LAARS Heating Systems Company
POWERED BY KELTECH™

H Series
Commercial Heaters
Tankless Electric Water Heating Solutions

- 5-25 kW (17,000 - 85,300 BTU/hr.)
- Low flow activation options at .15 and .25 GPM (0.6 and 0.9 LPM)
- Certified Lead-Free Design
- Variable modulation from 0 to 100% of the rated kW
- Low Pressure Drop Advantage
- 3/4" connections
- ETL and cETL certified to UL and CSA Standards
- Liquid-Cooled Triac Switches
- Surface Mounted Bi-Metal Thermostat with Manual Reset
- Internal fusing (included) adds safety and permits single power connection



Standard Equipment

Tankless Water Heating Specifications

Laars Commercial Tankless Electric Water Heaters, Powered by Keltech™ H Series are designed to accommodate most commercial fluid heating applications including: environments where demand is < 25kW and total flow is ≤ 7 GPM, and environments where lower activation flows are required: standard units are .5 GPM with options as low as .15 GPM. H Series units are also suited to applications where only single phase service is available or 3-Phase 208V, 240V, and 480V, 50/60 Hz is required.
H Series 5-18 kW units are available with NEMA 4 and 4X enclosure options. H Series 25 kW units are standard NEMA 4 with NEMA 4X (304 Stainless Steel) enclosure option.

Construction

Temperature Controller

The Laars PID Temperature Controller is more energy efficient and reliable than traditional microprocessors using staged elements. Power is infinitely variable, with no fixed inputs. The PID controller makes it possible to modulate the amount of power applied to the elements while also dispersing the required power evenly across all elements. This unique feature increases the product's life cycle.

Heating Element

Each heater features a heavy duty, low watt density, incoloy 800 sheathed resistive element. The design ensures greater protection, durability and resistance to scaling from hard water because water is only heated when flowing; this means sediment is less likely to collect in the heat exchanger.

Triac Switches

The liquid cooled, triac switches provide silent switching which has a faster response than mechanical relays to assist in maintaining an accurate temperature.

Electrical

The H Series requires only one service feed per unit. Includes internal fusing as standard. Internal fusing provides superior protection so the incoming circuit can be higher than 48 amps (NEC). Each heating element is protected with fusing.

Independent Safety

The surface mounted bi-metal thermostat with manual reset acts as a fail-safe. In the event the temperature limit is exceeded, it must be manually reset before power is restored to the elements.

Cabinet Enclosure

Standard cabinet enclosure is made from 18 gauge electro galvanized and powder coated steel. The H Series also features an optional 18 gauge NEMA 4 enclosure with ANSI 61 gray, corrosive resistant paint. The H Series 25 kW unit comes standard in the 18 gauge NEMA 4 enclosure. The NEMA 4X enclosures are for harsher environments made from 16 gauge 304 stainless steel.

Code Compliance and Certifications

Lead-Free

Products marked with the Lead-Free logo comply with the Safe Drinking Water Act (SDWA) requirements of a weighted average of less than 0.25% lead content on wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures.

ETL listed to UL499
cETL listed to CSA-C22.2 No. 88

Standard product selections contained within this document are third party CERTIFIED to NSF/ANSI 372 meeting the Lead-Free content requirement. Any product configured with custom options will be COMPLIANT with NSF/ANSI 372 meeting the Lead-Free content requirement.

ABS Design Assessed intended for product to be installed on an ABS classed vessel, mobile offshore drilling units (MODU), or facility. This is a Tier 2 Approval that states that the product complies with the stated standards and must receive approval by a Surveyor or Engineer for the intended installation.

Product Options

Building Management System (BMS) Integration

The D1 option has 4-20mA input and allows Building Management Systems to set temperature and view heater outlet temperature via the BMS display. This allows the BMS to command the temperature setting of the unit and verify unit performance with actual process values. The D1 option requires BMS input to establish a temperature setting; local adjustment of set-point per standard interface on the heater control display is not permitted.

NEMA 4 or 4X enclosures are required for the D1 option.

Other Product Options

For additional heater options and installation accessories, reference the appropriate section at the end of this document.

