FULL-LINE POCKET CATALOG

LAARS®
Heating Systems Company
A subsidiary of BRADFORD WHITE® Corporation
Built to be the Best™

Open this Catalog!

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Click onto the Product that you are interested in.

COMPANY HISTORY

In 1948, engineer Avy Miller formed Laars Engineering as a company dedicated to the concept of heating water quickly by passing the water through finned copper tube heat exchangers. Miller realized that moving water at high velocity through "low-mass" heat exchangers such as finned copper tubing, could heat water up to nine times faster than through cast iron vessels. Miller designed specialized manufacturing techniques to support this new concept, and the "low-mass" technology found a warm reception in the U.S. market.

First applied to the swimming pool heater market that emerged rapidly in California after WWII, the heat exchanger designs that Laars developed also proved to work well with space-heating boilers and hot water boilers. After all, if a Laars heat exchanger could work well with swimming pool water with all of the chemicals and impurities, it could work even better with clean domestic hot water and closed loop hydronic systems.

The Laars heat exchangers with their higher velocity water flow also solved another problem — that of scale build-up in the tubes. By controlling flow rates, lime and scale were prevented from forming on tube walls, thereby keeping the heat transfer process clean and efficient.

Today, Laars Heating Systems operates as a subsidiary of the Bradford White Corporation with manufacturing in Rochester, NH and a distribution center in Halton Hills, Ontario, Canada. Laars serves a diverse base of customers located in many countries all over the globe, and Laars product lines have expanded over the years to cover the large range from 50,000 to 5,000,000 BTU's. Laars' residential and commercial products serve the hydronic, radiant floor heating, volume water heating, and industrial process markets with over 20 different product lines and many accessories and controls to support these primary lines. 800.900.9276

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WWW.LAARS.COM ONLINE TOOLS

Electronic Literature Downloads

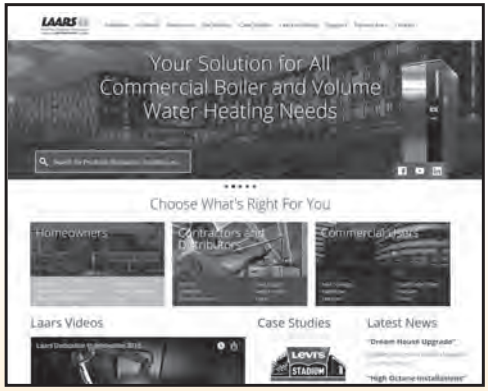
- Sales Brochures
- Installation/Operating Manuals
- User's Manuals
- Specification Sheets
- Submittal Documents
- Technical Discussions
- Warranty Sheets
- Master Spec Documents

Printed Literature Ordering

- Printed literature can be ordered easily online at www.laars.com.

Product Videos

- Learn about the latest boiler technology directly from Laars factory experts.
- View our Service Videos to get information regarding cleaning and maintenance of our product lines.



Volume Water Heater Sizing

- Properly size and specify Laars Volume Water Heaters via the online Laars sizing tool!

Parts Identification

- The Laars Parts ID portal allows you to identify the correct parts needed for repairs based on serial number. Make sure you get the correct part every time!

Partner Area

- Representatives and distributors are allowed access to their account, order, and shipping information along with bulletin notices and updates. A very powerful way to track your business with Laars.

Revit Drawings

Training Classes

VISIT – WWW.LAARS.COM TODAY!

LAARS HEATING SYSTEMS CUSTOMER CENTER

The Laars Customer Center is designed to educate HVAC professionals on hydronic systems and Laars' current and next generation heating technology. Flexibility in training content and techniques was the primary focus when building the facility and curriculum; here you are the most important person in the building.

KEY FEATURES

- **70-seat tiered classroom** that can be used as one large room or divided into two 35-seat classrooms.
- **Hands-on training:** Laars boilers, water heaters, and pool heaters are located in front of each 35-seat classroom.
- **Live-fired boilers during training sessions:** continuously operated equipment right in training room with BTU's as high as 2 million.
- **State-of-the-art high-definition audio/video system:** Large screens above the equipment bays connect the classroom experience with the live-fired equipment. The projectors tie into **ceiling-mounted HD cameras** for **up-close views of the system components** for an **enhanced experience.**
- **The latest video conference hub technology:** Laars invested in cutting-edge equipment to provide live web-streaming of the training sessions and to record the classes for later viewing. This function offers flexibility for those that can't travel, and for follow-up training sessions after live sessions.
- A large **café with adjacent large outdoor patio** is located just off the main lobby for catered meals and socializing after training.

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TYPICAL CLASS AGENDA

Tuesday: 8:00 am factory tour followed by presentations, live-fire demos, and hands-on troubleshooting Dinner will be served Tuesday night in the LAARS Cafe.

Wednesday: 8am to 1:00 pm, dismissal after lunch.

Laars will cover the hotel for 2 nights, breakfast and lunch on Tuesday and Wednesday plus dinner on Tuesday at the LAARS Café.

Classes are typically either commercial product or residential product.

Visit www.laars.com for details. Standard service training is offered throughout the year.

We offer custom classes to fit your group's specific needs for contractors and engineers, from basic through advanced training. Or sign up and train in one of our standard service training programs.

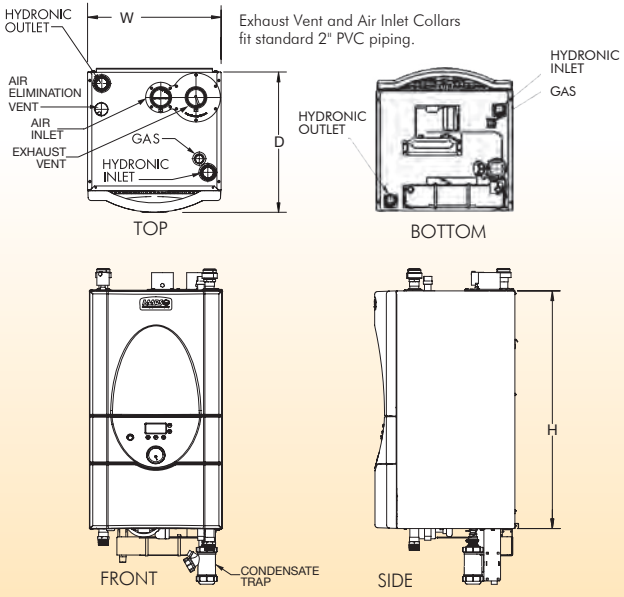
Sign up online at www.laars.com or contact your local representative for more information!

MASCOT® LX BOILER OR COMBINATION - WALL MOUNTED

Most Efficient
ENERGY STAR www.energystar.gov

The Mascot® LX is a wall mounted 50–220 MBH, space heating boiler. The 125, 150, and 175 MBH sizes are also offered as Combination Boilers to meet all of the heating and hot water needs of the smallest to largest homes.

- 95% AFUE efficiency
- Heating Sizes: 50, 75, 100, 125, 150, 175, and 220 MBH
- Combination Boiler Sizes: 125, 150, and 175 MBH
- Fully modulating 20% to 100%
- Boilers cascade up to a total of 8 units
- Quiet variable speed blower
- Pump Freeze Protection
- Ultra-Low NOx Emissions
- 2-year parts warranty
- 15-year heat exchanger warranty
- Natural or Propane Gas use
- Sleek, appliance-grade cabinet
- Lightweight, makes handling easy
- 150' of vent
- Stainless steel A.S.M.E. heat exchanger
- Stainless steel brazed plate DHW heat exchanger (combi models)
- Advanced water flow technology
- Laars integrated control system with temperature control, diagnostics, outdoor reset capability, and easy access for field wiring
- Unique, sealed condensate trap does not need to be primed at startup



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MASCOT® LX SPECIFICATIONS

Model	Input MBTU/h	Input kW	Output MBTU/h	Output kW	Gas Connection Size inches	Water Connection Size inches	Shipping Weight lbs.	Shipping Weight kg
MLX 50	50	*14.6*	47.5	*13.7*	½ NPT	¾ NPT	88	*40*
MLX 75	75	*21.9*	71.3	*20.6*	½ NPT	¾ NPT	97	*44*
MLX 100	100	*29.3*	95.0	*27.5*	½ NPT	¾ NPT	112	*51*
MLX 125*	125	*36.6*	118.8	*34.5*	½ NPT	¾ NPT	126	*57*
MLX 150*	150	*43.9*	142.5	*41.5*	½ NPT	1 NPT	140	*64*
MLX 175*	175	*51.6*	166.3	*48.3*	½ NPT	1 NPT	153	*69*
MLX 220	220	*64.4*	209.0	*60.6*	½ NPT	1 NPT	161	*73*

Appliance Surface	Suggested Service Access Clearance Inches	cm
Left Side	**6**	*15*
Right Side	**6**	*15*
Top	**12**	*30*
Closet, Front	**6**	*15*
Front	**24**	*61*
Vent	**1**	*3*

Certified by CSA for zero clearance to combustible materials on all sides

*Available as Combination Boilers

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

Combi Model	35ºF Rise GPM	35ºF Rise l/m	45ºF Rise GPM	45ºF Rise l/m	77ºF Rise GPM	77ºF Rise l/m	DHW Connection Size in.
MLXCW125	6.8	*24.6*	5.3	*20.1*	3.1	*11.7*	½
MLXCW150	8.1	*30.1*	6.3	*23.8*	3.7	*14.0*	½
MLXCW175	9.5	*36.0*	7.4	*28.0*	4.3	*16.3*	½

Model	W in.	W cm	H in.	H cm	D in.	D cm
MLX50, 75	17	*43*	30½	*78*	15¼	*39*
MLX100	17	*43*	30½	*78*	18	*46*
MLX125	17	*43*	30½	*78*	18	*46*
MLX150, 175	17	*43*	35½	*90*	18	*46*
MLX220	17	*43*	38½	*90*	18	*46*

Dimensions

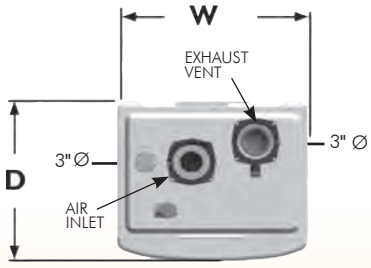
MASCOT® FT BOILER OR COMBINATION - WALL MOUNTED

Most Efficient
ENERGY STAR www.energystar.gov

The Mascot FT is a wall mounted 80 to 199 MBH space heating boiler. The larger sizes (140 - 199 MBH) are also offered as combination boilers to meet all of the heating and hot water needs of the smallest to largest homes. Powering the Mascot FT is an advanced fire tube heat exchanger that uses the latest in high efficiency, heating tube technology.

The FT boilers are cascadable up to 20 total units.

- 95% AFUE condensing efficiency
- Low pressure drop, fire tube heat exchanger design
- Up to 10:1 Modulation.
- Low NOx system exceeds the most stringent regulations for air quality – 17ppm NOx
- Stainless steel heat exchanger with finned aluminum core fire tubes, welded construction
- Integrated stainless steel DHW indirect storage tank with priority for on-demand hot water
- Built-in condensate trap and drain, priming not required
- Blocked condensate pressure switch
- Electronic PID modulating control
- Direct spark ignition
- Customizable Freeze Protection
- Anti-short cycling
- Large user-interface and display
- Accepts external (0-10VDC) modulation signal
- Gas leak detection
- Outdoor reset (sensor included)
- Natural or Propane Gas use.
- Warranties: 10-Year limited* + 5-Year parts



Exhaust Vent and Air Inlet Collars fit standard 3" PVC piping.

Heating Only

Combi

Intertek ASME H ENERGY STAR AHRI CERTIFIED

*When used in a residential application

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MASCOT FT SPECIFICATIONS

Model	Input		Output		AFUE%	Gas Conn. Size	Heating Supply & Return Conn. Size (inches)		Boxed Weight (Heating Only Units)	
	MBTU/h	kw	MBTU/h	kw			Heating Only	Combi	lbs.	kg
MFT080	80	23	74.4	22	95	3/4 NPT	1 1/2 NPT	1 NPT	98	44
MFT100	100	29	93.0	27	95	3/4 NPT	1 1/2 NPT	1 NPT	98	44
MFT120	120	35	111.6	33	95	3/4 NPT	1 1/2 NPT	1 NPT	102	46
MFT140*	140	41	133.0	39	95	3/4 NPT	1 1/2 NPT	1 NPT	102**	46
MFT199*	199	58	189.1	55	95	3/4 NPT	1 1/2 NPT	1 NPT	118**	54

* Available as Boilers and as Combination Boilers

** Combination boilers have a shipping weight of approximately 10 lbs more than the Heating Only unit of the same size.

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

Combi Model	35°F Rise		45°F Rise		77°F Rise		Stored DHW		DHW Conn. Size
	GPM	l/m	GPM	l/m	GPM	l/m	Gallons	liters	(inches)
MFT140	7.1	27	5.5	21	3.2	12	0.5	1.9	3/4 NPT
MFT199	9.8	37	7.7	29	4.8	18	0.5	1.9	3/4 NPT

Dimensions

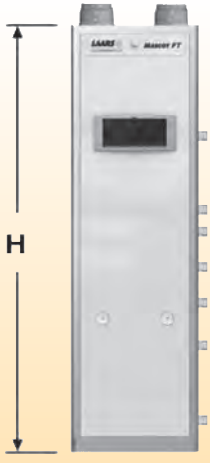
Model	W		H		D	
	in.	cm	in.	cm	in.	cm
MFT080	17.3	44	29	74	14.9	38
MFT100	17.3	44	29	74	14.9	38
MFT120	17.3	44	29	74	14.9	38
MFT140	17.3	44	29	74	14.9	38
MFT199	19.6	50	32	81	16.2	41

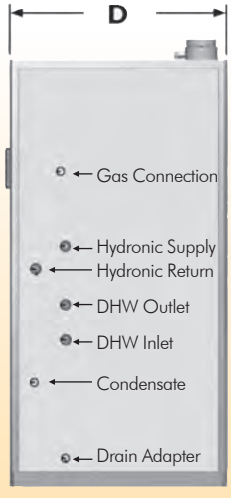
MASCOT® FT COMBI BOILER - FLOOR STANDING

The Mascot FT is a combination (heating and domestic hot water) boiler packed with features that easily satisfy the space heating and hot water needs of the modern home. Powering the Mascot FT is an advanced fire tube heat exchanger that uses the latest in high efficiency, heating tube technology.

- 95% AFUE condensing efficiency
- Integrated stainless steel DHW indirect 3 gallon storage tank with priority for on-demand hot water
- Low pressure drop, fire tube heat exchanger design
- Up to 10:1 Modulation.
- Low NOx system exceeds the most stringent regulations for air quality – 17ppm NOx
- Stainless steel heat exchanger with finned aluminum core fire tubes, welded construction
- Built-in condensate trap and drain, priming not required
- Blocked condensate pressure switch
- Electronic PID modulating control
- Direct spark ignition
- Customizable Freeze Protection
- Anti-short cycling
- Large user-interface and display
- Accepts external (0-10VDC) modulation signal
- Gas leak detection
- Outdoor reset (sensor included)
- Natural or Propane Gas use.
- Warranties: 10-Year limited* + 5-Year parts

*When used in a residential application





Exhaust Vent and Air Inlet Collars fit standard 3" PVC piping.

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MASCOT FT SPECIFICATIONS

Model	Input MBTU/h	Input kW	Output MBTU/h	Output kW	AFUE%	Gas Conn. Size in.	Heating Supply & Return Conn. Size in.	DHW Conn. Size in.	Boxed (shipping) Weight lbs.	Boxed (shipping) Weight kg
MFTCF140	140	41	133	39	95%	½ NPT *	1 NPT	¾ NPT	230	104
MFTCF199	199	58	189	55	95%	¾ NPT	1 NPT	¾ NPT	242	120

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

* ¾" Coupling is included with installation kit.

Combi Model	35°F Rise GPM	35°F Rise l/m	45°F Rise GPM	45°F Rise l/m	77°F Rise GPM	77°F Rise l/m	Stored DHW Gallons	Stored DHW liters
MFTCF140	7.1	27	5.5	21	3.2	12	3.0	11.4
MFTCF199	9.9	38	7.7	29	4.8	18	3.0	11.4

Dimensions

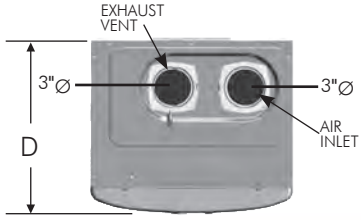
Model	W in.	W cm	H in.	H cm	D in.	D cm
MFTCF140	15.7	40	52.4	133	26.8	68
MFTCF199	15.7	40	53.7	136	26.8	68

MASCOT ST TANKLESS WATER HEATER—WALL MOUNTED

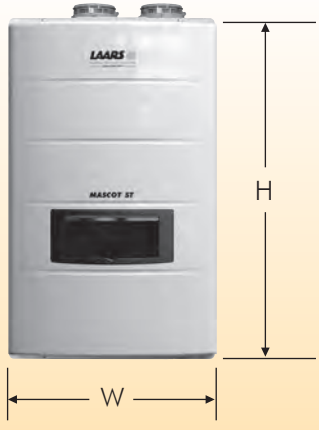
The Mascot ST is a wall mounted condensing tankless water heater packed with features. An advanced stainless steel condensing heat exchanger using the latest in combustion technology powers the Mascot ST. The heat transfer tubes are constructed with corrosion-resistant stainless steel and are precisely aligned to maximize heat transfer.
Cascadable up to 18 total units.

- 0.96 Energy Factor
- 10:1 Modulation
- Environmentally Friendly
- Low NOx Emissions
- Reliable Stainless Steel Condensing Heat Exchanger
- Vent up to 100ft in PVC, CPVC & Polypropylene
- Natural Gas & Propane Models
- Easy-to-use dial and push button input system with large backlit display
- Functions are clearly displayed for quick setup and diagnostics
- Quick access buttons for temperature control and status functions
- Rebate Eligible - check federal, state and local rebates
- High Performance Blower
- Automatic Air Gas Mixer
- Advanced Condensing Heat Exchanger
- Laars Integrated Control
- Clean Burning Burner
- Warranties: 12-Year limited* + 5-Year parts

*When used in a residential application



Exhaust Vent and Air Inlet Collars fit standard 3" PVC piping.



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MASCOT ST SPECIFICATIONS

Model	Input MBTU/h	Input kW	Output MBTU/h	Output kW	Efficiency (Energy Factor)	Gas Conn. Size in.	Heating Supply & Return Conn. Size in.	DHW Conn. Size in.	Boxed (shipping) Weight lbs.	Boxed (shipping) Weight kg
MSTWW199	190	58	183	56	0.96	3/4 NPT	3/4 NPT	3/4 NPT	100	45

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

Model	35°F Rise GPM	35°F Rise l/m	45°F Rise GPM	45°F Rise l/m	77°F Rise GPM	77°F Rise l/m	Stored DHW Gallons	Stored DHW liters
MSTWW199	10.0	38	8.0	30	5.0	19	1.0	3.8

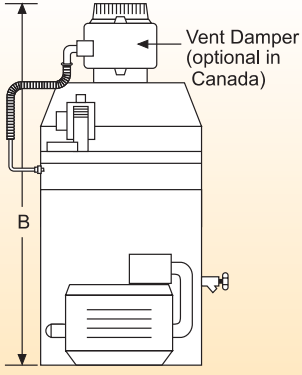
Dimensions

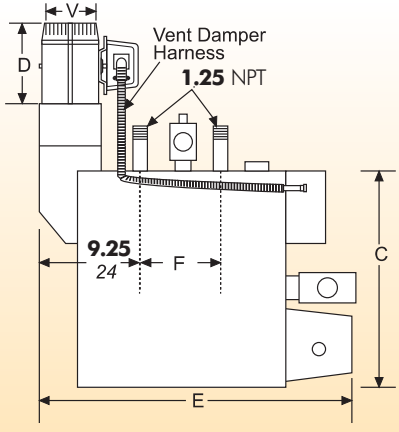
W in.	W cm	H in.	H cm	D in.	D cm
17.3	44	27.6	70	14.8	36

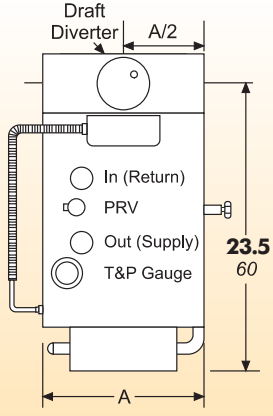
MINI-THERM® JVS BOILER

The Mini-Therm® JVS boilers are well-known for economy, durability, and the capacity to keep the largest homes comfortable on the coldest days.

- Spark ignition
- Efficient up to 85% AFUE
- Built-in draft diverter and automatic vent
- Low-mass heat exchanger results in super-quick heating response
- Very compact to save space
- Easy to install, reliable, and proven in the field over many years
- Has a unique hybrid and two-pass heat exchanger design
- 20-Year pro-rated heat exchanger warranty







Dimensions shown in **inches** *mm*

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MINI-THERM® JVS SPECIFICATIONS

Model	Input MBTU/h	Input kW	Heat Capacity MBTU/h JVS Natural	Heat Capacity MBTU/h JVS Propane	Heat Capacity kW JVS Natural	Heat Capacity kW JVS Propane	AFUE % JVS Natural	AFUE % JVS Propane
JVS050	50	*14.7*	43	43	*12.6*	*12.6*	85.0	85.4
JVS075	75	*22.0*	64	64	*18.8*	*18.8*	85.0	85.2
JVS100	100	*29.3*	85	85	*24.9*	*24.9*	85.0	85.0
JVS125	125	*36.6*	106	106	*31.1*	*31.1*	85.0	85.0
JVS160	160	*46.9*	136	136	*39.8*	*39.8*	85.0	85.0
JVS225	225	*65.9*	191	190	*56.0*	*55.7*	85.0	85.0

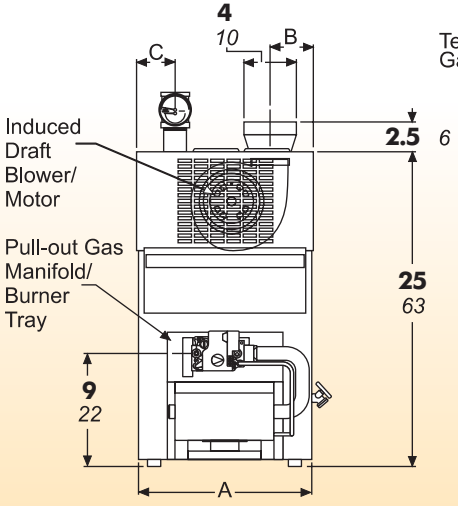
Model	A Inches	A *cm*	B Inches	B *cm*	C Inches	C *cm*	D Inches	D *cm*	E Inches	E *cm*	F Inches	F *cm*	V Inches	V *cm*	Water Conn. in.	Gas Conn. in.	Approx Weight lbs.	Approx Weight *kg*
JVS050	13 3/8	*34*	27 3/4	*71*	23 5/8	*60*	6	*15*	26 1/2	*67*	7	*18*	4	*10*	1 1/4	1/2	120	*54*
JVS075	13 3/8	*34*	27 3/4	*71*	24 1/8	*61*	6	*15*	27 1/2	*70*	7	*18*	5	*13*	1 1/4	1/2	126	*57*
JVS100	16 7/8	*43*	28 3/4	*73*	24 1/8	*61*	6	*15*	27 1/2	*70*	7	*18*	5	*13*	1 1/4	1/2	134	*61*
JVS125	16 7/8	*43*	28 3/4	*73*	23 5/8	*60*	6	*15*	27 1/2	*70*	7	*18*	6	*15*	1 1/4	1/2	138	*63*
JVS160	20 3/8	*52*	28 3/4	*73*	23 5/8	*60*	6	*15*	27 1/2	*70*	7	*18*	6	*15*	1 1/4	1/2	164	*74*
JVS225	20 5/8	*65*	31 1/2	*80*	23 1/4	*59*	6 3/4	*17*	27 1/2	*70*	8	*20*	7	*18*	1 1/4	3/4*	181	*82*

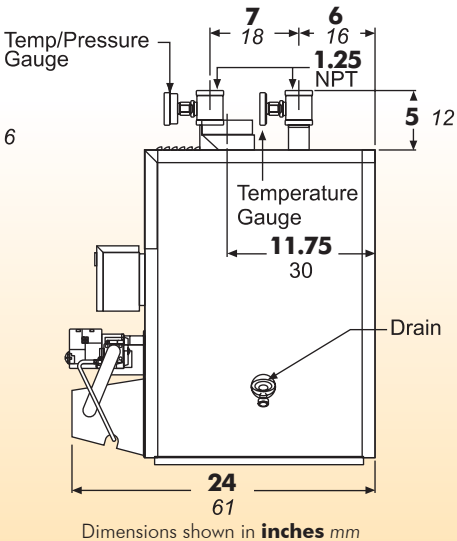
*JVS 225 uses 1/2" NPT gas connection for propane

MINI-THERM® JVH BOILER

The Mini-Therm® JVH has been in production for decades and is well known by contractors, making it ideal for new homes or replacement boilers. The JVH boiler is equipped with a draft blower that permits side-wall or chimney venting and uses H.S.I. (hot surface ignition) to operate all six sizes.

- Hot surface ignition system
- Up to 83% AFUE
- Single-stage on/off firing mode
- Equipped with a blower
- Can be side-wall or chimney vented
- Compact models offer small footprint
- Easy to install, operate and maintain
- Has a unique hybrid and 2 pass heat exchanger design
- 20-Year pro-rated heat exchanger warranty





Dimensions shown in **inches** *mm*

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MINI-THERM® JVH SPECIFICATIONS

Model	Input		Heat Capactiy MBTU/h		Heat Capacity kW		AFUE %	
	MBTU/h	*kW*	Natural	Propane	*Natural*	*Propane*	Natural	Propane
JVH050	50	*14.7*	41	42	*12.0*	*12.3*	83.4	84.0
JVH075	75	*22.0*	62	63	*18.2*	*18.5*	83.2	84.0
JVH100	100	*29.3*	82	83	*24.0*	*24.3*	82.4	84.0
JVH125	125	*36.6*	102	103	*29.9*	*30.2*	82.4	82.8
JVH160	160	*46.9*	131	132	*38.4*	*38.7*	82.3	82.4
JVH225	225	*65.9*	184	187	*53.9*	*54.8*	82.2	83.2

Model	Dimensions A		B		C		Water Connection in.	Gas Connection in.	Approx Weight	
	Inches	*cm*	Inches	*cm*	Inches	*cm*			lbs.	*kg*
JVH050	13 3/8	*34*	3 1/8	*8*	2 7/8	*7*	1 1/4	1/2	120	*54*
JVH075	13 3/8	*34*	2 1/4	*6*	2	*5*	1 1/4	1/2	126	*57*
JVH100	16 7/8	*43*	5 3/4	*15*	2 7/8	*7*	1 1/4	1/2	134	*61*
JVH125	16 7/8	*43*	5 1/2	*14*	2	*5*	1 1/4	1/2	138	*63*
JVH160	20 3/8	*52*	7 1/4	*19*	2	*5*	1 1/4	1/2	164	*74*
JVH225	20 5/8	*65*	10	*26*	2	*5*	1 1/4	3/4*	181	*82*

*JVH 225 uses 1/2" NPT gas connections for propane.

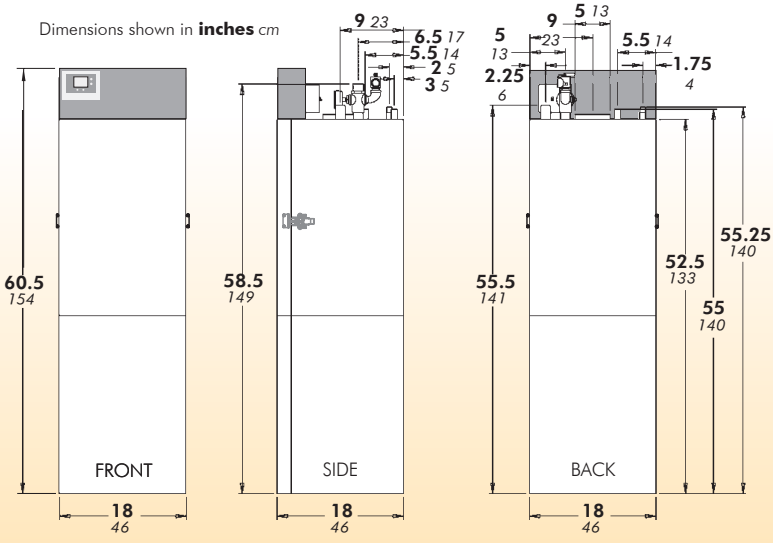
For complete product details and dimensions go to **www.laars.com/document-downloads/submittal-documents**

ENDURANCE® COMBINATION BOILER/WATER HEATER

Endurance® is a gas-fired, modulating, sealed combustion combination boiler/water heater offered in two sizes: the 110 modulates from 61,800 to 108,200 BTU/hr., and the 175 modulates from 102,900 to 175,300 BTU/hr.

