

# **LAARS<sup>®</sup>** **MIGHTY THERM**

Copper-Finned Gas-Fired  
Volume Water Heaters



**LAARS<sup>®</sup>**   
**Heating Systems Company**  
A subsidiary of **BRADFORD WHITE<sup>®</sup>** Corporation

# LAARS® MIGHTY THERM®

## QUIET, EFFICIENT, SPACE-SAVING

**Greater energy efficiencies as high as 82%** are achieved through state-of-the-art design. Efficient heat transfer and reduced standby losses result in lower operating costs.

**Design-certified** by IAS (International Approval Services, a joint venture of American Gas Association and Canadian Gas Association) under ANSI Standard Z21.1.3. Water heaters may be specified for use with natural or propane gas.

**Indoor and outdoor** models are available for maximum application flexibility.

**Working pressure of 160 psi** is standard in accordance with Section IV ASME Boiler and Pressure Vessel Code. Units are factory tested per this ASME code and are registered with the National Board of Boiler and Pressure Vessel Inspectors or the applicable Canadian provincial jurisdiction.

**Integral finned copper tubes** meeting ASME specification SB 75 are rolled directly into headers. Heat exchanger baffles and an eight-fins-per-inch tubing configuration extract combustion heat with maximum efficiency.

**Heat exchanger headers** conform to Article 2, Part HC of ASME Code. External header covers are field removable for complete inspection of tubing and header passages. Heat exchanger is replaceable without disassembly of burners or combustion chamber.

**Pressure relief valve** is ASME rated and is selected to provide discharge capacity in excess of unit heating input.

**Combustion chamber** is Laars' lightweight cast refractory utilizing calcium aluminate cement with 2000°F (1093°C) working temperature.

**Burners** are atmospheric type constructed of AISI alloy 430 (sizes 175-1825) or AISI 439 (sizes 2000-5000) stainless steel.

**Controls** meet requirements of ANSI Standard Z21.1.3 and the Canadian Gas Association standards and include ignition safeguard, manual reset high limit, operating temperature control, gas pressure regulator, redundant electric gas valve (optional in Canada), water flow sensing, and manual gas shutoff valve. Standard control systems operate on 24 VAC power from class 2 transformer. Ignition safeguard reacting to flame failure in less than 0.8 second is standard on units above 400,000 BTU/hr. (117.2 kW).

**Chassis and jacket parts** are of galvanized steel meeting ASTM Standard for G90 coating. Exterior is finished with acrylic paint, thermoset at 325°F (163°C).

**The limited warranty** provides one year on materials and workmanship for controls, combustion chamber, pump and tank (when provided). Refer to the Warranty Sheet enclosed with each unit for further details.

## STANDARD FEATURES

- No fire-side gasketing
- Slide-out burner tray (sizes 175-1825)
- Flanged connections
- 160 PSI working pressure
- Constructed to Section IV, ASME Boiler and Pressure Vessel Code
- Factory mounted pump (sizes 175-1825, Models IW & PW)
- Design certified and tested by I.A.S. (A.G.A. & C.G.A.)
- Meets requirements of ASHRAE Standard 90.1
- Electronic flame supervision
- Natural or propane gas
- Electronic ignition, standard on sizes 500 and above
- Pilot gas regulator
- On/off switch with indicator light
- Over-current circuit protection
- Non-combustible base - standard on all sizes 175-400 and outdoor sizes 500-1825
- Terminal strip for interfacing
- Manual reset high limit

## AVAILABLE FIRING MODES

- On/Off: Standard on all sizes
- Two Stage: Available on all sizes
- Four Stage: Available on sizes 500-5000

Galvanized steel jacket with acrylic finish for strength and long life

Built-in draft diverter - (indoor sizes 500-5000) to simplify installation

Pump mounted directly to header (sizes 500-1825, Model PW)

Automatic gas valve - on/off, 2-stage, 4-stage or modulating

Stainless steel burners assure long life



Slide out burner tray for easy maintenance (sizes 175-1825)

High temperature refractory firebox liner - to 2000°F (1093°C) for greater efficiency

