



## Utica Boilers MACF-205 - Submittal

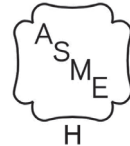


Engineer: \_\_\_\_\_

Project Name: \_\_\_\_\_

Project Location: \_\_\_\_\_

Contractor: \_\_\_\_\_



### APPLICATION:

Modulating Gas fired Combi boiler for indoor installation. Approved for closet or alcove installations. For use with natural or liquefied petroleum (LP/Propane) fuel gases. Shall be floor standing. All boilers are factory assembled with controls and wiring and test fired to ensure dependable performance. Boiler shall be certified for Direct Vent applications only.

### CERTIFICATION AND APPROVALS:

Stainless Steel heat exchanger is manufactured and tested in accordance with American Society of Mechanical Engineers (ASME) and certified by Canadian Standards Association (CSA), AHRI, NRCAN. Registered with National Board BPVI, and Massachusetts Board. Stainless steel heat exchanger is tested for maximum allowable working pressure of 50 psig in accordance with ASME boiler and pressure vessel code, section IV, rules for construction of heating boilers. A 30 psig safety relief valve is shipped standard.

### BOILERS INCLUDE:

- Boiler is equipped with internal stainless steel brazed plate heat exchanger for potable hot water and automatic 3 way diverting valve to allow Domestic Hot Water Priority operation.
- Boiler includes factory installed and wired, electronically controlled, 2 step modulating circulator pump. The circulator RPM is determined by the boiler temperature and controlled by the integrated boiler control.
- Primary/Secondary manifold with quick connections installed on the boiler.
- Digital Boiler Control:
  - ▶ Control is Self Commissioning, auto adjusts to fuel type and features a calibration function mode to optimize combustion. Control continuously monitors flame signal and adjusts the gas valve during normal operation for maximum efficiency.
  - ▶ Control system is PCB integral controller with LCD digital/graphical display.
  - ▶ Control senses supply water temperature and adjusts the boiler firing rate to deliver the amount of heat needed and optimize efficiency.



Manufactured by:  
ECR International Inc.  
2201 Dwyer Avenue, Utica, NY 13501  
Tel. 800 253 7900  
[www.ecrinternational.com](http://www.ecrinternational.com)  
PN 615000354 REV. A [06/31/2020]



- ▶ Control can sense and display supply water temperature and indicate when boiler is in central heating or domestic water mode.
- ▶ Control has selectable DHW preheat mode. Preheat mode will maintain brazed plate heat exchanger temperature to speed DHW delivery.
- ▶ Control can accept an optional proprietary Outdoor Air sensor and has field adjustable reset curves.
- ▶ Control displays Error Codes and Diagnostic information.
- ▶ Control can accept 0-10V input to manage heating set-point or heating power level.
- Boiler Combustion System:
  - ▶ The Gas valve is a modulating valve capable of firing from:
    - 205,000 BTU input down to 29,500 BTU input in Combi mode (7:1 turn down).
    - 164,000 BTU input down to 29,500 BTU input in Heat mode (5.5:1 turn down).
  - ▶ Induced draft blower is variable speed controlled by the PCB.
  - ▶ Burner is constructed of Iron-Chromium stainless steel.
  - ▶ Ignition system shall incorporate a Direct Spark Igniter and a separate Flame Sensing rod
- Heat Exchanger:
  - ▶ Boiler's primary heat exchanger is constructed of Iron-Chromium stainless steel.
  - ▶ DHW brazed plate is constructed of Stainless Steel.
- Electrical
  - ▶ 120 volts AC, 60 Hertz, 1-phase; less than 12 amps (15 amp circuit manufacturer recommended)
  - ▶ Low voltage terminal strip for Thermostat, and Outdoor Air Sensor.
- Other:
  - ▶ Field supplied Anti-Scald valve is required for Domestic Hot Water Supply.
- Warranty
  - ▶ Factory Standard Limited Warranty is 10 years on heat exchanger, one year on parts.
  - ▶ Please see the Limited Warranty for More Detail on Warranty Registrations & Extensions.
- Optional Equipment
  - ▶ Outdoor Air Sensor Kit
  - ▶ Coaxial and Two-pipe venting components



