# PHD4
## Product Specifications

## 14 SEER, 12 EER, 8.0 HSPF, PACKAGE HEAT PUMP, 2 to 5 TONS
## 208/230−1−60, Single Phase



### REFRIGERATION CIRCUIT
- Environmentally sound R-410A refrigerant
- Copper tube/aluminum fin condenser and evaporator coils
- Scroll compressor standard on all models
- Short-cycling protection for the compressor is built into the defrost control board
- Dehumidification mode (airflow reduction) on all models

### EASY TO INSTALL AND SERVICE
- Installs easily on a rooftop or at ground level
- Easy three-panel accessibility for maintenance and installation
- Easily converts to down discharge applications
- Combination electric heating and cooling

### BUILT TO LAST
- Hail guard (3/8" spacing) wire grilles standard on PHD3**000K**TP** models (2" spacing wire grilles on non-tin models)
- Direct drive high efficiency ECM blower motor on all models
- Pre-painted steel cabinet
- Vertical condenser fan discharge
- Full perimeter steel base rails
- High and low pressure switches provide added reliability for the compressor
- All models available with optional factory installed tin-coated copper evaporator coil (These models are identified with letters TP in the 11th and 12th positions in the model number)

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ENERGY STAR PARTNER

As an Energy Star® Partner, International Comfort Products has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

AHRI CERTIFIED™ www.ahridirectory.org

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org .

### WARRANTY*
- 5 year No Hassle Replacement™ limited warranty for models with tin coated copper evaporator coils
- 5 year parts limited warranty (including compressor and coils)
  - With timely registration, an additional 5 year parts limited warranty (including compressor and coils)

* Applies to original purchaser/homeowner, some limitations may apply. See warranty certificate for complete details.

### UNIT PERFORMANCE DATA

| Model Number | COOLING | | | HEATING | | Unit Dimensions Height x Width x Depth in (mm) | Operating Weight lbs (kg) |
|---|---|---|---|---|---|---|---|
| | Capacity BTU/h | SEER | EER | Capacity BTU/h | HSPF | | |
| PHD424000K000D | 23,000 | 14.2 | 12.0 | 23,000 | 8.0 | $41\frac{7}{8}$ x $48\frac{3}{16}$ x $32\frac{5}{8}$ (1065 x 1224 x 829) | 348 (158) |
| PHD424000KTP0D | 23,000 | 14.2 | 12.0 | 23,000 | 8.0 | $41\frac{7}{8}$ x $48\frac{3}{16}$ x $32\frac{5}{8}$ (1065 x 1224 x 829) | 348 (158) |
| PHD430000K000D | 28,600 | 14.2 | 12.0 | 29,600 | 8.0 | $45\frac{7}{8}$ x $48\frac{3}{16}$ x $32\frac{5}{8}$ (1165 x 1224 x 829) | 340 (154) |
| PHD430000KTP0D | 28,600 | 14.2 | 12.0 | 29,600 | 8.0 | $45\frac{7}{8}$ x $48\frac{3}{16}$ x $32\frac{5}{8}$ (1165 x 1224 x 829) | 340 (154) |
| PHD436000K000D | 35,800 | 14.5 | 12.0 | 35,800 | 8.0 | $43\frac{7}{8}$ x $48\frac{3}{16}$ x $44\frac{1}{8}$ (1116 x 1224 x 1123) | 418 (190) |
| PHD436000KTP0D | 35,800 | 14.5 | 12.0 | 35,800 | 8.0 | $43\frac{7}{8}$ x $48\frac{3}{16}$ x $44\frac{1}{8}$ (1116 x 1224 x 1123) | 418 (190) |
| PHD442000K000D | 40,500 | 14.5 | 12.0 | 41,500 | 8.0 | $49\frac{7}{8}$ x $48\frac{3}{16}$ x $44\frac{1}{8}$ (1266 x 1224 x 1123) | 464 (210) |
| PHD442000KTP0D | 40,500 | 14.5 | 12.0 | 41,500 | 8.0 | $49\frac{7}{8}$ x $48\frac{3}{16}$ x $44\frac{1}{8}$ (1266 x 1224 x 1123) | 464 (210) |
| PHD448000K000D | 46,500 | 14.5 | 12.0 | 45,500 | 8.0 | $49\frac{7}{8}$ x $48\frac{3}{16}$ x $44\frac{1}{8}$ (1266 x 1224 x 1123) | 452 (205) |
| PHD448000KTP0D | 46,500 | 14.5 | 12.0 | 45,500 | 8.0 | $49\frac{7}{8}$ x $48\frac{3}{16}$ x $44\frac{1}{8}$ (1266 x 1224 x 1123) | 452 (205) |
| PHD460000K000D | 57,000 | 14.5 | 12.0 | 59,000 | 8.0 | $53\frac{7}{8}$ x $48\frac{3}{16}$ x $44\frac{1}{8}$ (1368 x 1224 x 1123) | 506 (230) |
| PHD460000KTP0D | 57,000 | 14.5 | 12.0 | 59,000 | 8.0 | $53\frac{7}{8}$ x $48\frac{3}{16}$ x $44\frac{1}{8}$ (1368 x 1224 x 1123) | 506 (230) |

## MODEL NOMENCLATURE

| MODEL SERIES | 1 | 2 | 3 | 4 | 5,6 | 7,8,9 | 10 | 11,12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | H | D | 4 | 36 | 000 | K | 00 | 0 | D | 1 |

- P = Package
- H = Heat Pump
- D = Standard

**TIER**

- 3 = 13
- 4 = 14
- 5 = 15

**SEER**

- 24 = 24,000 BTUH = 2 Tons
- 30 = 30,000 BTUH = 2.5 Tons
- 36 = 36,000 BTUH = 3 Tons
- 42 = 42,000 BTUH = 3.5 Tons
- 48 = 48,000 BTUH = 4 Tons
- 60 = 60,000 BTUH = 5 Tons

**NOMINAL COOLING CAPACITY**

- 000 = no factory heat

**NOMINAL HEATING BTUH (input)**

- K = 208/230−1−60

**VOLTAGE**

- 00 = No options
- TP = Tin Plated Evaporator Main Tubes

**FACTORY INSTALLED OPTIONS**

- 0 = Standard

**FEATURE CODE**

- Sales Model Digit
- Engineering Digit

## AHRI* CAPACITIES

| COOLING CAPACITIES AND EFFICIENCIES | | | | | |
|---|---|---|---|---|---|
| PHD4 | NOMINAL TONS | STANDARD CFM | COOLING CAPACITY | EER | SEER |
| **24** | 2 | 800 | 23000 | 12.0 | 14.2 |
| **30** | 2.5 | 1000 | 28600 | 12.0 | 14.2 |
| **36** | 3 | 1200 | 35800 | 12.0 | 14.5 |
| **42** | 3.5 | 1400 | 40500 | 12.0 | 14.5 |
| **48** | 4 | 1600 | 46500 | 12.0 | 14.5 |
| **60** | 5 | 1750 | 57000 | 12.0 | 14.5 |

| HEAT PUMP HEATING CAPACITIES AND EFFICIENCIES | | | | | |
|---|---|---|---|---|---|
| PHD4 | HEATING CAPACITY (BTUH) @ 47 °F (8.3 °C) | COP @ 47 °F (8.3 °C) | HEATING CAPACITY (BTUH) @ 17 °F (−8.3 °C) | COP @ 17°F (−8.3 °C) | HSPF |
| **24** | 23000 | 3.5 | 11400 | 2.2 | 8.0 |
| **30** | 29600 | 3.5 | 15400 | 2.2 | 8.0 |
| **36** | 35800 | 3.5 | 19800 | 2.2 | 8.0 |
| **42** | 41500 | 3.4 | 23000 | 2.3 | 8.0 |
| **48** | 45500 | 3.4 | 26000 | 2.3 | 8.0 |
| **60** | 59000 | 3.5 | 32000 | 2.3 | 8.0 |

LEGEND
**dB—**Sound Levels (decibels)
**db**—Dry Bulb
**SEER**—Seasonal Energy Efficiency Ratio
**wb**—Wet Bulb
**COP**—Coefficient of Performance
**HSPF**—Heating Season Performance Factor
* Air Conditioning, Heating, & Refrigeration Institute.
**At "A" conditions—80°F (26.7°C) indoor db/67°F (19.4°C) indoor wb & 95°F (35°C) outdoor db.
† Rated in accordance with U.S. Government DOE Department of Energy) test procedures and/or ARI Standards 210/240.

