### Eclipse ThermJet

**Burners**

**Model TJ0075**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Burner Velocity</th>
<th>Model TJ0075</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Input BTU/hr (kW)</td>
<td>Medium &amp; High Velocity</td>
<td>750,000 (220)</td>
</tr>
<tr>
<td>Minimum Input, On-Ratio BTU/hr (kW)</td>
<td>Medium &amp; High Velocity</td>
<td>75,000 (22)</td>
</tr>
<tr>
<td>Minimum Input, Fixed Air BTU/hr (kW)</td>
<td>Medium &amp; High Velocity</td>
<td>15,000 (4.4)</td>
</tr>
<tr>
<td>Gas Inlet Pressure Required &quot;w.c. (mbar) Fuel Pressure at Gas Inlet (Tap “B” - see page 3)</td>
<td>High Velocity</td>
<td>Natural Gas 13.8 (34.4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Propane 18.3 (45.6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Butane 17.4 (43.3)</td>
</tr>
<tr>
<td></td>
<td>Medium Velocity</td>
<td>Natural Gas 7.2 (17.9)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Propane 10.2 (25.4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Butane 9.7 (24.1)</td>
</tr>
<tr>
<td>Air Inlet Pressure Required &quot;w.c. (mbar) 15% Excess Air at Maximum Input (Tap “A” - see page 3)</td>
<td>High Velocity</td>
<td>Natural Gas 16.0 (39.8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Propane 16.9 (42.1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Butane 17.0 (42.3)</td>
</tr>
<tr>
<td></td>
<td>Medium Velocity</td>
<td>Natural Gas 9.0 (22.4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Propane 9.3 (23.2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Butane 9.5 (23.7)</td>
</tr>
<tr>
<td>High Fire Flame Length Inches (mm) (Measured from End of Combustor)</td>
<td>High Velocity</td>
<td>Natural Gas 28 (711)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Propane 30 (762)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Butane 33 (838)</td>
</tr>
<tr>
<td></td>
<td>Medium Velocity</td>
<td>Natural Gas 28 (711)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Propane 38 (965)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Butane 38 (965)</td>
</tr>
<tr>
<td>Maximum Flame Velocity ft/s (m/s) 15% Excess Air at Maximum Input</td>
<td>High Velocity</td>
<td>500 (152.4)</td>
</tr>
<tr>
<td></td>
<td>Medium Velocity</td>
<td>250 (76.2)</td>
</tr>
<tr>
<td>Maximum Combustion Air Temperature</td>
<td>300°F (149°C). For higher temperatures, use TJPCA (Data 206).</td>
<td></td>
</tr>
<tr>
<td>Flame Detection</td>
<td>UV scanners available for all combustors. Flamerod available for all combustors and operating temperatures up to 2,500°F (1,371°C).</td>
<td></td>
</tr>
<tr>
<td>Fuel</td>
<td>Natural gas, propane, or butane. For any other mixed gas, contact Eclipse for orifice sizing.</td>
<td></td>
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<tr>
<td>Approvals</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.
Eclipse ThermJet Model TJ0075 V2, Data 205-4, 1/16/2009

**Performance Graphs**

**Operational/Ignition Zone**

% Excess Air

- Ignition and Operational Zone

**Input (x 1,000 BTU/hr)**

- 0
- 30
- 60
- 90
- 120
- 150
- 180
- 210
- 240

**Input (kW)**

- 0
- 10
- 30
- 50
- 70
- 90
- 110
- 130
- 150

**NOₓ Emissions**

(High Velocity Combustor)

- NOₓ ppm (at 3% O₂)

**Input (x 1,000 BTU/hr)**

- 0
- 30
- 60
- 90
- 120
- 150
- 180
- 210
- 240

**Input (kW)**

- 0
- 10
- 30
- 50
- 70
- 90
- 110
- 130
- 150

Correction factor for medium velocity combustor is 1.20. Emissions data based on on-ratio control, firing 15% excess air, corrected to 3% O₂.

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)

- High Fire Gas Orifice ΔP's
  - Natural Gas - 4.1" w.c.
  - Propane - 7.8" w.c.
  - Butane - 6.5" w.c.

**Air Orifice ΔP vs. Input**

(Measured from Tap A to Tap C)

- 15% Excess Air at Maximum Input

- Air Orifice (49 mm) ΔP
  - 6.1" w.c. at High Fire

Correction factor for medium velocity combustor is 1.20. Emissions data based on on-ratio control, firing 15% excess air, corrected to 3% O₂.

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**

- Diameter: 8.75 (222) mm
- Diameter: 10.5 (266.7) mm
- Diameter: 12 (304.9) mm
- Diameter: 6.49 (165) mm

**Tap Locations**

- Tap "D"
- Tap "B"
- Tap "C"
- Tap "A"

**Combustor**

- Exhaust Outlet Diameter: High Velocity: Ø2.11 (53.5)
- Medium Velocity: Ø2.91 (74)

**Alloy Tube (AISI 310)**

- Weight: 3.0 lbs (1.4 kg)
- Max Chamber Temp: 1,750°F (950°C)

**Silicon Carbide Tube**

- Weight: 3.3 lbs (1.5 kg)
- Max Chamber Temp: 2,500°F (1371°C)

**Refractory Block**

- Weight: 63 lbs (28.6 kg)
- Max Chamber Temp: 2,800°F (1538°C)

**Combustor Weight**

- Burner weight less combustor: 37 lbs (16.8 kg)
Down Firing Block

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