



# Freedom™

## Gas-fired High Efficiency Condensing Boiler

# 95%

HIGH EFFICIENCY



- Exceeds 95% AFUE - ENERGY STAR® Certified
- Three Sizes 70, 90 & 120 MBH
  - Natural Gas or Propane
- Cast Aluminum Mono Block Design
- Fully Modulating Operating Control with Outdoor Reset
- Wall-hung or Floor Mount Configuration
- Multiple Venting Options
  - Polypropylene concentric vent
  - CPVC/PVC venting
  - Stainless steel 2-pipe venting

# Burnham® Hydronics



## Condensing, Modulating, High Efficiency Boiler

### High Efficiency for Homeowners

Few boilers can deliver the kind of energy efficiency that the 95% efficient Burnham Freedom can. Beneath its sleek, modern jacket you'll find a durable cast-aluminum mono block heat exchanger which wrings nearly every BTU of heat from the combustion process and delivers it directly to the heating system. The Freedom's advanced control system senses just how much heat the building requires and adjusts the boiler's output accordingly. The Freedom boiler and the heating system work in harmony to achieve incredible efficiencies and provide unmatched comfort.

### Black & Silver on the Outside, "All Green" on the Inside

The Freedom's combustion system is designed to run clean and is tuned to produce extremely low emission levels. This means that the Freedom looks great, and is great for the environment as well! This boiler can be wall-mounted or installed on an optional matching floor-mounted pedestal. In addition, thanks to its whisper-quiet operation, the Freedom's beauty will be seen & not heard.

### Contractor-Friendly Design

The Freedom is small enough to fit into tight installations, while providing ample access to all internal components and wiring for easy setup and service. Installation of the Freedom is simplified by a long list of standard equipment. Every Freedom boiler includes a boiler circulator, a vent terminal, built-in outdoor reset, domestic hot water priority control, and a factory-installed low water cut-off device.

### What is a "Condensing" Boiler?

When a condensing boiler is working at its peak efficiency, the water vapor produced in the gas combustion process condenses back into water – hence the name "condensing" boiler. This condensation of exhaust gases releases the latent heat that is wasted in a non-condensing boiler.

### Easy Access Control Panel

Fully modulating boiler with MCBA control module located inside lower front cover provides access to operating information and troubleshooting for Freedom boilers.



MCBA Control Panel  
Instruction Guide



### Flexible Venting Options Available

Freedom boilers can use polypropylene concentric vent material, the popular CPVC/PVC vent material, or an AL29-4C stainless steel two-pipe system. Whatever the venting preference or code requirement, the Freedom can meet the need.

Flue Pipe Access  
Tapping with  
Screw-on Cap



CPVC/PVC Venting



Concentric Polypropylene  
Venting



AL29-4C Stainless Steel  
Two-Pipe Venting

## The Freedom Boiler

### Top Venting

Permits wall-mount installation

### Low Water Cut-Off

Installed as standard on each Freedom boiler

### Cylindrical Stainless Steel Mesh Burner

Assists in providing full modulation capabilities

### Monoblock

cast aluminum heat exchanger

### Pressure and temperature gauge

shows through when panel is closed

### Efficient Combustion

Air and fuel are premixed in blower assembly and modulation is controlled by blower speed via MCBA module

### Negative Pressure Gas Valve & Venturi System

Designed to operate efficiently, even in low gas pressure environments

### Heavy Duty Aluminum Sump

Features extra thick pan, designed to handle acidic condensate

### MCBA Control Module and Transformer

Easily accessed via hinged flip-down control panel is isolated from the combustion process, promoting long component life

### Polypropylene Condensate Trap (not visible)

Safely and effectively directs acidic condensate away from the boiler

### Optional Matching Floor Mount Base

Available for Freedom boilers

## Burnham Alliance SL™

### Indirect-fired Water Heaters

For an abundant supply of domestic hot water, be sure to use a Burnham Alliance SL indirect-fired water heater with every boiler application.




The Alliance SL water heaters are designed with an effective hydrastone lining that offers superior corrosion resistance and outstanding performance in a wide variety of water conditions.

Water heaters are available in five sizes and come with a unique 10/2/1 warranty – 10 years on the tank and coil, 2 years labor and 1 year on parts.



