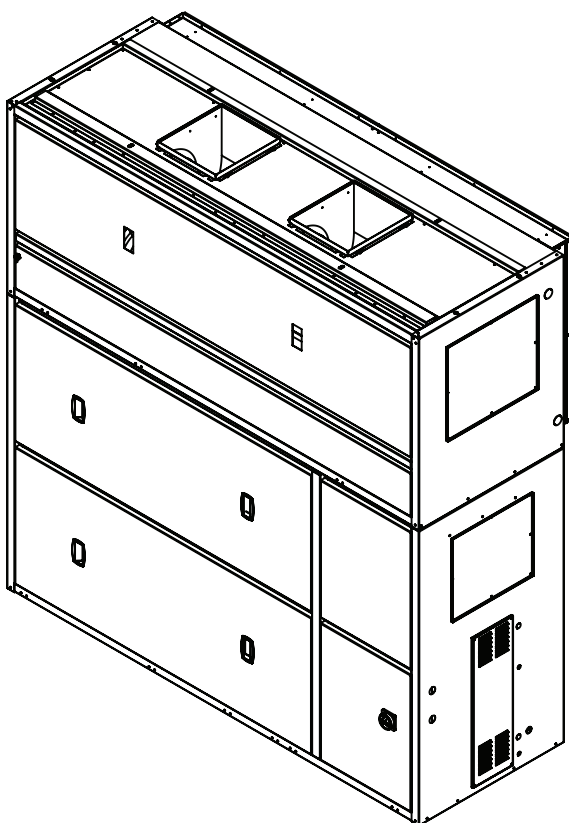




# Product Data

## Omnizone™ 50XCA06-14 Air-Cooled Indoor Self-Contained Systems with Puron® Refrigerant (R-410A)

5 to 12 Nominal Tons



The 50XCA single-package cooling units with integral air-cooled condensers offer:

- Compact, durable, and attractive cabinet that fits any working environment
- Ducted or free return with rear return connections and vertical or horizontal supply air discharge
- High-efficiency cooling for commercial and industrial projects
- 2-in. and 4-in. filtration options
- Optional coated evaporator coil
- Rear condenser inlet and discharge and belt drive condenser fan permit condenser air connections to be ducted through window or wall louver
- Uses Puron® refrigerant (R-410A)
- Available hot water or steam heat
- Optional airside economizer

## Features/Benefits

**The Omnizone 50XCA units provide a practical and economical approach to comfort conditioning requirements for offices, factories, and other applications in existing buildings when indoor air-cooled condensers are required.**

### Design flexibility

The 50XCA indoor packaged units are designed to provide the flexibility required in replacement, renovation, and new construction. Units are available in 4 sizes, from 5 tons to 12 tons, which meet the needs for cooling restaurants, retail stores, warehouses, offices, and building additions.



# Features/Benefits (cont)



The compact footprint and ability to service from the front of the units save valuable floor space in equipment rooms. Belt drive condensers provide adequate static to overcome ducting and louver static losses. This allows units to be positioned against an existing window or wall louver, or ducted to the outside, as required. These units can be installed in the equipment room or the conditioned space and used for either ducted or free return applications. Unit supply air discharge is vertical.

## Easy installation and maintenance

The units are completely pre-piped and wired at the factory to ensure saving time and money for installation and service. Exterior access panels are easily removed to provide speedy inspection, and service work may be done from the front of the unit. Precision engineered parts translate to a quality built, reliable design that will operate efficiently, minimize service calls, and provide years of reliable operation.

## Designed for customer satisfaction

Where space and styling are important considerations, 50XCA units are designed to exceed expectations. The high quality, baked enamel finish will fit any environment attractively. These packaged systems provide the user with economy and product satisfaction in cooling, dehumidification, filtering, and air circulation.

## Efficient design to increase savings

In order to provide an energy efficient HVAC solution, all 50XCA units have been designed to exceed the ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) 90.1-2010 guidelines. Sizes 12 and 14 follow ASHRAE 90.1-2013.

## Special features for outstanding performance

- High-efficiency scroll compressors deliver quiet, reliable cooling capacity. Compressor motor protection is assured by quick-acting, internal sensing elements that prevent trouble before it starts.

- Space-saver slab type evaporator and condenser coils use advanced heat transfer technology and provide peak heat transfer efficiency with large coil face area. Fins are mechanically bonded to nonferrous, seamless tubing for efficient leak-free operation.
- Quiet fan performance moves large volumes of indoor air. Compact housing and specially designed discharge air section provide superior air-handling capacity. Vertical and horizontal supply air discharge is available for both ducted or free blow (louvered) applications.
- Convenient front access electrical control center contains all factory pre-wired control devices.
- A stainless steel, sloped, condensate pan is standard. As a result of this new design, the coil is easily accessed for cleaning.
- The cabinets are constructed of galvanized steel, bonderized, and coated on all external surfaces with a baked enamel finish. The paint finish is nonchalking and is capable of withstanding ASTM (American Society for Testing and Materials) Standard No. B117 500-hour salt spray test.
- Choose from a full line of room-mounted thermostats.
- Compressor head pressure control is available to ensure proper unit operation during low ambient conditions.
- Two-speed fan operation is available for 50XCA12 and larger and offers a larger fan speed that operates at 67% of full speed for first stage cooling operation and 100% of full

speed for second stage cooling operation.

- Full compressor protection is assured by several devices, including current-sensing lockout relay(s), anti-short cycle control, and high and low-pressure stats. These devices lock out the compressor(s) under abnormal operating conditions to prevent compressor damage and ensure long life.
- Easy to understand and operate controls provide a virtually mistake-proof control operation.
- All motors are protected against single-phasing conditions.
- The management system governing the manufacture of this product is ISO 9001:2008 certified.

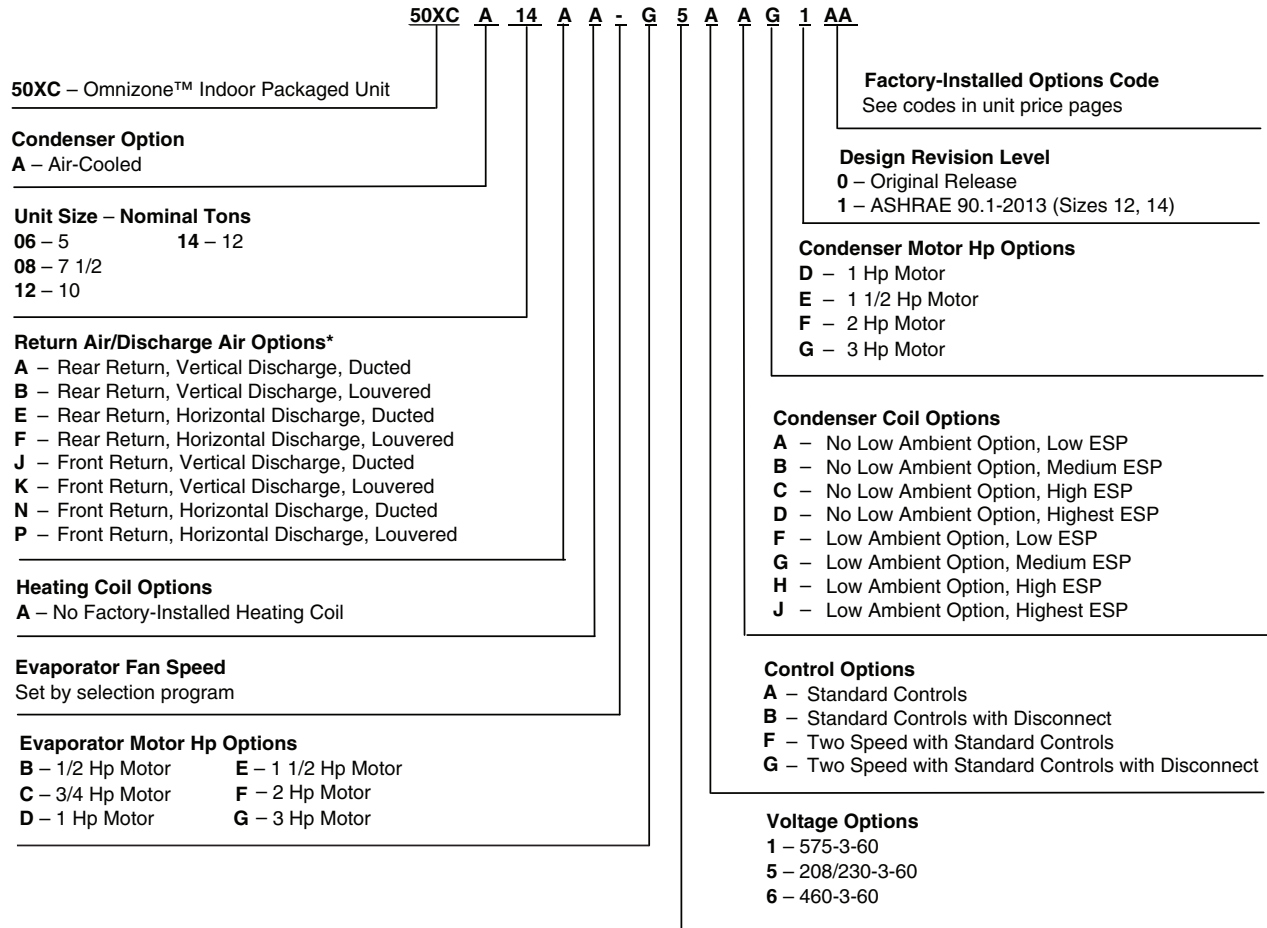
## Environmentally balanced

Making an environmentally responsible decision is possible when using Carrier's Puron® refrigerant (R-410A). Puron refrigerant (R-410A) is an HFC refrigerant that does not contain chlorine that is damaging to the ozone layer. This refrigerant (R-410A) is a safe, efficient and environmentally balanced refrigerant.

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# Model number nomenclature



## LEGEND

**ESP** — External Static Pressure

\* Horizontal discharge not available on size 06 or 08.

# AHRI capacity ratings

| UNIT<br>50XCA | NOMINAL<br>TONS | EVAPORATOR<br>CFM | CONDENSER<br>CFM | NET COOLING<br>(Btuh) | TOTAL<br>kW | EER  | IEER |
|---------------|-----------------|-------------------|------------------|-----------------------|-------------|------|------|
| <b>06</b>     | 5               | 1,875             | 2,800            | 65,000                | 5.8         | 11.2 | 11.4 |
| <b>08</b>     | 7 1/2           | 2,625             | 3,500            | 80,000                | 7.1         | 11.2 | 11.4 |
| <b>12</b>     | 10              | 3,500             | 6,400            | 138,000               | 12.5        | 11.2 | 12.9 |
| <b>14</b>     | 12              | 4,200             | 6,700            | 140,000               | 12.7        | 11.0 | 12.4 |

## LEGEND

**AHRI** — Air-Conditioning, Heating, and Refrigeration Institute  
**EER** — Energy Efficiency Ratio  
**IEER** — Integrated Energy Efficiency Ratio

→ NOTE: Units are certified in accordance with AHRI standard 340/360.



# Physical data



| UNIT 50XCA                         | 06                                                                       | 08          | 12          | 14                         |
|------------------------------------|--------------------------------------------------------------------------|-------------|-------------|----------------------------|
| NOMINAL CAPACITY (tons)            | 5                                                                        | 7.5         | 10          | 12                         |
| UNIT OPERATING WEIGHT (lb)         | 891                                                                      | 1144        | 1269        | 1298                       |
| COMPRESSOR                         | Scroll                                                                   |             |             |                            |
| Compressor Model                   | ZP57                                                                     | ZP67        | ZP54/ZP49   | ZP61/ZP57                  |
| Qty                                | 1                                                                        | 1           | 2           | 2                          |
| Steps of Control                   | 1                                                                        | 1           | 2           | 2                          |
| Operating Charge R-410A (lb)       | 17.4                                                                     | 21.4        | 32.8        | 42.4                       |
| EVAPORATOR FAN                     | Adjustable, Belt-Drive, Centrifugal                                      |             |             |                            |
| Nominal Cfm                        | 1750                                                                     | 2625        | 3500        | 4375                       |
| Cfm Range                          | 1500 - 2500                                                              | 2250 - 3750 | 3000 - 5000 | 3600 - 6000                |
| Available Static (in. wg)          | 0 - 1.6                                                                  | 0 - 1.6     | 0 - 1.6     | 0 - 1.6                    |
| Evaporator Fan Size                | 110-10R                                                                  | 110-10R     | 120-9R      | 120-9R                     |
| Number of Evaporator Fans          | 1                                                                        | 2           | 2           | 2                          |
| Standard Speed Range (Rpm)         | 576 - 782                                                                | 712 - 949   | 656 - 875   | 712 - 949                  |
| Max. Allowable Rpm                 | 1600                                                                     | 1700        | 1700        | 1700                       |
| Vertical Belt (Type)               | A48                                                                      | BX41        | BX48        | BX47                       |
| Fan Pulley (Type)                  | AK89                                                                     | BK65        | BK70        | BK65                       |
| Motor Pulley (Type)                | 1VL44                                                                    | 1VP34       | 1VP34       | 1VP34                      |
| Std Hp                             | .5                                                                       | 1           | 1           | 1.5                        |
| Hp Range                           | .5 - 2                                                                   | 1 - 2       | 1 - 3       | 1.5 - 3                    |
| Fan Shaft Size (in.)               | 0.75                                                                     | 1           | 1           | 1                          |
| Motor Shaft Size (in.)             | 0.625                                                                    | 0.875       | 0.875       | 0.875                      |
| Center Distance (in.) - Vertical   | 15.3                                                                     | 15.3        | 18.1        | 18.1                       |
| Center Distance (in.) - Horizontal | N/A                                                                      | N/A         | 15.5        | 13.0                       |
| EVAPORATOR COIL                    | <sup>3</sup> / <sub>8</sub> -in. OD, Enhanced Copper Tube, Aluminum Fins |             |             |                            |
| Quantity Rows ... Fin/in.          | 4...12                                                                   | 4...12      | 3...15      | 4...15                     |
| Fin Block Size (H x L) (in.)       | 28 x 34                                                                  | 28 x 46     | 32 x 60     | 32 x 60                    |
| Face Area (sq ft)                  | 6.6                                                                      | 8.9         | 13.3        | 13.3                       |
| RETURN AIR FILTERS                 |                                                                          |             |             |                            |
| Std 1 in., throwaway               | (2) 25 x 25                                                              | (2) 25 x 25 | (8) 16 x 16 | (8) 16 x 16<br>(2) 16 x 20 |
| CONDENSER FAN                      | Adjustable, Belt-Drive, Centrifugal                                      |             |             |                            |
| Nominal Cfm                        | 2800                                                                     | 3500        | 5500        | 8000                       |
| Cfm Range                          | 2100 - 3500                                                              | 2625 - 4300 | 4125 - 6875 | 6000 - 9500                |
| Available Static                   | 0 - 1.0                                                                  | 0 - 1.0     | 0 - 1.0     | 0 - 1.0                    |
| Condenser Fan Size                 | 110-10R                                                                  | 110-10R     | 150-12R     | 150-15R                    |
| Number of Condenser Fans           | 2                                                                        | 2           | 2           | 2                          |
| Standard Speed Range (Rpm)         | 656 - 875                                                                | 712 - 949   | 712 - 949   | 764 - 1011                 |
| Max. Allowable Rpm                 | 1700                                                                     | 1700        | 1700        | 1600                       |
| Belt (Type)                        | BX66                                                                     | BX65        | BX75        | BX77                       |
| Fan Pulley (Type)                  | BK70                                                                     | BK65        | BK90        | BK100                      |
| Motor Pulley (Type)                | 1VP34                                                                    | 1VP34       | 1VP34       | 1VP34                      |
| Std Hp                             | 1                                                                        | 1.5         | 2           | 2                          |
| Hp Range                           | 1 - 1.5                                                                  | 1.5 - 2     | 2 - 3       | 2 - 3                      |
| Fan Shaft Size (in.)               | 1                                                                        | 1           | 1           | 1.1875                     |
| Motor Shaft Size (in.)             | 0.875                                                                    | 0.875       | 0.875       | 0.875                      |
| Center Distance (in.)              | 27.1                                                                     | 27.1        | 29.8        | 29.8                       |
| CONDENSER COIL                     | <sup>3</sup> / <sub>8</sub> -in. OD, Enhanced Copper Tube, Aluminum Fins |             |             |                            |
| Quantity Rows ... Fin/in.          | 6...16W                                                                  | 6...16W     | 6...16W     | 6...16W                    |
| Fin Block Size (H x L) (in.)       | 30 x 46                                                                  | 30 x 46     | 32 x 60     | 34 x 80                    |
| Face Area (sq ft)                  | 9.58                                                                     | 9.58        | 13.33       | 18.89                      |
| HIGH-PRESSURE SWITCH               | Opens at 595 ± 10 psig; Closes at 443 ± 15 psig                          |             |             |                            |
| LOW-PRESSURE SWITCH                | Opens at 53 ± 5 psig; Closes at 80 ± 7 psig                              |             |             |                            |
| CONDENSATE DRAIN LINE (in.)        | 1 at <sup>3</sup> / <sub>4</sub> MPT (Male Pipe Thread)                  |             |             |                            |

# Options and accessories



| ITEM                      | FACTORY-INSTALLED OPTION | FIELD-INSTALLED ACCESSORY |
|---------------------------|--------------------------|---------------------------|
| Hot Water Coil            |                          | X                         |
| Low Ambient Operation     | X                        |                           |
| Supply Air Plenum         |                          | X                         |
| Winter Start Operation    | X                        |                           |
| Two-Speed Supply Fan      | X                        |                           |
| Evaporator Coil Coating   | X                        |                           |
| Non-Fused Disconnect      | X                        |                           |
| High-Static Motor Upgrade | X                        |                           |
| 4-in. Filter              | X                        |                           |
| Airside Economizer        |                          | X                         |
| Steam Heat                |                          | X                         |

## Factory-installed options

**Low ambient option** allows a refrigerant pressure controlled VFD (variable frequency drive) to adjust condenser fan speed to control head pressure. This fan speed control permits the unit to operate in cooling, even in winter - when outdoor air temperature is down to 0° F.

**Winter start option** provides a bypass of low-pressure switch on start-up for initial 90 seconds.

**Two-speed supply fan** for dual-stage units, sizes 50XCA12 and larger. Fan speed shall operate at 67% of full speed for first stage cooling operation and 100% of full speed for second stage cooling operation.

**Evaporator and condenser coil coating** is continuous and covers the whole fin surface, tubing, manifolds, and feeder lines if applicable. For evaporator coils with thermostatic expansion valve assemblies, valve body, head, and bulb shall be masked. A minimum of 2-in. shall be masked on all coil connection points. Expansion valve inlet piping if less than 6-in. in total length, expansion valve distributor, and external equalizer line are not required to be coated.

**4-in. filter** supplied with the unit has 4-in. deep pleated, 30% high-efficiency filters. The filters shall have side access capability through an access panel.

**Non-fused disconnect** is located by the unit control panel to disconnect all unit power. The lockable switch is accessible without opening any control panels.

**High-static motor upgrade** may be required for higher external static pressure (ESP) needed for factory or field-installed accessories (dampers, heating coils, etc.) to achieve the required performance.

Units are designed with a fixed pulley on the blower and an adjustable sheave on the motor. The sheave turns open or the components themselves may need to be changed to provide the desired performance.

## Field-installed accessories

**Supply air plenum** provides adjustable horizontal and vertical louvers for controlled free blow into conditioned space. The plenum mounts easily on top of base unit and matches unit styling.

