KRAMER

Catalog KM-KLV-0524A
Replaces KM-KLV-1021A

LV CENTER MOUNT

LOW VELOCITY CENTER MOUNT
UNIT COOLER

AIR & ELECTRIC DEFROST MODELS
4,300 to 32,500 BTUH

SMALL TO MEDIUM WALK-IN
COOLER APPLICATIONS



Features

Low Velocity Center Mount Unit Coolers mount flush to the ceiling to provide extra storage space. Units are ideal for florist boxes; produce storage; meat cutting, holding and packing rooms; and similar applications. Features include two-way air flow to provide for even circulation and temperature, easy serviceability, usability with multiple refrigerants, and are available in air and electric defrost models.

SIZES
There are a wide array of sizes available with capacities ranging from 4,300 to 32,500 BTUH at a 10° TD. One through five fan models are available with air flow spanning a range of 632 to 3,160 CFM.

HOUSING
The embossed aluminum casing is lightweight yet durable. Each fan section is baffled to prevent short cycling of the discharge air. The units are designed to mount flush to the ceiling and are compliant with NSF requirements. Top panel contains 3/8" mounting holes to simplify installation. The housing is sloped to provide more efficient condensate draining. An uniquely shaped control access cover allows for easy access for service in confined spaces.

COIL
Copper hairpins consist of high efficiency 3/8" enhanced copper tubes which are staggered and mechanically expanded into corrugated aluminum fins achieving maximum heat transfer while reducing refrigerant charge. Die formed fin collars provide even fin spacing.All models are available with 6 fins per inch (FPI). Sweat connections are standard on all models.

FANS
Aluminum 12" fans are balanced to provide vibration-free operation. Improved black plastic fan guard design and deep draw venturi achieve optimal air pattern. Fan motors and blades can be easily accessed by removing the fan guard.

MOTORS
Standard models feature highly efficient Dual Speed Electronically Commutated (EC) motors. Dual Speed EC motors are available for 115V or 208/230V and are compliant with California Title 24 regulations. All motors include thermal overload protection.

ELECTRICAL
Available for 115V, and 208/230V. All components are factory wired to terminal strips and are UL and cUL listed.

AIR DEFROST
Air Defrost models (KV6A) are designed for use in coolers down to 35°F.

ELECTRIC DEFROST
Electric Defrost models (RV6E) are designed for use in coolers and freezers down to 28°F.

Optional Features

- EcoNet® Enabled Controller[1] factory-installed
- EcoNet® Command Center (loose)
- Thermostat - Mechanical or Electric (mounted or loose)
- Thermostatic Expansion Valve (mounted or loose)
- Electronic Expansion Valve (mounted or loose)
- Liquid Line Solenoid Valve (mounted or loose)
- Insulated Drain Pan
- Painted Cabinet (White or Black)
- Stainless Steel Cabinet
- Coated Coil (Baked epoxy, Heresite, Bronz-Glow, or Electrofin®)
- Heat Exchanger (loose)

Notes

1. EcoNet Control Package includes: EEV; suction pressure transducer; suction, entering air coil temp. thermistors; local on-board two-row LCD display and push-button adjustments. (Controller replaces TXV, liquid line solenoid valve, room thermostat, defrost termination and fan delay, and time clock.)

MODEL NUMBER NOMENCLATURE

CONFIGURABLE BASE MODEL

K	V	6	A	043	A	D	A
Brand	**Style**	**Fins Per Inch**	**Defrost Type**	**BTUH in Hundreds**	**Unit Voltage^**	**Motor Type**	**Revision**
K - Kramer	V - Low Velocity Center Mount	6 FPI	A - Air E - Electric		A - 115/1/60 D - 208-230/1/60	D - Dual Speed EC	

Note

^ 50 Hz available. Contact Factory for additional information.

