

# High Air Velocity Unit Heater KFUH ECO2S Series



### Model Code:

KFUH	24	10	-1
A	B	C	D

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

Shown with KFUH DIFFUSER. KFUH DIFFUSER required for this heater and is sold separately



- Energy efficient ECM motor
- 2-Stage comfort heating 15% Savings
- Heavy duty open coil element
- Dual inlet industrial blower
- Horizontal or vertical mount
- Direct drive air over type motor
- Adjustable louver hood (sold separately)
- Quiet switching relays
- Replaceable intake filter
- 24 Volt control
- Ductable on intake and outlet
- Fan-only relay
- 3 speeds
- 5-year limited warranty



## The KFUH ECO2S High Air Velocity Unit Heater

**ENERGY SAVINGS meets MAXIMUM COMFORT with the ECM Motor & 2 Stage Heating**

The KFUH ECO2S Model adds a state of the art electronically controlled motor and 2 heating stages for added comfort and Maximum Energy Savings. The KFUH series commercial unit heater is an efficient, dependable unit heater perfectly suited for high ceiling applications such as warehouses, parking garages and docks. The 3-speed, ECM motor and blower quietly delivers large volumes of air ranging from 775 to 1540 CFM minimum. With welded mounting channels on 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 may be ordered separately.

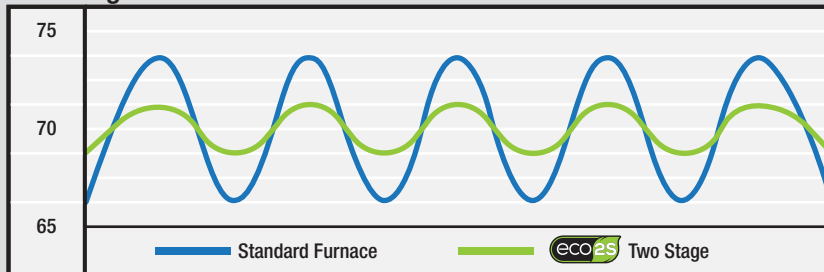
**FIELD WIRING:** Terminal blocks are supplied for field wiring on all units. Consult the National Electric Code for proper wire size and service circuit breaker protection. **CONTROL WIRING:** Connect low voltage thermostat to terminals R and W on the low voltage terminal block. For fan only operation connect terminals R and G with a switch or thermostat fan switch. Unit shown with standard diffuser model # KFUH DIFFUSER ordered separately. Unit shown with standard diffuser model # KFUH DIFFUSER ordered separately. Additional diffusers are located on the 3rd page of this specification sheet.

## TWO STAGE COMFORT Why 2 Stage is Better

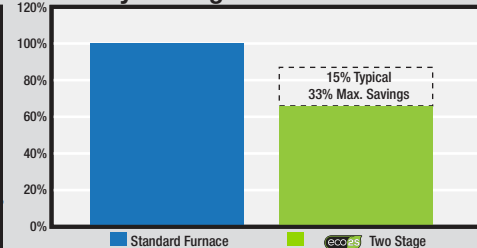
2 Stage controlled Furnaces allow you to use less energy during mild Spring and Fall temperatures. It's like having a smaller furnace installed just for spring and fall, then when winter hits you have the reserve power of the second heating stage to fight off the cold weather. It also has the benefit of creating more even comfort temperatures.

**Note:** The Furnace will run a percentage longer to reach the room temperature so the ECM motors efficiency is key to getting the most out of your Furnace.

### Two Stage Comfort

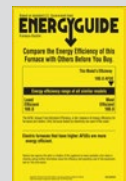
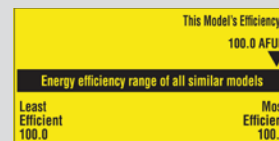


### Yearly Savings



The KFUH ECO2S is more efficient and will save you up to 33% more per year versus standard furnace motors

- Designed for extended life
- Energy efficient
- Improved reliability
- Cooler operating temperature
- 3 speeds
- 15% 2 Stage



