



A2L  
**LOW VELOCITY  
CENTER MOUNT  
UNIT COOLER**



**Walk-Ins: Small to Medium  
Cooler Applications**

**Air Defrost**

**5,300 to 33,800 BTUH**

**Electric Defrost**

**5,300 to 33,800 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 5,300 to 33,800 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. A 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.

### REFRIGERANTS

Low Velocity Unit Coolers are optimized for multiple A2L refrigerants including R454A, R454C and R455A. Please specify the refrigerant requirements when ordering. A separate compartment is provided for all refrigerant connections which allows for internal mounting of expansion valves.

## AIR DEFROST

Air Defrost models are designed for use in coolers down to 35°F. All components are factory wired to convenient screw-type terminal strips.

## ELECTRIC DEFROST

Electric Defrost models are designed for use in coolers down to 28°F.

## ELECTRICAL

Available for 115V (Air Defrost) and 208-230V. All of the components are factory wired to terminal strips and are UL and cUL listed.

## OPTIONAL FEATURES

- EcoNet® Enabled Controller<sup>1</sup> (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)
- Solenoid Shut Off Valve (SSOV) in place  
Liquid Line Solenoid Available Loose for field installation.
- Insulated Drain Pan
- Painted Cabinet (White or Black)
- Stainless Steel Cabinet
- Coated Coil (Russproof, Heresite, Bronz-Glow, or Electrofin®)

## MODEL NOMENCLATURE

| <b>K</b>   | <b>A</b>          | <b>V</b>                  | <b>6</b>            | <b>A</b>                | <b>053</b>        | <b>A</b>                         | <b>D</b>             | <b>A</b> |
|------------|-------------------|---------------------------|---------------------|-------------------------|-------------------|----------------------------------|----------------------|----------|
| Brand      | Refrigerant Class | Style                     | Fins per Inch (FPI) | Defrost Type            | BTUH in Thousands | Unit Voltage <sup>1</sup>        | Motor Type           | Vintage  |
| K = Kramer | A2L               | Low Velocity Center Mount | 6 FPI               | A = Air<br>E = Electric | XXX               | A = 115/1/60<br>D = 208-230/1/60 | D = Dual Speed<br>EC | A        |

<sup>1</sup>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.) EcoNet approved refrigerants are: RR454A, R454C, R455A.

## APPLICATION RATING & ELECTRICAL DATA

### AIR DEFROST MODELS

| Model No. |              | BTUH Capacity @<br>25°F S.T. & 10°F TD | CFM   | No. of<br>Fans | 115V/1            |      |      | 208-230V/1        |      |      |
|-----------|--------------|----------------------------------------|-------|----------------|-------------------|------|------|-------------------|------|------|
|           |              | R454A/R454C/<br>R454A                  |       |                | Total Fan<br>AMPS | MCA  | MOPD | Total Fan<br>AMPS | MCA  | MOPD |
| 6 FPI     | KAV6A053*DA  | 5,300                                  | 654   | 1              | 0.8               | 15.0 | 20   | 0.5               | 15.0 | 20   |
|           | KAV6A066*DA  | 6,600                                  | 632   | 1              | 0.8               | 15.0 | 20   | 0.5               | 15.0 | 20   |
|           | KAV6A105*DA  | 10,500                                 | 1,308 | 2              | 1.6               | 15.0 | 20   | 1.0               | 15.0 | 20   |
|           | KAV6A 131*DA | 13,100                                 | 1,264 | 2              | 1.6               | 15.0 | 20   | 1.0               | 15.0 | 20   |
|           | KAV6A159*DA  | 15,900                                 | 1,962 | 3              | 2.4               | 15.0 | 20   | 1.5               | 15.0 | 20   |
|           | KAV6A196*DA  | 19,600                                 | 1,896 | 3              | 2.4               | 15.0 | 20   | 1.5               | 15.0 | 20   |
|           | KAV6A216*DA  | 21,600                                 | 2,616 | 4              | 3.2               | 15.0 | 20   | 2.0               | 15.0 | 20   |
|           | KAV6A270*DA  | 27,000                                 | 2,528 | 4              | 3.2               | 15.0 | 20   | 2.0               | 15.0 | 20   |
|           | KAV6A338*DA  | 33,800                                 | 3,160 | 5              | 4.0               | 15.0 | 20   | 2.5               | 15.0 | 20   |

\*Asterisk represents a variable character based on voltage ordered. See nomenclature page for details.  
Dual Speed EC Motors include thermal overload protection.

### ELECTRIC DEFROST MODELS

| Model No. |             | BTUH Capacity @<br>25°F S.T. & 10°F TD | CFM   | No. of<br>Fans | 208-230V/1        |            |      |                |      |                |                 |
|-----------|-------------|----------------------------------------|-------|----------------|-------------------|------------|------|----------------|------|----------------|-----------------|
|           |             | R454A/R454C/<br>R454A                  |       |                | Total Fan<br>AMPS | Base Model |      | Econet Enabled |      | Heater<br>Amps | Heater<br>Watts |
|           |             |                                        |       |                |                   | MCA        | MOPD | MCA            | MOPD |                |                 |
| 6 FPI     | KAV6E053DDA | 5,300                                  | 654   | 1              | 0.5               | 15.0       | 20   | 15.0           | 20   | 3.3            | 750             |
|           | KAV6E066DDA | 6,600                                  | 632   | 1              | 0.5               | 15.0       | 20   | 15.0           | 20   | 3.3            | 750             |
|           | KAV6E105DDA | 10,500                                 | 1,308 | 2              | 1.0               | 15.0       | 20   | 15.0           | 20   | 6.5            | 1,500           |
|           | KAV6E131DDA | 13,100                                 | 1,264 | 2              | 1.0               | 15.0       | 20   | 15.0           | 20   | 6.5            | 1,500           |
|           | KAV6E159DDA | 15,900                                 | 1,962 | 3              | 1.5               | 15.0       | 20   | 15.0           | 20   | 9.8            | 2,250           |
|           | KAV6E196DDA | 19,600                                 | 1,896 | 3              | 1.5               | 15.0       | 20   | 15.0           | 20   | 9.8            | 2,250           |
|           | KAV6E216DDA | 21,600                                 | 2,616 | 4              | 2.0               | 15.0       | 20   | 18.3           | 20   | 13.0           | 3,000           |
|           | KAV6E270DDA | 27,000                                 | 2,528 | 4              | 2.0               | 15.0       | 20   | 18.3           | 20   | 13.0           | 3,000           |
|           | KAV6E338DDA | 33,800                                 | 3,160 | 5              | 2.5               | 15.0       | 20   | 22.4           | 25   | 16.3           | 3,750           |

Dual Speed EC Motors include thermal overload protection  
208-230 ratings include 2 amp for controls on Econet Enabled units.

