

- 18 - 25 kW (85,000 - 170,000 BTUs)
- Flow range between 0.75 - 10 GPM (3 - 37.8 L-Min)
- Lead-Free Design
- NEMA 4 enclosure standard
- 3/4" connections
- Independent Safeties
- ETL and cETL certified to UL and CSA Standards
- Liquid-Cooled Solid State Relays
- Controller-locked temperature setting, output fixed at 80°F (27°C)
- Meets ANSI Z358.1 Standards
- Internal fusing (included) adds safety and permits single power connection

## Standard Equipment

### Tankless Water Heating Specifications

Keltech, Inc. Tankless Eye/Face Wash Heaters warm water intended to supply safety fixtures. The heaters uniquely perform in applications with low line pressure, while still accommodating ANSI standard flow rates. The durable plumbing components withstand higher pressures which result in a longer service life, while ensuring the delivery of precise output temperature within  $\pm 1^\circ\text{F}$ . Keltech's durable electrical components withstand power abnormalities found in industrial environments and ensure tepid water standards are never exceeded (100°F), with its three-tier anti-scald protection.

Keltech Tankless systems do not require the installation of an emergency thermostatic mixing valve. The NEMA 4 Enclosure (General Area) is durable and waterproof. NEMA 4X Enclosure offers the same features as a NEMA 4 Enclosure, with the added benefit of corrosion resistance. CLE-Series units are also suited to applications where 3 Phase Delta 480V or 600V is required.

## Construction

### Temperature Controller

Keltech's 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 element. The Keltech design ensures greater protection, durability and resistance to scaling from hard water because continuous flushing and no dead space means sediment will not precipitate.

### Solid State Relays

The liquid cooled solid state relays provide silent switching, which has a fast response and works in conjunction with the PID controller to infinitely modulate and add to the life of the heater.

### Electrical

The CLE-Series requires only one service feed per unit. Includes internal fusing as standard. Internal fusing provides superior protection. Keltech protects both sides of each heating element with fusing.

### Cabinet Enclosure

The wall- or floor-mounted standard cabinet enclosure is NEMA 4 rated and made from 16 gauge electro galvanized steel and powder coated with ANSI 61 gray, corrosive resistant paint. The optional NEMA 4X enclosures are for harsher environments and made from 16 gauge 304 stainless steel. The NEMA 4X enclosure can also be specified with 316 stainless steel.



### Independent Safeties

Each heater has an auto reset high limit switch and a manual reset cutoff. Both switch and cutoff prevent overshoot or scalding. The auto reset high limit switch ensures that when the temperature limit is reached, the unit will power down a bank of elements; when the temperature returns to the set point, power is restored. The manual reset cutoff acts as a fail-safe and must be manually reset before power can be restored to the elements if the temperature limit is exceeded.

Temperature Safety Values:

Auto reset high limit switch: 95°F (35°C)

Manual reset cutoff: 100°F (38°C)

### Optional Fuse Disconnect

Internal fuse disconnect interlocks with enclosure door when energized, prohibiting access to a live cabinet. Select the FDS option for an additional level of safety and convenience at the heater location.

### Optional Alarm Selections

Keltech offers visible alarm hook ups for an audible alarm system including a stacklight option.

### Optional Freeze Protection

This option is powered off the main service so it does not require a separate circuit, which means no additional wiring. Includes insulation in the standard NEMA 4 Enclosure and thermostatically controlled forced air heater to maintain temperatures above freezing. ENHT Package has a Mechanical Ambient Sensor that can provide a signal to the DCS if the power has been removed from the heater and the enclosure temperature reaches 40°F.

### Optional Ground Fault

Equipment protection ground fault package includes fault status light test and reset buttons on exterior control panel.

### Other Product Options

For additional heater options, reference the Product Options section of this document.

## 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.



Intertek

ETL listed to UL499, cETL listed to CSA22.2.