Integral finned copper heat exchanger for higher efficiency on all models

Integral header flanges for easy serviceability

Glass lined or bronze headers for corrosion resistance

Recommended Minimum Clearance From	Sizes 175-400		Sizes 500-1825				Sizes 2000-5000					
	Indoor inches	Outdoor cm	Indoor inches	Outdoor cm	Indoor inches	Outdoor cm	Indoor inches	Outdoor cm	Indoor inches	Outdoor cm		
Top	37	94	Unobstructed		30	76	Unobstructed		24	61	Unobstructed	
Connection Side	12	31	Unobstructed		12	31	24	61	24	61	24	61
Opposite Side	6	15	6	15	6	15	24	61	24	61	24	61
Front*	18	46	Unobstructed*		24	61	Unobstructed*		48	122	Unobstructed*	
Rear	6	15	6	15	8	20	24	61	24	61	24	61
Vent	**6	15	—		**6	15	—		**6	15	—	

Note: Base for combustible flooring standard on outdoor sizes 500 to 1825. Indoor sizes 500 to 1825 must be installed on non-combustible floors or with base for combustible floors (Laars' optional base A.G.A. design certified). Indoor sizes 2000-5000 and outdoor sizes 2200-4500 require installation on non-combustible floors.

\*At least 48" (122cm) clearance should be provided in front of the boiler for maintenance accessibility (removal of burners, etc).

\*\*1" (25mm) if double wall vent is used.

- Motorized Modulation: Available on sizes 500-5000
- Mechanical Modulation: Available on sizes 325-1825
- Motorized On/Off: Available on sizes 500-5000
- Motorized 2-Stage: Available on sizes 500-5000

## OPTIONAL EQUIPMENT

### GAS TRAIN:

- Additional manual shutoff
- Additional safety valve
- Motorized safety valve (available with proof of closure)
- Highflow gas pressure switches
- Normally open vent valve
- Leak test valve
- Celsius controls

### CONTROLS:

- 100% lockout
- Low water cutoff - with manual reset and test button
- Low temperature aquastat - on/off, or 2-stage
- Automatic reset high limit
- EM2 - Energy Management Monitor (standard on PW models)
- Flex-Temp System Controller/Sequencer - 4 stage
- 220-240/24V @ 50/60Hz transformer

