# Eclipse ThermJet

## Burners

### Model TJ0750

Version 2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Burner Velocity</th>
<th>Model TJ0750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Input Btu/h (kW)</td>
<td>Medium &amp; High Velocity</td>
<td>7,500,000 (2198)</td>
</tr>
<tr>
<td>Minimum Input, On-Ratio Btu/h (kW)</td>
<td>Medium &amp; High Velocity</td>
<td>750,000 (220)</td>
</tr>
<tr>
<td>Minimum Input, Fixed Air Btu/h (kW)</td>
<td>Medium &amp; High Velocity</td>
<td>150,000 (44)</td>
</tr>
<tr>
<td>Gas Inlet Pressure Required &quot;w.c. (mbar)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Pressure at Gas Inlet (Tap “B” - see page 3)</td>
<td>High Velocity</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>13.4 (33.4)</td>
<td></td>
</tr>
<tr>
<td>Propane</td>
<td>13.4 (33.4)</td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td>13.4 (33.4)</td>
<td></td>
</tr>
<tr>
<td>Medium Velocity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>6.7 (16.7)</td>
<td></td>
</tr>
<tr>
<td>Propane</td>
<td>6.7 (16.7)</td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td>6.7 (16.7)</td>
<td></td>
</tr>
<tr>
<td>Air Inlet Pressure Required &quot;w.c. (mbar)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15% Excess Air at Maximum Input (Tap “A” - see page 3)</td>
<td>High Velocity</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>16.6 (41.3)</td>
<td></td>
</tr>
<tr>
<td>Propane</td>
<td>16.6 (41.3)</td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td>16.6 (41.3)</td>
<td></td>
</tr>
<tr>
<td>Medium Velocity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>10.2 (25.4)</td>
<td></td>
</tr>
<tr>
<td>Propane</td>
<td>10.2 (25.4)</td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td>10.2 (25.4)</td>
<td></td>
</tr>
<tr>
<td>High Fire Flame Length Inches (mm) (Measured from End of Combustor)</td>
<td>High Velocity</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>100 (2540)</td>
<td></td>
</tr>
<tr>
<td>Propane</td>
<td>115 (2921)</td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td>110 (2794)</td>
<td></td>
</tr>
<tr>
<td>Medium Velocity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>125 (3175)</td>
<td></td>
</tr>
<tr>
<td>Propane</td>
<td>125 (3175)</td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td>130 (3302)</td>
<td></td>
</tr>
<tr>
<td>Maximum Flame Velocity ft/s (m/s) 15% Excess Air at Maximum Input</td>
<td>High Velocity</td>
<td>570 (174)</td>
</tr>
<tr>
<td>Medium Velocity</td>
<td></td>
<td>280 (85)</td>
</tr>
<tr>
<td>Maximum Combustion Air Temperature</td>
<td></td>
<td>300°F (149°C). For higher temperatures, use TJPCA (Data 206).</td>
</tr>
<tr>
<td>Flame Detection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flamerods can be used with all combustors and operating temperatures up to 2,200°F (1,204°C). UV scanners can be used with all combustors. Certain piping configurations prohibit the use of a flamerod, see page 3 for details.</td>
<td></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>
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</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

<table>
<thead>
<tr>
<th>Input (x 1,000 Btu/h)</th>
<th>% Excess Air</th>
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<tbody>
<tr>
<td>0</td>
<td>0</td>
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<tr>
<td>1,000</td>
<td>10</td>
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<tr>
<td>2,000</td>
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<tr>
<td>3,000</td>
<td>1,000</td>
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<tr>
<td>4,000</td>
<td>10,000</td>
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<tr>
<td>5,000</td>
<td>100,000</td>
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<tr>
<td>6,000</td>
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<tr>
<td>7,000</td>
<td>10,000,000</td>
</tr>
<tr>
<td>8,000</td>
<td>100,000,000</td>
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<table>
<thead>
<tr>
<th>Input (kW)</th>
<th>Ignition Zone</th>
<th>Operational Zone</th>
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<tbody>
<tr>
<td>0</td>
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<tr>
<td>100</td>
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<tr>
<td>1,000</td>
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<tr>
<td>1,100</td>
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<tr>
<td>1,200</td>
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<td>1,300</td>
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<td>1,500</td>
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<td>1,600</td>
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<td>1,700</td>
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<td>1,800</td>
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<tr>
<td>2,000</td>
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</table>

NOx Emissions
(High Velocity Combustor)

<table>
<thead>
<tr>
<th>Input (x 1000 Btu/h)</th>
<th>NOx ppm @ 3% O2</th>
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<tbody>
<tr>
<td>0</td>
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<tr>
<td>1,000</td>
<td>80</td>
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<tr>
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</tr>
<tr>
<td>5,000</td>
<td>10</td>
</tr>
<tr>
<td>6,000</td>
<td>0</td>
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</tbody>
</table>

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

- Ø15.35 (390)
- 8 x Ø 0.47 (12)
- 3" NPT or BSP Gas Inlet
- 8" welded Pipe Connection Air Inlet (219 O/D)
- Spark Plug M14
- 1/2" NPT UV Scanner Adapter

Burner weight less combustor: 133 lbs (60 kg)

Tap Locations

- Tap “C”
- Tap “A”
- Tap “D”
- Tap “B”

Combustor

Exhaust Outlet Diameter:
- High Velocity: Ø 6.10 (155)
- Medium Velocity: Ø 8.66 (220)

Alloy Tube (AISI 310)

- Weight: 21 lbs (9.5 kg)
- Max. Chamber Temp: 1,750°F (950°C)

Refractory Block

(w/ 330 SS wrapper)

- Weight: 330 lbs (150 kg)
- Max. Chamber Temp: 2,800°F (1535°C)
Down Firing Block

Weight: 310 lbs (140.61 kg)
Max. Chamber Temp: 2800°F (1535°C)