



Stars Management DMCC

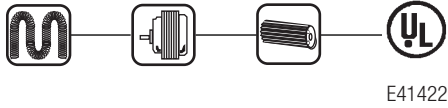
SUBMITTAL

**UNIT HEATER
(KFUH Series)**

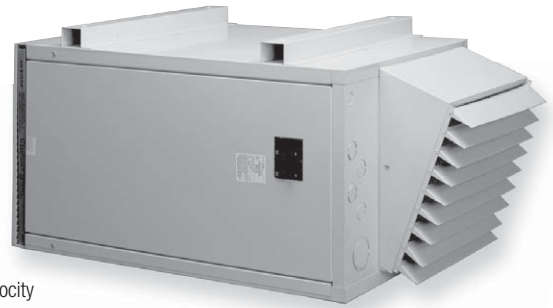
unit heater

KFUH
 SERIES

WAREHOUSE or PARKING GARAGES / CEILINGS OVER 10 FT



KFUH DIFFUSER required for this heater and is sold separately.



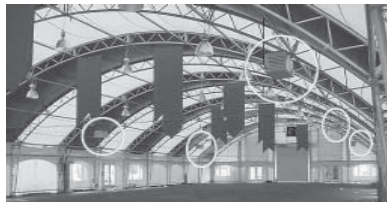
High velocity

FEATURES:

- Open-Coil Element
- C-Frame Motor
- Squirrel Cage Blower
- 24 Volt control
- Horizontal or vertical mount
- Adjustable louver hood
- 20 gauge steel
- Air over-type motor rated to -30°F
- Quiet switching relays or sequencers

OPTIONS:

- Control options
- Fan-only relay
- Can be ducted on intake and outlet
- ECM motor



Air being moved in a circular pattern to heat an event tent



High volume heater *

The KFUH series commercial unit heater is an efficient, dependable suspension heater perfectly suited for high ceiling applications such as warehouses, parking garages and docks. The three speed, high-capacity motor and blower quietly delivers large volumes of air ranging from 775 to 1540 CFM minimum.

With integral suspension ribs welded on to the unit, the heater may be mounted at any angle. Safety screens are provided at both the air intake and discharge aperture. The intake filter is replaceable. Thermostat and fan relay may be ordered separately.

FIELD WIRING

208 and 240 Volt heaters are equipped with circuit breakers to provide internal circuit protection when amperage exceeds 48. A single strike terminal block provides for field wiring. 480 Volt units do not have circuit breakers but are fused when internal protection is required over 48 Amps. Terminal blocks are supplied for field wiring. Consult the National Electric Code for proper wire size and service circuit breaker protection.

CONTROL WIRING

Connect low voltage thermostat to terminals R and W on the low voltage terminal block. For optional fan only operation connect terminals R and G with a switch or thermostat fan switch.

* Unit shown with standard diffuser model # KFUH DIFFUSER ordered separately. Additional designs are located on the 3rd page of this specification sheet.

ENGINEERING SPECIFICATIONS:

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

Transformer: Each unit is equipped with a heavyduty low voltage (24 Volt) transformer for the thermostat control circuit.

Contact or Time Delay Sequencer: Activates heating element banks at random intervals to minimize electrical surges in compliance with E.E.I. and N.E.M.A. standards.

Heating Elements: Quick heating, long life Ni-Chrome elements are sized to provide proper watt density for maximum heat dissipation by fan-forced air convection currents.

Terminal Block: For single strike field wiring.

Low Voltage Terminal Block: For 24 Volt control.

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

Motor: Long life, thermally protected, permanently lubricated, direct drive motor – no belts to adjust or slip. This low noise three speed motor is designed for maintenance-free operation.

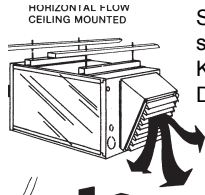
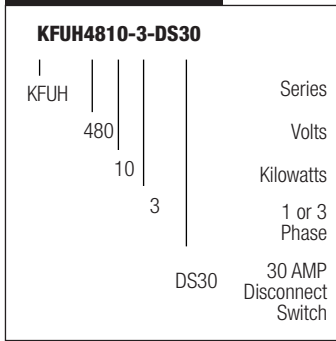
Overcurrent Protection: 60 Amp circuit breakers may be built in to comply with code requirements and offer ultimate safety in overcurrent protection. Front mounted for easy reset. Single power source.