# DIMENSIONAL AND SIZING DATA

## INDOOR MODELS

Indoor Size	Input <sup>1</sup>		Output <sup>1</sup>		IBR Net Rating <sup>1</sup>		Gas Connection <sup>2</sup>		Water Conn. Size inches NPT	Dimensions <sup>2</sup>						Shipping Weight <sup>3</sup>			
	MBTU/h	kW	MBTU/h	kW	MBTU/h	kW	Size-inches Natural <sup>4</sup>	NPT <sup>4</sup>		A inches	cm	B inches	cm	C inches	cm	V inches	cm	lbs.	kgs
175	175	51	144	42	125	37	1/2-3/4	1/2	1 1/2	18	46	26 1/2	67	23 1/2	60	6	15	255	116
250	250	73	205	60	178	52	3/4	1/2	1 1/2	22 1/2	57	31	79	24 3/4	63	7	18	255	116
325	325	95	267	78	232	68	3/4	1/2	1 1/2	26 3/4	68	35 3/4	91	25 7/8	66	8	20	325	148
400	400	117	328	96	285	84	3/4	1/2	1 1/2	31 3/4	81	40 1/4	102	26 7/8	68	9	23	360	163
500	500	147	410	120	357	104	1	3/4-1	2	33 5/8	85	39 5/8	101	23 5/8	60	10	25	612	28
600	600	176	492	144	428	125	1	3/4-1	2	38 5/8	98	44 5/8	113	22 5/8	58	12	31	702	32
715	715	209	586	172	510	149	1	3/4-1	2	44 1/4	112	50 1/4	128	22 5/8	58	12	31	750	34
850	850	249	697	204	606	178	1-1 1/4	3/4-1 1/4	2	50 5/8	129	56 5/8	141	21 5/8	55	14	36	830	38
1010	1010	296	828	243	720	211	1 1/4	1-1 1/4	2 1/2	58	147	64	163	20 5/8	52	16	41	986	45
1200	1200	352	984	288	856	251	1 1/4	1-1 1/4	2 1/2	66 1/4	57	72 1/4	196	20 5/8	52	16	41	995	45
1430	1430	419	1173	344	1020	299	1 1/4	1 1/4	2 1/2	76	193	82	208	19 5/8	50	18	46	1080	49
1670	1670	489	1369	401	1191	349	1 1/4-1 1/2	1 1/4	2 1/2	85 3/8	217	91 3/8	232	19 5/8	50	18	46	1175	53
1825	1825	535	1497	438	1301	381	1 1/4-1 1/2	1 1/4	2 1/2	92 1/4	234	98 1/4	249	19 5/8	50	18	46	1270	58
2000	2000	586	1640	481	1426	418	1 1/2	1 1/4-1 1/2	4	55 1/2	141	63	160	24 1/4	62	22	56	1815	82
2450	2450	718	2009	589	1747	512	1 1/2-2	1 1/2	4	65 1/2	166	73	185	24 1/2	62	24	61	1950	89
3050	3050	894	2501	733	2175	637	1 1/2-2	1 1/2	4	78	198	85 1/4	217	24 1/2	62	26	66	2100	95
3500	3500	1026	2870	841	2496	731	2	1 1/2	4	88	224	95 1/2	243	24 1/2	62	28	71	2237	102
4050	4050	1187	3321	973	2888	846	2-2 1/2	2	4	100 1/2	255	108	274	24 1/2	62	30	76	2555	116
4500	4500	1319	3690	1081	3209	940	2 1/2	2	4	110 1/2	281	118	300	24 1/2	62	32	81	3075	140
5000	5000	1465	4100	1201	3565	1045	2 1/2	2	4	123	312	130 1/2	315	24 1/2	62	34	83	3050	139

