



**Typical Specifications For DynaFlame®  
Domestic Hot Water Supply – Near-Condensing  
Copper and Copper Nickel Heat Exchangers  
Models DF(N,P)W 0501– 6014**

The domestic hot water boiler shall be a CAMUS® DYNAFLAME® model \_\_\_\_\_ having a recovery capacity of \_\_\_\_\_ gph (lph) at 100°F (56°C) rise, for DHW.

The domestic hot water boiler shall be design certified by CSA International and shall meet the requirements of ANSI Z21.10.3, and CSA 4.3. The domestic hot water boiler shall be vented as a Category II or IV condensing appliance.

**Performance Overview:**

- Boiler shall operate up to 88% thermal efficiency
- Heat exchanger shall be cylindrical 16 tube (Models 501 – 1201), 28 tube (Models 1501 – 4001), 32 tube (Models 4501 – 5001), 40 tube (Models 4514 – 6014) C12200 copper alloy with cast bronze headers and all gasket-less sealed design, optional C70600 cupronickel alloy is available
- Fine tuned combustion premix providing homogeneous air and gas combustion mix to a radial burner incorporating a knitted stainless steel wrap ensuring stable light off and efficient clean combustion.
- 5:1 gas input turn down ratio with sustained efficient combustion characteristics throughout entire modulating range
- Oxides of Nitrogen (NOx) of 9 ppm corrected to 3% oxygen.
- Category II and Category IV venting certification.
- The boiler is fully factory fire tested to obtain optimum combustion characteristics and to establish certified gas input rates.
- System safety and operating devices and controls are fully configured, calibrated and factory tested.
- Models consist of an input range of 500 MBTUH to 6000 MBTUH
- The boiler shall comply with the energy efficiency requirements of the latest edition of the ASHRAE 90.1 Standard

**Combustion Chamber:**

The combustion chamber shall be constructed of stainless steel, sealed water tight, chamber to be covered with minimal ¼" thick ceramic insulation. A stainless steel access door shall be provided for ease of service and inspection to the outer heat exchanger surface and an easily removable radial fired knitted fiber stainless steel burner to access the internal combustion chamber for inspection, service, and cleaning. A window view port shall be provided for visual inspection of the boiler combustion during firing.

**Heat Exchanger:**

The heat exchanger shall be tested and inspected 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 design with a maximum working pressure of 160psig (1100kPa) and maximum allowed working temperature of 210°F (98.8°C). The heat exchanger is of cylindrical design, with integral copper finned tubes ¾" I.D., 0.064" minimum wall thickness, 7 fins per inch, with nominal fin height of ¾". 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. The heat exchanger tubes shall be copper alloy C12200 with optional cupronickel alloy C70600 available.

**Gas Train:**

The gas train shall consist of a pressure regulating electro-hydraulic proportional air/gas main gas actuator providing a slow opening, fast closing shutoff valve and proportional 1:1 air/gas ratio control, a fast closing safety shutoff gas solenoid, and a low gas pressure switch. Optional high gas pressure switch is available. A factory pre-set combination metering valve and orifice shall be provided for setting combustion parameters. Models DF 501 – DF 6014 operate with a 5:1 turndown ratio.

**Burner/Combustion:**

The combustion air fan draws gas under negative pressure and mixes it with air to generate a fine tuned air gas mixture which is delivered under positive pressure to the radial knitted stainless steel burner. Combustion modulation is established by a variable frequency drive on all models. The burner shall be a 100% stainless steel vertical mounted radial fired type with stainless knitted metal fiber construction. The burner shall combust a precise amount of premixed combustion air and gas to provide equal distribution of heat for heat transfer throughout the entire heat exchanger. Combustion products are exhausted under minimum back pressure. Combustion operates with a 5:1 turn down ratio while sustaining combustion characteristics throughout the entire modulating range. Operation of up to 88% thermal efficiency and shall be certified for Oxides of Nitrogen (NOx) of 9 ppm corrected to 3% oxygen.

**Firing Mode:**

The burner combustion shall operate as proportional modulating with a 5:1 turndown ratio with a minimum 20% firing rate. Multiple boiler parallel sequential firing algorithms. Light off shall be at no more than 50% input to assure rumble free soft start. Combustion shall be optionally suitable for natural gas, propane and dual fuels operation.