**Hot water coil** provides a 2-row coil, encased in a 5-in. deep metal casing. The hot water coil is field installed in the preheat location, before the evaporator.

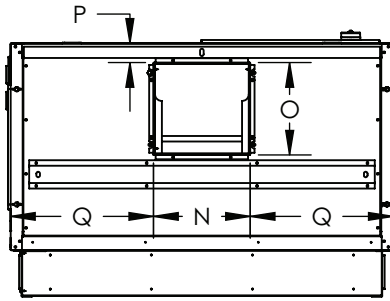
**Steam coil** provides a 1-row steam distributing type coil. The steam coil is field installed in the preheat position, before the evaporator.

**Airside economizer** provides a field-installed economizer assembly with integral economizer controller.

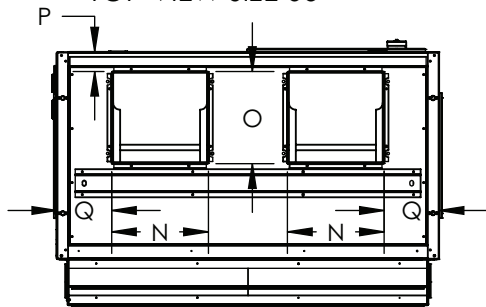
# Dimensions — 50XCA06,08



## REAR RETURN, VERTICAL DISCHARGE



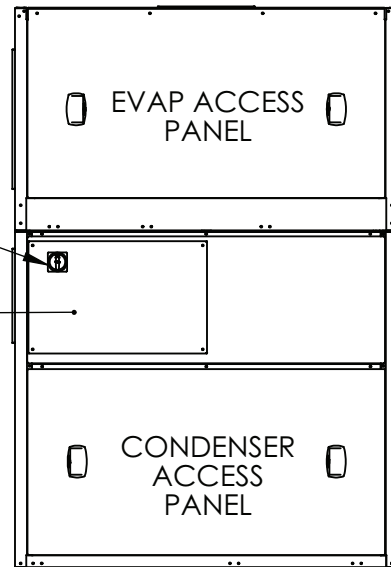
TOP VIEW SIZE 06



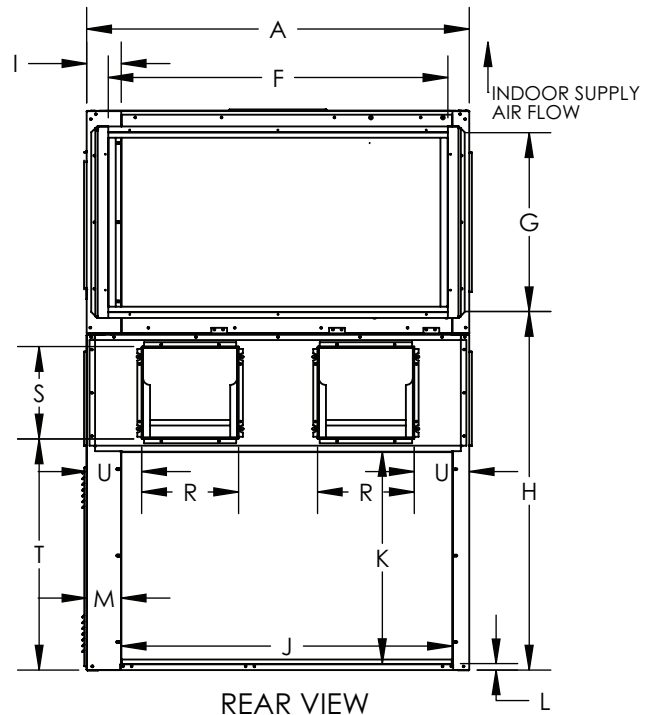
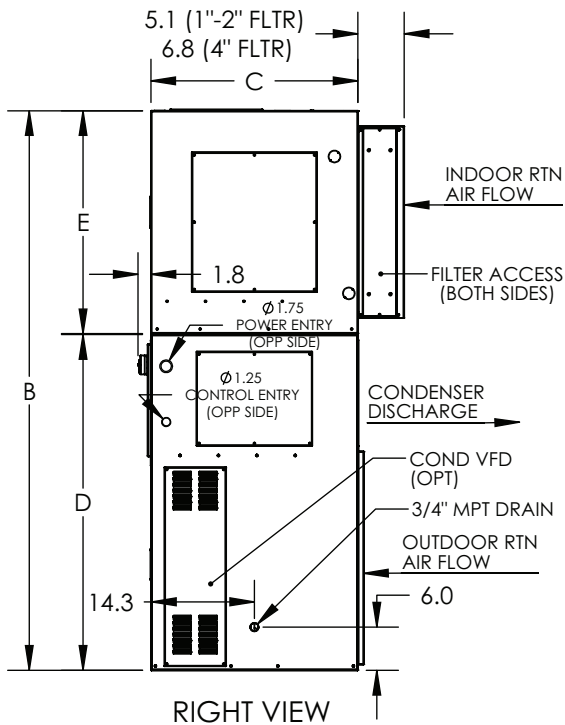
TOP VIEW SIZE 08

DISCONNECT  
(OPT)

CONTROL BOX



FRONT VIEW



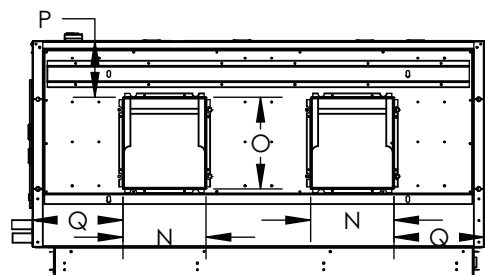
| UNIT<br>50XCA | WIDTH | HEIGHT | DEPTH | COND<br>SECTION | EVAP<br>SECTION | EVAP RETURN<br>DUCT |      |      |     | COND RETURN<br>DUCT |      |     |     | EVAP SUPPLY DUCT<br>(Blower Opening) |      |     |      | COND DISCHARGE<br>DUCT (Blower Opening) |      |      |     |
|---------------|-------|--------|-------|-----------------|-----------------|---------------------|------|------|-----|---------------------|------|-----|-----|--------------------------------------|------|-----|------|-----------------------------------------|------|------|-----|
|               | A     | B      | C     | D               | E               | F                   | G    | H    | I   | J                   | K    | L   | M   | N                                    | O    | P   | Q    | R                                       | S    | T    | U   |
| 06            | 53.1  | 77.1   | 29.0  | 46.6            | 31.0            | 47.2                | 24.8 | 49.8 | 4.8 | 46                  | 29.4 | 0.9 | 4.8 | 13.4                                 | 12.8 | 2.7 | 19.8 | 13.4                                    | 12.8 | 32.1 | 7.6 |
| 08            | 53.1  | 77.1   | 29.0  | 46.6            | 31.0            | 47.2                | 24.8 | 49.8 | 4.8 | 46                  | 29.4 | 0.9 | 4.8 | 13.4                                 | 12.8 | 2.7 | 7.6  | 13.4                                    | 12.8 | 32.1 | 7.6 |

NOTE: Dimensions are in inches.

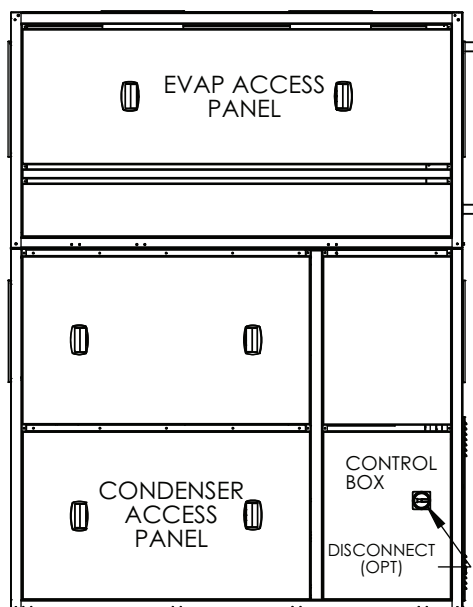
# Dimensions — 50XCA12,14



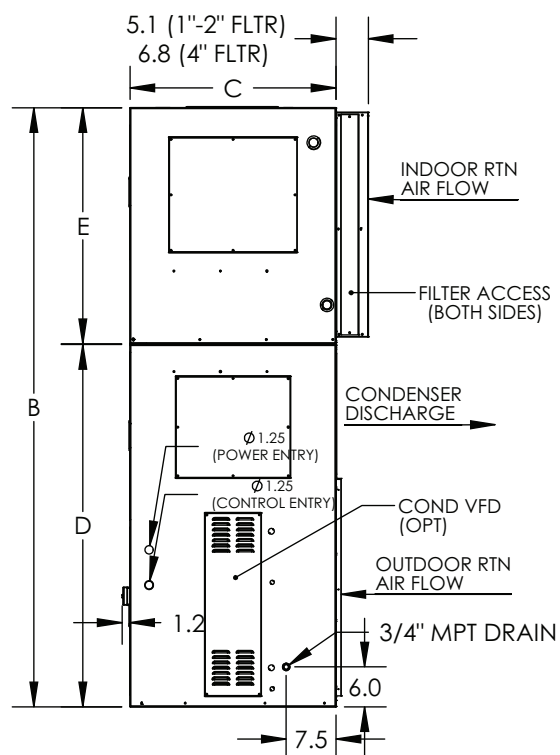
## REAR RETURN, VERTICAL DISCHARGE



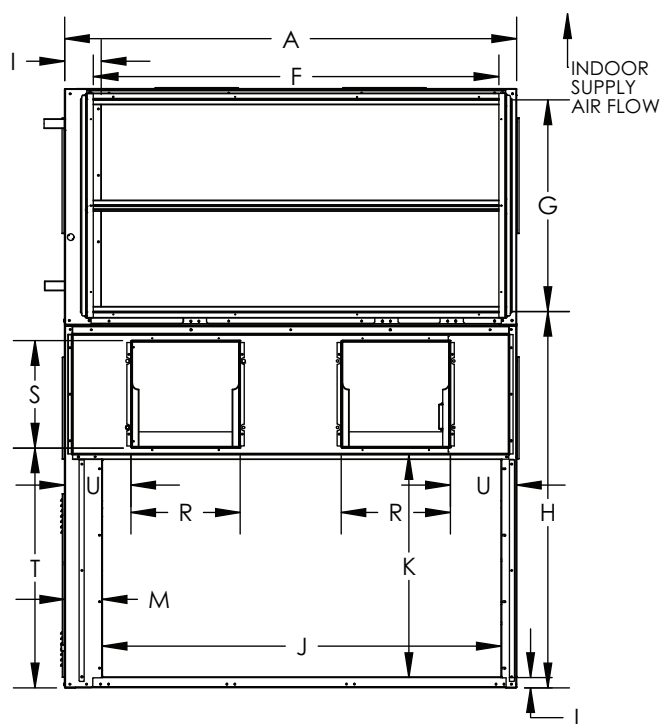
TOP VIEW



FRONT VIEW



RIGHT VIEW

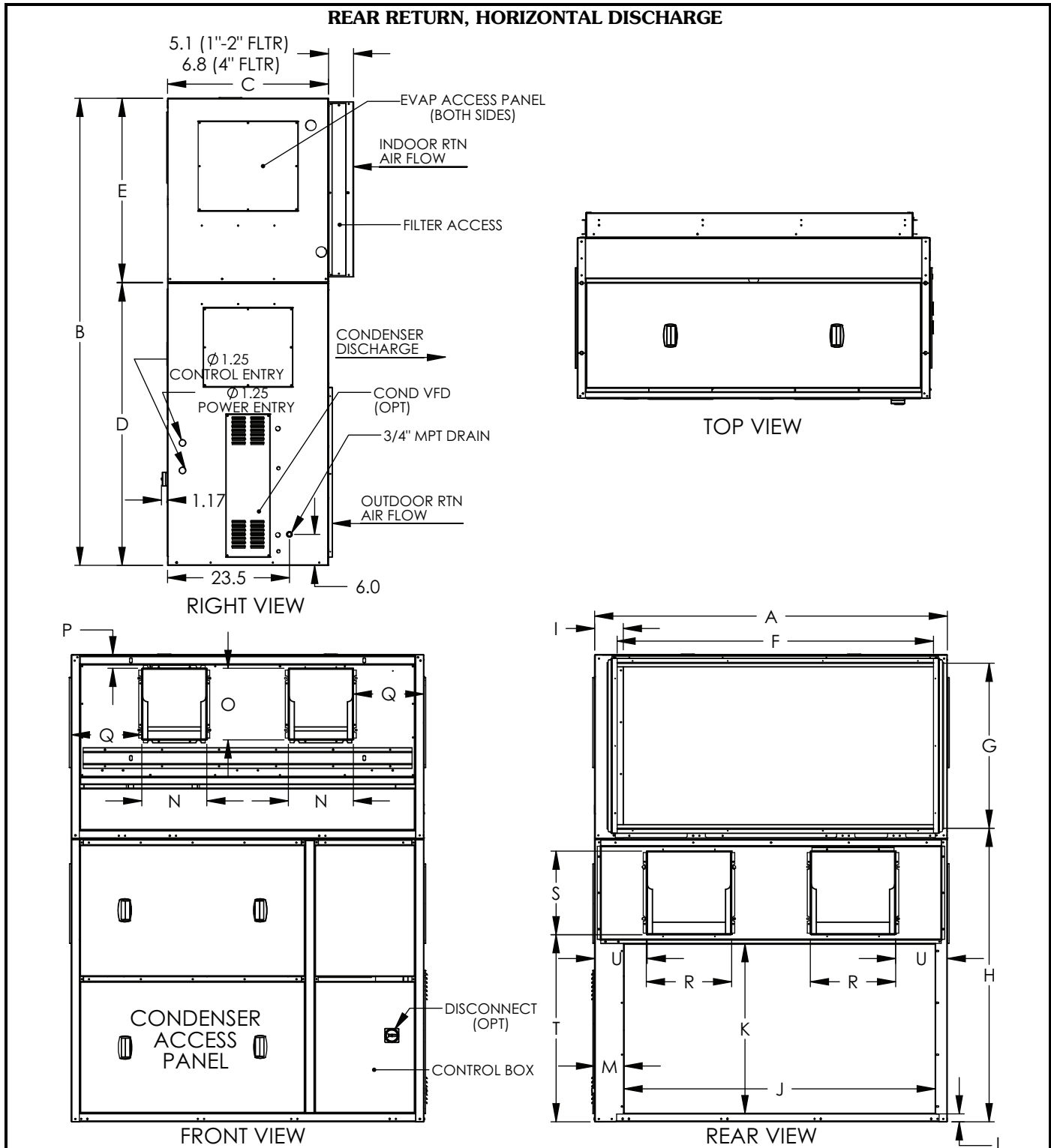


REAR VIEW

| UNIT<br>50XCA | WIDTH | HEIGHT | DEPTH | COND<br>SECTION | EVAP<br>SECTION | EVAP RETURN<br>DUCT |      |      |     | COND RETURN<br>DUCT |      |     |     | EVAP SUPPLY DUCT<br>(Blower Opening) |      |     |      | COND DISCHARGE<br>DUCT (Blower Opening) |      |      |      |
|---------------|-------|--------|-------|-----------------|-----------------|---------------------|------|------|-----|---------------------|------|-----|-----|--------------------------------------|------|-----|------|-----------------------------------------|------|------|------|
|               | A     | B      | C     | D               | E               | F                   | G    | H    | I   | J                   | K    | L   | M   | N                                    | O    | P   | Q    | R                                       | S    | T    | U    |
| 12            | 68.0  | 90.1   | 31.2  | 54.5            | 35.5            | 61.1                | 31.8 | 56.7 | 5.5 | 60                  | 32.8 | 1.5 | 5.7 | 12.5                                 | 13.8 | 8.5 | 13.6 | 16.4                                    | 16.2 | 36.5 | 11.5 |
| 14            | 88.0  | 90.1   | 31.2  | 54.5            | 35.5            | 81.0                | 31.8 | 56.7 | 2.5 | 80                  | 32.8 | 1.5 | 5.7 | 12.5                                 | 13.8 | 8.5 | 23.6 | 18.9                                    | 16.2 | 36.6 | 17.2 |

NOTE: Dimensions are in inches.

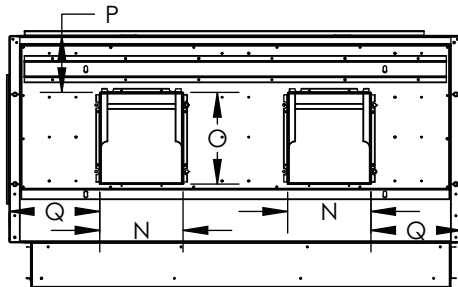
# Dimensions — 50XCA12,14 (cont)



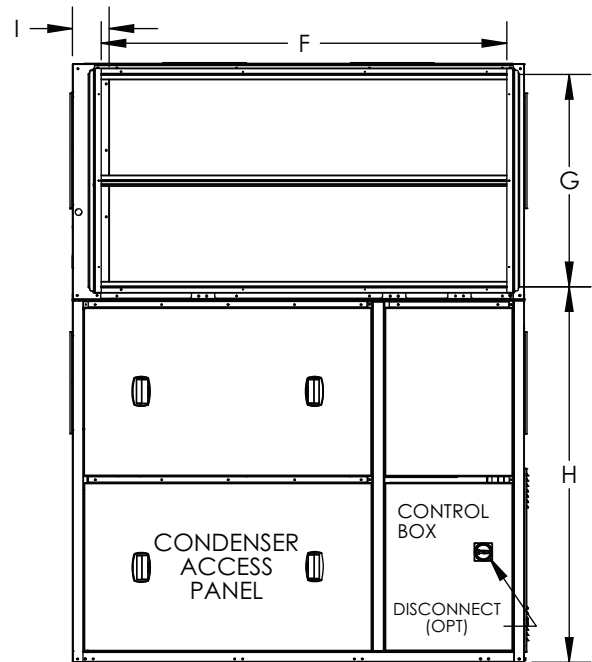
| UNIT<br>50XCA | WIDTH | HEIGHT | DEPTH | COND<br>SECTION | EVAP<br>SECTION | EVAP RETURN<br>DUCT |      |      |     | COND RETURN<br>DUCT |      |     |     | EVAP SUPPLY DUCT<br>(Blower Opening) |      |     |      | COND DISCHARGE<br>DUCT (Blower Opening) |      |      |      |
|---------------|-------|--------|-------|-----------------|-----------------|---------------------|------|------|-----|---------------------|------|-----|-----|--------------------------------------|------|-----|------|-----------------------------------------|------|------|------|
|               | A     | B      | C     | D               | E               | F                   | G    | H    | I   | J                   | K    | L   | M   | N                                    | O    | P   | Q    | R                                       | S    | T    | U    |
| 12            | 68.0  | 90.1   | 31.2  | 54.5            | 35.5            | 61.1                | 31.8 | 56.7 | 5.5 | 60                  | 32.8 | 1.5 | 5.7 | 12.5                                 | 13.8 | 2.7 | 13.6 | 16.4                                    | 16.2 | 36.5 | 11.5 |
| 14            | 88.0  | 90.1   | 31.2  | 54.5            | 35.5            | 81.0                | 31.8 | 56.7 | 2.5 | 80                  | 32.8 | 1.5 | 5.7 | 12.5                                 | 13.8 | 2.7 | 23.6 | 18.9                                    | 16.2 | 36.6 | 17.2 |

NOTE: Dimensions are in inches.