## DISTRIBUTOR NOZZLES &amp; EXPANSION VALVES

## AIR DEFROST MODELS

| Model No.     |              | Part Numbers        |              |                  |            |                  |        | No. of<br>Circuits |
|---------------|--------------|---------------------|--------------|------------------|------------|------------------|--------|--------------------|
|               |              | Nozzle @ Liq. Temp. |              | TXV @ Liq. Temp. |            | EEV @ Liq. Temp. |        |                    |
|               |              | 50°F                | 100°F        | 50°F             | 100°F      | 50°F             | 100°F  |                    |
| 6 FPI - R454A | KAV6A053*DA  | 1/6,TYPE L          | 1/2,TYPE L   | SBFTE-AAA-C      | SBFTE-AA-C | SER-AA           | SER-AA | 2                  |
|               | KAV6A066*DA  | 1/4,TYPE L          | 1/2,TYPE L   | SBFTE-AA-C       | SBFTE-AA-C | SER-AA           | SER-AA | 2                  |
|               | KAV6A105*DA  | 1/3,TYPE L          | 1,TYPE L     | SBFTE-AA-C       | SBFTE-A-C  | SER-A            | SER-A  | 2                  |
|               | KAV6A 131*DA | 1/2,TYPE L          | 1,TYPE L     | SBFTE-A-C        | SBFTE-A-C  | SER-A            | SER-A  | 4                  |
|               | KAV6A159*DA  | 1/2,TYPE L          | 1-1/2,TYPE L | SBFTE-A-C        | SBFTE-A-C  | SER-A            | SER-B  | 4                  |
|               | KAV6A196*DA  | 3/4,TYPE L          | 1-1/2,TYPE L | SBFTE-A-C        | SBFTE-B-C  | SER-B            | SER-B  | 4                  |
|               | KAV6A216*DA  | 3/4,TYPE L          | 2,TYPE L     | SBFTE-A-C        | SBFTE-B-C  | SER-B            | SER-B  | 6                  |
|               | KAV6A270*DA  | 1,TYPE L            | 2,TYPE L     | SBFTE-B-C        | SBFTE-B-C  | SER-B            | SER-B  | 8                  |
|               | KAV6A338*DA  | 1,TYPE L            | 3,TYPE L     | SBFTE-B-C        | SBFTE-C-C  | SER-B            | SER-C  | 8                  |
| 6 FPI - R454C | KAV6A053*DA  | 1/6,TYPE L          | 1/2,TYPE L   | SBFVE-AA-C       | SBFVE-AA-C | SER-AA           | SER-A  | 2                  |
|               | KAV6A066*DA  | 1/4,TYPE L          | 3/4,TYPE L   | SBFVE-AA-C       | SBFVE-AA-C | SER-AA           | SER-A  | 2                  |
|               | KAV6A105*DA  | 1/3,TYPE L          | 1,TYPE L     | SBFVE-A-C        | SBFVE-A-C  | SER-A            | SER-A  | 2                  |
|               | KAV6A 131*DA | 1/2,TYPE L          | 1-1/2,TYPE L | SBFVE-A-C        | SBFVE-A-C  | SER-A            | SER-B  | 4                  |
|               | KAV6A159*DA  | 1/2,TYPE L          | 1-1/2,TYPE L | SBFVE-A-C        | SBFVE-B-C  | SER-B            | SER-B  | 4                  |
|               | KAV6A196*DA  | 3/4,TYPE L          | 2,TYPE L     | SBFVE-A-C        | SBFVE-B-C  | SER-B            | SER-B  | 4                  |
|               | KAV6A216*DA  | 3/4,TYPE L          | 2,TYPE L     | SBFVE-B-C        | SBFVE-B-C  | SER-B            | SER-C  | 6                  |
|               | KAV6A270*DA  | 1,TYPE L            | 3,TYPE L     | SBFVE-B-C        | SBFVE-B-C  | SER-B            | SER-C  | 8                  |
|               | KAV6A338*DA  | 1-1/2,TYPE L        | 3,TYPE L     | SBFVE-B-C        | SBFVE-C-C  | SER-C            | SER-C  | 8                  |
| 6 FPI - R455A | KAV6A053*DA  | 1/6,TYPE L          | 1/2,TYPE L   | SBFVE-AA-C       | SBFVE-AA-C | SER-AA           | SER-A  | 2                  |
|               | KAV6A066*DA  | 1/4,TYPE L          | 3/4,TYPE L   | SBFVE-AA-C       | SBFVE-AA-C | SER-AA           | SER-A  | 2                  |
|               | KAV6A105*DA  | 1/3,TYPE L          | 1,TYPE L     | SBFVE-A-C        | SBFVE-A-C  | SER-A            | SER-A  | 2                  |
|               | KAV6A 131*DA | 1/2,TYPE L          | 1-1/2,TYPE L | SBFVE-A-C        | SBFVE-A-C  | SER-A            | SER-B  | 4                  |
|               | KAV6A159*DA  | 1/2,TYPE L          | 1-1/2,TYPE L | SBFVE-A-C        | SBFVE-B-C  | SER-B            | SER-B  | 4                  |
|               | KAV6A196*DA  | 3/4,TYPE L          | 2,TYPE L     | SBFVE-A-C        | SBFVE-B-C  | SER-B            | SER-B  | 4                  |
|               | KAV6A216*DA  | 3/4,TYPE L          | 2,TYPE L     | SBFVE-B-C        | SBFVE-B-C  | SER-B            | SER-C  | 6                  |
|               | KAV6A270*DA  | 1,TYPE L            | 3,TYPE L     | SBFVE-B-C        | SBFVE-B-C  | SER-B            | SER-C  | 8                  |
|               | KAV6A338*DA  | 1-1/2,TYPE L        | 3,TYPE L     | SBFVE-B-C        | SBFVE-C-C  | SER-C            | SER-C  | 8                  |

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

\*Asterisk represents a variable character based on voltage order. See nomenclature page for details.

Expansion valve selections based on +25° Suction Temp and 8°F to 12°F evaporator TD. Contact factory for operating conditions outside this range.

SBFTE Expansion valves are compatible with R454A refrigerant. SBFVE Expansion valves are compatible with R454C and R455A refrigerants.

For other valves, follow manufacturers selection guidelines.

Base models (with no factory-mounted components) include nozzles sized for 100°F liquid, shipped loose.

