

Heavy Duty Unit Heater KB Series



Model Code:

KB	48	10	-1	-B1
A	B	C	D	E

A: Series
 B: 20 - 208V, 24 - 240/208V
 27 - 277V, 48 - 480V
 C: kiloWatts (4-66)
 D: -1 = Single Phase
 -3 = Three Phase
 E: -B1 = Bracket



- Spiral finned element
- Long life unit bearing motor
- Manual limit
- Aluminum fan blade

- Optional field installed thermostat kit
- Standard color: gray
- High-temp safety limit
- Universal mounting bracket included

- Tested to UL standards for safety
- Adjustable louvers
- 5-year limited warranty
- Hinged access cover



The KB Horizontal Unit Heater

King's KB series unit heaters are designed for use as primary or supplemental heat sources in large or exposed areas, including high-rise buildings, stores, warehouses, garages, water treatment and fire room vaults to prevent freezing. Spiral finned steel elements and high CFM ensure even air distribution producing cooler element operation, prolonging heater life. By combining the highest quality components, with a dynamically balanced fan blade, the KB unit heater will provide years of trouble-free service. Includes universal wall/ceiling bracket for simple installation.

Factory Installed Options

Power Contactor: Standard on heaters above 5kW and on all 3-Phase models; optional on 3 to 5kW 1-Phase heaters.

24 Volt Control: Standard on 480V heaters; optional on all other heaters.

Mounting: Standard universal bracket made from heavy gauge Steel.

Control Options

- 1-Pole or 2-Pole field installed thermostat temperature indicated label with 44°F energy code setting
- Padlocking disconnect
- Wall-mounted thermostat line or low voltage

NOTE: Multiple heaters can be controlled by a single thermostat if phasing is coordinated in the control wiring.

Engineering Specifications

Contractor shall supply and install KB Series unit heaters manufactured by King Electrical Mfg. Company. Heaters shall be of the wattage and voltage as indicated on the plans.

Construction: All exterior and interior metal enclosure parts are made from 20 gauge electrogalvanized Steel with a rust inhibiting baked enamel finish. Smooth rounded corners and protective edge trim give an attractive modern appearance.

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

Rear Intake Screen: Heavy gauge steel screen protects against foreign objects making accidental contact with the rotating fan blade.

Spiral Fin Elements: The metal sheath element is copper brazed with spiral fins then molded 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.

Totally Enclosed Fan Motor: Permanently lubricated long life, unit bearing with 20cc of oil. Epoxy-coated motor with enclosed rotor resists moisture and corrosion for long-lasting, trouble-free operation.

Staging: Two-Stage operation is available as an optional feature.

Aluminum Fan Blade: Axial flow-type fan mounted directly to the motor shaft for maximum efficiency.

Manual Thermal Cutout: Heaters shall be equipped with King's patented thermal overload Smart Limit Protection®, which disconnects elements and motor in the event normal operating temperatures are exceeded. If thermal overload trips due to abnormal operating temperatures, thermal overload shall remain open until manually reset by turning the heater off for 15 minutes. Automatically reset of thermal overloads, which allow the element to continue to cycle under abnormal conditions, will not be accepted.

Internal Controls: Magnetic contactors are standard on all 480V heaters, all 208V/1-Phase, 240V/1-Phase, 277V/1-Phase heaters above 6kW, and all 3-Phase heaters. The control voltage is equal to the line voltage (208, 240 or 277) except for 480V models where a transformer is provided for 24V control. Over 5kW the line voltage control is operating the contactor coil only and will draw only 1 Amp. See page 64 for control voltages.

Fusing: Internal circuit fusing is provided when the heater ampacity exceeds 48 Amps to comply with N.E.C. standards. A fan delay is provided standard on models 12.5-kW and above to dissipate residual heat from the heating elements.

Easy Installation: A hinged access panel located on the bottom of the heater allows for quick wiring and easy maintenance for the life of the heater. Includes universal wall/ceiling bracket for simple installation.

