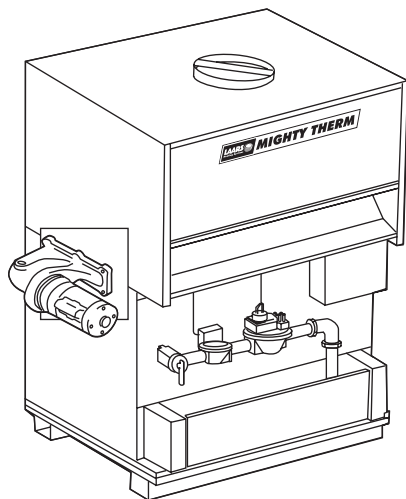


MIGHTY THERM®



Date:

Project #:

Engineer:

Prepared By:

Bid Date:

Hydronic Boilers

HH	Hydronic Heating Boiler
PH	Hydronic Heating Boiler with pump

Indoor Sizes 500-1825

Submittal Data **LAARS**
Heating Systems Company

Project Name:

Location:

Contractor:

Standard Equipment

- ASME 160 psi working pressure heat exchanger
- ASME "H" stamp
- Flanged water connections
- Glass-lined headers
- External water-side gaskets
- 75 psi (517 kPa) ASME rated pressure relief valve
- Pump, mounted and wired (PH)
- Flow switch
- Temperature pressure gauge
- ASME CSD-1
- Manual "A" gas valve
- Manual pilot valve
- Pilot gas regulator
- Manual shut-off valve
- Operating gas valve / gas pressure regulator
- Redundant safety gas valve
- Stainless steel burners
- Removable burner tray
- Built-in draft hood
- On/off toggle switch
- Power on light
- 115/24VAC transformer
- 24V control system
- 100% shut-off / lock-out ignition control
- 2-Amp fuse
- Terminal strip
- Operating control
- Manual reset high limit
- EM² pump time delay (std on PH, opt on HH)
- Covered control box

Boiler Data

Model:

- ☐ HH (no pump)
☐ PH (pump mounted)

Number of Units:

Firing Rate:

- ☐ On-off
☐ Two-stage
☐ Four-stage
☐ Motorized Modulation

Ignition System:

- ☐ Spark pilot ignition U.S. (system 9)
☐ Spark pilot ignition Canada (system 11)

Fuel

- ☐ Natural
☐ Propane

Heat Exchanger

- ☐ Copper
☐ Cupro-Nickel
☐ Copper, Reversed
☐ Cupro-Nickel, Reversed

Water Trim

- ☐ Glass-Lined Cast Iron
☐ Bronze Trim
☐ Full Bronze

Options:

- ☐ EM² pump time delay (std on PH)
☐ Low water cutoff
☐ Auto reset high limit
☐ External controller connections (n/a for on-off units)
☐ External controller connections with selector switch (n/a for on-off units)
☐ Alarm package with bell, mounted and wired
☐ Alarm package with dry contacts, mounted and wired
☐ High & low gas pressure switches
☐ Additional safety valve
☐ Motorized safety valve with proof of closure
☐ Additional motorized safety valve with proof of closure

Sizing Data

	Indoor Size	Input¹ BTU/h	Output¹ BTU/h	Shipping Weight² lbs	Input¹ kW	Output¹ kW	Shipping Weight² kg
	500	500,000	339,000	612	147	99	278
	600	600,000	420,000	702	176	123	319
	715	715,000	501,000	750	210	147	340
	850	850,000	595,000	830	249	174	377
	1010	1,010,000	707,000	945	296	207	429
	1200	1,200,000	840,000	995	352	246	451
	1430	1,430,000	1,044,000	1080	419	306	490
	1670	1,670,000	1,169,000	1175	489	343	533
	1825	1,825,000	1,278,000	1270	535	374	576

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

2. Units with pumps: Add 55lbs.

3. For other boiler ratings:

$$\text{Boiler Horsepower: HP} = \frac{\text{Output}}{33.475}$$

$$\text{Radiation Surface: EDR sq. ft.} = \frac{\text{Output}}{150}$$

Rate of Flow and Pressure Drop

Design Temperature Rise Across Boiler

Indoor Size	20°F		25°F		30°F		35°F	
	Water Flow GPM	Head Loss Ft	Water Flow GPM	Head Loss Ft	Water Flow GPM	Head Loss Ft	Water Flow GPM	Head Loss Ft
500	38	1.4	31	1.1	26	0.9	22	0.6
600	47	1.8	37	1.4	31	1.2	27	0.8
715	56	2.5	45	1.9	37	1.5	32	1.0
850	66	3.4	53	2.5	44	2.0	38	1.4
1010	79	4.7	63	3.4	53	2.7	45	1.9
1200	94	6.5	75	4.8	62	3.7	53	2.6
1430	112	8.9	89	6.5	74	5.0	64	3.5
1670	*	*	102	8.8	85	6.7	73	4.7
1825	*	*	114	10	95	8.0	81	5.5