# LOOSE COMPONENTS REQUIRED FOR A2L ISOLATION CONTROLS

A<sub>MIN</sub> (MINIMUM ALLOWABLE ROOM SIZE) VALUES // AIR DEFROST MODELS

| Model No.     |              | A <sub>min</sub> Values (Ft <sup>2</sup> ) |                   |                   |                   |                   | Loose SSOV Isolation Valve<br>@ Liquid Temp |           |           | Loose CSOV<br>Isolation CV |             |
|---------------|--------------|--------------------------------------------|-------------------|-------------------|-------------------|-------------------|---------------------------------------------|-----------|-----------|----------------------------|-------------|
|               |              | 10 Ft<br>Line Run                          | 20 Ft<br>Line Run | 30 Ft<br>Line Run | 40 Ft<br>Line Run | 50 Ft<br>Line Run | Size                                        | 50°F      | 100°F     | Size                       | Description |
| 6 FPI - R454C | KAV6A053*DA  | 21                                         | 27                | 32                | 38                | 44                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6A066*DA  | 18                                         | 24                | 30                | 35                | 41                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6A105*DA  | 28                                         | 34                | 40                | 46                | 52                | 3/8                                         | SSOV3S130 | SSOV3S130 | 7/8                        | CSOV-7S     |
|               | KAV6A 131*DA | 33                                         | 39                | 45                | 51                | 57                | 3/8                                         | SSOV3S130 | SSOV3S130 | 7/8                        | CSOV-7S     |
|               | KAV6A159*DA  | 36                                         | 42                | 48                | 54                | 60                | 3/8                                         | SSOV3S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6A196*DA  | 42                                         | 48                | 54                | 60                | 66                | 3/8                                         | SSOV6S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6A216*DA  | 42                                         | 48                | 54                | 60                | 66                | 3/8                                         | SSOV6S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6A270*DA  | 57                                         | 68                | 80                | 91                | 103               | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |
|               | KAV6A338*DA  | 67                                         | 79                | 90                | 102               | 113               | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |
| 6 FPI - R455A | KAV6A053*DA  | 20                                         | 26                | 31                | 37                | 42                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6A066*DA  | 18                                         | 23                | 29                | 34                | 40                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6A105*DA  | 27                                         | 33                | 38                | 44                | 50                | 3/8                                         | SSOV3S130 | SSOV3S130 | 7/8                        | CSOV-7S     |
|               | KAV6A 131*DA | 31                                         | 37                | 43                | 49                | 55                | 3/8                                         | SSOV3S130 | SSOV3S130 | 7/8                        | CSOV-7S     |
|               | KAV6A159*DA  | 34                                         | 40                | 46                | 52                | 58                | 3/8                                         | SSOV3S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6A196*DA  | 41                                         | 47                | 53                | 58                | 64                | 3/8                                         | SSOV6S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6A216*DA  | 41                                         | 47                | 52                | 58                | 64                | 3/8                                         | SSOV6S130 | SSOV6S140 | 7/8                        | CSOV-7S     |
|               | KAV6A270*DA  | 55                                         | 66                | 77                | 88                | 100               | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |
|               | KAV6A338*DA  | 65                                         | 76                | 87                | 98                | 110               | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |
| 6 FPI - R454A | KAV6A053*DA  | 18                                         | 23                | 28                | 33                | 39                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6A066*DA  | 16                                         | 21                | 26                | 31                | 36                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6A105*DA  | 24                                         | 30                | 35                | 40                | 46                | 3/8                                         | SSOV3S130 | SSOV3S130 | 7/8                        | CSOV-7S     |
|               | KAV6A 131*DA | 29                                         | 34                | 39                | 45                | 50                | 3/8                                         | SSOV3S130 | SSOV3S130 | 7/8                        | CSOV-7S     |
|               | KAV6A159*DA  | 31                                         | 37                | 42                | 47                | 53                | 3/8                                         | SSOV3S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6A196*DA  | 37                                         | 43                | 48                | 53                | 59                | 3/8                                         | SSOV6S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6A216*DA  | 37                                         | 43                | 48                | 53                | 58                | 3/8                                         | SSOV6S130 | SSOV6S140 | 7/8                        | CSOV-7S     |
|               | KAV6A270*DA  | 50                                         | 60                | 70                | 81                | 91                | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |
|               | KAV6A338*DA  | 59                                         | 69                | 80                | 90                | 100               | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |

\*Asterisk represents a variable character based on voltage order. See nomenclature page for details.

Solenoid Shut off valves (SSOV) operate as double duty isolation/liquid line solenoid valve and are required to ship loose and be installed in the field, outside the refrigerated space.

SSOV/CSOV (Check Shut off valves) Selection Criteria: Maximum 10 Foot Line Rise, 100 Foot Line Run, 1:1 Condensing Unit/Evaporator.

Contact applications for additional lengths or design considerations.

A<sub>min</sub> values calculated using operating conditions included in UL 60335-2-89 101.DVU.1.2 and standard connection sizes (liquid and suction).

A<sub>min</sub> values provided for 10 Ft, 20 Ft, 30 Ft, 40 Ft and 50 Ft line lengths. Contact applications for additional lengths or design considerations.

A<sub>min</sub> values intended to determine compliance with UL 2-89 and is NOT for charging calculations.