# High Air Velocity Unit Heater KFUH ECO2S Series

## Ordering Information- single phase

MODEL	BTUH	VOLTS	PHASE	KW	RESISTIVE AMPS	STAGE1	STAGE2	# OF ELEMENTS	INTERNAL CB	MOTOR	MOTOR FLA	SIZE	WT.(lbs)
KFUH2004-1-ECM	12,799	208	1	3.8	18.3	4 kW	*N/A	1	NO	1/3 HP	2.9	Fig. A	57.0
KFUH2005-1-ECM	17,065	208	1	5.0	24	5 kW	*N/A	1	NO	1/3 HP	2.9	Fig. A	57.0
KFUH2008-1-2S1-ECM	27,304	208	1	8.0	38.5	4.25 kW	3.75 kW	2	NO	1/3 HP	2.9	Fig. A	57.0
KFUH2010-1-2S1-ECM	34,130	208	1	10.0	48.1	5 kW	5kW	2	60	1/3 HP	2.9	Fig. A	65.0
KFUH2012-1-2S1-ECM	40,956	208	1	12.0	57.7	7.5 kW	4.5 kW	3	60	1/3 HP	2.9	Fig. A	74.0
KFUH2015-1-2S1-ECM	51,195	208	1	15.0	72.1	10 kW	5 kW	3	60+60	1/3 HP	2.9	Fig. A	74.0
KFUH2018-1-2S1-ECM	58,874	208	1	17.3	83.2	8.65 kW	8.65 kW	4	60+60	1/3 HP	2.9	Fig. B	74.0
KFUH2020-1-2S1-ECM	68,260	208	1	20.0	96.2	10 kW	10kW	4	60+60	1/2 HP	2.9	Fig. B	76.0
KFUH2025-1-2S1-ECM	85,325	208	1	25.0	120.2	15 kW	10 kW	5	60+60+60	1/2 HP	2.9	Fig. B	81.0
KFUH2030-1-2S1-ECM	102,390	208	1	30.0	144.2	20 kW	10 kW	6	60+60+60	3/4 HP	2.9	Fig. B	85.0
KFUH2404-1-ECM	13,652	240/208*	1	4.0	16.7 / 12.5*	4 kW	*N/A	1	NO	1/3 HP	2.7	Fig. A	57.0
KFUH2405-1-ECM	17,065	240/208*	1	5.0	20.8 / 15.6*	5 kW	*N/A	1	NO	1/3 HP	2.7	Fig. A	57.0
KFUH2408-1-2S1-ECM	27,304	240/208*	1	8.0	33.3 / 25*	4 kW	4 kW	2	NO	1/3 HP	2.7	Fig. A	57.0
KFUH2410-1-2S1-ECM	34,130	240/208*	1	10.0	41.7 / 31.3*	5kW	5 kW	2	NO	1/3 HP	2.7	Fig. A	65.0
KFUH2412-1-2S1-ECM	40,956	240/208*	1	12.0	50 / 37.5*	5.75 kW	5.75 kW	2	60	1/3 HP	2.7	Fig. A	74.0
KFUH2415-1-2S1-ECM	51,195	240/208*	1	15.0	62.5 / 46.9*	10 kw	5 kW	3	60+60	1/3 HP	2.7	Fig. A	74.0
KFUH2418-1-2S1-ECM	58,874	240/208*	1	17.3	72.1 / 54.1*	11.5 kw	5.75 kW	3	60+60	1/3 HP	2.7	Fig. A	74.0
KFUH2420-1-2S1-ECM	68,260	240/208*	1	20.0	83.3 / 62.5*	10kw	10 kW	4	60+60	1/2 HP	3.9	Fig. B	76.0
KFUH2425-1-2S1-ECM	85,325	240/208*	1	25.0	104.2 / 78.1*	15 kW	10 kW	5	60+60+60	1/2 HP	3.9	Fig. B	81.0
KFUH2430-1-2S1-ECM	102,390	240/208*	1	30.0	125 / 93.8*	20 kW	10 kW	6	60+60+60	3/4 HP	3.9	Fig. B	85.0
KFUH2435-1-2S1-ECM	117,749	240/208*	1	34.5	143.8 / 107.8*	23 kW	11.5 kW	6	60+60+60	3/4 HP	3.9	Fig. B	85.0
KFUH4804-1-ECM	13,652	480	1	4.0	8.3	4 kW	*N/A	1	NO	1/3 HP	0.7	Fig. A	57.0
KFUH4805-1-ECM	17,065	480	1	5.0	10.4	5 kW	*N/A	1	NO	1/3 HP	0.7	Fig. A	57.0
KFUH4808-1-2S1-ECM	27,304	480	1	8.0	16.7	4 kW	4 kW	2	NO	1/3 HP	0.7	Fig. A	57.0
KFUH4810-1-2S1-ECM	34,130	480	1	10.0	20.8	5 kW	5 kW	2	NO	1/3 HP	0.7	Fig. A	65.0
KFUH4812-1-2S1-ECM	40,956	480	1	12.0	25	8 kW	4 kW	3	NO	1/3 HP	0.7	Fig. A	74.0
KFUH4815-1-2S1-ECM	51,195	480	1	15.0	31.3	10 kW	5 kW	3	NO	1/3 HP	0.7	Fig. A	74.0
KFUH4818-1-2S1-ECM	58,874	480	1	17.3	36	11.5 kW	5.75 kW	3	NO	1/3 HP	0.7	Fig. A	74.0
KFUH4820-1-2S1-ECM	68,260	480	1	20.0	41.7	15 kW	5 kW	4	NO	1/2 HP	1.1	Fig. B	76.0
KFUH4825-1-2S1-ECM	85,325	480	1	25.0	52.1	15 kW	10 kW	5	60	1/2 HP	1.1	Fig. B	81.0
KFUH4830-1-2S1-ECM	102,390	480	1	30.0	62.5	20 kW	10 kW	6	60+60	3/4 HP	1.1	Fig. B	85.0
KFUH4835-1-2S1-ECM	117,749	480	1	34.5	71.9	23 kW	11.5 kW	6	60+60	3/4 HP	1.1	Fig. B	85.0

