

MATRIX



HIGH EFFICIENCY GAS-FIRED PROPELLER UNIT HEATER

The Matrix high efficiency condensing unit heater is the latest in Sterling HVAC's successful unit heater offering and features the ultimate combination of high performance and durability in a cost-conscious package.

Boasting a +93% thermal efficiency rating, Matrix is the perfect solution for today's energy-efficient light commercial and commercial applications. Additionally, unit sizes 50-150 MBH (14.6-117.2 kW) are certified for residential use as a utility heater.

Built not only for performance, Matrix utilizes a unique corrosion resistant ZAM treated cabinet making it the most durable piece of equipment available today, even in the harshest of environments. Matrix is not only perfect for traditional applications including loading docks, garages, and warehouses but it is ideal for more corrosive environments like greenhouses and agricultural buildings.

The design of Matrix allows for simplified start-up using a standard manometer without the need for additional tools. Other ease of service features include an external diagnostic LED and units being ready for either standard or separate combustion straight out of the box.

Matrix uses an exclusive tri-metal stainless steel heat exchanger maximizing heat transfer for class-leading operating efficiencies. These high efficiency unit heaters help minimize the carbon footprint through reduced fuel usage and low emissions while providing significant cost-savings each heating season.

APPLICATION FLEXIBILITY

- Separated or Standard Combustion All-In-One Design
- Corrosion Resistant ZAM Cabinetry
- PVC/CPVC Vent Compatible
- Multiple Voltage Configurations
- OSHA Fan Guards
- Condensate Float Switch and Trap Standard
- Optional Condensate Pump and Condensate Neutralizer
- Optional Concentric Vent Kits

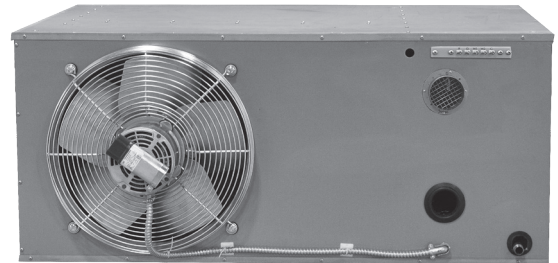
TRI-METAL HYBRID HEAT EXCHANGER

- +93% Efficiency at Full Input
- Brass and Aluminum Fins for Improved Heat Transfer
- All Stainless Steel Tubes for Enhanced Corrosion Protection
- Stainless Steel Flue Collector
- In-Shot Burners

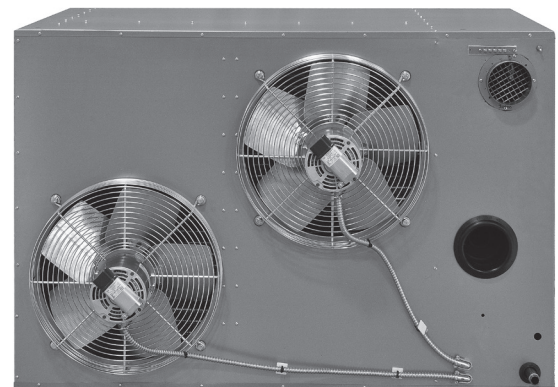
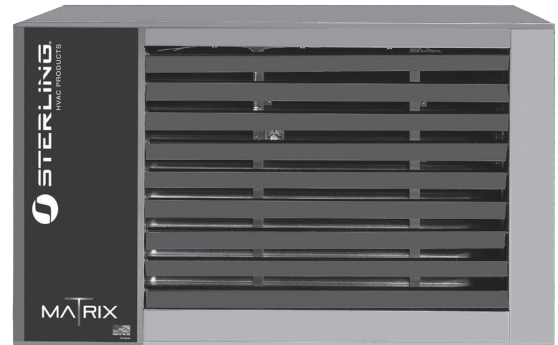
STANDARD FEATURES

- Available in 8 sizes 50-400 MBH (14.6-117.2 kW)
- 10-Year Heat Exchanger, Burner, and Flue Collector Warranty
- Single Stage Gas Control
- Direct Spark Ignition System
- Power Venter
- External LED Diagnostic Light
- Open Drip Proof Motor
- Right Side Burner Access
- Four-Point Suspension
- Natural or Propane (LP) Gas