- 85%+ A.F.U.E
- Features a 20-gallon tank, heat exchanger, and low limit control
- Design certified and tested to ANSI standard Z21.13
- Designed and constructed in accordance with the ASME Boiler & Pressure Vessel Code, Sections II, IV, and IX
- Maximum working pressure — water 30 psi, ASME rated
- Hydrostatic test pressure at factory — 60 psi
- Natural or propane gas
- Minimum gas supply pressure — 4" w.c.
- Maximum gas supply pressure — 13" w.c.
- Sealed stainless steel combustion chamber
- Hot surface ignition
- Automatic burner modulation from 57% to full fire
- NOx levels less than 25ppm
- Venting – Direct vent (sealed combustion with ducted combustion air in concentric vent) or Category IV
- Warranties: 20-Year heat exchanger + 10-Year tank warranty + 1-Year parts

Dimensions shown in **inches** *cm*



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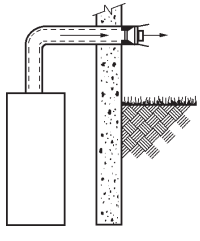
ENDURANCE SPECIFICATIONS

Model	Input MBTU/h	Input *kW*	Output MBTU/h	Output *kW*	AFUE%	Continuous GPH @ 100˚F Rise	Intermittent DHW Output @ 77˚F Rise	NOx Levels ppm
EBP 110	61.8 to 108.2	*18.1 to 31.7*	53.7 to 94	*5.7 to 27.5*	85.5	114	4 gpm	<25
EBP 175	102.9 to 175.3	*30.1 to 51.4*	88.6 to 151	*25.4 to 44.2*	86.1	183	5 gpm	<25

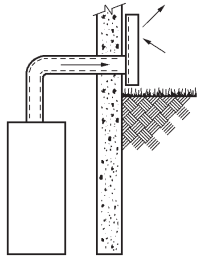
MINIMUM CLEARANCES

Appliance Surface	Minimum Clearance from Combustible Material Inches	*mm*	Suggested Serviceability Clearance Inches	*mm*
Back	**1**	*25*		
Left Side	**1**	*25*	**6**	*152*
Right Side	**1**	*25*	**6**	*152*
Front	**1**	*25*	**18**	*457*
Top (Alcove Install)	**1**	*25*		
Top (Closet Install)*	**22**	*559*		
Vent: Concentric, Direct	**0**	*0*		
Vent: Category IV	**3**	*76*		

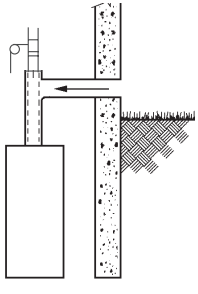
*Minimum closet height 6'9" (206cm)



Direct Vent
SEALED COMBUSTION
1. Utilizes outside air for combustion.
2. Horizontal vent lengths up to 15' with three 90° bends.



Optional Vent Terminal-Direct Vent
1. For vent locations less than 16½" above grade.

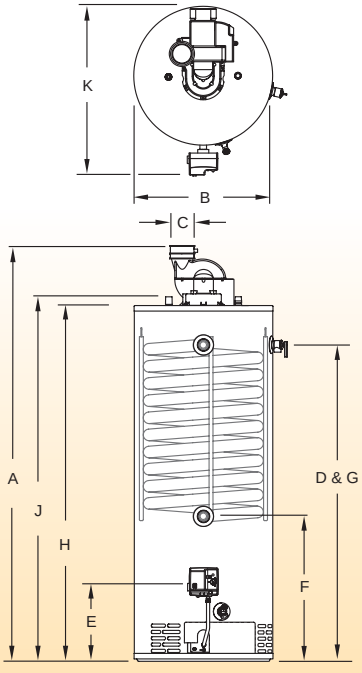


Alternative Vent
1. Horizontal and vertical venting.
2. Up to 50 equivalent feet.
3. Can take combustion air from outside or from inside space.
4. Vent material must meet code UL1738 (US) or ULC636 (Canada).

LAARS COMBI HEAT™ WATER HEATERS

Laars Combi Heat™ provides home space heating and potable hot water from a single energy-saving source. Combi Heat™ features a glass-coated, double-wall heat exchanger coil and is available in capacities of 50 and 75-gallons.

- Heat Exchanger is double wall, 1-1/2" O.D. glass coated steel coil
- Double wall coil ensures separation of potable water and heating fluid
- Up to 10 GPM flow, with less than 5 ft. of heat exchanger head loss
- Exclusive enamel tank and heat exchanger lining provides superior protection
- Fully Automatic Controls with built-in energy cut-off switch
- Built-in gas pressure regulation
- Heavy gauge steel automatically formed, rolled, and welded
- Thermostatic Mixing Valve supplied with unit
- Protective aluminum anode rod helps prevent corrosion
- Flue baffle maximizes heat absorption in tank and retards standby heat loss
- Factory-installed water inlet sediment reducing device prevents build up in tank
- 3/4" NPT factory-installed true dielectric waterway fittings to extend water heater life
- 2" Non-CFC foam insulation
- T&P Relief Valve installed
- Brass Drain Valve
- Design-Certified by CSA International
- 50-gallon model is FVIR compliant
- Warranties: 10-Year heat exchanger + 6-Year parts



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LAARS COMBI HEAT™ SPECIFICATIONS

Model*	Capacity U.S. Gal.	Capacity Imp. Gal.	Nat. MBTU/h Input	LP. MBTU/h Input	Recovery 90°F Rise* Nat. U.S. Gal.	Nat. Imp. GPH	Nat. U.S. GPH	LP Imp. GPH	A Floor to Vent Conn. in.	B Jacket Dia. in.	C Vent Size in.	D Floor to T&P Conn. in.	E Floor to Gas Conn. in.	F Floor to Exchanger Inlet in.	G Floor to Exchanger Outlet in.	H Floor to Heater Top in.	J Floor to Water Conn. in.	K Depth in.	Approx. Shipping Weight lbs
LCH-504T10FBN	45	38	65	61	70	59	66	55	59 1/4	22	4	50	13	28	50	56 3/8	57	24 1/4	238
LCH-75T10BN	72	61	76	76	81	70	81	70	63 3/4	26	4	53	16	30 7/8	53	60 1/4	61 1/4	28 1/2	328

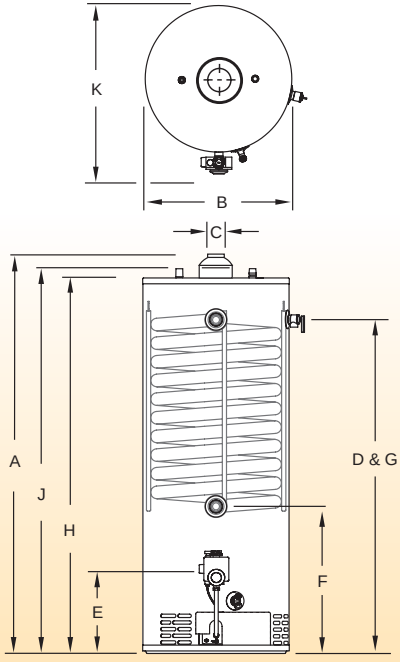
Model	Capacity Liters	Nat. kW Input	LP. kW Input	Recovery 50°C Rise Nat. Liters/ Hour	LP Liters/ Hour	A Floor to Vent Conn. cm.	B Jacket Dia. cm.	C Vent Size cm.	D Floor to T&P Conn. cm.	E Floor to Gas Conn. cm.	F Floor to Exchanger Inlet cm.	G Floor to Exchanger Outlet cm.	H Floor to Heater Top cm.	J Floor to Water Conn. cm.	K Depth cm.	Approx. Shipping Weight kg
LCH-504T10FBN	170	19.1	17.9	265	250	150	56	10	127	33	71	127	143	145	62	108
LCH-75T10BN	272	22.3	22.3	317	317	177	66	10	135	41	78	135	153	156	72	149

*All propane heaters are equipped with a cast iron burner. To order a propane heater change suffix from "BN" to "CX"

LAARS COMBI HEAT™ PV WATER HEATERS

Combi Heat™ PV (power-vented) water heaters feature a glass-coated, double-wall heat exchanger coil. These combination water and space heating products provide home space heating and potable hot water from a single energy-saving source.

- Heat Exchanger is double wall, 1-1/2" O.D. glass-coated steel coil
- Double wall coil ensures separation of potable water and heating fluid
- Powerful and quiet blower motor has high torque to minimize venting issues
- Spark to pilot ignition system
- Up to 10 GPM flow, with less than 5 ft. of heat exchanger head loss
- Exclusive enamel tank and heat exchanger lining provides superior protection
- Electronic Gas valve offers precise temperature control for higher first hour delivery
- Horizontal and vertical venting
- Electronic control LED display to aid in start-up and diagnostics
- Built-in gas pressure regulation
- Heavy gauge steel automatically formed, rolled, and welded
- Thermostatic Mixing Valve supplied with unit
- Protective aluminum anode rod helps prevent corrosion
- Flue baffle maximizes heat absorption in tank and retards standby heat loss
- Factory-installed water inlet sediment reducing device prevents build-up in tank
- 3/4" NPT factory-installed true dielectric waterway fittings to extend water heater life
- 2" Non-CFC foam insulation
- T&P Relief Valve installed
- Brass Drain Valve
- Design-Certified by CSA International
- 50-gallon model is FVIR compliant
- Warranties: 10-Year heat exchanger + 6-Year parts



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LAARS COMBI HEAT™ PV SPECIFICATIONS

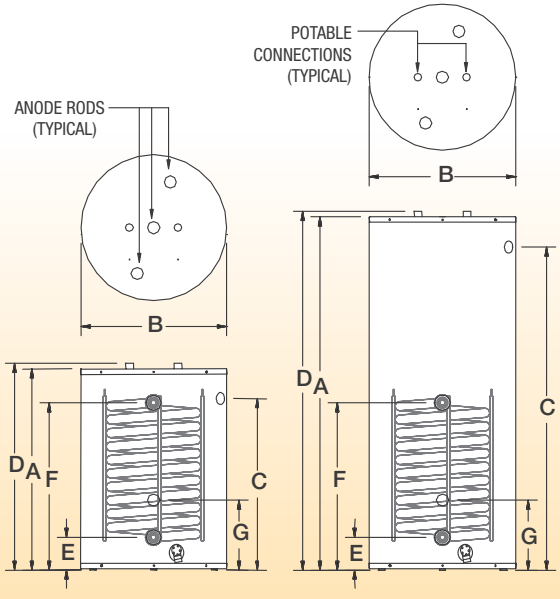
Model*	Capacity U.S. Gal.	Capacity Imp. Gal.	Nat. MBTU/h Input	LP. MBTU/h Input	Recovery 90°F Rise Nat. U.S. GPH	Recovery 90°F Rise Nat. Imp. GPH	Recovery 90°F Rise Nat. U.S. GPH	Recovery 90°F Rise LP Imp. GPH	A Floor to Vent Conn. in.	B Jacket Dia. in.	C Vent Size in.	D Floor to T&P Conn. in.	E Floor to Gas Conn. in.	F Floor to Exchanger Inlet in.	G Floor to Exchanger Outlet in.	H Floor to Heater Top in.	J Floor to Water Conn. in.	K Depth in.	Approx. Shipping Weight lbs
LCH-TW50T10FBN	45	38	67	60	72	60	65	54	65 1/2	22	3	50 1/8	11 3/4	28	50	56 3/8	57 3/4	26 1/4	245
LCH-TW75T10FBN	72	61	76	75	82	69	81	67	68 3/8	26	3	53	15	30 7/8	53	64 1/4	61 1/2	31	335

Model	Capacity Liters	Nat. kW Input	LP. kW Input	Recovery 50°C Rise Nat. Liters/ Hour	Recovery 50°C Rise LP Liters/ Hour	A Floor to Vent Conn. cm.	B Jacket Dia. cm.	C Vent Size cm.	D Floor to T&P Conn. cm..	E Floor to Gas Conn. cm.	F Floor to Exchanger Inlet cm.	G Floor to Exchanger Outlet cm.	H Floor to Heater Top cm.	J Floor to Water Conn. cm.	K Depth cm.	Approx. Shipping Weight kg
LCH-TW50T10PBN	170	19.6	17.5	272	246	167	56	8	127	30	71	127	143	147	68	111
LCH-TW75T10BN	270	22.3	22.1	310	306	174	66	8	135	38	78	135	153	156	79	152

*All propane heaters are equipped with a cast iron burner. To order a propane heater change suffix from "BN" to "CX"

The ingenious Laars-Stor® single wall was engineered to provide the lowest pressure drop, the highest hot water output, and the highest amount of effective actual heat transfer area of any indirect fired water heater in the industry.

- Single-Wall 11/2" O.D. enamel-coated heat exchanger (carbon steel coil)
- Coil with heat transfer area of 14.2 sq. ft. and a stored water volume of 2.7 Gal.
- Factory-installed sediment-reducing device helps to minimize build-up in tank
- Exclusive enamel lining formula for tank and heat exchanger provides superior protection
- Fast-acting Honeywell immersion aquastat for automatic temperature control
- 1" NPT supply and return connections are located on front of water heater
- ¾" NPT factory-installed true dielectric fittings extend water heater life
- Three protective aluminum anode rods provide added protection
- T&P relief valve included
- Low restriction brass drain valve
- 2" Non-CFC foam insulation
- Warranties: 5-Year tank and 1 Year parts



Intertek Intertek

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LAARS-STOR® RESIDENTIAL SINGLE WALL SPECIFICATIONS

Model	Capacity Imp. Gal.	Capacity U.S. Gal.	Capacity Liters	A Height Floor to Heater Top in.	A cm.	B Jacket Diameter in.	B cm.	C Height Floor to T&P Conn. in.	C cm.	D Height Floor to Water Conn. in.	D cm.	E Height Floor to Exchanger Outlet in.	E cm.	F Height Floor to Exchanger Inlet in.	F cm.	G Height Floor to Aquastat in.	G cm.	Shipping Weight Approx. lbs.	Shipping Weight Approx. kg.
LS-SW-2-30-L	25	30	114	33 5/8	85	22	56	28 1/4	72	34 3/8	87	5 3/8	14	27 1/2	70	11 1/2	30	140	64
LS-SW-2-40R-L	32	38	143	41 1/8	104	22	56	34 3/8	87	41 7/8	106	5 3/8	14	27 1/2	70	11 1/2	30	172	77
LS-SW-2-50R-L	40	48	182	46 1/4	112	22	56	40 1/8	102	47	119	5 3/8	14	27 1/2	70	11 1/2	30	180	82
LS-SW-2-65-L	50	60	227	59 1/4	150	22	56	53 1/8	135	60	152	5 3/8	14	27 1/2	70	11 1/2	30	196	89
LS-SW-2-80-L	62	75	284	59	150	24	61	52 7/8	135	59 3/4	152	5 3/8	14	27 1/2	70	11 1/2	30	224	102
LS-SW-2-120-L	97	116	439	62 1/2	159	28 1/4	72	55 3/4	142	63 1/4	161	6 3/8	16	28 1/2	72	11 1/2	30	355	161

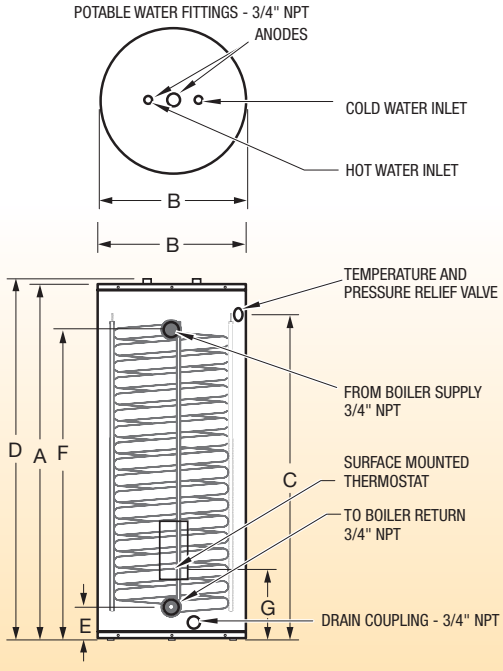
Meets or exceeds the insulating standards established under ASHRAE Standard 90.1b (current edition).
General: All units are certified at 300 psi (2068 kPa) test pressure and 150 psi working pressure (1034 kPa). All potable water connections are 3/4" (19mm) NPT on 8" (203mm) centers.

LAARS-STOR® COMMERCIAL SINGLE-WALL INDIRECT WATER HEATER

Intertek Intertek

Laars-Stor® single wall commercial models incorporate a super-efficient heat exchanger. Made of 1.5" diameter carbon steel tubing and coated with a glass-lining, it has a total heat surface area of 27.2 square feet.

- Single-Wall 1-1?2" O.D. enamel-coated heat exchanger (carbon steel coil)
- Coil with heat transfer area of 27.2 sq. ft. has a stored water volume of 5.0 Gal.
- Factory-installed sediment-reducing device helps to minimize build-up in tank
- Exclusive enamel lining formula for tank and heat exchanger provides superior protection
- Fast-acting Honeywell immersion aquastat for automatic temperature control
- 1" NPT supply and return connections are located on front of water heater
- 1" NPT factory-installed true dielectric fittings extend water heater life
- Three protective aluminum anode rods provide added protection
- T&P relief valve included
- Low restriction brass drain valve
- 2" Non-CFC foam insulation
- Warranties: 5-Year tank and 1-Year parts



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LAARS-STOR® COMMERCIAL SINGLE WALL SPECIFICATIONS

Model	Capacity U.S. Gal.	Capacity Imp. Gal.	A Floor to Heater Top in.	B Jacket Dia. in.	C Floor to T&P Conn. in.	D Floor to Water Conn. in.	E Floor to Exchager Outlet in.	F Floor to Exchager Inlet in.	G Floor to Aquastat in.	Approx. Shipping Weight lbs
LS-SW65C5	58	48	59 1/4	22	53 1/8	60	5 3/8	47 3/4	11 1/2	273
LS-SW80C5	73	61	59	24	52 7/8	59 3/4	5 3/8	47 3/4	11 1/2	300
LS-SW120C5	114	95	62 1/2	28 1/4	55 3/4	63 1/4	6 3/8	48 3/4	11 1/2	422

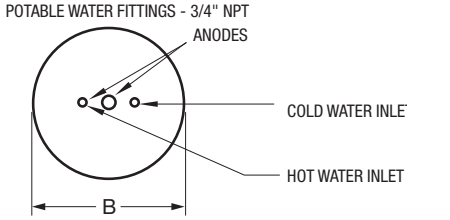
Model	Capacity Liters	A Floor to Heater Top mm.	B Jacket Dia. mm.	C Floor to T&P Conn. mm.	D Floor to Water Conn. mm.	E Floor to Exchanger Outlet mm.	F Floor to Exchanger Inlet mm.	G Floor to Aquastat mm.	Approx. Shipping Weight kg
LS-SW65C5	220	1505	559	1349	1524	137	1213	292	124
LS-SW80C5	276	1499	610	1343	1518	137	1213	292	136
LS-SW120C5	431	1588	718	1416	1607	162	1238	292	191

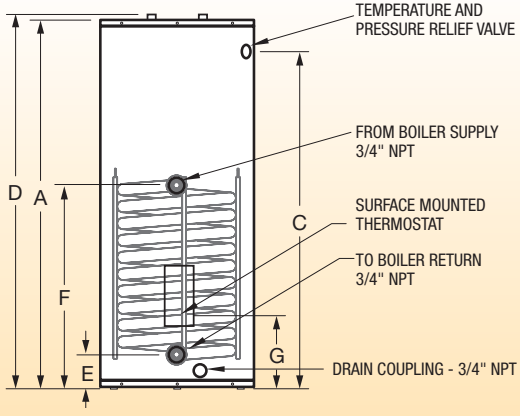
LAARS-STOR2™ RESIDENTIAL DOUBLE-WALL INDIRECT WATER HEATER

The Laars-Stor2™ features a patented double-wall carbon steel heat exchanger coil coated with a glass-lining for corrosion resistance and long life. The Laars-Stor2™ supplies a first hour rating of 120 to 158 gallons per hour.

- Double wall 1-1/2" O.D. glass-coated steel coil heat exchanger with positive leak path
- Low Heat Exchanger Head Loss — up to 10 GPM flow with less than 5 ft. of head loss
- Factory-installed sediment-reducing device helps to minimize build-up in tank
- Heavy gauge steel tank automatically formed, rolled, and welded
- Exclusive enamel lining formula provides superior tank protection
- Fast-acting surface-mount thermostat for automatic temperature control
- 3/4" NPT supply and return connections are located on front of water heater
- 3/4" NPT factory-installed true dielectric fittings extend water heater life
- Two protective aluminum anode rods provide added protection
- Standby heat loss is less than 1/2°F per hour (ASHRAE 90.1b current standard)
- T&P relief valve included
- Low restriction brass drain valve
- 2" Non-CFC foam insulation
- Warranties: Limited lifetime tank and heat exchanger + 6-Year limited parts

Intertek Intertek





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LAARS-STOR2® RESIDENTIAL DOUBLE WALL SPECIFICATIONS

Model	Capacity U.S. Gal.	Capacity Imp. Gal.	A Floor to Heater Top in.	B Jacket Dia. in.	C Floor to T&P Conn. in.	D Floor to Water Conn. in.	E Floor to Boiler Outlet in.	F Floor to Boiler Inlet in.	G Floor to Thermostat in.	Approx. Shipping Weight lbs
LS-DW240L-464	38	32	41	22	34 3/8	41 7/8	5 3/8	27 1/2	11 1/2	170
LS-DW250L-464	48	40	46 1/4	22	40 1/8	47 1/4	5 3/8	27 1/2	11 1/2	180
LS-DW265L-464	64	54	59	22	53 1/8	60	5 3/8	27 1/2	11 1/2	196
LS-DW280L-464	75	63	59	24	52 7/8	59 3/4	5 3/8	27 1/2	11 1/2	224

Model	Capacity Liters	A Floor to Heater Top mm.	B Jacket Dia. mm.	C Floor to T&P Conn. mm.	D Floor to Water Conn. mm.	E Floor to Boiler Outlet mm.	F Floor to Boiler Inlet mm.	G Floor to Thermostat mm.	Approx. Shipping Weight kg
LS-DW240L-464	144	1045	559	873	1083	137	699	292	76
LS-DW250L-464	182	1175	559	1019	1200	137	699	292	81
LS-DW265L-464	242	1505	559	1349	1527	137	699	292	86
LS-DW280L-464	284	1505	610	1343	1518	137	699	2922	102

LAARS-STOR® SS STAINLESS STEEL INDIRECT WATER HEATER

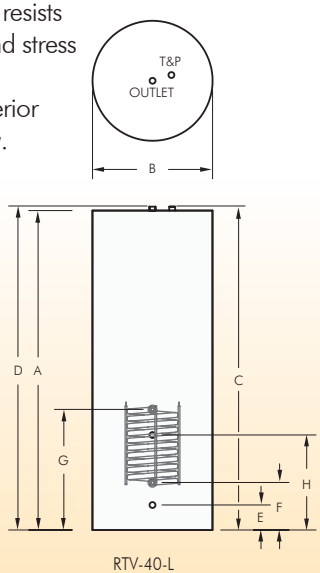
The Laars-Stor® SS utilizes a superior grade of stainless steel for the tank and the heat transfer coil. This construction is lightweight and also resists pitting while minimizing intergranular and stress corrosion.

The Laars-Stor® SS models provide superior thermal conductivity for higher efficiency.

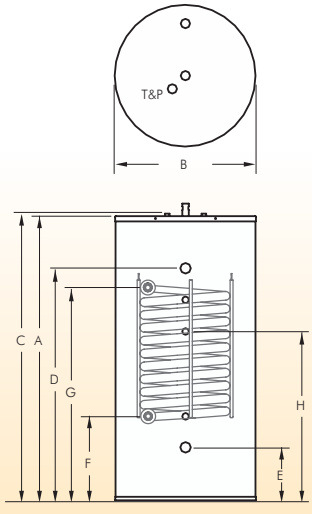
- Stainless steel tank and heat exchanger made from chromium molybdenum — titanium ferritic 444 stainless steel alloy
- 3/4" NPT female supply and return connections on front of water heater
- 1" NPT connections on LS-RTV-120-L
- Standby Heat loss less than 1/2°F per hour
- Brass Drain/Return Valve
- T&P Relief Valve Opening — all models have special tapping on top of tank.
- Form fitted and molded CFC-Free Polystyrene Insulation
- Steel Jacket
- Warranties: Limited lifetime tank and heat exchanger + 1-Year limited parts*

AHRI CERTIFIED

*When used in a residential application.



RTV-40-L
RTV-52-L
RTV-75-L



RTV-120-L
(Floor to Top Spare 3/4" NPT Tank Connection is 42 ¾")
(Floor to Bottom Spare 3/4" NPT Tank Connection is 17 ⅞")

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LAARS-STOR® SS SPECIFICATIONS

Model	Capacity U.S. Gal.	Capacity Imp. Gal.	A Floor to Heater Top in.	B Jacket Dia. in.	C Floor to T&P Conn. in.	D Floor to Hot Water Conn. in.	E Floor to Cold Water Conn. in.	F Floor to Exchanger Outlet in.	G Floor to Exchanger Inlet in.	H Floor to Aquastat in.	Approx. Shipping Weight lbs.
LS-RTV-40-L	40	33	35 1/4	24	35 1/2	35 1/2	5	9 1/2	24 5/8	19	83
LS-RTV-52-L	52	43	45 5/8	24	45 7/8	45 7/8	5	9 1/2	28 3/8	19	93
LS-RTV-75-L	75	63	63 7/8	24	64 1/8	64 1/8	5	9 1/2	28 1/4	19	117
LS-RTV-120-L	119	100	60	30 1/4	61	49 1/2	11 1/4	17 1/4	45 1/2	36	315

Model	Capacity Liters	A Floor to Heater Top mm.	B Jacket Dia. mm.	C Floor to T&P Conn. mm.	D Floor to Hot Water Conn. mm.	E Floor to Cold Water Conn. mm.	F Floor to Exchanger Outlet mm.	G Floor to Exchanger Inlet mm.	H Floor to Aquastat mm.	Approx. Shipping Weight kg.
LS-RTV-40-L	151	894	609	897	897	127	238	614	482	38
LS-RTV-52-L	197	1153	609	1163	1163	127	238	724	482	42
LS-RTV-75-L	284	1610	609	1628	1628	127	238	724	482	53
LS-RTV-120-L	450	1540	768	1549	1257	286	454	1156	914	143

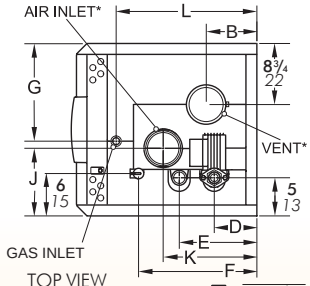
NeoTherm® Residential Condensing Boiler

Most Efficient
ENERGY STAR www.energystar.gov

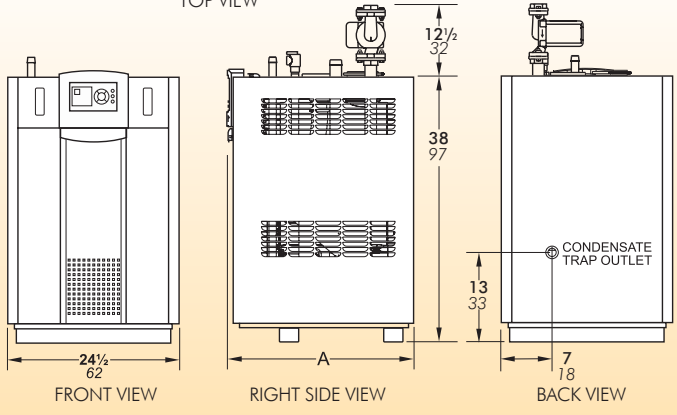
ASME H · AHRI CERTIFIED www.ahridirectory.org

High in efficiency and low in emissions, the NeoTherm® condensing boiler from Laars Heating Systems is a fully packaged, space-saving hydronic solution. ENERGY STAR® Most Efficient rated, NeoTherm® offers 95%+ A.F.U.E. to make it everything a modern boiler should be — easy-to-use, easy on the environment, powerful, and compact.

