



## Dunkirk Boilers DCC-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. Wall mounted – optional floor stand available. 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:

- Wall mount bracket, mounting hardware and actual size Wall Mount Template
- 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 2 speed, electronically controlled, step modulating circulator pump. The circulator RPM is determined by the boiler temperature and controlled by the integrated boiler control.
- External Primary/Secondary manifold with quick connections shipped with boiler.
- Digital Boiler Control:
  - Upon commissioning the boiler control shall automatically recognize fuel type (natural or LP gas) and automatically calibrate for correct fuel/air mixture, optimum combustion and performance. Control continuously monitors flame signal and adjusts the gas valve during normal operation for maximum efficiency.



**ECR**international

Manufactured by:  
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- ▶ 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.
- ▶ 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).
  - ▶ Factory wired 3-foot appliance cord with male plug end.
  - ▶ 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
  - ▶ Floor Stand Kit

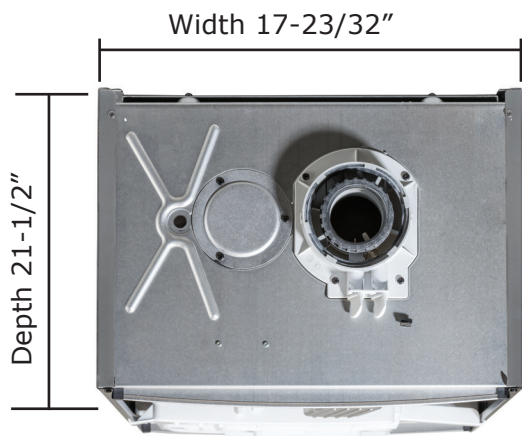


| Clearances  |   | Combustible Materials (Required) <sup>(1)</sup> |          | Service <sup>(1)(2)</sup> |          |
|---|---|---|----------|---------------------------|----------|
| <sup>(1)</sup> Required distances measured from boiler jacket.<br><sup>(2)</sup> Service, proper operation clearance recommendation.<br>*Allowance for piping at bottom of boiler not included. | Top   | 0"  | 0 mm     | 8-5/8"                    | 220 mm   |
|   | Left Side   | 1-3/4"  | 45 mm    | 1-3/4"                    | 45 mm    |
|   | Right Side  | 1-3/4"  | 46 mm    | 1-3/4"                    | 45 mm    |
|   | Front   | 0"  | 0 mm     | 17-3/4"                   | 450 mm   |
|   | Back  | 0"  | 0 mm     | 0"                        | 0 mm     |
|   | Bottom  | 0"  | 0 mm     | 9-13/16"                  | 250 mm   |
|   | Combustion Air / Venting Piping   | 0"  | 0 mm     | 6"                        | 155 mm   |
| 205 Physical Data & Specifications  |   |   |          |                           |          |
| Central Heat Supply & Return  |   | 1" NPT - Male                                   |          |                           |          |
| Central Heat Primary / Secondary Manifold   |   | 1-1/4" Copper Sweat                             |          |                           |          |
| DHW (Cold Water) Inlet & Outlet   |   | 1" NPT - Male                                   |          |                           |          |
| Gas Connection  |   | 3/4" NPT - Female                               |          |                           |          |
| DHW Maximum Flow Rate   |   | 5.0 GPM   |          |                           |          |
| Dimensions / Weights  |   | "Width"   | "Height" | "Depth"                   | "Weight" |
|   |   | 17-3/4"   | 30"      | 21-1/2"                   | 168 lbs. |
| Electrical  | 120 Volts AC, 60 Hertz, Single Phase, less than 12 amps<br>(15 amp circuit recommended) |   |          |                           |          |

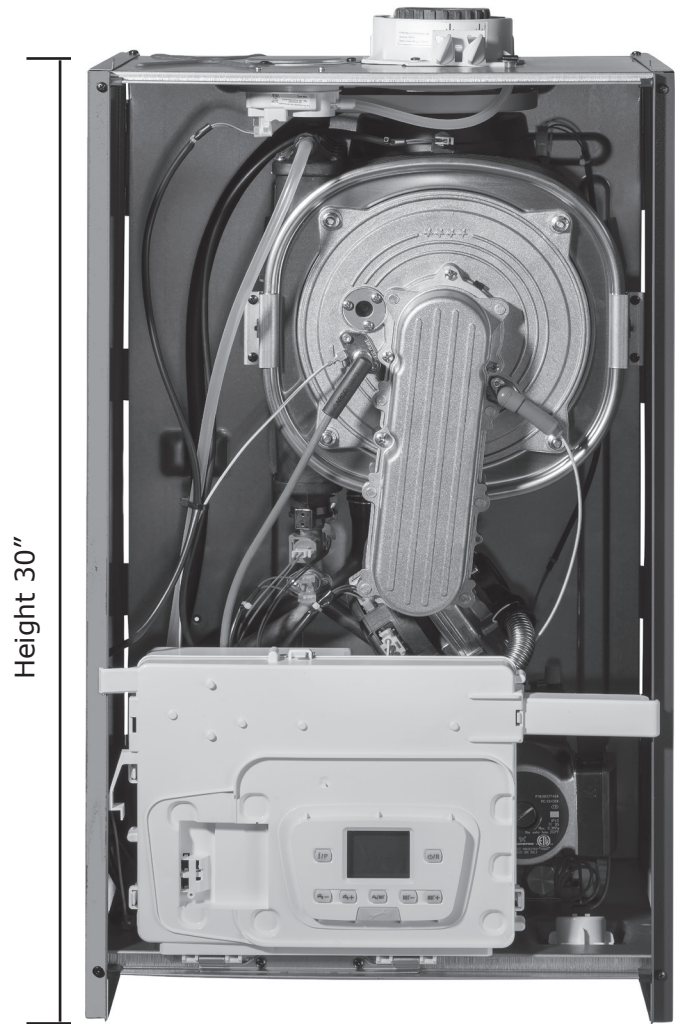
| Size                        | Input Rate (MBH)<br>0-2000 ft | Heating Capacity (MBH)<br>0-2000 ft | Net AHRI Rating, Water (MBH)<br>0-200 0ft | Vent Diameter O.D.<br>Coaxial | Vent Diameter 2-pipe | AFUE (%) |
|-----------------------------|-------------------------------|-------------------------------------|---|-------------------------------|---------------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

| <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" NPT               |
| Return Connection                       | 1" NPT               |
| Relief Valve Connection                 | 3/4" NPT             |
| Recommended Operational System Pressure | 21.7 psi / 1.5 bar   |

| <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" NPT              |
| DHW Outlet Connection                     | 3/4" NPT              |
| Max DHW Temperature                       | 140°F/60°C            |
| DHW Water Content                         | 0.10 gal/ 0.37 L      |



View - Front of Boiler



## Venting

### Coaxial Venting

Connects directly to the top of the boiler



### 2-Pipe Venting - Optional Kit

Using polypropylene - 80 mm venting



### 2-Pipe Venting - Optional Kit

Using CPVC UL1738/S626 - 3" venting



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

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



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All specifications subject to change without notice.

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