

# **LAARS<sup>®</sup> PENNANT<sup>®</sup>**

## **Commercial Pool Heater**



- ✓ Low Temp Mixing System
- ✓ Backwash Switch
- ✓ 500-1999 MBTU
- ✓ Easy Installation
- ✓ Easy Maintenance

**HIGH-PERFORMANCE HEATING  
FOR COMMERCIAL SWIMMING  
POOLS AND WATER THEME PARKS**

**LAARS<sup>®</sup>**   
**Heating Systems Company**

# LAARS® PENNANT®

## HIGH PERFORMANCE POOL HEATERS

Since our beginning as Laars Engineering in 1948, Laars has embodied innovation and advancement in heating technology. We have built upon our technology over the past seventy plus years to ensure Laars products meet the demands of today's discerning customer. Laars stands behind each of its products with stringent quality standards which require each unit to be live-fired before it's packaged, and a service and support team that places the customer and their needs first – every time.



Laars Pennant commercial pool heaters are backed by over 70 years of manufacturing commercial pool heaters and offer many advanced features specific to the commercial swimming pool and water theme park markets.



### Low Return Water Temperature Mixing System

- Built-in automatic mixing system ensures water temperatures as low as 60°F do not cause problematic condensation
  - ✓ 3-way valve
  - ✓ Fast-acting actuator
  - ✓ Factory mounted and wired pump



### Environmentally Sound

- 85% + efficiency
- NOx emissions among the lowest in the industry



### Flexible Configurations

- Room or outside air
- Chimney or side-wall vent
- Indoor or outdoor installation
- Dual ignition system for models over 750,000 BTU



### Simple Install

- Factory pre-set auto by-pass system and combustion system
- Reversible vent and air intake terminals
- Reversible gas and water connections
- Laars Linc® intuitive touch screen control system
  - ✓ Quick start easy configuration
  - ✓ Intelligent redundancy
  - ✓ Auto cascade
  - ✓ 0 - 10,000 feet elevation installations with no need for component changes



### Easy Maintenance

- Backwash switch helps maintenance staff avoid nuisance high limit shut-downs during filter backwash, by allowing the Pennant pump to complete its cycle before shutting down
- Front panel diagnostics with the Laars Linc control
- Quick access panel for ignitor replacement

# SIZING CHART AND CLEARANCES DATA

## For Indoor Pool

The selection charts below will assist in choosing the correct size Pennant for an indoor pool.

1. Calculate the pool's surface area in square feet or meters
2. Find the closest surface area of the pool using the 10°F (6°C) Temperature Difference column.
3. Identify the heater model needed from the PNCP model column.

For normal conditions, Laars recommends using the 10°F (6°C) Temperature Difference column which provides a temperature increase of approximately 6°F (3°C) per 24 hour period.

## For Outdoor Pools

The selection charts below will assist in choosing the correct size Pennant for an outdoor pool.

1. Determine the difference between the desired pool temperature and the average air temperature during the coldest month in the which the pool will be used.
2. Calculate the surface area of the pool in square feet or meters.
3. Using the column which provides the closest Temperature Difference and then finding the closest Surface Area of the Pool in that column, identify the recommended PCNP model.

Listed are the maximum pool surface areas for each heater model with typical temperature differences.