- Floor standing condensing boiler
- All connections are on top of unit
- Stainless steel heat exchanger
- Rated for alcove and closet installations
- Will qualify for Energy Rebates
- 95%+ AFUE
- Sealed combustion chamber
- Pre-mix stainless steel burner
- LAARS Integrated Control System℠
- 80 to 210MBH sizes
- Low NOx system exceeds the most stringent regulations for air quality — 10ppm NOx
- Horizontal or vertical direct vent
- Easy to use and easy on the environment
- Easy to service
- Warranties: 12-Year heat exchanger + 2-year parts



Dimensions are nominal and are shown in **inches** *cm*



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NeoTherm® Specifications

Model	A in	A cm	B in	B cm	Water Intlet D in	D cm	Water Outlet E in	E cm	PRV Outlet F in	F cm	G in	G cm	J in	J cm	K in	K cm	L in	L cm	Air Inlet Diameter* in	Air Inlet Diameter* cm	Vent Diameter* in	Vent Diameter* cm
NTH080	19½	49	9½	24	7½	19	11	28	10¾	35	13¾	35	3½	9	11¾	30	13½	34	25¼	97	2	5
NTH105	19½	49	8¼	21	6¼	16	11	28	14¼	36	14¼	36	3½	9	11¾	30	13½	34	25	97	2	5
NTH150	19½	49	5½	14	3¼	8	11	28	14¼	36	14¼	36	5	13	7½	19	13½	34	25	9	3	8
NTH210	26¾	68	5½	14	3¼	8	18	45	14¼	36	14¼	36	5	13	7½	19	20½	52	25	9	3	8

*NeoTherm is shipped with adapters for the air and vent that accept standard pipe of the proper size and type

Model	AFUE%	Input MBTU/h	Input kW	Output MBTU/h	Output kW	Connections Water	Connections Gas	Max Vent Length 2" Dia.	Max Vent Length 3" Dia.	Weight lbs.
NTH080	95	80	23.4	74	21.7	1"	½"	40 ft.	100 ft.	181
NTH105	95	105	30.8	96	28.1	1"	½"	40 ft.	100 ft.	188
NTH150	95	150	44.0	138	40.4	1"	½"	n/a	100 ft.	201
NTH210	95	210	61.5	194	56.8	1"	½"	n/a	100 ft.	246

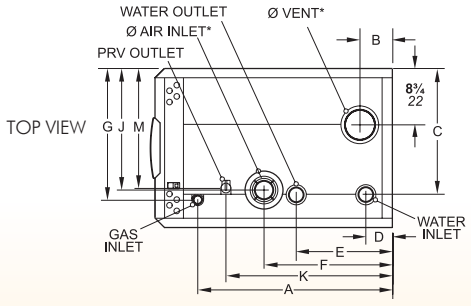
NeoTherm® Commercial Condensing Boiler

Most Efficient
ENERGY STAR www.energystar.gov
285 MBH Model

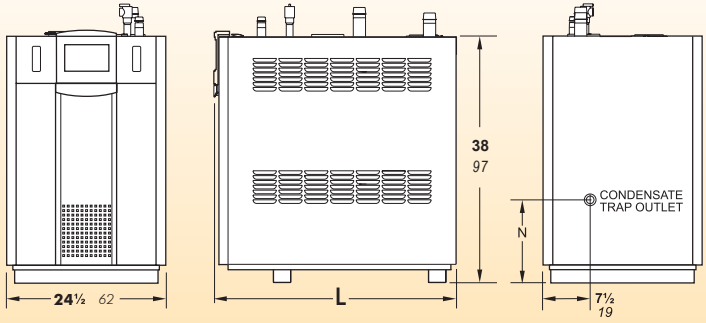
The NeoTherm® commercial boiler is a direct vent, sealed combustion, condensing hydronic boiler with 95%+ thermal efficiency that modulates with a 5 to 1 turndown. It features an ASME stainless steel heat exchanger, spark ignition system, and low NOx emissions.

- Sealed combustion chamber
- Pre-mix stainless steel burner
- Large color touch screen
- 285 to 850MBH sizes
- Stainless steel heat exchanger with welded construction
- Low NOx system exceeds the most stringent regulations for air quality — 10 ppm NOx
- Horizontal or vertical direct vent
- Communicates with Building Automation Systems
- Vent and air pipe lengths of up to 100 equivalent feet (each)
- Built-in condensate trap
- Vent temperature cutoff feature
- Direct spark ignition system
- Indirect water heater priority
- Sensor for indirect domestic water tank
- 160 psi maximum working pressure
- Warranties: 10-year heat exchanger + 1-year parts

- High condensing efficiency
- Modulation down to 20% of full fire (5:1 turndown)



Dimensions are nominal and are shown in **inches** *cm*



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NeoTherm® Specifications

	L	A	B	C	D	E	F	G	J	K	M	N	Air Inlet*	Vent*
Model	in. cm	in. cm	in. cm	in. cm	in. cm	in. cm	in. cm	in. cm	in. cm	in. cm	in. cm	in. cm	in. cm	in. cm
NTH285	26 3/4 68	20 1/4 52	7 1/4 19	19 1/4 49	6 1/4 16	11 1/4 29	13 1/2 34	14 36	15 38	17 43	18 3/4 48	13 33	4 1/2 11	4 1/2 11
NTH399	31 1/2 80	25 64	5 1/4 13	19 1/4 49	4 1/4 11	14 1/4 37	18 1/2 47	19 1/4 49	16 1/2 42	21 3/4 55	18 3/4 48	13 33	4 1/2 11	4 1/2 11
NTH500	37 3/4 96	30 1/4 77	5 1/4 13	19 1/2 50	4 1/4 11	15 1/2 38	20 51	20 1/2 52	19 48	26 66	18 3/4 48	13 33	4 1/2 11	4 1/2 11
NTH600	37 3/4 96	29 3/4 76	5 13	19 1/2 50	4 1/4 11	15 38	20 51	3 8	19 48	26 66	18 3/4 48	8 1/4 21	4 1/2 11	4 1/2 11
NTH750	51 130	35 1/2 90	6 15	19 1/2 50	5 1/4 13	19 48	40 1/2 103	3 1/4 8	19 48	30 3/4 78	18 3/4 48	8 1/4 21	4 1/2 11	6 1/2 17
NTH850	55 1/4 140	39 1/4 101	6 15	19 1/2 50	5 1/4 13	19 48	44 3/4 114	3 1/2 9	19 48	35 89	18 3/4 48	8 1/4 21	4 1/2 11	6 1/2 17

Dimensions are nominal and are shown in inches, *cm*
*NeoTherm is shipped with adapters for the air and vent that accept standard pipe of the proper size and type

Model	AFUE %	Thermal Efficiency %	Combustion Efficiency %	Input		Output		Connection Size (NPT)		Weight
				MBTU/h	kW	MBTU/h	kW	Water	Gas	
NTH285	95.0	n/a	n/a	285	83.5	264	78.8	1 1/4"	3/4"	276
NTH399	n/a	96.5	96.5	399.9	116.9	386	109.9	1 1/4"	3/4"	346
NTH500	n/a	95.0	95.0	500	146.5	475	139.2	1 1/2"	1"	381
NTH600	n/a	95.3	96.0	600	175.8	572	167.0	1 1/2"	1"	394
NTH750	n/a	96.6	96.6	750	219.8	724	208.9	2"	1 1/2"	469
NTH850	n/a	95.7	95.7	850	249.1	813	236.7	2"	1 1/2"	502

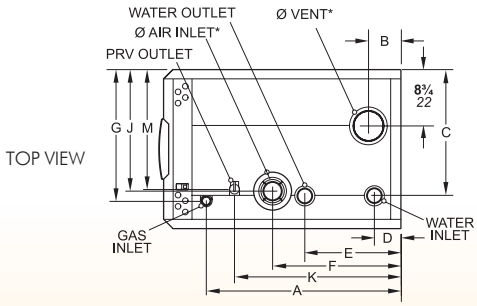
*NeoTherm is shipped with adapters for the air and vent that accept standard pipe of the proper size and type
For complete product details and dimensions go to www.laars.com/document-downloads/submittal-documents

NeoTherm® Condensing Volume Water Heater

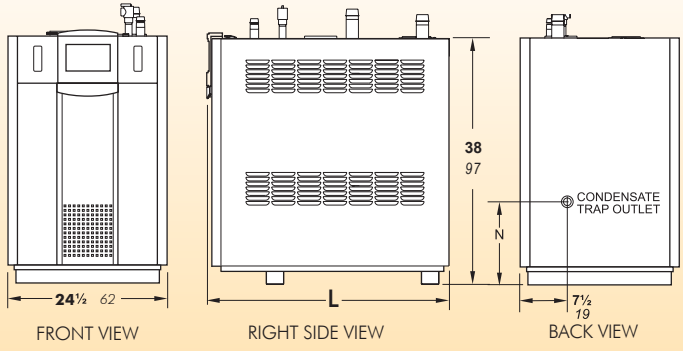
- All connections are on top of unit
- Stainless steel heat exchanger

NeoTherm® is a direct vent, sealed combustion, volume water heater with very high efficiency (95%+). It features an ASME stainless steel heat exchanger, spark ignition system, and low NOx emissions for a package that's easy to use and easy on the environment.

- Easy to service
- Low NOx system (10ppm) exceeds the most stringent regulations for air quality
- Large color touch screen
- LAARS Integrated Control System℠
- Communicates with Building Automation Systems
- High-condensing efficiency
- 150 to 850MBH sizes
- Modulation down to 20% of full fire (5:1 turndown)
- Sealed combustion chamber
- Pre-mix stainless steel burner
- Horizontal or vertical direct vent
- Horizontal vent and air terminals
- Vent and air pipe lengths of up to 100 equivalent feet (each)
- Warranties: 8-Year pro-rated heat exchanger + 1-year parts



Dimensions shown in inches *cm*



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NeoTherm® Specifications

Model	L		A		B		C		D		E		F		G		J		K		M		N		Air Inlet*		Vent*	
	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm
NTV150	19 1/4	49	13 1/4	34	5 1/4	14	19	48	3 1/4	8	10 3/4	28	7 1/2	19	14 1/4	36	19 1/2	49	7 1/2	19	15 1/4	39	13	33	3	7.6	3	7.6
NTV199	26 3/4	68	20 1/2	52	5 1/4	14	19	48	3 1/4	8	17 3/4	45	7 1/2	19	14 1/4	36	19 1/2	49	11 3/4	30	15 1/4	39	13	33	3	7.6	3	7.6
NTV285	26 3/4	68	20 1/4	11.5	7 1/4	19	19 3/4	50	4 1/4	11	11 1/4	29	13 1/2	34	14	36	15	38	17	43	18 3/4	48	13	33	4 1/2	11	4 1/2	11
NTV399	31 1/2	80	25	64	5 1/4	13	19 3/4	50	4 1/4	11	14 3/4	37	18 1/2	47	19 1/4	49	16 1/2	42	21 3/4	55	18 3/4	48	13	33	4 1/2	11	4 1/2	11
NTV500	37 3/4	96	30 1/4	77	5 1/4	13	19 3/4	50	4 1/4	11	15 1/2	38	20	51	20 1/2	52	19	48	26	66	18 3/4	48	13	33	4 1/2	11	4 1/2	11
NTV600	37 3/4	96	29 3/4	76	5	13	19 1/2	50	4 1/4	11	15	38	20	51	3	8	19	48	26	66	18 3/4	48	8 1/4	21	4 1/2	11	4 1/2	11
NTV750	51	130	35 1/2	90	6	15	19 1/2	50	5 1/4	13	19	48	40 1/2	103	3 1/4	8	19	48	30 3/4	78	18 3/4	48	8 1/4	21	4 1/2	11	6 1/2	17
NTV850	55 1/4	140	39 3/4	101	6	15	19 1/2	50	5 1/4	13	19	48	44 3/4	114	3 1/2	9	19	48	35	89	18 3/4	48	8 1/4	21	4 1/2	11	6 1/2	17

*NeoTherm® is shipped with adapters for the air and vent that accept standard pipe of the proper size and type

Dimensions shown in inches *cm*

Model	Thermal Efficiency %	Input		Output		Connection Size (NPT)		Weight
		MBTU/h	kW	MBTU/h	kW	Water	Gas	
NTV150	95	150	44	144	42	1 1/4"	1/2"	201
NTV199	97	199	58.3	193	57	1 1/4"	1/2"	246
NTV285	95	285	83.5	269	78.8	2"	3/4"	276
NTV399	96	399	116.9	375	109.9	2"	3/4"	346
NTV500	96	500	146.5	475	139.2	2"	1"	381
NTV600	97	600	175.8	576	167.0	2"	1"	394
NTV750	94	750	219.8	723	208.9	2"	1 1/2"	469
NTV850	96	850	249.1	810	236.7	2"	1 1/2"	502

For complete product details and dimensions go to **www.laars.com/document-downloads/submittal-documents**

NeoTherm® Outdoor, Condensing Boiler

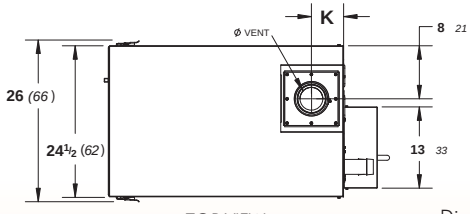
Most Efficient
ENERGY STAR www.energystar.gov

Models 150 to 285 MBH

- High condensing efficiency
- Modulation down to 20% of full fire (5:1 turndown)
- Meets ANSI Z21.13-2013, section 5.26 boilers for outdoor installations

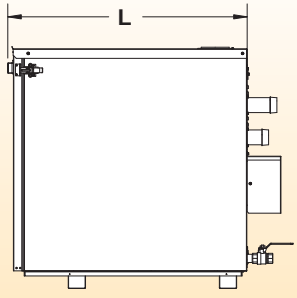
The NeoTherm® commercial boiler is a direct vent, sealed combustion, condensing hydronic boiler with 95%+ thermal efficiency that modulates with a 5 to 1 turndown. It features an ASME stainless steel heat exchanger, spark ignition system, and low NOx emissions.

- Sealed combustion chamber
- Pre-mix stainless steel burner
- Large color touch screen
- 285 to 850MBH sizes
- Stainless steel heat exchanger with welded construction
- Low NOx system exceeds the most stringent regulations for air quality — 10 ppm NOx
- Horizontal or vertical direct vent
- Communicates with Building Automation Systems
- Vent and air pipe lengths of up to 100 equivalent feet (each)
- Built-in condensate trap
- Vent temperature cutoff feature
- Direct spark ignition system
- Indirect water heater priority
- Sensor for indirect domestic water tank
- 160 psi maximum working pressure
- Warranties: 10-year heat exchanger + 1-year parts

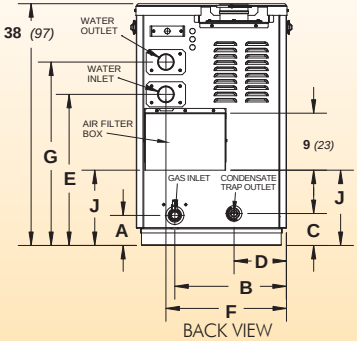


TOP VIEW

Dimensions shown in **inches** *cm*



RIGHT SIDE VIEW



BACK VIEW

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NeoTherm® Outdoor, Condensing Boiler Specifications

Model	A		B		C		D		E		F		G		J		K		L		Vent *	
	in.	*cm*	in.	*cm*	in.	*cm*	in.	*cm*	in.	*cm*	in.	*cm*	in.	*cm*	in.	*cm*	in.	*cm*	in.	*cm*	in.	*cm*
NTH150	6 1/4	16	11	28	13	33	17 1/4	43.8	23 1/2	60	18	45.7	27	69	23 1/2	60	5 1/4	13	20	60	3	7.6
NTH199/210	6 1/4	16	11	28	13	33	17 1/4	43.8	23 1/2	60	18	45.7	27	69	23 1/2	60	5 1/4	13	27	68.6	3	7.6
NTH285	6	15.5	11	28	5	13	17 1/4	43.8	24	61	19	48	28 1/4	72	12	30.5	7 1/4	18.4	27	68.6	4	11
NTH399	8	15.5	19 1/2	50	7 3/4	20	17 1/4	43.8	24	61	19	48	28 1/4	72	12	30.5	6	15.2	31 1/4	80.5	4	11
NTH500	5	13	17 3/4	45	5	13	8 1/4	21	24	61	19	48	29 1/4	74	12	30.5	5 1/2	14	38	96.5	4	11
NTH600	33 1/2	85	3.0	8	5	13	8 1/4	21	24	61	19	48	29 1/4	74	12	30.5	5 3/4	14.6	38	96.5	4	11
NTH750	32 3/4	83.2	3.0	8	5 1/4	13.4	17 1/4	43.8	24	61	19	48	29 1/4	74	12	30.5	5 3/4	14.6	51 1/4	130	6	17
NTH850	32 3/4	83.2	3.0	8	5 1/4	13.4	17 1/4	43.8	24	61	19	48	29 1/4	74	12	30.5	5 3/4	14.6	55 3/4	141.5	6	17

Dimensions are nominal and are shown in inches, *cm*

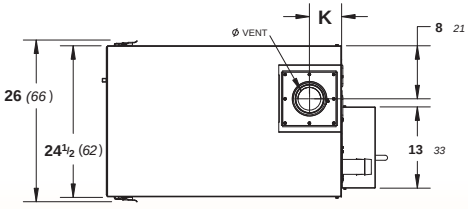
*NeoTherm is shipped with adapters for the air and vent that accept standard pipe of the proper size and type

Model	AFUE%	Thermal Efficiency %	Combustion Efficiency %	Input		Output		Connection Size (NPT)		Shipping Weight	
				MBTU/h	*kw*	MBTU/h	*kw*	Gas in.	Water in.	lbs	*kg*
NTH150	-	-	-	150,000	44.0	142,500	41.7	1/2	1 1/4	-	-
NTH199/210	-	-	-	199,000	58.3	193,030	56.5	1/2	1 1/4	-	-
NTH285	95.0	95	N/A	285,000	83.5	264,000	77.4	3/4	1 1/4	299	136
NTH399	N/A	96.5	96.5	399,900	117.2	386,000	113.1	3/4	1 1/4	364	165
NTH500	N/A	95.0	95.0	500,000	146.4	475,000	139.2	1	1 1/2	419	190
NTH600	N/A	95.3	95.3	600,000	175.7	572,000	167.6	1	1 1/2	426	193
NTH750	N/A	96.6	96.6	750,000	219.8	724,000	212.1	1 1/2	2	481	218
NTH850	N/A	95.7	95.7	850,000	248.9	813,000	238.2	1 1/2	2	503	228

NeoTherm® Outdoor, Condensing Water Heater

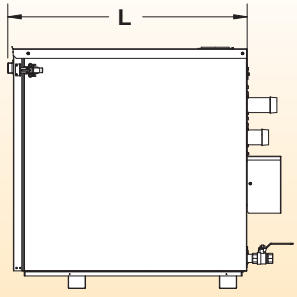
NeoTherm® is a direct vent, sealed combustion, volume water heater with very high efficiency (95%+). It features an ASME stainless steel heat exchanger, spark ignition system, and low NOx emissions for a package that's easy to use and easy on the environment.

- Low NOx system (10ppm) exceeds the most stringent regulations for air quality
- Large color touch screen
- LAARS Integrated Control System℠
- Communicates with Building Automation Systems
- High-condensing efficiency
- 150 to 850MBH sizes
- Modulation down to 20% of full fire (5:1 turndown)
- Sealed combustion chamber
- Pre-mix stainless steel burner
- Horizontal or vertical direct vent
- Horizontal vent and air terminals
- Vent and air pipe lengths of up to 100 equivalent feet (each)
- Warranties: 8-Year pro-rated heat exchanger + 1-year parts
- Stainless steel heat exchanger
- Meets ANSI Z21.13-2013, section 5.24 wind test and section 5.30 rain test
- Easy to service

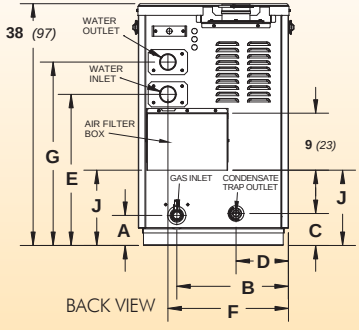


TOP VIEW

Dimensions shown in **inches** *cm*



RIGHT SIDE VIEW



BACK VIEW

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NeoTherm® Outdoor, Condensing Volume Water Heater Specifications

Model	A		B		C		D		E		F		G		J		K		L		Vent *	
	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm
NTV150	6 1/4	16	11	28	13	33	17 1/4	43.8	23 1/2	60	18	45.7	27	69	23 1/2	60	5 1/4	13	20	60	3	7.6
NTV199/210	6 1/4	16	11	28	13	33	17 1/4	43.8	23 1/2	60	18	45.7	27	69	23 1/2	60	5 1/4	13	27	68.6	3	7.6
NTV285	6	15.5	11	28	5	13	17 1/4	43.8	24	61	19	48	28 1/4	72	12	30.5	7 1/4	18.4	27	68.6	4	11
NTV399	8	15.5	19 1/2	50	7 3/4	20	17 1/4	43.8	24	61	19	48	28 1/4	72	12	30.5	6	15.2	31 1/4	80.5	4	11
NTV500	5	13	17 3/4	45	5	13	8 1/4	21	24	61	19	48	29 1/4	74	12	30.5	5 1/2	14	38	96.5	4	11
NTV600	33 1/2	85	3.0	8	5	13	8 1/4	21	24	61	19	48	29 1/4	74	12	30.5	5 3/4	14.6	38	96.5	4	11
NTV750	32 3/4	83.2	3.0	8	5 1/4	13.4	17 1/4	43.8	24	61	19	48	29 1/4	74	12	30.5	5 3/4	14.6	51 1/4	130	6	17
NTV850	32 3/4	83.2	3.0	8	5 1/4	13.4	17 1/4	43.8	24	61	19	48	29 1/4	74	12	30.5	5 3/4	14.6	55 3/4	141.5	6	17

Dimensions are nominal and are shown in inches, *cm*

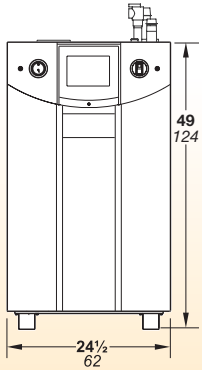
*NeoTherm is shipped with adapters for the air and vent that accept standard pipe of the proper size and type

Model	Thermal Efficiency %	Input		Output		Connection Size(NPT)		Shipping Weight	
		MBTU/h	kw	MBTU/h	kw	Gas in.	Water in.	lbs	kg
NTV150	95	150,000	44.0	142,500	41.7	1/2	1 1/4	228	103
NTV199/210	97	199,000	58.3	193,030	56.5	1/2	1 1/4	270	123
NTV285	95	285,000	83.5	270,750	79.3	3/4	2	299	136
NTV399	96	399,000	116.9	383,040	112.2	3/4	2	364	165
NTV500	96	500,000	146.5	480,000	140.6	1	2	419	190
NTV600	97	600,000	175.8	582,000	170.4	1	2	426	193
NTV750	94	750,000	219.8	705,000	206.4	1 1/2	2	481	218
NTV850	96	850,000	249.1	816,000	238.9	1 1/2	2	503	228

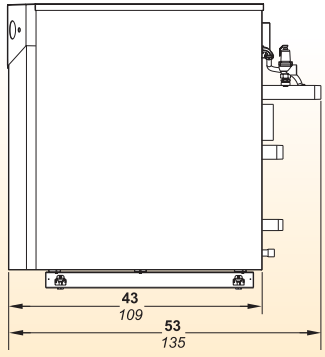
NeoTherm® LC Commercial Condensing Boiler

NeoTherm LC® is a direct vent, fully modulating, sealed combustion boiler, with very high efficiency. It features an ASME stainless steel heat exchanger, spark ignition system, and low NOx emissions for a package that's easy to use and easy on the environment.

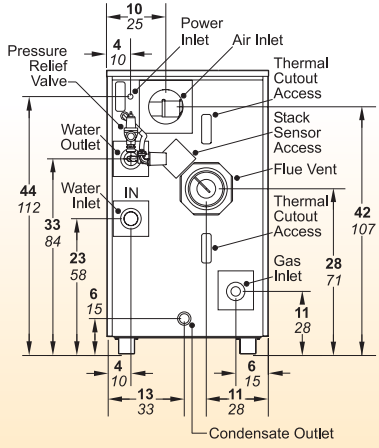
- Large color touch screen
- Stainless steel heat exchanger
- Easy to service
- LAARS Integrated Control System℠
- Communicates with Building Automation Systems
- High-condensing efficiency
- 1,000 and 1,200 MBH
- Modulation down to 10% of full fire (10:1 turndown)
- Sealed combustion chamber
- Pre-mix stainless steel burner
- Indoor and outdoor
- Horizontal or vertical direct vent
- Low NOx system (10ppm) exceeds the most stringent regulations for air quality
- Vent and air pipe lengths of up to 100 equivalent feet (each)
- Warranties: 10-Year heat exchanger + 1-Year parts



FRONT VIEW



SIDE VIEW



BACK VIEW

Dimensions shown in **inches** *cm*

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NeoTherm® Specifications

Sizing Data

Model	Input		Output		Thermal Efficiency	Comb. Efficiency %	Gas Conn. Size	Water Conn. Size	Product Weight		Shipping Weight		Air Inlet	Vent
	MBTU/h	*kW*	MBTU/h	*kW*			Inches	Inches	lbs	*kg*	lbs	*kg*	Inches	Inches
NTH 1000	999.9	*293*	942	*276*	94.2	94.2	1½	2	518	*235*	620	*281*	6	6
NTH 1200	1200	*351*	1136	*333*	95.1	94.7	1½	2	538	*244*	640	*290*	6	6

Water Flow Requirements

Model	Temperature Rise																					
	20˚F		*11˚C*		25˚F		*14˚C*		30˚F		*17˚C*		35˚F		*19˚C*		40˚F		*22˚C*		45˚F		*25˚C*	
	Flow gpm	H/L feet	*Flow lpm*	*H/L m*	Flow gpm	H/L feet	*Flow lpm*	*H/L m*	Flow gpm	H/L feet	*Flow lpm*	*H/L m*	Flow gpm	H/L feet	*Flow lpm*	*H/L m*	Flow gpm	H/L feet	*Flow lpm*	*H/L m*	Flow gpm	H/L feet	*Flow lpm*	*H/L m*
NTH 1000	95	30	*359*	*9.0*	75	20	*283*	*6.0*	62	15	*234*	*4.5*	54	11	*204*	*3.3*	48	9	*182*	*2.7*	42	7	*159*	*2.1*
NTH 1200	114	37	*432*	*11.3*	91	26	*344*	*7.9*	76	18	*288*	*5.5*	65	13	*246*	*4.0*	57	10	*216*	*3.0*	51	8	*193*	*2.4*

Electrical Data

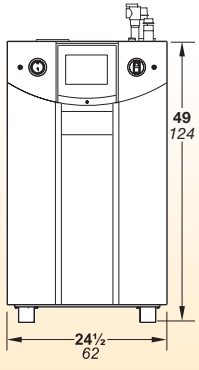
Model	Volts	Phase	Amps Nominal	Amps FLA	Pump Connections Ratings (Boiler, System, and DHW Pumps)
NTH 1000	120	Single	5	12	max 7.4 FLA
NTH 1200	120	Single	17	12	max 7.4 FLA

For complete product details and dimensions go to **www.laars.com/document-downloads/submittal-documents**

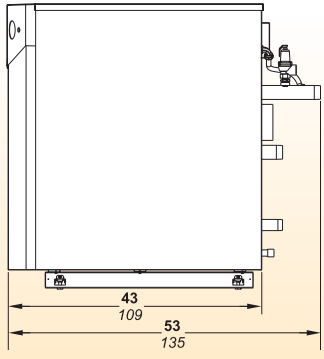
NeoTherm® LC Volume Water Heater

NeoTherm® LC is a direct vent, fully modulating, sealed combustion, volume water heater with very high efficiency. It features an ASME stainless steel heat exchanger, spark ignition system, and low NOx emissions for a package that's easy to use and easy on the environment.

