

# Plenum Rated Unit Heater CK Series



## Model Code:

CK	48	10	-3
A	B	C	D

A: Series  
 B: 20 - 208V 24 - 240V  
 48 - 480V  
 C: Kilowatts  
 D: 1 or 3-phase



- Spiral finned element
- Dual inlet blower
- Totally enclosed motor
- N.E.M.A. 12 construction
- Adjustable louver hood
- Available in 208, 240 & 480 volt
- 18GA steel enclosure
- 24V control
- Horizontal/Vertical mount
- Can be ducted
- Fan only relay
- 3-year limited warranty



## Concealed Space Use - Zero Clearance

The CK model is a special application heater approved for use in concealed areas of buildings such as an area between a finished ceiling and drop ceiling, in an open plenum or in a ducted system. It is specifically designed for high-rise and office buildings, factories, auto body shops, food processing plants, plating shops, and machine shops. It is engineered to withstand dirty, dusty, moist or even mildly corrosive environments, and rated for zero clearance mounting against any surface.

**Not intended for use where flammable vapors, gases, liquids or other combustibles are, or may be present.**

### Factory Installed Options

**Thermostat:** A N.E.M.A. 4X thermostat.

**Element Step Control:** 2-Stage control. For improved energy management additional steps can be added (refer to options chart).

**Disconnect Switch:** Available with a 3-Pole non-fused disconnect with a padlock provision.

**Motor HP Upgrades:** Standard models are listed with motors that will provide sufficient CFM for the kW they are designed for. Where additional CFM is required a larger motor and blower can be provided.

**No Diffuser:** Used when heater will be connected to ductwork or use an alternate diffuser.

### Engineering Specifications

*Contractor shall supply and install CK Series plenum heaters manufactured by King Electrical Mfg. Company.*

*Heaters shall be of the wattage and voltage as indicated on the plans.*

**Construction:** The heater case is fabricated from high tensile 18 gauge electrogalvanized steel that is welded together forming a durable unibody cabinet. Heater is finished with a rust inhibiting epoxy coating.

**Adjustable Outlet Louver:** Louvers direct air up or down as needed for the heating application.

**Intake and Discharge Screen:** Heavy gauge steel screen protects against foreign objects entering the heater. A 1" x 16" x 20" filter is provided to prevent dirt and dust build up in the heater.

**Air Filter:** Convenient access for replacement of standard 16" x 20" x 1" filter.

**N.E.M.A. 12 Wiring Compartment:** The wiring compartment is sealed with a ¼" high density polyurethane gasket. This provides excellent protection against moisture, dust and dirt from invading the electrical components and wiring. All optional control accessories are N.E.M.A. 12 rated.

**Spiral Fin Elements:** The metal sheath element is brazed with spiral fins and then formed into a coil configuration. This combination produces the best heat transfer while eliminating the potential for hot spots by positioning the element in the maximum airflow stream.

**Blower & Motor:** Totally enclosed outdoor ball bearing fan motor. Permanently lubricated, class B insulation, auto-protected, permanent split capacitor and 60°C ambient. Large capacity dual-inlet blower handles high static pressure and moves large air volume. Motor leads are enclosed

in a sealrite raceway to prolong equipment life & reduce maintenance.

**Air Intake Temperature Control:** A built-in thermostat located at the intake blower is factory set at 100°F which prevents the heater from operating when the ambient temperature exceeds this limit. This will prevent the heater from wasting energy and is an extra measure of safety.

**Auto-Reset Thermal Cutout:** Power is disconnected from the element if an overheated condition occurs. The fan continues to run to dissipate excess heat from the element. The element is re-energized automatically when the normal operating temperature returns.

**Internal Controls:** Magnetic contactors are standard on all units. A transformer is provided for 24 Volt control. This enables the customer to use a standard low voltage thermostat. Subcircuit fusing is provided when the heater ampacity exceeds 48 Amps to comply with UL standards. A fan delay is provided standard on models above 11kW to dissipate residual heat from the heating elements.

**Easy Wiring:** large wiring compartment allows quick access  
**Mounting:** CK heater comes with two brackets welded on top to be hung from the ceiling or beam using threaded rod.