## DISTRIBUTOR NOZZLES &amp; EXPANSION VALVES SELECTIONS

## ELECTRIC DEFROST MODELS

| Model No.     |             | Part Numbers        |               |                  |            |                  |        | No. of<br>Circuits |
|---------------|-------------|---------------------|---------------|------------------|------------|------------------|--------|--------------------|
|               |             | Nozzle @ Liq. Temp. |               | TXV @ Liq. Temp. |            | EEV @ Liq. Temp. |        |                    |
|               |             | 50°F                | 100°F         | 50°F             | 100°F      | 50°F             | 100°F  |                    |
| 6 FPI - R454A | KAV6E053DDA | 1/6,TYPE L          | 1/2,TYPE L    | SBF-AAA-C        | SBFTE-AA-C | SER-AA           | SER-AA | 2                  |
|               | KAV6E066DDA | 1/4,TYPE L          | 1/2,TYPE L    | SBF-AA-C         | SBFTE-AA-C | SER-AA           | SER-AA | 2                  |
|               | KAV6E105DDA | 1/3,TYPE L          | 1,TYPE L      | SBF-AA-C         | SBFTE-A-C  | SER-A            | SER-A  | 2                  |
|               | KAV6E131DDA | 1/2,TYPE L          | 1,TYPE L      | SBF-A-C          | SBFTE-A-C  | SER-A            | SER-A  | 4                  |
|               | KAV6E159DDA | 1/2,TYPE L          | 1-1/2,TYPE L  | SBF-A-C          | SBFTE-A-C  | SER-A            | SER-B  | 4                  |
|               | KAV6E196DDA | 3/4,TYPE L          | 1-1/2,TYPE L  | SBF-A-C          | SBFTE-B-C  | SER-B            | SER-B  | 4                  |
|               | KAV6E216DDA | 3/4,TYPE L          | 2,TYPE L      | SBF-A-C          | SBFTE-B-C  | SER-B            | SER-B  | 6                  |
|               | KAV6E270DDA | 1,TYPE L            | 2,TYPE L      | SBF-B-C          | SBFTE-B-C  | SER-B            | SER-B  | 8                  |
|               | KAV6E338DDA | 1,TYPE L            | 3,TYPE L      | SBF-B-C          | SBFTE-C-C  | SER-B            | SER-C  | 8                  |
| 6 FPI - R454C | KAV6E053DDA | 1/6,TYPE L          | 1/2,TYPE L    | SBFVE-AA-C       | SBFVE-AA-C | SER-AA           | SER-A  | 2                  |
|               | KAV6E066DDA | 1/4,TYPE L          | 3/4,TYPE L    | SBFVE-AA-C       | SBFVE-AA-C | SER-AA           | SER-A  | 2                  |
|               | KAV6E105DDA | 1/3,TYPE L          | 1,TYPE L      | SBFVE-A-C        | SBFVE-A-C  | SER-A            | SER-A  | 2                  |
|               | KAV6E131DDA | 1/2,TYPE L          | 1-1/2,TYPE L  | SBFVE-A-C        | SBFVE-A-C  | SER-A            | SER-B  | 4                  |
|               | KAV6E159DDA | 1/2,TYPE L          | 1-1/2,TYPE L  | SBFVE-A-C        | SBFVE-B-C  | SER-B            | SER-B  | 4                  |
|               | KAV6E196DDA | 3/4,TYPE L          | 2,TYPE L      | SBFVE-A-C        | SBFVE-B-C  | SER-B            | SER-B  | 4                  |
|               | KAV6E216DDA | 3/4,TYPE L          | 2,TYPE L      | SBFVE-B-C        | SBFVE-B-C  | SER-B            | SER-C  | 6                  |
|               | KAV6E270DDA | 1,TYPE L            | 3,TYPE L      | SBFVE-B-C        | SBFVE-B-C  | SER-B            | SER-C  | 8                  |
|               | KAV6E338DDA | 1-1/2, TYPE L       | 3,TYPE L      | SBFVE-B-C        | SBFVE-C-C  | SER-C            | SER-C  | 8                  |
| 6 FPI - R455A | KAV6E053DDA | 1/4,TYPE L          | 1/2,TYPE L    | SBFVE-AA-C       | SBFVE-AA-C | SER-AA           | SER-A  | 2                  |
|               | KAV6E066DDA | 1/4,TYPE L          | 3/4,TYPE L    | SBFVE-AA-C       | SBFVE-AA-C | SER-AA           | SER-A  | 2                  |
|               | KAV6E105DDA | 1/2,TYPE L          | 1,TYPE L      | SBFVE-A-C        | SBFVE-A-C  | SER-A            | SER-A  | 2                  |
|               | KAV6E131DDA | 3/4,TYPE L          | 1-1/2, TYPE L | SBFVE-A-C        | SBFVE-A-C  | SER-A            | SER-B  | 4                  |
|               | KAV6E159DDA | 3/4,TYPE L          | 1-1/2, TYPE L | SBFVE-A-C        | SBFVE-B-C  | SER-B            | SER-B  | 4                  |
|               | KAV6E196DDA | 3/4,TYPE L          | 2,TYPE L      | SBFVE-A-C        | SBFVE-B-C  | SER-B            | SER-B  | 4                  |
|               | KAV6E216DDA | 1,TYPE L            | 2,TYPE L      | SBFVE-B-C        | SBFVE-B-C  | SER-B            | SER-C  | 6                  |
|               | KAV6E270DDA | 1-1/2, TYPE L       | 2-1/2,TYPE L  | SBFVE-B-C        | SBFVE-B-C  | SER-B            | SER-C  | 8                  |
|               | KAV6E338DDA | 1-1/2, TYPE L       | 3,TYPE L      | SBFVE-B-C        | SBFVE-C-C  | SER-C            | SER-C  | 8                  |

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

Expansion valve selections based on +25° Suction Temp and 8°F to 12°F evaporator TD.

Contact factory for operating conditions outside this range.

SBFTE Expansion valves are compatible with R454A refrigerant. SBFVE Expansion valves are compatible with R454C and R455A refrigerants.

For other valves, follow manufacturers selection guidelines.

Base models (with no factory-mounted components) include nozzles sized for 100°F liquid, shipped loose.

## LOOSE COMPONENTS REQUIRED FOR A2L ISOLATION CONTROLS

$A_{min}$  (MINIMUM ALLOWABLE ROOM SIZE) VALUES // ELECTRIC DEFROST MODELS

| Model No.     |             | $A_{min}$ Values (Ft <sup>2</sup> ) |                   |                   |                   |                   | Loose SSOV Isolation Valve<br>@ Liquid Temp |           |           | Loose CSOV<br>Isolation CV |             |
|---------------|-------------|-------------------------------------|-------------------|-------------------|-------------------|-------------------|---------------------------------------------|-----------|-----------|----------------------------|-------------|
|               |             | 10 Ft<br>Line Run                   | 20 Ft<br>Line Run | 30 Ft<br>Line Run | 40 Ft<br>Line Run | 50 Ft<br>Line Run | Size                                        | 50°F      | 100°F     | Size                       | Description |
| 6 FPI - R454C | KAV6E053DDA | 21                                  | 27                | 32                | 38                | 44                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6E066DDA | 18                                  | 24                | 30                | 35                | 41                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6E105DDA | 28                                  | 34                | 40                | 46                | 52                | 3/8                                         | SSOV3S130 | SSOV3S130 | 7/8                        | CSOV-7S     |
|               | KAV6E131DDA | 33                                  | 39                | 45                | 51                | 57                | 3/8                                         | SSOV3S130 | SSOV3S130 | 7/8                        | CSOV-7S     |
|               | KAV6E159DDA | 36                                  | 42                | 48                | 54                | 60                | 3/8                                         | SSOV3S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6E196DDA | 42                                  | 48                | 54                | 60                | 66                | 3/8                                         | SSOV6S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6E216DDA | 42                                  | 48                | 54                | 60                | 66                | 3/8                                         | SSOV6S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6E270DDA | 57                                  | 68                | 80                | 91                | 103               | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |
|               | KAV6E338DDA | 67                                  | 79                | 90                | 102               | 113               | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |
| 6 FPI - R455A | KAV6E053DDA | 20                                  | 26                | 31                | 37                | 42                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6E066DDA | 18                                  | 23                | 29                | 34                | 40                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6E105DDA | 27                                  | 33                | 38                | 44                | 50                | 3/8                                         | SSOV3S130 | SSOV3S130 | 7/8                        | CSOV-7S     |
|               | KAV6E131DDA | 31                                  | 37                | 43                | 49                | 55                | 3/8                                         | SSOV3S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6E159DDA | 34                                  | 40                | 46                | 52                | 58                | 3/8                                         | SSOV3S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6E196DDA | 41                                  | 47                | 53                | 58                | 64                | 3/8                                         | SSOV6S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6E216DDA | 41                                  | 47                | 52                | 58                | 64                | 3/8                                         | SSOV6S130 | SSOV6S140 | 7/8                        | CSOV-7S     |
|               | KAV6E270DDA | 55                                  | 66                | 77                | 88                | 100               | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |
|               | KAV6E338DDA | 65                                  | 76                | 87                | 98                | 110               | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |
| 6 FPI - R454A | KAV6E053DDA | 18                                  | 23                | 28                | 33                | 39                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6E066DDA | 16                                  | 21                | 26                | 31                | 36                | 3/8                                         | SSOV3S130 | SSOV3S130 | 5/8                        | CSOV-5S     |
|               | KAV6E105DDA | 24                                  | 30                | 35                | 40                | 46                | 3/8                                         | SSOV3S130 | SSOV3S130 | 7/8                        | CSOV-7S     |
|               | KAV6E131DDA | 29                                  | 34                | 39                | 45                | 50                | 3/8                                         | SSOV3S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6E159DDA | 31                                  | 37                | 42                | 47                | 53                | 3/8                                         | SSOV3S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6E196DDA | 37                                  | 43                | 48                | 53                | 59                | 3/8                                         | SSOV6S130 | SSOV6S130 | 7/8                        | CSOV-7S     |
|               | KAV6E216DDA | 37                                  | 43                | 48                | 53                | 58                | 3/8                                         | SSOV6S130 | SSOV6S140 | 7/8                        | CSOV-7S     |
|               | KAV6E270DDA | 50                                  | 60                | 70                | 81                | 91                | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |
|               | KAV6E338DDA | 59                                  | 69                | 80                | 90                | 100               | 1/2                                         | SSOV6S140 | SSOV6S140 | 1 1/8                      | CSOV-9S     |