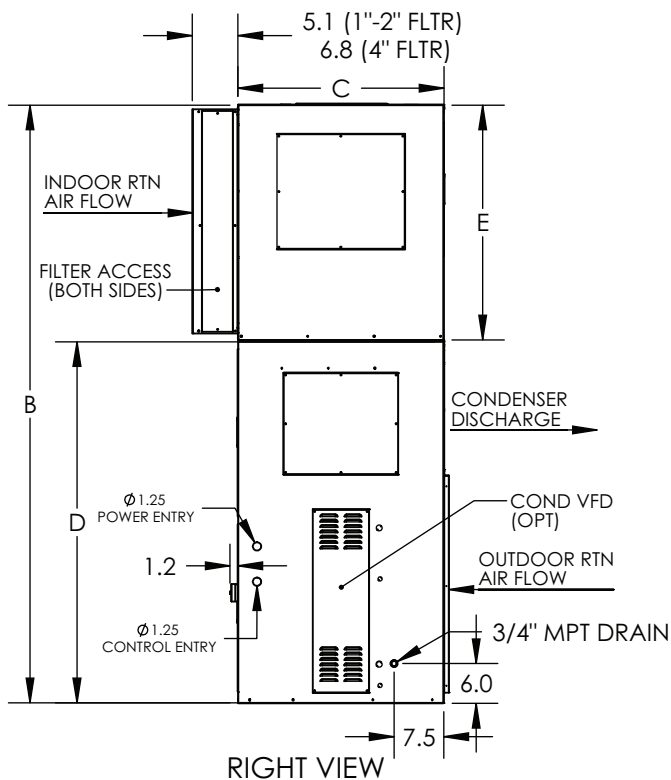
# FRONT RETURN, VERTICAL DISCHARGE



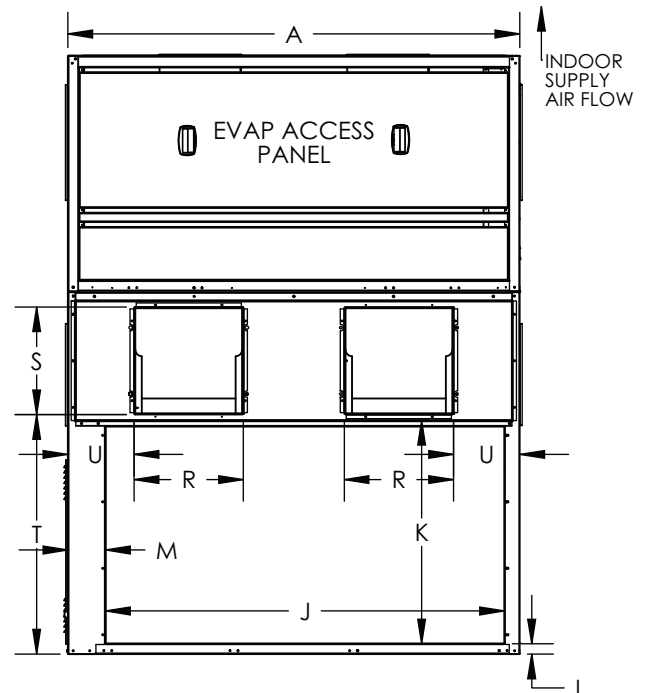
TOP VIEW



FRONT VIEW



RIGHT VIEW



REAR VIEW

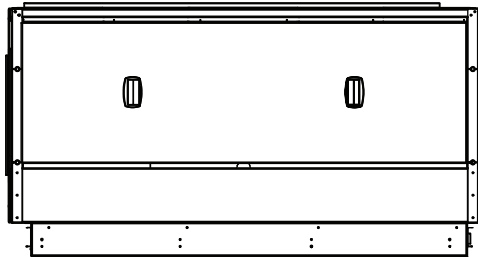
| UNIT<br>50XCA | WIDTH | HEIGHT | DEPTH | COND<br>SECTION | EVAP<br>SECTION | EVAP RETURN<br>DUCT |      |      |     | COND RETURN<br>DUCT |      |     |     | EVAP SUPPLY DUCT<br>(Blower Opening) |      |     |      | COND DISCHARGE<br>DUCT (Blower Opening) |      |      |      |
|---------------|-------|--------|-------|-----------------|-----------------|---------------------|------|------|-----|---------------------|------|-----|-----|--------------------------------------|------|-----|------|-----------------------------------------|------|------|------|
|               | A     | B      | C     | D               | E               | F                   | G    | H    | I   | J                   | K    | L   | M   | N                                    | O    | P   | Q    | R                                       | S    | T    | U    |
| 12            | 68.0  | 90.1   | 31.2  | 54.5            | 35.5            | 61.1                | 31.8 | 56.7 | 5.5 | 60                  | 32.8 | 1.5 | 5.7 | 12.5                                 | 13.8 | 8.5 | 13.6 | 16.4                                    | 16.2 | 36.5 | 11.5 |
| 14            | 88.0  | 90.1   | 31.2  | 54.5            | 35.5            | 81.0                | 31.8 | 56.7 | 2.5 | 80                  | 32.8 | 1.5 | 5.7 | 12.5                                 | 13.8 | 8.9 | 23.6 | 18.9                                    | 16.2 | 36.6 | 17.2 |

NOTE: Dimensions are in inches.

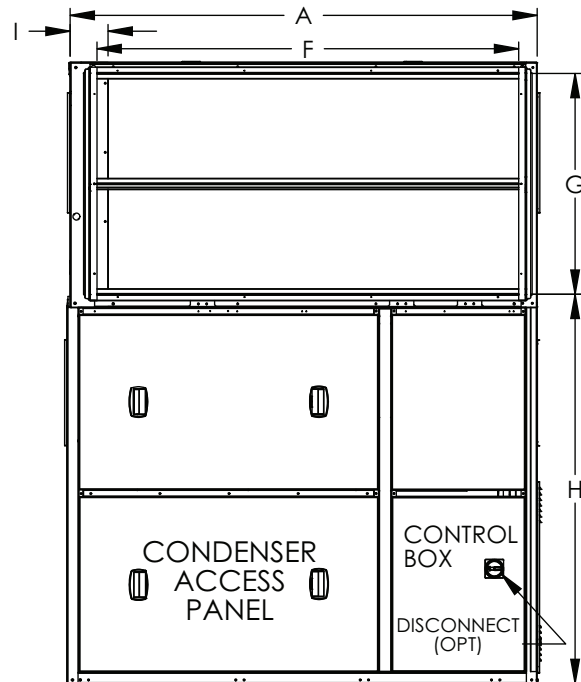
# Dimensions — 50XCA12,14 (cont)



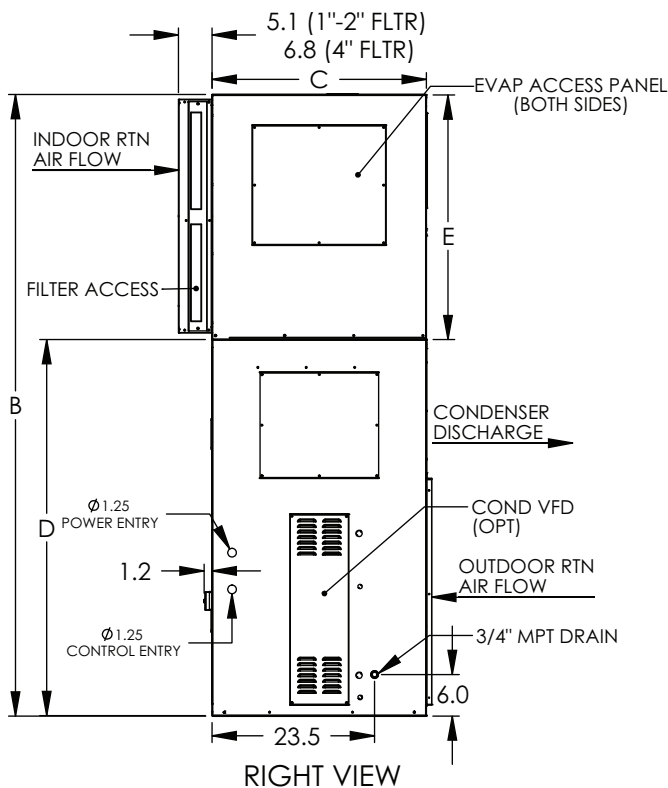
## FRONT RETURN, HORIZONTAL DISCHARGE



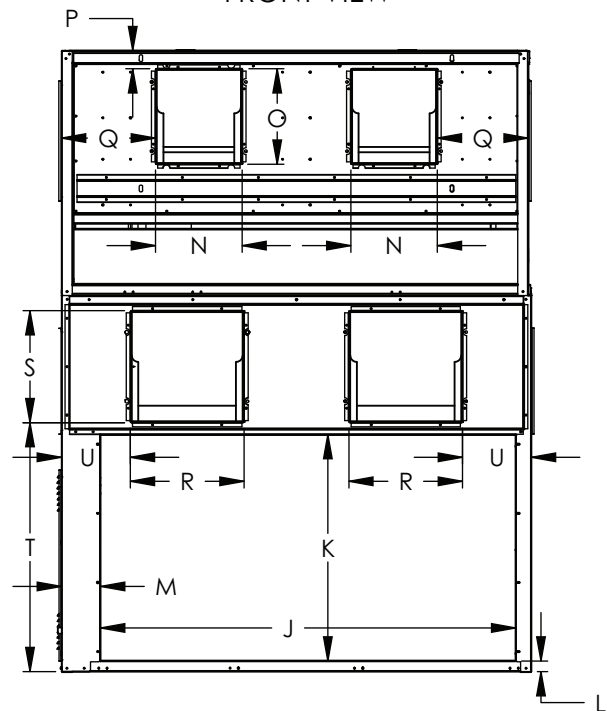
TOP VIEW



FRONT VIEW



RIGHT VIEW

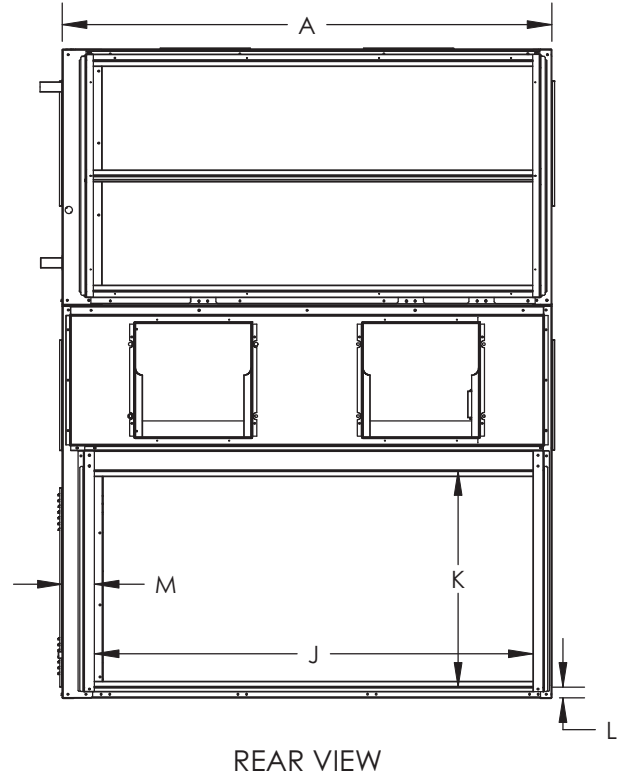
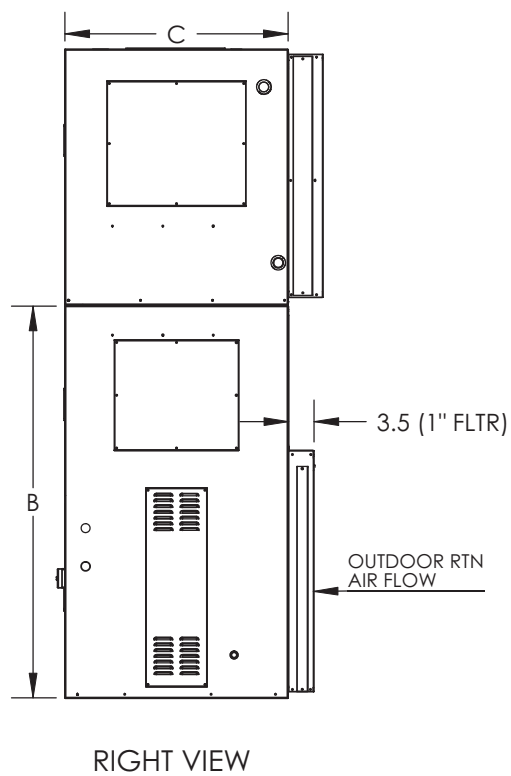


REAR VIEW

| UNIT<br>50XCA | WIDTH | HEIGHT | DEPTH | COND<br>SECTION | EVAP<br>SECTION | EVAP RETURN<br>DUCT |      |      |     | COND RETURN<br>DUCT |      |     |     | EVAP SUPPLY DUCT<br>(Blower Opening) |      |     |      | COND DISCHARGE<br>DUCT (Blower Opening) |      |      |      |
|---------------|-------|--------|-------|-----------------|-----------------|---------------------|------|------|-----|---------------------|------|-----|-----|--------------------------------------|------|-----|------|-----------------------------------------|------|------|------|
|               | A     | B      | C     | D               | E               | F                   | G    | H    | I   | J                   | K    | L   | M   | N                                    | O    | P   | Q    | R                                       | S    | T    | U    |
| 12            | 68.0  | 90.1   | 31.2  | 54.5            | 35.5            | 61.1                | 31.8 | 56.7 | 5.5 | 60                  | 32.8 | 1.5 | 5.7 | 12.5                                 | 13.8 | 2.6 | 13.6 | 16.4                                    | 16.2 | 36.5 | 11.5 |
| 14            | 88.0  | 90.1   | 31.2  | 54.5            | 35.5            | 81.0                | 31.8 | 56.7 | 2.5 | 80                  | 32.8 | 1.5 | 5.7 | 12.5                                 | 13.8 | 2.6 | 23.6 | 18.9                                    | 16.2 | 36.6 | 17.2 |

NOTE: Dimensions are in inches.

## CONDENSER FILTER

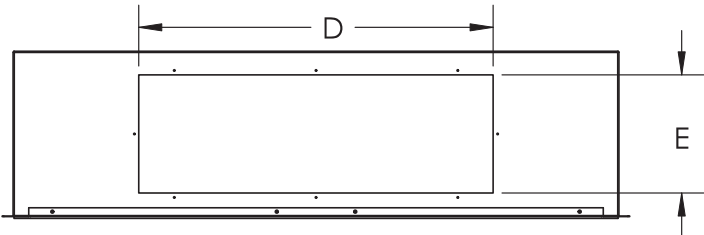
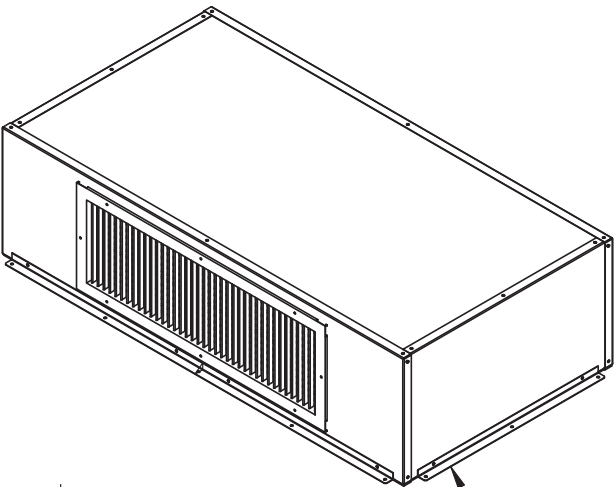


| UNIT<br>50XCA | WIDTH | HEIGHT | DEPTH | COND DUCT DIMENSIONS |      |     |     |
|---------------|-------|--------|-------|----------------------|------|-----|-----|
|               | A     | B      | C     | J                    | K    | L   | M   |
| 06,08         | 53.1  | 46.6   | 29.0  | 45.3                 | 29.7 | 0.7 | 5.1 |
| 12            | 68.0  | 54.5   | 31.2  | 61.0                 | 30.1 | 1.5 | 4.5 |
| 14            | 88.0  | 54.5   | 31.2  | 80.9                 | 30.1 | 1.5 | 4.5 |

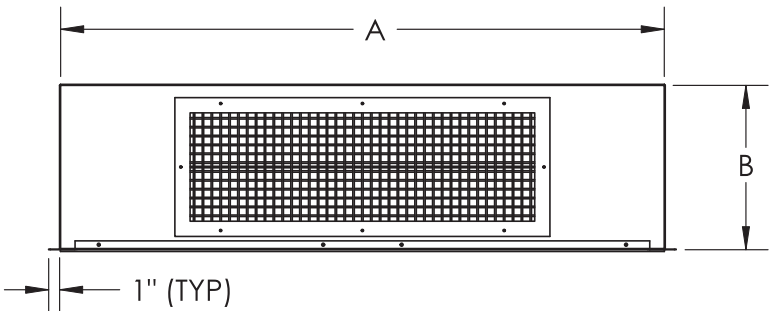
### NOTES:

1. Dimensions are in inches.
2. Condenser filters are no longer available as a factory-installed option. If needed, they are to be provided in the field.

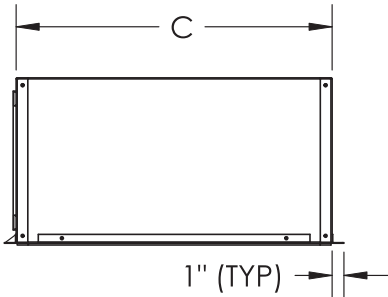
50XC PLENUM UNIT



FRONT VIEW  
LESS GRILLE



FRONT VIEW

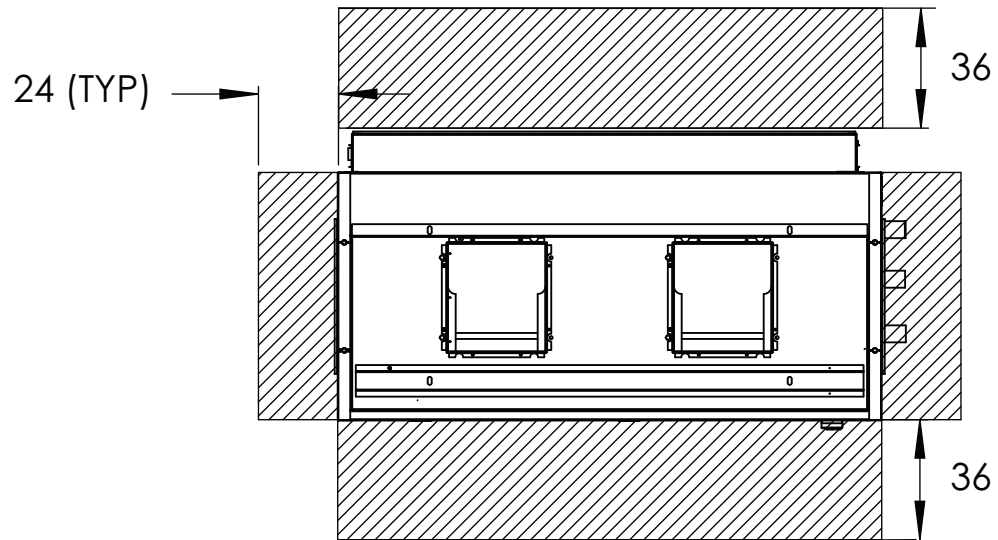


RIGHT VIEW

| MODEL           | UNIT SIZE | A    | B    | C    | D    | E    | WGT (lb) |
|-----------------|-----------|------|------|------|------|------|----------|
| 50XCA900-200A00 | 06        | 51.3 | 14.0 | 26.8 | 30.0 | 10.0 | 65       |
| 50XCA900-201A00 | 08        | 51.3 | 14.0 | 26.8 | 45.0 | 10.0 | 65       |
| 50XCA900-202A00 | 12        | 66.0 | 14.0 | 28.9 | 60.0 | 10.0 | 80       |
| 50XCA900-203A00 | 14        | 86.0 | 19.0 | 28.9 | 48.0 | 15.0 | 115      |

NOTE: Dimensions are shown in inches.

