# LAARS® MIGHTY THERM® 2

## 200-400 SERIES

*Light Commercial*
*Boiler and Volume Water Heater*

**PACKED WITH FEATURES**

- Low NOx
- Venting Options
- Easy install
- Outdoor certified

LAARS®
Heating Systems Company

# COMFORT • RELIABILITY • PEACE OF MIND

Since our beginning as Laars Engineering in 1948, Laars has embodied innovation and advancement in heating technology. We have built upon our technology over the past seventy plus years to ensure Laars products meet the demands of today's discerning customer.

Laars' advanced commercial heating technology ensures that every installation exceeds your customers' expectations for efficiency, reliability and performance for years to come. Laars Heating Systems Company is a leading designer and manufacturer of high efficiency boilers, water heaters, pool heaters, tanks and accessories for commercial heating applications. Our commercial boiler products are developed & manufactured in Rochester, NH with the mechanical contractor, engineer and building owner in mind.

Laars stands behind each of its products with stringent quality standards, such as requiring each unit to be live-fired before it's packaged, and a service and support team that places the customer and their needs first – every time.

## LAARS® MIGHTY THERM® 2

The Laars MightyTherm2 200-400 Series is a direct vent, non-condensing boiler or volume water heater. The Mighty Therm2's modular construction and simple yet technologically advanced design make this unit the perfect solution for compact light commercial or large residential spaces. Easy installation, set-up and access for maintenance are a winning combination!

***Environmentally Friendly***
- Low NOx emissions
- Meets NSF/ANSI-372 Low Lead Content Certification

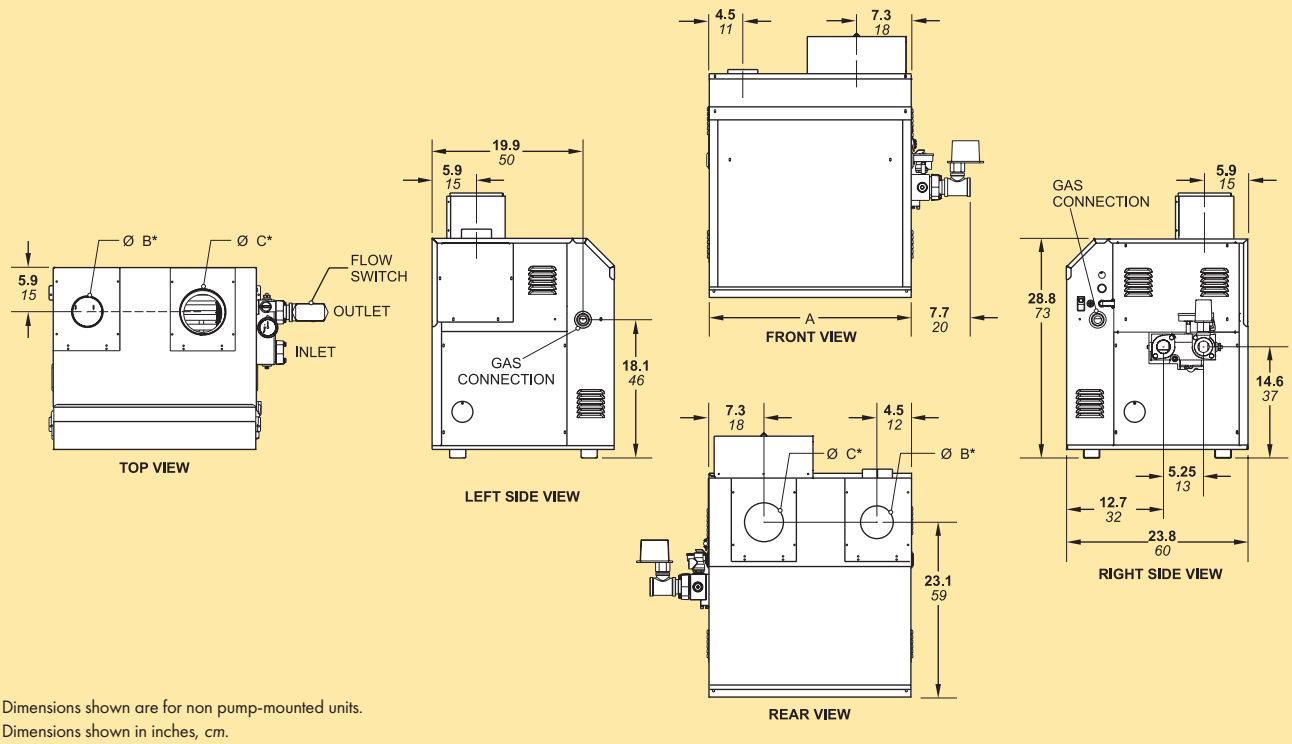
***Flexible Installation***
- Top or rear vent options
- Indoor or outdoor applications
- Natural or propane gas
- Selection of factory-mounted options
- Volume Water Heater - 200, 300 or 400 MBH; Boiler - 400 MBH

***Advanced control programming including auto set-point***

***Easy to use, install & maintain modular design***
- Easy access burner trays
- Gas train & blower assembly are separated
- Manual high limit reset

***Standard Features:***
- Hot surface ignition
- On/off firing (2-stage optional)
- ASME 160 psi working pressure heat exchanger
- Flanged water connections
- Glass-lined headers with external header gaskets
- Stainless steel burners with removable burner tray
- Built-in fan for Cat I and III systems