Notes:
1. Ratings are net values, reflecting the effects of circulating fan heat. Ratings are based on:
**Cooling Standard:** 80°F (26.7°C) db, 67°F (19.4°C) wb indoor entering−air temperature and 95°F (35°C) db outdoor entering−air temperature.
2. Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

## ELECTRICAL DATA − PHD4

| MODEL | V-PH-HZ | RANGE MIN | RANGE MAX | RLA | LRA | OFM FLA | IFM FLA | NOMINAL kW 208v/230v | FLA 208v/230v | MCA 208v/230v | MOCP 208v/230v |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PHD424 | 208/230-1-60 | 197 | 253 | 13.5 | 58.3 | 0.7 | 4.1 | -/- | -/- | 21.7 | 30 |
| | | | | | | | | 3.8/5 | 18.1/20.8 | 44.3/47.7 | 45/50 |
| | | | | | | | | 5.4/7.2 | 25.9/30 | 54.1/59.2 | 60/60 |
| | | | | | | | | 7.5/10 | 36.1/41.7 | 66.8/73.8 | 70/80 |
| PHD430 | | 197 | 253 | 14.1 | 73 | 1.2 | 4.1 | -/- | -/- | 22.9 | 35 |
| | | | | | | | | 3.8/5 | 18.1/20.8 | 45.6/48.9 | 50/50 |
| | | | | | | | | 5.4/7.2 | 25.9/30 | 55.3/60.4 | 60/70 |
| | | | | | | | | 7.5/10 | 36.1/41.7 | 68.1/75.1 | 70/80 |
| | | | | | | | | 11.3/15 | 54.2/62.5 | 90.7/101.1 | 100/110 |
| PHD436 | | 197 | 253 | 17.1 | 79 | 1.2 | 6.0 | -/- | -/- | 28.6 | 40 |
| | | | | | | | | 3.8/5 | 18.1/20.8 | 51.2/54.6 | 60/60 |
| | | | | | | | | 5.4/7.2 | 25.9/30 | 61.0/66.1 | 70/70 |
| | | | | | | | | 7.5/10 | 36.1/41.7 | 73.7/80.7 | 80/90 |
| | | | | | | | | 11.3/15 | 54.2/62.5 | 96.3/106.7 | 100/110 |
| PHD442 | | 197 | 253 | 20.6 | 112 | 1.2 | 6.0 | -/- | -/- | 33.0 | 50 |
| | | | | | | | | 3.8/5 | 18.1/20.8 | 55.6/59.0 | 60/60 |
| | | | | | | | | 5.4/7.2 | 25.9/30 | 65.3/70.5 | 70/80 |
| | | | | | | | | 7.5/10 | 36.1/41.7 | 78.1/85.1 | 80/90 |
| | | | | | | | | 11.3/15 | 54.2/62.5 | 100.7/111.1 | 110/125 |
| | | | | | | | | 15/20 | 72.2/83.3 | 123.2/137.1 | 125/150 |
| PHD448 | | 197 | 253 | 23.4 | 109 | 1.2 | 7.6 | -/- | -/- | 38.1 | 50 |
| | | | | | | | | 3.8/5 | 18.1/20.8 | 60.7/64.1 | 70/70 |
| | | | | | | | | 5.4/7.2 | 25.9/30 | 70.4/75.6 | 80/80 |
| | | | | | | | | 7.5/10 | 36.1/41.7 | 83.2/90.2 | 90/100 |
| | | | | | | | | 11.3/15 | 54.2/62.5 | 105.8/116.2 | 110/125 |
| | | | | | | | | 15/20 | 72.2/83.3 | 128.3/142.2 | 150/150 |
| PHD460 | | 197 | 253 | 29.6 | 134 | 1.2 | 7.6 | -/- | -/- | 45.8 | 60 |
| | | | | | | | | 3.8/5 | 18.1/20.8 | 68.4/71.8 | 70/80 |
| | | | | | | | | 5.4/7.2 | 25.9/30 | 78.2/83.3 | 80/90 |
| | | | | | | | | 7.5/10 | 36.1/41.7 | 90.9/97.9 | 100/100 |
| | | | | | | | | 11.3/15 | 54.2/62.5 | 113.6/123.9 | 125/125 |
| | | | | | | | | 15/20 | 72.2/83.3 | 136.1/149.9 | 150/150 |

See Legend and Notes.

LEGEND

FLA -- Full Load Amps
LRA -- Locked Rotor Amps
MCA -- Minimum Circuit Amps
MOCP -- Maximum Overcurrent Protection
RLA -- Rated Load Amps

NOTES:

1. In compliance with NEC (National Electrical Code) requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be Power Supply fuse. The CGA (Canadian Gas Association) units may be fuse or circuit breaker.
2. Minimum wire size is based on 60 C copper wire. If other than 60 C wire is used, or if length exceeds wire length in table, determine size from NEC.

| PHYSICAL DATA – UNIT PHD4 | | | | | | |
|---|---|---|---|---|---|---|
| **UNIT SIZE** | **24** | **30** | **36** | **42** | **48** | **60** |
| **NOMINAL CAPACITY (ton)** | 2 | 2.5 | 3 | 3.5 | 4 | 5 |
| **Shipping Weight (lb)**<br>**(kg)** | 354<br>161 | 346<br>157 | 426<br>193 | 472<br>214 | 460<br>209 | 506<br>230 |
| **Compressor Quantity** | 1 | | | | | |
| **Type** | Scroll | | | | | |
| **Refrigerant** | R-410A | | | | | |
| **Refrigerant Quantity (lb)**<br>**Quantity (kg)** | 11.1<br>5.0 | 10.3<br>4.7 | 9.9<br>4.5 | 11.3<br>5.1 | 12.5<br>5.7 | 15.2<br>6.9 |
| **Refrigerant Metering Device** | Indoor TXV, Outdoor Dual Orifice | | | | | |
| **Orifice OD (in)**<br>**(mm)** | 0.032 (2)<br>0.81 (2) | 0.037 (2)<br>0.94 (2) | 0.038 (2)<br>0.97 (2) | 0.040 (2)<br>1.02 (2) | 0.040 (2)<br>1.02 (2) | 0.049 (2)<br>1.24 (2) |
| **Outdoor Coil**<br>**Rows...Fins/in,**<br>**face area (sq. ft.)** | <br>2...21<br>13.6 | <br>2...21<br>13.6 | <br>2...21<br>13.6 | <br>2...21<br>17.5 | <br>2...21<br>17.5 | <br>2...21<br>23.3 |
| **Outdoor Fan**<br>**Nominal Airflow (cfm)**<br>**Diameter (in.)**<br>**Diameter (mm)**<br>**Motor hp (rpm)** | <br>2500<br>24<br>610<br>1/10 (810) | <br>2700<br>24<br>610<br>1/5 (810) | <br>3100<br>26<br>660<br>1/5 (810) | <br>3100<br>26<br>660<br>1/5 (810) | <br>3100<br>26<br>660<br>1/5 (810) | <br>3500<br>26<br>660<br>1/4 (810) |
| **Indoor Coil**<br>**Rows...Fins/in,**<br>**face area (sq. ft.)** | <br>3...17<br>3.7 | <br>3...17<br>3.7 | <br>3...17<br>4.7 | <br>3...17<br>4.7 | <br>3...17<br>5.6 | <br>3...17<br>5.6 |
| **Indoor Blower**<br>**Nominal Airflow (cfm)**<br>**Size (in.)**<br>**Size (mm)**<br>**Motor hp (rpm)** | <br>800<br>10 x 10<br>254 x 254<br>1/2 | <br>1000<br>10 x 10<br>254 x 254<br>1/2 | <br>1200<br>11 x 10<br>279 x 254<br>3/4 | <br>1400<br>11 x 10<br>279 x 254<br>3/4 | <br>1600<br>11 x 10<br>279 x 254<br>1 | <br>1750<br>11 x 10<br>279 x 254<br>1 |
| **High Pressure Switch (psig)**<br>**Cutout**<br>**Reset (Auto)** | <br>650 +/- 15<br>420 +/- 25 | | | | | |
| **Loss-of-Charge/Low Pressure Switch (psig)**<br>**Cutout**<br>**Reset (Auto)** | <br>20 +/- 5<br>45 +/- 10 | | | | | |
| **Return Air Filters**<br>**disposable (in)**<br>**(mm)** | <br>20x20x1<br>508x508x25 | <br>20x24x1<br>508x610x25 | <br>24x30x1<br>610x762x25 | | <br>24x36x1<br>610x914x25 | |

*Required filter sizes shown are based on the larger of the AHRI (Air conditioning, Heating, and Refrigeration Institute) rated cooling airflow or the heating airflow velocity of 300 ft/minute for throwaway type or 450 ft/minute for high−capacity type. Air filter pressure drop for non−standard filters must not exceed 0.08 IN. W.C.