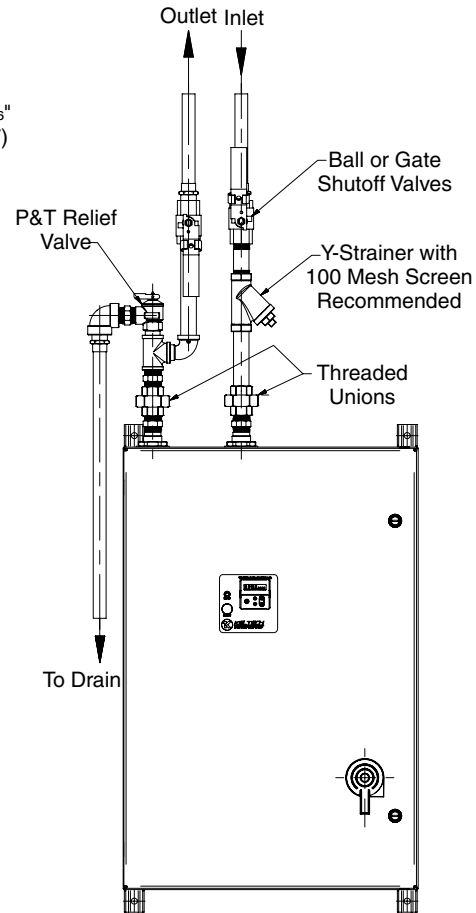
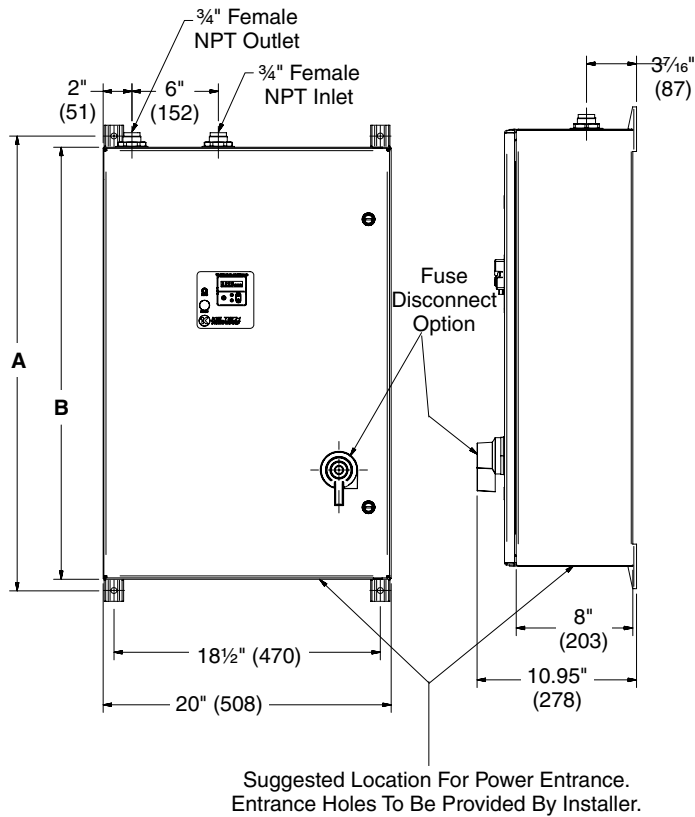
NSF Certified to comply with NSF/ANSI Standard 372 - Drinking Water System Components - Lead Content

### CLE Series - Dimensions

(mm)



Select product options shown. Other options available.



kW	A	B
18	31-1/2" (800)	30" (762)
25	37-1/2" (953)	36" (914)

### Suggested Installation Configuration

Components provided by installer unless otherwise specified. Reference the product options page or contact your local Bradley Representative for product options.