**Approvals:** ETL Certified to comply with standard for Heating and Cooling Equipment ANSI/UL 1995 fourth edition. Meets stringent City of Chicago codes for plenum use.

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## Ordering Information \*Suffix -1 = single phase & Suffix -3 = 3 phase

	MODEL	KILOWATTS	BTUH(000)	VOLTS	AMPS	MOTOR HP	CFM	TEMP. RISE °F	SIZE	WEIGHT lbs
<b>208V</b>	CK2003-1	3.3	10	208	14.4	1/4	600	17.4°	Fig. A	75
	CK2005-1	5	17	208	24.0	1/4	600	26.3°	Fig. A	75
	CK2007-1	7.5	23.9	208	33.6	1/4	1000	23.7°	Fig. A	80
	CK2010-1	10	34.1	208	48.1	1/4	1000	31.6°	Fig. A	80
	CK2012-1	12.5	41	208	57.7	1/3	1000	39.5°	Fig. A	85
	CK2015-1	15	51.2	208	72.1	1/3	1000	47.4°	Fig. A	85
<b>240/208V</b>	CK2403-1	3.3/2.5	10	240/208*	13.8/12	1/4	600	17.4°	Fig. A	75
	CK2405-1	5/3.8	17	240/208*	20.8/18.0	1/4	600	26.3°	Fig. A	75
	CK2407-1	7.5/5.6	23.9	240/208*	31.3/27.0	1/4	1000	23.7°	Fig. A	80
	CK2410-1	10/7.5	34.1	240/208*	41.7/36.0	1/4	1000	31.6°	Fig. A	80
	CK2412-1	12.5/9.4	41	240/208*	52.1/45.1	1/3	1000	39.5°	Fig. A	85
	CK2415-1	15/11.3	51.2	240/208*	62.5/54.1	1/3	1000	47.4°	Fig. A	85
<b>480V</b>	CK4805-1	5	17	480	10.4	1/4	1000	15.8°	Fig. A	75
	CK4807-1	7.5	23.9	480	14.6	1/4	1000	23.7°	Fig. A	80
	CK4810-1	10	34.1	480	20.8	1/4	1000	31.6°	Fig. A	80
	CK4812-1	12.5	41	480	25.0	1/3	1000	39.5°	Fig. A	85
	CK4815-1	15	51.2	480	31.1	1/3	1000	47.4°	Fig. A	85
	<b>208V</b>	CK2003-3	3	10	208	8.3	1/4	600	17.4°	Fig. A
CK2005-3		5	17.1	208	13.8	1/4	600	26.3°	Fig. A	90
CK2007-3		7.5	23.9	208	19.5	1/4	1000	23.7°	Fig. A	90
CK2010-3		10	34.1	208	27.8	1/4	1000	31.6°	Fig. A	90
CK2012-3		12.5	41	208	33.3	1/3	1000	39.5°	Fig. A	90
CK2015-3		15	51.2	208	41.6	1/3	1000	47.4°	Fig. A	90
CK2020-3		20	68.3	208	55.5	1/2	1250	50.6°	Fig. A	95
CK2025-3		25	85.3	208	69.4	1/2	1250	63.2°	Fig. A	95
CK2030-3-DBL		30	102.4	208	83.3	1/3	2000	47.4°	Fig. B	180
CK2040-3-DBL		40	136.5	208	111.0	1/3	2500	50.6°	Fig. B	190
CK2050-3-DBL		50	170.6	208	138.7	1/3	2500	63.2°	Fig. B	190
<b>240/208V</b>		CK2403-3	3/2.3	10	240/208*	7.2/6.2	1/4	600	17.4°	Fig. A
	CK2405-3	5/3.8	17.1	240/208*	12.0/18.0	1/4	600	26.3°	Fig. A	90
	CK2407-3	7.5/5.6	23.9	240/208*	18.0/15.6	1/4	1000	23.7°	Fig. A	90
	CK2410-3	10/7.5	34.1	240/208*	24.0/20.8	1/4	1000	31.6°	Fig. A	90
	CK2412-3	12.5/9.4	41	240/208*	30.1/26.0	1/3	1000	39.5°	Fig. A	90
	CK2415-3	15/11.3	51.2	240/208*	36.1/31.2	1/3	1000	47.4°	Fig. A	90
	CK2420-3	20/15	68.3	240/208*	48.1/41.6	1/2	1250	50.6°	Fig. A	95
	CK2425-3	25/18.8	85.3	240/208*	60.1/52.0	1/2	1250	63.2°	Fig. A	95
	CK2430-3-DBL	30/22.5	102.4	240/208*	72.1/62.4	1/3	2000	47.4°	Fig. B	180
	CK2440-3-DBL	40/30	136.5	240/208*	96.2/83.2	1/3	2500	50.6°	Fig. B	190
	CK2450-3-DBL	50/37.5	170.6	240/208*	120.2/104.0	1/3	2500	63.2°	Fig. B	190
	<b>480V</b>	CK4805-3	5	17.1	480	6	1/4	1000	15.8°	Fig. A
CK4807-3		7.5	23.9	480	9.0	1/4	1000	23.7°	Fig. A	90
CK4810-3		10	34.1	480	12	1/4	1000	31.6°	Fig. A	90
CK4812-3		12.5	41	480	15	1/3	1000	39.5°	Fig. A	90
CK4815-3		15	51.2	480	18	1/3	1000	47.4°	Fig. A	90
CK4820-3		20	68.3	480	24.0	1/2	1250	50.6°	Fig. A	95
CK4825-3		25	85.3	480	30.1	1/2	1250	63.2°	Fig. A	95
CK4830-3-DBL		30	102.4	480	36.1	1/3	2000	47.4°	Fig. B	180
CK4840-3-DBL		40	136.5	480	48.1	1/3	2500	50.6°	Fig. B	190
CK4850-3-DBL		50	170.6	480	60.1	1/3	2500	63.2°	Fig. B	190