Solenoid Shut Off Valves (SSOV) operate as double duty isolation/liquid line solenoid valve and are required to ship loose and be installed in the field, outside the refrigerated space.

SSOV/CSOV (Check Shut Off Valves) Selection Criteria: Maximum 10 Foot Line Rise, 100 Foot Line Run, 1:1 Condensing Unit/Evaporator.

Contact applications for additional lengths or design considerations.

$A_{min}$  values calculated using operating conditions included in UL 60335-2-89 101.DVU.1.2 and standard connection sizes (liquid and suction).

$A_{min}$  values provided for 10 Ft, 20 Ft, 30 Ft, 40 Ft and 50 Ft line lengths. Contact applications for additional lengths or design considerations.

$A_{min}$  values intended to determine compliance with UL 2-89 and is NOT for charging calculations.

## SPECIFICATIONS

## AIR DEFROST MODELS

| Model No.     |              | Fans | Refrigerant Connections |         | No. of Hanger Slot Locations | Dimensions (In.) |        |        |        | Approx. Weight (Lbs.) |      |
|---------------|--------------|------|-------------------------|---------|------------------------------|------------------|--------|--------|--------|-----------------------|------|
|               |              |      | Liquid                  | Suction |                              | L                | W      | H      | Figure | Net                   | Ship |
| 6 FPI - KAV6A | KAV6A053*DA  | 1    | 4                       | 3/8     | 5/8                          | 36               | 28-3/8 | 13-3/4 | 1      | 60                    | 195  |
|               | KAV6A066*DA  | 1    | 4                       | 3/8     | 5/8                          | 36               | 28-3/8 | 13-3/4 | 1      | 60                    | 195  |
|               | KAV6A105*DA  | 2    | 6                       | 3/8     | 7/8                          | 56               | 28-3/8 | 13-3/4 | 2      | 80                    | 215  |
|               | KAV6A 131*DA | 2    | 6                       | 3/8     | 7/8                          | 56               | 28-3/8 | 13-3/4 | 2      | 80                    | 215  |
|               | KAV6A159*DA  | 3    | 8                       | 3/8     | 7/8                          | 76               | 28-3/8 | 13-3/4 | 3      | 100                   | 235  |
|               | KAV6A196*DA  | 3    | 8                       | 3/8     | 7/8                          | 76               | 28-3/8 | 13-3/4 | 3      | 100                   | 235  |
|               | KAV6A216*DA  | 4    | 10                      | 3/8     | 7/8                          | 96               | 28-3/8 | 13-3/4 | 4      | 125                   | 285  |
|               | KAV6A270*DA  | 4    | 10                      | 1/2     | 1 1/8                        | 96               | 28-3/8 | 13-3/4 | 4      | 125                   | 285  |
|               | KAV6A338*DA  | 5    | 12                      | 1/2     | 1 1/8                        | 116              | 28-3/8 | 13-3/4 | 5      | 155                   | 340  |

## ELECTRIC DEFROST MODELS

| Model No.     |             | Fans | Refrigerant Connections |         | No. of Hanger Slot Locations | Dimensions (In.) |        |        |        | Approx. Weight (Lbs.) |      |
|---------------|-------------|------|-------------------------|---------|------------------------------|------------------|--------|--------|--------|-----------------------|------|
|               |             |      | Liquid                  | Suction |                              | L                | W      | H      | Figure | Net                   | Ship |
| 6 FPI - KAV6E | KAV6E053DDA | 1    | 4                       | 3/8     | 5/8                          | 36               | 28-3/8 | 13-3/4 | 1      | 60                    | 195  |
|               | KAV6E066DDA | 1    | 4                       | 3/8     | 5/8                          | 36               | 28-3/8 | 13-3/4 | 1      | 60                    | 195  |
|               | KAV6E105DDA | 2    | 6                       | 3/8     | 7/8                          | 56               | 28-3/8 | 13-3/4 | 2      | 80                    | 215  |
|               | KAV6E131DDA | 2    | 6                       | 3/8     | 7/8                          | 56               | 28-3/8 | 13-3/4 | 2      | 80                    | 215  |
|               | KAV6E159DDA | 3    | 8                       | 3/8     | 7/8                          | 76               | 28-3/8 | 13-3/4 | 3      | 100                   | 235  |
|               | KAV6E196DDA | 3    | 8                       | 3/8     | 7/8                          | 76               | 28-3/8 | 13-3/4 | 3      | 100                   | 235  |
|               | KAV6E216DDA | 4    | 10                      | 3/8     | 7/8                          | 96               | 28-3/8 | 13-3/4 | 4      | 125                   | 285  |
|               | KAV6E270DDA | 4    | 10                      | 1/2     | 1 1/8                        | 96               | 28-3/8 | 13-3/4 | 4      | 125                   | 285  |
|               | KAV6E338DDA | 5    | 12                      | 1/2     | 1 1/8                        | 116              | 28-3/8 | 13-3/4 | 5      | 155                   | 340  |

\*Asterisk represents a variable character based on voltage order. See nomenclature page for details.