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**Controls:**

Standard controls include a SOLA electronic proportional integrated combination ignition limit/operator control accurate to 1°F (0.5°C) having a 4-20 mA output signal suitable for control of a variable frequency motor drive for modulating fan speeds. Controls are lead lag "Cascade" ready for control of up to eight boilers c/w Indoor outdoor reset. Control shall be equipped and ready with 4-20 mA or 0-10Vdc input for remote set point or modulating control. Control is BMS Modbus RTU protocol ready and capable of other alternate protocol conversions with additional optional gateway protocol converter. Control shall be supplied with a 7" mounted touch screen display which shall also provide for control system configuration and set up, readouts of boiler target, differential and inlet/outlet temperatures as well as accumulated runtime, enunciator diagnostics, real time data logging and firing rates. The complete control package shall be mounted on the front panel with a hinged door for easy access to all control modules. The boiler safety control string shall be furnished with controls for low gas pressure, fan air proving, blocked flue, high limit and flow switch. High gas pressure switch is standard on CSD1 equipped boilers and is standard on models 3000 and up. A flow switch and relief valve shall be provided for each unit. Additional control safeties shall include flame rectification, fan speed, and auto recycling high limit.

**Ignition Module:**

The ignition module shall employ a direct igniter with 3 tries for ignition followed by a 90 minute standby and repeat of 3 tries for ignition for models DF 501 - DF 2501. A proven pilot is used on models DF 3001 – DF 6014. Trial for ignition shall proceed with 15 seconds between retrials. Ignition control shall include times for pre-purge, pre-ignition, ignition, and post purge.

**Venting Options:**

The following venting options shall be utilized:

- Category II Venting – single or combined vent
- Category IV Outside Air (Horizontal & Vertical)
- Category IV Through-wall Venting (Horizontal & Vertical)
- Outdoor Venting
- Category II & IV Direct Venting

The following Category II and IV vent material shall be utilized:

- Stainless or AL29-4C for all system applications

**External Jacket and Fasteners:**

The external jacket shall be of 430 stainless steel mirror finish panels and a powder paint coated access top cover assembled utilizing interference fit locks and minimal non-strip self tap screws for ease of removal and access to the heat exchanger and combustion air / gas control.



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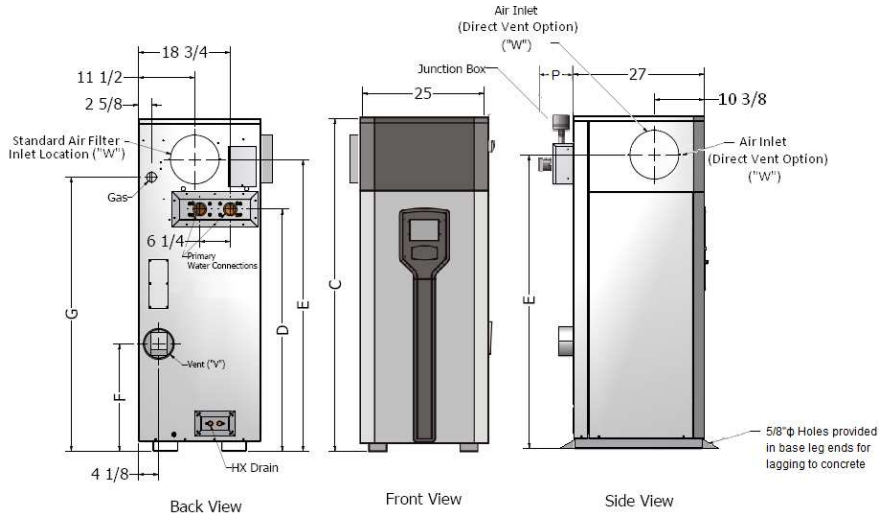
Engineer: \_\_\_\_\_ Job Location: \_\_\_\_\_ Date: \_\_\_\_\_

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

**Input & Output  
(MBTUH)**

| Model | Near-Condensing |        |
|-------|-----------------|--------|
|       | Input           | Output |
| 0501  | 500             | 440    |
| 0751  | 750             | 660    |
| 1101  | 1100            | 968    |
| 1201  | 1200            | 1056   |
| 1501  | 1500            | 1320   |
| 1751  | 1750            | 1540   |
| 2001  | 2000            | 1760   |
| 2501  | 2500            | 2200   |
| 3001  | 3000            | 2640   |
| 3501  | 3500            | 3080   |
| 4001  | 4000            | 3520   |
| 4501  | 4500            | 3960   |
| 5001  | 4999            | 4399   |
| 4514  | 4500            | 3960   |
| 5014  | 4999            | 4399   |
| 6014  | 6000            | 5280   |

