



Portable CNA-Series - Large Industrial Heaters

Tankless Water Heating Solutions

- Heavy duty industrial cart options simplify moving heater to various locations
- 36 - 72 kW (122,800 - 245,600 BTUs)
- Certified lead-free design
- New & improved pressure drop advantage
- Variable temp heat exchanger
- NEMA 4 enclosure standard
- Independent safeties
- Heater ETL and cETL certified to UL and CSA Standards
- Liquid-cooled solid state relays
- Internal fusing (included) adds safety and permits single power connection
- Door cutoff switch
- Emergency stop button
- ASME and NB Certified options available

Standard Equipment

Specifications

Certain Bradley® CNA Series Tankless Water Heaters **Powered by Keltech™** can now be paired up with heavy duty industrial carts to make a portable solution for temporary or semi-permanent heating needs. The heater and cart combination (shipped separately) are designed to accommodate most heavy industrial fluid heating applications where demand is 36kW - 72kW and flow rates from 1.5 to 50 GPM are required. Standard units: activation flow ≥ 1.5 GPM. CNA-Series are designed for environments requiring precise temperatures to 160° as an alternative to boilers. CNA-Series units are suited to applications where 480V and 600V, 50/60 Hz 3-Phase Delta is required. The heat exchanger features o-ring seals that out last typical gasket construction. 1-1/4" NPT female inlet and outlet connections.

Construction

Portable Cart

Bradley Portables feature a heavy-duty industrial cart for moving the heater into a temporary or semi-permanent location. Cart features push handle and forklift pockets to assist in moving heater from place to place. Carts are powder coated and constructed from welded steel tubing. All carts include 8" polyurethane casters.

Standard cart package includes lockable heater enclosure, tamper resistant inspection cover over control panel to prevent tampering by unauthorized personnel, cart push handle, forklift pockets, pigtail wire cable with plate and cable gland (shipped loose). Installer attaches heater to cart and provides final connections.

Deluxe cart package includes lockable heater enclosure, tamper resistant inspection cover over control panel to prevent tampering by unauthorized personnel, cart push handle, forklift pockets, Hubbell electrical connectors (shipped loose), welded tool box and truck brake to lock cart in place. Installer attaches heater to cart and provides final connections.

Temperature Controller

The 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 heater design ensures greater protection, durability and resistance to scaling from hard water because water is only heated when flowing; this means sediment will not collect in the heat exchanger.

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.



Deluxe Cart Shown

Electrical

The CNA-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 by fusing.

Cabinet Enclosure

The floor-mounted standard cabinet enclosure is NEMA 4 rated and made from 14 gauge mild 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 (at additional price). Bradley Portable Heaters include tamper resistant latches with matching quarter-turn tools to inhibit unauthorized access.

Independent Safeties

The internal thermostat with 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 drops back down to the set point, power is restored. The surface mounted bi-metal thermostat with manual reset acts as a fail-safe and must be manually reset before power can be restored to the elements if the temperature limit is exceeded.

Product Compliance



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

ETL listed to UL 50E

ETL listed to NFPA 496 (Requires EXP2CFPM Option)

cETL listed to CSA-C22.2 No. 88



Certified to NSF/ANSI 372

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.



HLW



ASME certification available. Bradley units 58kW (200,000 btu) and higher are the only electric tankless water heaters National Board certified with the HLW stamp. (Requires HLW or HLW-TE Option)



Portable CNA-Series - Large Industrial Heaters

Tankless Water Heating Solutions

Product Options

Fused Disconnect

Internal fused 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.

Ground Fault

Optional equipment protection ground fault senses leakage current to ground >1 Amp. In the event a fault is detected, this device will terminate the high voltage power supply to heating elements and disable operation of the unit. Fault status is communicated EXTERNALLY at the control interface. Personnel may also test the Ground Fault system and reset any nuisance trips without opening the cabinet.

ASME Heat Exchanger

Bradley offers any product above 200,000 btu equivalent (58kw+) the option to be fitted with internal plumbing certified to Section IV of the ASME Boiler and Pressure Vessel Code - an industry exclusive certification. HLW certification represents not only an approved design and method of construction, but an intensively audited construction and documentation process that concludes with a pressure test witnessed by an ASME official. Upon completion of this process, each heat exchanger is issued a unique serial number for registration in the National Board. This information is supplied with the unit via Form "HLW-6 Manufacturer Data Report" for verification and reference by local inspection officials. The HLW options also include additional features such as dry-fire protection, an auto bleed valve, stainless steel bulkheads and boiler drain valves, adding an extra level of quality and durability to Bradley heaters.

Select the HLW-TE options for deionized or mild corrosive applications requiring a HLW (ASME) Pressure Vessel. The TE2 option, which provides a Xylan Fluoropolymeric Coating, is not available with an ASME heat exchanger.