† If using accessory filter rack refer to the filter rack installation instructions for correct filter size and quantity.

| A−WEIGHTED SOUND POWER LEVEL (dBA) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **STANDARD RATING** | **TYPICAL OCTAVE BAND SPECTRUM (dBA) (without tone adjustment)** | | | | | | |
| **MODEL PHD4** | **(dBA)** | **125** | **250** | **500** | **1000** | **2000** | **4000** | **8000** |
| 24 | 74 | 67.0 | 65.5 | 68.5 | 68.0 | 63.5 | 59.5 | 53.5 |
| 30 | 72 | 61.5 | 62.5 | 66.0 | 66.0 | 63.0 | 57.5 | 50.5 |
| 36 | 78 | 62.0 | 69.0 | 72.5 | 73.0 | 70.5 | 67.5 | 62.0 |
| 42 | 75 | 62.5 | 62.5 | 68.5 | 70.0 | 67.0 | 62.0 | 58.5 |
| 48 | 78 | 70.5 | 69.5 | 71.0 | 72.5 | 69.5 | 66.0 | 59.5 |
| 60 | 79 | 69.0 | 69.0 | 71.5 | 74.0 | 72.0 | 67.5 | 59.5 |

NOTE: Tested in accordance with AHRI Standard 270 (not listed in AHRI).

## DRY COIL AIR DELIVERY* – HORIZONTAL AND DOWNFLOW DISCHARGE – UNIT PHD424–60

| Unit | Motor Speed | Wire Color | | External Static Pressure (in W.C) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
| PHD424 | Low | Blue | cfm | 754 | 650 | 536 | 429 | --- | --- | --- | --- | --- |
| | Med-Low | Pink | cfm | 851 | 777 | 675 | 591 | 475 | --- | --- | --- | --- |
| | Medium[1] | Red | cfm | 941 | 851 | 774 | 684 | 576 | 479 | --- | --- | --- |
| | Med-High | Orange | cfm | 1009 | 917 | 840 | 759 | 667 | 577 | 447 | --- | --- |
| | High | Black | cfm | 1241 | 1167 | 1111 | 1036 | 969 | 881 | 818 | 731 | 640 |
| PHD430 | Low | Blue | cfm | 741 | 638 | 547 | 415 | --- | --- | --- | --- | --- |
| | Med-Low | Pink | cfm | 973 | 887 | 823 | 733 | 665 | 538 | 451 | --- | --- |
| | Medium | Red | cfm | 1088 | 1023 | 954 | 881 | 800 | 723 | 658 | 563 | 461 |
| | Med-High[1] | Orange | cfm | 1140 | 1064 | 996 | 915 | 840 | 758 | 687 | 564 | 480 |
| | High | Black | cfm | 1202 | 1140 | 1082 | 1015 | 961 | 881 | 810 | 732 | 631 |
| PHD436 | Low | Blue | cfm | 1176 | 1121 | 1079 | 1019 | 974 | 920 | 877 | 826 | 754 |
| | Med-Low | Pink | cfm | 1295 | 1234 | 1182 | 1126 | 1075 | 1016 | 955 | 898 | 857 |
| | Medium[1] | Red | cfm | 1345 | 1282 | 1235 | 1194 | 1140 | 1095 | 1027 | 974 | 921 |
| | Med-High | Orange | cfm | 1505 | 1452 | 1413 | 1358 | 1323 | 1282 | 1234 | 1169 | 1130 |
| | High | Black | cfm | 1705 | 1643 | 1607 | 1568 | 1518 | 1483 | 1448 | 1404 | 1360 |
| PHD442 | Low | Blue | cfm | 1295 | 1234 | 1182 | 1126 | 1075 | 1016 | 955 | 898 | 857 |
| | Med-Low | Pink | cfm | 1345 | 1282 | 1235 | 1194 | 1140 | 1095 | 1027 | 974 | 921 |
| | Medium | Red | cfm | 1505 | 1452 | 1413 | 1358 | 1323 | 1282 | 1234 | 1169 | 1130 |
| | Med-High[1] | Orange | cfm | 1545 | 1492 | 1449 | 1411 | 1362 | 1313 | 1278 | 1231 | 1188 |
| | High | Black | cfm | 1705 | 1643 | 1607 | 1568 | 1518 | 1483 | 1448 | 1404 | 1360 |
| PHD448 | Low | Blue | cfm | 1430 | 1374 | 1327 | 1267 | 1223 | 1176 | 1127 | 1061 | 1016 |
| | Med-Low | Pink | cfm | 1445 | 1389 | 1341 | 1281 | 1236 | 1189 | 1139 | 1072 | 1027 |
| | Medium[1] | Red | cfm | 1678 | 1635 | 1602 | 1558 | 1513 | 1474 | 1438 | 1404 | 1349 |
| | Med-High | Orange | cfm | 2131 | 2088 | 2065 | 2013 | 1982 | 1941 | 1888 | 1860 | 1785 |
| | High | Black | cfm | 2461 | 2409 | 2339 | 2286 | 2192 | 2140 | 2062 | 1968 | 1874 |
| PHD460 | Low | Blue | cfm | 1445 | 1389 | 1341 | 1281 | 1236 | 1189 | 1139 | 1072 | 1027 |
| | Med-Low | Pink | cfm | 1678 | 1635 | 1602 | 1558 | 1513 | 1474 | 1438 | 1404 | 1349 |
| | Medium[1] | Red | cfm | 1962 | 1915 | 1880 | 1843 | 1794 | 1753 | 1711 | 1675 | 1628 |
| | Med-High | Orange | cfm | 2131 | 2088 | 2065 | 2013 | 1982 | 1941 | 1888 | 1860 | 1785 |
| | High | Black | cfm | 2461 | 2409 | 2339 | 2286 | 2192 | 2140 | 2062 | 1968 | 1874 |

* Air delivery values are without air filter and are for dry coil (See PHD4–A Wet Coil Pressure Drop Table).

[1] Factory–shipped cooling/heat pump heating speed

**NOTE**: For horizontal applications deduct field–supplied air filter pressure drop and wet coil pressure drop to obtain external static pressure available for ducting. For downflow applications see Wet Coil Air Delivery table for available static including wet coil, 1–in. (25 mm) filter and economizer.

Shaded areas indicate speed/static combinations that are not permitted for dehumidification speed.

## HORIZONTAL WET COIL PRESSURE DROP (in wc)

| UNIT SIZE | STANDARD CFM (S.C.F.M) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
| 24 | | 0.06 | 0.07 | 0.08 | 0.09 | 0.1 | | | | | | | | | | |
| 30 | | | | 0.12 | 0.15 | 0.19 | 0.23 | 0.27 | | | | | | | | |
| 36 | | | | | | 0.07 | 0.11 | 0.18 | 0.26 | 0.35 | | | | | | |
| 42 | | | | | | | | 0.04 | 0.07 | 0.1 | 0.15 | 0.21 | | | | |
| 48 | | | | | | | | | | 0.11 | 0.14 | 0.17 | 0.22 | 0.28 | | |
| 60 | | | | | | | | | | | | 0.1 | 0.17 | 0.23 | 0.31 | 0.36 |

## WET COIL AIR DELIVERY (CFM) – DOWNFLOW – HIGH SPEED WITH 1–IN. (25 MM) FILTER AND ECONOMIZER

| UNIT SIZE | EXTERNAL STATIC PRESSURE (in. W.C.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| 36, 42 | 1612 | 1569 | 1527 | 1481 | 1451 | 1393 | 1351 | 1317 | 1278 | 1242 |
| 48 | 2298 | 2239 | 2180 | 2110 | 2044 | 1951 | 1862 | 1777 | 1697 | 1591 |
| 60 | 2000 | 1926 | 1825 | 1820 | 1759 | 1705 | 1634 | 1496 | 1412 | 1328 |

