

MIURA'S LX SERIES STEAM BOILERS

**SAVE GAS COSTS AND
NATURAL RESOURCES**

NEW



*The new, BL Micro Controller
Boiler Control System*

*Miura Gas-Fired/
Low Nox LX Series
High Pressure Steam Boiler*



**Miura Steam is Engineered for
Greater Efficiency, Lower Costs.**

Discover The LX Series Advantages...

MIURA'S SUPER GAS-FIRED/ LOW NO_x SERIES STEAM BOILERS SAVE 20% FUEL COSTS* and CONSERVE RESOURCES.

* on average

LX SERIES

Miura is known world-wide for our commitment to protecting the environment and our innovative and efficient boiler designs. Our low NO_x steam and hot water boilers meet and exceed current and proposed regulations for nitrous oxide emissions levels, as low as 12ppm NO_x at 3%, corrected O₂.

- Gas fired: Natural Gas or Propane
- High and low pressure steam options available (300 MAWP, 250 MAWP, 170 MAWP or 15 MAWP)
- Hot water boilers are available depending on models (refer to a Miura hot water boiler catalog for details)
- Compact, an LX 200 Boiler can fit through a standard doorway
- Naturally low NO_x (nitrogen oxides) Rating as low as 12ppm depending on model



ADDITIONAL BENEFITS

Water to Steam in 5 minutes

Miura Boilers produce steam in 5 minutes using their exclusive floating header design, a revolutionary advance that results in our customers using substantially less gas and oil. On average our customers save 20% of their fuel costs.

As the cost of oil and gas becomes an ever-increasing concern, forward-thinking companies recognize the value and importance of owning a Miura Boiler.

PROFITS

**Cost of
GAS
20%
savings**

In Multiple Installations units can be turned on/off as needed

Miura Boiler customers whose needs require a multiple installation system (MI), also enjoy saving money while saving the planet, since Miura boilers can be turned on/off as required. This unique advantage lets users meet peak demand hours, while operating at greater efficiency throughout the day and reducing system wear and tear.



HIGH IN-SERVICE EFFICIENCY

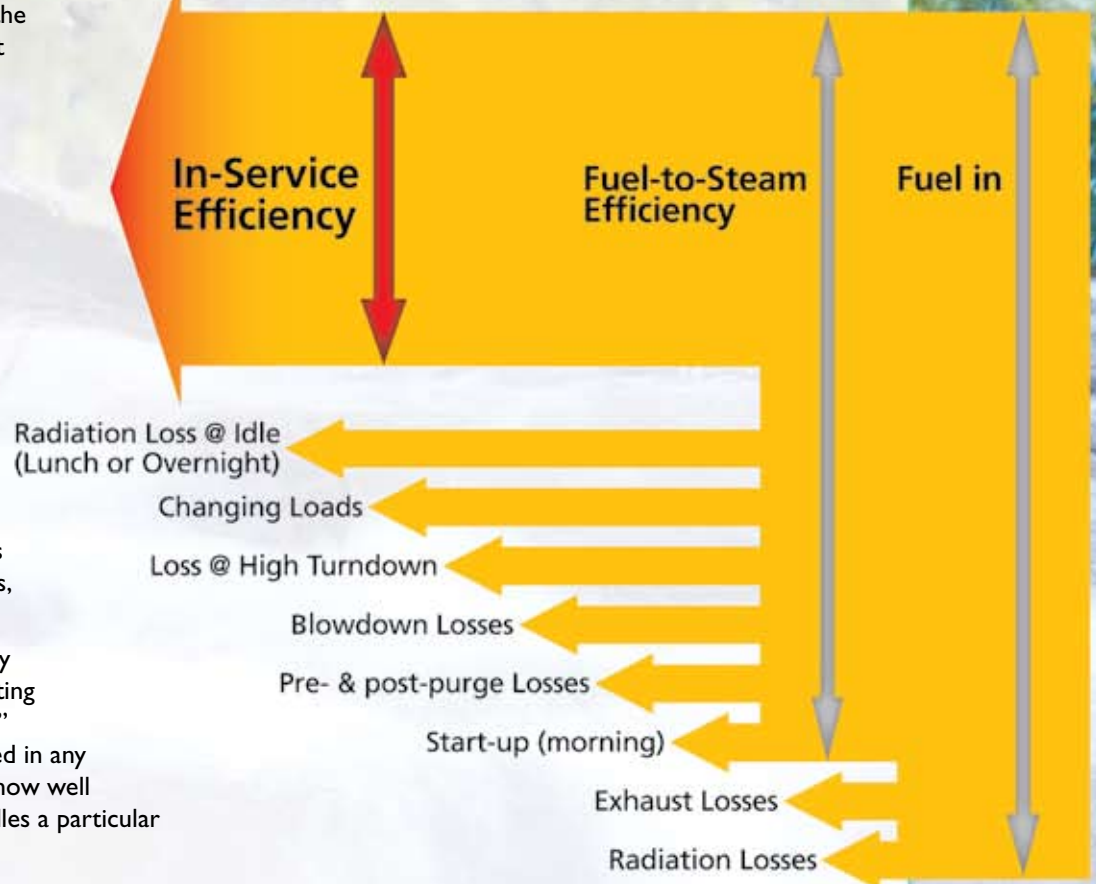
A Standard of Excellence that sets Miura apart from other Process Steam Boiler manufacturers