Clearances		Combustible Materials (Required) <sup>(1)</sup>		Service <sup>(1)(2)</sup>	
<sup>(1)</sup> Required distances measured from boiler jacket. <sup>(2)</sup> Service, proper operation clearance recommendation. *Allowance for piping at bottom of boiler not included.	<b>Top</b>	0"	0 mm	8-5/8"	220 mm
	<b>Left Side</b>	1-3/4"	45 mm	1-3/4"	45 mm
	<b>Right Side</b>	1-3/4"	46 mm	1-3/4"	45 mm
	<b>Front</b>	0"	0 mm	17-3/4"	450 mm
	<b>Back</b>	0"	0 mm	0"	0 mm
	<b>Bottom</b>	0"	0 mm	NA	NA
	<b>Combustion Air / Venting Piping</b>	0"	0 mm	6"	155 mm
205 Physical Data & Specifications					
<b>Central Heat Supply &amp; Return</b>		1" NPT - Male			
<b>Central Heat Primary / Secondary Manifold</b>		1-1/2" Copper Sweat			
<b>DHW (Cold Water) Inlet &amp; Outlet</b>		1" Copper Sweat			
<b>Gas Connection</b>		3/4" NPT - Female			
<b>DHW Maximum Flow Rate</b>		5.0 GPM			
<b>Dimensions / Weights</b>		"Width"	"Height"	"Depth"	"Weight"
		18.56"	42.69"	23.55"	168 lbs.
<b>Electrical</b>		120 Volts AC, 60 Hertz, Single Phase, less than 12 amps (15 amp circuit recommended)			

Size	Input Rate (MBH) 0-2000 ft	Heating Capacity (MBH) 0-2000 ft	Net AHRI Rating, Water (MBH) 0-200 0ft	Vent Diameter O.D. Coaxial	Vent Diameter 2-pipe	AFUE (%)
<b>MACF-205 Heating Mode</b>	164,000	153,000	133,000	4" / 2" 100mm/60mm	2" or 3"	95.0
<b>MACF-205 DHW Mode</b>	205,000	184,500	N/A	4" / 2" 100mm/60mm	2" or 3"	N/A

