LAARS® LOW-TEMP PENNANT®

Low Return Water Temperature Boilers and Volume Water Heaters

LAARS®
Heating Systems Company
A subsidiary of BRADFORD WHITE® Corporation

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BOILERS AND WATER HEATERS

The Problem: When boilers and water heaters operate with return water temperature that is lower than specified by the manufacturer, condensation can form on the heat exchanger, inside the unit. This condensation can be destructive and can shorten the life of the heat exchanger, and even damage other parts of the unit. In the past, external by-pass piping, balancing valves, and careful water balancing were required to raise the internal temperature of the boiler water above the dew point to control condensation. Careful manual water balancing was required on start-up to protect the boiler from low return water temperature, and sometimes this procedure had to be repeated frequently as conditions changed within the system.

The Solution: A factory mounted three-way valve and an automatic by-pass system working in concert with the boiler operating control maintains a minimum boiler return temperature of 120˚F (49˚C). Heat exchanger condensation is prevented, ensuring a long boiler life, even when there are rapid swings in the return water temperature from the system. The Pennant LT can handle return water temperatures as low as 70˚F (21˚C) — making it the perfect unit for your low temperature boiler and water heater systems.

APPLICATIONS IDEAL FOR PENNANT LT:

- **Back-up to heat pump systems**
- **Radiant floor heating**
- **Snow melting systems**
- **Process water heating**
- **Low-temp baseboard systems**

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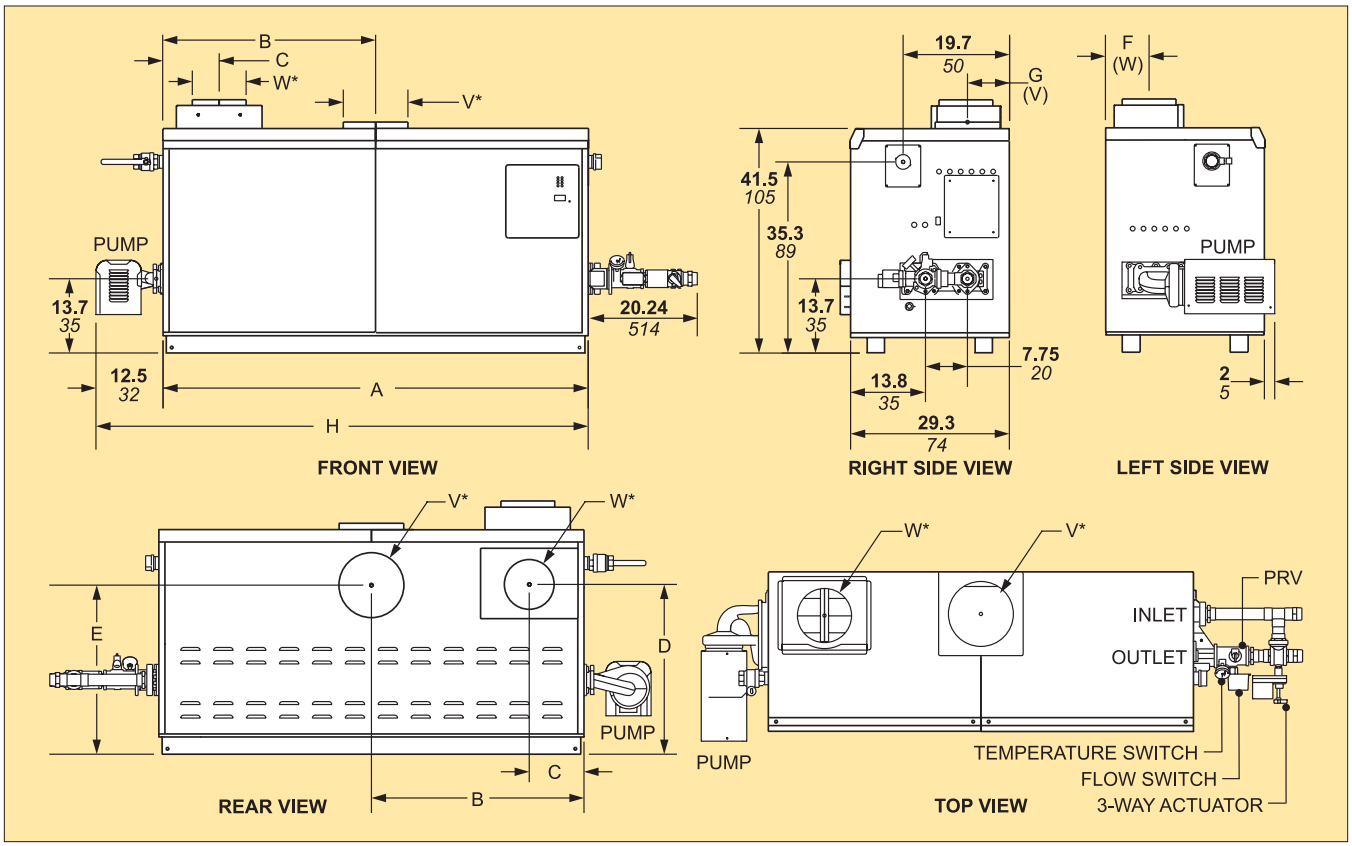
DIMENSIONAL AND SIZING DATA



Size	A		B		C		D		E		F		G		H		Air Conn. W*		Vent Conn. V*		Horiz Vent Pipe	
	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm
500	33 1/2	85	15 3/4	40	5 3/4	15	29 3/4	76	32 3/4	83	7 3/4	20	8 3/4	22	46	117	6	15	8	20	6	15
750	45 1/2	116	21 3/4	55	5 3/4	15	29 3/4	76	32 3/4	83	7 3/4	20	8 3/4	22	58	147	6	15	10	25	8	20
1000	57 1/2	146	28 3/4	73	5 3/4	15	29 3/4	76	32 3/4	83	7 3/4	20	7	18	70	178	8	20	10	25	8	20
1250	68	172	34	86	10 1/4	26	30 3/4	78	29 1/2	75	8 3/4	22	8 3/4	22	80	203	8	20	12	30	8	20
1500	78 1/2	199	39 3/4	101	10 1/4	26	30 3/4	78	29 1/2	75	8 3/4	22	8 3/4	22	91	231	8	20	12	30	8	20
1750	89	226	44 1/2	113	10 1/4	26	30 3/4	78	29 1/2	75	8 3/4	22	8 3/4	22	101	256	8	20	14	36	8	20
2000	99 1/2	253	49 3/4	126	10 1/4	26	30 3/4	78	29 1/2	75	8 3/4	22	8 3/4	22	112	284	12	20	14	36	12	30

*Air and vent connections may be on top or back of the Pennant, and are field convertible.

Size	Input[1] BTU/h x1000	Output[1] BTU/h x1000	IBR Net Rating[1, 3] BTU/h x1000	Gas Conn. Size Inches[2]	Heater Water Conn. Size Inches[2]	Shipping Weight lbs.	kg
500	500	425	361	1 1/4	2	495	225
750	750	638	524	1 1/4	2	575	261
1000	999	849	722	1 1/2	2	685	311
1250	1250	1063	903	2	2	730	331
1500	1500	1275	1084	2	2	830	377
1750	1750	1488	1264	2	2	880	400
2000	1999	1699	1444	2	2	1025	465

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. For other boiler ratings:
   Boiler Horsepower: HP = Output/33,475
   Radiation Surface: EDR sq. ft. = Output/150
   IBR sq. ft. = Net IBR/150

View our entire product line at www.Laars.com

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