

## Technical Data Sheet

# MFC II Multi-Fuel Condensing Fire Tube Boiler 4000-12000 MBH

MFC II is a mid- to large-capacity, multi-fuel boiler engineered for mission-critical environments where continuous operation and system resilience are non-negotiable.

Designed for hospitals, healthcare campuses, military installations, data centers, laboratories, and central plants among other applications, MFC II combines dual-fuel adaptability, high-efficiency condensing performance, and robust construction to ensure reliable heat delivery under demanding conditions.

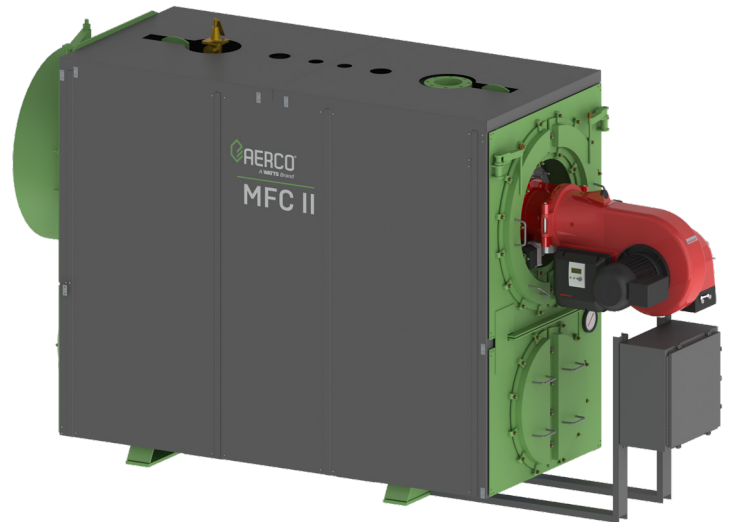
Its design supports redundancy strategies and stable operation across wide load ranges, making it ideal for facilities requiring maximum uptime and compliance with stringent performance standards.

### Engineered for Uninterrupted Service and Easy Plant Integration

MFC II's dual-fuel capability (natural gas, propane, or #2 fuel oil backup) ensures uninterrupted operation during fuel supply disruptions. Integration with lead/lag sequencing and Modbus-based plant control enables redundancy across multiple units, supporting N+1 design strategies for mission-critical systems.

### Stable Performance Across Wide Load Ranges

A large waterside volume minimizes cycling and absorbs load fluctuations, reducing thermal stress and maintaining safe operating conditions even under no-flow scenarios. Turndown ratios up to 7:1 on gas and 5:1 on oil allow precise modulation for varying demand profiles without sacrificing efficiency.



### Integration into Central Plants and BAS

Native Modbus communication and optional Master Lead/Lag panel simplify integration with Building Automation Systems (BAS) and Energy Management platforms. Control flexibility includes constant setpoint, indoor/outdoor reset, remote setpoint, and 4–20 mA modulation, ensuring compatibility with diverse plant strategies.

### Designed for Simplified Service and Greater Durability

The spacious furnace design and davited rear lid provide direct access to the combustion head and heat exchanger without disturbing the burner or fuel train. Full penetration tube welds and stainless steel condensing surfaces enhance durability and reduce maintenance frequency, supporting long-term reliability.

