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## 1,200 HP FIRETUBE BOILER

Maximum BTU/hr Input (ie: Rated Input @ High Fire / 100% Input Rating)	$1,200 \times 42,000 = 50,400,000$ BTU
Cubic Feet of Natural Gas Required	$50,400,000 \div 1,000 = 50,500$ Cu Ft
Cubic Feet of Vaporized Propane Required	$50,400,000 \div 2,500 = 21,160$ Cu Ft
Gallons of Liquid Propane Required	$50,400,000 \div 91,600 = 550.2$ Gallons
Gallons of #2 Diesel Oil Required	$50,400,000 \div 140,000 = 360$ Gallons
Minimum BTU/hr Input at a 4:1 Turndown Ratio (Low Fire)	$50,400,000 \div 4 = 12,600,000$ BTU
Cubic Feet of Natural Gas Required	$12,600,000 \div 1,000 = 12,600$ Cu Ft
Cubic Feet of Vaporized Propane Required	$12,600,000 \div 2,500 = 5,040$ Cu Ft
Gallons of Liquid Propane Required	$12,600,000 \div 91,600 = 137.5$ Gallons
Gallons of #2 Diesel Oil Required	$12,600,000 \div 140,000 = 90$ Gallons
Maximum Steam Production in lbs/hr (High Fire)	$1,200 \times 34.5 = 41,400$ lbs/hr
Maximum Water Evaporation Rate	$1,200 \times .069 = 82.8$ GPM
Minimum Feedwater Pump Flow (on / off pump strategy)	$82.8 \times 2 = 156.6$ GPM
Minimum Feedwater Pump Flow (modulating pump strategy)	$82.8 \times 1.5 = 124.2$ GPM
Minimum Feedwater Tank Storage Requirement	828 Gallons
Steam Temperature at <u>85 psi</u> Saturated	328 °F
BTU/hr Output, Based on 80% Efficiency at High Fire	$50,400,000 \times .80 = 40,320,000$ BTU
BTU/hr Output, Based on 80% Efficiency at Low Fire	$12,600,000 \times .80 = 10,080,000$ BTU
Square Feet Heating Surface (sq. ft. HS) at 5 sq. ft. per HP	$1,200 \times 5 = 6,000$ Sq Ft
Minimum Steam Safety Relief Valve Capacity at Boiler Design	$41,400 \times 1.10 = 45,540$ lbs/hr
Minimum Water Softener Flow Capacity at High Fire (always based upon 100% input)	$82.8 \times 2 = 165.6$ GPM

**HQ - Fremont, CA (510) 490-7100 - Visalia, CA (559) 623-9318**  
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