



FIRST CO.

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WWW.FIRSTCO.COM

# HHS-HH / HHSX / HHX PHHX / RHHX / CHHX

CHILLED WATER/ HOT WATER

2-PIPE WITH ELECTRIC HEAT

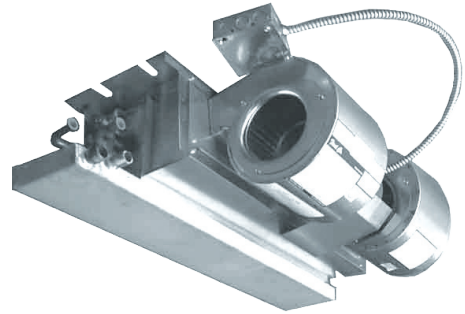
HORIZONTAL 300-1200 CFM

## ► HHS / HH SERIES PSC Motor

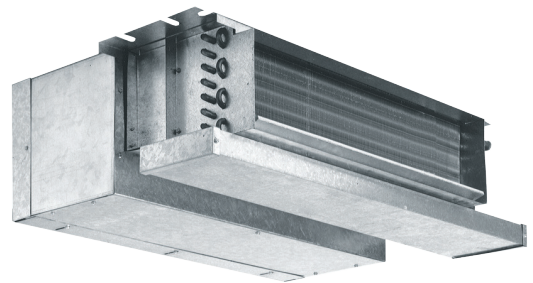
## ► HHSX / HHX SERIES ECM Motor

The ECM motor option includes 24V controls, a constant torque, permanent magnet, brushless DC motor, with 4 discrete speed taps that allow for high static applications and precise air balancing

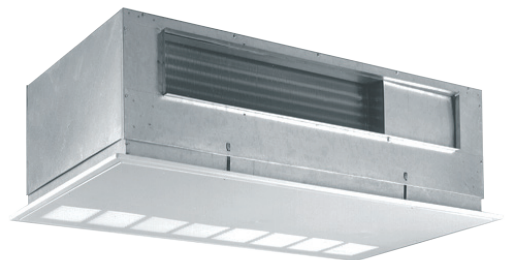
HIGH EFFICIENCY  
HIGH PERFORMANCE



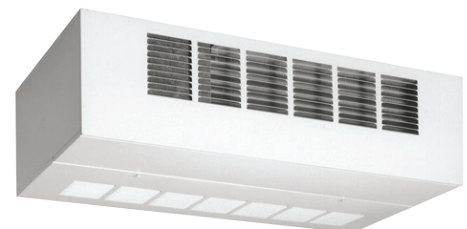
Ceiling Concealed



Ceiling Concealed with Plenum



Ceiling Recessed



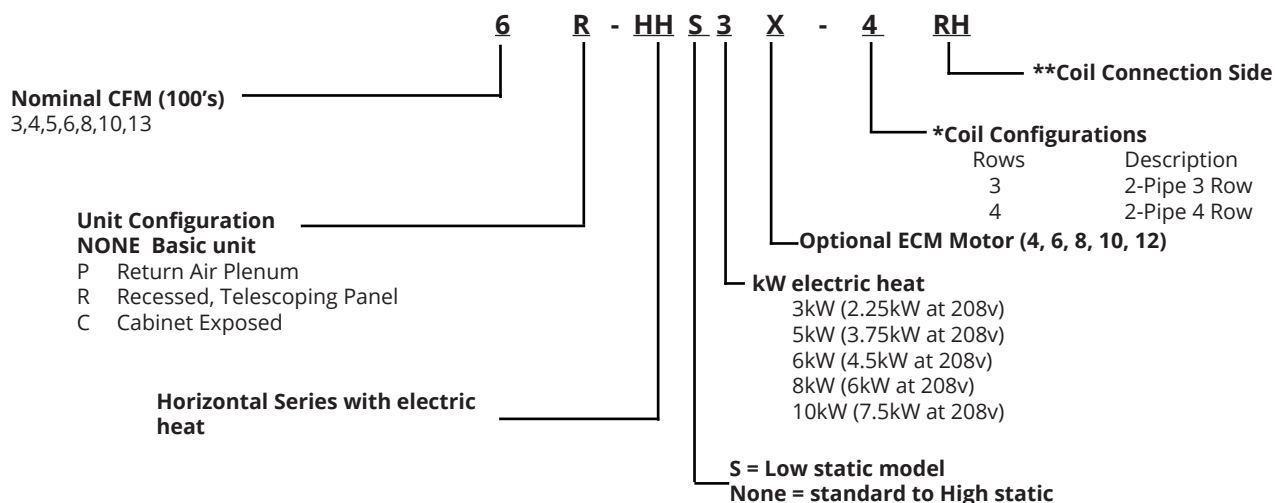
Ceiling Exposed



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## MODEL NOMENCLATURE



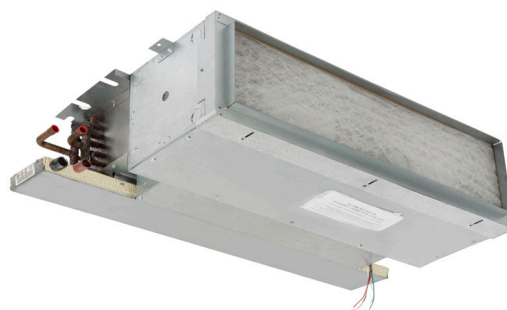
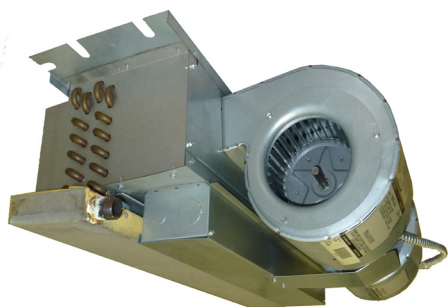
**Available Voltage (PSC Motors)**  
 208-230V/1/60  
 277V/1/60

**Available Voltage (ECM Motors)**  
 208/240V/1/60  
 277v/1/60

**\*\*Coil Connection Side**  
 RH Right Hand (default)  
 LH Left Hand  
 Hand connection is determined by  
 looking with airflow

# ECM MOTOR OPTION

*This new ECM motor option includes 24V controls, a constant torque, permanent magnet, brushless DC motor, with 4 discrete speed taps that allow for precise air balancing.*



## **\*HH(X) SERIES**

### *CEILING CONCEALED*

The \*HH series is designed for fully concealed applications. This 10" high space saving unit provides easy access for service and maintenance.

## **\*PHH(X) SERIES**

### *CEILING CONCEALED WITH PLENUM*

The \*PHH series is designed for fully concealed applications. This 10" high space saving unit provides easy access for service and maintenance.



## **\*RHH (X) SERIES**

### *CEILING RECESSED*

Includes adjustable hinged access/return panel with 1" TA fiber glass filter. The cabinet allows for a field mounted rear return duct connection by using a solid access panel.

## **\*CHH (X) SERIES**

### *CEILING EXPOSED*

Cabinet with an attractive baked powder finish. Cabinet includes stamped discharge opening and hinged bottom panel with 1" TA fiber glass filter.

*(X) Denotes with ECM motor*

## STANDARD FEATURES

### Basic Unit

All fan coils are manufactured with heavy gauge galvanized steel to resist corrosion. All models are approved for installation with "0" clearance to combustible material.

### Insulation

Plenums and cabinets are insulated with Tuf-Skin dual density fiber glass blanket insulation with an anti-microbial agent.

### Ceiling Panels

Hinged access/return panels are manufactured with heavy gauge galvanized steel with captive mounting screws and an attractive white baked powder finish.

### Condensate Pans

Positive sloped drain pans are galvanized steel, coated on the inside surface with insulation. Pan includes both primary and secondary drain connections.

### Return Air Plenums

Return air plenums are manufactured from galvanized steel insulated with dual density fiber glass blanket insulation and a 1" TA fiber glass filter.

### Coils

Constructed with seamless copper tubes and headers. The tubes are mechanically expanded into corrugated aluminum fin material for a permanent primary to secondary surface bond. Coils are tested under water at 450 PSI for operation at 300 PSI. Coils include manual air vents.

### Fan Wheels-Housing

The fan wheels are double width, double inlet (DWDI) forward curved, centrifugal type. Wheels are statically and dynamically balanced for smooth, quiet operation. The housing is constructed from heavy gauge galvanized steel with die-formed inlet cones.

### Motors

Standard motors are PSC, permanently lubricated type with internal thermal overload protection.

### Options

Factory mounted options include ECM motors stainless steel drain pans, foil faced cabinet insulation, Multi-24 3-speed 24V control, valve packages, thermostats, aqua stats, service switches. 120V, 208V/230V, 277V, 60hz

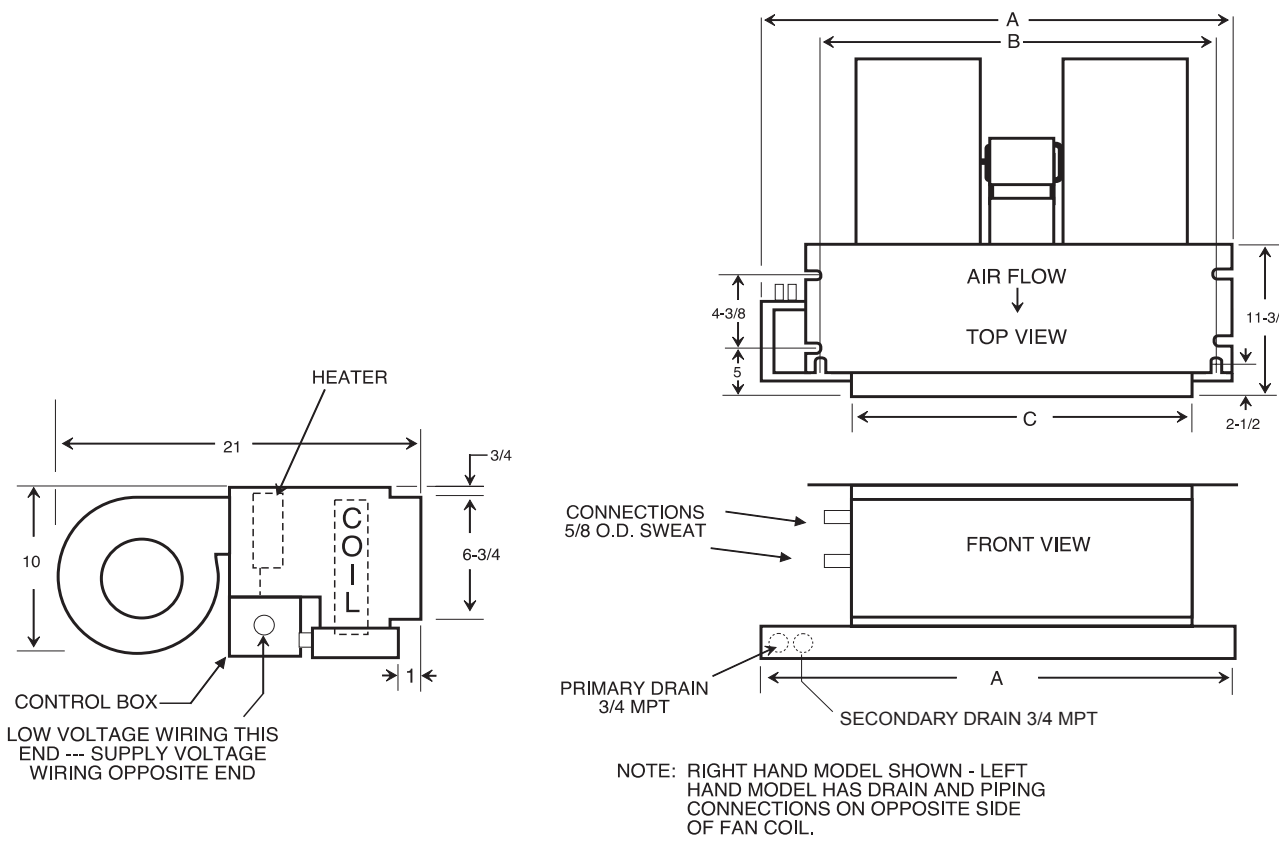


**MERV 8  
Louvered Access Panels**  
See page 29



# \*HH (X) Series

## CEILING RECESSED



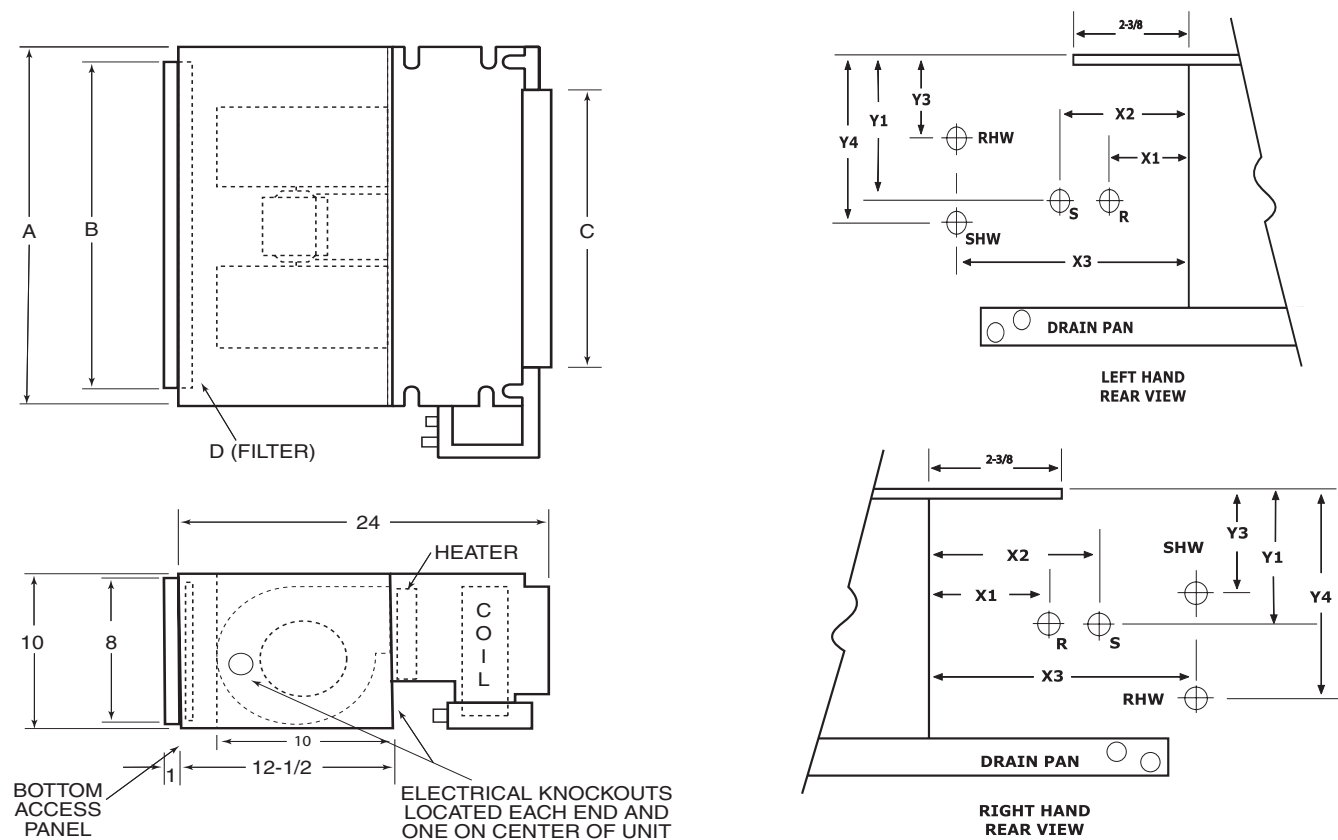
| PHYSICAL DIMENSIONS (LESS PLENUM)      |    |          |    |                  |                   |
|----------------------------------------|----|----------|----|------------------|-------------------|
| MODEL                                  | A  | B        | C  | NUMBER OF MOTORS | NUMBER OF BLOWERS |
| 3HHS                                   | 25 | 19-11/16 | 15 | 1                | 1                 |
| 4HHS(X)<br>6HHS(X)<br>6HH(X)<br>8HH(X) | 40 | 34-11/16 | 30 | 1                | 2                 |
| 10HH(X)                                | 46 | 40-11/16 | 36 | 1                | 2                 |
| 12HH(X)                                | 52 | 46-11/16 | 42 | 1                | 2                 |



In keeping with its policy of continuous progress and product improvement, First Operations reserves the right to make changes without notice. Maintenance for all First Co. products is available under "Product Maintenance" at [www.firstco.com](http://www.firstco.com).

