



# **LAARS<sup>®</sup> MIGHTY THERM<sup>2</sup>**

Economical efficiency  
for greater savings



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

# **Mighty Therm<sup>®</sup>2**

## **Hydronic Boilers or Volume Water Heaters**

### **Extremely easy to live with**

For 60 years, the LAARS brand has stood for quality, reliability, and innovation in heating system design. Mighty Therm2 builds on that tradition with an outstanding line of commercial boilers/heaters designed for today's most demanding indoor and outdoor environments. The new line of fan-assisted, modular boilers and water heaters from LAARS ranks among the industry's most versatile and environmentally friendly commercial systems for hydronic and hot water applications. Available in 7 sizes from 500 to 2000 MBTU/h, Mighty Therm2 boilers and water heaters run reliably on natural or LP gas and deliver efficiency levels up to 85%. The systems are also among the "greenest" in the industry with NOx emissions below 10 ppm.

The Mighty Therm2 has been specifically designed to meet the needs of the replacement market by offering simple and straightforward controls with 2-stage firing.

Mighty Therm2 boilers and water heaters feature convenient, modular construction that separates the burner trays, gas train, and blower assembly. All models use lightweight insulation, glass-lined cast iron or bronze headers, and non-ferrous waterways. The 10 tube heat exchanger design uses finned tubing for the quickest and most efficient heat transfer and the water heater meets the ASHRAE 90.1 standard for efficiency for use with storage tanks. Units are available with copper or cupronickel heat exchanger tubing for use in various water and flow rate conditions, and may include optional factory-mounted pumps sized for the heat exchanger and 30 feet of piping.

With superior overall construction and high-efficiency combustion, Mighty Therm2 can cut fuel costs significantly compared to conventional water heating systems, and the savings can amount to thousands of dollars over the life of the equipment.

### **Extremely versatile**

Water connections may be ordered to accommodate left or right side piping. Gas can be piped to either the left or right side of the unit. The sealed combustion system is fan-assisted and uses either ambient room air, or air from the outside ducted directly to the unit. This allows the Mighty Therm2 to be vented as a Category I or Category III appliance. Category I fan-assisted appliances allow for smaller diameter vents than natural draft units, but can still be vented with standard B-vent. When Mighty Therm2 is vented horizontally, as a Category III appliance, it uses AL29-4C stainless steel. It may be vented horizontally up to 50 feet with three elbows without the addition of external vent fans and every unit has a long-lasting, washable air filter to keep the burners clean, ensuring long life.

### **Extremely easy to maintain**

Mighty Therm2 features modular burner trays to ensure perfect alignment of orifices and burners, gas manifolds mount on the burner flange, and the burner flanges seal to the air box. In addition, the entire gas train can be easily removed and the heat exchanger lifts out from the top, front, or back of the unit. The air filter is a breeze to clean...just wash it with soap and water.

### **Extremely rugged**

All Mighty Therm2 water heater/boilers are built to operate effectively at up to 10,000 feet, in harsh environments from -40° to +140°F. The boilers can be used with up to a 50:50 glycol to water mix and waterways can operate in water with a hardness up to 17 gpg. All units feature compliant end walls to accommodate thermal expansion and the heat exchanger is designed to withstand thermal shock down to 30°F. The Mighty Therm2 is the easy choice. With high efficiency, operating costs are minimized. Mighty Therm2's performance and low maintenance delivers the savings!



# MIGHTY THERM2

## **Mighty Therm2 Features:**

- Applications for hydronic heating or domestic hot water
- 85% Combustion efficiency, 84% 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
- Volume water heater models supply temps from 130°F to 200°F
- Gas supply right or left side (field convertible)
- Maintains efficiency and low NOx levels at low and high fire
- Optional 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
- External staging control connections
- May be ordered with left or right-hand piping connection

## **Extremely durable construction**

- 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
- Compliant end-walls to accommodate thermal expansion
- Non-ferrous waterways to meet standards for volume water heaters
- Backed by LAARS warranty and superior customer service

## **Extremely flexible venting**

- Category III (horizontal) venting, up to 50 feet with 3 elbows, without additional fans
- Fan-assisted category I venting with standard B-vent
- Combustion air can be taken from room, or ducted to the unit from the outside

## **Extremely easy maintenance**

- Heat exchanger is removable from top, back or front
- Washable air filter
- Wiring terminal strip makes electrical troubleshooting easy
- Easy access to ignitor via special service panel
- Easy-to-service burner assembly

## Mighty Therm2 Sizing Data

Size	Input BTU/Hr.	Output BTU/Hr.	Gas Connection Sizes inches	Water Connection Sizes inches	Approx. Shipping Weight* lbs. kg
500	500,000	425,000	1¼	2	425 193
750	750,000	638,000	1¼	2	505 229
1000	999,000	849,000	1¼	2½	615 279
1250	1,250,000	1,062,500	2	2½	675 306
1500	1,500,000	1,275,000	2	2½	760 345
1750	1,750,000	1,487,500	2	2½	825 375
2000	1,999,000	1,699,000	2	2½	955 434

- NOTE:** 1. Input and output must be derated 4% per 1000 feet above sea level when installed above 2000 feet altitude.  
 2. Dimensions are nominal.  
 3. For other boiler ratings: Boiler Horsepower:  $HP = \frac{\text{Output}}{33,475}$  Radiation Surface: EDR sq. ft. =  $\frac{\text{Output}}{150}$

\*Add approximately 55 lbs. (25 kg) for pump-mounted units.

