Russell

LOW VELOCITY CENTER MOUNT UNIT COOLER

Walk-Ins: Small to Medium Cooler Applications

Air Defrost

4,300 to 32,500 BTUH

Electric Defrost

4,300 to 32,500 BTUH

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°F 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.

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.

FANS & FAN GUARDS

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.

AIR DEFROST

Air Defrost models (RV6A) 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.

ELECTRICAL

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

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 (Russproof, Heresite, Bronz-Glow, or Electrofin®)
- Heat Exchanger (loose)

MODEL NOMENCLATURE

R	V	6	A	043	A	D	A
Brand	Style	Fins per Inch (FPI)	Defrost Type	BTUH in Thousands	Unit Voltage^	Motor Type	Vintage
R = Russell	Low Velocity Center Mount	6 FPI	A = Air E = Electric	XXX	A = 115/1/60 D = 208-230/1/60	D = Dual Speed EC	A

^ 50 Hz available. Contact Factory for additional information.

[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.)

APPLICATION RATING & ELECTRICAL DATA // ALL MODELS

AIR DEFROST MODELS // 6 FPI

Model No.	BTUH Capacity @ 25°F SST & 10°F TD		CFM	No. of Fans	Total Fan AMPS EC Motors		115V/208-230V	115V/208-230V
	R404A	R407A/R448/ R449A/B^			115V	208-230V	MCA	MOPD
RV6A043*DA	4,300	5,100	654	1	0.8	0.5	15.0	20.0
RV6A053*DA	5,300	6,300	632	1	0.8	0.5	15.0	20.0
RV6A085*DA	8,500	10,100	1,308	2	1.6	1.0	15.0	20.0
RV6A106*DA	10,600	12,600	1,264	2	1.6	1.0	15.0	20.0
RV6A129*DA	12,900	15,300	1,962	3	2.4	1.5	15.0	20.0
RV6A158*DA	15,800	18,800	1,896	3	2.4	1.5	15.0	20.0
RV6A176*DA	17,600	20,800	2,616	4	3.2	2.0	15.0	20.0
RV6A218*DA	21,800	26,000	2,528	4	3.2	2.0	15.0	20.0
RV6A271*DA	27,100	32,500	3,160	5	4.0	2.5	15.0	20.0

ELECTRIC DEFROST MODELS // 6 FPI

Model No.	BTUH Capacity @ 25°F SST & 10°F TD		CFM	No. of Fans	208-230V/1					Heater Amps	Heater Watts
					Total Fan AMPS EC Motors†	Base Model		Econet Enabled			
	R404A	R407A/R448/ R449A/B^				MCA	MOPD	MCA	MOPD		
RV6E043DDA	4,300	5,100	654	1	0.5	15.0	20.0	15.0	20.0	3.2	750
RV6E053DDA	5,300	6,300	632	1	0.5	15.0	20.0	15.0	20.0	3.2	750
RV6E085DDA	8,500	10,100	1,308	2	1.0	15.0	20.0	15.0	20.0	6.5	1,500
RV6E106DDA	10,600	12,600	1,264	2	1.0	15.0	20.0	15.0	20.0	6.5	1,500
RV6E129DDA	12,900	15,300	1,962	3	1.5	15.0	20.0	15.0	20.0	9.8	2,250
RV6E158DDA	15,800	18,800	1,896	3	1.5	15.0	20.0	15.0	20.0	9.8	2,250
RV6E176DDA	17,600	20,800	2,616	4	2.0	15.0	20.0	19.2	20.0	13.0	3,000
RV6E218DDA	21,800	26,000	2,528	4	2.0	15.0	20.0	19.2	20.0	13.0	3,000
RV6E271DDA	27,100	32,500	3,160	5	2.5	15.0	20.0	16.3	20.0	16.3	3,750

Consult Factory for 50Hz Operation

* Each asterisk represents a variable character based on voltage ordered. ^ 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.

