


# Eclipse Single-Ended Metallic Radiant Tube Burners

Model SER 450  
Version 5

Parameter	Typical Burner Input 1000's Btu/h (kW)		
	50 (14.6)	75 (21.9)	100 (29.3)
<b>Low firing rate x 1000 Btu/h (kW)<sup>1</sup></b> <i>Between 150 - 220% excess air</i>	10 (3.0)	10 (3.0)	10 (3.0)
<b>Air Inlet Pressure Required, "w.c. (mbar)<sup>3</sup></b> <i>15% Excess Air at Maximum Input</i>	9.7 (24.2)	15.6 (39.0)	18.5 (46.3)
<b>Air flow, SCFH (Nm<sup>3</sup>/h)</b> <i>At 15% excess air</i>	560 (15.0)	840 (22.5)	1120 (30.0)
<b>Gas Inlet Pressure Required, "w.c. (mbar)<sup>3</sup></b> <i>Tap B (see page 4)</i>	7.8 (19.4)	13.0 (32.4)	14.0 (34.9)
<b>Maximum Chamber Temperature</b> <i>Refer to page 3 for maximum heat flux</i>	1850°F (1010°C)		
<b>Piping</b>	NPT or BSP interface is available.		
<b>Flame detection</b>	UV Scanner		
<b>Ignition</b>	Direct Spark Ignition (6 kVAC)		
<b>Fuels</b> <i>For any other mixed gas, contact Eclipse, Inc.</i>	Natural Gas		
<b>Weight, lbs (kg)<sup>4</sup></b> <i>Burner Length "M" (less mounting extension, inner and outer tubes)</i>	36 (16.5)		
<b>Approvals</b>	 АИЗ0		

<sup>1</sup> The low fire rate represents the capability of the burner. Achievement of this rate will be affected by the control method and ratio regulator used in the system design. Typical ratio regulators provide a 10 to 1 turndown from high to low fire.

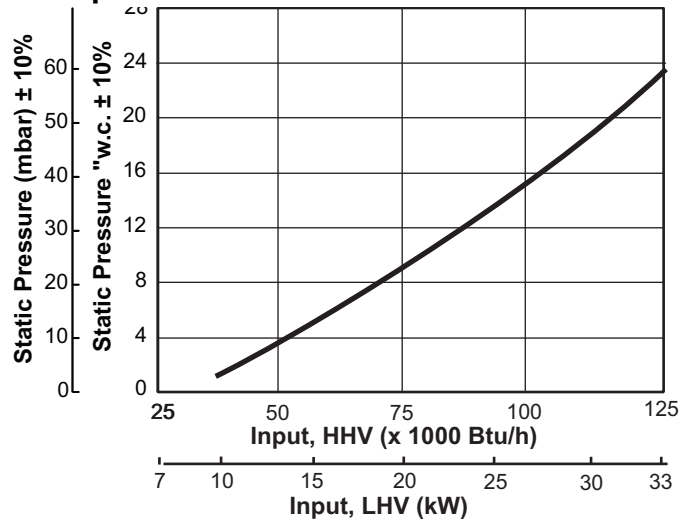
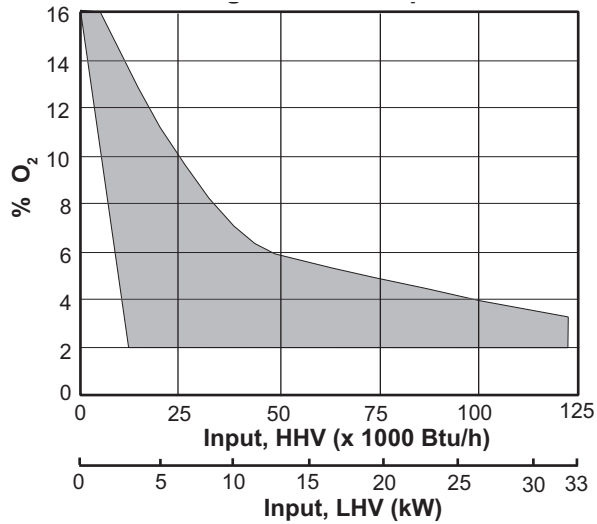
<sup>2</sup> Air supply pressure required at the burner inlet is static pressure at Tap C plus the pressure drop across Tap A to Tap C. See graphs on page 2.

<sup>3</sup> If a ratio regulator is being used, the gas pressure into the ratio regulator should be at least 5" w.c. above the static air pressure at Tap A.

