



FLX

Watertube Boiler

Steam or Hot Water

1,500 to 25,000 MBH (36 to 600 BHP)

MODELO FLX

Flexible solution for Any Application

The FLX is a fire-pass, bent-watertube design that delivers 99.5% dry steam to your system and features a fuel-to-steam efficiency rating of up to 81%. Add an economizer and increase efficiency by 3% on average. The FLX provides modulating turndown throughout the entire firing range, which allows the boiler to respond quickly and track rapid load swings to prevent energy losses from excess boiler cycling.

The FLX boiler design reflects our commitment to the four cornerstones of a successful plant operation: Safety, Efficiency, Reliability and Sustainability.

To achieve your sustainability goals in the boiler room, the FLX can:

- Meet emissions reduction goals, down to <9 ppm NOx with low CO.
- Burn renewable fuels with a fully modulating burner, offering optimum efficiency from minimum-to-maximum firing.
- Achieve up to 81% efficiency (steam) and 85% (Hot water).
- Offer the lowest total cost of ownership.

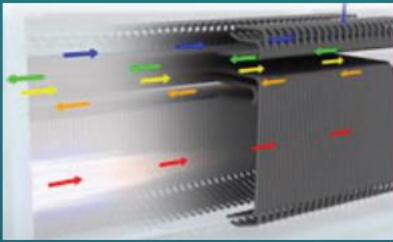


FLX watertube boilers meet the strict performance and sustainability criteria required to earn the Cleaver-Brooks Sustainability Seal.

The Cleaver Brooks Design Advantage

The FLX offers superior performance for a quick return on your investment. Cleaver-Brooks is the only manufacturer that offers The Power of Total Integration, which means the boiler, burner and controls are specifically designed to work together at peak efficiency for each demand response. The FLX is a fully integrated, tested, and certified UL/UL boiler system.

Optimum Heat Transfer



Each tube in the five-pass fireside heat transfer design is precisely engineered with a specific bend pattern to provide thermal stress protection and gas flow direction without the addition of baffles or baffle shields. A fully water-cooled furnace ensures optimum heat transfer in a boiler's highest heat transfer zone and minimizes heat loss through the casing.

Quick Steam from a Cold Start

The boiler's low-water-volume design rapidly responds to load swings. If quick steam is required, the FLX can provide steam from a cold start in minutes.

Engineered Flexibility in a Small Footprint

The FLX compact design saves valuable square footage in a boiler room. It takes up 35% less installed footprint than a fire tube. This allows more flexibility for the N+1 boiler room design.

Field Erectable for any Size Boiler Room

If access to your boiler room is limited, we can deliver the FLX as a field-erectable package (Model FLE) permitting access into limited entryways. The unit can be assembled in the boiler room, minimizing demolition of the existing boiler. Assembly of the pressure vessel does not require code welding.

25-Year Thermal Shock Warranty

Rapid replacement with cool water can be detrimental to many boiler designs, but the FLX is designed to alleviate these thermal stresses. With our 25-year thermal shock warranty, rest assured that your boiler will operate reliably for a long time.

Burner Options to Meet your Needs

Depending on your application, you can choose our exclusive integral burner, jet burner, or premix burner. No matter which burner you select, you will have peace of mind knowing your system will perform optimally and reliably with repeatable operation. This is because Cleaver-Brooks tests every boiler-and-burner combination at our dedicated research and development facility.

Jet Burner

1,500 to 12,000 MBH (36 to 287 HP)



- » Natural gas, propane, oil, renewable fuel, or a combination
- » Ultra-low NO_x options down to 9 ppm
- » Up to 10:1 turndown on gas for standard emissions
- » Up to 5:1 turndown on gas for controlled emissions
- » Flexible control options

Premix Burner

3,150 to 10,500 MBH (75 to 250 HP)



- » Natural gas, propane, or a combination
- » Standard 20 ppm NO_x with option for 9 ppm
- » Siemens LMV controls
- » Up to 5:1 turndown on gas for controlled emissions
- » No FGR piping required for NO_x control
- » 5-year burner warranty

Integral Burner

12,500 25,000 MBH (300 to 600 HP)



- » Proprietary, proven integral burner technology
- » Natural gas, propane, oil, renewable fuel, or a combination
- » Ultra-low NO_x options down to 9 ppm
- » Up to 10:1 turndown on gas for standard emissions
- » Up to 7:1 turndown on gas for controlled emissions
- » 10-year burner warranty
- » Lowest noise level available in the market

Hawk Integrated Controls System

The Hawk Control, the brain of the FLX system, enables safe, efficient boiler operation.