Low Pressure Drop Advantage

Pressure Drop							
GPM	1	2	3	4	5	6	7
PSI	0	2	4	8	12	17	24
LPM	3.8	7.6	11.3	15.1	18.9	22.7	26.5
BAR	0.0	0.1	0.3	0.5	0.8	1.2	1.6

Electrical Specifications for the Heater (1-Phase)

☑ All internal fuses necessary for installation are included with the unit.

Capacity (kW)	Voltage	Maximum Amperage	Minimum AWG Wire Size*	MCA	MOP
5	208	25	10	30.0	30
5	240	21	10	26.0	30
6	208	29	8	36.1	40
6	240	25	8	31.3	35
6	277	22	10	27.1	30
6	480	13	12	15.6	20
10	208	48	4	60.1	70
10	240	42	6	52.1	60
10	480	21	10	26.0	30
15	208	72	3	90.1	100
15	240	63	3	78.1	80
18	208	87	3	108.2	110
18	240	75	3	93.8	100
18	277	65	3	81.2	90
18	480	38	6	46.9	50

Electrical Specifications for the Heater (3-Phase)

☑ All internal fuses necessary for installation are included with the unit.

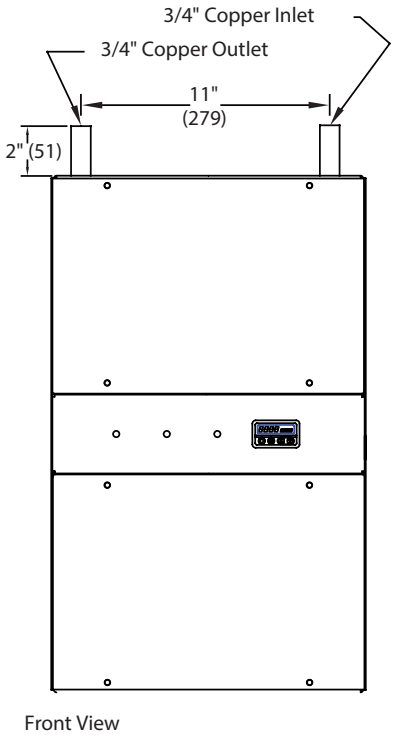
Capacity (kW)	Voltage	Maximum Amperage	Minimum AWG Wire Size*	MCA	MOP
10	208	28	10	30.0	35
10	480	13	12	15.0	15
15	208	42	6	52.0	60
15	240	36	6	45.1	50
18	208	50	4	62.5	70
18	240	43	6	54.1	60
18	480	22	10	27.1	30
25	480	30	8	37.6	40

* Based on the NEC Table 310.16 (Formerly 310.15) for 75°C insulated copper wire @ 30°C Ambient. Aluminum wire requires larger gauges.

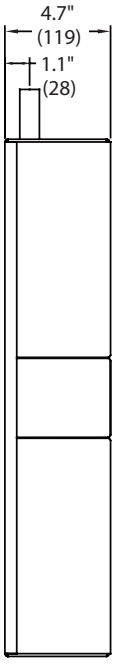
H Series - Standard Dimensions

☑ Select product options shown.

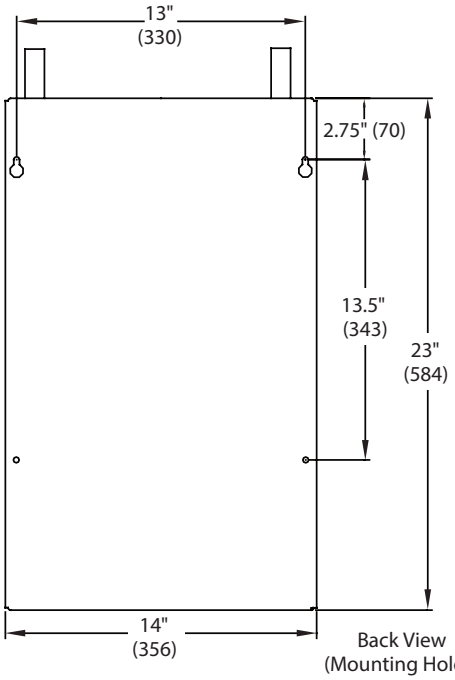
(mm)