Other Product Options

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

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
36	480	43	6
36	600	35	8
54	480	65	4
54	600	52	6
63	480	76	4
63	600	61	4
72	480	87	3
72	600	69	4

CNA-Series Pressure Drop Advantage

GPM	1.5	2	3	4	5	6	8	10	15	20	25	30	35	40	45	50
36-63 kW PSI	0.0	0.0	0.1	0.2	0.2	0.3	0.6	0.9	2.0	3.6	5.5	7.9	10.8	14.0	17.6	21.7
72-144 kW PSI	0.0	0.0	0.1	0.2	0.3	0.4	0.8	1.2	2.6	4.7	7.3	10.4	14.2	18.5	23.3	28.7
L-MIN	5.7	7.6	11.3	15.1	18.9	22.7	30.2	37.8	56.7	75.6	94.5	113.4	132.5	151.2	170.1	189
36-63 kW BAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.5	0.7	1.0	1.2	1.5
72-144 kW BAR	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3	1.6	2.0



Portable CNA-Series - Large Industrial Heaters

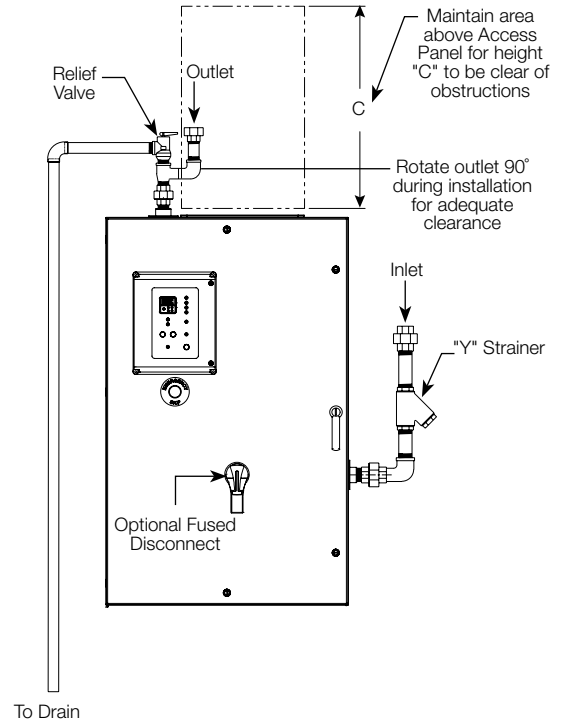
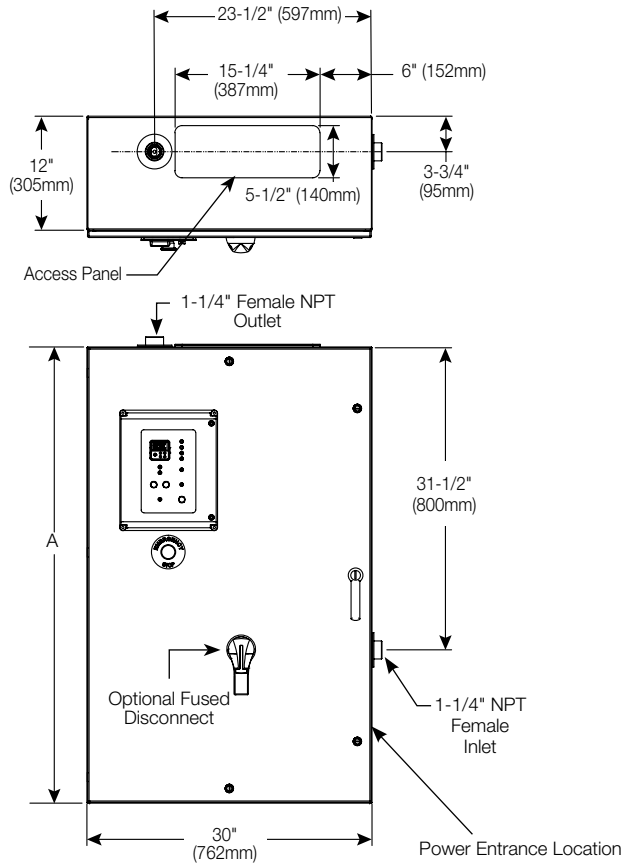
Tankless Water Heating Solutions

Portable CNA-Series - Dimensions

(mm)



Select product options shown. Other options available.



