



LC

CLEARFIRE®

**LARGE CAPACITY CONDENSING BOILERS
4,000 TO 12,000 MBTU/HR**

TOTAL INTEGRATION IN A SMALL FOOTPRINT WITH UNPRECEDENTED POWER FOR HYDRONIC APPLICATIONS

Cleaver-Brooks has raised the bar and changed the game in condensing boilers with the new ClearFire®-LC boiler line. This exciting new offering provides up to 12,000 MBTU/hr capacity, with a compact footprint and ultra-high efficiency. Cleaver-Brooks engineers have been able to produce the highest capacity condensing boiler system designed, engineered and built by a single manufacturer. With six different large capacity sizes available, starting at 4,000 up to 12,000 MBTU/hr, there's a CFLC that's right for your needs.



ClearFire®-LC 4,000–12,000 MBTU/hr

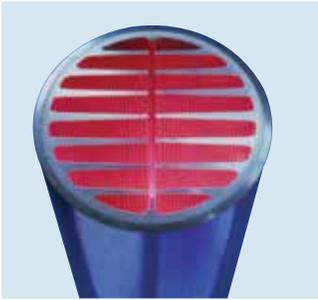
Features

- Full condensing with up to 98% efficiency and 5:1 turndown
- Ultra-low emissions
- Reduce energy consumption by as much as 40–50% compared to traditional non-condensing boiler systems
- No minimum return water temperature for maximum efficiency and reliability
- Dual temperature returns for system design flexibility
- Up-front capital cost is reduced by installing fewer larger-capacity boilers versus many smaller boilers
- Fully integrated system includes boiler, burner, and controls for multiple lead/lag configuration

Maximum capacity - unparalleled efficiency

The revolutionary CFLC line provides maximum flexibility for larger facilities with enhanced efficiency. The larger capacity design allows the most effective installation by using fewer units as opposed to banks of smaller boilers, thus reducing capital cost, complexity, and maintenance.

Superior product design



In order to produce a condensing hydronic boiler with 12,000 MBTU/hr capacity, Cleaver-Brooks engineers designed the boiler system from the ground up. The core heat transfer technology used in the boiler is our patented AluFer[®] tube. The tube is constructed from an inner (fireside) aluminum alloy finned surface, die-fitted within an outer stainless steel tube, providing exceptional heat exchange characteristics. The corrosion-resistant properties of the AluFer tube assure long life and reliability of the boiler.

Along with the AluFer tubes, the ClearFire[®]-LC combines our exclusive spiral tube design featured in our proven EX technology. Bringing these proven technologies into a true counter-flow arrangement along with unmatched heating surface per BTU results in maximum efficiency. And because we engineered and integrated the heat exchanger, burner and controls, Cleaver-Brooks is able to deliver the highest efficiency, lowest emissions and largest capacity condensing boiler on the market.

By combining the CFLC's efficient high-turndown design with our advanced controls, the CFLC achieves ultra-high efficiency of up to 98%, and its ultra-low emissions allows you to meet stringent industry regulations.



Intelligent integrated controls

The Cleaver-Brooks Falcon is a proven boiler/burner management control that provides an intuitive operator interface featuring integrated burner sequencing, trending, flame safety, modulation, alarms, lockout, and much more, ensuring your boiler system operates at peak efficiency, while providing necessary safety and reliability.

The Cleaver-Brooks Falcon control with integrated lead/lag optimizes the boiler room's operational efficiency while delivering precise temperature control to meet heating demands. The Cleaver-Brooks Falcon can communicate with your building's Energy Management System (EMS), which helps maximize overall system efficiency.