## HORIZONTAL FILTER PRESSURE DROP TABLE (in wc)

| FILTER SIZE in. (mm) | STANDARD CFM (S.C.F.M) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
| 20X20X1 (508X508X25) | 0.05 | 0.07 | 0.08 | 0.1 | 0.12 | 0.13 | 0.14 | 0.15 | — | — | — | — | — | — | — | — | — | — | — |
| 20X24X1 (508X610x25) | — | — | — | .09 | .10 | .11 | .13 | .14 | .15 | .16 | — | — | — | — | — | — | — | — | — |
| 24X30X1 (610X762x25) | — | — | — | 0.04 | 0.05 | 0.06 | 0.07 | 0.07 | 0.08 | 0.09 | 0.1 | — | — | — | — | — | — | — | — |
| 24X36X1 (610X914X25) | — | — | — | — | — | — | — | 0.06 | 0.07 | 0.07 | 0.08 | 0.09 | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 | 0.14 |

## ECONOMIZER 1−IN. (25 MM) FILTER PRESSURE DROP (in wc)

| UNIT PHD4 | PRESSURE DROP |
|---|---|
| 24−30 | 0.20 |
| 36−60 | 0.25 |

## MULTIPLICATION FACTORS

| HEATER kW RATING | VOLTAGE DISTRIBUTION | MULTIPLICATION FACTOR |
|---|---|---|
| 240 | 200 | 0.69 |
| | 208 | 0.75 |
| | 230 | 0.92 |
| | 240 | 1.00 |

## ELECTRIC HEAT PRESSURE DROP TABLE (in wc) SMALL CABINET: 24−30

| HEATER CAPACITY | STANDARD CFM (S.C.F.M) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 |
| 5kw | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.06 | 0.07 |
| 7.5 kw | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.03 | 0.05 | 0.07 | 0.08 | 0.09 |
| 10 kw | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.06 | 0.07 | 0.09 | 0.10 | 0.11 |
| 15 kw | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.06 | 0.08 | 0.10 | 0.12 | 0.14 | 0.16 | 0.18 |

## ELECTRIC HEAT PRESSURE DROP TABLE (in wc) LARGE CABINET 36−60

| HEATER CAPACITY | STANDARD CFM (S.C.F.M) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | 2500 |
| 5kw | 0.00 | 0.00 | 0.00 | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 |
| 7.5 kw | 0.00 | 0.00 | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 |
| 10 kw | 0.00 | 0.00 | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 |
| 15 kw | 0.00 | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 | 0.15 |
| 20 kw | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 | 0.15 | 0.16 |

## MINIMUM AIRFLOW FOR RELIABLE ELECTRIC HEATER OPERATION (CFM)

| SIZE | PHD424 | PHD430 | PHD436 | PHD442 | PHD448 | PHD460 |
|---|---|---|---|---|---|---|
| AIRFLOW (CFM) | 800 | 1025 | 1250 | 1400 | 1710 | 1800 |

## PHD424 COOLING EXTENDED PERFORMANCE TABLE

| EVAPORATOR AIR | | CONDENSER ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 75 (23.9) | | | 85 (29.4) | | | 95 (35) | | | 105 (40.6) | | | 115 (46.1) | | | 125 (51.7) | | |
| | | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW |
| CFM / BF | EWB °F (°C) | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | |
| 700 / 0.08 | 57 (13.8) | 23.20 | 23.20 | 1.51 | 21.79 | 21.79 | 1.69 | 20.35 | 20.35 | 1.90 | 18.87 | 18.87 | 2.12 | 17.34 | 17.34 | 2.36 | 15.72 | 15.72 | 2.63 |
| | 62 (16.6) | 23.89 | 22.10 | 1.51 | 22.26 | 20.78 | 1.69 | 20.63 | 19.47 | 1.90 | 18.99 | 18.11 | 2.12 | 17.35 | 17.35 | 2.36 | 15.72 | 15.72 | 2.63 |
| | 63* (17.2) | 24.22 | 17.97 | 1.51 | 22.54 | 16.83 | 1.69 | 20.86 | 15.71 | 1.90 | 19.15 | 14.59 | 2.12 | 17.40 | 13.47 | 2.36 | 15.56 | 12.33 | 2.63 |
| | 67 (19.4) | 26.13 | 18.68 | 1.51 | 24.33 | 17.52 | 1.69 | 22.51 | 16.37 | 1.90 | 20.66 | 15.25 | 2.12 | 18.76 | 14.06 | 2.37 | 16.75 | 12.87 | 2.63 |
| | 72 (22.2) | 28.61 | 15.23 | 1.51 | 26.64 | 14.20 | 1.70 | 24.63 | 13.18 | 1.90 | 22.59 | 12.15 | 2.13 | 20.48 | 11.12 | 2.37 | 18.24 | 10.05 | 2.63 |
| 800 / 0.09 | 57 (13.8) | 24.24 | 24.24 | 1.53 | 22.73 | 22.73 | 1.71 | 21.20 | 21.20 | 1.91 | 19.62 | 19.62 | 2.14 | 18.00 | 18.00 | 2.38 | 16.26 | 16.26 | 2.64 |
| | 62 (16.6) | 24.56 | 23.69 | 1.53 | 22.89 | 22.23 | 1.71 | 21.22 | 21.22 | 1.91 | 19.62 | 19.62 | 2.14 | 18.00 | 18.00 | 2.38 | 16.26 | 16.26 | 2.64 |
| | 63* (17.2) | 24.83 | 19.13 | 1.53 | 23.09 | 17.95 | 1.71 | 21.33 | 16.77 | 1.91 | 19.55 | 15.59 | 2.14 | 17.72 | 14.39 | 2.38 | 15.82 | 13.15 | 2.64 |
| | 67 (19.4) | 26.77 | 19.94 | 1.53 | 24.90 | 18.72 | 1.71 | 23.00 | 17.50 | 1.92 | 21.07 | 16.28 | 2.14 | 19.09 | 15.05 | 2.38 | 17.00 | 13.78 | 2.65 |
| | 72 (22.2) | 29.30 | 16.01 | 1.53 | 27.24 | 14.94 | 1.72 | 25.15 | 13.87 | 1.92 | 23.02 | 12.79 | 2.14 | 21.99 | 12.21 | 2.11 | 18.49 | 10.58 | 2.65 |
| 900 / 0.10 | 57 (13.8) | 25.13 | 25.13 | 1.54 | 23.54 | 23.54 | 1.73 | 21.92 | 21.92 | 1.93 | 20.26 | 20.26 | 2.16 | 18.53 | 18.53 | 2.40 | 16.69 | 16.69 | 2.66 |
| | 62 (16.6) | 25.17 | 25.17 | 1.54 | 23.54 | 23.54 | 1.73 | 21.92 | 21.92 | 1.93 | 20.26 | 20.26 | 2.16 | 18.53 | 18.53 | 2.40 | 16.70 | 16.70 | 2.66 |
| | 63* (17.2) | 25.31 | 20.26 | 1.54 | 23.51 | 19.02 | 1.73 | 21.70 | 17.77 | 1.93 | 19.86 | 16.52 | 2.16 | 17.98 | 15.25 | 2.40 | 16.03 | 13.93 | 2.66 |
| | 67 (19.4) | 27.29 | 21.14 | 1.55 | 25.34 | 19.86 | 1.73 | 23.38 | 18.58 | 1.93 | 21.38 | 17.30 | 2.16 | 19.34 | 15.99 | 2.40 | 17.19 | 14.61 | 2.66 |
| | 72 (22.2) | 29.85 | 16.75 | 1.55 | 27.72 | 15.64 | 1.73 | 25.55 | 14.52 | 1.94 | 23.35 | 13.40 | 2.16 | 22.34 | 12.76 | 2.13 | 18.67 | 11.09 | 2.66 |