Limit Control: Integral automatic high temperature limit control in each heating element bank prevents the delivery of air at unsafe temperatures. 20-35 kW use a manual reset limit control to completely shut the furnace off should an overtemperature occur.

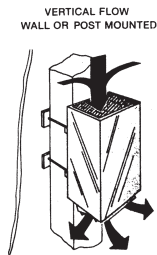
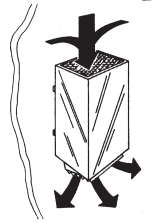
Fan Relay: Heavyduty dual speed fan relay may be ordered with furnaces for air conditioning or summer fan operation.

Unique Fan Orifice: Louver directs air over all heating elements and sidewalls evenly, ensuring long life performance. No insulation necessary in cabinet.

Approvals: UL (E41422)

MODEL CODE:


Shown with standard
**KFUH
DIFFUSER**


QUICK SELECTION CHART:

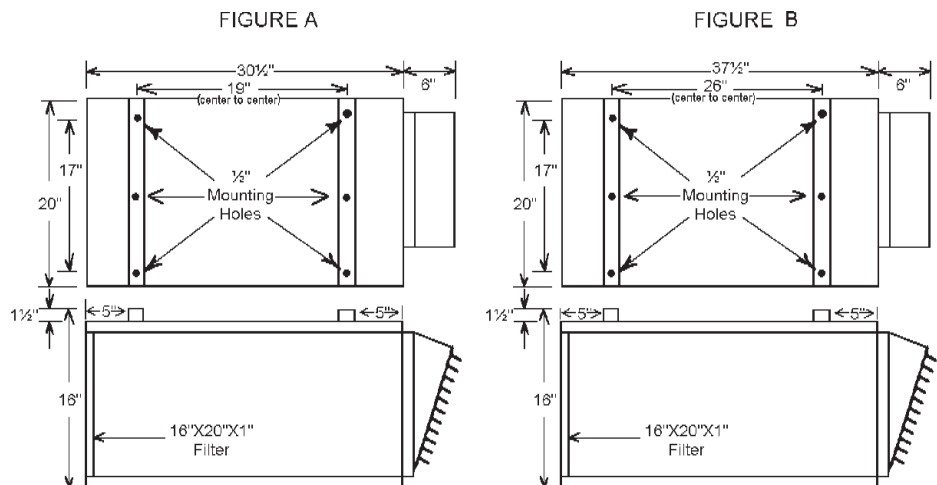
KILOWATTS	2-STAGE OPTION (-2S1)		SINGLE PHASE	208V		240V		480V		WT. (lbs.)	
	1ST	2ND		MODEL	UPC #093319 PART#	MODEL	UPC #093319 PART#	MODEL	UPC #093319 PART#		
3			1	KFUH2003-1	15701					57	
4							KFUH2404-1	15702			
5					KFUH2005-1	15705	KFUH2405-1	15700	KFUH4805-1		15703
6					KFUH2006-1	15706					
8	4	4					KFUH2408-1	15704			
10	5	5			KFUH2010-1	15713	KFUH2410-1	15712	KFUH4810-1	15715	65
11.5	5.75	5.75					KFUH2412-1	15718	KFUH4812-1	15721	
15	5	10			KFUH2015-1	15732	KFUH2415-1	15730	KFUH4815-1	15733	
17.2	5.75	11.5					KFUH2418-1	15742	KFUH4818-1	15745	74
20	10	10			KFUH2020-1	15752	KFUH2420-1	15754	KFUH4820-1	15757	76
25	10	15			KFUH2025-1	15780	KFUH2425-1	15778	KFUH4825-1	15781	81
30	15	15			KFUH2030-1	15782	KFUH2430-1	15784	KFUH4830-1	15787	85
34.5	17.25	17.25					KFUH2435-1	15796	KFUH4835-1	15799	