- Completely integrated boiler/burner control is fully tested during development
- Automatically tunes boiler for changes in environmental conditions
- Combustion air-fan vibration monitoring
- Linkageless control eliminates single-point control hysteresis
- Optional VSD control reduces fan horsepower load
- Advanced emissions controls with NOx trim option
- Unlimited options for system customization and optimization
- NFPA and UL® compliant for maximum safety
- Return-to-pilot functionality for immediate ignition
- Hawk water level control, draft control, third fuel option
- Integrated plant controls.

Industry-Leading Interface



The available advanced control interface for the Hawk boiler system is the most powerful in the industry. Its user-friendly design features:

- » Highest-resolution screen on the market
- » Intuitive navigation
- » Built-in maintenance manual
- » E-mail and text alerts

Prometha® IoT-Connected Boiler Solutions



Prometha® IOT technology collects critical data and provides actionable insights, making boiler optimization and troubleshooting simple. With Prometha® IOT technology, you can:

- » Access boiler insights from anywhere, 24/7/365
- » Increase operational efficiency
- » Lower total cost of ownership
- » Prevent or reduce unplanned downtime

FLX Dimensions and Weights

FLX with Jet Burner Model

Steam

Boiler Input (MBH)	150-250	300-350	400-600	700-900	1,000-1,200
Overall Height	86"	90"	95"	109"	109"
Overall Width	42"	46"	48"	54"	54"
Overall Length	108"	114"	139"	168"	205"
Shipping Weight (lbs)	5,700	6,200	7,900	10,200	12,000
Operating Weight (lbs)	6,600	7,200	9,200	12,500	14,100

FLX with Premix Burner Model

Steam

Boiler Input (MBH)	315	420	540	630	840	1,050
Overall Height	90"	95"	95"	109"	109"	109"
Overall Width	58"	60"	60"	66"	66"	66"
Overall Length	107"	130"	134"	157"	157"	189"
Shipping Weight (lbs)	6,200	7,900	7,900	10,200	10,200	12,000
Operating Weight (lbs)	7,200	9,200	9,200	12,500	12,500	14,100



Hot Water

Boiler Input (MBH)	150-250	300-350	400-600	700-900	1,000-1,200
Overall Height	78"	82"	86"	95"	95"
Overall Width	42"	46"	48"	54"	54"
Overall Length	115"	120"	153"	174"	206"
Shipping Weight (lbs)	3,900	5,000	6,100	8,500	10,000
Operating Weight (lbs)	4,700	5,900	7,600	10,500	12,300



Hot Water

Boiler Input (MBH)	315	420	540	630	840	1,050
Overall Height	82"	86"	86"	95"	95"	95"
Overall Width	35"	36"	36"	39"	39"	39"
Overall Length	113"	137"	144"	163"	163"	195"
Shipping Weight (lbs)	5,000	6,100	6,100	8,500	8,500	10,000
Operating Weight (lbs)	5,900	7,600	7,600	10,500	10,500	12,300

Management and Maintenance

Calderas del Norte offers technical support 24 hours a day, throughout the Mexican Republic, through specialized and certified technicians.

Through predictive, preventive and corrective maintenance, it allows the equipment to be available at all times and working efficiently; which results in savings of unnecessary expenses and guarantees the security of the systems.

Predictive

Preventive

Corrective

To learn more, please call or visit us online at calderasdelnorte.com

Calderas[®]
del norte

Carr. A Los Ramones km. 1,
Pesquería 66679, Nuevo León
Tel. 01 800 849 8459