# Eclipse ThermJet Burners for Preheated Combustion Air

**Model TJPCA0300**

**Version 2**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specifications</th>
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</thead>
<tbody>
<tr>
<td>**Maximum Input, Btu/h (kW)**¹</td>
<td>Natural Gas: 3,000,000 (791)</td>
</tr>
<tr>
<td>**Minimum Input, Btu/h (kW)**¹</td>
<td>300,000 (79)</td>
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<tr>
<td><strong>Main Gas Inlet Pressure, &quot;w.c. (mbar)</strong> Fuel pressure at gas inlet Tap B (see page 3)</td>
<td>Ambient: 6.0 (14.9)</td>
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<tr>
<td></td>
<td>300°F (150°C): 7.8 (19.5)</td>
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<tr>
<td></td>
<td>700°F (370°C): 11.2 (27.7)</td>
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<tr>
<td></td>
<td>1000°F (540°C): 13.7 (34.1)</td>
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<tr>
<td><strong>Air Inlet Pressure, &quot;w.c. (mbar) 15% excess air at maximum input</strong></td>
<td>Ambient: 4.5 (11.2)</td>
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<tr>
<td></td>
<td>300°F (150°C): 6.3 (15.7)</td>
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<tr>
<td></td>
<td>700°F (370°C): 9.7 (24.2)</td>
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<tr>
<td></td>
<td>1000°F (540°C): 12.2 (30.4)</td>
</tr>
<tr>
<td><strong>High Fire Visible Flame Length, inches (mm)</strong> Measured from the outlet end of combustor</td>
<td>&lt;64.0 (1630)</td>
</tr>
<tr>
<td><strong>Flame Detection</strong></td>
<td>UV scanner available for all combustors.</td>
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<tr>
<td><strong>Fuels²</strong> For any other mixed gas, contact Eclipse for orifice sizing.</td>
<td>Natural gas, Propane, or Butane</td>
</tr>
</tbody>
</table>

1. All imperial inputs based upon gross calorific values (HHV). All metric inputs based upon net calorific values (LHV).
2. See Design Guide 205 for more information about typical fuel composition and properties.
   - All information is based on laboratory testing in neutral (0 "w.c., 0 mbar) pressure chamber. Different chamber 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 standard conditions; 1 atmosphere, 70°F (21°C).
   - 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 and Operation Zone

% Excess Air

0  100  200  300  400  500  600  700  800
Input LHV (kW)

0  100  200  300  400  500  600  700  800
Input HHV (x 1,000 Btu/h)

Fuel Orifice Δp vs. Input
(Δp Measured Between Taps B and D)

Natural Gas Δp - 29.0 mm orifice
Propane Δp - 22.5 mm orifice
Butane Δp - 22.5 mm orifice

ΔP (mbar ± 10%)

0.0  2.5  5.0  7.5  10.0  12.5  15.0
Input HHV (x 1,000 Btu/h)

ΔP (w.c. ± 10%)

0.0  2.5  5.0  7.5  10.0  12.5  15.0
Input LHV (kW)
Dimensions and Specifications
Dimensions in mm (inches)

Burner Housing

Burner weight less combustor: 89 lbs (40 kg)

Tap Locations

Tap C
Tap D
Tap B
Dimensions and Specifications
Dimensions in mm (inches)

Combustors

Alloy Combustor (AISI 310)
Weight: 13.5 lbs (6 kg)
Maximum Chamber Temp: 1,750°F (950°C)
[Not Suitable for Preheated Air Over 700°F (371°C)]

Refractory Combustor with AISI 330 wrapper
Weight: 131.4 lbs (60 kg)
Maximum Chamber Temp: 2,800°F (1,538°C)

Down Firing Block with AISI 330 wrapper
Weight: 135 lbs (61.2 kg)
Maximum Chamber Temp: 2,800°F (1,538°C)

NOTE: Mounting gasket shown on right side of combustor flange. Dimensions shown do not account for mounting gasket.