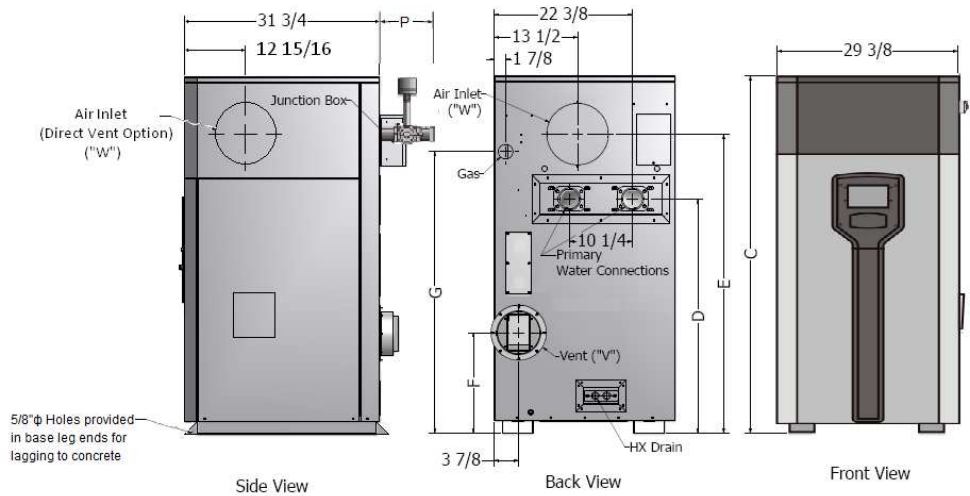
**DYNAFLAME® 0500 – 1200**



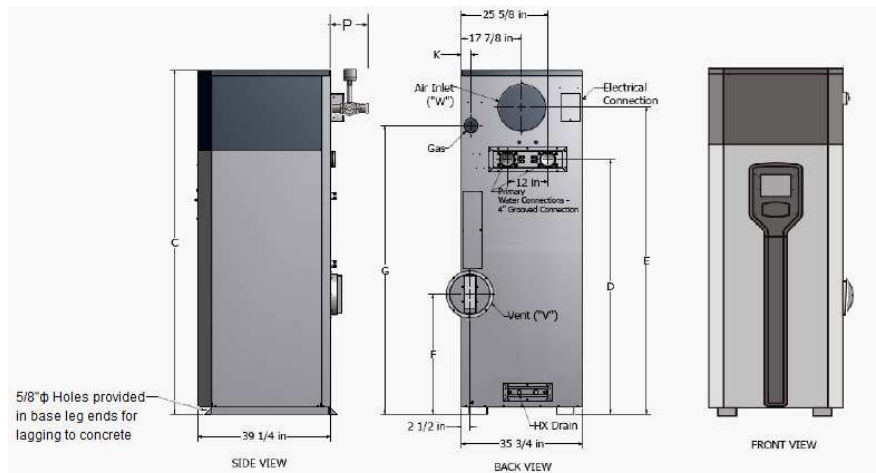
**Shipping Weight**

| Model | Near-Condensing |
|-------|-----------------|
| 0501  | 520             |
| 0751  | 600             |
| 1101  | 640             |
| 1201  | 700             |
| 1501  | 825             |
| 1751  | 900             |
| 2001  | 943             |
| 2501  | 1025            |
| 3001  | 1100            |
| 3501  | 1250            |
| 4001  | 1290            |
| 4501  | 1420            |
| 5001  | 1627            |
| 4514  | 1525            |
| 5014  | 1732            |
| 6014  | 1963            |