\*Not Available in 2-Stage.

## Ordering Information- three phase

MODEL	BTUH	VOLTS	PHASE	KW	RESISTIVE AMPS	STAGE1	STAGE2	# OF ELEMENTS	INTERNAL CB	MOTOR	MOTOR FLA	SIZE	WT.(lbs)
KFUH2005-3-ECM	17,065	208	3	5.0	13.9	5 kW	N/A	1	NO	1/3 HP	2.9	Fig. A	57.0
KFUH2008-3-2S3-ECM	27,304	208	3	7.5	20.8	4 kW	4 kW	2	NO	1/3 HP	2.9	Fig. A	57.0
KFUH2010-3-2S3-ECM	34,130	208	3	10.0	27.7	5 kW	5 kW	2	NO	1/3 HP	2.9	Fig. A	65.0
KFUH2012-3-2S3-ECM	42,253	208	3	12.4	34.4	7.5 kW	3.75 kW	3	NO	1/3 HP	2.9	Fig. A	74.0
KFUH2015-3-2S3-ECM	51,195	208	3	15.0	41.6	10 kW	5 kW	3	NO	1/3 HP	2.9	Fig. A	74.0
KFUH2020-3-2S3-ECM	68,260	208	3	20.0	55.5	15 kW	5 kW	4	60	1/2 HP	4.2	Fig. B	76.0
KFUH2025-3-2S3-ECM	85,325	208	3	25.0	69.4	15 kW	10 kW	5	60+60	1/2 HP	4.2	Fig. B	81.0
KFUH2030-3-2S3-ECM	102,390	208	3	30.0	83.2	20 kW	10 kW	6	60+60	3/4 HP	4.2	Fig. B	85.0
KFUH2040-3-2S3-ECM	136,520	208	3	40.0	111	20kW	20 kW	8	60+60	2 x 1/2 HP	8.4	Fig. C	N/A
KFUH2050-3-2S3-ECM	170,650	208	3	50.0	138.7	25 kW	25 kW	10	60+60	2 x 1/2 HP	8.4	Fig. C	N/A
KFUH2060-3-2S3-ECM	204,780	208	3	60.0	166.4	30 kW	30 kW	12	60+60+60	2 x 3/4 HP	8.4	Fig. C	N/A
KFUH2405-3-ECM	17,065	240/208*	3	5.0	12 / 9*	5 kW	*N/A	1	NO	1/3 HP	2.7	Fig. A	57.0
KFUH2410-3-2S3-ECM	34,130	240/208*	3	10.0	24 / 18*	5 kW	5 kW	2	NO	1/3 HP	2.7	Fig. A	65.0
KFUH2412-3-2S3-ECM	40,956	240/208*	3	12.0	28.9 / 21.6*	6 kW	6 kW	3	NO	1/3 HP	2.7	Fig. A	74.0
KFUH2415-3-2S3-ECM	51,195	240/208*	3	15.0	36.1 / 27*	10 kW	5 kW	3	NO	1/3 HP	2.7	Fig. A	74.0
KFUH2418-3-ECM	58,874	240/208*	3	17.3	41.6 / 31.2*	17.25 kW	*N/A	3	NO	1/3 HP	2.7	Fig. A	74.0
KFUH2420-3-2S3-ECM	68,260	240/208*	3	20.0	48.1 / 36.1*	10 kW	10 kW	4	60	1/2 HP	3.9	Fig. B	76.0
KFUH2425-3-2S3-ECM	85,325	240/208*	3	25.0	60.1 / 45.1*	15 kW	10 kW	5	60	1/2 HP	3.9	Fig. B	81.0
KFUH2430-3-2S3-ECM	102,390	240/208*	3	30.0	72.1 / 54.1*	20 kW	10kW	6	60+60	3/4 HP	3.9	Fig. B	85.0