100 MBH



400 MBH



STERLING

HVAC PRODUCTS

260 North Elm St., Westfield, MA 01085

(413) 564-5540

www.sterlinghvac.com

PROJECT: _____

UNIT TAG: _____



STERLING MATRIX GAS-FIRED PROPELLER UNIT HEATER



Unit Capacity (MBH)		50	100	150	200	250	300	350	400
PERFORMANCE DATA†									
Input Maximum	BTU/Hr. (kW)	50,000 (14.6)	100,000 (29.3)	150,000 (43.9)	200,000 (58.6)	250,000 (73.2)	300,000 (87.9)	350,000 (102.5)	400,000 (117.2)
Output -	BTU/Hr. (kW)	47,900 (14.0)	96,000 (28.1)	145,350 (42.6)	191,200 (56.0)	242,500 (71.1)	282,600 (82.8)	327,600 (96.0)	372,000 (109.0)
Thermal Efficiency	(%)	95.8	96.0	96.9	95.6	97.0	94.2	93.6	93.0
Free Air Delivery -	CFM (cu. m/s)	691 0.326	1830 0.863	2869 1.354	3567 1.683	4154 1.960	4675 2.206	6087 2.872	6124 2.890
Air Temperature Rise -	Deg. F (Deg C.)	64 (35.6)	50 (27.8)	47 (26.1)	50 (27.8)	53 (29.4)	56 (31.1)	51 (28.3)	58 (32.2)
Condensate Production	gph	0.36	0.63	1.03	1.32	1.58	1.62	2.52	2.46
Full Load Amps at 120V		6.7	7.4	14.0	14.0	23.0	24.6	24.6	24.6
Minimum Circuit Amps at 120V		7.3	8.9	15.4	15.5	25.6	27.2	27.2	27.2
Max. Overcurrent Protection at 120V		9.8	14.6	21.2	21.2	35.9	37.5	37.5	37.5
MOTOR DATA:									
	Motor HP (Qty)	1/14 (2)	1/2 (1)	1/2 (2)	1/2 (2)	1 (2)	1 (2)	1 (2)	1 (2)
	Motor kW	0.05	0.37	0.37	0.37	0.74	0.74	0.74	0.74
	Motor Type, ODP	SP	PSC	PSC	PSC	PSC	PSC	PSC	PSC
	RPM	1500	1500	1500	1500	1625	1625	1625	1625
	Amps @ 115	5.2	6	12	12	21.4	21.4	21.4	21.4
DIMENSIONAL DATA - inches (mm)									
"A" Unit Height		15-1/16 (383)	20-3/8 (518)	20-3/8 (518)	20-3/8 (518)	27-9/16 (700)	27-9/16 (700)	37-5/16 (948)	37-5/16 (948)
"B" Jacket Width of Unit		46-7/16 (1180)	46-7/16 (1180)	56-3/8 (1432)	56-3/8 (1432)	56-3/8 (1432)	56-3/8 (1432)	56-3/8 (1432)	56-3/8 (1432)
"C" Depth to Rear of Housing		4-1/2 (115)	7-7/8 (201)	7-7/8 (201)	7-7/8 (201)	8-5/8 (220)	8-5/8 (220)	8-5/8 (220)	8-5/8 (220)
"D" Hanging Distance Width		41-1/4 (1048)	41-1/4 (1048)	51-1/4 (1302)	51-1/4 (1302)	43-5/8 (1108)	43-5/8 (1108)	43-5/8 (1108)	43-5/8 (1108)
"E" Hanging Distance from Rear of Housing		4-3/16 (107)	4-3/16 (107)	4-3/16 (107)	4-3/16 (107)	4 (102)	4 (102)	4 (102)	4 (102)