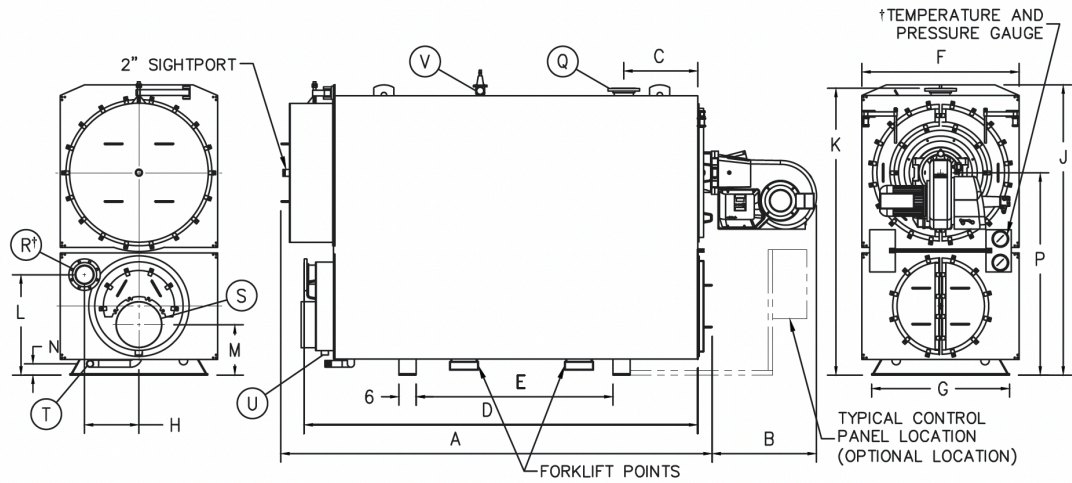
## Features

- 4,000–12,000 MBH capacity range
- Condensing operation (gas and ultra-low sulfur oil)
- Fuel flexibility: Operates on natural gas, propane, or dual-fuel (#2 oil backup)
- Up to 7:1 turndown ratio (14%) when firing on natural gas; up to 5:1 (20%) on oil
- Thermal efficiency up to 94.5%
- Heat exchanger (3-pass fire-tube) made of high-quality, combined carbon steel/ 316L SS
- Industry leading power burner (Weishaupt)
- Low NOx emissions: 30 ppm (7 ppm available up to 8,000 MBH)
- Precise temperature control
- Furnace design enables easy service access without removing burner or fuel train
- Capable of variable primary flow Installations
- Ducted combustion air capable
- Acceptable vent materials: AL29-4C
- Controls options: constant setpoint, indoor/outdoor reset, remote setpoint (via Modbus) or 4-20mA modulating control.
- Optional dual return water connections

## Specifications

	4000	5000	6000	7000	8000	9000	10000	11000	12000
Boiler Category	ASME Sect.IV								
Max. Allowed Working Pressure	125 psi and 160 psi versions available								
Max. Working Temperature	210°F								
Type of Fuel	Natural Gas, Propane, #2 Fuel Oil (backup)								
Gas Connections (NPT)	2"				3" (Flange)				
Oil Connections (NPT)	3/8"	1/2"							
Min. Gas Pressure <sup>1</sup>	1 - 2 psi (See MFC II Gas/Oil Design Guide for size and burner-specific minimum gas pressure)								
Max. Gas Pressure	5 psi								
Max #2 Fuel Oil Consumption Flow rate (GPH)	28.6	35.7	42.9	50	57.1	64.3	71.4	78.6	85.7
#2 Fuel Oil Supply Flow Rate (GPH)									
Electrical Req. 208V/3PH/60Hz									
Electrical Req. 460V/3PH/60Hz									
Electrical Req. 575V/3PH/60Hz									
Water Connections (Flanged)	6"				8"				
Min. Water Flow (GPM)									
Max. Water Flow (GPM)									
Water Volume Gallons	423	480	480	618	618	696	696	876	876
Water Pressure Drop									
Turndown (Nat. Gas/Propane)	Up to 7:1 turndown ratio (14%)								
Turndown (#2 Fuel Oil)	Up to 5:1 turndown ratio (20%)								
Vent/Air Intake Connections	12"				16"				
Vent Materials	AL29-4C								
NOx Emissions <9ppm Capability	<30 ppm (7ppm Ultra Low Nox available)					<30 ppm			
Temp. Control Range	90°F to 190°F								
Minimum Water Inlet Temperature	Natural Gas/Propane - no minimum; #2 Fuel Oil 140°F (100°F for ultra-low sulfur, <15ppm)								
Ambient Temp. Range	xx°F to xx°F								
Standard Listings & Approvals	UL, CUL, CSD-1, ASME								
Gas Train Operations	FM Compliant or Double Block and Bleed								
Shipping Weight lbs.	7600	8900		11000		12300		14500	

# Dimensions



Model	DIM	4000	5000 6000	7000 8000	9000 10000	11000 12000
Overall Length	A	134	134	150	153	170
Burner Extension	B	33	33	37	37	37
To Supply Nozzle	C	25 3/4	25 3/4	25 3/4	25 3/4	25 3/4
To Return Nozzle	D	123	123	137	145	157
Between Supports	E	62	62	69	78	90
Overall Widths	F	45	51	55	57	57
Support Width	G	42	46	48	50	50
CL to Return	H	17 1/2	18 1/4	19	22 1/2	21 3/4
Overall Heights	J	86 1/2	94 1/2	100 1/2	106 1/2	108 1/2
Outlet Nozzle	K	85 1/2	93 1/2	99 1/2	105 1/2	107 1/2
Return Nozzle	L	32	33 1/2	34 3/4	39	43
Flue Outlet	M	16	15 3/8	17 1/2	17 1/2	17 1/2
Drain	N	4	4	4	4	4
Furnace CL	P	61	66	70	75	77
<b>CONNECTIONS</b>						
Supply Nozzle	Q	6	6	6	8	8
Return Nozzle	R	6	6	6	8	8
Flue Outlet	S	12	12	16	16	16
System Drain	T	2	2	2	2	2
Condensate Drain	U	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Safety Valve	V	3/4 x 1	1 x 1 1/4	1 1/2 x 2	1 1/2 x 2	1 1/2 x 2
<b>MINIMUM CLEARANCES</b>						
To Combustibles Front		48	48	48	48	48
To Combustibles Side		4	4	4	4	4
To Combustibles Top		20	20	20	20	20
To Combustibles Rear		20	20	20	20	20
Door Swing Side		54/57	54/60	60/67	60/68	60/68
Door Swing Rear		45/40	48/40	51/45	52/45	52/45



Heating and Hot Water Solutions

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