

### DIRECT EXPANSION COMMERCIAL PACKAGED AIR HANDLING UNITS, 6 TO 30 TONS BUILT TO LAST, EASY TO INSTALL AND SERVICE

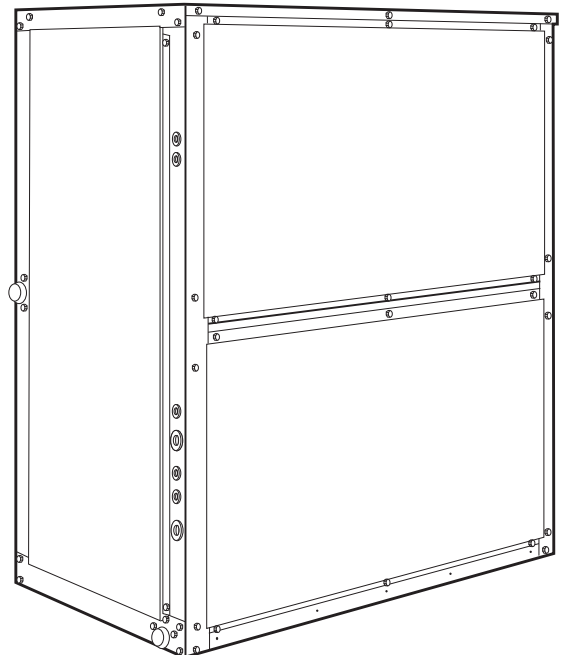
- Multi-position design for horizontal or vertical installation without modification
- Two sloped condensate pans on each unit for horizontal or vertical applications
- Standard sloped drain pans and cleanable insulation treated with Environmental Protection Agency (EPA) registered antimicrobial agent improves indoor air quality
- High-static design meets a wider range of applications than competitive packaged air handler lines
- Ultra low leak economizer accessory provides ventilation air and “free” cooling with built in Fault Detection and Diagnostic (FDD) capabilities
- Single refrigerant circuit on 072 and 091 sizes. Dual refrigerant circuit on 120-336 sizes  
Dual circuit can be field modified for use on single circuit condensers
- Cooling coils with mechanically bonded fins provide peak heat transfer
- Optional 2-speed indoor fan with VFD controller
- Standard factory-installed thermostatic expansion valve (TXV) with removable power element
- Easy maintenance - removal of single panel allows access to virtually all components
- Die-formed galvanized steel casings provide durability and structural integrity. Optional paint is available
- 24-volt terminal block for control wiring connection
- Hot water coil, steam coil, and electric heat accessories are available

#### WARRANTY

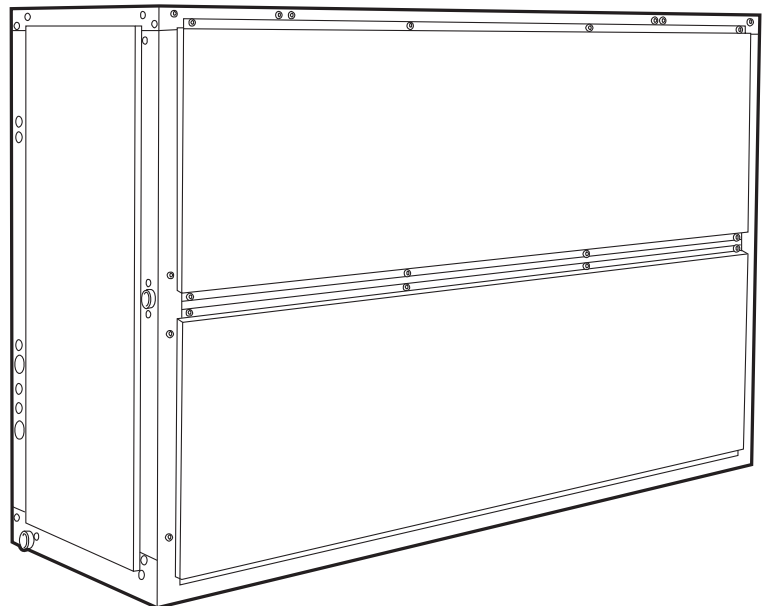
- 1 year parts limited warranty



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FAS072-120



FAS150-336

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## UNIT PERFORMANCE DATA

| UNIT                  | NOMINAL TONS | NUMBER OF CIRCUITS | UNIT DIMENSIONS<br>H X W X L [MM]                                                                                                        | UNIT WEIGHT<br>LB. [KG] |
|-----------------------|--------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>FAS072*AAA0A0A</b> | 6            | 1                  | 56 <sup>1</sup> / <sub>16</sub> -in. x 49-in. x 28 <sup>3</sup> / <sub>16</sub> -in.<br>[1424 x 1244 x 714]                              | 399 [181]               |
| <b>FAS091*AAA0A0A</b> | 7.5          | 1                  | 56 <sup>1</sup> / <sub>16</sub> -in. x 49-in. x 28 <sup>3</sup> / <sub>16</sub> -in.<br>[1424 x 1244 x 714]                              | 404 [183]               |
| <b>FAS120*AAA0A0A</b> | 10           | 2                  | 56 <sup>1</sup> / <sub>16</sub> -in. x 49-in. x 28 <sup>3</sup> / <sub>16</sub> -in.<br>[1424 x 1244 x 714]                              | 425 [193]               |
| <b>FAS150*AAA0A0A</b> | 12.5         | 2                  | 56 <sup>1</sup> / <sub>16</sub> -in. x 89-in. x 28 <sup>3</sup> / <sub>16</sub> -in.<br>[1424 x 2261 x 714]                              | 695 [315]               |
| <b>FAS180*AAA0A0A</b> | 15           | 2                  | 56 <sup>1</sup> / <sub>16</sub> -in. x 89-in. x 28 <sup>3</sup> / <sub>16</sub> -in.<br>[1424 x 2261 x 714]                              | 713 [323]               |
| <b>FAS240*AAA0A0A</b> | 20           | 2                  | 56 <sup>1</sup> / <sub>16</sub> -in. x 89-in. x 28 <sup>3</sup> / <sub>16</sub> -in.<br>[1424 x 2261 x 714]                              | 730 [331]               |
| <b>FAS300*AAA0A0A</b> | 25           | 2                  | 65 <sup>9</sup> / <sub>16</sub> -in. x 100 <sup>1</sup> / <sub>2</sub> -in. x 32 <sup>5</sup> / <sub>8</sub> -in.<br>[1665 x 2553 x 829] | 1050 [477]              |
| <b>FAS336*AAA0A0A</b> | 30           | 2                  | 65 <sup>9</sup> / <sub>16</sub> -in. x 100 <sup>1</sup> / <sub>2</sub> -in. x 32 <sup>5</sup> / <sub>8</sub> -in.<br>[1665 x 2553 x 829] | 1062 [482]              |

\* Indicates Unit voltage: K = 208/230-1-60, H = 208/230-3-60, M = 208/230/460-3-60, L = 460-3-60, S = 575-3-60  
NOTE: BASE MODEL NUMBERS LISTED. SEE MODEL NOMENCLATURE LISTING FOR ADDITIONAL OPTIONS.

## Model number nomenclature

| MODEL SERIES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |            |   |                         |   |   |   |   |   |    |    |    |    |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------|---|-------------------------|---|---|---|---|---|----|----|----|----|----|
| Position Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | F | A          | S | 0                       | 9 | 1 | M | A | A | 0  | A  | 0  | A  |    |
| F = R-410A Fan Coil Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1 | 2          | 3 | 4                       | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| A = Air Conditioning (Cooling Only)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   | Type       |   |                         |   |   |   |   |   |    |    |    |    |    |
| S = Standard Efficiency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   | Efficiency |   |                         |   |   |   |   |   |    |    |    |    |    |
| 072 = 6 Tons (1 circuit)<br>091 = 7.5 Tons (1 circuit)<br>120 = 10 Tons (2 circuit)<br>150 = 12.5 Tons (2 circuit)<br>180 = 15 Tons (2 circuit)<br>240 = 20 Tons (2 circuit)<br>300 = 25 Tons (2 circuit)<br>336 = 30 Tons (2 circuit)                                                                                                                                                                                                                                                                                                                                                                                                                                            |   |            |   | Nominal Tonnage         |   |   |   |   |   |    |    |    |    |    |
| K = 208/230–1–60<br>H = 208/230–3–60<br>M = 460/208/230–3–60<br>L = 460–3–60<br>S = 575–3–60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |            |   | Voltage                 |   |   |   |   |   |    |    |    |    |    |
| A = Standard Static Standard Efficiency Motor / Standard Drive <ul style="list-style-type: none"><li>• 6 to 15 ton 208/230v, 460v, 575v-3-60, 6 and 7.5 ton 208/230-1-60, 1-speed</li><li>• all 2-speed</li></ul> B = High Static Standard Efficiency Motor / High Drive <ul style="list-style-type: none"><li>• 6 to 15 ton 208/230V, 460v, 6 to 10 ton 575v-3-60, 1-speed</li><li>• all 2-speed</li></ul> D = Standard Static High Efficiency Motor / Standard Drive <ul style="list-style-type: none"><li>• 20, 25, 30 ton all 3 phase</li></ul> E = High Static High Efficiency Motor / High Drive <ul style="list-style-type: none"><li>• 15 to 30 ton all 3 phase</li></ul> |   |            |   | Fan Motor Options       |   |   |   |   |   |    |    |    |    |    |
| A = Cu/Al                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |   |            |   | Indoor Coil             |   |   |   |   |   |    |    |    |    |    |
| A = Future Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |   |            |   | Future Use              |   |   |   |   |   |    |    |    |    |    |
| 0 = Single Speed Indoor Fan Motor<br>2 = Two Speed Indoor Fan Motor Controller (VFD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |            |   | Fan Speed Controller    |   |   |   |   |   |    |    |    |    |    |
| A = Standard - Unpainted<br>B = Painted cabinet (Gray)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |   |            |   | Painted Cabinet Options |   |   |   |   |   |    |    |    |    |    |
| 0 = Future Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |   |            |   | Future Use              |   |   |   |   |   |    |    |    |    |    |
| A = Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |            |   |                         |   |   |   |   |   |    |    |    |    |    |

**Notes:**

1. All FAS072-150 units with a "M" voltage designation are triple voltage; i.e., 208/230/460-3-60. FAS 180 units are also triple voltage in the "M" configuration unless the High Static motor option is used. "M" voltage is not available on 2-speed indoor fan motor option.
2. Single-phase 072 and 091 units designate standard motor and high static drive.

# Model number nomenclature (cont)

## SINGLE SPEED MOTORS

| POSITION 8 | MOTOR DESCRIPTION                                          | VOLTAGE                  | UNIT SIZE |     |     |     |     |     |     |     |
|------------|------------------------------------------------------------|--------------------------|-----------|-----|-----|-----|-----|-----|-----|-----|
|            |                                                            |                          | 072       | 091 | 120 | 150 | 180 | 240 | 300 | 336 |
| A          | Std Static, Std Efficiency Motor / Std Drive               | All                      | ✓         | ✓   | ✓   | ✓   | ✓   | —   | —   | —   |
| B          | High (Alternate) Static, Std Efficiency Motor / High Drive | 575-3-60                 | ✓         | ✓   | ✓   | —   | —   | —   | —   | —   |
|            |                                                            | 208/230-1-60             | ✓         | ✓   | —   | —   | —   | —   | —   | —   |
|            |                                                            | 208/230-3-60<br>460-3-60 | ✓         | ✓   | ✓   | ✓   | —   | —   | —   | —   |
| D          | Std Static, High Efficiency Motor / Std Drive              | All                      | —         | —   | —   | —   | —   | ✓   | ✓   | ✓   |
| E          | High (Alternate) Static, Std Efficiency Motor / High Drive | 575-3-60                 | —         | —   | —   | ✓   | ✓   | ✓   | ✓   | ✓*  |
|            |                                                            | 208/230-3-60<br>460-3-60 | —         | —   | —   | —   | ✓   | ✓   | ✓   | ✓   |

\* Size 336 is designated standard motor and high static drive.

## 2- SPEED MOTORS

| POSITION 8 | MOTOR DESCRIPTION                                           | VOLTAGE                  | UNIT SIZE |     |     |     |     |     |     |     |
|------------|-------------------------------------------------------------|--------------------------|-----------|-----|-----|-----|-----|-----|-----|-----|
|            |                                                             |                          | 072       | 091 | 120 | 150 | 180 | 240 | 300 | 336 |
| A          | Std Static, Std Efficiency Motor / Std Drive                | All                      | ✓         | ✓   | ✓   | ✓   | ✓   | —   | —   | —   |
|            | Std Static, High Efficiency Motor / Std Drive               | All                      | —         | —   | —   | —   | —   | ✓   | ✓   | ✓   |
| E          | High (Alternate) Static, Std Efficiency Motor / High Drive  | 575-3-60                 | ✓         | ✓   | ✓   | —   | —   | —   | —   | —   |
|            |                                                             | 208/230-3-60<br>460-3-60 | ✓         | ✓   | ✓   | ✓   | —   | —   | —   | —   |
|            | High (Alternate) Static, High Efficiency Motor / High Drive | 575-3-60                 | —         | —   | —   | ✓   | ✓   | ✓   | ✓   | ✓   |
|            |                                                             | 208/230-3-60<br>460-3-60 | —         | —   | —   | —   | ✓   | ✓   | ✓   | ✓   |

# Physical data

## PHYSICAL DATA

| FAS UNIT                                    | 072                                            | 091       | 120          | 150                                | 180       | 240         | 300                                | 336         |
|---------------------------------------------|------------------------------------------------|-----------|--------------|------------------------------------|-----------|-------------|------------------------------------|-------------|
| NOMINAL CAPACITY (tons)                     | 6                                              | 7½        | 10           | 12½                                | 15        | 20          | 25                                 | 30          |
| OPERATING WEIGHT (lb)                       |                                                |           |              |                                    |           |             |                                    |             |
| Base Unit with TXV (4 Row)                  | 399                                            | 404       | 425          | 695                                | 713       | 730         | 1050                               | 1062        |
| Plenum                                      | 175                                            | 175       | 175          | 225                                | 225       | 225         | 325                                | 325         |
| Economizer                                  | 185                                            | 185       | 185          | 340                                | 340       | 340         | 340                                | 340         |
| Hot Water Coil                              | 195                                            | 195       | 195          | 285                                | 285       | 285         | 345                                | 345         |
| Steam Coil                                  | 215                                            | 215       | 215          | 340                                | 340       | 340         | 405                                | 405         |
| FANS                                        |                                                |           |              |                                    |           |             |                                    |             |
| Qty...Diam. (in.)                           | 1...15                                         | 1...15    | 1...15       | 2...15                             | 2...15    | 2...15      | 2...18                             | 2...18      |
| Nominal Airflow (cfm)                       | 2400                                           | 3000      | 4000         | 5000                               | 6000      | 8000        | 10,000                             | 12,000      |
| Airflow Range (cfm)                         | 1800-3000                                      | 2250-3750 | 3000-5000    | 3750-6250                          | 4500-7500 | 6000-10,000 | 7500-12,500                        | 9000-15,000 |
| Nom. Motor Hp (Standard Motor)*             |                                                |           |              |                                    |           |             |                                    |             |
| 208/230-1-60                                | 1.3                                            | 2.4       | —            | —                                  | —         | —           | —                                  | —           |
| 208/230-3-60 and 460-3-60                   | 2.4                                            | 2.4       | 2.4          | 2.9                                | 3.7       | 5.0         | 7.5                                | 10.0        |
| 575-3-60                                    | 1.0                                            | 2.0       | 2.0          | 3.0                                | 3.0       | 5.0         | 7.5                                | 10.0        |
| Motor Speed (rpm)                           |                                                |           |              |                                    |           |             |                                    |             |
| 208/230-1-60                                | 1725                                           | 1725      | —            | —                                  | —         | —           | —                                  | —           |
| 208/230-3-60 and 460-3-60                   | 1725                                           | 1725      | 1725         | 1725                               | 1725      | 1760        | 1760                               | 1755        |
| 575-3-60                                    | 1725                                           | 1725      | 1725         | 1725                               | 1725      | 1745        | 1755                               | 1755        |
| REFRIGERANT                                 | R-410A                                         |           |              |                                    |           |             |                                    |             |
| Shipping charge (lb)                        | Nitrogen Purge                                 |           |              |                                    |           |             |                                    |             |
| Metering Device                             | TXV                                            |           |              |                                    |           |             |                                    |             |
| Operating charge (lb) (approx per circuit)† | 3.0                                            | 3.0       | 1.5/1.5      | 2.0/2.0                            | 2.5/2.5   | 3.5/3.5     | 4.5/4.5                            | 5.0/5.0     |
| DIRECT-EXPANSION COIL                       | Enhanced Copper Tubes, Aluminum Sine-Wave Fins |           |              |                                    |           |             |                                    |             |
| Max Working Pressure (psig)                 | 650                                            |           |              |                                    |           |             |                                    |             |
| Material                                    | Al / Cu                                        |           |              |                                    |           |             |                                    |             |
| Coil Type                                   | RTPF                                           |           |              |                                    |           |             |                                    |             |
| Face Area (sq ft)                           | 6.67                                           | 8.33      | 10.01        | 13.25                              | 17.67     | 19.88       | 24.86                              | 29.83       |
| No. of Splits                               | 1                                              | 1         | 2            | 2                                  | 2         | 2           | 2                                  | 2           |
| Split Type...Percentage                     | —                                              | —         | Face...50/50 |                                    |           |             |                                    |             |
| No. of Circuits per Split                   | 12                                             | 15        | 9            | 12                                 | 16        | 18          | 20                                 | 24          |
| Rows...Fins/in.                             | 4...15                                         | 4...15    | 4...15       | 4...15                             | 4...15    | 4...15      | 4...15                             | 4...15      |
| STEAM COIL                                  |                                                |           |              |                                    |           |             |                                    |             |
| Max Working Press. (psig at 260°F)          | 20                                             |           |              |                                    |           |             |                                    |             |
| Total Face Area (sq ft)                     | 6.67                                           | 6.67      | 6.67         | 13.33                              | 13.33     | 13.33       | 15.0                               | 15.0        |
| Rows...Fins/in.                             | 1...9                                          | 1...9     | 1...9        | 1...10                             | 1...10    | 1...10      | 1...10                             | 1...10      |
| HOT WATER COIL                              |                                                |           |              |                                    |           |             |                                    |             |
| Max Working Pressure (psig)                 | 150                                            |           |              |                                    |           |             |                                    |             |
| Total Face Area (sq ft)                     | 6.67                                           | 6.67      | 6.67         | 13.33                              | 13.33     | 13.33       | 15.0                               | 15.0        |
| Rows...Fins/in.                             | 2...8.5                                        | 2...8.5   | 2...8.5      | 2...8.5                            | 2...8.5   | 2...8.5     | 2...12.5                           | 2...12.5    |
| Water Volume                                |                                                |           |              |                                    |           |             |                                    |             |
| (gal)                                       | 8.3                                            |           |              | 13.9                               |           |             | 14.3                               |             |
| (ft³)                                       | 1.1                                            |           |              | 1.85                               |           |             | 1.90                               |             |
| PIPING CONNECTIONS                          |                                                |           |              |                                    |           |             |                                    |             |
| Quantity...Size (in.)                       |                                                |           |              |                                    |           |             |                                    |             |
| DX Coil — Suction (ODF)                     | 1...1⅛                                         | 1...1⅛    | 2...1⅛       | 2...1⅛                             | 2...1⅛    | 2...1⅛      | 2...1⅜                             | 2...1⅜      |
| DX Coil — Liquid Refrig. (ODF)              | 1...5⁄8                                        |           | 2...5⁄8      |                                    |           |             |                                    |             |
| Steam Coil, In (MPT)                        | 1...2½                                         |           | 1...2½       |                                    |           |             |                                    |             |
| Steam Coil, Out (MPT)                       | 1...1½                                         |           | 1...1½       |                                    |           |             |                                    |             |
| Hot Water Coil, In (MPT)                    | 1...1½                                         |           | 1...1½       | 1...2                              |           |             |                                    |             |
| Hot Water Coil, Out (MPT)                   | 1...1½                                         |           | 1...1½       | 1...2                              |           |             |                                    |             |
| Condensate (PVC)                            | 1...5⁄8 ODM / 1¼ IDF                           |           |              |                                    |           |             |                                    |             |
| FILTERS                                     | Throwaway — Factory-Supplied                   |           |              |                                    |           |             |                                    |             |
| Quantity...Size (in.)                       | 4...16 x 24 x 2                                |           |              | 4...16 x 20 x 2<br>4...16 x 24 x 2 |           |             | 4...20 x 24 x 2<br>4...20 x 25 x 2 |             |
| Access Location                             | Right or Left Side                             |           |              |                                    |           |             |                                    |             |

\* Refer to Alternate Fan Motor Data table for alternate motor data.

† Units are shipped without refrigerant charge.

# Options and accessories

| ITEM                            | OPTION* | ACCESSORY† |
|---------------------------------|---------|------------|
| Alternate Fan Motors            | X       |            |
| Alternate Drives                | X       |            |
| 2-Speed Indoor Fan Motor System | X       |            |
| CO <sub>2</sub> Sensors         |         | X          |
| Condensate Drain Trap           |         | X          |
| Discharge Plenum                |         | X          |
| Economizer Ultra Low Leak-FDD   |         | X          |
| Economizer Low Leak             |         | X          |
| Electric Heat                   |         | X          |
| Hot Water Heating Coils         |         | X          |
| Overhead Suspension Package     |         | X          |
| Pre-painted Units               | X       |            |
| Return Air Grille               |         | X          |
| Steam Heating Coil              |         | X          |
| Subbase                         |         | X          |

\* Factory-installed option.

† Field-installed accessory.

## Factory-installed options

### Alternate fan motors and drives

Alternate fan motors and drives are available to provide the widest possible range of performance.

### Pre-painted steel units

Pre-painted steel units are available from the factory for applications that require painted units. Units are painted with American Sterling Gray color.

### 2-Speed Indoor Fan Motor system

2-Speed Indoor Fan Motor system saves energy and installation time by utilizing a Variable Frequency Drive (VFD) to automatically adjust the indoor fan motor speed in sequence with the units cooling operation. Per ASHRAE 90.1 2010 standard section 6.4.3.10.b, during the first stage of cooling operation the VFD will adjust the

fan motor to provide two thirds ( $\frac{2}{3}$ ) of the total cfm established for the unit. When a call for the second stage of cooling is required, the VFD will allow the total cfm for the unit established (100%). During the heating mode the VFD will allow total design cfm (100%) operation and during the ventilation mode the VFD will allow operation to two thirds ( $\frac{2}{3}$ ) of total cfm.

Compared to single speed indoor fan motor systems, ICP's 2-Speed Indoor Fan Motor system can save substantial energy, 25%+\*, versus single speed indoor fan motor systems.

\*Data based on 0.10 (\$/kWh) in an office application utilizing ICP's HAP 4.6 simulation software program.

The VFD used in ICP's 2-Speed Indoor Fan Motor system has soft start capabilities to slowly ramp up the speeds, thus eliminating any high inrush air volume during initial start-up. It also has internal over current protection for the fan motor and a field-installed display kit that allows adjustment and in depth diagnostics of the VFD.

This 2-Speed Indoor Fan Motor system is available on models with 2-stage cooling operation with electrical mechanical controls.

The 2-Speed Indoor Fan Motor system is very flexible for initial fan performance set up and adjustment. The standard factory shipped VFD is pre-programmed to automatically stage the fan speed between the first and second stage of cooling. The unit fan performance static pressure and cfm can be easily adjusted using the traditional means of pulley adjustments. The other means to adjust the unit static and cfm performance is to utilize the field installed Display Kit and adjust the frequency and voltage in the VFD to required performance requirements. In either case, once set up, the VFD will automatically adjust the speed between the cooling stage operations.

## **Field-installed accessories**

### **Two-row hot water coils**

Two-row hot water coils have copper tubes mechanically bonded to aluminum plate fins and non-ferrous headers.

### **One-row steam coil**

The one-row steam coil has copper tubes and aluminum fins. The Inner Distributing Tube (IDT) design provides uniform temperatures across the coil face. The steam coil has a broad operating pressure range: up to 20 psi (138 kPag) at 260°F (126°C). The IDT steam coils are especially suited to applications where sub-freezing air enters the unit.

### **Electric resistance heat coils**

Electric resistance heat coils have an open-wire design and are mounted in a rigid frame. Safety cutouts for high temperature conditions are standard. Terminal block for single-point power connection is included.

### **Economizer - dry bulb temperature controlled**

#### **ULTRA LOW LEAK**

EconoMi\$er® X with solid-state W7220 controller, gear-driven, modulating damper, spring return actuator. Supply and outdoor air sensors, and CO<sub>2</sub> sensor compatible, for use in electro-mechanical controls only. Also includes return and outside air damper leakage that meets California Title 24 section 140.4 requirements. Controller meets California Title 24 Section 120.2 Fault Detection and Diagnostic (FDD) requirements.

### **Discharge plenum**

The discharge plenum directs the air discharge directly into the occupied space; integral horizontal and vertical

louvers enable redirection of airflow. Accessory is available unpainted or painted. Field assembly is required (only applicable for vertical application).

### **Return-air grille**

The return-air grille provides a protective barrier over the return-air opening and gives a finished appearance to units installed in the occupied space. Accessory is available unpainted or painted.

### **Subbase**

The subbase provides a stable, raised platform and room for condensate drain trap connection for vertical floor-mounted units. Accessory is available unpainted or painted.

### **Overhead suspension package**

Overhead suspension package includes necessary brackets to support units in horizontal ceiling installations.

### **CO<sub>2</sub> sensors**

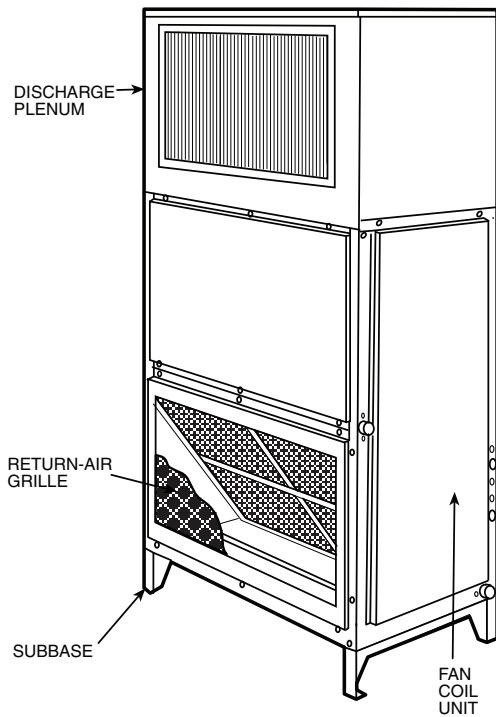
CO<sub>2</sub> sensors can be used in conjunction with the economizer accessory to help meet indoor air quality requirements. The sensor signals the economizer to open when the CO<sub>2</sub> level in the space exceeds the setpoint. A programmable thermostat can be used to override the sensor if the outside-air temperature is too high or too low.

### **Condensate drain trap**

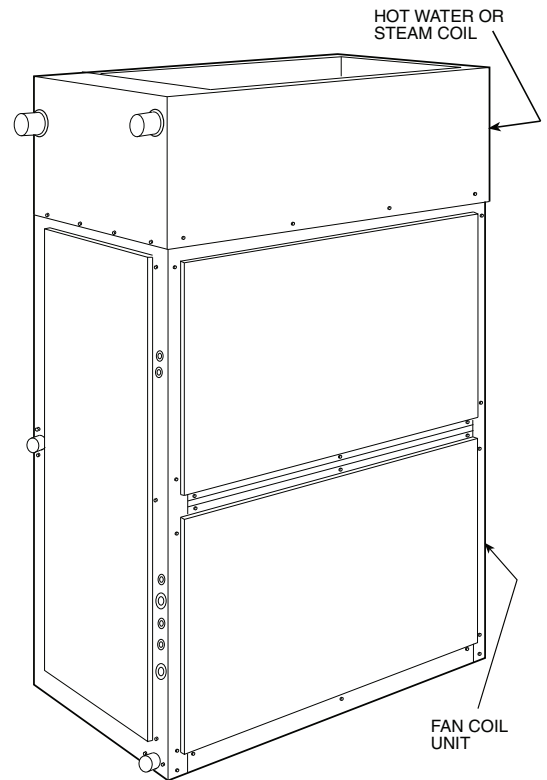
Condensate drain trap includes an overflow shutoff switch that can be wired to turn off the unit if the trap becomes plugged. Kit also includes a wire harness that can be connected to an alarm if desired. The transparent trap is designed for easy service and maintenance.

