



Copper-Fin® Commercial Gas Boilers


Energy Efficient, Cost Effective Boilers

Lochinvar first introduced Copper-Fin technology to the boiler industry some 50 years ago. Since then, we've continued to refine and perfect it - adding advanced fan-assisted combustion, hot surface ignition, a unique gasketless copper finned tube heat exchanger and highly efficient insulating materials.

Installation Flexibility and Cost-Savings

With compact sizes that use less floor space than ever before, all Copper-Fin units are narrow enough to fit through a standard 36" doorway - an advantage most commercial boilers can't provide. Plus, thanks to special insulating materials, Copper-Fin units require only 3" clearance from combustible walls. What's more, our Stack Frame allows you to install two units in the area normally required for one. This makes it easier to fit multiple Copper-Fin boilers into cramped mechanical rooms. And you can even use a smaller diameter vent stack - up to 8" smaller than typically required for comparable atmospheric boilers - so it saves money as well as valuable mechanical room space.

Unique Copper-Fin Heat Exchanger



The Lochinvar Copper-Fin boiler design uses a two pass heat exchanger. Water is circulated through a row of highly-efficient, finned copper tubes. The high rate of water flow creates a scouring action that prevents sediment and lime-scale buildup, common in conventional boilers, and the finned copper tubes allow maximum heat transfer efficiency. To create this special heat transfer capability, Lochinvar extrudes the fins from thick wall copper tubing to precise specifications - exactly 7 fins per inch. The result is an integrally-finned tube with a heat transfer ratio 9 times greater than a plain copper tube.

Heavy-Duty Gasketless Design

What's more, advanced casting processes allowed Lochinvar to develop a unique one-piece header system. This gasketless design provides enhanced reliability, improved durability and optimum performance - without the problems or failures common with O-rings and gaskets.

Meets the Toughest Air Quality Standards



Because of our unique fan-assisted combustion process, the Copper-Fin exceeds today's toughest NO_x emissions requirements. An independent certification laboratory test gave us a rating of less than 20 ppm - corrected to 3% O₂. And less NO_x means a cleaner environment.



Enhanced to Provide Performance and Serviceability

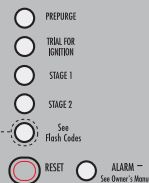
Our enhanced Copper-Fin models offer the same reliable operation, and feature a more service friendly design. The down stream test valves and referenced gas valves are now in the upper deck for easier access, and the electrical and BMS connections have been repositioned to the front of the unit for easier installation.

The gas valves, which are referenced to the sealed combustion chamber, improve operational performance by monitoring the pressure in the sealed combustion chamber and adjusting gas flow to maintain the optimum air/fuel mixture. And the built-in air inlet filter reduces maintenance and improves performance by trapping dust and airborne particulates that can foul the burners and blowers.

With dual sight glasses (one on each end), you can easily monitor burner performance and flame characteristics throughout the entire combustion chamber.

The operator interface panel provides two-stage electronic temperature control and comprehensive diagnostic status without opening the control panel. Its user friendly design simplifies service while providing additional diagnostic information through a series of LEDs.