**UNIT CLEARANCES**



NOTE: Dimensions are in inches.

# Performance data



## STEAM CAPACITIES

| 50XCA<br>UNIT SIZE | STEAM PRESSURE (psig) | CFM  | EAT (F)   | 40          | 50           | 60           | 70           |
|--------------------|-----------------------|------|-----------|-------------|--------------|--------------|--------------|
| 06                 | 2                     | 1500 | TC<br>LDB | 86<br>92.1  | 81<br>99.2   | 76<br>106.3  | 72<br>113.4  |
|                    |                       | 2000 | TC<br>LDB | 103<br>86.7 | 97<br>94.1   | 91<br>101.5  | 86<br>108.9  |
|                    |                       | 2500 | TC<br>LDB | 118<br>82.8 | 111<br>90.4  | 104<br>98.0  | 98<br>105.6  |
|                    | 5                     | 1500 | TC<br>LDB | 90<br>94.5  | 85<br>101.6  | 80<br>108.7  | 76<br>115.8  |
|                    |                       | 2000 | TC<br>LDB | 108<br>88.9 | 102<br>96.3  | 96<br>103.6  | 90<br>111.0  |
|                    |                       | 2500 | TC<br>LDB | 123<br>84.7 | 116<br>92.3  | 110<br>99.9  | 103<br>107.5 |
|                    | 10                    | 1500 | TC<br>LDB | 96<br>97.9  | 91<br>105.0  | 86<br>112.1  | 81<br>119.2  |
|                    |                       | 2000 | TC<br>LDB | 114<br>92.0 | 109<br>99.3  | 103<br>106.7 | 97<br>114.1  |
|                    |                       | 2500 | TC<br>LDB | 131<br>87.5 | 124<br>95.1  | 118<br>102.8 | 111<br>110.4 |
| 08                 | 2                     | 2250 | TC<br>LDB | 124<br>90.1 | 117<br>97.3  | 110<br>104.5 | 103<br>111.7 |
|                    |                       | 3000 | TC<br>LDB | 148<br>84.8 | 140<br>92.3  | 132<br>99.8  | 123<br>107.3 |
|                    |                       | 3750 | TC<br>LDB | 169<br>80.9 | 159<br>88.6  | 150<br>96.4  | 141<br>104.1 |
|                    | 5                     | 2250 | TC<br>LDB | 130<br>92.4 | 123<br>99.6  | 116<br>106.8 | 109<br>114.0 |
|                    |                       | 3000 | TC<br>LDB | 155<br>86.9 | 147<br>94.4  | 138<br>101.9 | 130<br>109.4 |
|                    |                       | 3750 | TC<br>LDB | 177<br>82.8 | 167<br>90.5  | 158<br>98.2  | 148<br>105.9 |
|                    | 10                    | 2250 | TC<br>LDB | 138<br>95.7 | 131<br>102.9 | 124<br>110.1 | 117<br>117.3 |
|                    |                       | 3000 | TC<br>LDB | 165<br>89.8 | 156<br>97.4  | 148<br>104.8 | 140<br>112.4 |
|                    |                       | 3750 | TC<br>LDB | 188<br>85.5 | 178<br>93.2  | 169<br>100.9 | 159<br>108.7 |
| 12                 | 2                     | 3000 | TC<br>LDB | 174<br>92.8 | 164<br>99.8  | 155<br>106.9 | 145<br>113.9 |
|                    |                       | 4000 | TC<br>LDB | 209<br>87.4 | 197<br>94.8  | 185<br>102.1 | 174<br>109.5 |
|                    |                       | 5000 | TC<br>LDB | 238<br>83.4 | 225<br>90.9  | 212<br>98.5  | 199<br>106.1 |
|                    | 5                     | 3000 | TC<br>LDB | 182<br>95.2 | 173<br>102.3 | 163<br>109.3 | 153<br>116.4 |
|                    |                       | 4000 | TC<br>LDB | 218<br>89.6 | 207<br>96.9  | 195<br>104.3 | 183<br>111.6 |
|                    |                       | 5000 | TC<br>LDB | 249<br>85.3 | 236<br>92.9  | 223<br>100.5 | 209<br>108.1 |
|                    | 10                    | 3000 | TC<br>LDB | 194<br>98.7 | 184<br>105.7 | 174<br>112.8 | 164<br>119.8 |
|                    |                       | 4000 | TC<br>LDB | 232<br>92.7 | 220<br>100.0 | 209<br>107.4 | 197<br>114.8 |
|                    |                       | 5000 | TC<br>LDB | 265<br>88.2 | 252<br>95.8  | 239<br>103.4 | 225<br>110.9 |
| 14                 | 2                     | 3750 | TC<br>LDB | 200<br>88.6 | 189<br>95.9  | 178<br>103.2 | 167<br>110.4 |
|                    |                       | 5000 | TC<br>LDB | 239<br>83.4 | 225<br>91.0  | 212<br>98.5  | 199<br>106.1 |
|                    |                       | 6250 | TC<br>LDB | 272<br>79.5 | 257<br>87.3  | 241<br>95.1  | 226<br>102.9 |
|                    | 5                     | 3750 | TC<br>LDB | 210<br>90.8 | 198<br>98.1  | 187<br>105.4 | 176<br>112.7 |
|                    |                       | 5000 | TC<br>LDB | 250<br>85.4 | 236<br>92.9  | 223<br>100.5 | 210<br>108.1 |
|                    |                       | 6250 | TC<br>LDB | 284<br>81.4 | 269<br>89.1  | 254<br>96.9  | 239<br>104.7 |
|                    | 10                    | 3750 | TC<br>LDB | 223<br>94.0 | 212<br>101.3 | 200<br>108.6 | 189<br>115.9 |
|                    |                       | 5000 | TC<br>LDB | 265<br>88.2 | 252<br>95.8  | 239<br>103.4 | 225<br>111.0 |
|                    |                       | 6250 | TC<br>LDB | 302<br>84.0 | 287<br>91.8  | 272<br>99.5  | 257<br>107.3 |

### LEGEND

**EAT** — Entering Air Temperature (F)  
**LDB** — Leaving Dry-Bulb (F)  
**TC** — Total Capacity (1000 Btu/hr)

## CONDENSER FAN PERFORMANCE

### 50XCA06 (5 TONS)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|
|      | 0.00         |      | 0.10 |      | 0.20 |      | 0.30 |      | 0.40 |      | 0.50 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 1800 | 594          | 0.19 | 594  | 0.19 | 594  | 0.19 | 676  | 0.25 | 755  | 0.33 | 828  | 0.42 |
| 1900 | 588          | 0.19 | 588  | 0.19 | 598  | 0.20 | 686  | 0.27 | 764  | 0.35 | 836  | 0.44 |
| 2000 | 582          | 0.19 | 582  | 0.19 | 610  | 0.21 | 696  | 0.29 | 773  | 0.37 | 844  | 0.46 |
| 2100 | 576          | 0.19 | 576  | 0.19 | 623  | 0.23 | 707  | 0.31 | 783  | 0.40 | 852  | 0.49 |
| 2200 | 570          | 0.20 | 570  | 0.20 | 636  | 0.25 | 718  | 0.33 | 793  | 0.42 | 861  | 0.51 |
| 2300 | 564          | 0.20 | 564  | 0.20 | 649  | 0.27 | 730  | 0.36 | 803  | 0.44 | 870  | 0.54 |
| 2400 | 558          | 0.20 | 573  | 0.22 | 662  | 0.29 | 742  | 0.38 | 814  | 0.47 | 880  | 0.57 |
| 2500 | 552          | 0.21 | 589  | 0.24 | 676  | 0.32 | 754  | 0.41 | 825  | 0.50 | 890  | 0.60 |
| 2600 | 546          | 0.21 | 605  | 0.26 | 690  | 0.34 | 766  | 0.43 | 836  | 0.53 | 901  | 0.63 |
| 2600 | 540          | 0.21 | 622  | 0.28 | 704  | 0.37 | 779  | 0.46 | 848  | 0.56 | 911  | 0.66 |
| 2800 | 550          | 0.23 | 638  | 0.31 | 719  | 0.40 | 792  | 0.49 | 860  | 0.59 | 923  | 0.70 |
| 2900 | 570          | 0.26 | 655  | 0.34 | 734  | 0.43 | 806  | 0.53 | 872  | 0.63 | 934  | 0.74 |
| 3000 | 590          | 0.29 | 672  | 0.37 | 749  | 0.46 | 819  | 0.56 | 885  | 0.67 | 946  | 0.78 |

### 50XCA06 (5 TONS) (cont)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|
|      | 0.60         |      | 0.70 |      | 0.80 |      | 0.90 |      | 1.00 |      | 1.10 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 1800 | 896          | 0.51 | 960  | 0.61 | 1020 | 0.72 | —    | —    | —    | —    | —    | —    |
| 1900 | 902          | 0.54 | 965  | 0.64 | 1025 | 0.74 | 1082 | 0.86 | —    | —    | —    | —    |
| 2000 | 909          | 0.56 | 971  | 0.66 | 1030 | 0.77 | 1086 | 0.88 | 1140 | 1.00 | —    | —    |
| 2100 | 917          | 0.58 | 978  | 0.69 | 1036 | 0.80 | 1091 | 0.91 | 1145 | 1.03 | 1196 | 1.16 |
| 2200 | 925          | 0.61 | 985  | 0.72 | 1042 | 0.83 | 1097 | 0.94 | 1150 | 1.06 | 1201 | 1.19 |
| 2300 | 933          | 0.64 | 993  | 0.75 | 1049 | 0.86 | 1103 | 0.98 | 1155 | 1.10 | 1206 | 1.22 |
| 2400 | 942          | 0.67 | 1001 | 0.78 | 1057 | 0.89 | 1110 | 1.01 | 1162 | 1.13 | 1211 | 1.26 |
| 2500 | 951          | 0.70 | 1009 | 0.81 | 1065 | 0.93 | 1117 | 1.05 | 1168 | 1.17 | 1217 | 1.30 |
| 2600 | 961          | 0.74 | 1018 | 0.85 | 1073 | 0.96 | 1125 | 1.09 | 1175 | 1.21 | 1224 | 1.34 |
| 2700 | 971          | 0.77 | 1028 | 0.89 | 1081 | 1.00 | 1133 | 1.13 | 1183 | 1.25 | 1231 | 1.39 |
| 2800 | 982          | 0.81 | 1037 | 0.93 | 1090 | 1.05 | 1141 | 1.17 | 1191 | 1.30 | 1238 | 1.43 |
| 2900 | 992          | 0.85 | 1047 | 0.97 | 1100 | 1.09 | 1150 | 1.21 | 1199 | 1.34 | 1246 | 1.48 |
| 3000 | 1003         | 0.89 | 1058 | 1.01 | 1110 | 1.13 | 1159 | 1.26 | 1207 | 1.39 | —    | —    |

#### LEGEND

**Bhp** — Brake Horsepower  
**ESP** — External Static Pressure

#### NOTES:

- Units are available with several motor hp options. Refer to Physical Data table.
- Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- Interpolation is permitted; extrapolation is not.
- Fan performance is based on unit casing, and dry DX (direct expansion) coil losses at sea level.
- Full load product performance can be generated using the Self Contained Unit Builder (SCU) found in Carrier's Electronic Catalog software.

# Performance data (cont)



## CONDENSER FAN PERFORMANCE (cont)

### 50XCA08 (7 1/2 TONS)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 0.00         |      | 0.10 |      | 0.20 |      | 0.30 |      | 0.40 |      | 0.50 |      | 0.60 |      | 0.70 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 2500 | 594          | 0.25 | 594  | 0.25 | 662  | 0.32 | 738  | 0.41 | 807  | 0.50 | 872  | 0.60 | 932  | 0.70 | 988  | 0.81 |
| 2650 | 588          | 0.26 | 600  | 0.27 | 682  | 0.36 | 757  | 0.45 | 824  | 0.55 | 887  | 0.65 | 946  | 0.75 | 1001 | 0.87 |
| 2800 | 582          | 0.27 | 625  | 0.31 | 704  | 0.40 | 776  | 0.49 | 842  | 0.59 | 903  | 0.70 | 961  | 0.81 | 1016 | 0.93 |
| 2950 | 576          | 0.28 | 650  | 0.35 | 726  | 0.45 | 795  | 0.54 | 860  | 0.65 | 920  | 0.76 | 977  | 0.87 | 1030 | 0.99 |
| 3100 | 597          | 0.31 | 675  | 0.40 | 748  | 0.50 | 816  | 0.60 | 879  | 0.71 | 938  | 0.82 | 993  | 0.94 | 1046 | 1.06 |
| 3250 | 625          | 0.36 | 700  | 0.45 | 771  | 0.55 | 836  | 0.66 | 898  | 0.77 | 956  | 0.88 | 1010 | 1.00 | 1062 | 1.13 |
| 3400 | 654          | 0.42 | 726  | 0.51 | 794  | 0.61 | 858  | 0.72 | 918  | 0.83 | 974  | 0.95 | 1027 | 1.08 | 1078 | 1.21 |
| 3550 | 683          | 0.47 | 752  | 0.57 | 818  | 0.68 | 879  | 0.79 | 938  | 0.91 | 993  | 1.03 | 1045 | 1.16 | 1095 | 1.29 |
| 3700 | 712          | 0.54 | 778  | 0.64 | 842  | 0.75 | 901  | 0.86 | 958  | 0.98 | 1012 | 1.11 | 1064 | 1.24 | 1113 | 1.37 |
| 3850 | 741          | 0.60 | 805  | 0.71 | 866  | 0.82 | 924  | 0.94 | 979  | 1.06 | 1032 | 1.19 | 1083 | 1.33 | 1131 | 1.47 |
| 4000 | 770          | 0.68 | 831  | 0.79 | 890  | 0.90 | 947  | 1.02 | 1001 | 1.15 | 1053 | 1.29 | 1102 | 1.42 | 1150 | 1.56 |
| 4150 | 799          | 0.75 | 858  | 0.87 | 915  | 0.99 | 970  | 1.11 | 1023 | 1.25 | 1073 | 1.38 | 1122 | 1.52 | 1168 | 1.67 |
| 4300 | 828          | 0.84 | 885  | 0.96 | 940  | 1.08 | 994  | 1.21 | 1045 | 1.34 | 1094 | 1.49 | 1142 | 1.63 | 1188 | 1.78 |
| 4450 | 856          | 0.93 | 912  | 1.05 | 966  | 1.18 | 1017 | 1.31 | 1068 | 1.45 | 1116 | 1.59 | 1162 | 1.74 | 1207 | 1.89 |
| 4600 | 885          | 1.03 | 939  | 1.15 | 991  | 1.28 | 1042 | 1.42 | 1090 | 1.56 | 1138 | 1.71 | 1183 | 1.86 | —    | —    |

### 50XCA08 (7 1/2 TONS) (cont)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 0.80         |      | 0.90 |      | 1.00 |      | 1.10 |      | 1.20 |      | 1.30 |      | 1.40 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 2500 | 1042         | 0.93 | 1094 | 1.05 | 1144 | 1.17 | 1192 | 1.30 | 1238 | 1.43 | 1283 | 1.57 | 1327 | 1.72 |
| 2650 | 1055         | 0.98 | 1105 | 1.11 | 1154 | 1.23 | 1201 | 1.36 | 1247 | 1.50 | 1291 | 1.64 | 1334 | 1.78 |
| 2800 | 1068         | 1.05 | 1117 | 1.17 | 1166 | 1.30 | 1212 | 1.43 | 1257 | 1.57 | 1301 | 1.71 | 1343 | 1.86 |
| 2950 | 1081         | 1.11 | 1131 | 1.24 | 1178 | 1.37 | 1224 | 1.50 | 1268 | 1.64 | 1311 | 1.79 | 1353 | 1.94 |
| 3100 | 1096         | 1.18 | 1144 | 1.31 | 1191 | 1.44 | 1236 | 1.58 | 1279 | 1.72 | 1322 | 1.87 | —    | —    |
| 3250 | 1111         | 1.26 | 1159 | 1.39 | 1205 | 1.53 | 1249 | 1.67 | 1292 | 1.81 | 1334 | 1.96 | —    | —    |
| 3400 | 1127         | 1.34 | 1174 | 1.47 | 1219 | 1.61 | 1263 | 1.75 | 1305 | 1.90 | —    | —    | —    | —    |
| 3550 | 1143         | 1.42 | 1189 | 1.56 | 1234 | 1.70 | 1277 | 1.85 | 1319 | 2.00 | —    | —    | —    | —    |
| 3700 | 1160         | 1.51 | 1206 | 1.65 | 1249 | 1.80 | 1292 | 1.95 | —    | —    | —    | —    | —    | —    |
| 3850 | 1178         | 1.61 | 1222 | 1.75 | 1265 | 1.90 | —    | —    | —    | —    | —    | —    | —    | —    |
| 4000 | 1195         | 1.71 | 1239 | 1.86 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 4150 | 1213         | 1.82 | 1257 | 1.97 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 4300 | 1232         | 1.93 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 4450 | —            | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 4600 | —            | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |

#### LEGEND

**Bhp** — Brake Horsepower  
**ESP** — External Static Pressure

#### NOTES:

- Units are available with several motor hp options. Refer to Physical Data table.
- Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- Interpolation is permitted; extrapolation is not.
- Fan performance is based on unit casing, and dry DX (direct expansion) coil losses at sea level.
- Full load product performance can be generated using the Self Contained Unit Builder (SCU) found in Carrier's Electronic Catalog software.