Approvals: cULus (E41422)

Heavy Duty Unit Heater KB Series

Ordering Information - single phase

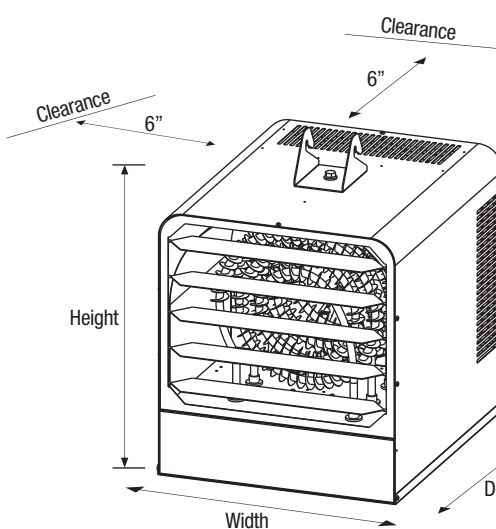
MODEL	UPC	KW	BTUH	PHASE	VOLTS	AMPS	**THERMOSTAT CONTROL VOLTAGE	MOTOR HP	CFM	TEMP. RISE	AIR THROW	MAX. MOUNT HEIGHT	SIZE	WT. (lbs.)
KB2003-1	20928	3.3	11.1	1	208	15.8	208	9W	400	36°	15ft.	8ft.	A	30.5
KB2403-1	20928	3.3	11.1	1	240/208*	13.7	240	9W	400	36°	15ft.	8ft.	A	30.5
KB2703-1	20928	3.3	11.1	1	277	11.9	277	9W	400	36°	15ft.	8ft.	A	30.5
KB2004-1-B1	20928	4	13.5	1	208	19.2	208	9W	400	38°	15ft.	8ft.	A	30.5
KB2404-1-B1	13354	4	13.5	1	240/208*	16.6/14.4	240	9W	400	38°	15ft.	8ft.	A	30.5
KB2704-1-B1	13361	4	13.5	1	277	14.4	277	9W	400	38°	15ft.	8ft.	A	30.5
KB4804-1-B1	22091	4	13.5	1	480	8.3	24	9W	400	38°	15ft.	8ft.	A	30.5
KB2005-1-B1	13366	5	17	1	208	24	208	9W	400	40°	16ft.	8ft.	A	30.5
KB2405-1-B1	13374	5	17	1	240/208*	20.8/18	240	9W	400	40°	16ft.	8ft.	A	30.5
KB2705-1-B1	15240	5	17	1	277	18.1	277	9W	400	40°	16ft.	8ft.	A	30.5
KB4805-1-B1	13388	5	17	1	480	10.4	24	9W	400	40°	16ft.	8ft.	A	30.5
KB2007-1-B2	22242	7.5	25.6	1	208	36.1	208	16W	600	40°	20ft.	9ft.	B	45.0
KB2407-1-B2	22243	7.5	25.6	1	240/208*	31.2/27	240	16W	600	40°	20ft.	9ft.	B	45.0
KB2707-1-B2	22095	7.5	25.6	1	277	27	277	16W	600	40°	20ft.	9ft.	B	45.0
KB4807-1-B2	22244	7.5	25.6	1	480	15.6	24	16W	600	40°	20ft.	9ft.	B	45.0
KB2010-1-B2	13538	10	34.1	1	208	48.1	208	25W	725	44°	24ft.	10ft.	B	45.0
KB2410-1-B2	13546	10	34.1	1	240/208*	41.6/36.1	240	25W	725	44°	24ft.	10ft.	B	45.0
KB2710-1-B2	13554	10	34.1	1	277	36.1	277	25W	725	44°	24ft.	10ft.	B	45.0
KB4810-1-B2	13560	10	34.1	1	480	20.8	24	25W	725	44°	24ft.	10ft.	B	45.0
KB2012-1-B2	13616	12.5	42.7	1	208	60.1	208	35W	825	48°	30ft.	11ft.	C	46.5
KB2412-1-B2	13624	12.5	42.7	1	240/208*	52/45.1	240	35W	825	48°	30ft.	11ft.	C	46.5
KB2712-1-B2	22096	12.5	42.7	1	277	45.1	277	35W	825	48°	30ft.	11ft.	C	46.5
KB4812-1-B2	22097	12.5	42.7	1	480	26	24	35W	825	48°	30ft.	11ft.	C	46.5
KB2015-1-B2	13672	15	51.2	1	208	72.1	208	50W	925	51°	33ft.	12ft.	C	46.5
KB2415-1-B2	22098	15	51.2	1	240/208*	62.5/54.1	240	50W	925	51°	33ft.	12ft.	C	46.5
KB2715-1-B2	22099	15	51.2	1	277	54.2	277	50W	925	51°	33ft.	12ft.	C	46.5
KB4815-1-B2	22100	15	51.2	1	480	31.3	24	50W	925	51°	33ft.	12ft.	C	46.5

