

# Eclipse RatioAir Burners

Model RA0025

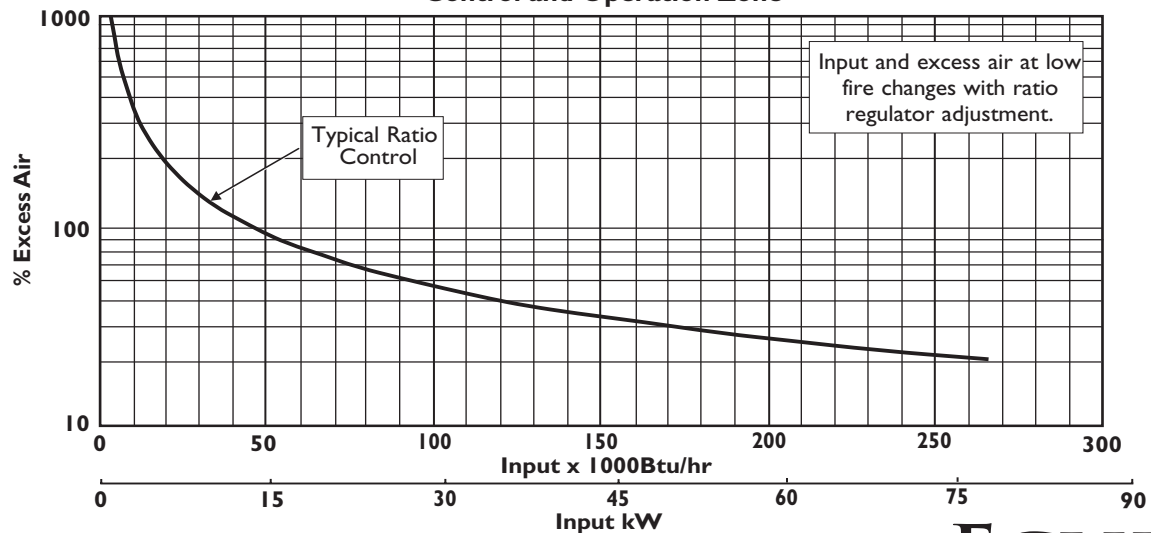
Version 1

## Main Specifications - RA0025

PARAMETER		SPECIFICATIONS		
		Straight Tube	Medium Velocity Tube	High Velocity Tube
Maximum input, Btu/hr (kW) at neutral chamber conditions 60 Hz Packaged Blower	Natural Gas	266,000 (78)	266,000 (78)	266,000 (78)
	Propane	280,000 (82)	280,000 (82)	257,000 (75)
	Butane	294,000 (86)	278,000 (81)	246,000 (72)
Maximum input, Btu/hr (kW) at neutral chamber conditions 50 Hz Packaged Blower	Natural Gas	305,000 (81)	280,000 (82)	Not Available
	Propane	321,000 (94)	295,000 (86)	Not Available
	Butane	337,000 (99)	293,000 (86)	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.		6 to 24 (15 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.		20 (508)	14 (356)	12 (305)
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



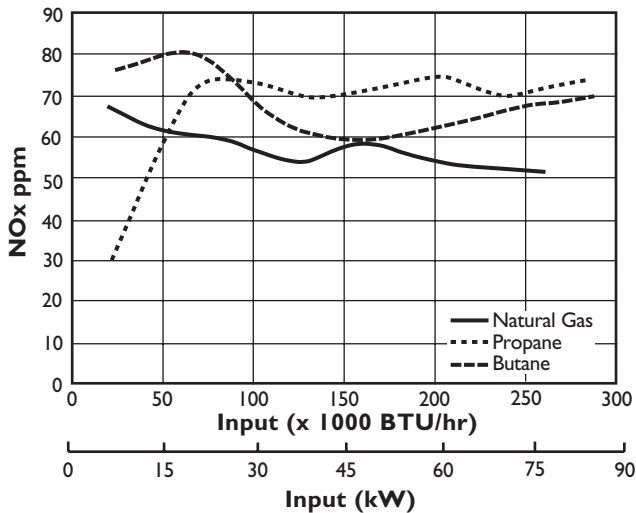
# Straight Tube Specifications

## Blower Model

60Hz, 2H (3"w.c. @ 4,600 scfh, 1/6 hp)  
 50Hz, 2E (4.2"w.c. @ 4,580 scfh, .18 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	330,000	97	360,000	105
	-1.0	-2,5	300,000	88	334,000	98
	0.0	0,0	266,000	78	305,000	89
	1.0	2,5	230,000	67	273,000	80
	2.0	5,0	180,000	53	236,000	69