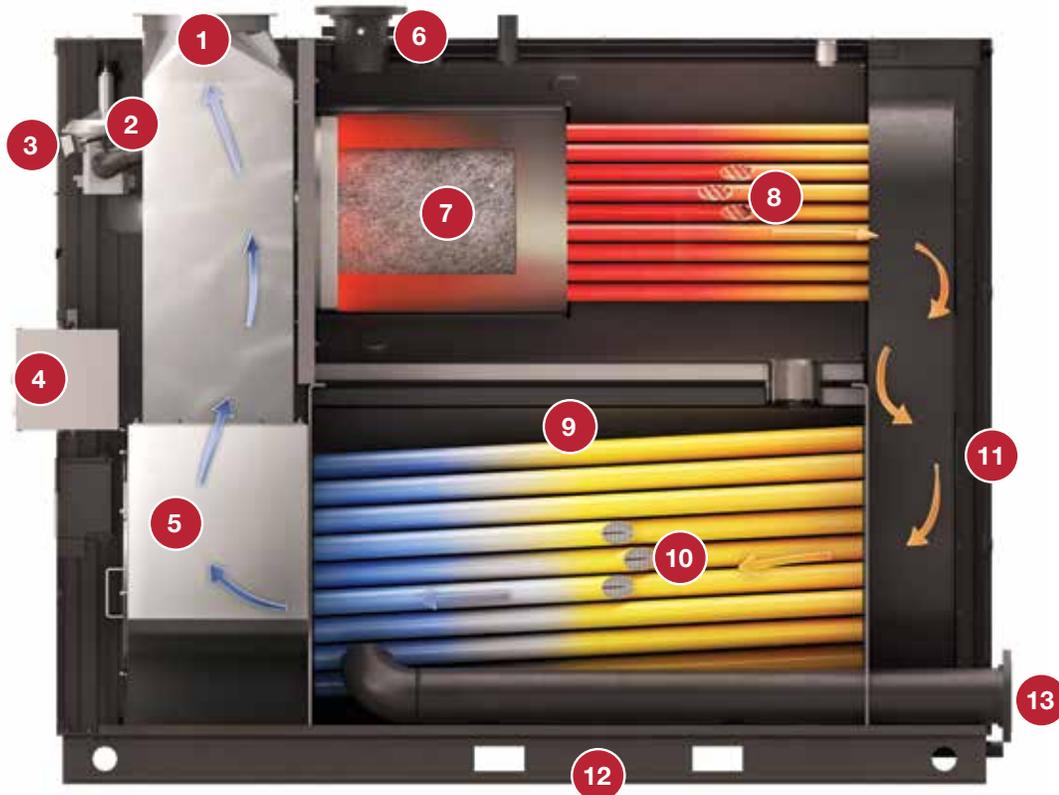
Cost-effective heating

Getting the most boiler for your money is important on every project. With the CFLC, you can decrease your upfront capital cost by saving on equipment cost and installation. One or two larger CFLC units is more cost effective per BTU than several smaller capacity hydronic condensing boilers. And installation cost for one unit, including mechanical piping and exhaust, is less when compared to multiple smaller capacity units. In addition to the upfront capital cost, operators can save on ongoing operating cost. With a condensing boiler option for larger applications, where only traditional non-condensing boilers were available before, it's possible to see operating costs reduced by as much as 40% – 50%.

Advanced Engineering

The ClearFire®-LC integrates Cleaver-Brooks leading heat exchanger, burner and control technology into a large capacity condensing boiler solution. The CFLC's integrated premix burner and linkageless control, work together to provide full modulation, ultra-low emissions and optimum turndown. By combining our proven extended heating surface tube designs, our patented AluFer® tubes and exclusive spiral tubes in a true counter flow arrangement, the CFLC delivers the capacity, efficiency and reliability previously considered unattainable.

When you are the industry leader, the only way to stay there is to continuously innovate. Many of our competitors claim to be innovators, but no one invests more energy and resources into research and product development. The CFLC is the latest in Cleaver-Brooks product advancements that define their category.



Components

- | | | |
|--|---|--|
| 1 Exhaust connection | 6 Hot water supply outlet | 10 Patented AluFer tubes for maximum condensing efficiency |
| 2 Premix modular venturi/blower assembly | 7 Metal fiber premix burner for ultra-low NOx emissions | 11 Removable casing for easy maintenance |
| 3 Gas train UL/CSD-1 compliant | 8 Spiral tubes with EX technology for increased heat transfer versus plain tube | 12 Structural base |
| 4 User-friendly Falcon control with color touch screen interface | 9 True counter-flow arrangement | 13 Low and high temperature return connections |
| 5 Flue and condensation collection chamber | | |



Condensing and Hybrid Flexible Solutions

The ClearFire®-LC is an ideal retrofit option for an existing condensing or non-condensing boiler system to increase system efficiency. Whether it's modular systems that divide load among boilers of similar size and type, or hybrid systems that have a combination of different types of boilers, adding one or more CFLC boilers to your system can add additional flexibility and efficiency. Because we manufacture nearly every type boiler and the integrated controls that make all components work together seamlessly, you can be sure your system is the most reliable possible.

