



**Typical Specifications For
Modulating MicoFlame – Domestic Hot Water Supply
Models MF(N),(P)W 2010 – 4000, Non-Condensing
Models MF(N),(P)W 2012 – 4002, Condensing**

The water heater shall be a CAMUS MicoFlame model _____ having an input rating of _____ Btu (kw) /hr. and _____ Btu (kw)/hr output for domestic hot water and shall be operated on Natural gas or L.P. gas. The water heater shall be capable of firing down to 40% of rated input for models 2010 – 4000.

The water heater shall be design/certified by CSA International and shall meet the requirements of ANSI Z21.10.3b-2008 & CSA 4.3b-2008. The water heater shall be optionally vented as a Category I conventional appliance or a category II condensing appliance.

Combustion Chamber:

The combustion chamber shall be fully enclosed by high temperature fiberboard refractory, which is of modular interlocking construction for ease of replacement.

Burner:

The burner shall be constructed of high heat temperature Stainless Steel with knitted metal fiber to provide modulating firing rates. 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 water heater during firing. Maximum input per burner shall be 1,000,000 BTU/hr.

Heat Exchanger:

The heat exchanger shall be suitable for a M.A.W.P. of 160 psig (1100 kPa) and shall be of a two pass design employing integrally finned 7/8" copper tubes. All castings shall be bronze. A pressure relief valve of _____ lb/hr shall be furnished with the heater. There shall be ready access to the heat exchanger to permit internal and external inspection and cleaning of the tubes.

Controls:

Standard controls to include factory mounted hi-limit and operator controls, on/off switch and 24 VAC class 2 transformer and light display package. The SmartFlame 78-0017 electronic modulating control to be accurate to 1°F (0.5°C). The control shall also provide readouts of inlet/outlet temperatures and delta T as well as accumulated run hours. The control shall have 8 preset modes to allow operation of the heater as hydronic heating, DHW or remote operation through an analog 0-10VDC signal.

On/off switch and full diagnostic light package are included. Flow switch is included loose.

Firing Mode:

The heater shall operate as a fully modulating unit with a 5:2 turn down ratio.

Gas Train:

The gas train shall consist of a one to one air/gas ratio control valve, dual main valve seats, a pilot valve and pilot regulator.

Ignition Module:

The ignition module shall provide for proved ignition of intermittent pilot and continuous retrieval. Trial for ignition shall be a minimum of 15 seconds with 5 minutes between retrievals.

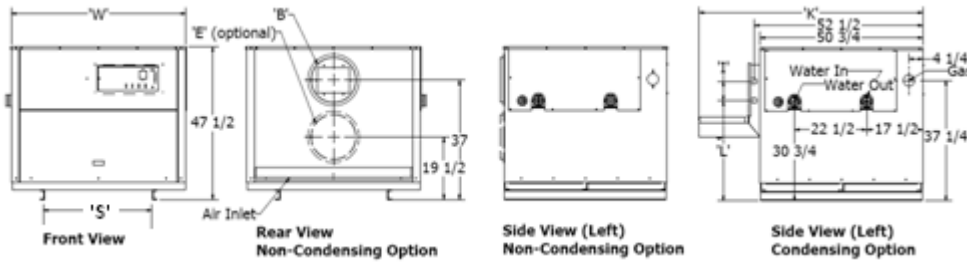
External Jacket and Fasteners:

The external jacket shall be of stainless and enameled steel panels assembled with crimpite non-strip self tap screws.

SUBMITTAL DATA SHEET – MICROFLAME

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

Model 2010 – 4000 Non-Condensing, 2012 - 4002 Condensing



| Model | 'B' Dia. Venting** | | | 'E' Dia. |
|-----------|--------------------|-------------------------|----------|------------|
| | Outdoor | Sidewall or Condensing* | Standard | Air Inlet* |
| 2010/2012 | 12 | 12 | 14 | 12 |
| 2500/2502 | 14 | 14 | 16 | 14 |
| 3000/3002 | 14 | 14 | 16 | 14 |
| 3500/3502 | 16 | 16 | 18 | 16 |
| 4000/4002 | 16 | 16 | 18 | 16 |

* 60 Ft. Equivalent, Appliance may be provided with two openings that can be combined into this size.

