

# 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.

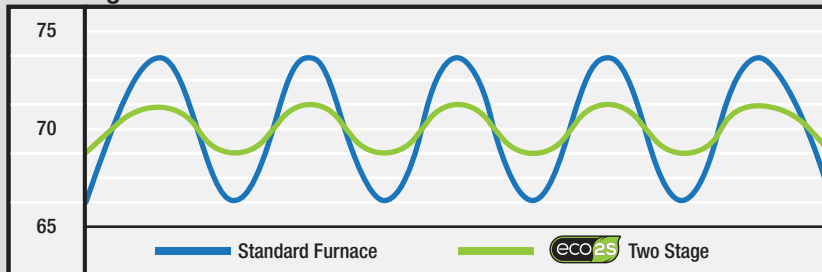
**FIELD WIRING:** Terminal blocks are supplied for field wiring on all units. Consult the National Electric Code for proper wire size and service circuit breaker protection. **CONTROL WIRING:** Connect low voltage thermostat to terminals R and W on the low voltage terminal block. For fan only operation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

## TWO STAGE COMFORT Why 2 Stage is Better

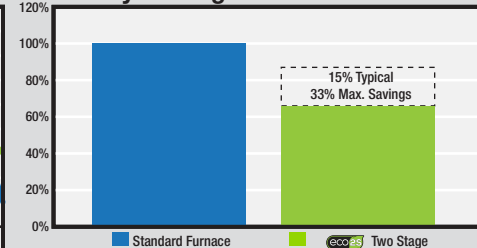
2 Stage controlled Furnaces allow you to use less energy during mild Spring and Fall temperatures. It's like having a smaller furnace installed just for spring and fall, then when winter hits you have the reserve power of the second heating stage to fight off the cold weather. It also has the benefit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

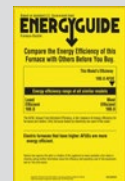
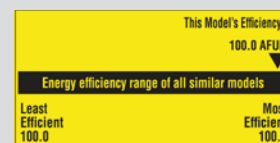


