

# Eclipse RatioAir Burners

Model RA0075

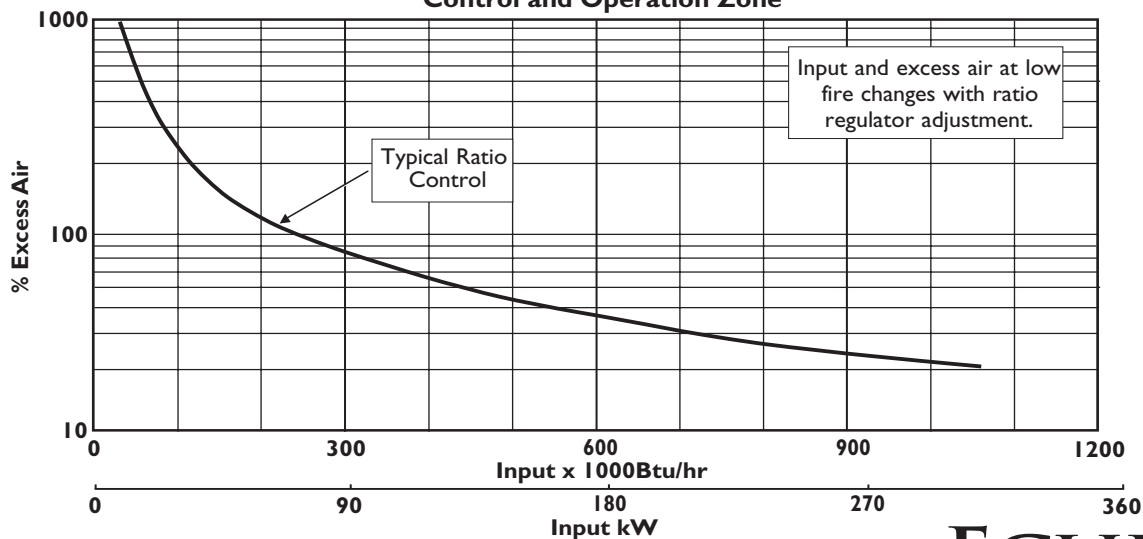
Version 1

## Main Specifications - RA0075

PARAMETER		SPECIFICATIONS		
		Straight Tube	Medium Velocity Tube	High Velocity Tube
Maximum input, Btu/hr (kW) at neutral chamber conditions 60Hz Packaged Blower	Natural Gas	1,080,000 (316)	830,000 (243)	830,000 (243)
	Propane	1,050,000 (308)	780,000 (229)	790,000 (232)
	Butane	980,000 (288)	790,000 (232)	800,000 (234)
Maximum input, Btu/hr (kW) at neutral chamber conditions 50Hz Packaged Blower	Natural Gas	1,080,000 (316)	830,000 (243)	Not Available
	Propane	1,050,000 (308)	780,000 (229)	Not Available
	Butane	980,000 (288)	790,000 (232)	Not Available
Minimum input, Btu/hr (kW) • Lower inputs may be achieved. Contact factory.		30,000 (8.8)	30,000 (8.8)	30,000 (8.8)
Main Gas Inlet Pressure, "w.c. (mbar) • Fuel pressure at ratio regulator inlet.		10 to 24 (25 to 60)	10 to 24 (25 to 60)	15 to 24 (37 to 60)
High Fire Flame Length, inches (mm) • Measured from the outlet end of the combustor.		39 (991)	28 (711)	28 (711)
Maximum Flame Velocity, ft/s (m/s) • Approximately 15% excess air at maximum input.		-----	250 (75)	500 (150)
Maximum chamber temperature, °F (°C)	Alloy tube	1500 (816)	1750 (954)	1750 (954)
	SiC tube	1900 (1038)	2500 (1370)	2500 (1370)
	Block & Holder	1900 (1038)	2800 (1538)	2800 (1538)
Flame detection		UV scanner available for all combustors. Flame rod available for alloy or SiC tubes		
Fuel		Natural Gas, Propane and Butane (For any other gas, contact Eclipse Combustion for orifice sizing.)		