KFUH2435-3-2S3-ECM	117,749	240/208*	3	34.5	82.9 / 62.2*	17.25 kW	17.25 kW	6	60+60	3/4 HP	3.9	Fig. B	85.0
KFUH2440-3-2S3-ECM	136,520	240/208*	3	40.0	96.2 / 72.1*	20 kW	20 kW	8	60+60	2 x 1/2 HP	7.8	Fig. C	N/A
KFUH2450-3-2S3-ECM	170,650	240/208*	3	50.0	120.2 / 90.2*	25 kW	25 kW	10	60+60	2 x 1/2 HP	7.8	Fig. C	N/A
KFUH2460-3-2S3-ECM	204,780	240/208*	3	60.0	144.3 / 108.2*	30 kW	30 kW	12	60+60+60	2 x 3/4 HP	7.8	Fig. C	N/A
KFUH2470-3-ECM	238,910	240/208*	3	70.0	168.3 / 126.2*	70 kW	*N/A	12	60+60+60	2 x 3/4 HP	7.8	Fig. C	N/A
KFUH4805-3-ECM	17,065	480	3	5.0	6	5 kW	*N/A	1	NO	1/3 HP	0.7	Fig. A	57.0
KFUH4810-3-2S3-ECM	34,130	480	3	10.0	12	5 kW	5 kW	2	NO	1/3 HP	0.7	Fig. A	65.0
KFUH4812-3-ECM	40,956	480	3	12.0	14.4	12 kW	*N/A	3	NO	1/3 HP	0.7	Fig. A	74.0
KFUH4815-3-2S3-ECM	51,195	480	3	15.0	18	10 kW	5 kW	3	NO	1/3 HP	0.7	Fig. A	74.0

\*Not Available in 2-Stage.

# High Air Velocity Unit Heater KFUH ECO2S Series

## Ordering Information - three phase

MODEL	BTUH	VOLTS	PHASE	KW	RESISTIVE AMPS	STAGE1	STAGE2	# OF ELEMENTS	INTERNAL CB	MOTOR	MOTOR FLA	SIZE	WT.(lbs)
KFUH4818-3-ECM	58,874	480	3	17.3	21	17.3 kW	*N/A	3	NO	1/3 HP	0.7	Fig. A	74.0
KFUH4820-3-2S3-ECM	68,260	480	3	20.0	24	10 kW	10 kW	4	NO	1/2 HP	1.1	Fig. B	76.0
KFUH4825-3-2S3-ECM	85,325	480	3	25.0	30.1	15 kW	10 kW	5	NO	1/2 HP	1.1	Fig. B	81.0
KFUH4830-3-2S3-ECM	102,390	480	3	30.0	36.1	20 kW	10 kW	6	NO	3/4 HP	1.1	Fig. B	85.0
KFUH4835-3-2S3-ECM	117,749	480	3	34.5	41.5	17.25 kW	17.25 kW	6	NO	3/4 HP	1.1	Fig. B	85.0
KFUH4840-3-2S3-ECM	136,520	480	3	40.0	48.1	20 kW	20 kW	8	60	2 x 1/2 HP	2.2	Fig. C	N/A
KFUH4850-3-2S3-ECM	170,650	480	3	50.0	60.1	25 kW	25 kW	10	60+60	2 x 1/2 HP	2.2	Fig. C	N/A
KFUH4860-3-2S3-ECM	204,780	480	3	60.0	72.1	30 kW	30 kW	12	60+60	2 x 3/4 HP	2.2	Fig. C	N/A
KFUH4870-3-ECM	238,910	480	3	70.0	84.1	70 kW	*N/A	12	60+60	2 x 3/4 HP	2.2	Fig. C	N/A