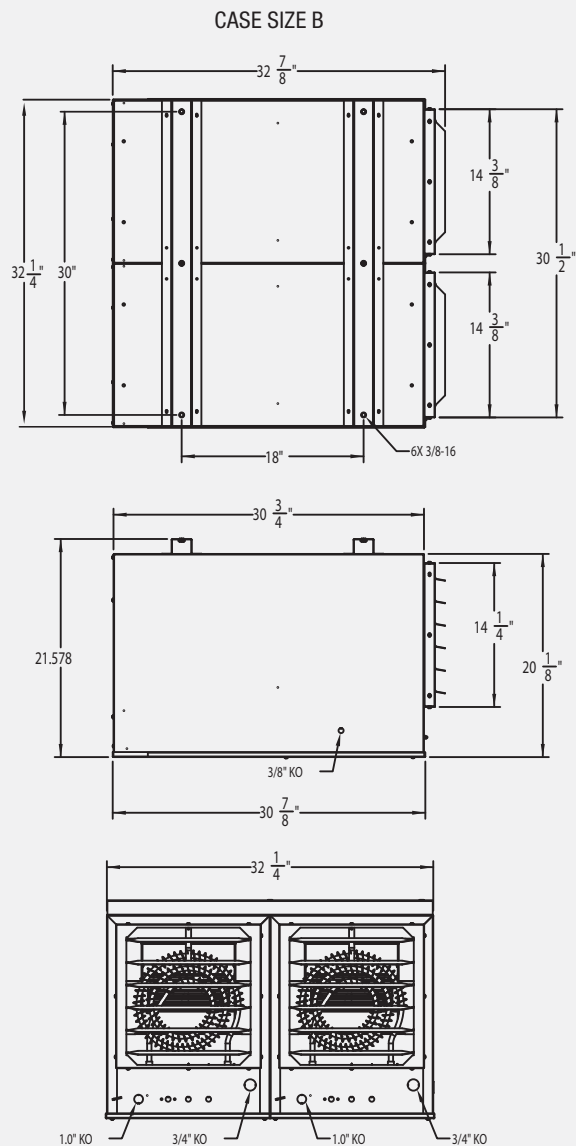
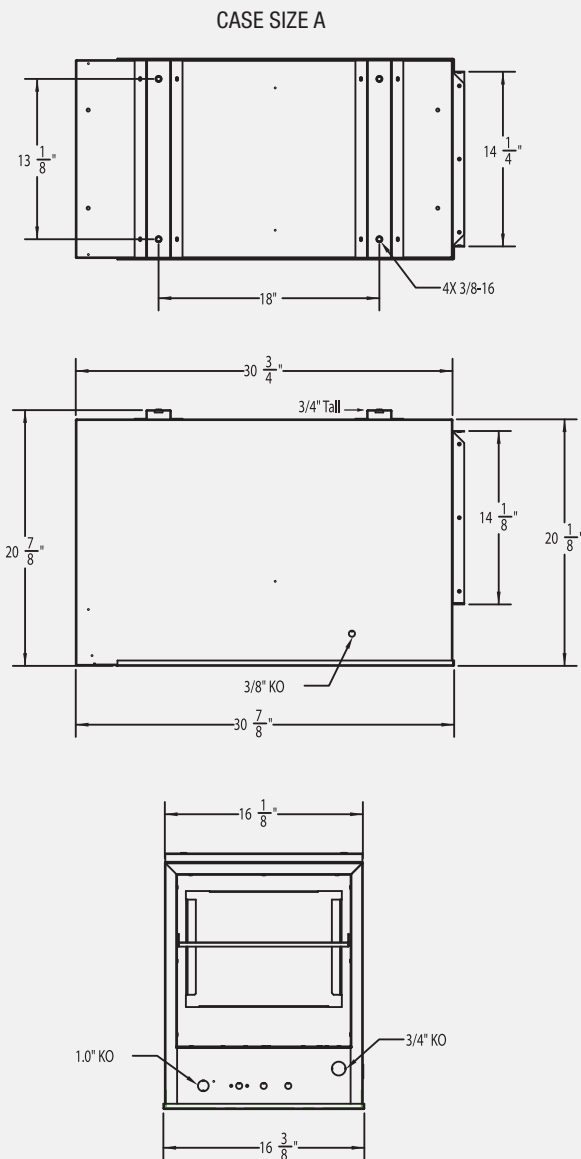
\*Dual rated heaters will draw 13% less amps and 25% less wattage when operated at 208V.