## OUTDOOR MODELS

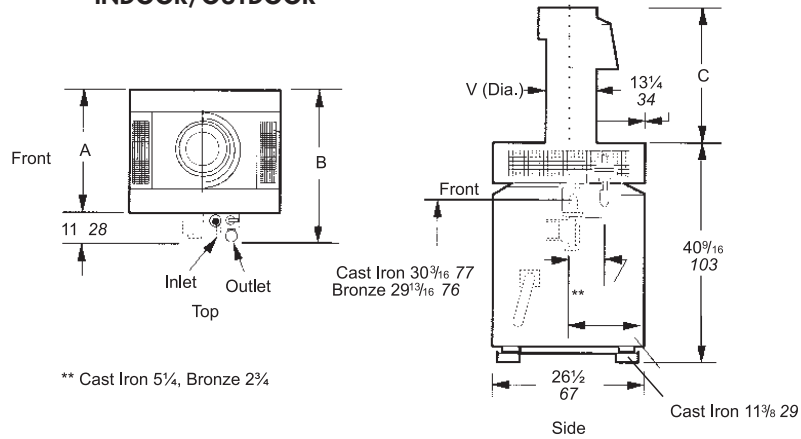
Outdoor Size	Input <sup>1</sup>		Output <sup>1</sup>		IBR Net Rating <sup>1</sup>		Gas Connection <sup>2</sup>		Water Conn. Size inches NPT	Dimensions <sup>2</sup>						Shipping Weight <sup>3</sup>			
	MBTU/h	kW	MBTU/h	kW	MBTU/h	kW	Size-inches Natural <sup>4</sup>	NPT <sup>4</sup>		A inches	cm	B inches	cm	C inches	cm	V inches	cm	lbs.	kgs
175	175	51	144	42	125	37	1/2-3/4	1/2	1 1/2	18	46	26 1/2	67	14 1/16	36	6	15	255	12
250	250	73	205	60	178	52	3/4	1/2	1 1/2	22 1/2	57	31	79	18 1/16	47	7	18	285	13
325	325	95	267	78	232	68	3/4	1/2	1 1/2	26 3/4	68	35 3/4	91	19 3/16	49	8	20	325	15
400	400	117	328	96	285	84	3/4	1/2	1 1/2	31 3/4	81	40 1/4	102	22 5/8	58	9	23	360	16
500	500	147	410	120	357	104	1	3/4	2	33 3/4	86	39 3/4	101	—	—	—	—	751	34
600	600	176	492	144	428	125	1	3/4	2	38 3/4	98	44 3/4	114	—	—	—	—	821	37
715	715	209	586	172	510	149	1	3/4	2	44 1/4	112	50 1/4	128	—	—	—	—	906	41
850	850	249	697	204	606	178	1	3/4	2	50 3/4	129	56 3/4	144	—	—	—	—	1000	45
1010	1010	296	828	243	720	211	1 1/4	1	2 1/2	58	147	64	163	—	—	—	—	1116	51
1200	1200	352	984	288	856	251	1 1/4	1	2 1/2	66 1/4	168	72 1/4	184	—	—	—	—	1185	54
1430	1430	419	1173	344	1020	299	1 1/4	1 1/4	2 1/2	76	193	82	208	—	—	—	—	1330	60
1670	1670	489	1369	401	1191	349	1 1/2	1 1/4	2 1/2	85 1/2	217	91 1/2	232	—	—	—	—	1490	68
1825	1825	535	1497	438	1301	381	1 1/2	1 1/4	2 1/2	92 1/4	234	98 1/4	250	—	—	—	—	1630	74
2200	2200	645	1808	530	1572	461	1 1/2-2	1 1/2	4	65 1/2	166	73	185	—	—	—	—	2300	104
2800	2800	820	2296	673	1997	585	1 1/2-2	1 1/2	4	78	198	85 1/2	217	—	—	—	—	2670	121
3200	3200	938	2624	769	2282	669	2	1 1/2	4	88	224	95 1/2	243	—	—	—	—	2750	125
3600	3600	1055	2952	865	2567	752	2-2 1/2	2	4	100 1/2	255	108	274	—	—	—	—	3175	144
4000	4000	1172	3280	961	2852	836	2 1/2	2	4	110 1/2	281	118	300	—	—	—	—	3380	154
4500	4500	1319	3690	1081	3209	940	2 1/2	2	4	123	312	130 1/2	332	—	—	—	—	3330	151

- NOTES:**
1. Input and output must be derated 4% per 1000 feet above sea level when installed above 2000 feet altitude.
  2. Dimensions are nominal.
  3. Units with pumps: Add 20 lbs. (9 kg) to sizes 175-400 and 55 lbs. (25 kg) to sizes 500-1825.
  4. When two gas connection sizes are shown, the smaller applies to the standard gas train, while the larger applies to optional trains, such as four stage or motorized gas valves. Consult factory for exact specifications.