## CONDENSER FAN PERFORMANCE (cont)

### 50XCA12 (10 TONS)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 0.00         |      | 0.10 |      | 0.20 |      | 0.30 |      | 0.40 |      | 0.50 |      | 0.60 |      | 0.70 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 4100 | 389          | 0.41 | 451  | 0.53 | 506  | 0.66 | 557  | 0.80 | 605  | 0.94 | 651  | 1.10 | 695  | 1.26 | 737  | 1.43 |
| 4300 | 408          | 0.47 | 467  | 0.60 | 520  | 0.73 | 569  | 0.87 | 616  | 1.02 | 661  | 1.18 | 704  | 1.35 | 745  | 1.53 |
| 4500 | 427          | 0.54 | 484  | 0.67 | 535  | 0.81 | 583  | 0.96 | 628  | 1.11 | 672  | 1.28 | 714  | 1.45 | 754  | 1.63 |
| 4700 | 446          | 0.62 | 501  | 0.76 | 550  | 0.90 | 596  | 1.05 | 641  | 1.21 | 683  | 1.37 | 724  | 1.55 | 763  | 1.73 |
| 4900 | 465          | 0.70 | 518  | 0.84 | 566  | 0.99 | 611  | 1.15 | 653  | 1.31 | 694  | 1.48 | 734  | 1.66 | 773  | 1.85 |
| 5100 | 484          | 0.79 | 535  | 0.94 | 581  | 1.09 | 625  | 1.25 | 666  | 1.42 | 706  | 1.59 | 745  | 1.78 | 783  | 1.97 |
| 5300 | 503          | 0.88 | 552  | 1.04 | 597  | 1.20 | 640  | 1.37 | 680  | 1.54 | 719  | 1.72 | 757  | 1.90 | 793  | 2.10 |
| 5500 | 522          | 0.99 | 569  | 1.15 | 613  | 1.32 | 654  | 1.49 | 694  | 1.66 | 732  | 1.85 | 769  | 2.04 | 804  | 2.23 |
| 5700 | 541          | 1.10 | 587  | 1.27 | 629  | 1.44 | 670  | 1.62 | 708  | 1.80 | 745  | 1.98 | 781  | 2.18 | 816  | 2.38 |
| 5900 | 560          | 1.22 | 604  | 1.39 | 646  | 1.57 | 685  | 1.75 | 722  | 1.94 | 758  | 2.13 | 794  | 2.33 | 828  | 2.53 |
| 6100 | 578          | 1.35 | 622  | 1.53 | 662  | 1.71 | 700  | 1.90 | 737  | 2.09 | 772  | 2.29 | 807  | 2.49 | 840  | 2.70 |
| 6300 | 597          | 1.48 | 639  | 1.67 | 679  | 1.86 | 716  | 2.05 | 752  | 2.25 | 786  | 2.45 | 820  | 2.66 | 852  | 2.87 |
| 6500 | 616          | 1.63 | 657  | 1.82 | 696  | 2.02 | 732  | 2.21 | 767  | 2.42 | 801  | 2.62 | 833  | 2.83 | —    | —    |
| 6700 | 635          | 1.78 | 675  | 1.98 | 712  | 2.18 | 748  | 2.39 | 782  | 2.59 | 815  | 2.81 | —    | —    | —    | —    |
| 6900 | 654          | 1.95 | 693  | 2.15 | 729  | 2.36 | 764  | 2.57 | 798  | 2.78 | 830  | 3.00 | —    | —    | —    | —    |

### 50XCA12 (10 TONS) (cont)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 0.80         |      | 0.90 |      | 1.00 |      | 1.10 |      | 1.20 |      | 1.30 |      | 1.40 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 4100 | 777          | 1.61 | 815  | 1.79 | 851  | 1.98 | 885  | 2.17 | 917  | 2.36 | 948  | 2.55 | 977  | 2.75 |
| 4300 | 785          | 1.71 | 822  | 1.90 | 858  | 2.09 | 892  | 2.28 | 925  | 2.48 | 956  | 2.68 | 985  | 2.89 |
| 4500 | 793          | 1.81 | 830  | 2.01 | 866  | 2.20 | 900  | 2.40 | 932  | 2.61 | 964  | 2.82 | —    | —    |
| 4700 | 801          | 1.92 | 838  | 2.12 | 873  | 2.32 | 907  | 2.53 | 940  | 2.74 | 971  | 2.95 | —    | —    |
| 4900 | 810          | 2.04 | 846  | 2.24 | 881  | 2.45 | 915  | 2.66 | 947  | 2.87 | —    | —    | —    | —    |
| 5100 | 819          | 2.16 | 855  | 2.37 | 889  | 2.58 | 923  | 2.80 | —    | —    | —    | —    | —    | —    |
| 5300 | 829          | 2.30 | 864  | 2.51 | 898  | 2.72 | 931  | 2.94 | —    | —    | —    | —    | —    | —    |
| 5500 | 839          | 2.44 | 874  | 2.65 | 907  | 2.87 | —    | —    | —    | —    | —    | —    | —    | —    |
| 5700 | 850          | 2.59 | 884  | 2.80 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 5900 | 861          | 2.74 | 894  | 2.96 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 6100 | 873          | 2.91 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 6300 | —            | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 6500 | —            | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 6700 | —            | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 6900 | —            | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |

#### LEGEND

**Bhp** — Brake Horsepower  
**ESP** — External Static Pressure

#### NOTES:

- Units are available with several motor hp options. Refer to Physical Data table.
- Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- Interpolation is permitted; extrapolation is not.
- Fan performance is based on unit casing, and dry DX (direct expansion) coil losses at sea level. Full load product performance can be generated using the Self Contained Unit Builder (SCU) found in Carrier's Electronic Catalog software.

# Performance data (cont)



## CONDENSER FAN PERFORMANCE (cont)

### 50XCA14 (12 TONS)

| CFM  | ESP (in. wg) |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
|------|--------------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|
|      | 0.0          |      | 0.1 |      | 0.2 |      | 0.3 |      | 0.4 |      | 0.5 |      | 0.6 |      | 0.7 |      |
|      | Rpm          | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  |
| 6000 | 496          | 1.03 | 533 | 1.17 | 570 | 1.36 | 608 | 1.58 | 646 | 1.82 | 683 | 2.06 | 719 | 2.31 | 755 | 2.56 |
| 6250 | 517          | 1.17 | 552 | 1.31 | 588 | 1.50 | 624 | 1.72 | 660 | 1.97 | 696 | 2.22 | 732 | 2.48 | 766 | 2.74 |
| 6500 | 537          | 1.31 | 571 | 1.46 | 605 | 1.65 | 640 | 1.88 | 675 | 2.13 | 710 | 2.39 | 744 | 2.66 | 778 | 2.93 |
| 6750 | 558          | 1.47 | 590 | 1.62 | 623 | 1.81 | 657 | 2.05 | 691 | 2.30 | 724 | 2.57 | 757 | 2.85 | —   | —    |
| 7000 | 579          | 1.64 | 610 | 1.79 | 642 | 1.99 | 674 | 2.23 | 707 | 2.49 | 739 | 2.76 | —   | —    | —   | —    |
| 7250 | 599          | 1.82 | 629 | 1.98 | 660 | 2.18 | 691 | 2.42 | 723 | 2.68 | 754 | 2.96 | —   | —    | —   | —    |
| 7500 | 620          | 2.02 | 649 | 2.18 | 679 | 2.38 | 709 | 2.62 | 739 | 2.89 | —   | —    | —   | —    | —   | —    |
| 7750 | 641          | 2.23 | 669 | 2.39 | 697 | 2.59 | 726 | 2.84 | —   | —    | —   | —    | —   | —    | —   | —    |
| 8000 | 661          | 2.45 | 688 | 2.61 | 716 | 2.82 | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    |
| 8250 | 682          | 2.69 | 708 | 2.85 | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    |
| 8500 | 703          | 2.94 | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    |
| 8750 | —            | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    |
| 9000 | —            | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    |
| 9250 | —            | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    |
| 9500 | —            | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    | —   | —    |

### 50XCA14 (12 TONS) (cont)

| CFM  | ESP (in. wg) |      |     |     |     |     |     |     |     |     |
|------|--------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
|      | 0.8          |      | 0.9 |     | 0.9 |     | 0.9 |     | 0.9 |     |
|      | Rpm          | Bhp  | Rpm | Bhp | Rpm | Bhp | Rpm | Bhp | Rpm | Bhp |
| 6000 | 789          | 2.81 | —   | —   | —   | —   | —   | —   | —   | —   |
| 6250 | 800          | 3.00 | —   | —   | —   | —   | —   | —   | —   | —   |
| 6500 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 6750 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 7000 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 7250 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 7500 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 7750 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 8000 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 8250 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 8500 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 8750 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 9000 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 9250 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |
| 9500 | —            | —    | —   | —   | —   | —   | —   | —   | —   | —   |

#### LEGEND

**Bhp** — Brake Horsepower  
**ESP** — External Static Pressure

#### NOTES:

- Units are available with several motor hp options. Refer to Physical Data table.
- Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.

- Interpolation is permitted; extrapolation is not.
- Fan performance is based on unit casing, and dry DX (direct expansion) coil losses at sea level.
- Full load product performance can be generated using the Self Contained Unit Builder (SCU) found in Carrier's Electronic Catalog software.

## EVAPORATOR FAN PERFORMANCE

### 50XCA06 (5 TONS)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 0.00         |      | 0.10 |      | 0.20 |      | 0.30 |      | 0.40 |      | 0.50 |      | 0.60 |      | 0.70 |      | 0.80 |      | 0.90 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 1500 | 594          | 0.23 | 594  | 0.23 | 594  | 0.23 | 612  | 0.24 | 670  | 0.29 | 727  | 0.34 | 785  | 0.40 | 842  | 0.46 | 897  | 0.53 | 950  | 0.60 |
| 1600 | 588          | 0.24 | 588  | 0.24 | 588  | 0.24 | 630  | 0.28 | 684  | 0.32 | 738  | 0.37 | 793  | 0.43 | 847  | 0.49 | 900  | 0.56 | 952  | 0.64 |
| 1700 | 582          | 0.26 | 582  | 0.26 | 596  | 0.27 | 650  | 0.31 | 701  | 0.36 | 752  | 0.41 | 803  | 0.47 | 854  | 0.53 | 905  | 0.60 | 955  | 0.67 |
| 1800 | 576          | 0.28 | 576  | 0.28 | 618  | 0.31 | 670  | 0.36 | 719  | 0.40 | 767  | 0.45 | 815  | 0.51 | 863  | 0.57 | 911  | 0.64 | 959  | 0.71 |
| 1900 | 570          | 0.29 | 586  | 0.31 | 641  | 0.35 | 691  | 0.40 | 738  | 0.45 | 784  | 0.50 | 829  | 0.56 | 875  | 0.62 | 920  | 0.69 | 966  | 0.76 |
| 2000 | 564          | 0.31 | 612  | 0.35 | 664  | 0.40 | 712  | 0.45 | 757  | 0.50 | 801  | 0.56 | 845  | 0.61 | 888  | 0.67 | 931  | 0.74 | 975  | 0.81 |
| 2100 | 593          | 0.36 | 637  | 0.40 | 687  | 0.46 | 734  | 0.51 | 778  | 0.56 | 820  | 0.61 | 862  | 0.67 | 903  | 0.73 | 944  | 0.80 | 985  | 0.87 |
| 2200 | 621          | 0.42 | 663  | 0.46 | 710  | 0.51 | 756  | 0.57 | 799  | 0.62 | 840  | 0.68 | 879  | 0.74 | 919  | 0.80 | 958  | 0.86 | 997  | 0.93 |
| 2300 | 649          | 0.48 | 689  | 0.52 | 734  | 0.58 | 779  | 0.63 | 820  | 0.69 | 860  | 0.75 | 898  | 0.81 | 936  | 0.87 | 974  | 0.93 | 1011 | 1.00 |
| 2400 | 677          | 0.54 | 715  | 0.59 | 759  | 0.64 | 801  | 0.70 | 842  | 0.76 | 880  | 0.82 | 918  | 0.88 | 954  | 0.95 | 990  | 1.01 | 1026 | 1.08 |
| 2500 | 705          | 0.61 | 742  | 0.66 | 783  | 0.72 | 824  | 0.78 | 864  | 0.84 | 902  | 0.90 | 938  | 0.97 | 973  | 1.03 | 1008 | 1.10 | 1043 | 1.17 |

### 50XCA06 (5 TONS) (cont)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 1.00         |      | 1.10 |      | 1.20 |      | 1.30 |      | 1.40 |      | 1.50 |      | 1.60 |      | 1.70 |      | 1.80 |      | 1.90 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 1500 | 1000         | 0.68 | 1047 | 0.76 | 1092 | 0.84 | 1134 | 0.93 | 1174 | 1.01 | 1213 | 1.10 | 1249 | 1.19 | 1284 | 1.28 | 1318 | 1.36 | 1351 | 1.46 |
| 1600 | 1001         | 0.71 | 1049 | 0.80 | 1094 | 0.88 | 1137 | 0.97 | 1178 | 1.06 | 1218 | 1.14 | 1255 | 1.24 | 1291 | 1.33 | 1326 | 1.42 | 1359 | 1.52 |
| 1700 | 1004         | 0.75 | 1051 | 0.83 | 1096 | 0.92 | 1139 | 1.01 | 1181 | 1.10 | 1221 | 1.19 | 1259 | 1.28 | 1296 | 1.38 | 1331 | 1.48 | 1365 | 1.57 |
| 1800 | 1007         | 0.79 | 1053 | 0.87 | 1098 | 0.96 | 1141 | 1.05 | 1183 | 1.14 | 1224 | 1.24 | 1262 | 1.33 | 1300 | 1.43 | —    | —    | —    | —    |
| 1900 | 1011         | 0.83 | 1056 | 0.92 | 1100 | 1.00 | 1143 | 1.09 | 1185 | 1.19 | 1225 | 1.28 | 1264 | 1.38 | 1302 | 1.48 | —    | —    | —    | —    |
| 2000 | 1018         | 0.89 | 1061 | 0.97 | 1104 | 1.05 | 1146 | 1.14 | 1187 | 1.24 | 1227 | 1.33 | 1266 | 1.43 | —    | —    | —    | —    | —    | —    |
| 2100 | 1027         | 0.94 | 1068 | 1.02 | 1109 | 1.11 | 1150 | 1.20 | 1190 | 1.29 | 1230 | 1.39 | 1268 | 1.49 | —    | —    | —    | —    | —    | —    |
| 2200 | 1037         | 1.01 | 1076 | 1.09 | 1116 | 1.17 | 1155 | 1.26 | 1194 | 1.35 | 1233 | 1.45 | —    | —    | —    | —    | —    | —    | —    | —    |
| 2300 | 1049         | 1.08 | 1087 | 1.16 | 1124 | 1.24 | 1162 | 1.33 | 1200 | 1.42 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 2400 | 1063         | 1.16 | 1099 | 1.23 | 1135 | 1.32 | 1171 | 1.40 | 1207 | 1.49 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 2500 | 1077         | 1.24 | 1112 | 1.32 | 1147 | 1.40 | 1181 | 1.48 | 1216 | 1.57 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    |

#### LEGEND

**Bhp** — Brake Horsepower  
**ESP** — External Static Pressure

#### NOTES:

- Units are available with several motor hp options. Refer to Physical Data table.
- Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- Interpolation is permitted; extrapolation is not.
- Fan performance is based on 1 in. standard throwaway filter, unit casing, and dry DX (direct expansion) coil losses at sea level.
- Full load product performance can be generated using the Self Contained Unit Builder (SCU) found in Carrier's Electronic Catalog software.

# Performance data (cont)



## EVAPORATOR FAN PERFORMANCE (cont)

### 50XCA08 (7½ TONS)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 0.00         |      | 0.10 |      | 0.20 |      | 0.30 |      | 0.40 |      | 0.50 |      | 0.60 |      | 0.70 |      | 0.80 |      | 0.90 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 2200 | 594          | 0.26 | 594  | 0.26 | 594  | 0.26 | 644  | 0.31 | 707  | 0.38 | 766  | 0.45 | 820  | 0.53 | 871  | 0.62 | 918  | 0.70 | 963  | 0.79 |
| 2400 | 588          | 0.28 | 588  | 0.28 | 602  | 0.29 | 667  | 0.36 | 728  | 0.43 | 785  | 0.51 | 838  | 0.59 | 888  | 0.68 | 935  | 0.77 | 979  | 0.86 |
| 2600 | 582          | 0.29 | 582  | 0.29 | 630  | 0.34 | 692  | 0.42 | 750  | 0.49 | 805  | 0.58 | 857  | 0.66 | 906  | 0.75 | 952  | 0.84 | 996  | 0.94 |
| 2800 | 576          | 0.31 | 597  | 0.33 | 659  | 0.41 | 718  | 0.48 | 774  | 0.56 | 827  | 0.65 | 877  | 0.74 | 925  | 0.83 | 970  | 0.93 | 1013 | 1.03 |
| 3000 | 570          | 0.33 | 631  | 0.40 | 690  | 0.48 | 746  | 0.55 | 799  | 0.64 | 850  | 0.73 | 898  | 0.82 | 945  | 0.92 | 989  | 1.02 | 1032 | 1.12 |
| 3200 | 606          | 0.40 | 665  | 0.48 | 721  | 0.55 | 774  | 0.64 | 825  | 0.73 | 874  | 0.82 | 921  | 0.91 | 966  | 1.01 | 1009 | 1.12 | 1051 | 1.22 |
| 3400 | 644          | 0.48 | 699  | 0.56 | 752  | 0.64 | 803  | 0.73 | 852  | 0.82 | 899  | 0.92 | 944  | 1.02 | 988  | 1.12 | 1030 | 1.23 | 1071 | 1.34 |
| 3600 | 681          | 0.57 | 734  | 0.66 | 785  | 0.74 | 833  | 0.83 | 880  | 0.93 | 925  | 1.03 | 969  | 1.13 | 1011 | 1.24 | 1052 | 1.35 | 1092 | 1.46 |
| 3800 | 719          | 0.67 | 770  | 0.76 | 818  | 0.85 | 864  | 0.95 | 909  | 1.04 | 952  | 1.15 | 995  | 1.25 | 1035 | 1.36 | 1075 | 1.48 | 1114 | 1.59 |

### 50XCA08 (7½ TONS) (cont)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 1.00         |      | 1.10 |      | 1.20 |      | 1.30 |      | 1.40 |      | 1.50 |      | 1.60 |      | 1.70 |      | 1.80 |      | 1.90 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 2200 | 1006         | 0.88 | 1047 | 0.97 | 1085 | 1.07 | 1122 | 1.17 | 1158 | 1.27 | 1193 | 1.37 | 1226 | 1.47 | 1258 | 1.58 | —    | —    | —    | —    |
| 2400 | 1022         | 0.96 | 1062 | 1.05 | 1101 | 1.15 | 1138 | 1.26 | 1174 | 1.36 | 1209 | 1.46 | 1242 | 1.57 | 1274 | 1.68 | 1306 | 1.79 | 1336 | 1.90 |
| 2600 | 1038         | 1.04 | 1078 | 1.14 | 1117 | 1.24 | 1154 | 1.35 | 1190 | 1.46 | 1225 | 1.57 | 1258 | 1.68 | 1290 | 1.79 | 1322 | 1.91 | 1352 | 2.03 |
| 2800 | 1055         | 1.13 | 1095 | 1.23 | 1133 | 1.34 | 1170 | 1.45 | 1206 | 1.56 | 1240 | 1.68 | 1274 | 1.79 | 1306 | 1.91 | 1338 | 2.03 | 1368 | 2.15 |
| 3000 | 1073         | 1.23 | 1112 | 1.34 | 1150 | 1.45 | 1187 | 1.56 | 1222 | 1.68 | 1256 | 1.79 | 1290 | 1.91 | 1322 | 2.04 | 1353 | 2.16 | 1384 | 2.29 |
| 3200 | 1091         | 1.33 | 1130 | 1.45 | 1167 | 1.56 | 1204 | 1.68 | 1239 | 1.80 | 1273 | 1.92 | 1306 | 2.04 | 1338 | 2.17 | 1369 | 2.30 | 1400 | 2.43 |
| 3400 | 1110         | 1.45 | 1148 | 1.57 | 1185 | 1.68 | 1221 | 1.81 | 1256 | 1.93 | 1290 | 2.05 | 1322 | 2.18 | 1354 | 2.31 | 1385 | 2.44 | 1416 | 2.58 |
| 3600 | 1131         | 1.58 | 1168 | 1.69 | 1204 | 1.82 | 1239 | 1.94 | 1274 | 2.07 | 1307 | 2.20 | 1340 | 2.33 | 1371 | 2.46 | 1402 | 2.60 | 1432 | 2.74 |
| 3800 | 1152         | 1.71 | 1188 | 1.84 | 1224 | 1.96 | 1258 | 2.09 | 1292 | 2.22 | 1325 | 2.35 | 1357 | 2.49 | 1389 | 2.62 | 1419 | 2.76 | 1449 | 2.90 |

### 50XCA08 (7½ TONS) (cont)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|
|      | 2.00         |      | 2.10 |      | 2.20 |      | 2.30 |      | 2.40 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 2200 | —            | —    | —    | —    | —    | —    | —    | —    | —    | —    |
| 2400 | 1366         | 2.02 | 1395 | 2.13 | —    | —    | —    | —    | —    | —    |
| 2600 | 1382         | 2.14 | 1411 | 2.26 | 1439 | 2.39 | 1467 | 2.51 | 1494 | 2.63 |
| 2800 | 1398         | 2.27 | 1427 | 2.40 | 1455 | 2.52 | 1483 | 2.65 | 1510 | 2.78 |
| 3000 | 1414         | 2.41 | 1443 | 2.54 | 1471 | 2.67 | 1499 | 2.80 | 1526 | 2.94 |
| 3200 | 1429         | 2.56 | 1459 | 2.69 | 1487 | 2.82 | 1515 | 2.96 | —    | —    |
| 3400 | 1445         | 2.71 | 1474 | 2.85 | 1503 | 2.99 | —    | —    | —    | —    |
| 3600 | 1462         | 2.87 | —    | —    | —    | —    | —    | —    | —    | —    |
| 3800 | —            | —    | —    | —    | —    | —    | —    | —    | —    | —    |

#### LEGEND

**Bhp** — Brake Horsepower  
**ESP** — External Static Pressure

#### NOTES:

- Units are available with several motor hp options. Refer to Physical Data table.
- Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.