- All information is based on laboratory testing in neutral (0.0" w.c.) chamber with standard combustor design. Different chamber conditions will affect the data.
- Maximum inputs are given for the standard combustion air blower without an air filter.
- All inputs based upon gross calorific values and standard conditions: 1 atmosphere, 70° F ( 21°C).
- Blower motor service factors greater than 1.0 may be required when firing into negative chamber pressure applications. For specific application questions, contact your Eclipse Combustion representative.
- Eclipse reserves the right to change the construction and/or configuration of our products at any time without being obliged to adjust earlier supplies accordingly.

## Control and Operation Zone

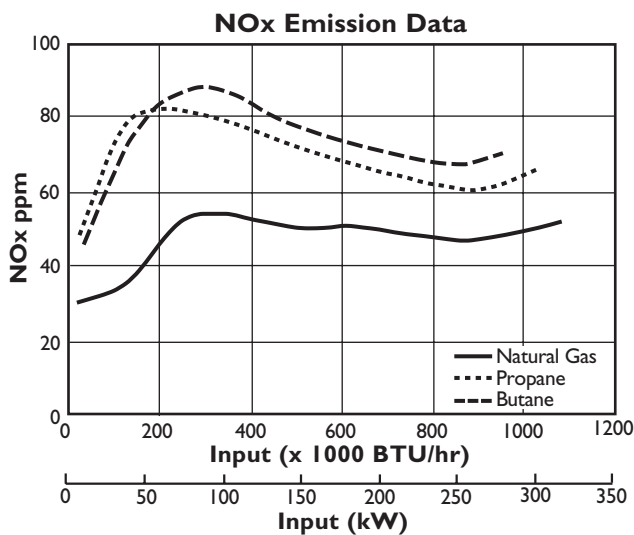


# Straight Tube Specifications

## Blower Model

**60Hz, 3J (4.2" w.c. @ 8,500 scfh, 1/2 hp)**  
**50Hz, 3J (4.2" w.c. @ 8,500 scfh, .25 kW)**

Specifications						
Parameter	"w.c. (mbar)		60Hz Packaged Blower		50Hz Packaged Blower	
			Btu/hr	kW	Btu/hr	kW
Maximum Input vs. Chamber Pressure (Natural Gas)	-2.0	-5.0	1,320,000	387	1,320,000	387
	-1.0	-2.5	1,210,000	355	1,210,000	355
	0.0	0.0	1,080,000	316	1,080,000	316
	1.0	2.5	950,000	278	950,000	278
	2.0	5.0	780,000	229	780,000	229