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

Maximum mounting height is manufacturer's recommendation

**Over 5kw line voltage control is operating the contactor coil only, and will draw under 1 amp.

Dimensional Data



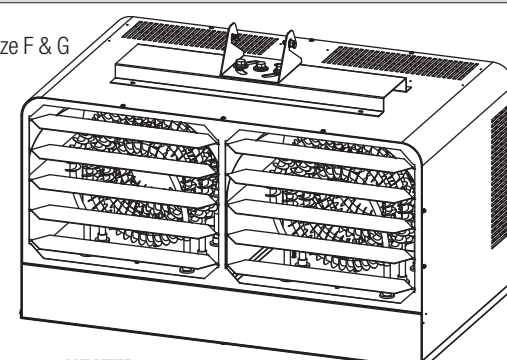
Clearance 6"

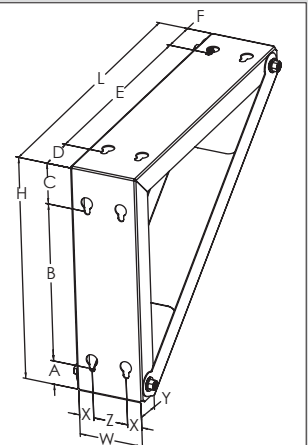
Height

Width

Depth

Twin Unit Size F & G





HEATER SIZE	HEIGHT	DEPTH	WIDTH
A	16.5"	11"	15"
B	16.5"	13.5"	15"
C	16.5"	18"	15"
E	20.5"	18"	15"
F	18.5"	18"	30"
G	16.5"	18"	30"

KBB-1 / KBB-2 / KBB-3

Unit heater brackets can be used for mounting on ceiling or wall. 3/8" threaded hole on top of unit heater can also be used with threaded rod to drop the unit closer to the floor. Refer to bracket selection chart.

Heavy Duty Unit Heater KB Series

Ordering Information - three phase

MODEL	UPC	KW	BTUH	PHASE	VOLTS	AMPS	**THERM. CONTROL VOLTAGE	MOTOR HP	CFM	TEMP. RISE	AIR THROW	MAX. MOUNT HEIGHT	*SIZE	WT. (lbs.)
KB4803-3MP-B2	13318	3	10.2	1-3	480	6.3	24	5W	400	37°	14ft.	8ft.	C	46.5
KB2005-3MP-B2	13370	5	17.1	1-3	208	24 & 13.9	208	9W	400	40°	16ft.	8ft.	C	46.5
KB2405-3MP-B2	22102	5	17.1	1-3	240/208*	20.8/18 & 18/15.6	240	9W	400	40°	16ft.	8ft.	C	46.5
KB4805-3MP-B2	13392	5	17.1	1-3	480	10.4 & 6	24	9W	400	40°	16ft.	8ft.	C	46.5
KB2007-3MP-B2	13450	7.5	25.6	1-3	208	36.1 & 20.8	208	16W	600	40°	20ft.	9ft.	C	46.5
KB2407-3MP-B2	13458	7.5	25.6	1-3	240/208*	31.2/27 & 18/15.6	240	16W	600	40°	20ft.	9ft.	C	46.5
KB4807-3MP-B2	13472	7.5	25.6	1-3	480	15.6 & 24	24	16W	600	40°	20ft.	9ft.	C	46.5
KB2010-3MP-B2	13542	10	34.1	1-3	208	27.7	208	25W	725	44°	24ft.	10ft.	C	46.5
KB2410-3MP-B2	13550	10	34.1	1-3	240/208*	41.6/36.1 & 24/20.8	240	25W	725	44°	24ft.	10ft.	C	46.5
KB4810-3MP-B2	13564	10	34.1	1-3	480	20.8 & 12	24	25W	725	44°	24ft.	10ft.	C	46.5
KB2012-3-B2	13620	12.5	42.7	3	208	34.6	208	35W	825	48°	30ft.	11ft.	C	46.5
KB2412-3-B2	13632	12.5	42.7	3	240/208*	30/26	240	35W	825	48°	30ft.	11ft.	C	46.5
KB4812-3MP-B2	13644	12.5	42.7	1-3	480	26 & 15	24	35W	825	48°	30ft.	11ft.	C	46.5
KB2015-3-B2	13676	15	51.2	3	208	41.6	208	50W	925	51°	33ft.	12ft.	C	46.5
KB2415-3-B2	13688	15	51.2	3	240/208*	36/31.2	240	50W	925	51°	33ft.	12ft.	C	46.5
KB4815-3MP-B2	22104	15	51.2	1-3	480	18	24	50W	925	51°	33ft.	12ft.	C	46.5
KB2020-3-B2	13734	20	68.3	3	208	55.5	208	¼HP	1100	57°	47ft.	13ft.	E	55.0
KB2420-3-B2	13738	20	68.3	3	240/208*	48.1/41.6	240	¼HP	1100	57°	47ft.	13ft.	E	55.0
KB4820-3MP-B2	22105	20	68.3	1-3	480	24	24	¼HP	1100	57°	47ft.	13ft.	E	55.0
KB2025-3-B2	22106	24	85.3	3	208	69.4	208	(2) 35W	1350	58°	41ft.	14ft.	F	60.5
KB2425-3-B2	13784	24	85.3	3	240/208*	60.1/52.1	240	(2) 35W	1350	58°	41ft.	14ft.	F	60.5
KB4825-3-B2	22107	24	85.3	3	480	30.1	24	(2) 35W	1350	58°	41ft.	14ft.	F	60.5
KB2030-3-B2	13806	30	102.4	3	208	83.3	208	(2) 50W	1800	53°	48ft.	15ft.	F	60.5
KB2430-3-B2	13810	30	102.4	3	240/208*	72.1/62.5	240	(2) 50W	1800	53°	48ft.	15ft.	F	60.5
KB4830-3-B2	13816	30	102.4	3	480	24	24	(2) 50W	1800	53°	48ft.	15ft.	F	60.5
KB2040-3-B2	22108	40	136.5	3	208	111	208	(2) ¼HP	2200	57°	53ft.	15ft.	G	70.0
KB2440-3-B2	22109	40	136.5	3	240/208*	96.2/83.3	240	(2) ¼HP	2200	57°	53ft.	15ft.	G	70.0
KB4840-3-B2	22110	40	136.5	3	480	48.1	24	(2) ¼HP	2200	57°	53ft.	15ft.	G	70.0