Drain connection is 3/4" NPT for all models.

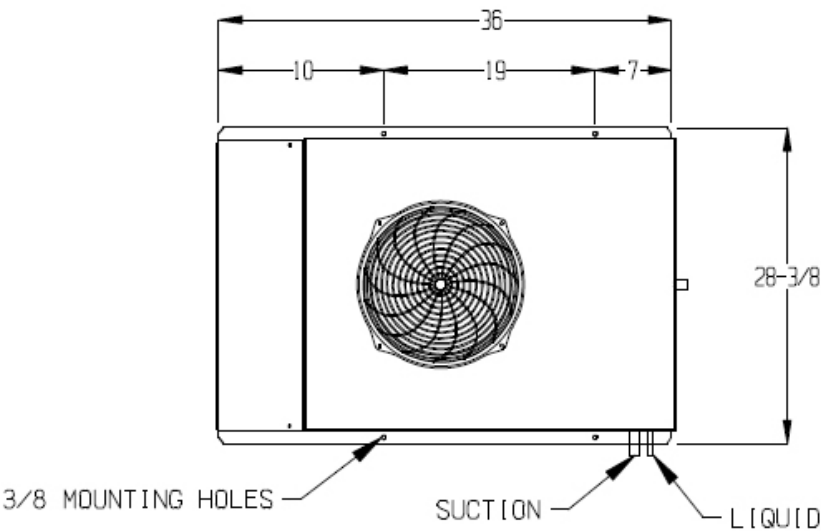
For units with mounted TXV components, see nozzle/TXV table for distributor connection size when TXV is field supplied.

TXV Type: Externally Equalized (EXT)

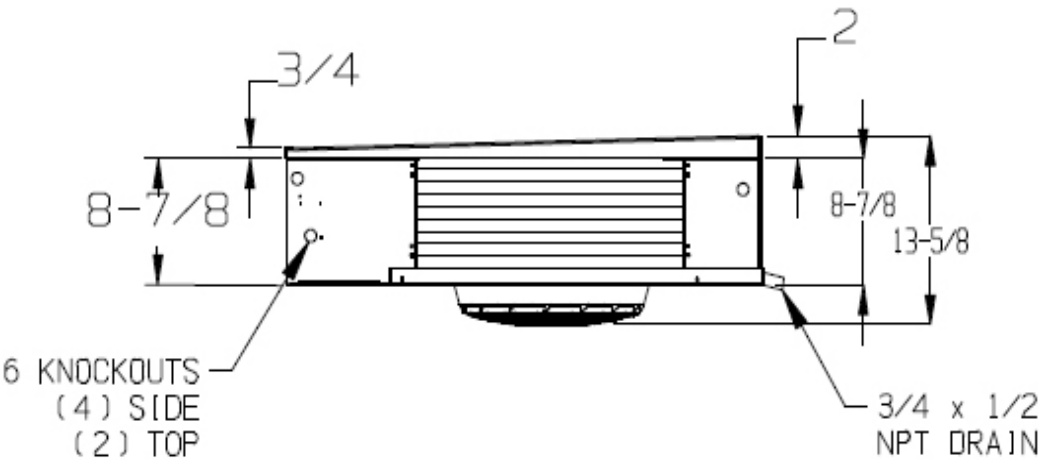
PHYSICAL DIMENSIONS

Figure 1: Single Fan

Bottom View



Side View

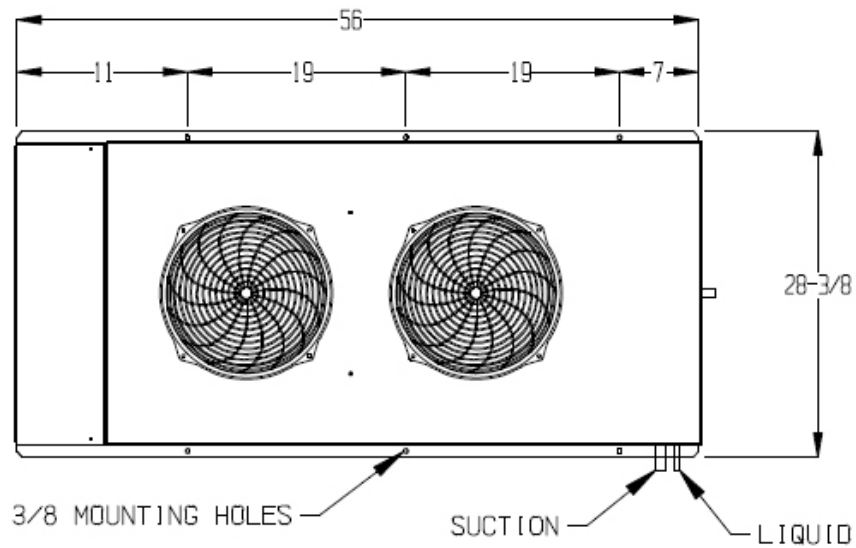


Measurements noted on the end view drawing are the same for all units. All mounting holes are 3/8" diameter.