DISTRIBUTOR NOZZLES & EXPANSION VALVES

AIR DEFROST MODELS // 6 FPI

	Model No.	Nozzle @ Liq. Temp.		TXV^ @ Liq. Temp.		EEV @ Liq. Temp.		No. of Circuits
		50°F	100°F	50°F	100°F	50°F	100°F	
R404A	RV6A043*DA	1/6,TYPE L	1/2,TYPE L	SBFSE-AA-C	SBFSE-AA-C	SER-AA	SER-A	2
	RV6A053*DA	1/6,TYPE L	1/2,TYPE L	SBFSE-AA-C	SBFSE-AA-C	SER-AA	SER-B	2
	RV6A085*DA	1/4,TYPE L	3/4,TYPE L	SBFSE-A-C	SBFSE-A-C	SER-A	SER-A	2
	RV6A106*DA	1/3,TYPE L	1,TYPE L	SBFSE-A-C	SBFSE-A-C	SER-A	SER-B	4
	RV6A129*DA	1/2,TYPE L	1-1/2,TYPE L	SBFSE-A-C	SBFSE-B-C	SER-B	SER-B	6
	RV6A158*DA	1/2,TYPE L	1-1/2,TYPE L	SBFSE-A-C	SBFSE-B-C	SER-B	SER-B	6
	RV6A176*DA	3/4,TYPE L	2,TYPE L	SBFSE-A-C	SBFSE-B-C	SER-B	SER-C	6
	RV6A218*DA	3/4,TYPE L	2,TYPE L	SBFSE-B-C	SBFSE-C-C	SER-B	SER-C	8
	RV6A271*DA	1,TYPE G	2-1/2,TYPE L	SBFSE-B-C	SBFSE-C-C	SER-C	SER-C	12
R407A/R448A/R449A/B†	RV6A043*DA	1/6,TYPE L	1/2,TYPE L	SBFDE-AAA-C	SBFDE-AA-C	SER-AA	SER-AA	2
	RV6A053*DA	1/4,TYPE L	1/2,TYPE L	SBFDE-AA-C	SBFDE-AA-C	SER-AA	SER-A	2
	RV6A085*DA	1/3,TYPE L	3/4,TYPE L	SBFDE-AA-C	SBFDE-A-C	SER-A	SER-A	2
	RV6A106*DA	1/2,TYPE L	1,TYPE L	SBFDE-A-C	SBFDE-A-C	SER-A	SER-B	4
	RV6A129*DA	1/2,TYPE L	1-1/2,TYPE L	SBFDE-A-C	SBFDE-A-C	SER-A	SER-B	6
	RV6A158*DA	3/4,TYPE L	1-1/2,TYPE L	SBFDE-A-C	SBFDE-B-C	SER-B	SER-B	6
	RV6A176*DA	3/4,TYPE L	2,TYPE L	SBFDE-A-C	SBFDE-B-C	SER-B	SER-B	6
	RV6A218*DA	1,TYPE L	2,TYPE L	SBFDE-B-C	SBFDE-B-C	SER-B	SER-C	8
	RV6A271*DA	1,TYPE G	2-1/2,TYPE G	SBFDE-B-C	SBFDE-C-C	SER-C	SER-C	12

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

Distributor lines are 3/16" diameter and 18" long.

Distributor connection size is 1/2" for Air and Electric Defrost models with "L" nozzle and 7/8" for models with "G" nozzle.

^ 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.