Suggested Installation Configuration

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

	Dim. "A"	Dim. "C"
36kW	48"(1219)	36"(914)
54kW	48"(1219)	36"(914)
63kW	60"(1524)	48"(1219)
72kW	48"(1219)	36"(914)

DISCONTINUED



Portable CNA-Series - Large Industrial Heaters

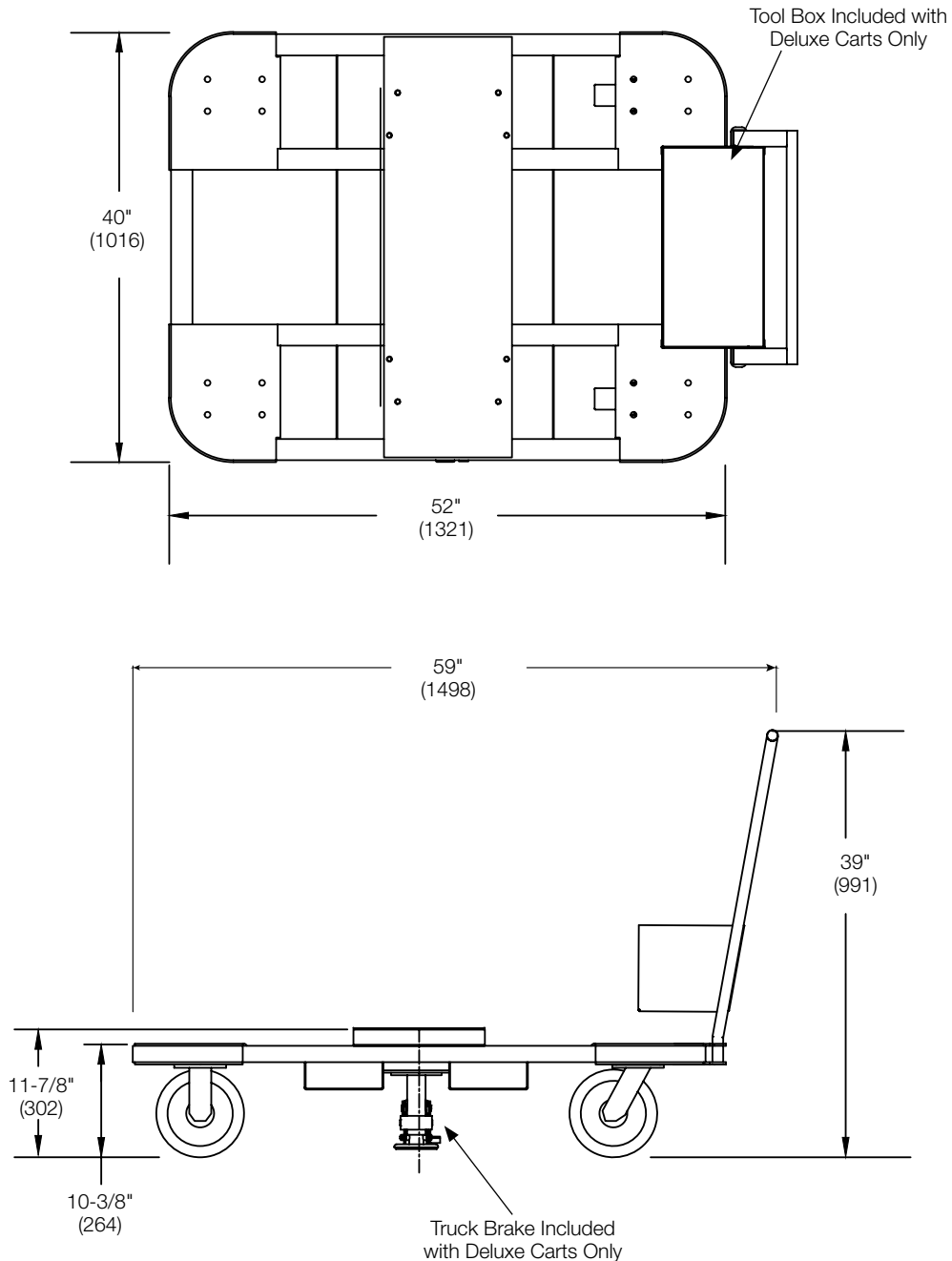
Tankless Water Heating Solutions

Portable CNA Series - Cart Dimensions

(mm)



Deluxe cart shown with tool box and truck brake,
standard cart dimensions are identical.