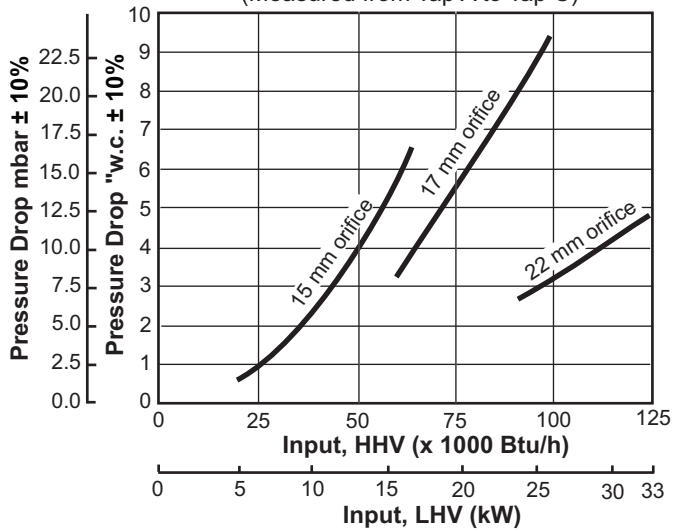
<sup>4</sup> All weights are approximate.

- Version 5 outer tubes have a larger diameter flange than previous versions. Previous version outer tubes cannot be used with the version 5 burners. Contact factory for retrofit of the burner to previous version outer tubes.
- All information is based on laboratory testing with neutral (0.0" w.c.) exhaust conditions.
- All inputs based upon gross calorific values and standard conditions: 1 atmosphere, 70°F (21°C).
- Air and fuel pressure data given in this document are based on 15% excess air and hot furnace conditions.
- Plumbing of air and gas will affect accuracy of orifice readings. All information is based on generally acceptable air and gas piping practices.
- 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.