### Yearly Savings



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	4 kW	*N/A	1	NO	1/3HP	2.9	Fig. A	57.0
KFUH2005-1-ECM	17,065	208	1	5.0	24	5 kW	*N/A	1	NO	1/3HP	2.9	Fig. A	57.0
KFUH2008-1-ECM	27,304	208	1	8.0	38	8 kW	*N/A	2	NO	1/3HP	2.9	Fig. A	57.0
KFUH2010-1-2S1-ECM	34,130	208	1	10.0	48	5 kW	5kW	2	60	1/3HP	2.9	Fig. A	65.0
KFUH2012-1-ECM	40,956	208	1	12.0	58	12 kW	*N/A	3	60	1/3HP	2.9	Fig. A	74.0
KFUH2015-1-2S1-ECM	51,195	208	1	15.0	72	10 kW	5 kW	3	60+60	1/3HP	2.9	Fig. A	74.0
KFUH2018-1-ECM	58,874	208	1	17.3	83	17.3 kW	*N/A	4	60+60	1/3HP	2.9	Fig. B	74.0
KFUH2020-1-2S1-ECM	68,260	208	1	20.0	96	10 kW	10kW	4	60+60	1/2HP	2.9	Fig. B	76.0
KFUH2025-1-2S1-ECM	85,325	208	1	25.0	120	15 kW	10 kW	5	60+60+60	1/2HP	2.9	Fig. B	81.0
KFUH2030-1-2S1-ECM	102,390	208	1	30.0	144	20 kW	10 kW	6	60+60+60	1/2HP	2.9	Fig. B	85.0
KFUH2404-1-ECM	13,652	240	1	4.0	17	4 kW	*N/A	1	NO	1/3HP	2.7	Fig. A	57.0
KFUH2405-1-ECM	17,065	240	1	5.0	21	5 kW	*N/A	1	NO	1/3HP	2.7	Fig. A	57.0
KFUH2408-1-2S1-ECM	27,304	240	1	8.0	33	4 kW	4 kW	2	NO	1/3HP	2.7	Fig. A	57.0
KFUH2410-1-2S1-ECM	34,130	240	1	10.0	42	5kW	5 kW	2	NO	1/3HP	2.7	Fig. A	65.0
KFUH2412-1-2S1-ECM	40,956	240	1	12.0	50	5.75 kW	5.75 kW	2	60	1/3HP	2.7	Fig. A	74.0
KFUH2415-1-2S1-ECM	51,195	240	1	15.0	63	10 kw	5 kW	3	60+60	1/3HP	2.7	Fig. A	74.0
KFUH2418-1-2S1-ECM	58,874	240	1	17.3	72	11.5 kw	5.75 kW	3	60+60	1/3HP	2.7	Fig. A	74.0
KFUH2420-1-2S1-ECM	68,260	240	1	20.0	83	10kw	10 kW	4	60+60	1/2HP	3.9	Fig. B	76.0
KFUH2425-1-2S1-ECM	85,325	240	1	25.0	104	15 kW	10 kW	5	60+60+60	1/2HP	3.9	Fig. B	81.0
KFUH2430-1-2S1-ECM	102,390	240	1	30.0	125	20 kW	10 kW	6	60+60+60	1/2HP	3.9	Fig. B	85.0
KFUH2435-1-2S1-ECM	117,749	240	1	34.5	144	23 kW	11.5 kW	6	60+60+60	1/2HP	3.9	Fig. B	85.0
KFUH4804-1-ECM	13,652	480	1	4.0	8	4 kW	*N/A	1	NO	1/3HP	0.7	Fig. A	57.0
KFUH4805-1-ECM	17,065	480	1	5.0	10	5 kW	*N/A	1	NO	1/3HP	0.7	Fig. A	57.0
KFUH4808-1-2S1-ECM	27,304	480	1	8.0	17	4 kW	4 kW	2	NO	1/3HP	0.7	Fig. A	57.0
KFUH4810-1-2S1-ECM	34,130	480	1	10.0	21	5 kW	5 kW	2	NO	1/3HP	0.7	Fig. A	65.0
KFUH4812-1-2S1-ECM	40,956	480	1	12.0	25	8 kW	4 kW	3	NO	1/3HP	0.7	Fig. A	74.0
KFUH4815-1-2S1-ECM	51,195	480	1	15.0	31	10 kW	5 kW	3	NO	1/3HP	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	1/3HP	0.7	Fig. A	74.0
KFUH4820-1-2S1-ECM	68,260	480	1	20.0	42	15 kW	5 kW	4	NO	1/2HP	1.1	Fig. B	76.0
KFUH4825-1-2S1-ECM	85,325	480	1	25.0	52	15 kW	10 kW	5	60	1/2HP	1.1	Fig. B	81.0
KFUH4830-1-2S1-ECM	102,390	480	1	30.0	63	20 kW	10 kW	6	60+60	1/2HP	1.1	Fig. B	85.0
KFUH4835-1-2S1-ECM	117,749	480	1	34.5	72	23 kW	11.5 kW	6	60+60	1/2HP	1.1	Fig. B	85.0