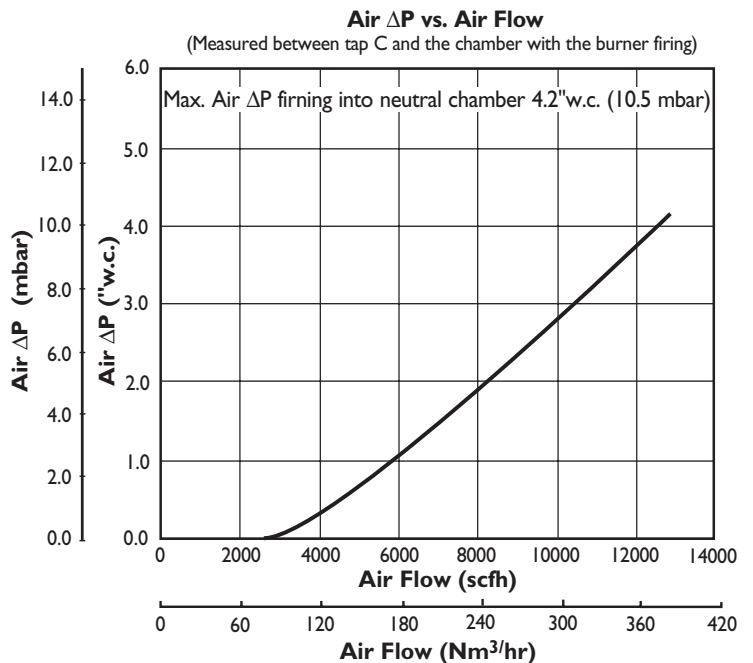
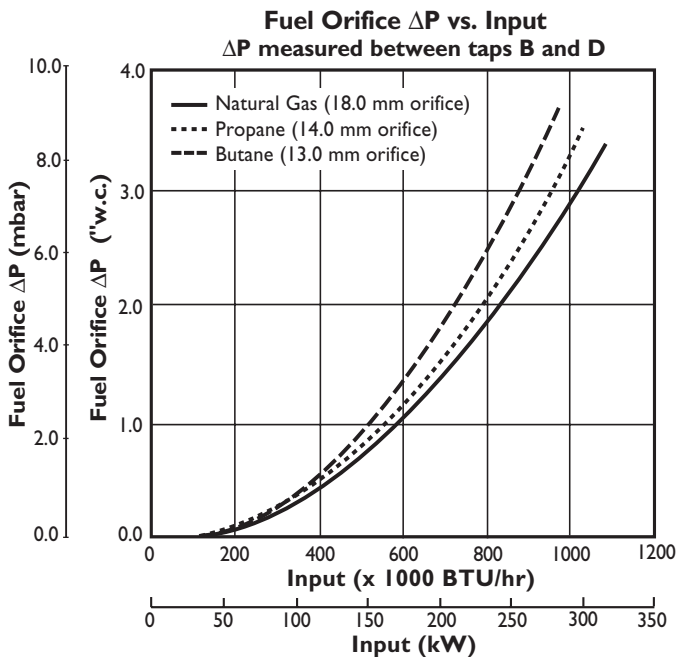
NOx emission data is given for:

- Ambient combustion air ~70 °F (20 °C)
- Minimal process air velocity
- ppm volume dry at 3% O<sub>2</sub>
- Neutral chamber pressure

CO emission is largely influenced by chamber conditions. Contact your local Eclipse Combustion representative for an estimate of CO emission on your application.

Emissions are influenced by:

- Chamber conditions
- Fuel type
- Firing rate
- Ratio regulator adjustment
- Combustion air temperature



# Medium Velocity Tube Specifications

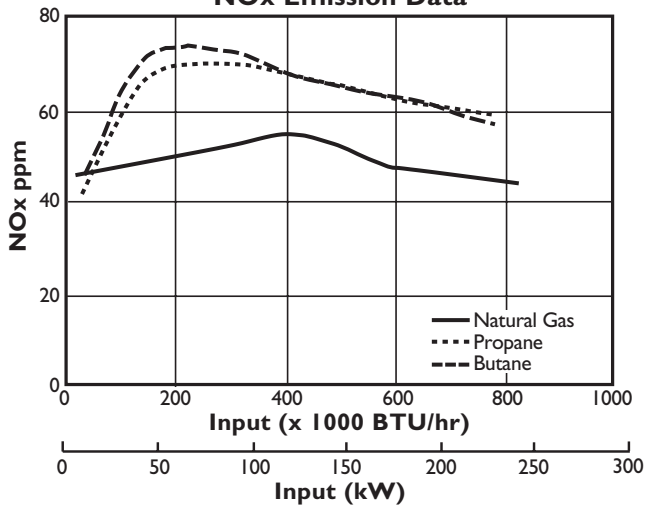
## Blower Model

60Hz, 3J (4.2" w.c. @ 8,500 scfh, 1/2 hp)

50Hz, 3J (4.2" w.c. @ 8,500 scfh, .25 kW)

Specifications						
Parameter	"w.c.	(mbar)	60Hz Packaged Blower		50Hz Packaged Blower	
			Btu/hr	kW	Btu/hr	kW
Maximum Input vs. Chamber Pressure (Natural Gas)	-2.0	-5.0	950,000	278	950,000	278
	-1.0	-2.5	890,000	261	890,000	261
	0.0	0.0	830,000	243	830,000	243
	1.0	2.5	760,000	223	760,000	223
	2.0	5.0	700,000	205	700,000	205

### NOx Emission Data



NOx emission data is given for:

- Ambient combustion air ~70 °F (20 °C)
- Minimal process air velocity
- ppm volume dry at 3% O<sub>2</sub>
- Neutral chamber pressure

CO emission is largely influenced by chamber conditions.