In-Service Efficiency is a measure of overall performance, no matter your load profile. High In-Service Efficiency is the level of performance every Miura customer can expect. This standard of excellence has been established based on taking all factors of the boilers operation into account (see chart).

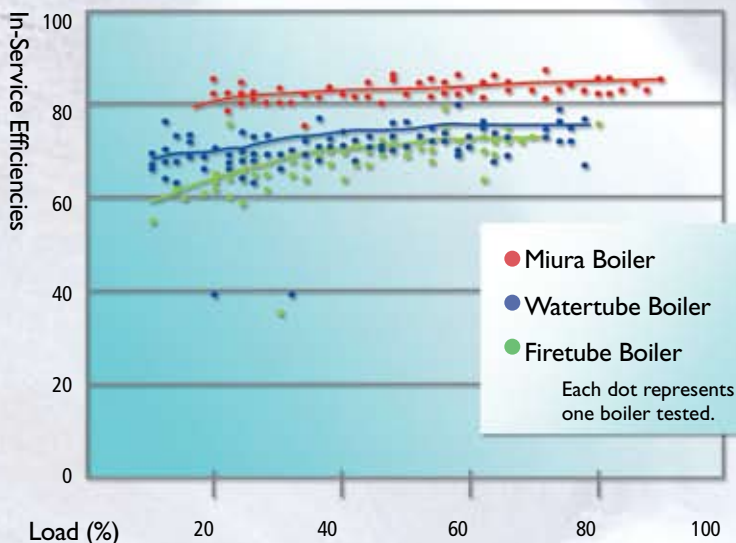
For a further explanation, let's review the common Definitions of Efficiency as related to the Boiler...

Miura has developed the term "In-Service Efficiency" to describe • Combustion Efficiency • Thermal Efficiency • Fuel-to-Steam Efficiency and defines it as follows: The resulting efficiency of a boiler when the total operation cycles are taken into account such as day, night, weekends, high loads, low loads, standby loads.

It is a comprehensive efficiency which is based upon an operating model and is the "bottom line" efficiency, which should be used in any boiler comparison. It reflects how well a particular boiler design handles a particular operating model.



SUPERIOR FUEL SAVINGS

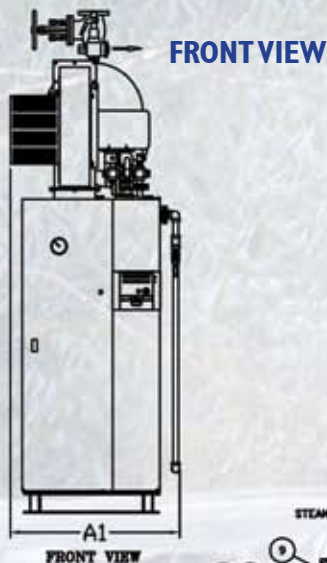


Highest In-Service Efficiencies in the industrial boiler industry.