\*Not Availabel 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	14	5 kW	N/A	1	NO	1/3HP	2.9	Fig. A	57.0
KFUH2008-3-ECM	27,304	208	3	8.0	22	8 kW	N/A	2	NO	1/3HP	2.9	Fig. A	57.0
KFUH2010-3-ECM	34,130	208	3	10.0	28	5 kW	5 kW	2	NO	1/3HP	2.9	Fig. A	65.0
KFUH2012-3-2S3-ECM	42,253	208	3	12.4	34	7.5 kW	3.75 kW	3	NO	1/3HP	2.9	Fig. A	74.0
KFUH2015-3-2S3-ECM	51,195	208	3	15.0	42	10 kW	5 kW	3	NO	1/3HP	2.9	Fig. A	74.0
KFUH2020-3-2S3-ECM	68,260	208	3	20.0	56	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	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	20 kW	10 kW	6	60+60	1/2 HP	4.2	Fig. B	85.0
KFUH2405-3-ECM	17,065	240	3	5.0	12	5 kW	*N/A	1	NO	1/3 HP	2.7	Fig. A	57.0
KFUH2410-3-2S3-ECM	34,130	240	3	10.0	24	5 kW	5 kW	2	NO	1/3 HP	2.7	Fig. A	65.0
KFUH2412-3-ECM	40,956	240	3	12.0	29	12 kW	*N/A	3	NO	1/3 HP	2.7	Fig. A	74.0
KFUH2415-3-2S3-ECM	51,195	240	3	15.0	36	10 kW	5 kW	3	NO	1/3 HP	2.7	Fig. A	74.0
KFUH2418-3-ECM	58,874	240	3	17.3	42	17.25 kW	*N/A	3	NO	1/3 HP	2.7	Fig. A	74.0
KFUH2420-3-2S3-ECM	68,260	240	3	20.0	48	10 kW	10 kW	4	60	1/2 HP	3.9	Fig. B	76.0
KFUH2425-3-ECM	85,325	240	3	25.0	60	15 kW	10 kW	5	60	1/2 HP	3.9	Fig. B	81.0
KFUH2430-3-2S3-ECM	102,390	240	3	30.0	72	20 kW	10kW	6	60+60	1/2 HP	3.9	Fig. B	85.0
KFUH2435-3-ECM	117,749	240	3	34.5	83	35 kW	N/A	6	60+60	1/2 HP	3.9	Fig. B	85.0
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
KFUH4810-3-23S-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	12 kW	*N/A	3	NO	1/3 HP	0.7	Fig. A	74.0
KFUH4815-3-23S-ECM	51,195	480	3	15.0	18	10 kW	5 kW	3	NO	1/3 HP	0.7	Fig. A	74.0
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
KFUH4820-3-23S-ECM	68,260	480	3	20.0	24	10 kW	10 kW	4	NO	1/2HP	1.1	Fig. B	76.0
KFUH4825-3-23S-ECM	85,325	480	3	25.0	30	15 kW	10 kW	5	NO	1/2HP	1.1	Fig. B	81.0
KFUH4830-3-23S-ECM	102,390	480	3	30.0	36	20 kW	10 kW	6	NO	1/2HP	1.1	Fig. B	85.0
KFUH4835-3-ECM	117,749	480	3	34.5	42	34.5 kW	*N/A	6	NO	1/2HP	1.1	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	139	25 kW	25 kW	10	60+60	2 x 1/2 HP	8.4	Fig. C	N/A

\*Not Availabel 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)
KFUH2060-3-2S3-ECM	204,780	208	3	60.0	167	30 kW	30 kW	12	60+60+60	2 x 1/2 HP	8.4	Fig. C	N/A
KFUH2440-3-2S3-ECM	136,520	240	3	40.0	96	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	3	50.0	120	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	3	60.0	145	30 kW	30 kW	12	60+60+60	2 x 1/2 HP	7.8	Fig. C	N/A
KFUH2470-3-ECM	238,910	240	3	70.0	169	70 kW	*N/A	12	60+60+60	2 x 1/2 HP	7.8	Fig. C	N/A
KFUH4840-3-2S3-ECM	136,520	480	3	40.0	48	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	25 kW	25 kW	10	60	2 x 1/2 HP	2.2	Fig. C	N/A
KFUH4860-3-2S3-ECM	204,780	480	3	60.0	72	30 kW	30 kW	12	60+60	2 x 1/2 HP	2.2	Fig. C	N/A
KFUH4870-3-ECM	238,910	480	3	70.0	84	70 kW	*N/A	12	60+60	2 x 1/2 HP	2.2	Fig. C	N/A

\*Not Available in 2-Stage.

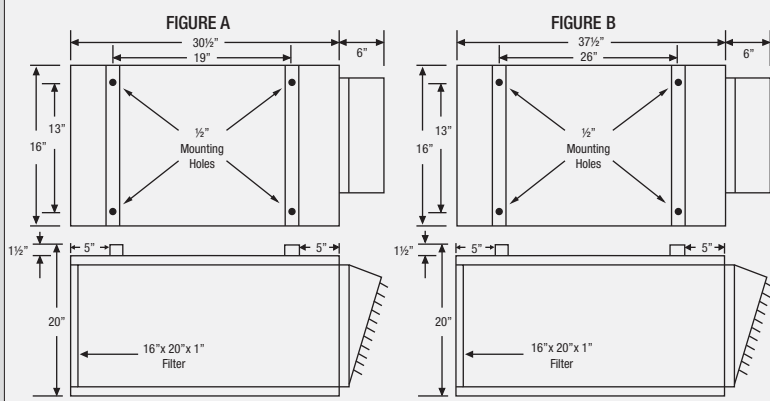
## Factory Installed Options

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

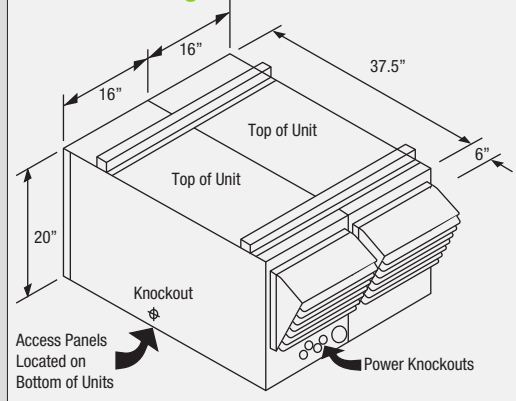
## Accessories

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
1E30-910	19000	Thermostat 24V Mercury Free-Vertical 45°-90°F	N/A