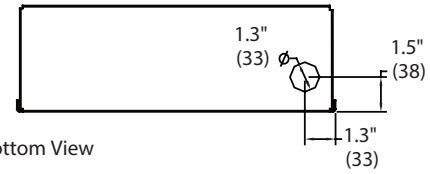
Front View



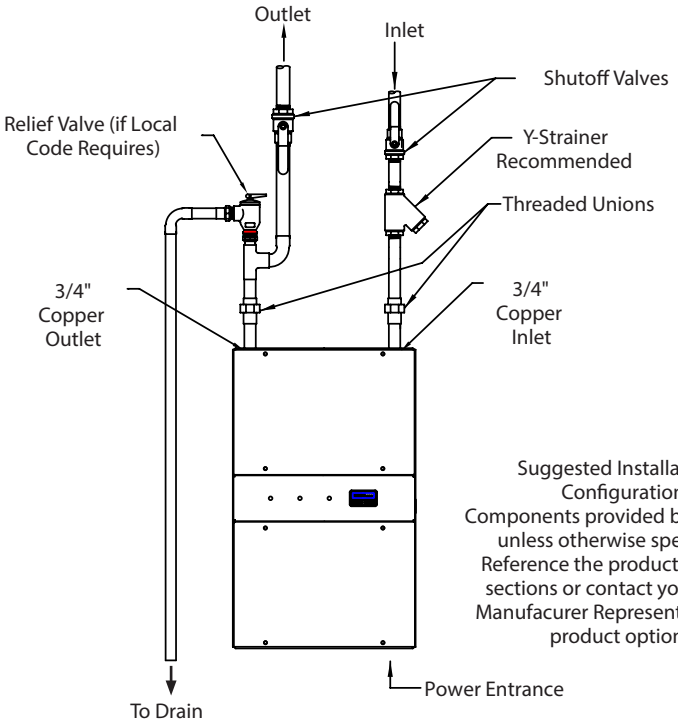
Side View



Back View
(Mounting Holes)



Bottom View

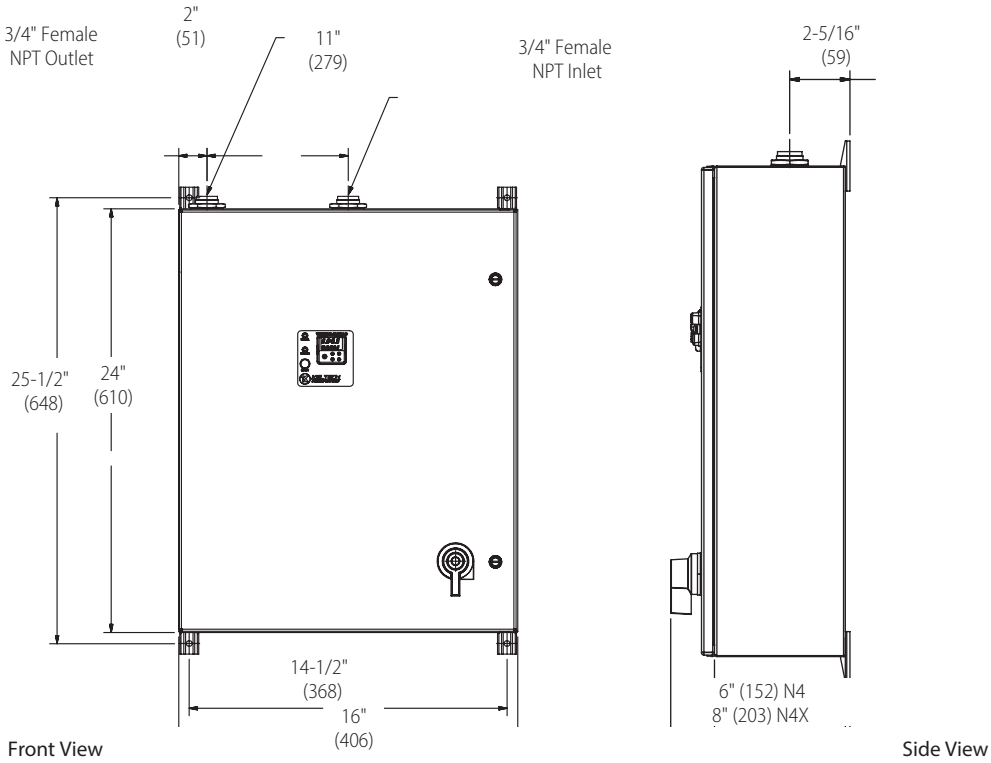


Suggested Installation Configuration
Components provided by installer unless otherwise specified. Reference the product options sections or contact your local Manufacurer Representative for product options.