# \*PHH (X) Series

## CEILING RECESSED



| PLENUM DATA                                |    |    |    |             |
|--------------------------------------------|----|----|----|-------------|
| MODEL                                      | A  | B  | C  | D (FILTER)  |
| 3PHHS                                      | 20 | 18 | 15 | 10 X 20 X 1 |
| 4PHHS(X)<br>6PHHS(X)<br>6PHH(X)<br>8PHH(X) | 34 | 32 | 30 | 10 X 34 X 1 |
| 10PHH(X)                                   | 40 | 38 | 36 | 10 X 40 X 1 |
| 12PHH(X)                                   | 46 | 44 | 42 | 10 X 46 X 1 |

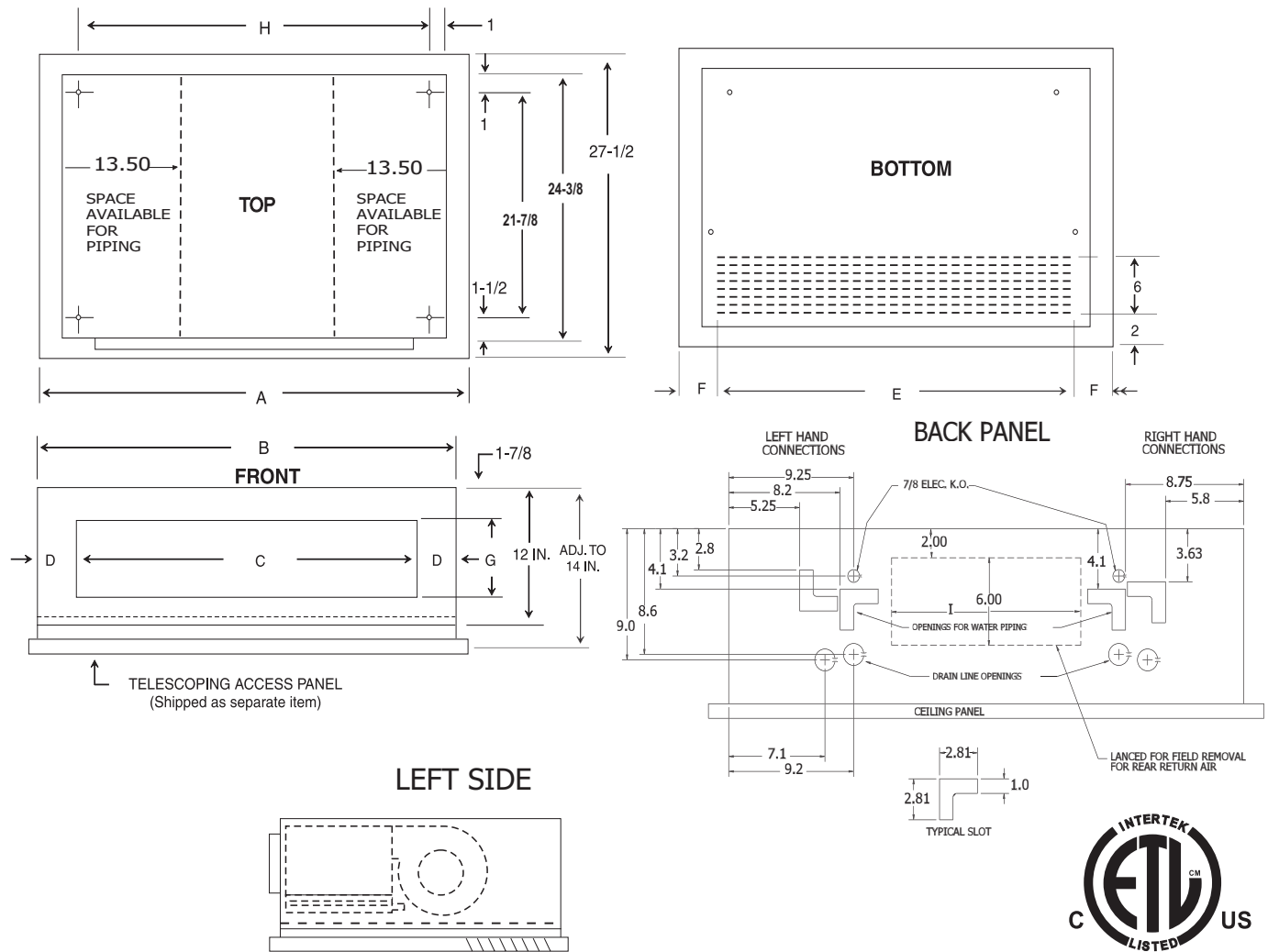
**NOTE:** 1. Return plenums are insulated  
 2. All plenums include throw away filter



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# \*RHH(X) Series

## CEILING RECESSED



### NOTES:

- 1) ALL DIMENSIONS IN INCHES.
- 2) COIL CONNECTION TOLERANCE  $\pm 1/4"$ .
- 3) LEFT HAND UNIT SHOWN, RIGHT HAND MIRROR IMAGE.  
(HAND IS DETERMINED BY FACING THE BLOWER END)

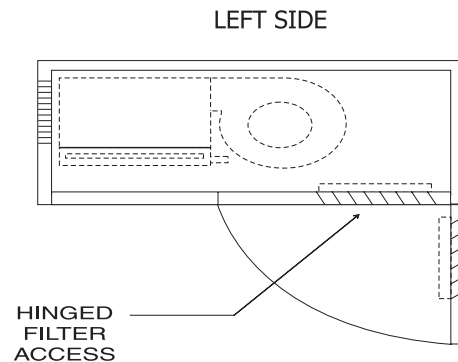
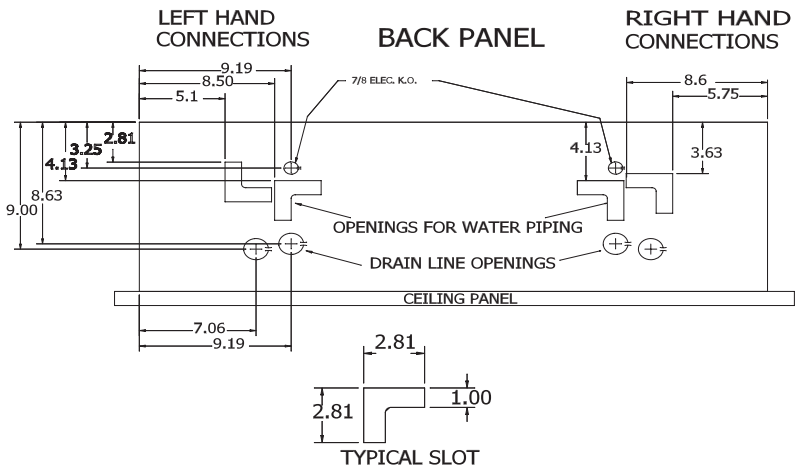
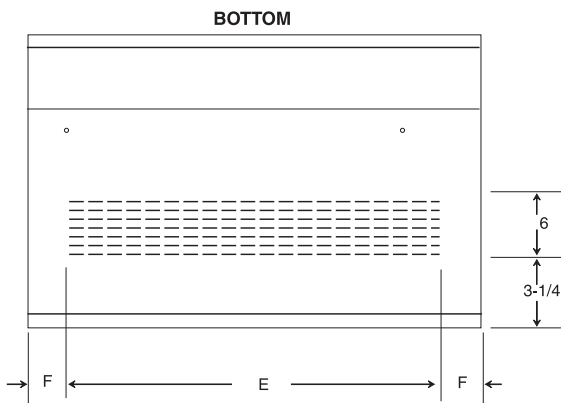
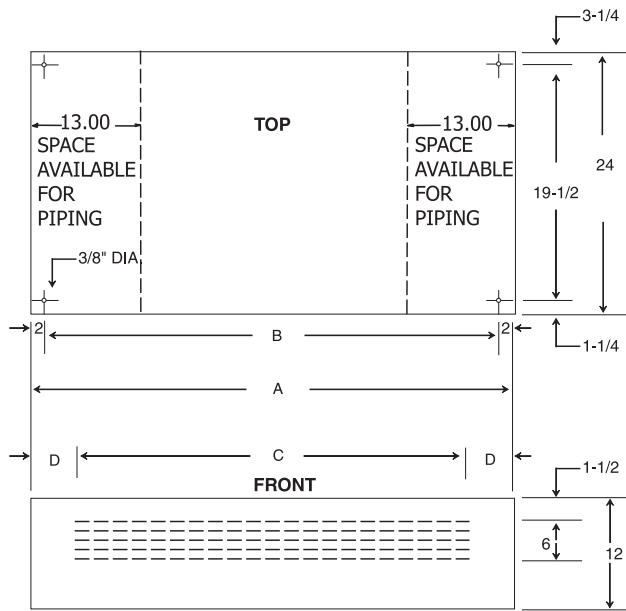
### NOTES:

1. Telescoping panel allows the cabinet to be installed to within 2 inches of the ceiling line. The adjustable panel frame ensures a flush installation.
2. Louvered access panel (bottom return) is standard. Specify solid panel if ducted rear return air is required.

| GENERAL DIMENSIONS             |    |        |    |       |        |        |       |    |    |                                   |                                |                    |
|--------------------------------|----|--------|----|-------|--------|--------|-------|----|----|-----------------------------------|--------------------------------|--------------------|
| MODEL                          | A  | B      | C  | D     | E      | F      | G     | H  | I  | TELESCOPING LOUVERED ACCESS PANEL | TELESCOPING SOLID ACCESS PANEL | FILTER SIZE (INCL) |
| 3RHHS                          | 41 | 38-1/8 | 29 | 4-1/2 | 36-5/8 | 2-3/16 | 5-1/2 | 36 | 14 | 968-1                             | 968-1S                         | 10 X 37            |
| 4RHHS(X)                       | 51 | 48-1/8 | 39 | 4-1/2 | 47-1/4 | 1-7/8  | 5-1/2 | 46 | 24 | 968-3                             | 968-3S                         | 10 X 47.5          |
| 6RHHS(X)<br>6RHH(X)<br>8RHH(X) | 51 | 48-1/8 | 39 | 4-1/2 | 47-1/4 | 1-7/8  | 5-1/2 | 46 | 24 | 968-3                             | 968-3S                         | 10 X 47.5          |
| 10RHH(X)                       | 57 | 54-1/8 | 45 | 4-1/2 | 52-1/2 | 2-1/4  | 5-1/2 | 52 | 30 | 968-4                             | 968-4S                         | 10 X 53            |
| 12RHH(X)                       | 63 | 60-1/8 | 51 | 4-1/2 | 57-7/8 | 2-9/16 | 5-1/2 | 58 | 36 | 968-5                             | 968-5S                         | 10 X 59            |

# \*CHH(X) Series

## CEILING EXPOSED



### NOTES:

- 1) ALL DIMENSIONS IN INCHES.
- 2) COIL CONNECTION TOLERANCE  $\pm 1/4"$ .
- 3) LEFT HAND UNIT SHOWN, RIGHT HAND MIRROR IMAGE.  
(HAND IS DETERMINED BY FACING THE BLOWER END)

### NOTES:

1. Side panels are removable for easier valve access.
2. Plastic thumb screws are provided for easy filter access.

| GENERAL DIMENSIONS |    |    |        |       |        |       |                    |                          |
|--------------------|----|----|--------|-------|--------|-------|--------------------|--------------------------|
| MODEL              | A  | B  | C      | D     | E      | F     | FILTER SIZE (INCL) | CONNECTIONS PRIMARY O.D. |
| 3CHHS(X)           | 33 | 29 | 21     | 6     | 25-1/2 | 3-1/2 | 10 X 30            | 5/8"                     |
| 4CHHS(X)           | 48 | 44 | 37     | 5-1/2 | 41-1/2 | 3-1/2 | 10 X 46            |                          |
| 6CHHS(X)           | 48 | 44 | 37     | 5-1/2 | 41-1/2 | 3-1/2 | 10 X 46            |                          |
| 6CHH(X)            |    |    |        |       |        |       |                    |                          |
| 8CHH(X)            | 48 | 44 | 37     | 5-1/2 | 41-1/2 | 3-1/2 | 10 X 46            |                          |
| 10CHH(X)           | 54 | 50 | 42-1/2 | 5-3/4 | 46-1/2 | 3-1/2 | 10 X 53            |                          |
| 12CHH(X)           | 60 | 56 | 48     | 6     | 52     | 4     | 10 X 59            |                          |