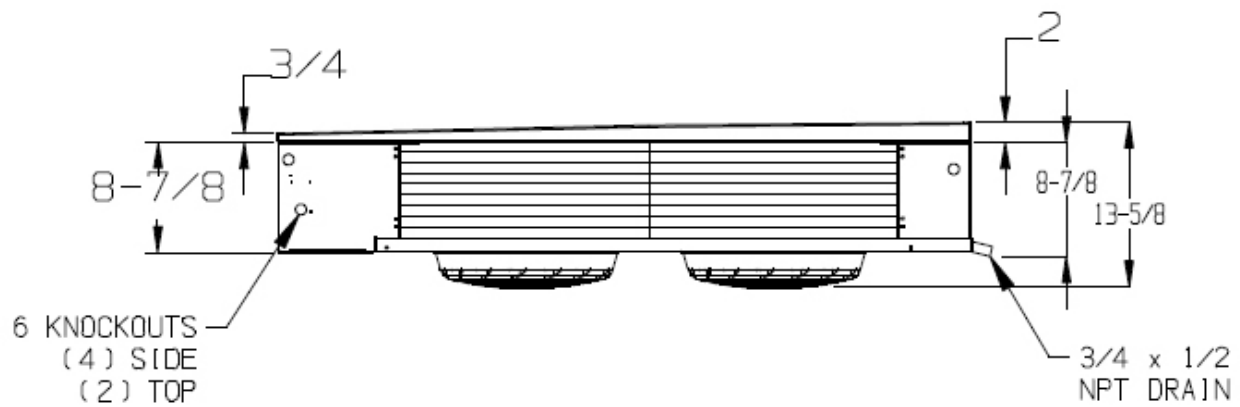
## PHYSICAL DIMENSIONS

**Figure 2: Two Fan**

Bottom View



Side View

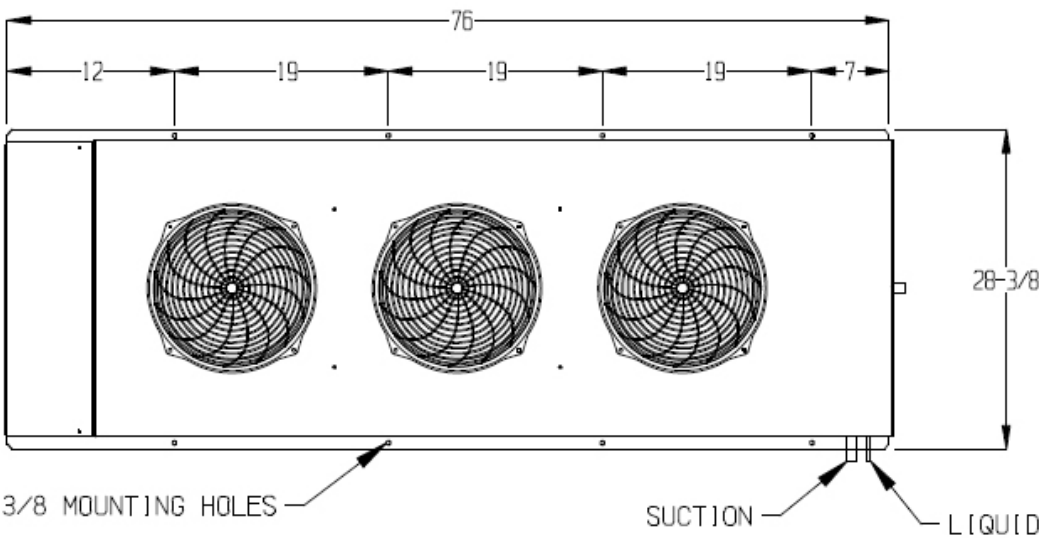


Measurements noted on the end view drawing are the same for all units. All mounting holes are 3/8" diameter.

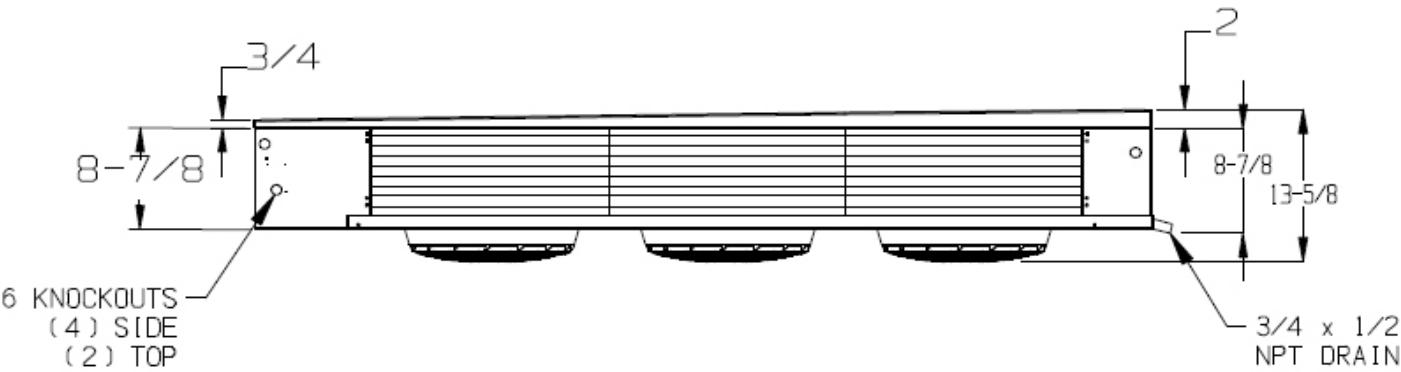
PHYSICAL DIMENSIONS

Figure 3: Three Fan

Bottom View



Side View

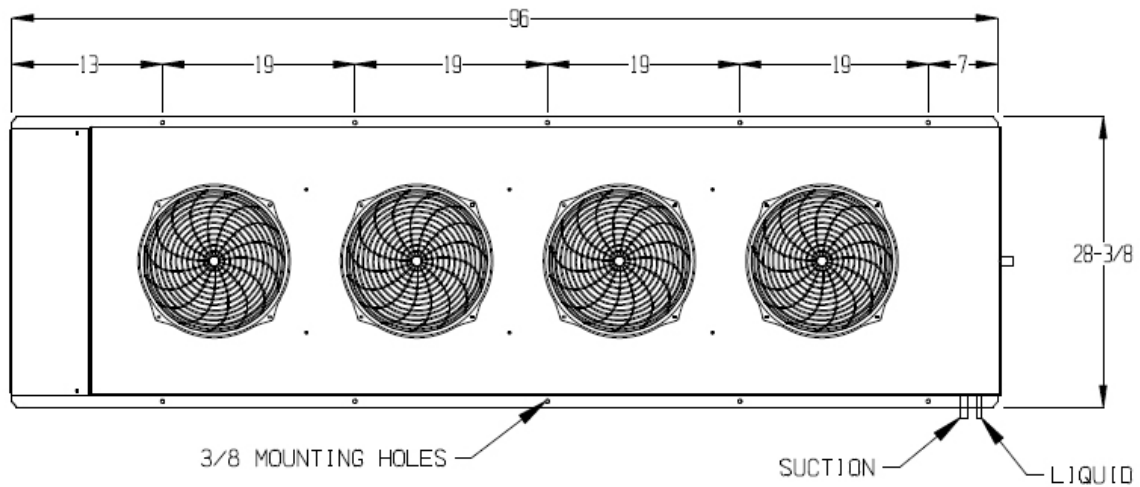


Measurements noted on the end view drawing are the same for all units. All mounting holes are 3/8" diameter.

