## Eclipse ThermJet Burners

### for Preheated Combustion Air

**Model TJPCA0100**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Natural Gas</th>
<th>Propane</th>
<th>Butane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximum Input BTU/hr (kW)</strong></td>
<td>1,000,000 (293)</td>
<td>1,000,000 (293)</td>
<td>1,000,000 (293)</td>
</tr>
<tr>
<td><strong>Minimum Input, On-Ratio BTU/hr (kW)</strong></td>
<td>100,000 (29)</td>
<td>100,000 (29)</td>
<td>100,000 (29)</td>
</tr>
<tr>
<td><strong>Gas Inlet Pressure Required &quot;w.c. (mbar)</strong></td>
<td>Ambient: 5.5 (13.7)</td>
<td>8.0 (19.9)</td>
<td>7.5 (18.6)</td>
</tr>
<tr>
<td>Fuel Pressure at Gas Inlet</td>
<td>300°F (150°C): 6.7 (16.7)</td>
<td>9.2 (22.9)</td>
<td>8.7 (21.7)</td>
</tr>
<tr>
<td></td>
<td>700°F (370°C): 8.9 (22.2)</td>
<td>11.4 (28.4)</td>
<td>10.9 (27.2)</td>
</tr>
<tr>
<td></td>
<td>1000°F (540°C): 10.6 (26.3)</td>
<td>13.1 (32.6)</td>
<td>12.6 (31.3)</td>
</tr>
<tr>
<td><strong>Air Inlet Pressure Required &quot;w.c. (mbar)</strong></td>
<td>Ambient: 3.5 (8.7)</td>
<td>3.5 (8.7)</td>
<td>3.5 (8.7)</td>
</tr>
<tr>
<td>15% Excess Air at Maximum Input</td>
<td>300°F (150°C): 5 (12.5)</td>
<td>5 (12.5)</td>
<td>5 (12.5)</td>
</tr>
<tr>
<td></td>
<td>700°F (370°C): 7.7 (19.2)</td>
<td>7.7 (19.2)</td>
<td>7.7 (19.2)</td>
</tr>
<tr>
<td></td>
<td>1000°F (540°C): 9.6 (23.9)</td>
<td>9.6 (23.9)</td>
<td>9.6 (23.9)</td>
</tr>
<tr>
<td><strong>High Fire Flame Length Inches (mm)</strong></td>
<td>&lt;38.0 (965)</td>
<td>&lt;37.0 (940)</td>
<td>&lt;42.0 (1065)</td>
</tr>
<tr>
<td>(Measured from End of Combustor)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flame Detection</strong></td>
<td>UV scanner available for all combustors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fuel</strong></td>
<td>Natural gas, propane, or butane</td>
<td></td>
<td></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

NO$_x$ 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.
Dimensions in inches (mm)

Burner Housing

- 4 x Ø 0.47 (12)
- 1/2" NPT UV Scanner Adapter
- 1-1/2" NPT or BSP
- 3" NPT or BSP

Tap Locations

- Spark Plug M14
- 3.19 (81)
- 5.5 (140)
- 4.13 (105)
- 9.45 (240)

Burner weight less combustor: 42 lbs (19 kg)

Combustor

Exhaust Outlet Diameter - Medium Velocity: Ø 3 (76.4)

- 4 x Ø 0.47 (12)

Alloy Tube (AISI 310)

Weight: 3.2 lbs (1.45 kg)
Max Chamber Temp: 1,750°F (950°C)
(Not suitable for preheated air over 700°F)

Silicon Carbide Tube

Weight: 3.2 lbs (1.45 kg)
Max. Chamber Temp: 2,200°F (1200°C)

Refractory Block

(w/RA330 wrapper)
Weight: 61.3 lbs (28 kg)
Max Chamber Temp: 2,800°F (1538°C)
Down Firing Block

- Weight: 75 lbs (34 kg)
- Max. Chamber Temp: 2800°F (1535°C)