H Series (5-18 kW) - NEMA 4/4X Dimensions

☑ Select product options shown.

(mm)



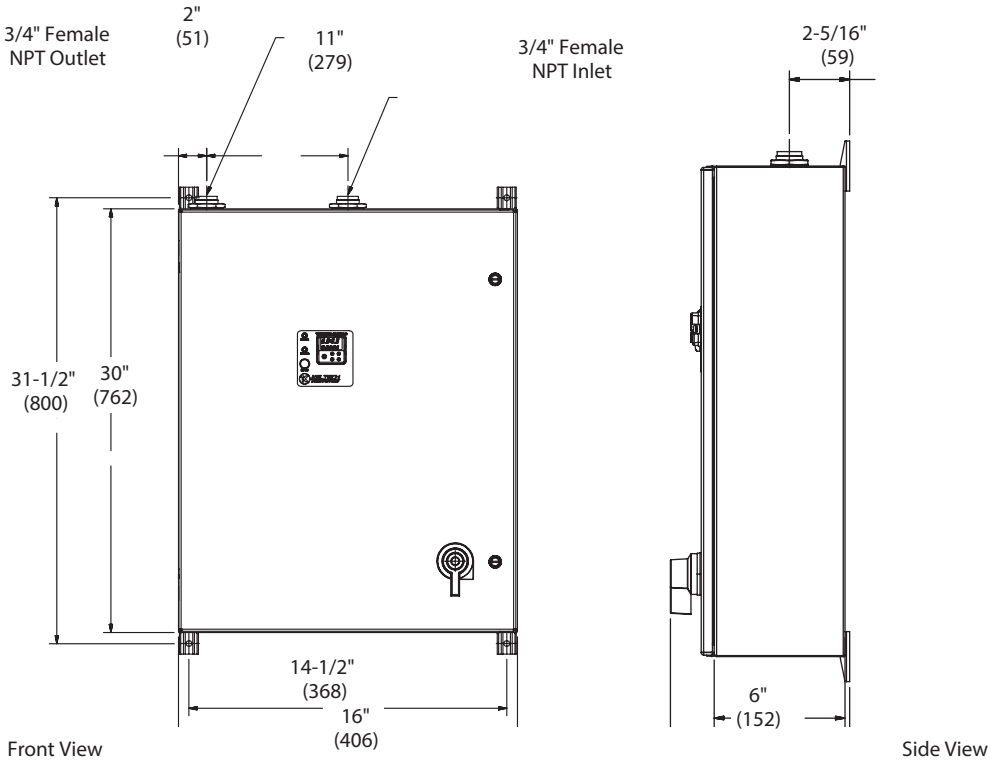
Front View

Side View

H Series (25 kW) - NEMA 4/4X Dimensions

☑ Select product options shown.

(mm)