# Options and accessories (cont)

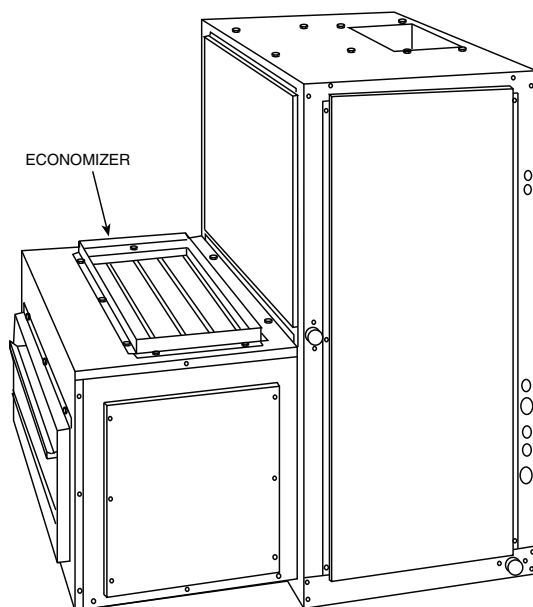
FAS WITH DISCHARGE PLENUM  
RETURN-AIR GRILLE AND SUBBASE



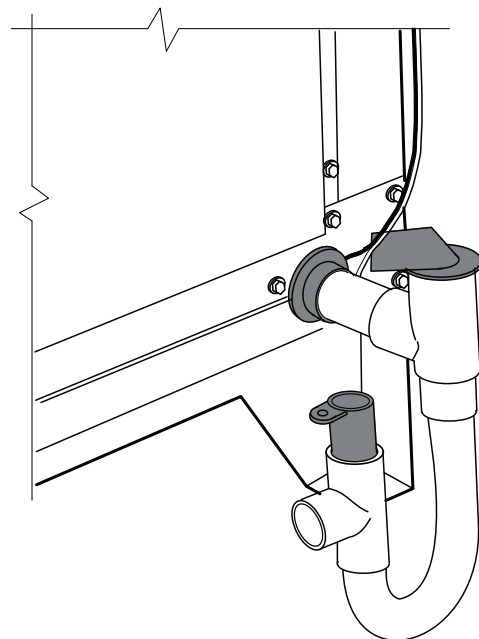
FAS WITH HOT WATER OR STEAM COIL



FAS WITH ECONOMIZER



FAS WITH CONDENSATE TRAP



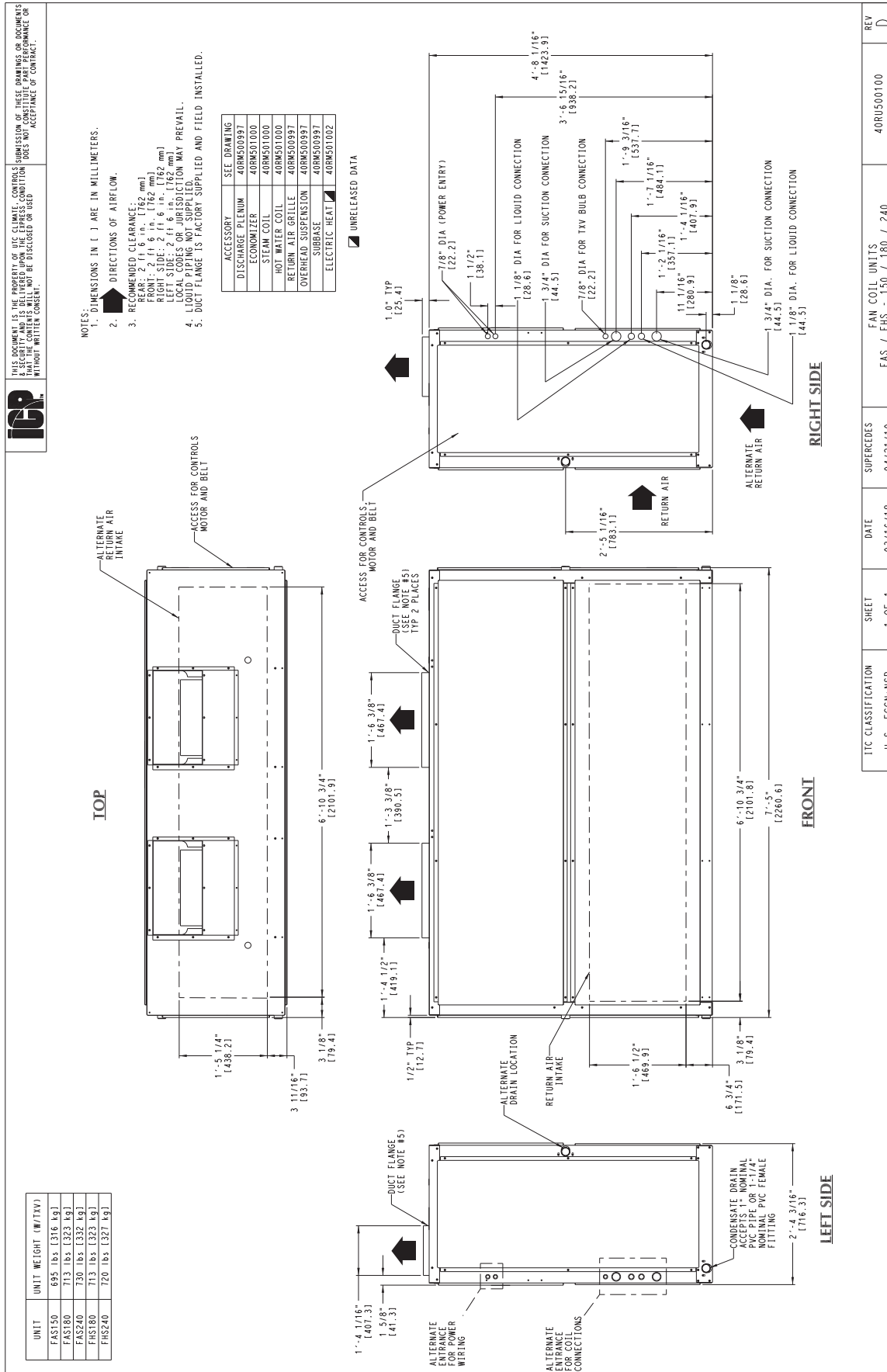
**508 71 1603 02 Rev. A**

**Specifications subject to change without notice.**

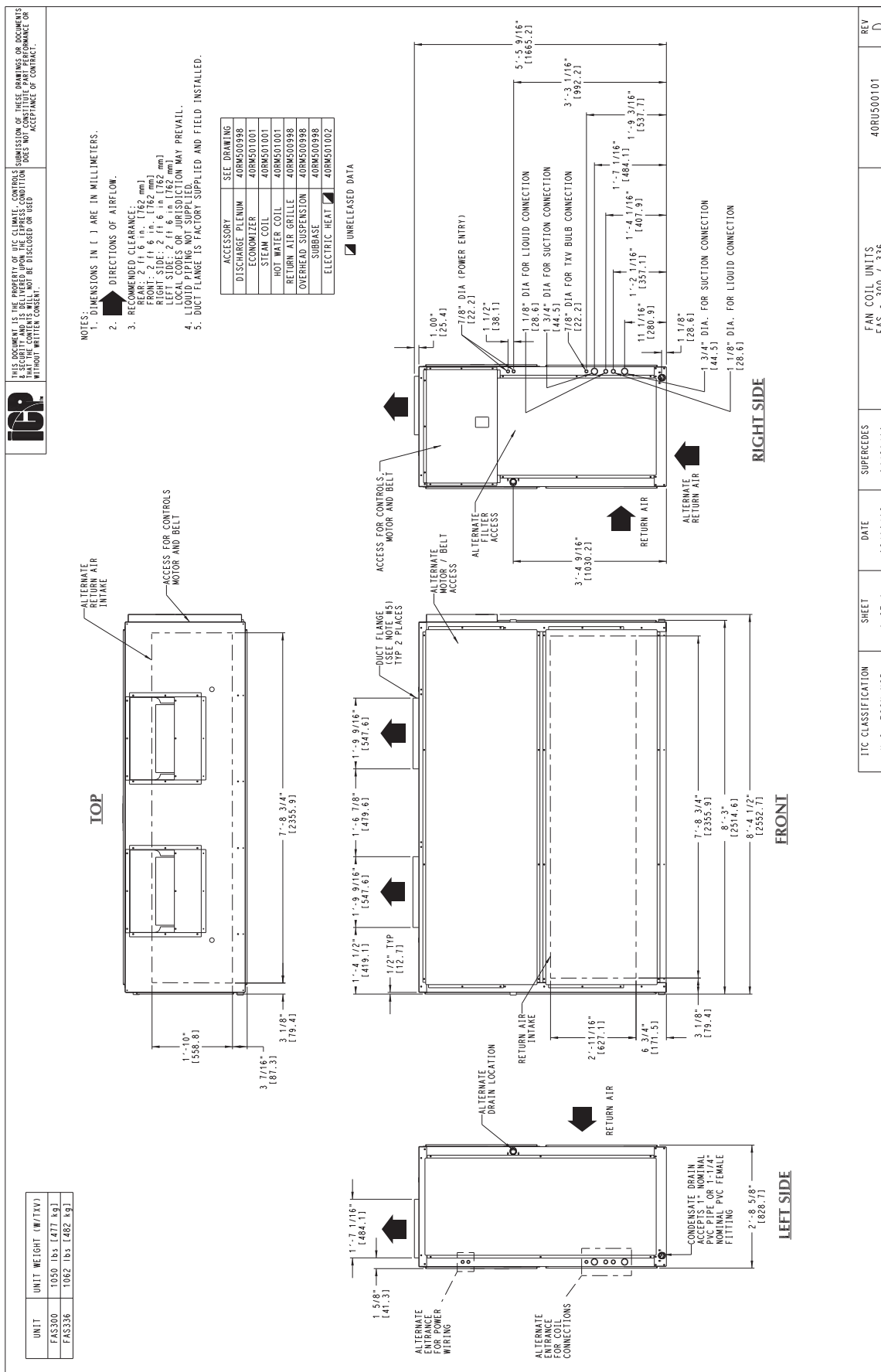


## Dimensions (cont)

## FAS150-240 UNIT DIMENSIONS

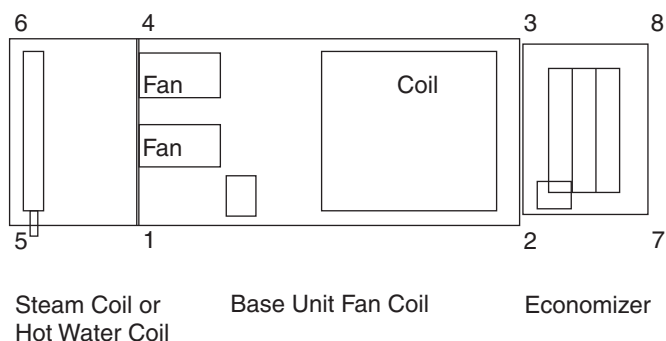


## FAS300-336 UNIT DIMENSIONS



# Dimensions (cont)

## CORNER WEIGHTS HORIZONTAL POSITION



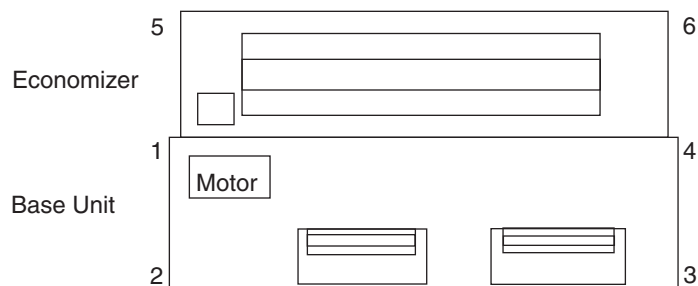
### FAS CORNER WEIGHTS - HORIZONTAL POSITION

| FAS<br>UNIT SIZE | UNIT OR<br>ACCESSORY NAME |     | UNIT OR<br>ACCESSORY<br>WEIGHT (lb) | CORNER NUMBER (WEIGHT IN LB) |       |       |       |       |       |       |       |
|------------------|---------------------------|-----|-------------------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|
|                  |                           |     |                                     | 1                            | 2     | 3     | 4     | 5     | 6     | 7     | 8     |
| FAS072           | FAN COIL BASE UNIT        |     | 399                                 | 109.3                        | 106.1 | 90.6  | 93.4  | —     | —     | —     | —     |
| FAS091           | FAN COIL BASE UNIT        |     | 404                                 | 110.7                        | 107.5 | 91.7  | 94.5  | —     | —     | —     | —     |
| FAS120           | FAN COIL BASE UNIT        |     | 425                                 | 116.4                        | 113.0 | 96.5  | 99.4  | —     | —     | —     | —     |
| FAS072-120       | STEAM COIL                | ADD | 215                                 | 40.2                         | 0.0   | 0.0   | 40.6  | 66.5  | 67.5  | 0.0   | 0.0   |
|                  | HOT WATER COIL            | ADD | 195                                 | 35.9                         | 0.0   | 0.0   | 36.7  | 60.4  | 62.0  | 0.0   | 0.0   |
|                  | ECONOMIZER                | ADD | 185                                 | 0.0                          | 36.8  | 35.7  | 0.0   | 0.0   | 0.0   | 56.8  | 55.1  |
|                  | ECO + STEAM COIL          | ADD | 400                                 | 38.8                         | 38.6  | 37.4  | 39.2  | 64.2  | 65.2  | 59.5  | 57.7  |
|                  | ECO + HW COIL             | ADD | 380                                 | 36.9                         | 35.8  | 34.6  | 37.7  | 62.1  | 63.8  | 55.1  | 53.4  |
| FAS150           | FAN COIL BASE UNIT        |     | 695                                 | 224.0                        | 177.7 | 129.8 | 163.7 | —     | —     | —     | —     |
| FAS180           | FAN COIL BASE UNIT        |     | 713                                 | 229.8                        | 182.3 | 133.2 | 167.9 | —     | —     | —     | —     |
| FAS240           | FAN COIL BASE UNIT        |     | 730                                 | 235.6                        | 186.4 | 136.5 | 171.5 | —     | —     | —     | —     |
| FAS150-240       | STEAM COIL                | ADD | 340                                 | 61.4                         | 0.0   | 0.0   | 62.0  | 107.8 | 108.8 | 0.0   | 0.0   |
|                  | HOT WATER COIL            | ADD | 285                                 | 51.7                         | 0.0   | 0.0   | 51.3  | 91.5  | 90.6  | 0.0   | 0.0   |
|                  | ECONOMIZER                | ADD | 340                                 | 0.0                          | 66.9  | 62.0  | 0.0   | 0.0   | 0.0   | 109.8 | 102.0 |
|                  | ECO + STEAM COIL          | ADD | 680                                 | 64.4                         | 63.7  | 59.0  | 65.0  | 113.0 | 114.1 | 104.5 | 97.1  |
|                  | ECO + HW COIL             | ADD | 625                                 | 60.0                         | 57.6  | 53.4  | 59.5  | 106.2 | 105.1 | 94.6  | 87.8  |
| FAS300           | FAN COIL BASE UNIT        |     | 1050                                | 338.4                        | 268.5 | 196.1 | 247.2 | —     | —     | —     | —     |
| FAS336           | FAN COIL BASE UNIT        |     | 1062                                | 342.4                        | 271.6 | 198.3 | 249.7 | —     | —     | —     | —     |
| FAS300, 336      | STEAM COIL                | ADD | 405                                 | 73.2                         | 0.0   | 0.0   | 73.8  | 128.4 | 129.6 | 0.0   | 0.0   |
|                  | HOT WATER COIL            | ADD | 345                                 | 62.6                         | 0.0   | 0.0   | 62.1  | 110.7 | 109.6 | 0.0   | 0.0   |
|                  | ECONOMIZER                | ADD | 450                                 | 0.0                          | 88.5  | 82.0  | 0.0   | 0.0   | 0.0   | 145.3 | 134.2 |
|                  | ECO + STEAM COIL          | ADD | 855                                 | 80.6                         | 80.1  | 74.1  | 81.6  | 142.0 | 143.4 | 131.3 | 122.0 |
|                  | ECO + HW COIL             | ADD | 795                                 | 76.8                         | 73.7  | 68.2  | 75.7  | 135.0 | 133.6 | 120.3 | 111.7 |

#### LEGEND

**ECO** — Economizer  
**HW** — Hot Water

## CORNER WEIGHTS VERTICAL POSITION



NOTE: Steam, Hot Water and Plenum on top of positions 1,2,3,4

### FAS CORNER WEIGHTS - VERTICAL POSITION

| FAS<br>UNIT SIZE       | UNIT OR<br>ACCESSORY NAME |     | UNIT OR<br>ACCESSORY<br>WEIGHT (lb) | CORNER NUMBER (WEIGHT IN LB) |       |       |       |       |       |
|------------------------|---------------------------|-----|-------------------------------------|------------------------------|-------|-------|-------|-------|-------|
|                        |                           |     |                                     | 1                            | 2     | 3     | 4     | 5     | 6     |
| <b>FAS072</b>          | FAN COIL BASE UNIT        |     | 399                                 | 100.5                        | 114.9 | 98.0  | 85.8  | —     | —     |
| <b>FAS091</b>          | FAN COIL BASE UNIT        |     | 404                                 | 101.7                        | 116.3 | 99.1  | 86.9  | —     | —     |
| <b>FAS120</b>          | FAN COIL BASE UNIT        |     | 425                                 | 107.6                        | 122.3 | 108.0 | 87.1  | —     | —     |
| <b>FAS072, 091,120</b> | STEAM COIL                | ADD | 215                                 | 54.1                         | 54.1  | 53.4  | 53.4  | 0.0   | 0.0   |
|                        | HOT WATER COIL            | ADD | 195                                 | 49.4                         | 49.4  | 48.1  | 48.1  | 0.0   | 0.0   |
|                        | PLENUM                    | ADD | 175                                 | 50.8                         | 36.7  | 36.7  | 50.8  | 0.0   | 0.0   |
|                        | ECONOMIZER                | ADD | 195                                 | 38.9                         | 0.0   | 0.0   | 37.1  | 59.9  | 58.3  |
|                        | ECO + STEAM COIL          | ADD | 410                                 | 93.0                         | 53.4  | 52.6  | 91.1  | 61.0  | 59.1  |
|                        | ECO + HW COIL             | ADD | 390                                 | 88.9                         | 52.3  | 50.9  | 86.5  | 56.7  | 54.9  |
| <b>FAS150</b>          | FAN COIL BASE UNIT        |     | 695                                 | 191.2                        | 210.5 | 153.8 | 139.5 | —     | —     |
| <b>FAS180</b>          | FAN COIL BASE UNIT        |     | 713                                 | 196.2                        | 216.0 | 157.8 | 143.1 | —     | —     |
| <b>FAS150, 180</b>     | STEAM COIL                | ADD | 340                                 | 85.4                         | 85.4  | 84.6  | 84.6  | 0.0   | 0.0   |
|                        | HOT WATER COIL            | ADD | 285                                 | 70.9                         | 70.9  | 71.6  | 71.6  | 0.0   | 0.0   |
|                        | PLENUM                    | ADD | 225                                 | 72.5                         | 40.0  | 40.0  | 72.5  | 0.0   | 0.0   |
|                        | ECONOMIZER                | ADD | 340                                 | 66.5                         | 0.0   | 0.0   | 62.0  | 109.5 | 102.0 |
|                        | ECO + STEAM COIL          | ADD | 680                                 | 153.0                        | 89.1  | 88.7  | 147.7 | 104.5 | 97.0  |
|                        | ECO + HW COIL             | ADD | 625                                 | 139.9                        | 82.5  | 83.3  | 136.7 | 94.7  | 87.9  |

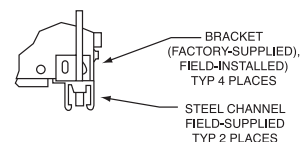
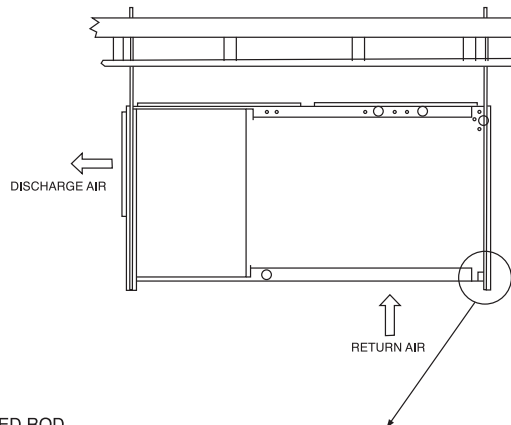
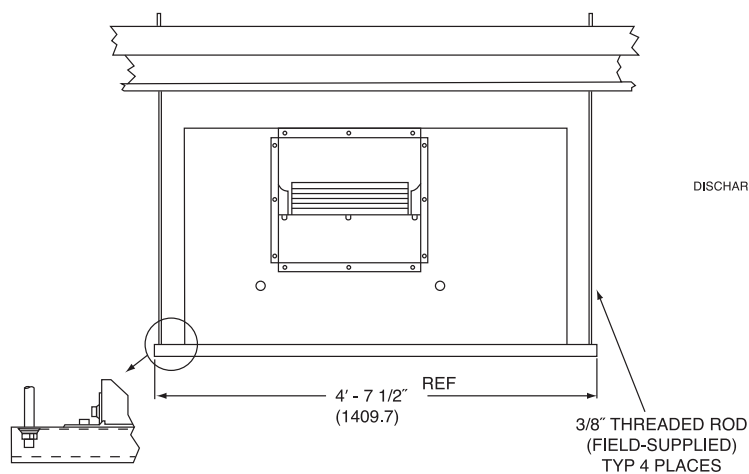
#### LEGEND

**ECO** — Economizer  
**HW** — Hot Water

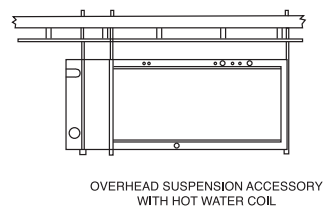
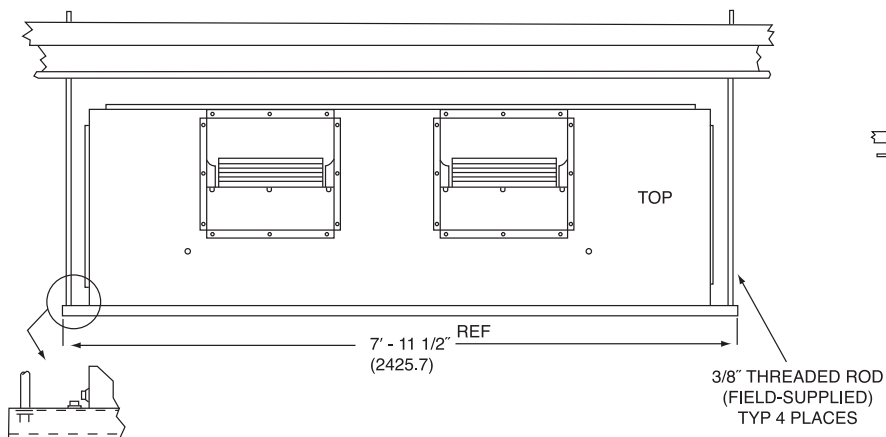
# Dimensions (cont)

## OVERHEAD SUSPENSION ACCESSORY

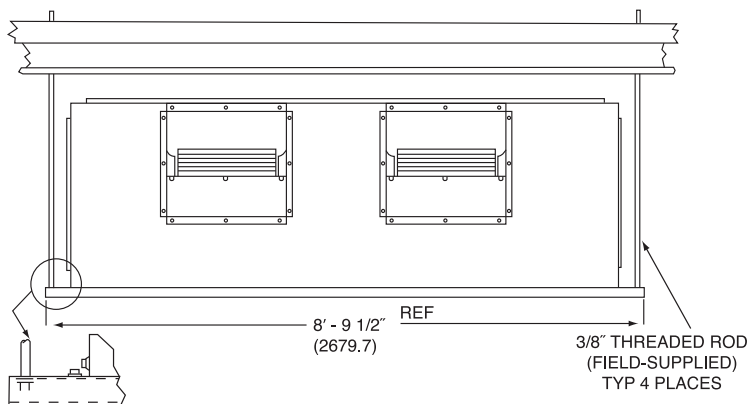
6 TO 10 TON UNITS  
(FRONT)



12.5 TO 20 TON UNITS  
(FRONT)



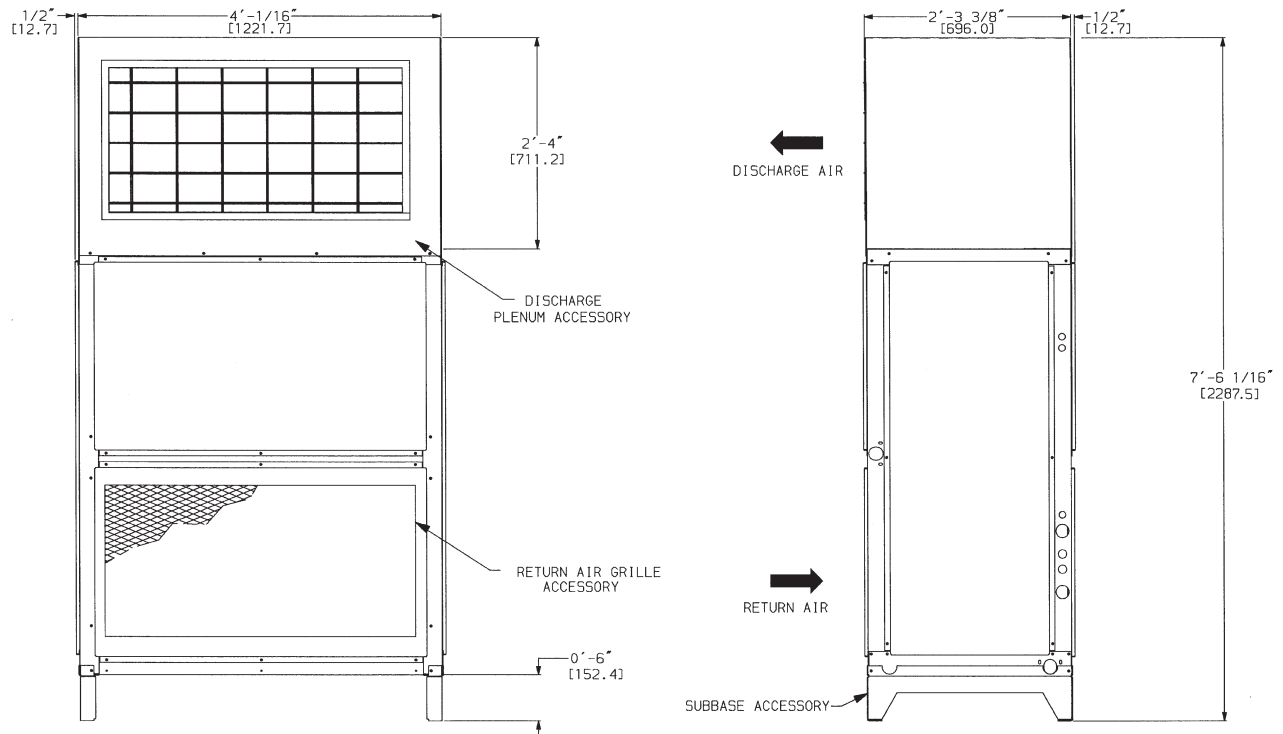
25 AND 30 TON UNITS  
(FRONT)



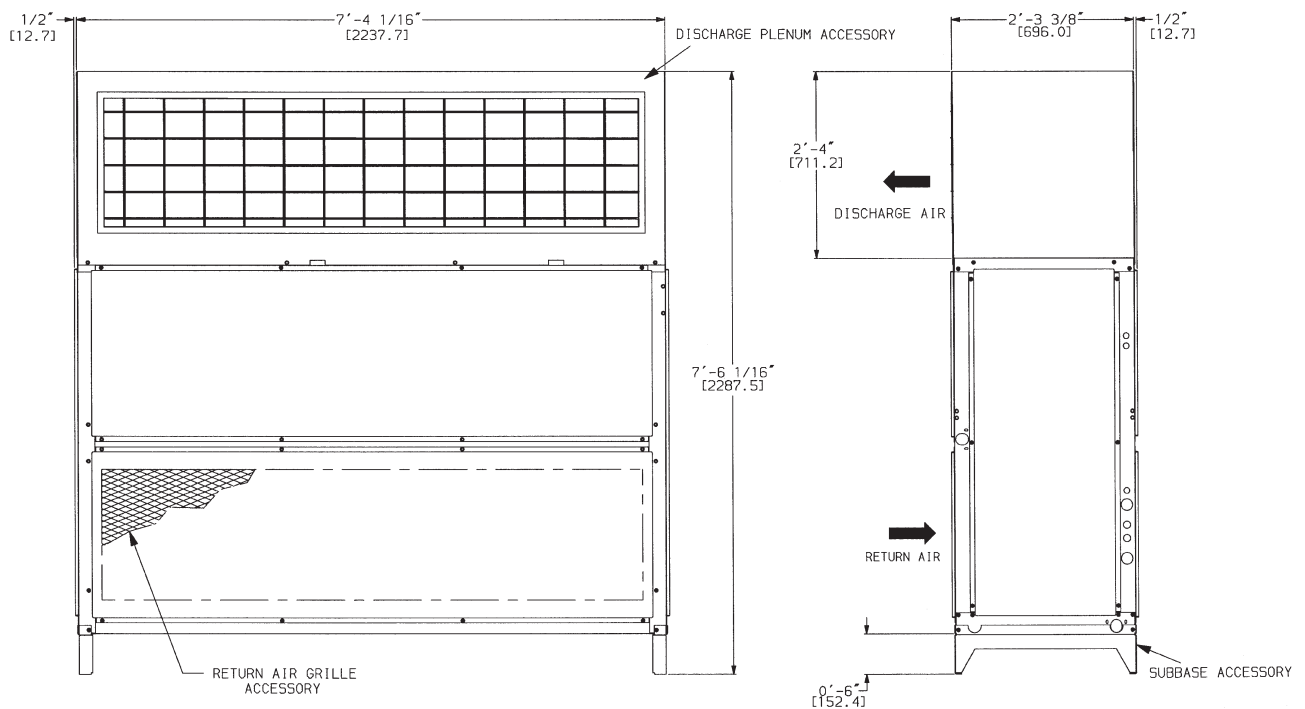
NOTE: Dimensions in [ ] are millimeters.

## PLENUM, RETURN-AIR GRILLE, AND SUBBASE ACCESSORIES

6 TO 10 TON UNITS



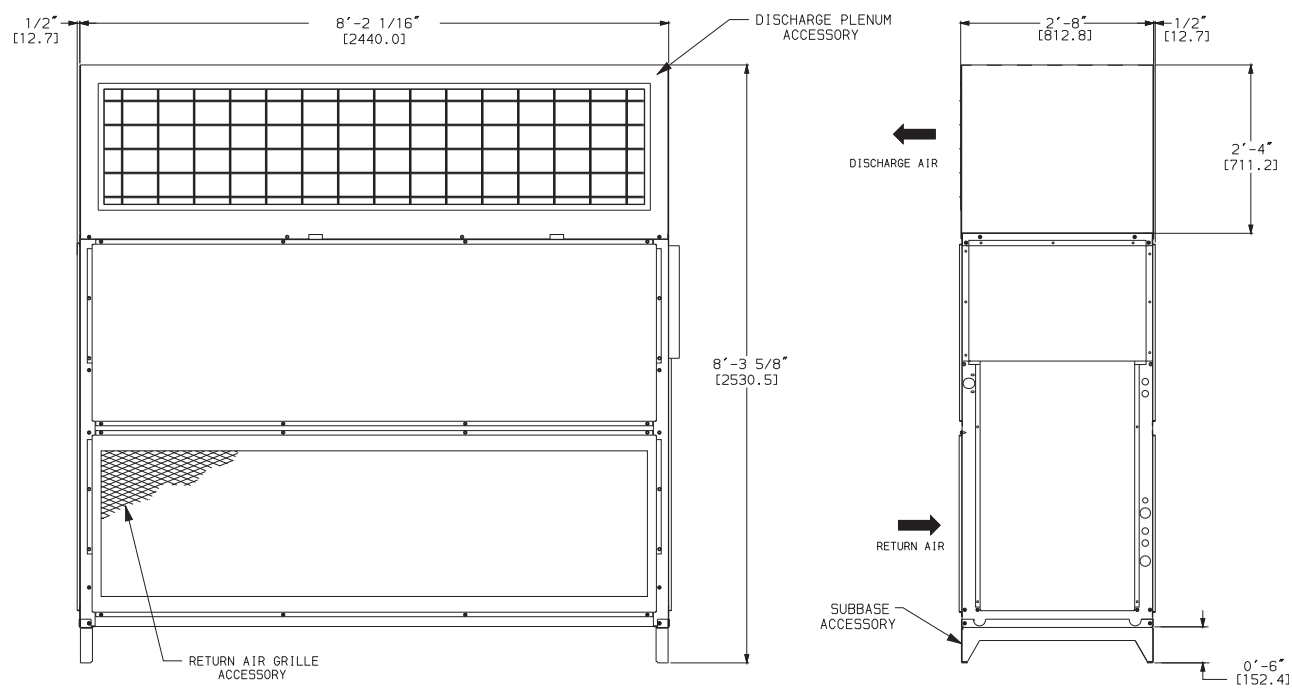
12.5 TO 20 TON UNITS



NOTE: Dimensions in [ ] are millimeters.

# Dimensions (cont)

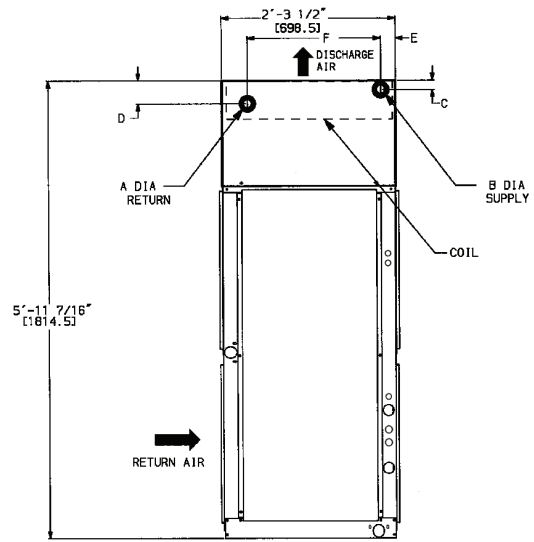
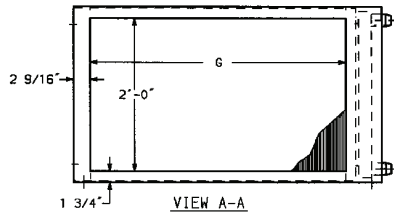
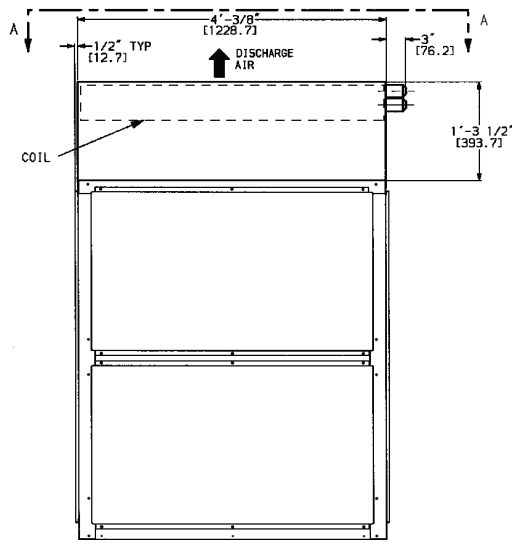
## PLENUM, RETURN-AIR GRILLE, AND SUBBASE ACCESSORIES 25 TO 30 TON UNITS



NOTE: Dimensions in [ ] are millimeters.