- Interpolation is permitted; extrapolation is not.
- Fan performance is based on 1 in. standard throwaway filter, unit casing, and dry DX (direct expansion) coil losses at sea level.
- Full load product performance can be generated using the Self Contained Unit Builder (SCU) found in Carrier's Electronic Catalog software.

## EVAPORATOR FAN PERFORMANCE (cont)

### 50XCA12 (10 TONS)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 0.00         |      | 0.10 |      | 0.20 |      | 0.30 |      | 0.40 |      | 0.50 |      | 0.60 |      | 0.70 |      | 0.80 |      | 0.90 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 3000 | 381          | 0.26 | 434  | 0.33 | 492  | 0.41 | 533  | 0.51 | 614  | 0.63 | 674  | 0.77 | 730  | 0.93 | 783  | 1.10 | 831  | 1.29 | 877  | 1.47 |
| 3200 | 406          | 0.32 | 456  | 0.39 | 510  | 0.48 | 566  | 0.58 | 624  | 0.69 | 681  | 0.83 | 735  | 0.99 | 788  | 1.16 | 837  | 1.35 | 882  | 1.54 |
| 3400 | 432          | 0.39 | 478  | 0.46 | 528  | 0.55 | 581  | 0.65 | 635  | 0.76 | 689  | 0.90 | 742  | 1.05 | 793  | 1.22 | 841  | 1.41 | 887  | 1.61 |
| 3600 | 457          | 0.46 | 501  | 0.54 | 548  | 0.63 | 597  | 0.73 | 647  | 0.84 | 699  | 0.98 | 749  | 1.13 | 799  | 1.30 | 847  | 1.48 | 892  | 1.68 |
| 3800 | 483          | 0.54 | 524  | 0.62 | 568  | 0.72 | 614  | 0.82 | 661  | 0.93 | 710  | 1.06 | 758  | 1.21 | 806  | 1.38 | 852  | 1.56 | 897  | 1.76 |
| 4000 | 508          | 0.63 | 547  | 0.71 | 588  | 0.81 | 632  | 0.92 | 677  | 1.04 | 722  | 1.17 | 768  | 1.31 | 814  | 1.47 | 859  | 1.65 | 903  | 1.85 |
| 4200 | 533          | 0.73 | 570  | 0.82 | 609  | 0.92 | 650  | 1.03 | 693  | 1.15 | 736  | 1.28 | 780  | 1.42 | 823  | 1.58 | 867  | 1.76 | 910  | 1.95 |
| 4400 | 559          | 0.83 | 594  | 0.93 | 631  | 1.03 | 670  | 1.15 | 710  | 1.27 | 751  | 1.40 | 792  | 1.54 | 834  | 1.70 | 876  | 1.87 | 917  | 2.06 |
| 4600 | 584          | 0.95 | 618  | 1.05 | 653  | 1.16 | 690  | 1.28 | 728  | 1.40 | 767  | 1.53 | 806  | 1.68 | 846  | 1.83 | 886  | 2.01 | 926  | 2.19 |
| 4800 | 610          | 1.08 | 641  | 1.19 | 675  | 1.30 | 710  | 1.42 | 746  | 1.54 | 783  | 1.68 | 821  | 1.82 | 859  | 1.98 | 897  | 2.15 | 936  | 2.33 |
| 5000 | 635          | 1.22 | 666  | 1.33 | 698  | 1.45 | 731  | 1.57 | 766  | 1.70 | 801  | 1.84 | 837  | 1.98 | 873  | 2.14 | 910  | 2.31 | 946  | 2.49 |

### 50XCA12 (10 TONS) (cont)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |      |     |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|-----|
|      | 1.00         |      | 1.10 |      | 1.20 |      | 1.30 |      | 1.40 |      | 1.50 |      | 1.60 |      | 1.70 |      | 1.80 |     | 1.90 |     |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp | Rpm  | Bhp |
| 3000 | 919          | 1.66 | 958  | 1.85 | 994  | 2.04 | 1029 | 2.22 | 1061 | 2.40 | 1092 | 2.57 | 1122 | 2.74 | 1149 | 2.91 | —    | —   | —    | —   |
| 3200 | 925          | 1.74 | 965  | 1.94 | 1003 | 2.14 | 1039 | 2.34 | 1072 | 2.54 | 1104 | 2.73 | 1134 | 2.92 | —    | —    | —    | —   | —    | —   |
| 3400 | 931          | 1.82 | 972  | 2.03 | 1010 | 2.24 | 1047 | 2.45 | 1081 | 2.67 | 1114 | 2.88 | —    | —    | —    | —    | —    | —   | —    | —   |
| 3600 | 936          | 1.89 | 977  | 2.11 | 1016 | 2.33 | 1053 | 2.56 | 1089 | 2.78 | —    | —    | —    | —    | —    | —    | —    | —   | —    | —   |
| 3800 | 941          | 1.97 | 982  | 2.19 | 1022 | 2.42 | 1059 | 2.65 | 1095 | 2.89 | —    | —    | —    | —    | —    | —    | —    | —   | —    | —   |
| 4000 | 946          | 2.06 | 987  | 2.28 | 1027 | 2.51 | 1064 | 2.75 | 1101 | 3.00 | —    | —    | —    | —    | —    | —    | —    | —   | —    | —   |
| 4200 | 951          | 2.16 | 992  | 2.38 | 1031 | 2.61 | 1069 | 2.85 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —   | —    | —   |
| 4400 | 958          | 2.27 | 998  | 2.49 | 1037 | 2.72 | 1074 | 2.96 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —   | —    | —   |
| 4600 | 965          | 2.39 | 1004 | 2.61 | 1042 | 2.83 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —   | —    | —   |
| 4800 | 974          | 2.53 | 1011 | 2.74 | 1049 | 2.97 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —   | —    | —   |
| 5000 | 983          | 2.68 | 1020 | 2.89 | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —    | —   | —    | —   |

#### LEGEND

**Bhp** — Brake Horsepower  
**ESP** — External Static Pressure

#### NOTES:

- Units are available with several motor hp options. Refer to Physical Data table.
- Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- Interpolation is permitted; extrapolation is not.
- Fan performance is based on 1 in. standard throwaway filter, unit casing, and dry DX (direct expansion) coil losses at sea level.
- Full load product performance can be generated using the Self Contained Unit Builder (SCU) found in Carrier's Electronic Catalog software.

# Performance data (cont)



## EVAPORATOR FAN PERFORMANCE (cont)

### 50XCA14 (12 TONS)

| CFM  | ESP (in. wg) |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |      |      |
|------|--------------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|------|------|
|      | 0.0          |      | 0.1 |      | 0.2 |      | 0.3 |      | 0.4 |      | 0.5 |      | 0.6 |      | 0.7 |      | 0.8 |      | 0.9  |      |
|      | Rpm          | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm | Bhp  | Rpm  | Bhp  |
| 3500 | 450          | 0.30 | 495 | 0.46 | 537 | 0.56 | 583 | 0.65 | 633 | 0.76 | 687 | 0.89 | 742 | 1.05 | 793 | 1.23 | 841 | 1.41 | 885  | 1.60 |
| 3700 | 476          | 0.35 | 519 | 0.53 | 558 | 0.64 | 600 | 0.73 | 646 | 0.84 | 696 | 0.96 | 748 | 1.12 | 799 | 1.29 | 847 | 1.48 | 892  | 1.68 |
| 3900 | 502          | 0.41 | 543 | 0.60 | 580 | 0.72 | 619 | 0.83 | 661 | 0.93 | 707 | 1.05 | 756 | 1.19 | 805 | 1.37 | 852 | 1.56 | 898  | 1.76 |
| 4100 | 527          | 0.48 | 566 | 0.68 | 602 | 0.82 | 639 | 0.93 | 678 | 1.03 | 720 | 1.15 | 765 | 1.29 | 811 | 1.45 | 858 | 1.64 | 903  | 1.84 |
| 4300 | 553          | 0.55 | 591 | 0.77 | 625 | 0.92 | 659 | 1.04 | 696 | 1.15 | 735 | 1.26 | 776 | 1.40 | 820 | 1.55 | 865 | 1.73 | 909  | 1.93 |
| 4500 | 579          | 0.63 | 615 | 0.87 | 648 | 1.03 | 681 | 1.15 | 715 | 1.27 | 751 | 1.39 | 789 | 1.52 | 830 | 1.67 | 872 | 1.84 | 915  | 2.03 |
| 4700 | 604          | 0.72 | 639 | 0.97 | 671 | 1.14 | 702 | 1.28 | 734 | 1.40 | 768 | 1.52 | 804 | 1.65 | 842 | 1.80 | 882 | 1.96 | 922  | 2.15 |
| 4900 | 630          | 0.81 | 664 | 1.08 | 694 | 1.27 | 724 | 1.41 | 755 | 1.55 | 786 | 1.67 | 820 | 1.80 | 855 | 1.94 | 892 | 2.10 | 931  | 2.28 |
| 5100 | 656          | 0.92 | 688 | 1.20 | 718 | 1.40 | 746 | 1.56 | 776 | 1.70 | 806 | 1.83 | 837 | 1.96 | 870 | 2.10 | 905 | 2.26 | 941  | 2.43 |
| 5300 | 682          | 1.03 | 713 | 1.33 | 741 | 1.54 | 769 | 1.71 | 797 | 1.86 | 826 | 2.00 | 855 | 2.14 | 886 | 2.28 | 919 | 2.43 | 953  | 2.59 |
| 5500 | 707          | 1.15 | 738 | 1.47 | 765 | 1.69 | 792 | 1.88 | 819 | 2.03 | 846 | 2.18 | 874 | 2.32 | 903 | 2.46 | 934 | 2.62 | 966  | 2.78 |
| 5700 | 733          | 1.28 | 763 | 1.61 | 789 | 1.85 | 815 | 2.05 | 841 | 2.22 | 867 | 2.37 | 894 | 2.52 | 921 | 2.67 | 950 | 2.82 | 980  | 2.98 |
| 5900 | 759          | 1.42 | 787 | 1.77 | 813 | 2.02 | 838 | 2.23 | 863 | 2.41 | 888 | 2.57 | 914 | 2.73 | 940 | 2.88 | 968 | 3.03 | 996  | 3.19 |
| 6100 | 784          | 1.57 | 812 | 1.93 | 838 | 2.20 | 862 | 2.42 | 886 | 2.62 | 910 | 2.79 | 934 | 2.95 | 960 | 3.11 | 986 | 3.27 | 1013 | 3.43 |

### 50XCA14 (12 TONS) (cont)

| CFM  | ESP (in. wg) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 1.00         |      | 1.10 |      | 1.20 |      | 1.30 |      | 1.40 |      | 1.50 |      | 1.60 |      | 1.70 |      | 1.80 |      | 1.90 |      |
|      | Rpm          | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  | Rpm  | Bhp  |
| 3500 | 925          | 1.78 | 962  | 1.97 | 997  | 2.15 | 1030 | 2.32 | 1061 | 2.50 | 1090 | 2.67 | 1119 | 2.83 | 1146 | 3.00 | 1172 | 3.16 | 1198 | 3.32 |
| 3700 | 933          | 1.88 | 971  | 2.07 | 1007 | 2.27 | 1041 | 2.46 | 1072 | 2.65 | 1103 | 2.83 | 1131 | 3.01 | 1159 | 3.19 | 1186 | 3.37 | 1211 | 3.54 |
| 3900 | 940          | 1.97 | 979  | 2.17 | 1016 | 2.38 | 1051 | 2.59 | 1083 | 2.79 | 1114 | 2.99 | 1143 | 3.19 | 1172 | 3.38 | 1199 | 3.57 | 1225 | 3.76 |
| 4100 | 946          | 2.05 | 986  | 2.27 | 1024 | 2.49 | 1059 | 2.71 | 1093 | 2.93 | 1124 | 3.14 | 1154 | 3.35 | 1183 | 3.56 | 1211 | 3.77 | 1237 | 3.97 |
| 4300 | 951          | 2.15 | 992  | 2.37 | 1030 | 2.60 | 1067 | 2.83 | 1101 | 3.06 | 1133 | 3.29 | 1164 | 3.51 | 1194 | 3.73 | 1222 | 3.95 | 1249 | 4.17 |
| 4500 | 957          | 2.24 | 998  | 2.47 | 1036 | 2.71 | 1073 | 2.94 | 1108 | 3.18 | 1141 | 3.43 | 1173 | 3.66 | 1203 | 3.90 | 1232 | 4.14 | 1260 | 4.37 |
| 4700 | 963          | 2.35 | 1003 | 2.58 | 1042 | 2.81 | 1079 | 3.06 | 1115 | 3.31 | 1149 | 3.56 | 1181 | 3.81 | 1212 | 4.06 | 1241 | 4.31 | 1269 | 4.56 |
| 4900 | 970          | 2.48 | 1009 | 2.70 | 1047 | 2.93 | 1085 | 3.18 | 1121 | 3.43 | 1155 | 3.69 | 1188 | 3.95 | 1219 | 4.22 | 1249 | 4.48 | 1278 | 4.74 |
| 5100 | 978          | 2.62 | 1016 | 2.83 | 1053 | 3.06 | 1090 | 3.31 | 1126 | 3.56 | 1161 | 3.83 | 1194 | 4.10 | 1226 | 4.37 | 1257 | 4.64 | 1286 | 4.91 |
| 5300 | 988          | 2.78 | 1024 | 2.98 | 1060 | 3.20 | 1096 | 3.44 | 1132 | 3.70 | 1166 | 3.97 | 1200 | 4.24 | 1232 | 4.52 | 1263 | 4.80 | —    | —    |
| 5500 | 999          | 2.95 | 1033 | 3.15 | 1068 | 3.37 | 1103 | 3.60 | 1137 | 3.85 | 1172 | 4.11 | 1205 | 4.39 | 1238 | 4.67 | 1269 | 4.96 | —    | —    |
| 5700 | 1012         | 3.15 | 1044 | 3.34 | 1077 | 3.55 | 1110 | 3.77 | 1144 | 4.02 | 1178 | 4.28 | 1211 | 4.55 | 1243 | 4.83 | —    | —    | —    | —    |
| 5900 | 1025         | 3.36 | 1056 | 3.55 | 1087 | 3.75 | 1119 | 3.97 | 1152 | 4.20 | 1184 | 4.45 | 1217 | 4.72 | —    | —    | —    | —    | —    | —    |
| 6100 | 1040         | 3.60 | 1069 | 3.78 | 1099 | 3.97 | 1129 | 4.18 | 1160 | 4.41 | 1192 | 4.65 | 1223 | 4.91 | —    | —    | —    | —    | —    | —    |

#### LEGEND

**Bhp** — Brake Horsepower  
**ESP** — External Static Pressure

#### NOTES:

- Units are available with several motor hp options. Refer to Physical Data table.
- Static pressure losses for any options or accessories must be applied to external static pressure before entering the fan performance table.
- Interpolation is permitted; extrapolation is not.
- Fan performance is based on 1 in. standard throwaway filter, unit casing, and dry DX (direct expansion) coil losses at sea level.
- Full load product performance can be generated using the Self Contained Unit Builder (SCU) found in Carrier's Electronic Catalog software.

# Electrical data



## UNIT ELECTRICAL DATA

| UNIT<br>50XCA | V-PH-Hz      | VOLTAGE<br>RANGE |     | COMPRESSOR<br>NO. 1 |     | COMPRESSOR<br>NO. 2 |     |
|---------------|--------------|------------------|-----|---------------------|-----|---------------------|-----|
|               |              | Min              | Max | RLA                 | LRA | RLA                 | LRA |
| 06            | 208/230-3-60 | 187              | 253 | 20.5                | 155 | —                   | —   |
|               | 460-3-60     | 414              | 506 | 9.6                 | 75  | —                   | —   |
|               | 575-3-60     | 518              | 632 | 7.6                 | 54  | —                   | —   |
| 08            | 208/230-3-60 | 187              | 253 | 22.4                | 149 | —                   | —   |
|               | 460-3-60     | 414              | 506 | 10.6                | 75  | —                   | —   |
|               | 575-3-60     | 518              | 632 | 7.7                 | 54  | —                   | —   |
| 12            | 208/230-3-60 | 187              | 253 | 15.6                | 110 | 15.9                | 110 |
|               | 460-3-60     | 414              | 506 | 7.8                 | 52  | 7.1                 | 52  |
|               | 575-3-60     | 518              | 632 | 5.8                 | 39  | 5.1                 | 39  |
| 14            | 208/230-3-60 | 187              | 253 | 19.6                | 136 | 19.2                | 136 |
|               | 460-3-60     | 414              | 506 | 8.2                 | 66  | 8.7                 | 66  |
|               | 575-3-60     | 518              | 632 | 6.6                 | 55  | 6.9                 | 55  |

### LEGEND

**FLA** — Full Load Amps  
**LRA** — Locked Rotor Amps  
**NEC** — National Electrical Code  
**RLA** — Rated Load Amps

- Wire sizing amps are a sum of 125% of the compressor RLA plus 100% of indoor fan motor FLA.
- Motors are protected against primary single phasing condition.
- Indoor-fan motors are 3-phase motors of same voltage as unit.

### NOTES:

- In compliance with NEC requirements for multimotor and combination load equipment (NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR circuit breaker. Canadian units may be fuse or circuit breaker.



