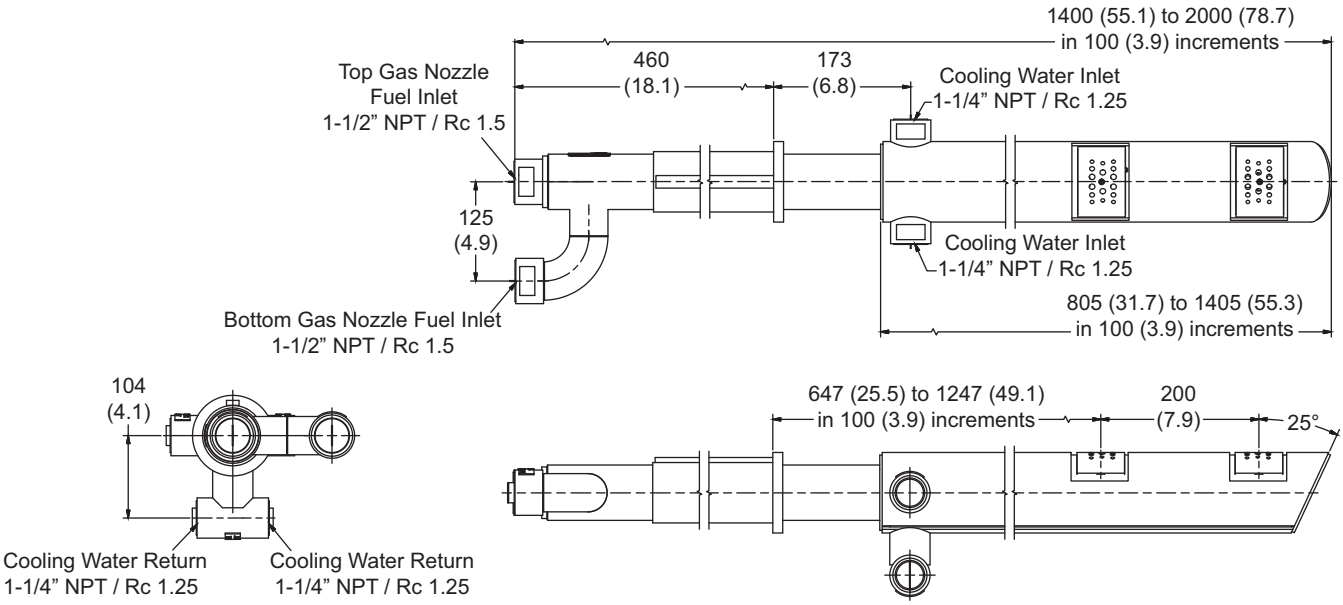
Datasheet 1135
12/31/2013

Eclipse WGD

Throughport Gas Burners

Version 2



Parameter	Specification
Burner Capacity, scfh (Nm^3/h)	7,600 (200) - 45,650 (1,200)
Gas Pressure, psi (mbar)	4.0 (275) minimum
Burner Length*, inches (mm)	55 to 79 (1400 to 2000)
Burner Diameter, inches (mm)	4.0 (102)
Cooling Water Flow, US gal/min (L/min)	21 (80)
Cooling Water Supply Pressure, psi (bar)	30 (2.1)
Cooling Water Pressure Drop, psi (bar)	14 (1.0)
Cooling Water Supply Temperature, °F (°C)	104 (40) maximum
Cooling Water Temperature Rise, °F (°C)	36 (20) maximum
Water Condition	< 30 ppm hardness < 1 ppm dissolved oxygen pH between 7.5 and 8.5

*4 inch (100 mm) increments.

- Standard conditions: 1 atmosphere, 70°F (21°C)
- Normal conditions: 1 atmosphere, 32°F (0°C)
- Eclipse reserves the right to change the consturction and/or configuration of our products at any time without being obliged to adjust earlier supplies accordingly.

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Available Nozzle Equivalent Diameters, inches* (mm)	60° Spray Angle	80° Spray Angle	100° Spray Angle
	0.94 (24)	1.10 (28)	1.42 (36)
	1.02 (26)	1.18 (30)	1.50 (38)
	1.10 (28)	1.26 (32)	1.57 (40)
	1.18 (30)	1.34 (34)	1.65 (42)
		1.42 (36)	1.73 (44)
			1.81 (46)
			1.89 (48)
			2.00 (51)
			2.09 (53)

*Top nozzles are available with hole angles of 0°, 5°, 10°, and 15°. Bottom nozzles are available with hole angles of 5°, 10°, 15°, and 20°. Contact Eclipse for additional nozzle sizes and geometries.

Nozzle Selection Guide

The equivalent nozzle diameter for the WGD throughport gas burner is selected based on the desired velocity of gas calculated from the required flow rate at each nozzle for each burner. The gas velocity range for each nozzle is 45 - 107 m/s (150 - 350 ft/s). The recommended velocity for higher flow ports is 53 - 68 m/s (175 - 225 ft/s), and the recommended velocity for lower flow ports is 45 - 53 m/s (150 - 175 ft/s). Lower velocities result in longer flames.

The following equation is used to determine the required equivalent nozzle diameter based on the flow rate of natural gas through the nozzle and the desired natural gas velocity.

$$\text{Equivalent Nozzle Diameter (mm)} = \sqrt{\frac{\text{Flow } (Nm^3/h)}{\text{Velocity (m/s)}}} \times 18.8$$

$$\text{Equivalent Nozzle Diameter (inches)} = \sqrt{\frac{\text{Flow (SCFH)}}{\text{Velocity (ft/s)}}} \times 0.226$$

This will produce the ideal diameter of the nozzle. Select the nozzle from the above table with a bore diameter that is closest to the calculated ideal diameter.