\*Not Available in 2-Stage.

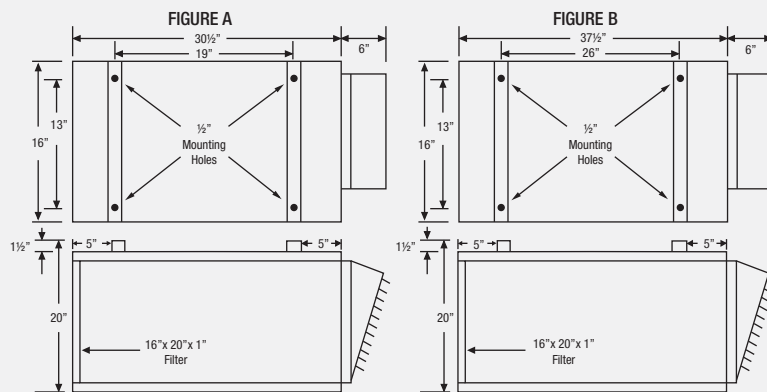
## Factory Installed Options

ADD SUFFIX	DESCRIPTION	WEIGHT (lbs.)
-T	Factory Installed Stat (SPST). Temperature range 40°F to 100°F	N/A
-2TS	Factory Installed Stat (DPST). Temperature range 40°F to 100°F	N/A
-SF	Factory Installed Summer Fan Switch	N/A
-DS32	Factory Installed 32 Amp, 3-Pole Non-Fused Locking Disconnect Switch	N/A
-DS63	Factory Installed 63 Amp, 3-Pole Non-Fused Locking Disconnect Switch	NA
-DS80	Factory Installed 80 Amp, 3-Pole Non-Fused Locking Disconnect Switch	N/A
-DS100	Factory Installed 100 Amp, 3-Pole Non-Fused Locking Disconnect Switch	N/A

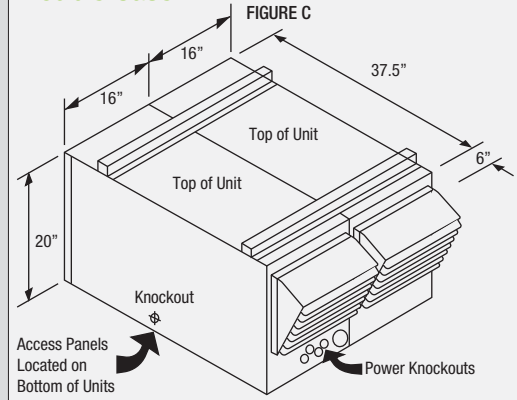
## Accessories

MODEL	UPC	DESCRIPTION	WEIGHT (lbs.)
KFUH-DIFFUSER	15741	Standard KFUH Air Diffuser	5.0
KFUH-RD	15743	Radial diffuser for wide pattern heat dispersion	4.0
KFUH-90D	15728	Right angle elbow (90°) diffuser with adjustable louvers	15.0
KFUH-90RD	15729	Right angle elbow (90°) with radial diffuser	14.0
1E30N-910	55379	Thermostat 24V Mercury Free-Vertical 45°-90°F	1.0

## Dimensional Data

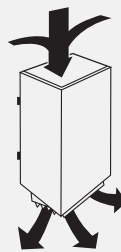
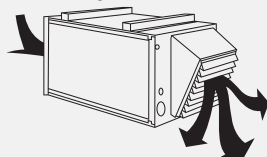