Highlighted Features and Options



FANS AND HOUSING

- Extra low height — mounts flush to ceiling
- Two-way air flow for even air circulation and consistent temperature
- 12" aluminum fans are balanced for vibration-free operation
- High efficiency fan guard design and deep draw venturi provide optimal air flow
- Easy access to fan motors
- Sloped housing for efficient condensate draining
- UL and NSF approved



COILS AND DEFROST HEATERS

- Available in 6 FPI
- Electric defrost heaters are mounted on the air intake coil face to provide optimal performance and are easily accessible by removing the venturi panel
- Independent defrost termination on each coil slab for efficient defrosting
- Independent drain pan per coil

ECONET ENABLED UNIT COOLERS (Optional)

Developed in conjunction with Rheem Manufacturing specifically for walk-in coolers and freezers — it builds on the reliability and efficiency of Rheem's EcoNet technology.

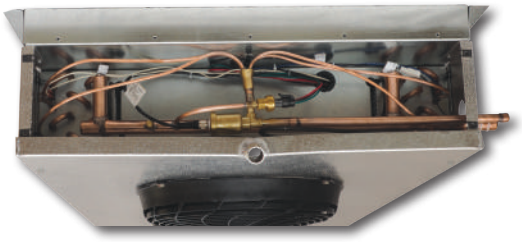






- Saves energy in refrigeration systems through precise superheat and space temperature control, fan cycling, and controlling how often the system goes into defrost based on compressor runtime
  - Eliminates unnecessary defrosts
  - Maximizes energy efficiency with less compressor runtime
  - Reduces fan speed to 50% during off cycle for energy savings
- Can be used with a condensing unit in single and multiple evaporator installations as a group
- Optional EcoNet Command Center with intuitive graphical interface controls up to 32 devices (including the Command Center) through one display, provides continuous communication between system components, and the remote mount display allows for EcoNet Enabled Unit Coolers to be programmed, monitored and troubleshot outside of the space being cooled

ELECTRICAL AND PIPING





Unit shown with EcoNet option installed

- Unique design of control access cover allows for service in confined spaces
- Ample room in electrical and piping compartments for easy access

EVAPORATOR APPLICATION RATINGS

Multiple conditions combine to determine the application capacity of an evaporator. Walk-in space temperature, relative humidity, saturated suction temperature difference, and outdoor ambient temperature. All of the factors are considered when calculating an evaporator application rating. These ratings are considerably higher than the net capacity value used for DOE ratings (AWEF).

The AWEF of an evaporator is calculated using the dry coil capacity and the daily evaporator power consumption. Power consumption included fan and defrost power. Evaporator net capacity reported to the DOE database is dry coil capacity less the full power fan watts. DOE test conditions are at 10°F evaporator/SST temperature difference and less than 50% relative humidity and 96°F liquid temperature. These conditions create a uniform test method, but should not be used for equipment selection. The equipment selected would be too large for the application.

Kramer's published application ratings are a guideline for proper equipment selection. They account for true operating conditions experienced by equipment.

Application Rating and Electrical Data - Air Defrost Models

	Model Number	BTUH Capacity @ 25°F S.T. & 10°F TD		CFM	No. of Fans	Total Fan Motor AMPS - 1 Phase Dual Speed EC Motors†		MCA		MOPD	
		R404A	R407A/ R448A/ R449A/B^			115V	208-230V	115V	208-230V	115V	208-230V
6 FPI	KV6A043*DA	4,300	5,100	654	1	0.8	0.5	15.0	15.0	20.0	20.0
	KV6A053*DA	5,300	6,300	632	1	0.8	0.5	15.0	15.0	20.0	20.0
	KV6A085*DA	8,500	10,100	1,308	2	1.6	1.0	15.0	15.0	20.0	20.0
	KV6A106*DA	10,600	12,600	1,264	2	1.6	1.0	15.0	15.0	20.0	20.0
	KV6A129*DA	12,900	15,300	1,962	3	2.4	1.5	15.0	15.0	20.0	20.0
	KV6A158*DA	15,800	18,800	1,896	3	2.4	1.5	15.0	15.0	20.0	20.0
	KV6A176*DA	17,600	20,800	2,616	4	3.2	2.0	15.0	15.0	20.0	20.0
	KV6A218*DA	21,800	26,000	2,528	4	3.2	2.0	15.0	15.0	20.0	20.0
	KV6A271*DA	27,100	32,500	3,160	5	4.0	2.5	15.0	15.0	20.0	20.0