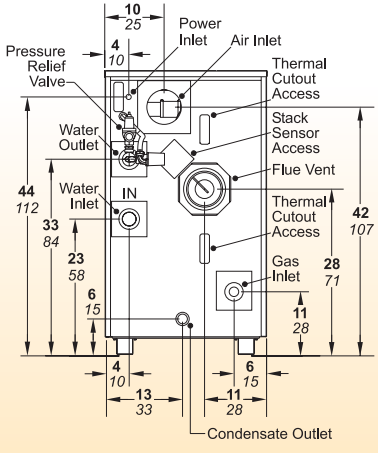
- Large color touch screen
- Stainless steel heat exchanger
- Easy to service
- LAARS Integrated Control System℠
- Communicates with Building Automation Systems
- High-condensing efficiency
- 1,000 and 1,200 MBH
- Modulation down to 10% of full fire (10:1 turndown)
- Sealed combustion chamber
- Pre-mix stainless steel burner
- Indoor and outdoor
- Horizontal or vertical direct vent
- Meets AB1953 low-lead standard
- Low NOx system (10ppm) exceeds the most stringent regulations for air quality
- Vent and air pipe lengths of up to 100 equivalent feet (each)
- Warranties: 8-Year pro-rated heat exchanger + 1-year parts



FRONT VIEW



SIDE VIEW



BACK VIEW

Dimensions shown in **inches** *cm*

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NeoTherm® Specifications

Sizing Data

Model	Input		Output		Thermal Efficiency %	Gas Conn. Size Inches	Water Conn. Size Inches	Product Weight		Shipping Weight		Air Inlet	Vent
	MBTU/h	*kW*	MBTU/h	*kW*				lbs	*kg*	lbs	*kg*	Inches	Inches
NTV 1000	999.9	*293*	952	*278.9*	95	1½	2	518	*235*	620	*281*	6	6
NTV 1200	1200	*351*	1140	*333*	95	1½	2	538	*244*	640	*290*	6	6

Recovery Data

Model	Design Temperature Rise Across Boiler															
	40˚F gph	*22˚C L/h*	50˚F gph	*28˚C L/h*	60˚F gph	*33˚C L/h*	70˚F gph	*39˚C L/h*	80˚F gph	*44˚C L/h*	90˚F gph	*50˚C L/h*	100˚F gph	*56˚C L/h*	120˚F gph	*67˚C L/h*	140˚F gph	*78˚C L/h*
NTV 1000	2857	*10799*	2286	*8641*	1905	*7201*	1633	*6173*	1429	*5402*	1270	*4801*	1143	*4321*	952	*3599*	816	*3084*
NTV 1200	3420	*12927*	2736	*10369*	2280	*8641*	1954	*7407*	1710	*6482*	1520	*5761*	1368	*5185*	1140	*4319*	977	*3701*

Water Flow Requirements

Model	Temperature Rise			
	20˚F Flow gpm	H/L feet	*11˚C Flow lpm*	*HL m*
NTV 1000	95	30	*359*	*9.0*
NTV 1200	114	37	*430*	*10.8*

Electrical Data

Model	Volts	Phase	Amps Nominal	Amps FLA	Pump Conn. Ratings
NTV 1000	120	Single	5	12	max 7.4 FLA
NTV 1200	120	Single	12	12	max 7.4 FLA

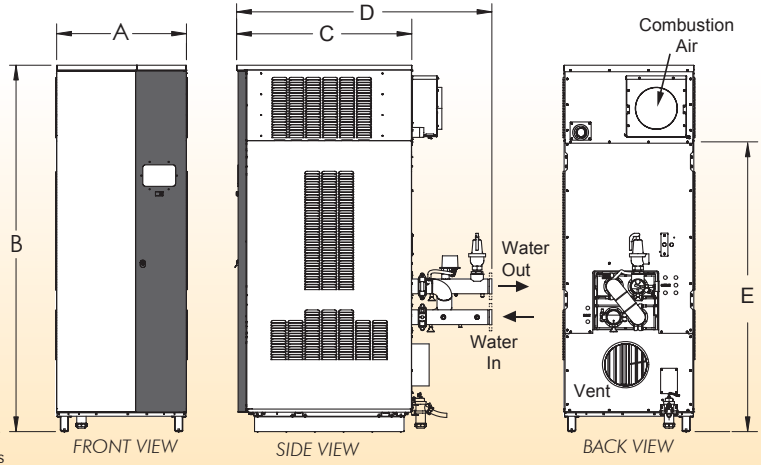
Maximum water hardness of 10 grains per gallon allowed.

For complete product details and dimensions go to www.laars.com/document-downloads/submittal-documents

MAGNATHERM® COMMERCIAL CONDENSING BOILER

The Laars MagnaTherm® Commercial Modulating Condensing Boiler has everything to satisfy large input commercial applications. The unique VARI-PRIME™ variable speed boiler pump control optimizes three major variables of boiler operation: combustion, blower, and boiler pump efficiencies.

- Meets the most stringent NOx emission requirements
- Up to 99% thermal efficiency, condensing operation
- Indoor/Outdoor installation
- Large color touch screen allows for easy control and setup
- VARI-PRIME™ variable speed pump control matches system pump with boiler modulation to optimize efficiency
- Small footprint, slim vertical design, and removable top section help it fit into tight spots
- Forward mounted low voltage panel for easy wiring and trouble-shooting
- Unique, sealed condensate trap does not need to be primed at startup
- Single or up to 8 boilers in a cascade installation
- Up to 100 feet of vent
- 439 Stainless Steel Heat Exchanger for increased corrosion resistance
- Advanced control system with temperature control, diagnostics, outdoor reset capability, and easy access for field wiring
- Warranties: 10-Year heat exchanger + 1-Year parts



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MAGNATHERM® SPECIFICATIONS

DIMENSIONAL

Model	A		B		C		D		E 'Knock-down' Height		Water Connection	Gas Connection	Condensate Trap
	inches	cm	inches	cm	inches	cm	inches	cm	inches	cm	Groove Lock	(NPT)	Line
MGH1600	29.3	75	79.5	202	38.0	96	57.5	147	60.8	154	3"	2"	1"
MGH2000	29.3	75	79.5	202	38.0	96	57.5	147	60.8	154	3"	2"	1"
MGH2500	30.8	78	87	221	41.5	105	60.5	154	71.0	180	3"	2"	1"
MGH3000	30.8	78	87	221	41.5	105	60.5	154	71.0	180	3"	2"	1"
MGH3500	34.5	88	97	246	52.0	132	70.0	178	80.8	205	4"	2"	1"
MGH4000	34.5	88	97	246	52.0	132	70.0	178	80.8	205	4"	2"	1"

SIZING DATA

Model	Input Rate	Output Rate	Boiler Thermal Efficiency	Combustion Efficiency	Product Weight	Shipping Weight	Vent Diameter	Vent Length
	MBTU/h kW	MBTU/h kW	%	%	lbs kg	lbs kg	in (cm)	ft (m)
MGH1600	1600.0 469	1572 443	96	95	1390 630	1590 721	6 (15)	100 (30.5)
MGH2000	1999.9 586	1883 552	95	93.6	1390 630	1590 721	8 (20)	100 (30.5)
MGH2500	2499.9 732	2374 696	95	93.8	1785 810	1985 900	8 (20)	100 (30.5)
MGH3000	3000.0 879	2814 825	95	93.8	1785 810	1985 900	10 (25)	100 (30.5)
MGH3500	3500.0 1025	3317 972	95	93.6	2278 1033	2478 1124	10 (25)	100 (30.5)
MGH4000	4000.0 1172	3724 1091	95	93.1	2278 1033	2478 1124	12 (30)	100 (30.5)

WATER FLOW REQUIREMENTS

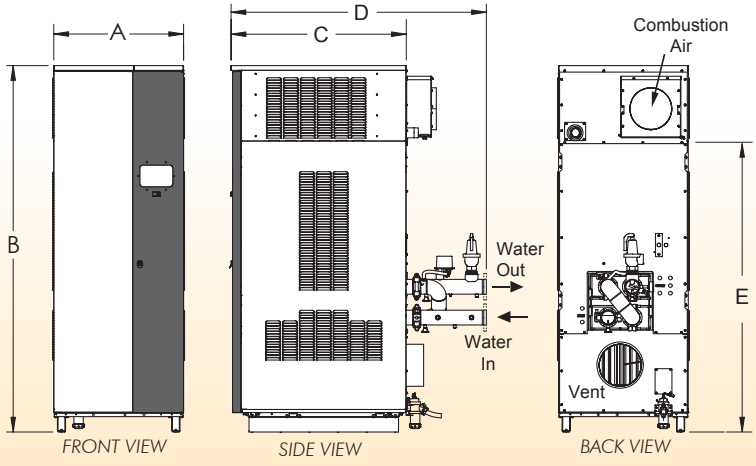
Model	Temperature Rise 30°F 17°C				35°F 19°C				40°F 22°C			
	Flow gpm	H/L feet	Flow lpm	HL m	Flow gpm	H/L feet	Flow lpm	HL m	Flow gpm	H/L feet	Flow lpm	HL m
MGH1600	100	14	379	4.3	87	10	329	3	76	8	288	2.5
MGH2000	128	23.5	485	7.2	109	17.1	413	5.2	95	13.6	360	4.2
MGH2500	158	23.6	599	7.0	136	17.6	514	5.0	119	13.6	449	4.1
MGH3000	190	34.2	719	10.4	164	25.8	621	7.9	142	18.9	538	5.9
MGH3500	222	30.6	839	9.0	190	23.6	719	7.0	166	18.6	629	6.0
MGH4000	255	38.2	965	11.6	218	28.5	825	8.7	190	22.5	71	6.9

Dimensions shown in inches *cm*

MAGNATHERM® COMMERCIAL CONDENSING VOLUME WATER HEATER

The Laars MagnaTherm® Commercial Volume Water Heater has everything to satisfy large input commercial applications. 95%+ efficiency, small footprint, and easy to use controls.

- Meets the most stringent NOx emission requirements
- Up to 99% thermal efficiency, condensing operation
- Indoor/Outdoor installation
- Matches system pump with boiler modulation to optimize efficiency
- Large color touch screen allows for easy control and setup
- Small footprint, slim vertical design, and removable top section help it fit into tight spots
- Forward mounted low voltage panel for easy wiring and troubleshooting
- Unique, sealed condensate trap does not need to be primed at startup
- Single or up to 8 boilers in a cascade installation
- Up to 100 feet of vent
- 439 Stainless Steel Heat Exchanger for increased corrosion resistance
- Advanced control system with temperature control, diagnostics, outdoor reset capability, and easy access for field wiring
- Warranties: 10-Year heat exchanger + 1-Year parts



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MAGNATHERM® SPECIFICATIONS

DIMENSIONAL

Model	A		B		C		D		E 'Knock-down' Height		Water Connection	Gas Connection	Condensate Trap
	inches	cm	inches	cm	inches	cm	inches	cm	inches	cm	Groove Lock	(NPT)	Line
MGV1600	29.3	75	79.5	202	38.0	96	57.5	147	60.8	154	3"	2"	1"
MGV2000	29.3	75	79.5	202	38.0	105	57.5	147	60.8	154	3"	2"	1"
MGV2500	30.8	78	87	221	41.5	96	60.5	154	71.0	180	3"	2"	1"
MGV3000	30.8	78	87	221	41.5	105	60.5	178	71.0	180	3"	2"	1"
MGV3500	34.5	88	97	246	52.0	132	70.0	178	80.8	205	4"	2"	1"
MGV4000	34.5	88	97	246	52.0	132	70.0	178	80.8	205	4"	2"	1"

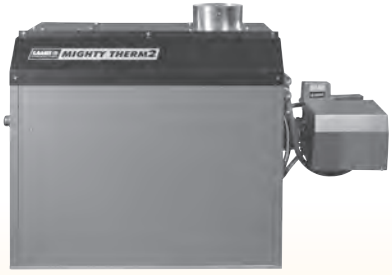
SIZING DATA

WATER FLOW REQUIREMENTS

Model	Input Rate		Output Rate		Water Heater Thermal Efficiency %	Product Weight		Shipping Weight		Vent Diameter		Vent Length		Flow gpm	Temp Rise °F	H/L feet	Flow lpm	Temp Rise °C	H/L m
	MBTU/h	kW	MBTU/h	kW		lbs	kg	lbs	kg	in	(cm)	ft	(m)						
MGV1600	1600.0	469	1572	443	96	1390	630	1590	721	6	(15)	100	(30.5)	152	20	31.0	525	11.1	10.1
MGV2000	1999.9	586	1883	552	96	1390	630	1590	721	8	(20)	100	(30.5)	152	25	33.0	575	14	10.1
MGV2500	2499.9	732	2374	696	96	1785	810	1985	900	8	(20)	100	(30.5)	190	25	33.7	719	13.9	10.0
MGV3000	3000.0	879	2814	825	95	1785	810	1985	900	10	(25)	100	(30.5)	190	30	36.0	719	17	11
MGV3500	3500.0	1025	3317	972	96	2278	1033	2478	1124	10	(25)	100	(30.5)	222	30	30.6	839	17	9.0
MGV4000	4000.0	1172	3724	1091	96	2278	1033	2478	1124	12	(30)	100	(30.5)	224	34	30.0	848	19	9.1

Dimensions shown in inches *cm*

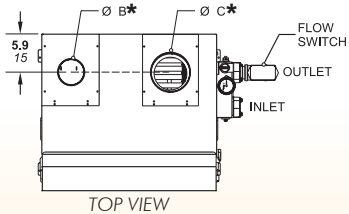
For complete product details and dimensions go to **www.laars.com/document-downloads/submittal-documents**



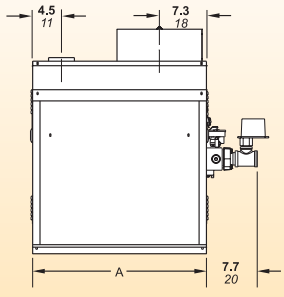
The Mighty Therm2®, 200 – 400 series boiler operates at an environmentally friendly 85% efficiency with low NOx emissions. Easy to use, install, and maintain, it utilizes basic cap and bulb temperature controls and a low voltage terminal strip for simple troubleshooting.

- Glass-lined cast iron or bronze headers and non-ferrous waterways.
- 10 finned tube heat exchanger design for quick and efficient heat transfer
- 85.1% AFUE on MT2H 200 & 300.
- 83.4% Combustion efficiency, 85.3% Thermal efficiency on MT2H 400
- NOx below 10 ppm
- 2-stage firing

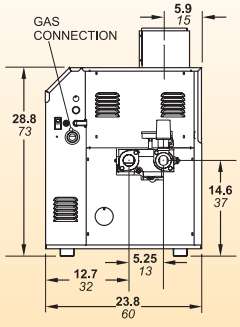
- Immune to thermal shock down to 30°F
- Operates in altitudes up to 10,000 feet
- Ambient temperatures from -40°F to +140°F
- Tolerant of glycol systems
- Waterways able to operate in a maximum water hardness of 17 gpg
- Hydronic models supply temps from 130°F to 240°F
- Heat exchanger is removable from top, back, or front
- Washable air filter
- Gas supply right or left side (field convertible)
- Maintains efficiency and low NOx levels at low and high fire
- Fan-assisted combustion system
- Warranties: 10-Year heat exchanger + 1-Year parts



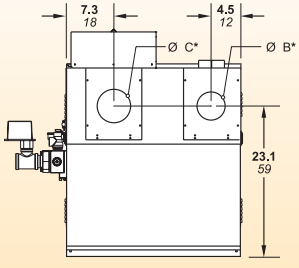
TOP VIEW



FRONT VIEW



RIGHT SIDE VIEW



BACK VIEW

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

Dimensions shown in inches *cm*

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MIGHTY THERM2® SPECIFICATIONS

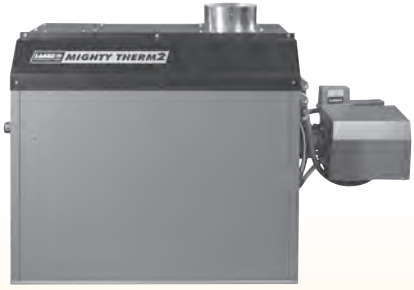
Model	Input MBTU/h	Input kW	Output MT2H MBTU/h	Output MT2H kW	Gas Conn. Size Inches MBTU/h	Water Conn. Size Inches MBTU/h	Shipping Weight lbs.	Shipping Weight kg
MT2H0200	200	*58.6*	170	*50.4*	¾ NPT	1½ NPT	270	*123*
MT2H0300	299	*87.9*	255	*74.7*	¾ NPT	1½ NPT	300	*136*
MT2H0400	399	*117.2*	340	*99.6*	¾ NPT	1½ NPT	330	*150*

Model	A in.	A *cm*	Air Conn. B* in.	Air Conn. B* *cm*	Vent Conn. C* in.	Vent Conn. C* *cm*	Horiz Vent Pipe in.	Horiz Vent Pipe *cm*
MT2H0200	20 1/2	*52*	4	*10*	5	*13*	4	*10*
MT2H0300	26 1/2	*67*	4	*10*	6	*15*	5	*13*
MT2H0400	33 1/2	*85*	6	*15*	7	*18*	6	*15*

Dimensions shown in inches *cm*

EFFICIENCY DATA

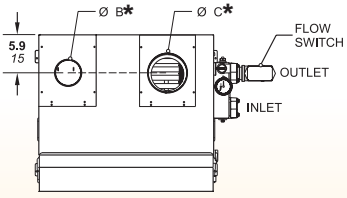
Model	Thermal	Combustion Efficiency	A.F.U.E.
MT2H0200	N/A	N/A	85.1
MT2H0300	N/A	N/A	85.1
MT2H0400	85.3	83.4	N/A



The Mighty Therm2®, 200 – 400 series volume water heater operates at an environmentally friendly 85% efficiency with low NOx emissions. Easy to use, install, and maintain, it utilizes basic cap and bulb temperature controls and a low voltage terminal strip for simple troubleshooting.

- 85% Thermal efficiency
- NOx below 10 ppm
- 2-stage firing
- Immune to thermal shock down to 30°F
- Operates in altitudes up to 10,000 feet
- Ambient temperatures from -40°F to +140°F
- Tolerant of glycol systems
- Waterways able to operate in a maximum water hardness of 17 gpg

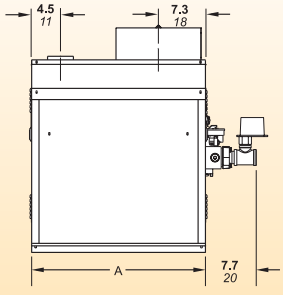
- Volume water heater models supply temps from 130°F to 200°F
- Heat exchanger is removable from top, back, or front
- Washable air filter
- Gas supply right or left side (field convertible)
- Maintains efficiency and low NOx levels at low and high fire
- Fan-assisted combustion system
- Warranties: 10-Year heat exchanger + 1-Year parts



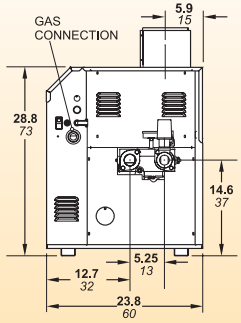
TOP VIEW

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

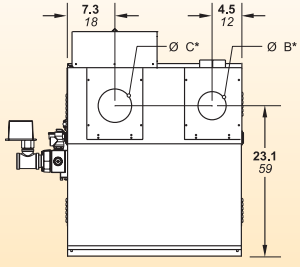
Dimensions shown in inches *cm*



FRONT VIEW



RIGHT SIDE VIEW



BACK VIEW

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MIGHTY THERM2® SPECIFICATIONS

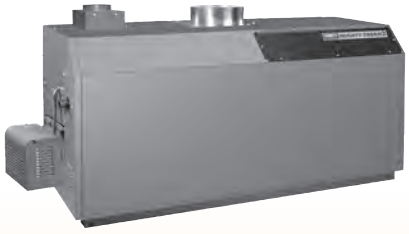
Model	A		Input		Output MT2V		Thermal Efficiency	Gas Conn.	Water Conn.	Air Conn. B*		Vent Conn. C*		Horiz Vent Pipe		Shipping Weight	
	in.	*cm*	MBTU/h	*kW*	MBTU/h	*kW*	%	Size Inches	Size Inches	in.	*cm*	in.	*cm*	in.	*cm*	lbs.	*kg*
MT2V0200	20½	*52*	199.9	*58.6*	169.9	*49.8*	85	¾ NPT	1½ NPT	4	*10*	5	*13*	4	*10*	270	*123*
MT2V0300	26½	*67*	300	*87.9*	255	*74.7*	85	¾ NPT	1½ NPT	4	*10*	6	*15*	5	*13*	300	*136*
MT2V0400	33½	*85*	399.9	*117.2*	339.9	*99.6*	85	¾ NPT	1½ NPT	6	*15*	7	*18*	6	*15*	330	*150*

Temp Rise:	20˚F		*11˚C*		25˚F		*14˚C*		30˚F		*17˚C*		35˚F		*19˚C*	
Model	Flow gpm	H/L feet	*Flow lpm*	*H/L m*	Flow gpm	H/L feet	*Flow lpm*	*H/L m*	Flow gpm	H/L feet	*Flow lpm*	*H/L m*	Flow gpm	H/L feet	*Flow lpm*	*H/L m*
MT2V0200	17	1.6	*64*	*0.5*	14	1.0	*53*	*0.3*	11	0.7	*42*	*0.2*	10	0.5	*38*	*0.2*
MT2V0300	26	3.5	*97*	*1.1*	20	2.3	*76*	*0.7*	17	1.6	*64*	*0.5*	15	1.2	*57*	*0.4*
MT2V0400	34	6.3	*129*	*1.9*	27	4.0	*102*	*1.2*	23	2.8	*87*	*0.9*	19	2.1	*72*	*0.6*

	HARD WATER						NORMAL WATER						SOFT WATER					
Model	Flow gpm	H/L feet	Temp Rise ˚F	*Flow lpm*	*H/L m*	*Temp Rise ˚C*	Flow gpm	H/L feet	Temp Rise ˚F	*Flow lpm*	*H/L m*	*Temp Rise ˚C*	Flow gpm	H/L feet	Temp Rise ˚F	*Flow lpm*	*H/L m*	*Temp Rise ˚C*
MT2V0200	45	7.3	8	*170*	*2.2*	*4*	35	4.4	10	*133*	*1.3*	*6*	23	1.9	15	*87*	*0.6*	*8*
MT2V0300	45	7.4	11	*170*	*2.3*	*6*	35	4.5	15	*133*	*1.4*	*8*	23	2.0	22	*87*	*0.6*	*12*
MT2V0400	45	7.4	15	*170*	*2.3*	*8*	35	4.5	19	*133*	*1.4*	*11*	23	2.0	30	*87*	*0.6*	*17*

*Air connections may be on top or back of the Mighty Therm®2 and are field convertible.

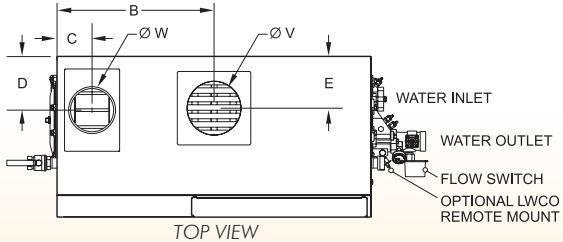
MIGHTY THERM2® COMMERCIAL HYDRONIC BOILER



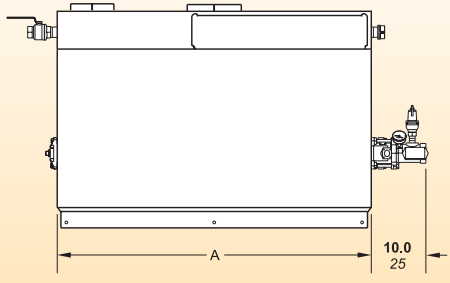
The Mighty Therm2® boiler has been specifically designed to meet the needs of the replacement market by offering simple and straightforward controls with 2-stage firing. It features modular construction that separates the burner trays, gas train, and blower assembly.

- Glass-lined cast iron or bronze headers and non-ferrous waterways.
- 10 finned tube heat exchanger design for quick and efficient heat transfer
- 85% Combustion efficiency, 85% Thermal efficiency
- NOx below 10 ppm
- 2-stage firing
- Immune to thermal shock down to 30°F
- Operates in altitudes up to 10,000 feet

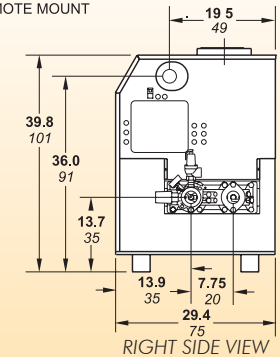
- Ambient temperatures from -40°F to +140°F
- Tolerant of glycol systems
- Waterways able to operate in a maximum water hardness of 17 gpg
- Hydronic models supply temps from 130°F to 240°F
- Heat exchanger is removable from top, back, or front
- Washable air filter
- Gas supply right or left side (field convertible)
- Maintains efficiency and low NOx levels at low and high fire
- Fan-assisted combustion system
- Warranties: 10-Year heat exchanger + 1-Year parts



TOP VIEW



FRONT VIEW



RIGHT SIDE VIEW

Dimensions shown in **inches** *cm*

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MIGHTY THERM2® SPECIFICATIONS

Model	Dimensions A	B	C	D	E	Input MBTU/h	Output MBTU/h	Combustion Efficiency %	Thermal Efficiency %	Gas Connection Sizes inches	Water Connection Sizes inches	Air Conn. W	Vent Conn. V	Approx. Shipping Weight* lbs.	kg
MT2H0500	33¾ *85*	16¾ *43*	6½ *17*	10 *25*	8 *20*	500	425	85.0	85.0	1¼	2	6 *15*	8 *20*	630	*286*
MT2H0750	45¾ *116*	22¾ *53*	6½ *17*	10 *25*	9½ *24*	750	638	85.0	85.0	1¼	2	8 *20*	10 *25*	725	*329*
MT2H1000	57¾ *147*	28¾ *73*	6½ *17*	10 *25*	9½ *24*	999	849	85.0	85.0	1¼	2½	8 *20*	10 *25*	820	*372*
MT2H1250	68¼ *173*	34 *87*	10¼ *26*	10 *25*	9 *23*	1250	1064	85.1	85.2	2	2½	12 *30*	12 *30*	915	*415*
MT2H1500	78¾ *200*	39½ *100*	10¼ *26*	10 *25*	9 *23*	1500	1277	85.1	85.2	2	2½	12 *30*	12 *30*	1010	*458*
MT2H1750	89¼ *227*	44¾ *113*	10¼ *26*	10 *25*	9 *23*	1750	1489	85.1	85.2	2	2½	12 *30*	14 *36*	1105	*501*
MT2H2000	99¾ *253*	49¾ *127*	10¼ *26*	10 *25*	9 *23*	1999	1701	85.1	85.2	2	2½	12 *30*	14 *36*	1200	*544*

Dimensions shown in inches *cm*

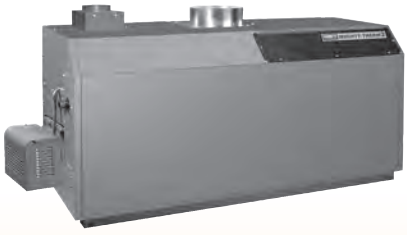
*Add 70 lbs to 200 lbs (depending on model size) to 'Approx. Shipping Weight' if pump mounted.

TEMPERATURE RISES IN DEGREES

Model	20°F Flow GPM	20°F H/L Feet	11°C Flow *lpm*	11°C H/L *m*	25°F Flow GPM	25°F H/L Feet	14°C Flow *lpm*	14°C H/L *m*	30°F Flow GPM	30°F H/L Feet	17°C Flow *lpm*	17°C H/L *m*	35°F Flow GPM	35°F H/L Feet	19°C Flow *lpm*	19°C H/L *m*
MT2H0500	43	1.7	*161*	*0.5*	34	1.1	*129*	*0.3*	28	0.9	*107*	*0.3*	24	0.7	*92*	*0.2*
MT2H0750	64	3.3	*242*	*1.0*	51	2.3	*193*	*0.7*	43	1.7	*161*	*0.5*	36	1.2	*138*	*0.4*
MT2H1000	85	5.0	*321*	*1.5*	68	3.6	*257*	*1.1*	57	3.1	*214*	*0.9*	49	2.2	*184*	*0.7*
MT2H1250	106	8.1	*402*	*2.5*	85	6.1	*322*	*1.9*	71	4.7	*268*	*1.4*	61	3.4	*230*	*1.0*
MT2H1500	128	10.0	*483*	*3.0*	102	7.2	*386*	*2.2*	85	5.5	*322*	*1.7*	73	4.2	*276*	*1.3*
MT2H1750	N/R	N/R	*N/R*	*N/R*	119	10.5	*451*	*3.2*	99	8.4	*375*	*2.6*	85	5.8	*322*	*1.8*
MT2H2000	N/R	N/R	*N/R*	*N/R*	136	12.5	*515*	*3.8*	113	10.4	*429*	*3.2*	97	8.3	*368*	*2.5*

For complete product details and dimensions go to **www.laars.com/document-downloads/submittal-documents**

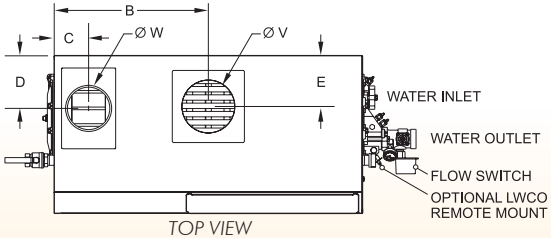
MIGHTY THERM2® COMMERCIAL VOLUME WATER HEATER



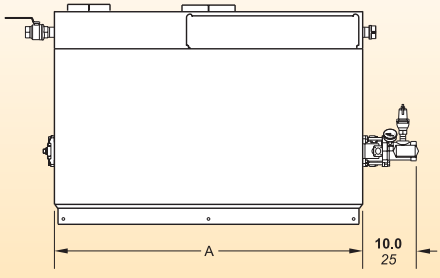
The Mighty Therm2® volume water heater has been specifically designed to meet the needs of the replacement market by offering simple and straightforward controls with 2-stage firing. It features modular construction that separates the burner trays, gas train, and blower assembly.