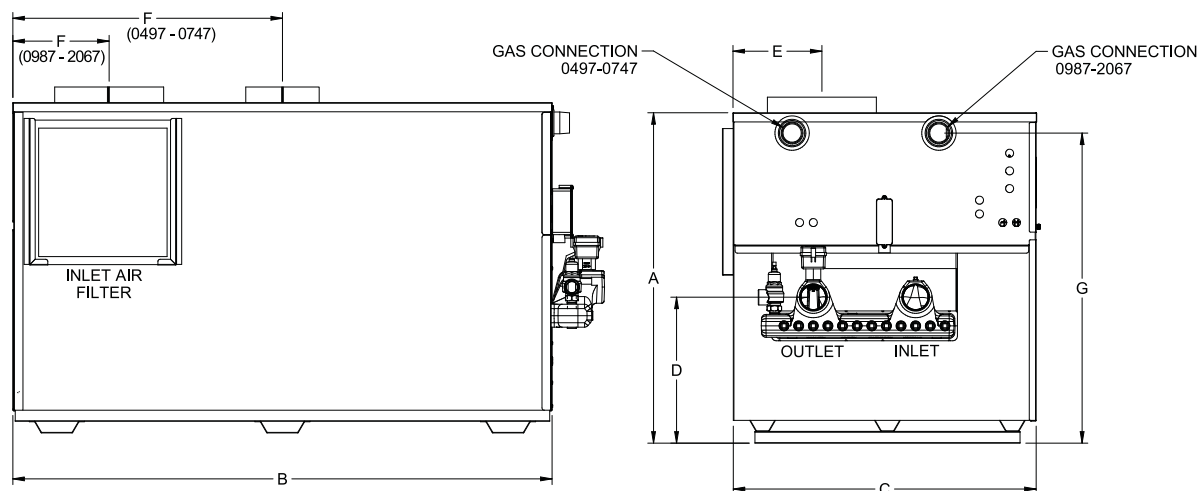
Copper-Fin®



FLASH CODES

- 0 Flashes — Normal Operation
- 1 Flash — Low Air Condition
- 2 Flashes — Flame without Call for Heat
- 3 Flashes — Flame Failure Condition
- 4 Flashes — Igniter Failure
- 5 Flashes — Low Voltage Condition
- 6 Flashes — Replace Control

Copper-Fin® Boiler Dimensions & Specifications



Copper-Fin Heating Boiler					Dimensions & Specifications									
Model Number	Input Max MBH	Heating Thermal Efficiency	Net Capacity MBH	Net AHRI Rating MBH	A	B	C	D	E	F	G	Gas Conn.	Vent Size	Shipping Weight
CBN0497	495	81%	401	349	31-1/2"	45-1/4"	22-1/4"	12-1/2"	9-1/2"	22-3/4"	29-1/2"	1-1/4"	6"	440
CBN0647	645	81%	522	454	31-1/2"	56-3/4"	22-1/4"	12-1/2"	9-1/2"	28-1/2"	29-1/2"	1-1/4"	8"	510
CBN0747	745	81%	603	524	31-1/2"	64"	22-1/4"	12-1/2"	9-1/2"	32"	29-1/2"	1-1/4"	8"	550
CBN0987	985	81%	798	694	36"	48-1/4"	33-1/2"	15-3/4"	8-1/2"	8-1/2"	33-3/4"	2"	10"	845
CBN1257	1255	81%	1,017	884	36"	58-1/2"	33-1/2"	15-3/4"	9-1/2"	10-1/2"	33-3/4"	2"	12"	905
CBN1437	1435	81%	1,162	1,010	36"	68-3/4"	33-1/2"	15-3/4"	10-1/2"	10-1/2"	33-3/4"	2"	12"	1050
CBN1797	1795	81%	1,454	1,264	36"	82-1/4"	33-1/2"	15-3/4"	11"	11"	33-3/4"	2"	14"	1193
CBN2067	2065	81%	1,673	1,455	36"	92-1/2"	33-1/2"	15-3/4"	11"	11"	33-3/4"	2"	14"	1350

Notes: Change 'N' to 'L' for LP gas models.

No deration on LP models.

Performance data based on manufacturer test results.

Water connections for models CB 0497-747 are 2" NPT on 6-1/2" centers.

Water connections for models CB 0987-2067 are 2-1/2" NPT on 11-1/4" centers.

Standard Features

- 81% Thermal Efficiency
- Electronic Temperature Control
- Fan Assisted Combustion
- Sealed Combustion Chamber
- Stainless Steel Burners
- Low NOx Operation Exceeds the most Stringent Air Quality Requirements
- ASME Copper Finned Tube Heat Exchanger
- 160 psi Working Pressure
- Gasketless Heat Exchanger Design
- Pump Relay w/ Delay
- Down Stream Test Valve
- Referenced Gas Valves
- Loch-Heat Ceramic Tile Combustion Chamber
- Hot Surface Ignition
- Adjustable High Limit w/ Manual Reset
- ASME Pressure Relief Valve
- Temperature & Pressure Gauge

- Flow Switch
- 24 Volt Control System
- BMS Terminal Strip
- Combustion Air Filter
- Freeze Protection
- 10 Year Limited Warranty on Heat Exchanger (See warranty for details)

Optional Equipment

- Alarm Bell
- Contacts on any Failure
- Contacts for Air Louvers
- Cupro-Nickel Heat Exchanger
- High & Low Gas Pressure Switch w/ Manual Reset
- Outdoor Reset Control
- Manual Reset Low Water Cut-Off w/ test
- Stack Frame
- MP² Sequencer

Available Firing Systems

- M9 Hot Surface Ignition with Electronic Supervision (Standard)
- M13 GE GAP/FM/CSD1
- M7 California Code

Venting

- Outdoor Vent Cap

Registered under U.S. Patent # 5,989,020

For Ease In Ordering
By Model Number

CB	N	0497	M9
MODEL	NAT GAS	Btu/hr INPUT	FIRING CONTROLS

This boiler is a 495,000 Btu/hr, natural gas Copper-Fin. It has M9 firing controls



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