## DIMENSIONS

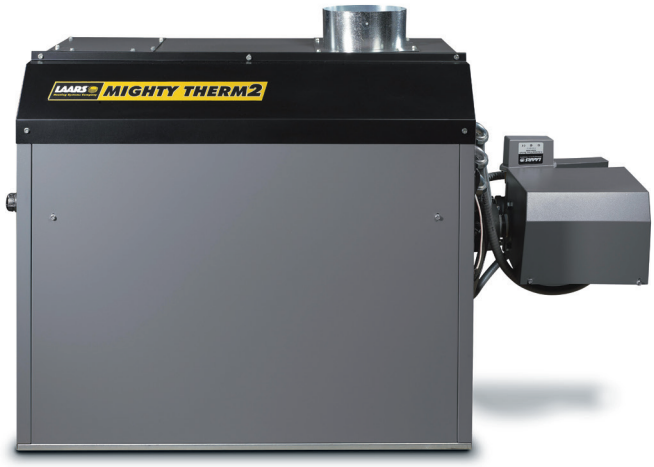



Dimensions shown are for non pump-mounted units.
Dimensions shown in inches, *cm*.
Dimensions are nominal.

## DIMENSIONS

| | A | | Air Conn. B* | | Vent Conn. C* | | Horiz Vent Pipe | |
|---|---|---|---|---|---|---|---|---|
| Size | in. | *cm* | in. | *cm* | in. | *cm* | in. | *cm* |
| 200 | 20½ | *52* | 4 | *10* | 5 | *13* | 4 | *10* |
| 300 | 26½ | *67* | 4 | *10* | 6 | *15* | 5 | *13* |
| 400 | 33½ | *85* | 6 | *15* | 7 | *18* | 6 | *15* |

| | Gas Conn. Size Inches | Water Conn. Size Inches | Shipping Weight | |
|---|---|---|---|---|
| SIZE | NPT | NPT | lbs. | kg |
| 200 | ¾ | 1½ | 270 | 123 |
| 300 | ¾ | 1½ | 300 | 136 |
| 400 | ¾ | 1½ | 330 | 150 |




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

## SIZING DATA

| | Input MT2H | | Output MT2H | | Input MT2V | | Output MT2V | |
|---|---|---|---|---|---|---|---|---|
| SIZE | MT2H | kW | MBH | kW | MBH | kW | MBH | kW |
| 200 | -- | -- | -- | -- | 199.9 | 58.6 | 169.9 | 49.8 |
| 300 | -- | -- | -- | -- | 300.0 | 87.9 | 225.0 | 74.7 |
| 400 | 399.0 | 116.9 | 340.0 | 99.6 | 400.0 | 117.2 | 339.9 | 99.6 |

**NOTES:**
1. Input and output must be derated 4% per 1000 feet above sea level when installed above 2000 feet altitude.
2. Dimensions are nominal.
3. For other boiler ratings:
   Boiler Horsepower: HP - Output/33,475
   Radiation Surface: EDR sq. ft. = Output/150
3. Add 20 lbs. (9kg) to shipping weight for pump-mounted units.

## WATER FLOW REQUIREMENTS

| Temp Rise: | 20°F | | 11°C | | 25°F | | 14°C | | 30°F | | 17°C | | 35°F | | 19°C | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Size | 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 |
| MT2H400 | 34 | 6.3 | 129 | 1.9 | 27 | 4.0 | 102 | 1.2 | 23 | 2.8 | 87 | 0.9 | 19 | 21 | 72 | 0.6 |

| | HARD WATER | | | | | | NORMAL WATER | | | | | | SOFT WATER | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Size | 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 |
| MT2V200 | 45 | 7.3 | 8 | 170 | 2.2 | 4 | 35 | 4.4 | 10 | 133 | 1.3 | 6 | 23 | 1.9 | 15 | 87 | 0.6 | 8 |
| MT2V300 | 45 | 7.4 | 11 | 170 | 2.3 | 6 | 35 | 4.5 | 15 | 133 | 1.4 | 8 | 23 | 2.0 | 22 | 87 | 0.6 | 12 |
| MT2V400 | 45 | 7.4 | 15 | 170 | 2.3 | 8 | 35 | 4.5 | 19 | 133 | 1.4 | 11 | 23 | 2.0 | 30 | 87 | 0.6 | 17 |

**NOTE:** gpm = gallons per minute, lpm = liters per minute

## RECOVERY DATA

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 | 510 | 1928 | 408 | 1542 | 340 | 1285 | 291 | 1100 | 255 | 964 | 227 | 858 | 204 | 771 | 170 | 643 | 146 | 552 |
| 300 | 765 | 2892 | 612 | 2313 | 510 | 1928 | 437 | 1652 | 383 | 1448 | 340 | 1285 | 306 | 1157 | 255 | 964 | 219 | 828 |
| 400 | 1020 | 3856 | 816 | 3084 | 680 | 2570 | 583 | 2204 | 510 | 1928 | 453 | 1712 | 408 | 1542 | 340 | 1285 | 291 | 1100 |

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

## MINIMUM CLEARANCES FROM ADJACENT CONSTRUCTION

| Appliance Surface | Required Clearance from Combustible Material | | Suggested Service Access Clearance | |
|---|---|---|---|---|
| | inhes | cm | inches | cm |
| Left Side | 1 | 2.5 | 24 | 61.0 |
| Right Side | 1 | 2.5 | 24 | 61.0 |
| Top | 1 | 2.5 | 12 | 30.5 |
| Back* | 1 | 2.5 | 12 | 30.5 |
| Front | 1 | 2.5 | 36 | 91.4 |
| Vertical Vent** (Category 1) | 6 | 15.2 | | |
| Horizontal Vent (Category 3) | per UL1738 venting system supplier's instructions | | | |

* When vent and/or combustion air connects to the back, recommended clearance is 36" 91cm.
** 1" when b-vent is used.

LLC - Low Lead Content

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HLW

AHRI MEMBER

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