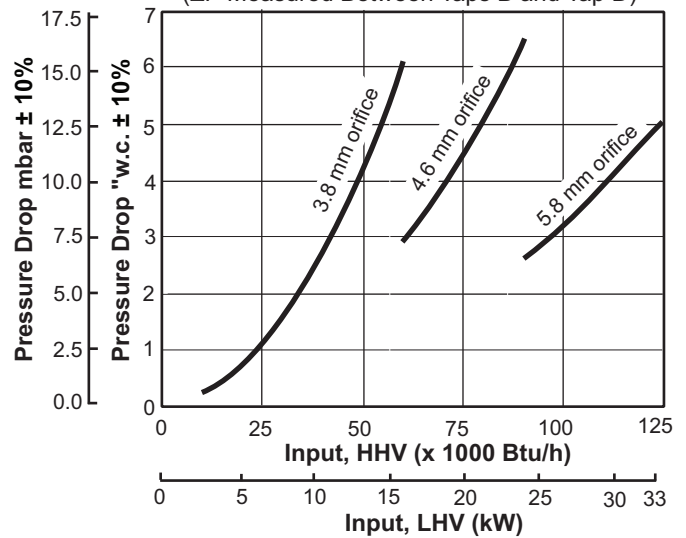
## Performance Graphs



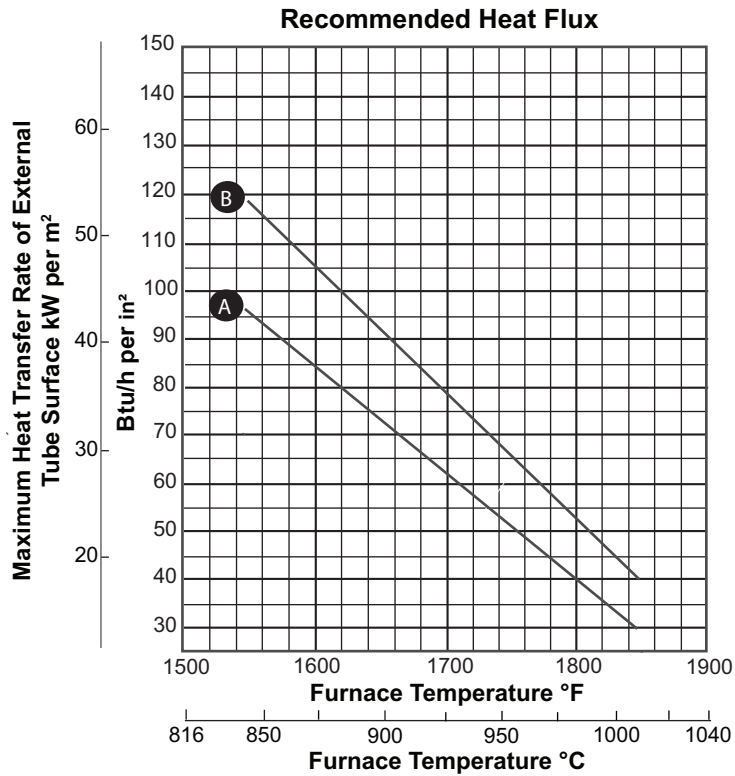
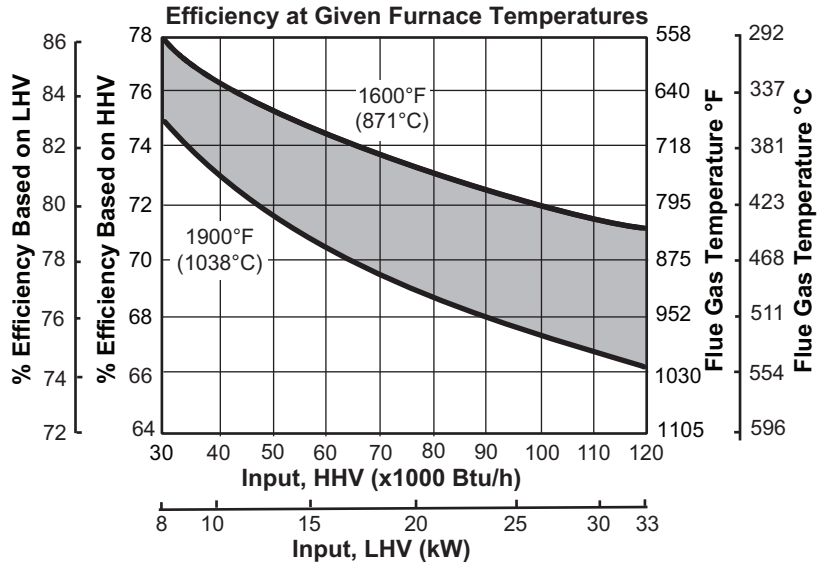
**Burner Input vs.  $\Delta P$  Air @ 3% O<sub>2</sub>**  
(Measured from Tap A to Tap C)



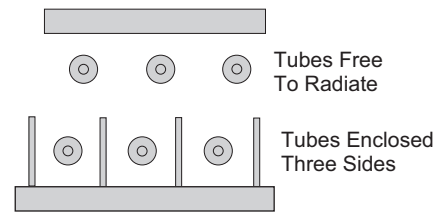
**Fuel Orifice  $\Delta P$  vs. Input**  
( $\Delta P$  Measured Between Taps B and Tap D)



# Efficiency Graphs

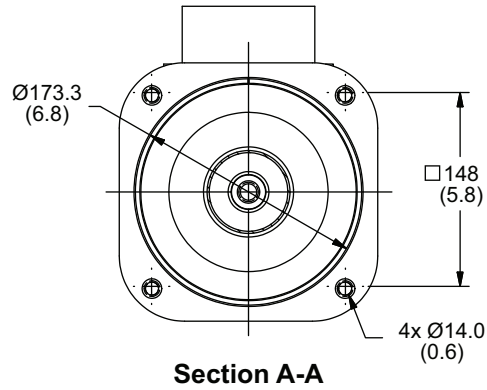
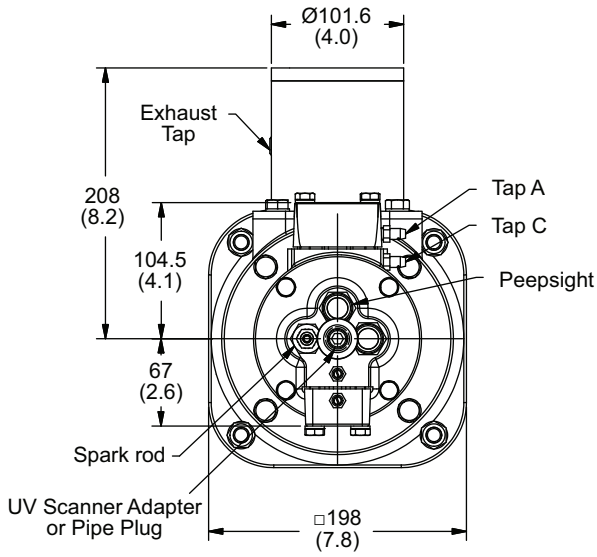


- Ⓐ Metallic outer tube, enclosed on three sides.
- Ⓑ Metallic outer tube, free to radiate.