DISTRIBUTOR NOZZLES & EXPANSION VALVES

ELECTRIC DEFROST MODELS // 6 FPI

Model No.		Nozzle @ Liq. Temp.		TXV^ @ Liq. Temp.		EEV @ Liq. Temp.		No. of Circuits
		50°F	100°F	50°F	100°F	50°F	100°F	
R404A	RV6E053DDA	1/6,TYPE L	1/2,TYPE L	SBFSE-AA-C	SBFSE-AA-C	SER-AA	SER-A	2
	RV6E053DDA	1/6,TYPE L	1/2,TYPE L	SBFSE-AA-C	SBFSE-AA-C	SER-AA	SER-B	2
	RV6E085DDA	1/4,TYPE L	3/4,TYPE L	SBFSE-A-C	SBFSE-A-C	SER-A	SER-A	2
	RV6E106DDA	1/3,TYPE L	1,TYPE L	SBFSE-A-C	SBFSE-A-C	SER-A	SER-B	4
	RV6E129DDA	1/2,TYPE L	1-1/2,TYPE L	SBFSE-A-C	SBFSE-B-C	SER-B	SER-B	6
	RV6E158DDA	1/2,TYPE L	1-1/2,TYPE L	SBFSE-A-C	SBFSE-B-C	SER-B	SER-B	6
	RV6E176DDA	3/4,TYPE L	2,TYPE L	SBFSE-A-C	SBFSE-B-C	SER-B	SER-C	6
	RV6E218DDA	3/4,TYPE L	2,TYPE L	SBFSE-B-C	SBFSE-C-C	SER-B	SER-C	8
	RV6E271DDA	1,TYPE G	2-1/2,TYPE L	SBFSE-B-C	SBFSE-C-C	SER-C	SER-C	12
407A/R448A/R449A/B†	RV6E053DDA	1/6,TYPE L	1/2,TYPE L	SBFDE-AAA-C	SBFDE-AA-C	SER-AA	SER-AA	2
	RV6E053DDA	1/4,TYPE L	1/2,TYPE L	SBFDE-AA-C	SBFDE-AA-C	SER-AA	SER-A	2
	RV6E085DDA	1/3,TYPE L	3/4,TYPE L	SBFDE-AA-C	SBFDE-A-C	SER-A	SER-A	2
	RV6E106DDA	1/2,TYPE L	1,TYPE L	SBFDE-A-C	SBFDE-A-C	SER-A	SER-B	4
	RV6E129DDA	1/2,TYPE L	1-1/2,TYPE L	SBFDE-A-C	SBFDE-A-C	SER-A	SER-B	6
	RV6E158DDA	3/4,TYPE L	1-1/2,TYPE L	SBFDE-A-C	SBFDE-B-C	SER-B	SER-B	6
	RV6E176DDA	3/4,TYPE L	2,TYPE L	SBFDE-A-C	SBFDE-B-C	SER-B	SER-B	6
	RV6E218DDA	1,TYPE L	2,TYPE L	SBFDE-B-C	SBFDE-B-C	SER-B	SER-C	8
	RV6E271DDA	1,TYPE G	2-1/2,TYPE G	SBFDE-B-C	SBFDE-C-C	SER-C	SER-C	12

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

Distributor lines are 3/16" diameter and 18" long.

Distributor connection size is 1/2" for Air and Electric Defrost models with "L" nozzle and 7/8" for models with "G" nozzle.

^ 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 // ALL MODELS

AIR DEFROST MODELS // 6 FPI

Model No.	TXV Type	Refrigerant Connections		No. of Hanger Slot Locations	Dimensions (In.)				Approx. Weight (Lbs.)	
		Liquid Line	Suction		L	W	H	Figure	Net	Ship
RV6A043*DA	External	3/8	5/8	2	32	28-3/8	13-3/4	1	60	195
RV6A053*DA	External	3/8	5/8	2	32	28-3/8	13-3/4	1	60	195
RV6A085*DA	External	3/8	5/8	3	52	28-3/8	13-3/4	2	80	215
RV6A106*DA	External	3/8	5/8	3	52	28-3/8	13-3/4	2	80	215
RV6A129*DA	External	3/8	7/8	4	72	28-3/8	13-3/4	3	100	235
RV6A158*DA	External	3/8	7/8	4	72	28-3/8	13-3/4	3	100	235
RV6A176*DA	External	3/8	7/8	5	92	28-3/8	13-3/4	4	125	285
RV6A218*DA	External	3/8	7/8	5	92	28-3/8	13-3/4	4	125	285
RV6A271*DA	External	3/8	1-1/8	6	112	28-3/8	13-3/4	5	155	340