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

## PHD424 HEATING EXTENDED PERFORMANCE TABLE −10−60 (−23.3−15.6_C)

| INDOOR AIR | | OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | −10 (−23.3) | | | 0 (−17.8) | | | 10 (−12.2) | | | 20 (−6.7) | | | 30 (−1.1) | | | 40 (4.4) | | | 50 (10) | | | 60 (15.6) | | |
| | | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW |
| EDB | CFM | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | |
| 65 | 700 | 7.36 | 6.77 | 1.58 | 9.63 | 8.86 | 1.63 | 12.04 | 11.05 | 1.68 | 14.61 | 13.25 | 1.74 | 17.53 | 15.36 | 1.81 | 20.88 | 20.88 | 1.90 | 24.68 | 24.68 | 2.02 | 29.14 | 29.14 | 2.15 |
| | 800 | 7.48 | 6.88 | 1.58 | 9.76 | 8.98 | 1.62 | 12.18 | 11.18 | 1.67 | 14.77 | 13.40 | 1.72 | 17.76 | 15.56 | 1.78 | 21.18 | 21.18 | 1.86 | 25.22 | 25.22 | 1.96 | 29.17 | 29.17 | 2.09 |
| | 900 | 7.58 | 6.97 | 1.59 | 9.86 | 9.07 | 1.62 | 12.30 | 11.29 | 1.66 | 14.92 | 13.53 | 1.70 | 17.99 | 15.76 | 1.76 | 21.51 | 21.51 | 1.84 | 25.23 | 25.23 | 1.93 | 28.82 | 28.82 | 2.06 |
| 70 | 700 | 7.07 | 6.50 | 1.66 | 9.38 | 8.63 | 1.71 | 11.80 | 10.83 | 1.77 | 14.39 | 13.05 | 1.83 | 17.25 | 15.12 | 1.91 | 20.57 | 20.57 | 2.00 | 24.27 | 24.27 | 2.12 | 28.75 | 28.75 | 2.27 |
| | 800 | 7.18 | 6.61 | 1.66 | 9.50 | 8.75 | 1.71 | 11.94 | 10.96 | 1.76 | 14.55 | 13.20 | 1.81 | 17.47 | 15.31 | 1.88 | 20.85 | 20.85 | 1.96 | 24.78 | 24.78 | 2.07 | 28.90 | 28.90 | 2.19 |
| | 900 | 7.28 | 6.70 | 1.67 | 9.61 | 8.85 | 1.71 | 12.07 | 11.08 | 1.75 | 14.68 | 13.32 | 1.80 | 17.66 | 15.47 | 1.85 | 21.09 | 21.09 | 1.93 | 25.00 | 25.00 | 2.03 | 28.67 | 28.67 | 2.16 |
| 75 | 700 | 6.74 | 6.20 | 1.74 | 9.10 | 8.38 | 1.80 | 11.56 | 10.61 | 1.87 | 14.17 | 12.85 | 1.93 | 16.98 | 14.88 | 2.01 | 20.27 | 20.27 | 2.11 | 23.90 | 23.90 | 2.23 | 28.30 | 28.30 | 2.39 |
| | 800 | 6.86 | 6.31 | 1.74 | 9.23 | 8.50 | 1.80 | 11.70 | 10.74 | 1.85 | 14.33 | 12.99 | 1.91 | 17.19 | 15.06 | 1.98 | 20.53 | 20.53 | 2.06 | 24.32 | 24.32 | 2.17 | 28.58 | 28.58 | 2.30 |
| | 900 | 6.96 | 6.41 | 1.75 | 9.35 | 8.60 | 1.80 | 11.82 | 10.85 | 1.84 | 14.46 | 13.12 | 1.89 | 17.37 | 15.22 | 1.95 | 20.76 | 20.76 | 2.04 | 24.73 | 24.73 | 2.14 | 28.48 | 28.48 | 2.27 |

See Legend and Notes following tables.

## PHD430 COOLING EXTENDED PERFORMANCE TABLE

| EVAPORATOR AIR | | CONDENSER ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 75 (23.9) | | | 85 (29.4) | | | 95 (35) | | | 105 (40.6) | | | 115 (46.1) | | | 125 (51.7) | | |
| CFM / BF | EWB °F (°C) | Capacity MBtuh Total | Capacity MBtuh Sens | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Sens | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Sens | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Sens | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Sens | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Sens | Total Sys KW |
| **875 / 0.05** | 57 (13.8) | 28.47 | 28.47 | 1.94 | 27.21 | 27.21 | 2.15 | 25.85 | 25.85 | 2.37 | 24.39 | 24.39 | 2.62 | 22.78 | 22.78 | 2.88 | 20.95 | 20.95 | 3.15 |
| | 62 (16.6) | 29.18 | 25.42 | 1.94 | 27.67 | 24.95 | 2.15 | 26.09 | 24.39 | 2.37 | 24.42 | 24.42 | 2.62 | 22.78 | 22.78 | 2.88 | 20.95 | 20.95 | 3.15 |
| | 63* (17.2) | 29.61 | 20.60 | 1.94 | 28.05 | 20.16 | 2.15 | 26.40 | 19.65 | 2.38 | 24.64 | 19.08 | 2.62 | 22.73 | 18.41 | 2.88 | 20.62 | 17.62 | 3.15 |
| | 67 (19.4) | 31.91 | 21.40 | 1.95 | 30.23 | 20.96 | 2.16 | 28.45 | 20.46 | 2.38 | 26.52 | 19.88 | 2.63 | 24.44 | 19.21 | 2.89 | 22.12 | 18.39 | 3.16 |
| | 72 (22.2) | 34.97 | 17.28 | 1.96 | 33.11 | 16.85 | 2.17 | 31.12 | 16.32 | 2.39 | 28.99 | 15.72 | 2.64 | 26.68 | 15.03 | 2.90 | 24.10 | 14.20 | 3.17 |
| **1000 / 0.05** | 57 (13.8) | 29.72 | 29.72 | 1.98 | 28.36 | 28.36 | 2.18 | 26.91 | 26.91 | 2.41 | 25.32 | 25.32 | 2.65 | 23.58 | 23.58 | 2.91 | 21.60 | 21.60 | 3.19 |
| | 62 (16.6) | 29.97 | 27.26 | 1.98 | 28.41 | 28.34 | 2.18 | 26.91 | 26.91 | 2.41 | 25.33 | 25.33 | 2.65 | 23.58 | 23.58 | 2.91 | 21.60 | 21.60 | 3.19 |
| | 63* (17.2) | 30.31 | 21.98 | 1.98 | 28.67 | 21.52 | 2.18 | 26.94 | 21.00 | 2.41 | 25.10 | 20.40 | 2.65 | 23.10 | 19.69 | 2.91 | 20.89 | 18.83 | 3.18 |
| | 67 (19.4) | 32.64 | 22.87 | 1.99 | 30.88 | 22.42 | 2.19 | 29.00 | 21.90 | 2.42 | 26.98 | 21.29 | 2.66 | 24.80 | 20.58 | 2.92 | 22.39 | 19.70 | 3.19 |
| | 72 (22.2) | 35.74 | 18.21 | 2.00 | 33.79 | 17.74 | 2.20 | 31.70 | 17.19 | 2.43 | 29.47 | 16.56 | 2.67 | 27.04 | 15.84 | 2.93 | 24.35 | 14.99 | 3.20 |
| **1125 / 0.06** | 57 (13.8) | 30.79 | 30.79 | 2.01 | 29.34 | 29.34 | 2.22 | 27.78 | 27.78 | 2.44 | 26.09 | 26.09 | 2.69 | 24.23 | 24.23 | 2.95 | 22.12 | 22.12 | 3.22 |
| | 62 (16.6) | 30.79 | 30.79 | 2.01 | 29.34 | 29.34 | 2.22 | 27.79 | 27.79 | 2.44 | 26.09 | 26.09 | 2.69 | 24.23 | 24.23 | 2.95 | 22.12 | 22.12 | 3.22 |
| | 63* (17.2) | 30.85 | 23.30 | 2.01 | 29.15 | 22.83 | 2.22 | 27.36 | 22.29 | 2.44 | 25.44 | 21.65 | 2.68 | 23.38 | 20.89 | 2.94 | 21.11 | 19.95 | 3.21 |
| | 67 (19.4) | 33.20 | 24.29 | 2.02 | 31.37 | 23.82 | 2.23 | 29.41 | 23.28 | 2.45 | 27.32 | 22.64 | 2.69 | 25.06 | 21.88 | 2.95 | 22.58 | 20.93 | 3.22 |
| | 72 (22.2) | 36.33 | 19.07 | 2.03 | 34.30 | 18.58 | 2.24 | 32.12 | 18.01 | 2.46 | 29.81 | 17.37 | 2.70 | 27.30 | 16.63 | 2.96 | 24.52 | 15.74 | 3.23 |