AWEF Ratings - Air Defrost Models

Air Defrost Department of Energy Annual Walk-In Energy Factor (AWEF) Ratings			
Base Model Number	**Defrost Type**	**FPI**	**AWEF**
Cooler Models[1]			
KV6A043*DA	Air Defrost	6	9.0
KV6A053*DA	Air Defrost	6	9.0
KV6A085*DA	Air Defrost	6	9.0
KV6A106*DA	Air Defrost	6	9.0
KV6A129*DA	Air Defrost	6	9.0
KV6A158*DA	Air Defrost	6	9.0
KV6A176*DA	Air Defrost	6	9.0
KV6A218*DA	Air Defrost	6	9.0
KV6A271*DA	Air Defrost	6	9.0

Consult Factory for 50Hz Operation

* Each asterisk represents a variable character based on voltage ordered. See page 4 for nomenclature.

^ Refrigerants with large glides are rated at dew point temperature. Use R407A capacity ratings for R407C and R407F.

† Dual-speed EC motors are compliant with California Title 24 regulations.

Models were designed in anticipation of the July 2020 Department of Energy AWEF regulations for evaporators for Walk-in Coolers and Freezers in boxes less than 3,000 sq. ft. See below for AWEF compliance ratings.

1. If the model has a numerical value in the AWEF table, the following statement applies: "The refrigeration system is designed and certified for use in walk-in cooler applications."

Application Rating and Electrical Data - Electric Defrost Models

	Model Number	BTUH Capacity @ 25°F S.T. & 10°F TD		CFM	No. of Fans	208-230V/1				
		R404A	R407A/ R448A/ R449A/B^			Dual Speed EC Motors†	MCA		MOPD	
						Total Fan Motor AMPS	Base Model	EcoNet Enabled	Base Model	EcoNet Enabled
6 FPI	KV6E043DDA	4,300	5,100	654	1	0.5	15.0	15.0	20	20
	KV6E053DDA	5,300	6,300	632	1	0.5	15.0	15.0	20	20
	KV6E085DDA	8,500	10,100	1,308	2	1.0	15.0	15.0	20	20
	KV6E106DDA	10,600	12,600	1,264	2	1.0	15.0	15.0	20	20
	KV6E129DDA	12,900	15,300	1,962	3	1.5	15.0	15.0	20	20
	KV6E158DDA	15,800	18,800	1,896	3	1.5	15.0	15.0	20	20
	KV6E176DDA	17,600	20,800	2,616	4	2.0	15.0	15.0	20	20
	KV6E218DDA	21,800	26,000	2,528	4	2.0	15.0	15.0	20	20
	KV6E271DDA	27,100	32,500	3,160	5	2.5	15.0	15.0	20	20

	Model Number	Heater Amps	Heater Watts
		230V/1	
6 FPI	KV6E043DDA	3.2	750
	KV6E053DDA	3.2	750
	KV6E085DDA	6.5	1,500
	KV6E106DDA	6.5	1,500
	KV6E129DDA	9.8	2,250
	KV6E158DDA	9.8	2,250
	KV6E176DDA	13	3,000
	KV6E218DDA	13	3,000
	KV6E271DDA	16.3	3,750

Consult Factory for 50Hz Operation

^ Refrigerants with large glides are rated at dew point temperature. Use R407A capacity ratings for R407C and R407F.

† Dual-speed EC motors are compliant with California Title 24 regulations.