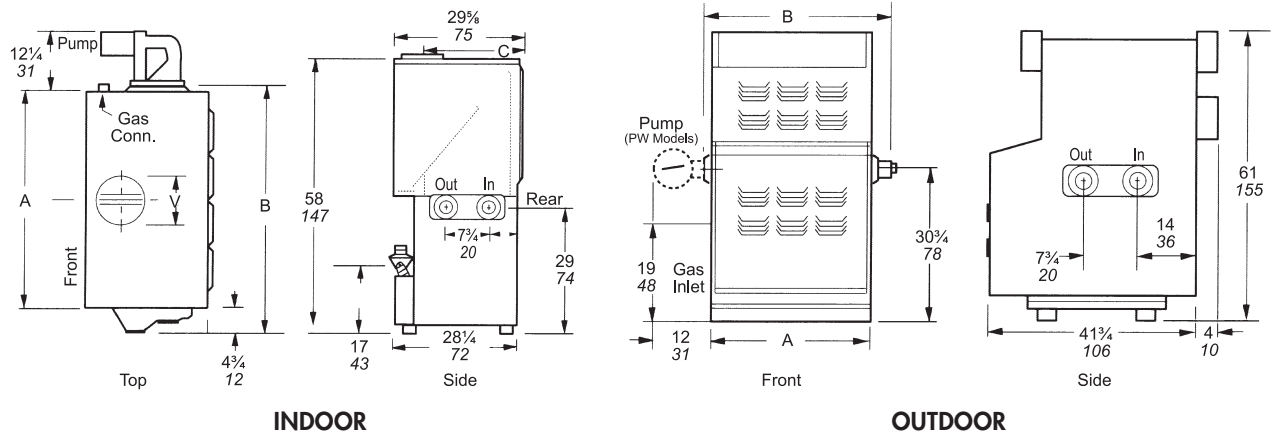
# DIMENSIONAL DIAGRAMS

## SIZES 175-400

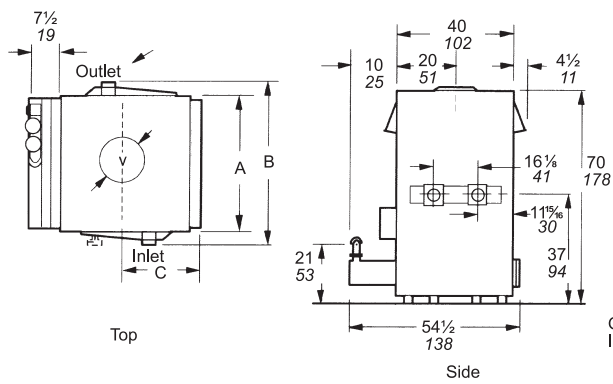
### INDOOR/OUTDOOR



## SIZES 500-1825

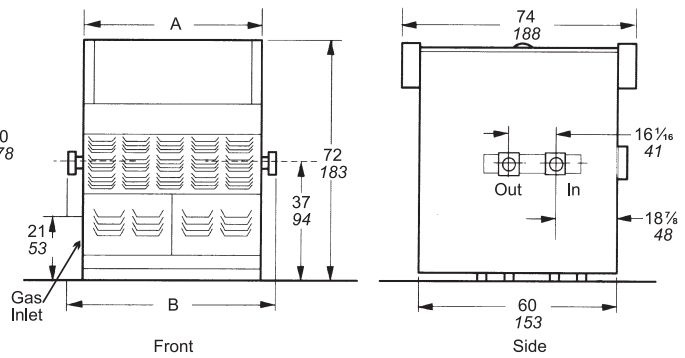


## SIZES 2000-5000



### INDOOR

## SIZES 2200-4500



### OUTDOOR

# RECOVERY TABLES

## INDOOR MODELS

Required Water Temperature Rise

Indoor Size	40°F	22°C	50°F	28°C	60°F	33°C	70°F	39°C	80°F	44°C	90°F	50°C	100°F	56°C	120°F	67°C	140°F	78°C
	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s
175	425	447	340	357	284	298	243	255	213	223	189	198	170	179	142	149	122	128
250	612	643	490	514	408	428	350	367	306	321	272	286	245	257	204	214	175	184
325	790	829	632	663	527	553	451	474	395	415	351	369	316	332	263	276	226	237
400	972	1021	778	816	648	680	555	583	486	510	432	454	389	408	324	340	278	292
500	1215	1276	972	1021	810	851	694	729	608	638	540	567	486	510	405	425	347	365
600	1458	1531	1166	1225	972	1021	833	875	729	765	648	680	583	612	486	510	417	437
715	1737	1824	1390	1459	1158	1216	993	1042	869	912	772	811	695	730	579	608	496	521
850	2066	2169	1652	1735	1377	1446	1180	1239	1033	1084	918	964	826	868	689	723	590	620
1010	2454	2577	1963	2062	1636	1718	1402	1473	1227	1289	1091	1145	982	1031	818	859	701	736
1200	2916	3062	2333	2449	1944	2041	1666	1750	1458	1531	1296	1361	1166	1225	972	1021	833	875
1430	3475	3649	2780	2919	2317	2432	1986	2085	1738	1824	1544	1622	1390	1459	1158	1216	993	1042
1670	4058	4261	3246	3409	2705	2841	2319	2435	2029	2131	1804	1894	1623	1704	1353	1420	1159	1217
1825	4435	4656	3548	3725	2957	3104	2534	2661	2217	2328	1971	2070	1774	1863	1478	1552	1267	1330
2000	4920	5166	3936	4133	3280	3444	2811	2952	2460	2583	2187	2296	1968	2066	1640	1722	1406	1476
2450	6027	6328	4822	5063	4018	4219	3444	3616	3014	3164	2679	2813	2411	2531	2009	2109	1722	1808
3050	7503	7878	6002	6303	5002	5252	4287	4502	3752	3939	3335	3501	3001	3151	2501	2626	2144	2251
3500	8610	9041	6888	7232	5740	6027	4920	5166	4305	4520	3827	4018	3444	3616	2870	3014	2460	2583
4050	9963	10461	7970	8369	6642	6974	5693	5978	4982	5231	4428	4649	3985	4184	3321	3487	2847	2989
4500	11070	11624	8856	9299	7380	7749	6326	6642	5535	5812	4920	5166	4428	4649	3690	3875	3163	3321
5000	12300	12915	9840	10332	8200	8610	7029	7380	6150	6458	5467	5740	4920	5166	4100	4305	3514	3690