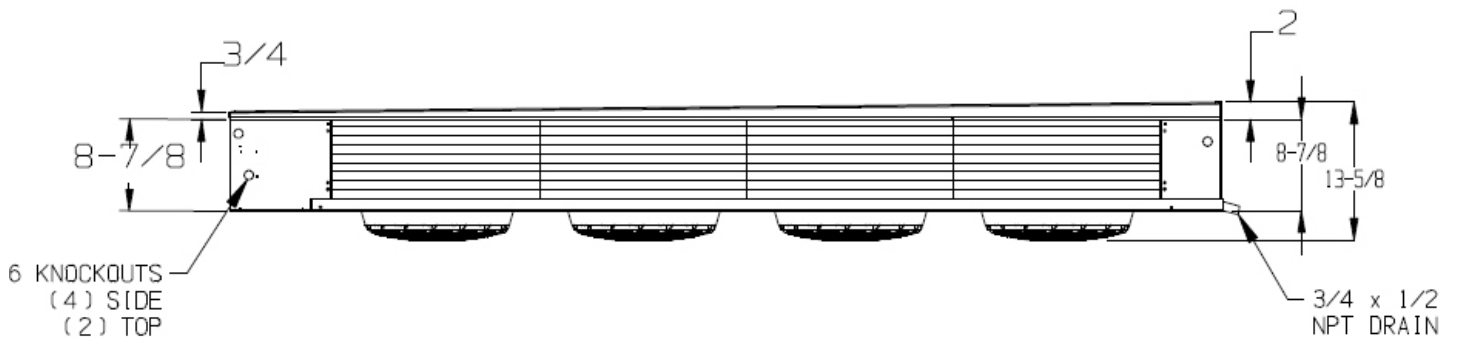
## PHYSICAL DIMENSIONS

**Figure 4: Four Fan**

Bottom View



Side View

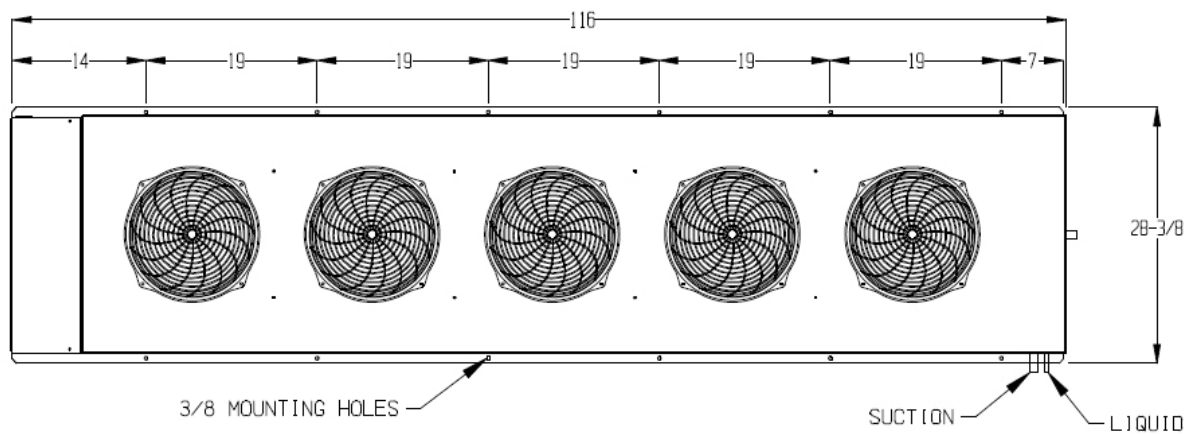


Measurements noted on the end view drawing are the same for all units. All mounting holes are 3/8" diameter. Mounting holes on four and five fan units are located 20" on center at each tube sheet. All dimensions are in inches.

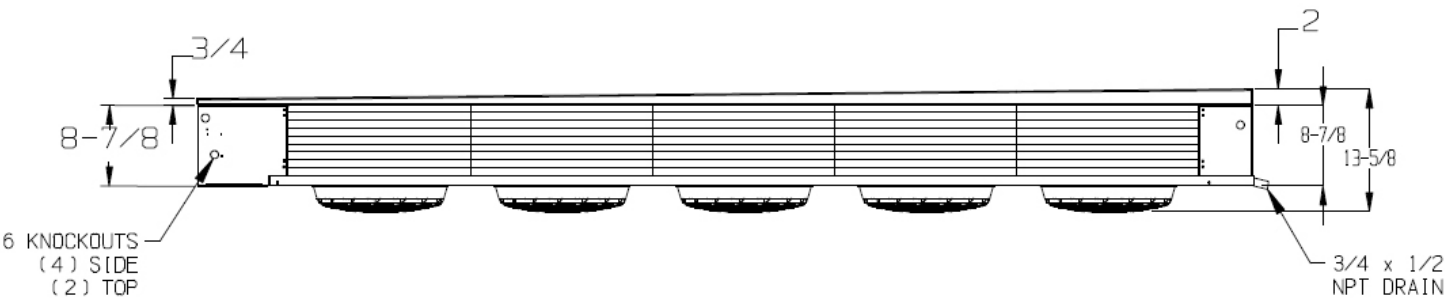
PHYSICAL DIMENSIONS

Figure 5: Five Fan

Bottom View



Side View



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.

## 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.

### AWEF RATINGS // COOLER AND FREEZER MODELS

| Department of Energy Annual<br>Walk-in Energy factor (AWEF) Ratings |              |     |      |
|---------------------------------------------------------------------|--------------|-----|------|
| Cooler Models - Air Defrost <sup>1</sup>                            |              |     |      |
| Base Model No.                                                      | Defrost Type | FPI | AWEF |
| KAV6A053*DA                                                         | Air Defrost  | 6   | 9.00 |
| KAV6A066*DA                                                         | Air Defrost  | 6   | 9.00 |
| KAV6A105*DA                                                         | Air Defrost  | 6   | 9.00 |
| KAV6A131*DA                                                         | Air Defrost  | 6   | 9.00 |
| KAV6A159*DA                                                         | Air Defrost  | 6   | 9.00 |
| KAV6A196*DA                                                         | Air Defrost  | 6   | 9.00 |
| KAV6A216*DA                                                         | Air Defrost  | 6   | 9.00 |
| KAV6A270*DA                                                         | Air Defrost  | 6   | 9.00 |
| KAV6A338*DA                                                         | Air Defrost  | 6   | 9.00 |

| Department of Energy Annual<br>Walk-in Energy factor (AWEF) Ratings |                  |     |      |
|---------------------------------------------------------------------|------------------|-----|------|
| Cooler Models - Electric Defrost <sup>1</sup>                       |                  |     |      |
| Base Model No.                                                      | Defrost Type     | FPI | AWEF |
| KAV6E053DDA                                                         | Electric Defrost | 6   | 9.00 |
| KAV6E066DDA                                                         | Electric Defrost | 6   | 9.00 |
| KAV6E105DDA                                                         | Electric Defrost | 6   | 9.00 |
| KAV6E131DDA                                                         | Electric Defrost | 6   | 9.00 |
| KAV6E159DDA                                                         | Electric Defrost | 6   | 9.00 |
| KAV6E196DDA                                                         | Electric Defrost | 6   | 9.00 |
| KAV6E216DDA                                                         | Electric Defrost | 6   | 9.00 |
| KAV6E270DDA                                                         | Electric Defrost | 6   | 9.00 |
| KAV6E338DDA                                                         | Electric Defrost | 6   | 9.00 |

\*Asterisk represents a variable character based on voltage order. See nomenclature page for details.

1. If the model has a numerical value in the table above, the following statement applies:

"The refrigeration system is designed and certified for use in walk-in cooler applications."



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