TEMPERATURE DIFFERENCE									
	10°F 6°C	15°F 8°C	20°F 11°C	25°F 14°C	30°F 17°C	35°F 19°C	40°F 22°C	45°F 25°C	50°F 28°C
PNCP	SURFACE AREA OF POOL								
Model	sq. ft. sq. m	sq. ft. sq. m	sq. ft. sq. m	sq. ft. sq. m	sq. ft. sq. m	sq. ft. sq. m	sq. ft. sq. m	sq. ft. sq. m	sq. ft. sq. m
500	4090 370	2720 250	2040 180	1630 150	1360 120	1170 100	1020 90	910 80	810 70
750	6130 560	4090 370	3060 280	2450 220	2040 180	1750 160	1530 140	1360 120	1220 110
1000	8180 750	5450 500	4090 370	3270 300	2720 250	2340 210	2040 180	1820 160	1630 150
1250	10230 950	6820 630	5110 470	4090 370	3410 310	2920 270	2550 230	2280 210	2040 180
1500	12270 1130	8180 750	6130 560	4910 450	4090 370	3510 320	3060 280	2730 250	2450 220
1750	14320 1330	9540 880	7160 660	5720 530	4770 440	4090 370	3580 330	3190 290	2860 260
2000	16370 1520	10910 1010	8180 750	6540 600	5450 500	4680 430	4090 370	3650 330	3270 300

## Clearances

APPLIANCE SURFACE	CLEARANCE FROM COMBUSTIBLE MATERIAL	SERVICE ACCESS CLEARANCE
Right Side	1" 2.5 cm	24" 61 cm
Left Side	1" 2.5 cm	24" 61 cm
Front	1" 2.5 cm	36" 91 cm

APPLIANCE SURFACE	CLEARANCE FROM COMBUSTIBLE MATERIAL	SERVICE ACCESS CLEARANCE
Top	1" 2.5 cm	12" 30 cm
Back*	1" 2.5 cm	12" 30 cm
Vent	Per venting system supplier's instructions	

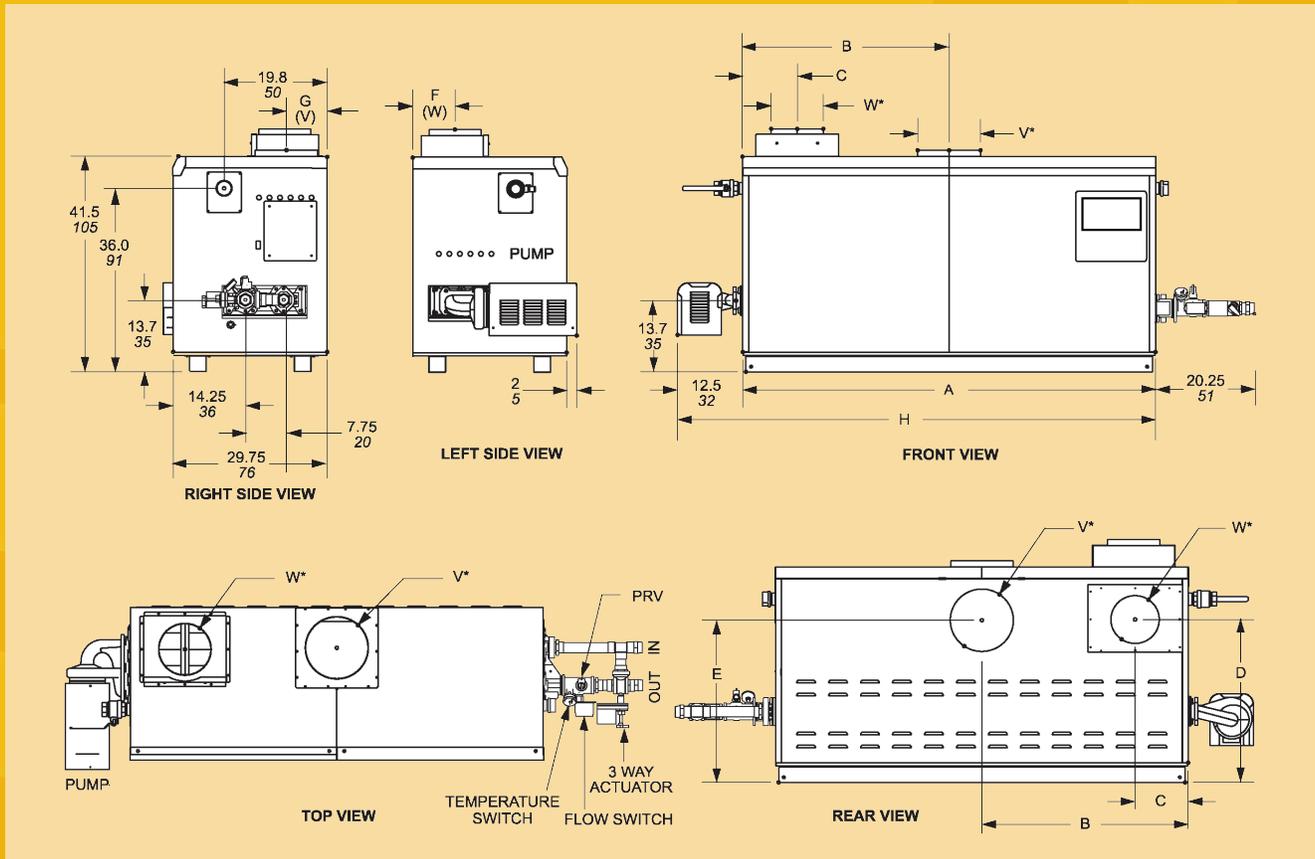
\*When vent and/or air is connected to the back, 36" (91 cm) is suggested.