## Double Case

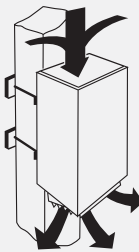


## Mounting

Horizontal Flow  
Ceiling Mounted



Vertical Flow  
Wall or  
Post Mounted



## Diffusers



KFUH-90RD



KFUH-90D

# High Air Velocity Unit Heater KFUH ECO2S Series



## Air Flow Chart

(For 4 to 17.3kW Units with 1/3HP ECM Motor)

MODEL	KW	TORQUE	CFM	RISE
KFUH**04	4	(2) 6.8	708	18
		9.4	919	14
		12.0	1,085	12
		17.0	1,320	10
		20.0	1,536	8
KFUH**05	5	(2) 6.8	708	22
		9.4	919	17
		12.0	1,085	15
		17.0	1,320	12
		20.0	1,536	10
KFUH**08	8	(1) 6.8	708	36
		(2) 9.4	919	27
		12.0	1,085	23
		17.0	1,320	19
		20.0	1,536	16
KFUH**10	10	(1) 6.8	708	45
		(2) 9.4	919	34
		12.0	1,085	29
		17.0	1,320	24
		20.0	1,536	21
KFUH**12	12	(1) 6.8	708	54
		(2) 9.4	919	41
		12.0	1,085	35
		17.0	1,320	29
		20.0	1,536	25
KFUH**15	15	(1) 6.8	708	67
		9.4	919	52
		(2) 12.0	1,085	44
		17.0	1,320	36
		20.0	1,536	31
KFUH**18	17.3	6.8	708	77
		(1) 9.4	919	59
		12.0	1,085	50
		x(2) 17.0	1,320	41
		20.0	1,536	35

## Air Flow Chart

(For 20 to 25kW Units with 1/2HP ECM Motor)

MODEL	KW	TORQUE	CFM	RISE
KFUH**20	20	(1) 15.5	1,258	50
		(2) 19.0	1,466	43
		22.5	1,575	40
		26.0	1,690	37
		30.0	1,771	36
KFUH**25	25	15.5	1,258	63
		(1) 19.0	1,466	54
		22.5	1,575	50
		(2) 26.0	1,690	47
		30.0	1,771	45

## Air Flow Chart

(For 20 to 35kW Units with 3/4HP ECM Motor)

MODEL	KW	TORQUE	CFM	RISE
KFUH**20 (Optional) 3/4 HP	20	(1) 26.0	1,592	40
		30.0	1,789	35
		(2) 35.0	1,814	35
		40.5	2,080	30
		45.0	2,142	30
KFUH**25 (Optional) 3/4 HP	25	(1) 26.0	1,592	50
		30.0	1,789	44
		(2) 35.0	1,814	44
		40.5	2,080	38
		45.0	2,142	37
KFUH**30	30	(1) 26.0	1,592	60
		30.0	1,789	53
		35.0	1,814	52
		(2) 40.5	2,080	46
		45.0	2,142	44
KFUH**35	35	26.0	1,592	69
		(1) 30.0	1,789	62
		35.0	1,814	61
		(2) 40.5	2,080	53
		45.0	2,142	52

(A) \*\* Represents the voltage, 20=208V, 24=240V, 48=480V. Voltage of the KFUH unit does not affect the data in this table.

(B) NR= Not Recommended, Temperature Rise is above maximum design parameter.

(C) The highlighted cells are the factory default torque setting for each model. The ECM motor has 5 field adjustable torque settings, allowing for a wide range of design choices.

(D) (1)= Stage 1 Torque Settings (2) = Stage 2 Torque Settings / (2) = Default for Single Stage KFUH

(E) Blower: 10" diameter, 8" wide

## Engineering Specifications

*Contractor shall supply and install KFUH ECO2S 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 heavy duty low voltage (24 Volt) transformer for the thermostat control circuit.

**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:** Energy Saving, Long life, thermally protected, permanently lubricated, direct drive ECM motor—no belts to adjust or slip.

This low noise, 3 speed motor is designed for use with air conditioning capability as well as heating. Very quiet operating. 60 second fan delay.

**Overcurrent Protection:** 208 & 240 volt KFUH ECO2S models have 60 amp circuit breakers with single strike terminal block. Units over 48 amps have 60 amp fusing.

**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 unit heater off should overtemperature occur.

**Fan Relay:** Heavy duty fan relay standard with summer fan operation.

**Approvals:** UL (E41422)