AWEF Ratings - Electric Defrost Models

Electric Defrost Department of Energy Annual Walk-In Energy Factor (AWEF) Ratings			
Base Model Number	Defrost Type	FPI	AWEF
Cooler Models[1]			
KV6E043DDA	Electric Defrost	6	9.0
KV6E053DDA	Electric Defrost	6	9.0
KV6E085DDA	Electric Defrost	6	9.0
KV6E106DDA	Electric Defrost	6	9.0
KV6E129DDA	Electric Defrost	6	9.0
KV6E158DDA	Electric Defrost	6	9.0
KV6E176DDA	Electric Defrost	6	9.0
KV6E218DDA	Electric Defrost	6	9.0
KV6E271DDA	Electric Defrost	6	9.0

Models were designed in anticipation of the July 2020 Department of Energy AWEF regulations for evaporators for Walk-in Coolers and Freezers in boxes less than 3,000 sq. ft. See below for AWEF compliance ratings.

1. If the model has a numerical value in the AWEF table on left, the following statement applies: "The refrigeration system is designed and certified for use in walk-in cooler applications."

Distributor Nozzle - All Models

	Model Number		Part Numbers						
	Air Defrost	Electric Defrost	Nozzle @ Liq. Temp.		TXV^ @ Liq. Temp.		EEV @ Liq. Temp.		Number of Circuits
			50°F	100°F	50°F	100°F	50°F	100°F	
R404A									
6 FPI	KV6A043*DA	KV6E043DDA	L, #1/6	L, #1/2	SBFSE-AA-C	SBFSE-AA-C	SER-AA	SER-A	2
	KV6A053*DA	KV6E053DDA	L, #1/6	L, #1/2	SBFSE-AA-C	SBFSE-AA-C	SER-AA	SER-A	2
	KV6A085*DA	KV6E085DDA	L, #1/4	L, #3/4	SBFSE-A-C	SBFSE-A-C	SER-A	SER-B	2
	KV6A106*DA	KV6E106DDA	L, #1/3	L, #1	SBFSE-A-C	SBFSE-A-C	SER-A	SER-B	4
	KV6A129*DA	KV6E129DDA	L, #1/2	L, #1-1/2	SBFSE-A-C	SBFSE-B-C	SER-B	SER-B	6
	KV6A158*DA	KV6E158DDA	L, #1/2	L, #1-1/2	SBFSE-A-C	SBFSE-B-C	SER-B	SER-B	6
	KV6A176*DA	KV6E176DDA	L, #3/4	L, #2	SBFSE-A-C	SBFSE-B-C	SER-B	SER-C	6
	KV6A218*DA	KV6E218DDA	L, #3/4	L, #2	SBFSE-B-C	SBFSE-C-C	SER-B	SER-C	8
	KV6A271*DA	KV6E271DDA	G, #1	G, #2-1/2	SBFSE-B-C	SBFSE-C-C	SER-C	SER-C	12
R407A/ R448A/ R449A/B†									
6 FPI	KV6A043*DA	KV6E043DDA	L, #1/6	L, #1/2	SBFDE-AAA-C	SBFDE-AA-C	SER-AA	SER-AA	2
	KV6A053*DA	KV6E053DDA	L, #1/4	L, #1/2	SBFDE-AA-C	SBFDE-AA-C	SER-AA	SER-A	2
	KV6A085*DA	KV6E085DDA	L, #1/3	L, #3/4	SBFDE-AA-C	SBFDE-A-C	SER-A	SER-A	2
	KV6A106*DA	KV6E106DDA	L, #1/2	L, #1	SBFDE-A-C	SBFDE-A-C	SER-A	SER-B	4
	KV6A129*DA	KV6E129DDA	L, #1/2	L, #1-1/2	SBFDE-A-C	SBFDE-A-C	SER-A	SER-B	6
	KV6A158*DA	KV6E158DDA	L, #3/4	L, #1-1/2	SBFDE-A-C	SBFDE-B-C	SER-B	SER-B	6
	KV6A176*DA	KV6E176DDA	L, #3/4	L, #2	SBFDE-A-C	SBFDE-B-C	SER-B	SER-B	6
	KV6A218*DA	KV6E218DDA	L, #1	L, #2	SBFDE-B-C	SBFDE-B-C	SER-B	SER-C	8
	KV6A271*DA	KV6E271DDA	G, #1	G, #2-1/2	SBFDE-B-C	SBFDE-C-C	SER-C	SER-C	12

Distributor lines are 3/16" diameter and 14" long. Distributor connection size is 1/2" for Air and Electric Defrost models with "L" nozzle and 7/8" for models with "G" nozzle.

