## Eclipse ThermJet

**Burners**

**Model TJ0300**

### Parameter | Burner Velocity | Model TJ0300
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Maximum Input Btu/h (kW) | Medium & High Velocity | 3,000,000 (879)
Minimum Input, On-Ratio Btu/h (kW) | Medium & High Velocity | 300,000 (88)
Minimum Input, Fixed Air Btu/h (kW) | Medium & High Velocity | 60,000 (18)
Gas Inlet Pressure Required "w.c. (mbar) Fuel Pressure at Gas Inlet (Tap “B” - see page 3) | High Velocity | Natural Gas 12.5 (31.0) Propane 12.7 (32.0) Butane 12.2 (30.0) Medium Velocity | Natural Gas 6.0 (15.0) Propane 6.8 (17.0) Butane 6.0 (15.0)
Air Inlet Pressure Required "w.c. (mbar) 15% Excess Air at Maximum Input (Tap “A” - see page 3) | High Velocity | Natural Gas 15.0 (38.0) Propane 15.0 (38.0) Butane 15.0 (38.0) Medium Velocity | Natural Gas 8.5 (21.0) Propane 8.5 (21.0) Butane 8.5 (21.0)
High Fire Flame Length Inches (mm) (Measured from End of Combustor) | High Velocity | Natural Gas 50 (1270) Propane 55 (1400) Butane 55 (1400) Medium Velocity | Natural Gas 64 (1630) Propane 66 (1675) Butane 68 (1730)
Maximum Flame Velocity ft/s (m/s) 15% Excess Air at Maximum Input | High Velocity | 550 (168) Medium Velocity | 300 (91)
Maximum Combustion Air Temperature | 300°F (149°C). For higher temperatures, use TJPCA (Data 206)
Flame Detection | Flamerod 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.
Fuel | Natural gas, propane or butane. For any other mixed gas, contact Eclipse for orifice sizing.
Approvals | [PTG](image) AM30

*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

0 100 1,000 10,000

Input (x 1,000 Btu/h)

0 500 1,000 1,500 2,000 2,500 3,000

Input (kW)

NOx Emissions

(High Velocity Combustor)

NOx ppm (@ 3% O2)

0 150 300 450 600 750 900

Input (kW)

Energy input (x 1,000 Btu/h)

0 500 1,000 1,500 2,000 2,500 3,000

0 150 300 450 600 750 900

Input (kW)

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 ∆P vs. Input

(Measured from Tap B to Tap D)

<table>
<thead>
<tr>
<th>High Fire Gas ∆P’s</th>
<th>Fuel</th>
<th>∆P (w.c. ± 10%)</th>
<th>Orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nat. Gas</td>
<td>4.2</td>
<td>29.0 mm</td>
<td></td>
</tr>
<tr>
<td>Propane</td>
<td>4.3</td>
<td>22.5 mm</td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td>3.5</td>
<td>22.5 mm</td>
<td></td>
</tr>
</tbody>
</table>

Air Orifice ∆P vs. Input

(Measured from Tap A to Tap C)

15% Excess Air at Maximum Input

Air Orifice (90mm) ∆P’s

7.00” w.c. @ High Fire

Eclipse ThermJet TJ0300, V2, Datasheet 205-8, 11/23/2011
Dimensions in inches (mm)

Combustor

Exhaust Outlet Diameter: High Velocity: Ø 3.94 (100)
Medium Velocity: Ø 5.31 (135)

Alloy Tube (AISI 310)
Weight: 13.5 lbs (6 kg)
Maximum Chamber Temp: 1,750°F (950°C)

Refractory Block
(w/ 330 SS wrapper)
Weight: 131.4 lbs (60 kg)
Maximum Chamber Temp: 2,800°F (1535°C)
Down Firing Block

Weight: 135 lbs (61.23 kg)
Maximum Chamber Temp: 2800°F (1535°C)