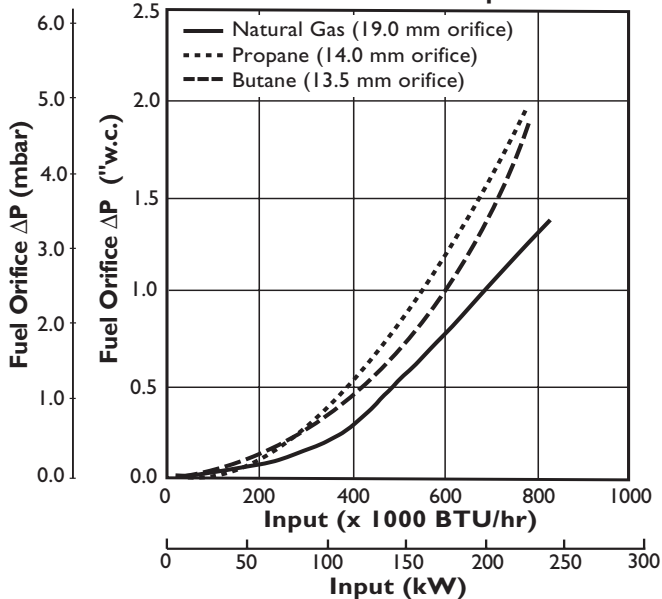
Contact your local Eclipse Combustion representative for an estimate of CO emission on your application.

Emissions are influenced by:

- Chamber conditions
- Fuel type
- Firing rate
- Ratio regulator adjustment
- Combustion air temperature