6" minimum clearance to walls and ceilings.

Over 5KW line voltage control is operating the contactor coil only, and will draw under 1 AMP.

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

Field Mount Accessories

MODEL	UPC	DESCRIPTION	WT. (lbs.)
KBB-1	15192	Universal Wall/Ceiling Small Mounting Bracket (for heaters with size A heaters)	1.9
KBB-2	15195	Universal Wall/Ceiling Large Mounting Bracket (for heaters with size B, C, and E)	2.6
KBB-3	13488	Universal Wall/Ceiling Large Mounting Bracket (for heaters with size F & G)	3.9
KBT	15189	Capillary Bulb-StyleThermostat Kit (single pole single throw) 25 Amp	
KBT-2	18209	Capillary Bulb-StyleThermostat Kit (double pole single throw) 25 Amp	0.5

Bracket Selection Chart

BRACKET #	HEATER KW SIZE USED WITH	BRACKET DIMENSIONS											
		L	W	H	A	B	C	D	E	F	X	Y	Z
KBB-1	3 to 5 kW (1 phase)	12½"	2 ₁₅ / ₁₆ "	10 ₁ / ₁₆ "	1 ₃ / ₁₆ "	7"	1 ₇ / ₈ "	1 ₇ / ₈ "	9¼"	1 ₅ / ₈ "	¾"	1"	½"
KBB-2	7.5 to 15 kW (1 phase) 3 to 20 kW (3 phase)	16 ₇ / ₈ "	2 ₁₅ / ₁₆ "	10 ₁ / ₈ "	1¼"	7"	1 ₇ / ₈ "	1 ₅ / ₈ "	13 ₅ / ₈ "	1 ₅ / ₈ "	¾"	1"	1½"
KBB-3	25 to 40 kW (3 phase)	19½"	4 ₃ / ₁₆ "	13 ₃ / ₁₆ "	1 ₅ / ₁₆ "	10"	1 ₇ / ₈ "	1 ₅ / ₈ "	16¼"	1 ₁ / ₈ "	11/ ₁₆ "	1"	2"

Heavy Duty Unit Heater^{KB Series}

Factory Options

ADD SUFFIX:	DESCRIPTION
-B1	Mounting Bracket KBB-1 (included with heater size A and C)
-B2	Mounting Bracket KBB-2 (included with heater size B, and E)
-B3	Mounting Bracket KBB-3 (included with heater size F and G)
-SFR	Control Relay and 24V Transformer for Remote Summer Fan Operation
-CX	Power Contactor for 3 kW - 5kW 1-Phase Models (Line Voltage Coil)
-CT24	Transformer that Converts 208, 240 and 277 Volts to 24 Volt Control Circuit {add power contactor (-CX) for 3 kW - 5kW 1-Phase models}
-DS40	60 Amp, 3-Pole Disconnect Switch w/Padlock Provision
-DS60	60 Amp, 3-Pole Disconnect Switch w/Padlock Provision
-DS80	80 Amp, 3-Pole Disconnect Switch w/Padlock Provision
-DS100	100 Amp, 3-Pole Disconnect Switch w/Door Interlock and Padlock Provision