## OUTDOOR MODELS

Required Water Temperature Rise

Outdoor Size	40°F	22°C	50°F	28°C	60°F	33°C	70°F	39°C	80°F	44°C	90°F	50°C	100°F	56°C	120°F	67°C	140°F	78°C
	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s	gph	mL/s
175	420	441	336	353	280	294	240	252	210	221	187	196	168	176	140	147	120	126
250	600	630	480	504	400	420	343	360	300	315	267	280	240	252	200	210	171	180
325	780	819	624	655	520	546	446	468	390	410	347	364	312	328	260	273	223	234
400	960	1008	768	806	640	672	549	576	480	504	427	448	384	403	320	336	274	288
500	1230	1292	984	1033	820	861	703	738	615	646	547	574	492	517	410	431	351	369
600	1476	1550	1181	1240	984	1033	843	886	738	775	656	689	590	620	492	517	422	443
715	1759	1847	1407	1477	1173	1231	1005	1055	879	923	782	821	704	739	586	616	503	528
850	2091	2196	1673	1756	1394	1464	1195	1255	1046	1098	929	976	836	878	697	732	597	627
1010	2485	2608	1988	2087	1656	1739	1420	1491	1242	1304	1104	1159	994	1044	828	870	710	745
1200	2952	3100	2362	2480	1968	2066	1687	1771	1476	1550	1312	1378	1181	1240	984	1033	843	886
1430	3518	3694	2814	2955	2345	2462	2010	2111	1759	1847	1563	1642	1407	1477	1173	1231	1005	1055
1670	4108	4314	3287	3451	2739	2876	2348	2465	2054	2157	1826	1917	1643	1725	1369	1438	1174	1232
1825	4490	4714	3592	3771	2993	3143	2565	2694	2245	2357	1995	2095	1796	1886	1497	1571	1283	1347
2200	5358	5626	4286	4501	3572	3751	3062	3215	2679	2813	2381	2500	2143	2250	1786	1875	1531	1607
2800	6669	7002	5335	5602	4446	4668	3811	4001	3335	3501	2964	3112	2668	2801	2223	2334	1905	2001
3200	7656	8039	6125	6431	5104	5359	4375	4594	3828	4019	3403	3573	3062	3216	2552	2680	2187	2297
3600	8856	9299	7085	7439	5904	6199	5061	5314	4428	4649	3936	4133	3542	3720	2952	3100	2530	2657
4000	9843	10335	7874	8268	6562	6890	5625	5906	4922	5168	4375	4593	3837	4134	3281	3445	2812	2953
4500	10935	11482	8748	9185	7290	7655	6249	6561	5468	5741	4860	5103	4374	4593	3645	3827	3124	3281

- NOTES:**
1. Input and output must be derated 4% per 1000 feet above sea level when installed above 2000 feet altitude.
  2. Dimensions are nominal.
  3. Units with pumps: Add 20 lbs. (9 kg) to sizes 175-400 and 55 lbs. (25 kg) to sizes 500-1825.
  4. When two gas connection sizes are shown, the smaller applies to the standard gas train, while the larger applies to optional trains, such as four stage or motorized gas valves. Consult factory for exact specifications.