# COOLING CAPACITIES

## Product Specifications

Horizontal Fan Coils  
2 Pipe

| COOLING / HEATING CAPACITIES |           |          |     |                |                   |                  |                            |
|------------------------------|-----------|----------|-----|----------------|-------------------|------------------|----------------------------|
| MODEL                        | COIL ROWS | NOM. CFM | GPM | P.D. (FT. WTR) | TOTAL (2) COOLING | SENSIBLE COOLING | WATER (3) HEATING CAPACITY |
| 3HHS                         | 3         | 270      | 1.0 | 1.4            | 6.1               | 5.1              | 18.9                       |
|                              |           |          | 2.0 | 5.0            | 8.1               | 5.9              | 21.0                       |
|                              |           |          | 3.0 | 10.5           | 8.9               | 6.2              | 21.8                       |
|                              | 4         | 215      | 1.0 | 1.8            | 6.7               | 5.1              | 18.8                       |
|                              |           |          | 2.0 | 6.3            | 8.4               | 5.7              | 20.5                       |
|                              |           |          | 3.0 | 13.1           | 9.0               | 6.0              | 21.1                       |
| 4HHS                         | 3         | 410      | 1.5 | 4.2            | 11.1              | 8.6              | 32.2                       |
|                              |           |          | 2.0 | 7.0            | 12.5              | 9.2              | 33.6                       |
|                              |           |          | 2.5 | 10.5           | 13.5              | 9.5              | 34.5                       |
|                              | 4         | 390      | 1.5 | 5.8            | 12.5              | 9.3              | 34.9                       |
|                              |           |          | 2.0 | 9.7            | 14.1              | 9.9              | 36.4                       |
|                              |           |          | 2.5 | 14.5           | 15.1              | 10.3             | 37.4                       |
| 6HHS                         | 3         | 535      | 3.0 | 5.7            | 15.3              | 11.3             | 41.1                       |
|                              |           |          | 4.0 | 9.5            | 16.6              | 11.8             | 42.4                       |
|                              |           |          | 5.0 | 14.2           | 17.5              | 12.1             | 43.3                       |
|                              | 4         | 490      | 3.0 | 3.9            | 16.5              | 11.9             | 43.5                       |
|                              |           |          | 4.0 | 6.5            | 18.0              | 12.5             | 45.0                       |
|                              |           |          | 5.0 | 9.7            | 18.9              | 12.8             | 46.0                       |
| 6HH                          | 3         | 600      | 3.0 | 5.7            | 16.3              | 12.3             | 44.2                       |
|                              |           |          | 4.0 | 9.5            | 17.7              | 12.8             | 45.7                       |
|                              |           |          | 5.0 | 14.2           | 18.7              | 13.1             | 46.7                       |
|                              | 4         | 600      | 3.0 | 3.9            | 18.2              | 13.7             | 50.1                       |
|                              |           |          | 4.0 | 6.5            | 20.1              | 14.4             | 52.0                       |
|                              |           |          | 5.0 | 9.7            | 21.3              | 14.8             | 53.2                       |
| 8HH                          | 3         | 800      | 4.0 | 5.4            | 19.6              | 15.0             | 54.2                       |
|                              |           |          | 5.0 | 8.0            | 21.1              | 15.6             | 55.8                       |
|                              |           |          | 6.0 | 11.0           | 22.1              | 15.9             | 56.9                       |
|                              | 4         | 800      | 4.0 | 6.5            | 23.2              | 17.4             | 63.4                       |
|                              |           |          | 5.0 | 9.6            | 24.9              | 18.0             | 65.3                       |
|                              |           |          | 6.0 | 13.3           | 26.2              | 18.5             | 66.5                       |
| 10HH                         | 3         | 1000     | 4.0 | 5.5            | 22.9              | 18.1             | 65.5                       |
|                              |           |          | 5.0 | 8.4            | 24.9              | 18.8             | 67.7                       |
|                              |           |          | 6.0 | 11.7           | 26.3              | 19.3             | 69.2                       |
|                              | 4         | 1000     | 4.0 | 4.3            | 28.6              | 21.5             | 78.3                       |
|                              |           |          | 5.0 | 6.5            | 30.3              | 22.1             | 80.2                       |
|                              |           |          | 6.0 | 9.1            | 31.6              | 22.6             | 81.6                       |
| 12HH                         | 3         | 1200     | 6.0 | 7.9            | 28.6              | 22.0             | 79.4                       |
|                              |           |          | 7.0 | 10.5           | 30.0              | 22.5             | 81.0                       |
|                              |           |          | 8.0 | 13.3           | 31.2              | 23.0             | 82.3                       |
|                              | 4         | 1200     | 6.0 | 10.0           | 33.9              | 25.6             | 93.2                       |
|                              |           |          | 7.0 | 13.1           | 35.6              | 26.2             | 95.1                       |
|                              |           |          | 8.0 | 16.5           | 37.0              | 26.8             | 96.6                       |

(1) Cooling at 80DB/67WB, 45°F EWT.  
(2) Heating at 70DB/180°F EWT.

# COOLING CAPACITIES

## Product Specifications

Horizontal Fan Coils  
2 Pipe

| AIR STANDARD APPROVED RATINGS |       |      |     |                   |                           |      |                           |                    |
|-------------------------------|-------|------|-----|-------------------|---------------------------|------|---------------------------|--------------------|
| MODEL                         | COIL  | CFM  | GPM | P.D.<br>(FT.WTR.) | COOLING<br>(1000<br>BTUH) |      | POWER<br>INPUT<br>(WATTS) | TYPE<br>MO-<br>TOR |
|                               |       |      |     |                   | TH                        | SH   |                           |                    |
| 3HHS(*)-230-3                 | 3 ROW | 280  | 1.5 | 3.3               | 7.5                       | 4.9  | 130                       | SP                 |
| 4HHS(*)-230-3                 |       | 410  | 2.6 | 12.0              | 12.9                      | 8.9  |                           | PSC                |
| 4HHX(*)-230-3                 |       |      |     |                   |                           |      |                           | ECM                |
| 6HHS(*)-230-3                 |       | 590  | 3.1 | 7.0               | 15.4                      | 10.5 |                           | PSC                |
| 6HH(*)-230-3                  |       | 790  | 4.0 | 10.5              | 19.8                      | 14.2 |                           | PSC                |
| 6HHX(*)-230-3                 |       |      |     |                   |                           |      |                           | ECM                |
| 8HH(*)-230-3                  |       | 950  | 4.2 | 6.5               | 21.2                      | 16.3 | 320                       | PSC                |
| 8HHX(*)-230-3                 |       |      |     |                   |                           |      |                           | ECM                |
| 10HH(*)-230-3                 |       | 1170 | 5.2 | 10.0              | 26.2                      | 20.2 | 398                       | PSC                |
| 10HHX(*)-230-3                |       |      |     |                   |                           |      |                           | ECM                |
| 12HH(*)-230-3                 |       | 1460 | 6.4 | 9.2               | 32.1                      | 24.9 | 490                       | PSC                |
| 12HHX(*)-230-3                |       |      |     |                   |                           |      |                           | ECM                |
| 3HHS(*)-230-4                 | 4 ROW | 220  | 1.7 | 5.0               | 8.5                       | 5.1  | 120                       | SP                 |
| 4HHS(*)-230-4                 |       | 400  | 3.2 | 24.0              | 15.8                      | 9.8  |                           | PSC                |
| 4HHX(*)-230-4                 |       |      |     |                   |                           |      |                           | ECM                |
| 6HHS(*)-230-4                 |       | 550  | 3.3 | 6.0               | 16.5                      | 11.0 |                           | PSC                |
| 6HH(*)-230-4                  |       | 770  | 4.5 | 9.0               | 22.5                      | 15.5 |                           | PSC                |
| 6HHX(*)-230-4                 |       |      |     |                   |                           |      |                           | ECM                |
| 8HH(*)-230-4                  |       | 920  | 5.0 | 10.0              | 24.9                      | 17.5 | 310                       | PSC                |
| 8HHX(*)-230-4                 |       |      |     |                   |                           |      |                           | ECM                |
| 10HH(*)-230-4                 |       | 1160 | 6.2 | 10.5              | 30.9                      | 22.1 | 390                       | PSC                |
| 10HH(*)-230-4                 |       |      |     |                   |                           |      |                           | ECM                |
| 12HH(*)-230-4                 |       | 1440 | 8.4 | 18.4              | 42.2                      | 30.7 | 485                       | PSC                |
| 12HHX(*)-230-4                |       |      |     |                   |                           |      |                           | ECM                |

### NOTE:

Ratings based on high fan speed,  
standard air at dry coil operation, 10  
°F water temp. rise, ent. air 80DB,  
67WB entering water at 45°F.

Rated in accordance with ARI Stan-  
dard 440.

**SH** - sensible heat

**TH** - total heat

**Sp** - shaded pole motor

**PSC** - perm. split capacitor

ECM - Electrily commutated motor

Power input is for motor only

# \*HH (PSC) Series

| ELECTRICAL DATA (240V) |          |          |            |           |             |                |                          |      |                                    |      |
|------------------------|----------|----------|------------|-----------|-------------|----------------|--------------------------|------|------------------------------------|------|
| UNIT MODEL             | NOM. CFM | Heat     |            |           |             | TOTAL AMPS (1) | MIN. CIR. AMPACITY (MCA) |      | MAX. OVERCURRENT. PROTECTION (MOP) |      |
|                        |          | kW @240v | BTUH@ 240v | kW @ 208V | BTUH @ 208V |                | 208V                     | 240V | 208V                               | 240V |
| 3HHS-2                 | 300      | 2        | 6,820      | 1.5       | 5,120       | 9.3            | 11                       | 12   | 15                                 | 15   |
| -3                     |          | 3        | 10,230     | 2.3       | 7,680       | 13.5           | 15                       | 17   | 15                                 | 20   |
| -4                     |          | 4        | 13,640     | 3.0       | 10,240      | 17.6           | 20                       | 23   | 20                                 | 25   |
| -5                     |          | 5        | 17,050     | 3.8       | 12,800      | 21.8           | 24                       | 28   | 25                                 | 30   |
| 4HHS-3                 | 400      | 3        | 10,230     | 2.3       | 7,680       | 13.3           | 15                       | 17   | 15                                 | 20   |
| -5                     |          | 5        | 17,050     | 3.8       | 12,800      | 21.6           | 24                       | 27   | 25                                 | 30   |
| -6                     |          | 6        | 20,460     | 4.5       | 15,360      | 25.8           | 28                       | 33   | 30                                 | 35   |
| 6HHS-3                 | 600      | 3        | 10,230     | 2.3       | 7,680       | 13.8           | 16                       | 18   | 20                                 | 20   |
| -5                     |          | 5        | 17,050     | 3.8       | 12,800      | 22.1           | 23                       | 28   | 25                                 | 30   |
| -6                     |          | 6        | 20,460     | 4.5       | 15,360      | 26.3           | 30                       | 34   | 30                                 | 35   |
| 6HH-3                  | 600      | 3        | 10,230     | 2.3       | 7,680       | 14.5           | 16                       | 20   | 20                                 | 20   |
| -4                     |          | 4        | 13,640     | 3.0       | 10,240      | 18.7           | 21                       | 24   | 25                                 | 25   |
| -5                     |          | 5        | 17,050     | 3.8       | 12,800      | 22.8           | 25                       | 30   | 25                                 | 30   |
| -6                     |          | 6        | 20,460     | 4.5       | 15,360      | 27             | 30                       | 35   | 30                                 | 35   |
| -8                     |          | 8        | 27,280     | 6.0       | 20,480      | 35.3           | 39                       | 47   | 40                                 | 50   |
| -10                    |          | 10       | 34,100     | 7.5       | 25,600      | 43.7           | 48                       | 55   | 50                                 | 60   |
| 8HH-3                  | 800      | 3        | 10,230     | 2.3       | 7,680       | 14.5           | 16                       | 20   | 20                                 | 20   |
| -4                     |          | 4        | 13,640     | 3.0       | 10,240      | 18.7           | 24                       | 21   | 25                                 | 25   |
| -5                     |          | 5        | 17,050     | 3.8       | 12,800      | 22.8           | 25                       | 30   | 25                                 | 30   |
| -6                     |          | 6        | 20,460     | 4.5       | 15,360      | 27             | 30                       | 35   | 30                                 | 35   |
| -8                     |          | 8        | 27,280     | 6.0       | 20,480      | 35.3           | 39                       | 47   | 40                                 | 50   |
| -10                    |          | 10       | 34,100     | 7.5       | 25,600      | 43.7           | 48                       | 55   | 50                                 | 60   |
| 10HH-3                 | 1000     | 3        | 10,230     | 2.3       | 7,680       | 14.5           | 16                       | 20   | 20                                 | 20   |
| -4                     |          | 4        | 13,640     | 3.0       | 10,240      | 18.7           | 21                       | 24   | 25                                 | 25   |
| -5                     |          | 5        | 17,050     | 3.8       | 12,800      | 22.8           | 25                       | 30   | 25                                 | 30   |
| -6                     |          | 6        | 20,460     | 4.5       | 15,360      | 27             | 30                       | 35   | 30                                 | 35   |
| -8                     |          | 8        | 27,280     | 6.0       | 20,480      | 35.3           | 39                       | 47   | 40                                 | 50   |
| -10                    |          | 10       | 34,100     | 7.5       | 25,600      | 43.7           | 48                       | 55   | 50                                 | 60   |
| 12HH-3                 | 1200     | 3        | 10,230     | 2.3       | 7,680       | 15.3           | 18                       | 20   | 20                                 | 20   |
| -5                     |          | 5        | 17,050     | 3.8       | 12,800      | 23.6           | 27                       | 30   | 30                                 | 30   |
| -6                     |          | 6        | 20,460     | 4.5       | 15,360      | 27.8           | 31                       | 35   | 35                                 | 35   |
| -8                     |          | 8        | 27,280     | 6.0       | 20,480      | 36.1           | 40                       | 46   | 40                                 | 50   |
| -10                    |          | 10       | 34,100     | 7.5       | 25,600      | 44.5           | 49                       | 56   | 50                                 | 60   |

(1) Includes motor and heaters (at 240V)

