Data 115-2
11/12/2008

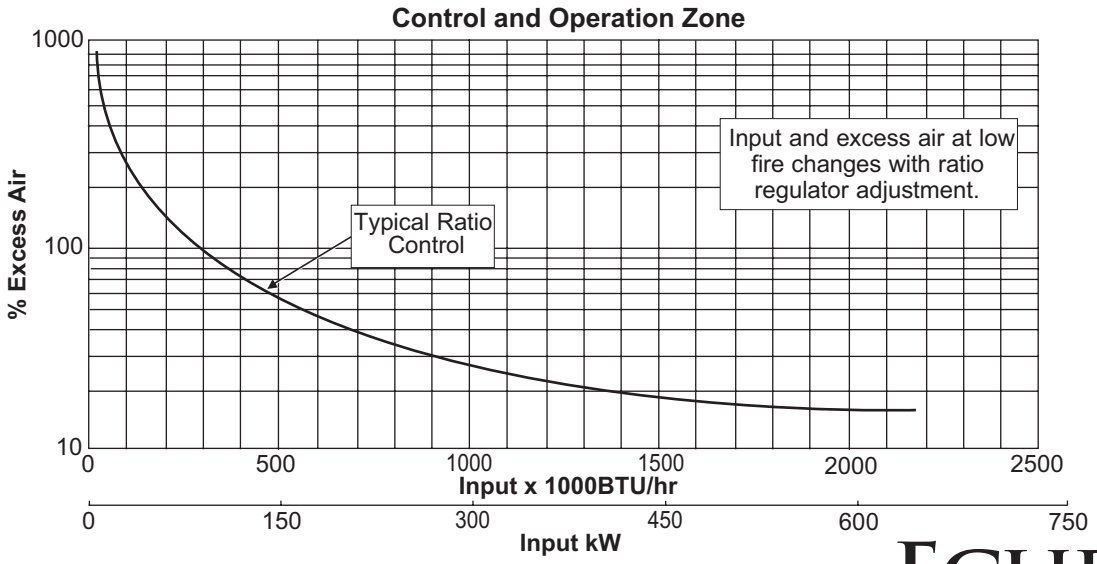
Eclipse RatioAir Burners

Model RA0200

Version 1

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**	2,260,000 (662)	2,110,000 (618)	2,270,000 (665)
	Propane	2,210,000 (647)	1,950,000 (571)	2,200,000 (644)
	Butane	2,060,000 (603)	2,030,000 (594)	2,250,000 (659)
Maximum Input, BTU/hr (kW) at Neutral Chamber Conditions 50 Hz Packaged Blower	**Natural Gas**	2,310,000 (676)	2,160,000 (632)	Not Available
	Propane	2,250,000 (659)	1,993,000 (584)	Not Available
	Butane	2,108,000 (617)	2,075,000 (608)	Not Available
Minimum Input, BTU/hr (kW) *Lower Inputs May Be Achieved. Contact Factory.*		40,000 (12)	40,000 (12)	40,000 (12)
Main Gas Inlet Pressure, "w.c. (mbar) *Fuel Pressure at Ratio Regulator Inlet.*		15 to 55 (38 to 137)	15 to 55 (38 to 137)	20 to 55 (50 to 137)
High Fire Flame Length, Inches (mm) *Measured from the Outlet End of the Combustor.*		54 (1370)	36 (915)	27 (685)
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)	1950 (1066)	1950 (1066)
	SiC Tube	1900 (1038)	2500 (1370)	2500 (1370)
	Block & Holder	-	2800 (1538)	2800 (1538)
Flame Detection		UV scanner unavailable for all combustors Flame rod available for alloy or SiC tubes with left hand piping only (270° CW from air inlet)		
Fuel		Natural Gas, Propane, and Butane *For other fuels, contact Eclipse.*		

- 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 Eclipse.
- 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.