**Non-Condensing models are shipped with standard vent opening size unless sidewall venting is specified

Input & Output Range

| Model | Input Range [kBTU/hr x 100] | Input Range [kW] | Input [BTU/hr] | Input [kW] | Non-Condensing | | Condensing | |
|-----------|-----------------------------|------------------|----------------|------------|-----------------|-------------|-----------------|-------------|
| | | | | | Output [BTU/hr] | Output [kW] | Output [BTU/hr] | Output [kW] |
| 2010/2012 | 800 - 2000 | 234.2 - 585.6 | 2,000,000 | 585.6 | 1,700,000 | 497.8 | 1,900,000 | 556.3 |
| 2500/2502 | 1000 - 2500 | 292.8 - 732.0 | 2,500,000 | 732.0 | 2,125,000 | 622.2 | 2,375,000 | 695.4 |
| 3000/3002 | 1200 - 3000 | 351.4 - 878.4 | 3,000,000 | 878.4 | 2,550,000 | 746.6 | 2,850,000 | 834.5 |
| 3500/3502 | 1400 - 3500 | 409.9 - 1024.8 | 3,500,000 | 1024.8 | 2,975,000 | 871.1 | 3,325,000 | 973.6 |
| 4000/4002 | 1600 - 4000 | 468.5 - 1171.2 | 4,000,000 | 1171.2 | 3,400,000 | 995.5 | 3,800,000 | 1,112.6 |

Heat Exchanger Head Loss & Flow

| Model | 20°F | | 30°F | | 35°F | |
|-----------|--------|--------|--------|--------|-------|--------|
| | USGPM | ΔP-ft. | USGPM | ΔP-ft. | USGPM | ΔP-ft. |
| 2010/2012 | 170 | 5.1 | 113 | 2.4 | 97 | 1.8 |
| 2500/2502 | 200*** | 8.2 | 141 | 4.3 | 121 | 3.3 |
| 3000/3002 | 200*** | 8.2 | 170 | 6.2 | 146 | 4.5 |
| 3500/3502 | 200*** | 10.2 | 198 | 10.2 | 170 | 7.7 |
| 4000/4002 | 200*** | 10.2 | 200*** | 10.2 | 194 | 9.8 |

Dimensions and Specifications

| Model | 'I' | 'K' | 'L' | 'W' | 'S' | Water Connection | Approx. Weight | | |
|-----------|-----|-----|--------|--------|--------|------------------|----------------|-----------------------|-------------------|
| | | | | | | | Gas Connection | Non-Condensing [lbs.] | Condensing [lbs.] |
| 2010/2012 | 6 | 68 | 34 5/8 | 54 5/8 | 33 3/8 | 3 | 1 1/2 | 1,585 | 1,635 |
| 2500/2502 | 6 | 72 | 34 5/8 | 78 7/8 | 58 | 3 | 2 | 1,675 | 1,745 |
| 3000/3002 | 6 | 72 | 34 5/8 | 78 7/8 | 58 | 3 | 2 | 1,750 | 1,820 |
| 3500/3502 | 6 | 72 | 34 5/8 | 103 | 81 3/4 | 4 | 2 1/2 | 2,000 | 2,070 |
| 4000/4002 | 6 | 72 | 34 5/8 | 103 | 81 3/4 | 4 | 2 1/2 | 2,200 | 2,270 |

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 |
| 2010/2012 | 2037 | 7711 | 2546 | 9639 | 3395 | 12851 |
| 2500/2502 | 2546 | 9638 | 3183 | 12047 | 4243 | 16063 |
| 3000/3002 | 3055 | 11564 | 3819 | 14456 | 5092 | 19274 |
| 3500/3502 | 3565 | 13495 | 4456 | 16869 | 5942 | 22492 |
| 4000/4002 | 4074 | 15422 | 5093 | 19277 | 6790 | 25703 |

| Model | 50°F Rise | 28°C Rise | 40°F Rise | 22°C Rise | 20°F Rise | 11°C Rise |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | GPH | LPH | GPH | LPH | GPH | LPH |
| 2010/2012 | 4074 | 15422 | 5093 | 19277 | 10185 | 38554 |
| 2500/2502 | 5092 | 19275 | 6365 | 24094 | 12730 | 48188 |
| 3000/3002 | 6110 | 23129 | 7638 | 28911 | 15275 | 57822 |
| 3500/3502 | 7130 | 26990 | 8913 | 33737 | 17825 | 67475 |
| 4000/4002 | 8148 | 30844 | 10185 | 38554 | 20370 | 77109 |

*** Maximum flow recommended. Temperature rise may be higher than shown. Contact factory for recommendation

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