### 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

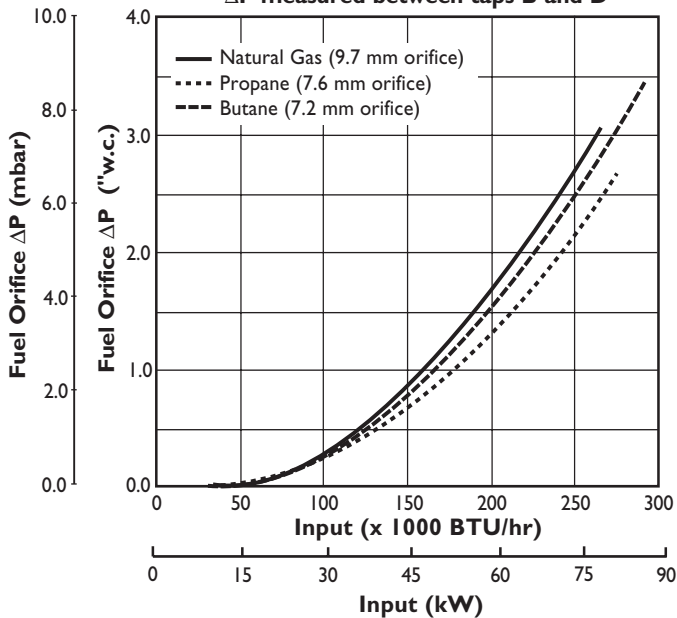
CO emission is largely influenced by chamber conditions. Contact your local Eclipse Combustion representative for an estimate of CO emission on your application.

Emissions are influenced by:

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

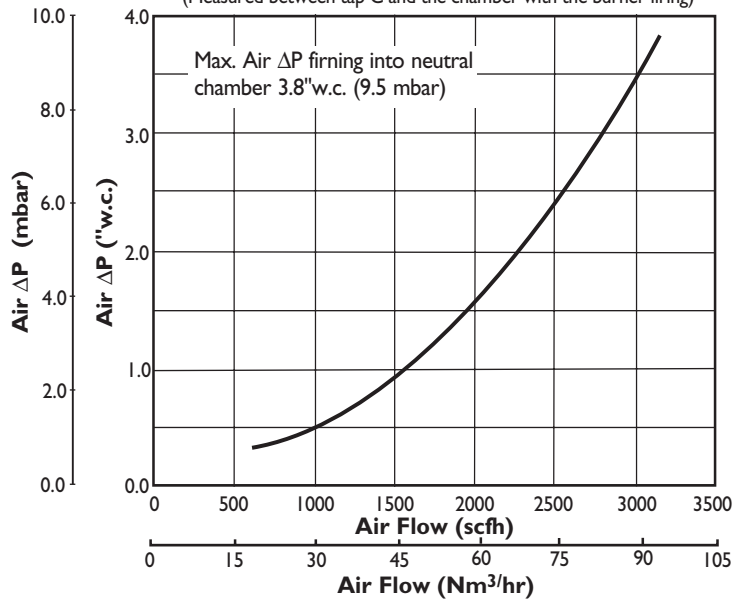
### Fuel Orifice ΔP vs. Input

ΔP measured between taps B and D



### Air ΔP vs. Air Flow

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



# Medium Velocity Tube Specifications

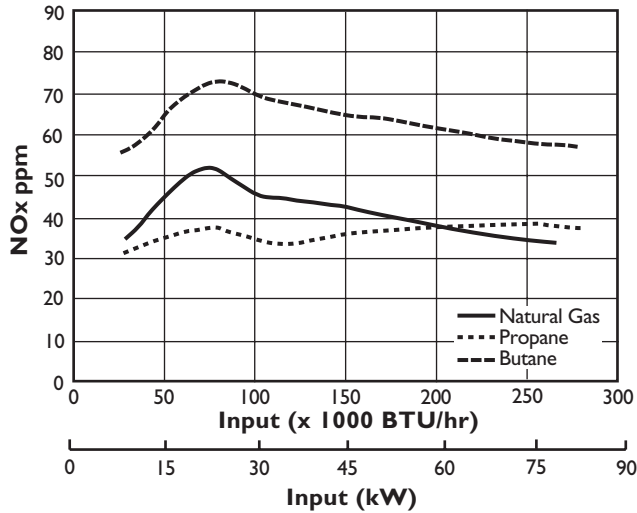
## Blower Model

60Hz, 2G (6" w.c. @ 5,500 scfh, 1/3 hp)

50Hz, 2B (6" w.c. @ 5,500 scfh, .18 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	306,000	90	318,000	93
	-1.0	-2.5	290,000	85	300,000	88
	0.0	0.0	266,000	78	280,000	82
	1.0	2.5	240,000	70	259,000	76
	2.0	5.0	220,000	64	236,000	69

### NOx Emission Data



NOx emission data is given for:

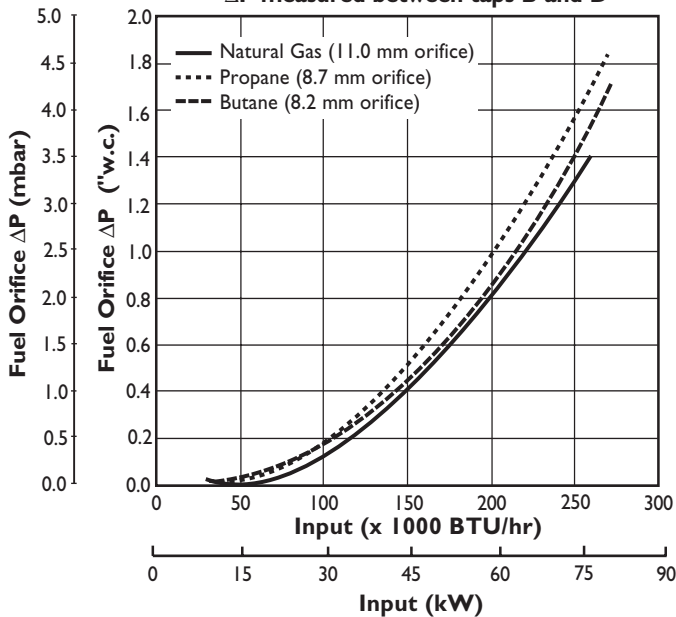
- Ambient combustion air ~70 °F (20 °C)
- Minimal process air velocity
- ppm volume dry at 3% O<sub>2</sub>
- Neutral chamber pressure

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

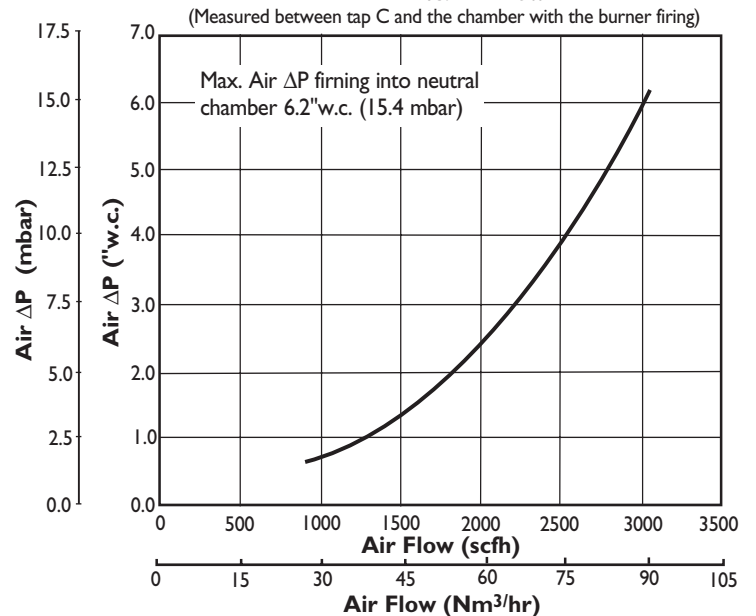
Emissions are influenced by:

- 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

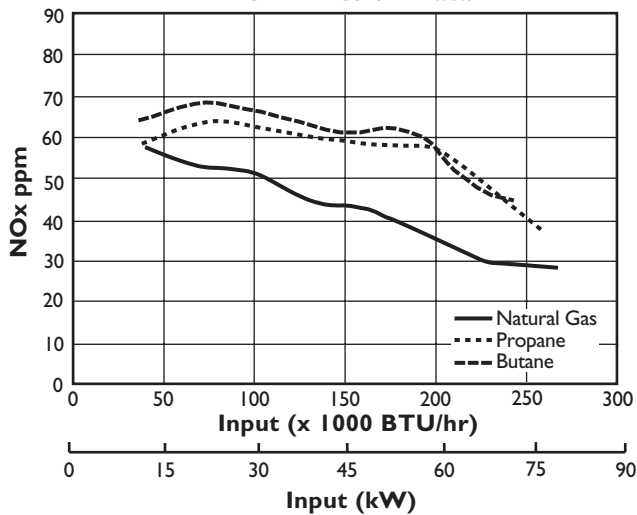


# High Velocity Tube Specifications

## Blower Model – 2C (10" w.c. @ 5,500 scfh, 1/3 hp)

Specifications					
Parameter	Frequency	Btu/hr	"w.c.	kW	(mbar)
Maximum Input vs. Chamber Pressure (Natural Gas)	60Hz Packaged Blower	290,000	-2.0	85	-5.0
		280,000	-1.0	82	-2.5
		266,000	0.0	78	0.0
		250,000	1.0	73	2.5
		240,000	2.0	70	5.0

### NOx Emission Data



NOx emission data is given for:

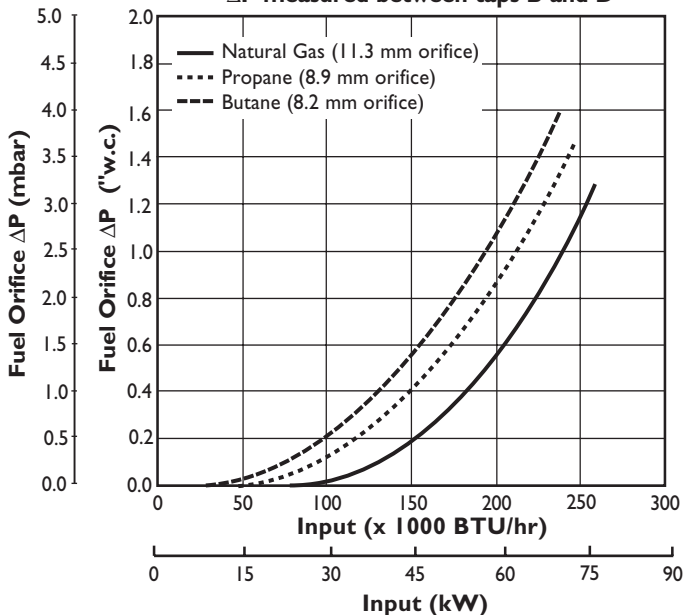
- Ambient combustion air ~70 °F (20 °C)
- Minimal process air velocity
- ppm volume dry at 3% O<sub>2</sub>
- Neutral chamber pressure