## MT2H (Boiler) Temperature Rises in Degrees

Size	20°F		11°C		25°F		14°C		30°F		17°C		35°F		19°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
500	43	1.7	161	0.5	34	1.1	129	0.3	28	0.9	107	0.3	24	0.7	92	0.2
750	64	3.3	242	1.0	51	2.3	193	0.7	43	1.7	161	0.5	36	1.2	138	0.4
1000	85	5.0	321	1.5	68	3.6	257	1.1	57	3.1	214	0.9	49	2.2	184	0.7
1250	106	8.1	402	2.5	85	6.1	322	1.9	71	4.7	268	1.4	61	3.4	230	1.0
1500	128	10.0	483	3.0	102	7.2	386	2.2	85	5.5	322	1.7	73	4.2	276	1.3
1750	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
2000	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

## MT2V (Water Heater)

Size	HARD WATER						NORMAL WATER						SOFT WATER					
	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
500	90	3.5	9	341	1.1	5	68	2.3	13	257	0.7	7	45	1.8	19	170	0.5	10
750	90	6.0	14	341	1.8	8	68	3.0	19	257	0.9	10	45	2.1	28	170	0.6	16
1000	90	6.1	19	341	1.9	10	68	3.6	25	257	1.1	14	45	2.3	38	170	0.7	21
1250	90	6.3	24	341	1.9	13	68	3.8	31	257	1.2	17	45	2.8	31	257	1.2	17
1500	90	6.5	28	341	2.0	16	68	3.9	38	257	1.2	21	68	3.9	38	257	1.2	21
1750	90	6.7	33	341	2.0	18	68	4.0	44	257	1.2	24	68	4.0	44	257	1.2	24
2000	120	10.0	30	424	3.0	17	112	10.0	30	424	3.0	17	112	10.0	30	424	3.0	17