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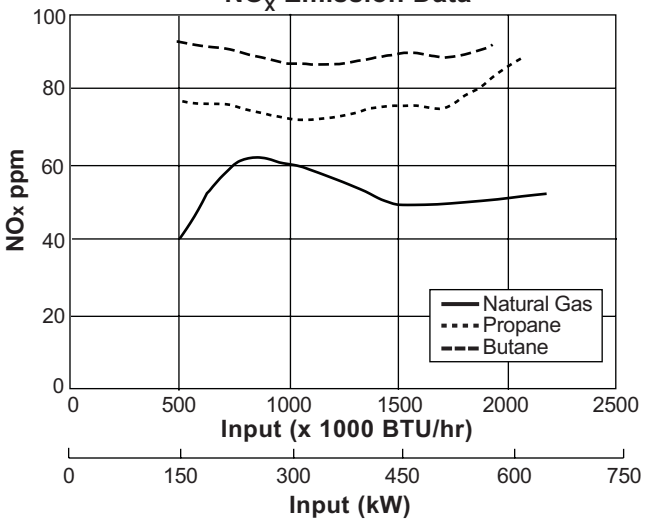
Innovative Thermal Solutions

Straight Tube Specifications

Blower Model
60 Hz, 4D (10" w.c. @ 22,000 scfh, 1hp)
50 Hz, 4D (10" w.c. @ 22,000 scfh, .75 kW)

Specifications						
			60 Hz Packaged Blower		50 Hz Packaged Blower	
Parameter	"w.c.	mbar	BTU/hr	kW	BTU/hr	kW
Maximum Input vs. Chamber Pressure (Natural Gas)	-2.0	-5,0	2,540,000	744	2,590,000	758
	-1.0	-2,5	2,405,000	704	2,450,000	717
	0.0	0,0	2,260,000	662	2,310,000	676
	1.0	2,5	2,150,000	616	2,160,000	632
	2.0	5,0	1,940,000	568	1,995,000	584

NO_x Emission Data



NO_X emission data is given for:

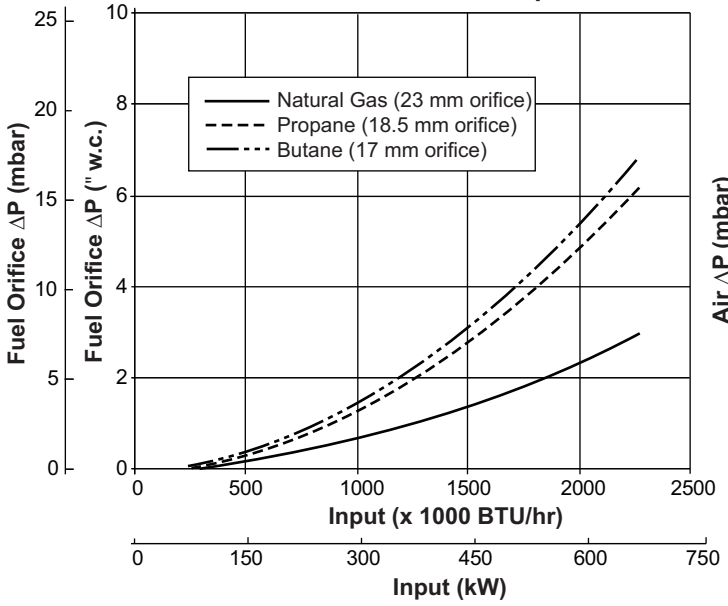
- Ambient Combustion Air ~70°F (20°C)
- Minimal Process Air Velocity
- ppm Volume Dry at 3% O_2
- Neutral Chamber Pressure

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

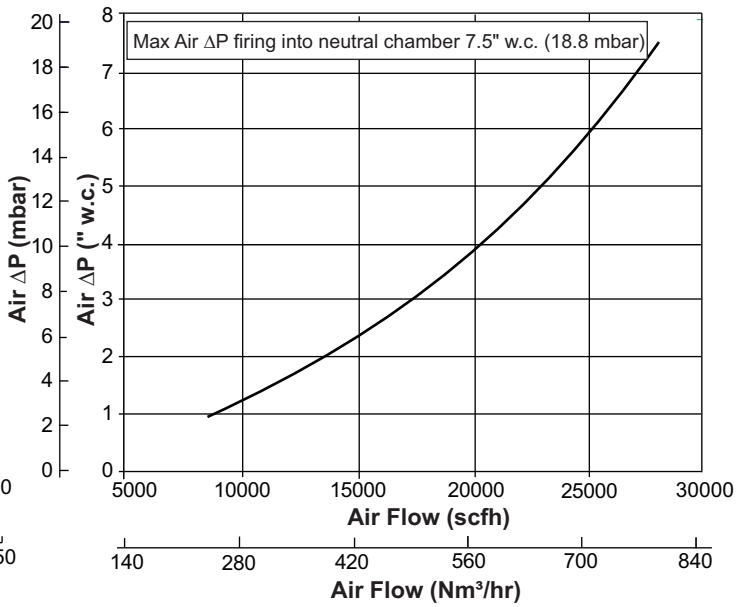
Emissions are influenced by:

- Chamber Conditions
- Fuel Type
- Firing Rate
- Ratio Regulator Adjustment
- Combustion Air Temperature

Fuel Orifice ΔP vs. Input
ΔP Measured Between Taps B & D



Air ΔP vs. Air Flow
(Measured between tap C and the chamber with the burner firing)

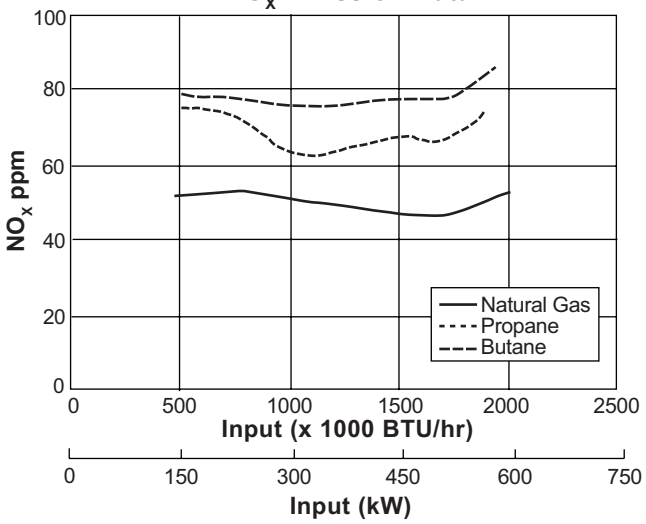


Medium Velocity Tube Specifications

Blower Model
60 Hz, 4D (10" w.c. @ 22,000 scfh, 1hp)
50 Hz, 4D (10" w.c. @ 22,000 scfh, .75 kW)

Specifications						
			60 Hz Packaged Blower		50 Hz Packaged Blower	
Parameter	"w.c.	mbar	BTU/hr	kW	BTU/hr	kW
Maximum Input vs. Chamber Pressure (Natural Gas)	-2.0	-5,0	2,350,000	689	2,400,000	703
	-1.0	-2,5	2,200,000	645	2,275,000	666
	0.0	0,0	2,110,000	618	2,160,000	630
	1.0	2,5	2,000,000	586	2,015,000	590
	2.0	5,0	1,850,000	542	1,870,000	548

NO_x Emission Data

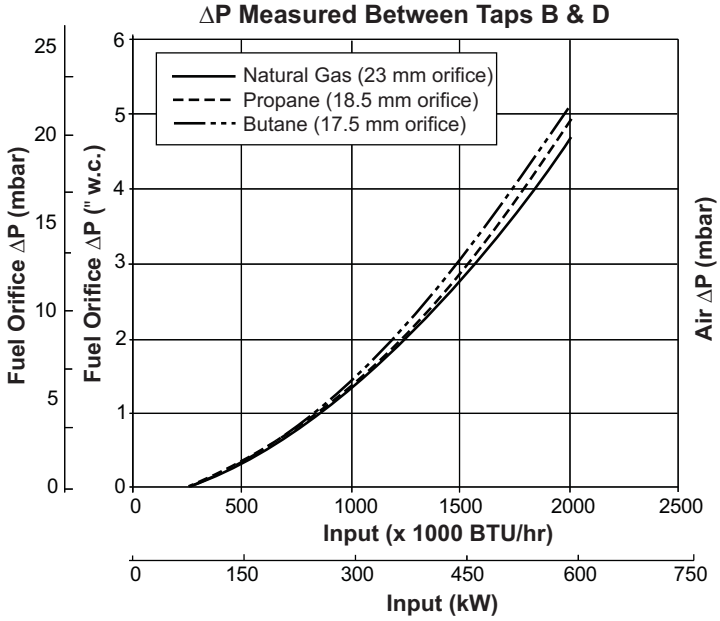


NO_X emission data is given for:
- Ambient Combustion Air ~70°F (20°C)
- Minimal Process Air Velocity
- ppm Volume Dry at 3% O_2
- Neutral Chamber Pressure