* Each asterisk represents a variable character based on voltage ordered. See page 2 for nomenclature.

^ TXV selections are based on +25°F suction temp., 8°F to 12°F evaporator TD. Contact factory for operating conditions outside of this range.

† SBFDE expansion valves are compatible with R407A, R448A and R449A/B. For other valves, follow manufacturers selection guidelines.

If unit is not configured with a factory installed TXV, unit will include shipped-loose nozzles sized for 100°F liquid temperature.

Specifications

	Model Number		TXV† Type	Refrigerant Connections		No. of Hanger Slot Locations	Dimensions (Inches)				Approx. Weight (Lbs.)	
	Air Defrost	Electric Defrost		Liquid Line[1]	Suction		Length	Width	Height	Figure	Net	Ship
6 FPI	KV6A043**A	KV6E043D*A	EXT	3/8	5/8	2	32	28-3/8	13-3/4	1	60	195
	KV6A053**A	KV6E053D*A	EXT	3/8	5/8	2	32	28-3/8	13-3/4	1	60	195
	KV6A085**A	KV6E085D*A	EXT	3/8	5/8	3	52	28-3/8	13-3/4	2	80	215
	KV6A106**A	KV6E106D*A	EXT	3/8	5/8	3	52	28-3/8	13-3/4	2	80	215
	KV6A129**A	KV6E129D*A	EXT	3/8	7/8	4	72	28-3/8	13-3/4	3	100	235
	KV6A158**A	KV6E158D*A	EXT	3/8	7/8	4	72	28-3/8	13-3/4	3	100	235
	KV6A176**A	KV6E176D*A	EXT	3/8	7/8	5	92	28-3/8	13-3/4	4	125	285
	KV6A218**A	KV6E218D*A	EXT	3/8	7/8	5	92	28-3/8	13-3/4	4	125	285
	KV6A271**A	KV6E271D*A	EXT	3/8	1-1/8	6	112	28-3/8	13-3/4	5	155	340

* Each asterisk represents a variable character based on voltage and motor ordered. See page 2 for nomenclature.

† Externally equalized.

1 For units with mounted TXV components. See Nozzle/TXV table for distributor connection size when TXV is field installed.