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

## PHD430 HEATING EXTENDED PERFORMANCE TABLE

| INDOOR AIR | | OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –10 (–23.3) | | | 0 (–17.8) | | | 10 (–12.2) | | | 20 (–6.7) | | | 30 (–1.1) | | | 40 (4.4) | | | 50 (10) | | | 60 (15.6) | | |
| EDB | CFM | Capacity MBtuh Total | Capacity MBtuh Integ | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Integ | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Integ | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Integ | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Integ | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Integ | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Integ | Total Sys KW | Capacity MBtuh Total | Capacity MBtuh Integ | Total Sys KW |
| **65** | 875 | 9.06 | 8.34 | 1.90 | 12.11 | 11.14 | 1.98 | 15.26 | 14.00 | 2.04 | 18.55 | 16.82 | 2.12 | 22.03 | 19.31 | 2.19 | 25.87 | 25.87 | 2.28 | 30.37 | 30.37 | 2.39 | 35.63 | 35.63 | 2.54 |
| | 1000 | 9.26 | 8.52 | 1.92 | 12.33 | 11.34 | 1.99 | 15.48 | 14.21 | 2.05 | 18.79 | 17.05 | 2.10 | 22.30 | 19.54 | 2.17 | 26.34 | 26.34 | 2.24 | 30.84 | 30.84 | 2.34 | 36.27 | 36.27 | 2.47 |
| | 1125 | 9.43 | 8.68 | 1.94 | 12.51 | 11.51 | 2.00 | 15.68 | 14.39 | 2.05 | 19.00 | 17.24 | 2.10 | 22.53 | 19.74 | 2.16 | 26.65 | 26.65 | 2.22 | 31.24 | 31.24 | 2.31 | 36.86 | 36.86 | 2.43 |
| **70** | 875 | 8.53 | 7.85 | 1.98 | 11.67 | 10.73 | 2.06 | 14.87 | 13.65 | 2.14 | 18.21 | 16.51 | 2.22 | 21.71 | 19.03 | 2.30 | 25.47 | 25.47 | 2.40 | 29.91 | 29.91 | 2.52 | 35.05 | 35.05 | 2.67 |
| | 1000 | 8.73 | 8.03 | 2.00 | 11.89 | 10.94 | 2.08 | 15.11 | 13.87 | 2.14 | 18.46 | 16.74 | 2.21 | 21.99 | 19.26 | 2.28 | 25.82 | 25.82 | 2.36 | 30.36 | 30.36 | 2.46 | 35.68 | 35.68 | 2.59 |
| | 1125 | 8.91 | 8.20 | 2.02 | 12.08 | 11.11 | 2.09 | 15.31 | 14.05 | 2.15 | 18.68 | 16.94 | 2.21 | 22.22 | 19.47 | 2.27 | 26.12 | 26.12 | 2.34 | 30.74 | 30.74 | 2.42 | 36.20 | 36.20 | 2.55 |
| **75** | 875 | 7.95 | 7.31 | 2.06 | 11.18 | 10.29 | 2.15 | 14.45 | 13.27 | 2.24 | 17.84 | 16.18 | 2.33 | 21.38 | 18.73 | 2.42 | 25.11 | 25.11 | 2.52 | 29.46 | 29.46 | 2.64 | 34.49 | 34.49 | 2.80 |
| | 1000 | 8.15 | 7.50 | 2.08 | 11.40 | 10.49 | 2.17 | 14.70 | 13.49 | 2.24 | 18.10 | 16.41 | 2.32 | 21.66 | 18.97 | 2.39 | 25.43 | 25.43 | 2.48 | 29.90 | 29.90 | 2.58 | 35.09 | 35.09 | 2.72 |
| | 1125 | 8.33 | 7.66 | 2.11 | 11.60 | 10.67 | 2.18 | 14.90 | 13.68 | 2.25 | 18.32 | 16.61 | 2.32 | 21.89 | 19.18 | 2.38 | 25.72 | 25.72 | 2.45 | 30.27 | 30.27 | 2.55 | 35.60 | 35.60 | 2.67 |

See Legend and Notes following tables.

## PHD436 COOLING EXTENDED PERFORMANCE TABLE

| EVAPORATOR AIR | | CONDENSER ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 75 (23.9) | | | 85 (29.4) | | | 95 (35) | | | 105 (40.6) | | | 115 (46.1) | | | 125 (51.7) | | |
| CFM / BF | EWB °F (°C) | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW |
| | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | |
| 1050 / 0.08 | 57 (13.8) | 38.00 | 38.00 | 2.44 | 34.81 | 34.81 | 2.69 | 31.68 | 31.68 | 2.95 | 28.58 | 28.58 | 3.23 | 25.51 | 25.51 | 3.53 | 22.43 | 22.43 | 3.85 |
| | 62 (16.6) | 39.23 | 34.90 | 2.45 | 35.69 | 32.70 | 2.69 | 32.23 | 30.51 | 2.95 | 28.85 | 28.27 | 3.23 | 25.55 | 25.55 | 3.53 | 22.43 | 22.43 | 3.85 |
| | 63* (17.2) | 39.74 | 28.36 | 2.45 | 36.13 | 26.48 | 2.69 | 32.59 | 24.60 | 2.95 | 29.11 | 22.76 | 3.24 | 25.68 | 20.90 | 3.53 | 22.28 | 19.03 | 3.85 |
| | 67 (19.4) | 42.90 | 29.50 | 2.46 | 39.01 | 27.57 | 2.70 | 35.20 | 25.66 | 2.97 | 31.45 | 23.75 | 3.25 | 27.77 | 21.86 | 3.55 | 24.10 | 19.94 | 3.87 |
| | 72 (22.2) | 46.93 | 24.09 | 2.47 | 42.69 | 22.40 | 2.72 | 38.51 | 20.71 | 2.98 | 34.42 | 19.04 | 3.27 | 30.38 | 17.37 | 3.57 | 26.35 | 15.68 | 3.89 |
| 1200 / 0.09 | 57 (13.8) | 39.72 | 39.72 | 2.48 | 36.36 | 36.36 | 2.72 | 33.04 | 33.04 | 2.99 | 29.76 | 29.76 | 3.27 | 26.51 | 26.51 | 3.57 | 23.26 | 23.26 | 3.88 |
| | 62 (16.6) | 40.35 | 37.43 | 2.48 | 36.71 | 35.04 | 2.72 | 33.12 | 33.12 | 2.99 | 29.77 | 29.77 | 3.27 | 26.52 | 26.52 | 3.57 | 23.26 | 23.26 | 3.88 |
| | 63* (17.2) | 40.77 | 30.20 | 2.48 | 37.03 | 28.20 | 2.72 | 33.35 | 26.23 | 2.99 | 29.75 | 24.28 | 3.27 | 26.21 | 22.32 | 3.57 | 22.70 | 20.32 | 3.88 |
| | 67 (19.4) | 43.99 | 31.47 | 2.49 | 39.95 | 29.42 | 2.74 | 36.00 | 27.40 | 3.00 | 32.13 | 25.39 | 3.28 | 28.31 | 23.39 | 3.58 | 24.52 | 21.34 | 3.90 |
| | 72 (22.2) | 48.09 | 25.31 | 2.51 | 43.69 | 23.54 | 2.75 | 39.37 | 21.78 | 3.02 | 35.13 | 20.04 | 3.30 | 30.95 | 18.29 | 3.60 | 26.79 | 16.52 | 3.92 |
| 1350 / 0.10 | 57 (13.8) | 41.20 | 41.20 | 2.51 | 37.67 | 37.67 | 2.76 | 34.19 | 34.19 | 3.02 | 30.76 | 30.76 | 3.30 | 27.36 | 27.36 | 3.60 | 23.95 | 23.95 | 3.92 |
| | 62 (16.6) | 41.37 | 39.65 | 2.51 | 37.69 | 37.69 | 2.76 | 34.19 | 34.19 | 3.02 | 30.76 | 30.76 | 3.30 | 27.36 | 27.36 | 3.60 | 23.95 | 23.95 | 3.92 |
| | 63* (17.2) | 41.60 | 31.96 | 2.51 | 37.74 | 29.86 | 2.76 | 33.95 | 27.79 | 3.02 | 30.25 | 25.74 | 3.30 | 26.62 | 23.66 | 3.60 | 23.02 | 21.54 | 3.91 |
| | 67 (19.4) | 44.85 | 33.35 | 2.52 | 40.70 | 31.21 | 2.77 | 36.63 | 29.08 | 3.03 | 32.65 | 26.97 | 3.31 | 28.73 | 24.84 | 3.61 | 24.84 | 22.67 | 3.93 |
| | 72 (22.2) | 49.01 | 26.47 | 2.54 | 44.48 | 24.63 | 2.78 | 40.03 | 22.80 | 3.05 | 35.68 | 20.98 | 3.33 | 31.39 | 19.16 | 3.63 | 27.12 | 17.31 | 3.95 |