**DYNAFLAME® 1500 – 5000**



**DYNAFLAME® MEGA 4504– 6004**





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**Dimensions [in.]**

| Model | Height "C" | Water Conn. "D" | Air Inlet "E" | Flue Height "F" | Gas Height "G" | Dim. "P" | Air Inlet Dia. "W" | Water Conn. Prim. [T.P.,NPT]† | Gas Conn. [NPT] | "K"   |
|-------|------------|-----------------|---------------|-----------------|----------------|----------|--------------------|-------------------------------|-----------------|-------|
| 0501  | 45 5/8     | 27              | 37 1/4        | 13 1/4          | 33 3/4         | 5        | 6                  | 2                             | 1               | --    |
| 0751  | 55         | 36 3/8          | 46 5/8        | 15 3/4          | 43             | 5        | 8                  | 2                             | 1               | --    |
| 1101  | 68 1/4     | 49 5/8          | 59 7/8        | 22              | 56 1/4         | 5        | 8                  | 2                             | 1               | --    |
| 1201  | 68 1/4     | 49 5/8          | 59 7/8        | 22              | 56 1/4         | 5        | 8                  | 2                             | 1               | --    |
| 1501  | 58 1/8     | 38 1/4          | 48 5/8        | 16 3/8          | 45 7/8         | 5        | 10                 | 2 1/2                         | 1 1/4           | --    |
| 1751  | 62 5/8     | 42 5/8          | 53 1/8        | 16 3/8          | 50 3/8         | 5        | 10                 | 2 1/2                         | 1 1/4           | --    |
| 2001  | 66 7/8     | 46 7/8          | 57 3/8        | 20              | 53 3/8         | 5        | 12                 | 3                             | 1 1/4           | --    |
| 2501  | 73 1/2     | 52 5/8          | 63 5/8        | 25 3/4          | 60 3/8         | 5 1/2    | 12                 | 3                             | 1 1/2           | --    |
| 3001  | 79 1/2     | 58 5/8          | 69 5/8        | 31 3/4          | 66 3/8         | 5 1/2    | 12                 | 3                             | 1 1/2           | --    |
| 3501  | 86 1/2     | 63 5/8          | 76            | 24 7/8          | 72 5/8         | 6        | 14                 | 4                             | 2               | --    |
| 4001  | 91 1/2     | 68 5/8          | 81            | 29 7/8          | 77 5/8         | 6        | 14                 | 4                             | 2               | --    |
| 4501  | 96 1/2     | 73 5/8          | 86            | 34 7/8          | 82 5/8         | 8        | 14                 | 4                             | 2 1/2           | --    |
| 5001  | 101 1/2    | 78 5/8          | 91            | 39 7/8          | 87 5/8         | 8        | 14                 | 4                             | 2 1/2           | --    |
| 4514  | 83         | 59 3/4          | 72 1/4        | 20 3/4          | 67 7/8         | 8        | 14                 | 4 (Grooved)                   | 2 1/2           | 3 1/2 |
| 5014  | 88 1/4     | 65              | 77 1/2        | 26              | 72 1/4         | 8        | 14                 | 4 (Grooved)                   | 2 1/2           | 3 1/2 |

†500-1200 Appliance Heat Exchanger Inlet/Outlet Connections are 2" NPT.  
†1500-5000 Appliance Heat Exchanger Inlet/Outlet Connections are 3" NPT

T.P.: Terminal Point

**Recovery Capacity**

| Model | 100°F Rise | 56°C Rise | 80°F Rise | 44°C Rise | 60°F Rise | 33°C Rise |
|-------|------------|-----------|-----------|-----------|-----------|-----------|
|       | GPH        | LPH       | GPH       | LPH       | GPH       | LPH       |
| 0501  | 527        | 1995      | 659       | 2493      | 878       | 3325      |
| 0751  | 790        | 2990      | 988       | 3738      | 1317      | 4984      |
| 1101  | 1159       | 4387      | 1449      | 5484      | 1932      | 7311      |
| 1201  | 1265       | 4788      | 1581      | 5985      | 2108      | 7980      |
| 1501  | 1581       | 5984      | 1976      | 7480      | 2635      | 9974      |
| 1751  | 1845       | 5983      | 2306      | 8729      | 3075      | 11639     |
| 2001  | 2109       | 7983      | 2636      | 9978      | 3515      | 13304     |
| 2501  | 2636       | 9977      | 3295      | 12472     | 4393      | 16629     |
| 3001  | 3164       | 11976     | 3955      | 14970     | 5273      | 19960     |
| 3501  | 3691       | 13970     | 4614      | 17463     | 6152      | 23284     |
| 4001  | 4218       | 15965     | 5273      | 19956     | 7030      | 26609     |
| 4501  | 4745       | 17960     | 5931      | 22450     | 7908      | 29933     |
| 5001  | 5273       | 19958     | 6591      | 24948     | 8788      | 33264     |
| 4514  | 4745       | 17960     | 5931      | 22450     | 7908      | 29933     |
| 5014  | 5273       | 19958     | 6591      | 24948     | 8788      | 33264     |
| 6014  | 6290       | 23809     | 7893      | 29762     | 10484     | 39682     |