Based on today's fuel costs, the average dollar savings Miura customers enjoy in steam production is approximately 20% over other boiler designs. At 10% to 40% fuel savings, Miura can save about \$200,000 per year in fuel for a typical 600 BHP steam system with the price of natural gas at \$0.90/therm.

The chart (left) compares in-service efficiencies of Miura boilers with both firetube and watertube boilers. Miura's design results in optimal heating surface transfer with minimal water content for fuel-to-steam efficiencies of 85%. Although typical firetube designs can deliver up to 83% fuel-to-steam, studies comparing actual efficiencies have shown Miura averages 10% to 40% in fuel savings over standard firetube designs.

SUPER LX SERIES SPECIFICATIONS



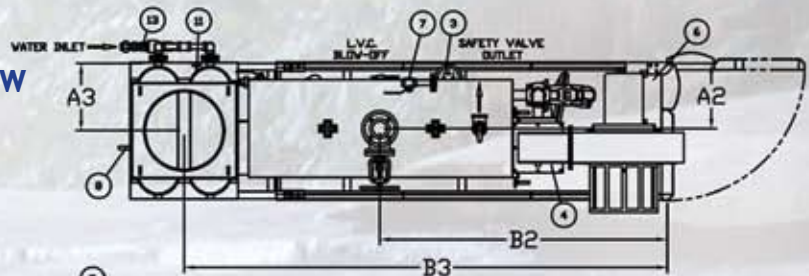
	A1	A2	A3	B1	B2	B3	H1	H2	h*
LX-50 SG	39 1/2	16 1/2	21 1/2	95 1/2	57	78 1/2	96	62	68
LX-100 SG	38	14 1/2	17	124	87 1/2	109	97	68 1/2	69
LX-150 SG	42 1/2	16 1/2	17	141 1/2	72	121	116 1/2	82 1/2	84 1/2
LX-200 SG	42 1/2	16 1/2	17	141 1/2	72	121	116 1/2	82 1/2	84 1/2
**LX-300 SG	81	22	22	152	82 1/2	116	126 1/2	80	84 1/2

