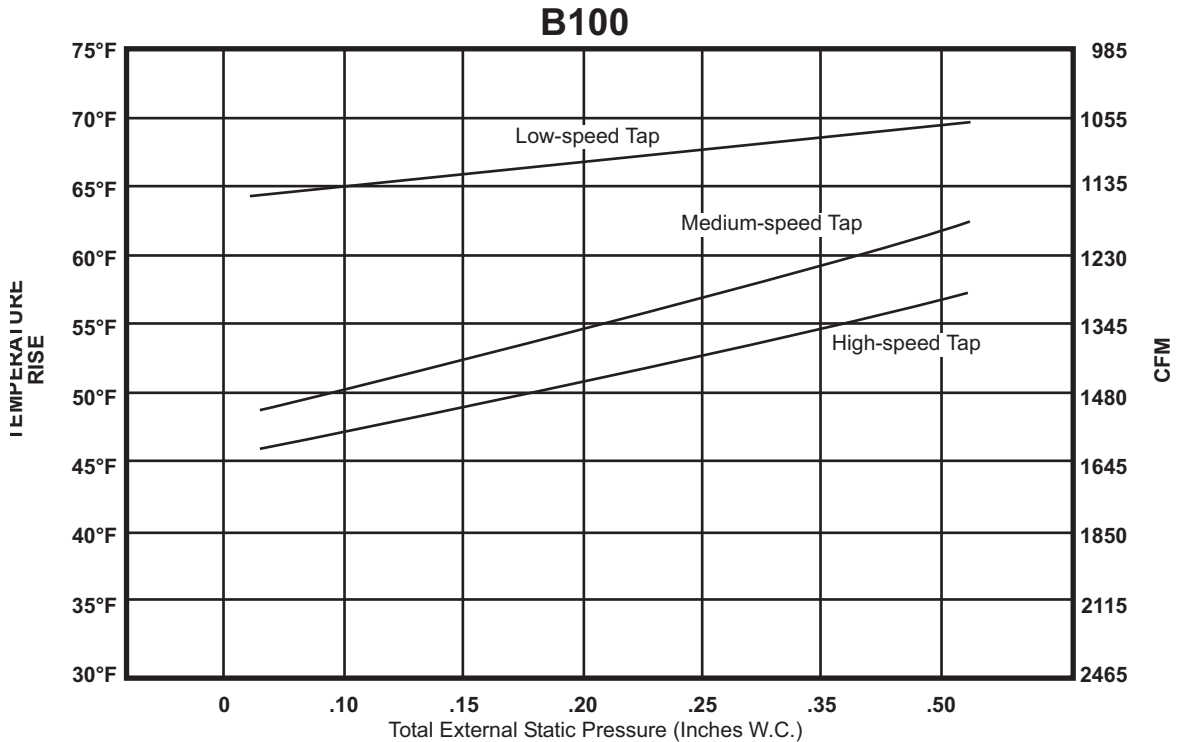
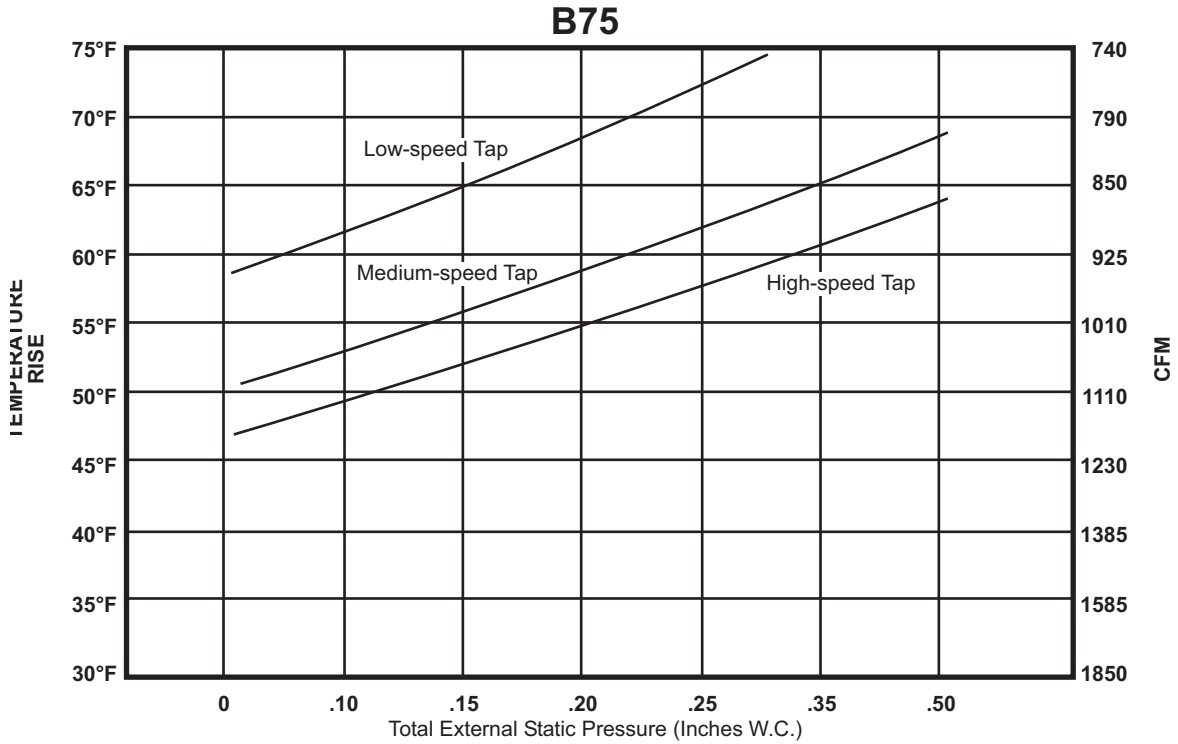
The direct drive motors are equipped with multispeed taps for speed adjustment as indicated on the curve charts. Models 25 and 75 are factory-wired to the medium speed tap; Models 50 and 100 are factory-wired to the high-speed tap.

NOTE: If the heater includes a blower cabinet, refer to appropriate pressure drop chart.



BLOWER CURVES

APPLY TO MODELS B WITH DIRECT-DRIVE MOTOR





**For more information on Reznor HVAC Equipment,
contact your local Reznor Representative by
calling 800-695-1901.**

**Or, find us on the internet at
ReznorHVAC.com**

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