## FAN ELECTRICAL DATA

| MOTOR<br>CODE | HP   | V-PH-Hz      | VOLTAGE<br>RANGE |     | FLA     |
|---------------|------|--------------|------------------|-----|---------|
|               |      |              | Min              | Max |         |
| B             | 0.50 | 208/230-3-60 | 187              | 253 | 1.8/2.2 |
|               |      | 460-3-60     | 414              | 506 | 1.1     |
|               |      | 575-3-60     | 518              | 632 | 0.9     |
| C             | 0.75 | 208/230-3-60 | 187              | 253 | 2.5/2.6 |
|               |      | 460-3-60     | 414              | 506 | 1.3     |
|               |      | 575-3-60     | 518              | 632 | 1.0     |
| D             | 1.00 | 208/230-3-60 | 187              | 253 | 3.2/3.2 |
|               |      | 460-3-60     | 414              | 506 | 1.6     |
|               |      | 575-3-60     | 518              | 632 | 1.1     |
| E             | 1.50 | 208/230-3-60 | 187              | 253 | 4.6/4.8 |
|               |      | 460-3-60     | 414              | 506 | 2.4     |
|               |      | 575-3-60     | 518              | 632 | 1.6     |
| F             | 2.00 | 208/230-3-60 | 187              | 253 | 6.0/5.8 |
|               |      | 460-3-60     | 414              | 506 | 2.9     |
|               |      | 575-3-60     | 518              | 632 | 2.1     |
| G             | 3.00 | 208/230-3-60 | 187              | 253 | 9.2/8.6 |
|               |      | 460-3-60     | 414              | 506 | 4.3     |
|               |      | 575-3-60     | 518              | 632 | 3.4     |

### LEGEND

**FLA** — Full Load Amps

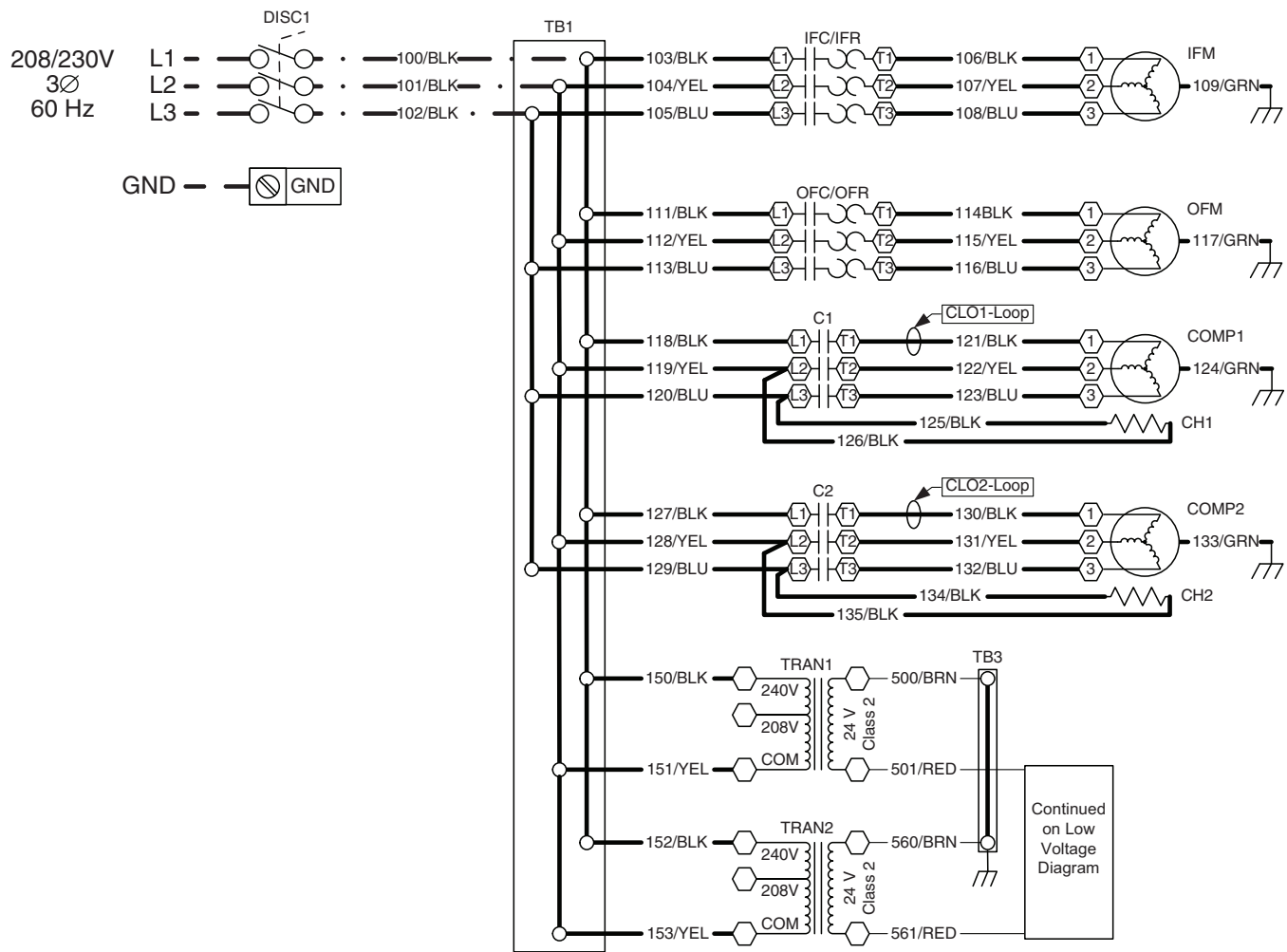
NOTE: The FLA data listed in this table is for one fan only. When calculating system FLA, evaporator fan and condenser fan must be included.



# Typical wiring schematics



**LINE VOLTAGE DIAGRAM — 50XCA012,014, 208/230-3-60 UNITS SHOWN**



## LEGEND AND NOTES FOR WIRING SCHEMATICS

### LEGEND

|                                      |                                       |
|--------------------------------------|---------------------------------------|
| <b>C</b> — Compressor Contactor      | <b>OFR</b> — Outdoor-Fan Relay        |
| <b>CH</b> — Crankcase Heater         | <b>PRES</b> — Pressure Transducer     |
| <b>CLO</b> — Compressor Lockout      | <b>SAT</b> — Supply Air Thermistor    |
| <b>COMP</b> — Compressor             | <b>TB</b> — Terminal Block            |
| <b>CR</b> — Control Relay            | <b>TRAN</b> — Transformer             |
| <b>DISC</b> — Disconnect             | <b>VFD</b> — Variable Frequency Drive |
| <b>FRZ</b> — Freeze Protection       | Terminal Block Connection             |
| <b>GND</b> — Ground                  | Marked Terminal                       |
| <b>HPS</b> — High Pressure Switch    | Unmarked Terminal                     |
| <b>HR</b> — Heat Relay               | Splice                                |
| <b>IFC</b> — Indoor-Fan Contactor    | Factory Wiring                        |
| <b>IFM</b> — Indoor-Fan Motor        | Field Power Wiring                    |
| <b>IFR</b> — Indoor-Fan Relay        |                                       |
| <b>LPS</b> — Low Pressure Switch     |                                       |
| <b>LLT</b> — Liquid Line Temperature |                                       |
| <b>OFC</b> — Outdoor-Fan Contactor   |                                       |
| <b>OFM</b> — Outdoor-Fan Motor       |                                       |

\* Disconnect can either be field or factory installed.

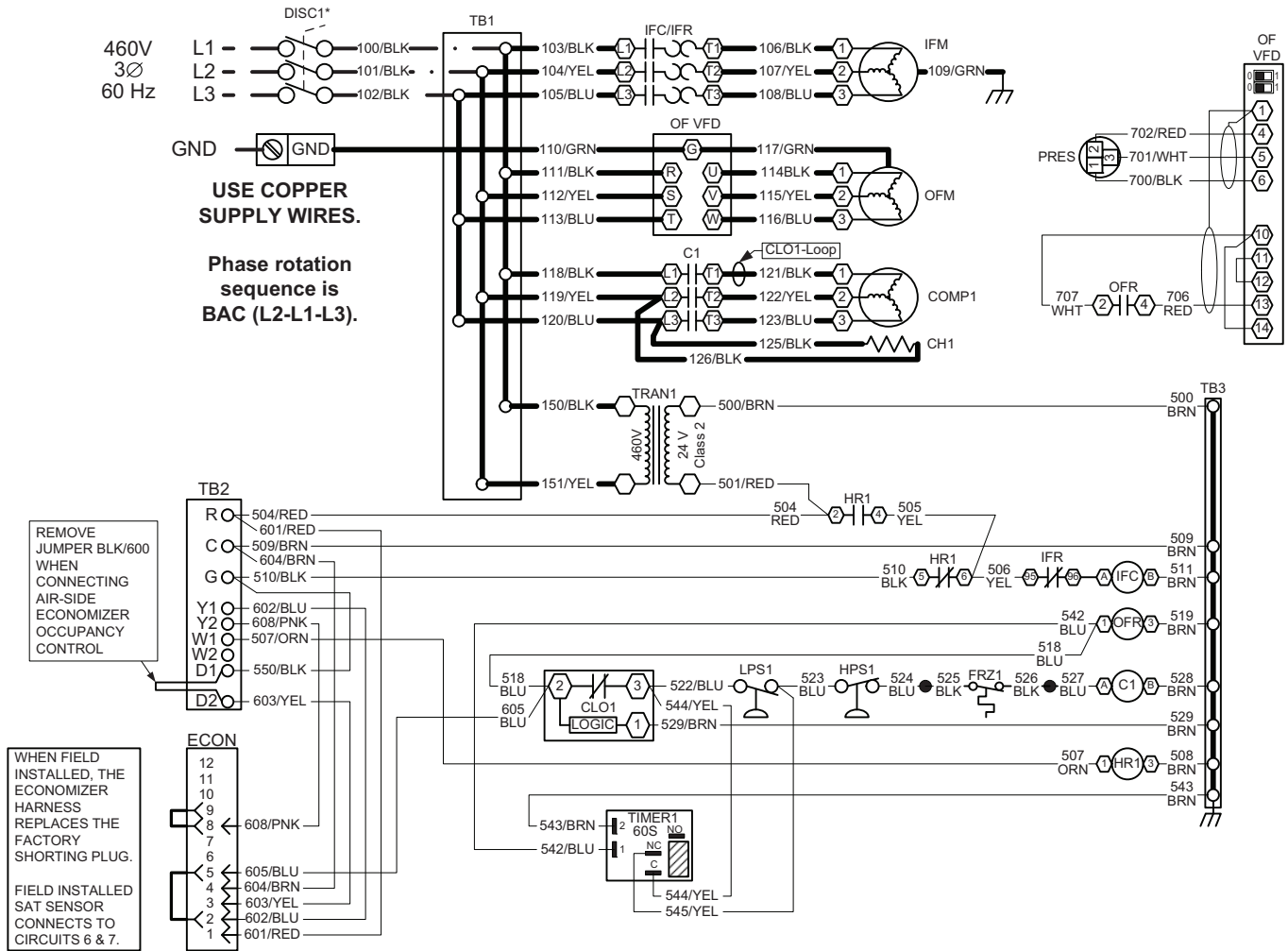
### NOTES:

1. Fan motors are inherently thermally protected.
2. Three-phase motors are protected under primary single phase conditions.
3. Use conductors suitable for at least 194 F (90 C) when replacing factory wiring.
4. Use copper conductors only.
5. Wiring for field power supply must be rated at 165 F (75 C) minimum.



# Typical wiring schematics (cont)

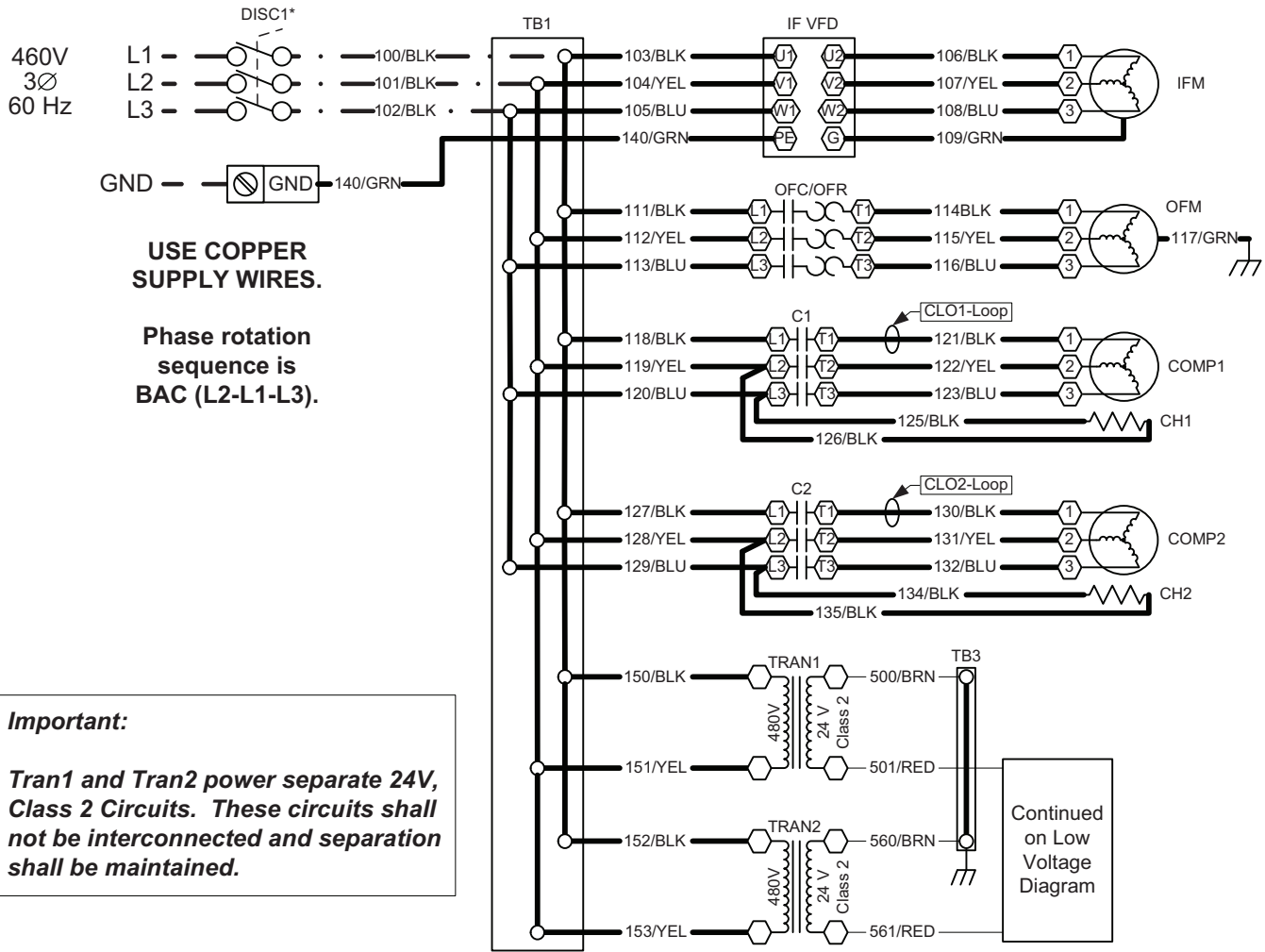
## CONTROL AND LINE VOLTAGE DIAGRAM — 460V UNITS (50XCA06,08 UNITS) WITH WINTER START KIT





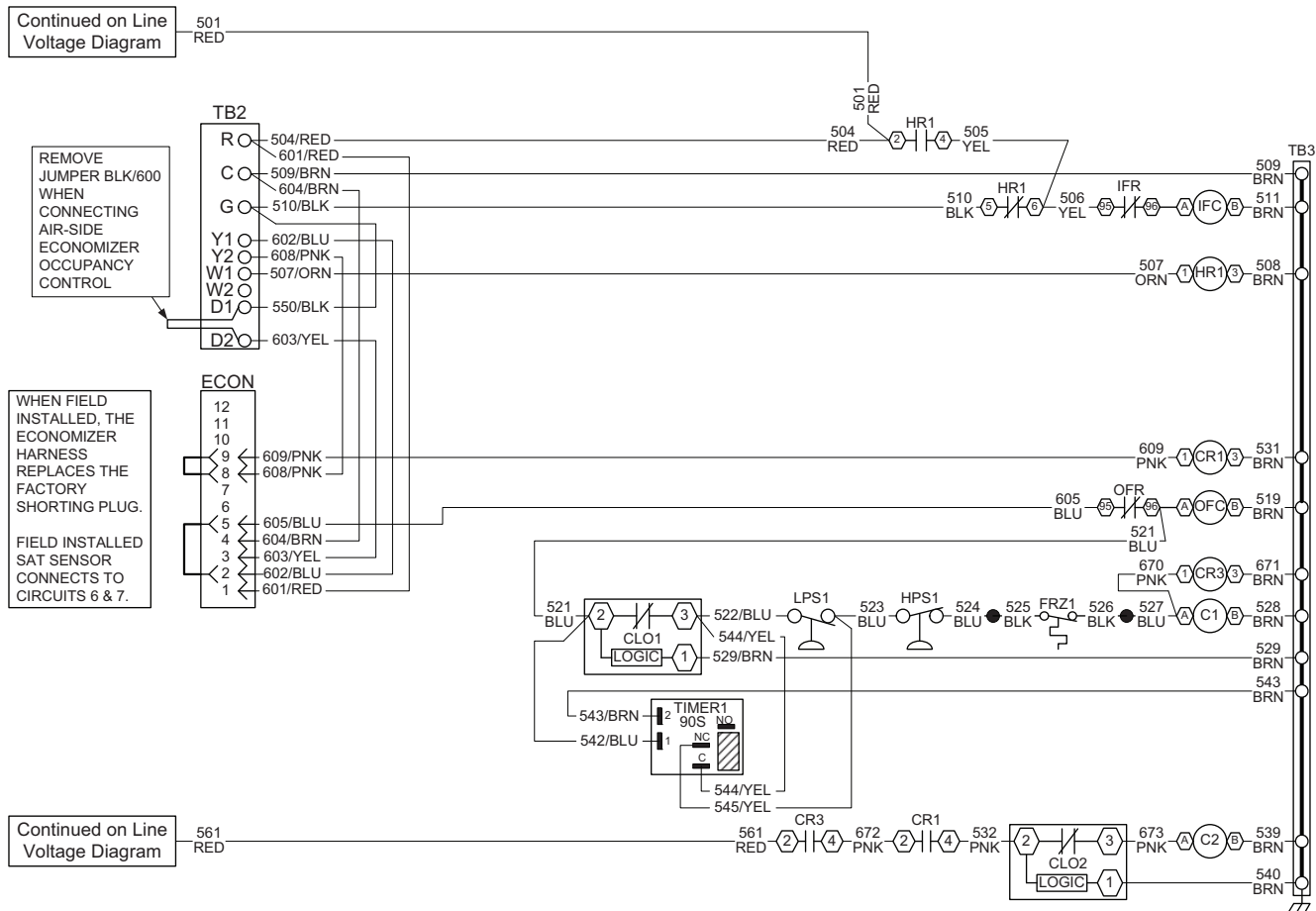
# Typical wiring schematics (cont)

LINE VOLTAGE DIAGRAM — 460V UNITS (50XCA12,14 UNITS)



NOTE: Refer to legend and notes on page 24.

## TYPICAL WIRING SCHEMATIC FOR WINTER START KIT (50XCA12,14 UNITS)

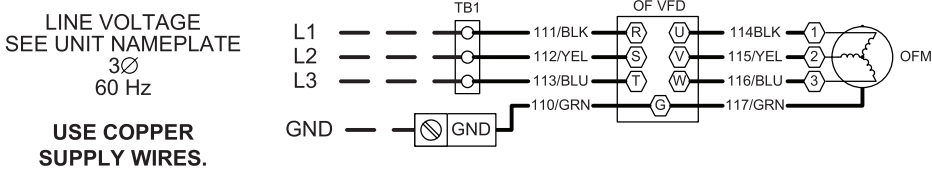


NOTE: Refer to legend and notes on page 24.

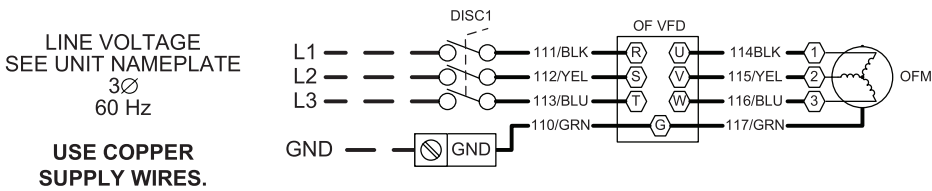
# Typical wiring schematics (cont)



## TYPICAL WIRING SCHEMATIC FOR LOW AMBIENT OPTION (50XCA06,08 UNITS)



### WITHOUT FACTORY INSTALLED DISCONNECT SWITCH



### FACTORY INSTALLED DISCONNECT SWITCH OPTION



### LOW VOLTAGE CONTROLS

NOTE: Refer to legend and notes on page 24.