The drawing illustrated is LX-200 SG

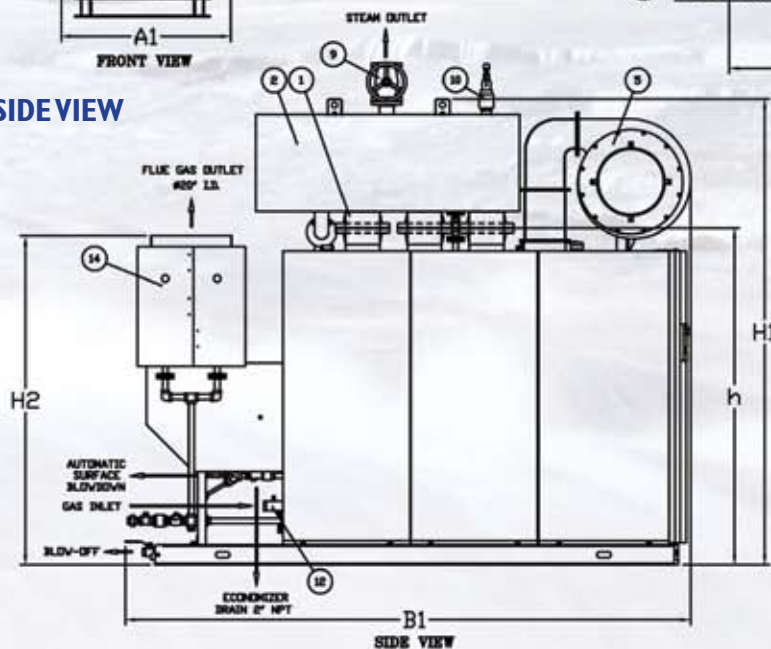
* Minimum height for Boiler Knock Down

** Drawing not applicable for LX-300SG

TOP VIEW



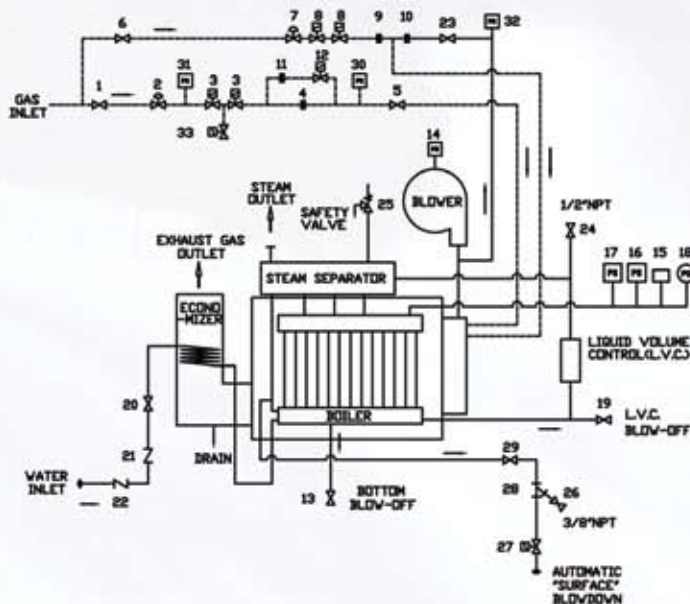
SIDE VIEW



SIDE VIEW

NO.	NAME OF PART
1	BOILER VESSEL
2	STEAM SEPARATOR
3	LIQUID VOLUME CONTROLLER
4	WIND BOX
5	BLOWER
6	CONTROL BOX
7	MANUAL BLOWDOWN VALVE
8	MANUAL BLOWDOWN VALVE
9	STEAM OUTLET VALVE (OPTION)
10	MAIN SAFETY VALVE
11	AUTOMATIC BLOWDOWN
12	MAIN GAS TRAIN
13	FEEDWATER PIPING
14	ECONOMIZER

SCHEMATIC VIEW (Standard)



NO.	NAME OF PART	NO.	NAME OF PART
1	MAIN GAS VALVE	18	PRESSURE GAUGE
2	MAIN GAS REGULATOR	19	L.V.C. BLOW-OFF VALVE
3	GAS CONTROL VALVE	20	VALVE
4	MAIN GAS ORIFICE (LOW)	21	CHECK VALVE
5	TEST FIRING VALVE	22	CHECK VALVE
6	PILOT GAS VALVE	23	AIR CONTROL VALVE
7	PILOT GAS REGULATOR	24	AIR VENT VALVE
8	PILOT GAS CONTROL VALVE	25	SAFETY VALVE
9	PILOT GAS ORIFICE	26	SAMPLE WATER VALVE
10	PILOT AIR ORIFICE	27	BLOWDOWN CONTROL VALVE
11	MAIN GAS ORIFICE (HIGH)	28	BLOWDOWN STRAINER
12	HIGH-LOW CONTROL VALVE	29	BLOWDOWN VALVE
13	BOILER BLOW-OFF VALVE	30	GAS PRESSURE SWITCH
14	PRESSURE SWITCH	31	GAS PRESSURE SWITCH
15	PRESSURE SENSOR	32	AIR PRESSURE SWITCH
16	STEAM PRESSURE SWITCH	33	GAS VENT VALVE*
17	STEAM PRESSURE SWITCH		

* Available if required by local codes, or may not be supplied or optional according to boiler type.