KILOWATTS	2-STAGE OPTION (-2S3)		THREE PHASE	208V		240V		480V		WT. (lbs.)			
	1ST	2ND		MODEL	UPC #093319 PART #	MODEL	UPC #093319 PART #	MODEL	UPC #093319 PART #				
5			3			KFUH2405-3	15762	KFUH4805-3	15769	74			
9					KFUH2009-3	15710							
10	5	5					KFUH2410-3	15764	KFUH4810-3		15766		
12					KFUH2012-3	15722							
15	5	10					KFUH2412-3	15724	KFUH4812-3		15727		
17.2							KFUH2415-3	15734	KFUH2415-3		15736	KFUH4815-3	15739
20	10	10					KFUH2418-3	15748	KFUH4818-3	15751	85		
22.5							KFUH2420-3	15768	KFUH4820-3	15770			
24							KFUH2022-3	15760					
30	15	15					KFUH2424-3	15772	KFUH4824-3	15775			
34.5	17.25	17.25					KFUH2030-3	15792	KFUH2430-3	15790		KFUH4830-3	15793
									KFUH2435-3	15802		KFUH4835-3	15805

Lugs rated for Copper and Aluminum

OPTIONS:

ADD SUFFIX:	DESCRIPTION
-SF	Summer Fan Switch
-BR	Blower Relay (standard in all) (for remote fan-only operation)
-2S1	2 Stage Control – 1-Phase models
-2S3	2 Stage Control – 3-Phase models (5 kW increments only)
-DS30	30 Amp, 3-Pole Non-Fused Disconnect Switch
-DS40	40 Amp, 3-Pole Non-Fused Disconnect Switch
-DS60	60 Amp, 3-Pole Non-Fused Disconnect Switch
-DS80	80 Amp, 3-Pole Non-Fused Disconnect Switch
-DS100	100 Amp, 3-Pole Non-Fused Disconnect Switch
-ND	No Diffuser, 1" Duct Collar (provided on discharge side for connection to 14" x 14" duct)
-T	1-Pole Thermostat
-2TS	2-Pole Thermostat

DIMENSIONS:


Units shown with standard KFUH DIFFUSER

TECHNICAL DATA CHART:

380V-3Ø heaters are available in most kW ratings

CATALOG #	KILOWATTS	PHASE	BTUH (000)	VOLTS	*AMPS	# OF ELEMENTS	MOTOR		TEMPERATURE RISE °F			CABINET SIZE	WT. (lbs.)
							VOLTS	HP	LOW	MED	HIGH		
KFUH2003-1	3	1	10.2	208	14.4	1	208	1/5	12°	11°	9°	Fig. A	57
KFUH2404-1	4	1	13.6	240	16.7	1	240	1/5	16°	15°	13°	Fig. A	57
KFUH2005-1 KFUH2405-1 KFUH4805-1	5	1	17.1	208 240 480	24 20.8 10.4	1	208 240 480	1/5	20°	18°	16°	Fig. A	57
KFUH2006-1	6	1	20.5	208	25	2	208	1/5	24°	22°	19°	Fig. A	57
KFUH2408-1	8	1	26.9	240	33.3	2	240	1/5	33°	29°	25°	Fig. A	65
KFUH2010-1 KFUH2410-1 KFUH4810-1	10	1	34.1	208 240 480	48 41.7 20.8	2	208 240 480	1/5	41°	37°	32°	Fig. A	65
KFUH2412-1 KFUH4812-1	11.5	1	39.2	240 480	47.9 23.9	2	240 480	1/5	47°	42°	36°	Fig. A	65
KFUH2015-1 KFUH2415-1 KFUH4815-1	15	1	51.2	208 240 480	72.1 62.5 31.2	3	208 240 480	1/5	61°	55°	47°	Fig. A	74
KFUH2418-1 KFUH4818-1	17.25	1	58.8	240 480	82.9 35.9	3	240 480	1/5	70°	63°	55°	Fig. A	74
KFUH2020-1 KFUH2420-1 KFUH4820-1	20	1	68.3	208 240 480	96.2 83.3 41.7	4	208 240 480	1/3	57°	51°	41°	Fig. B	76
KFUH2025-1 KFUH2425-1 KFUH4825-1	25	1	85.3	208 240 480	120.2 104.2 52.1	5	208 240 480	1/3	72°	63°	51°	Fig. B	81
KFUH2030-1 KFUH2430-1 KFUH4830-1	30	1	102.4	208 240 480	144.2 125 62.5	6	208 240 480	1/3	86°	76°	62°	Fig. B	85
KFUH2435-1 KFUH4835-1	34.5	1	117.7	240 480	143.7 71.8	6	240 480	1/3	99°	87°	71°	Fig. B	85
3-PHASE													
KFUH2405-3 KFUH4805-3	5	3	17.1	240 480	13 7	3	240 480	1/5	30°	25°	20°	Fig. A	74
KFUH2009-3	9	3	30.7	208	21.6	3	208	1/5	37°	33°	28°	Fig. A	74
KFUH2410-3 KFUH4810-3	10	3	34.1	240 480	24.1 12	3	240 480	1/5	41°	37°	32°	Fig. A	74
KFUH2012-3	11.25	3	38.4	208	31.2	3	208	1/5	46°	41°	35°	Fig. A	74
KFUH2412-3 KFUH4812-3	12	3	40.9	240 480	28.9 14.4	3	240 480	1/5	49°	44°	38°	Fig. A	74
KFUH2015-3 KFUH2415-3 KFUH4815-3	15	3	51.2	208 240 480	41.6 36.1 18.1	3	208 240 480	1/5	61°	55°	47°	Fig. A	74
KFUH2418-3 KFUH4818-3	17.25	3	58.8	240 480	43.3 20.7	3	240 480	1/5	70°	63°	55°	Fig. A	74
KFUH2420-3 KFUH4820-3	20	3	68.3	240 480	48 24	4	240 480	1/5	57°	51°	41°	Fig. B	85
KFUH2022-3	22.5	3	76.8	208	62.5	6	208	1/3	64°	56°	46°	Fig. B	85
KFUH2424-3 KFUH4824-3	24	3	81.6	240 480	57.7 28.8	6	240 480	1/3	69°	61°	49°	Fig. B	85
KFUH2030-3 KFUH2430-3 KFUH4830-3	30	3	102.4	208 240 480	83.3 72.2 36.1	6	208 240 480	1/3	86°	76°	62°	Fig. B	85
KFUH2435-3 KFUH4835-3	34.5	3	117.7	240 480	82.9 41.5	6	240 480	1/3	99°	87°	71°	Fig. B	85

* Above units can be doubled for twice the wattage output.
Does not include motor load – refer to Air Delivery Chart.

ALTERNATE DIFFUSERS


KFUH-90D
Typically used in low ceiling height or where a 90° turn is preferred



KFUH-90RD
90° and radial diffuser



KFUH-RD
Wide pattern for radial heat dispersion

MODEL	DESCRIPTION
KFUH-90D	90° Adjustable Louver Diffuser
KFUH-RD	Radial Diffuser
KFUH-90RD	90° Radial Diffuser
KFUH-PTBL	Kit includes casters and mounting bracket to create a portable KFUH (no power cord)

AIR DELIVERY CHART:

MOTOR HP	MOTOR SPEED							
	MOTOR LOAD		LOW		MED		HIGH	
	VOLTAGE	AMPS	CFM	FPM	CFM	FPM	CFM	FPM
1/5	2303 380 / 4601	3.4 1.7	775	570	860	630	10001	735
1/3	2303 380 / 4602	3.2 1.7	11002	810	1250	920	15402	1130
1/2	2303 380 / 4601	3.8 1.9	1250	920	1540	1130	17503	1285
MOTOR WIRE COLOR			RED		BLUE		BLACK	
Air Volume = Cubic Feet Per Minute (CFM) Air Velocity = Feet Per Minute (FPM)								

¹ Single speed (High) ²Two speed (High/Low) ³Three speed (Low/Med/High)

Mounting

KFUH heaters can be mounted vertically or horizontally as shown. 3/8" weldnuts are welded into brackets and will accept a 3/8 threaded rod. A minimum of 6" clearance to vertical and horizontal surfaces and 6 feet minimum above floor is required. Louvers can be adjusted for desired air flow.