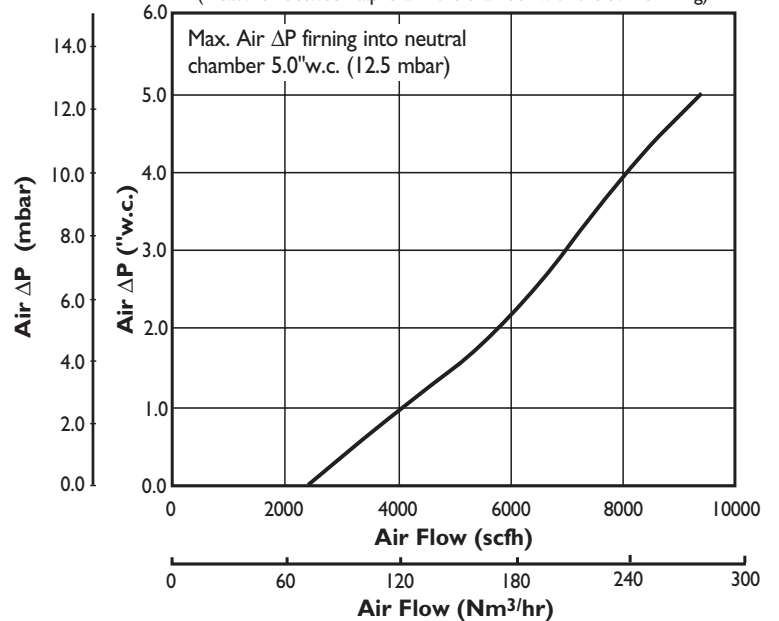
### Fuel Orifice ΔP vs. Input

ΔP measured between taps B and D



### Air ΔP vs. Air Flow

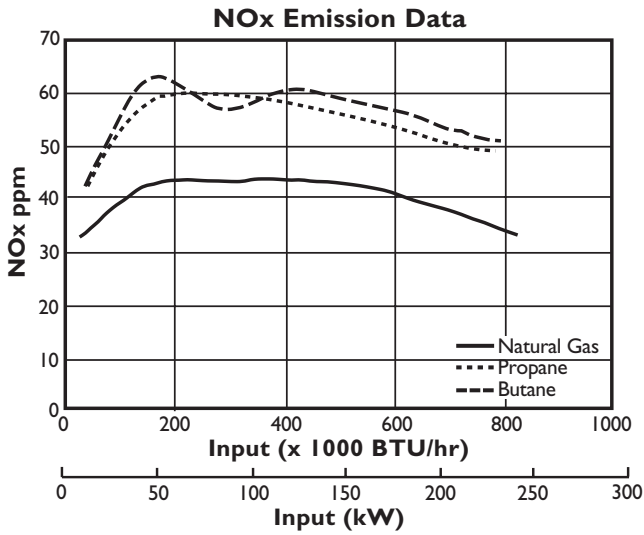
(Measured between tap C and the chamber with the burner firing)



# High Velocity Tube Specifications

## Blower Model – 3D (10" w.c. @ 11,000 scfh, 3/4 hp)

Specifications					
Parameter	Frequency	Btu/hr	"w.c.	kW	(mbar)
Maximum Input vs. Chamber Pressure (Natural Gas)	60Hz Packaged Blower	910,000	-2.0	267	-5.0
		870,000	-1.0	255	-2.5
		830,000	0.0	243	0.0
		790,000	1.0	231	2.5
		740,000	2.0	217	5.0



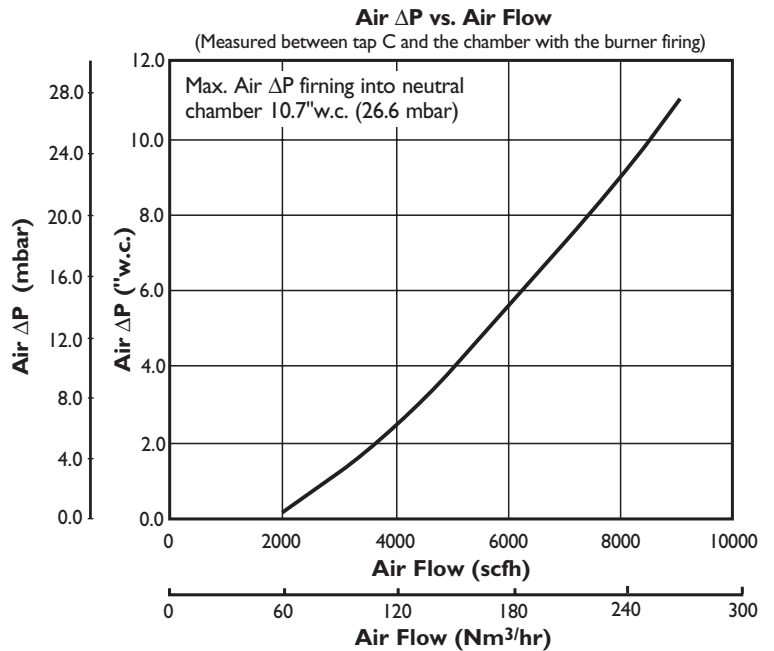
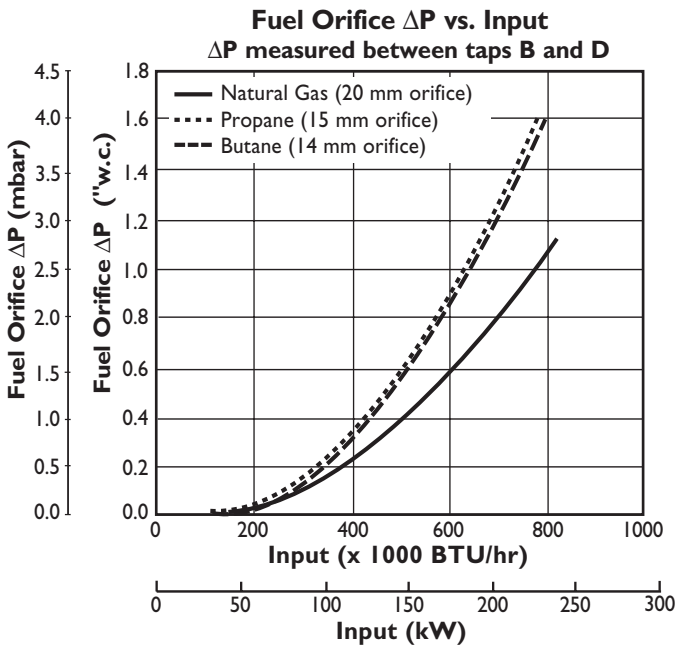
NOx emission data is given for:

- Ambient combustion air ~70 °F (20 °C)
- Minimal process air velocity
- ppm volume dry at 3% O<sub>2</sub>
- Neutral chamber pressure

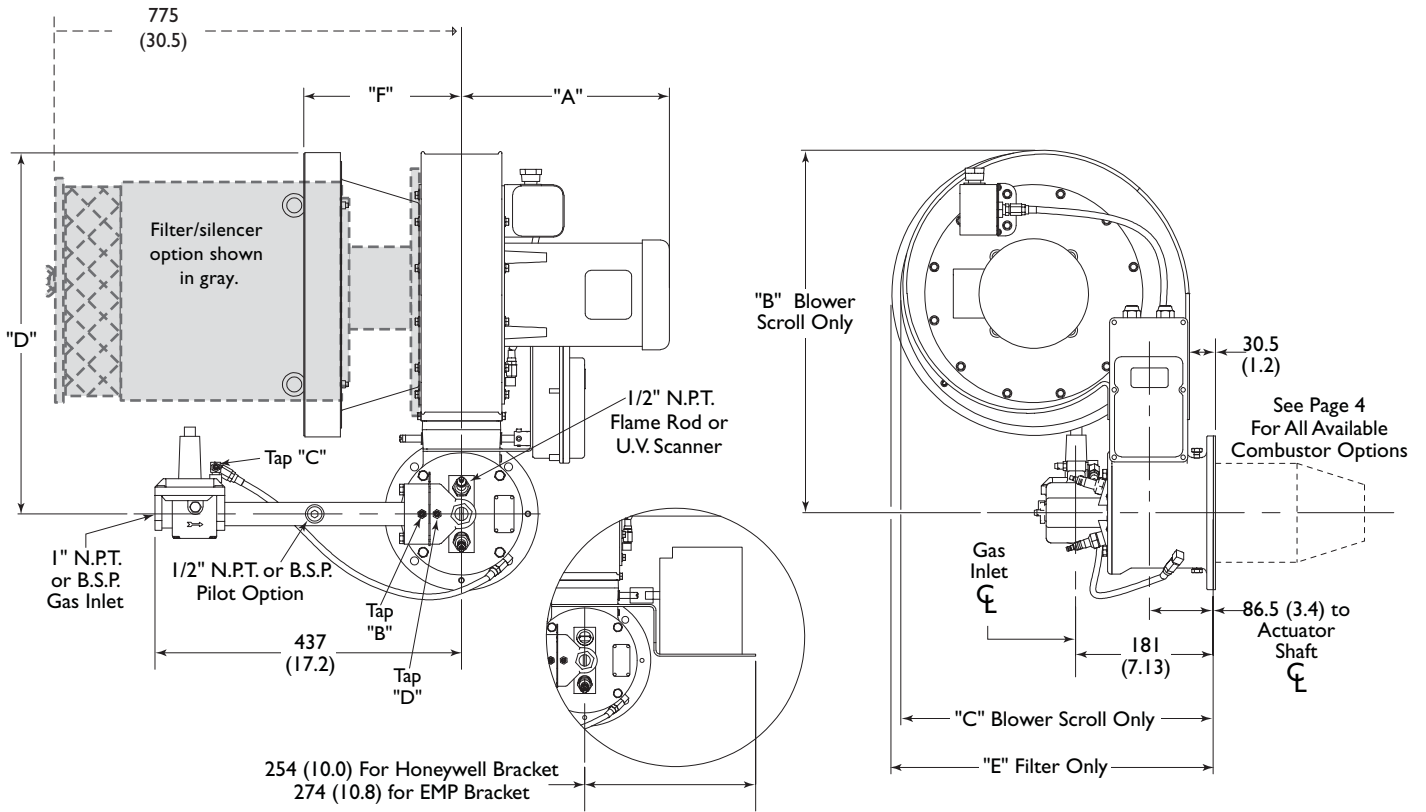
CO emission is largely influenced by chamber conditions. Contact your local Eclipse Combustion representative for an estimate of CO emission on your application.