ELECTRIC DEFROST MODELS // 6 FPI

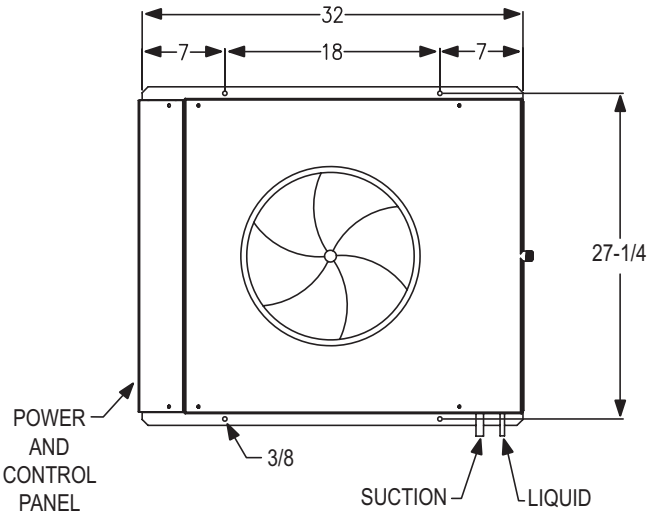
Model No.	TXV Type	Refrigerant Connections		No. of Hanger Slot Locations	Dimensions (In.)				Approx. Weight (Lbs.)	
		Liquid Line	Suction		L	W	H	Figure	Net	Ship
RV6E043*DA	External	3/8	5/8	2	32	28-3/8	13-3/4	1	60	195
RV6E053*DA	External	3/8	5/8	2	32	28-3/8	13-3/4	1	60	195
RV6E085*DA	External	3/8	5/8	3	52	28-3/8	13-3/4	2	80	215
RV6E106*DA	External	3/8	5/8	3	52	28-3/8	13-3/4	2	80	215
RV6E129*DA	External	3/8	7/8	4	72	28-3/8	13-3/4	3	100	235
RV6E158*DA	External	3/8	7/8	4	72	28-3/8	13-3/4	3	100	235
RV6E176*DA	External	3/8	7/8	5	92	28-3/8	13-3/4	4	125	285
RV6E218*DA	External	3/8	7/8	5	92	28-3/8	13-3/4	4	125	285
RV6E271*DA	External	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 ordered. See nomenclature page for details.
For units with mounted TXV components, see nozzle/TXV table for distributor connection size when TXV is field supplied