# \*HH (X) Series

| ELECTRICAL DATA ECM (240V) |     |          |           |             |           |             |                |                          |      |                                   |      |
|----------------------------|-----|----------|-----------|-------------|-----------|-------------|----------------|--------------------------|------|-----------------------------------|------|
| UNIT MODEL                 |     | NOM. CFM | HEAT      |             |           |             | TOTAL AMPS (1) | MIN. CIR. AMPACITY (MCA) |      | MAX. OVERCURRENT PROTECTION (MOP) |      |
|                            |     |          | KW @ 240V | BTUH @ 240V | KW @ 208V | BTUH @ 208V |                | 208V                     | 240V | 208V                              | 240V |
| 4HHSX                      | -2  | 400      | 2         | 6,820       | 1.5       | 5,120       | 9.7            | 11                       | 13   | 15                                | 15   |
|                            | -3  |          | 3         | 10,230      | 2.3       | 7,680       | 13.9           | 16                       | 18   | 20                                | 20   |
|                            | -4  |          | 4         | 13,640      | 3.0       | 10,240      | 18.1           | 20                       | 23   | 20                                | 25   |
|                            | -5  |          | 5         | 17,050      | 3.8       | 12,800      | 22.2           | 25                       | 28   | 25                                | 30   |
| 6HHSX                      | -3  | 600      | 3         | 10,230      | 2.3       | 7,680       | 13.9           | 16                       | 18   | 20                                | 20   |
|                            | -4  |          | 4         | 13,640      | 3.0       | 10,240      | 18.1           | 20                       | 23   | 20                                | 25   |
|                            | -5  |          | 5         | 17,050      | 3.8       | 12,800      | 22.2           | 25                       | 28   | 25                                | 30   |
|                            | -6  |          | 6         | 20,460      | 4.5       | 15,360      | 26.4           | 29                       | 33   | 30                                | 35   |
| 6HHX                       | -3  | 600      | 3         | 10,230      | 2.3       | 7,680       | 16.8           | 19                       | 21   | 20                                | 25   |
|                            | -4  |          | 4         | 13,640      | 3.0       | 10,240      | 21.0           | 24                       | 27   | 25                                | 30   |
|                            | -5  |          | 5         | 17,050      | 3.8       | 12,800      | 25.1           | 28                       | 32   | 30                                | 35   |
|                            | -6  |          | 6         | 20,460      | 4.5       | 15,360      | 29.3           | 33                       | 37   | 35                                | 40   |
|                            | -8  |          | 8         | 27,280      | 6.0       | 20,480      | 37.6           | 42                       | 47   | 50                                | 50   |
|                            | -10 |          | 10        | 34,100      | 7.5       | 25,600      | 46.0           | 51                       | 58   | 60                                | 60   |
| 8HHX                       | -3  | 800      | 3         | 10,230      | 2.3       | 7,680       | 16.8           | 19                       | 21   | 20                                | 25   |
|                            | -4  |          | 4         | 13,640      | 3.0       | 10,240      | 21.0           | 24                       | 27   | 25                                | 30   |
|                            | -5  |          | 5         | 17,050      | 3.8       | 12,800      | 25.1           | 28                       | 32   | 30                                | 35   |
|                            | -6  |          | 6         | 20,460      | 4.5       | 15,360      | 29.3           | 33                       | 37   | 35                                | 40   |
|                            | -8  |          | 8         | 27,280      | 6.0       | 20,480      | 37.6           | 42                       | 47   | 50                                | 50   |
|                            | -10 |          | 10        | 34,100      | 7.5       | 25,600      | 46.0           | 51                       | 58   | 60                                | 60   |
| 10HHX                      | -3  | 1000     | 3         | 10,230      | 2.3       | 7,680       | 16.8           | 19                       | 21   | 20                                | 25   |
|                            | -4  |          | 4         | 13,640      | 3.0       | 10,240      | 21.0           | 24                       | 27   | 25                                | 30   |
|                            | -5  |          | 5         | 17,050      | 3.8       | 12,800      | 25.1           | 28                       | 32   | 30                                | 35   |
|                            | -6  |          | 6         | 20,460      | 4.5       | 15,360      | 29.3           | 33                       | 37   | 35                                | 40   |
|                            | -8  |          | 8         | 27,280      | 6.0       | 20,480      | 37.6           | 42                       | 47   | 50                                | 50   |
|                            | -10 |          | 10        | 34,100      | 7.5       | 25,600      | 46.0           | 51                       | 58   | 60                                | 60   |
| 12HHX                      | -3  | 1200     | 3         | 10,230      | 2.3       | 7,680       | 16.8           | 19                       | 21   | 20                                | 25   |
|                            | -5  |          | 5         | 17,050      | 3.8       | 12,800      | 25.1           | 28                       | 32   | 30                                | 35   |
|                            | -6  |          | 6         | 20,460      | 4.5       | 15,360      | 29.3           | 33                       | 37   | 35                                | 40   |
|                            | -8  |          | 8         | 27,280      | 6.0       | 20,480      | 37.6           | 42                       | 47   | 50                                | 50   |
|                            | -10 |          | 10        | 34,100      | 7.5       | 25,600      | 46.0           | 51                       | 58   | 60                                | 60   |

(1) Includes motor and heaters (at 240V)

# \*HH (PSC) Series

| ELECTRICAL DATA ECM (277V) |         |          |           |             |           |             |                |                          |                                     |
|----------------------------|---------|----------|-----------|-------------|-----------|-------------|----------------|--------------------------|-------------------------------------|
| UNIT MODEL                 |         | NOM. CFM | HEAT      |             | MO-TOR HP | MO-TOR AMPS | TOTAL AMPS (1) | MIN. CIR. AMPACITY (MCA) | MAX. OVER-CURRENT PRO-TECTION (MOP) |
|                            |         |          | KW @ 277V | BTUH @ 277V |           |             |                | 277V                     | 277V                                |
| 4HHSX                      | -3-277  | 400      | 3         | 10,230      | 1/6       | 1.4         | 12.2           | 16                       | 20                                  |
|                            | -5-277  |          | 5         | 17,050      |           | 1.4         | 19.5           | 25                       | 25                                  |
|                            | -6-277  |          | 6         | 20,460      |           | 1.4         | 23.1           | 29                       | 30                                  |
| 6HHSX                      | -3-277  | 600      | 3         | 10,230      | 1/6       | 1.4         | 12.2           | 16                       | 20                                  |
|                            | -5-277  |          | 5         | 17,050      |           | 1.4         | 19.5           | 25                       | 25                                  |
|                            | -6-277  |          | 6         | 20,460      |           | 1.4         | 23.1           | 29                       | 30                                  |
| 6HHX                       | -3-277  | 600      | 3         | 10,230      | 1/2       | 3.6         | 14.4           | 18                       | 20                                  |
|                            | -4-277  |          | 4         | 13,640      |           | 3.6         | 18.0           | 23                       | 25                                  |
|                            | -5-277  |          | 5         | 17,050      |           | 3.6         | 21.7           | 28                       | 30                                  |
|                            | -6-277  |          | 6         | 20,460      |           | 3.6         | 25.3           | 32                       | 35                                  |
| 8HHX                       | -3-277  | 800      | 3         | 10,230      | 1/2       | 3.6         | 14.4           | 18                       | 20                                  |
|                            | -4-277  |          | 4         | 13,640      |           | 3.6         | 18.0           | 23                       | 25                                  |
|                            | -5-277  |          | 5         | 17,050      |           | 3.6         | 21.7           | 28                       | 30                                  |
|                            | -6-277  |          | 6         | 20,460      |           | 3.6         | 25.3           | 32                       | 35                                  |
|                            | -8-277  |          | 8         | 27,280      |           | 3.6         | 32.5           | 41                       | 45                                  |
|                            | -10-277 |          | 10        | 34,100      |           | 3.6         | 39.7           | 50                       | 50                                  |
| 10HHX                      | -3-277  | 1000     | 3         | 10,230      | 1/2       | 3.6         | 14.4           | 18                       | 20                                  |
|                            | -4-277  |          | 4         | 13,640      |           | 3.6         | 18.0           | 23                       | 25                                  |
|                            | -5-277  |          | 5         | 17,050      |           | 3.6         | 21.7           | 28                       | 30                                  |
|                            | -6-277  |          | 6         | 20,460      |           | 3.6         | 25.3           | 32                       | 35                                  |
|                            | -8-277  |          | 8         | 27,280      |           | 3.6         | 32.5           | 41                       | 45                                  |
|                            | -10-277 |          | 10        | 34,100      |           | 3.6         | 39.7           | 50                       | 50                                  |
| 12HHX                      | -3-277  | 1200     | 3         | 10,230      | 1/2       | 3.6         | 14.4           | 18                       | 20                                  |
|                            | -5-277  |          | 5         | 17,050      |           | 3.6         | 21.7           | 28                       | 30                                  |
|                            | -6-277  |          | 6         | 20,460      |           | 3.6         | 25.3           | 32                       | 35                                  |
|                            | -8-277  |          | 8         | 27,280      |           | 3.6         | 32.5           | 41                       | 45                                  |
|                            | -10-277 |          | 10        | 34,100      |           | 3.6         | 39.7           | 50                       | 50                                  |

(1) Includes motor and heaters

# \*HH (X) Series

| ELECTRICAL DATA (277V) |          |      |        |          |            |                |                          |                                    |
|------------------------|----------|------|--------|----------|------------|----------------|--------------------------|------------------------------------|
| UNIT MODEL             | NOM. CFM | Heat |        | MOTOR HP | MOTOR AMPS | TOTAL AMPS (1) | MIN. CIR. AMPACITY (MCA) | MAX. OVERCURRENT. PROTECTION (MOP) |
|                        |          | kW   | BTUH   |          |            |                | 277V                     | 277V                               |
| 3HHS-1-277             | 300      | 1    | 3,410  | 1/20     | 0.48       | 4.1            | 6                        | 15                                 |
| -2-277                 |          | 2    | 6,820  |          | 0.48       | 7.7            | 10                       | 15                                 |
| -3-277                 |          | 3    | 10,230 |          | 0.48       | 11.3           | 15                       | 15                                 |
| 4HHS-1-277             | 400      | 1    | 3,410  | 1/10     | 0.90       | 4.5            | 6                        | 15                                 |
| -2-277                 |          | 2    | 6,820  |          | 0.90       | 8.1            | 11                       | 15                                 |
| -3-277                 |          | 3    | 10,230 |          | 0.90       | 11.7           | 15                       | 15                                 |
| -4-277                 |          | 4    | 13,640 |          | 0.90       | 15.3           | 20                       | 20                                 |
| 4HHS-1-277             | 400      | 1    | 3,410  | 1/6      | 1.40       | 5.0            | 7                        | 15                                 |
| -2-277                 |          | 2    | 6,820  |          | 1.40       | 8.6            | 11                       | 15                                 |
| -3-277                 |          | 3    | 10,230 |          | 1.40       | 12.2           | 16                       | 20                                 |
| -4-277                 |          | 4    | 13,640 |          | 1.40       | 15.8           | 20                       | 20                                 |
| 6HHS-1-277             | 600      | 1    | 3,410  | 1/6      | 1.40       | 5.0            | 7                        | 15                                 |
| -2-277                 |          | 2    | 6,820  |          | 1.40       | 8.6            | 11                       | 15                                 |
| -3-277                 |          | 3    | 10,230 |          | 1.40       | 12.2           | 16                       | 20                                 |
| -4-277                 |          | 4    | 13,640 |          | 1.40       | 15.8           | 20                       | 20                                 |
| 6HH-1-277              | 600      | 1    | 3,410  | 1/2      | 3.60       | 7.2            | 10                       | 15                                 |
| -2-277                 |          | 2    | 6,820  |          | 3.60       | 10.8           | 14                       | 15                                 |
| -3-277                 |          | 3    | 10,230 |          | 3.60       | 14.4           | 19                       | 20                                 |
| -4-277                 |          | 4    | 13,640 |          | 3.60       | 18.0           | 23                       | 25                                 |
| -5-277                 |          | 5    | 17,050 |          | 3.60       | 21.7           | 28                       | 30                                 |
| -6-277                 |          | 6    | 20,460 |          | 3.60       | 25.3           | 32                       | 35                                 |
| 8HH-1-277              | 800      | 1    | 3,410  | 1/2      | 3.60       | 7.2            | 10                       | 15                                 |
| -2-277                 |          | 2    | 6,820  |          | 3.60       | 10.8           | 14                       | 15                                 |
| -3-277                 |          | 3    | 10,230 |          | 3.60       | 14.4           | 19                       | 20                                 |
| -4-277                 |          | 4    | 13,640 |          | 3.60       | 18.0           | 23                       | 25                                 |
| -5-277                 |          | 5    | 17,050 |          | 3.60       | 21.7           | 28                       | 30                                 |
| -6-277                 |          | 6    | 20,460 |          | 3.60       | 25.3           | 32                       | 35                                 |
| -8-277                 |          | 8    | 27,280 |          | 3.60       | 32.5           | 41                       | 45                                 |
| 10HH-2-277             | 1000     | 2    | 6,820  | 1/2      | 3.60       | 10.8           | 14                       | 15                                 |
| -3-277                 |          | 3    | 10,230 |          | 3.60       | 14.4           | 19                       | 20                                 |
| -4-277                 |          | 4    | 13,640 |          | 3.60       | 18.0           | 23                       | 25                                 |
| -5-277                 |          | 5    | 17,050 |          | 3.60       | 21.7           | 28                       | 30                                 |
| -6-277                 |          | 6    | 20,460 |          | 3.60       | 25.3           | 32                       | 35                                 |
| -8-277                 |          | 8    | 27,280 |          | 3.60       | 32.5           | 41                       | 45                                 |
| -10-277                |          | 10   | 34,100 |          | 3.60       | 39.7           | 50                       | 50                                 |
| 12HH-2-277             | 1200     | 2    | 6,820  | 1/2      | 3.60       | 10.8           | 14                       | 15                                 |
| -3-277                 |          | 3    | 10,230 |          | 3.60       | 14.4           | 19                       | 20                                 |
| -4-277                 |          | 4    | 13,640 |          | 3.60       | 18.0           | 23                       | 25                                 |
| -5-277                 |          | 5    | 17,050 |          | 3.60       | 21.7           | 28                       | 30                                 |
| -6-277                 |          | 6    | 20,460 |          | 3.60       | 25.3           | 32                       | 35                                 |
| -8-277                 |          | 8    | 27,280 |          | 3.60       | 32.5           | 41                       | 45                                 |
| -10-277                |          | 10   | 34,100 |          | 3.60       | 39.7           | 50                       | 50                                 |