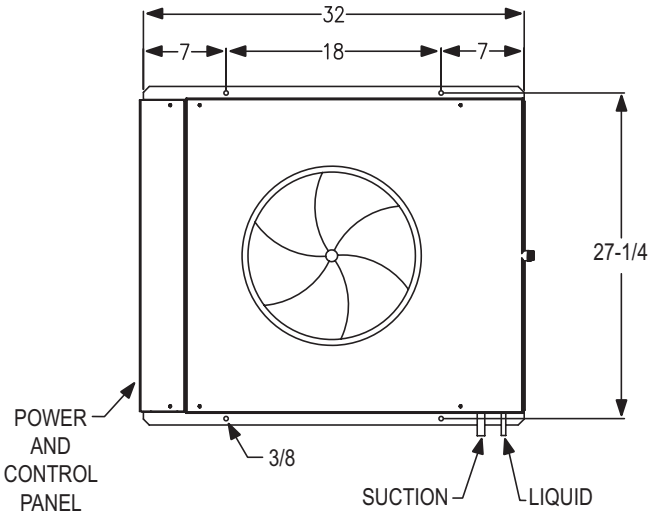


Applications

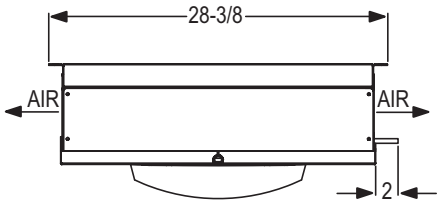
Physical Dimensions

Figure 1 - Single Fan

Bottom View



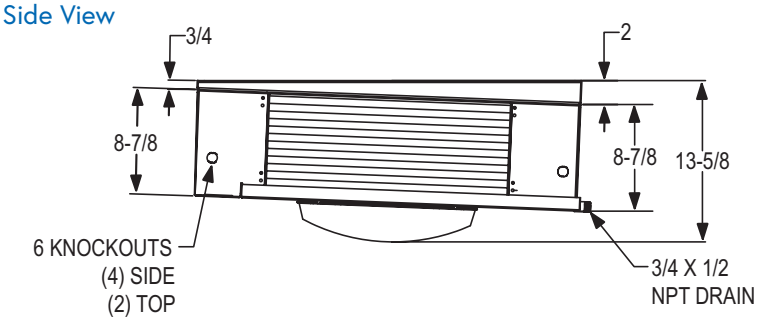
End View



Notes:

- Measurements noted on the end view drawing are the same for all units.
- All mounting holes are 3/8" diameter.
- Mounting holes on four and five fan units are located 20" on center at each tube sheet.
- All dimensions are in inches.