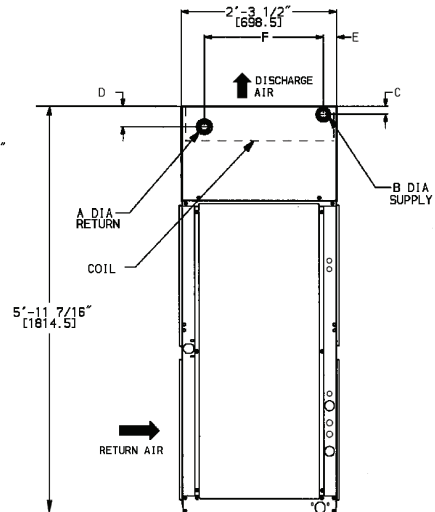
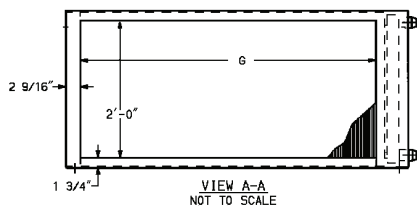
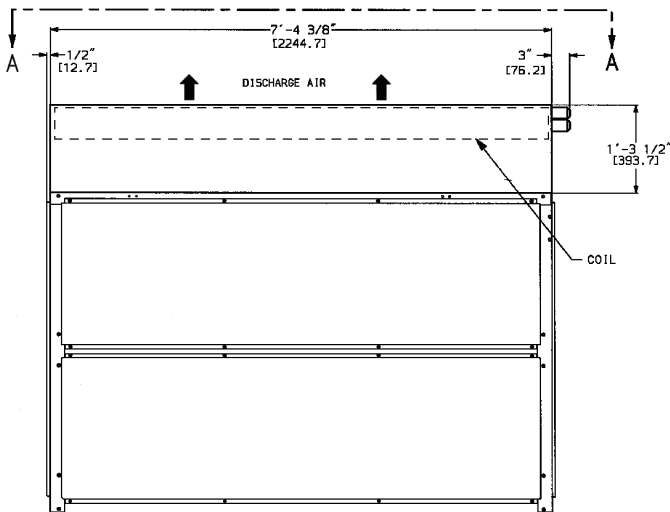
## HOT WATER AND STEAM COIL ACCESSORIES

### 6 TO 10 TON UNITS



| DIMENSION | HOT WATER COIL |          | STEAM COIL |          |
|-----------|----------------|----------|------------|----------|
| A         | 1 1/2" MPT     | [38.1]   | 1 1/2" MPT | [38.1]   |
| B         | 1 1/2" MPT     | [38.1]   | 2 1/2" MPT | [63.5]   |
| C         | 2 3/8"         | [60.3]   | 3 1/8"     | [79.4]   |
| D         | 4 7/8"         | [123.8]  | 3 1/8"     | [79.4]   |
| E         | 2 1/8"         | [54.0]   | 4 9/16"    | [115.8]  |
| F         | 1'-11 1/4"     | [590.6]  | 1'-9"      | [584.2]  |
| G         | 3'-4"          | [1016.0] | 3'-4"      | [1016.0] |

### 12.5 TO 20 TON UNITS



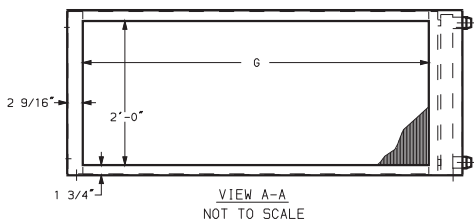
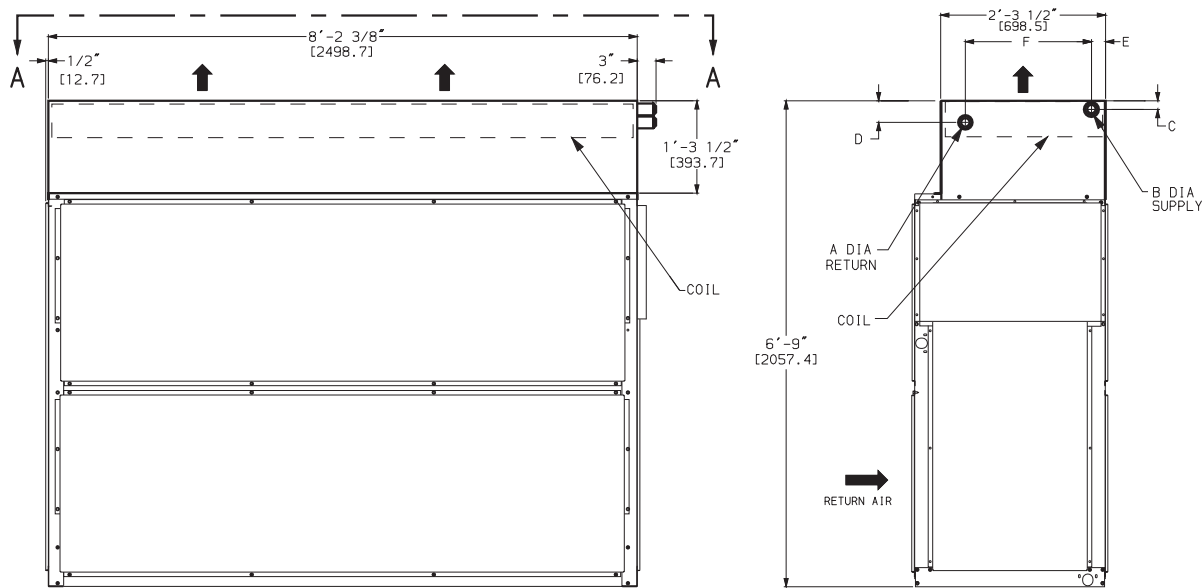
| DIMENSION | HOT WATER COIL |          | STEAM COIL |          |
|-----------|----------------|----------|------------|----------|
| A         | 2" MPT         | [50.8]   | 1 1/2" MPT | [38.1]   |
| B         | 2" MPT         | [50.8]   | 2 1/2" MPT | [63.5]   |
| C         | 2 3/8"         | [60.3]   | 3 1/8"     | [79.4]   |
| D         | 4 7/8"         | [123.8]  | 3 1/8"     | [79.4]   |
| E         | 2 1/8"         | [54.0]   | 4 9/16"    | [115.8]  |
| F         | 1'-11 1/4"     | [590.6]  | 1'-9"      | [584.2]  |
| G         | 6'-8"          | [2032.0] | 6'-8"      | [2032.0] |

NOTE: Dimensions in [ ] are millimeters.

# Dimensions (cont)

## HOT WATER AND STEAM COIL ACCESSORIES

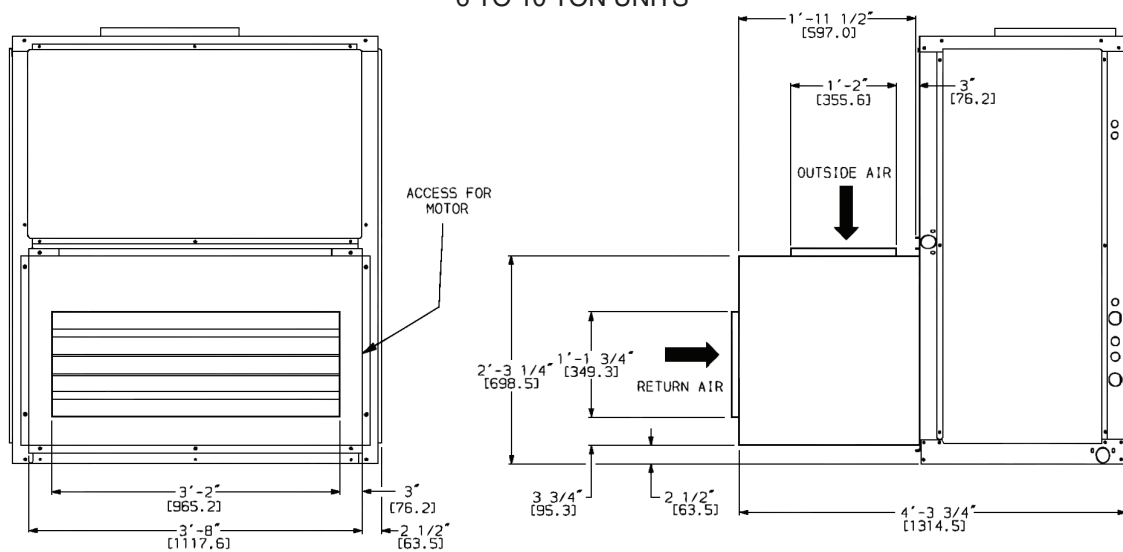
### 25 TO 30 TON UNITS



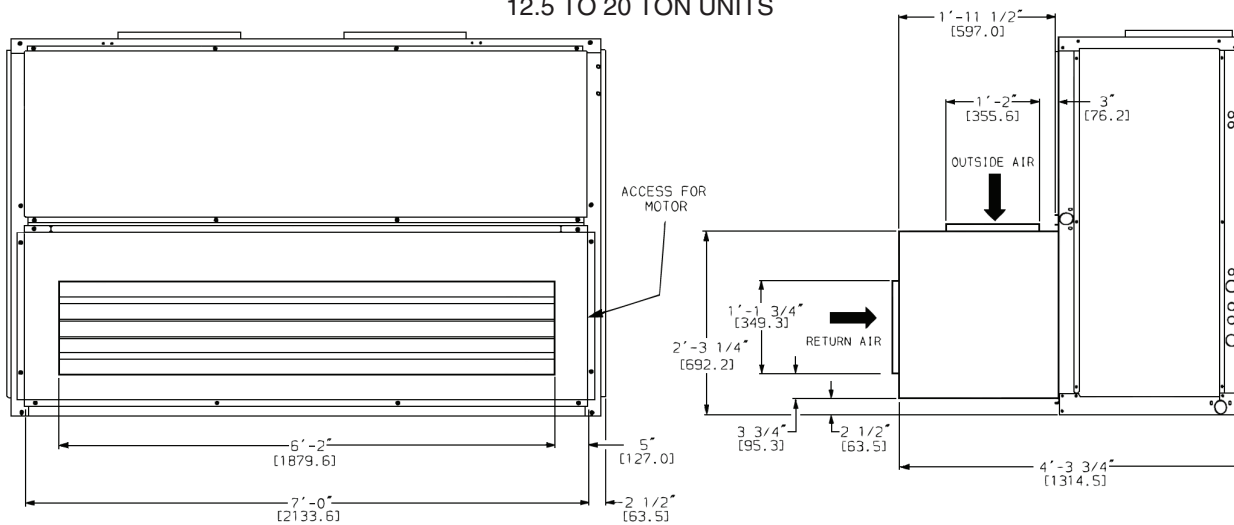
NOTE: Dimensions in [ ] are millimeters.

| DIMENSION | HOT WATER COIL |          | STEAM COIL |          |
|-----------|----------------|----------|------------|----------|
| A         | 2"MPT          | [50.8]   | 1 1/2" MPT | [38.1]   |
| B         | 2" MPT         | [50.8]   | 2 1/2" MPT | [63.5]   |
| C         | 2 3/8"         | [60.3]   | 3 1/8"     | [79.4]   |
| D         | 4 7/8"         | [123.8]  | 3 1/8"     | [79.4]   |
| E         | 2 1/8"         | [54.0]   | 4 9/16"    | [115.8]  |
| F         | 1'-11 1/4"     | [590.6]  | 1'-9"      | [584.2]  |
| G         | 7'-6"          | [2286.0] | 7'-6"      | [2286.0] |

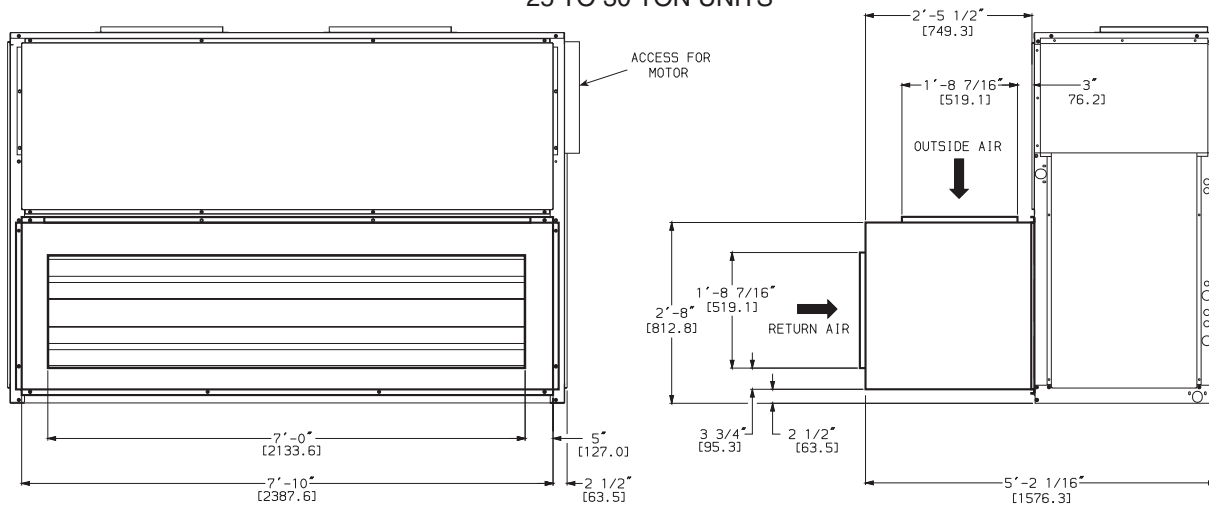
## ECONOMIZER ACCESSORY



## 12.5 TO 20 TON UNITS



## 25 TO 30 TON UNITS



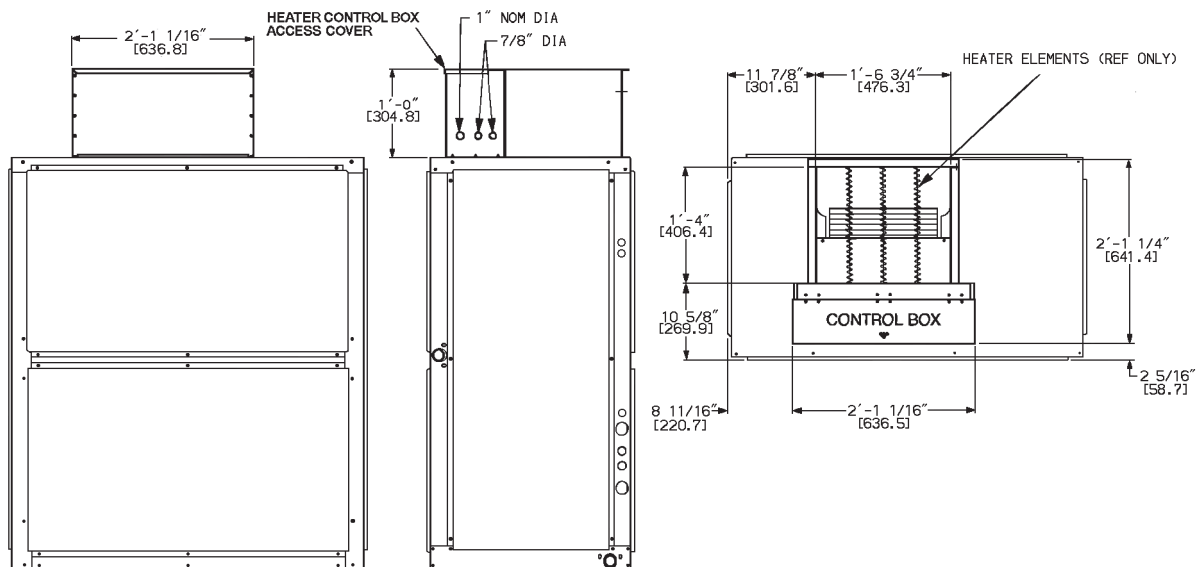
NOTE:

1. For horizontal unit applications, economizer can be attached to end of unit opposite duct connections.
2. Dimensions in [ ] are millimeters.

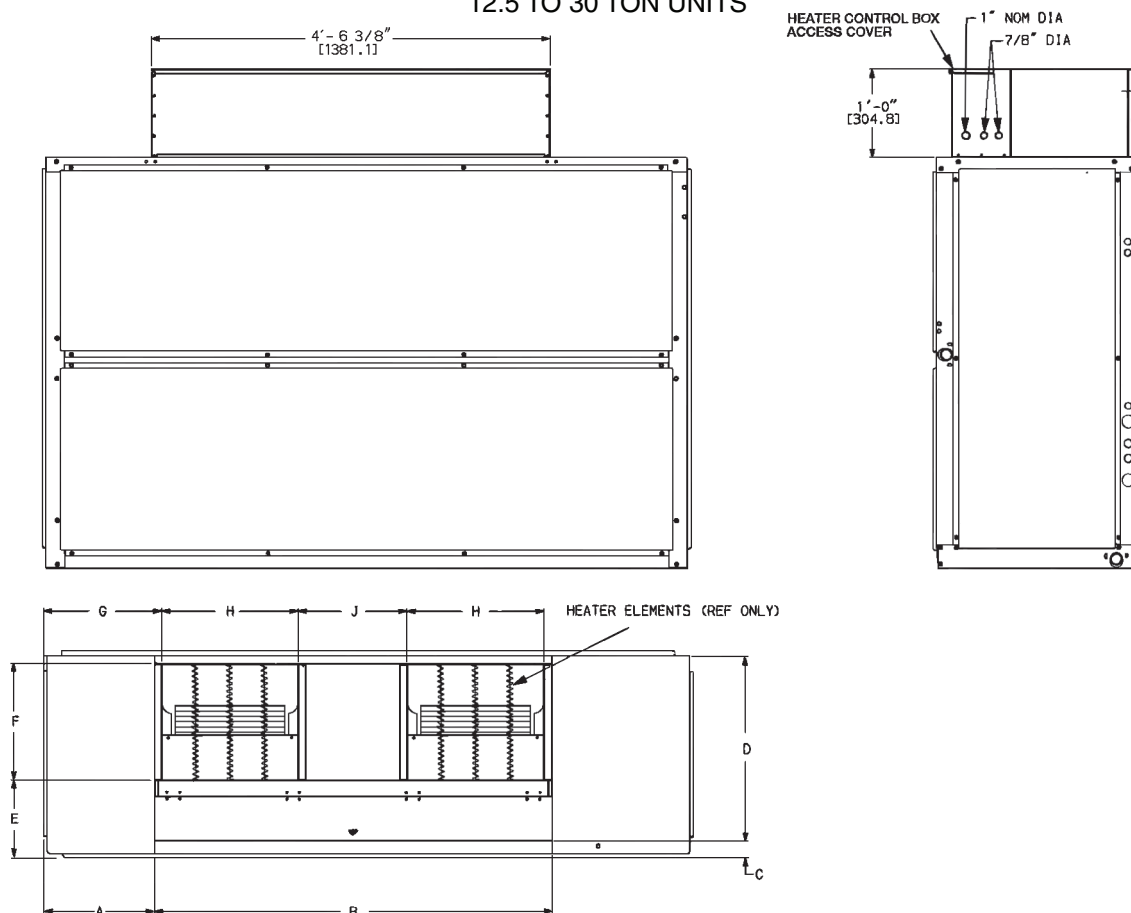
# Dimensions (cont)

## ELECTRIC HEAT ACCESSORY

### 6 TO 10 TON UNITS



### 12.5 TO 30 TON UNITS



# Selection procedure

## Cooling (DX)

### I Determine the cooling load and temperature and quantity of air entering the evaporator.

Given:

|                                            |                                |
|--------------------------------------------|--------------------------------|
| Total Capacity .....                       | 300,000 Btuh                   |
| Sensible Heat Capacity .....               | 200,000 Btuh                   |
| Air Temperature Entering Indoor Coil ..... | 80°F (27°C) db, 67°F (19°C) wb |
| Air Quantity Entering Indoor Coil .....    | 8000 cfm                       |
| Ductwork Static Pressure Loss.....         | 0.2 in. wg                     |
| Power Supply .....                         | 230-3-60                       |

### II Determine unit selection and coil refrigerant temperature.

Enter the Cooling Capacities table at 8000 cfm. Select a FAS180 unit which has a total capacity of 309,000 and 256,000 Btuh at 40°F and 45°F (4°C and 7°C) coil refrigerant temperature, respectively. By interpolation, coil refrigerant temperature of 40.8°F (4.9°C) is needed to give a total capacity of 300,000 Btuh. Sensible capacity is approximately 208,000 Btuh. Cooling load is satisfied.

## Heating (Hot Water Coil)

### I Determine heating load and temperature of air entering the indoor coil.

Given:

|                                      |              |
|--------------------------------------|--------------|
| Load .....                           | 525,000 Btuh |
| Entering-Air Temperature .....       | 70°F (21°C)  |
| Coils 2-Row Hot Water                |              |
| Coil Entering-Water Temperature..... | 200°F (93°C) |
| Water Temperature Drop.....          | 20°F (–7°C)  |

### II Find the heating capacity.

Enter Hydronic Heating Capacities table for the FAS240 unit at 8000 cfm. A 2-row hot water coil delivers

584,000 Btuh (based on 60°F/16°C entering air temperature and 20°F /–7°C water temperature drop). Since existing entering air temperature is 70°F (21°C), enter the Heating Correction Factors table for hot water coils at 200°F (93°C) entering water temperature, 20°F (–7°C) water temperature drop and 70°F (21°C) entering air. Read a constant of 0.93.

$$584,000 \times 0.93 = 543,000$$

The 584,000 Btuh rating satisfies the heating load.

## Fan

### I Determine fan speed and brake horsepower:

From the Accessory Pressure Drop table, read a loss of 0.37 in. wg for a hot water coil at 8000 cfm.

$$\begin{aligned} \text{External static pressure} &= 0.20 + 0.37 \\ &= 0.57 \text{ in. wg} \end{aligned}$$

Enter FAS240 Fan Performance table at 8000 cfm and 0.57 in. wg. Interpolate and determine fan speed of 825 rpm and 3.79 bhp.

### II Determine motor and drive.

Enter the fan motor data tables and find that the 230 v standard motor for a FAS240 unit is rated at 5.0 Hp. Since the bhp required is 3.79, a standard motor satisfies the requirement and should be used.

Next, find the type of drive that satisfies the 825 rpm requirement in the Drive Data tables. For a FAS240 unit, the Standard-Static Drive table shows an rpm range of 679 to 841. Since the rpm required is 825, the medium-static drive satisfies the requirement and should be used. Select the standard motor and medium-static drive combination (option A in the 8th position).

To select an outdoor unit for this FAS240 indoor section, refer to the Combination Rating sheets for condensing units in the condensing unit Product Data.

# Performance data

## FAS COOLING CAPACITIES

| FAS UNIT | EVAPORATOR AIR |          | COIL REFRIGERANT TEMP (°F) |     |     |     |     |     |     |     |     |     |
|----------|----------------|----------|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|          | AIRFLOW (CFM)  | EWB (°F) | 30                         |     | 35  |     | 40  |     | 45  |     | 50  |     |
|          |                |          | TC                         | SHC | TC  | SHC | TC  | SHC | TC  | SHC | TC  | SHC |
| 072      | 1,800          | 72       | 124                        | 60  | 113 | 55  | 101 | 49  | 87  | 43  | 71  | 37  |
|          |                | 67       | 104                        | 64  | 93  | 59  | 81  | 53  | 67  | 47  | 52  | 40  |
|          |                | 62       | 86                         | 68  | 75  | 62  | 63  | 56  | 49  | 49  | 42  | 42  |
|          | 2,400          | 72       | 143                        | 69  | 131 | 64  | 117 | 58  | 101 | 52  | 83  | 44  |
|          |                | 67       | 121                        | 76  | 108 | 70  | 94  | 64  | 78  | 57  | 60  | 50  |
|          |                | 62       | 101                        | 83  | 88  | 76  | 73  | 69  | 60  | 60  | 51  | 51  |
|          | 3,000          | 72       | 158                        | 77  | 144 | 71  | 129 | 65  | 111 | 58  | 92  | 51  |
|          |                | 67       | 134                        | 86  | 121 | 80  | 105 | 73  | 87  | 66  | 67  | 58  |
|          |                | 62       | 113                        | 95  | 98  | 88  | 82  | 80  | 70  | 70  | 59  | 59  |
| 091      | 2,250          | 72       | 155                        | 75  | 141 | 68  | 126 | 61  | 108 | 54  | 89  | 46  |
|          |                | 67       | 130                        | 80  | 116 | 73  | 101 | 66  | 83  | 59  | 64  | 51  |
|          |                | 62       | 108                        | 85  | 94  | 78  | 78  | 70  | 62  | 62  | 52  | 52  |
|          | 3,000          | 72       | 179                        | 86  | 164 | 80  | 146 | 72  | 126 | 64  | 103 | 56  |
|          |                | 67       | 151                        | 95  | 136 | 88  | 118 | 80  | 98  | 71  | 75  | 62  |
|          |                | 62       | 126                        | 103 | 110 | 95  | 92  | 86  | 76  | 76  | 64  | 64  |
|          | 3,750          | 72       | 197                        | 96  | 180 | 89  | 161 | 82  | 139 | 73  | 115 | 63  |
|          |                | 67       | 168                        | 108 | 151 | 100 | 131 | 92  | 109 | 82  | 84  | 72  |
|          |                | 62       | 141                        | 119 | 122 | 110 | 103 | 100 | 87  | 87  | 74  | 74  |
| 120      | 3,000          | 72       | 200                        | 96  | 182 | 88  | 161 | 79  | 138 | 70  | 113 | 60  |
|          |                | 67       | 168                        | 104 | 150 | 96  | 130 | 86  | 107 | 76  | 83  | 66  |
|          |                | 62       | 140                        | 112 | 121 | 102 | 101 | 92  | 82  | 82  | 69  | 69  |
|          | 4,000          | 72       | 228                        | 111 | 208 | 102 | 185 | 93  | 159 | 83  | 130 | 71  |
|          |                | 67       | 194                        | 124 | 174 | 114 | 150 | 104 | 124 | 93  | 96  | 81  |
|          |                | 62       | 162                        | 135 | 141 | 124 | 119 | 113 | 99  | 99  | 84  | 84  |
|          | 5,000          | 72       | 250                        | 123 | 228 | 114 | 204 | 105 | 175 | 94  | 143 | 81  |
|          |                | 67       | 214                        | 140 | 192 | 130 | 166 | 119 | 138 | 107 | 106 | 94  |
|          |                | 62       | 179                        | 155 | 156 | 143 | 133 | 130 | 113 | 113 | 96  | 96  |
| 150      | 3,750          | 72       | 251                        | 121 | 228 | 110 | 202 | 99  | 173 | 87  | 140 | 74  |
|          |                | 67       | 210                        | 129 | 187 | 118 | 161 | 106 | 133 | 94  | 102 | 81  |
|          |                | 62       | 174                        | 138 | 150 | 126 | 125 | 113 | 100 | 100 | 84  | 84  |
|          | 5,000          | 72       | 289                        | 139 | 263 | 128 | 233 | 116 | 200 | 103 | 162 | 88  |
|          |                | 67       | 244                        | 154 | 218 | 141 | 188 | 128 | 155 | 114 | 119 | 99  |
|          |                | 62       | 203                        | 167 | 176 | 153 | 146 | 138 | 121 | 121 | 102 | 102 |
|          | 6,250          | 72       | 319                        | 155 | 290 | 143 | 258 | 131 | 221 | 116 | 180 | 101 |
|          |                | 67       | 271                        | 174 | 242 | 161 | 209 | 147 | 172 | 132 | 133 | 115 |
|          |                | 62       | 226                        | 192 | 196 | 177 | 164 | 160 | 139 | 139 | 118 | 118 |
| 180      | 4,500          | 72       | 310                        | 150 | 281 | 136 | 249 | 122 | 214 | 108 | 174 | 92  |
|          |                | 67       | 260                        | 160 | 231 | 145 | 199 | 131 | 165 | 116 | 127 | 100 |
|          |                | 62       | 215                        | 169 | 186 | 154 | 154 | 138 | 121 | 121 | 102 | 102 |
|          | 6,000          | 72       | 361                        | 175 | 329 | 161 | 292 | 145 | 250 | 128 | 205 | 110 |
|          |                | 67       | 304                        | 191 | 271 | 175 | 235 | 159 | 194 | 141 | 149 | 122 |
|          |                | 62       | 254                        | 206 | 220 | 189 | 183 | 170 | 149 | 149 | 125 | 125 |
|          | 7,500          | 72       | 401                        | 196 | 366 | 181 | 325 | 164 | 280 | 146 | 229 | 127 |
|          |                | 67       | 340                        | 218 | 304 | 201 | 263 | 183 | 218 | 164 | 167 | 143 |
|          |                | 62       | 285                        | 239 | 247 | 220 | 206 | 197 | 172 | 172 | 145 | 145 |
| 240      | 6,000          | 72       | 408                        | 197 | 372 | 180 | 331 | 162 | 272 | 141 | 232 | 123 |
|          |                | 67       | 344                        | 213 | 307 | 195 | 266 | 176 | 220 | 156 | 169 | 135 |
|          |                | 62       | 286                        | 227 | 248 | 208 | 207 | 188 | 164 | 164 | 139 | 139 |
|          | 8,000          | 72       | 470                        | 228 | 429 | 210 | 382 | 191 | 329 | 170 | 269 | 147 |
|          |                | 67       | 399                        | 253 | 357 | 233 | 309 | 212 | 256 | 189 | 197 | 166 |
|          |                | 62       | 333                        | 275 | 290 | 254 | 242 | 230 | 202 | 202 | 170 | 170 |
|          | 10,000         | 72       | 516                        | 253 | 471 | 235 | 421 | 215 | 363 | 192 | 297 | 168 |
|          |                | 67       | 440                        | 287 | 395 | 266 | 343 | 244 | 284 | 219 | 220 | 193 |
|          |                | 62       | 369                        | 317 | 322 | 294 | 271 | 266 | 232 | 232 | 196 | 196 |

### FAS COOLING CAPACITIES (cont)

| FAS UNIT | EVAPORATOR AIR |          | COIL REFRIGERANT TEMP (°F) |     |     |     |     |     |     |     |     |     |
|----------|----------------|----------|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|          | AIRFLOW (CFM)  | EWB (°F) | 30                         |     | 35  |     | 40  |     | 45  |     | 50  |     |
|          |                |          | TC                         | SHC | TC  | SHC | TC  | SHC | TC  | SHC | TC  | SHC |
| 300      | 7,500          | 72       | 470                        | 226 | 428 | 208 | 379 | 187 | 328 | 167 | 270 | 144 |
|          |                | 67       | 395                        | 246 | 354 | 227 | 307 | 205 | 255 | 183 | 197 | 159 |
|          |                | 62       | 329                        | 265 | 287 | 244 | 240 | 221 | 193 | 193 | 163 | 163 |
|          | 10,000         | 72       | 535                        | 260 | 487 | 240 | 434 | 219 | 376 | 196 | 310 | 171 |
|          |                | 67       | 454                        | 291 | 407 | 269 | 354 | 246 | 295 | 221 | 228 | 194 |
|          |                | 62       | 380                        | 320 | 332 | 296 | 279 | 268 | 235 | 235 | 199 | 199 |
|          | 12,500         | 72       | 583                        | 287 | 531 | 267 | 475 | 245 | 412 | 221 | 341 | 194 |
|          |                | 67       | 499                        | 329 | 448 | 306 | 390 | 282 | 325 | 255 | 252 | 225 |
|          |                | 62       | 420                        | 367 | 367 | 341 | 310 | 310 | 269 | 269 | 228 | 228 |
| 336      | 9,000          | 72       | 564                        | 271 | 513 | 249 | 456 | 225 | 394 | 200 | 324 | 173 |
|          |                | 67       | 476                        | 296 | 425 | 272 | 368 | 246 | 306 | 220 | 236 | 191 |
|          |                | 62       | 395                        | 319 | 344 | 293 | 288 | 265 | 231 | 231 | 195 | 195 |
|          | 12,500         | 72       | 642                        | 312 | 584 | 288 | 521 | 263 | 451 | 235 | 372 | 205 |
|          |                | 67       | 545                        | 349 | 489 | 323 | 425 | 295 | 353 | 265 | 273 | 233 |
|          |                | 62       | 456                        | 383 | 398 | 355 | 334 | 322 | 281 | 281 | 238 | 238 |
|          | 15,000         | 72       | 699                        | 345 | 637 | 320 | 570 | 294 | 495 | 265 | 410 | 233 |
|          |                | 67       | 598                        | 394 | 537 | 367 | 468 | 338 | 390 | 306 | 303 | 270 |
|          |                | 62       | 503                        | 440 | 440 | 409 | 371 | 371 | 322 | 322 | 273 | 273 |

#### LEGEND

|     |   |                                    |
|-----|---|------------------------------------|
| db  | — | Dry-Bulb Temp (°F)                 |
| Ewb | — | Entering Wet-Bulb Temp (°F)        |
| Lwb | — | Leaving Wet-Bulb Temp (°F)         |
| SHC | — | Sensible Heat Capacity (1000 Btuh) |
| TC  | — | Total Capacity (1000 Btuh)         |

#### NOTES:

1. Ratings based on approximately 15°F superheat leaving coil.
2. Direct interpolation is permissible. Do not extrapolate.
3. Dashes indicate coil loading limits are exceeded.
4. Evaporator fan heat not deducted from ratings.
5. Formulas:

$$\text{Leaving db} = \text{entering db} - \frac{\text{sensible heat capacity (Btuh)}}{1.1 \times \text{cfm}}$$

$$\text{Leaving wb} = \text{wet-bulb temperature corresponding to enthalpy of air leaving coil (h}_{Lwb}\text{)}$$

$$h_{Lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

$$\text{where } h_{Lwb} = \text{enthalpy of air entering coil}$$

6. SHC is based on 80°F db temperature of air entering evaporator coil.

# Performance data (cont)

## HYDRONIC HEATING CAPACITIES

| FAS UNIT | AIRFLOW (CFM) | 1-ROW STEAM* |     | 2-ROW HOT WATER COIL† |     |                  |     |
|----------|---------------|--------------|-----|-----------------------|-----|------------------|-----|
|          |               | CAP          | LDB | CAP                   | LDB | WATER FLOW (GPM) | PD  |
| 072      | 1,800         | 146          | 134 | 156.0                 | 140 | 15.6             | 3.4 |
|          | 2,400         | 173          | 126 | 183.0                 | 131 | 18.3             | 4.3 |
|          | 3,000         | 209          | 123 | 206.0                 | 124 | 20.6             | 5.2 |
| 091      | 2,250         | 168          | 129 | 174.0                 | 133 | 17.4             | 4.0 |
|          | 3,000         | 209          | 123 | 206.0                 | 124 | 20.6             | 5.2 |
|          | 3,750         | 240          | 117 | 238.0                 | 118 | 23.8             | 6.5 |
| 120      | 3,000         | 209          | 123 | 299.0                 | 152 | 29.9             | 5.0 |
|          | 4,000         | 243          | 115 | 275.0                 | 124 | 27.5             | 6.6 |
|          | 5,000         | 279          | 111 | 316.0                 | 119 | 31.6             | 8.2 |
| 150      | 3,750         | 370          | 150 | 362.0                 | 149 | 36.2             | 4.2 |
|          | 5,000         | 425          | 137 | 409.0                 | 136 | 40.9             | 5.1 |
|          | 6,250         | 465          | 128 | 456.0                 | 128 | 45.6             | 6.0 |
| 180      | 4,500         | 402          | 141 | 412.0                 | 145 | 41.2             | 4.5 |
|          | 6,000         | 458          | 129 | 471.0                 | 133 | 47.1             | 5.5 |
|          | 7,500         | 479          | 118 | 529.0                 | 125 | 52.9             | 6.6 |
| 240      | 6,000         | 458          | 129 | 506.0                 | 138 | 50.6             | 5.1 |
|          | 8,000         | 487          | 115 | 584.0                 | 128 | 58.4             | 6.3 |
|          | 10,000        | 499          | 105 | 652.0                 | 120 | 65.2             | 7.5 |
| 300      | 7,500         | 511          | 122 | 649.0                 | 140 | 64.9             | 5.7 |
|          | 10,000        | 575          | 112 | 752.0                 | 130 | 75.2             | 7.1 |
|          | 12,500        | 626          | 106 | 842.0                 | 122 | 84.2             | 8.5 |
| 336      | 9,000         | 560          | 117 | 735.0                 | 136 | 73.5             | 6.2 |
|          | 12,000        | 621          | 107 | 850.0                 | 126 | 85.0             | 7.8 |
|          | 15,000        | 670          | 101 | 950.0                 | 119 | 95.0             | 9.3 |

### LEGEND

**CAP** — Capacity (Btuh in thousands)  
**LDB** — Leaving Air Dry Bulb Temp (°F)  
**PD** — Pressure Drop (ft water)

\* Based on 5 psig steam, 60°F entering-air temperature. All steam coils are non-freeze type.