** Numerous options are available upon request.

BL MICRO CONTROLLER BOILER CONTROL SYSTEM

NEW



The new BL Micro Controller Boiler Control System (left) offers significant advancements including many new individual monitoring points; an increase of over 60% compared to our popular XJ1.

The BL Controller is the smart answer to troubleshooting. It works for you and with you, identifying problems and suggesting solutions in plain, descriptive English on an easy-to-read display. Featuring simple, intuitive programming and operation, the BL Controller is as easy to set up and program as it is to operate. Miura's training program and the intuitive, easy-to-use interface is your assurance of an intelligent boiler that works according to your needs.

Detailed Boiler Operations

The BL Micro Controller Boiler Control System measures the performance of your boiler in an easy-to-read, user-friendly format:

- Greater control over steam pressure settings for steadier steam pressure.
- Allows for compensated adjustment of high and low fire scale thermocouple settings.
- Allows for compensated adjustment of automatic blowdown based upon Total Dissolved Solids (TDS) and/or blowdown rates.
- Easily interfaces with the Miura "Colormetry" unit to minimize scale formation due to water softener failure.

- Steam Pressure
 - Flue Gas Temperature
 - Feed Water Temperature
 - Scale Monitor Temperature
 - Overheat Monitor Temperature
 - Flame Current
 - Remaining Time to Blowdown
 - Automatic Surface Blowdown Valve (On/Off)
 - Water Conductivity
 - 11-Point Boiler Management Data
- ... Plus many more

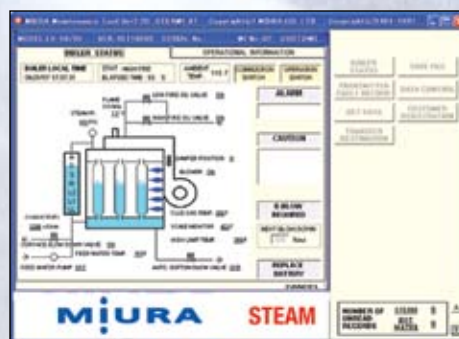
Top view of
Flame Pattern



Burner Head

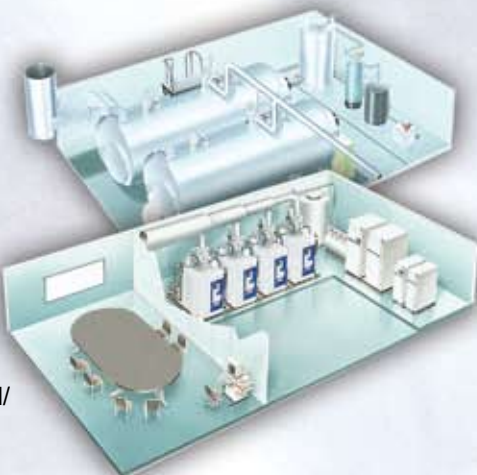
Low NOx output aids in environmental safety

Miura's "green" design maximizes energy efficiency. Not only does it provide substantial fuel savings, it's also better for the environment. How does it work? Cool soft flame wraps around the tubes from a flame spread over a large surface area. This naturally controlled burn results in remarkably low NOx.



Our Boilers Require Less Space

Miura Boiler's exclusive floating header design technology produces BHP outputs comparable to much larger units, but with far less water, and a more compact footprint. This reduces new construction costs and/or better utilizes current space.



Trouble-Free Online Maintenance System

Efficiency is also measured in trouble-free, reliable performance, and Miura's online maintenance system with the "sliding window feature" actually records an alarm or caution four seconds before it occurs, so it can be diagnosed and corrected faster. This important feature is one of many Miura boiler advantages.