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

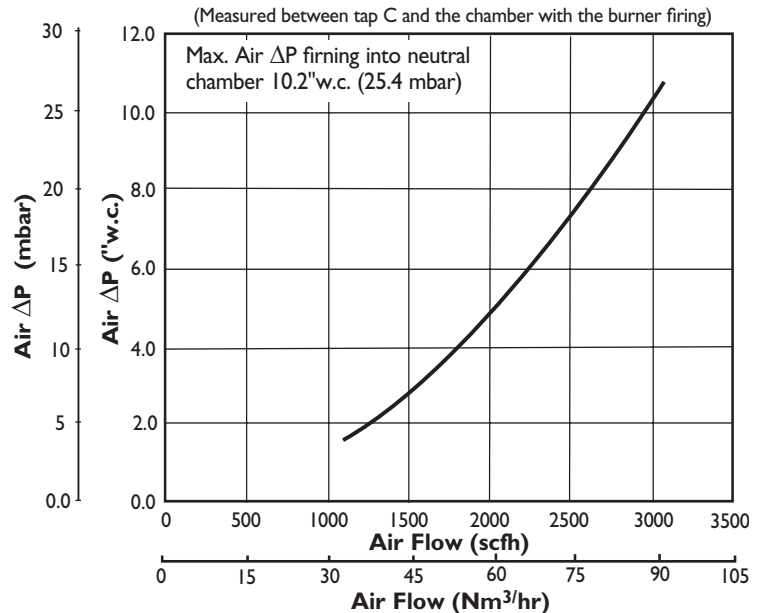
Emissions are influenced by:

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

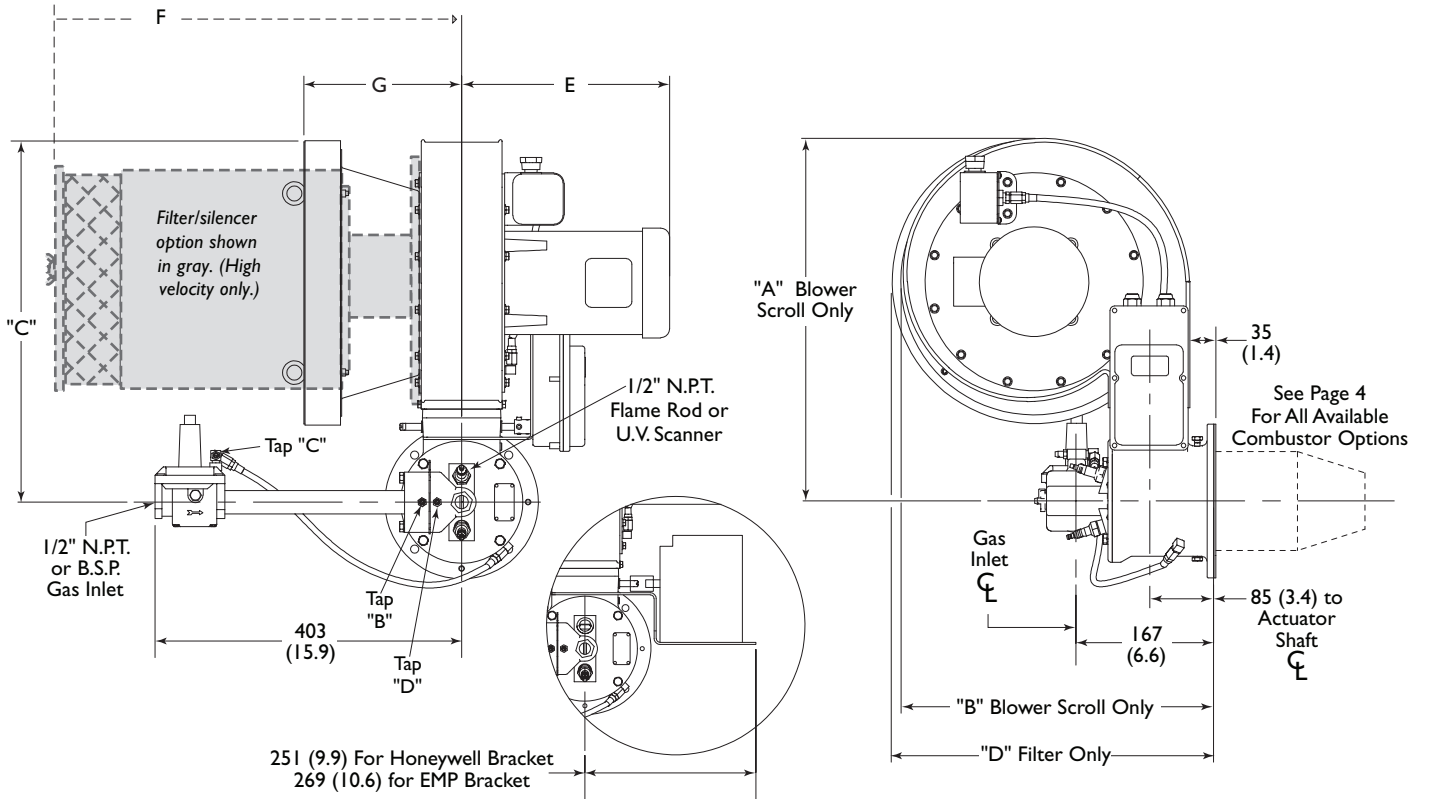
### Fuel Orifice ΔP vs. Input ΔP measured between taps B and D