Indoor Size	11°C		14°C		17°C		19°C	
	Water Flow L/M	Head Loss m	Water Flow L/M	Head Loss m	Water Flow L/M	Head Loss m	Water Flow L/M	Head Loss m
500	144	0.4	117	0.3	98	0.3	83	0.2
600	178	0.5	140	0.4	117	0.4	102	0.2
715	212	0.8	170	0.6	140	0.5	121	0.3
850	250	1.0	201	0.8	167	0.6	144	0.4
1010	299	1.4	239	1.0	201	0.8	170	0.6
1200	356	2.0	284	1.5	235	1.1	201	0.8
1430	424	2.7	337	2.0	280	1.5	242	1.1
1670	*	*	386	2.7	322	2.0	276	1.4
1825	*	*	432	3.0	360	2.4	307	1.7

• Not recommended. Consult factory.

Electrical Data

Model	Heater			Mounted Pump	Pump Delay Connection Rating
	Volts	Phase	Amps		
HH (no pump)	115	Single	Less than 12	N/A	(when ordered optionally) 115V – Max 1HP or 230V – Max 3/4HP (pilot duty)
PH (built-in pump)	115	Single	Less than 12	Included in Mighty Therm connection	Included in Mighty Therm connection

Pump Data

Indoor Size	Power (HP)	Current (Amps)
500	1/3	2.8
600	1/3	2.8
715	1/3	2.8
850	1/3	2.8
1010	1/2	5.2
1200	1/2	5.2
1430	3/4	7.2
1670	3/4	7.2
1825	3/4	7.2

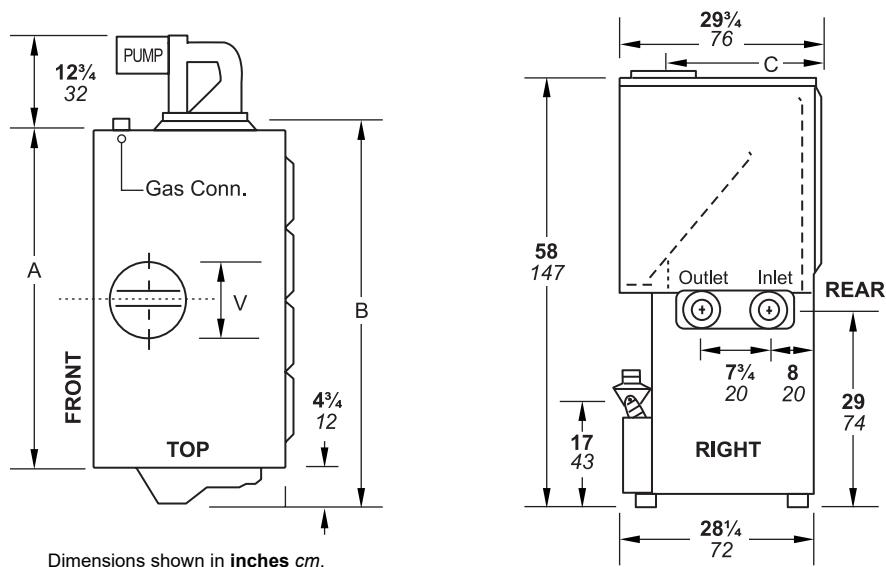
Clearances

Appliance Surface	Required Clearance From Combustible Material	
	inches	cm
Water Side	12	30
Opposite Side	6	15
Top	30	76
Back	8	20
Front	Alcove	
Vent	6*	15

NOTES: All sizes must be installed on non-comustible floors or with base for combustible floors (certified base is available from Laars).

* 1" if B-vent is used (refer to manufacturer's instructions)

Dimensional Data



Indoor Size	Gas Connection Size, inches NPT		Water Conn. Size in ¹	Dimensions ¹							
	Natural ²	LP ²		A		B		C		V	
				in	cm	in	cm	in	cm	in	cm
500	1	¾-1	2	33¾	86	45¼	115	23¾	60	10	25
600	1	¾-1	2	38¾	98	50¼	128	22¾	58	12	31
715	1	¾-1	2	44¼	112	55¾	142	22¾	58	12	31
850	1-1¼	¾-1¼	2	50¾	129	62¼	158	21¾	55	14	36
1010	1¼	1-1¼	2½	58	147	69½	177	20¾	53	16	41
1200	1¼	1-1¼	2½	66¼	168	77¾	198	20¾	53	16	41
1430	1¼	1¼	2½	76	193	87½	222	19¾	50	18	46
1670	1¼	1¼	2½	85½	217	97	246	19¾	50	18	46
1825	1¼	1¼	2½	92¼	234	103¾	264	19¾	50	18	46

NOTES: 1. Dimensions are nominal.

2. When two gas connection sizes are shown, the smaller applies to the standard gas train, while the larger applies to optional trains, such as four stage or motorized gas valves. Consult factory for exact specifications.

Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.