Portable CNA-Series - Large Industrial Heaters

Tankless Water Heating Solutions

kW Calculator

CNA-Series (kW): 36, 54, 63, 72

		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°)		
	1.5	5.7	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	2	7.6	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	54	54	54	54	
	3	11.3	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	54	54	54	54	54	54	54	54	63	63	63	63	
	4	15.1	36	36	36	36	36	36	36	36	36	36	36	36	54	54	54	54	54	54	54	63	63	72	72	72	-	-	-	-	
	5	18.9	36	36	36	36	36	36	36	36	36	54	54	54	54	54	54	63	63	72	72	-	-	-	-	-	-	-	-	-	-
	6	22.7	36	36	36	36	36	36	36	54	54	54	54	54	63	63	72	72	-	-	-	-	-	-	-	-	-	-	-	-	-
	7	26.5	36	36	36	36	36	36	54	54	54	63	63	72	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8	30.2	36	36	36	36	36	54	54	54	63	72	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9	34.0	36	36	36	36	54	54	54	63	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10	37.8	36	36	36	54	54	54	63	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	45.4	36	36	36	54	54	63	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	15	56.7	36	36	54	63	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	20	75.6	36	54	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25	94.5	54	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	30	113.4	54	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	35	132.3	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	40	151.2	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	45	170.1	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ASME Certification Available



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

How to Size a Heater

1. Calculate Delta-T (ΔT).

Set point temp - coldest ground water temp = ΔT

$\Delta T =$ _____

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

Peak demand in GPM x ΔT x .1465 = kW

kW = _____

3. Confirm voltage and phase available on site.

Voltage and Phase = _____

4. Confirm minimum flow.

Minimum Flow = _____



Portable CNA-Series - Large Industrial Heaters

Tankless Water Heating Solutions

Model	
CNA CNA-Series - Large Industrial Heater	
Standard Selections (Must select one from each category)	
Kilowatts	
36 36 kilowatts	63 63 kilowatts
54 54 kilowatts	72 72 kilowatts
AC Power Supply	
3 Three Phase	
Voltage	
480 480 Volts	380 380 Volts (down rated from 480V)
600 600 Volts	400 400 Volts (down rated from 480V)
415 415 Volts (down rated from 480V)	
System Controller	
D Digital Control	
Cabinet Enclosure	
N4 NEMA-4 Enclosure (standard)	
N4X NEMA-4X Enclosure - Stainless Steel	
N4X316 NEMA-4X Enclosure - 316 Stainless Steel	

☒ **Heaters listed above can be down rated in 380, 400 and 415 volts. Contact your local Bradley Representative for power ratio and effective kW.**

Enhanced Performance Tuning
Please select your type of application. Bradley will precisely "tune" your heater specifically to your application for the highest level of performance at no additional charge.
Process Heating Potable Boosting Re-Circulating

Heater Installation Accessories	
BSPP	Stainless steel thread adapter converts NPT to BSPP
NONE	None
PR	Pressure and temperature relief valve
PRS	ASME pressure relief valve, stainless steel
NONE	None
YS	Y-Strainer
YSS	Y-Strainer, stainless steel
NONE	None

☒ **Verify ASME Code applicability for all installations 58kw (200,000 btu) and higher.**

Heater Product Options (must select one from each category)	
FDS*	Internal Fused Disconnect
NONE	None
GF	Ground Fault Package
NONE	None
HLW	ASME Heat Exchanger with Sensor Level (63kW and Higher Only)
NONE	None
T200	High Temperature Package (Select for Temp Greater than 190°F)
T190	High Temperature Package (Select for Temp Greater than 180°F)
T180	High Temperature Package (Select for Temp Greater than 170°F)
T170	High Temperature Package (Select for Temp Greater than 160°F)
NONE	None
TE	PFA Teflon® Coated Heat Exchanger with Bright Annealed Stainless Steel Elements, FDA Approved (Use for deionized water or mild corrosive fluid applications)
TE2**	Xylan Fluoropolymeric Coated Heat Exchanger with Bright Annealed Stainless Steel Elements, FDA Approved for Food Contact (Use in deionized water applications)
NONE	None

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

* Not available with CNA-723/600D

** TE2 not available with HLW.

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

DISCONTINUED



Portable CNA-Series - Large Industrial Heaters Tankless Water Heating Solutions

Heater Model Number Configuration

CNA-	3	/	D	-	-	-	-	-	-	-	-
	kW		Volts								
INSTL_ACCESSORY	-	-	-	-	-	-	-	-	-	-	-

List applicable option codes alphabetically. Do not include Installation Accessories in configuration. Select one or two cart options below.

Cart Product Options (must select one)	
Standard	Standard cart package includes lockable heater enclosure, tamper resistant inspection cover over control panel to prevent tampering by unauthorized personnel, cart push handle, forklift pockets, pigtail wire cable with plate and cable gland (shipped loose). Installer attaches heater to cart and provides final connections.
Deluxe	Deluxe cart package includes lockable heater enclosure, tamper resistant inspection cover over control panel to prevent tampering by unauthorized personnel, cart push handle, forklift pockets, Hubbell electrical connectors (shipped loose), welded tool box and truck brake to lock cart in place. Installer attaches heater to cart and provides final connections.



Bradley® Tankless Portable Carts and Tankless Water Heaters *Powered by Keltech™* are non-cancelable, non-refundable and non-returnable.

Customer Signoff _____