



# Typical Specifications for VTech™ Series Condensing Commercial Domestic Hot Water Heater Models VT080 – VT499

The domestic hot water (DHW) heater shall be a CAMUS VTECH model \_\_\_\_\_ having a maximum input rating of \_\_\_\_\_ Btu/hr (kW) and a recovery capacity of \_\_\_\_\_ GPH (LPH) at 100°F (56°C) and shall be operated on Natural gas or L.P. Gas. The water heater shall be capable of full modulation firing down to 20% of rated input with turn down ratio of 5:1.

The DHW heater shall be design certified by UL and shall meet the requirements of ANSI Z21.10.3 and CSA 4.3. ASME "HLW" tank construction and National Board is available on all model sizes. The water heater shall comply with the energy efficiency requirements of the latest edition of the ASHRAE 90.1 Standard.

**Storage Tank/Heat Exchanger:** The heat exchanger shall be designed, 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 of fully welded construction and shall be rated with a maximum working pressure of 160 PSI (1100 kPa). Configuration shall be a cylindrical, vertical, one pass, counter-flow, fire tube design and consist of an integral combustion chamber with an inner tube bundle for the heat transfer.

The storage tank design shall be capable of 40°F (4.4°C) constant system inlet temperatures. A temperature and pressure relief valve set at 150 psi (1034 kPa), 210°F (98.9°C) and rated for \_\_\_\_\_ Btu/hr (kW) shall be furnished with the water heater. The heat exchanger shall be designed to drain condensation to the bottom of the heat exchanger assembly. A condensate collection box shall be employed to trap and neutralize flue product condensate.

**Combustion Chamber:** The combustion chamber shall be an all welded stainless steel construction and an integral part of the heat exchange. The combustion chamber shall be sealed and completely enclosed, independent of the outer jacket assembly. The combustion chamber shall incorporate 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.

**Gas Train:** The gas train shall consist of 1:1 Gas/Air servo regulated gas valve to provide slow opening, fast closing, safety shutoff and air/gas ratio control.

**Burner:** The burner shall be a premix design and constructed of high temperature stainless steel with knitted metal fiber outer covering to provide maximum 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 boiler during firing.

**Controls:** Standard controls include an electronic proportional integrated combination ignition limit/operator control accurate to 1°F (0.50C) having a pulse width modulation signal output for modulating fan speeds. Control shall be supplied with a mounted multi-line touchscreen display which shall also provide for water heater configuration and set up, readouts of tank temperatures, differential and as well as accumulated runtime, diagnostics, and firing rate. The display shall feature automatic daylight savings time intelligence with the date and time stamp log for errors. The water heater safety control string shall be furnished with controls for optional low gas pressure, optional high gas pressure, blocked flue switch, high limit and stack limit switch.

**External Jacket, Insulation and Fasteners:** The external jacket shall be of 22 gauge satin coat steel with powder coated paint, silver colour, assembled. The heat exchanger shall be thermally insulated with 1.5" thick insulation foam.

## Venting Options:

The following venting options shall be utilized:

- Combined vent\*
- Outside Air (Horizontal & Vertical)
- Through-wall Venting (Horizontal & Vertical)
- Direct Venting

\* Combined vent shall only employ an engineered vent system prepared by a certified vent manufacturer.



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The following vent materials to be utilized shall be suitable and rated for condensing gas appliances

- Stainless or AL29-4C for all system applications
- Polypropylene (PPE) for all system applications
- CPVC for hydronic heating systems
- PVC for select low temperature systems only – consult factory

The hot water heater shall be vented as a through-wall (vertical or horizontal) condensing appliance for up to 100 equivalent ft using material approved for use on condensing application under standard ULC S636 or equivalent, or as permitted by the local jurisdiction. The following air intake options shall be utilized:

- Outside air sealed direct (vertical or horizontal);
- Outside air ducted to jacket flange;
- Indoor air



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## Submittal Data Sheet

DynaFlame® Hydronic Heating, Non-Condensing

Date: \_\_\_\_\_

Quote No.: \_\_\_\_\_

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

Prepared by: \_\_\_\_\_

Job Name: \_\_\_\_\_

Job Location: \_\_\_\_\_

Buyers Name: \_\_\_\_\_

Buyers Address: \_\_\_\_\_

MODEL	Approx. Shipping Weight [lbs.]
VT-080	465
VT-100	465
VT-125	520
VT-150	520
VT-199	739
VT-250	739
VT-299	752
VT-399	752
VT-499	845