**NOTE:** Headloss (H/L) shown is for the Mighty Therm2 heat exchanger only.

## Recovery Data Temperature Rises in Degrees

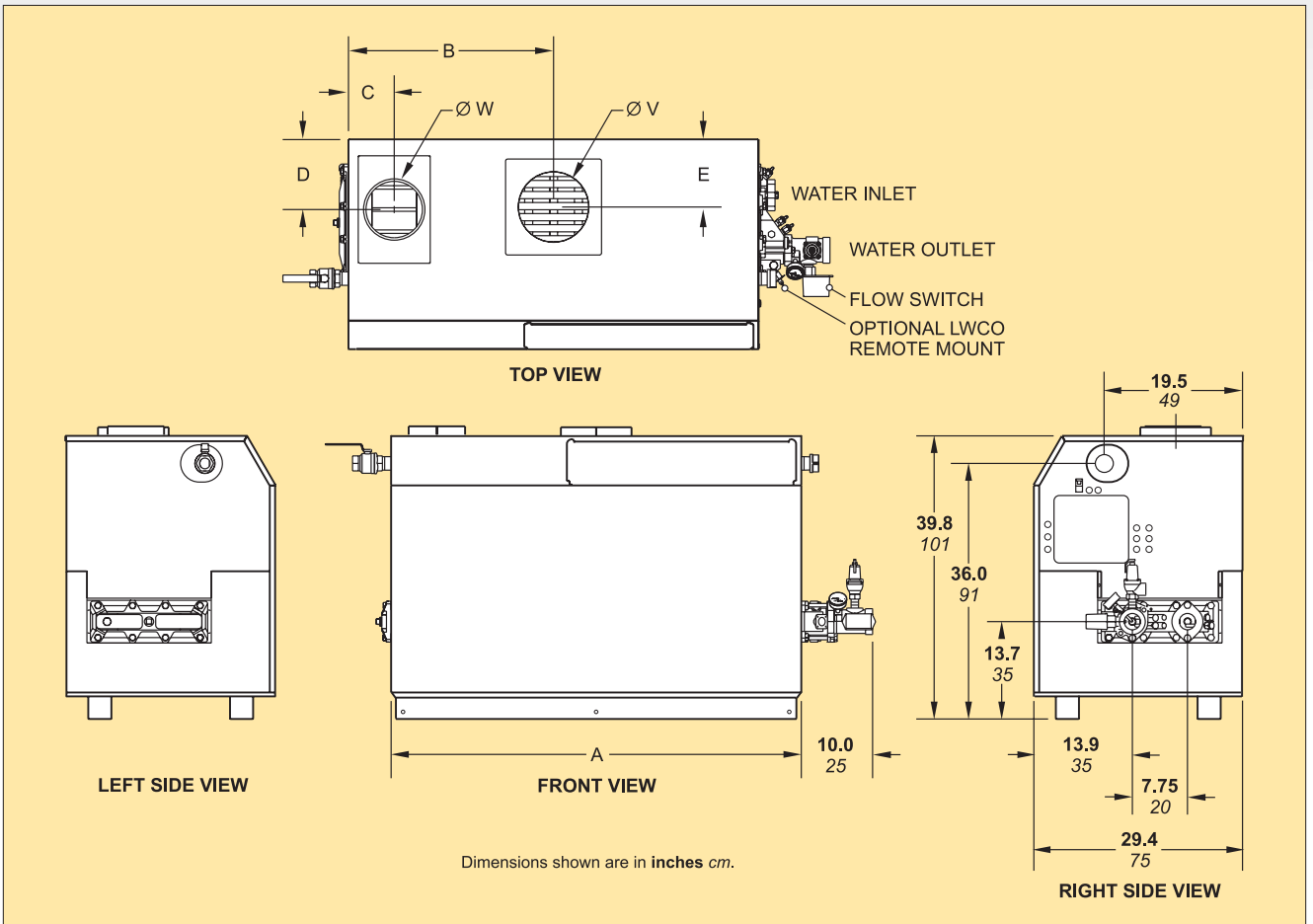
Size	40°F gph	22°C L/h	50°F gph	28°C L/h	60°F gph	33°C L/h	70°F gph	39°C L/h	80°F gph	44°C L/h	90°F gph	50°C L/h	100°F gph	56°C L/h	120°F gph	67°C L/h	140°F gph	78°C L/h
500	1276	4821	1020	3857	850	3214	729	2755	638	2411	567	2143	510	1929	425	1607	364	1378
750	1915	7238	1532	5790	1277	4825	1094	4136	957	3619	851	3217	766	2895	638	2413	547	2068
1000	2548	9632	2038	7705	1699	6421	1456	5504	1274	4816	1132	4281	1019	3853	849	3211	728	2752
1250	3189	12054	2551	9643	2126	8036	1822	6888	1594	6027	1417	5357	1276	4821	1063	4018	911	3444
1500	3827	14464	3061	11571	2551	9643	2187	8265	1913	7232	1701	6429	1531	5786	1276	4821	1093	4133
1750	4464	16875	3571	13500	2976	11250	2551	9643	2232	8438	1984	7500	1786	6750	1488	5625	1276	4821
2000	5099	19274	4079	15419	3399	12850	2914	11014	2550	9637	2266	8566	2040	7710	1700	6425	1457	5507

**NOTE:** gph = gallons per hour, L/h = Liters per hour.

## Electrical Data

Model	Boiler/Heater			Pump Delay Connection Rating			Blower(s)
	Volts	Phase	Amps	Volts	Phase	Amps	
MT2H, MT2V non-pump mounted 500-2000	115	Single	Less Than 12	Pilot Duty 24V	Single	Up to 25VA	Included in MT2 connection

# MIGHTY THERM2



## Dimensions

Size	A		B		C		D		E		Air Conn. W		Vent Conn. V	
500	33 <sup>3</sup> / <sub>4</sub>	85	16 <sup>3</sup> / <sub>4</sub>	43	6 <sup>1</sup> / <sub>2</sub>	17	10	25	8	20	6	15	8	20
750	45 <sup>3</sup> / <sub>4</sub>	116	22 <sup>3</sup> / <sub>4</sub>	53	6 <sup>1</sup> / <sub>2</sub>	17	10	25	9 <sup>1</sup> / <sub>2</sub>	24	6	15	10	25
1000	57 <sup>3</sup> / <sub>4</sub>	147	28 <sup>3</sup> / <sub>4</sub>	73	6 <sup>1</sup> / <sub>2</sub>	17	10	25	9 <sup>1</sup> / <sub>2</sub>	24	8	20	10	25
1250	68 <sup>1</sup> / <sub>4</sub>	173	34	87	10 <sup>1</sup> / <sub>4</sub>	26	10	25	9	23	8	20	12	30
1500	78 <sup>3</sup> / <sub>4</sub>	200	39 <sup>1</sup> / <sub>2</sub>	100	10 <sup>1</sup> / <sub>4</sub>	26	10	25	9	23	8	20	12	30
1750	89 <sup>1</sup> / <sub>4</sub>	227	44 <sup>3</sup> / <sub>4</sub>	113	10 <sup>1</sup> / <sub>4</sub>	26	10	25	9	23	8	20	14	36
2000	99 <sup>3</sup> / <sub>4</sub>	253	49 <sup>3</sup> / <sub>4</sub>	127	10 <sup>1</sup> / <sub>4</sub>	26	10	25	9	23	12	30	14	36

NOTE: Dimensions shown in inches cm.



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

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