

Volume Water Heater

BOCV | Volume Water Heater, CAT II / IV

Indoor/Outdoor, Sizes 1250 - 3000



Submittal Data

Date:

Project #:

Engineer:

Prepared By:

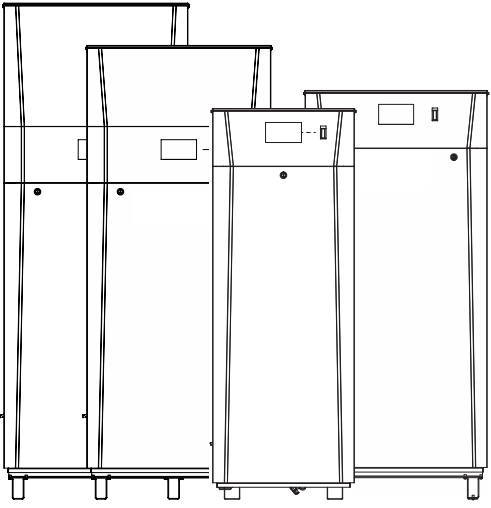
Bid Date:

Project Name:

Location:

Contractor:

Brute OmniTech®



Standard Features

- ASME "HLW" stamp
- 160 psi maximum working pressure
- Meets NSF/ANSI-372 Low Lead Content certification
- Certified for Category II & IV vent
- Indoor / outdoor
- Low NOx system exceeds the most stringent NOx regulations
- Sophisticated gas/air valve allows for constant control of combustion
- Sealed combustion chamber
- Stainless steel heat exchanger with welded construction
- Pre-mix stainless steel burner
- Electronic PID modulating control with large touchscreen and color display
- Multiple independent heat demands
- Controller cascades with up to eight OmniTech BOCV heaters
- Accepts 4-20ma or 0-10VDC external modulation or external set point control
- Modbus RTU & BACnet MSTP on board
- Domestic water pump control with time delay
- Sensor for DHW tank
- Cat IV vent & air pipe lengths of up to 100 equivalent feet (each)
- High and low gas pressure switches
- Vent temperature cutoff
- Normally open alarm contact
- Air filter
- Water flow switch
- Temperature & pressure gauge
- Low water cutoff
- 125 psi (861kPa) ASME rated pressure relief valve
- Groove lock fittings (optional flange adapter)
- Burner site glass
- 10-Year limited warranty

Heater Data

Number of Units

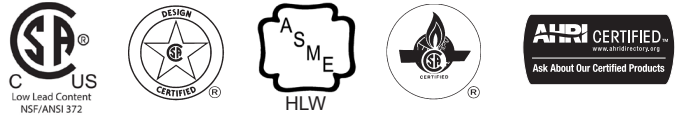
Fuel Natural

Voltage

<input type="checkbox"/> 120V, single ph (1250-2000)	<input type="checkbox"/> 208V, three ph (2500-3000)
<input type="checkbox"/> 208V, single ph (1500-2500)	<input type="checkbox"/> 480V, three ph (2500-3000)
<input type="checkbox"/> 220/240V, single ph (1500-2500)	<input type="checkbox"/> 600V, three ph (2500-3000)

Factory Mounted Options

- ASME CSD-1
- ASME "H" Stamp (instead of standard "HLW" Stamp)
- BACnet IP gateway
- LonWorks gateway
- Additional auto & manual reset high limit switches
- Alarm bell with silence switch
- Groove lock to flange connections
- 125 psi pressure relief valve (std)
- 30 psi pressure relief valve
- 50 psi pressure relief valve
- 60 psi pressure relief valve
- 75 psi pressure relief valve
- 150 psi pressure relief valve



Accessories for Field Mounting

- Gateway for BACnet IP
- Gateway for LonWorks

- Cat IV horizontal vent terminal
- Screen for air terminal
- Vent terminal for outdoor unit
- Air pipe screen for outdoor unit