† Based on 200°F entering water, 20°F water temperature drop, 60°F entering-air temperature.

### NOTES:

- Maximum operating limits for heating coils: 20 psig at 260°F.
- Leaving db = ent db (°F) +  $\frac{\text{Capacity (Btuh)}}{1.1 \times \text{cfm}}$
- See Heating Correction Factors table.

## HEATING CORRECTION FACTORS

| HOT WATER COIL       |                     |                        |      |      |      |      |
|----------------------|---------------------|------------------------|------|------|------|------|
| WATER TEMP DROP (°F) | ENT WATER TEMP (°F) | ENTERING-AIR TEMP (°F) |      |      |      |      |
|                      |                     | 40                     | 50   | 60   | 70   | 80   |
| 10                   | 140                 | 0.72                   | 0.64 | 0.57 | 0.49 | 0.41 |
|                      | 160                 | 0.89                   | 0.81 | 0.74 | 0.66 | 0.58 |
|                      | 180                 | 1.06                   | 0.98 | 0.90 | 0.83 | 0.75 |
|                      | 200                 | 1.22                   | 1.15 | 1.07 | 1.00 | 0.92 |
| 20                   | 220                 | 1.39                   | 1.32 | 1.24 | 1.17 | 1.09 |
|                      | 140                 | 0.64                   | 0.57 | 0.49 | 0.41 | 0.33 |
|                      | 160                 | 0.81                   | 0.74 | 0.66 | 0.58 | 0.51 |
|                      | 180                 | 0.98                   | 0.91 | 0.83 | 0.75 | 0.68 |
| 30                   | 200                 | 1.15                   | 1.08 | 1.00 | 0.93 | 0.85 |
|                      | 220                 | 1.32                   | 1.25 | 1.17 | 1.10 | 1.02 |
|                      | 140                 | 0.56                   | 0.49 | 0.41 | 0.33 | 0.24 |
|                      | 160                 | 0.74                   | 0.66 | 0.58 | 0.51 | 0.43 |
| 30                   | 180                 | 0.91                   | 0.83 | 0.76 | 0.68 | 0.60 |
|                      | 200                 | 1.08                   | 1.00 | 0.93 | 0.85 | 0.78 |
|                      | 220                 | 1.25                   | 1.18 | 1.10 | 1.03 | 0.95 |

### STEAM COIL

| STEAM PRESSURE (PSIG) | Entering-Air Temp (°F) |      |      |      |      |
|-----------------------|------------------------|------|------|------|------|
|                       | 40                     | 50   | 60   | 70   | 80   |
| 0                     | 1.06                   | 0.98 | 0.91 | 0.85 | 0.78 |
| 2                     | 1.09                   | 1.02 | 0.95 | 0.89 | 0.82 |
| 5                     | 1.13                   | 1.06 | 1.00 | 0.93 | 0.87 |

NOTE: Multiply capacity given in the Hydronic Heating Capacities table by the correction factor for conditions at which unit is actually operating. Correct leaving-air temperature using formula in Note 2 of Hydronic Heating Capacities table.

# FAN PERFORMANCE DATA — 0.0-1.2 IN. WG ESP — 60 Hz

| FAS UNIT | AIRFLOW (CFM) | EXTERNAL STATIC PRESSURE (IN. WG) |             |            |             |            |              |            |              |             |              |             |              |             |              |
|----------|---------------|-----------------------------------|-------------|------------|-------------|------------|--------------|------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|
|          |               | 0.0                               |             | 0.2        |             | 0.4        |              | 0.6        |              | 0.8         |              | 1.0         |              | 1.2         |              |
|          |               | RPM                               | BHP         | RPM        | BHP         | RPM        | BHP          | RPM        | BHP          | RPM         | BHP          | RPM         | BHP          | RPM         | BHP          |
| 072      | 1,800         | <b>419</b>                        | <b>0.21</b> | 471        | 0.26        | 564        | 0.37         | 649        | 0.49         | <u>727</u>  | <u>0.63</u>  | <u>797</u>  | <u>0.77</u>  | <u>862</u>  | <u>0.92</u>  |
|          | 2,100         | 471                               | 0.31        | 519        | 0.37        | 602        | 0.49         | <u>679</u> | <u>0.62</u>  | <u>751</u>  | <u>0.77</u>  | <u>819</u>  | <u>0.92</u>  | <u>882</u>  | <u>1.09</u>  |
|          | 2,400         | 524                               | 0.44        | 568        | 0.51        | 645        | 0.64         | <u>715</u> | <u>0.79</u>  | <u>781</u>  | <u>0.94</u>  | <u>844</u>  | <u>1.11</u>  | <u>905</u>  | <u>1.28</u>  |
|          | 2,700         | 578                               | 0.61        | 619        | 0.69        | <u>690</u> | <u>0.84</u>  | <u>755</u> | <u>0.99</u>  | <u>816</u>  | <u>1.15</u>  | <u>875</u>  | <u>1.33</u>  | <u>932</u>  | <u>1.51</u>  |
|          | 3,000         | 633                               | 0.81        | <u>671</u> | <u>0.90</u> | <u>738</u> | <u>1.07</u>  | <u>799</u> | <u>1.24</u>  | <u>856</u>  | <u>1.41</u>  | <u>910</u>  | <u>1.60</u>  | <u>963</u>  | <u>1.79</u>  |
| 091      | 2,250         | <b>290</b>                        | <b>0.10</b> | <b>510</b> | <b>0.39</b> | 594        | 0.51         | 669        | 0.65         | 739         | 0.79         | <u>806</u>  | <u>0.95</u>  | <u>870</u>  | <u>1.12</u>  |
|          | 2,600         | <b>349</b>                        | <b>0.19</b> | 561        | 0.55        | 640        | 0.70         | 709        | 0.84         | <u>773</u>  | <u>1.00</u>  | <u>834</u>  | <u>1.16</u>  | <u>893</u>  | <u>1.34</u>  |
|          | 3,000         | 579                               | 0.70        | 621        | 0.79        | 695        | 0.96         | 759        | 1.12         | <u>818</u>  | <u>1.30</u>  | <u>874</u>  | <u>1.47</u>  | <u>928</u>  | <u>1.66</u>  |
|          | 3,400         | 646                               | 0.99        | 683        | 1.09        | <u>752</u> | <u>1.29</u>  | <u>813</u> | <u>1.48</u>  | <u>869</u>  | <u>1.67</u>  | <u>920</u>  | <u>1.86</u>  | <u>970</u>  | <u>2.06</u>  |
|          | 3,750         | 705                               | 1.31        | 739        | 1.42        | <u>804</u> | <u>1.63</u>  | <u>862</u> | <u>1.85</u>  | <u>915</u>  | <u>2.05</u>  | <u>964</u>  | <u>2.26</u>  | <u>1011</u> | <u>2.48</u>  |
| 120      | 3,000         | <b>421</b>                        | <b>0.35</b> | <b>592</b> | 0.73        | 670        | 0.90         | 737        | 1.06         | <u>797</u>  | <u>1.23</u>  | <u>854</u>  | <u>1.41</u>  | <u>908</u>  | <u>1.59</u>  |
|          | 3,500         | <b>626</b>                        | <b>0.98</b> | <b>664</b> | 1.08        | 735        | 1.28         | 798        | 1.48         | <u>855</u>  | <u>1.67</u>  | <u>908</u>  | <u>1.87</u>  | <u>958</u>  | <u>2.07</u>  |
|          | 4,000         | 706                               | 1.42        | 738        | 1.54        | 803        | 1.77         | 862        | 2.00         | <u>917</u>  | <u>2.23</u>  | <u>967</u>  | <u>2.45</u>  | <u>1014</u> | <u>2.67</u>  |
|          | 4,500         | 786                               | 1.99        | 815        | 2.12        | <u>873</u> | <u>2.39</u>  | <u>929</u> | <u>2.65</u>  | <u>980</u>  | <u>2.90</u>  | <u>1028</u> | <u>3.16</u>  | <u>1073</u> | <u>3.41</u>  |
|          | 5,000         | <u>867</u>                        | <u>2.70</u> | <u>893</u> | <u>2.84</u> | <u>946</u> | <u>3.14</u>  | <u>997</u> | <u>3.43</u>  | <u>1046</u> | <u>3.72</u>  | <u>1092</u> | <u>4.00</u>  | <u>1135</u> | <u>4.28</u>  |
| 150      | 3,750         | <b>410</b>                        | <b>0.43</b> | <b>467</b> | <b>0.55</b> | 567        | 0.83         | 649        | 1.12         | 721         | 1.41         | <u>788</u>  | <u>1.72</u>  | <u>851</u>  | <u>2.05</u>  |
|          | 4,300         | <b>455</b>                        | <b>0.62</b> | <b>504</b> | <b>0.74</b> | 599        | 1.05         | 679        | 1.38         | <u>748</u>  | <u>1.70</u>  | <u>811</u>  | <u>2.04</u>  | <u>871</u>  | <u>2.39</u>  |
|          | 5,000         | <b>514</b>                        | <b>0.92</b> | 556        | 1.06        | 641        | 1.39         | 718        | 1.76         | <u>786</u>  | <u>2.14</u>  | <u>847</u>  | <u>2.52</u>  | <u>903</u>  | <u>2.91</u>  |
|          | 5,700         | 575                               | 1.32        | 612        | 1.47        | 686        | 1.82         | <u>759</u> | <u>2.23</u>  | <u>825</u>  | <u>2.66</u>  | <u>884</u>  | <u>3.09</u>  | <u>939</u>  | <u>3.52</u>  |
|          | 6,250         | 624                               | 1.71        | 657        | 1.87        | 725        | 2.24         | <u>793</u> | <u>2.66</u>  | <u>856</u>  | <u>3.12</u>  | <u>915</u>  | <u>3.59</u>  | <u>969</u>  | <u>4.06</u>  |
| 180      | 4,500         | <b>437</b>                        | <b>0.61</b> | <b>483</b> | <b>0.72</b> | 576        | 1.01         | 660        | 1.35         | <u>732</u>  | <u>1.69</u>  | <u>797</u>  | <u>2.03</u>  | <u>856</u>  | <u>2.38</u>  |
|          | 5,300         | <b>499</b>                        | <b>0.95</b> | 538        | 1.07        | 617        | 1.37         | 696        | 1.74         | <u>767</u>  | <u>2.13</u>  | <u>830</u>  | <u>2.53</u>  | <u>888</u>  | <u>2.94</u>  |
|          | 6,000         | <b>555</b>                        | <b>1.34</b> | 590        | 1.48        | 659        | 1.79         | <u>730</u> | <u>2.17</u>  | <u>798</u>  | <u>2.59</u>  | <u>860</u>  | <u>3.04</u>  | <u>918</u>  | <u>3.49</u>  |
|          | 6,800         | 620                               | 1.91        | 651        | 2.06        | 712        | 2.39         | <u>774</u> | <u>2.78</u>  | <u>836</u>  | <u>3.22</u>  | <u>896</u>  | <u>3.71</u>  | <u>952</u>  | <u>4.21</u>  |
|          | 7,500         | 677                               | 2.52        | 706        | 2.69        | <u>761</u> | <u>3.04</u>  | <u>817</u> | <u>3.44</u>  | <u>873</u>  | <u>3.89</u>  | <u>929</u>  | <u>4.39</u>  | <u>984</u>  | <u>4.93</u>  |
| 240      | 6,000         | <b>542</b>                        | <b>1.29</b> | <b>577</b> | <b>1.42</b> | <b>646</b> | <b>1.72</b>  | 716        | 2.09         | 785         | 2.51         | 849         | 2.95         | <u>907</u>  | <u>3.40</u>  |
|          | 7,000         | <b>620</b>                        | <b>1.99</b> | <b>652</b> | <b>2.15</b> | 711        | 2.48         | 771        | 2.85         | 831         | 3.28         | <u>890</u>  | <u>3.76</u>  | <u>947</u>  | <u>4.27</u>  |
|          | 8,000         | 700                               | 2.92        | 728        | 3.10        | 781        | 3.46         | 833        | 3.85         | <u>885</u>  | <u>4.29</u>  | <u>938</u>  | <u>4.78</u>  | <u>990</u>  | <u>5.32</u>  |
|          | 9,000         | 781                               | 4.10        | 806        | 4.30        | 854        | 4.71         | <u>900</u> | <u>5.13</u>  | <u>946</u>  | <u>5.58</u>  | <u>993</u>  | <u>6.08</u>  | <u>1039</u> | <u>6.62</u>  |
|          | 10,000        | 862                               | 5.56        | <u>885</u> | <u>5.79</u> | <u>929</u> | <u>6.24</u>  | <u>971</u> | <u>6.70</u>  | <u>1012</u> | <u>7.18</u>  | <u>1054</u> | <u>7.69</u>  | <u>1096</u> | <u>8.24</u>  |
| 300      | 7,500         | <b>476</b>                        | <b>1.39</b> | <b>510</b> | <b>1.58</b> | <b>579</b> | <b>1.99</b>  | <b>644</b> | <b>2.40</b>  | 701         | 2.81         | 752         | 3.29         | 804         | 3.96         |
|          | 8,750         | <b>545</b>                        | <b>2.14</b> | <b>574</b> | <b>2.35</b> | <b>633</b> | <b>2.81</b>  | 691        | 3.29         | 747         | 3.77         | 797         | 4.25         | <u>842</u>  | <u>4.76</u>  |
|          | 10,000        | <b>615</b>                        | <b>3.12</b> | <b>641</b> | <b>3.36</b> | 692        | 3.87         | 743        | 4.41         | 794         | 4.96         | <u>843</u>  | <u>5.51</u>  | <u>888</u>  | <u>6.05</u>  |
|          | 11,250        | 685                               | 4.37        | 709        | 4.64        | 754        | 5.20         | 800        | 5.79         | <u>845</u>  | <u>6.40</u>  | <u>891</u>  | <u>7.02</u>  | <u>935</u>  | <u>7.64</u>  |
|          | 12,500        | 756                               | 5.92        | 778        | 6.22        | 819        | 6.83         | <u>860</u> | <u>7.47</u>  | <u>901</u>  | <u>8.14</u>  | <u>942</u>  | <u>8.83</u>  | <u>983</u>  | <u>9.52</u>  |
| 336      | 9,000         | <b>539</b>                        | <b>2.18</b> | <b>569</b> | <b>2.39</b> | <b>626</b> | <b>2.85</b>  | 683        | 3.34         | 739         | 3.83         | 791         | 4.32         | <u>837</u>  | <u>4.82</u>  |
|          | 10,500        | <b>620</b>                        | <b>3.37</b> | <b>646</b> | <b>3.62</b> | 695        | 4.13         | 744        | 4.68         | 793         | 5.25         | <u>842</u>  | <u>5.83</u>  | <u>888</u>  | <u>6.41</u>  |
|          | 12,000        | 701                               | 4.94        | 724        | 5.22        | 769        | 5.80         | 811        | 6.40         | <u>854</u>  | <u>7.04</u>  | <u>897</u>  | <u>7.69</u>  | <u>940</u>  | <u>8.36</u>  |
|          | 13,500        | 783                               | 6.95        | 804        | 7.27        | <u>844</u> | <u>7.91</u>  | <u>883</u> | <u>8.57</u>  | <u>920</u>  | <u>9.26</u>  | <u>958</u>  | <u>9.97</u>  | <u>996</u>  | <u>10.71</u> |
|          | 15,000        | <u>865</u>                        | <u>9.45</u> | <u>884</u> | <u>9.81</u> | <u>921</u> | <u>10.52</u> | <u>956</u> | <u>11.24</u> | <u>991</u>  | <u>11.98</u> | <u>1025</u> | <u>12.75</u> | <u>1059</u> | <u>13.54</u> |

## LEGEND

**Bhp** — Brake Horsepower Input to Fan  
**ESP** — External Static Pressure

**Bold** indicates field-supplied drive is required.

Plain type indicates standard motor and standard drive.

Underline indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables to complete selection.

NOTE: Maximum allowable fan speed is 1100 rpm for unit sizes 28 and 30; 1200 rpm for all other sizes. Fan performance is based on deductions for wet coil, clean 2-in. filters, and unit casing. See table on page 27 for factory-supplied filter pressure drop. For 60 Hz units, the medium-static drive and standard motor combination is not available for

# Performance data (cont)

FAN PERFORMANCE DATA — 1.4-2.4 IN. WG ESP — 60 Hz

| FAS UNIT | AIRFLOW (CFM) | EXTERNAL STATIC PRESSURE (IN. WG) |              |             |              |             |              |             |              |             |             |             |             |
|----------|---------------|-----------------------------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|
|          |               | 1.4                               |              | 1.6         |              | 1.8         |              | 2.0         |              | 2.2         |             | 2.4         |             |
|          |               | RPM                               | BHP          | RPM         | BHP          | RPM         | BHP          | RPM         | BHP          | RPM         | BHP         | RPM         | BHP         |
| 072      | 1,800         | <u>921</u>                        | <u>1.07</u>  | <u>975</u>  | <u>1.23</u>  | <u>1026</u> | <u>1.39</u>  | <u>1074</u> | <u>1.55</u>  | <u>1120</u> | <u>1.72</u> | <u>1164</u> | <u>1.90</u> |
|          | 2,100         | <u>942</u>                        | <u>1.26</u>  | <u>997</u>  | <u>1.43</u>  | <u>1048</u> | <u>1.61</u>  | <u>1097</u> | <u>1.79</u>  | <u>1143</u> | <u>1.97</u> | <u>1186</u> | <u>2.16</u> |
|          | 2,400         | <u>963</u>                        | <u>1.47</u>  | <u>1017</u> | <u>1.66</u>  | <u>1069</u> | <u>1.85</u>  | <u>1118</u> | <u>2.05</u>  | <u>1164</u> | <u>2.25</u> | —           | —           |
|          | 2,700         | <u>987</u>                        | <u>1.71</u>  | <u>1039</u> | <u>1.91</u>  | <u>1090</u> | <u>2.12</u>  | <u>1138</u> | <u>2.33</u>  | <u>1185</u> | <u>2.55</u> | —           | —           |
|          | 3,000         | <u>1015</u>                       | <u>1.99</u>  | <u>1065</u> | <u>2.20</u>  | <u>1113</u> | <u>2.42</u>  | <u>1161</u> | <u>2.65</u>  | —           | —           | —           | —           |
| 091      | 2,250         | <u>930</u>                        | <u>1.29</u>  | <u>986</u>  | <u>1.47</u>  | <u>1039</u> | <u>1.65</u>  | <u>1089</u> | <u>1.84</u>  | <u>1136</u> | <u>2.03</u> | <u>1181</u> | <u>2.22</u> |
|          | 2,600         | <u>950</u>                        | <u>1.53</u>  | <u>1005</u> | <u>1.72</u>  | <u>1057</u> | <u>1.92</u>  | <u>1107</u> | <u>2.13</u>  | <u>1154</u> | <u>2.33</u> | —           | —           |
|          | 3,000         | <u>980</u>                        | <u>1.86</u>  | <u>1031</u> | <u>2.06</u>  | <u>1081</u> | <u>2.27</u>  | <u>1129</u> | <u>2.49</u>  | <u>1175</u> | <u>2.72</u> | —           | —           |
|          | 3,400         | <u>1018</u>                       | <u>2.26</u>  | <u>1065</u> | <u>2.48</u>  | <u>1111</u> | <u>2.70</u>  | <u>1156</u> | <u>2.93</u>  | —           | —           | —           | —           |
|          | 3,750         | <u>1057</u>                       | <u>2.69</u>  | <u>1101</u> | <u>2.92</u>  | <u>1144</u> | <u>3.15</u>  | <u>1186</u> | <u>3.39</u>  | —           | —           | —           | —           |
| 120      | 3,000         | <u>961</u>                        | <u>1.78</u>  | <u>1012</u> | <u>1.98</u>  | <u>1062</u> | <u>2.19</u>  | <u>1111</u> | <u>2.41</u>  | <u>1158</u> | <u>2.64</u> | —           | —           |
|          | 3,500         | <u>1005</u>                       | <u>2.27</u>  | <u>1052</u> | <u>2.49</u>  | <u>1098</u> | <u>2.71</u>  | <u>1142</u> | <u>2.94</u>  | <u>1186</u> | <u>3.18</u> | —           | —           |
|          | 4,000         | <u>1058</u>                       | <u>2.90</u>  | <u>1101</u> | <u>3.13</u>  | <u>1143</u> | <u>3.36</u>  | <u>1184</u> | <u>3.60</u>  | —           | —           | —           | —           |
|          | 4,500         | <u>1116</u>                       | <u>3.66</u>  | <u>1157</u> | <u>3.91</u>  | <u>1196</u> | <u>4.16</u>  | —           | —            | —           | —           | —           | —           |
|          | 5,000         | <u>1176</u>                       | <u>4.56</u>  | —           | —            | —           | —            | —           | —            | —           | —           | —           | —           |
| 150      | 3,750         | <u>912</u>                        | <u>2.39</u>  | <u>971</u>  | <u>2.76</u>  | <u>1028</u> | <u>3.14</u>  | <u>1083</u> | <u>3.54</u>  | <u>1135</u> | <u>3.95</u> | <u>1185</u> | <u>4.36</u> |
|          | 4,300         | <u>928</u>                        | <u>2.75</u>  | <u>982</u>  | <u>3.13</u>  | <u>1036</u> | <u>3.53</u>  | <u>1087</u> | <u>3.94</u>  | <u>1138</u> | <u>4.37</u> | <u>1187</u> | <u>4.81</u> |
|          | 5,000         | <u>956</u>                        | <u>3.30</u>  | <u>1007</u> | <u>3.71</u>  | <u>1056</u> | <u>4.13</u>  | <u>1104</u> | <u>4.56</u>  | <u>1151</u> | <u>5.00</u> | <u>1196</u> | <u>5.46</u> |
|          | 5,700         | <u>990</u>                        | <u>3.96</u>  | <u>1039</u> | <u>4.40</u>  | <u>1086</u> | <u>4.85</u>  | <u>1130</u> | <u>5.31</u>  | <u>1174</u> | <u>5.78</u> | —           | —           |
|          | 6,250         | <u>1019</u>                       | <u>4.54</u>  | <u>1067</u> | <u>5.02</u>  | <u>1112</u> | <u>5.50</u>  | <u>1156</u> | <u>5.99</u>  | <u>1198</u> | <u>6.49</u> | —           | —           |
| 180      | 4,500         | <u>912</u>                        | <u>2.75</u>  | <u>967</u>  | <u>3.12</u>  | <u>1019</u> | <u>3.52</u>  | <u>1070</u> | <u>3.92</u>  | <u>1120</u> | <u>4.35</u> | <u>1168</u> | <u>4.79</u> |
|          | 5,300         | <u>942</u>                        | <u>3.34</u>  | <u>992</u>  | <u>3.76</u>  | <u>1041</u> | <u>4.18</u>  | <u>1088</u> | <u>4.61</u>  | <u>1134</u> | <u>5.06</u> | <u>1179</u> | <u>5.52</u> |
|          | 6,000         | <u>971</u>                        | <u>3.95</u>  | <u>1020</u> | <u>4.40</u>  | <u>1067</u> | <u>4.86</u>  | <u>1112</u> | <u>5.33</u>  | <u>1156</u> | <u>5.81</u> | <u>1198</u> | <u>6.29</u> |
|          | 6,800         | <u>1005</u>                       | <u>4.72</u>  | <u>1054</u> | <u>5.23</u>  | <u>1101</u> | <u>5.75</u>  | <u>1145</u> | <u>6.27</u>  | <u>1187</u> | <u>6.79</u> | —           | —           |
|          | 7,500         | <u>1036</u>                       | <u>5.48</u>  | <u>1084</u> | <u>6.04</u>  | <u>1131</u> | <u>6.61</u>  | <u>1174</u> | <u>7.17</u>  | —           | —           | —           | —           |
| 240      | 6,000         | <u>961</u>                        | <u>3.86</u>  | <u>1011</u> | <u>4.31</u>  | <u>1058</u> | <u>4.77</u>  | <u>1104</u> | <u>5.24</u>  | <u>1147</u> | <u>5.71</u> | —           | —           |
|          | 7,000         | <u>1000</u>                       | <u>4.79</u>  | <u>1050</u> | <u>5.32</u>  | <u>1097</u> | <u>5.85</u>  | <u>1142</u> | <u>6.38</u>  | <u>1184</u> | <u>6.91</u> | —           | —           |
|          | 8,000         | <u>1041</u>                       | <u>5.88</u>  | <u>1090</u> | <u>6.47</u>  | <u>1137</u> | <u>7.07</u>  | <u>1181</u> | <u>7.67</u>  | —           | —           | —           | —           |
|          | 9,000         | <u>1086</u>                       | <u>7.21</u>  | <u>1133</u> | <u>7.82</u>  | <u>1178</u> | <u>8.47</u>  | —           | —            | —           | —           | —           | —           |
|          | 10,000        | <u>1138</u>                       | <u>8.83</u>  | <u>1180</u> | <u>9.46</u>  | —           | —            | —           | —            | —           | —           | —           | —           |
| 300      | 7,500         | <u>874</u>                        | <u>5.33</u>  | <u>897</u>  | <u>5.91</u>  | <u>940</u>  | <u>6.80</u>  | <u>990</u>  | <u>7.50</u>  | —           | —           | —           | —           |
|          | 8,750         | <u>886</u>                        | <u>5.36</u>  | <u>930</u>  | <u>6.13</u>  | <u>982</u>  | <u>7.32</u>  | <u>1020</u> | <u>8.10</u>  | —           | —           | —           | —           |
|          | 10,000        | <u>930</u>                        | <u>6.60</u>  | <u>969</u>  | <u>7.20</u>  | <u>1007</u> | <u>7.89</u>  | <u>1045</u> | <u>8.71</u>  | —           | —           | —           | —           |
|          | 11,250        | <u>976</u>                        | <u>8.25</u>  | <u>1014</u> | <u>8.86</u>  | <u>1051</u> | <u>9.49</u>  | <u>1086</u> | <u>10.17</u> | —           | —           | —           | —           |
|          | 12,500        | <u>1023</u>                       | <u>10.20</u> | <u>1061</u> | <u>10.88</u> | <u>1097</u> | <u>11.56</u> | —           | —            | —           | —           | —           | —           |
| 336      | 9,000         | <u>881</u>                        | <u>5.37</u>  | <u>923</u>  | <u>6.03</u>  | <u>967</u>  | <u>6.89</u>  | <u>1020</u> | <u>8.25</u>  | —           | —           | —           | —           |
|          | 10,500        | <u>930</u>                        | <u>6.97</u>  | <u>970</u>  | <u>7.55</u>  | <u>1008</u> | <u>8.17</u>  | <u>1045</u> | <u>8.86</u>  | —           | —           | —           | —           |
|          | 12,000        | <u>981</u>                        | <u>9.02</u>  | <u>1021</u> | <u>9.67</u>  | —           | —            | —           | —            | —           | —           | —           | —           |
|          | 13,500        | <u>1035</u>                       | <u>11.45</u> | —           | —            | —           | —            | —           | —            | —           | —           | —           | —           |
|          | 15,000        | —                                 | —            | —           | —            | —           | —            | —           | —            | —           | —           | —           | —           |

## LEGEND

**Bhp** — Brake Horsepower Input to Fan  
**ESP** — External Static Pressure

**Bold** indicates field-supplied drive is required.

Plain type indicates standard motor and standard drive.

Underline indicates a different motor and drive combination other than the standard motor and standard drive combination is required. Refer to fan motor and drive tables to complete selection.

NOTE: Maximum allowable fan speed is 1100 rpm for unit sizes 28 and 30; 1200 rpm for all other sizes. Fan performance is based on deductions for wet coil, clean 2-in. filters, and unit casing. See table on page 27 for factory-supplied filter pressure drop. For 60 Hz units, the medium-static drive and standard motor combination is not available for

### DUCT SOUND POWER LEVELS (L<sub>w</sub>)

| FAS UNIT | CFM    | DB(A) | OCTAVE BAND CENTER FREQUENCY (Hz) |       |      |      |      |      |      |
|----------|--------|-------|-----------------------------------|-------|------|------|------|------|------|
|          |        |       | 63                                | 125   | 250  | 500  | 1000 | 2000 | 4000 |
| 072      | 2,400  | 86.3  | 93.2                              | 89.2  | 85.2 | 84.2 | 80.2 | 78.2 | 74.2 |
| 091      | 3,000  | 88.3  | 95.3                              | 91.3  | 87.3 | 86.3 | 82.3 | 80.3 | 76.3 |
| 120      | 4,000  | 91.6  | 98.6                              | 94.6  | 90.6 | 89.6 | 85.6 | 83.6 | 79.6 |
| 150      | 5,000  | 91.1  | 97.3                              | 93.3  | 89.3 | 90.3 | 84.3 | 82.3 | 78.3 |
| 180      | 6,000  | 92.7  | 98.9                              | 94.9  | 90.9 | 91.9 | 85.9 | 83.9 | 79.9 |
| 240      | 8,000  | 96.4  | 102.6                             | 98.6  | 94.6 | 95.6 | 89.6 | 87.6 | 83.6 |
| 300      | 10,000 | 96.2  | 102.5                             | 98.5  | 94.5 | 95.5 | 89.5 | 87.5 | 83.5 |
| 336      | 12,000 | 98.5  | 104.7                             | 100.7 | 96.7 | 97.7 | 91.7 | 89.7 | 85.7 |

#### LEGEND

**ASHRAE** — American Society of Heating, Refrigerating, and Air Conditioning, Inc.

**HVAC** — Heating, Ventilation, and Air Conditioning

#### NOTES:

1. The above estimated sound power levels are based upon the ASHRAE calculation approach from the ASHRAE 1987 HVAC Systems and Applications handbook, Chapter 52.
2. Since this data is calculated, these sound power levels may be different than the actual sound power levels.
3. The acoustic center of the unit is located at the geometric center of the unit.