# HH(X) 230 VOLT PSC

## BLOWER PERFORMANCE

| HH SERIES |      | CFM vs EXTERNAL STATIC PRESSURE (3 ROW) |                                            |      |      |      |      |      |      |      |
|-----------|------|-----------------------------------------|--------------------------------------------|------|------|------|------|------|------|------|
| MODEL     | H.P. | FAN SPEED                               | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |
|           |      |                                         | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 |
| 3HHS-3    | 1/30 | COOL                                    | 300                                        | 270  | 235  | 205  | ---  | ---  | ---  | ---  |
|           |      | HEAT                                    | 265                                        | 230  | 210  | 200  | ---  | ---  | ---  | ---  |
| 4HHS-3    | 1/15 | COOL                                    | 425                                        | 410  | 380  | 330  | ---  | ---  | ---  | ---  |
|           |      | HEAT                                    | 395                                        | 360  | 320  | 285  | ---  | ---  | ---  | ---  |
| 6HHS-3    | 1/12 | COOL                                    | 605                                        | 535  | 485  | 425  | ---  | ---  | ---  | ---  |
|           |      | HEAT                                    | 500                                        | 390  | 320  | 270  | ---  | ---  | ---  | ---  |
| 6HH-3     | 1/8  | COOL                                    | ---                                        | ---  | 805  | 770  | 735  | 700  | 665  | 625  |
|           |      | HEAT                                    | ---                                        | ---  | 700  | 970  | 640  | 610  | 580  | 550  |
| 8HH-3     | 1/4  | COOL                                    | ---                                        | ---  | 895  | 860  | 825  | 795  | 760  | 725  |
|           |      | HEAT                                    | ---                                        | ---  | 775  | 750  | 720  | 690  | 655  | 625  |
| 10HH-3    | 1/4  | COOL                                    | ---                                        | ---  | 1110 | 1075 | 1040 | 1000 | 955  | 915  |
|           |      | HEAT                                    | ---                                        | ---  | 715  | 695  | 670  | 645  | 620  | 600  |
| 12HH-3    | 1/3  | COOL                                    | ---                                        | ---  | 1395 | 1345 | 1295 | 1245 | 1195 | 1145 |
|           |      | HEAT                                    | ---                                        | ---  | 950  | 920  | 890  | 855  | 820  | 775  |

| HH SERIES |      | CFM vs EXTERNAL STATIC PRESSURE (4 ROW) |                                            |      |      |      |      |      |      |      |
|-----------|------|-----------------------------------------|--------------------------------------------|------|------|------|------|------|------|------|
| MODEL     | H.P. | FAN SPEED                               | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |
|           |      |                                         | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 |
| 3HHS-4    | 1/30 | COOL                                    | 255                                        | 215  | 200  | 175  | ---  | ---  | ---  | ---  |
|           |      | HEAT                                    | 230                                        | 200  | 175  | 150  | ---  | ---  | ---  | ---  |
| 4HHS-4    | 1/15 | COOL                                    | 410                                        | 390  | 335  | 265  | ---  | ---  | ---  | ---  |
|           |      | HEAT                                    | 325                                        | 320  | 290  | 235  | ---  | ---  | ---  | ---  |
| 6HHS-4    | 1/12 | COOL                                    | 535                                        | 490  | 435  | 365  | ---  | ---  | ---  | ---  |
|           |      | HEAT                                    | 350                                        | 335  | 320  | 290  | ---  | ---  | ---  | ---  |
| 6HH-4     | 1/8  | COOL                                    | ---                                        | ---  | 740  | 705  | 675  | 640  | 605  | 565  |
|           |      | HEAT                                    | ---                                        | ---  | 650  | 625  | 600  | 570  | 535  | 495  |
| 8HH-4     | 1/4  | COOL                                    | ---                                        | ---  | 810  | 780  | 750  | 715  | 680  | 645  |
|           |      | HEAT                                    | ---                                        | ---  | 730  | 700  | 670  | 640  | 610  | 580  |
| 10HH-4    | 1/4  | COOL                                    | ---                                        | ---  | 1070 | 1030 | 995  | 960  | 930  | 895  |
|           |      | HEAT                                    | ---                                        | ---  | 775  | 750  | 725  | 700  | 670  | 640  |
| 12HH-4    | 1/3  | COOL                                    | ---                                        | ---  | 1270 | 1215 | 1165 | 1115 | 1070 | 1025 |
|           |      | HEAT                                    | ---                                        | ---  | 950  | 915  | 880  | 850  | 820  | 790  |

# \*PHH / RHH / CHH 230 VOLT PSC

## BLOWER PERFORMANCE

| PHH / RHH / CHH SERIES 230V |      |                                         |                                            |      |      |      |      |      |      |      |
|-----------------------------|------|-----------------------------------------|--------------------------------------------|------|------|------|------|------|------|------|
| PHH/RHH SERIES              |      | CFM vs EXTERNAL STATIC PRESSURE (3 ROW) |                                            |      |      |      |      |      |      |      |
| MODEL                       | H.P. | FAN SPEED                               | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |
|                             |      |                                         | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 |
| 3PHHS-3                     | 1/30 | COOL                                    | 270                                        | 255  | 215  | 180  | 150  | 105  | ---  | ---  |
|                             |      | HEAT                                    | 250                                        | 215  | 185  | 160  | 130  | 80   | ---  | ---  |
| 4PHHS-3                     | 1/15 | COOL                                    | 430                                        | 395  | 350  | 295  | 239  | ---  | ---  | ---  |
|                             |      | HEAT                                    | 340                                        | 320  | 295  | 255  | 202  | ---  | ---  | ---  |
| 6PHHS-3                     | 1/12 | COOL                                    | 570                                        | 490  | 415  | 335  | 245  | 140  | ---  | ---  |
|                             |      | HEAT                                    | 290                                        | 285  | 270  | 230  | 175  | 60   | ---  | ---  |
| 6PHH-3                      | 1/8  | COOL                                    | 820                                        | 765  | 710  | 660  | 615  | 570  | 530  | 485  |
|                             |      | HEAT                                    | 720                                        | 673  | 625  | 575  | 535  | 495  | 460  | 415  |
| 8PHH-3                      | 1/4  | COOL                                    | ---                                        | ---  | 860  | 830  | 800  | 770  | 740  | 710  |
|                             |      | HEAT                                    | ---                                        | ---  | 555  | 540  | 525  | 505  | 490  | 470  |
| 10PHH-3                     | 1/4  | COOL                                    | ---                                        | ---  | 1050 | 1010 | 965  | 920  | 875  | 825  |
|                             |      | HEAT                                    | ---                                        | ---  | 760  | 735  | 710  | 675  | 640  | 600  |
| 12PHH-3                     | 1/3  | COOL                                    | ---                                        | ---  | 1230 | 1205 | 1165 | 1115 | 1065 | 1005 |
|                             |      | HEAT                                    | ---                                        | ---  | 910  | 870  | 835  | 805  | 765  | 720  |

| PHH / RHH / CHH SERIES |      |                                         |                                            |      |      |      |      |      |      |      |
|------------------------|------|-----------------------------------------|--------------------------------------------|------|------|------|------|------|------|------|
| HH SERIES              |      | CFM vs EXTERNAL STATIC PRESSURE (4 ROW) |                                            |      |      |      |      |      |      |      |
| MODEL                  | H.P. | "FAN SPEED"                             | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |
|                        |      |                                         | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 |
| 3PHHS-4                | 1/30 | COOL                                    | 225                                        | 195  | 165  | 130  | 90   | 55   | ---  | ---  |
|                        |      | HEAT                                    | 210                                        | 175  | 145  | 115  | 80   | 45   | ---  | ---  |
| 4PHHS-4                | 1/15 | COOL                                    | 420                                        | 375  | 315  | 243  | 170  | 50   | ---  | ---  |
|                        |      | HEAT                                    | 330                                        | 305  | 265  | 208  | 150  | 50   | ---  | ---  |
| 6PHHS-4                | 1/12 | COOL                                    | 500                                        | 450  | 395  | 320  | 245  | 245  | ---  | ---  |
|                        |      | HEAT                                    | 325                                        | 320  | 300  | 245  | 190  | 100  | ---  | ---  |
| 6PHH-4                 | 1/8  | COOL                                    | ---                                        | ---  | 680  | 645  | 610  | 570  | 530  | 490  |
|                        |      | HEAT                                    | ---                                        | ---  | 645  | 565  | 485  | 430  | 395  | 360  |
| 8PHH-4                 | 1/4  | COOL                                    | ---                                        | ---  | 740  | 690  | 645  | 605  | 560  | 515  |
|                        |      | HEAT                                    | ---                                        | ---  | 650  | 610  | 570  | 530  | 490  | 445  |
| 10PHH-4                | 1/4  | COOL                                    | ---                                        | ---  | 990  | 950  | 915  | 875  | 840  | 800  |
|                        |      | HEAT                                    | ---                                        | ---  | 750  | 725  | 700  | 675  | 650  | 620  |
| 12PHH-4                | 1/3  | COOL                                    | ---                                        | ---  | 1200 | 1150 | 1110 | 1065 | 1020 | 975  |
|                        |      | HEAT                                    | ---                                        | ---  | 900  | 870  | 840  | 800  | 760  | 710  |

# \*PHH / RHH / CHH 208 VOLT PSC

## BLOWER PERFORMANCE

| PHH / RHH / CHH SERIES 208V |      |                                         |                                            |      |      |      |      |      |      |      |
|-----------------------------|------|-----------------------------------------|--------------------------------------------|------|------|------|------|------|------|------|
| RHH SERIES                  |      | CFM vs EXTERNAL STATIC PRESSURE (3 ROW) |                                            |      |      |      |      |      |      |      |
| MODEL                       | H.P. | FAN SPEED                               | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |
|                             |      |                                         | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 |
| 3RHHS-3                     | 1/30 | COOL                                    | 265                                        | 237  | 205  | 176  | 146  | 104  | ---  | ---  |
|                             |      | HEAT                                    | 250                                        | 215  | 185  | 160  | 130  | 80   | ---  | ---  |
| 4RHHS-3                     | 1/50 | COOL                                    | 359                                        | 336  | 312  | 263  | 214  | 131  | 47   | ---  |
|                             |      | HEAT                                    | 278                                        | 256  | 233  | 198  | 162  | 103  | 43   | ---  |
| 6RHHS-3                     | 1/12 | COOL                                    | 547                                        | 471  | 394  | 317  | 239  | 141  | ---  | ---  |
|                             |      | HEAT                                    | 227                                        | 218  | 208  | 168  | 128  | 59   | ---  | ---  |
| 6RHH-3                      | 1/8  | COOL                                    | 779                                        | 726  | 673  | 633  | 592  | 545  | 498  | 448  |
|                             |      | HEAT                                    | 640                                        | 592  | 544  | 510  | 475  | 435  | 394  | 348  |
| 8RHH-3                      | 1/4  | COOL                                    | 875                                        | 838  | 800  | 768  | 736  | 701  | 666  | 629  |
|                             |      | HEAT                                    | 730                                        | 704  | 677  | 650  | 623  | 596  | 568  | 538  |
| 10RHH-3                     | 1/4  | COOL                                    | 1075                                       | 1034 | 993  | 952  | 911  | 875  | 839  | 786  |
|                             |      | HEAT                                    | 702                                        | 679  | 656  | 631  | 606  | 579  | 552  | 511  |
| 12RHH-3                     | 1/3  | COOL                                    | 1304                                       | 1256 | 1208 | 1168 | 1127 | 1076 | 1025 | 971  |
|                             |      | HEAT                                    | 851                                        | 813  | 774  | 738  | 702  | 671  | 640  | 605  |

| RHH SERIES |      | CFM vs EXTERNAL STATIC PRESSURE (4 ROW) |                                            |      |      |      |      |      |      |      |
|------------|------|-----------------------------------------|--------------------------------------------|------|------|------|------|------|------|------|
| MODEL      | H.P. | FAN SPEED                               | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |
|            |      |                                         | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 |
| 3RHHS-4    | 1/30 | COOL                                    | 220                                        | 180  | 162  | 125  | 93   | 58   | ---  | ---  |
|            |      | HEAT                                    | 198                                        | 170  | 141  | 109  | 80   | 43   | ---  | ---  |
| 4RHHS-4    | 1/50 | COOL                                    | 360                                        | 319  | 278  | 214  | 149  | 48   | ---  | ---  |
|            |      | HEAT                                    | ---                                        | ---  | 224  | 166  | 108  | 34   | ---  | ---  |
| 6RHHS-4    | 1/12 | COOL                                    | 489                                        | 434  | 379  | 347  | 249  | 149  | 48   | ---  |
|            |      | HEAT                                    | 227                                        | 210  | 157  | 84   | 157  | ---  | ---  | ---  |
| 6RHH-4     | 1/8  | COOL                                    | 736                                        | 700  | 663  | 630  | 596  | 558  | 520  | 476  |
|            |      | HEAT                                    | 641                                        | 585  | 529  | 486  | 443  | 399  | 355  | 301  |
| 8RHH-4     | 1/4  | COOL                                    | 834                                        | 779  | 723  | 684  | 645  | 600  | 555  | 502  |
|            |      | HEAT                                    | 710                                        | 659  | 607  | 568  | 529  | 491  | 453  | 408  |
| 10RHH-4    | 1/4  | COOL                                    | 1025                                       | 991  | 956  | 922  | 887  | 847  | 807  | 770  |
|            |      | HEAT                                    | 687                                        | 664  | 640  | 619  | 597  | 579  | 561  | 537  |
| 12RHH-4    | 1/3  | COOL                                    | 1284                                       | 1233 | 1182 | 1133 | 1084 | 1036 | 988  | 941  |
|            |      | HEAT                                    | 832                                        | 796  | 760  | 731  | 702  | 671  | 640  | 605  |

