


# Eclipse ThermJet Burners

## for Preheated Combustion Air

Model TJPCA0050

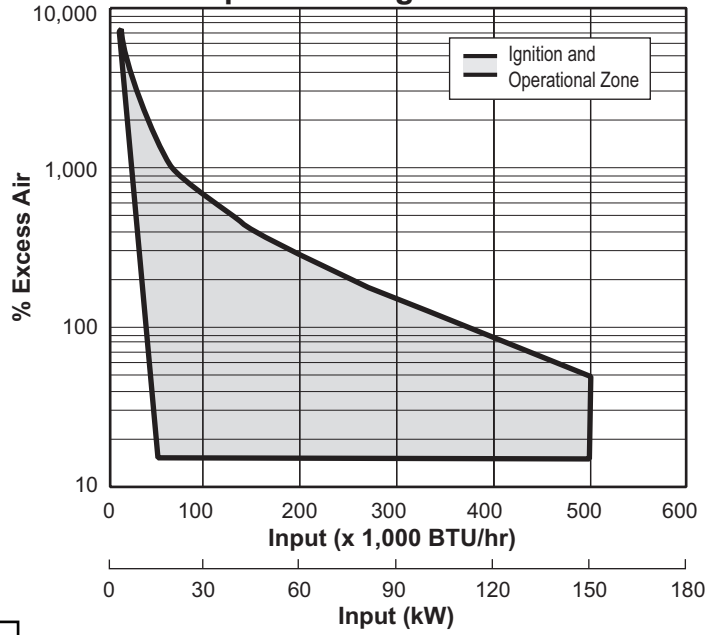
Version 2

| Parameter   |                     |                   | Specifications  |                    |                    |
|---|---------------------|-------------------|---|--------------------|--------------------|
|   |                     |                   | Natural Gas   | Propane            | Butane             |
| Maximum Input BTU/hr (kW)   |                     |                   | 500,000<br>(146.5)  | 500,000<br>(146.5) | 500,000<br>(146.5) |
| Minimum Input, On-Ratio BTU/hr (kW)   |                     |                   | 50,000<br>(14.6)  | 50,000<br>(14.6)   | 50,000<br>(14.6)   |
| Gas Inlet Pressure Required "w.c. (mbar)<br>Fuel Pressure at Gas Inlet<br>(Tap "B" - see page 3)      | Combustion Air Temp | Ambient           | 8.9<br>(22.1)   | 11.4<br>(28.3)     | 9.6<br>(23.8)      |
|   |                     | 300°F<br>(150°C)  | 10.9<br>(27.0)  | 13.8<br>(34.2)     | 11.8<br>(29.3)     |
|   |                     | 700°F<br>(370°C)  | 14.4<br>(35.8)  | 18.1<br>(44.8)     | 15.8<br>(39.2)     |
|   |                     | 1000°F<br>(540°C) | 17.1<br>(42.4)  | 21.3<br>(52.8)     | 18.8<br>(46.7)     |
| Air Inlet Pressure Required "w.c. (mbar)<br>15% Excess Air at Maximum Input<br>(Tap "A" - see page 3) | Combustion Air Temp | Ambient           | 5.2<br>(13)   | 5.2<br>(13)        | 5.2<br>(13)        |
|   |                     | 300°F<br>(150°C)  | 7.5<br>(18.7)   | 7.5<br>(18.7)      | 7.5<br>(18.7)      |
|   |                     | 700°F<br>(370°C)  | 11.4<br>(28.4)  | 11.4<br>(28.4)     | 11.4<br>(28.4)     |
|   |                     | 1000°F<br>(540°C) | 14.3<br>(35.6)  | 14.3<br>(35.6)     | 14.3<br>(35.6)     |
| High Fire Flame Length Inches (mm)<br>(Measured from End of Combustor)                                |                     |                   | <28.0<br>(711)  | <36.0<br>(914)     | <39.0<br>(991)     |
| Flame Detection   |                     |                   | UV scanner available for all combustors.  |                    |                    |
| Fuel<br>For any other mixed gas, contact Eclipse for orifice sizing.                                  |                     |                   | Natural gas, propane, or butane   |                    |                    |
| Approvals   |                     |                   |  |                    |                    |