Emissions are influenced by:

- Chamber conditions
- Fuel type
- Firing rate
- Ratio regulator adjustment
- Combustion air temperature



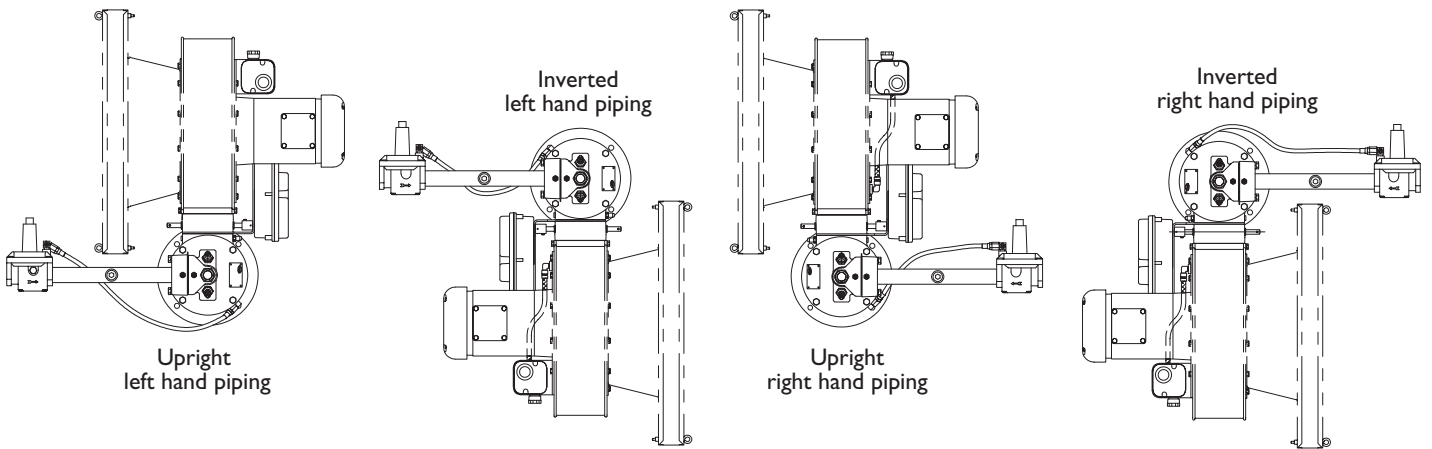
## Dimensions mm (Inches)



	Combustor Type	Blower Model	Filter Type	Dimensions mm (inches)					
				A	B	C	D	E	F
60Hz Blower	Straight & Medium Velocity	3J	Rectangular	290 (11.4)	402 (15.8)	338 (13.3)	439 (17.3)	379 (14.9)	118 (4.6)
	High Velocity	3D	Round	290 (11.4)	534 (21.0)	483 (19.0)	514 (20.2)	475 (18.7)	218 (8.6)
	High Velocity	3D	Automotive	290 (11.4)	534 (21.0)	483 (19.0)	594 (23.4)	538 (22.1)	218 (8.6)
50Hz Blower	Straight & Medium Velocity	3J	Round	290 (11.4)	534 (21.0)	483 (19.0)	594 (23.4)	538 (22.1)	218 (8.6)