# \*RHH 277 VOLT PSC

## BLOWER PERFORMANCE

| RHH SERIES |      | CFM vs EXTERNAL STATIC PRESSURE (3 ROW) |                                            |      |      |      |      |      |      |      |
|------------|------|-----------------------------------------|--------------------------------------------|------|------|------|------|------|------|------|
| MODEL      | H.P. | FAN SPEED                               | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |
|            |      |                                         | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 |
| 3RHHS-3    | 1/20 | COOL                                    | 265                                        | 235  | 205  | 170  | ---  | ---  | ---  | ---  |
|            |      | HEAT                                    | 230                                        | 195  | 165  | 135  | ---  | ---  | ---  | ---  |
| 4RHHS-3    | 1/15 | COOL                                    | 530                                        | 465  | 415  | 365  | ---  | ---  | ---  | ---  |
|            |      | HEAT                                    | 445                                        | 390  | 335  | 280  | ---  | ---  | ---  | ---  |
| 6RHHS-3    | 1/15 | COOL                                    | 525                                        | 445  | 375  | 300  | ---  | ---  | ---  | ---  |
|            |      | HEAT                                    | 425                                        | 370  | 305  | 225  | ---  | ---  | ---  | ---  |
| 6RHH-3     | 1/12 | COOL                                    | ---                                        | ---  | 565  | 515  | 470  | 420  | 375  | ---  |
|            |      | HEAT                                    | ---                                        | ---  | 445  | 400  | 360  | ---  | ---  | ---  |
| 8RHH-3     | 1/6  | COOL                                    | ---                                        | ---  | 745  | 715  | 690  | 665  | 650  | 635  |
|            |      | HEAT                                    | ---                                        | ---  | 660  | 630  | 600  | 570  | 535  | 495  |
| 10RHH-3    | 1/4  | COOL                                    | ---                                        | ---  | 990  | 950  | 910  | 870  | 830  | 795  |
|            |      | HEAT                                    | ---                                        | ---  | 870  | 830  | 795  | 765  | 730  | 700  |
| 12RHH-3    | 1/3  | COOL                                    | ---                                        | ---  | 1305 | 1260 | 1220 | 1185 | 1145 | 1100 |
|            |      | HEAT                                    | ---                                        | ---  | 1180 | 1140 | 1105 | 1070 | 1030 | 990  |

| RHH SERIES |      | CFM vs EXTERNAL STATIC PRESSURE (4 ROW) |                                            |      |      |      |      |      |      |      |
|------------|------|-----------------------------------------|--------------------------------------------|------|------|------|------|------|------|------|
| MODEL      | H.P. | FAN SPEED                               | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |
|            |      |                                         | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 |
| 3RHHS-4    | 1/20 | COOL                                    | 230                                        | 215  | 180  | 160  | ---  | ---  | ---  | ---  |
|            |      | HEAT                                    | 205                                        | 180  | 150  | 125  | ---  | ---  | ---  | ---  |
| 4RHHS-4    | 1/15 | COOL                                    | 490                                        | 420  | 360  | 295  | ---  | ---  | ---  | ---  |
|            |      | HEAT                                    | 415                                        | 365  | 310  | 230  | ---  | ---  | ---  | ---  |
| 6RHHS-4    | 1/15 | COOL                                    | 485                                        | 410  | 330  | 250  | ---  | ---  | ---  | ---  |
|            |      | HEAT                                    | 420                                        | 345  | 280  | 210  | ---  | ---  | ---  | ---  |
| 6RHH-4     | 1/12 | COOL                                    | ---                                        | ---  | 560  | 525  | 490  | 455  | 415  | 370  |
|            |      | HEAT                                    | ---                                        | ---  | 480  | 445  | 415  | 380  | 350  | ---  |
| 8RHH-4     | 1/6  | COOL                                    | ---                                        | ---  | 660  | 610  | 565  | 520  | 470  | 415  |
|            |      | HEAT                                    | ---                                        | ---  | 585  | 535  | 490  | 445  | 395  | 350  |
| 10RHH-4    | 1/4  | COOL                                    | ---                                        | ---  | 925  | 890  | 860  | 830  | 795  | 765  |
|            |      | HEAT                                    | ---                                        | ---  | 820  | 790  | 765  | 740  | 710  | 680  |
| 12RHH-4    | 1/3  | COOL                                    | ---                                        | ---  | 1190 | 1145 | 1105 | 1065 | 1030 | 995  |
|            |      | HEAT                                    | ---                                        | ---  | 1070 | 1030 | 995  | 960  | 920  | 885  |

# HHX 230 VOLT ECM

## BLOWER PERFORMANCE

| HHX Series 230V |             |               |      |      |      |      |      |      |      |      |      |      |      |
|-----------------|-------------|---------------|------|------|------|------|------|------|------|------|------|------|------|
| MODEL           | MOTOR HP    | SPEED TAP     |      |      |      |      |      |      |      |      |      |      |      |
|                 |             |               | 0.0  | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 |
| 3HHSX           | 1/20        | Optional High | 353  | 333  | 319  | 305  | 269  | 258  | 246  | 234  | 220  | 206  | 193  |
|                 |             | Std. High     | 293  | 277  | 245  | 234  | 224  | 211  | 201  | 191  | 180  | 169  | 159  |
|                 |             | Std. Low      | 248  | 229  | 216  | 202  | 188  | 177  | 165  | 153  | 140  | 129  | ---  |
| 4HHSX           | 1/7 or 1/10 | Optional High | 473  | 430  | 409  | 392  | 371  | 357  | 341  | 328  | ---  | ---  | ---  |
|                 |             | Std. High     | 395  | 373  | 350  | 332  | 308  | 290  | 247  | 229  | ---  | ---  | ---  |
|                 |             | Std. Low      | 323  | 290  | 263  | 241  | 217  | 196  | 176  | 149  | ---  | ---  | ---  |
| 6HHSX           | 1/7         | Optional High | 665  | 625  | 595  | 570  | 545  | 525  | 505  | ---  | ---  | ---  | ---  |
|                 |             | Std. High     | 625  | 575  | 545  | 520  | 495  | 475  | 455  | ---  | ---  | ---  | ---  |
|                 |             | Std. Low      | 520  | 480  | 445  | 415  | 390  | 365  | 340  | ---  | ---  | ---  | ---  |
| 6HHX            | 1/2         | Optional High | 806  | 780  | 754  | 734  | 714  | 698  | 683  | 662  | 642  | 608  | 575  |
|                 |             | Std. High     | 679  | 654  | 629  | 609  | 589  | 570  | 551  | 530  | 510  | 495  | 479  |
|                 |             | Std. Low      | 589  | 555  | 520  | 502  | 483  | 467  | 452  | 427  | 402  | 378  | 354  |
| 8HHX            | 1/2         | Optional High | 916  | 879  | 842  | 810  | 779  | 742  | 706  | 671  | 637  | 601  | 565  |
|                 |             | Std. High     | 864  | 840  | 816  | 790  | 765  | 731  | 698  | 665  | 633  | 597  | 560  |
|                 |             | Std. Low      | 761  | 733  | 706  | 682  | 658  | 637  | 616  | 597  | 579  | 558  | 536  |
| 10HHX           | 1/2         | Optional High | 1275 | 1252 | 1229 | 1212 | 1196 | 1174 | 1152 | 1108 | 1064 | 1016 | 969  |
|                 |             | Std. High     | 1177 | 1152 | 1127 | 1109 | 1091 | 1072 | 1053 | 1037 | 1020 | 986  | 951  |
|                 |             | Std. Low      | 992  | 969  | 946  | 927  | 908  | 886  | 864  | 848  | 832  | 812  | 791  |
| 12HHX           | 1/2         | Optional High | 1363 | 1344 | 1325 | 1305 | 1285 | 1268 | 1252 | 1234 | 1217 | 1199 | 1181 |
|                 |             | Std. High     | 1267 | 1244 | 1221 | 1202 | 1184 | 1167 | 1150 | 1132 | 1115 | 1097 | 1079 |
|                 |             | Std. Low      | 1110 | 1092 | 1073 | 1060 | 1047 | 1039 | 1030 | 994  | 957  | 939  | 921  |

# HHSX-HHX 240V

## BLOWER PERFORMANCE

| HHX 3-ROW (240V) |             |              |                                            |      |      |      |      |      |      |      |      |      |
|------------------|-------------|--------------|--------------------------------------------|------|------|------|------|------|------|------|------|------|
| UNIT<br>MODEL    | MOTOR<br>HP | SPEED<br>TAP | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |      |      |
|                  |             |              | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.5  |
| 4HHSX-3          | 1/7         | Opt. High    | 495                                        | 465  | 435  | 410  | 380  | 355  | 330  | -    | -    | -    |
|                  |             | Std. High    | 435                                        | 415  | 385  | 360  | 335  | 305  | 280  | -    | -    | -    |
|                  |             | Std. Low     | 370                                        | 345  | 320  | 290  | 265  | 240  | 210  | -    | -    | -    |
| 6HHSX-3          | 1/7         | Opt. High    | 700                                        | 665  | 630  | 605  | 580  | 555  | 535  | -    | -    | -    |
|                  |             | Std. High    | 645                                        | 610  | 580  | 550  | 525  | 505  | 480  | -    | -    | -    |
|                  |             | Std. Low     | 545                                        | 510  | 470  | 440  | 410  | 385  | 360  | -    | -    | -    |
| 6HHX-3           | 1/2         | Opt. High    | 980                                        | 950  | 920  | 890  | 865  | 840  | 810  | 785  | 755  | 695  |
|                  |             | Std. High    | 815                                        | 790  | 765  | 740  | 715  | 695  | 675  | 650  | 630  | 590  |
|                  |             | Std. Low     | 715                                        | 680  | 650  | 625  | 600  | 575  | 555  | 530  | 510  | 465  |
| 8HHX-3           | 1/2         | Opt. High    | 1040                                       | 1010 | 975  | 940  | 905  | 865  | 830  | 795  | 760  | 680  |
|                  |             | Std. High    | 1030                                       | 1000 | 965  | 930  | 895  | 860  | 825  | 790  | 755  | 680  |
|                  |             | Std. Low     | 895                                        | 870  | 845  | 820  | 790  | 760  | 735  | 705  | 680  | 625  |
| 10HHX-3          | 1/2         | Opt. High    | 1325                                       | 1305 | 1285 | 1265 | 1240 | 1210 | 1180 | 1145 | 1100 | 1000 |
|                  |             | Std. High    | 1220                                       | 1195 | 1170 | 1150 | 1130 | 1110 | 1085 | 1060 | 1035 | 960  |
|                  |             | Std. Low     | 1025                                       | 1005 | 980  | 960  | 940  | 915  | 890  | 870  | 845  | 790  |
| 12HHX-3          | 1/2         | Opt. High    | 1415                                       | 1395 | 1375 | 1355 | 1330 | 1310 | 1295 | 1275 | 1255 | 1220 |
|                  |             | Std. High    | 1300                                       | 1280 | 1260 | 1240 | 1225 | 1205 | 1185 | 1170 | 1150 | 1115 |
|                  |             | Std. Low     | 1160                                       | 1140 | 1120 | 1100 | 1080 | 1060 | 1040 | 1015 | 990  | 945  |
| HHX 4-ROW (240V) |             |              |                                            |      |      |      |      |      |      |      |      |      |
| UNIT<br>MODEL    | MOTOR<br>HP | SPEED<br>TAP | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |      |      |
|                  |             |              | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.5  |
| 4HHSX-4          | 1/7         | Opt. High    | 465                                        | 440  | 410  | 385  | 360  | 335  | 310  | -    | -    | -    |
|                  |             | Std. High    | 410                                        | 390  | 365  | 340  | 315  | 290  | 265  | -    | -    | -    |
|                  |             | Std. Low     | 350                                        | 325  | 300  | 275  | 250  | 225  | 200  | -    | -    | -    |
| 6HHSX-4          | 1/7         | Opt. High    | 660                                        | 625  | 595  | 570  | 545  | 525  | 505  | -    | -    | -    |
|                  |             | Std. High    | 610                                        | 575  | 545  | 520  | 495  | 475  | 455  | -    | -    | -    |
|                  |             | Std. Low     | 515                                        | 480  | 445  | 415  | 390  | 365  | 340  | -    | -    | -    |
| 6HHX-4           | 1/2         | Opt. High    | 925                                        | 895  | 870  | 845  | 815  | 790  | 765  | 735  | 710  | 655  |
|                  |             | Std. High    | 770                                        | 745  | 720  | 695  | 675  | 655  | 635  | 615  | 595  | 555  |
|                  |             | Std. Low     | 675                                        | 645  | 615  | 590  | 570  | 545  | 520  | 500  | 480  | 440  |
| 8HHX-4           | 1/2         | Opt. High    | 980                                        | 950  | 920  | 885  | 855  | 820  | 785  | 750  | 715  | 640  |
|                  |             | Std. High    | 970                                        | 940  | 910  | 880  | 845  | 815  | 780  | 745  | 710  | 640  |
|                  |             | Std. Low     | 845                                        | 820  | 795  | 770  | 745  | 720  | 695  | 665  | 640  | 590  |
| 10HHX-4          | 1/2         | Opt. High    | 1250                                       | 1230 | 1210 | 1190 | 1170 | 1145 | 1115 | 1080 | 1040 | 945  |
|                  |             | Std. High    | 1150                                       | 1125 | 1105 | 1085 | 1065 | 1045 | 1025 | 1000 | 975  | 905  |
|                  |             | Std. Low     | 965                                        | 945  | 925  | 905  | 885  | 865  | 840  | 820  | 795  | 745  |
| 12HHX-4          | 1/2         | Opt. High    | 1335                                       | 1315 | 1295 | 1275 | 1255 | 1235 | 1220 | 1200 | 1185 | 1150 |
|                  |             | Std. High    | 1225                                       | 1210 | 1190 | 1175 | 1155 | 1135 | 1120 | 1105 | 1085 | 1050 |
|                  |             | Std. Low     | 1095                                       | 1075 | 1055 | 1040 | 1020 | 1000 | 980  | 960  | 935  | 890  |