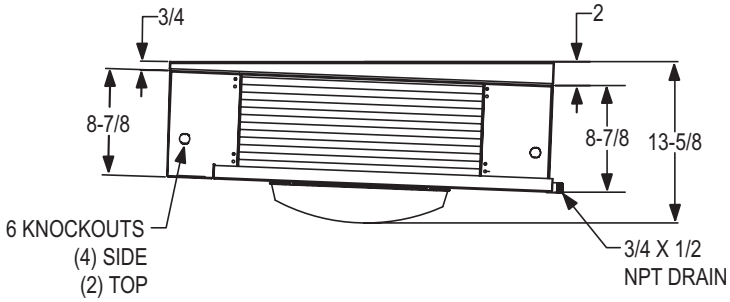
DIMENSIONAL DRAWINGS

Figure 1: Single Fan

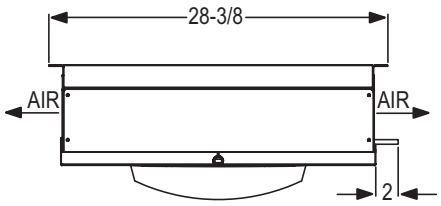
Bottom View



Side View



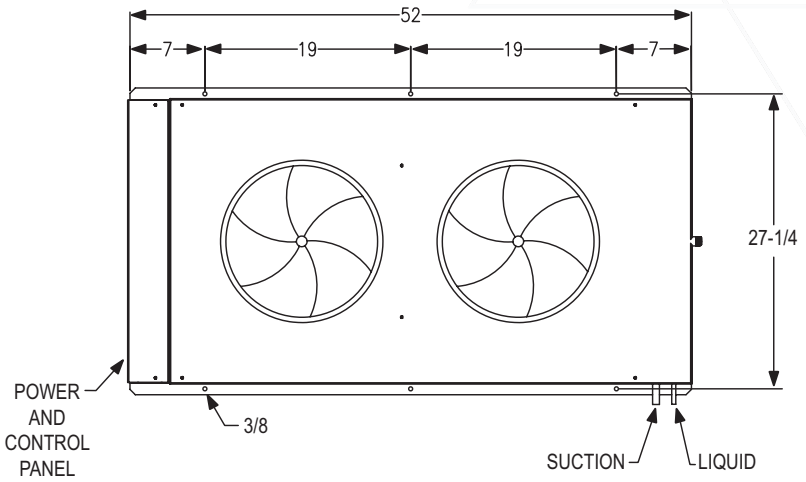
End View



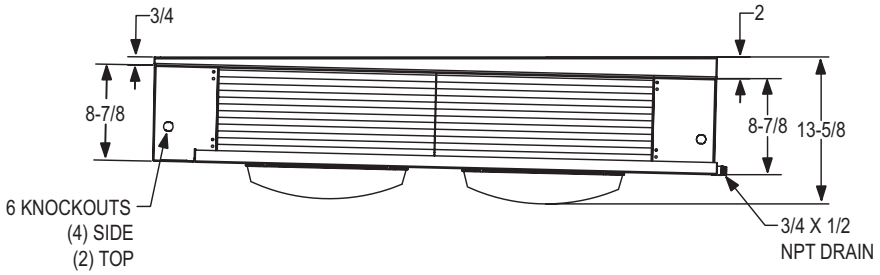
DIMENSIONAL DRAWINGS

Figure 2: Two Fan

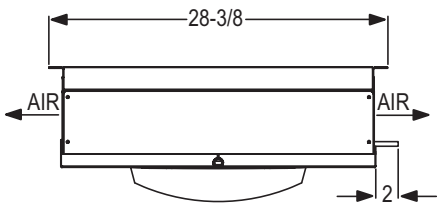
Bottom View



Side View



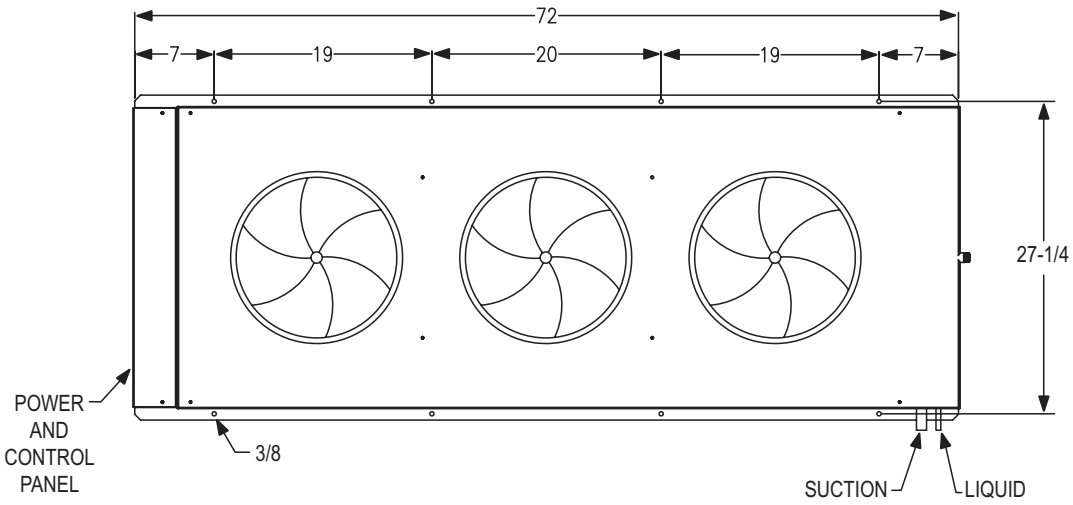
End View



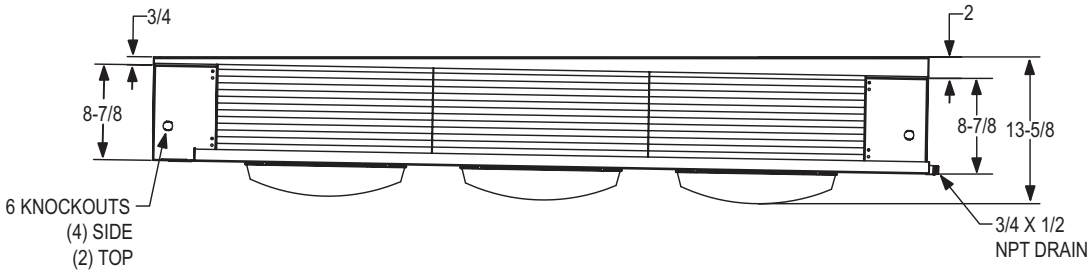
DIMENSIONAL DRAWINGS

Figure 3: Three Fan

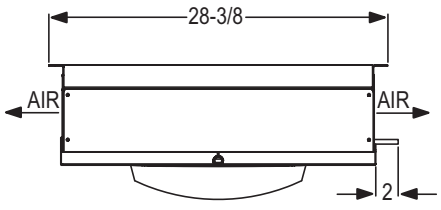
Bottom View



Side View



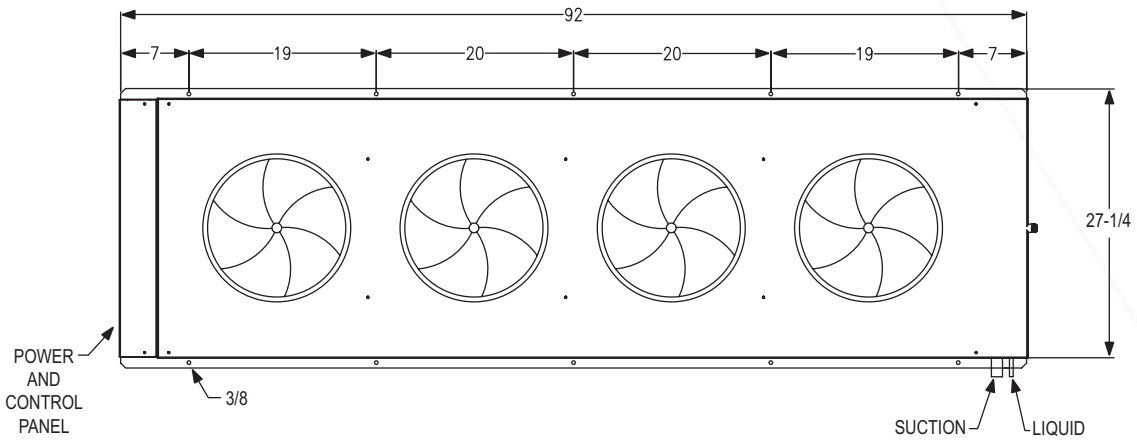
End View



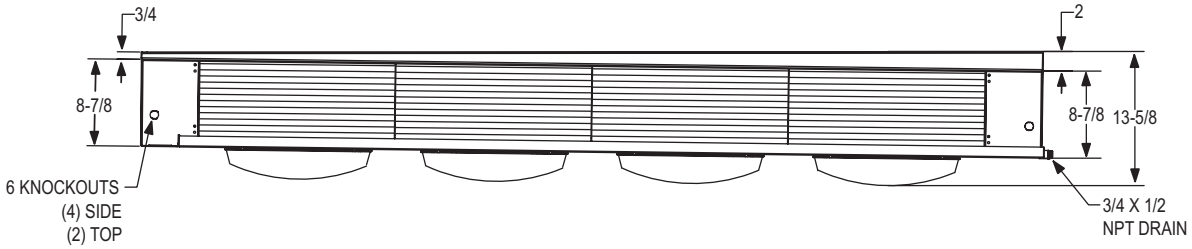
DIMENSIONAL DRAWINGS

Figure 4: Four Fan

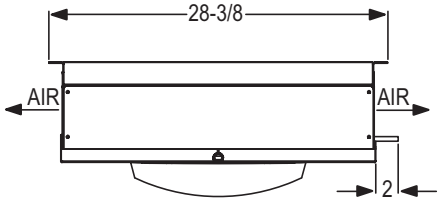
Bottom View



Side View