Versatile Controls Solutions

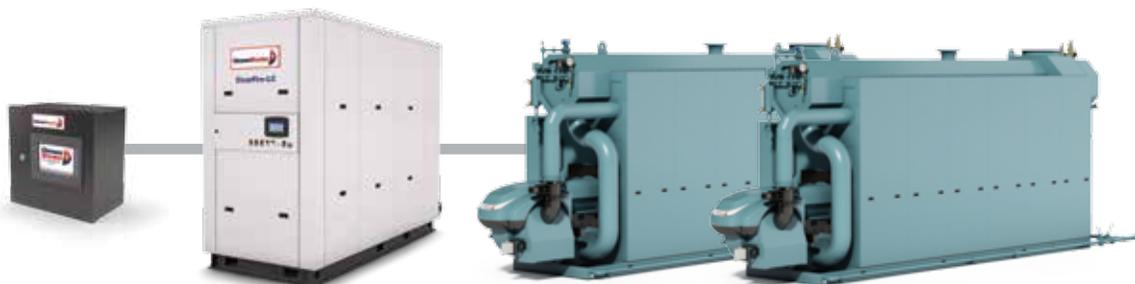
The integrated Falcon lead/lag control is uniquely suited to sequence and modulate up to 8 ClearFire®-LC boilers, or a combination of other Cleaver-Brooks models using the Falcon platform, allowing flexibility and maximum efficiency.

For additional versatility across multiple boiler control platforms, Cleaver-Brooks Hydronic System Control (HSC) will work with condensing, non-condensing and hybrid designs to optimize the performance and efficiency of any hydronic system. For details on how the HSC can deliver performance and flexibility to your facility, contact your local authorized Cleaver-Brooks representative at cleaverbrooks.com/ reps.

