Nationwide™ Boiler Incorporated
Boiler Rentals & Sales • Environmental Solutions • Control Solutions

Rentals • Sales • Service
24/7 • (800) 227-1966
www.nationwideboiler.com

650 HP FIRETUBE BOILER

Maximum BTU/hr Input (ie: Rated Input @ High Fire / 100% Input Rating)	650 x 42,000 = 27,300,000 BTU
Cubic Feet of Natural Gas Required	27,300,000 ÷ 1,000 = 27,300 Cu Ft
Cubic Feet of Vaporized Propane Required	27,300,000 ÷ 2,500 = 10,920 Cu Ft
Gallons of Liquid Propane Required	27,300,000 ÷ 91,600 = 298 Gallons
Gallons of #2 Diesel Oil Required	27,300,000 ÷ 140,000 = 195 Gallons
Minimum BTU/hr Input at a 4:1 Turndown Ratio (Low Fire)	27,300,000 ÷ 4 = 6,825,000 BTU
Cubic Feet of Natural Gas Required	6,825,000 ÷ 1,000 = 6,825 Cu Ft
Cubic Feet of Vaporized Propane Required	6,825,000 ÷ 2,500 = 2,730 Cu Ft
Gallons of Liquid Propane Required	6,825,000 ÷ 91,600 = 74.5 Gallons
Gallons of #2 Diesel Oil Required	6,825,000 ÷ 140,000 = 48.75 Gallons
Maximum Steam Production in lbs/hr (High Fire)	650 x 34.5 = 22,425 lbs/hr
Maximum Water Evaporation Rate	650 x .069 = 44.85 GPM
Minimum Feedwater Pump Flow (on / off pump strategy)	44.85 x 2 = 89.7 GPM
Minimum Feedwater Pump Flow (modulating pump strategy)	44.85 x 1.5 = 67.27 GPM
Minimum Feedwater Tank Storage Requirement	448.67 Gallons
Steam Temperature at 70 psi Saturated	316.25 °F
BTU/hr Output, Based on 80% Efficiency at High Fire	27,300,000 x .80 = 21,840,000 BTU
BTU/hr Output, Based on 80% Efficiency at Low Fire	6,825,000 x .80 = 5,460,000 BTU
Square Feet Heating Surface (sq. ft. HS) at 5 sq. ft. per HP	650 x 5 = 3,250 Sq Ft
Minimum Steam Safety Relief Valve Capacity at Boiler Design	22,425 x 1.10 = 24,667.5 lbs/hr
Minimum Water Softener Flow Capacity at High Fire (always based upon 100% input)	44.85 x 2 = 89.7 GPM

HQ - Fremont, CA (510) 490-7100 **- Visalia, CA** (559) 623-9318
Washougal, WA (360) 335-1443 / **Alvin, TX** (800) 227-1966
True Nationwide Coverage & Beyond. Representatives Located Worldwide.

*For general use only, please contact Nationwide Boiler for equipment specific information.