### Air ΔP vs. Air Flow



## Dimensions mm (Inches)

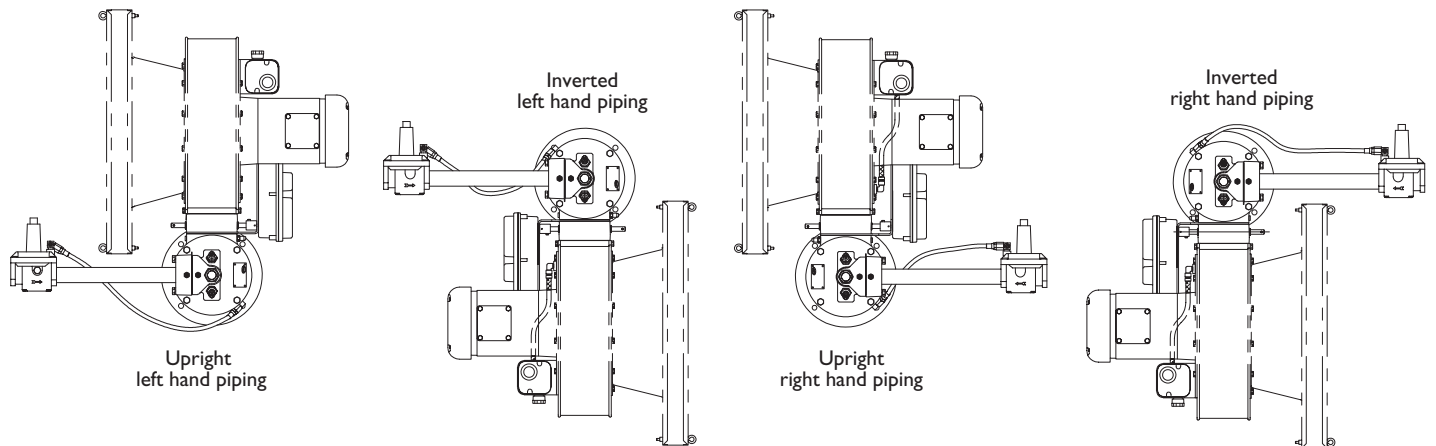


	Combustor Type	Blower Model	Filter Type	Dimensions mm (inches)						
				A*	B	C*	D	E	F	G
<b>60Hz Blower</b>	Straight**	2H	Rectangular	360 (14.2)	335 (13.2)	391 (15.4)	378 (14.9)	378 (6.9)	N/A	113 (4.4)
	Medium Velocity	2G	Round	409 (16.1)	394 (15.5)	442 (17.4)	432 (17.0)	287 (11.3)	N/A	217 (8.5)
	High Velocity	2C	Round	499 (19.6)	475 (18.7)	489 (19.3)	469 (18.5)	287 (11.3)	622 (24.5)	214 (8.4)
<b>50Hz Blower</b>	Straight	2E	Round	427 (16.8)	410 (16.1)	433 (17.0)	428 (16.8)	240 (9.4)	622 (24.5)	214 (8.4)
	Medium Velocity	2B	Round	499 (19.6)	475 (18.7)	489 (19.3)	469 (18.5)	287 (11.3)	622 (24.5)	214 (8.4)