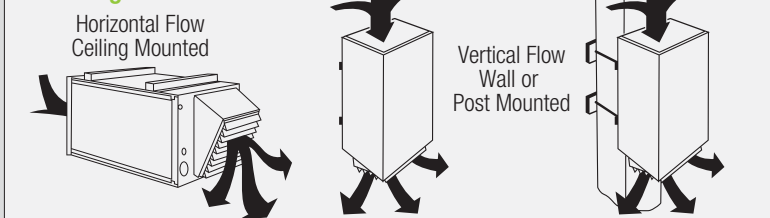
## Dimensional Data



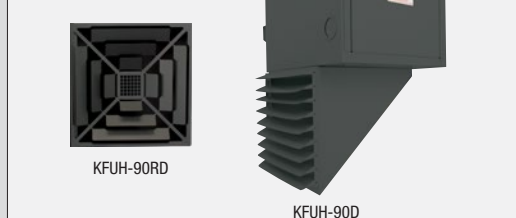
## Dual Mounting



## Mounting



## Diffusers



# High Air Velocity Unit Heater KFUH ECO2S Series

**Air Flow Chart** (For 20 to 34.5kW Units with 1/2HP ECM Motor)

**Air Flow Chart** (For 4 to 17.25kW Units with 1/3HP ECM Motor)

MODEL	KW	TORQUE	CFM	RISE (F)	MODEL	KW	TORQUE	CFM	RISE (F)
KF/KFS**20	20	15.5	1,258	50	KFUH**04	4	6.8	832	15
		19.0	1,466	43			9.4	1,030	12
		22.5	1,575	40			12.0	1,168	11
		26.0	1,690	37			17.0	1,376	9
		30.0	1,771	36			20.0	1,582	8
KF/KFS**25	25	15.5	1,258	63	KFUH**05	5	6.8	832	19
		19.0	1,466	54			9.4	1,030	15
		22.5	1,575	50			12.0	1,168	14
		26.0	1,690	47			17.0	1,376	11
		30.0	1,771	45			20.0	1,582	10
KF/KFS**30	30	15.5	1,258	75	KFUH**08	8	6.8	832	30
		19.0	1,466	65			9.4	1,030	25
		22.5	1,575	60			12.0	1,168	22
		26.0	1,690	56			17.0	1,376	18
		30.0	1,771	54			20.0	1,582	16
KF/KFS**35	35	15.5	1,258	88	KFUH**10	10	6.8	832	38
		19.0	1,466	75			9.4	1,030	31
		22.5	1,575	70			12.0	1,168	27
		26.0	1,690	65			17.0	1,376	23
		30.0	1,771	62			20.0	1,582	20
KF/KFS**40	40	15.5	1,258	88	KFUH**12	12	6.8	832	46
		19.0	1,466	75			9.4	1,030	37
		22.5	1,575	70			12.0	1,168	32
		26.0	1,690	65			17.0	1,376	28
		30.0	1,771	62			20.0	1,582	24
KF/KFS**50	50	15.5	1,258	88	KFUH**15	15	6.8	832	57
		19.0	1,466	75			9.4	1,030	46
		22.5	1,575	70			12.0	1,168	41
		26.0	1,690	65			17.0	1,376	34
		30.0	1,771	62			20.0	1,582	30
KF/KFS**60	60	15.5	1,258	88	KFUH**18	17.25	6.8	832	66
		19.0	1,466	75			9.4	1,030	53
		22.5	1,575	70			12.0	1,168	47
		26.0	1,690	65			17.0	1,376	40
		30.0	1,771	62			20.0	1,582	34
KF/KFS**70	70	15.5	1,258	88					
		19.0	1,466	75					
		22.5	1,575	70					
		26.0	1,690	65					
		30.0	1,771	62					

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

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

(3) 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.

(4) Blower: 9" diameter, 7" 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)