**Primary Heat Exchanger Head Loss & Flow**

| Model | Temperature Rise Across Heat Exchanger |        |       |        |
|-------|----------------------------------------|--------|-------|--------|
|       | 30°F                                   |        | 35°F  |        |
|       | USGPM                                  | ΔP-Ft. | USGPM | ΔP-Ft. |
| 0501  | 28.0                                   | 0.7    | 24.0  | 0.5    |
| 0751  | 42.0                                   | 1.4    | 36.0  | 1.0    |
| 1101  | 61.6                                   | 2.7    | 52.8  | 2.1    |
| 1201  | 68.0                                   | 2.9    | 58.3  | 2.2    |
| 1501  | 83.9                                   | 1.9    | 71.9  | 1.4    |
| 1751  | 97.9                                   | 2.9    | 83.9  | 2.2    |
| 2001  | 111.9                                  | 4.1    | 95.9  | 3.1    |
| 2501  | 139.9                                  | 6.1    | 119.9 | 4.6    |
| 3001  | 167.9                                  | 8.4    | 143.9 | 7.0    |
| 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   |
| 4514  | 254.7                                  | 15.3   | 218.3 | 11.4   |
| 5014  | 282.9                                  | 19.6   | 242.5 | 14.9   |
| 6014  | 339.5                                  | 31.8   | 291.0 | 24.1   |

**Near-Condensing Venting**

| Model | Vent ("V") Diameter Inches |                     |                      |         |
|-------|----------------------------|---------------------|----------------------|---------|
|       | Outdoor                    | Cat. IV Up to 50 ft | Cat. IV Up to 100 ft | Cat. II |
| 0501  | 4                          | 4                   | 6                    | 5       |
| 0751  | 6                          | 6                   | 8                    | 6       |
| 1101  | 6                          | 6                   | 8                    | 7       |
| 1201  | 6                          | 6                   | 8                    | 7       |
| 1501  | 7                          | 7                   | 10                   | 8       |
| 1751  | 7                          | 7                   | 10                   | 8       |
| 2001  | 8                          | 8                   | 12                   | 9       |
| 2501  | 8                          | 8                   | 12                   | 9       |
| 3001  | 8                          | 8                   | 12                   | 10      |
| 3501  | 9                          | 9                   | 14                   | 12      |
| 4001  | 9                          | 9                   | 14                   | 12      |
| 4501  | 10                         | 10                  | 14                   | 12      |
| 5001  | 10                         | 10                  | 14                   | 12      |
| 4514  | 10                         | 10                  | 14                   | 12      |
| 5014  | 10                         | 10                  | 14                   | 12      |
| 6014  | 12                         | 12                  | 14                   | 12      |

**Current drawn by Boiler @ 115 Volts Single Phase 60 Hz**

| Model | Max Amps Draw - Boiler Only |
|-------|-----------------------------|
| 0501  | 7                           |
| 0751  | 7                           |
| 1101  | 7                           |
| 1201  | 7                           |
| 1501  | 11                          |
| 1751  | 11                          |
| 2001  | 11                          |
| 2501  | 14                          |

**Current drawn by Boiler @ 230 Volts Phase 60 Hz**

| Model | Max Amps Draw - Boiler Only | Phase  |
|-------|-----------------------------|--------|
| 3001  | 14                          | Single |
| 3501  | 16                          | Single |
| 4001  | 16                          | Single |
| 4501  | 24                          | Single |
| 5001  | 18                          | Three  |
| 4514  | 24                          | Single |
| 5014  | 18                          | Three  |
| 6014  | 18                          | Three  |

Model # \_\_\_\_\_ # Of Units \_\_\_\_\_ Type of Gas \_\_\_\_\_  
 Total Input \_\_\_\_\_ BTU/hr Flow \_\_\_\_\_ USGPM @ Allowable Pressure Drop \_\_\_\_\_ ft.  
 Total Output \_\_\_\_\_ BTU/hr  
 Optional Accessories \_\_\_\_\_