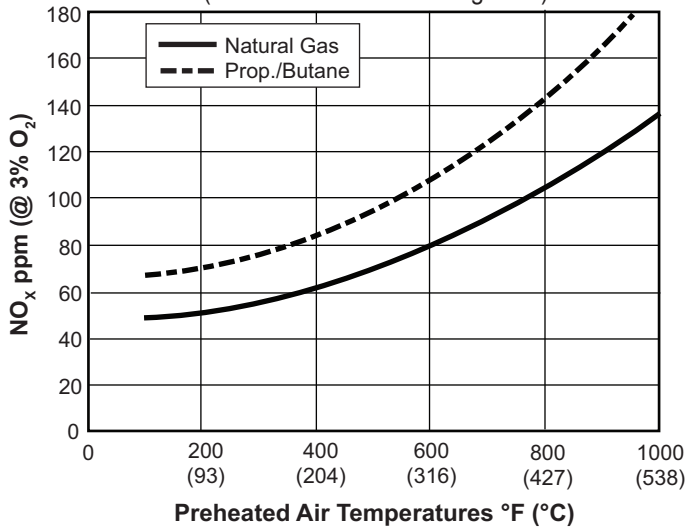
- All information is based on laboratory testing in neutral (0.0" w.c.) pressure chamber. Different chamber size and conditions may affect the data.
- All information is based on standard combustor design. Changes in combustor will alter performance and pressures.
- All inputs based upon gross calorific values.
- 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.
- Plumbing of air and gas will affect accuracy of orifice readings. All information is based on generally acceptable air and gas piping practices.

# Performance Graphs

## Operational/Ignition Zone



## NO<sub>x</sub> vs Preheated Air Temperatures (Based on Maximum Firing Rate)

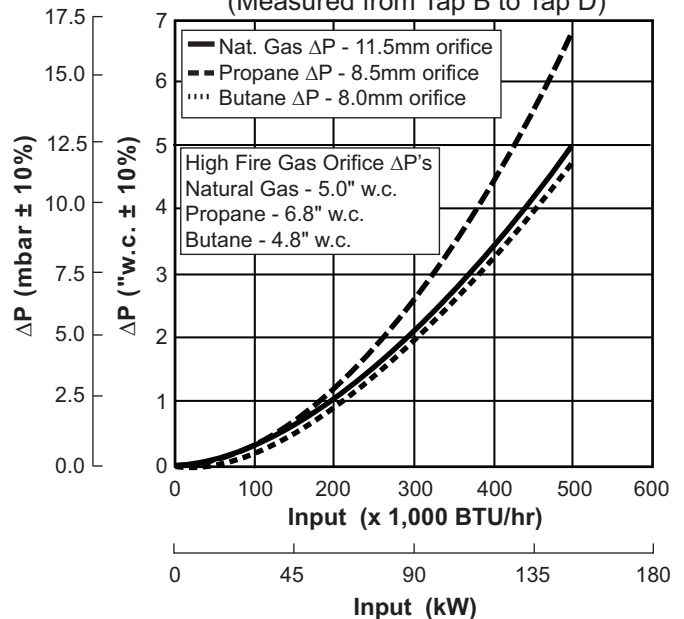


Emissions from the burner are influenced by:

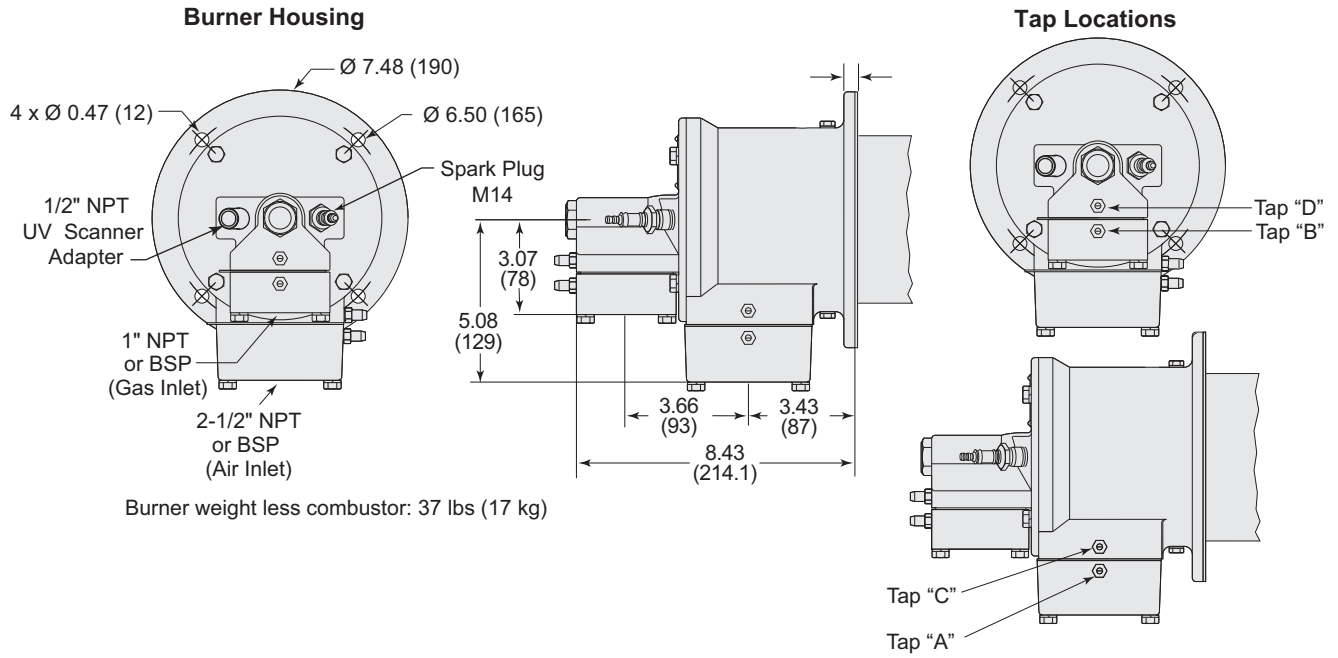
- Fuel type
- Combustion air temperature
- Firing rate
- Chamber conditions
- Percent of excess air