#### FACTORY-SUPPLIED FILTER PRESSURE DROP

| FAS UNIT SIZE | AIRFLOW (CFM) | PRESSURE DROP (in. wg) |
|---------------|---------------|------------------------|
| 072           | 1,800         | 0.05                   |
|               | 2,400         | 0.08                   |
|               | 3,000         | 0.11                   |
| 091           | 2,250         | 0.07                   |
|               | 3,000         | 0.11                   |
|               | 3,750         | 0.15                   |
| 120           | 3,000         | 0.11                   |
|               | 4,000         | 0.17                   |
|               | 5,000         | 0.23                   |
| 150           | 3,750         | 0.06                   |
|               | 5,000         | 0.10                   |
|               | 6,250         | 0.13                   |
| 180           | 4,500         | 0.08                   |
|               | 6,000         | 0.12                   |
|               | 7,500         | 0.17                   |
| 240           | 6,000         | 0.12                   |
|               | 8,000         | 0.19                   |
|               | 10,000        | 0.26                   |
| 300           | 7,500         | 0.15                   |
|               | 10,000        | 0.22                   |
|               | 12,500        | 0.30                   |
| 336           | 9,000         | 0.19                   |
|               | 12,000        | 0.29                   |
|               | 15,000        | 0.40                   |

#### ACCESSORY PLENUM AIR THROW DATA (Ft)

| FAS UNIT | AIRFLOW (CFM) | VANE DEFLECTION |      |     |
|----------|---------------|-----------------|------|-----|
|          |               | Straight        | 21½° | 45° |
| 072      | 2,400         | 39              | 33   | 24  |
| 091      | 3,000         | 45              | 38   | 28  |
| 120      | 4,000         | 55              | 46   | 33  |
| 150      | 5,000         | 45              | 38   | 28  |
| 180      | 6,000         | 50              | 43   | 31  |
| 240      | 8,000         | 60              | 51   | 37  |
| 300      | 10,000        | 76              | 65   | 47  |
| 336      | 12,000        | 85              | 72   | 52  |

NOTE: Throw distances shown are for 75 fpm terminal velocity. Use the following multipliers to determine throw values for other terminal velocities.

| TERMINAL VELOCITY (Fpm) | THROW FACTOR |
|-------------------------|--------------|
| 50                      | X 1.50       |
| 100                     | X 0.75       |
| 150                     | X 0.50       |

# Performance data (cont)

## ACCESSORY PRESSURE DROP — in. wg

| FAS UNIT | AIRFLOW (CFM) | DISCHARGE<br>PLENUM | RETURN AIR<br>GRILLE | HOT WATER | STEAM | ELECTRIC | ECONOMIZER |
|----------|---------------|---------------------|----------------------|-----------|-------|----------|------------|
| 072      | 1,800         | 0.06                | 0.01                 | 0.10      | 0.10  | 0.04     | 0.05       |
|          | 2,400         | 0.10                | 0.01                 | 0.16      | 0.16  | 0.06     | 0.07       |
|          | 3,000         | 0.14                | 0.02                 | 0.23      | 0.23  | 0.10     | 0.09       |
| 091      | 2,250         | 0.09                | 0.01                 | 0.15      | 0.15  | 0.06     | 0.06       |
|          | 3,000         | 0.14                | 0.02                 | 0.23      | 0.23  | 0.10     | 0.09       |
|          | 3,750         | 0.21                | 0.03                 | 0.35      | 0.35  | 0.15     | 0.15       |
| 120      | 3,000         | 0.14                | 0.02                 | 0.23      | 0.23  | 0.10     | 0.09       |
|          | 4,000         | 0.22                | 0.04                 | 0.37      | 0.37  | 0.17     | 0.17       |
|          | 5,000         | 0.32                | 0.06                 | 0.53      | 0.53  | 0.26     | 0.28       |
| 150      | 3,750         | 0.07                | 0.01                 | 0.11      | 0.11  | 0.04     | 0.05       |
|          | 5,000         | 0.12                | 0.02                 | 0.17      | 0.17  | 0.07     | 0.07       |
|          | 6,250         | 0.17                | 0.02                 | 0.25      | 0.25  | 0.11     | 0.11       |
| 180      | 4,500         | 0.10                | 0.01                 | 0.15      | 0.15  | 0.06     | 0.06       |
|          | 6,000         | 0.16                | 0.02                 | 0.23      | 0.23  | 0.10     | 0.09       |
|          | 7,500         | 0.23                | 0.03                 | 0.33      | 0.33  | 0.15     | 0.15       |
| 240      | 6,000         | 0.16                | 0.02                 | 0.23      | 0.23  | 0.10     | 0.09       |
|          | 8,000         | 0.26                | 0.04                 | 0.37      | 0.37  | 0.17     | 0.17       |
|          | 10,000        | 0.37                | 0.06                 | 0.53      | 0.53  | 0.26     | 0.28       |
| 300      | 7,500         | 0.15                | 0.02                 | 0.28      | 0.28  | 0.09     | 0.06       |
|          | 10,000        | 0.24                | 0.03                 | 0.44      | 0.44  | 0.16     | 0.09       |
|          | 12,500        | 0.34                | 0.05                 | 0.63      | 0.63  | 0.24     | 0.14       |
| 336      | 9,000         | 0.20                | 0.03                 | 0.37      | 0.37  | 0.13     | 0.08       |
|          | 12,000        | 0.32                | 0.05                 | 0.59      | 0.59  | 0.22     | 0.14       |
|          | 15,000        | 0.46                | 0.07                 | 0.85      | 0.85  | 0.34     | 0.21       |

# Electrical data

## ELECTRICAL DATA, STANDARD MOTORS WITH FACTORY-INSTALLED SINGLE SPEED FAN OPTION

| FAS UNIT | V-PH-HZ†     | VOLTAGE LIMITS | FAN MOTOR   |      | POWER SUPPLY         |                       |
|----------|--------------|----------------|-------------|------|----------------------|-----------------------|
|          |              |                | HP (kW)     | FLA  | MINIMUM CIRCUIT AMPS | MAX FUSE OR HACR BRKR |
| 072      | 208/230-1-60 | 187-253        | 1.3 (0.97)  | 6.6  | 9.0                  | 15                    |
|          | 208/230-3-60 | 187-253        | 2.4 (1.79)  | 5.2  | 7.0                  | 15                    |
|          | 460-3-60     | 414-506        | 2.4 (1.79)  | 2.6  | 4.0                  | 15                    |
|          | 575-3-60     | 518-632        | 1.0 (0.75)  | 1.4  | 2.0                  | 15                    |
| 091      | 208/230-1-60 | 187-253        | 2.4 (1.79)  | 11.0 | 13.8                 | 20                    |
|          | 208/230-3-60 | 187-253        | 2.4 (1.79)  | 5.2  | 7.0                  | 15                    |
|          | 460-3-60     | 414-506        | 2.4 (1.79)  | 2.6  | 4.0                  | 15                    |
|          | 575-3-60     | 518-632        | 2.0 (1.49)  | 2.4  | 3.0                  | 15                    |
| 120      | 208/230-3-60 | 187-253        | 2.4 (1.79)  | 5.2  | 7.0                  | 15                    |
|          | 460-3-60     | 414-506        | 2.4 (1.79)  | 2.6  | 4.0                  | 15                    |
|          | 575-3-60     | 518-632        | 2.0 (1.49)  | 2.4  | 3.0                  | 15                    |
| 150      | 208/230-3-60 | 187-253        | 2.9 (2.16)  | 7.5  | 10.0                 | 15                    |
|          | 460-3-60     | 414-506        | 2.9 (2.16)  | 3.4  | 5.0                  | 15                    |
|          | 575-3-60     | 518-632        | 3.0 (2.24)  | 3.8  | 5.0                  | 15                    |
| 180      | 208/230-3-60 | 187-253        | 3.7 (2.76)  | 10.2 | 13.0                 | 20                    |
|          | 460-3-60     | 414-506        | 3.7 (2.76)  | 4.8  | 6.0                  | 15                    |
|          | 575-3-60     | 518-632        | 3.0 (2.24)  | 3.8  | 5.0                  | 15                    |
| 240      | 208/230-3-60 | 187-253        | 5.0 (3.73)  | 18.0 | 23.0                 | 40                    |
|          | 460-3-60     | 414-506        | 5.0 (3.73)  | 9.1  | 12.0                 | 20                    |
|          | 575-3-60     | 518-632        | 5.0 (3.73)  | 8.0  | 10.0                 | 15                    |
| 300      | 208/230-3-60 | 187-253        | 7.5 (5.59)  | 23.5 | 30.0                 | 50                    |
|          | 460-3-60     | 414-506        | 7.5 (5.59)  | 15.0 | 19.0                 | 30                    |
|          | 575-3-60     | 518-632        | 7.5 (5.59)  | 10.0 | 13.0                 | 20                    |
| 336      | 208/230-3-60 | 187-253        | 10.0 (7.46) | 32.0 | 40.0                 | 70                    |
|          | 460-3-60     | 414-506        | 10.0 (7.46) | 16.0 | 20.0                 | 35                    |
|          | 575-3-60     | 518-632        | 10.0 (7.46) | 13.0 | 17.0                 | 25                    |

See: "Legend and Notes" on page 32.

# Electrical data (cont)

## ELECTRICAL DATA, ALTERNATE MOTORS WITH FACTORY-INSTALLED SINGLE SPEED FAN OPTION

| FAS UNIT | V-PH-HZ†     | VOLTAGE LIMITS | FAN MOTOR   |      | POWER SUPPLY         |                       |
|----------|--------------|----------------|-------------|------|----------------------|-----------------------|
|          |              |                | HP (kW)     | FLA  | MINIMUM CIRCUIT AMPS | MAX FUSE OR HACR BRKR |
| 072      | 208/230-1-60 | 187-253        | 2.4 (1.79)  | 11.0 | 13.8                 | 20                    |
|          | 208/230-3-60 | 187-253        | 2.9 (2.16)  | 7.5  | 10.0                 | 15                    |
|          | 460-3-60     | 414-506        | 2.9 (2.16)  | 3.4  | 5.0                  | 15                    |
|          | 575-3-60     | 518-632        | 2.0 (1.49)  | 2.4  | 3.0                  | 15                    |
| 091      | 208/230-1-60 | 187-253        | 2.4 (1.79)  | 11.0 | 13.8                 | 15                    |
|          | 208/230-3-60 | 187-253        | 2.9 (2.16)  | 7.5  | 10.0                 | 15                    |
|          | 460-3-60     | 414-506        | 2.9 (2.16)  | 3.4  | 5.0                  | 15                    |
|          | 575-3-60     | 518-632        | 3.0 (2.24)  | 3.8  | 5.0                  | 15                    |
| 120      | 208/230-3-60 | 187-253        | 3.7 (2.76)  | 10.2 | 13.0                 | 20                    |
|          | 460-3-60     | 414-506        | 3.7 (2.76)  | 4.8  | 6.0                  | 15                    |
|          | 575-3-60     | 518-632        | 3.0 (2.24)  | 3.8  | 5.0                  | 15                    |
| 150      | 208/230-3-60 | 187-253        | 3.7 (2.76)  | 10.2 | 13.0                 | 20                    |
|          | 460-3-60     | 414-506        | 3.7 (2.76)  | 4.8  | 6.0                  | 15                    |
|          | 575-3-60     | 518-632        | 5.0 (3.73)  | 8.0  | 10.0                 | 15                    |
| 180      | 208/230-3-60 | 187-253        | 5.0 (3.73)  | 18.0 | 23.0                 | 40                    |
|          | 460-3-60     | 414-506        | 5.0 (3.73)  | 9.1  | 12.0                 | 20                    |
|          | 575-3-60     | 518-632        | 5.0 (3.73)  | 8.0  | 10.0                 | 15                    |
| 240      | 208/230-3-60 | 187-253        | 7.5 (5.59)  | 23.5 | 30.0                 | 50                    |
|          | 460-3-60     | 414-506        | 7.5 (5.59)  | 15.0 | 19.0                 | 30                    |
|          | 575-3-60     | 518-632        | 7.5 (5.59)  | 10.0 | 13.0                 | 20                    |
| 300      | 208/230-3-60 | 187-253        | 10.0 (7.46) | 32.0 | 40.0                 | 70                    |
|          | 460-3-60     | 414-506        | 10.0 (7.46) | 16.0 | 20.0                 | 35                    |
|          | 575-3-60     | 518-632        | 10.0 (7.46) | 13.0 | 17.0                 | 30                    |
| 336      | 208/230-3-60 | 187-253        | 10.0 (7.46) | 32.0 | 40.0                 | 70                    |
|          | 460-3-60     | 414-506        | 10.0 (7.46) | 16.0 | 20.0                 | 35                    |
|          | 575-3-60     | 518-632        | 10.0 (7.46) | 13.0 | 17.0                 | 25                    |

See: "Legend and Notes" on page 32.

### ELECTRICAL DATA, STANDARD MOTORS WITH FACTORY-INSTALLED 2-SPEED FAN OPTION

| FAS UNIT | V-PH-HZ†     | VOLTAGE LIMITS | FAN MOTOR   |      | POWER SUPPLY         |                       |
|----------|--------------|----------------|-------------|------|----------------------|-----------------------|
|          |              |                | HP (kW)     | FLA  | MINIMUM CIRCUIT AMPS | MAX FUSE OR HACR BRKR |
| 072      | 208/230-3-60 | 187-253        | 2.4 (1.79)  | 7.1  | 9.0                  | 15                    |
|          | 460-3-60     | 414-506        | 2.4 (1.79)  | 3.8  | 5.0                  | 15                    |
|          | 575-3-60     | 518-632        | 2.4 (1.79)  | 3.5  | 5.0                  | 15                    |
| 091      | 208/230-3-60 | 187-253        | 2.4 (1.79)  | 7.1  | 9.0                  | 15                    |
|          | 460-3-60     | 414-506        | 2.4 (1.79)  | 3.8  | 5.0                  | 15                    |
|          | 575-3-60     | 518-632        | 2.4 (1.79)  | 3.5  | 5.0                  | 15                    |
| 120      | 208/230-3-60 | 187-253        | 2.4 (1.79)  | 7.1  | 9.0                  | 15                    |
|          | 460-3-60     | 414-506        | 2.4 (1.79)  | 3.8  | 5.0                  | 15                    |
|          | 575-3-60     | 518-632        | 2.4 (1.79)  | 3.5  | 5.0                  | 15                    |
| 150      | 208/230-3-60 | 187-253        | 2.9 (2.16)  | 8.6  | 11.0                 | 15                    |
|          | 460-3-60     | 414-506        | 2.9 (2.16)  | 3.8  | 5.0                  | 15                    |
|          | 575-3-60     | 518-632        | 3.7 (2.76)  | 4.5  | 6.0                  | 15                    |
| 180      | 208/230-3-60 | 187-253        | 3.7 (2.76)  | 10.8 | 14.0                 | 20                    |
|          | 460-3-60     | 414-506        | 3.7 (2.76)  | 4.9  | 7.0                  | 15                    |
|          | 575-3-60     | 518-632        | 3.7 (2.76)  | 4.5  | 6.0                  | 15                    |
| 240      | 208/230-3-60 | 187-253        | 5.0 (3.73)  | 18.0 | 23.0                 | 40                    |
|          | 460-3-60     | 414-506        | 5.0 (3.73)  | 9.1  | 12.0                 | 20                    |
|          | 575-3-60     | 518-632        | 5.0 (3.73)  | 8.0  | 10.0                 | 15                    |
| 300      | 208/230-3-60 | 187-253        | 7.5 (5.59)  | 23.5 | 30.0                 | 50                    |
|          | 460-3-60     | 414-506        | 7.5 (5.59)  | 15.0 | 19.0                 | 30                    |
|          | 575-3-60     | 518-632        | 7.5 (5.59)  | 10.0 | 13.0                 | 20                    |
| 336      | 208/230-3-60 | 187-253        | 10.0 (7.46) | 32.0 | 40.0                 | 70                    |
|          | 460-3-60     | 414-506        | 10.0 (7.46) | 16.0 | 20.0                 | 35                    |
|          | 575-3-60     | 518-632        | 10.0 (7.46) | 13.0 | 17.0                 | 25                    |

See: "Legend and Notes" on page 32.

### ELECTRICAL DATA, ALTERNATE MOTORS WITH FACTORY-INSTALLED 2-SPEED FAN OPTION

| FAS UNIT | V-PH-HZ†     | VOLTAGE LIMITS | FAN MOTOR   |      | POWER SUPPLY         |                       |
|----------|--------------|----------------|-------------|------|----------------------|-----------------------|
|          |              |                | HP (kW)     | FLA  | MINIMUM CIRCUIT AMPS | MAX FUSE OR HACR BRKR |
| 072      | 208/230-3-60 | 187-253        | 3.7 (2.76)  | 10.8 | 14.0                 | 20                    |
|          | 460-3-60     | 414-506        | 3.7 (2.76)  | 4.9  | 7.0                  | 15                    |
|          | 575-3-60     | 518-632        | 3.7 (2.76)  | 4.5  | 6.0                  | 15                    |
| 091      | 208/230-3-60 | 187-253        | 3.7 (2.76)  | 10.8 | 14.0                 | 20                    |
|          | 460-3-60     | 414-506        | 3.7 (2.76)  | 4.9  | 7.0                  | 15                    |
|          | 575-3-60     | 518-632        | 3.7 (2.76)  | 4.5  | 6.0                  | 15                    |
| 120      | 208/230-3-60 | 187-253        | 3.7 (2.76)  | 10.8 | 14.0                 | 20                    |
|          | 460-3-60     | 414-506        | 3.7 (2.76)  | 4.9  | 7.0                  | 15                    |
|          | 575-3-60     | 518-632        | 3.7 (2.76)  | 4.5  | 6.0                  | 15                    |
| 150      | 208/230-3-60 | 187-253        | 3.7 (2.76)  | 10.8 | 14.0                 | 20                    |
|          | 460-3-60     | 414-506        | 3.7 (2.76)  | 4.9  | 7.0                  | 15                    |
|          | 575-3-60     | 518-632        | 5.0 (3.73)  | 8.0  | 10.0                 | 15                    |
| 180      | 208/230-3-60 | 187-253        | 5.0 (3.73)  | 18.0 | 23.0                 | 40                    |
|          | 460-3-60     | 414-506        | 5.0 (3.73)  | 9.1  | 12.0                 | 20                    |
|          | 575-3-60     | 518-632        | 5.0 (3.73)  | 8.0  | 10.0                 | 15                    |
| 240      | 208/230-3-60 | 187-253        | 7.5 (5.59)  | 23.5 | 30.0                 | 50                    |
|          | 460-3-60     | 414-506        | 7.5 (5.59)  | 15.0 | 19.0                 | 30                    |
|          | 575-3-60     | 518-632        | 7.5 (5.59)  | 10.0 | 13.0                 | 20                    |
| 300      | 208/230-3-60 | 187-253        | 10.0 (7.46) | 32.0 | 40.0                 | 70                    |
|          | 460-3-60     | 414-506        | 10.0 (7.46) | 16.0 | 20.0                 | 35                    |
|          | 575-3-60     | 518-632        | 10.0 (7.46) | 13.0 | 17.0                 | 25                    |
| 336      | 208/230-3-60 | 187-253        | 10.0 (7.46) | 32.0 | 40.0                 | 70                    |
|          | 460-3-60     | 414-506        | 10.0 (7.46) | 16.0 | 20.0                 | 35                    |
|          | 575-3-60     | 518-632        | 10.0 (7.46) | 13.0 | 17.0                 | 25                    |

See: "Legend and Notes" on page 32.

# Electrical data (cont)

Legend and Notes for tables on pages 29-31

LEGEND

**FLA** — Full Load Amps  
**MOCP** — MAX FUSE or HACR BRKR

† Motors are designed for satisfactory operation within 10% of normal voltage shown. Voltages should not exceed the limits shown in the Voltage Limits column.

NOTES:

- 1. Minimum circuit amps (MCA) and fuse or HACR breaker values are calculated in accordance with The NEC. Article 440.
- 2. Motor FLA values are established in accordance with Underwriters' Laboratories (UL). Standard 1995.
- 3. Unbalanced 3-Phase Supply Voltage  
Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the formula in the example below to determine the percentage of voltage imbalance.
- 4. Installation with Accessory Electric Heaters Size the Field Power Wiring between the heater TB1 and the FAS indoor fan motor per NEC Article 430-28 (1) or (2) (depends on length of conduit between heater enclosure and FAS power entry location). Install wires in field-installed conduit.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 230-3-60



AB = 224 v  
BC = 231 v  
AC = 226 v

$$\text{Average Voltage} = \frac{(224 + 231 + 226)}{3} = \frac{681}{3} = 227$$

Determine maximum deviation from average voltage.

(AB) 227-224 = 3 v

(BC) 231-227 = 4 v

(AC) 227-226 = 1 v

Maximum deviation is 4 v.

Determine percent of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{4}{227} = 1.78\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

**IMPORTANT:** If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.



**ELECTRIC HEATER DATA - SINGLE SPEED MOTOR**

| HEATER<br>PART NO.<br>CAELHEAT | FAS<br>UNIT   | V-PH-HZ  | FAN MOTOR |      |      | ELECTRIC HEATER(S)   |                      |         |       |      | MCA* | MOCP* |
|--------------------------------|---------------|----------|-----------|------|------|----------------------|----------------------|---------|-------|------|------|-------|
|                                |               |          |           |      |      | NOM.<br>CAP.<br>(KW) | ACTUAL CAPACITY (KW) |         |       | FLA  |      |       |
|                                |               |          | HP        | KW   | FLA  |                      | STAGE 1              | STAGE 2 | TOTAL |      |      |       |
| 001A00                         | 072, 091, 120 | 208-3-60 | 1.3†      | 0.97 | 6.6  | 5.0                  | 3.8                  | —       | 3.8   | 10.4 | 21.3 | 25    |
|                                |               |          | 2.4†      | 1.79 | 11.0 | 5.0                  | 3.8                  | —       | 3.8   | 10.4 | 26.8 | 35    |
|                                |               |          | 2.4       | 1.79 | 5.2  | 5.0                  | 3.8                  | —       | 3.8   | 10.4 | 19.5 | 20    |
|                                |               |          | 2.9       | 2.16 | 7.5  | 5.0                  | 3.8                  | —       | 3.8   | 10.4 | 22.4 | 25    |
|                                |               |          | 3.7       | 2.76 | 10.2 | 5.0                  | 3.8                  | —       | 3.8   | 10.4 | 25.8 | 30    |
|                                |               | 240-3-60 | 1.3†      | 0.97 | 6.6  | 5.0                  | 5.0                  | —       | 5.0   | 12.0 | 23.3 | 25    |
|                                |               |          | 2.4†      | 1.79 | 11.0 | 5.0                  | 5.0                  | —       | 5.0   | 12.0 | 28.8 | 35    |
|                                |               |          | 2.4       | 1.79 | 5.2  | 5.0                  | 5.0                  | —       | 5.0   | 12.0 | 21.5 | 25    |
|                                |               |          | 2.9       | 2.16 | 7.5  | 5.0                  | 5.0                  | —       | 5.0   | 12.0 | 24.4 | 25    |
|                                |               |          | 3.7       | 2.76 | 10.2 | 5.0                  | 5.0                  | —       | 5.0   | 12.0 | 27.8 | 30    |
| 002A00                         |               | 480-3-60 | 2.4       | 1.79 | 2.6  | 5.0                  | 5.0                  | —       | 5.0   | 6.0  | 10.8 | 15    |
|                                |               |          | 2.9       | 2.16 | 3.4  | 5.0                  | 5.0                  | —       | 5.0   | 6.0  | 11.8 | 15    |
|                                |               |          | 3.7       | 2.76 | 4.8  | 5.0                  | 5.0                  | —       | 5.0   | 6.0  | 13.5 | 15    |
| 003A00                         |               | 575-3-60 | 1.0       | 0.75 | 1.4  | 5.0                  | 5.0                  | —       | 5.0   | 5.0  | 8.0  | 15    |
|                                |               |          | 2.0       | 1.49 | 2.4  | 5.0                  | 5.0                  | —       | 5.0   | 5.0  | 9.3  | 15    |
|                                |               |          | 3.0       | 2.24 | 3.8  | 5.0                  | 5.0                  | —       | 5.0   | 5.0  | 11.0 | 15    |
| 004A00                         |               | 208-3-60 | 1.3†      | 0.97 | 6.6  | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 34.3 | 35    |
|                                |               |          | 2.4†      | 1.79 | 11.0 | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 39.8 | 40    |
|                                |               |          | 2.4       | 1.79 | 5.2  | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 32.6 | 35    |
|                                |               |          | 2.9       | 2.16 | 7.5  | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 35.4 | 40    |
|                                |               |          | 3.7       | 2.76 | 10.2 | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 38.8 | 40    |
|                                |               | 240-3-60 | 1.3†      | 0.97 | 6.6  | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 38.3 | 40    |
|                                |               |          | 2.4†      | 1.79 | 11.0 | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 43.8 | 50    |
|                                |               |          | 2.4       | 1.79 | 5.2  | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 36.6 | 40    |
|                                |               |          | 2.9       | 2.16 | 7.5  | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 39.4 | 40    |
|                                |               |          | 3.7       | 2.76 | 10.2 | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 42.8 | 50    |
| 005A00                         |               | 480-3-60 | 2.4       | 1.79 | 2.6  | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 18.3 | 20    |
|                                |               |          | 2.9       | 2.16 | 3.4  | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 19.3 | 20    |
|                                |               |          | 3.7       | 2.76 | 4.8  | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 21.0 | 25    |
| 006A00                         |               | 575-3-60 | 1.0       | 0.75 | 1.4  | 10.0                 | 10.0                 | —       | 10.0  | 10.0 | 14.3 | 15    |
|                                |               |          | 2.0       | 1.49 | 2.4  | 10.0                 | 10.0                 | —       | 10.0  | 10.0 | 15.6 | 20    |
|                                |               |          | 3.0       | 2.24 | 3.8  | 10.0                 | 10.0                 | —       | 10.0  | 10.0 | 17.3 | 20    |
| 007A00                         |               | 208-3-60 | 1.3†      | 0.97 | 6.6  | 15.0                 | 11.3                 | —       | 11.3  | 31.3 | 47.4 | 50    |
|                                |               |          | 2.4†      | 1.79 | 11.0 | 15.0                 | 11.3                 | —       | 11.3  | 31.3 | 52.9 | 60    |
|                                |               |          | 2.4       | 1.79 | 5.2  | 15.0                 | 11.3                 | —       | 11.3  | 31.3 | 45.6 | 50    |
|                                |               |          | 2.9       | 2.16 | 7.5  | 15.0                 | 11.3                 | —       | 11.3  | 31.3 | 48.5 | 50    |
|                                |               |          | 3.7       | 2.76 | 10.2 | 15.0                 | 11.3                 | —       | 11.3  | 31.3 | 51.9 | 60    |
|                                |               | 240-3-60 | 1.3†      | 0.97 | 6.6  | 15.0                 | 15.0                 | —       | 15.0  | 36.1 | 53.4 | 60    |
|                                |               |          | 2.4†      | 1.79 | 11.0 | 15.0                 | 15.0                 | —       | 15.0  | 36.1 | 58.9 | 60    |
|                                |               |          | 2.4       | 1.79 | 5.2  | 15.0                 | 15.0                 | —       | 15.0  | 36.1 | 51.6 | 60    |
|                                |               |          | 2.9       | 2.16 | 7.5  | 15.0                 | 15.0                 | —       | 15.0  | 36.1 | 54.5 | 60    |
|                                |               |          | 3.7       | 2.76 | 10.2 | 15.0                 | 15.0                 | —       | 15.0  | 36.1 | 57.9 | 60    |
| 008A00                         |               | 480-3-60 | 2.4       | 1.79 | 2.6  | 15.0                 | 15.0                 | —       | 15.0  | 18.0 | 25.8 | 30    |
|                                |               |          | 2.9       | 2.16 | 3.4  | 15.0                 | 15.0                 | —       | 15.0  | 18.0 | 26.8 | 30    |
|                                |               |          | 3.7       | 2.76 | 4.8  | 15.0                 | 15.0                 | —       | 15.0  | 18.0 | 28.6 | 30    |
| 009A00                         |               | 575-3-60 | 1.0       | 0.75 | 1.4  | 15.0                 | 15.0                 | —       | 15.0  | 15.1 | 20.6 | 25    |
|                                |               |          | 2.0       | 1.49 | 2.4  | 15.0                 | 15.0                 | —       | 15.0  | 15.1 | 21.8 | 25    |
|                                |               |          | 3.0       | 2.24 | 3.8  | 15.0                 | 15.0                 | —       | 15.0  | 15.1 | 23.6 | 25    |

# Electrical data (cont)

## ELECTRIC HEATER DATA - SINGLE SPEED MOTOR (cont)

| HEATER<br>PART NO.<br>CAELHEAT | FAS<br>UNIT             | V-PH-HZ  | FAN MOTOR |      |      | ELECTRIC HEATER(S)   |                      |         |       |      | MCA*  | MOCP* |
|--------------------------------|-------------------------|----------|-----------|------|------|----------------------|----------------------|---------|-------|------|-------|-------|
|                                |                         |          |           |      |      | NOM.<br>CAP.<br>(KW) | ACTUAL CAPACITY (KW) |         |       | FLA  |       |       |
|                                |                         |          | HP        | KW   | FLA  |                      | STAGE 1              | STAGE 2 | TOTAL |      |       |       |
| 010A00                         | 072, 091, 120<br>(cont) | 208-3-60 | 1.3†      | 0.97 | 6.6  | 25.0                 | 11.3                 | 7.5     | 18.8  | 52.1 | 73.4  | 80    |
|                                |                         |          | 2.4†      | 1.79 | 11.0 | 25.0                 | 11.3                 | 7.5     | 18.8  | 52.1 | 78.9  | 80    |
|                                |                         |          | 2.4       | 1.79 | 5.2  | 25.0                 | 11.3                 | 7.5     | 18.8  | 52.1 | 71.7  | 80    |
|                                |                         |          | 2.9       | 2.16 | 7.5  | 25.0                 | 11.3                 | 7.5     | 18.8  | 52.1 | 74.5  | 80    |
|                                |                         |          | 3.7       | 2.76 | 10.2 | 25.0                 | 11.3                 | 7.5     | 18.8  | 52.1 | 77.9  | 80    |
|                                |                         | 240-3-60 | 1.3†      | 0.97 | 6.6  | 25.0                 | 15.0                 | 10.0    | 25.0  | 60.1 | 83.4  | 90    |
|                                |                         |          | 2.4†      | 1.79 | 11.0 | 25.0                 | 15.0                 | 10.0    | 25.0  | 60.1 | 88.9  | 90    |
|                                |                         |          | 2.4       | 1.79 | 5.2  | 25.0                 | 15.0                 | 10.0    | 25.0  | 60.1 | 81.7  | 90    |
|                                |                         |          | 2.9       | 2.16 | 7.5  | 25.0                 | 15.0                 | 10.0    | 25.0  | 60.1 | 84.6  | 90    |
|                                |                         |          | 3.7       | 2.76 | 10.2 | 25.0                 | 15.0                 | 10.0    | 25.0  | 60.1 | 87.9  | 90    |
|                                |                         | 480-3-60 | 2.4       | 1.79 | 2.6  | 25.0                 | 15.0                 | 10.0    | 25.0  | 30.1 | 40.8  | 50    |
|                                |                         |          | 2.9       | 2.16 | 3.4  | 25.0                 | 15.0                 | 10.0    | 25.0  | 30.1 | 41.8  | 50    |
|                                |                         |          | 3.7       | 2.76 | 4.8  | 25.0                 | 15.0                 | 10.0    | 25.0  | 30.1 | 43.6  | 50    |
|                                |                         | 575-3-60 | 1.0       | 0.75 | 1.4  | 25.0                 | 15.0                 | 10.0    | 25.0  | 25.1 | 33.1  | 35    |
|                                |                         |          | 2.0       | 1.49 | 2.4  | 25.0                 | 15.0                 | 10.0    | 25.0  | 25.1 | 34.4  | 35    |
|                                |                         |          | 3.0       | 2.24 | 3.8  | 25.0                 | 15.0                 | 10.0    | 25.0  | 25.1 | 36.1  | 40    |
| 013A00                         | 091, 120                | 208-3-60 | 2.4†      | 1.79 | 11.0 | 35.0                 | 15.0                 | 11.3    | 26.3  | 73.0 | 105.0 | 110   |
|                                |                         |          | 2.4       | 1.79 | 5.2  | 35.0                 | 15.0                 | 11.3    | 26.3  | 73.0 | 97.7  | 100   |
|                                |                         |          | 2.9       | 2.16 | 7.5  | 35.0                 | 15.0                 | 11.3    | 26.3  | 73.0 | 100.6 | 110   |
|                                |                         |          | 3.7       | 2.76 | 10.2 | 35.0                 | 15.0                 | 11.3    | 26.3  | 73.0 | 104.0 | 110   |
|                                |                         | 240-3-60 | 2.4†      | 1.79 | 11.0 | 35.0                 | 20.0                 | 15.0    | 35.0  | 84.2 | 119.0 | 125   |
|                                |                         |          | 2.4       | 1.79 | 5.2  | 35.0                 | 20.0                 | 15.0    | 35.0  | 84.2 | 111.7 | 125   |
|                                |                         |          | 2.9       | 2.16 | 7.5  | 35.0                 | 20.0                 | 15.0    | 35.0  | 84.2 | 114.6 | 125   |
|                                |                         |          | 3.7       | 2.76 | 10.2 | 35.0                 | 20.0                 | 15.0    | 35.0  | 84.2 | 118.0 | 125   |
|                                |                         | 480-3-60 | 2.4       | 1.79 | 2.6  | 35.0                 | 20.0                 | 15.0    | 35.0  | 42.1 | 55.9  | 60    |
|                                |                         |          | 2.9       | 2.16 | 3.4  | 35.0                 | 20.0                 | 15.0    | 35.0  | 42.1 | 56.9  | 60    |
|                                |                         | 3.7      | 2.76      | 4.8  | 35.0 | 20.0                 | 15.0                 | 35.0    | 42.1  | 58.6 | 60    |       |
|                                |                         | 575-3-60 | 2.0       | 1.49 | 2.4  | 35.0                 | 20.0                 | 15.0    | 35.0  | 35.1 | 46.9  | 50    |
| 3.0                            | 2.24                    |          | 3.8       | 35.0 | 20.0 | 15.0                 | 35.0                 | 35.1    | 48.7  | 50   |       |       |
| 016A00                         | 150, 180, 240           | 208-3-60 | 2.9       | 2.16 | 7.5  | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 35.4  | 40    |
|                                |                         |          | 3.7       | 2.76 | 10.2 | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 38.8  | 40    |
|                                |                         |          | 5.0       | 3.73 | 18.0 | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 48.6  | 60    |
|                                |                         |          | 7.5       | 5.59 | 23.5 | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 55.4  | 70    |
|                                |                         | 240-3-60 | 2.9       | 2.16 | 7.5  | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 39.4  | 40    |
|                                |                         |          | 3.7       | 2.76 | 10.2 | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 42.8  | 50    |
|                                |                         |          | 5.0       | 3.73 | 18.0 | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 52.6  | 60    |
|                                |                         |          | 7.5       | 5.59 | 23.5 | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 59.4  | 70    |
|                                |                         | 480-3-60 | 2.9       | 2.16 | 3.4  | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 19.3  | 20    |
|                                |                         |          | 3.7       | 2.76 | 4.8  | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 21.0  | 25    |
|                                |                         |          | 5.0       | 3.73 | 9.1  | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 26.4  | 30    |
|                                |                         |          | 7.5       | 5.59 | 15.0 | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 33.8  | 40    |
| 575-3-60                       | 3.0                     | 2.24     | 3.8       | 10.0 | 10.0 | —                    | 10.0                 | 10.0    | 17.3  | 20   |       |       |
|                                | 5.0                     | 3.73     | 8.0       | 10.0 | 10.0 | —                    | 10.0                 | 10.0    | 22.6  | 25   |       |       |
|                                | 7.5                     | 5.59     | 10.0      | 10.0 | 10.0 | —                    | 10.0                 | 10.0    | 25.1  | 30   |       |       |
| 019A00                         | 150, 180, 240           | 208-3-60 | 2.9       | 2.16 | 7.5  | 20.0                 | 14.9                 | —       | 15.0  | 41.7 | 61.5  | 70    |
|                                |                         |          | 3.7       | 2.76 | 10.2 | 20.0                 | 14.9                 | —       | 15.0  | 41.7 | 64.9  | 70    |
|                                |                         |          | 5.0       | 3.73 | 18.0 | 20.0                 | 14.9                 | —       | 15.0  | 41.7 | 74.6  | 80    |
|                                |                         |          | 7.5       | 5.59 | 23.5 | 20.0                 | 14.9                 | —       | 15.0  | 41.7 | 81.5  | 90    |
|                                |                         | 240-3-60 | 2.9       | 2.16 | 7.5  | 20.0                 | 19.9                 | —       | 20.0  | 48.1 | 69.5  | 70    |
|                                |                         |          | 3.7       | 2.76 | 10.2 | 20.0                 | 19.9                 | —       | 20.0  | 48.1 | 72.9  | 80    |
|                                |                         |          | 5.0       | 3.73 | 18.0 | 20.0                 | 19.9                 | —       | 20.0  | 48.1 | 82.6  | 90    |
|                                |                         |          | 7.5       | 5.59 | 23.5 | 20.0                 | 19.9                 | —       | 20.0  | 48.1 | 89.5  | 100   |