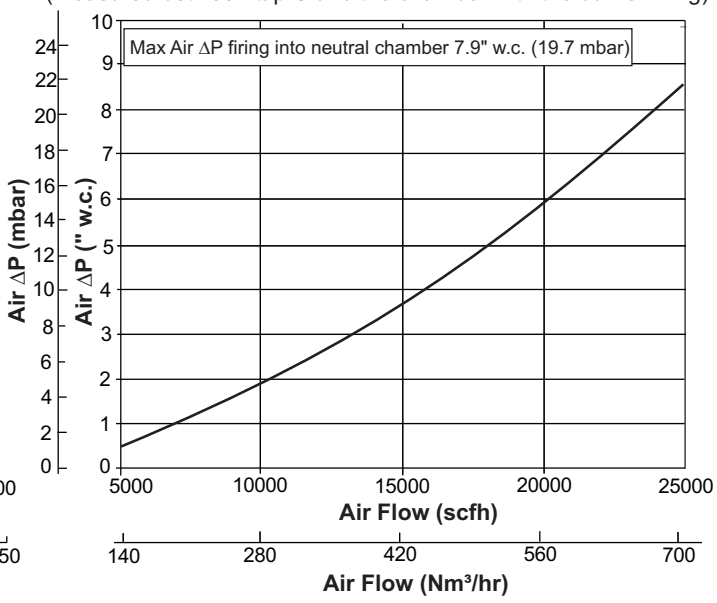
CO emission is largely influenced by chamber conditions. Contact Eclipse for an estimate of CO emissions on your application.

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 & D



Air ΔP vs. Air Flow
(Measured between tap C and the chamber with the burner firing)

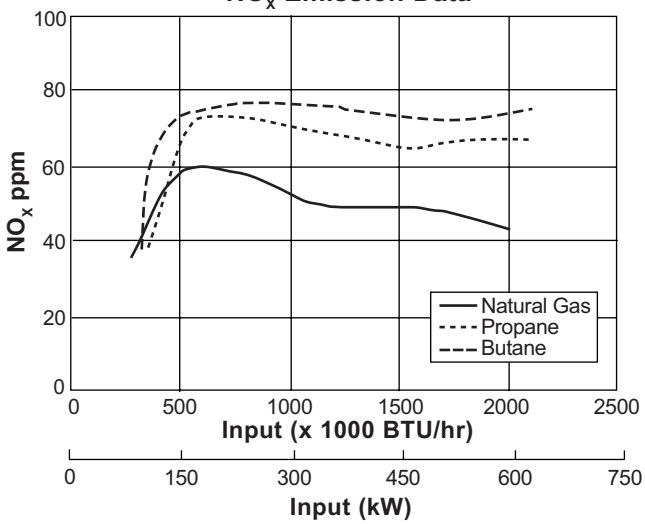


High Velocity Tube Specifications

Blower Model - 4K
(15" w.c. @ 22,000 scfh, 2hp)

Specifications					
Parameter	**Frequency**	**BTU/hr**	**kW**	**"w.c.**	**mbar**
Maximum Input vs. Chamber Pressure (Natural Gas)	60 Hz Packaged Blower	2,430,000	712	-2.0	-5,0
		2,350,000	688	-1.0	-2,5
		2,270,000	665	0.0	0,0
		2,185,000	640	1.0	2.5
		2,095,000	613	2.0	5,0

NO_x Emission Data



NO_X emission data is given for:

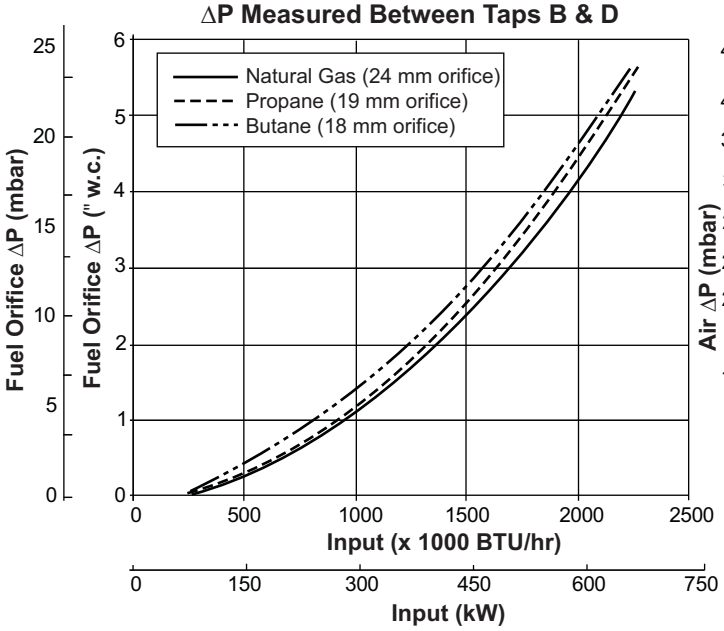
- Ambient Combustion Air ~70°F (20°C)
- Minimal Process Air Velocity
- ppm Volume Dry at 3% O_2
- Neutral Chamber Pressure

