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119 HP FIRETUBE BOILER

Maximum BTU/hr Input (ie: Rated Input @ High Fire / 100% Input Rating)	119 x 42,000 = 4,998,000 BTU
Cubic Feet of Natural Gas Required	4,998,000 ÷ 1,000 = 4,998 Cu Ft
Cubic Feet of Vaporized Propane Required	4,998,000 ÷ 2,500 = 1,999.2 Cu Ft
Gallons of Liquid Propane Required	4,998,000 ÷ 91,600 = 54.56 Gallons
Gallons of #2 Diesel Oil Required	4,998,000 ÷ 140,000 = 35.7 Gallons
Minimum BTU/hr Input at a 4:1 Turndown Ratio (Low Fire)	4,998,000 ÷ 4 = 1,249,500 BTU
Cubic Feet of Natural Gas Required	1,249,500 ÷ 1,000 = 1,249.5 Cu Ft
Cubic Feet of Vaporized Propane Required	1,249,500 ÷ 2,500 = 499.8 Cu Ft
Gallons of Liquid Propane Required	1,249,500 ÷ 91,600 = 13.64 Gallons
Gallons of #2 Diesel Oil Required	1,249,500 ÷ 140,000 = 8.9 Gallons
Maximum Steam Production in lbs/hr (High Fire)	119 x 34.5 = 4,105.5 lbs/hr
Maximum Water Evaporation Rate	119 x .069 = 8.21 GPM
Minimum Feedwater Pump Flow (on / off pump strategy)	8.21 x 2 = 16.42 GPM
Minimum Feedwater Pump Flow (modulating pump strategy)	8.21 x 1.5 = 12.31 GPM
Minimum Feedwater Tank Storage Requirement	82.14 Gallons
Steam Temperature at 125 psi Saturated	353 °F
BTU/hr Output, Based on 80% Efficiency at High Fire	4,998,000 x .80 = 3,998,400 BTU
BTU/hr Output, Based on 80% Efficiency at Low Fire	1,249,500 x .80 = 999,600 BTU
Square Feet Heating Surface (sq. ft. HS) at 5 sq. ft. per HP	119 x 5 = 595 Sq Ft
Minimum Steam Safety Relief Valve Capacity at Boiler Design	4,105.5 x 1.10 = 4,516.05 lbs/hr
Minimum Water Softener Flow Capacity at High Fire (always based upon 100% input)	8.21 x 2 = 16.42 GPM

HQ - Fremont, CA (510) 490-7100 / Sales Office - Visalia, CA (559) 623-9318
Controls Division - Pacific Combustion Engineering - Washougal, WA (360) 335-1443
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