"F" Hanging Distance Depth		27-3/4 (705)	27-3/4 (705)	27-3/4 (705)	27-3/4 (705)	30-3/16 (766)	30-3/16 (766)	30-3/16 (766)	30-3/16 (766)
"G" Hanging Distance from Fixed Side Panel		2-11/16 (68)	2-11/16 (68)	2-1/16 (53)	2-1/16 (53)	2-3/16 (56)	2-3/16 (56)	2-3/16 (56)	2-3/16 (56)
"H" Discharge Opening Width		27-7/8 (708)	27-7/8 (708)	37-7/8 (962)	37-7/8 (962)	37-7/8 (962)	37-7/8 (962)	37-7/8 (962)	37-7/8 (962)
"J" Discharge Opening Height		7-5/16 (186)	10-15/16 (278)	13-3/4 (349)	17-1/16 (434)	20-1/4 (515)	23-9/16 (598)	26-15/16 (684)	29-7/8 (759)
"K" Side Panel to Centerline Combustion Air and Flue		8-1/8 (206)	8-1/8 (206)	8-1/8 (206)	8-1/8 (206)	7-1/8 (181)	7-1/8 (181)	7-1/8 (181)	7-1/8 (181)
"L" Bottom Panel to Centerline Combustion Air		10 (254)	15 (381)	15 (381)	15 (381)	18-7/8 (479)	18-7/8 (479)	28-5/8 (727)	28-5/8 (727)
"M" Bottom Panel to Centerline Flue		3-15/16 (100)	5-1/2 (140)	5-1/2 (140)	5-1/2 (140)	10-1/4 (260)	10-1/4 (260)	15-1/8 (384)	15-1/8 (384)
"N" Side Panel to Centerline Gas Connection		2-7/16 (62)	2-7/16 (62)	2-5/16 (59)	2-5/16 (59)	2-5/16 (59)	2-5/16 (59)	2-5/16 (59)	2-5/16 (59)
"P" Side to Centerline Condensate Drain Connection		10-15/16 (278)	10-15/16 (278)	10-13/16 (275)	10-13/16 (275)	10-13/16 (275)	10-13/16 (275)	10-13/16 (275)	10-13/16 (275)
"R" Rear to Centerline Condensate Drain Connection		11-3/8 (289)	11-3/8 (289)	11-3/8 (289)	10-7/8 (276)	10-7/8 (276)	10-7/8 (276)	10-7/8 (276)	10-7/8 (276)
"S" Bottom to Centerline Gas Connection		2-11/16 (68)	2-3/16 (56)	1-3/16 (30)	3-3/16 (81)	2-3/16 (56)	1-5/8 (42)	1-5/8 (42)	1-15/16 (49)
Combustion Air Inlet Pipe Dia.	in. (mm)	2" (51)	2" (51)	3" (76)	4" (102)	4" (102)	4" (102)	4" (102)	4" (102)
* Flue Pipe Dia.	in. (mm)	2" (51)	2" (51)	3" (76)	4" (102)	4" (102)	4" (102)	4" (102)	4" (102)
Gas Inlet	in.	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"
Condensate Connection Dia.	in.	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Approximate Unit Weight	lb (kg)	195 (88.5)	245 (111.1)	310 (140.6)	325 (147.4)	420 (190.5)	425 (192.8)	510 (231.3)	515 (233.6)
Approximate Ship Weight	lb (kg)	250 (113.4)	305 (138.3)	360 (163.3)	390 (176.9)	465 (210.9)	475 (210.9)	560 (254.0)	565 (256.3)