- 85% Thermal efficiency
- NOx below 10 ppm
- 2-stage firing
- Immune to thermal shock down to 30°F
- Operates in altitudes up to 10,000 feet
- Ambient temperatures from -40°F to +140°F
- Tolerant of glycol systems
- Waterways able to operate in a maximum water hardness of 17 gpg

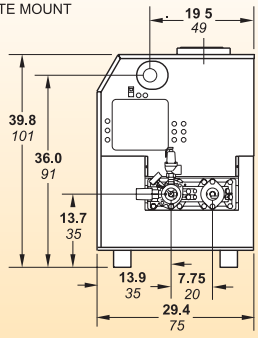
- Volume water heater models supply temps from 130°F to 200°F
- Heat exchanger is removable from top, back, or front
- Washable air filter
- Gas supply right or left side (field convertible)
- Maintains efficiency and low NOx levels at low and high fire
- Fan-assisted combustion system
- 10-Year heat exchanger + 1-Year parts



TOP VIEW



FRONT VIEW



RIGHT SIDE VIEW

Dimensions shown in **inches** *cm*

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MIGHTY THERM2® SPECIFICATIONS

Model	Dimensions A	B	C	D	E	Input MBTU/h	Output MBTU/h	Thermal Efficiency %	Gas Connection Sizes inches	Water Connection Sizes inches	Air Conn. W	Vent Conn. V	Approx. Shipping Weight* lbs. kg
MT2V0500	33¾ 85	16¾ 43	6½ 17	10 25	8 20	500	425	85	1¼	2	6 15	8 20	630 286
MT2V0750	45¾ 116	22¾ 53	6½ 17	10 25	9½ 24	750	638	85	1¼	2	8 20	10 25	725 329
MT2V1000	57¾ 147	28¾ 73	6½ 17	10 25	9½ 24	999	849	85	1¼	2½	8 20	10 25	820 372
MT2V1250	68¼ 173	34 87	10¼ 26	10 25	9 23	1250	1064	85	2	2½	12 30	12 30	915 415
MT2V1500	78¾ 200	39½ 100	10¼ 26	10 25	9 23	1500	1277	85	2	2½	12 30	12 30	1010 458
MT2V1750	89¼ 227	44¾ 113	10¼ 26	10 25	9 23	1750	1489	85	2	2½	12 30	14 36	1105 501
MT2V2000	99¾ 253	49¾ 127	10¼ 26	10 25	9 23	2000	1701	85	2	2½	12 30	14 36	1200 544

Dimensions shown in inches *cm*

*Add 70 lbs to 200 lbs (depending on model size) to 'Approx. Shipping Weight' if pump mounted.

RECOVERY DATA

Model	40°F gph	22°C L/h	50°F gph	28°C L/h	60°F gph	33°C L/h	70°F gph	39°C L/h	80°F gph	44°C L/h	90°F gph	50°C L/h	100°F gph	56°C L/h	120°F gph	67°C L/h	140°F gph	78°C L/h
MT2V0500	1276	4821	1020	3857	850	3214	729	2755	638	2411	567	2143	510	1929	425	1607	364	1378
MT2V0750	1915	7238	1532	5790	1277	4825	1094	4136	957	3619	851	3217	766	2895	638	2413	547	2068
MT2V1000	2548	9632	2038	7705	1699	6421	1456	5504	1274	4816	1132	4281	1019	3853	849	3211	728	2752
MT2V1250	3189	12054	2551	9643	2126	8036	1822	6888	1594	6027	1417	5357	1276	4821	1063	4018	911	3444
MT2V1500	3827	14464	3061	11571	2551	9643	2187	8265	1913	7232	1701	6429	1531	5786	1276	4821	1093	4133
MT2V1750	4464	16875	3571	13500	2976	11250	2551	9643	2232	8438	1984	7500	1786	6750	1488	5625	1276	4821
MT2V2000	5099	19274	4079	15419	3399	12850	2914	11014	2550	9637	2266	8566	2040	7710	1700	6425	1457	5507

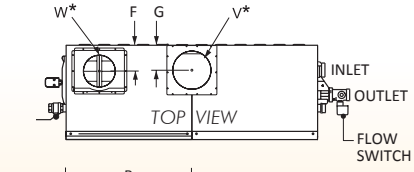
For complete product details and dimensions go to **www.laars.com/document-downloads/submittal-documents**

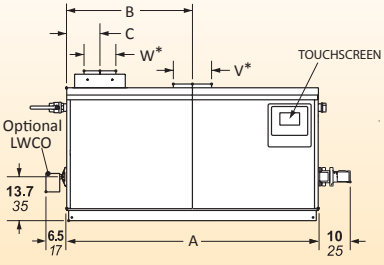
PENNANT® COMMERCIAL BOILER

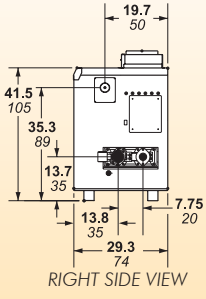
The Pennant® line of fan-assisted, modular boilers ranks among the industry's most versatile and environmentally friendly systems for hydronic applications. Available in 7 sizes from 500 to 2000 MBTU/h, Pennant® boilers deliver efficiency levels up to 85%.

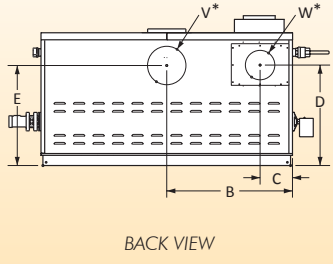
- Easy to use color touchscreen controls
- 85% efficiency
- NOx below 10 ppm
- 2-stage, 3-stage, and 4-stage firing
- Immune to thermal shock down to 30°F
- Operates in altitudes up to 10,000 feet
- Ambient temperatures from -40°F to +140°F

- Tolerant of glycol systems
- Waterways able to operate in a maximum water hardness of 17 gpg
- Hydronic Models supply temps from 125°F to 220°F
- Modular construction: burner trays, gas train, blower assembly
- Glass-lined cast iron or bronze headers
- Heat exchanger uses efficient 10 finned-tube design
- Lightweight insulation
- Warranties: 10-Year heat exchanger + 1-Year parts









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

Dimensions shown in **inches** *cm*

Non pump-mounted unit shown.

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PENNANT® SPECIFICATIONS

Model	Dimensions A	B	C	D	E	F	G	Input[1,3] MBTU/h	Output[1,3] MBTU/h	Combustion Efficiency %	Thermal Efficiency %	Gas Connection Sizes inches	Water Connection Sizes inches	Air Conn W	Vent Conn. V	Horiz. Vent V	Shipping Weight* lbs. kg
PNCH0500	33½ 85	15¾ 40	5¾ 15	29¾ 76	33¾ 86	7¾ 20	8¾ 22	500	425	85.0	85.0	1¼	2	6 15	8 20	6 15	640 290
PNCH0750	45½ 116	21¾ 55	5¾ 15	29¾ 76	33¾ 86	7¾ 20	8¾ 22	750	638	85.0	85.0	1¼	2	8 20	10 25	8 20	735 333
PNCH1000	57½ 146	28¾ 73	5¾ 15	29¾ 76	33¾ 86	7¾ 20	7 18	999	849	85.0	85.0	1¼	2½	8 20	10 25	8 20	830 376
PNCH1250	68 172	34 86	10⅛ 26	30¾ 78	31⅛ 79	8¾ 22	8¾ 22	1250	1064	85.1	85.2	2	2½	12 30	12 30	1025	925 420
PNCH1500	78½ 199	39¾ 101	10⅛ 26	30¾ 78	31⅛ 79	8¾ 22	8¾ 22	1500	1266	85.1	85.2	2	2½	12 30	12 30	1025	1020 463
PNCH1750	89 226	44½ 113	10⅛ 26	30¾ 78	31⅛ 79	8¾ 22	8¾ 22	1750	1489	85.1	85.2	2	2½	12 30	14 36	1230	1115 506
PNCH2000	99½ 253	49¾ 126	10⅛ 26	30¾ 78	31⅛ 79	8¾ 22	8¾ 22	1999	1701	85.1	85.2	2	2½	12 30	14 36	1230	1210 549

Dimensions shown in inches *cm*

NOTES: 1. Input and output must be de-rated 4% per 1000 feet above sea level when installed above 2000 feet altitude.
2. For other boiler ratings:
Boiler Horsepower: HP = Output Radiation Surface: EDR sq. ft. / 33,475 = Output IBR sq. ft. / 150 = Net IBR Rating / 150
3. Add 70 lbs to 200 lbs (depending on model size) to 'Shipping Weight', if pump mounted.

TEMPERATURE RISES IN DEGREES

Model	20°F Flow GPM	20°F H/L Feet	11°C Flow lpm	11°C H/L m	25°F Flow GPM	25°F H/L Feet	14°C Flow lpm	14°C H/L m	30°F Flow GPM	30°F H/L Feet	17°C Flow lpm	17°C H/L m	35°F Flow GPM	35°F H/L Feet	19°C Flow lpm	19°C H/L m
PNCH0500	43	1.7	161	0.5	34	1.1	129	0.3	28	0.9	107	0.3	24	0.7	92	0.2
PNCH0750	64	3.3	241	1.0	51	2.3	193	0.7	43	1.7	161	0.5	36	1.2	138	0.4
PNCH1000	85	5.0	321	1.5	68	3.6	257	1.1	57	3.1	214	0.9	48	2.2	184	0.7
PNCH1250	106	8.1	401	2.5	85	6.1	322	1.9	71	4.7	269	1.4	61	3.4	231	1.0
PNCH1500	128	10.0	483	3.0	102	7.2	356	2.2	85	5.5	322	1.7	73	4.2	276	1.3
PNCH1750	N/R	N/R	N/R	N/R	119	10.5	451	3.2	99	8.4	375	2.6	85	5.8	322	1.8
PNCH2000	N/R	N/R	N/R	N/R	136	12.5	515	3.2	113	10.4	429	3.2	97	8.3	368	2.5

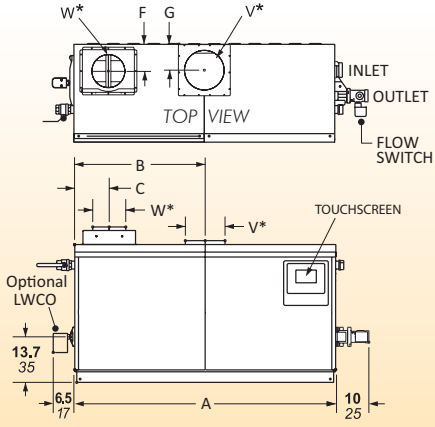
PENNANT® COMMERCIAL VOLUME WATER HEATER

The Pennant® line of fan-assisted, volume water heaters ranks among the industry's most versatile systems for hot water applications. Available in 7 sizes from 500 to 2000 MBTU/h, Pennant® water heaters run and deliver efficiency levels up to 85%.

- Volume Water Heater models supply temps from 125°F to 210°F
- Modular construction: burner trays, gas train, blower assembly
- Glass-lined cast iron or bronze headers
- Heat exchanger uses efficient 10 finned-tube design
- Lightweight insulation
- Warranties: 10-Year heat exchanger + 1-Year parts

- Easy to use color touchscreen controls
- Up to 85% efficiency
- NOx below 10 ppm
- 2-stage, 3-stage, and 4-stage firing
- Immune to thermal shock down to 30°F
- Operates in altitudes up to 10,000 feet
- Ambient temperatures from -40°F to +140°F
- Tolerant of glycol systems
- Waterways able to operate in a maximum water hardness of 17 gpg

HLW



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

Dimensions shown in **inches** *cm*

Non pump-mounted unit shown.

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PENNANT® SPECIFICATIONS

Model	Dimensions A	B	C	D	E	F	G	Input[1,3] MBTU/h	Output[1,3] MBTU/h	Thermal Efficiency	Gas Connection Sizes inches	Water Connection Sizes inches	Air Conn. W	Vent Conn. V	Horiz. Vent V	Shipping Weight lbs.	kg
PNCV0500	33½ *85*	15¾ *40*	5¾ *15*	29¾ *76*	33¾ *86*	7¾ *20*	8¾ *22*	500	425	85	1¼	2	6 *15*	8 *20*	6 *15*	640	*290*
PNCV0750	45½ *116*	21¾ *55*	5¾ *15*	29¾ *76*	33¾ *86*	7¾ *20*	8¾ *22*	750	638	85	1¼	2	8 *20*	10 *25*	8 *20*	735	*333*
PNCV1000	57½ *146*	28¾ *73*	5¾ *15*	29¾ *76*	33¾ *86*	7¾ *20*	7 *18*	999	849	85	1¼	2½	8 *20*	10 *25*	8 *20*	830	*376*
PNCV1250	68 *172*	34 *86*	10⅛ *26*	30¾ *78*	31⅛ *79*	8¾ *22*	8¾ *22*	1250	1064	85	2	2½	12 *30*	12 *30*	10 *25*	925	*420*
PNCV1500	78½ *199*	39¾ *101*	10⅛ *26*	30¾ *78*	31⅛ *79*	8¾ *22*	8¾ *22*	1500	1266	85	2	2½	12 *30*	12 *30*	10 *25*	1020	*463*
PNCV1750	89 *226*	44½ *113*	10⅛ *26*	30¾ *78*	31⅛ *79*	8¾ *22*	8¾ *22*	1750	1489	85	2	2½	12 *30*	14 *36*	12 *30*	1115	*506*
PNCV2000	99½ *253*	49¾ *126*	10⅛ *26*	30¾ *78*	31⅛ *79*	8¾ *22*	8¾ *22*	2000	1701	85	2	2½	12 *30*	14 *36*	12 *30*	1210	*549*

NOTES: 1. Input and output must be de-rated 4% per 1000 feet above sea level when installed above 2000 feet altitude.

Dimensions shown in inches *cm*

2. For other boiler ratings:
Boiler Horsepower: HP = Output / 33,475 Radiation Surface: EDR sq. ft. = Output / 150 IBR sq. ft. = Net IBR Rating / 150
3. Add 70 lbs to 200 lbs (depending on model size) to 'Shipping Weight', if pump mounted.

RECOVERY DATA

Model	40° F GPH	22° C L/h	50° F GPH	28° C L/h	60° F GPH	33° C L/h	70° F GPH	39° C L/h	80° F GPH	44° C L/h	90° F GPH	50° C L/h	100° F GPH	56° C L/h	120° F GPH	67° C L/h	140° F GPH	78° C L/h
PNCV0500	1276	*4821*	1120	*3857*	850	*3214*	729	*2755*	638	*2411*	567	*2143*	510	*1929*	425	*1607*	364	*1378*
PNCV0750	1913	*7232*	1531	*5786*	1276	*4821*	1093	*4133*	957	*3616*	850	*3214*	765	*2893*	638	*2411*	547	*2066*
PNCV1000	2548	*9633*	2039	*7707*	1699	*6422*	1456	*5505*	1274	*4817*	1133	*4281*	1019	*3853*	849	*3211*	728	*2752*
PNCV1250	3189	*12054*	2551	*9643*	2126	*8036*	1822	*6888*	1594	*6027*	1417	*5357*	1276	*4821*	1063	*4018*	911	*3444*
PNCV1500	3827	*14464*	3061	*11571*	2551	*9643*	2187	*8265*	1913	*7232*	1701	*6429*	1531	*5786*	1276	*4821*	1093	*4133*
PNCV1750	4464	*16875*	3571	*13500*	2976	*11250*	2551	*9643*	2232	*8438*	1984	*7500*	1786	*6750*	1488	*5625*	1276	*4821*
PNCV2000	5099	*19276*	4080	*15421*	3400	*12851*	2914	*11015*	2550	*9638*	2266	*8567*	2040	*7710*	1700	*6425*	1457	*5507*

The Low Return Water Temperature Pennant® commercial boiler and volume water heaters eliminate the problem of condensation shortening the life of the heat exchanger. A factory mounted three-way valve and an automatic bypass system help to maintain a minimum boiler return temperature.

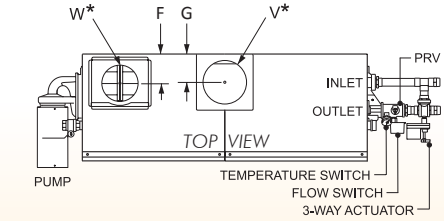
- Boiler operating control of 120°F (49°C).
- Heat exchanger condensation is prevented
- Long boiler life, even with rapid swings in the return water temperature
- Operates successfully with return water temperatures as low as 70°F (21°C)
- Easy to use color touchscreen controls
- Seven sizes available from 500 – 2,000MBH
- Perfect for backup to heat pump systems, radiant floor heating, snow melting systems, and low-temp baseboard systems

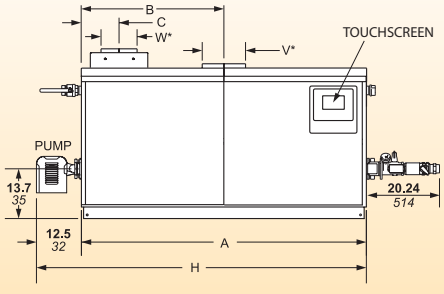
H HLW

- Warranties: 10-Year heat exchanger + 1-Year parts

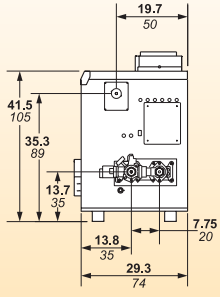
*Air and vent connections may be on top or back of the Pennant, and are field convertible.

Dimensions shown in **inches** *cm*

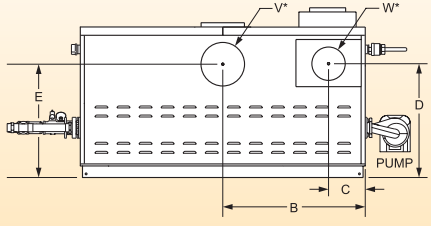




FRONT VIEW



SIDE VIEW



BACK VIEW

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LOW-TEMP PENNANT® SPECIFICATIONS

Model	A in.	A cm	B in.	B cm	C in.	C cm	D in.	D cm	E in.	E cm	F in.	F cm	G in.	G cm	H in.	H cm	Air Conn. W* in.	Air Conn. W* cm	Vent Conn. V* in.	Vent Conn. V* cm	Horiz Vent Pipe in.	Horiz Vent Pipe cm
PNCH0500	33 1/2	85	15 3/4	40	5 3/4	15	29 3/4	76	33 3/4	86	7 3/4	20	8 3/4	22	46	117	6	15	8	20	6	15
PNCH0750	45 1/2	116	21 3/4	55	5 3/4	15	29 3/4	76	33 3/4	86	7 3/4	20	8 3/4	22	58	147	8	20	10	25	8	20
PNCH1000	57 1/2	146	28 3/4	73	5 3/4	15	29 3/4	76	33 3/4	86	7 3/4	20	7	18	70	178	8	20	10	25	8	20
PNCH1250	68	172	34	86	10 1/4	26	30 3/4	78	31 1/8	79	8 3/4	22	8 3/4	22	80	203	12	30	12	30	10	25
PNCH1500	78 1/2	199	39 3/4	101	10 1/4	26	30 3/4	78	31 1/8	79	8 3/4	22	8 3/4	22	91	231	12	30	12	30	10	25
PNCH1750	89	226	44 1/2	113	10 1/4	26	30 3/4	78	31 1/8	79	8 3/4	22	8 3/4	22	101	256	12	30	14	36	12	30
PNCH2000	99 1/2	253	49 3/4	126	10 1/4	26	30 3/4	78	31 1/8	79	8 3/4	22	8 3/4	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.

Model	Input[1] MBTU/h	Output[1] MBTU/h	PNCH Combustion Efficiency %	PNCV Thermal Efficiency %	PNCH Thermal Efficiency %	Gas Connection Size Inches	Heater Water Connection Size Inches	Shipping Weight lbs.	Shipping Weight kg
PNCH0500	500	425	85	85	85.0	1 1/4	2	775	352
PNCH0750	750	638	85	85	85.0	1 1/4	2	870	395
PNCH1000	999	849	85	85	85.0	1 1/2	2	1035	469
PNCH1250	1250	1064	85.1	85	85.2	2	2	1130	513
PNCH1500	1500	1266	85.1	85	85.2	2	2	1285	583
PNCH1750	1750	1489	85.1	85	85.2	2	2	1380	626
PNCH2000	1999*	1701	85.1	85	85.2	2	2	1510	685

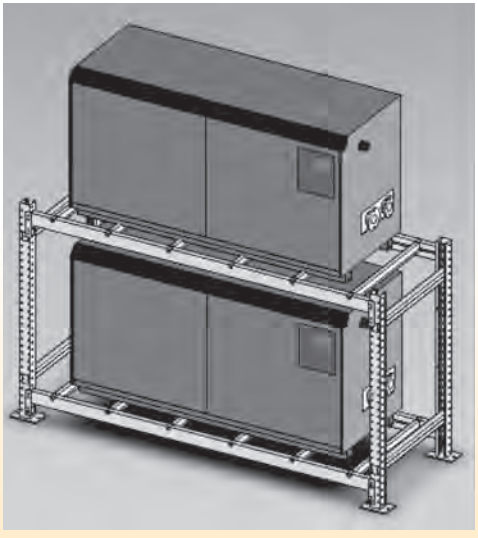
*The Input MBTU/h for the 2000 is 1999.0 (PNCH) / 2000.0 (PNCV)

NOTES: 1. Input and output must be de-rated 4% per 1000 feet above sea level when installed above 2000 feet altitude.

2. For other boiler ratings:

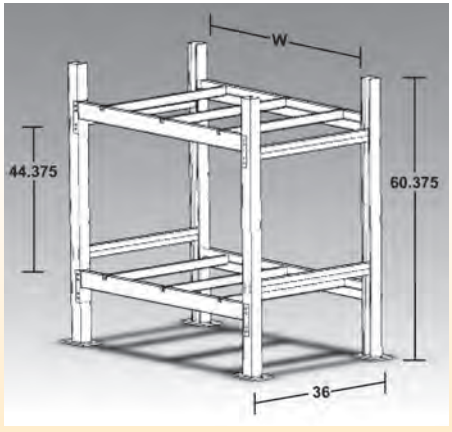
Boiler Horsepower: HP = $\frac{\text{Output}}{33{,}475}$ Radiation Surface: EDR sq. ft. = $\frac{\text{Output}}{150}$ IBR sq. ft. = $\frac{\text{Net IBR Rating}}{150}$

RACKS FOR PENNANT®



This solidly constructed rack system allows the stacking of two Pennant® units, in-line without offset and accommodates venting and piping configurations. Pennant models with pumps mounted can be applied and will overhang on sides of rack.

- Maximizes floor space
- Doubles the heating capacity per square foot of floor space
- Easy to assemble
- Works with Pennant Hydronic Boilers or Volume Water Heaters
- Stack two units in-line without offset
- Accommodates venting and piping configurations
- Construction meets or exceeds California requirements and is Seismic Approved and Certified



Dimensions shown in inches
W is the inside dimension.

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RACKS FOR PENNANT® SPECIFICATIONS

Ass'y P/N	Dimension (inside) "W"	Models Used without Pump	Models Used with Pump	Weight lbs
CA000700	42	Pennant 500	——	183
CA000800	54	Pennant 750	Pennant 500	195
CA000900	66	Pennant 1000	Pennant 750	214
CA001000	84	Pennant 1250	Pennant 1000	230
CA001100	98	Pennant 1500, 1750	Pennant 1250	265
CA001200	108	Pennant 2000	Pennant 1500, 1750	275
CA001300	126	——	Pennant 2000	289

Note: Models with pumps mounted can be applied and will overhang on sides of rack.

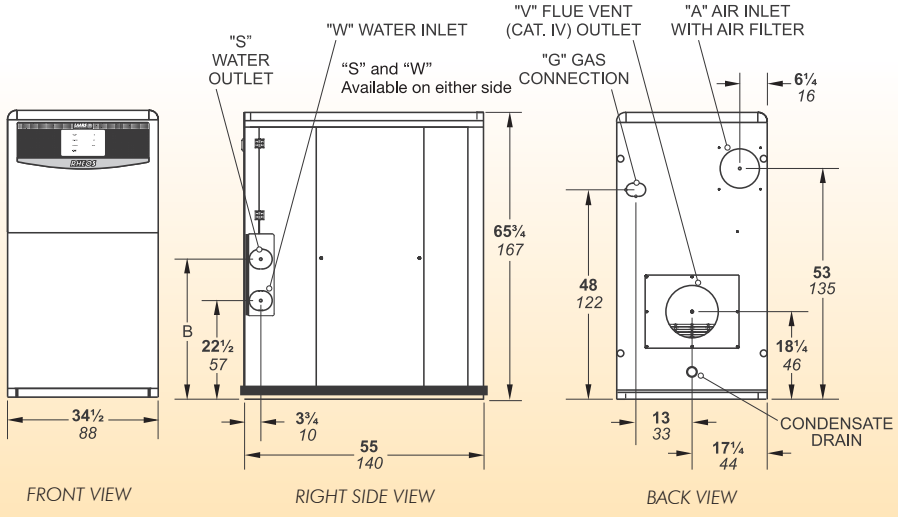
RHEOS® COMMERCIAL BOILER

Rheos® boiler technology uses precise modulation electronics that sense conditions and automatically adjust the boiler performance to meet the required heating load. The Rheos® efficiency can cut fuel costs by as must as 30% over traditional boilers. Comes in 1200-2400 MBH.

- Manual reset high-limit
- Fits through a 36" doorway
- High gas pressure switch
- Low gas pressure switch
- Air pressure switch
- ASME CSD-1
- Water flow switch
- Vertical or horizontal venting options (Category IV)
- Pump time delay
- Low-fire start time delay
- 160 lb. w.p. heat exchanger
- 75 psi pressure relief valve (boiler)
- Warranties: 10-Year heat exchanger + 1-Year parts

- Modulating proportional firing control system (50-100%)
- All waterways are copper or glass-lined
- Low-water cutoff with test light and manual reset button

Dimensions shown in **inches** *cm*



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RHEOS® SPECIFICATIONS

Model	Input High Fire MBTU/h *kW*	Input Low Fire MBTU/h *kW*	Output High Fire MBTU/h *kW*	Output Low Fire MBTU/h *kW*	Combustion Efficiency %	Thermal Efficiency %	"G" Gas Connections Control Packages Std, A, C, D, F, G NAT/LP NPT	B & E Nat NPT	B & E Nat NPT	Water Conn. W	Air Conn. A	Water Outlet B	Vent Conn. V	Shipping Weight lbs. *kg*
RHCH1200	1200 *352*	600 *176*	1032 *302*	516 *151*	86.4	86	1	1½	1½	2½	6 *15*	34¼ *87*	6 *15*	1220 *554*
RHCH1600	1600 *469*	800 *234*	1376 *403*	688 *202*	86	86.3	1½	2	2	2½	8 *20*	34¼ *87*	6 *15*	1265 *574*
RHCH2000	2000 *586*	999.5 *293*	1719 *504*	859.5 *252*	85.7	86.7	1½	2	2	3	8 *20*	34¼ *87*	7 *18*	1295 *588*
RHCH2400	2400 *703*	1200 *352*	2064 *605*	1032 *302*	85.5	86.9	1½	2	2	3	8 *20*	32 *81*	10 *25*	1350 *613*

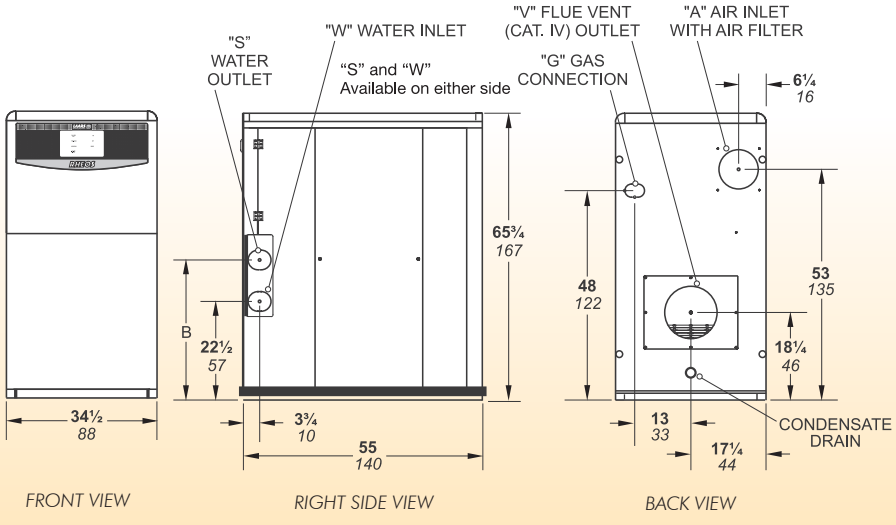
RHEOS® COMMERCIAL VOLUME WATER HEATER

The Rheos® volume water heater is a compact high-efficiency, low-cost system for commercial water heating installations requiring up to 2400 MBH.