Side View





Mounts flush to ceiling to maximize storage space

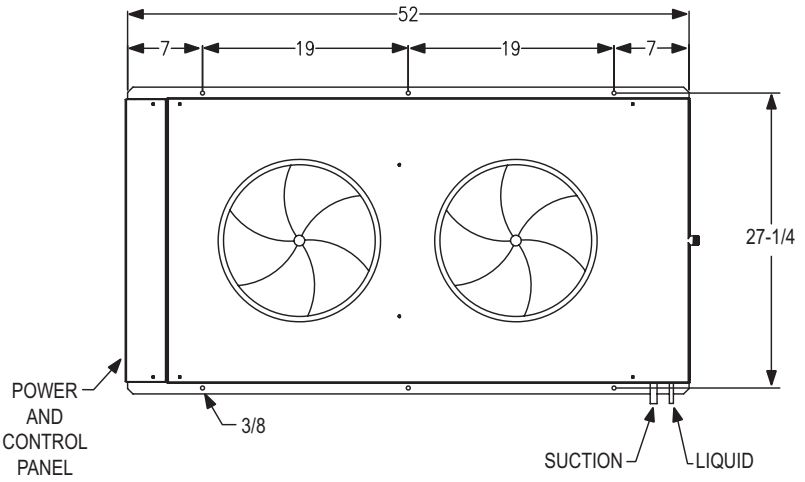
Easy access to fan motors

Sloped housing for efficient condensate draining

Physical Dimensions

Figure 2 - Two Fan

Bottom View



Side View

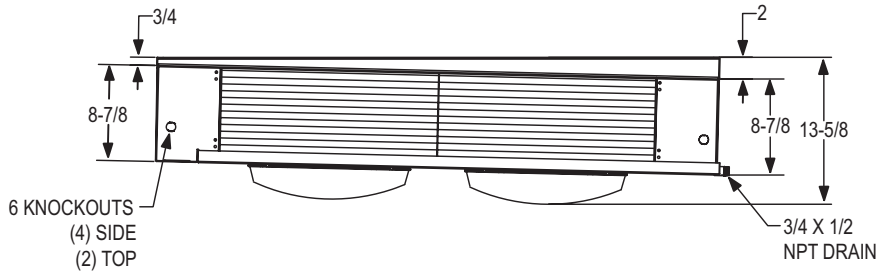
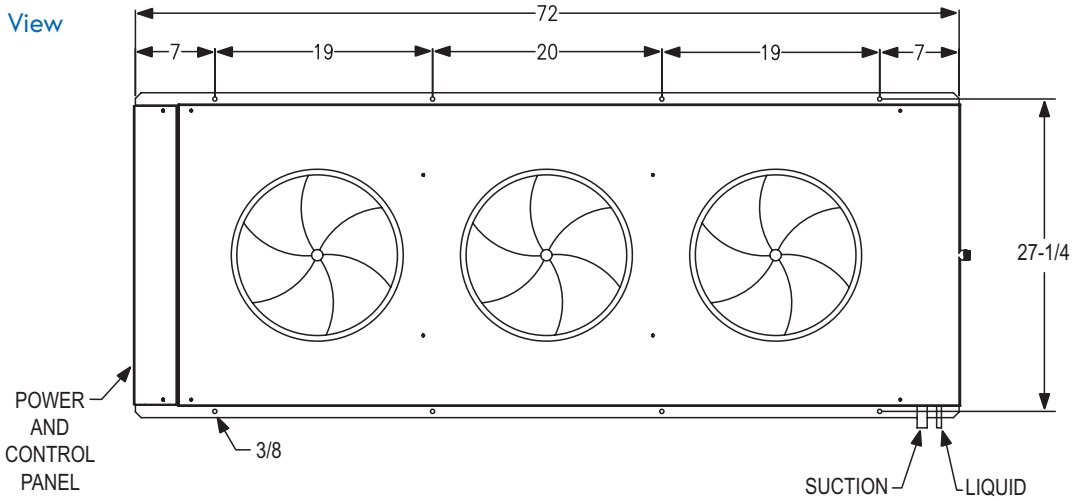
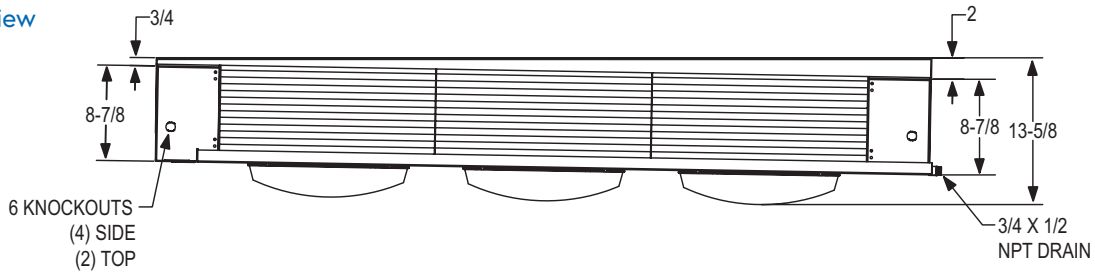