† Ratings shown are for unit installations at elevations between 0 and 2,000 feet (0 to 610m). For unit installations in U.S.A. above 2,000 feet (610m), the unit input must be field derated 4% for each 1,000 feet (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z223.1 (NFPA No. 54).

For installations in Canada, any reference to deration at altitudes in excess of 2,000 feet (610m) are to be ignored. At altitudes of 2,000 feet to 4,500 feet (610 to 1372m), the unit must be field derated and be so marked in accordance with the ETL certification. See HIGH ALTITUDE DERATION section of the unit installation, operation and maintenance manual for deration information.

* Field installed PVC fittings provided with unit sizes 150-400 as follows:

- Size 150 units come with a 2" to 3" PVC reducer
- Size 200/300 units come with a 2" to 4" PVC reducer
- Size 350/400 units come with a 2" to 4" PVC drain tee fitting

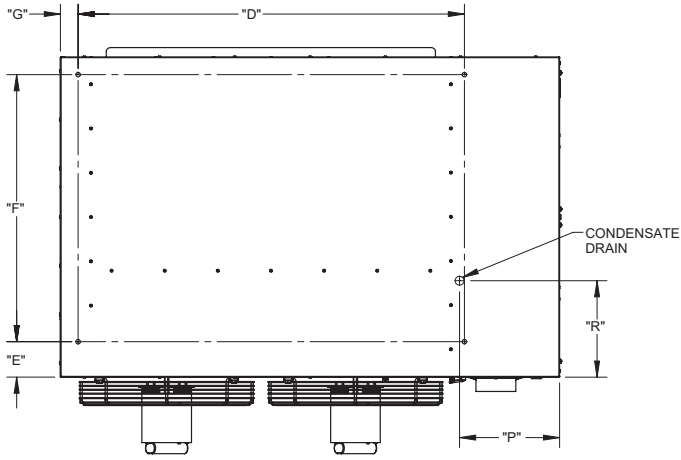
Reducers/drain tee fittings are to be field installed per Venting instructions.

LEGEND: ODP = Open Drip Proof, PSC = Permanent Split Capacitor, SP = Shaded Pole

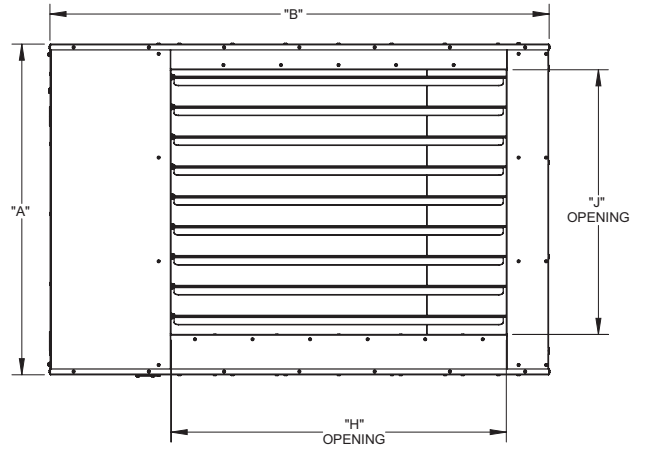
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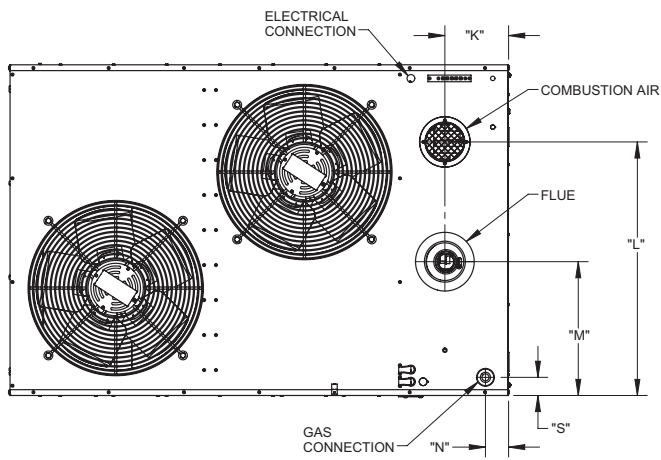
Dimensional Data



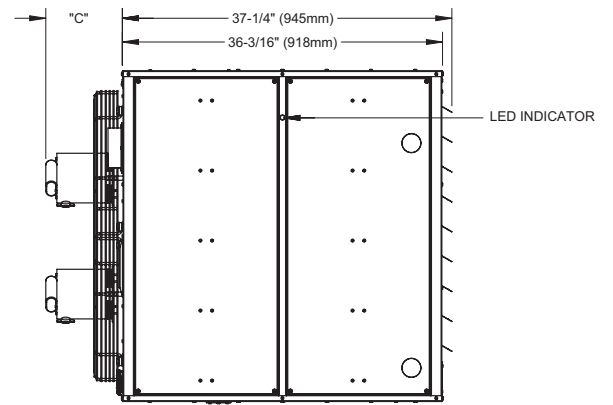
Bottom View



Front View



Rear View



Side View