- Manual reset high-limit
- Fits through a 36" doorway
- High gas pressure switch
- Low gas pressure switch
- Air pressure switch
- ASME CSD-1
- Water flow switch
- Vertical or horizontal venting options (Category IV)
- Pump time delay
- Low-fire start time delay
- 160 lb. w.p. heat exchanger
- 125 psi pressure relief valve (water heater)
- Warranties: 10-Year heat exchanger + 1-Year parts

- Modulating proportional firing control system (50-100%)
- All waterways are copper or glass-lined
- Low-water cutoff with test light and manual reset button

HLW



Dimensions shown in **inches** *cm*

FRONT VIEW *RIGHT SIDE VIEW* *BACK VIEW*

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RHEOS® SPECIFICATIONS

Model	Input High Fire MBTU/h	kW	Input Low Fire MBTU/h	kW	Output High Fire MBTU/h	kW	Output Low Fire MBTU/h	kW	Thermal Efficiency %	"G" Gas Connections Control Packages Std, A, C, D, F, G NAT/LP NPT	B & E Nat NPT	B & E Nat NPT	Water Conn. W	Air Conn. A	Water Outlet B	Vent Conn. V	Shipping Weight lbs.	kg
RHCV1200	1200	352	600	176	1032	302	516	151	86	1	1½	1½	2½	6 15	34¼ 87	6 15	1220	554
RHCV1600	1600	469	800	234	1376	403	688	202	86	1½	2	2	2½	8 20	34¼ 87	6 15	1265	574
RHCV2000	2000	586	999.5	293	1719	504	859.5	252	86	1½	2	2	3	8 20	34¼ 87	7 18	1295	588
RHCV2400	2400	703	1200	352	2064	605	1032	302	86	1½	2	2	3	8 20	32 81	10 25	1350	613

RECOVERY DATA

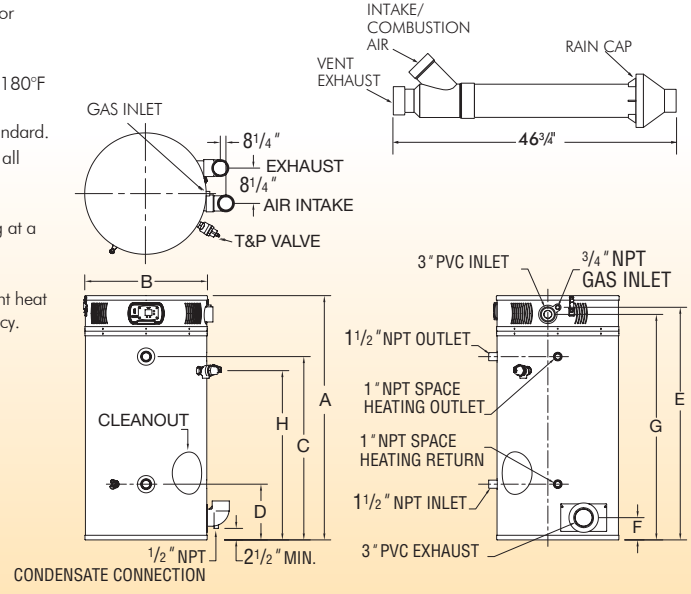
Model	40° F GPH	22° C L/h	50° F GPH	28° C L/h	60° F GPH	33° C L/h	70° F GPH	39° C L/h	80° F GPH	44° C L/h	90° F GPH	50° C L/h	100° F GPH	56° C L/h	120° F GPH	67° C L/h	140° F GPH	78° C L/h
RHCV1200	3061	11571	2449	9257	2041	7714	1749	6612	1531	5789	1361	5143	1224	4629	1020	3857	875	3306
RHCV1600	4082	15429	3265	12343	2721	10286	2332	8816	2041	7714	1814	6857	1633	6171	1361	5143	1166	4408
RHCV2000	5102	19286	4082	15429	3401	12857	2915	11020	2551	9643	2268	8571	2041	7714	1701	6429	1458	5510
RHCV2400	6100	23143	4898	18514	4082	15429	3499	13224	3061	11571	2721	10286	2449	9257	2041	7714	1749	6612

U.H.E.® COMMERCIAL WATER HEATER

Laars U.H.E.® has a remarkable thermal efficiency rating, as high as 99.1% — that makes this line of commercial water heaters the most efficient in its class. In addition, the Laars® U.H.E.™ is second-to-none in installation flexibility.

- Thermal Efficiency up to 99.1%
- Integrated Control system combines temperature control, diagnostic codes, and system ignition functions
- Direct Spark Ignition for improved operational dependability and durability.
- Premix Power Burner automatically increases or decreases fuel flow when a change in combustion air is detected
- Flexible venting vertically or horizontally with either 3" or 4" PVC, CPVC or ABS (not approved for Canada) vent pipe
- Approved for direct vent closed combustion applications approved for unbalanced venting
- 1" NPT side connections for space heating
- Sanitizing capability — temperature setting up to 180°F (82°C).
- Low NOx construction standard.
- ASME Code available on all models
- Three pass flue system — combustion gases moving at a high velocity.
- Submerged combustion chamber minimizes radiant heat loss and improves efficiency.
- Zero Inch Clearance for unsurpassed installation flexibility.
- Warranties: 3-Year tank + 1-Year parts

HLW



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U.H.E.® SPECIFICATIONS

Model	Capacity U.S. Gal.	Capacity Imp. Gal.	Input Nat. MBTU/h Input	Input LP MBTU/h. Input	1ST Hour Delivery at 100°F Rise Gal.	GPH Recovery at Degree Rise* 40°F	100°F	140°F	Therm. Eff. %	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.	Water Conn. Dia. in.	Gas Conn. Dia. in.	Relief Valve Open in.	Approx. Shipping Weight lbs.
LUHE60T125E3N(A)	60	50	125	125	187	364	145	104	96	57	28¼	42½	13	53½	5	52½	40	1½	¾	¾	570
LUHE60T150E3N(A)	60	50	150	150	211	423	169	121	93	57	28¼	42½	13	53½	5	52½	40	1½	¾	¾	570
LUHE60T199E3N(A)	60	50	199.9	199.9	265	558	223	159	92	57	28¼	42½	13	53½	5	52½	40	1½	¾	¾	570
LUHE100T150E3N(A)	100	83	150	150	250	450	180	129	99	77⅝	28¼	62½	13	74¾	5	73⅛	60	1½	¾	¾	900
LUHE100T199E3N(A)	100	83	199.9	199.9	309	597	239	171	99	77⅝	28¼	62½	13	74¾	5	73⅛	60	1½	¾	¾	900
LUHE100T250E3N(A)	100	83	250	250	364	735	294	210	97	77⅝	28¼	62½	13	74¾	5	73⅛	60	1½	¾	1	900
LUHE100T300E3N(A)	100	83	300	300	405	836	335	239	92	77⅝	28¼	62½	13	74¾	5	73⅛	60	1½	¾	1	900
LUHE100T399E3N(A)	100	83	399.9	399.9	521	1127	451	322	94	77⅝	28¼	63	13	73¼	5	73⅛	60	1½	1	1	950

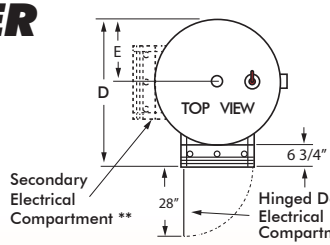
Model	Capacity Liters	Input Nat. kW/Hr. Input	Input LP kW/Hr. Input	1ST Hour Delivery at 56°C Rise Liters	LPH Recovery at Degree Rise* 22°C	56°C	78°C	Therm. Eff. %	A Floor to Top of Heater mm.	B Jacket Dia. mm.	C Floor to Hot Water Conn. mm.	D Floor to Cold Water Conn. mm.	E Floor to Gas Conn. mm.	F Floor to Vent Conn. mm.	G Floor to Air Intake Conn. mm.	H Floor to T&P Conn. mm.	Water Conn. Dia. mm.	Gas Conn. Dia. mm.	Relief Valve Open mm.	Approx. Shipping Weight kg
LUHE60T125E3N(A)	227	36.6	36.6	708	1378	549	394	96.0	1448	718	1087	330	1359	127	1334	1016	38	19	19	259
LUHE60T150E3N(A)	227	43.9	43.9	799	1601	640	458	93.0	1448	718	1087	330	1359	127	1334	1016	38	19	19	259
LUHE60T199E3N(A)	227	58.6	58.6	1003	2112	844	602	92.0	1448	718	1087	330	1359	127	1334	1016	38	19	19	259
LUHE100T150E3N(A)	379	43.9	43.9	946	1703	681	488	99.1	1972	718	1588	330	1899	127	1857	1527	38	19	19	408
LUHE100T199E3N(A)	379	58.6	58.6	1170	2260	905	647	98.5	1972	718	1588	330	1899	127	1857	1527	38	19	19	408
LUHE100T250E3N(A)	379	73.2	73.2	1378	2782	1113	795	97.0	1972	718	1588	330	1899	127	1857	1527	38	19	25	408
LUHE100T300E3N(A)	379	87.9	87.9	1533	3165	1268	905	92.0	1972	718	1588	330	1899	127	1857	1527	38	19	25	408
LUHE100T399E3N(A)	379	117.2	117.2	1972	4266	1707	1219	93.0	1970	720	1600	330	1860	130	1860	1530	40	30	30	431

(A) ASME — All models are available with ASME construction by adding the A at end of model number string
Note: For propane, remove the 11th character E and change the 13th character to X in model number. Example: LUME60T125**E3N**(A) to LUME60T1253X(A)

For complete product details and dimensions go to www.laars.com/document-downloads/submittal-documents

ELECTRA-THERM® COMMERCIAL VERTICAL ROUND, ELECTRIC WATER HEATER

The Electra-Therm is the electric solution for a wide range of commercial water heating applications. These units meet ASHRAE 90.1b standards for heat loss. This makes it possible for a maximum of 4 watts per square foot of tank surface energy loss, resulting in big savings and operating efficiency!
3 Year Limited Tank Warranty

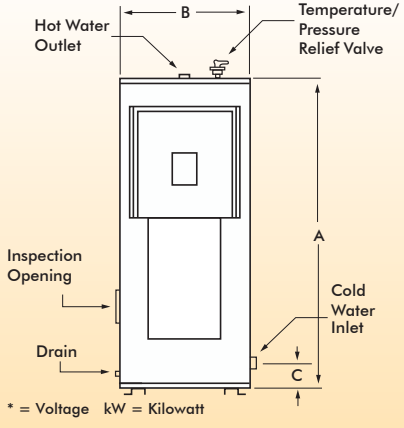


Standard Features:
- 150 psi ASME Code Glass-Lined Tank
- ASME Temperature and Pressure Relief Valve
- Internal Fusing (above 120 amps)
- Incoloy Heating Elements
- Painted Steel Jacket
- Magnesium Anode Rods

Intertek HLW

Standard Features (continued)
- Immersion Thermostats
- Magnetic Contactors
- Manual Reset High Limit
- Hinged Door with Keyed Lock
- Channel Iron Skid Base
- Approved for 180 F Operation
- Lifting Lug access

Optional:
- BMS Contacts
- Low Water Cut-off
- Pilot Lights and Manual Limiting Switches
- Electric Step Controller (36kW & higher)
- Alarm Bell
- Shunt Trip Disconnect (Separate mounting)
- Low Pressure Switch
- High Pressure Switch
- Time Clock (7 Day)
- Time Clock (24 Hour)•
- Safety door interlock
- T&P gauge
- 12" x 16" Manhole (250 Gallons and Larger)



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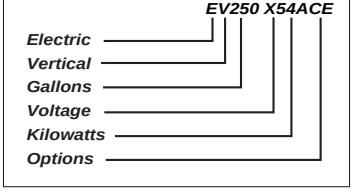
ELECTRA-THERM® 150 - 2500 GALLON CAPACITY SPECIFICATIONS

Model Number	Gallon Capacity	Maximum kW	A Floor to Top of Heater	B Jacket Dia.	C Floor to Cold Water Inlet	D Depth	E Back of Heater to Hot Water Outlet	Water Connection	Approx. Ship Weight
EV150 - *(kW)	150	90	67 1/2"	32	7 3/4"	38 3/4"	16"	1 1/2"	650
EV200 - *(kW)	200	162	80"	32	7 3/4"	38 3/4"	17"	1 1/2"	750
EV250 - *(kW)	250	162	92"	34	19 1/2"	40 3/4"	17"	1 1/2"	1165
EV300 - *(kW)	300	162	80"	40	21"	40 3/4"	20"	2"	1350
EV400 - *(kW)	400	162	80"	46	22 1/2"	52 3/4"	23"	2"	1590
EV500 - *(kW)	500	162	92"	46	22 1/2"	52 3/4"	23"	2"	1700
EV600 - *(kW)	600	216	92"	52	24 1/2"	58 3/4"	26"	2 1/2"	2010
EV800 - *(kW)	800	270	104"	52	24 1/2"	58 3/4"	26"	2 1/2"	2450
EV1000 - *(kW)	1000	360	128"	52	24 1/2"	58 3/4"	26"	2 1/2"	3160
EV1250 - *(kW)	1250	360	133"	58	26"	64 3/4"	29"	3"	3792
EV1500 - *(kW)	1500	360	129"	64	271/2"	70 3/4"	32"	3"	4550
EV2000 - *(kW)	2000	360	140"	70	29 1/2"	76 3/4"	35"	3"	5460
EV2500 - *(kW)	2500	360	144"	76	30 1/2"	82 3/4"	38"	3"	6553

Available Voltages

A - 240V, 1ph	B - 240V, 3ph
J - 208V, 1ph	K - 208V, 3ph
Q - 400V, 3ph	W - 277V, 1ph
X - 480V, 3ph	Y - 380V, 3ph
Z - 415V, 3ph	N - 600V, 3ph

Part Number Example:



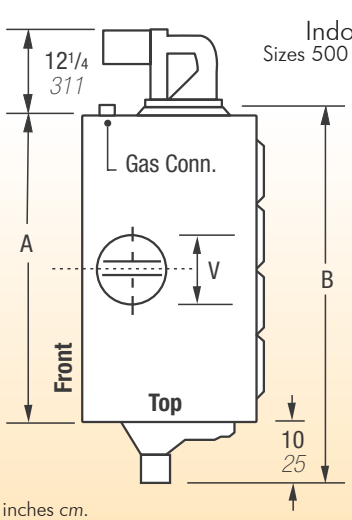
** Note: Vertical round models above 90kW at 208V, 240V or 380V, and 162kW at 400V or 480V, exceed the capacity of a single control panel and may require multiple control panels. Consult the factory for specific details and optional construction.

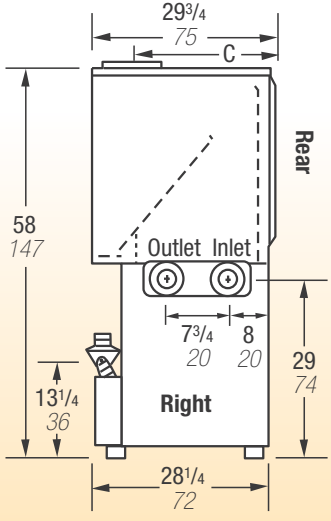
MIGHTY THERM® AP INDOOR COMMERCIAL POOL HEATER

- Nine sizes available 500 – 1825MBH inputs
- Natural or propane gas models
- Electronic ignition
- Built-in draft diverter to simplify installation

The field proven Mighty Therm® Model AP indoor pool heating boilers **(500 – 1825MBH)** are designed for commercial, institutional, and large residential pools where economical performance, reliability and rapid heat-up are needed.

- Flow switch standard on all models
- Integral pump assures proper water flow
- Automatic gas valve
- Stainless steel burners, with slide-out burner tray for easy maintenance
- Electronic flame supervision
- Galvanized steel jacket with acrylic finish for long life
- High temperature refractory firebox liner — to 2000°F for greater efficiency
- Integral header flanges for easier serviceability
- Glass-lined or bronze headers for corrosion resistance
- Integral lined copper tube heat exchanger
- Warranties: 5-Year heat exchanger + 1-Year parts





Dimensions shown in inches *cm*.
All specifications subject to change.

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MIGHTY THERM® AP 500 I–1825 INDOOR MODELS SPECIFICATIONS

Model	Dimensions[2] inches *cm* A		B		C		V		Input[1] MBTU/h	*kW*	Output[1] MBTU/h	*kW*	Gas Connection[2] Size - inches NPT Natural	LP	Water Connection[2] Size - inches NPT	Shipping Weight[3] lbs	*kgs*
AP500 I	33 3/4	*86*	45 1/4	*115*	23 3/4	*60*	10	*25*	500	*147*	405	*119*	1	3/4	2 1/2	808	*367*
AP600 I	38 3/4	*98*	50 1/4	*128*	22 3/4	*58*	12	*30*	600	*176*	486	*143*	1	3/4	2 1/2	819	*372*
AP715 I	44 1/4	*112*	55 1/4	*142*	22 3/4	*58*	12	*30*	715	*210*	579	*170*	1	3/4	2 1/2	873	*396*
AP850 I	50 3/4	*129*	62 1/4	*158*	21 3/4	*55*	14	*36*	850	*249*	689	*202*	1	3/4	2 1/2	945	*429*
AP1010 I	58	*147*	69 1/2	*177*	20 3/4	*53*	16	*41*	1010	*296*	818	*240*	1 1/4	1	2 1/2	1041	*473*
AP1200 I	66 1/4	*168*	77 3/4	*197*	20 3/4	*53*	16	*41*	1200	*352*	972	*285*	1 1/4	1	2 1/2	1199	*544*
AP1430 I	76	*193*	87 1/2	*222*	19 3/4	*50*	18	*46*	1430	*419*	1158	*339*	1 1/4	1 1/4	2 1/2	1280	*581*
AP1670 I	85 1/2	*217*	97	*246*	19 3/4	*50*	18	*46*	1670	*689*	1353	*396*	1 1/2	1 1/4	2 1/2	1445	*656*
AP1825 I	92 1/2	*235*	103 3/4	*264*	19 3/4	*50*	18	*46*	1825	*535*	1478	*433*	1 1/2	1 1/4	2 1/2	1570	*713*

Notes:1. Input and output must be de-rated 4% per 1000 feet above sea level when installed above 2000 feet altitude. 2. Dimensions are nominal. 3. Integral pump included on sizes 500 – 1825.

Model	Temperature Difference Surface Area of Pools (sq. ft.) 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*
AP500 I	3900	*362*	2600	*242*	1950	*181*	1560	*145*	1300	*121*	1115	*104*	975	*91*	870	*81*	780	*72*
AP600 I	4680	*435*	3120	*290*	2340	*217*	1870	*174*	1560	*145*	1340	*124*	1170	*109*	1040	*97*	935	*87*
AP715 I	5580	*518*	3720	*346*	2790	*259*	2230	*207*	1860	*173*	1595	*148*	1395	*130*	1240	*115*	1115	*104*
AP850 I	6630	*616*	4420	*411*	3315	*308*	2650	*246*	2210	*205*	1895	*176*	1660	*154*	1475	*137*	1325	*123*
AP1010 I	7880	*732*	5250	*488*	3940	*366*	3150	*293*	2625	*244*	2259	*210*	1970	*183*	1750	*163*	1575	*146*
AP1200 I	9360	*870*	6240	*580*	4680	*435*	3745	*348*	3120	*290*	2675	*249*	2340	*217*	2080	*193*	1870	*174*
AP1430 I	11155	*1036*	7435	*691*	5580	*518*	4460	*414*	3720	*346*	3190	*296*	2790	*259*	2480	*230*	2230	*207*
AP1670 I	13025	*1210*	8685	*807*	6515	*605*	5210	*484*	4340	*403*	3720	*346*	3260	*303*	2895	*269*	2605	*242*
AP1825 I	14235	*1322*	9490	*882*	7120	*661*	5695	*528*	4745	*441*	4070	*378*	3560	*331*	3165	*294*	2850	*265*

Notes: 1. For high altitude pools, reduce the surface area figures shown in the charts by 4% for each 1000 ft. above sea level. (No derating is necessary up to 2000 ft. above sea level.)
2. Laars maintains a policy of continuous improvements and therefore reserves the right to change specifications without notice.
3. Sizing for outdoor pools is based on 3½ mph average wind.

For complete product details and dimensions go to www.laars.com/document-downloads/submittal-documents

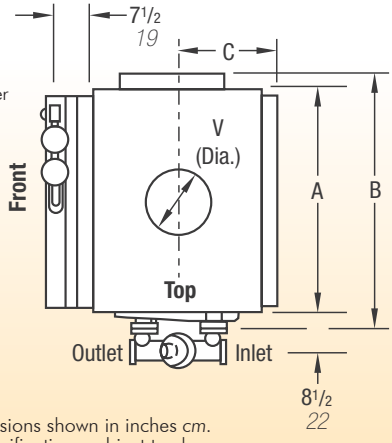
MIGHTY THERM® AP INDOOR COMMERCIAL POOL HEATER

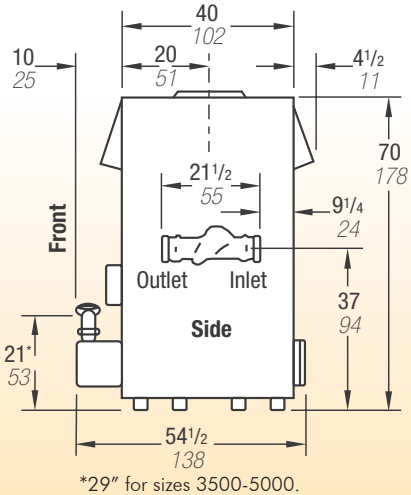
The field proven Mighty Therm® Model AP indoor pool heating boilers **(2000 – 5000MBH)** are designed for commercial, institutional, and large residential pools where economical performance, reliability and rapid heat-up are needed.

- Seven sizes available 2000 – 5000MBH inputs
- Natural or propane gas models
- Electronic ignition
- Built-in draft diverter to simplify installation
- Flow switch standard on all models

- Automatic gas valve
- Electronic flame supervision
- Galvanized steel jacket with acrylic finish for long life
- High temperature refractory firebox liner — to 2000°F for greater efficiency
- Integral header flanges for easier serviceability
- Glass-lined or bronze headers for corrosion resistance
- Integral lined copper tube heat exchanger
- Warranties: 5-Year heat exchanger + 1-Year parts

Indoor
Sizes 2000 – 5000





Dimensions shown in inches *cm*.
All specifications subject to change.

*29" for sizes 3500-5000.

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MIGHTY THERM® AP 2000 I–5000 I INDOOR MODELS SPECIFICATIONS

Model	Dimensions[2] inches *cm* A		B		C		V		Input[1] MBTU/h	*kW*	Output[1] MBTU/h	*kW*	Gas Connection[2] Size - inches NPT Natural	LP	Water Connection[2] Size - inches NPT	Shipping Weight[3] lbs	*kgs*
AP2000 I	55½	*141*	73	*185*	24½	*62*	22	*56*	2000	*596*	1639	*480*	1½	1¼	4	1950	*885*
AP2450 I	65½	*166*	83	*211*	24½	*62*	24	*61*	2450	*718*	2009	*589*	1½	1½	4	2100	*913*
AP3050 I	78	*198*	95½	*243*	24½	*62*	26	*66*	3050	*894*	2501	*733*	2	1½	4	2250	*1022*
AP3500 I	88	*224*	105½	*268*	24½	*62*	28	*71*	3500	*1025*	2870	*841*	2	1½	4	2510	*1140*
AP4050 I	100½	*255*	118	*300*	24½	*62*	30	*76*	4050	*1186*	3321	*973*	2	2	4	2750	*1249*
AP4500 I	110½	*281*	128	*325*	24½	*62*	32	*81*	4500	*1318*	3690	*1081*	2½	2	4	2900	*1317*
AP5000 I	123	*312*	140½	*357*	24½	*62*	34	*86*	5000	*1465*	4100	*1201*	2½	2	4	3200	*1453*

Notes:1. Input and output must be de-rated 4% per 1000 feet above sea level when installed above 2000 feet altitude. 2. Dimensions are nominal. 3. Integral pump included on sizes 500 – 1825.

Model	Temperature Difference Surface Area of Pools (sq. ft.) 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*
AP2000 I	16400	*1524*	10935	*1016*	8200	*819*	6560	*609*	5465	*508*	4685	*435*	4100	*381*	3645	*339*	3280	*305*
AP2450 I	20090	*1866*	13395	*1244*	10045	*933*	8035	*746*	6695	*622*	5740	*533*	5025	*467*	4465	*415*	4020	*373*
AP3050 I	25010	*2323*	16675	*1549*	12505	*1162*	10000	*929*	8335	*744*	7145	*664*	6255	*581*	5560	*517*	5000	*465*
AP3500 I	28700	*2666*	19135	*1778*	14350	*1333*	11480	*1066*	9565	*889*	8200	*764*	7175	*667*	6380	*593*	5740	*533*
AP4050 I	33210	*3085*	22140	*2057*	16605	*1543*	13285	*1234*	11070	*1028*	9490	*882*	8300	*771*	7380	*686*	6640	*617*
AP4500 I	36900	*3428*	24600	*2285*	18450	*1714*	14760	*1371*	12300	*1143*	10545	*980*	9225	*857*	8200	*762*	7380	*686*
AP5000 I	41000	*3809*	27335	*2539*	20500	*1904*	16400	*1524*	13665	*1269*	11715	*1088*	10250	*952*	9110	*846*	8200	*762*

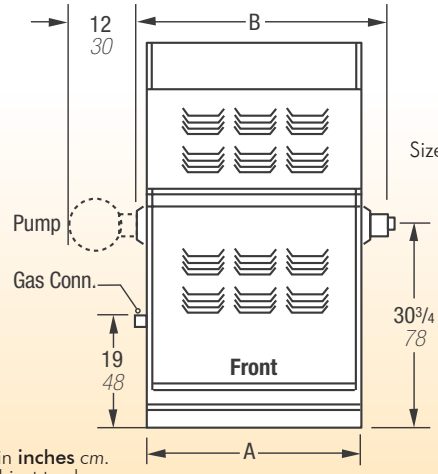
Notes: 1. For high altitude pools, reduce the surface area figures shown in the charts by 4% for each 1000 ft. above sea level. (No derating is necessary up to 2000 ft. above sea level.)
2. Laars maintains a policy of continuous improvements and therefore reserves the right to change specifications without notice.
3. Sizing for outdoor pools is based on 3½ mph average wind.

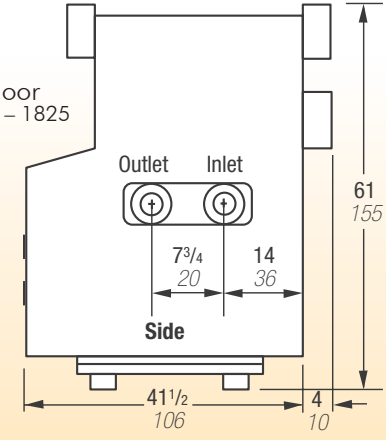
MIGHTY THERM® AP OUTDOOR COMMERCIAL POOL HEATER

The field proven Mighty Therm® Model AP outdoor pool heating boilers **(500 – 1825MBH)** are designed for commercial, institutional, and large residential pools where economical performance, reliability and rapid heat-up are needed.

- Nine sizes available 500 – 1825MBH inputs
- Natural or propane gas models
- Electronic ignition
- Built-in draft diverter to simplify installation
- Flow switch standard on all models
- Integral pump assures proper water flow

- Automatic gas valve
- Stainless steel burners, with slide-out burner tray for easy maintenance
- Electronic flame supervision
- Galvanized steel jacket with acrylic finish for long life
- High temperature refractory firebox liner — to 2000°F for greater efficiency
- Integral header flanges for easier serviceability
- Glass-lined or bronze headers for corrosion resistance
- Integral lined copper tube heat exchanger
- Warranties: 5-Year heat exchanger + 1-Year parts





Dimensions shown in **inches** *cm*.
All specifications subject to change.

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MIGHTY THERM® AP 500 E–1825 E OUTDOOR MODELS SPECIFICATIONS

Model	Dimensions[2] inches *cm* A		B		Input[1] MBTU/h	*kW*	Output[1] MBTU/h	*kW*	Gas Connection[2] Size - inches NPT Natural	LP	Water Connection[2] Size - inches NPT	Shipping Weight[3] lbs	*kgs*
AP500 E	33¾	*86*	45¼	*115*	500	*147*	410	*1120*	1	¾	2½	855	*388*
AP600 E	38¾	*98*	50¼	*128*	600	*176*	492	*144*	1	¾	2½	949	*431*
AP715 E	44¼	*112*	55¼	*142*	715	*210*	586	*172*	1	¾	2½	1050	*477*
AP850 E	50¾	*129*	62¼	*158*	850	*249*	697	*204*	1	¾	2½	1100	*499*
AP1010 E	58	*147*	69½	*177*	1010	*296*	828	*243*	1¼	1	2½	1240	*563*
AP1200 E	66¼	*168*	77¾	*197*	1200	*352*	984	*288*	1¼	1	2½	1410	*640*
AP1430 E	76	*193*	87½	*222*	1430	*419*	1173	*344*	1¼	1¼	2½	1570	*713*
AP1670 E	85½	*217*	97	*246*	1670	*689*	1370	*401*	1½	1¼	2½	1622	*736*
AP1825 E	92½	*235*	103¾	*264*	1825	*535*	1497	*439*	1½	1¼	2½	1725	*783*

Notes:1. Input and output must be de-rated 4% per 1000 feet above sea level when installed above 2000 feet altitude. 2. Dimensions are nominal. 3. Integral pump included on sizes 500 – 1825.

