Technical Specifications

The Next Generation of Clayton Steam Generators

Available in the following configurations:

- Standard configuration for most installations.
- Super Economizer (SE) for increased efficiency.
- Low NOx Fiber Metal Burner (FMB) for NOx levels below 12 ppmv.
- Step-fired and fully modulating burners.
- Fuel Options: Natural Gas, Propane, #2 Fuel Oil, Biogas and Hydrogen.

Clayton SigmaFire™

The *SigmaFire*:

- **SAVES FUEL**
  The unique counter flow design provides higher fuel-to-steam efficiency than traditional boilers.

- **IS SAFE FOR PERSONNEL AND EQUIPMENT**
  Inherently safe, the Clayton design eliminates hazardous steam explosions.

- **PROVIDES RAPID RESPONSE**
  The Clayton design responds rapidly to sudden or fluctuating load demands.

- **STARTS FAST**
  The Clayton design will provide full output from a cold start within five minutes, without thermal stress.

- **IS COMPACT AND LIGHTWEIGHT**
  The Clayton design typically occupies one-third of the floor space and weighs 75% less than a traditional boiler.

- **ENSURES HIGH QUALITY STEAM**
  Clayton offers a 99.5% quality separator to minimize moisture in the steam.

- **OFFERS ADVANCED CONTROLS**
  Digital controllers, PLC's and a linkage-less servo controlled burner management system is available.

- **INCLUDES OUTSTANDING SUPPORT**
  Every Steam Generator is backed by Clayton factory direct sales and service plus full service feedwater treatement.

SigmaFire 50 BHP Steam Generator

SPECIFICATIONS

MODEL SF50

	MODEL SF50 Standard	MODEL SF-50-SE with Super Economizer	MODEL SF50-FMB with Low NOx FMB Burner	MODEL SF50-SE-FMB with Low NOx FMB Burner and Super Economizer
BOILER HORSEPOWER	50	50	50	50
HEAT INPUT, BTU/hr Oil	2,016,566	1,946,221	NA	NA
Gas	2,041,159	1,969,118	2,066,358	1,969,118
NET HEAT OUTPUT, BTU/hr	1,673,750	1,673,750	1,673,750	1,673,750
EQUIVALENT OUTPUT (from and at 212°F feedwater and 0 PSIG steam)	1,725 lbs/hr	1,725 lbs/hr	1,725 lbs/hr	1,725 lbs/hr
DESIGN PRESSURE (see note 1)	15 - 500 psig	15 - 500 psig	15 - 500 psig	15 - 500 psig
STEAM OPERATING PRESSURE (determined by design pressure)	13 - 450 psig	13 - 450 psig	13 - 450 psig	13 - 450 psig
OIL CONSUMPTION at maximum steam output (see note 2)	14.3 gph	13.8 gph	NA	NA
GAS CONSUMPTION at maximum steam output (see note 3)	2,041 cfh	1,969 cfh	2,066 cfh	1,969 cfh
BURNER CONTROLS				
step fired	100% / 50% / Off	100% / 50% / Off	N/A	N/A
modulating (see note 4)	5 to 1 Turndown	5 to 1 Turndown	4 to 1 Turndown	4 to 1 Turndown
EFFICIENCY				
oil-fired efficiency %	83%	86%	N/A	N/A
gas-fired efficiency %	82%	85%	81%	85%
ELECTRIC MOTORS, HP	Blower / Pump	Blower / Pump	Blower / Pump / Cooling	Blower / Pump / Cooling
design pressure 15-300 psig	3 / 2	3 / 2	5 / 2 / 3	5 / 2 / 3
design pressure 301-500 psig	3 / 3	3 / 3	5 / 3 / 3	5 / 3 / 3
ELECTRIC FLA, based on 460 V (see note 5)				
design pressure 15-300 psig	8.2	8.2	15.8	15.8
design pressure 301-500 psig	9.6	9.6	17.2	17.2
GAS SUPPLY REQUIRED	2.0 psig	2.0 psig	2.0 psig	2.0 psig
AIR SUPPLY REQUIRED (FMB - see note 6)	NA	NA	5 scfm @ 3 to 150 psig	5 scfm @ 3 to 150 psig
WATER SUPPLY REQUIRED	265 gph	265 gph	265 gph	265 gph
HEATING SURFACE	106 sq.ft.	145 sq.ft.	106 sq.ft.	145 sq.ft.
EXHAUST STACK DIAMETER, o.d.	11.88 in.	11.88 in.	11.88 in.	11.88 in.
APPROXIMATE OVERALL DIMENSIONS				
length	63 in.	63 in.	63 in.	63 in.
width	66 in.	66 in.	66 in.	66 in.
height	75 in.	86 in.	75 in.	86 in.
WEIGHT				
installed - wet	3,842 lbs	4,113 lbs	3,842 lbs	4,113 lbs
shipping	3,700 lbs	3,930 lbs	3,700 lbs	3,930 lbs

1) Design pressures are available up to 3000 psig. Consult factory for details.
2) Based on No. 2 fuel oil with a High Heat Value (HHV) of 140,600 BTU/Gal.
3) Based on Natural Gas with a High Heat Value (HHV) of 1,000 BTU/Ft.^{3}
4) On dual fuel units only gas fired is modulating, oil fired is step fired. Switching fuels requires a manual change of burners
5) Continuous running. For 575 V multiply by 0.8; for 380 V multiply by 1.1; for 230 V multiply by 2.0; for 208 V multiply by 2.2.
6) Compressed air required for FMB only.

The description and specifications shown were in effect at the time this publication was approved for printing. Clayton Industries, whose policy is one of continuous improvement, reserves the right to discontinue models, or change specifications or design, without notice.

Clayton INNOVATIVE STEAM SOLUTIONS

World Headquarters
17477 Hurley Street
City of Industry, CA 91744
800.423.4585 tel • 626.435.0180 fax
email: sales@claytonindustries.com
www.claytonindustries.com

Europe, Africa & Middle East Headquarters
Rijksweg 30 • B-2880 Bornem, Belgium
32.3.890.5700 tel • 32.3.890.5701 fax
email: sales@clayton.be

Latin America Headquarters
Manuel L. Stampa 54 • Nueva Industrial Vallejo
Mexico D.F., 07700 Mexico
Toll Free: 01.800.888.4422 • (55)55.86.51.00 tel
(55)55.86.23.00 fax • email: claytonmexico@clayton.com.mx
www.claytonmexico.com.mx

ATLANTA • BOSTON • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DETROIT • KANSAS CITY • NEW YORK/NEW JERSEY • SAN FRANCISCO

Clayton Deutschland GmbH | Clayton Scandinavia A.S. | Clayton de France S.A.R.L.
Clayton Thermal Products Ltd (UK) | Clayton Nederland B.V. | Clayton Sales & Service Canada

World Leaders in Precision Steam Generators, Fluid Heaters, Heat Recovery Systems and Customer Service