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## Options

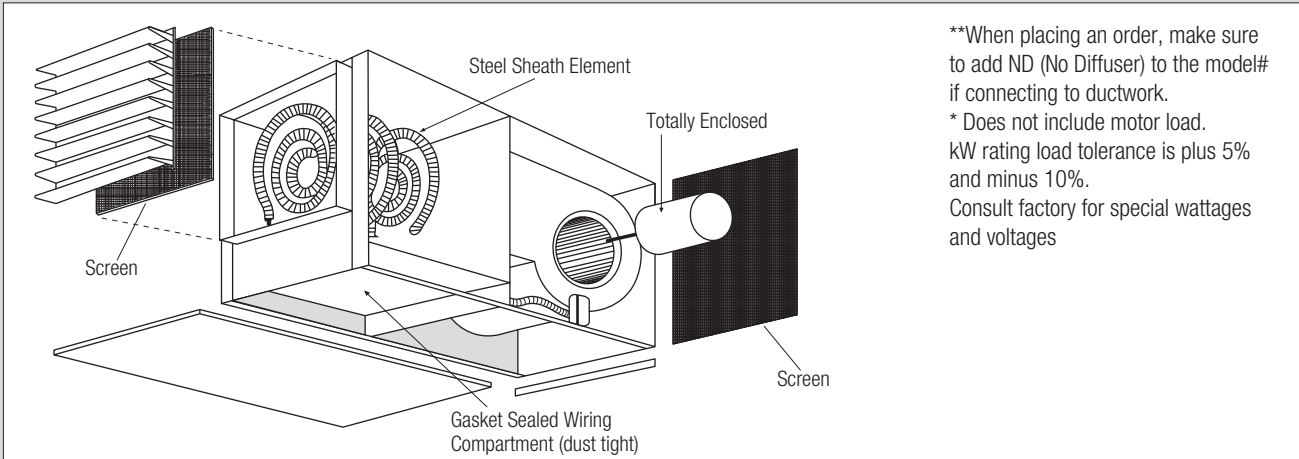
ADD SUFFIX	DESCRIPTION
-T	NEMA 4X Single Pole Thermostat
-ND	No Diffuser Option - Applications when connecting to ductwork
-1/4HP	Substitute 1/4 HP Motor (1000 CFM)
-1/3HP	Substitute 1/3 HP Motor (1250 CFM)
-1/2HP	Substitute 1/2 HP Motor (1500 CFM)
-3/4HP	Substitute 3/4 HP Motor (2000 CFM)
-DS32	32 Amp 3-Pole Lockable Disconnect Switch
-DS63	63 Amp 3-Pole Lockable Disconnect Switch
-DS80	80 Amp 3-Pole Lockable Disconnect Switch
-DS100	100 Amp 3-Pole Disconnect Switch
-2TS	Accessory 2-Stage Thermostat
-2S1	2-Stage Heating - 1 Phase Models
-2S3	2-Stage Heating - 3 Phase Double Case Models* <i>(*Single Case 3 Phase Heaters Can Not be 2-Stage)</i>