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

## PHD436 HEATING EXTENDED PERFORMANCE TABLE

| INDOOR AIR | | OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –10 (–23.3) | | | 0 (–17.8) | | | 10 (–12.2) | | | 20 (–6.7) | | | 30 (–1.1) | | | 40 (4.4) | | | 50 (10) | | | 60 (15.6) | | |
| EDB | CFM | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW |
| | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | |
| 65 | 1050 | 11.29 | 10.39 | 2.23 | 14.77 | 13.59 | 2.33 | 18.36 | 16.85 | 2.42 | 22.15 | 20.09 | 2.51 | 26.29 | 23.04 | 2.61 | 31.12 | 31.12 | 2.74 | 36.45 | 36.45 | 2.89 | 43.29 | 43.29 | 3.09 |
| | 1200 | 11.49 | 10.57 | 2.25 | 14.97 | 13.78 | 2.33 | 18.58 | 17.05 | 2.41 | 22.39 | 20.30 | 2.48 | 26.60 | 23.31 | 2.57 | 31.43 | 31.43 | 2.68 | 37.07 | 37.07 | 2.82 | 43.51 | 43.51 | 2.98 |
| | 1350 | 11.66 | 10.72 | 2.26 | 15.15 | 13.94 | 2.34 | 18.77 | 17.23 | 2.40 | 22.59 | 20.49 | 2.47 | 26.87 | 23.54 | 2.55 | 31.76 | 31.76 | 2.64 | 37.79 | 37.79 | 2.77 | 42.96 | 42.96 | 2.92 |
| 70 | 1050 | 10.75 | 9.89 | 2.33 | 14.33 | 13.18 | 2.43 | 17.99 | 16.51 | 2.53 | 21.82 | 19.79 | 2.64 | 25.90 | 22.70 | 2.74 | 30.63 | 30.63 | 2.88 | 35.89 | 35.89 | 3.03 | 42.54 | 42.54 | 3.25 |
| | 1200 | 10.95 | 10.08 | 2.34 | 14.54 | 13.38 | 2.43 | 18.22 | 16.72 | 2.52 | 22.06 | 20.01 | 2.61 | 26.21 | 22.96 | 2.70 | 31.01 | 31.01 | 2.82 | 36.42 | 36.42 | 2.96 | 43.07 | 43.07 | 3.13 |
| | 1350 | 11.13 | 10.24 | 2.35 | 14.72 | 13.55 | 2.44 | 18.41 | 16.90 | 2.52 | 22.27 | 20.20 | 2.60 | 26.47 | 23.19 | 2.68 | 31.48 | 31.48 | 2.78 | 37.12 | 37.12 | 2.91 | 42.78 | 42.78 | 3.06 |
| 75 | 1050 | 10.16 | 9.34 | 2.42 | 13.83 | 12.73 | 2.54 | 17.57 | 16.13 | 2.65 | 21.46 | 19.46 | 2.76 | 25.55 | 22.39 | 2.88 | 30.22 | 30.22 | 3.02 | 35.36 | 35.36 | 3.18 | 41.76 | 41.76 | 3.40 |
| | 1200 | 10.36 | 9.53 | 2.43 | 14.06 | 12.94 | 2.54 | 17.81 | 16.35 | 2.64 | 21.71 | 19.69 | 2.74 | 25.83 | 22.63 | 2.84 | 30.58 | 30.58 | 2.96 | 35.87 | 35.87 | 3.10 | 42.56 | 42.56 | 3.29 |
| | 1350 | 10.53 | 9.69 | 2.45 | 14.25 | 13.11 | 2.55 | 18.01 | 16.53 | 2.64 | 21.92 | 19.88 | 2.72 | 26.07 | 22.84 | 2.81 | 30.89 | 30.89 | 2.92 | 36.37 | 36.37 | 3.05 | 42.48 | 42.48 | 3.21 |

See Legend and Notes following tables.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## PHD442 COOLING EXTENDED PERFORMANCE TABLE

| EVAPORATOR AIR | | CONDENSER ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 75 (23.9) | | | 85 (29.4) | | | 95 (35) | | | 105 (40.6) | | | 115 (46.1) | | | 125 (51.7) | | |
| CFM / BF | EWB °F (°C) | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW |
| | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | |
| 1225 / 0.19 | 57 (13.8) | 39.54 | 39.54 | 2.66 | 37.86 | 37.86 | 2.97 | 36.04 | 36.04 | 3.31 | 34.09 | 34.09 | 3.68 | 33.27 | 33.27 | 3.64 | 29.41 | 29.41 | 4.50 |
| | 62 (16.6) | 41.07 | 37.14 | 2.68 | 39.05 | 35.92 | 2.99 | 36.93 | 34.59 | 3.32 | 34.67 | 33.19 | 3.69 | 33.74 | 32.57 | 3.64 | 29.46 | 29.46 | 4.50 |
| | 63* (17.2) | 41.31 | 30.04 | 2.68 | 39.26 | 28.92 | 2.99 | 37.09 | 27.73 | 3.32 | 34.77 | 26.46 | 3.69 | 33.77 | 25.92 | 3.64 | 29.35 | 23.46 | 4.50 |
| | 67 (19.4) | 44.64 | 31.32 | 2.72 | 42.44 | 30.19 | 3.03 | 40.10 | 28.99 | 3.36 | 37.58 | 27.69 | 3.73 | 36.64 | 27.22 | 3.69 | 31.64 | 24.59 | 4.54 |
| | 72 (22.2) | 48.47 | 25.70 | 2.76 | 46.05 | 24.64 | 3.07 | 43.49 | 23.53 | 3.41 | 40.72 | 22.32 | 3.77 | 39.79 | 21.91 | 3.74 | 34.12 | 19.42 | 4.59 |
| 1400 / 0.21 | 57 (13.8) | 41.22 | 41.22 | 2.72 | 39.41 | 39.41 | 3.03 | 37.47 | 37.47 | 3.37 | 35.37 | 35.37 | 3.74 | 34.56 | 34.56 | 3.70 | 30.33 | 30.33 | 4.56 |
| | 62 (16.6) | 42.17 | 39.64 | 2.73 | 40.08 | 38.31 | 3.04 | 37.89 | 36.85 | 3.38 | 35.52 | 35.52 | 3.74 | 34.66 | 34.66 | 3.70 | 30.34 | 30.34 | 4.56 |
| | 63* (17.2) | 42.36 | 31.75 | 2.74 | 40.21 | 30.57 | 3.04 | 37.94 | 29.32 | 3.37 | 35.51 | 27.98 | 3.74 | 34.52 | 27.44 | 3.70 | 29.83 | 24.80 | 4.55 |
| | 67 (19.4) | 45.76 | 33.17 | 2.78 | 43.45 | 31.97 | 3.08 | 41.00 | 30.70 | 3.42 | 38.36 | 29.32 | 3.78 | 37.43 | 28.87 | 3.75 | 32.13 | 26.08 | 4.59 |
| | 72 (22.2) | 49.65 | 26.83 | 2.82 | 47.11 | 25.72 | 3.13 | 44.43 | 24.56 | 3.46 | 41.52 | 23.28 | 3.83 | 40.63 | 22.89 | 3.80 | 34.63 | 20.24 | 4.64 |
| 1575 / 0.23 | 57 (13.8) | 42.65 | 42.65 | 2.78 | 40.73 | 40.73 | 3.09 | 38.67 | 38.67 | 3.43 | 36.45 | 36.45 | 3.80 | 35.65 | 35.65 | 3.76 | 31.08 | 31.08 | 4.62 |
| | 62 (16.6) | 43.14 | 41.90 | 2.79 | 40.94 | 40.94 | 3.09 | 38.75 | 38.75 | 3.43 | 36.45 | 36.45 | 3.80 | 35.65 | 35.65 | 3.76 | 31.08 | 31.08 | 4.62 |
| | 63* (17.2) | 43.20 | 33.36 | 2.79 | 40.97 | 32.13 | 3.09 | 38.61 | 30.82 | 3.42 | 36.08 | 29.41 | 3.79 | 35.10 | 28.88 | 3.75 | 30.20 | 26.10 | 4.60 |
| | 67 (19.4) | 46.66 | 34.92 | 2.83 | 44.26 | 33.67 | 3.13 | 41.71 | 32.33 | 3.47 | 38.97 | 30.89 | 3.83 | 38.06 | 30.44 | 3.80 | 32.50 | 27.49 | 4.64 |
| | 72 (22.2) | 50.59 | 27.89 | 2.87 | 47.95 | 26.72 | 3.18 | 45.17 | 25.51 | 3.51 | 42.14 | 24.18 | 3.88 | 41.29 | 23.80 | 3.86 | 35.01 | 21.00 | 4.69 |

