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## 125 HP FIRETUBE BOILER

Maximum BTU/hr Input (ie: Rated Input @ High Fire / 100% Input Rating)	$125 \times 42,000 = 5,250,000$ BTU
Cubic Feet of Natural Gas Required	$5,250,000 \div 1,000 = 5,250$ Cu Ft
Cubic Feet of Vaporized Propane Required	$5,250,000 \div 2,500 = 2,100$ Cu Ft
Gallons of Liquid Propane Required	$5,250,000 \div 91,600 = 57.31$ Gallons
Gallons of #2 Diesel Oil Required	$5,250,000 \div 140,000 = 37.5$ Gallons
Minimum BTU/hr Input at a 4:1 Turndown Ratio (Low Fire)	$5,250,000 \div 4 = 1,312,500$ BTU
Cubic Feet of Natural Gas Required	$1,312,500 \div 1,000 = 1,312.5$ Cu Ft
Cubic Feet of Vaporized Propane Required	$1,312,500 \div 2,500 = 525$ Cu Ft
Gallons of Liquid Propane Required	$1,312,500 \div 91,600 = 14.3$ Gallons
Gallons of #2 Diesel Oil Required	$1,312,500 \div 140,000 = 9.4$ Gallons
Maximum Steam Production in lbs/hr (High Fire)	$125 \times 34.5 = 4,312.5$ lbs/hr
Maximum Water Evaporation Rate	$125 \times .069 = 8.625$ GPM
Minimum Feedwater Pump Flow (on / off pump strategy)	$8.625 \times 2 = 17.25$ GPM
Minimum Feedwater Pump Flow (modulating pump strategy)	$8.625 \times 1.5 = 12.94$ GPM
Minimum Feedwater Tank Storage Requirement	85 Gallons
Steam Temperature at <u>50 psi</u> Saturated	297.97 °F
BTU/hr Output, Based on 80% Efficiency at High Fire	$5,250,000 \times .80 = 4,200,000$ BTU
BTU/hr Output, Based on 80% Efficiency at Low Fire	$1,312,500 \times .80 = 1,050,000$ BTU
Square Feet Heating Surface (sq. ft. HS) at 5 sq. ft. per HP	$125 \times 5 = 625$ Sq Ft
Minimum Steam Safety Relief Valve Capacity at Boiler Design	$4,312.5 \times 1.10 = 4,743.75$ lbs/hr
Minimum Water Softener Flow Capacity at High Fire (always based upon 100% input)	$8.625 \times 2 = 17.25$ 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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