MODEL	MAXIMUM INPUT [BTUH]	MAXIMUM OUTPUT [BTUH]
VT-080	80,000	76,000
VT-100	100,000	95,000
VT-125	125,000	118,750
VT-150	150,000	142,500
VT-199	199,000	189,050
VT-250	250,000	237,500
VT-299	299,000	284,050
VT-399	399,000	379,050
VT-499	499,000	474,050

MODEL	TANK CAPACITY [US GAL.]	TANK CAPACITY [LITERS]
VT-080	60	227
VT-100	60	227
VT-125	80	302
VT-150	80	302
VT-199	100	378
VT-250	100	378
VT-299	100	378
VT-399	100	378
VT-499	115	435

Model	Voltage Requirement
VT080 - 499	120VAC, 60Hz, 1 Phase

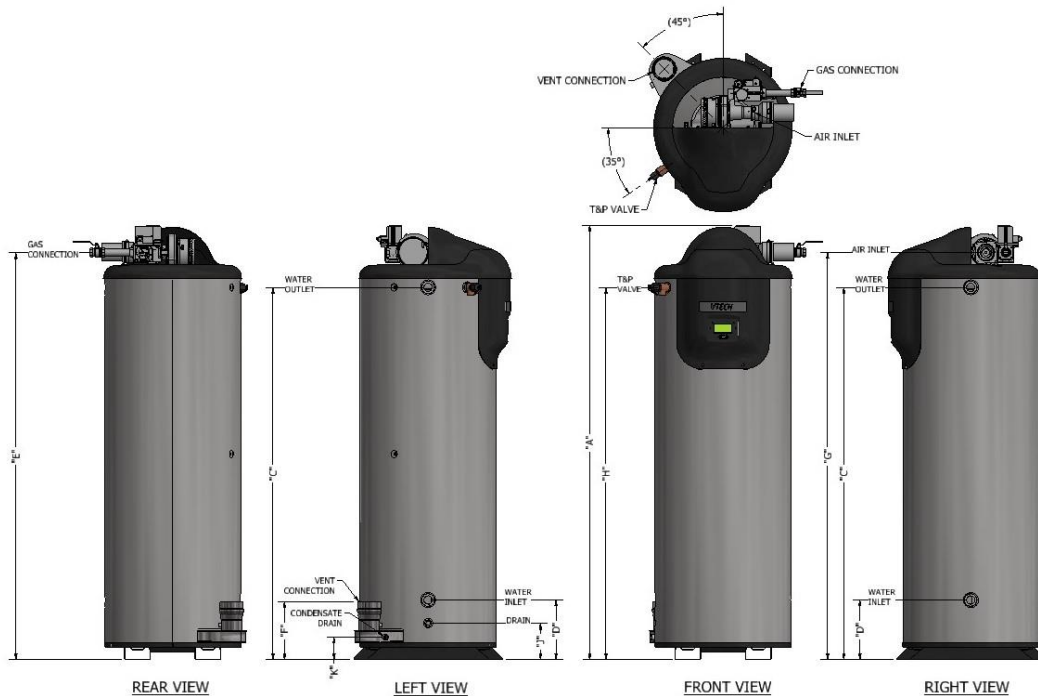
MODEL	RECOVERY CAPACITY DURING FIRST HOUR											
	140°F Rise	78°C Rise	120°F Rise	67°C Rise	100°F Rise	56°C Rise	80°F Rise	44°C Rise	60°F Rise	33°C Rise	40°F Rise	22°C Rise
	GPH	LPH	GPH	LPH	GPH	LPH	GPH	LPH	GPH	LPH	GPH	LPH
VT-080	125	473	136	515	151	571	174	659	212	802	288	1090
VT-100	141	534	155	587	174	659	202	765	250	946	345	1306
VT-125	182	689	199	753	222	840	258	977	317	1200	436	1650
VT-150	202	765	222	840	251	950	293	1109	365	1382	507	1919
VT-199	262	992	289	1094	327	1238	383	1450	478	1809	667	2525
VT-250	303	1147	337	1276	385	1457	456	1726	575	2177	812	3074
VT-299	343	1298	384	1454	440	1665	525	1987	668	2527	951	3600
VT-399	425	1609	479	1813	554	2097	668	2529	857	3244	1236	4679
VT-499	521	1972	589	2230	683	2585	826	3127	1062	4020	1536	5814

