### Eclipse ThermJet Burners

**for Preheated Combustion Air**

**Model TJPCA0040**

**Version 2**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Input BTU/hr (kW)</td>
<td>Natural Gas 400,000 (117)</td>
</tr>
<tr>
<td></td>
<td>Propane 400,000 (117)</td>
</tr>
<tr>
<td></td>
<td>Butane 400,000 (117)</td>
</tr>
<tr>
<td>Minimum Input, On-Ratio BTU/hr (kW)</td>
<td>Natural Gas 40,000 (11.7)</td>
</tr>
<tr>
<td></td>
<td>Propane 40,000 (11.7)</td>
</tr>
<tr>
<td></td>
<td>Butane 40,000 (11.7)</td>
</tr>
<tr>
<td>Gas Inlet Pressure Required &quot;w.c. (mbar)</td>
<td>Ambient 5.5 (13.7)</td>
</tr>
<tr>
<td>Fuel Pressure at Gas Inlet (Tap &quot;B&quot; - see page 3)</td>
<td>300°F (150°C) 7.2 (17.9)</td>
</tr>
<tr>
<td></td>
<td>700°F (370°C) 10.3 (25.6)</td>
</tr>
<tr>
<td></td>
<td>1000°F (540°C) 12.7 (31.4)</td>
</tr>
<tr>
<td>Combustion Air Temp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air Inlet Pressure Required &quot;w.c. (mbar) 15% Excess Air at Maximum Input (Tap &quot;A&quot; - see page 3)</td>
</tr>
<tr>
<td></td>
<td>300°F (150°C) 4.9 (12.2)</td>
</tr>
<tr>
<td></td>
<td>700°F (370°C) 7.4 (18.4)</td>
</tr>
<tr>
<td></td>
<td>1000°F (540°C) 9.4 (23.4)</td>
</tr>
<tr>
<td>Combustion Air Temp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flameth Length Inches (mm)</td>
</tr>
<tr>
<td>(Measured from End of Combustor)</td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel</td>
<td>UV scanner available for all combustors.</td>
</tr>
<tr>
<td><strong>Fuel</strong></td>
<td>Natural gas, propane, or butane.</td>
</tr>
</tbody>
</table>

- 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

Ignition & Operational Zones

% Excess Air

Input (x 1,000 BTU/hr)

0 100 200 300 400

Input (kW)

0 30 60 90 120

Emission 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.

NO\textsubscript{x} vs. Preheated Air Temperatures
(Based on Maximum Firing Rate)

NO\textsubscript{x} ppm (@ 3% O\textsubscript{2})

Preheated Air Temperatures °F (°C)

High Fire Gas Orifice ∆P's
Natural Gas - 4.3" w.c.
Propane - 3.8" w.c.
Butane - 3.1" w.c.

Emission 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.
Dimensions in inches (mm)

Burner Housing

Dimensions in inches (mm)

Tap Locations

Burner weight less combustor: 21.6 lbs (9.8 kg)

Combustor

Exhaust Outlet Diameter - Medium Velocity: Ø2.36 (60)

Alloy Tube (AISI 310)
Weight: 2.1 lbs (0.95 kg)
Maximum Chamber Temp: 1,750°F (950°C)
(Not suitable for preheated air over 700°F)

Silicon Carbide Tube
Weight: 3.6 lbs (1.63 kg)
Maximum Chamber Temp: 2,200°F (1200°C)

Refractory Block (w/330 SS wrapper)
Weight: 14 lbs (6.35 kg)
Maximum Chamber Temp: 2,800°F (1538°C)