- Condensate neutralizer
- Condensate neutralizer with pump

Sizing Data

Model	Input Rate		Output Rate		Thermal Efficiency	Turndown	Product Weight		Operating Weight		Shipping Weight		Water Content	
	MBH	kw	MBH	kw	%	Ratio	lbs	kg	lbs	kg	lbs	kg	gal	l
<input type="checkbox"/> 1250	1250	366	1125	330	90	5:1	541	246	575	261	741	336	3.8	14
<input type="checkbox"/> 1500	1500	440	1335	391	89	7:1	541	246	575	261	741	336	3.8	14
<input type="checkbox"/> 1750	1750	513	1540	451	88	7:1	947	430	1025	465	1197	543	8.9	34
<input type="checkbox"/> 2000	1999.9	586	1800	527	90	5:1	1030	468	1125	511	1280	581	10.8	41
<input type="checkbox"/> 2500	2499.9	733	2250	659	90	7:1	1030	468	1125	511	1280	581	10.8	41
<input type="checkbox"/> 3000	3000	879	2610	765	87	7:1	1085	493	1190	540	1335	606	11.6	44

Clearances

Model	Certified Clearances to Combustibles										
	Front		Back		Left		Right		Top		
	inches	cm	inches	cm	inches	cm	inches	cm	inches	cm	
1250-3000	closet*	-	0	0	0	0	0	0	0	0	0

*With required openings

Model	Suggested Service Clearances									
	Front		Back		Left		Right		Top	
	inches	cm	inches	cm	inches	cm	inches	cm	inches	cm
1250-1500	24	61	24	61	8	20	8	20	18	46
1750-3000	24	61	24	61	8	20	8	20	17	43

Electrical Data

Voltage	1250 Current			1500 Current			1750 Current			2000 Current			2500 Current			3000 Current		
	FLA	MCA	MOP	FLA	MCA	MOP	FLA	MCA	MOP	FLA	MCA	MOP	FLA	MCA	MOP	FLA	MCA	MOP
120V, 1 phase	9.4	11.8	20	9.4	11.8	20	9.2	11.5	20	9.2	11.5	20	N/A	N/A	N/A	N/A	N/A	N/A
208V, 1 phase	N/A	N/A	N/A	4.8	6.0	15	5.0	6.3	15	5.0	6.3	15	5.0	6.3	15	N/A	N/A	N/A
220/240V, 1 ph	N/A	N/A	N/A	4.8	6.0	15	4.8	6.0	15	4.8	6.0	15	4.8	6.0	15	N/A	N/A	N/A
208V, 3 phase	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.2	6.5	15	6.2	7.8	15
480V, 3 phase	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.2	2.8	15	2.7	3.4	15
600V, 3 phase	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.8	2.3	15	2.2	2.8	15

Vent System

Model	Air Collar Size		Ducted Air Pipe Size		Maximum Ducted Air Pipe Length		Vent Collar Size		Category IV Vent Pipe Size		Maximum Category IV Vent Pipe Length		Typical** Category II Vent Pipe Size	
	inches	cm	inches	cm	ft*	m	inches	cm	inches	cm	ft*	m	inches	cm
1250	6	15	6	15	100	30.5	6	15	6	15	100	30.5	12	30
1500	6	15	6	15	100	30.5	6	15	6	15	100	30.5	12	30
1750	8	20	8	20	100	30.5	8	20	8	20	100	30.5	14	36
2000	8	20	8	20	100	30.5	8	20	8	20	100	30.5	14	36
2500	8	20	8	20	100	30.5	8	20	8	20	100	30.5	16	41
3000	10	25	10	25	100	30.5	10	25	10	25	100	30.5	16	41

*Equivalent Feet: To calculate, measure the linear feet of the pipe and add 5 ft (1.5m) for each elbow used.

**Category II vent pipe size must be engineered for vent system configuration, and may differ from what is shown.

Notes:

1. Installations in the U.S. require exhaust vent pipe that is stainless steel complying with UL1738.
2. Intake air pipe may be single-wall galvanized steel pipe, polypropylene, ABS, PVC, or CPVC, properly sealed.

Water Flow Requirements

Model	1-10 Grains Per Gallon Hardness			11-15 Grains Per Gallon Hardness		
	Flow Rate (gpm)	Headloss* (ft)	Temp Rise (°F)	Flow Rate (gpm)	Headloss* (ft)	Temp Rise (°F)
1250	85	16.1	26	104	23.6	21
1500	90	17.9	29	110	26.3	24
1750	120	12.9	25	150	19.6	20
2000	135	16.1	26	170	24.4	21
2500	140	17.2	31	170	24.4	26
3000	150	21	35	183	31.5	28
Model	1-10 Grains Per Gallon Hardness			11-15 Grains Per Gallon Hardness		
	Flow Rate (l/m)	Headloss* (m)	Temp Rise (°C)	Flow Rate (l/m)	Headloss* (m)	Temp Rise (°C)
1250	322	4.9	14	394	7.2	12
1500	341	5.5	16	416	8.0	13
1750	454	3.9	14	568	6.0	11
2000	511	4.9	14	644	7.4	11
2500	530	5.2	17	644	7.4	14
3000	568	6.4	19	693	9.6	16