# PUMP REQUIREMENTS GUIDE

A suitable pump must be field-provided for circulation of water between Model VW heater and the storage tank(s). The pump must be sized to provide adequate temperature rise through the heater, while producing correct flow for prevailing water hardness conditions.

Specifications in this table include allowance for 30 ft. (9.1 m) of piping and normal fittings between heater and tank. This allowance is based on flange connection size (see chart).

Size		Flow Rate			Head Loss			Flow Rate			Head Loss			Water Conn. Size	Temp. Rise Across Heater											
		gpm			ft.			l/s			m				Indoor			Outdoor								
		S	N	H	S	N	H	S	N	H	S	N	H		S	N	H	S	N	H						
Indoor	Outdoor													Inches	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C		
175	175	22	34	46	5.6	13.0	22.7	1.4	2.1	2.9	1.7	4.0	6.9	1 1/2	13	7	8	4	6	3	13	7	8	4	6	3
250	250	22	34	46	6.0	13.6	23.8	1.4	2.1	2.9	1.8	4.1	7.3	1 1/2	18	10	12	7	9	5	18	10	12	7	9	5
325	325	22	34	46	6.1	13.9	24.4	1.4	2.1	2.9	1.9	4.2	7.4	1 1/2	24	13	16	9	11	6	24	13	16	9	11	6
400	400	22	34	46	6.3	14.5	25.6	1.4	2.1	2.9	1.9	4.4	7.8	1 1/2	29	16	19	11	14	8	29	16	19	11	14	8
500	500	45	68	90	5.0	9.9	15.7	2.8	4.3	5.7	1.5	3.0	4.8	2	17	9	11	6	8	4	17	9	11	6	8	4
600	600	45	68	90	5.1	10.0	15.9	2.8	4.3	5.7	1.6	3.0	5.4	2	20	11	14	8	10	6	20	11	14	8	10	6
715	715	45	68	90	5.3	11.0	17.8	2.8	4.3	5.7	1.6	3.4	5.5	2	24	13	16	9	12	7	24	13	16	9	12	7
850	850	45	68	90	5.4	11.1	18.1	2.8	4.3	5.7	1.8	3.4	5.4	2	30	17	20	11	15	8	30	17	20	11	15	8
1010	1010	45	68	90	3.9	7.5	11.7	2.8	4.3	5.7	1.2	2.3	3.6	2 1/2	35	19	23	13	18	13	35	19	23	13	18	10
1200	1200	68	68	90	7.8	7.8	12.2	4.3	4.3	5.7	2.4	2.4	3.7	2 1/2	27	15	27	15	21	12	27	15	27	15	21	12
1430	1430	68	68	90	8.1	8.1	12.6	4.3	4.3	5.7	2.5	2.5	3.8	2 1/2	32	18	32	18	24	13	32	18	32	18	24	13
1670	1670	68	68	90	8.3	8.3	13.0	4.3	4.3	5.7	2.5	2.5	4.0	2 1/2	37	21	37	21	28	16	37	21	37	21	28	16
1825	1825	90	90	90	13.5	13.5	13.5	5.7	5.7	5.7	4.1	4.1	4.1	2 1/2	30	17	30	17	30	17	30	17	30	17	30	17
2000	NA	100	150	200	4.2	9.0	15.0	6.3	9.5	12.6	1.3	2.7	4.6	4	33	18	22	12	16	9	NA	NA	NA	NA	NA	NA
2450	2200	100	150	200	4.5	9.7	16.0	6.3	9.5	12.6	1.4	3.0	4.9	4	40	22	27	15	20	11	35	19	24	13	18	10
3050	2800	*200	150	200	6.1	11.0	18.0	12.6	9.5	12.6	1.9	3.4	5.5	4	25	14	34	19	25	14	22	12	29	16	22	12
3500	3200	*200	150	200	6.3	11.0	19.0	12.6	9.5	12.6	1.9	3.4	5.8	4	29	16	38	21	29	16	25	14	34	19	25	14
4050	3600	*200	150	200	6.7	12.0	20.0	12.6	9.5	12.6	2.0	3.7	6.1	4	33	18	44	24	33	18	29	16	39	22	29	16
4500	4000	*200	180	200	6.9	17.0	21.0	12.6	11.4	12.6	2.1	5.2	6.4	4	37	21	41	23	37	21	32	18	36	20	32	18
5000	4500	*200	180	200	7.2	18.0	22.0	12.6	11.4	12.6	2.2	5.5	6.7	4	41	23	46	26	41	23	36	20	40	22	36	20