**ELECTRIC HEATER DATA - SINGLE SPEED MOTOR (cont)**

| HEATER<br>PART NO.<br>CAELHEAT | FAS<br>UNIT             | V-PH-HZ  | FAN MOTOR |      |      | ELECTRIC HEATER(S)   |                      |         |       |       | MCA*  | MOCP* |
|--------------------------------|-------------------------|----------|-----------|------|------|----------------------|----------------------|---------|-------|-------|-------|-------|
|                                |                         |          |           |      |      | NOM.<br>CAP.<br>(KW) | ACTUAL CAPACITY (KW) |         |       | FLA   |       |       |
|                                |                         |          | HP        | KW   | FLA  |                      | STAGE 1              | STAGE 2 | TOTAL |       |       |       |
| 020A00                         | 150, 180, 240<br>(cont) | 480-3-60 | 2.9       | 2.16 | 3.4  | 20.0                 | 20.0                 | —       | 20.0  | 24.1  | 34.3  | 35    |
|                                |                         |          | 3.7       | 2.76 | 4.8  | 20.0                 | 20.0                 | —       | 20.0  | 24.1  | 36.1  | 40    |
|                                |                         |          | 5.0       | 3.73 | 9.1  | 20.0                 | 20.0                 | —       | 20.0  | 24.1  | 41.4  | 50    |
|                                |                         |          | 7.5       | 5.59 | 15.0 | 20.0                 | 20.0                 | —       | 20.0  | 24.1  | 48.8  | 50    |
| 021A00                         |                         | 575-3-60 | 3.0       | 2.24 | 3.8  | 20.0                 | 20.0                 | —       | 20.0  | 20.1  | 29.9  | 30    |
|                                |                         |          | 5.0       | 3.73 | 8.0  | 20.0                 | 20.0                 | —       | 20.0  | 20.1  | 35.1  | 40    |
|                                |                         |          | 7.5       | 5.59 | 10.0 | 20.0                 | 20.0                 | —       | 20.0  | 20.1  | 37.6  | 40    |
| 022A00                         |                         | 208-3-60 | 2.9       | 2.16 | 7.5  | 30.0                 | 15.0                 | 7.5     | 22.5  | 62.5  | 87.5  | 90    |
|                                |                         |          | 3.7       | 2.76 | 10.2 | 30.0                 | 15.0                 | 7.5     | 22.5  | 62.5  | 90.9  | 100   |
|                                |                         |          | 5.0       | 3.73 | 18.0 | 30.0                 | 15.0                 | 7.5     | 22.5  | 62.5  | 100.7 | 110   |
|                                |                         |          | 7.5       | 5.59 | 23.5 | 30.0                 | 15.0                 | 7.5     | 22.5  | 62.5  | 107.5 | 110   |
|                                |                         | 240-3-60 | 2.9       | 2.16 | 7.5  | 30.0                 | 20.0                 | 10.0    | 30.0  | 72.2  | 99.6  | 100   |
|                                |                         |          | 3.7       | 2.76 | 10.2 | 30.0                 | 20.0                 | 10.0    | 30.0  | 72.2  | 103.0 | 110   |
|                                |                         |          | 5.0       | 3.73 | 18.0 | 30.0                 | 20.0                 | 10.0    | 30.0  | 72.2  | 112.7 | 125   |
|                                |                         |          | 7.5       | 5.59 | 23.5 | 30.0                 | 20.0                 | 10.0    | 30.0  | 72.2  | 119.6 | 125   |
| 023A00                         |                         | 480-3-60 | 2.9       | 2.16 | 3.4  | 30.0                 | 20.0                 | 10.0    | 30.0  | 36.1  | 49.4  | 50    |
|                                |                         |          | 3.7       | 2.76 | 4.8  | 30.0                 | 20.0                 | 10.0    | 30.0  | 36.1  | 51.1  | 60    |
|                                |                         |          | 5.0       | 3.73 | 9.1  | 30.0                 | 20.0                 | 10.0    | 30.0  | 36.1  | 56.5  | 60    |
|                                |                         |          | 7.5       | 5.59 | 15.0 | 30.0                 | 20.0                 | 10.0    | 30.0  | 36.1  | 63.9  | 70    |
| 024A00                         |                         | 575-3-60 | 3.0       | 2.24 | 3.8  | 30.0                 | 20.0                 | 10.0    | 30.0  | 30.1  | 42.4  | 50    |
|                                |                         |          | 5.0       | 3.73 | 8.0  | 30.0                 | 20.0                 | 10.0    | 30.0  | 30.1  | 47.7  | 50    |
|                                |                         |          | 7.5       | 5.59 | 10.0 | 30.0                 | 20.0                 | 10.0    | 30.0  | 30.1  | 50.2  | 60    |
| 025A00                         |                         | 208-3-60 | 3.7       | 2.76 | 10.2 | 50.0                 | 22.6                 | 15.0    | 37.6  | 104.3 | 143.1 | 150   |
|                                |                         |          | 5.0       | 3.73 | 18.0 | 50.0                 | 22.6                 | 15.0    | 37.6  | 104.3 | 152.8 | 175   |
|                                |                         |          | 7.5       | 5.59 | 23.5 | 50.0                 | 22.6                 | 15.0    | 37.6  | 104.3 | 159.7 | 175   |
|                                |                         | 240-3-60 | 3.7       | 2.76 | 10.2 | 50.0                 | 30.0                 | 20.0    | 50.0  | 120.3 | 163.1 | 175   |
|                                |                         |          | 5.0       | 3.73 | 18.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 120.3 | 172.9 | 175   |
|                                |                         |          | 7.5       | 5.59 | 23.5 | 50.0                 | 30.0                 | 20.0    | 50.0  | 120.3 | 179.7 | 200   |
| 026A00                         |                         | 480-3-60 | 3.7       | 2.76 | 4.8  | 50.0                 | 30.0                 | 20.0    | 50.0  | 60.1  | 81.2  | 90    |
|                                |                         |          | 5.0       | 3.73 | 9.1  | 50.0                 | 30.0                 | 20.0    | 50.0  | 60.1  | 86.6  | 90    |
|                                |                         |          | 7.5       | 5.59 | 15.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 60.1  | 93.9  | 100   |
| 027A00                         |                         | 575-3-60 | 3.0       | 2.24 | 3.8  | 50.0                 | 30.0                 | 20.0    | 50.0  | 50.2  | 67.5  | 70    |
|                                |                         |          | 5.0       | 3.73 | 8.0  | 50.0                 | 30.0                 | 20.0    | 50.0  | 50.2  | 72.8  | 80    |
|                                |                         |          | 7.5       | 5.59 | 10.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 50.2  | 75.3  | 80    |
| 028A00                         | 300, 336                | 208-3-60 | 7.5       | 5.59 | 23.5 | 20.0                 | 14.9                 | —       | 15.0  | 41.7  | 81.5  | 90    |
|                                |                         |          | 10.0      | 7.46 | 32.0 | 20.0                 | 14.9                 | —       | 15.0  | 41.7  | 92.1  | 110   |
| 240-3-60                       |                         | 7.5      | 5.59      | 23.5 | 20.0 | 19.9                 | —                    | 20.0    | 48.1  | 89.5  | 100   |       |
|                                |                         | 10.0     | 7.46      | 32.0 | 20.0 | 19.9                 | —                    | 20.0    | 48.1  | 100.1 | 110   |       |
| 029A00                         |                         | 480-3-60 | 7.5       | 5.59 | 15.0 | 20.0                 | 20.0                 | —       | 20.0  | 24.1  | 48.8  | 50    |
|                                |                         |          | 10.0      | 7.46 | 16.0 | 20.0                 | 20.0                 | —       | 20.0  | 24.1  | 50.1  | 60    |
| 030A00                         |                         | 575-3-60 | 7.5       | 5.59 | 10.0 | 20.0                 | 20.0                 | —       | 20.0  | 20.1  | 37.6  | 40    |
|                                |                         |          | 10.0      | 7.46 | 13.0 | 20.0                 | 20.0                 | —       | 20.0  | 20.1  | 41.4  | 50    |
| 031A00                         |                         | 208-3-60 | 7.5       | 5.59 | 23.5 | 40.0                 | 15.0                 | 15.0    | 30.0  | 83.4  | 133.6 | 150   |
|                                |                         |          | 10.0      | 7.46 | 32.0 | 40.0                 | 15.0                 | 15.0    | 30.0  | 83.4  | 144.2 | 150   |
|                                |                         | 240-3-60 | 7.5       | 5.59 | 23.5 | 40.0                 | 20.0                 | 20.0    | 40.0  | 96.2  | 149.7 | 150   |
|                                |                         |          | 10.0      | 7.46 | 32.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 96.2  | 160.3 | 175   |
| 032A00                         |                         | 480-3-60 | 7.5       | 5.59 | 15.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 48.1  | 78.9  | 80    |
|                                |                         |          | 10.0      | 7.46 | 16.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 48.1  | 80.1  | 90    |
| 033A00                         |                         | 575-3-60 | 7.5       | 5.59 | 10.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 40.2  | 62.7  | 70    |
|                                |                         |          | 10.0      | 7.46 | 13.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 40.2  | 66.5  | 70    |
| 034A00                         |                         | 208-3-60 | 7.5       | 5.59 | 23.5 | 50.0                 | 22.6                 | 15.0    | 37.6  | 104.3 | 159.7 | 175   |
|                                |                         |          | 10.0      | 7.46 | 32.0 | 50.0                 | 22.6                 | 15.0    | 37.6  | 104.3 | 170.3 | 175   |
|                                |                         | 240-3-60 | 7.5       | 5.59 | 23.5 | 50.0                 | 30.0                 | 20.0    | 50.0  | 120.3 | 179.7 | 200   |
|                                |                         |          | 10.0      | 7.46 | 32.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 120.3 | 190.4 | 200   |
| 035A00                         |                         | 480-3-60 | 7.5       | 5.59 | 15.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 60.1  | 93.9  | 100   |
|                                |                         |          | 10.0      | 7.46 | 16.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 60.1  | 95.2  | 100   |

# Electrical data (cont)

## ELECTRIC HEATER DATA - SINGLE SPEED MOTOR (cont)

| HEATER<br>PART NO.<br>CAELHEAT | FAS<br>UNIT        | V-PH-HZ  | FAN MOTOR |      |      | ELECTRIC HEATER(S)   |                      |         |       |       | MCA*  | MOCP* |
|--------------------------------|--------------------|----------|-----------|------|------|----------------------|----------------------|---------|-------|-------|-------|-------|
|                                |                    |          |           |      |      | NOM.<br>CAP.<br>(KW) | ACTUAL CAPACITY (KW) |         |       | FLA   |       |       |
|                                |                    |          | HP        | KW   | FLA  |                      | STAGE 1              | STAGE 2 | TOTAL |       |       |       |
| 036A00                         | 300, 336<br>(cont) | 575-3-60 | 7.5       | 5.59 | 10.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 50.2  | 75.3  | 80    |
|                                |                    |          | 10.0      | 7.46 | 13.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 50.2  | 79.0  | 80    |
| 037A00                         |                    | 208-3-60 | 7.5       | 5.59 | 23.5 | 70.0                 | 30.0                 | 22.6    | 52.6  | 145.9 | 175.3 | 200   |
|                                |                    |          | 10.0      | 7.46 | 32.0 | 70.0                 | 30.0                 | 22.6    | 52.6  | 145.9 | 185.9 | 200   |
|                                |                    | 240-3-60 | 7.5       | 5.59 | 23.5 | 70.0                 | 40.0                 | 30.0    | 70.0  | 168.4 | 197.8 | 225   |
|                                |                    |          | 10.0      | 7.46 | 32.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 168.4 | 208.4 | 225   |
| 038A00                         |                    | 480-3-60 | 7.5       | 5.59 | 15.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 84.2  | 102.9 | 110   |
|                                |                    |          | 10.0      | 7.46 | 16.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 84.2  | 104.2 | 110   |
| 039A00                         |                    | 575-3-60 | 7.5       | 5.59 | 10.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 70.3  | 82.8  | 90    |
|                                |                    |          | 10.0      | 7.46 | 13.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 70.3  | 86.5  | 90    |

See: "Legend and Notes" on page 41.

# **ELECTRIC HEATER DATA - 2-SPEED MOTOR**

| HEATER<br>PART NO.<br>CAELHEAT | FAS<br>UNIT   | V-PH-HZ  | FAN MOTOR |      |      | ELECTRIC HEATER(S)   |                      |         |       |      | MCA* | MOCP* |
|--------------------------------|---------------|----------|-----------|------|------|----------------------|----------------------|---------|-------|------|------|-------|
|                                |               |          |           |      |      | NOM.<br>CAP.<br>(KW) | ACTUAL CAPACITY (KW) |         |       | FLA  |      |       |
|                                |               |          | HP        | KW   | FLA  |                      | STAGE 1              | STAGE 2 | TOTAL |      |      |       |
| 001A00                         | 072, 091, 120 | 208-3-60 | 1.7       | 1.27 | 5.8  | 5.0                  | 3.8                  | —       | 3.8   | 10.4 | 20.3 | 25    |
|                                |               |          | 2.4       | 1.79 | 7.1  | 5.0                  | 3.8                  | —       | 3.8   | 10.4 | 21.9 | 25    |
|                                |               |          | 3.7       | 2.76 | 10.8 | 5.0                  | 3.8                  | —       | 3.8   | 10.4 | 26.5 | 30    |
|                                |               |          | 3.7**     | 2.76 | 10.6 | 5.0                  | 3.8                  | —       | 3.8   | 10.4 | 26.3 | 30    |
|                                |               | 240-3-60 | 1.7       | 1.27 | 5.6  | 5.0                  | 5.0                  | —       | 5.0   | 12.0 | 22.0 | 25    |
|                                |               |          | 2.4       | 1.79 | 7.1  | 5.0                  | 5.0                  | —       | 5.0   | 12.0 | 23.9 | 25    |
|                                |               |          | 3.7       | 2.76 | 10.8 | 5.0                  | 5.0                  | —       | 5.0   | 12.0 | 28.5 | 35    |
|                                |               |          | 3.7**     | 2.76 | 10.6 | 5.0                  | 5.0                  | —       | 5.0   | 12.0 | 28.3 | 35    |
| 002A00                         |               | 480-3-60 | 1.7       | 1.27 | 2.9  | 5.0                  | 5.0                  | —       | 5.0   | 6.0  | 11.1 | 15    |
|                                |               |          | 2.4       | 1.79 | 3.8  | 5.0                  | 5.0                  | —       | 5.0   | 6.0  | 12.3 | 15    |
|                                |               |          | 3.7       | 2.76 | 4.9  | 5.0                  | 5.0                  | —       | 5.0   | 6.0  | 13.6 | 15    |
|                                |               |          | 3.7**     | 2.76 | 5.3  | 5.0                  | 5.0                  | —       | 5.0   | 6.0  | 14.1 | 15    |
| 003A00                         |               | 575-3-60 | 1.7       | 1.27 | 2.8  | 5.0                  | 5.0                  | —       | 5.0   | 5.0  | 9.8  | 15    |
|                                |               |          | 2.4       | 1.79 | 3.5  | 5.0                  | 5.0                  | —       | 5.0   | 5.0  | 10.7 | 15    |
|                                |               |          | 3.7       | 2.76 | 4.5  | 5.0                  | 5.0                  | —       | 5.0   | 5.0  | 11.9 | 15    |
| 004A00                         |               | 208-3-60 | 1.7       | 1.27 | 5.8  | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 33.3 | 35    |
|                                |               |          | 2.4       | 1.79 | 7.1  | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 34.9 | 35    |
|                                |               |          | 3.7       | 2.76 | 10.8 | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 39.6 | 40    |
|                                |               |          | 3.7**     | 2.76 | 10.6 | 10.0                 | 7.5                  | —       | 7.5   | 20.8 | 39.3 | 40    |
|                                |               | 240-3-60 | 1.7       | 1.27 | 5.6  | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 37.1 | 40    |
|                                |               |          | 2.4       | 1.79 | 7.1  | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 38.9 | 40    |
|                                |               |          | 3.7       | 2.76 | 10.8 | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 43.6 | 50    |
|                                |               |          | 3.7**     | 2.76 | 10.6 | 10.0                 | 10.0                 | —       | 10.0  | 24.1 | 43.3 | 50    |
| 005A00                         |               | 480-3-60 | 1.7       | 1.27 | 2.9  | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 18.7 | 20    |
|                                |               |          | 2.4       | 1.79 | 3.8  | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 19.8 | 20    |
|                                |               |          | 3.7       | 2.76 | 4.9  | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 21.2 | 25    |
|                                |               |          | 3.7**     | 2.76 | 5.3  | 10.0                 | 10.0                 | —       | 10.0  | 12.0 | 21.7 | 25    |
| 006A00                         |               | 575-3-60 | 1.7       | 1.27 | 2.8  | 10.0                 | 10.0                 | —       | 10.0  | 10.0 | 16.1 | 20    |
|                                |               |          | 2.4       | 1.79 | 3.5  | 10.0                 | 10.0                 | —       | 10.0  | 10.0 | 16.9 | 20    |
|                                |               |          | 3.7       | 2.76 | 4.5  | 10.0                 | 10.0                 | —       | 10.0  | 10.0 | 18.2 | 20    |
| 007A00                         |               | 208-3-60 | 1.7       | 1.27 | 5.8  | 15.0                 | 11.3                 | —       | 11.3  | 31.3 | 46.4 | 50    |
|                                |               |          | 2.4       | 1.79 | 7.1  | 15.0                 | 11.3                 | —       | 11.3  | 31.3 | 48.0 | 50    |
|                                |               |          | 3.7       | 2.76 | 10.8 | 15.0                 | 11.3                 | —       | 11.3  | 31.3 | 52.6 | 60    |
|                                |               |          | 3.7**     | 2.76 | 10.6 | 15.0                 | 11.3                 | —       | 11.3  | 31.3 | 52.4 | 60    |
|                                |               | 240-3-60 | 1.7       | 1.27 | 5.6  | 15.0                 | 15.0                 | —       | 15.0  | 36.1 | 52.1 | 60    |
|                                |               |          | 2.4       | 1.79 | 7.1  | 15.0                 | 15.0                 | —       | 15.0  | 36.1 | 54.0 | 60    |
|                                |               |          | 3.7       | 2.76 | 10.8 | 15.0                 | 15.0                 | —       | 15.0  | 36.1 | 58.6 | 60    |
|                                |               |          | 3.7**     | 2.76 | 10.6 | 15.0                 | 15.0                 | —       | 15.0  | 36.1 | 58.4 | 60    |
| 008A00                         |               | 480-3-60 | 1.7       | 1.27 | 2.9  | 15.0                 | 15.0                 | —       | 15.0  | 18.0 | 26.2 | 30    |
|                                |               |          | 2.4       | 1.79 | 3.8  | 15.0                 | 15.0                 | —       | 15.0  | 18.0 | 27.3 | 30    |
|                                |               |          | 3.7       | 2.76 | 4.9  | 15.0                 | 15.0                 | —       | 15.0  | 18.0 | 28.7 | 30    |
|                                |               |          | 3.7**     | 2.76 | 5.3  | 15.0                 | 15.0                 | —       | 15.0  | 18.0 | 29.2 | 30    |
| 009A00                         |               | 575-3-60 | 1.7       | 1.27 | 2.8  | 15.0                 | 15.0                 | —       | 15.0  | 15.1 | 22.3 | 25    |
|                                |               |          | 2.4       | 1.79 | 3.5  | 15.0                 | 15.0                 | —       | 15.0  | 15.1 | 23.2 | 25    |
|                                |               |          | 3.7       | 2.76 | 4.5  | 15.0                 | 15.0                 | —       | 15.0  | 15.1 | 24.5 | 25    |
| 010A00                         |               | 208-3-60 | 1.7       | 1.27 | 5.8  | 25.0                 | 11.3                 | 7.5     | 18.8  | 52.1 | 72.4 | 80    |
|                                |               |          | 2.4       | 1.79 | 7.1  | 25.0                 | 11.3                 | 7.5     | 18.8  | 52.1 | 74.0 | 80    |
|                                |               |          | 3.7       | 2.76 | 10.8 | 25.0                 | 11.3                 | 7.5     | 18.8  | 52.1 | 78.7 | 80    |
|                                |               |          | 3.7**     | 2.76 | 10.6 | 25.0                 | 11.3                 | 7.5     | 18.8  | 52.1 | 78.4 | 80    |
|                                |               | 240-3-60 | 1.7       | 1.27 | 5.6  | 25.0                 | 15.0                 | 10.0    | 25.0  | 60.1 | 82.2 | 90    |
|                                |               |          | 2.4       | 1.79 | 7.1  | 25.0                 | 15.0                 | 10.0    | 25.0  | 60.1 | 84.1 | 90    |
|                                |               |          | 3.7       | 2.76 | 10.8 | 25.0                 | 15.0                 | 10.0    | 25.0  | 60.1 | 88.7 | 90    |
|                                |               |          | 3.7**     | 2.76 | 10.6 | 25.0                 | 15.0                 | 10.0    | 25.0  | 60.1 | 88.4 | 90    |
| 011A00                         |               | 480-3-60 | 1.7       | 1.27 | 2.9  | 25.0                 | 15.0                 | 10.0    | 25.0  | 30.1 | 41.2 | 50    |
|                                |               |          | 2.4       | 1.79 | 3.8  | 25.0                 | 15.0                 | 10.0    | 25.0  | 30.1 | 42.3 | 50    |
|                                |               |          | 3.7       | 2.76 | 4.9  | 25.0                 | 15.0                 | 10.0    | 25.0  | 30.1 | 43.7 | 50    |
|                                |               |          | 3.7**     | 2.76 | 5.3  | 25.0                 | 15.0                 | 10.0    | 25.0  | 30.1 | 44.2 | 50    |

# Electrical data (cont)

## ELECTRIC HEATER DATA - 2-SPEED MOTOR (cont)

| HEATER<br>PART NO.<br>CAELHEAT | FAS<br>UNIT             | V-PH-HZ  | FAN MOTOR |      |      | ELECTRIC HEATER(S)   |                      |         |       |       | MCA*  | MOCP* |     |
|--------------------------------|-------------------------|----------|-----------|------|------|----------------------|----------------------|---------|-------|-------|-------|-------|-----|
|                                |                         |          | HP        | KW   | FLA  | NOM.<br>CAP.<br>(KW) | ACTUAL CAPACITY (KW) |         |       | FLA   |       |       |     |
|                                |                         |          |           |      |      |                      | STAGE 1              | STAGE 2 | TOTAL |       |       |       |     |
| 012A00                         | 072, 091, 120<br>(cont) | 575-3-60 | 1.7       | 1.27 | 2.8  | 25.0                 | 15.0                 | 10.0    | 25.0  | 25.1  | 34.9  | 35    |     |
|                                |                         |          | 2.4       | 1.79 | 3.5  | 25.0                 | 15.0                 | 10.0    | 25.0  | 25.1  | 35.8  | 40    |     |
|                                |                         |          | 3.7       | 2.76 | 4.5  | 25.0                 | 15.0                 | 10.0    | 25.0  | 25.1  | 37.0  | 40    |     |
| 013A00                         |                         | 208-3-60 | 1.7       | 1.27 | 5.8  | 35.0                 | 15.0                 | 11.3    | 26.3  | 73.0  | 98.5  | 100   |     |
|                                |                         |          | 2.4       | 1.79 | 7.1  | 35.0                 | 15.0                 | 11.3    | 26.3  | 73.0  | 100.1 | 110   |     |
|                                |                         |          | 3.7       | 2.76 | 10.8 | 35.0                 | 15.0                 | 11.3    | 26.3  | 73.0  | 104.7 | 110   |     |
|                                |                         | 3.7**    | 2.76      | 10.6 | 35.0 | 15.0                 | 11.3                 | 26.3    | 73.0  | 104.5 | 110   |       |     |
|                                |                         | 240-3-60 | 1.7       | 1.27 | 5.6  | 35.0                 | 20.0                 | 15.0    | 35.0  | 84.2  | 112.2 | 125   |     |
|                                |                         |          | 2.4       | 1.79 | 7.1  | 35.0                 | 20.0                 | 15.0    | 35.0  | 84.2  | 114.1 | 125   |     |
|                                |                         |          | 3.7       | 2.76 | 10.8 | 35.0                 | 20.0                 | 15.0    | 35.0  | 84.2  | 118.7 | 125   |     |
|                                |                         | 3.7**    | 2.76      | 10.6 | 35.0 | 20.0                 | 15.0                 | 35.0    | 84.2  | 118.5 | 125   |       |     |
|                                |                         | 014A00   | 480-3-60  | 1.7  | 1.27 | 2.9                  | 35.0                 | 20.0    | 15.0  | 35.0  | 42.1  | 56.2  | 60  |
| 2.4                            |                         |          |           | 1.79 | 3.8  | 35.0                 | 20.0                 | 15.0    | 35.0  | 42.1  | 57.4  | 60    |     |
| 3.7                            |                         |          |           | 2.76 | 4.9  | 35.0                 | 20.0                 | 15.0    | 35.0  | 42.1  | 58.7  | 60    |     |
| 3.7**                          |                         |          |           | 2.76 | 5.3  | 35.0                 | 20.0                 | 15.0    | 35.0  | 42.1  | 59.2  | 60    |     |
| 015A00                         |                         | 575-3-60 | 1.7       | 1.27 | 2.8  | 35.0                 | 20.0                 | 15.0    | 35.0  | 35.1  | 47.4  | 50    |     |
|                                |                         |          | 2.4       | 1.79 | 3.5  | 35.0                 | 20.0                 | 15.0    | 35.0  | 35.1  | 48.3  | 50    |     |
|                                |                         |          | 3.7       | 2.76 | 4.5  | 35.0                 | 20.0                 | 15.0    | 35.0  | 35.1  | 49.6  | 50    |     |
| 016A00                         |                         | 150      | 208-3-60  | 2.9  | 2.16 | 8.6                  | 10.0                 | 7.5     | —     | 7.5   | 20.8  | 36.8  | 40  |
|                                |                         |          |           | 3.7  | 2.76 | 10.8                 | 10.0                 | 7.5     | —     | 7.5   | 20.8  | 39.6  | 40  |
|                                |                         | 180      | 208-3-60  | 3.7  | 2.76 | 10.8                 | 10.0                 | 7.5     | —     | 7.5   | 20.8  | 39.6  | 40  |
|                                |                         |          |           | 5.0  | 3.73 | 18.0                 | 10.0                 | 7.5     | —     | 7.5   | 20.8  | 48.6  | 60  |
|                                |                         | 240      | 208-3-60  | 5.0  | 3.73 | 18.0                 | 10.0                 | 7.5     | —     | 7.5   | 20.8  | 48.6  | 60  |
|                                |                         |          |           | 7.5  | 5.59 | 23.5                 | 10.0                 | 7.5     | —     | 7.5   | 20.8  | 55.4  | 70  |
|                                |                         | 150      | 240-3-60  | 2.9  | 2.16 | 8.6                  | 10.0                 | 10.0    | —     | 10.0  | 24.1  | 40.8  | 50  |
|                                |                         |          |           | 3.7  | 2.76 | 10.8                 | 10.0                 | 10.0    | —     | 10.0  | 24.1  | 43.6  | 50  |
|                                |                         | 180      | 240-3-60  | 3.7  | 2.76 | 10.8                 | 10.0                 | 10.0    | —     | 10.0  | 24.1  | 43.6  | 50  |
|                                |                         |          |           | 5.0  | 3.73 | 18.0                 | 10.0                 | 10.0    | —     | 10.0  | 24.1  | 52.6  | 60  |
|                                |                         | 240      | 240-3-60  | 5.0  | 3.73 | 18.0                 | 10.0                 | 10.0    | —     | 10.0  | 24.1  | 52.6  | 60  |
|                                |                         |          |           | 7.5  | 5.59 | 23.5                 | 10.0                 | 10.0    | —     | 10.0  | 24.1  | 59.4  | 70  |
| 017A00                         |                         | 150      | 480-3-60  | 2.9  | 2.16 | 3.8                  | 10.0                 | 10.0    | —     | 10.0  | 12.0  | 19.8  | 20  |
|                                |                         |          |           | 3.7  | 2.76 | 4.9                  | 10.0                 | 10.0    | —     | 10.0  | 12.0  | 21.2  | 25  |
|                                |                         | 180      | 480-3-60  | 3.7  | 2.76 | 4.9                  | 10.0                 | 10.0    | —     | 10.0  | 12.0  | 21.2  | 25  |
|                                |                         |          |           | 5.0  | 3.73 | 9.1                  | 10.0                 | 10.0    | —     | 10.0  | 12.0  | 26.4  | 30  |
|                                |                         | 240      | 480-3-60  | 5.0  | 3.73 | 9.1                  | 10.0                 | 10.0    | —     | 10.0  | 12.0  | 26.4  | 30  |
|                                |                         |          |           | 7.5  | 5.59 | 15.0                 | 10.0                 | 10.0    | —     | 10.0  | 12.0  | 33.8  | 40  |
| 018A00                         |                         | 150      | 575-3-60  | 3.7  | 2.76 | 4.5                  | 10.0                 | 10.0    | —     | 10.0  | 10.0  | 18.2  | 20  |
|                                |                         |          |           | 5.0  | 3.73 | 8.0                  | 10.0                 | 10.0    | —     | 10.0  | 10.0  | 22.6  | 25  |
|                                |                         | 180      | 575-3-60  | 3.7  | 2.76 | 4.5                  | 10.0                 | 10.0    | —     | 10.0  | 10.0  | 18.2  | 20  |
|                                |                         |          |           | 5.0  | 3.73 | 8.0                  | 10.0                 | 10.0    | —     | 10.0  | 10.0  | 22.6  | 25  |
|                                |                         | 240      | 575-3-60  | 5.0  | 3.73 | 8.0                  | 10.0                 | 10.0    | —     | 10.0  | 10.0  | 22.6  | 25  |
|                                |                         |          |           | 7.5  | 5.59 | 10.0                 | 10.0                 | 10.0    | —     | 10.0  | 10.0  | 25.1  | 30  |
| 019A00                         |                         | 150      | 208-3-60  | 2.9  | 2.16 | 8.6                  | 20.0                 | 15.0    | —     | 15.0  | 41.7  | 62.9  | 70  |
|                                |                         |          |           | 3.7  | 2.76 | 10.8                 | 20.0                 | 15.0    | —     | 15.0  | 41.7  | 65.6  | 70  |
|                                |                         | 180      | 208-3-60  | 3.7  | 2.76 | 10.8                 | 20.0                 | 15.0    | —     | 15.0  | 41.7  | 65.6  | 70  |
|                                |                         |          |           | 5.0  | 3.73 | 18.0                 | 20.0                 | 15.0    | —     | 15.0  | 41.7  | 74.6  | 80  |
|                                |                         | 240      | 208-3-60  | 5.0  | 3.73 | 18.0                 | 20.0                 | 15.0    | —     | 15.0  | 41.7  | 74.6  | 80  |
|                                |                         |          |           | 7.5  | 5.59 | 23.5                 | 20.0                 | 15.0    | —     | 15.0  | 41.7  | 81.5  | 90  |
|                                |                         | 150      | 240-3-60  | 2.9  | 2.16 | 8.6                  | 20.0                 | 20.0    | —     | 20.0  | 48.1  | 70.9  | 80  |
|                                |                         |          |           | 3.7  | 2.76 | 10.8                 | 20.0                 | 20.0    | —     | 20.0  | 48.1  | 73.6  | 80  |
|                                |                         | 180      | 240-3-60  | 3.7  | 2.76 | 10.8                 | 20.0                 | 20.0    | —     | 20.0  | 48.1  | 73.6  | 80  |
|                                |                         |          |           | 5.0  | 3.73 | 18.0                 | 20.0                 | 20.0    | —     | 20.0  | 48.1  | 82.6  | 90  |
|                                |                         | 240      | 240-3-60  | 5.0  | 3.73 | 18.0                 | 20.0                 | 20.0    | —     | 20.0  | 48.1  | 82.6  | 90  |
|                                |                         |          |           | 7.5  | 5.59 | 23.5                 | 20.0                 | 20.0    | —     | 20.0  | 48.1  | 89.5  | 100 |