### 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
18	480	22	10
18	600	18	10
25	480	30	8
25	600	24	8

### HL Pressure Drop Advantage

Pressure Drop								
GPM	1	2	3	4	5	6	8	10
PSI	0	1	2	3	4	5	7	10
L-MIN	3.8	7.6	11.3	15.1	18.9	22.7	30.2	37.8
BAR	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7

### kW Calculator

CLE Series (kW): 18, 25

		Temperature Δ°F (°C)																														
Flow	GPM L-MIN	10° (6°)	15° (8°)	20° (11°)	25° (14°)	30° (17°)	35° (19°)	40° (22°)	45° (25°)	50° (28°)	55° (31°)	60° (33°)	65° (36°)	70° (39°)	75° (42°)	80° (44°)	85° (47°)	90° (50°)	95° (53°)	100° (56°)	105° (58°)	110° (61°)	115° (64°)	120° (67°)	125° (69°)	130° (72°)	135° (75°)	140° (78°)				
	0.75 2.8	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18			
	1.0 3.8	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	25	25	25	25			
	1.5 5.7	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	25	25	25	25	25	25	25	-	-	-	-	-	-			
	2 7.6	18	18	18	18	18	18	18	18	18	18	18	25	25	25	25	25	-	-	-	-	-	-	-	-	-	-	-	-			
	3 11.3	18	18	18	18	18	18	18	25	25	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	4 15.1	18	18	18	18	18	25	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	5 18.9	18	18	18	25	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	6 22.7	18	18	18	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	7 26.5	18	18	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	8 30.2	18	18	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	9 34.0	18	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	10 37.8	18	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			



Sizing for the proper flow rate is important. If the temperature rise requirements exceed a single CLE model, consider using multiple CLE-Series units. Please contact your Keltech Representative for additional product information.

### How to Size a Heater

1. Calculate Delta-T ( $\Delta T$ ).

Set point temp - coldest ground water temp =  $\Delta T$

$\Delta T =$  \_\_\_\_\_

2. Select kW required by using chart or formula below.

Peak demand in GPM x  $\Delta T$  x .1465 = kW

kW = \_\_\_\_\_

3. Confirm voltage and phase available on site.

Voltage and Phase = \_\_\_\_\_

4. Confirm minimum flow.

Minimum Flow = \_\_\_\_\_

# CLE Series - Eyewash Heaters

## Tankless Water Heating Solutions

### Standard Product - CLE Series

#### 18kW Eyewash Heaters

- ☐ **CLE183/480D** Three Phase 18kW, 480V Eyewash Heater
- ☐ **CLE183/600D** Three Phase 18kW, 600V Eyewash Heater

#### 25kW Eyewash Heaters

- ☐ **CLE253/480D** Three Phase 25kW, 480V Eyewash Heater
- ☐ **CLE253/600D** Three Phase 25kW, 600V Eyewash Heater

### Product Options

- ☐ **AL3** Distributed Control System Link
- ☐ **AL3-SL** Stack light with distributed control system link
- ☐ **ENHT** Freeze Protection to -20°F
- ☐ **EXP2** Explosion Proof Class1/Division2
- ☐ **FDS** Internal Fuse Disconnect
- ☐ **GF** Ground Fault Package
- ☐ **LK** Leg kit converts standard wall-mount to floor-mount
- ☐ **N4X** NEMA-4X Enclosure - Stainless Steel

### Installation Accessories

- ☐ **BSPP** Stainless steel thread adapter converts NPT to BSPP
- ☐ **PR** Pressure and temperature relief valve
- ☐ **PRS** Pressure and temperature relief valve, stainless steel
- ☐ **YS** Y-Strainer
- ☐ **YSS** Y-Strainer, stainless steel



**Keltech Tankless Water Heaters are non-cancelable, non-refundable and non-returnable.**

### Application Attributes (MANDATORY)

Coldest ground water temperature: \_\_\_\_\_

Minimum Flow: \_\_\_\_\_

Maximum Flow: \_\_\_\_\_

Set point temperature: \_\_\_\_\_

### Delta T Calculation

Set Point Temperature - Coldest Incoming Water Temperature = Minimum Delta T for Application

### Model Number Configuration

**CLE** \_\_\_\_\_ / **D-** \_\_\_\_\_ - - - - -

List applicable option codes alphabetically.

Customer Signoff \_\_\_\_\_