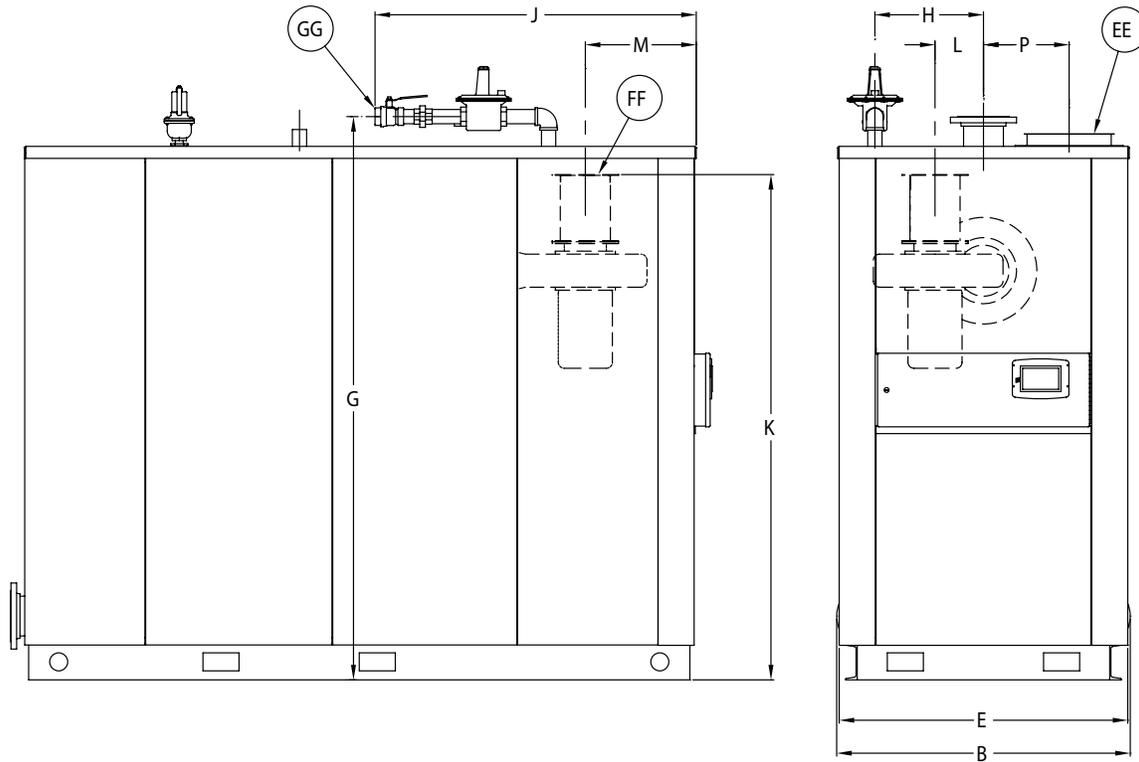
Full Condensing Flexible Solutions



Hybrid Solutions

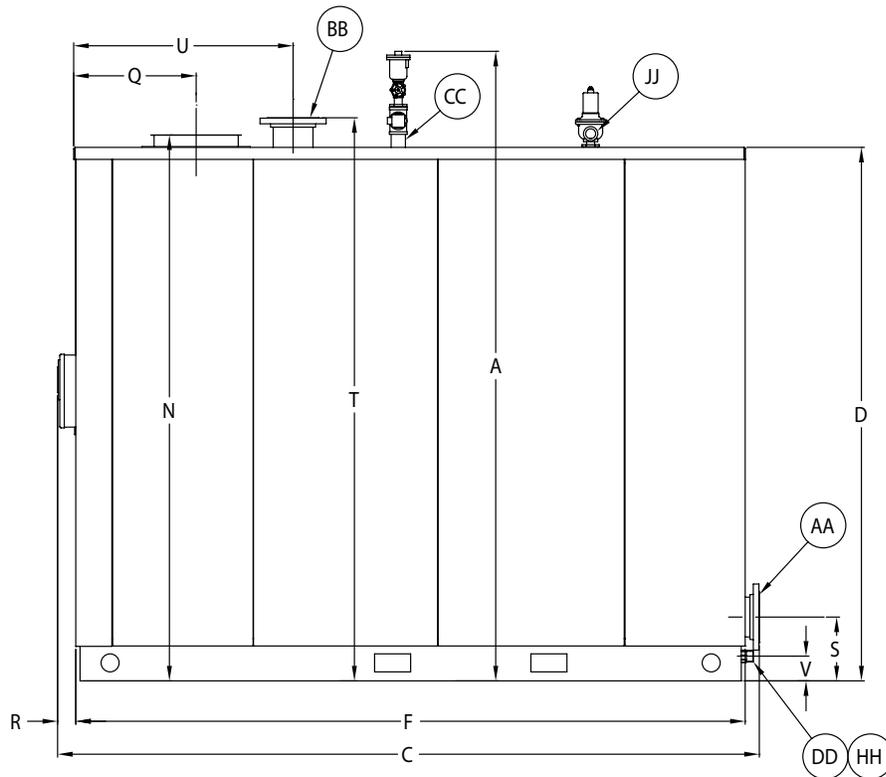


ClearFire®-LC Boiler Dimensions and Ratings



Left Side View

Front View

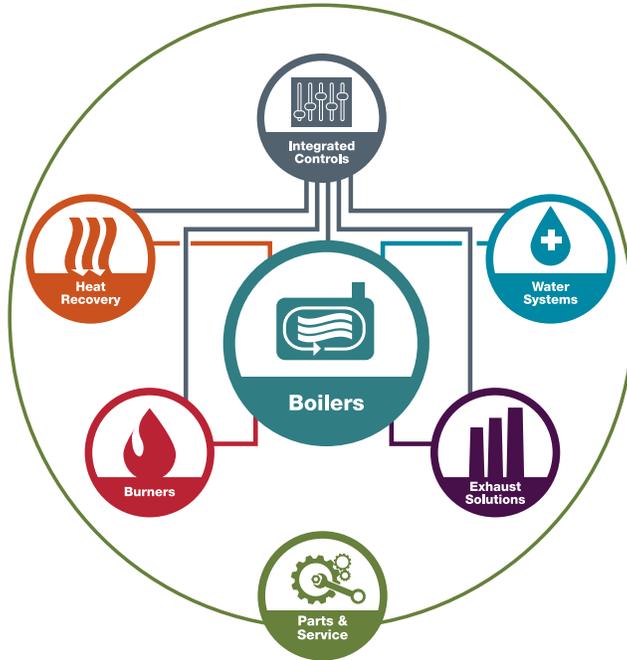


Right Side View



ITEM	DIMENSIONS (inches)	BOILER MODELS					
		CFLC-4000	CFLC-5000	CFLC-6000	CFLC-8000	CFLC-10000	CFLC-12000
	Input Max. (BTU/hr)	4,000,000	5,000,000	6,000,000	8,000,000	10,000,000	12,000,000
A	Overall Height	105"	105"	115"	115"	135"	135"
B	Overall Width	49"	49"	57.5"	57.5"	70"	70"
C	Overall Depth	117"	117"	131"	131"	147"	147"
D	Casing Height	89"	89"	99"	99"	119"	119"
E	Casing Width	48"	48"	57.5"	57.5"	69"	69"
F	Casing Depth	111.5"	111.5"	125.5"	125.5"	141.5"	141.5"
G	Gas Connection to Floor	94"	94"	104"	104"	124"	124"
H	Gas Connection to Boiler Centerline	18"	18"	21"	21"	26"	26"
J	Gas Connection to Front of Boiler	56.5"	56.5"	58"	58"	60"	60"
K	Air Inlet Venturi to Floor	84"	84"	95"	95"	114"	114"
L	Air Inlet Centerline to Boiler Centerline	8"	8"	10.5"	10.5"	10"	10"
M	Air Inlet Centerline to Front of Boiler	18.5"	18.5"	21"	21"	30.5"	30.5"
N	Stack Connection to Floor	91"	91"	101"	101"	121"	121"
P	Stack Connection to Boiler Centerline	14.5"	14.5"	18"	18"	21"	21"
Q	Stack Connection to Front of Boiler	20.5"	20.5"	23"	23"	32"	32"
R	Control Panel Projection	3"	3"	3"	3"	3"	3"
S	Return Connections to Floor	11"	11"	14.5"	14.5"	16"	16"
T	Supply Connection to Floor	94"	94"	104"	104"	124"	124"
U	Supply Connection to Front of Boiler	36.5"	36.5"	40.5"	40.5"	50"	50"