Figure 3 - Three Fan

Bottom View



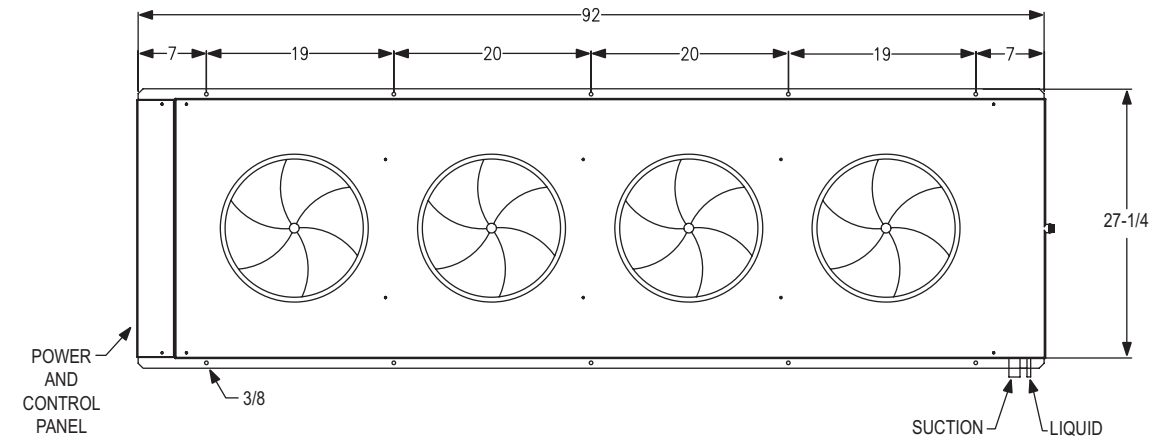
Side View



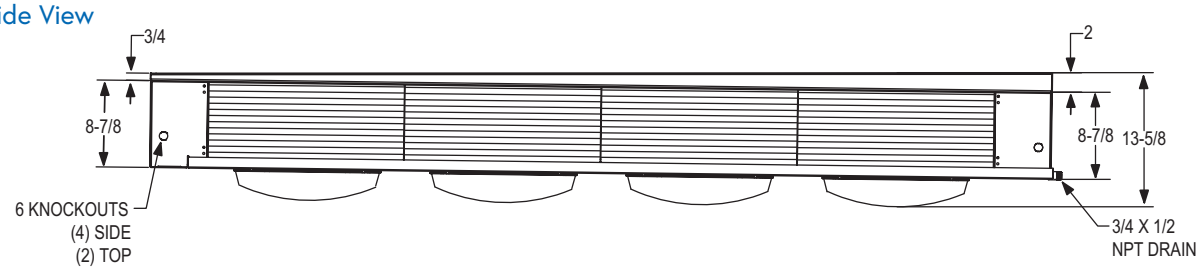
Physical Dimensions

Figure 4 - Four Fan

Bottom View



Side View



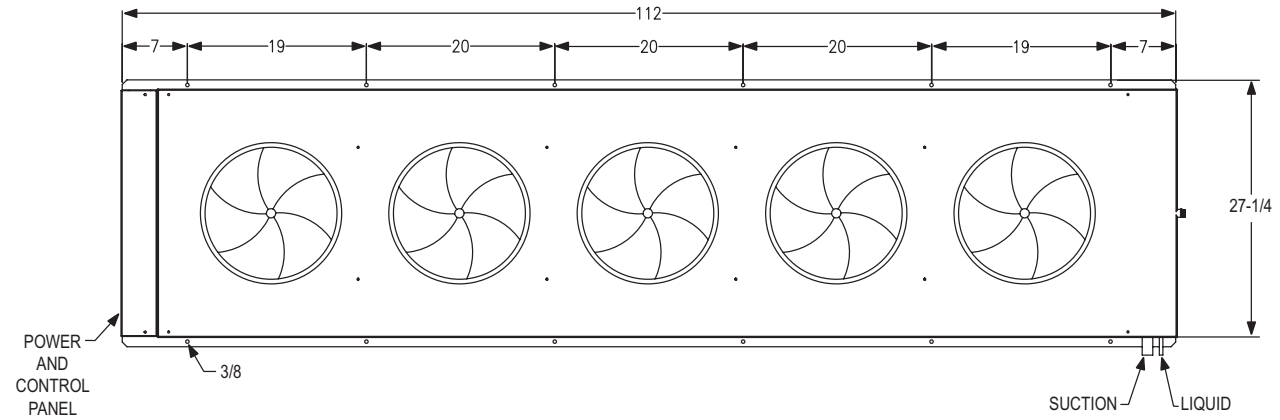


Kramer's Low Velocity Center Mount Unit Cooler can be used in combination with Next-Gen MiniCon Condensing Units to provide complete refrigeration solutions for small to medium walk-ins

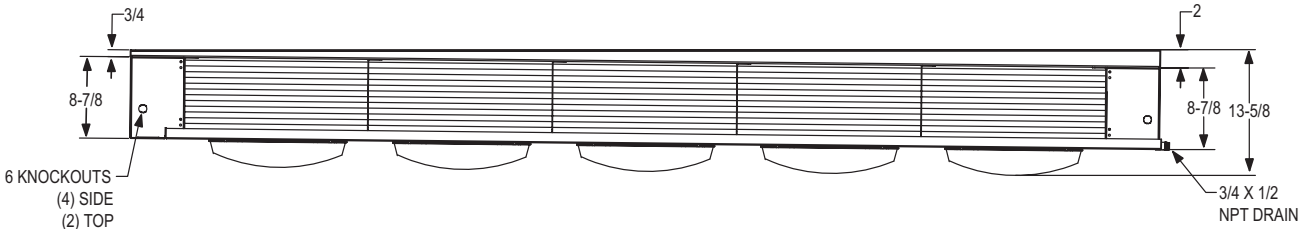
Physical Dimensions

Figure 5 - Five Fan

Bottom View



Side View



Due to continuing product development, specifications are subject to change without notice.

KRAMER

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