\*When using Honeywell or Siemens actuators with right hand piping, add 35mm (1.4")

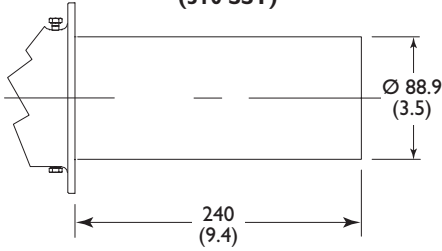
\*\* An air filter is not available when using a straight tube and Honeywell actuators. The Honeywell actuator must be mounted opposite the blower motor to prevent interference.

## Burner Configuration & Piping Arrangement

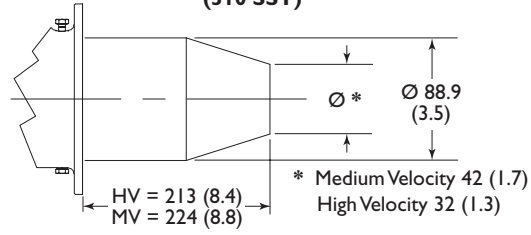


# Combustor Options

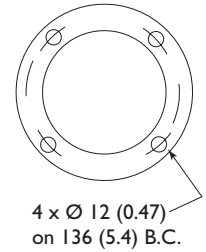
**Straight Alloy Tube  
(310 SST)**



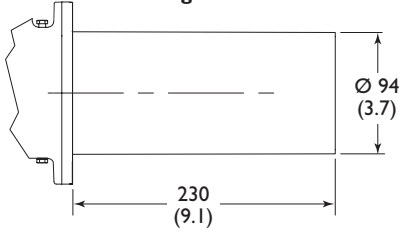
**Medium & High  
Velocity Alloy Tube  
(310 SST)**



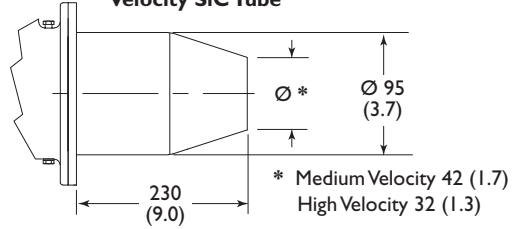
**Mounting Pattern**



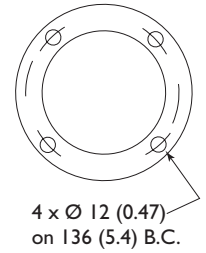
**Straight SiC Tube**



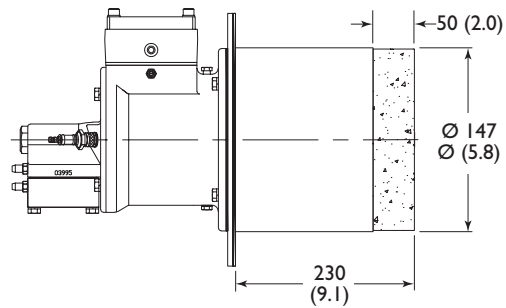
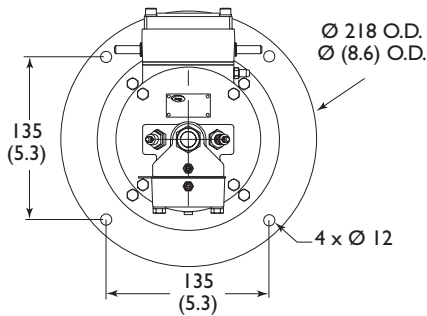
**Medium & High  
Velocity SiC Tube**



**Mounting Pattern**



**Block & Holder**





**Offered By:**

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