## Sizing Data

INDOOR MODEL	INPUT <sup>1</sup> BTU/H x1000	OUTPUT <sup>1</sup> BTU/H x1000	GAS CONN. SIZE inches <sup>2</sup>	HEATER WATER CONN. SIZE inches <sup>2</sup>	MIXING SYSTEM WATER CONN. SIZE inches <sup>2</sup>	SHIPPING WEIGHT	
						lbs.	kg
500	500	425	1¼	2	2	775	352
750	750	638	1¼	2	2	870	395
1000	999	849	1½	2½	2	1035	469
1250	1250	1063	2	2½	2	1130	513
1500	1500	1275	2	2½	2	1285	583
1750	1750	1488	2	2½	2	1380	626
2000	1999	1699	2	2½	2	1510	685

**NOTE:** 1. Input and output must be derated 2% per 1000 feet above sea level when installed above 2000 feet altitude.

# DIMENSIONAL DATA



SIZE	A	B	C	D	E	F	G	H	AIR CONN. W*	VENT CONN. V*	HORIZ. VENT PIPE
500	33½ 85	15¾ 40	5¼ 15	29¾ 76	33¾ 86	7¾ 20	8¾ 22	46 117	6 15	8 20	6 15
750	45½ 116	21¾ 55	5¼ 15	29¾ 76	33¾ 86	7¾ 20	8¾ 22	58 147	8 20	10 25	8 20
1000	57½ 146	28¾ 73	5¼ 15	29¾ 76	33¾ 86	7¾ 20	7 18	70 178	8 20	10 25	8 20
1250	68 172	34 86	10¼ 26	30¾ 78	31½ 79	8¾ 22	8¾ 22	80 203	12 30	12 30	10 25
1500	78½ 199	39¾ 101	10¼ 26	30¾ 78	31½ 79	8¾ 22	8¾ 22	91 231	12 30	12 30	10 25
1750	89 226	44½ 113	10¼ 26	30¾ 78	31½ 79	8¾ 22	8¾ 22	101 256	12 30	14 36	12 30
2000	99½ 253	49¾ 126	10¼ 26	30¾ 78	31½ 79	8¾ 22	8¾ 22	112 284	12 30	14 36	12 30

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



**LAARS**  
Heating Systems Company

Customer Service and Product Support: 800.900.9276 • Fax 800.559.1583

Headquarters: 20 Industrial Way, Rochester, NH 03867 • 603.335.6300 • Fax 603.335.3355

9 Brigden Gate, Halton Hills, Ontario, Canada, L7G 0A3 • 905.203.0600 • Fax 905.636.0666

www.LAARS.com