Boiler Model
EX-300SGF-LV

Document Number
EN-F-0015-01

General Specifications		
Description	-	Standard Pressure, Low Water Volume, FGR
Boiler Type	-	Once-through watertube boiler with no fixed water line
Boiler Capacity	BHP	300
Design Pressure	PSIG	170
Operating Pressure Range[1,2]	PSIG	70-150
Boiler Heating Surface Area	ft^2	393
Recommended Min. Feedwater Temperature	°F	180
Minimum Design Feedwater Temperature	°F	140

Combustion Specifications				
Fuel	-	Natural Gas	Propane	#2 Oil
Fuel Supply Pressure	PSIG	3-5	3-5	-
Maximum Heat Input	BTU/hr	11,814,706	11,814,706	-
Maximum Heat Output	BTU/hr	10,042,500	10,042,500	-
Maximum Fuel-to-Steam Efficiency[3]	%	85.0%	85.0%	-
Equivalent Output[4]	lb/hr	10,350	10,350	-
Turn-Down	-	2:1	1.6:1	-
Flue Gas Excess Oxygen	%	5.0%	5.0%	-
Flue Gas Temperature[3]	° F	270	270	-
Fuel Consumption[5]	SCFH/GPH	11583	129	-
Combustion Air Volume	SCFH	146,160	146,170	-
Flue Gas Volume - Wet	SCFH	157,740	150,870	-
Flue Gas Volume - Dry[6]	SCFH	135,270	135,270	-
Flue Gas Velocity	ft/s	17.0	16.3	-

Emissions[7]				
Fuel	-	Natural Gas	Propane	#2 Oil
NOx	ppm	49.6	65.0	-
NOx	lbs/MMBTU	0.0602	0.0789	-
CO	ppm	100.0	100.0	-
CO	lbs/MMBTU	0.0739	0.0739	-
CO2	lbs/MMBTU	117.6	136.6	-
VOC	lbs/MMBTU	0.0054	N/A	-
TOC	lbs/MMBTU	0.0108	0.0109	-
SO28	lbs/MMBTU	0.0006	0.0005	-
PMt	lbs/MMBTU	0.0075	0.0077	-
PMf	lbs/MMBTU	0.0019	0.0022	-
PMc	lbs/MMBTU	0.0056	0.0055	-

Weights and Capacities		
Shipping Weight	lbs	11,900
Operational Weight	lbs	12,700
Operational Water Content(PV)[9]	Gal (Imp)	66.7
Operational Water Content(PV+ECO)[9]	Gal (Imp)	74.7
Fully Flooded Water Content[10]	Gal (Imp)	247

Connections		
Main Steam Outlet	-	4", Class 150 Flange
Safety Valve Outlet[11]	in NPT	(QTY 2) 2-1/2
Drip Pan Elbow Vent[11]	in NPT	(QTY 2) 4
Drip Pan Elbow Drain[11]	in NPT	(QTY 2) 3/4
Feedwater Inlet	in NPT	1-1/4
Fuel Gas Inlet	in NPT	2-1/2
#2 Oil Inlet	in NPT	3/4
Automatic "Surface" Blowdown	in NPT	3/8
Bottom Blow-Off	in NPT	1
LVC Blow-Off	in NPT	1
Economizer Drain (If Equipped)	in NPT	2
Chimney Diameter	in OD	26

Electrical Ratings at 575V[12]				
Feedwater Configuration[13]	-	Std. Check Valve	MI Check Valve	No Pump
Electrical Rating	A	53.0	53.0	42.0
Min. Circuit Ampacity	A	63.3	63.3	52.3
Apparent Power	kVA	52.3	52.3	41.3

Electrical Components and Controls		
Power Supply	-	575, 460, 380, 230 or 208 Volts, 3 Phase, 60 Hz
Blower Motor	HP	40
Water Pump Motor[14]	HP	10
Water Booster Pump Motor	HP	N/A
Oil Pump Motor	HP	1.5
Combustion Control	-	3-Position Step Burner (High - Low - Off)
Combustion System	-	Forced Draft Burner
Ignition System	-	Electric Spark Ignited, Interrupted Gas Pilot
Flame Safeguard	-	Miura BL Microcontroller with Miura ZUV Flame Sensor
Low Water Protection	-	Primary and Secondary Low Water Cutoff Electrodes
Remote Monitoring	-	Optional

Notes
1) Operating within this range ensures proper steam quality and limited relief valve leakage.
2) Setpoint must be below the listed maximum operating pressure to accommodate overshoot. Contact your Miura representative to confirm operating pressure range for your specific application.
3) Based on 68° F feedwater, 80° F combustion air, and minimum steam pressure. Feedwater temperature during normal operation must be higher. Efficiency decreases and flue gas temperature increases with increasing feedwater temperature and steam pressure. Contact your Miura representative to confirm values for your specific application.
4) Equivalent output is calculated based on conversion of 212° F feedwater to 212° F steam.
5) Fuel consumption assumes 1,020 BTU/SCF for natural gas, 91,500 BTU/US gal for LPG, and 140,000 BTU/US gal for #2 oil.
6) Dry flue gas volume is corrected for the operating O_2 percentage and assumes F-factor of 8,710 SCF/MMBTU for natural gas/LPG and 9,190 SCF/MMBTU for #2 oil.
7) NOx and CO emissions are based on empirical test data corrected to 3% excess oxygen, all others are calculated using EPA factors.
8) SO_2 factor assumes 0.002 grains/SCF for natural gas, 0.005 grains/SCF for LPG, 15ppm for #2 oil.
9) Operational water content is the average water content during normal operation for the entire boiler assembly including economizer.
Fully flooded water content is the total water and steam capacity for the entire boiler assembly including economizer.
10) The fully flooded water content is the total water and steam capacity for the entire boiler assembly including economizer.
11) Boiler safety valve and drip pan elbow connection sizes subject to change based on specific operating pressure.
12) Convert to amps at a different voltage by multiplying value by the ratio of 575V/new voltage.
13) Multiple installation (MI) check valve is required with higher feedwater pressures (i.e. when using DA tank) and may require a larger pump.
14) Water pump size may vary depending on feedwater piping options.