**ELECTRIC HEATER DATA - 2-SPEED MOTOR (cont)**

| HEATER<br>PART NO.<br>CAELHEAT | FAS<br>UNIT | V-PH-HZ  | FAN MOTOR |          |      | ELECTRIC HEATER(S)   |                      |         |       |      | MCA*  | MOCP* |      |
|--------------------------------|-------------|----------|-----------|----------|------|----------------------|----------------------|---------|-------|------|-------|-------|------|
|                                |             |          |           |          |      | NOM.<br>CAP.<br>(KW) | ACTUAL CAPACITY (KW) |         |       | FLA  |       |       |      |
|                                |             |          | HP        | KW       | FLA  |                      | STAGE 1              | STAGE 2 | TOTAL |      |       |       |      |
| 020A00                         | 150         | 480-3-60 | 2.9       | 2.16     | 3.8  | 20.0                 | 19.9                 | —       | 20.0  | 24.1 | 34.8  | 35    |      |
|                                |             |          | 3.7       | 2.76     | 4.9  | 20.0                 | 19.9                 | —       | 20.0  | 24.1 | 36.2  | 40    |      |
|                                | 5.0         | 3.73     | 9.1       | 20.0     | 19.9 | —                    | 20.0                 | 24.1    | 41.4  | 50   |       |       |      |
|                                | 7.5         | 5.59     | 15.0      | 20.0     | 19.9 | —                    | 20.0                 | 24.1    | 48.8  | 50   |       |       |      |
|                                | 021A00      | 150      | 575-3-60  | 3.7      | 2.76 | 4.5                  | 20.0                 | 20.0    | —     | 20.0 | 20.1  | 30.7  | 35   |
|                                |             |          |           | 5.0      | 3.73 | 8.0                  | 20.0                 | 20.0    | —     | 20.0 | 20.1  | 35.1  | 40   |
| 5.0                            |             | 3.73     | 8.0       | 20.0     | 20.0 | —                    | 20.0                 | 20.1    | 35.1  | 40   |       |       |      |
| 7.5                            |             | 5.59     | 10.0      | 20.0     | 20.0 | —                    | 20.0                 | 20.1    | 37.6  | 40   |       |       |      |
| 022A00                         |             | 150      | 208-3-60  | 2.9      | 2.16 | 8.6                  | 30.0                 | 15.0    | 7.5   | 22.5 | 62.5  | 88.9  | 90   |
|                                |             |          |           | 3.7      | 2.76 | 10.8                 | 30.0                 | 15.0    | 7.5   | 22.5 | 62.5  | 91.7  | 100  |
|                                | 5.0         | 3.73     | 18.0      | 30.0     | 15.0 | 7.5                  | 22.5                 | 62.5    | 100.7 | 110  |       |       |      |
|                                | 3.7         | 2.76     | 10.8      | 30.0     | 20.0 | 10.0                 | 30.0                 | 72.2    | 103.7 | 110  |       |       |      |
|                                | 5.0         | 3.73     | 18.0      | 30.0     | 20.0 | 10.0                 | 30.0                 | 72.2    | 112.7 | 125  |       |       |      |
|                                | 7.5         | 5.59     | 23.5      | 30.0     | 15.0 | 7.5                  | 22.5                 | 62.5    | 107.5 | 110  |       |       |      |
|                                | 7.5         | 5.59     | 23.5      | 30.0     | 20.0 | 10.0                 | 30.0                 | 72.2    | 119.6 | 125  |       |       |      |
|                                | 023A00      | 150      | 480-3-60  | 2.9      | 2.16 | 3.8                  | 30.0                 | 20.0    | 10.0  | 30.0 | 36.1  | 49.9  | 50   |
|                                |             |          |           | 3.7      | 2.76 | 4.9                  | 30.0                 | 20.0    | 10.0  | 30.0 | 36.1  | 51.2  | 60   |
|                                |             | 5.0      | 3.73      | 9.1      | 30.0 | 20.0                 | 10.0                 | 30.0    | 36.1  | 56.5 | 60    |       |      |
|                                |             | 7.5      | 5.59      | 15.0     | 30.0 | 20.0                 | 10.0                 | 30.0    | 36.1  | 63.9 | 70    |       |      |
|                                |             | 024A00   | 150       | 575-3-60 | 3.7  | 2.76                 | 4.5                  | 30.0    | 20.0  | 10.0 | 30.0  | 30.1  | 43.3 |
| 5.0                            |             |          |           |          | 3.73 | 8.0                  | 30.0                 | 20.0    | 10.0  | 30.0 | 30.1  | 47.7  | 50   |
| 5.0                            | 3.73        |          | 8.0       | 30.0     | 20.0 | 10.0                 | 30.0                 | 30.1    | 47.7  | 50   |       |       |      |
| 7.5                            | 5.59        |          | 10.0      | 30.0     | 20.0 | 10.0                 | 30.0                 | 30.1    | 50.2  | 60   |       |       |      |
| 025A00                         | 180         |          | 208-3-60  | 3.7      | 2.76 | 10.8                 | 50.0                 | 22.6    | 15.0  | 37.6 | 104.3 | 143.8 | 150  |
|                                |             |          |           | 5.0      | 3.73 | 18.0                 | 50.0                 | 22.6    | 15.0  | 37.6 | 104.3 | 152.8 | 175  |
|                                | 7.5         | 5.59     | 23.5      | 50.0     | 22.6 | 15.0                 | 37.6                 | 104.3   | 159.7 | 175  |       |       |      |
|                                | 5.0         | 3.73     | 18.0      | 50.0     | 30.0 | 20.0                 | 50.0                 | 120.3   | 172.9 | 175  |       |       |      |
|                                | 7.5         | 5.59     | 23.5      | 50.0     | 30.0 | 20.0                 | 50.0                 | 120.3   | 179.7 | 200  |       |       |      |
|                                | 026A00      | 180      | 480-3-60  | 3.7      | 2.76 | 4.9                  | 50.0                 | 30.0    | 20.0  | 50.0 | 60.1  | 81.3  | 90   |
|                                |             |          |           | 5.0      | 3.73 | 9.1                  | 50.0                 | 30.0    | 20.0  | 50.0 | 60.1  | 86.6  | 90   |
|                                |             | 7.5      | 5.59      | 15.0     | 50.0 | 30.0                 | 20.0                 | 50.0    | 60.1  | 93.9 | 100   |       |      |
| 027A00                         |             | 180      | 575-3-60  | 3.7      | 2.76 | 4.5                  | 50.0                 | 30.0    | 20.0  | 50.0 | 50.2  | 68.4  | 70   |
|                                | 5.0         |          |           | 3.73     | 8.0  | 50.0                 | 30.0                 | 20.0    | 50.0  | 50.2 | 72.8  | 80    |      |
|                                | 7.5         | 5.59     | 10.0      | 50.0     | 30.0 | 20.0                 | 50.0                 | 50.2    | 75.3  | 80   |       |       |      |

# Electrical data (cont)

## ELECTRIC HEATER DATA - 2-SPEED MOTOR (cont)

| HEATER<br>PART NO.<br>CAELHEAT | FAS<br>UNIT | V-PH-HZ  | FAN MOTOR |      |      | ELECTRIC HEATER(S)   |                      |         |       |       | MCA*  | MOCP* |
|--------------------------------|-------------|----------|-----------|------|------|----------------------|----------------------|---------|-------|-------|-------|-------|
|                                |             |          |           |      |      | NOM.<br>CAP.<br>(KW) | ACTUAL CAPACITY (KW) |         |       | FLA   |       |       |
|                                |             |          | HP        | KW   | FLA  |                      | STAGE 1              | STAGE 2 | TOTAL |       |       |       |
| 028A00                         | 300         | 208-3-60 | 7.5       | 5.59 | 23.5 | 20.0                 | 15.0                 | —       | 15.0  | 41.7  | 81.5  | 90    |
|                                |             | 240-3-60 | 7.5       | 5.59 | 23.5 | 20.0                 | 20.0                 | —       | 20.0  | 48.1  | 89.5  | 100   |
|                                |             | 208-3-60 | 10.0      | 7.46 | 32.0 | 20.0                 | 15.0                 | —       | 15.0  | 41.7  | 92.1  | 110   |
|                                |             | 240-3-60 | 10.0      | 7.46 | 32.0 | 20.0                 | 20.0                 | —       | 20.0  | 48.1  | 100.1 | 110   |
|                                | 336         | 208-3-60 | 10.0      | 7.46 | 32.0 | 20.0                 | 15.0                 | —       | 15.0  | 41.7  | 92.1  | 110   |
|                                |             | 240-3-60 | 10.0      | 7.46 | 32.0 | 20.0                 | 20.0                 | —       | 20.0  | 48.1  | 100.1 | 110   |
| 029A00                         | 300         | 480-3-60 | 7.5       | 5.59 | 15.0 | 20.0                 | 20.0                 | —       | 20.0  | 24.1  | 48.8  | 50    |
|                                |             |          | 10.0      | 7.46 | 16.0 | 20.0                 | 20.0                 | —       | 20.0  | 24.1  | 50.1  | 60    |
|                                | 336         | 480-3-60 | 10.0      | 7.46 | 16.0 | 20.0                 | 20.0                 | —       | 20.0  | 24.1  | 50.1  | 60    |
| 030A00                         | 300         | 575-3-60 | 7.5       | 5.59 | 10.0 | 20.0                 | 20.0                 | —       | 20.0  | 20.1  | 37.6  | 40    |
|                                |             |          | 10.0      | 7.46 | 13.0 | 20.0                 | 20.0                 | —       | 20.0  | 20.1  | 41.4  | 50    |
|                                | 336         | 575-3-60 | 10.0      | 7.46 | 13.0 | 20.0                 | 20.0                 | —       | 20.0  | 20.1  | 41.4  | 50    |
| 031A00                         | 300         | 208-3-60 | 7.5       | 5.59 | 23.5 | 40.0                 | 15.0                 | 15.0    | 30.0  | 83.4  | 133.6 | 150   |
|                                |             |          | 10.0      | 7.46 | 32.0 | 40.0                 | 15.0                 | 15.0    | 30.0  | 83.4  | 144.2 | 150   |
|                                | 336         | 240-3-60 | 10.0      | 7.46 | 32.0 | 40.0                 | 15.0                 | 15.0    | 40.0  | 96.2  | 160.3 | 175   |
|                                |             |          | 7.5       | 5.59 | 23.5 | 40.0                 | 20.0                 | 20.0    | 30.0  | 83.4  | 133.6 | 150   |
|                                | 300         | 208-3-60 | 10.0      | 7.46 | 32.0 | 40.0                 | 20.0                 | 20.0    | 30.0  | 83.4  | 144.2 | 150   |
|                                |             |          | 10.0      | 7.46 | 32.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 96.2  | 160.3 | 175   |
| 032A00                         | 300         | 480-3-60 | 7.5       | 5.59 | 15.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 48.1  | 78.9  | 80    |
|                                |             |          | 10.0      | 7.46 | 16.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 48.1  | 80.1  | 90    |
|                                | 336         | 480-3-60 | 10.0      | 7.46 | 16.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 48.1  | 80.1  | 90    |
| 033A00                         | 300         | 575-3-60 | 7.5       | 5.59 | 10.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 40.2  | 62.7  | 70    |
|                                |             |          | 10.0      | 7.46 | 13.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 40.2  | 66.5  | 70    |
|                                | 336         | 575-3-60 | 10.0      | 7.46 | 13.0 | 40.0                 | 20.0                 | 20.0    | 40.0  | 40.2  | 66.5  | 70    |
| 034A00                         | 300         | 208-3-60 | 7.5       | 5.59 | 23.5 | 50.0                 | 22.6                 | 15.0    | 37.6  | 104.3 | 159.7 | 175   |
|                                |             |          | 10.0      | 7.46 | 32.0 | 50.0                 | 22.6                 | 15.0    | 37.6  | 104.3 | 170.3 | 175   |
|                                | 336         | 240-3-60 | 10.0      | 7.46 | 32.0 | 50.0                 | 22.6                 | 15.0    | 50.0  | 120.3 | 190.4 | 200   |
|                                |             |          | 7.5       | 5.59 | 23.5 | 50.0                 | 30.0                 | 20.0    | 37.6  | 104.3 | 159.7 | 175   |
|                                | 300         | 208-3-60 | 10.0      | 7.46 | 32.0 | 50.0                 | 30.0                 | 20.0    | 37.6  | 104.3 | 170.3 | 175   |
|                                |             |          | 10.0      | 7.46 | 32.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 120.3 | 190.4 | 200   |
| 035A00                         | 300         | 480-3-60 | 7.5       | 5.59 | 15.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 60.1  | 93.9  | 100   |
|                                |             |          | 10.0      | 7.46 | 16.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 60.1  | 95.2  | 100   |
|                                | 336         | 480-3-60 | 10.0      | 7.46 | 16.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 60.1  | 95.2  | 100   |
| 036A00                         | 300         | 575-3-60 | 7.5       | 5.59 | 10.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 50.2  | 75.3  | 80    |
|                                |             |          | 10.0      | 7.46 | 13.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 50.2  | 79.0  | 80    |
|                                | 336         | 575-3-60 | 10.0      | 7.46 | 13.0 | 50.0                 | 30.0                 | 20.0    | 50.0  | 50.2  | 79.0  | 80    |
| 037A00                         | 300         | 208-3-60 | 7.5       | 5.59 | 23.5 | 70.0                 | 30.0                 | 22.6    | 52.6  | 145.9 | 175.3 | 200   |
|                                |             |          | 10.0      | 7.46 | 32.0 | 70.0                 | 30.0                 | 22.6    | 52.6  | 145.9 | 185.9 | 200   |
|                                | 336         | 208-3-60 | 10.0      | 7.46 | 32.0 | 70.0                 | 30.0                 | 22.6    | 52.6  | 145.9 | 185.9 | 200   |
|                                |             |          | 7.5       | 5.59 | 23.5 | 70.0                 | 40.0                 | 30.0    | 70.0  | 168.4 | 197.8 | 225   |
|                                | 300         | 240-3-60 | 10.0      | 7.46 | 32.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 168.4 | 208.4 | 225   |
|                                |             |          | 10.0      | 7.46 | 32.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 168.4 | 208.4 | 225   |
| 038A00                         | 300         | 480-3-60 | 7.5       | 5.59 | 15.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 84.2  | 102.9 | 110   |
|                                |             |          | 10.0      | 7.46 | 16.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 84.2  | 104.2 | 110   |
|                                | 336         | 480-3-60 | 10.0      | 7.46 | 16.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 84.2  | 104.2 | 110   |
| 039A00                         | 300         | 575-3-60 | 7.5       | 5.59 | 10.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 70.3  | 82.8  | 90    |
|                                |             |          | 10.0      | 7.46 | 13.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 70.3  | 86.5  | 90    |
|                                | 336         | 575-3-60 | 10.0      | 7.46 | 13.0 | 70.0                 | 40.0                 | 30.0    | 70.0  | 70.3  | 86.5  | 90    |

See: "Legend and Notes" on page 41.

Legend and Notes for tables on pages 33-40

LEGEND

- FLA** — Full Load Amps
- HP** — Horsepower
- MCA** — Minimum Circuit Amps
- MOCP** — Maximum Overcurrent Protection (Amps)

\* Values shown are for single-point connection of electric heat accessory and air handler.

† Single-phase motors. All other motors are 3-phase.

\*\* High Efficiency Motor



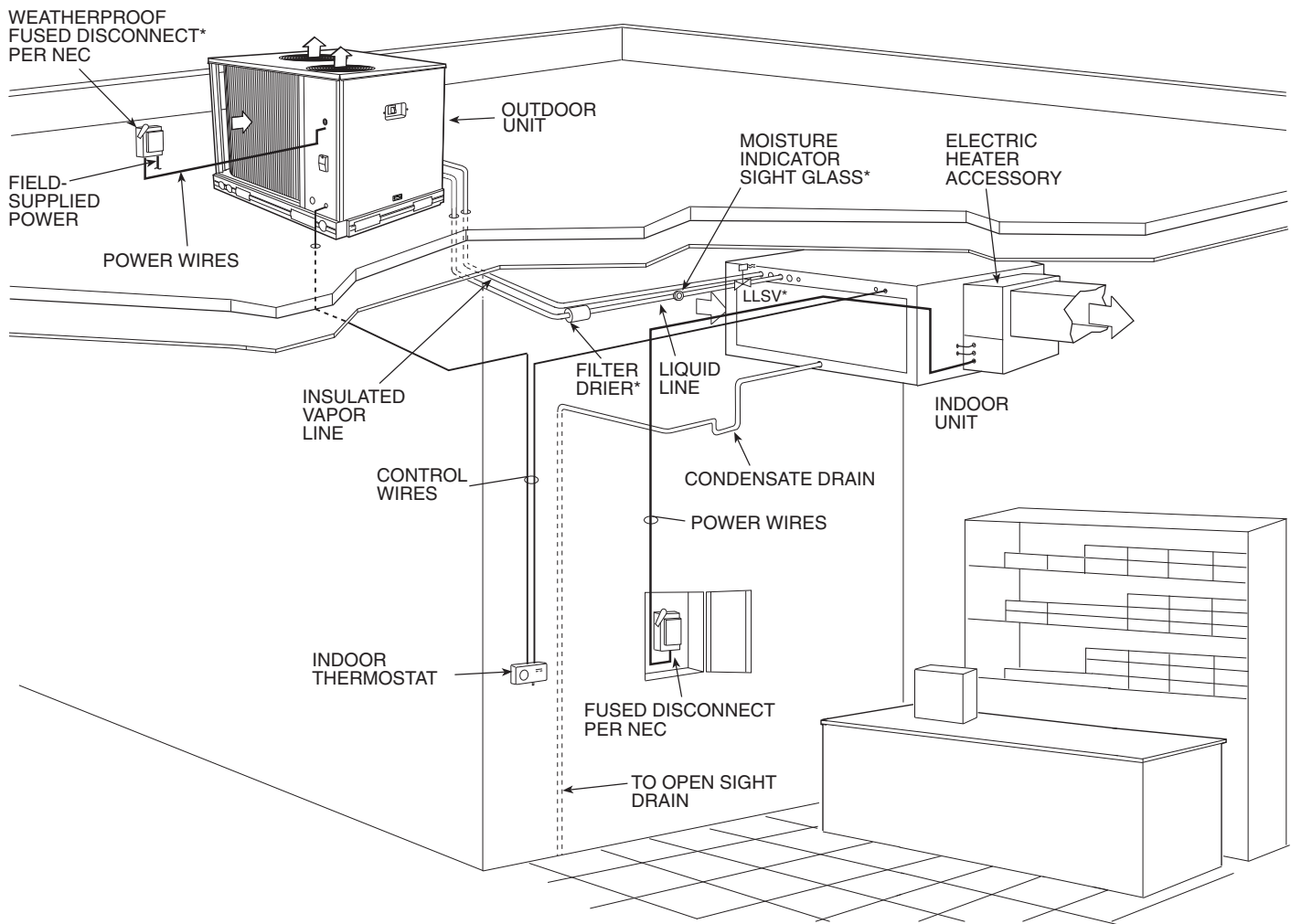
NOTES:

- Electrical resistance heaters are rated at 240 v, 480 v, or 575 v. To determine heater capacity (kW) at unit nameplate multiply the 240-v, 480-v, or 575-v capacity (kW) by the factor shown in the table below for the unit voltage.
- The following equation converts kW of heat energy to Btuh:  $kW \times 3,412 = Btuh$ .
- Heater contactor coils are 24-v and require 8 va holding current.
- Electric heaters are tested and ETL approved at maximum total external static pressure of 1.9 in. wg.
- MCA and MOCP values apply to both standard and alternate factory-supplied motors.
- Approximate shipping weight for CAELHEAT001A00-015A00 is 55 lb (25 kg) each. Approximate shipping weight for CAELHEAT016A00-027A00 is 60 lb (27 kg) each, and CAELHEAT028A00-039A00 is 75 lb (34 kg) each.

| HEATER<br>RATING<br>VOLTAGE | ACTUAL HEATER VOLTAGE |       |       |     |       |      |       |     |       |     |       |
|-----------------------------|-----------------------|-------|-------|-----|-------|------|-------|-----|-------|-----|-------|
|                             | 200                   | 208   | 230   | 240 | 400   | 440  | 460   | 480 | 550   | 575 | 600   |
| 240                         | 0.694                 | 0.751 | 0.918 | 1   | —     | —    | —     | —   | —     | —   | —     |
| 480                         | —                     | —     | —     | —   | 0.694 | 0.84 | 0.918 | 1   | —     | —   | —     |
| 575                         | —                     | —     | —     | —   | —     | —    | —     | —   | 0.915 | 1   | 1.089 |

# Typical piping and wiring

## HORIZONTAL INSTALLATION



### LEGEND

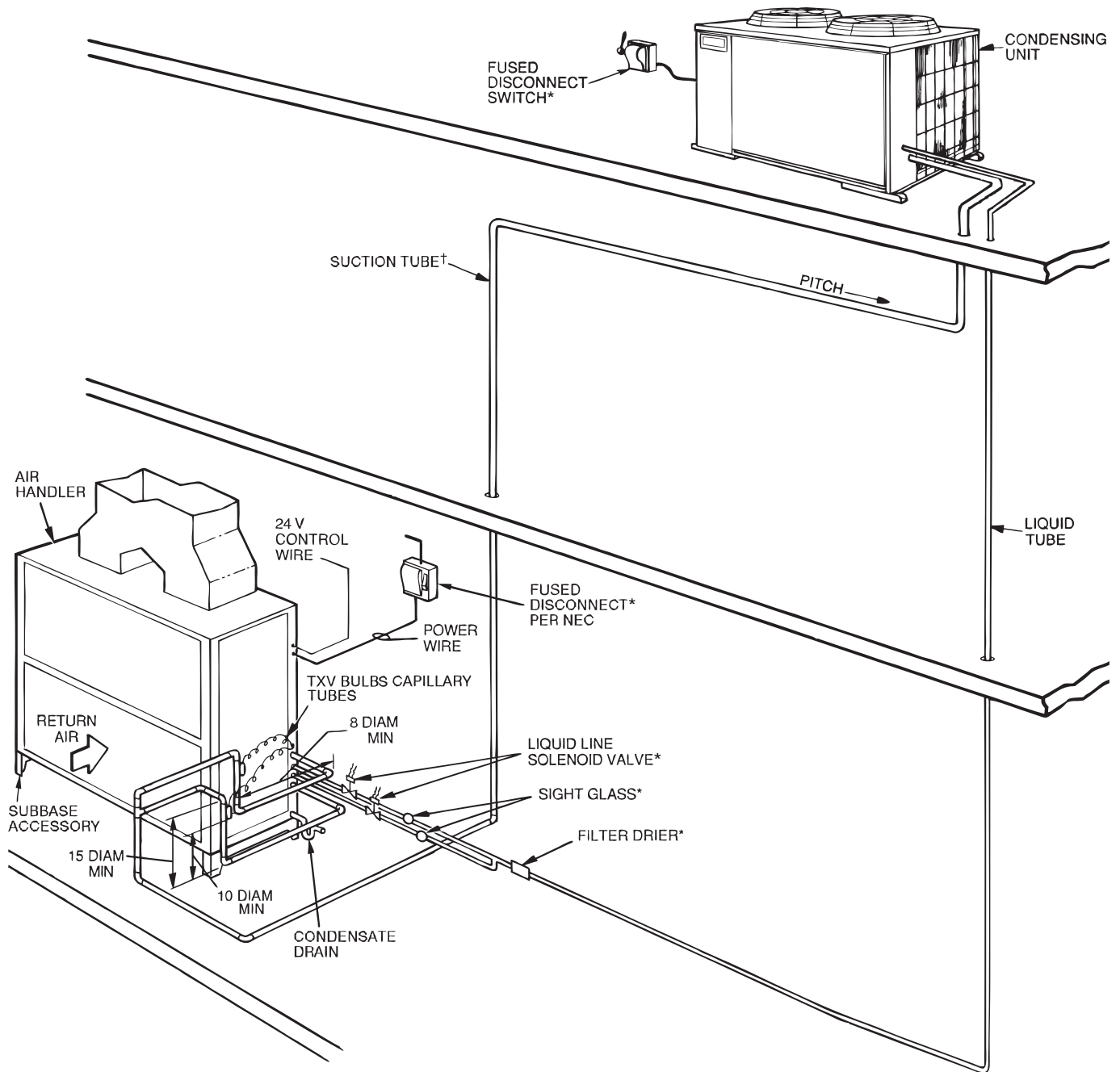
|             |   |                              |
|-------------|---|------------------------------|
| <b>LLSV</b> | — | Liquid Line Solenoid Valve   |
| <b>NEC</b>  | — | National Electrical Code     |
| <b>TXV</b>  | — | Thermostatic Expansion Valve |

\* Field-supplied

### NOTES:

1. All piping must follow standard refrigerant piping techniques.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

## VERTICAL INSTALLATION - FAS (TYPICAL)



### LEGEND

|             |   |                              |
|-------------|---|------------------------------|
| <b>LLSV</b> | — | Liquid Line Solenoid Valve   |
| <b>NEC</b>  | — | National Electrical Code     |
| <b>TXV</b>  | — | Thermostatic Expansion Valve |

\* Field-supplied

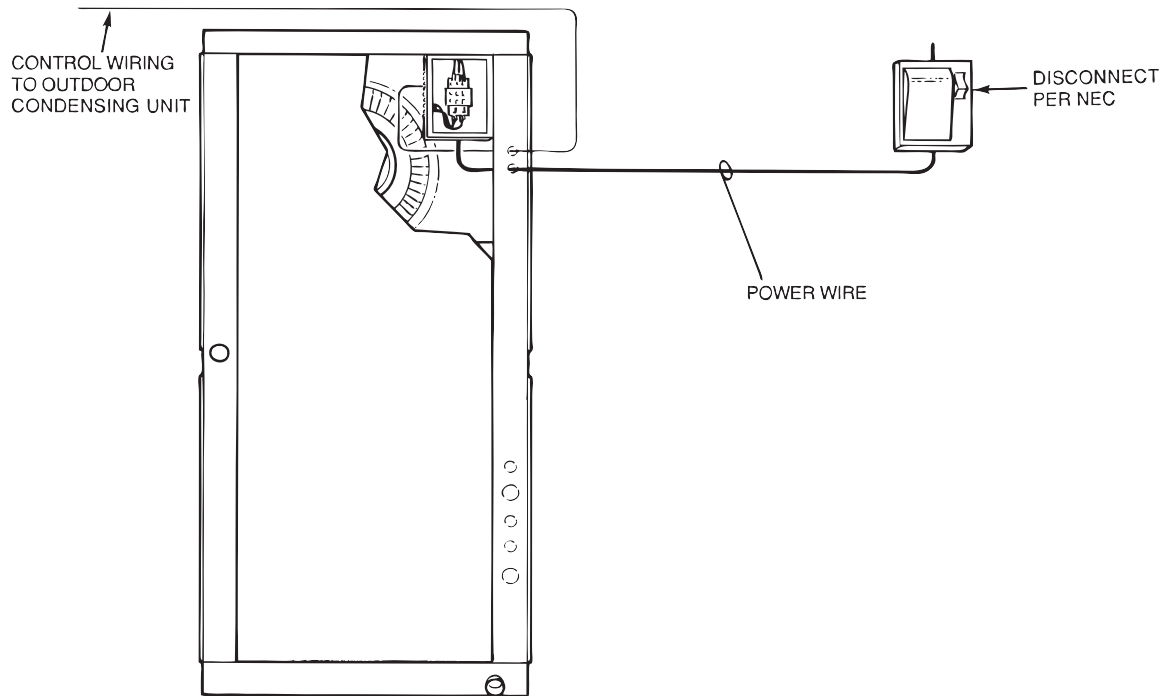
† Double riser may be required. Consult condensing unit product data catalog for details.

### NOTES:

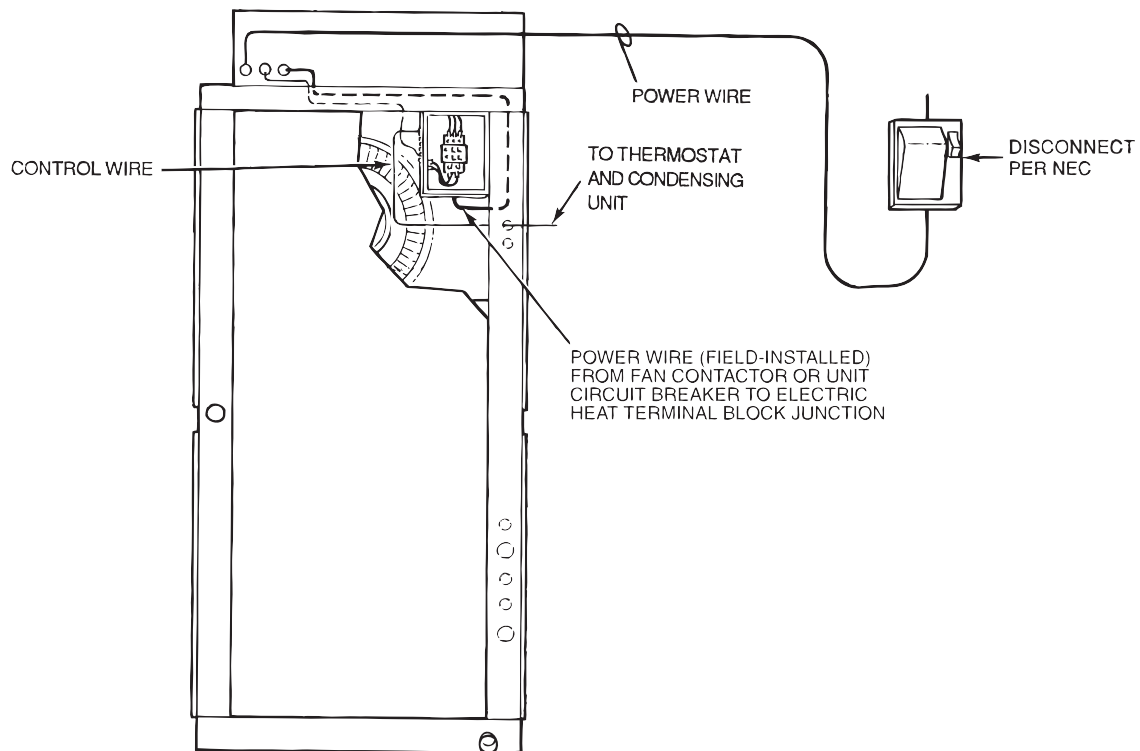
1. All piping must follow standard refrigerant piping techniques.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for, or to include all details for, a specific installation.
4. Liquid line solenoid valve (solenoid drop control) is recommended to prevent refrigerant migration to the compressor.
5. Internal factory-supplied TXVs not shown.