## Dimensional Data



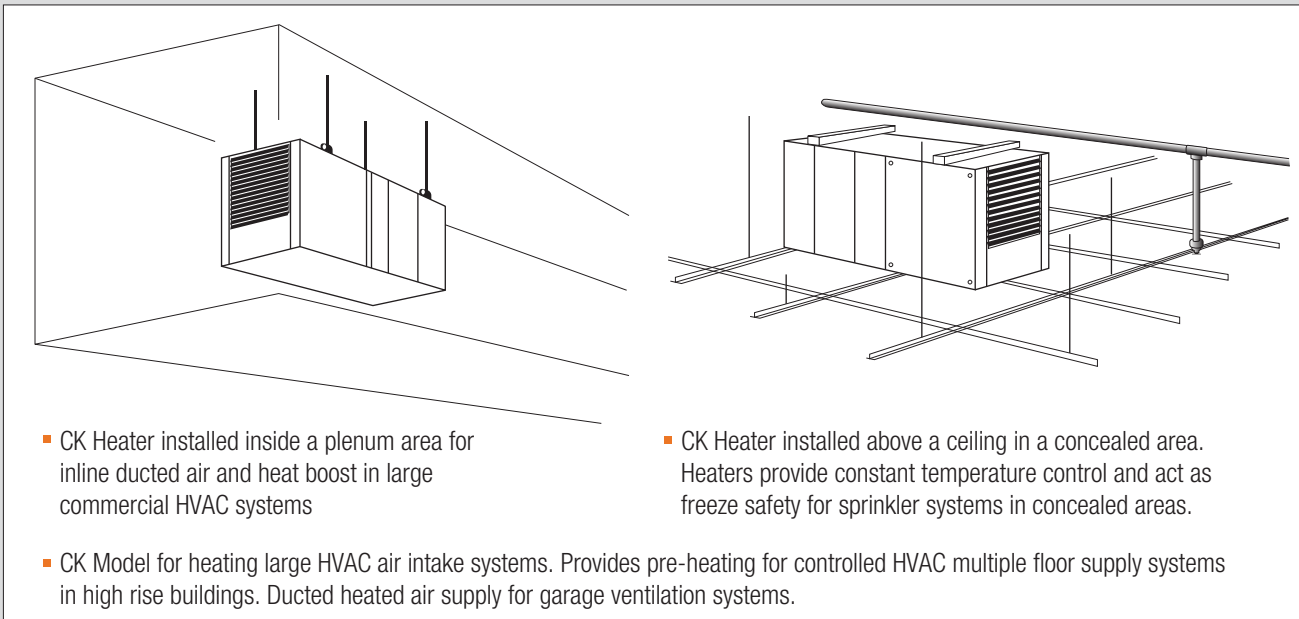
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## Internal View



\*\*When placing an order, make sure to add ND (No Diffuser) to the model# if connecting to ductwork.  
 \* Does not include motor load.  
 kW rating load tolerance is plus 5% and minus 10%.  
 Consult factory for special wattages and voltages

## Installation Options



- CK Heater installed inside a plenum area for inline ducted air and heat boost in large commercial HVAC systems
- CK Model for heating large HVAC air intake systems. Provides pre-heating for controlled HVAC multiple floor supply systems in high rise buildings. Ducted heated air supply for garage ventilation systems.
- CK Heater installed above a ceiling in a concealed area. Heaters provide constant temperature control and act as freeze safety for sprinkler systems in concealed areas.



Front View



Backside



CK Double