*Headloss is for the heater only (no piping)

Allowable pH is 6.5 to 9.5

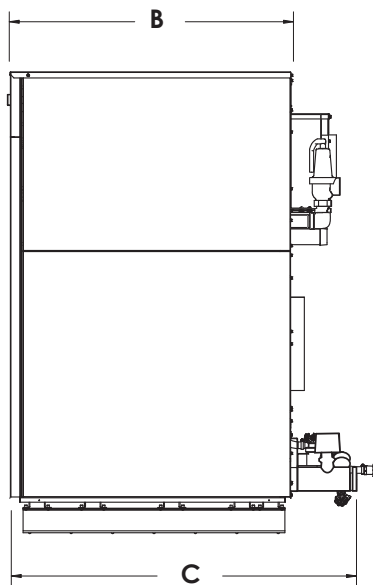
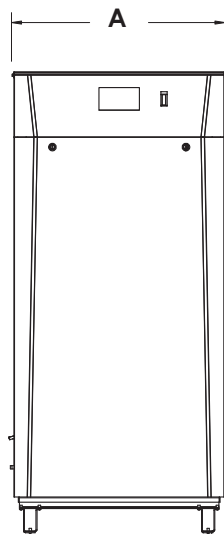
Recovery

Model	Temperature Rise						
	40°F	50°F	60°F	70°F	80°F	90°F	100°F
	gph	gph	gph	gph	gph	gph	gph
1250	3293	2634	2195	1881	1646	1463	1317
1500	3920	3136	2613	2240	1960	1742	1568
1750	4568	3654	3045	2610	2284	2030	1827
2000	5268	4214	3512	3010	2634	2341	2107
2500	6578	5262	4385	3759	3289	2923	2631
3000	7767	6214	5178	4438	3884	3452	3107

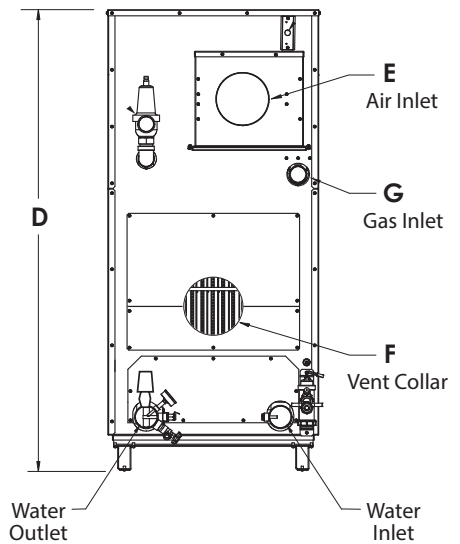
Model	Temperature Rise						
	22°C	28°C	33°C	39°C	44°C	50°C	56°C
	L/h	L/h	L/h	L/h	L/h	L/h	L/h
1250	12463	9971	8309	7122	6232	5539	4985
1500	14837	11870	9891	8478	7418	6594	5935
1750	17290	13832	11527	9880	8645	7684	6916
2000	19942	15953	13294	11395	9971	8863	7977
2500	24899	19919	16599	14228	12449	11066	9959
3000	29401	23521	19601	16801	14701	13067	11761

Dimensional Data

Model	"A"		"B"		"C"		"D"		"E"		"F"		"G"		Water Inlet & Outlet
	in.	(cm)	in.	(cm)	in.	(cm)	in.	(cm)	Air Inlet Diameter	in.	(cm)	Vent Collar Diameter	in.	(cm)	
1250	24½	(62)	27	(69)	39	(99)	66	(168)	6	(15)	6	(15)	2"		2½"
1500	24½	(62)	27	(69)	39	(99)	66	(168)	6	(15)	6	(15)	2"		2½"
1750	32	(81)	43	(109)	53	(135)	69	(175)	8	(20)	8	(20)	2"		3"
2000	32	(81)	43	(109)	53	(135)	78	(198)	8	(20)	8	(20)	2"		3"
2500	32	(81)	43	(109)	53	(135)	78	(198)	8	(20)	8	(20)	2"		3"
3000	32	(81)	43	(109)	53	(135)	85	(216)	10	(25)	10	(25)	2"		3"



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