MODEL	RECOVERY CAPACITY AFTER FIRST HOUR											
	140°F Rise	78°C Rise	120°F Rise	67°C Rise	100°F Rise	56°C Rise	80°F Rise	44°C Rise	60°F Rise	33°C Rise	40°F Rise	22°C Rise
	GPH	LPH	GPH	LPH	GPH	LPH	GPH	LPH	GPH	LPH	GPH	LPH
VT-080	65	246	76	288	91	344	114	431	152	575	228	863
VT-100	81	307	95	360	114	431	142	537	190	719	285	1079
VT-125	102	386	119	450	142	537	178	674	237	897	356	1348
VT-150	122	462	142	537	171	647	214	810	285	1079	427	1616
VT-199	162	613	189	715	227	859	283	1071	378	1431	567	2146
VT-250	203	768	237	897	285	1079	356	1348	475	1798	712	2695
VT-299	243	920	284	1075	341	1291	426	1613	568	2150	851	3221
VT-399	325	1230	379	1435	454	1718	568	2150	757	2865	1136	4300
VT-499	406	1537	474	1794	568	2150	711	2691	947	3585	1421	5379



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MODEL	"A" Floor to Top of Heater [in.]	"B" Jacket Dia [in.]	"C" Floor to Hot Water Conn. [in.]	"D" Floor to Cold Water Conn. [in.]	"E" Floor to Gas Conn. [in.]	"F" Floor to Vent Conn. [in.]	"G" Floor to Air Intake Conn. [in.]	"H" Floor to T&P Conn. [in.]	"J" Floor to Drain Conn. [in.]	"K" Floor to Condensate Drain Conn. [in.]	Water Conn. At Heater NPT [in.]	Relief Valve Open [in.]	Air Inlet Conn. At Heater [in.]	Gas Conn. At Heater NPT [in.]
VT-080	53	27	41	11 3/4	49 1/2	11 1/2	48	41	7 1/4	4 1/2	1 1/2	1	2	1/2
VT-100	53	27	41	11 3/4	49 1/2	11 1/2	48	41	7 1/4	4 1/2	1 1/2	1	2	1/2
VT-125	66	27	54	11 3/4	62 1/2	11 1/2	61	54	7 1/4	4 1/2	1 1/2	1	2	1/2
VT-150	66	27	54	11 3/4	62 1/2	11 1/2	61	54	7 1/4	4 1/2	1 1/2	1	2	1/2
VT-199	76	27	64	11 3/4	72 1/2	11 1/2	71	64	7 1/4	4 1/2	1 1/2	1	2	1/2
VT-250	76	27	64	11 3/4	72 1/2	11 1/2	71	64	7 1/4	4 1/2	1 1/2	1	2	1/2
VT-299	76	27	64	11 3/4	72 1/2	11 1/2	71	64	7 1/4	4 1/2	1 1/2	1	3	3/4
VT-399	76	27	64	11 3/4	72 1/2	11 1/2	71	64	7 1/4	4 1/2	1 1/2	1	3	1
VT-499	85 3/4	27	73 3/4	11 3/4	80 3/4	11 1/2	80 3/4	73 3/4	7 1/4	4 1/2	1 1/2	1	3	1



MODEL	Length of Vent & Air Intake Pipes at Recommended Diameter (in.)			
	Over 25' & up to 100'	Over 15' & up to 25'	Up to 15'	Comb. Vent
VT080 – VT250	3	3	2	4
VT-299 – VT399	4	3	3	5
VT-499	4	3	3	6

Model No.: \_\_\_\_\_ No. of Units: \_\_\_\_\_ Type of Gas: \_\_\_\_\_  
 Total Input: \_\_\_\_\_ BTU/hr Total Output: \_\_\_\_\_ BTU/hr  
 Flow: \_\_\_\_\_ USGPM @ Allowable Pressure Drop \_\_\_\_\_ ft.  
 Optional Accessories: \_\_\_\_\_