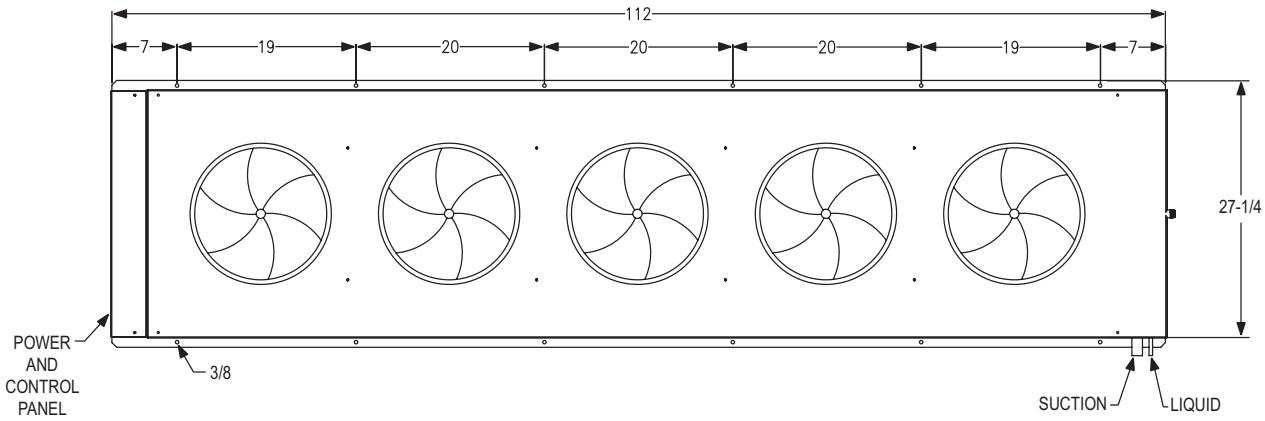
End View



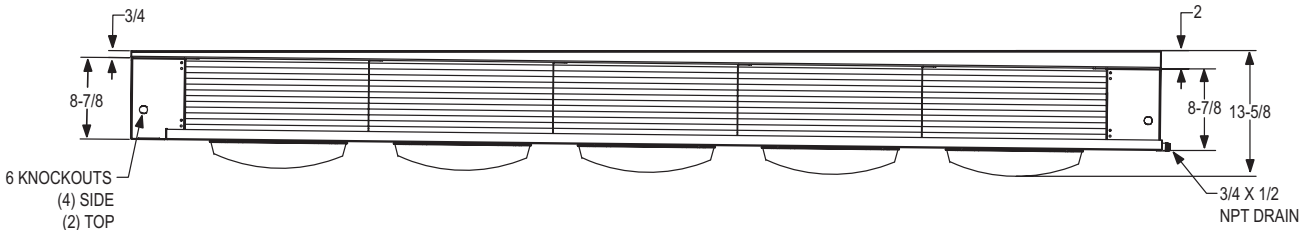
DIMENSIONAL DRAWINGS

Figure 5: Five Fan

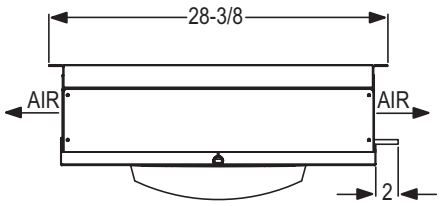
Bottom View



Side View



End View



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.

Published application ratings are a guideline for proper equipment selection. They account for true operating conditions experienced by equipment.

DEPARTMENT OF ENERGY ANNUAL WALK-IN ENERGY FACTOR (AWEF) RATINGS

COOLER MODELS - AIR DEFROST[1]

Model No.	Defrost Type	FPI	AWEF
RV6A043*DA	Air Defrost	6	9.00
RV6A053*DA	Air Defrost	6	9.00
RV6A085*DA	Air Defrost	6	9.00
RV6A106*DA	Air Defrost	6	9.00
RV6A129*DA	Air Defrost	6	9.00
RV6A158*DA	Air Defrost	6	9.00
RV6A176*DA	Air Defrost	6	9.00
RV6A218*DA	Air Defrost	6	9.00
RV6A271*DA	Air Defrost	6	9.00

COOLER MODELS - ELECTRIC DEFROST[1]

Model No.	Defrost Type	FPI	AWEF
RV6E043DDA	Electric Defrost	6	9.00
RV6E053DDA	Electric Defrost	6	9.00
RV6E085DDA	Electric Defrost	6	9.00
RV6E106DDA	Electric Defrost	6	9.00
RV6E129DDA	Electric Defrost	6	9.00
RV6E158DDA	Electric Defrost	6	9.00
RV6E176DDA	Electric Defrost	6	9.00
RV6E218DDA	Electric Defrost	6	9.00
RV6E271DDA	Electric Defrost	6	9.00

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

[1] If the models has a numerical value in the AWEF table, the following statement applies:

"The Refrigeration system is designed and certified for us in walk-in cooler applications."

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.

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