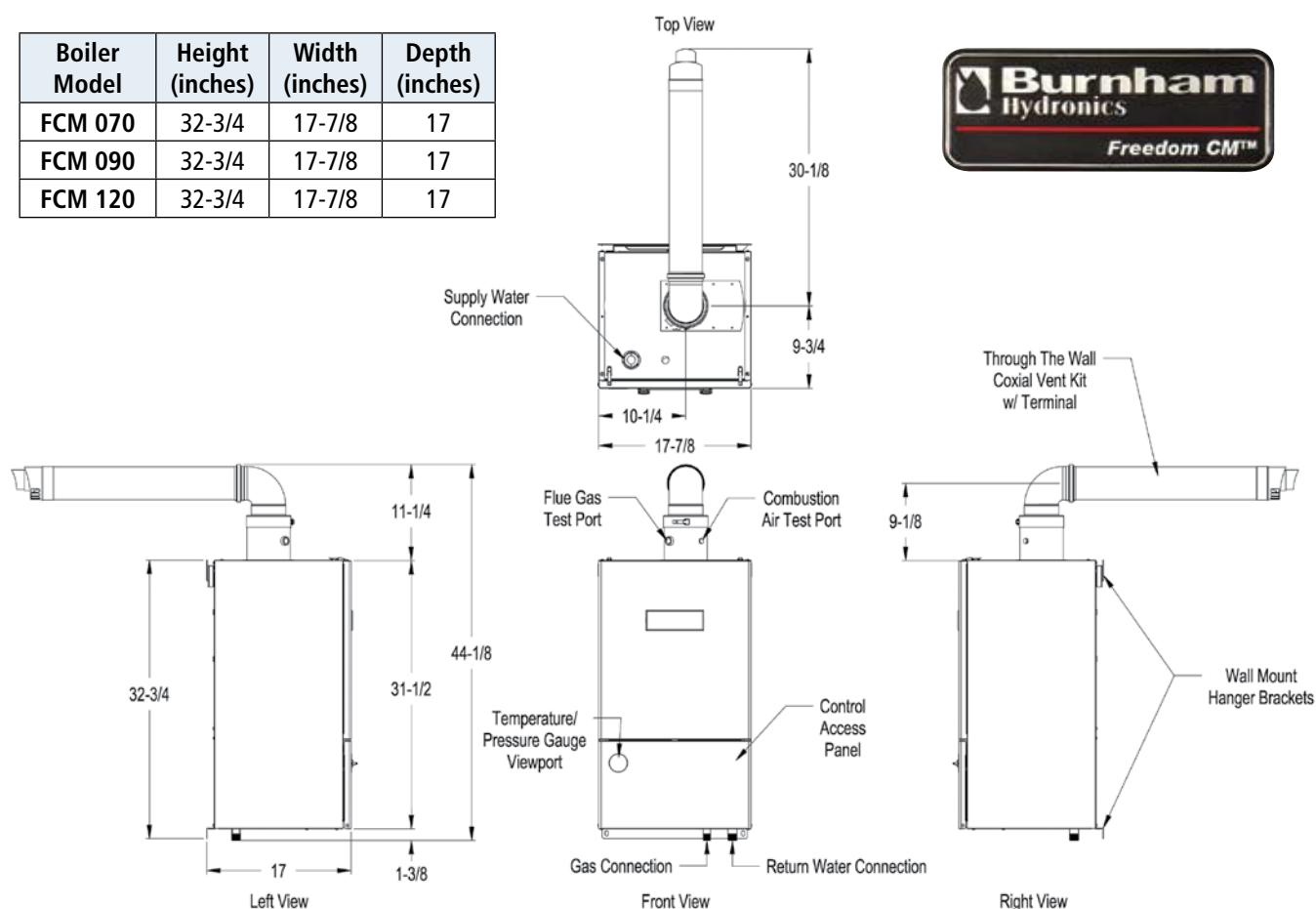
## Ratings



Boiler Model	Maximum Input (MBH)	Minimum Input (MBH)	DOE Heating Capacity (MBH)	I=B=R Net Rating (MBH)	 AFUE (%)	Approx. Net Weight (lbs.)	Mounting System
FCM 070	70	30	63	55	95.4	102	Wall Hung Bracket (included)
FCM 090	90	30	80	70	94.5	102	
FCM 120	120	40	107	93	95.2	110	

## Dimensions

Boiler Model	Height (inches)	Width (inches)	Depth (inches)
FCM 070	32-3/4	17-7/8	17
FCM 090	32-3/4	17-7/8	17
FCM 120	32-3/4	17-7/8	17



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