Sizes 1200, 1430, 1670 and 1825 (with soft water) must be ordered with cupro-nickel heat exchanger tubes to prevent erosion.

\*Numbers for indoor sizes 3050-5000 and outdoor sizes 2800-4500 (with soft water) are for single-pass heat exchangers to prevent erosion.

**KEY:** Water category grain hardness per gallon. **S**=Soft - 1 through 7.5; **N** = Normal - 7.6 through 17; **H** = Hard - Over 17.

17.1 parts per million = 1 grain hardness per gallon.

## PUMP ELECTRICAL DATA - PW/IW

Sizes	Water Category					
	Power (HP)			Current (Amps)		
	Soft	Normal	Hard	Soft	Normal	Hard
175-400	1/12	1/6	1/2**	1.4	2.1	5.8**
500-715	1/3	1/3	3/4	5.4	5.4	8.8
850-1430	1/3	1/2	3/4	5.4	5.8	8.8
1670	1/3	3/4	3/4	5.4	8.8	8.8
1825	3/4	3/4	3/4	8.8	8.8	8.8

Data is shown for 115 volt single phase motors.

\*\*Pumps are not supplied on hard water application. This is the recommended pump specification for field application.

## MODELS AVAILABLE

### Model VW

Volume Water Heater

Completely assembled at the factory and simple to install. Sizes 175,000 to 400,000 BTU/hr. (51.3 to 117.2 kW) are combination indoor/outdoor. Sizes 500,000 to 5,000,000 BTU/hr. (146.5 to 1465.0 kW) can be ordered either indoor or outdoor. Both series are used in conjunction with storage wherever a large volume of hot water is required, such as apartments/condominiums, hotels, schools, hospitals and laundries.

### Model PW

Volume Water Heater with Pump

The addition of a factory mounted and matched pump provides installation and operation advantages of a packaged system. Pumps are sized for pressure drop through the heat exchanger plus 30 feet (9.1m) of full-sized pipe equal to flange size connections and normal fittings. Available with inputs from 175,000 to 1,825,000 BTU/hr (51.3 to 534.7 kW) for indoor or outdoor installations.

### Model IW

Instantaneous Volume Water Heater

Designed to deliver hot water using building piping instead of a storage tank. Suitable for applications with load diversity such as apartments/condominiums and motels. Available in both indoor and outdoor sizes 500,000 to 1,825,000 BTU/hr. (146.5 to 534.7 kW).



View our entire product line at [www.Laars.com](http://www.Laars.com)



**LAARS**<sup>®</sup>   
**Heating Systems Company**  
A subsidiary of **BRADFORD WHITE**<sup>™</sup> Corporation

800.900.9276 • Fax 800.559.1583 (Customer Service, Service Advisors)  
20 Industrial Way, Rochester, NH 03867 • 603.335.6300 • Fax 603.335.3355 (Applications Engineering)  
1869 Sismet Road, Mississauga, Ontario, Canada L4W 1W8 • 905.238.0100 • Fax 905.366.0130

[www.Laars.com](http://www.Laars.com)