



**Typical Specifications For DynaFlame  
Hydronic Heating Boilers  
(DFX Series)  
Models DF(N),(P)H 3501 - 5001**

The heating boiler shall be a CAMUS DYNAFLAME (DFX) model \_\_\_\_\_ having an input rating of \_\_\_\_\_ Btu (kW) /hr. and \_\_\_\_\_ Btu (kW)/hr output for hydronic heating.

The hydronic heating boiler shall be design certified by CSA International and shall meet the requirements of ANSI Z21.13, and CSA 4.9 and shall be vented as a Category II condensing appliance.

**Combustion Chamber:**

The combustion chamber shall be fully enclosed by a stainless steel chamber inside of which is assembled a cylindrical copper-nickel coil Heat Exchanger having a maximum allowable working pressure of 160 psig (1100 kPa). An access door shall be provided for ease of service and inspection of the Heat Exchanger.

**Burner:**

The burner shall be constructed of stainless steel. The burner shall provide equal distribution of heat through the entire heat exchanger. A window view port shall be provided for visual inspection of the boiler during firing.

**Heat Exchanger:**

The heat exchanger shall be inspected and tested to A.S.M.E. Section IV requirements. The A.S.M.E. Section IV seal of approval will not be provided as standard for jurisdictions not requiring the A.S.M.E. Section IV seal of approval. The heat exchanger shall be a four-pass heat exchanger with maximum working pressure of 160 psig (1100 kPa). The heat exchanger is of cylindrical design, with integral copper-nickel finned tube  $\frac{7}{8}$ " I.D., 0.064" minimum wall thickness, 7 fins per inch, with nominal fin height of  $\frac{3}{8}$ ". Each end of the tubes shall be expanded by mechanical rolling process into the headers. The heat exchanger shall be gasket-less. All header castings shall be bronze. A pressure relief valve of \_\_\_\_\_ lb/hr shall be furnished with the heater.

**Controls:**

Standard controls include an electronic proportional integrated combination limit/operator control accurate to  $1^{\circ}\text{F}$  ( $0.5^{\circ}\text{C}$ ) having a 4-20 mA output signal suitable for control of a variable frequency motor drive. The control shall also provide readouts of boiler target, differential and inlet/outlet temperatures as well as accumulated runtime. On/off switch, and full diagnostic light package shall be provided. The complete control package shall be mounted on the front panel with hinged door for easy access to all control modules. A flow switch shall be provided loose.

**Firing Mode:**

The burner shall operate as fully modulating down to 20% of the heating load. Light off shall be at no more than 50% input to assure rattle free soft start.

**Venting Options**

The following venting options shall be utilized: 1. Combined Venting. 2. Horizontal & Vertical Outside air Venting. 3. Through-Wall Venting. 4. Outdoor Venting. 5. Direct Venting.

**Gas Train:**

The gas train shall consist of a gas valve with a pressure regulating electro-hydraulic actuator to provide slow opening, fast closing, safety shutoff and air/gas ratio control. A factory pre-set combination metering valve and orifice shall be provided for setting combustion parameters.

**Ignition Module:**

The ignition module shall employ a proved igniter with 3 tries for ignition followed by lockout. Trial for ignition shall be 10 seconds with 15 seconds between retries.

**External Jacket and Fasteners:**

The external jacket shall be of stainless steel mirror finish panels assembled utilizing interference fit locks and minimal non-strip self tap screws.

## SUBMITTAL DATA SHEET – DYNAFLAME (Heating) 3501-5001 (DFX Series)

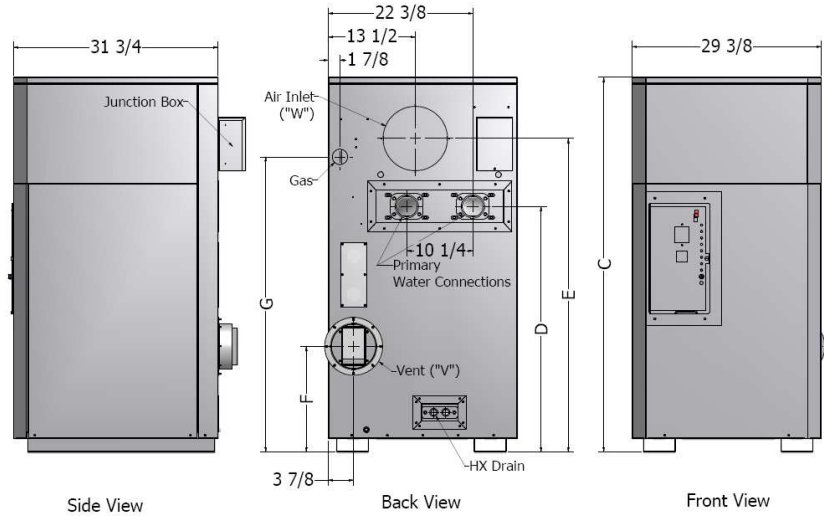
Engineer: \_\_\_\_\_ Job Location: \_\_\_\_\_ Date: \_\_\_\_\_  
 Prepared by: \_\_\_\_\_ Buyer's Name: \_\_\_\_\_ Quote #: \_\_\_\_\_  
 Job Name: \_\_\_\_\_ Buyer's Address: \_\_\_\_\_

### Input & Output (MBTUH)

Model	Near-Condensing	
	Input	Output
3501	3500	3080
4001	4000	3520
4501	4500	3960
5001	5000	4400

### Shipping Weight (lbs.)

Model	Near Cond.
3501	1030
4001	1140
4501	1250
5001	1350



### Dimensions Near-Condensing

Model	Height Dim. "C"	Water Conn. "D"	Air Inlet "E"	Flue Height "F"	Gas Height "G"	Air Inlet Dia. "W"	Water Conn. Prim. †	Gas Conn. (NPT)
3501	86 1/2"	63 5/8"	76"	24 7/8"	72 5/8"	14"	4" NPT	2"
4001	91 1/2"	68 5/8"	81"	29 7/8"	77 5/8"	14"	4" NPT	2"
4501	96 1/2"	73 5/8"	86"	34 7/8"	82 5/8"	14"	4" NPT	2 1/2"
5001	101 1/2"	78 5/8"	91"	39 7/8"	87 5/8"	14"	4" NPT	2 1/2"

†For models 3500 - 5000 appliance inlet/outlet connections are 3" NPT.

### Current drawn by Boiler @ 230 Volts single phase 60 Hz

Models	Max Amps Draw - Boiler Only
3501 thru 4001	16
4501 thru 5001	24

### Primary Heat Exchanger Head Loss & Flow

Model	Δ T Across Heat Exchanger			
	30°F		35°F	
	USGPM	ΔP - Ft.	USGPM	ΔP - Ft.
3501	198.1	12.7	169.8	9.5
4001	226.9	17.0	194.5	12.7
4501	254.7	21.9	218.3	16.4
5001	282.9	27.6	242.5	20.7

### DynaFlame Near-Condensing

Model	Vent ("V") Diameter Inches			
	Outdoor	Cat III Up to 50 ft	Cat III Up to 100 ft	Cat I
3501	9	9	14	12
4001	9	9	14	12
4501	10	10	14	12
5001	10	10	14	12

Model #	# Of Units	Type of Gas
Total Input _____ BTU/hr    Flow _____ USGPM @ Allowable Pressure Drop _____ ft.		
Total Output _____ BTU/hr    Recovery Rate _____ USGPH @ _____ °F		
Optional Accessories _____		