Model	Temperature Difference Surface Area of Pools (sq. ft.) 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*
AP500 E	4000	*372*	2665	*248*	2000	*186*	1600	*149*	1330	*124*	1140	*106*	1000	*93*	885	*82*	800	*74*
AP600 E	4800	*446*	3200	*297*	2400	*223*	1920	*178*	1600	*149*	1370	*127*	1200	*111*	1065	*99*	960	*89*
AP715 E	5720	*531*	3810	*354*	2860	*266*	2285	*212*	1905	*177*	1630	*151*	1430	*133*	1270	*118*	1140	*106*
AP850 E	6800	*632*	4530	*421*	3400	*316*	2720	*253*	2265	*210*	1940	*180*	1700	*158*	1510	*140*	1360	*126*
AP1010 E	8080	*751*	5385	*500*	4040	*375*	3230	*300*	2690	*250*	2305	*214*	2020	*188*	1795	*167*	1615	*150*
AP1200 E	9600	*892*	6400	*595*	4800	*446*	3840	*357*	3200	*297*	2740	*255*	2400	*223*	2130	*198*	1920	*178*
AP1430 E	11440	*1063*	7625	*708*	5720	*531*	4575	*425*	3810	*354*	3265	*303*	2860	*266*	2540	*236*	2285	*212*
AP1670 E	13360	*1241*	8905	*827*	6680	*621*	5344	*496*	4450	*413*	3815	*354*	3340	*310*	2965	*275*	2670	*248*
AP182 5E	14600	*1356*	9730	*904*	7300	*678*	5840	*543*	4865	*452*	4170	*387*	3650	*339*	3240	*301*	2920	*271*

Notes: 1. For high altitude pools, reduce the surface area figures shown in the charts by 4% for each 1000 ft. above sea level. (No de-rating is necessary up to 2000 ft. above sea level.)
2. Laars maintains a policy of continuous improvements and therefore reserves the right to change specifications without notice.
3. Sizing for outdoor pools is based on 3½ mph average wind.

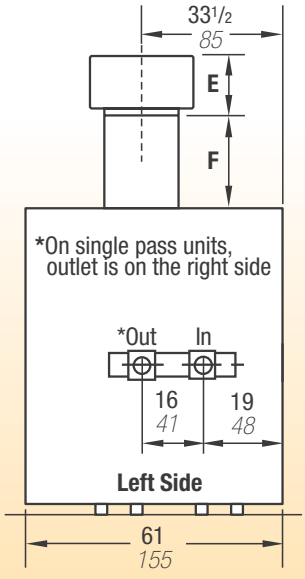
MIGHTY THERM® AP OUTDOOR COMMERCIAL POOL HEATER

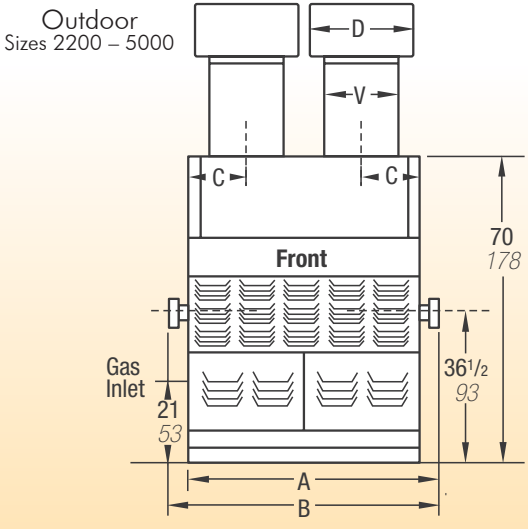
- Six sizes available 2200 – 4500MBH inputs
- Natural or propane gas models
- Electronic ignition
- Built-in draft diverter to simplify installation
- Flow switch standard on all models
- Automatic gas valve
- Electronic flame supervision

The field proven Mighty Therm® Model AP outdoor pool heating boilers (2200 – 4500MBH) are designed for commercial, institutional, and large residential pools where economical performance, reliability and rapid heat-up are needed.

- Galvanized steel jacket with acrylic finish for long life
- High temperature refractory firebox liner — to 2000°F for greater efficiency
- Integral header flanges for easier serviceability
- Glass-lined or bronze headers for corrosion resistance
- Integral lined copper tube heat exchanger
- Warranties: 5-Year heat exchanger + 1-Year parts

Dimensions shown in **inches** *cm*. All specifications subject to change.





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MIGHTY THERM® AP 2200 E–4500 E OUTDOOR MODELS SPECIFICATIONS

Model	Dimensions[2] inches *cm* A		B		C		D		E		F		V		Input[1] MBTU/h	*kW*	Output[1] MBTU/h	*kW*	Gas Connection[2] Size - inches NPT Natural	LP	Water Connection[2] Size - inches NPT	Shipping Weight[3] lbs	*kgs*
AP2200 E	65½	*166*	83	*211*	16	*41*	28¼	*72*	15	*38*	24	*61*	18	*46*	2205	*646*	1786	*523*	1½	1¼	4	2320	*1053*
AP2800 E	78	*198*	95½	*243*	20	*51*	28¼	*72*	15	*38*	24	*61*	18	*46*	2745	*804*	2223	*651*	1½	1½	4	2500	*1135*
AP3200 E	88	*224*	105½	*268*	23	*58*	31½	*80*	16½	*42*	36	*91*	20	*51*	3150	*923*	2552	*748*	2	1½	4	2840	*1289*
AP3600 E	100½	*255*	118	*300*	29	*74*	31½	*80*	16½	*42*	36	*91*	20	*51*	3645	*1068*	2952	*865*	2	2	4	3175	*1142*
AP4000 E	110½	*281*	128	*325*	30½	*77*	34½	*88*	18	*46*	36	*91*	22	*56*	4050	*1187*	3281	*961*	2½	2	4	3940	*1789*
AP4500 E	123	*312*	140½	*357*	34	*86*	37¾	*96*	19½	*50*	36	*91*	24	*61*	4500	*1319*	3645	*1068*	2½	2	4	3790	*1721*

Notes:1. Input and output must be de-rated 4% per 1000 feet above sea level when installed above 2000 feet altitude. 2. Dimensions are nominal. 3. Integral pump included on sizes 500 – 1825.

Model	Temperature Difference Surface Area of Pools (sq. ft.) 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*
AP2200 E	17861	*1659*	11907	*1106*	8930	*830*	7144	*664*	5954	*553*	5103	*474*	4465	*415*	3969	*369*	3572	*332*
AP2800 E	22235	*2066*	14823	*1377*	11117	*1033*	8894	*826*	7412	*689*	6353	*590*	5559	*516*	4941	*459*	4447	*413*
AP3200 E	25515	*2370*	17010	*1580*	12758	*1185*	10206	*948*	8505	*790*	7290	*677*	6379	*593*	5670	*527*	5103	*474*
AP3600 E	29525	*2743*	19683	*1829*	14762	*1375*	11810	*1097*	9842	*914*	8436	*784*	7381	*689*	6561	*610*	5905	*549*
AP4000 E	32805	*3048*	21870	*2032*	16403	*1524*	13122	*1219*	10935	*1016*	9373	*871*	8201	*762*	7290	*677*	6561	*610*
AP4500 E	36450	*3386*	24300	*2257*	18225	*1693*	14580	*1354*	12150	*1129*	10414	*967*	9113	*847*	8100	*752*	7290	*677*

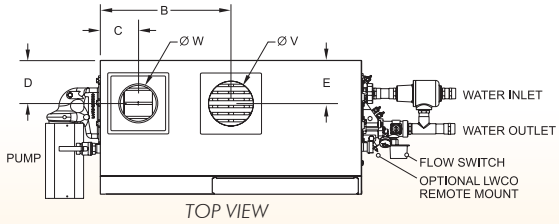
Notes: 1. For high altitude pools, reduce the surface area figures shown in the charts by 4% for each 1000 ft. above sea level. (No de-rating is necessary up to 2000 ft. above sea level.)
2. Laars maintains a policy of continuous improvements and therefore reserves the right to change specifications without notice.
3. Sizing for outdoor pools is based on 3½ mph average wind.

MIGHTY THERM2® POOL COMMERCIAL IN/OUTDOOR POOL HEATER

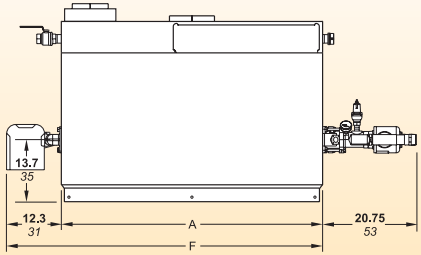
Mighty Therm2® ranks among the industry's most versatile and environmentally friendly systems for superior pool heating. Available in 7 sizes from 500 to 2000 MBH, Mighty Therm2® pool heaters run reliably on natural or LP gas and deliver exceptional efficiency levels. NOx emissions below 10 ppm.

- Indoor/Outdoor construction
- Immune to thermal shock down to 30°F
- Operates in altitudes up to 10,000 feet
- Ambient temperatures from -40°F to +140°F
- Waterways able to operate in a maximum water hardness of 17 gpg
- Factory-mounted pump sized for heat exchanger, 30 feet of pipe and 3 elbows total pressure drop
- Fan-assisted combustion system
- 120vac, 60 Hz single phase power

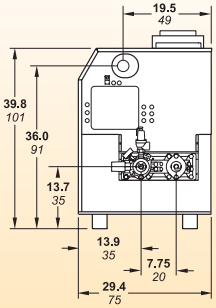
- Modular construction: burner trays, gas train, blower assembly
- Thermostatic mixing valve
- Heat exchanger uses efficient 10 finned tube design
- Category III (horizontal) venting, up to 50 feet with 3 elbows, without additional fans
- Washable air filter
- Wiring terminal strip makes electrical troubleshooting easy
- Easy access to igniter via special service panel
- Easy-to-service burner assembly
- Warranties: 5-Year limited + 1-Year parts



TOP VIEW



FRONT VIEW



SIDE RIGHT VIEW

Dimensions shown in **inches** *cm*.

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MIGHTY THERM2® POOL HEATER SPECIFICATIONS

DIMENSIONS

Model	A in.	A cm	B in.	B cm	C in.	C cm	D in.	D cm	E in.	E cm	F in.	F cm	Air Conn. W		Vent Conn. V	
MT2P0500	33 3/4	85	16 3/4	43	6 1/2	17	10	25	8	20	46 1/4	117	6	15	8	20
MT2P0750	45 3/4	116	22 3/4	53	6 1/2	17	10	25	9 1/2	24	58 1/4	148	8	20	10	25
MT2P1000	57 3/4	147	28 3/4	73	6 1/2	17	10	25	9 1/2	24	70 1/4	178	8	20	10	25
MT2P1250	68 1/4	173	34	87	10 1/4	26	10	25	9	23	80 3/4	205	12	30	12	30
MT2P1500	78 3/4	200	39 1/2	100	10 1/4	26	10	25	9	23	91 1/4	232	12	30	12	30
MT2P1750	89 1/4	227	44 3/4	113	10 1/4	26	10	25	9	23	101 3/4	258	12	30	12	30
MT2P2000	99 3/4	253	49 3/4	127	10 1/4	26	10	25	9	23	112 1/4	285	12	30	14	36

SIZING DATA

Model	Input MBTU/h	Input kW	Output MBTU/h	Output kW	Thermal Efficiency %	Gas Conn. Sizes inches	Pool Heater Water Conn. Size inches	Mixing System Water Conn. Size inches	Approx. Shipping Weight. lbs.	kg
MT2P0500	500	147	435	127	87	1 1/4	2	2	760	345
MT2P0750	750	220	652.5	191	87	1 1/4	2	2	855	388
MT2P1000	999	293	869.13	254	87	1 1/4	2 1/2	2	1020	463
MT2P1250	1250	366	1087.5	318	87	2	2 1/2	2	1115	506
MT2P1500	1500	440	1305	382	87	2	2 1/2	2	1260	572
MT2P1750	1750	513	1522.5	446	87	2	2 1/2	2	1365	619
MT2P2000	1999	586	1739.13	509	87	2	2 1/2	2	1495	678

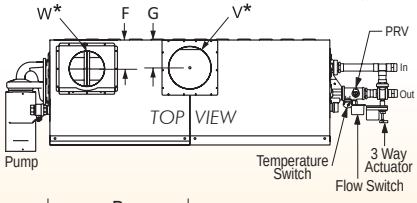
NOTE: 1. Input and output must be de-rated 4% per 1000 feet above sea level when installed above 2000 feet altitude.
2. Dimensions are nominal.

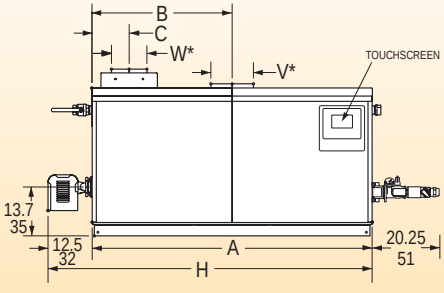
PENNANT® COMMERCIAL POOL HEATER

The Pennant® line of high-performance commercial pool heating boilers from LAARS delivers efficiency levels of 85% or more. NOx emissions are among the lowest in the industry at 10 ppm.

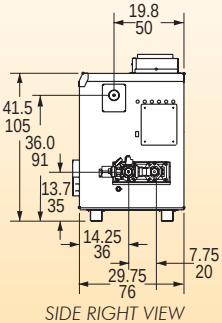
- Installs indoors or outdoors
- Automatic bypass system is factory pre-set — no field adjustments required
- Reversible vent and intake air terminals
- Separate field wiring terminal panel
- Front panel diagnostics
- Optional rack-mounting
- Reversible gas and water connections
- Warranties: 5-Year limited + 1-Year parts

- Available in 500, 750, 1000, 1250, 1500, 1750, 2000MBH inputs
- Built-in automatic mixing system to help eliminate condensation in the heat exchanger
- Allows return water temperatures as low as 60° without condensation
- Standard Backwash Switch
- Uses room air or outside air for combustion
- Vents into a chimney or through a side-wall

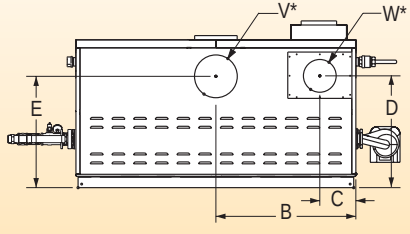




FRONT VIEW



SIDE RIGHT VIEW



REAR VIEW

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

Dimensions shown in **inches** *cm*.
All specifications subject to change.

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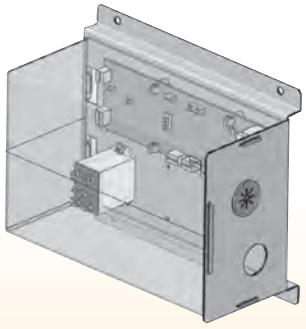
PENNANT® SPECIFICATIONS

Model	Dimensions[2] inches *cm* A	B	C	D	E	F	G	H	Air Conn. W*	Vent Conn. V*	Horiz. Vent. Pipe	Input[1] MBTU/h	Output[1] MBTU/h	Gas Conn. Size inches	Water Heater Conn. Size inches	Mixing System Water Conn. Size inches	Shipping Weight lbs *kgs*
PNCP0500	33½ *85*	15¾ *40*	5¾ *15*	29¾ *76*	33¾ *86*	7¾ *20*	8¾ *22*	46 *117*	6 *15*	8 *20*	6 *15*	500	425	1¼	2	2	775 *352*
PNCP0750	45½ *116*	21¾ *55*	5¾ *15*	29¾ *76*	33¾ *86*	7¾ *20*	8¾ *22*	58 *147*	8 *20*	10 *25*	8 *20*	750	638	1¼	2	2	870 *395*
PNCP1000	57½ *146*	28¾ *73*	5¾ *15*	29¾ *76*	33¾ *86*	7¾ *20*	7 *18*	70 *178*	8 *20*	10 *25*	8 *20*	999	849	1½	2½	2	1035 *469*
PNCP1250	68 *172*	34 *86*	10⅛ *26*	30¾ *78*	31⅛ *79*	8¾ *22*	8¾ *22*	80 *203*	12 *30*	12 *30*	10 *25*	1250	1063	2	2½	2	1130 *513*
PNCP1500	78½ *199*	39¾ *101*	10⅛ *26*	30¾ *78*	31⅛ *79*	8¾ *22*	8¾ *22*	91 *231*	12 *30*	12 *30*	10 *25*	1500	1275	2	2½	2	1285 *583*
PNCP1750	89 *226*	44½ *113*	10⅛ *26*	30¾ *78*	31⅛ *79*	8¾ *22*	8¾ *22*	101 *256*	12 *30*	14 *36*	12 *30*	1750	1488	2	2½	2	1380 *626*
PNCP2000	99½ *253*	49¾ *126*	10⅛ *26*	30¾ *78*	31⅛ *79*	8¾ *22*	8¾ *22*	112 *284*	12 *30*	14 *36*	12 *30*	1999	1699	2	2½	2	1510 *685*

*Air and vent connections may be on top or back of the Pennant, and they are field convertible.
NOTES:1.Input and output must be de-rated 2% per 1000 feet above sea level when installed above 2000 feet altitude. 2. Dimensions are nominal.

Model	Temperature Difference Surface Area of Pools (sq. ft.) 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
PNCP0500	4090	*370*	2720	*250*	2040	*180*	1630	*150*	1360	*120*	1170	*100*	1020	*90*	910	*80*	810	*70*
PNCP0750	6130	*560*	4090	*370*	3060	*280*	2450	*220*	2040	*180*	1750	*160*	1530	*140*	1360	*120*	1220	*110*
PNCP1000	8180	*750*	54540	*500*	4090	*370*	3270	*300*	2720	*250*	2340	*210*	2040	*180*	1820	*160*	1630	*150*
PNCP1250	10230	*950*	6820	*630*	5110	*470*	4090	*370*	3410	*310*	2920	*270*	2550	*230*	2280	*210*	2040	*180*
PNCP1500	12270	*1130*	8180	*750*	6130	*560*	4910	*450*	4090	*370*	3510	*320*	3060	*280*	2730	*250*	2450	*220*
PNCP1750	14320	*1330*	9540	*880*	7160	*660*	5720	*530*	4770	*440*	4090	*370*	3580	*330*	3190	*290*	2860	*260*
PNCP2000	16370	*1520*	10910	*1010*	8180	*750*	6540	*600*	5450	*500*	4680	*430*	4090	*370*	3650	*330*	3270	*300*

VARI-PRIME™ CONTROL SYSTEM FOR NEOTHERM AND NEOTHERM LC



The Vari-Prime™ Control System features a variable pump control that, when used with a variable speed pump, maintains a user-chosen temperature rise between the inlet and outlet of the boiler.

- Maintains user chosen temperature rise between boiler inlet and outlet.
- Operates in degrees, Fahrenheit or Celsius, user selectable.
- User selectable Delta T settings.
- Protective enclosure.
- Proprietary Boiler System Algorithm: Vari-Prime™ will operate the boiler pump at maximum flow during boiler startup to ensure stable operation is reached before introducing variable water flow. This key feature keeps the boiler's combustion and variable speed pump's flow in phase with each other, protecting the heat exchanger from potential low flow conditions.
- Comes standard on the Laars MagnaTherm condensing modulating boilers
- Available as an optional package on the Laars NeoTherm condensing boiler line.
- In conjunction with a variable speed pump, A Vari-Prime™ installation will track the heating profile curve and dramatically reduce the electrical usage of the boiler pump.
- Vari-Prime™ control logic operates in tandem with Laars modulating boiler combustion controls and the variable speed pumps and drivers that are available on the market today.
- Based on today's energy costs vs. the cost of installing a variable speed pump system can provide an expected payback within one to two years, depending on size of system, heating profile, and regional energy costs.

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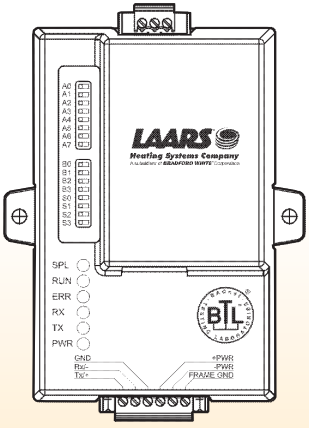
VARI-PRIME™ CONTROL SYSTEM SPECIFICATIONS

Delta T Settings	15°F (8°C), 20°F (10°C), 25°F (13°C), 30°F (16°C), 35°F (18°C), 40°F (20°C)
Output Types	0-10VDC or 4-20mA
Dimensions	7 ¾" x 6 ¼" x 3 ¾"
Power Voltage	24 VAC
Max Operating Temp	150°F (65°C)

GATEWAY FOR LAARS INTEGRATED BOILER CONTROL SYSTEM



The LAARS Gateway is an external, high performance Building Automation multi-protocol gateway that has been preprogrammed for LAARS' Mascot II, NeoTherm, and NeoTherm LC to support BACnet®1MS/TP, BACnet/IP, Metasys®2 N2 by JCI, Modbus TCP, and LonWorks®3.

Features
- BTL Marked and LonMark Certified
- Field programmable

Standard Equipment
- LER Model Protocol: LonWorks
- RER Model protocols: BACnet MS/TP, BACnet IP, Metasys N2, and Modbus TCP
- Laars Gateway RER is based on an ARM9 processor for fast performance and includes two serial ports, one RS-485, and one Ethernet port. BACnet BTL marked (B-ASC)
- Laars Gateway LER includes a LonWorks port plus Ethernet and RS-485 ports. LonMark certified
- Able to interface with up to eight controls on Laars Mascot, NeoTherm, and MagnaTherm product lines
- Interfaces with RS-485, Ethernet, or LonWorks
- DIP switches to select baud rate on RS-485 protocol (9600, 19200, 38400, 57600, or 76800)
- Serial or Ethernet versions support a total of 2400 Host and Field Protocol memory points
- LonWorks versions support a total of 1500 Host and Field Protocol memory points. Voltage Input Multi-mode power adapter: 9-30VDC or 12 – 24VAC

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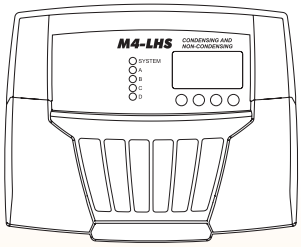
GATEWAY SPECIFICATIONS

Power Consumption @ 12V	RER = 150mA LER = 279mA
Operating Temperature	-40°F to 167°F (-40°C to 75 °C)
Operating Humidity	5-90% RH, non-condensing
Connections	RS-485 Port for BACnet MP/TS or Metasys N2 Ethernet Port for BACnet IP LonWorks Port
Weight	0.4 lbs (0.2 kg)
Dimensions	4.5 L x 3.2 W x 1.6 H inches (11.5 x 8.2 x 4.0 cm)
Surge Suppression	EN61000-4-2 ESD EN61000-4-3 EMC EN61000-4-4 EFT
Approvals	BACnet Testing Labs (BTL) B-ASC-RER Series LonMark 3.4 Certified-LER Series CE (EN55022; EN55024; EN60950) TUV approved to UL 916 standard and CSA C22-2 FCC Class A Part 15 CSA 205 Approved RoHS Compliant DNP3 Conformance Tested OPC Self Certified to Compliance
BACnet Support	BTL Listed BACnet COV's Support up to 2,000 Host & Field points DIP switches are for setting MAC Address, Node-ID, Baud Rate on the RS-485 Field protocol
LonMark Certification	SPID: 80:00:95:46:00:84:04:07 Profiles: 0000-Node object (1), 0001 0001-Open Loop Sensor Object (5) 0003-Open Loop Actuator Object (5)
Warranty	Two years from date of purchase, return to factory

M4-LHS CONTROL FOR CONDENSING, NON-CONDENSING, MODULATION & STAGE-FIRED BOILERS



Laars M4-LHS — Multiple boiler sequencing control with outdoor reset for up to four modulating boilers. Includes system water sensor and well, outdoor air sensor, and clip.

Standard Equipment

- Multiple boiler control, used to lead-lag modulating, stage-fired, condensing, and non-condensing boilers
- Controls up to four stages (one modulating boiler is one stage)
- Ready to use with Laars X-BAC BACnet interface module
- Ready to use with up to two M4EXT extension modules for control of up to 16 modulating stages
- Ready to use with XSIG module to accept external 4-20mA control signal
- Outdoor reset or setpoint control
- System water temperature sensor
- System water temperature sensor well
- Outdoor air temperature sensor
- Outdoor air temperature sensor clip

Features

- Operates two groups of boilers — condensing and non-condensing — each with independent configuration — to achieve the highest system efficiency
- Chooses condensing or noncondensing groups based on system temperature
- Controller works with either stagefired or modulated boilers
- Controls 0-5V, 1-5V, 0-10V, 2-10V and 4-20mA boilers, or stage-fired boilers, in any combination
- Lo/Hi/Lo/Hi sequencing fires lag boiler after the lead boiler reaches full fire capacity — Lo/Lo/Hi/Hi sequencing provides an opportunity for higher boiler efficiency to bring on the lowest firings stages of all the boiler before moving any of them to higher firing rates
- Parallel or normal modulation provides efficient, smooth, and adjustable modulation that can fit most applications whether the boilers are to sequence normally (one after another) or in parallel
- Each boiler can be set for one of three rotation modes: timed (one hour to sixty days), manual, or last-on/last-off
- Each boiler can be set individually to be automatically operated, fully on, manually adjusted, off, or be considered a standby boiler. The standby boiler is used as a backup with an adjustable standby delay. This feature is great for using less efficient boilers (with lower initial purchase cost) for periods of high demand only
- Soft-off feature, lag delay and last stage hold assist in minimizing boiler short-cycling
- Adjustable ignition start point and modulation start point
- Adjustable purge delay, feature to match the boiler's pre-purge time
- Adjustable minimum and maximum system temperature protect boilers or system
- Communicates with EMS (energy management system) by adding the XSIG 4-20mA interface module, and has shutdown and prove inputs for the EMS

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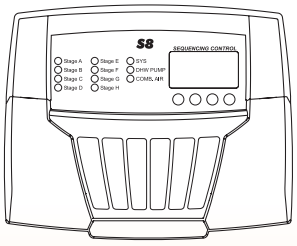
M4-LHS SPECIFICATIONS

Voltage Input	120VAC 60Hz
Power Consumption	12 VA Max
Operating Temperature	20°F to 130°F
Operating Humidity	20% to 80%
Storage Temperature	-4°F to 180°F
Dimensions	11-3/8" wide x 9-1/4" high x 3-314" deep
Weight	2.5 pounds
Lead Boiler Rotation	Time (1 to 1440 hours [60 days]), manual, last-on
Stage Modes	Auto, standby, manual, on, off
Ignition Start Point	1% to 50%
Modulation Start Point	0% to 100%
Switch Between Boiler Group Modes	System/Return Temp
Standby Time (PID only)	1 to 60 minutes
Purge Delay	0.0 to10.0 mintues Switch between boiler group modes: Outdoor Temp or System/Return Temp
Lag Delay	0 to 60 minutes
Modulating Signals Available	0-5V, 1·5V, 0·10V, 2-10V and 4-20mA
Output Relay Ratings	1 Amp inductive, 6Amp resistive at 120VAC 60Hz, 15A total for all circuits
Pump Outlet	1 N.O. SPST
Temperature Display	Fahrenheit or Celsius

Display	Graphical alphanumeric (7 rows x 21characters each)
Temperature Sensor Ranges	-35°F to 250°F
Outdoor Cutoff	Range 20°F to 100°F, ON and OFF
SetPoint	70°F to 250°F
External Setpoint	-10°F to 240°F using XSIG 4-20mA interface (optional)
Sequencing Modes	Lo/Hi/Lo/Hi or Lo/Lo/Hi/Hi
Domestic Water	With or without priority
Reset Ratio Range (Outdoor Reset only)	(1:4) to (4:1) (outdoor: system water), and custom ratio
Offset Adjustment (Outdoor Reset only)	-40°F to 40°F
Minimum Target (Outdoor Reset only)	70°F to 170°F
Maximum Target (Outdoor Reset only)	90°F to 240°F
Last Stage Hold (PID only)	0°F to 30°F
Pump Run-On	0 to 360 minutes
Night Setback	0°F to 75°F
Schedules	1 Day and 1 Night (setback) settings per day
Power Backup	Lithium coin battery,100 days minimum 5 year replacement (maintains clock in power outage)
External Inputs	Shutdown input and prove input (dry contacts only)
Season	Winter and Summer
Modulation Modes	Normal or parallel

S8 CONTROL FOR MULTIPLE STAGE-FIRED BOILERS



S8 — Multiple boiler sequencing control with outdoor reset for up to eight boiler stages — will control on/off, two-stage, and four-stage units.