# Typical piping and wiring (cont)

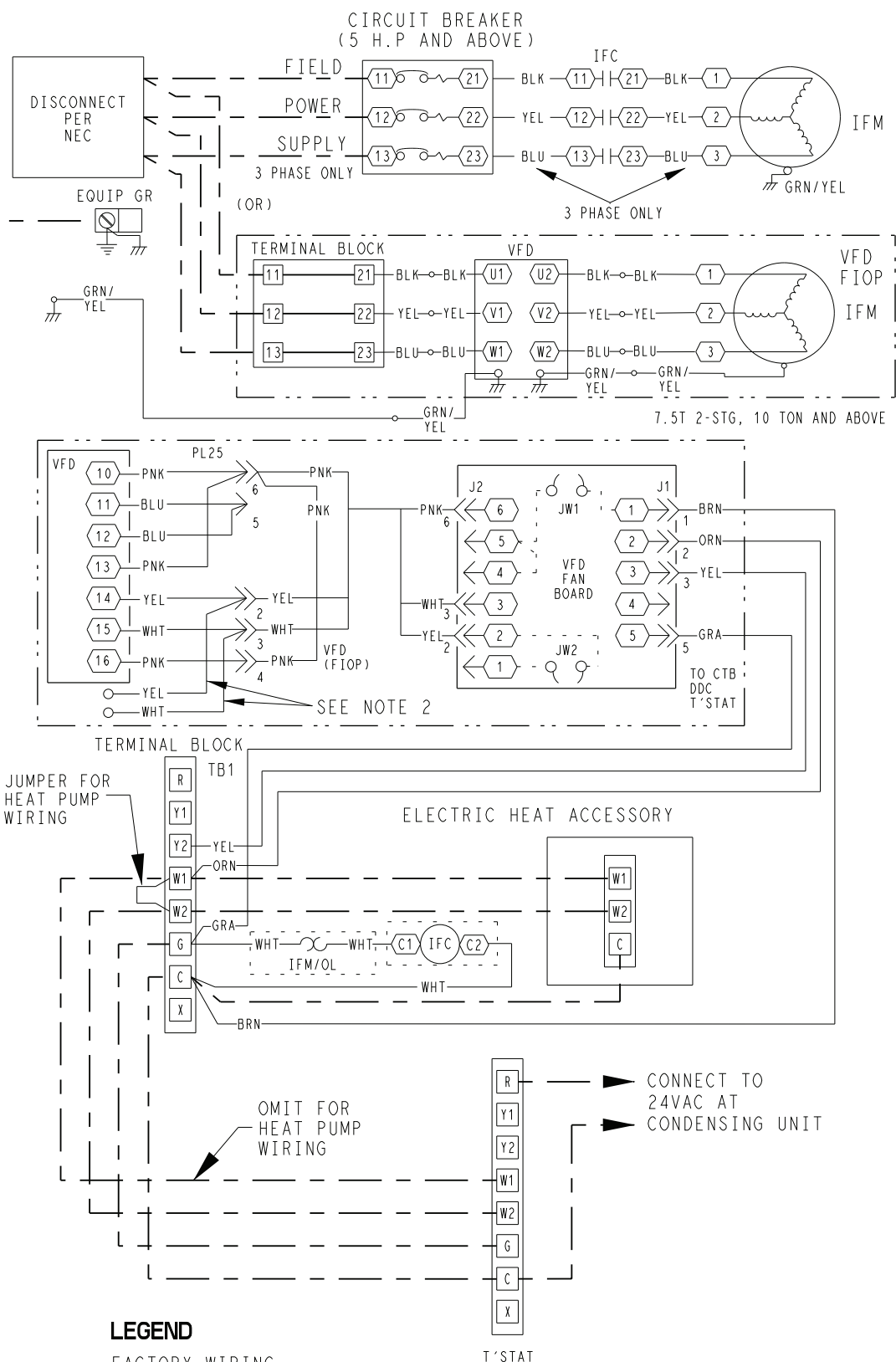
## WIRE ROUTING, FAS BASE UNIT



## WIRE ROUTING, FAS UNIT WITH ELECTRIC HEAT



## Typical control wiring schematic



## LEGEND

|           |                          |
|-----------|--------------------------|
|           | FACTORY WIRING           |
| — — — — — | FIELD CONTROL WIRING     |
| CB        | CIRCUIT BREAKER          |
| IFC       | INDOOR FAN CONTACTOR     |
| IFM       | INDOOR FAN MOTOR         |
| TB        | TERMINAL BLOCK           |
| T'STAT    | THERMOSTAT               |
| VFD       | VARIABLE FREQUENCY DRIVE |

NOTES:

NOTES:

1. USE COPPER CONDUCTORS ONLY.
2. USE HIGH SPEED BLOWER TESTING, CONNECT YELLOW AND WHITE WIRES. DISCONNECT FOR NORMAL OPERATION.

|            |   |
|------------|---|
| 40RM501370 | I |
|------------|---|

# Application data

## General

**IMPORTANT:** Do not bury refrigerant piping underground.

Select equipment to match or to be slightly less than peak load. This provides better humidity control, less unit cycling, and less part-load operation. Equipment should be selected to perform at no less than 300 cfm/ton (40 L/s per kW).

The air handler fan must always be operating when the condensing unit is operating.

Ductwork should be sized according to unit size, not building load. For larger units with two fans, a split duct transition is recommended at the fan outlets, but a plenum can be used with slight reduction in external static pressure capability.

### AUXILIARY SIDE CONNECTOR DATA

| FAS UNIT | P/N       | INLET/OUTLET<br>DIAMETER — ODF (in.) | AUXILIARY (HOT GAS)<br>DIAMETER — ODF (in.) |
|----------|-----------|--------------------------------------|---------------------------------------------|
| 072      | EA19BA705 | 1 <sup>1</sup> / <sub>8</sub>        | 5 <sup>5</sup> / <sub>8</sub>               |
| 091      | EA19BA905 | 1 <sup>3</sup> / <sub>8</sub>        | 7 <sup>7</sup> / <sub>8</sub>               |
| 120      | EA19BA705 | 1 <sup>1</sup> / <sub>8</sub>        | 5 <sup>5</sup> / <sub>8</sub>               |
| 150      | EA19BA705 | 1 <sup>1</sup> / <sub>8</sub>        | 5 <sup>5</sup> / <sub>8</sub>               |
| 180      | EA19BA705 | 1 <sup>1</sup> / <sub>8</sub>        | 5 <sup>5</sup> / <sub>8</sub>               |
| 240      | EA19BA705 | 1 <sup>1</sup> / <sub>8</sub>        | 5 <sup>5</sup> / <sub>8</sub>               |
| 300      | EA19BA905 | 1 <sup>3</sup> / <sub>8</sub>        | 7 <sup>7</sup> / <sub>8</sub>               |
| 336      | EA19BA905 | 1 <sup>3</sup> / <sub>8</sub>        | 7 <sup>7</sup> / <sub>8</sub>               |

### FACTORY-INSTALLED NOZZLE AND DISTRIBUTOR DATA

| FAS UNIT | COIL TYPE | TXV             | DISTRIBUTOR     | FEEDER TUBES<br>PER DISTRIBUTOR    | NOZZLE         |
|----------|-----------|-----------------|-----------------|------------------------------------|----------------|
|          |           | Qty...Part No.* | Qty...Part No.† | Qty...Size (in.)                   | Qty...Part No. |
| 072      | 4 Row     | 1...TDEBX8      | 1...1116        | 12... <sup>1</sup> / <sub>4</sub>  | 1...E5         |
| 091      | 4 Row     | 1...TDEBX8      | 1...1126        | 15... <sup>1</sup> / <sub>4</sub>  | 1...C6         |
| 120      | 4 Row     | 2...TDEX6       | 2...1115        | 9... <sup>1</sup> / <sub>4</sub>   | 2...E4         |
| 150      | 4 Row     | 2...TDEBX8      | 2...1115        | 12... <sup>3</sup> / <sub>16</sub> | 2...E5         |
| 180      | 4 Row     | 2...TDEBX8      | 2...1126        | 16... <sup>1</sup> / <sub>4</sub>  | 2...C6         |
| 240      | 4 Row     | 2...TDEBX11     | 2...1126        | 18... <sup>3</sup> / <sub>16</sub> | 2...C8         |
| 300      | 4 Row     | 2...TDEBX11     | 2...1126        | 20... <sup>3</sup> / <sub>16</sub> | 2...C15        |
| 336      | 4 Row     | 2...TDEBX16     | 2...1126        | 24... <sup>3</sup> / <sub>16</sub> | 2...C17        |

#### LEGEND

**TXV** — Thermostatic Expansion Valve

\* Danfoss part numbers shown.

† Sporlan Valve Co. part numbers shown.

NOTE: Hot gas bypass applications require field-supplied auxiliary side connector.

### FAN MOTOR DATA — STANDARD MOTOR SINGLE SPEED

| UNIT                  | FAS072        | FAS091        | FAS120        | FAS150        | FAS180        | FAS240         | FAS300         | FAS336         |
|-----------------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|
| 208/230-1-60          |               |               |               |               |               |                |                |                |
| Speed (rpm)           | 1725          | 1725          | —             | —             | —             | —              | —              | —              |
| Hp                    | 1.3           | 2.4           | —             | —             | —             | —              | —              | —              |
| Frame (NEMA)          | 56Y           | 56Y           | —             | —             | —             | —              | —              | —              |
| Shaft Dia (in.)       | $\frac{5}{8}$ | $\frac{5}{8}$ | —             | —             | —             | —              | —              | —              |
| 230-3-60 and 460-3-60 |               |               |               |               |               |                |                |                |
| Speed (rpm)           | 1750          | 1750          | 1750          | 1750          | 1750          | 1755           | 1760           | 1755           |
| Hp                    | 2.4           | 2.4           | 2.4           | 2.9           | 3.7           | 5.0            | 7.5            | 10.0           |
| Frame (NEMA)          | 56Y           | 56Y           | 56Y           | 56Y           | 56HZ          | 184T           | S213T          | S215T          |
| Shaft Dia (in.)       | $\frac{5}{8}$ | $\frac{5}{8}$ | $\frac{5}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$ | $1\frac{1}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ |
| 575-3-60              |               |               |               |               |               |                |                |                |
| Speed (rpm)           | 1725          | 1725          | 1725          | 1725          | 1725          | 1755           | 1750           | 1755           |
| Hp                    | 1.0           | 2.0           | 2.0           | 3.0           | 3.0           | 5.0            | 7.5            | 10.0           |
| Frame (NEMA)          | 56            | 56HZ          | 56HZ          | 56HZ          | 56HZ          | 184T           | S213T          | S215T          |
| Shaft Dia (in.)       | $\frac{5}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$ | $1\frac{1}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ |

#### LEGEND

**NEMA** — National Electrical Manufacturers Association (U.S.A.)

### FAN MOTOR DATA — ALTERNATE MOTOR SINGLE SPEED

| UNIT                  | FAS072        | FAS091        | FAS120        | FAS150         | FAS180         | FAS240         | FAS300         | FAS336         |
|-----------------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|
| 208/230-1-60          |               |               |               |                |                |                |                |                |
| Speed (rpm)           | 1725          | 1725          | —             | —              | —              | —              | —              | —              |
| Hp                    | 2.4           | 2.4           | —             | —              | —              | —              | —              | —              |
| Frame (NEMA)          | 56Y           | 56Y           | —             | —              | —              | —              | —              | —              |
| Shaft Dia (in.)       | $\frac{5}{8}$ | $\frac{5}{8}$ | —             | —              | —              | —              | —              | —              |
| 230-3-60 and 460-3-60 |               |               |               |                |                |                |                |                |
| Speed (rpm)           | 1750          | 1750          | 1750          | 1750           | 1755           | 1760           | 1755           | 1755           |
| Hp                    | 2.9           | 2.9           | 3.7           | 3.7            | 5.0            | 7.5            | 10.0           | 10.0           |
| Frame (NEMA)          | 56Y           | 56Y           | 56HZ          | 56HZ           | 184T           | S213T          | S215T          | S215T          |
| Shaft Dia (in.)       | $\frac{7}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$  | $1\frac{1}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ |
| 575-3-60              |               |               |               |                |                |                |                |                |
| Speed (rpm)           | 1725          | 1725          | 1725          | 1745           | 1745           | 1755           | 1750           | 1755           |
| Hp                    | 2.0           | 3.0           | 3.0           | 5.0            | 5.0            | 7.5            | 10.0           | 10.0           |
| Frame (NEMA)          | 56HZ          | 56HZ          | 56HZ          | 184T           | 184T           | S213T          | S215T          | S215T          |
| Shaft Dia (in.)       | $\frac{7}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$ | $1\frac{1}{8}$ | $1\frac{1}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ |

#### LEGEND

**NEMA** — National Electrical Manufacturers Association (U.S.A.)

### MOTOR EFFICIENCY - SINGLE SPEED MOTOR

| MOTOR HP | EPACT MINIMUM | MOTOR EFFICIENCY |
|----------|---------------|------------------|
| 1.3*     | —             | 70.0%            |
| 2.4      | —             | 76.8%            |
| 2.9      | —             | 77.1%            |
| 3.7      | —             | 81.5%            |
| 5.0      | 89.5%         | 89.5%            |
| 7.5      | 91.7%         | 91.7%            |
| 10.0     | 91.7%         | 91.7%            |

#### LEGEND

\* Single-phase only.

**EPACT** — Energy Policy and Conservation Act of 1992

# Application data (cont)

## FAN MOTOR DATA — STANDARD MOTOR TWO SPEED

| UNIT                  | FAS091        | FAS120        | FAS150        | FAS180        | FAS240         | FAS300         | FAS336         |
|-----------------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|
| 230-3-60 and 460-3-60 |               |               |               |               |                |                |                |
| Speed (rpm)           | 1680          | 1680          | 1735          | 1750          | 1755           | 1760           | 1755           |
| Hp                    | 2.4           | 2.4           | 2.9           | 3.7           | 5.0            | 7.5            | 10.0           |
| Frame (NEMA)          | 56HY          | 56HY          | 56HY          | 56HY          | 184T           | S213T          | S215T          |
| Shaft Dia (in.)       | $\frac{5}{8}$ | $\frac{5}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$ | $1\frac{1}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ |
| 575-3-60              |               |               |               |               |                |                |                |
| Speed (rpm)           | 1680          | 1680          | 1710          | 1710          | 1755           | 1750           | 1755           |
| Hp                    | 2.4           | 2.4           | 3.7           | 3.7           | 5.0            | 7.5            | 10.0           |
| Frame (NEMA)          | 56HY          | 56HY          | 56HY          | 56HY          | 184T           | S213T          | S215T          |
| Shaft Dia (in.)       | $\frac{5}{8}$ | $\frac{5}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$ | $1\frac{1}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ |

## FAN MOTOR DATA — ALTERNATE MOTOR TWO SPEED

| UNIT                  | FAS091        | FAS120        | FAS150         | FAS180         | FAS240         | FAS300         | FAS336         |
|-----------------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|
| 230-3-60 and 460-3-60 |               |               |                |                |                |                |                |
| Speed (rpm)           | 1750          | 1750          | 1750           | 1755           | 1760           | 1755           | 1755           |
| Hp                    | 3.7           | 3.7           | 3.7            | 5.0            | 7.5            | 10.0           | 10.0           |
| Frame (NEMA)          | 56HY          | 56HY          | 56HY           | 184T           | S213T          | S215T          | S215T          |
| Shaft Dia (in.)       | $\frac{7}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$  | $1\frac{1}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ |
| 575-3-60              |               |               |                |                |                |                |                |
| Speed (rpm)           | 1710          | 1710          | 1755           | 1755           | 1750           | 1755           | 1755           |
| Hp                    | 3.7           | 3.7           | 5.0            | 5.0            | 7.5            | 10.0           | 10.0           |
| Frame (NEMA)          | 56HY          | 56HY          | 184T           | 184T           | S213T          | S215T          | S215T          |
| Shaft Dia (in.)       | $\frac{7}{8}$ | $\frac{7}{8}$ | $1\frac{1}{8}$ | $1\frac{1}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ | $1\frac{3}{8}$ |

## MOTOR EFFICIENCY - TWO SPEED MOTOR

| MOTOR HP | EPACT MINIMUM | MOTOR EFFICIENCY |
|----------|---------------|------------------|
| 2.4      | —             | 80.0%            |
| 2.9      | —             | 86.5%            |
| 3.7      | —             | 83.6%            |
| 5.0      | 89.5%         | 89.5%            |
| 7.5      | 91.7%         | 91.7%            |
| 10.0     | 91.7%         | 91.7%            |

### LEGEND

**EPACT** — Energy Policy and Conservation Act of 1992

| UNIT                                                | FAS072      | FAS091      | FAS120      | FAS150            | FAS180            | FAS240            | FAS300               | FAS336               |
|-----------------------------------------------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|----------------------|----------------------|
| <b>MOTOR DRIVE</b>                                  |             |             |             |                   |                   |                   |                      |                      |
| Motor Pulley Pitch Diameter (in.)                   | 2.4-3.4     | 2.8-3.8     | 3.4-4.4     | 2.8-3.8           | 2.8-3.8           | 3.7-4.7           | 4.3-5.3              | 4.3-5.3              |
| Pulley Factory Setting Full Turns Open              | 2.5         | 2.5         | 2.5         | 2.5               | 2.5               | 3.0               | 3.0                  | 3.0                  |
| <b>FAN DRIVE</b>                                    |             |             |             |                   |                   |                   |                      |                      |
| Pulley Pitch Dia (in.)                              | 8.8         | 8.8         | 8.8         | 9.0               | 9.0               | 9.4               | 11.0                 | 11.0                 |
| Pulley Bore (in.)                                   | 1           | 1           | 1           | 1 <sup>7/16</sup> | 1 <sup>7/16</sup> | 1 <sup>7/16</sup> | 1 <sup>15/16</sup>   | 1 <sup>15/16</sup>   |
| Belt No. — Section                                  | 1—A         | 1—A         | 1—A         | 1—A               | 1—A               | 2—B               | 2—B*                 | 2—B*                 |
| Belt Pitch (in.)                                    | 40.3        | 41.3        | 42.3        | 42.3              | 42.3              | 41.8              | (2) 42.8<br>(2) 43.8 | (2) 42.8<br>(2) 43.8 |
| <b>FAN SPEEDS (rpm)</b>                             |             |             |             |                   |                   |                   |                      |                      |
| Factory Setting                                     | 568         | 647         | 764         | 632               | 632               | 771               | 752                  | 752                  |
| Range                                               | 470-666     | 549-745     | 666-863     | 537-728           | 537-728           | 679-863           | 682-841              | 674-831              |
| Max Allowable Speed (rpm)                           | 1200        | 1200        | 1200        | 1200              | 1200              | 1200              | 1100                 | 1100                 |
| Change per 1/2 Turn of Moveable Motor Pulley Flange | 19.6        | 19.6        | 19.7        | 19.1              | 19.1              | 15.3              | 13.1                 | 13.1                 |
| <b>MAX FULL TURNS FROM CLOSED POSITION</b>          | 5           | 5           | 5           | 5                 | 5                 | 6                 | 6                    | 6                    |
| <b>SHAFTS CENTER DISTANCE (in.)</b>                 | 10.44-12.32 | 10.44-12.32 | 10.44-12.32 | 10.44-12.32       | 10.44-12.32       | 9.12-10.99        | 6.67-9.43            | 6.67-9.43            |

\* Four belts shipped with unit. Use correct set of 2 belts sized according to the pulley setting.

| UNIT                                                | FAS072      | FAS091      | FAS120      | FAS150            | FAS180            | FAS240            | FAS300             | FAS336             |
|-----------------------------------------------------|-------------|-------------|-------------|-------------------|-------------------|-------------------|--------------------|--------------------|
| <b>MOTOR DRIVE</b>                                  |             |             |             |                   |                   |                   |                    |                    |
| Motor Pulley Pitch Diameter (in.)                   | 3.4-4.4     | 3.4-4.4     | 3.4-4.4     | 3.7-4.7           | 4.3-5.3           | 4.3-5.3           | 4.3-5.3            | 4.3-5.3            |
| Pulley Factory Setting Full Turns Open              | 2.5         | 2.5         | 2.5         | 3.0               | 3.0               | 3.0               | 3.0                | 3.0                |
| <b>FAN DRIVE</b>                                    |             |             |             |                   |                   |                   |                    |                    |
| Pulley Pitch Dia (in.)                              | 7.0         | 6.0*        | 6.0         | 7.4               | 7.9               | 7.4               | 8.6                | 8.6                |
| Pulley Bore (in.)                                   | 1           | 1           | 1           | 1 <sup>7/16</sup> | 1 <sup>7/16</sup> | 1 <sup>7/16</sup> | 1 <sup>15/16</sup> | 1 <sup>15/16</sup> |
| Belt No. — Section                                  | 1—A         | 1—A         | 1—A         | 1—B               | 1—B               | 2—B               | 2—B                | 2—B                |
| Belt Pitch (in.)                                    | 41.3        | 37.3        | 37.3        | 39.8              | 39.8              | 36.8              | 37.8               | 37.8               |
| <b>FAN SPEEDS (rpm)</b>                             |             |             |             |                   |                   |                   |                    |                    |
| Factory Setting                                     | 961         | 1121        | 1121        | 979               | 1060              | 1118              | 1024               | 1024               |
| Range                                               | 838-1084    | 978-1200*†  | 978-1200†   | 873-1096          | 950-1171          | 1014-1200†        | 873-1075           | 873-1075           |
| Max Allowable Speed (rpm)                           | 1200        | 1200        | 1200        | 1200              | 1200              | 1200              | 1100               | 1100               |
| Change per 1/2 Turn of Moveable Motor Pulley Flange | 24.6        | 28.7        | 28.7        | 19.4              | 18.4              | 19.4              | 16.7               | 16.7               |
| <b>MAX FULL TURNS FROM CLOSED POSITION</b>          | 5           | 5           | 5           | 6                 | 6                 | 6                 | 6                  | 6                  |
| <b>SHAFTS CENTER DISTANCE (in.)</b>                 | 10.44-12.32 | 10.44-12.32 | 10.44-12.32 | 10.44-12.32**     | 9.16-10.99        | 8.16-10.02        | 6.67-9.43          | 6.67-9.43          |

\* Values for 3-phase motor shown. For single-phase motor, pulley pitch diameter is 7-in. and resulting fan speed is 837-1096 rpm.

\*\* 575-v unit has a center distance of 9.16-10.99-in.

† It is possible to adjust drive so that fan speed exceeds maximum allowable. DO NOT exceed 1200 rpm.

# Guide specifications

## Commercial Packaged Air-Handling Unit

### HVAC Guide Specifications

Size Range: 2,400 to 10,000 Cfm, Nominal Airflow, 6 to 30 Tons, Nominal Cooling

Model Numbers: FAS (Direct-Expansion Coil)

#### Part 1 — GENERAL

##### 1.01 SYSTEM DESCRIPTION

- A. Indoor, packaged air-handling unit for use in commercial split systems. Unit shall have a multi-position design and shall be capable of horizontal or vertical installation on a floor or in a ceiling, with or without ductwork. (Only vertical units are to be applied without ductwork.)
- B. Unit with direct-expansion coil shall be used in a refrigerant circuit with a matching air-cooled condensing unit.

##### 1.02 QUALITY ASSURANCE

- A. Coils shall be designed and tested in accordance with ASHRAE 15 Safety Code for Mechanical Refrigeration (U.S.A.), latest edition.
- B. Unit shall be constructed in accordance with ETL (U.S.A.) and ETL, Canada, standards and shall carry the ETL and ETL, Canada, labels.
- C. Unit insulation and adhesive shall comply with NFPA-90A (U.S.A.) requirements for flame spread and smoke generation. Insulation shall contain an EPA-registered immobilized antimicrobial agent to effectively resist the growth of bacteria and fungi as proven by tests in accordance with ASTM standards G21 and 22 (U.S.A.).
- D. Unit shall be manufactured in a facility registered to the ISO 9001 manufacturing quality standard.
- E. Direct-expansion coils shall be burst and leak tested at 435 psi.

##### 1.03 DELIVERY AND STORAGE

Units shall be stored and handled per manufacturer's recommendations.

#### Part 2 — PRODUCTS

##### 2.01 EQUIPMENT

Indoor mounted, draw-through, packaged air-handling unit that can be used in a suspended horizontal configuration or a vertical configuration. Unit shall consist of forward-curved belt-driven centrifugal fan(s), motor and drive assembly, pre-wired fan motor contactor, factory-installed refrigerant metering devices (direct-expansion coil units), cooling coil, 2-in. (51-mm) disposable air filters, and condensate drain pans for vertical or horizontal configurations.

###### A. Base Unit:

1. Cabinet shall be constructed of mill-galvanized steel.
2. Cabinet panels shall be fully insulated with 1/2-in. (12.7 mm) fire-retardant material. Insulation shall contain an EPA-registered immobilized antimicrobial agent to effectively resist the growth of bacteria and fungi as proven by tests

in accordance with ASTM standards G21 and 22 (U.S.A.).

3. Unit shall contain non-corroding condensate drain pans for both vertical and horizontal applications. Drain pans shall have connections on right and left sides of unit to facilitate field connection. Drain pans shall have the ability to be sloped toward the right or left side of the unit to prevent standing water from accumulating in pans.
4. Unit shall have factory-supplied 2-in. (51 mm) throwaway-type filters installed upstream from the cooling coil. Filter access shall be from either the right or left side of the unit.

###### B. Coils:

DX coil is 4-row and consists of copper tubes with sine-wave aluminum fins bonded to the tubes by mechanical expansion. Suction and liquid line connections or supply and discharge connections shall be made on the same side of the coil.

1. Direct-expansion coils shall feature factory installed thermostatic expansion valves (TXVs) for refrigerant control. The TXVs shall be R-410A compatible and capable of external adjustment. Coil tubing shall be internally rifled to maximize heat transfer. The FAS300 have 1179823 TXVs. These are Sporlan BBIZE-15-GA-BP5 which have a 5% bleed.

###### C. Operating Characteristics:

1. When combined with matching CAS condensing unit the system shall be capable of starting and running at ambient outdoor temperatures from 35°F (2°C) to 125°F (52°C) in cooling mode and from -10°F (-23°C) to 60°F (16°C) in heating mode.
2. Unit shall operate at ±10% from rated voltage.

###### D. Motor:

1. Fan motor of the size and electrical characteristics specified on the equipment schedule shall be factory supplied and installed.
2. Motors rated at 1.3 through 3.7 hp shall have inherent thermal overload protection. Motors rated at 5 hp shall be protected by a circuit breaker.
3. Evaporator fan motor shall have permanently lubricated, sealed bearings and inherent automatic-reset thermal overload protection or manual reset calibrated circuit breakers. Evaporator motors are designed specifically for ICP and do not have conventional horsepower (hp) ratings listed on the motor nameplate. Motors are designed and qualified in the "air-over" location downstream of the cooling coil and carry a maximum continuous bhp rating that is the maximum application bhp rating for the motor; no "safety factors" above that rating may be applied.

4. All evaporator fan motors 5 hp and larger shall meet the minimum efficiency requirements as established by the Energy Policy Act of 1992 (EPACT), effective October 24, 1997.

E. Special Features:

1. Alternate Motor and Drive:  
An alternate motor and/or medium-static or high-static drive shall be available to meet the airflow and external static pressure requirements specified on the equipment schedule.
2. External Paint:  
Where conditions require, units shall be painted with an American Sterling Gray finish.
3. Hot Water Coil:  
Coil shall be 2-row, U-bend coil with copper tubes and aluminum plate fins bonded to the tubes by mechanical expansion. Coil shall be mounted in a galvanized steel housing that shall be fastened to the unit's fan deck for blow-through heating operation. Coil shall have maximum working pressure of 150 psig.
4. Steam Distributing Coil:  
Coil shall consist of one row of copper tubes with aluminum plate fins, and shall have inner steam distributing tubes. Coil shall be mounted in a galvanized steel housing and shall be fastened to the unit's fan deck for blow-through heating operation. Coil shall have maximum working pressure of 20 psig at 260°F.
5. Electric Heaters:  
Heaters for nominal 240, 480, or 575-volt, 3-phase, 60 Hz shall be factory-supplied for field installation as shown on the equipment drawings. Electric heat assembly shall be ETL (U.S.A.) and ETL, Canada, agency approved, and shall have single-point power wiring. Heater assembly shall include contactors with 24-v coils, power wiring, 24-v control wiring terminal blocks, and a hinged access panel. Electric heaters shall not be used with air discharge plenum.
6. Air Discharge Plenum:  
Plenum shall be factory-supplied to provide free-blow air distribution for vertical floor-mounted units. A grille with moveable vanes for horizontal or vertical airflow adjustment shall be included. Plenum shall be field-assembled and field-installed on the unit's fan deck for blow-through air distribution. Plenum shall not be used with electric heaters.
7. Return-Air Grille:  
Grille shall be factory-supplied for field installation on the unit's return air opening.
8. Unit Subbase:  
Subbase assembly shall be factory-supplied for field installation. Subbase shall elevate floor-mounted vertical units to provide access for correct condensate drain connection.

9. Economizers:

- a. Accessory Ultra LOW LEAK EconoMi\$er X. (Field installed) Economizer for ventilation or "free" cooling shall be factory provided for field installation on either return air opening of air handler.
  - 1) Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.
  - 2) Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
  - 3) Shall include all hardware, actuator and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.
  - 4) Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
  - 5) Ultra LOW LEAK design meets California Title 24 section 140.4 and ASHRAE 90.1 requirements for 4 cfm per sq.ft. on the outside air dampers and 10 cfm per sq. ft. on the return dampers.
  - 6) Economizer controller on EconoMi\$er X models shall be the Honeywell W7220 that provides:
    - a).2-line LCD interface screen for setup, configuration, and troubleshooting.
    - b).On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24.
    - c).Sensor failure loss of communication identification.
    - d).Automatic sensor detection.
    - e).Capabilities for use with multiple-speed indoor fan systems.
    - f).Utilizing digital sensors: Dry bulb and Enthalpy. Accessory comes standard with dry bulb sensing.
    - g).Field installed enthalpy sensor required.
- b. Accessory Standard Leak EconoMi\$er IV (field-installed) Economizer for ventilation or "free" cooling shall be factory provided for field installation on either return air opening of air handler.
  - 1) Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.

# Guide specifications (cont)

- 2) Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
- 3) Shall include all hardware, actuator and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.
- 4) Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
- 5) Standard leak rate shall be equipped with dampers not to exceed 2% leakage at 1 in. wg pressure differential.
- 6) Economizer controller on EconoMiSer IV models shall be Honeywell W7212 that provides:
  - a). Combined minimum and DCV maximum damper position potentiometers with compressor staging relay.
  - b). Functions with solid state analog enthalpy or dry bulb changeover control sensing.
  - c). Contains LED indicators for when free cooling is available, when module is in DCV mode, and when exhaust fan is closed.
10. Overhead Suspension Package:  
Package shall include necessary brackets to support units in a horizontal ceiling installation.
11. CO<sub>2</sub> Sensor:  
Sensor shall provide the ability to signal the economizer to open when the space CO<sub>2</sub> level exceeds the predetermined setpoint.
12. Condensate Drain Trap:  
Trap shall have transparent, serviceable design for easy cleaning. Kit shall include overflow shutoff switch and wiring harness for connection to an alarm if desired.
13. 2-Speed Indoor Fan Motor system for 2-stage cooling models only:
  - a. Evaporator fan motor:
    - 1) Shall have permanently lubricated bearings.
    - 2) Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating.
    - 3) Shall be Variable Frequency duty and 2-speed control.
    - 4) Shall contain motor shaft grounding ring to prevent electrical bearing fluting damage by safely diverting harmful shaft voltages and bearing currents to ground.
14. Variable Frequency Drive (VFD). Only available on 2-Speed Indoor Fan Motor system units:
  - a. Shall be installed inside the unit cabinet, mounted, wired and tested.
  - b. Shall contain Electromagnetic Interference (EMI) frequency protection.
  - c. Insulated Gate Bi-Polar Transistors (IGBT) used to produce the output pulse width modulated (PWM) waveform, allowing for quiet motor operation.
  - d. Self diagnostics with fault and power code LED indicator. Field accessory display kit available for further diagnostics and special setup applications.
  - e. RS485 capability standard.
  - f. Electronic thermal overload protection.
  - g. 5% swinging chokes for harmonic reduction and improved power factor.
  - h. All printed circuit boards shall be conformal coated.

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