kW Calculator

H Series: 5, 6, 10, 15, 18, 25 kW

		Temperature Δ°F (°C)																										
		10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°	110°	115°	120°	125°	130°	135°	140°
Flow	GPM LPM	(6°)	(8°)	(11°)	(14°)	(17°)	(19°)	(22°)	(25°)	(28°)	(31°)	(33°)	(36°)	(39°)	(42°)	(44°)	(47°)	(50°)	(53°)	(56°)	(58°)	(61°)	(64°)	(67°)	(69°)	(72°)	(75°)	(78°)
	0.15 0.6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	0.25 0.9	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6
	0.50 1.9	5	5	5	5	5	5	5	5	5	5	5	5	6	6	6	10	10	10	10	10	10	10	10	10	10	10	15
	0.75 2.8	5	5	5	5	5	5	5	5	6	6	10	10	10	10	10	10	10	15	15	15	15	15	15	15	15	15	18
	1 3.8	5	5	5	5	5	6	6	10	10	10	10	10	15	15	15	15	15	15	15	18	18	18	18	25	25	25	25
	1.5 5.7	5	5	5	6	10	10	10	10	15	15	15	15	18	18	18	25	25	25	25	25	25	-	-	-	-	-	-
	2 7.6	5	5	6	10	10	15	15	15	15	18	18	25	25	25	25	25	-	-	-	-	-	-	-	-	-	-	-
	3 11.3	5	10	10	15	15	18	18	25	25	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4 15.1	6	10	15	15	18	25	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5 18.9	10	15	15	25	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6 22.7	10	15	18	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7 26.5	15	18	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

☑ Sizing for the proper flow rate is important. If the temperature rise requirements exceed a single H Series (formerly HL Series) model, consider using multiple H Series units or the G Series (formerly C1N Series) & F Series (formerly C2N Series) Series. Please contact your Laars Representative for additional product information.

How to Size a Heater

1. Calculate temperature rise (also known as delta tee or ΔT).
   Setpoint temp _____ minus coldest incoming water temp _____ = ΔT ΔT = _____

2. Select kW required by using chart or formula below.
   Peak demand in GPM x ΔT x 0.1465 = kW kW = _____

3. Confirm voltage and phase available on site. Voltage & Phase _____

LAARS Heating Systems Company
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H Series
Commercial Heaters
Tankless Electric Water Heating Solutions

1 Brand [L]
L = Laars

2 3 4 5 Category [C][T][E][H]
C T E H = Commercial Tankless Electric H Series

6 7 8 Power [ ][ ][ ]

0 0 5 = 5kW	0 1 5 = 15kW
0 0 6 = 6kW	0 1 8 = 18kW
0 1 0 = 10kW	0 2 5 = 25kW

Available Voltages

	Single Phase Voltage				Three Phase Voltage		
Size	208	240	277	480	208	240	480
5 kW	X	X					
6 kW	X	X	X	X			
10 kW	X	X		X	X		X
15 kW	X	X			X	X	
18 kW	X	X	X	X	X	X	X
25 kW							X

9 Voltage [ ]

Single Phase
C = 208
D = 240
E = 277
J = 480

Three Phase
K = 208
L = 240
S = 480

10 Enclosure Construction [ ]
X = Standard 5-18 kW
D = NEMA 4 - Standard 25 kW
- Optional 5-18 kW
E = NEMA 4X 304 SSTL

11 Heat Exchanger [ ]
X = Standard
F = TE2 - XF Coated HX

12 Control [ ]
X = Standard
F = D1- 4-20mA Input*
* NEMA 4 Only

13 Electrical [X]
X = Standard

14 Temperature Setpoints [ ]
X = Standard (0.5 GPM activation & 160F)
3 = T190 High Temp
C = L15-0.15 gpm activation
D = L25-0.25 gpm activation
H = T190 & L15
M = T190 & L25

15 Firmware [ ]
X = Standard

16 Language [ ]
__ = English (blank)
F = French

Installation Accessories

☐ BSPP = Stainless steel thread adapter converts NPT to BSPP (NEMA 4 or 4X only)	☐ PR = Pressure and temperature relief valve	☐ YS = Y-Strainer
☐ NONE= None	☐ PRS = ASME pressure relief valve, stainless steel	☐ YSS = Y-Strainer, stainless steel
	☐ NONE= None	☐ NONE= None

Application Attributes (MANDATORY)

Coldest incomnig water temperature (140F Max):_____ Maximum Flow:_____ Set point temperature:_____

Delta T Calculation: Set Point Temperature - Coldest Incoming Water Temperature = _____ (Maximum Delta T for Application)

☑ Laars Tankless Water Heaters are built to customer specification and are therefore non-cancelable, non-refundable and non-returnable.

Teflon is a registered trademark of E. I. du Pont de Nemours and Company

Model Number Configuration

L	C	T	E	H								X			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Customer Signoff_____

LAARS Heating Systems Company

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