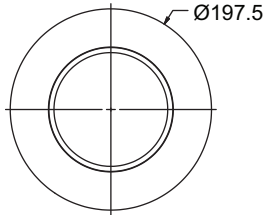


# Dimensions & Specifications

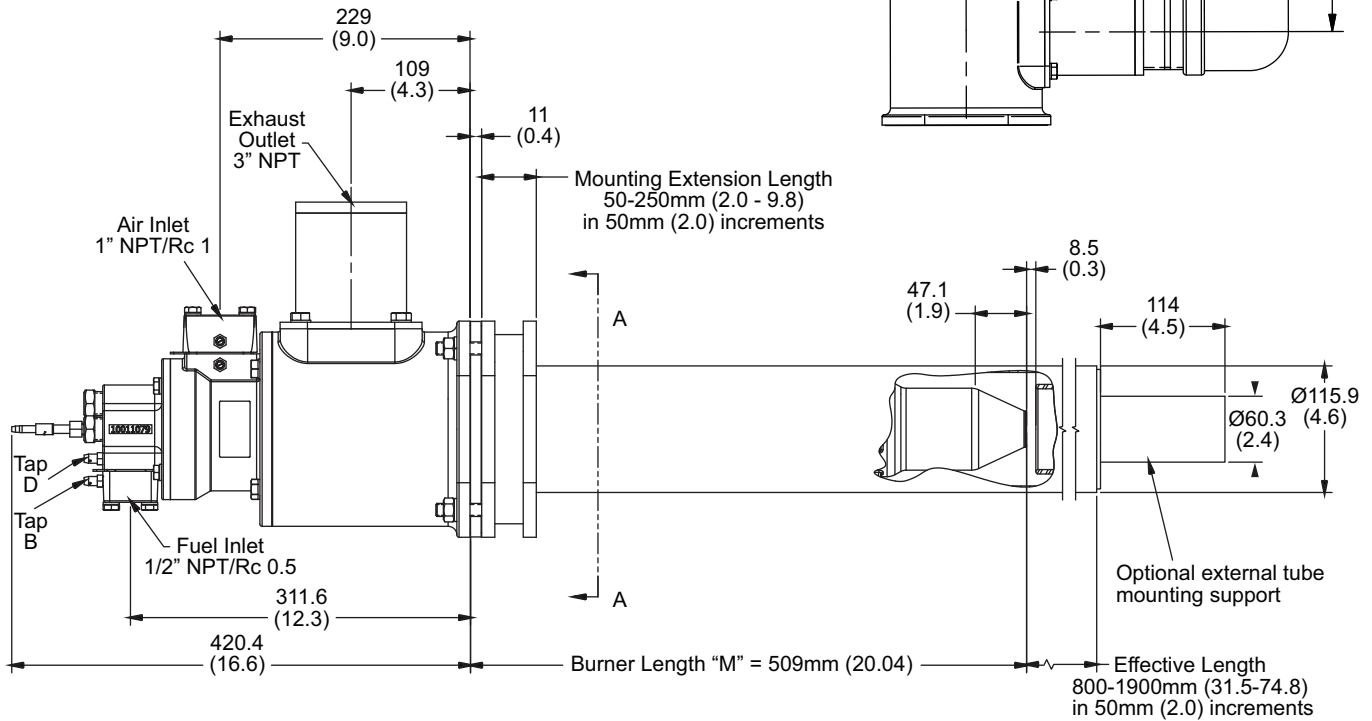
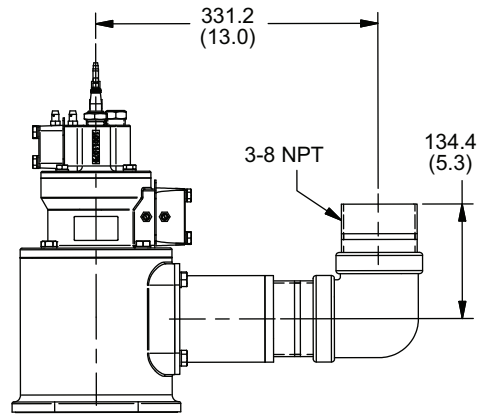
Dimensions in mm (inches)



## Outer Tube Flange View B-B



## Vertically Mounted Outer Tube Option



Version 5 outer tubes have a larger diameter flange than previous versions. Previous version outer tubes cannot be used with the version 5 burner. Contact factory for retrofit of the burner to previous version outer tubes.