# HHSX-HHX 240V

## BLOWER PERFORMANCE

| PHHX, RHHX, CHHX 3-ROW (240V) |                  |              |                                            |      |      |      |      |      |      |      |      |      |
|-------------------------------|------------------|--------------|--------------------------------------------|------|------|------|------|------|------|------|------|------|
| UNIT<br>MODEL                 | MO-<br>TOR<br>HP | SPEED<br>TAP | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |      |      |
|                               |                  |              | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.5  |
| 4*HHSX-3                      | 1/7              | Opt. High    | 435                                        | 410  | 385  | 360  | 335  | 310  | 290  | -    | -    | -    |
|                               |                  | Std. High    | 385                                        | 365  | 340  | 315  | 295  | 270  | 245  | -    | -    | -    |
|                               |                  | Std. Low     | 325                                        | 305  | 280  | 255  | 235  | 210  | 185  | -    | -    | -    |
| 6*HHSX-3                      | 1/7              | Opt. High    | 615                                        | 585  | 555  | 530  | 510  | 490  | 470  | -    | -    | -    |
|                               |                  | Std. High    | 570                                        | 535  | 510  | 485  | 465  | 445  | 420  | -    | -    | -    |
|                               |                  | Std. Low     | 480                                        | 450  | 415  | 385  | 365  | 340  | 315  | -    | -    | -    |
| 6*HHX-3                       | 1/2              | Opt. High    | 870                                        | 845  | 820  | 795  | 770  | 745  | 720  | 695  | 670  | 620  |
|                               |                  | Std. High    | 725                                        | 700  | 680  | 660  | 635  | 615  | 600  | 580  | 560  | 525  |
|                               |                  | Std. Low     | 635                                        | 605  | 580  | 560  | 535  | 515  | 495  | 475  | 455  | 415  |
| 8*HHX-3                       | 1/2              | Opt. High    | 925                                        | 900  | 870  | 835  | 805  | 770  | 740  | 710  | 675  | 605  |
|                               |                  | Std. High    | 915                                        | 890  | 860  | 830  | 795  | 765  | 735  | 700  | 670  | 605  |
|                               |                  | Std. Low     | 795                                        | 775  | 750  | 730  | 705  | 680  | 655  | 630  | 605  | 555  |
| 10*HHX-3                      | 1/2              | Opt. High    | 1260                                       | 1240 | 1220 | 1200 | 1180 | 1150 | 1120 | 1085 | 1045 | 950  |
|                               |                  | Std. High    | 1160                                       | 1135 | 1110 | 1090 | 1070 | 1055 | 1035 | 1010 | 985  | 910  |
|                               |                  | Std. Low     | 975                                        | 955  | 930  | 910  | 890  | 870  | 850  | 825  | 805  | 750  |
| 12*HHX-3                      | 1/2              | Opt. High    | 1360                                       | 1340 | 1320 | 1300 | 1280 | 1260 | 1240 | 1225 | 1205 | 1170 |
|                               |                  | Std. High    | 1250                                       | 1230 | 1210 | 1190 | 1175 | 1160 | 1140 | 1125 | 1105 | 1070 |
|                               |                  | Std. Low     | 1115                                       | 1095 | 1075 | 1055 | 1040 | 1020 | 995  | 975  | 950  | 905  |
| PHHX, RHHX, CHHX 4-ROW (240V) |                  |              |                                            |      |      |      |      |      |      |      |      |      |
| UNIT<br>MODEL                 | MO-<br>TOR<br>HP | SPEED<br>TAP | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |      |      |
|                               |                  |              | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.5  |
| 4*HHSX-4                      | 1/7              | Opt. High    | 410                                        | 385  | 360  | 340  | 315  | 295  | 275  | -    | -    | -    |
|                               |                  | Std. High    | 365                                        | 345  | 320  | 300  | 275  | 255  | 235  | -    | -    | -    |
|                               |                  | Std. Low     | 310                                        | 285  | 265  | 240  | 220  | 200  | 175  | -    | -    | -    |
| 6*HHSX-4                      | 1/7              | Opt. High    | 580                                        | 550  | 525  | 500  | 480  | 460  | 445  | -    | -    | -    |
|                               |                  | Std. High    | 535                                        | 505  | 480  | 455  | 435  | 420  | 400  | -    | -    | -    |
|                               |                  | Std. Low     | 445                                        | 415  | 385  | 355  | 335  | 315  | 290  | -    | -    | -    |
| 6*HHX-4                       | 1/2              | Opt. High    | 840                                        | 815  | 790  | 765  | 740  | 720  | 695  | 670  | 645  | 595  |
|                               |                  | Std. High    | 700                                        | 675  | 655  | 635  | 615  | 600  | 580  | 560  | 540  | 505  |
|                               |                  | Std. Low     | 610                                        | 580  | 555  | 535  | 515  | 495  | 470  | 450  | 430  | 395  |
| 8*HHX-4                       | 1/2              | Opt. High    | 890                                        | 860  | 835  | 805  | 780  | 750  | 715  | 685  | 650  | 580  |
|                               |                  | Std. High    | 885                                        | 860  | 830  | 800  | 770  | 740  | 710  | 680  | 645  | 580  |
|                               |                  | Std. Low     | 770                                        | 745  | 725  | 705  | 680  | 655  | 630  | 605  | 580  | 535  |
| 10*HHX-4                      | 1/2              | Opt. High    | 1190                                       | 1170 | 1150 | 1130 | 1110 | 1085 | 1060 | 1025 | 990  | 900  |
|                               |                  | Std. High    | 1095                                       | 1070 | 1050 | 1030 | 1010 | 995  | 975  | 950  | 925  | 860  |
|                               |                  | Std. Low     | 915                                        | 900  | 880  | 860  | 840  | 820  | 800  | 780  | 755  | 710  |
| 12*HHX-4                      | 1/2              | Opt. High    | 1280                                       | 1265 | 1245 | 1225 | 1205 | 1185 | 1170 | 1155 | 1140 | 1105 |
|                               |                  | Std. High    | 1175                                       | 1155 | 1140 | 1125 | 1110 | 1095 | 1075 | 1060 | 1040 | 1010 |
|                               |                  | Std. Low     | 1050                                       | 1035 | 1015 | 1000 | 980  | 960  | 940  | 920  | 900  | 855  |

# HHX 277 VOLT ECM

## BLOWER PERFORMANCE

| HHX 3-ROW (277V) |             |              |                                            |      |      |      |      |      |      |      |      |      |
|------------------|-------------|--------------|--------------------------------------------|------|------|------|------|------|------|------|------|------|
| UNIT<br>MODEL    | MOTOR<br>HP | SPEED<br>TAP | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |      |      |
|                  |             |              | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.5  |
| 4HHSX-3<br>277   | 1/6         | Opt. High    | 500                                        | 465  | 435  | 400  | 370  | 345  | 315  | -    | -    | -    |
|                  |             | Std. High    | 445                                        | 410  | 375  | 340  | 310  | 280  | 255  | -    | -    | -    |
|                  |             | Std. Low     | 360                                        | 320  | 285  | 255  | 225  | 195  | 165  | -    | -    | -    |
| 6HHSX-3<br>277   | 1/6         | Opt. High    | 645                                        | 615  | 585  | 555  | 530  | 505  | 480  | -    | -    | -    |
|                  |             | Std. High    | 560                                        | 520  | 485  | 455  | 425  | 400  | 370  | -    | -    | -    |
|                  |             | Std. Low     | 445                                        | 405  | 365  | 330  | 295  | 260  | 225  | -    | -    | -    |
| 6HHX-3<br>277    | 1/2         | Opt. High    | 845                                        | 820  | 795  | 770  | 750  | 725  | 700  | 680  | 655  | 610  |
|                  |             | Std. High    | 700                                        | 675  | 650  | 625  | 605  | 585  | 560  | 540  | 515  | 465  |
|                  |             | Std. Low     | 600                                        | 575  | 550  | 525  | 500  | 475  | 450  | 425  | 400  | 350  |
| 8HHX-3<br>277    | 1/2         | Opt. High    | 945                                        | 910  | 875  | 840  | 810  | 775  | 740  | 705  | 670  | 595  |
|                  |             | Std. High    | 915                                        | 890  | 860  | 830  | 800  | 770  | 735  | 700  | 665  | 590  |
|                  |             | Std. Low     | 795                                        | 770  | 745  | 720  | 700  | 675  | 650  | 630  | 610  | 560  |
| 10HHX-3<br>277   | 1/2         | Opt. High    | 1315                                       | 1290 | 1265 | 1245 | 1225 | 1200 | 1175 | 1150 | 1115 | 1010 |
|                  |             | Std. High    | 1210                                       | 1185 | 1160 | 1140 | 1120 | 1095 | 1070 | 1040 | 1010 | 930  |
|                  |             | Std. Low     | 1025                                       | 1000 | 970  | 940  | 915  | 890  | 865  | 840  | 810  | 730  |
| 12HHX-3<br>277   | 1/2         | Opt. High    | 1385                                       | 1355 | 1325 | 1295 | 1270 | 1240 | 1215 | 1190 | 1165 | 1120 |
|                  |             | Std. High    | 1380                                       | 1350 | 1320 | 1290 | 1265 | 1235 | 1210 | 1185 | 1160 | 1115 |
|                  |             | Std. Low     | 1250                                       | 1225 | 1195 | 1170 | 1145 | 1115 | 1085 | 1060 | 1030 | 970  |
| HHX 4-ROW (277V) |             |              |                                            |      |      |      |      |      |      |      |      |      |
| UNIT<br>MODEL    | MOTOR<br>HP | SPEED<br>TAP | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |      |      |
|                  |             |              | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.5  |
| 4HHSX-4<br>277   | 1/6         | Opt. High    | 470                                        | 440  | 410  | 380  | 350  | 325  | 295  | -    | -    | -    |
|                  |             | Std. High    | 420                                        | 390  | 355  | 320  | 290  | 265  | 240  | -    | -    | -    |
|                  |             | Std. Low     | 340                                        | 305  | 270  | 240  | 210  | 185  | 155  | -    | -    | -    |
| 6HHSX-4<br>277   | 1/6         | Opt. High    | 610                                        | 580  | 550  | 525  | 500  | 480  | 455  | -    | -    | -    |
|                  |             | Std. High    | 530                                        | 490  | 455  | 425  | 400  | 375  | 350  | -    | -    | -    |
|                  |             | Std. Low     | 420                                        | 380  | 340  | 310  | 280  | 245  | 210  | -    | -    | -    |
| 6HHX-4<br>277    | 1/2         | Opt. High    | 795                                        | 770  | 750  | 730  | 705  | 685  | 665  | 640  | 620  | 575  |
|                  |             | Std. High    | 670                                        | 640  | 615  | 590  | 570  | 550  | 530  | 510  | 485  | 440  |
|                  |             | Std. Low     | 575                                        | 545  | 520  | 495  | 470  | 450  | 425  | 400  | 375  | 330  |
| 8HHX-4<br>277    | 1/2         | Opt. High    | 890                                        | 855  | 825  | 795  | 765  | 735  | 700  | 665  | 630  | 560  |
|                  |             | Std. High    | 865                                        | 835  | 810  | 785  | 755  | 725  | 695  | 660  | 625  | 555  |
|                  |             | Std. Low     | 750                                        | 730  | 705  | 680  | 660  | 635  | 615  | 595  | 575  | 530  |
| 10HHX-4<br>277   | 1/2         | Opt. High    | 1240                                       | 1215 | 1195 | 1175 | 1155 | 1135 | 1110 | 1085 | 1050 | 955  |
|                  |             | Std. High    | 1140                                       | 1115 | 1095 | 1075 | 1055 | 1035 | 1010 | 985  | 955  | 875  |
|                  |             | Std. Low     | 965                                        | 940  | 915  | 890  | 865  | 840  | 815  | 790  | 765  | 690  |
| 12HHX-4<br>277   | 1/2         | Opt. High    | 1305                                       | 1280 | 1250 | 1225 | 1200 | 1170 | 1145 | 1125 | 1100 | 1055 |
|                  |             | Std. High    | 1300                                       | 1275 | 1245 | 1220 | 1195 | 1165 | 1140 | 1120 | 1095 | 1050 |
|                  |             | Std. Low     | 1180                                       | 1150 | 1125 | 1100 | 1080 | 1055 | 1025 | 1000 | 970  | 915  |

# HHX 277 VOLT ECM

## BLOWER PERFORMANCE

| PHHX, RHHX, CHHX 3-ROW (277V) |             |              |                                            |      |      |      |      |      |      |      |      |      |
|-------------------------------|-------------|--------------|--------------------------------------------|------|------|------|------|------|------|------|------|------|
| UNIT<br>MODEL                 | MOTOR<br>HP | SPEED<br>TAP | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |      |      |
|                               |             |              | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.5  |
| 4*HHSX-3<br>277               | 1/6         | Opt. High    | 440                                        | 410  | 380  | 350  | 325  | 300  | 275  | -    | -    | -    |
|                               |             | Std. High    | 390                                        | 360  | 330  | 300  | 270  | 245  | 225  | -    | -    | -    |
|                               |             | Std. Low     | 315                                        | 280  | 250  | 225  | 200  | 170  | 145  | -    | -    | -    |
| 6*HHSX-3<br>277               | 1/6         | Opt. High    | 570                                        | 540  | 515  | 490  | 465  | 445  | 420  | -    | -    | -    |
|                               |             | Std. High    | 480                                        | 445  | 415  | 390  | 365  | 345  | 320  | -    | -    | -    |
|                               |             | Std. Low     | 375                                        | 340  | 305  | 275  | 250  | 220  | 190  | -    | -    | -    |
| 6*HHX-3<br>277                | 1/2         | Opt. High    | 750                                        | 730  | 710  | 690  | 665  | 645  | 625  | 605  | 585  | 545  |
|                               |             | Std. High    | 625                                        | 600  | 580  | 560  | 540  | 520  | 500  | 480  | 460  | 415  |
|                               |             | Std. Low     | 535                                        | 515  | 490  | 470  | 445  | 425  | 400  | 380  | 355  | 310  |
| 8*HHX-3<br>277                | 1/2         | Opt. High    | 840                                        | 810  | 780  | 750  | 720  | 690  | 660  | 630  | 595  | 530  |
|                               |             | Std. High    | 815                                        | 790  | 765  | 740  | 710  | 685  | 655  | 625  | 590  | 525  |
|                               |             | Std. Low     | 710                                        | 690  | 665  | 645  | 625  | 600  | 580  | 565  | 545  | 500  |
| 10*HHX-3<br>277               | 1/2         | Opt. High    | 1250                                       | 1225 | 1200 | 1180 | 1160 | 1140 | 1120 | 1090 | 1060 | 960  |
|                               |             | Std. High    | 1150                                       | 1125 | 1100 | 1080 | 1060 | 1040 | 1020 | 990  | 960  | 885  |
|                               |             | Std. Low     | 975                                        | 950  | 920  | 895  | 870  | 845  | 820  | 795  | 770  | 695  |
| 12*HHX-3<br>277               | 1/2         | Opt. High    | 1330                                       | 1300 | 1270 | 1245 | 1220 | 1190 | 1165 | 1145 | 1120 | 1075 |
|                               |             | Std. High    | 1325                                       | 1295 | 1265 | 1240 | 1215 | 1185 | 1160 | 1140 | 1115 | 1070 |
|                               |             | Std. Low     | 1200                                       | 1175 | 1145 | 1120 | 1095 | 1070 | 1045 | 1015 | 990  | 930  |
| PHHX, RHHX, CHHX 4-ROW (277V) |             |              |                                            |      |      |      |      |      |      |      |      |      |
| UNIT<br>MODEL                 | MOTOR<br>HP | SPEED<br>TAP | EXTERNAL STATIC PRESSURE (inches of water) |      |      |      |      |      |      |      |      |      |
|                               |             |              | 0.0                                        | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.5  |
| 4*HHSX-4<br>277               | 1/6         | Opt. High    | 405                                        | 380  | 355  | 325  | 300  | 275  | 255  | -    | -    | -    |
|                               |             | Std. High    | 360                                        | 330  | 300  | 270  | 245  | 225  | 205  | -    | -    | -    |
|                               |             | Std. Low     | 275                                        | 245  | 220  | 195  | 170  | 150  | 125  | -    | -    | -    |
| 6*HHSX-4<br>277               | 1/6         | Opt. High    | 535                                        | 510  | 485  | 460  | 440  | 420  | 400  | -    | -    | -    |
|                               |             | Std. High    | 455                                        | 420  | 390  | 365  | 345  | 325  | 300  | -    | -    | -    |
|                               |             | Std. Low     | 355                                        | 320  | 290  | 260  | 235  | 205  | 175  | -    | -    | -    |
| 6*HHX-4<br>277                | 1/2         | Opt. High    | 730                                        | 710  | 690  | 670  | 650  | 630  | 610  | 590  | 570  | 530  |
|                               |             | Std. High    | 610                                        | 585  | 560  | 540  | 520  | 500  | 480  | 460  | 440  | 400  |
|                               |             | Std. Low     | 520                                        | 495  | 470  | 445  | 425  | 405  | 385  | 365  | 340  | 295  |
| 8*HHX-4<br>277                | 1/2         | Opt. High    | 820                                        | 790  | 760  | 735  | 705  | 675  | 645  | 615  | 580  | 515  |
|                               |             | Std. High    | 805                                        | 780  | 755  | 730  | 700  | 675  | 645  | 615  | 580  | 515  |
|                               |             | Std. Low     | 700                                        | 675  | 655  | 635  | 615  | 595  | 575  | 555  | 535  | 495  |
| 10*HHX-4<br>277               | 1/2         | Opt. High    | 1180                                       | 1155 | 1135 | 1115 | 1095 | 1075 | 1055 | 1030 | 1000 | 905  |
|                               |             | Std. High    | 1085                                       | 1060 | 1040 | 1020 | 1000 | 980  | 960  | 935  | 905  | 830  |
|                               |             | Std. Low     | 905                                        | 885  | 860  | 835  | 815  | 790  | 765  | 745  | 720  | 650  |
| 12*HHX-4<br>277               | 1/2         | Opt. High    | 1225                                       | 1200 | 1175 | 1150 | 1125 | 1100 | 1080 | 1055 | 1035 | 990  |
|                               |             | Std. High    | 1220                                       | 1195 | 1170 | 1145 | 1120 | 1095 | 1075 | 1050 | 1030 | 985  |
|                               |             | Std. Low     | 1110                                       | 1085 | 1060 | 1040 | 1015 | 990  | 965  | 940  | 910  | 860  |