V	Floor to Drain Connection	4.5"	4.5"	6"	6"	7.5"	7.5"
	CONNECTIONS (inches)						
AA	Water Return, 150# RF Flg	6"	6"	6"	6"	8"	8"
BB	Water Supply, 150# RF Flg	6"	6"	6"	6"	8"	8"
CC	Boiler Air Vent, NPT	2"	2"	2"	2"	2"	2"
DD	Boiler Drain, NPT	1.5"	1.5"	1.5"	1.5"	1.5"	1.5"
EE	Flue Gas, Nominal OD	14"	14"	16"	16"	20"	20"
FF	Combustion Air Option	8"	8"	10"	10"	12"	12"
GG	Gas Connection, NPT	2"	2"	2.5"	2.5"	2.5"	2.5"
HH	Condensate Drain, FPT	1.25"	1.25"	1.25"	1.25"	1.5"	1.5"
JJ	Relief Valve Outlet @ 160# Setting	1.25"	1.25"	1.25"	1.5"	1.5"	2"
	Voltage Fan Motor (Volts/Ph/Hz)	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60
	Voltage Control Circuit (Volts/Ph/Hz)	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60
	RATINGS						
	MAWP (PSI)	160	160	160	160	160	160
	Weight w/o Water (Shipping) (lbs.)	7,450	7,800	9,800	10,500	15,300	16,100
	Operating Weight (lbs.)	10,743	10,918	14,460	14,760	22,562	22,928





Total Integration goes far beyond boilers.

For more than 80 years, Cleaver-Brooks has built a reputation for innovation in the boiler solutions industry. We remain committed to introducing technology and products that enable a more energy-efficient and environmentally friendly generation of steam and hot water.

When you come to us for a condensing boiler solution, you can know that each element is created to the highest standards and all will work together seamlessly to give you a highly efficient and reliable solution for protecting your boiler system. To learn more, please call or visit us online.



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