LX SERIES SPECIFICATIONS

ITEM	LX(L)-50 SG	LX(L)-100 SG	LX-150 SG	LX(L)-200 SG	LX-300 SG
Utilization Horsepower (*1)	50HP	100HP	150HP	200HP	300HP
Maximum Pressure	170 PSIG MAWP, 150 PSIG Maximum Operating (15 PSIG MAWP)				
Equivalent Output (*2)	1,725 LB/HR	3,450 LB/HR	5,175 LB/HR	6,900 LB/HR	10,350 LB/HR
Heat Output	1,674,000 BTU/HR	3,348,000 BTU/HR	5,022,000 BTU/HR	6,695,000 BTU/HR	10,050,000 BTU/HR
Efficiency (fuel to steam) (*3)	85% (80% without Economizer)				
Heating Surface Area	192.4 FT ²	269.0 FT ²	388.2 FT ²	387.7 FT ²	786.7 FT ²
Operational Weight	3710 LBS	6,070 LBS	8,620 LBS	8,620 LBS	13,200 LBS
Shipping Weight	3,480 LBS	5,470 LBS	7,820 LBS	7,820 LBS	12,200 LBS
Dimensions Given are Approximate					
Width	39.5 in. (50 in.)	38 in. (57 in.)	42.5 in.	42.5 in. (70.5 in.)	81 in.
Length	95.5 in. (119 in.)	124 in. (154.5 in.)	141.5 in.	141.5 in.	152 in.
Height	96 in. (147 in.)	97 in. (160.5 in.)	116.5 in.	116.5 in. (190 in.)	116 in.
Combustion System	Proprietary Forced Draft, Step Fired Modulation Hi-Low-Off				
Ignition System	Electric Spark Ignited, Interrupted Gas Pilot				
Power Supply	208, 230, 460, 575V, 3 phase, 60Hz				
Max. Electrical Consumption	6.5 KVA (5.0 KVA)	13.3 KVA (10.9 KVA)	22.1 KVA	24.3 KVA (19.0 KVA)	35.4 KVA
Fuel Type (*4)	Natural Gas or Propane (3-5 PSIG)				
Gas Consumption (*5)	1,960 SCFH	3,920 SCFH	5,880 SCFH	7,850 SCFH	11,770 SCFH
Gas Supply Pressure	3-5 PSIG Natural Gas or Propane				
Main Steam Outlet Valve	2 in. (4 in.)	2 in. (6 in.)	3 in. (8 in.)		4 in.
Safety Valve Outlet	One 1 1/4 in.	One 2 in.	One 2 1/2 in.		Two 2 1/2 in.
Main Water Inlet	3/4 in.		1 in.		1 1/4 in.
Fuel Gas Inlet	1 1/2 in.		2 in.		2 1/2 in.
Automatic Surface Blowdown			One 3/8 in.		Two 3/8 in.
Manual Blowdown			Two 1 in.		One 1 in. & One 1 1/4 in.
Chimney Diameter (ID)	12 in.	12 in.	20 in.	20 in.	26 in.
Flame Detector	Ultraviolet Flame Eye Sensor				
Pressure Control	Adjustable Pressure Transducer and Switch				
Liquid Volume Control	Electric Conductivity Type				
Overheat Protection	Low Water Cut Off & Thermocouple				

Note: *1 Available 49 and 199 BHP rating for L.A. area.

*2 Equivalent output calculated from and at 212°F (100°C) feed water at 212°F (100°C) steam.

*3 Thermal Efficiencies are based on high heating values of fuels and 68°F (20°C) feed water.

*4 UL and c-UL approved for natural gas or propane.

*5 Gas consumption based on natural gas with high heating 1004 BTU/SCF.

*6 All Miura steam boilers are fully packaged and test fired at factory.

*7 Built to meet or exceed UL & ASME standards in U.S.A.; c-UL & B-51 standards in Canada.

*8 Low pressure steam is available in 50, 100 and 200 BHP only.

*9 California Low NOx model(LX100SGI, LX150SGI, LX200SGI) available.

*10 LX-300 exterior look is different and the BL controller is not applicable for this model.

*11 Safety valve outlet size may change depending on the pressure setting.

"S" - Economizer

"G" - Natural Gas or Propane Fired

"(L)" - Low Pressure

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Miura

**Miura Steam is Engineered for
Greater Efficiency, Lower Costs.**

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