Standard Equipment

- Multiple boiler control, for up to eight boiler stages
- Ready to use with up to two S8EXT extension modules for control of up to twenty-four boiler stages
- Outdoor reset or setpoint control
- Ready to use with XSIG module to accept external 4-20mA control signal
- System water temperature sensor

Features

- System water temperature sensor well
- Outdoor air temperature sensor
- Outdoor air temperature sensor clip
- Graphics that display in plain English
- Brightly lit LCD, visible with no ambient light
- Can be used with on/off, two-stage and four-stage units
- Each boiler can be set individually to be automatically operated, fully on, manually adjusted, off, or standby.
- Communicates with EMS (energy management systems) by adding the XSIG 4-20mA interface module
- Can be configured for indirect domestic hot water pump control with the additional DHW sensor, or by using a dry contact closure, for a variety of domestic water priority and control options
- Settings are pre-configured, but adjustable
- Three rotation options – timed, manual, or first-on/first-off
- Minimum boiler return feature with optional return sensor
- Adjustable day and night schedule
- PID Lo/Hi/Lo/Hi or Lo/Lo/Hi/Hi sequencing or over-sized-system sequencing with features such as last stage hold, reaction time, or minimum runtime, to minimize short-cycling
- System output relay for system pump with adjustable run-on delay, or combustion air damper with prove for air damper
- Adjustable outdoor temperature cutoff and customizable reset curves
- Internal programming switch protected by locking cover for security against unexpected changes to program
- UL Listed, tested per standard 916
- Boost feature
- Summer shutdown option with domestic water override
- Memory and backup with lithium battery to store information for 100 days

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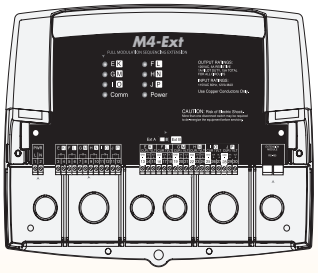
S8 SPECIFICATIONS

Voltage Input	20VAC 60Hz
Power Consumption	12 VA Max
Operating Temperature	20°F to 120°F
Operating Humidity	20% to 80%
Dimensions	11-3/8" wide x 9-1/4" high x 3-3/4" deep
Weight	2.5 pounds
Lead Stage Rotation	Time (1 to 999 hours [41 days]) manual, first-on/first-off
Stage Modes	Auto, standby, on, off
Standby Time (PID only)	1 to 60 minutes
Output Relay Ratings	2 Amp inductive at 120 VAC 60 Hz
Add-on Extension Panels	Up to two S8EXT panels using included RS485
Temperature Display	Fahrenheit or Celsius
Display	Graphical alphanumeric (7 rows of 21 characters)
Temperature Sensor Ranges	-35°F to 250°F
Outdoor Cutoff Range	20°F to 100°F, ON and OFF
Set Point	-10°F to 240°F
External Set Point	-10°F to 240°F using XSIG 4-20mA interface (optional)
Reset Ratio Range (outdoor reset only)	(1:4) to (8:1) (outdoor : system water) and custom ratio
Offset Adjustment (outdoor reset only)	-40°F to 40°F
Minimum Target (outdoor reset only)	70°F to 170°F
Maximum Target (outdoor reset only)	90°F to 240°F
Reaction Time (PID only)	1 to 10 minutes
Min. Run-Time (PID only)	80°F to 140°F
Purge Delay (PID only)	0.0 to 10.0 minutes
Last Stage Hold (PID only)	0°F to 30°F
Throttle Range (OSS only)	2°F to 20°F
Domestic Hot Water Priority Options	Parallel piping w/ or w/out priority
Pump Run-On	0 to 60 minutes
Pump Exercise	Yes or no
Schedules	1 day and 1 night (setback) setting
Night Setback	0°F to 80°F
Power Backup	Lithium coin battery, 100 days min (maintains clock in power outage)
External Inputs	Shutdown input and prove input (d
Seasons	Winter and Summer

M4 EXT EXTENSION MODULE FOR M4-LHS CONTROLS



Extension module for M4-LHS control, to add 6 more boilers to the control system. Includes RS485 connection cable. Up to two M4 EXT modules can be used with one M4 control, for control of up to 16 boilers from the same system.

- Easily connects to any M4-LHS and additional M4 EXT panels or XSIG interface modules
- Additional stages easily added by using the included RS485 cable
- Six N.O. Boiler startup relay outputs. Each is wired in series with each boiler's limit circuit.
- UL listed, tested per standard 916
- LED indicators display associated relay status for easy diagnostics.
- The M4 EXT can operate up to six 0-10 V, 4-20 mA (or split signal) modulating boilers, in any combination
- M4 EXT can be used in Hybrid Systems with condensing, non-condensing, modulating, and/or stage-fired boilers

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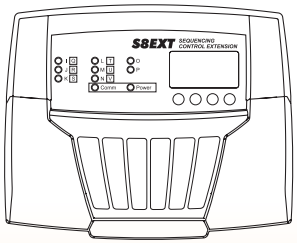
M4 EXT SPECIFICATIONS

Voltage Input	120 VAC 60 Hz
Power Consumption	12 VA Max
Operating Temperature	20°F/-6°C to 130°F/54°C
Operating Humidity	20% to 80% non-condensing
Dimensions	11" W x 9" H x 3 ¾" D
Weight	2.5 pounds
Switch Between Boiler Groups Mode	Using Outdoor Temperature or System/Return Temperature
Lead State Rotation	Time (1 to 1440 Hours (60 days)), Manual, Last-On
Pump Output	1 N.O. S.P.S.T.
Modulating Boiler Modes	Auto, Manual, Standby, On, Off
Staging Boiler Modes	Auto, Standby, On, Off
Standby Time	1 to 60 minutes
Modulating Output Types	4-20mA, 0-5V, 0-10V, 1-5V, 2-10V
Sequencing Output Types	On/Off, 2-Stage, 3-Stage, or 4-Stage
Output Relay Ratings	1 Amp inductive, 6 Amp resistive at 120 VAC 60 Hz, 15A total for all circuits
Add-On M4-Extension Panels	up two M4-Extension Panels using RS485
Ignition Point %	1 to 50%
Modulation Start Point %	0 to 100%
Modulation Modes	Normal or Parallel
Sequencing Modes	Lo/Hi/Lo/Hi or Lo/Lo/Hi/Hi
Temperature Display	Fahrenheit or Celsius

Display	Graphical Alphanumeric (up to 7 rows x 21 char. Each)
LED	1 System Output relay, 4 Boiler Output relays
Sensor Ranges	Outdoor temperature sensor — minus 35°F/-37°C to 250°F/121°C Heating system sensor- minus 35°F/-37°C to 250°F/121°C
Outdoor Cutoff Range	20°F/-6°C to 100°F, ON and OFF
Reset Ratio Range	(1:4) to (4:1) (Outdoor: System Water)
Minimum Water Temperature	70°F/21°C to 170°F/77°C
Maximum Water Temperature	90°F/32°C to 240°F/116°C
Domestic Hot Water	with Priority or without Priority
Pump Run-On	0 to 360 minutes
Purge Delay	0.0 to 10.0 minutes
Lag Delay	0 to 60 minutes
Last Stage Hold	0 to 30°F
Schedules	1 Day and 1 Night (Setback) setting per day
Night Setback	0F°/0C° to 75F°/42C°
Power Backup	Lithium coin battery, 100 days minimum 5 year replacement (Maintains Clock in power outages)
External Inputs	Shutdown, Tstat, and Setback Input, and Prove and DHW Call Input. (Dry Contacts Only)
Season	Winter and Summer

S8 EXT EXTENSION MODULE FOR S8 CONTROL



Standard Equipment

- Extension module (used with Laars S8) for up to eight additional boiler stages
- Ready to use with RS485 cable (included)

Features

- Easily connects to S8, another S8EXT, and XSIG with RS485 cables
- Can be used with on/off, two-stage and four-stage units
- A-B switch for identification when two S8 EXT units are used
- UL Listed, tested per standard 916

Extension Numbering	Toggle switch A or B
LED	1 power: (dual color green (A)/red (B)),1 comm: 8 stage output relays (dual color green (A)/red (B))
Stage Outputs	8 N.O. SPST
Output Relay Ratings	2 Amp inductive at 120 VAC 60 Hz

Connection to S8 and Another S8EXT	Two RS485
Operating Temperature	20°F to 120°F
Operating Humidity	20% to 80%
Dimensions	11-3/8" wide x 9-1/4" high x 3-3/4" deep
Weight	2.5 pounds

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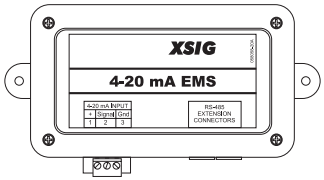
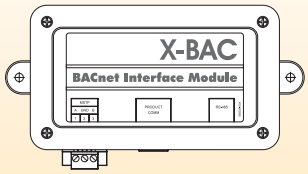
XSIG 4-20MA INTERFACE MODULE



The XSIG Interface provides the M4 and S8 series controls with the capability of receiving an external set point as a 4-20mA signal through an Energy Management or Building Management Systems (EMS/BMS).

- Module easily connects with the S8 or M4 controls and extensions.
- Connects to the M4 or S8 via included RS485 connection cable.
- The M4 and the S8 controls can be shutdown by the EMS/BMS system.
- The control, XSIG Interface, and two Extensions can be connected in series using the RS485.
- The XSIG Interface can source the current for the 4-20mA input signal, providing an excitation DC current.

LAARS X-BAC BACNET INTERFACE MODULE

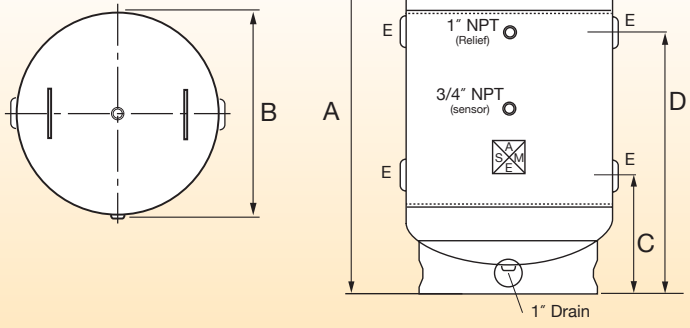


X-BAC interface module allows a BACnet system to have communication with Laars M4-LHS multiple boiler controls and easily connects to M4-LHS with RJ45 (ethernet) cables.
Available to the BACnet system from the M4-LHS, through the X-BAC:

- Operation mode
- Outdoor temperature
- System temperature
- Output status
- Control status
- Season
- Reset ratio
- Offset
- Outdoor cutoff
- Minimum water temperature
- Maximum water temperature
- Setback
- Purge delay
- System run-on
- Rotation time
- Standby time
- Last stage hold
- Condensing unit lead stage
- Non-condensing unit lead stage
- Reaction time
- Minimum run time
- Gain
- Lag delay
- Soft off
- Set time
- Day schedule
- Night schedule

HYDRAULIC SEPARATORS

The Laars Hydraulic Separator tank is designed help reduce short cycling of a boiler system and separate building and boiler circulation. The Laars Hydraulic Separator uses stored boiler water to buffer the system load when the boiler is producing more BTU's than what the building can handle. When the building has a minimal demand, it pulls from the tank allowing the boiler to "rest". The Hydraulic Separator is piped so the building flow is separate from the boiler flow, allowing independent circulation.



Standard:
- ASME Sec. VIII, Div 1
- 125 psi
- Bare tank
- 5 year warranty
- 4" base ring

Optional:
- Hand hole
- Manway
- Topcoat R-16 insulation
- Painted Steel Jacket
- Additional fittings

Laars Hydraulic Separators are designed for 125 psi (150 optional). Standard sizes range from 120 gallon up to 860 actual gallons. Custom sizes and additional fittings are available.

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HYDRAULIC SEPARATORS SPECIFICATIONS

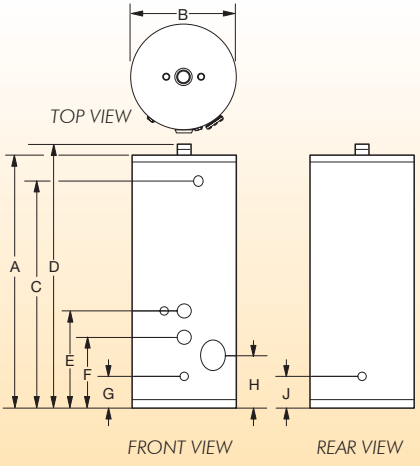
Model	Actual Gallons	Nominal Gallons	NPT/FLG	A	B	C	D	E
HTVN-30-045	120	138	3" NPT	49"	30"	16 7/5"	36 1/4"	4"
HTVN-30-071	200	217	3" NPT	75"	30"	16 7/5"	62 1/4"	4"
HTVN-36-072	285	317	4" Flg	76"	36"	24 1/2"	55 1/2"	4"
HTVN-42-072	385	432	4" Flg	76"	42"	27"	53"	4"
HTVN-42-083	450	498	4" Flg	87"	42"	27"	64"	4"
HTVN-48-096	675	752	4" Flg	100"	48"	29"	75"	4"
HTVN-48-120	860	940	4" Flg	124"	48"	29"	99"	4"

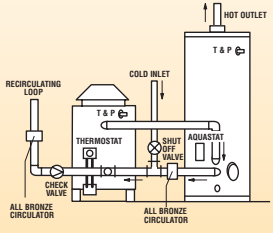
Dimensions shown in inches

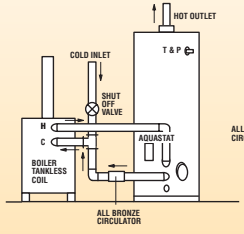
COMMERCIAL JACKETED ENERGY SAVER STORAGE TANKS

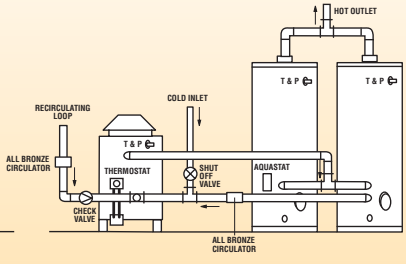
Designed for moderate, commercial peak demands, light duty jacketed storage tanks are available in 80, 120, and 200 gallon capacities. Applications include use with boilers, hot water circulation systems, and where large dump volume is required.

- Heavy gauge steel automatically formed, rolled, and welded
- Exclusive ceramic porcelain-like lining protects storage tank from corrosion
- ASME construction available. 200-gallon models come standard with ASME construction
- 2" NPT factory-installed true dielectric waterway fittings extend water heater life
- 120 and 200-gallon ASME models have 2-1/2" connections
- 2" NPT spud allows for a rear water connection (120 gallon models only)
- Hand hole cleanout
- Two protective magnesium anode rods
- 2" Non-CFC foam insulation
- T&P relief valve opening (T&P not supplied)
- 3/4" NPT aquastat fitting
- Brass drain valve









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COMMERCIAL JACKETED ENERGY SAVER STORAGE TANKS SPECIFICATIONS

			A	B	C	D	E	F	G	H	J		
Model	Gallon Capacity	ASME	Floor to Heater Top	Jacket Dia.	Floor to T&P Valve	Floor to Hot Water Conn.	Floor to Aquastat Top Circ. Conn.	Floor to Bottom Circ. Conn.	Floor to Drain Valve	Floor to Hand Hole Cleanout	Floor to Rear Water Conn.	Water Conn. Size†	Approx. Shipping Weight (lbs)
A0073100	80	No	58 3/4	24	52 1/2	59 3/4	14 1/4	9 1/4	4 3/4	7 1/4	—	2(F&T)	192
A0073101	80	Yes	58 3/4	24	52 1/2	59 3/4	14 1/4	9 1/4	4 3/4	7 1/4	—	2(F&T)	192
A0078800	119	No	62 1/2	28	55 3/4	63 1/2	14 1/4	9 1/4	5	—	5	2(F&T), 2(R)	312
A0070101	119	Yes	62 1/2	28	55 3/4	63 1/2	14 1/4	9 1/4	5	7 1/2	5	2 1/2(F&T), 2(R)	366
A2086000	200	Yes	77	32	66	78	16 1/4	11 1/4	6 3/4	9 1/4	—	2 1/2(F&T)	541

† (F) = Front water connections
(R) = Rear water connections
(T) = Top water connections

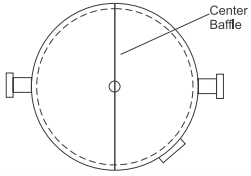
Dimensions shown in inches

COMMERCIAL CHILLED WATER BUFFER TANKS

- Eliminates excessive chiller cycling, poor temperature and erratic system operation
- Stabilized water temperature return
- Red oxide shop primer exterior standard

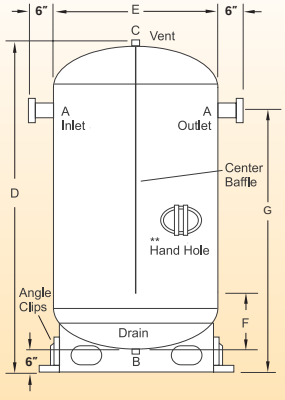
Chilled Water Buffer Tanks from Laars® Heating Systems are designed to increase water volume capacity, in relation to the chiller capacity.

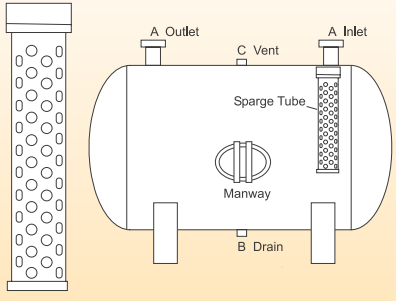
- Spray foam insulation, R-16 value with acrylic top coat available
- Custom sizes available upon request
- Can be ordered in vertical or horizontal orientation
- Tanks constructed and certified in accordance with ASME Section VIII, Div. I Code, rated for 125 psi at 450°F
- Horizontal tanks are supplied with sparging tube
- Horizontal tanks are same size as vertical tanks



** Hand Holes required on tanks above 36" diameter.

Low water volume systems may require additional buffer capacity to eliminate excessive chiller cycling, poor temperature control, or erratic system operation. A Chilled Buffer Tank can buffer the system volume.





Sparge Tube mixes and disperses water evenly

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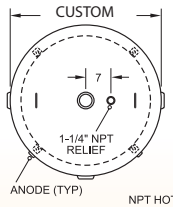
LAARS® COMMERCIAL CHILLED WATER BUFFER TANKS SPECIFICATIONS

Model	Capacity	A	B	C	D	E	F	G	Weight
	Gal.	Inlet/Outlet	in.	in.	in.	in.	in.	in.	lbs.
BT-VNB-24-072-XASX-XX	130	2 NPT	1	1	78	24	20	66	375
BT-VNB-30 075-XFSX-XX	210	3 FLG	1	1	83	30	24	67	425
BT-VNB-36 072-XFSX-XX	300	4 FLG	1	1	78	36	24	62	633
BT-VNB-36 094-XFSX-XX	400	4 FLG	1	1	100	36	30	84	715
BT-VNB-42 084-XFSX-XX	460	4 FLG	1	1	91	42	30	74	870
BT-VNB-48 077-MFSX-XX	528	6 FLG	1	1	83	48	31	62	1150
BT-VNB-48 147-MFSX-XX	1040	6 FLG	1	1	150	48	45	127	1975
BT-VNB-54 096-MFSX-XX	850	6 FLG	1	1	102	54	32	80	1630
BT-VNB-60 096-MFSX-XX	1040	8 FLG	1	1	102	60	32	77	2280

CUSTOM STORAGE TANKS 30" TO 84" DIA. 193 TO 6141 GALLONS

Available in 30" through 84" standard diameters, these large volume, bare tanks offer capacities ranging from **193 to 6141 gallons**. Horizontal and vertical configurations as well as custom sizes are available.

- Vertical or Horizontal Construction
- Horizontal models require two saddles and have two additional 3" (7.6 cm.) NPT fittings
- Heavy gauge steel primed with a red oxide color (Bare tanks only)
- Tanks are lined with an exclusive enamel formula to provide superior protection from corrosion
- Two female 3" (7.6 cm.) NPT water connection fittings are located on the front for ease of installation
- Additional size fittings are available as an option
- Magnesium anode rods provide added protection against corrosion
- One 3/4" (1.9 cm.) NPT aquastat fitting
- Lifting lugs — standard
- Optional hand hole cleanout — 4" x 6" (10.2cm. x 15.2 cm.) diameter
- Optional manway — 12" x 16" (30.5 cm. x 40.1 cm.) diameter
- Optional stainless steel, dielectrically isolated recirculation tube minimizes turbulence and maximizes hot water delivery
- Designed for storage of potable water up to 180°F (82°C)
- All tanks are constructed and certified in accordance with ASME Sect. IV, Part HLW for 125 psi (862 kPa). 150 psi (1034 kPa) is available as an option
- 5-year limited steel tank warranty



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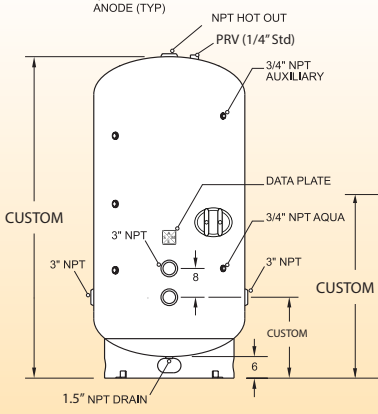
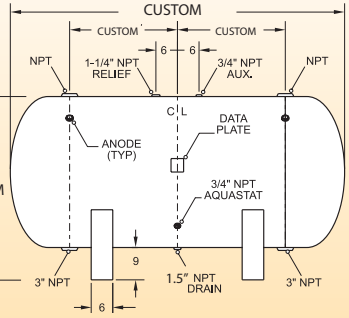


Vertical or Horizontal



Dimensions shown in inches

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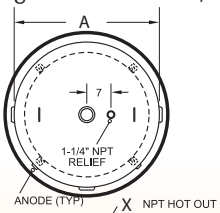
CUSTOM JACKETED STORAGE TANKS

Jacketed

- Sturdy heavy gauge steel jacket
- 2" High Density Foam Insulation — Covers the side and top of tank, reducing the amount of heat loss
- Optional Hand hole Cleanout — 4" x 6" (10.2cm. x 15.2 cm.) diameter
- Optional manway — 12"x16" (30.5 cm. x 40.1 cm.) diameter

Available in 30" thru 60" standard diameters, these large volume, insulated and jacketed tanks offer seven capacities ranging from 193 to 1689 gallons. Two inch, high-density foam insulation minimizes heat loss.

- Optional stainless steel, dielectrically isolated recirculation tube minimizes turbulence and maximizes hot water delivery
- Tanks are lined with a exclusive enamel formula to provide superior protection from corrosion
- Two female 3" (7.6 cm.) NPT water connection fittings are located on the front for ease of installation
- Additional size fittings are available as an option
- Magnesium anode rods provide added protection against corrosion
- One 3/4" (1.9 cm.) NPT aquastat fitting
- Designed for storage of potable water up to 180°F (82°C)
- All Tanks are constructed and certified in accordance with ASME Sect. IV, Part HLW for 125 psi (862 kPa). 150 psi (1034 kPa) is available as an option
- 5-year limited steel tank warranty



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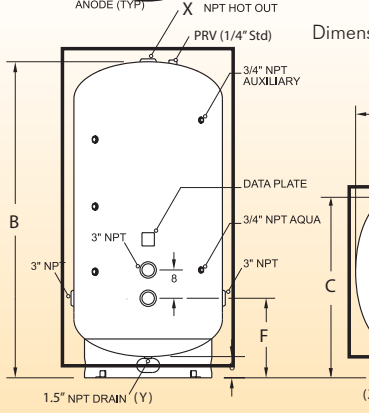
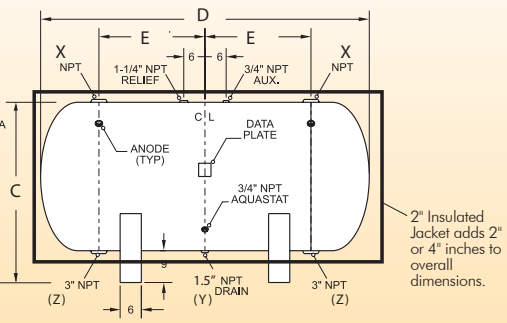


Dimensions shown in inches

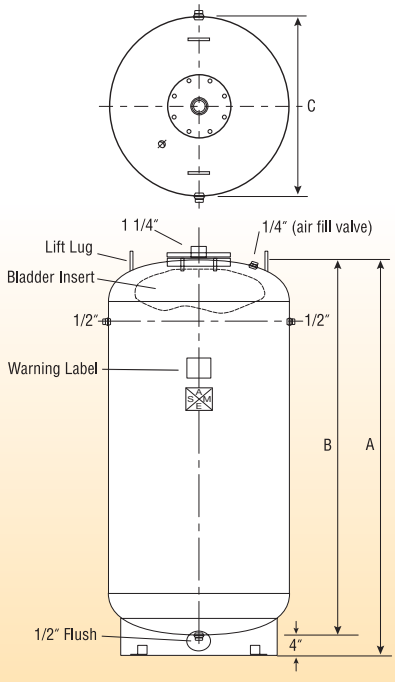
Vertical or Horizontal



2" Insulated Jacket adds 2" or 4" inches to overall dimensions.

EXPANSION BLADDER TANKS

- Factory charged at 12 psi.
- Dried to -50 dew point
- For use with non-potable water
- Heavy duty replaceable bladder
- Max temperature 240 degrees F
- Red oxide primer paint
- Large flanged opening for easy bag replacement
- Carbon steel construction
- Can be used with gycol systems
- ASME code Sec VIII, Div 1
- 1 Year warranty



Dimensions shown in inches

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EXPANSION BLADDER TANKS SPECIFICATIONS

Model	Gallons	(A) Overall Height	(B) Overall Height	(C) Diameter	System Connection	Working Pressure	Weight
LEBT-30-063	175	67″	63″	30″	1½″	125	465
LEBT-30-075	210	79″	75″	30″	1½″	125	505
LEBT-30-085	240	89″	85″	30″	1½″	125	550
LEBT-36-072	285	76″	72″	36″	1½″	125	675
LEBT-36-078	310	82″	78″	36″	1½″	125	700
LEBT-36-085	340	89″	85″	36″	1½″	125	750
LEBT-36-090	360	94″	90″	36″	1½″	125	780
LEBT-42-081	435	85″	81″	42″	1½″	125	1186
LEBT-42-084	453	88″	84″	42″	1½″	125	1216
LEBT-42-093	505	97″	93″	42″	1½″	125	1304
LEBT-48-073	500	77″	73″	48″	1½″	125	1293
LEBT-48-096	675	100″	96″	48″	1½″	125	1550
LEBT-48-108	765	112″	108″	48″	1½″	125	1685
LEBT-48-120	860	124″	120″	48″	1½″	125	1870
LEBT-48-141	1040	145″	141″	48″	1½″	125	1870

Dimensions shown in inches

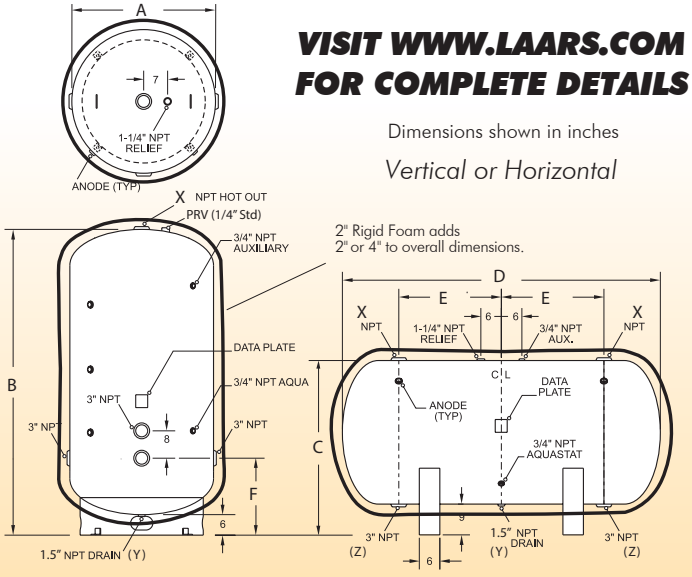
RIGID FOAM STORAGE TANKS

Rigid Foam

- SPF meets requirements for California Title 24.
- The 100% acrylic topcoat is formulated for applications over spray polyurethane foam
- Alternative for insulated and steel jacket
- Any tank size or shape can be insulated
- Field repairable
- Vertical or Horizontal construction

Custom storage tanks with sprayed-on, rigid Polyurethane foam (SPF) insulation and acrylic topcoat exceed ASHRAE 90.1 requirements with 2.25" of high-density polyurethane foam with an "R" value of R-16. Spray foam insulation has the best fire spread rating with a class I foam with less than a 25-flame spread rating suitable for boiler room applications.

- Horizontal models require two saddles and have two additional 3" NPT fittings
- Tanks are lined with an exclusive enamel formula to provide superior protection from corrosion
- Two female 3" (7.6 cm.) NPT water connection fittings are located on the front for ease of installation
- Magnesium anode rods provide added protection against corrosion
- One 3/4" (1.9 cm.) NPT aquastat fitting
- Lifting lugs — standard
- Optional hand hole cleanout — 4" x 6" (10.2cm. x 15.2 cm.) diameter
- Optional manway — 12" x 16" (30.5 cm. x 40.1 cm.) diameter
- Optional stainless steel, dielectrically isolated recirculation tube minimizes turbulence and maximizes hot water delivery
- Designed for storage of potable water up to 180°F (82°C)
- All tanks are constructed and certified in accordance with ASME Sect. IV, Part HLW for 125 psi (862 kPa). 150 psi (1034 kPa) is available as an option



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Dimensions shown in inches

Vertical or Horizontal

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NOTES