# Controls



## Operating sequence

All units require the addition of a thermostat accessory package to complete the control circuit. The sequence of operation may vary depending on which package is selected.

**Room-mounted thermostat** — The unit uses an electronic thermostat mounted in the conditioned space.

**Fan circulation** — When the thermostat selector switch is set to the FAN position, the evaporator-fan motor will operate to provide air circulation.

**Cooling** — The evaporator will operate continuously or when the compressor runs, depending on the setting of the thermostat fan selector switch. When the thermostat closes (on a call for cooling), the control relay condenser-fan contactor and compressor contactor(s) close. The control relay will start the indoor fan if it is not already running. The condenser-fan contactor will start the condenser-fan and the compressor contactor(s) will immediately start the compressor(s).

A second stage on 50XCA12, 14 units will close if additional cooling demand is required, and will start the second-stage compressor. When the thermostat is satisfied, the

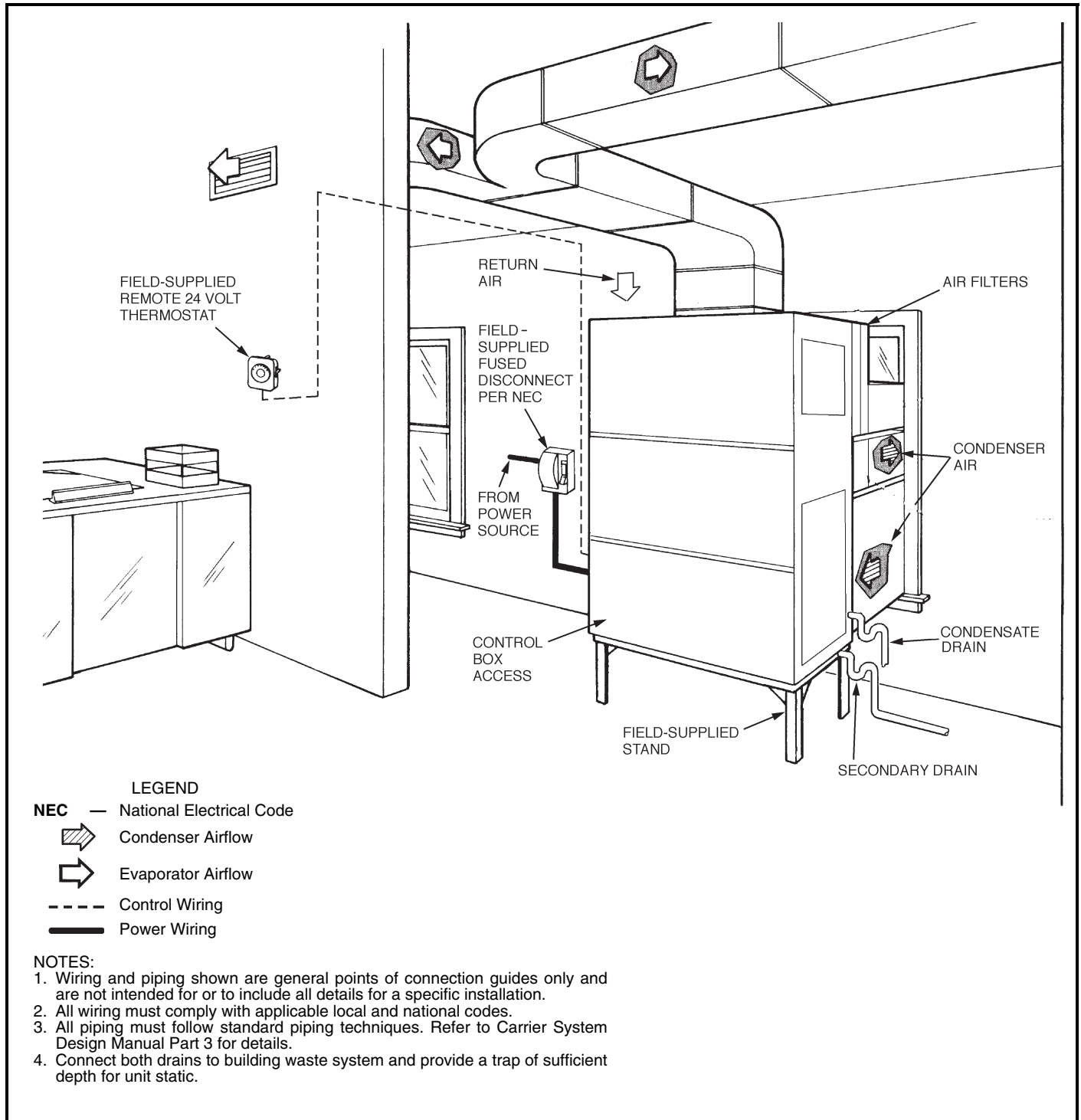
second-stage compressor will stop first, and then the first-stage compressor will stop when cooling demand is satisfied. The condenser will also stop as soon as both cooling stages are satisfied.

A 5-minute timer, TDR (time-delay relay), will prevent the compressor(s) from restarting for 5 minutes after any compressor has stopped.

**2-speed fan operation** — For dual-stage units, sizes 50XCA12 and larger, fan speed shall operate at 67% of full speed for first-stage cooling operation and 100% of full speed for second-stage cooling operation.

**All units** — The control circuit incorporates a current sensing lockout relay (Cycle-LOC™ device) that locks off the compressor(s) when any safety device is activated (low or high-pressure switches, or compressor internal overload). If any compressor safety device opens, the compressor will stop. High and low-pressure switches and compressor motor overload protectors will reset automatically when the condition which caused the device to trip has dropped below the reset condition. To reset the Cycle-LOC control device, manually turn the control power OFF, then back ON.

# Typical piping and wiring



# Application data



## Location

For best results, unit must be properly located and installed. Selected location should not be adjacent to an acoustically sensitive space; for example, a conference room or executive office. The best location is in mechanical rooms near areas like elevators, restrooms, stairways, or similar spaces. The mechanical room should use construction methods which will help isolate the transmission of acoustical energy.

Since these units typically use large quantities of ducted condenser air, select a location with the best access to an outside window or wall to accommodate condenser air louver. Locate the unit as close to the wall opening as possible, but allow space for return air inlet and access to the evaporator and condenser coil for cleaning. Units on the same floor should have a minimum of 6 ft between units to prevent recirculation of condenser air. Units floor-to-floor should have a minimum of 10 ft between units to prevent recirculation. Units should not be located with several units pulling condenser air from a small space between buildings, where air may be recirculated. Recirculation of condenser air will result in increased head pressure which may cause units to trip on high pressure.

There are several methods for applying 50XCA units in different space applications. See page 35 for recommended equipment room applications and locations of key components.

## Moving units into existing buildings

The 50XCA06-14 units are designed to pass through most 36-in. door openings. The filter rack may also be removed.

## Unit isolation

Unit compressors are internally isolated and the compressor compartment is lined with acoustical insulation. If additional vibration isolation is desired, rubber in-shear pads are recommended under the four corners of the unit. Spring isolation is not recommended. All duct connections to the unit should be made with flexible connections to prevent any transmission of vibration to the ductwork.

## Evaporator ductwork

Supply duct should be properly supported and the aspect ratio as close to square as possible. Duct should be sized for a maximum of 2000 fpm velocity in areas outside the equipment room. The duct should be lined with acoustical insulation for a minimum of 10 ft beyond the equipment room. A flexible duct connection should be used on the connection to the unit to prevent transmission of any unit vibrations into the duct.

Return duct may be attached to the unit, but is not necessary. The return to the unit should prevent line of sight visibility to the space. Insulated return duct is also recommended for acoustically sensitive spaces. Maximum velocity should not exceed 1000 fpm over occupied spaces. Adequate return area is essential for proper operation.

## Condenser ductwork

Condenser supply and discharge air ducts should be as short and straight as possible. Cross-sectional area of the inlet and discharge should never be less than the face area

of the unit openings. When bends must be made, they should be as gradual as space limitations will allow. If the unit will be operated in cold outdoor weather, or if dampers are not provided at the louver, then the condenser ducts should be insulated to prevent condensation.

Design of the louver used for the inlet and discharge of the condenser airflow is critical to preventing recirculation of air and high pressure tips. The louver blades must be heavy enough to prevent unit airflow from drawing them together. Louver blades should be a minimum of 18 gage, and widths over 30 in. should have stiffeners. The inlet louver should not have a flange and the discharge louver should have a flange which directs the air away from the inlet. The use of a deflector, in conjunction with the condenser air discharge, is also recommended.

## Piping traps

All 50XCA units have a drain for the condensate from the evaporator coil. The condensate trap should have a depth adequate to allow 2 in. of water in the trap with the unit running. Provide a clean-out on the trap and vent and pitch the trap for proper drainage.

## Controls

All units require a room-mounted 24-v thermostat to complete the control system. Carrier has several versions of thermostats to meet a wide range of job conditions, including fully programmable and light-activated versions.

## Operational limits

**Airflow** — 300 to 500 cfm per ton

**Air temperature to evaporator:**

*Cooling*

Maximum 90 F

Minimum 67 F

## Condenser

*Nominal airflow* 350 cfm per ton,

Range: 300 to 500 cfm per ton

*Condenser air temperature*

Maximum 115 F

Minimum without low ambient 55 F

Minimum with low ambient 0° F

## Sound considerations

All units are acoustically insulated. When installed in or near areas requiring additional sound attenuation:

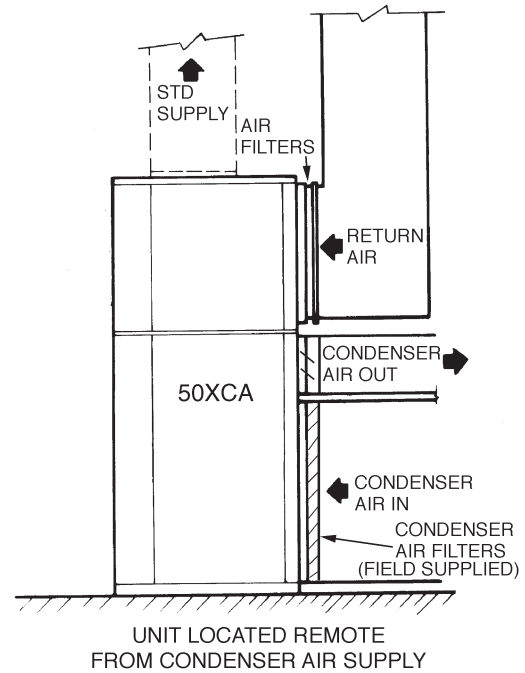
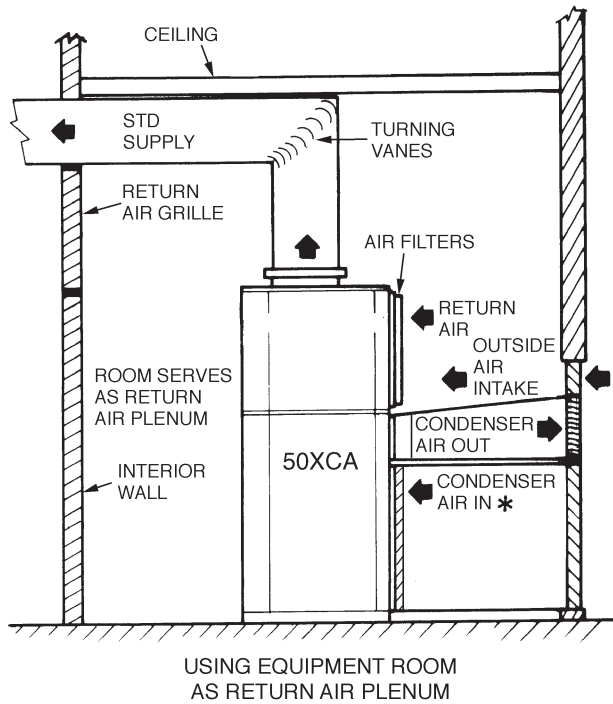
- Locate unit in equipment room or closet
- Use acoustic lining in ductwork
- Provide square duct elbows with acoustic lining and turning vanes
- Locate the first supply outlet no less than 10 ft from a lined elbow
- If unit is located in the conditioned space, return air opening from the space should be a lined elbow or equivalent
- For critical applications, use packaged sound attenuators or duct silencers. Sound attenuation may be used on both evaporator air and condenser air.

## Setting condenser fan speed

The 50XCA condenser has a centrifugal blower and a variable pitch drive which allow adjusting the condenser airflow to match the static from the louvers, ductwork,

filters, and sound traps (if used). It is best to adjust the fan to the nominal airflow and the rpm which will achieve this performance. Excess airflow and rpm will make units noisier.

### TYPICAL UNIT LOCATION



\*Provide access to clean condenser coil.

NOTE: Refer to Installation Instructions for detailed louver information.

## Indoor Self-Contained Air-Cooled Unit Constant Volume Application

### HVAC Guide Specifications

Size Range: **5 to 12 Tons**

Carrier Model Number: **50XCA**

#### Part 1 — General

##### 1.01 SYSTEM DESCRIPTION

Indoor packaged vertical air-cooled cooling unit using hermetic scroll compressors and built-in condenser fan for cooling duty. Unit shall discharge supply air vertically or horizontally and condenser air horizontally as shown on contract drawings.

##### 1.02 QUALITY ASSURANCE

- A. Units shall be rated in accordance with AHRI (Air-Conditioning, Heating, and Refrigeration Unit) Standard 340/360, latest edition, as appropriate.
- B. Unit shall be designed to conform to ANSI/ASHRAE (American National Standards Institute/American Society of Heating, Refrigerating, and Air-Conditioning Engineers) 15, latest revision safety code, and UL (Underwriters Laboratories) Standard 1995, and shall be UL listed under both American and Canadian Standards.
- C. The management system governing the manufacture of this product is ISO 9001:2008 certified.
- D. Insulation, adhesive, and liner system shall meet NFPA (National Fire Protection Association) 90A requirements for flame spread and smoke generation.

##### 1.03 DELIVERY, STORAGE, AND HANDLING

Units shall be stored and handled according to manufacturer's recommendations.

#### Part 2 — Products

##### 2.01 EQUIPMENT

###### A. General:

Factory-assembled, single-piece, air-cooled cooling unit. Unit shall consist of scroll refrigerant compressor(s), indoor fan section with belt drive centrifugal fans and motor, evaporator coil section with direct expansion coil and drain pan, air-cooled condenser fan section with belt drive centrifugal fans and motor, factory wiring, piping and controls, and a system charge of refrigerant (R-410A). Unit may be used with or without return ductwork.

###### B. Unit Cabinet:

1. Cabinet shall be constructed of minimum 18 gage zinc surface alloyed steel with a baked enamel finish. Unit shall be capable of withstanding ASTM (American Society for Testing and Materials) B117 500-hour salt spray test.
2. Cabinet shall be fully insulated.
3. Configurations include vertical or horizontal discharge with a ducted or louvered return.
4. Unit drain pan shall have positive double slope to the drain to prevent standing water in pan.

5. Panels for servicing shall be easily removable.

###### C. Evaporator Fan Section:

1. Fans shall be double inlet, centrifugal wheel with forward curved blades designed for continuous operation. Fan wheel and scroll shall be constructed of steel with corrosion resistant finish, and statically and dynamically balanced.

Motor shall be 3-phase high-efficiency NEMA (National Electrical Manufacturers Association) frame ODP (open drip proof) of the same voltage as the compressor(s). Motor shall have permanently lubricated ball bearings.

###### D. Compressor:

Hermetic scroll compressors shall be internally protected with high pressure relief. Compressors shall be factory mounted with vibration isolators.

###### E. Coils:

1. Evaporator and condenser coils shall have aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed. Tube sheet openings shall be swaged to prevent tube wear. Coils shall be face split design for sizes 06 and 08, and full face for sizes 12 and 14.
2. Direct expansion coil shall be designed and tested in accordance with ANSI/ASHRAE 15, latest revision safety code.
3. Coil and drain pan shall be accessible through service access panels for cleaning.

###### F. Filter:

Filter frame shall be installed upstream of the cooling coil, designed to take a 1-in. or 2-in. thick cleanable or disposable type commercially available filter. Filters shall be accessible from either side of the unit and filter rack shall be usable with ducted or free return. Disposable filters will be supplied with the unit. Four-in. filter racks are available.

###### G. Condenser:

1. Fans shall be double inlet, centrifugal wheel with forward curved blades designed for continuous operation. Fan wheel and scroll shall be constructed of steel with corrosion resistant finish, and statically and dynamically balanced.
2. Fan shall be belt drive with an adjustable pitch motor pulley and fixed pitch fan pulley, with permanently lubricated, ball-bearing type bearings.
3. Motor shall be 3-phase high-efficiency NEMA frame ODP (open drip proof) of the same voltage as the compressor(s). Motor shall have permanently lubricated ball bearings.

###### H. Operating Characteristics:

1. Unit shall be capable of providing a constant volume of conditioned air at a specified static pressure within the unit's normal operating range. Unit shall have dual-stage cooling capacity control on all units sizes 12 to 14. All units have a single, common refrigeration circuit - sizes 12 and 14 have 2 compressors on a

single circuit. Unit shall be capable of starting and operating at up to 115 F outdoor ambient.

2. Units shall be able to operate down to 0° F when equipped with low ambient option.

I. Controls and Safeties:

1. Units shall be furnished with a control terminal block for connection of low voltage controls and thermostats.
2. Unit shall require a room-mounted thermostat mounted in the conditioned space. Thermostat shall be digital type. Thermostat shall control fan operation and be capable of turning unit on and off.
3. Units shall have the following factory-installed safeties:
  - a. High and low-pressure switches.
  - b. Motor and compressor overtemperature.
  - c. Current lockout.
  - d. Inherent automatic fan motor overload.

J. Electrical Requirements:

All electrical power wiring shall enter the unit cabinet at a single location. Control circuit is 24-v, suitable for a field-supplied 24-v thermostat.

K. Refrigerant Components:

Refrigerant circuit components include thermal expansion valves, distributor with nozzle, filter driers, and charging service valves on each circuit. Suction line shall have a refrigerant loop to prevent refrigerant drain back to the compressor. Suction piping shall be insulated with closed cell piping insulation.

L. Special Features:

1. Supply Air Plenum:

Plenum shall be provided to permit free-blow horizontal air distribution with movable vanes to adjust airflow in horizontal and vertical direction. Plenum is field installed and shall be fully insulated.

2. Heating Coil:

Field-installed hot water coil shall be two rows with copper tube aluminum fins and a powder coated steel casing. Fins shall be bonded to tubes by mechanical expansion. Coil to be leak tested at 400 psig air pressure submerged in water and charged with dry air.

3. Steam coil:

Field-installed steam heating coil shall be of a steam distributing tube type, aluminum fin coil to be mounted external to the unit.

4. Evaporator and Condenser Coil Coating:

The coating shall be continuous and cover the whole fin surface, tubing, manifolds, and feeder lines if applicable. For evaporator coils with thermostatic expansion valve assemblies, valve body, head, and bulb shall be masked. A minimum of 2-in. shall be masked on all coil connection points. Expansion valve inlet piping less than 6-inches in total length, expansion valve distributor, and external equalizer line are not required to be coated.

5. Airside Economizer:

A field-installed airside economizer shall be available with integral controller.