For estimates of other emissions, contact Eclipse.

## Gas Orifice ΔP vs. Input (Measured from Tap B to Tap D)

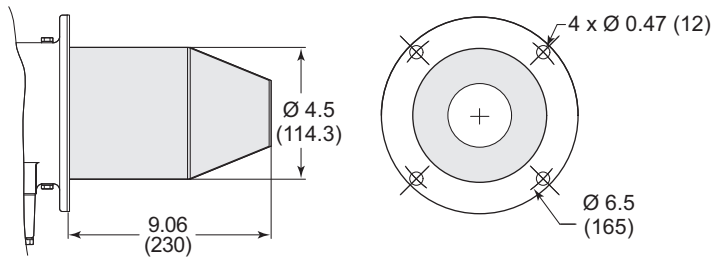


## Dimensions in inches (mm)



### Combustor

Exhaust Outlet Diameter - Medium Velocity: Ø 2.11 (53.5)

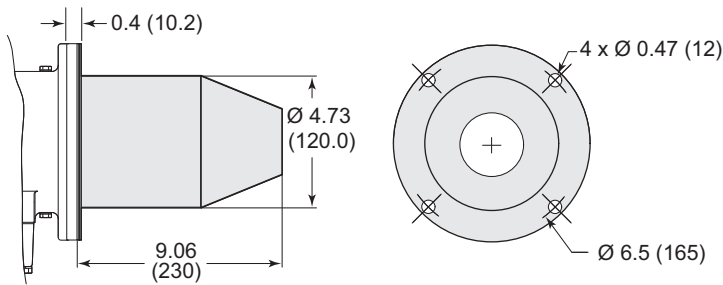


**Alloy Tube (AISI 310)**

Weight: 3.0 lbs 1.36 kg

Max Chamber Temp: 1,750°F (950°C)

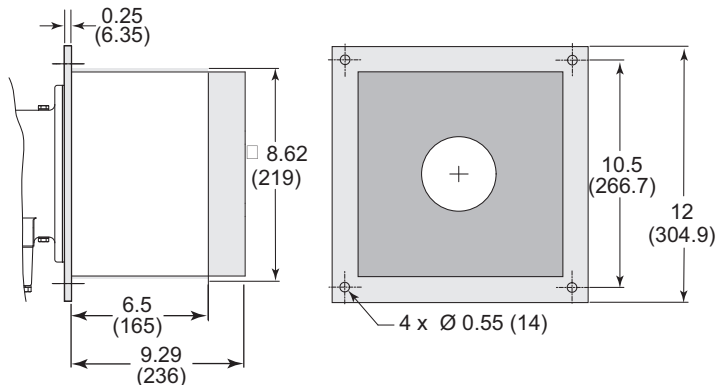
(Not suitable for preheated air over 700°F)



**Silicon Carbide Tube**

Weight: 3.3 lbs (1.5 kg)

Max. Chamber Temp: 2,200°F (1200°C)



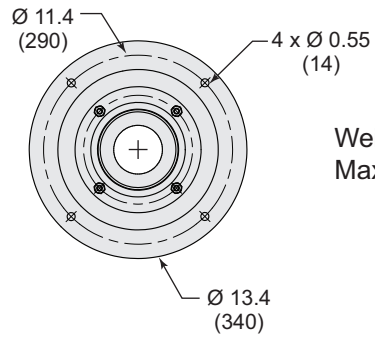
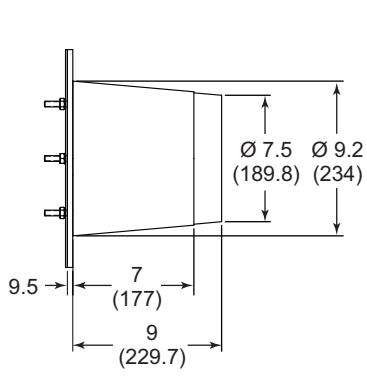
**Refractory Block**

(w/RA330 wrapper)

Weight: 62.5 lbs (28.3 kg)

Max Chamber Temp: 2,800°F (1538°C)

## Down Firing Block



Weight: 60 lbs (27.22 kg)  
Max. Chamber Temp: 2800°F (1535°C)