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

Emissions are influenced by:

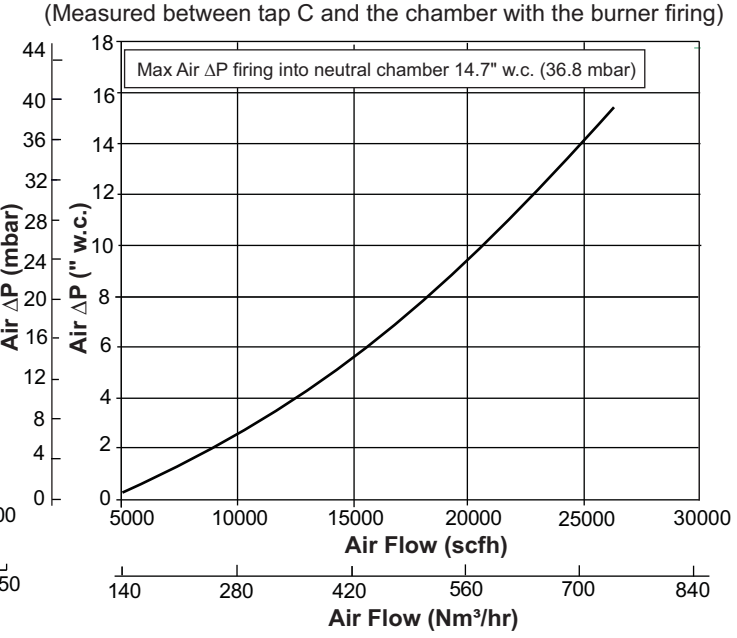
- Chamber Conditions
- Fuel Type
- Firing Rate
- Ratio Regulator Adjustment
- Combustion Air Temperature