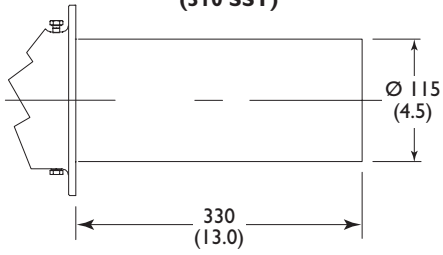
Note: Standard round filters are illustrated above. Automotive filters are 508x508 (20x20). Rectangular filter is 256x256 (10x10).

## Burner Configuration & Piping Arrangement

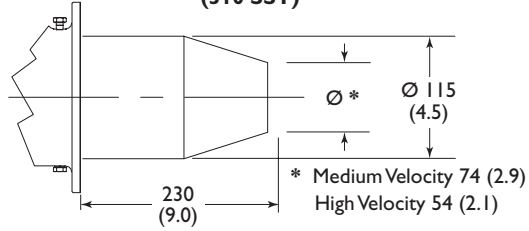


## Combustor Options

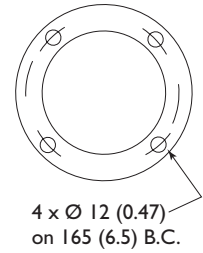
**Straight Alloy Tube  
(310 SST)**



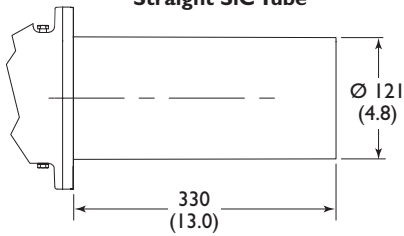
**Medium & High  
Velocity Alloy Tube  
(310 SST)**



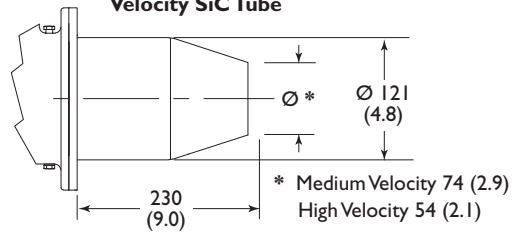
**Mounting Pattern**



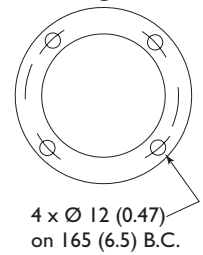
**Straight SiC Tube**



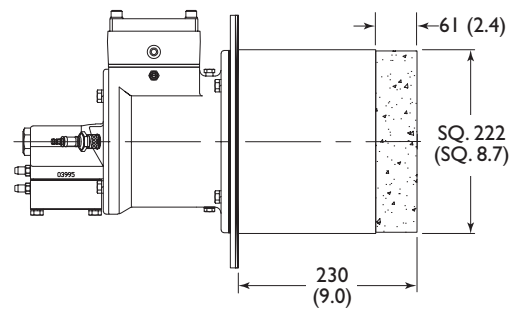
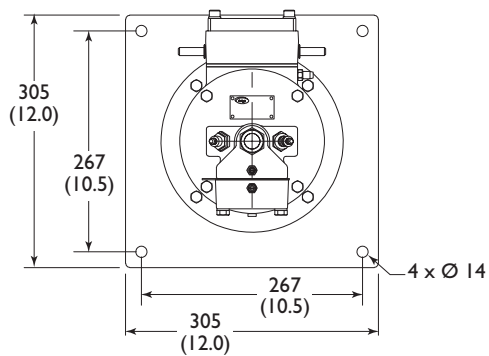
**Medium & High  
Velocity SiC Tube**



**Mounting Pattern**



## Block & Holder





**Offered By:**

Power Equipment Company  
2011 Williamsburg Road  
Richmond, Virginia 23231  
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Fax (804) 236-3882

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