# GUIDE SPECIFICATIONS

## Part 1 — General

### 1.01 SECTION INCLUDES

- A. Fan Coil Units

### 1.02 REFERENCES

- AMCA 99 – Standards Handbook
- AMCA 210 -- Laboratory Methods for Testing Fans for Rating Purposes
- AMCA 300 – Test Code for Sound Rating Air Moving Devices
- ARI 440 – Room Fan-Coil Unit
- ASTMB117 – Standard Practice for Operating Salt Spray Apparatus
- NEMA MGI – Motors and Generators
- NFPA 70 – National Electric Code
- SMACNA – HVAC Duct Construction Standards – Metal and Flexible
- UL 723 – Test for Surface Burning Characteristics of Building Materials
- UL 900 – Test Performance of Air Filter Units
- UL 1995 – Standard for Heating and Cooling Equipment
- UL 94 – Test for Flammability of Plastic Materials for Parts in Devices and Appliances

### 1.03 SUBMITTALS

- A. Shop drawings: Indicate assembly, unit dimensions, weight loading, required clearances, construction details, field connection details, and electrical characteristics and connection requirements. A computer generated capacity selection shall be submitted for each cooling coil with design points and final operating point clearly noted.
- B. Product Data:
  - 1. Provide literature that indicates dimensions, weights, capacities, ratings, fan performance, finishes of materials, and electrical characteristics and connection requirements.
  - 2. Provide data of filter media, filter performance data.
  - 3. Manufacturer's installation instructions.

### 1.04 OPERATION AND MAINTENANCE DATA

- A. Maintenance Data: Include instructions for lubrication, filter replacement and motor and drive replacement.

### 1.05 QUALIFICATIONS

- A. Maintenance Data: Include instructions for lubrication, filter replacement and motor and drive replacement.

### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Accept products on site on factory-installed shipping skids. Inspect for damage.
- B. Store in clean dry place and protect from weather and construction traffic. Handle carefully to avoid damage to components, enclosures, and finish.

### 1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not operate units for any purpose, temporary or permanent, until ductwork is clean, filters are in place, and fan has been test run under observation.

# GUIDE SPECIFICATIONS (CONT.)

## Part 2 — Products

### 2.01 MANUFACTURERS

A. The following manufacturers are approved for use. No substitutions will be permitted.

1. First Company, Dallas TX

### 2.02 CASING

A. Unit shall have corrosion resistant casing consisting of galvanized steel panels. Unit panels shall be fully insulated with 1.5lb fiberglass insulation with anti-microbial agent. Removable panels shall provide full access to unit components..

B. Drain pans shall be heavy gauge galvanized steel with an insulating coating. Optional stainless steel drain pan shall include an insulating coating. Drain pans shall be removable for cleaning or replacement without removing coils or disturbing coil connections.

### 2.03 SUPPLY FAN

A. Provide DWDI forward-curved supply fans. Fan assemblies shall be statically and dynamically balanced by manufacturer. The housings are constructed from heavy gauge galvanized steel with die-formed inlet cones.

B. Fan and motor mounting platform shall be a minimum of 12 gauge LFQ galvanized steel.

### 2.04 MOTORS

A. Direct drive motors to be PSC or ECM type, permanently lubricated type with internal thermal overload protection and mounted with rubber isolation bushings.

### 2.05 ELECTRICAL

A. Provide units with 115, 208-230, or 277V, 3-speed with 24v control transformer, and 15 amp service switch or optional ECM motor with 120/24V control transformer, 15 amp service switch, 4 speed taps. Controls to be factory mounted and tested.

### 2.07 COOLING AND HEATING COIL SECTIONS

A. Provide access to coils for service and cleaning..

B. Water Coils: fins shall have full drawn collars to provide a continuous surface cover over the entire tube for maximum heat transfer. Tubes shall be mechanically expanded into the fins to provide a continuous primary-to-secondary compression bond over the entire finned length for maximum heat transfer rates. Bare copper tube shall not be visible between fins. Coil tubes shall be seamless copper, expanded into fins, and brazed at joints. Coil connections shall be copper with sweat connection size to be determined by manufacturer based upon the most efficient coil circuiting. Manual air vent connections shall be provided at the highest point to assure proper venting. Coils shall be tested with 350 pounds air pressure and suitable for 300 psig working pressure. Coil casings shall be a formed channel frame of galvanized steel.

### 2.08 FILTERS

A. Filter to be disposable type and media shall be UL 900 listed, Class I or Class II.

B. MERV 8 can be used as an option, will increase static by 0.25

## Part 3 — Execution

### 3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.



## ACCESS PANELS /FILTER



| *STANDARD PANEL OPTIONS FOR HH SERIES |           |            |                  |              | *IAQ MERV 8 PANEL OPTIONS FOR HH SERIES |           |            |                  |              |
|---------------------------------------|-----------|------------|------------------|--------------|-----------------------------------------|-----------|------------|------------------|--------------|
| PART #                                | UNIT SIZE | PANEL TYPE | FRAME DIMENSIONS | *FILTER SIZE | PART #                                  | UNIT SIZE | PANEL TYPE | FRAME DIMENSIONS | *FILTER SIZE |
| 965                                   | 3,4,5,6,8 | LOUVERED   | 27-1/2 X 43      | 20X20X1 (1)  | 965-M8                                  | 3,4,5,6,8 | LOUVERED   | 27-1/2 X 43      | 20X30X1 (1)  |
| 965-1                                 |           | SOLID      |                  |              |                                         |           |            |                  |              |
| 966                                   | 10        | LOUVERED   | 27-1/2 X 49      | 20X20X1 (1)  | 966-M8                                  | 10        | LOUVERED   | 27-1/2 X 49      | 20X20X1 (2)  |
| 966-1                                 |           | SOLID      |                  |              |                                         |           |            |                  |              |
| 967                                   | 12        | LOUVERED   | 27-1/2 X 55-1/2  | 20X20X1 (1)  | 967-M8                                  | 12        | LOUVERED   | 27-1/2 X 55-1/2  | 20X20X1 (2)  |
| 967-1                                 |           | SOLID      |                  |              |                                         |           |            |                  |              |

NOTE: \* Filters not included

| IAQ PANEL PERFORMANCE DATA (4) (Clean Filter)        |      |      |      |      |      |      |      |      |      |      |
|------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|
|                                                      | CFM  |      |      |      |      |      |      |      |      |      |
|                                                      | 500  | 600  | 700  | 800  | 900  | 1000 | 1100 | 1200 | 1300 | 1500 |
| 965-M8 with AF20301HV (20x030, Merv 8) Filters (2)   | 0.04 | 0.06 | 0.06 | 0.08 | 0.09 | 0.10 | ---  | ---  | ---  | ---  |
| 966-M8 with AF20201HV (20x020, Merv 8) Filters (2)   | 0.04 | 0.06 | 0.06 | 0.08 | 0.09 | 0.10 | ---  | ---  | ---  | ---  |
| 967-M8 with AF20201HV (20x020, Merv 8) Filters (2)   | ---  | 0.05 | 0.05 | 0.07 | 0.08 | 0.10 | ---  | ---  | ---  | ---  |
| 967-6-M8 with AF20251HV (20x025, Merv 8) Filters (2) | ---  | ---  | ---  | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | ---  | ---  |
| 967-8-M8 with AF20301HV (20x30, Merv 8) Filters (2)  | ---  | ---  | ---  | ---  | ---  | 0.06 | 0.06 | 0.08 | 0.08 | 0.10 |

### NOTES:

- (1) The above is the actual laboratory test data on these panels.
- (2) Glassfloss® Industries HV series Merv 8 filters were used to generate above data (**filters must be field supplied**)
- (3) Alternate Merv 8 filters would be acceptable provided they have equal or less resistance.
- (4) Refer to fan coil specification sheets for fan coil blower data.

# ACCESSORIES

## VALVE PACKAGES AND ACCESSORIES

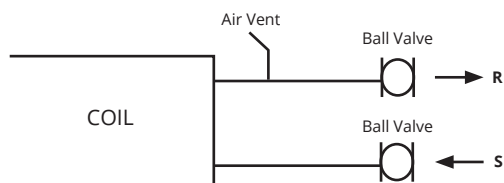
| ACTUATOR                       |           |            | ACTUATOR MATERIALS        |          |                    |  |                  |  |
|--------------------------------|-----------|------------|---------------------------|----------|--------------------|--|------------------|--|
| 2-POSITION<br>(ON-OFF) 50/60HZ |           |            | BASE                      |          | POLYCARBONATE      |  | APPROVALS        |  |
| VOLTAGE                        |           |            | COVER                     |          | POLYCARBONATE      |  | ETL<br>Cul<br>CE |  |
| PART #                         |           | BASE PLATE |                           | ALUMINUM |                    |  |                  |  |
| 24V                            | E50131180 |            | LEAD LENGTH               |          | 6" - (24V 18")     |  |                  |  |
| 120/1/60                       | E50132180 |            | POWER REQUIREMENTS        |          | 6.5W, 7 VA         |  |                  |  |
| 230/1/60                       | E50138180 |            | AMBIENT TEMPERATURE RANGE |          | 32 TO 170 F        |  |                  |  |
| 277/1/60                       | E50137180 |            | MICRO SWITCH              |          | 5 A, 250 V         |  |                  |  |
|                                |           |            | HUMIDITY                  |          | 95% NON-CONDENSING |  |                  |  |
|                                |           |            |                           |          |                    |  |                  |  |
|                                |           |            |                           |          |                    |  |                  |  |
|                                |           |            |                           |          |                    |  |                  |  |
|                                |           |            |                           |          |                    |  |                  |  |
|                                |           |            |                           |          |                    |  |                  |  |
|                                |           |            |                           |          |                    |  |                  |  |
|                                |           |            |                           |          |                    |  |                  |  |
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# PIPING PACKAGE OPTIONS

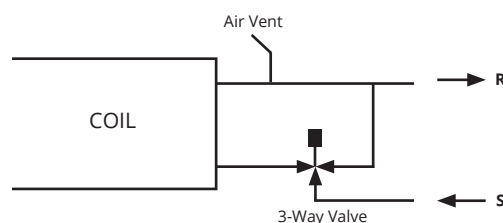
## TWO POSITION OR MODULATING

Manual air vents are standard and are factory mounted on all chilled water and hot water coils.  
*All pre-piped on/off or modulating valve packages are factory assembled with sweat connections.*

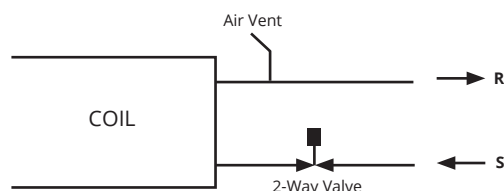
**Ball Valves only, No Control Valve**



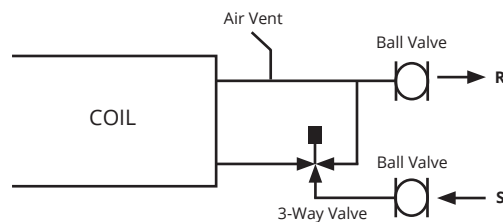
**3-Way Valve, No Ball Valves**



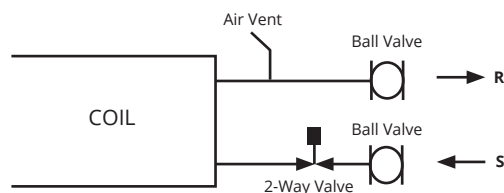
**2-Way Valve, No Ball Valves**



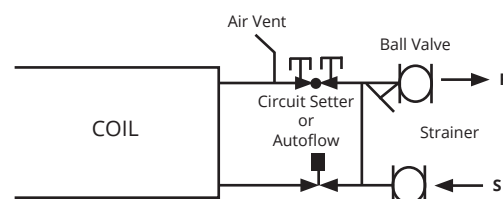
**3-Way Valve, with 2-Ball Valves**



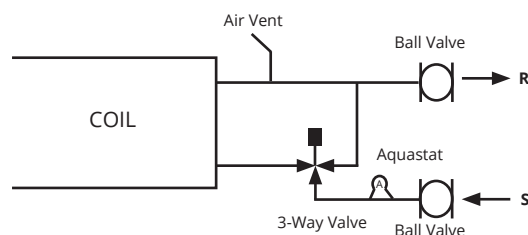
**2-Way Valve with 2-Ball Valves**



**3-Way Valve, with 2-Ball valve and Manual Circuit Setter or Automatic Flow Control, Y-Strainer, PT's**



**3-Way Valve with 2-Ball Valves and Aquastat**



### Add Options:

Y-Strainers, Pete's Plugs, Cleanout Blow-down, SS hose kits, Aquastats

*Additional options and configurations may be available. Contact factory for availability.*

*Valve packages are available as kits or factory mounted on certain products. Contact factory for availability.*