Fuel Orifice ΔP vs. Input
ΔP Measured Between Taps B & D

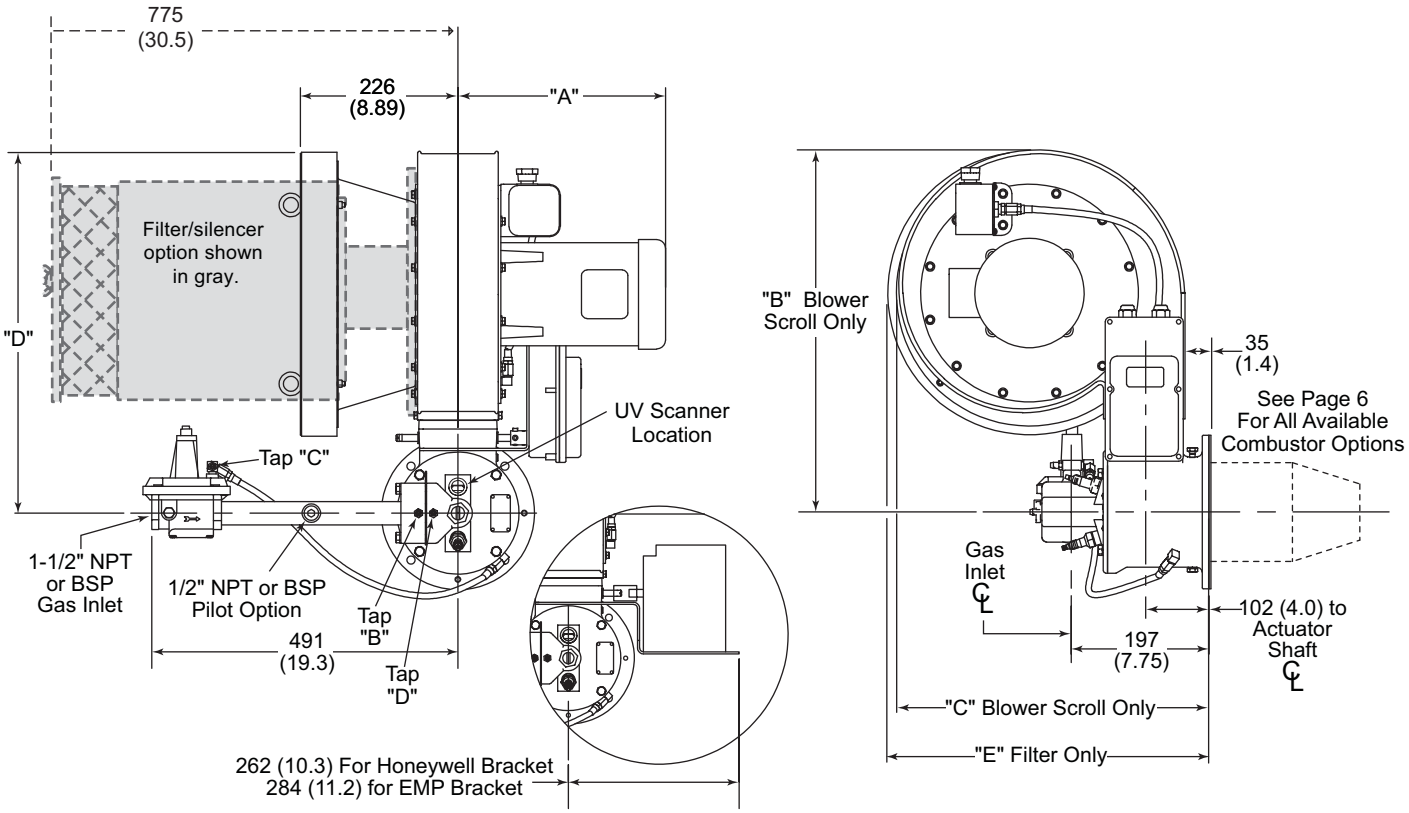


Air ΔP vs. Air Flow

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



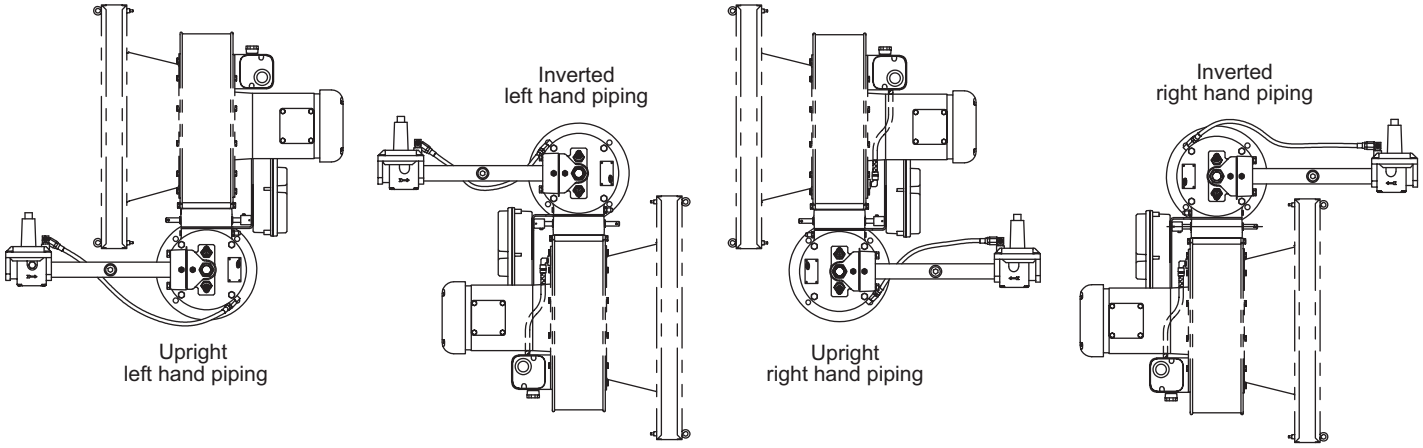
Dimensions mm (Inches)