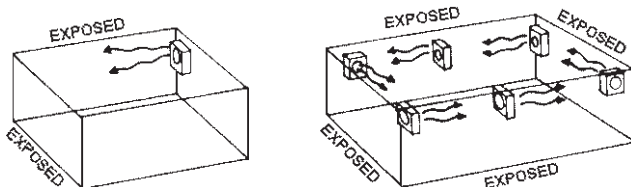
Application Tips

First, calculate heating loads in the conventional way using the N.E.M.A. handbook or ASHRAE guide. Next, determine quantity and size of heaters to be used. In instances where large groups of people are normally settled in the same location use a large number of smaller kW heaters (Example: people on a production line or skilled machine operations). By utilizing heaters in this manner one can best distribute uniform heat, prevent hot drafts, reduce potential noise levels and balance the electrical operating demand.

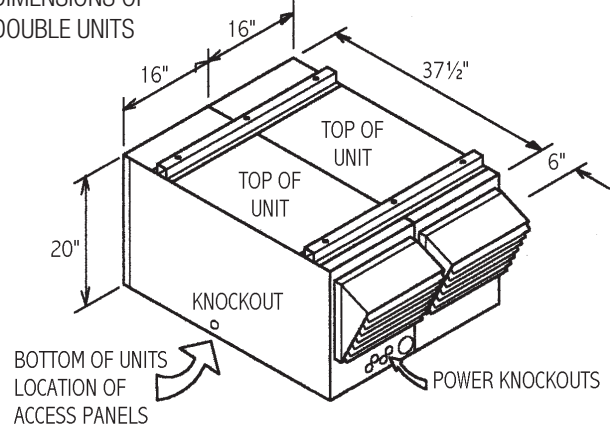
When considering warehouse areas or storage rooms where heat distribution and constant temperatures are less important, use fewer heaters of higher capacity. To maintain uniform heat and reduce stratified air it is recommended that the total CFM of the units turn the air over approximately 3 times per hour.

Horizontal Mount

Smaller rooms can be heated by one unit heater. Where two walls are exposed heaters should be mounted as shown below. In larger rooms, units should be located so air streams wipe exposed walls without blowing at them. Units should be located so the airstream of one supports that of another thus setting up a circulatory air movement. (Distance between units to be approximately 1 times published air throw). Units should not be mounted horizontally in areas having ceiling heights in excess of 10 to 12 feet.

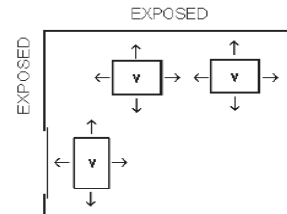


DIMENSIONS OF DOUBLE UNITS



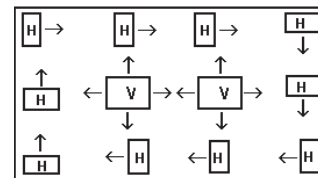
Vertical Mount

Units should be mounted vertically in high bay areas where they may not otherwise interfere with assorted material or handling equipment. Heaters should be situated to provide free air circulation. Size and selection of units should be based on recommended mounting height. Unit heaters are frequently used to combat cold air inrush when loading dock doors are opened. For such applications, one or more units should be arranged to blow warm air vertically in front of opening.



Dual Mounting

Where square footage is large and comfort essential, both horizontal and vertical installations may best serve your requirements.



Mounting Limitations

KFUH unit heaters should not be used in potentially explosive atmospheres. The finish is not intended for direct salt spray exposure in marine applications or the highly corrosive atmospheres of swimming pools, chemical storage bins, etc. Please refer to the factory for explosion proof or marine application heater information.

Do not install unit heaters above recommended maximum mounting height. See chart for height information. Obstructions must not block unit heater air inlet or discharge. To prevent possible injury heaters must be mounted at least 6 feet above the floor to prevent accidental contact with heating element or fan blade.