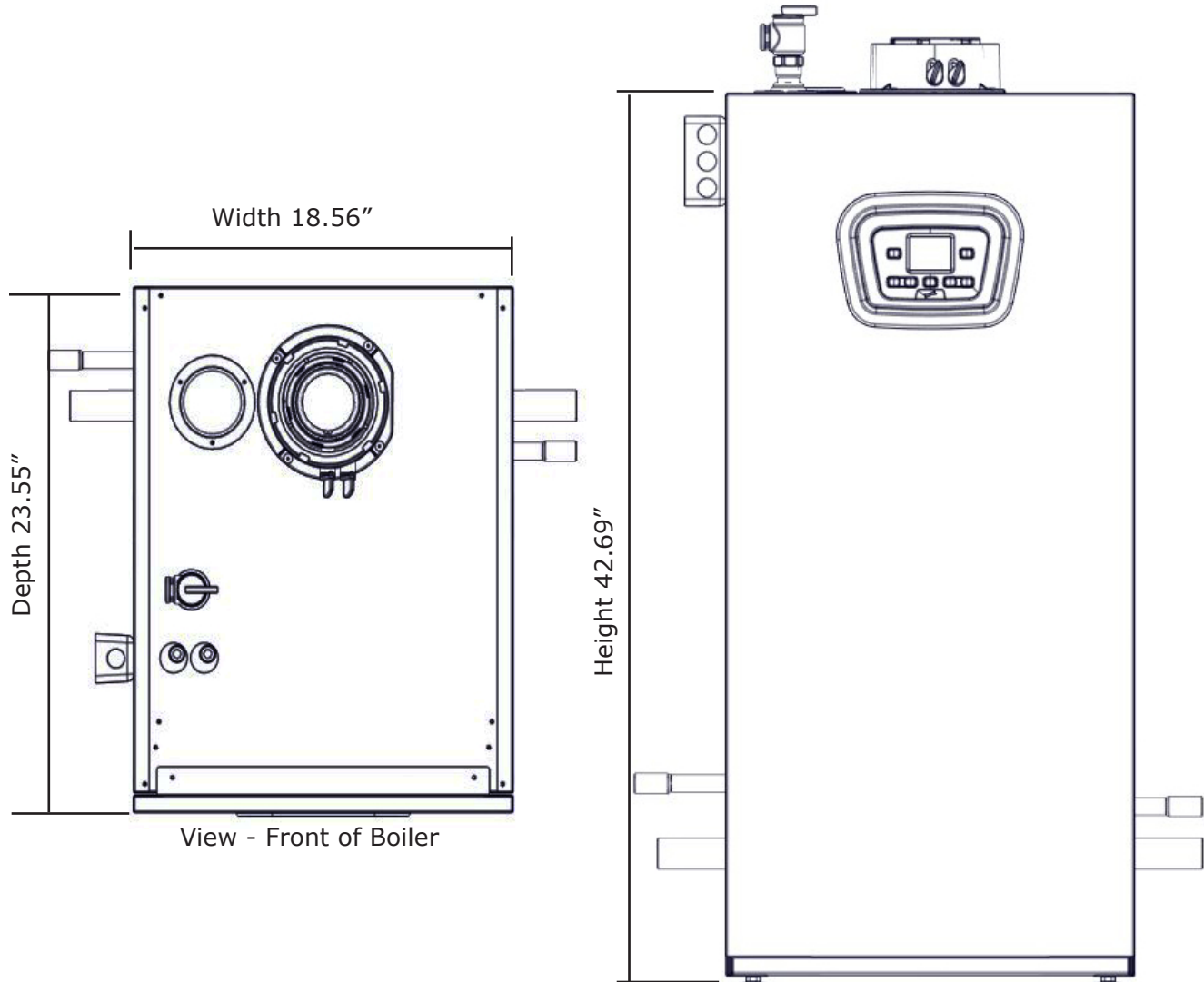


<b>MACF-205</b>	
<b>Central Heating (Sealed System)</b>	
Max System Pressure	43.00 psi / 2.96 bar
Min System Pressure	7.25 psi / 0.50 bar
Max System Temperature	176°F / 80°C
Pressure Relief Valve Setting	30.00 psi / 2.11 bar
Flow Connection	1.5" Sweat
Return Connection	1.5" Sweat
Relief Valve Connection	3/4" NPT
Recommended Operational System Pressure	21.7 psi / 1.5 bar

<b>MACF-205</b>	
<b>Domestic Hot Water (Sealed System)</b>	
Max Inlet Pressure	116.00 psi / 8 bar
Min Inlet Pressure	2.9 psi / 0.2 bar
Min DHW Flow Rate	0.55 gpm / 2.50 l/min
Cold Water Inlet Connection	3/4" Sweat
DHW Outlet Connection	3/4" Sweat
Max DHW Temperature	140°F/60°C
DHW Water Content	0.10 gal/ 0.37 L



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## Venting

### Coaxial Venting

Connects directly to the top of the boiler



### 2-Pipe Venting - Optional Kit

Using polypropylene -3"/ 80 mm venting



### 2-Pipe Venting - Optional Kit

Using CPVC UL1738/S626 - 3"/ 80 mm venti



### Total Vent Equivalent Lengths\* - Account For Fittings As Listed

	Coaxial	Twin Pipe			
		Rigid		Flexible	CPVC UL1738/ S636
Vent Size	4"/2" [100/60]	3" [80 mm]	2" ** [60 mm]	3" [80 mm]	3" [80 mm]
Total Maximum	32.8 ft [10 m]				
Air Intake Maximum		49 ft [15 m]	85 ft [25.9 m]	50 ft [15.2 m]	49 ft [15 m]
Intake + Exhaust		196.8 ft [60 m]	170 ft [51.8 m]	130 ft [40 m]	196.8 ft [60 m]
90° elbows	3.28 ft [1.0 m]	1.64ft [0.50 m]	3 ft [0.91 m]	1.64ft [0.50 m]	1.64 ft [0.50 m]
45° elbows	1.64 ft [0.50 m]	0.82 ft [0.25 m]	5 ft [1.5 m]	0.82 ft [0.25m]	0.82 ft [0.25 m]

\* Refer to IOM for complete venting details.

\*\* Use venting manufacturer's components to transition from 3" [80 mm] to 2" [60 mm]



**ECR** international

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All specifications subject to change without notice.

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