	Combustor Type	Blower Model	Filter Type	Dimensions mm (inches)				
				A	B	C	D	E
60Hz Blower	Straight & Medium Velocity	4D	Round	298 (11.7)	578 (22.7)	503 (19.8)	547 (21.5)	485 (19.1)
	High Velocity	4K	Round	346 (13.6)	670 (26.4)	587 (23.1)	597 (23.5)	530 (20.9)
	Straight & Medium Velocity	4D	Automotive	298 (11.7)	578 (22.7)	503 (19.8)	610 (24.0)	567 (22.3)
	High Velocity	4K	Automotive	346 (13.6)	670 (26.4)	587 (23.1)	597 (23.5)	611 (24.0)
50Hz Blower	Straight & Medium Velocity	4D	Round	346 (13.6)	670 (26.4)	587 (23.1)	597 (23.5)	530 (20.9)

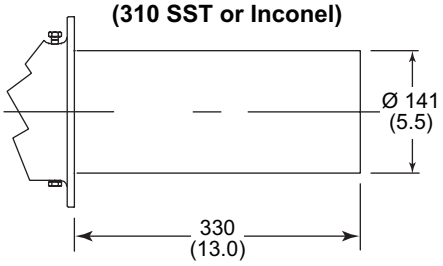
Note: Round filters are illustrated above. Automotive filters are 508x508 (20x20).

Burner Configuration & Piping Arrangement

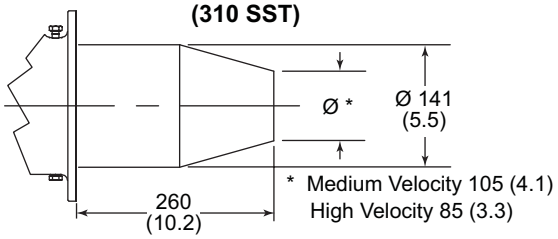


Combustor Options

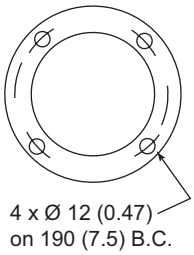
Straight Alloy Tube (310 SST or Inconel)



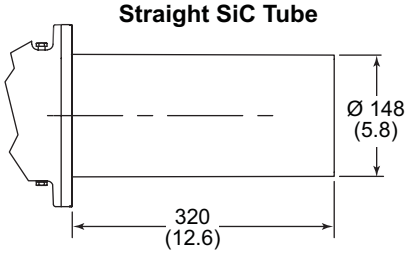
Medium & High Velocity Alloy Tube (310 SST)



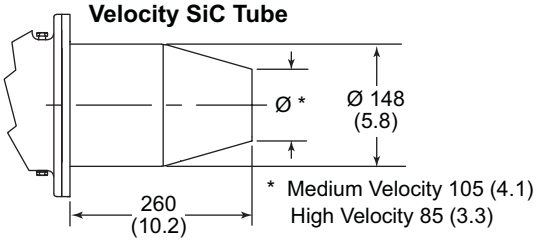
Mounting Pattern



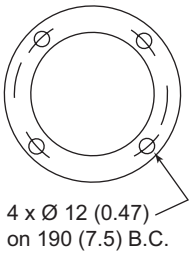
Straight SiC Tube



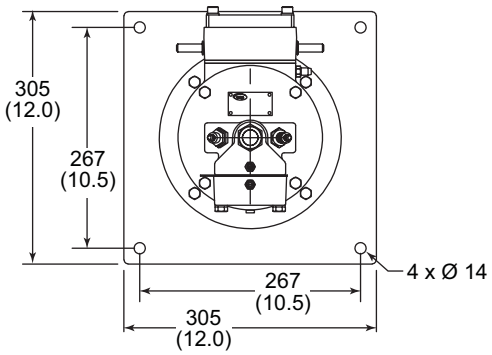
Medium & High Velocity SiC Tube

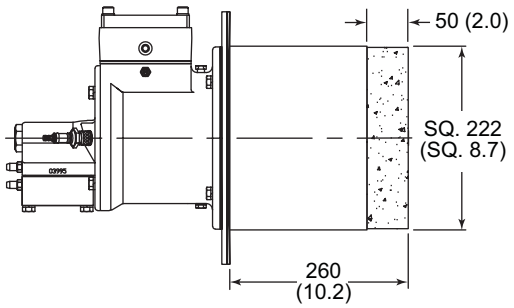


Mounting Pattern



Block & Holder





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