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

## PHD442 HEATING EXTENDED PERFORMANCE TABLE

| INDOOR AIR | | OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –10 (–23.3) | | | 0 (–17.8) | | | 10 (–12.2) | | | 20 (–6.7) | | | 30 (–1.1) | | | 40 (4.4) | | | 50 (10) | | | 60 (15.6) | | |
| EDB | CFM | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW |
| | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | |
| 65 | 1225 | 13.75 | 12.65 | 2.45 | 17.57 | 16.17 | 2.56 | 21.58 | 19.81 | 2.68 | 25.83 | 23.43 | 2.81 | 30.61 | 26.82 | 2.96 | 36.10 | 36.10 | 3.14 | 42.45 | 42.45 | 3.36 | 50.07 | 50.07 | 3.66 |
| | 1400 | 13.97 | 12.85 | 2.47 | 17.81 | 16.38 | 2.57 | 21.83 | 20.04 | 2.68 | 26.10 | 23.67 | 2.79 | 30.97 | 27.13 | 2.92 | 36.56 | 36.56 | 3.08 | 43.06 | 43.06 | 3.29 | 50.69 | 50.69 | 3.55 |
| | 1575 | 14.17 | 13.03 | 2.49 | 18.01 | 16.57 | 2.58 | 22.05 | 20.23 | 2.68 | 26.32 | 23.87 | 2.78 | 31.28 | 27.40 | 2.90 | 36.94 | 36.94 | 3.05 | 43.53 | 43.53 | 3.26 | 50.61 | 50.61 | 3.51 |
| 70 | 1225 | 13.24 | 12.18 | 2.57 | 17.15 | 15.78 | 2.70 | 21.21 | 19.47 | 2.82 | 25.49 | 23.12 | 2.96 | 30.16 | 26.42 | 3.11 | 35.59 | 35.59 | 3.30 | 41.83 | 41.83 | 3.53 | 49.28 | 49.28 | 3.84 |
| | 1400 | 13.47 | 12.39 | 2.59 | 17.39 | 16.00 | 2.70 | 21.46 | 19.70 | 2.82 | 25.76 | 23.37 | 2.94 | 30.51 | 26.74 | 3.07 | 36.03 | 36.03 | 3.24 | 42.41 | 42.41 | 3.45 | 50.08 | 50.08 | 3.72 |
| | 1575 | 13.67 | 12.57 | 2.61 | 17.60 | 16.19 | 2.72 | 21.68 | 19.90 | 2.82 | 26.00 | 23.58 | 2.93 | 30.82 | 27.00 | 3.05 | 36.40 | 36.40 | 3.21 | 42.88 | 42.88 | 3.41 | 50.18 | 50.18 | 3.67 |
| 75 | 1225 | 12.69 | 11.67 | 2.69 | 16.68 | 15.35 | 2.83 | 20.80 | 19.09 | 2.97 | 25.13 | 22.79 | 3.12 | 29.77 | 26.08 | 3.28 | 35.10 | 35.10 | 3.47 | 41.22 | 41.22 | 3.71 | 48.53 | 48.53 | 4.02 |
| | 1400 | 12.91 | 11.88 | 2.71 | 16.93 | 15.57 | 2.84 | 21.07 | 19.34 | 2.96 | 25.41 | 23.04 | 3.09 | 30.09 | 26.37 | 3.24 | 35.53 | 35.53 | 3.41 | 41.79 | 41.79 | 3.63 | 49.30 | 49.30 | 3.91 |
| | 1575 | 13.12 | 12.07 | 2.74 | 17.14 | 15.77 | 2.85 | 21.29 | 19.54 | 2.97 | 25.65 | 23.26 | 3.08 | 30.37 | 26.61 | 3.21 | 35.88 | 35.88 | 3.37 | 42.24 | 42.24 | 3.58 | 49.68 | 49.68 | 3.84 |

See Legend and Notes following tables.

## PHD448 COOLING EXTENDED PERFORMANCE TABLE

| EVAPORATOR AIR | | CONDENSER ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 75 (23.9) | | | 85 (29.4) | | | 95 (35) | | | 105 (40.6) | | | 115 (46.1) | | | 125 (51.7) | | |
| CFM / BF | EWB °F (°C) | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW |
| | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | |
| 1400 / 0.09 | 57 (13.8) | 48.07 | 48.07 | 2.99 | 44.60 | 44.60 | 3.35 | 41.11 | 41.11 | 3.74 | 37.59 | 37.59 | 4.18 | 33.97 | 33.97 | 4.66 | 30.20 | 30.20 | 5.18 |
| | 62 (16.6) | 49.24 | 42.95 | 3.00 | 45.38 | 40.81 | 3.35 | 41.54 | 38.58 | 3.75 | 37.68 | 37.68 | 4.18 | 33.97 | 33.97 | 4.66 | 30.20 | 30.20 | 5.18 |
| | 63* (17.2) | 49.85 | 34.74 | 3.00 | 45.89 | 32.91 | 3.35 | 41.92 | 31.03 | 3.75 | 37.95 | 29.14 | 4.18 | 33.92 | 27.18 | 4.66 | 29.77 | 25.09 | 5.17 |
| | 67 (19.4) | 53.72 | 36.13 | 3.02 | 49.45 | 34.25 | 3.38 | 45.16 | 32.34 | 3.77 | 40.85 | 30.39 | 4.21 | 36.48 | 28.37 | 4.68 | 31.96 | 26.23 | 5.20 |
| | 72 (22.2) | 58.70 | 29.21 | 3.05 | 54.00 | 27.52 | 3.41 | 49.26 | 25.79 | 3.80 | 44.53 | 24.03 | 4.24 | 39.71 | 22.21 | 4.72 | 34.74 | 20.27 | 5.23 |
| 1600 / 0.10 | 57 (13.8) | 50.08 | 50.08 | 3.05 | 46.40 | 46.40 | 3.41 | 42.70 | 42.70 | 3.81 | 38.95 | 38.95 | 4.25 | 35.11 | 35.11 | 4.72 | 31.11 | 31.11 | 5.24 |
| | 62 (16.6) | 50.54 | 45.92 | 3.06 | 46.59 | 43.48 | 3.41 | 42.71 | 42.71 | 3.81 | 38.95 | 38.95 | 4.25 | 35.11 | 35.11 | 4.72 | 31.11 | 31.11 | 5.24 |
| | 63* (17.2) | 50.98 | 36.96 | 3.06 | 46.86 | 35.03 | 3.41 | 42.75 | 33.06 | 3.81 | 38.62 | 31.05 | 4.24 | 34.44 | 28.96 | 4.72 | 30.16 | 26.75 | 5.23 |
| | 67 (19.4) | 54.90 | 38.50 | 3.08 | 50.46 | 36.52 | 3.44 | 46.00 | 34.50 | 3.83 | 41.53 | 32.45 | 4.27 | 37.00 | 30.30 | 4.74 | 32.34 | 28.01 | 5.26 |
| | 72 (22.2) | 59.95 | 30.65 | 3.11 | 55.05 | 28.88 | 3.47 | 50.14 | 27.08 | 3.86 | 45.24 | 25.24 | 4.30 | 40.25 | 23.33 | 4.77 | 35.12 | 21.31 | 5.28 |
| 1800 / 0.11 | 57 (13.8) | 51.77 | 51.77 | 3.11 | 47.91 | 47.91 | 3.47 | 44.01 | 44.01 | 3.87 | 40.06 | 40.06 | 4.31 | 36.03 | 36.03 | 4.79 | 31.82 | 31.82 | 5.30 |
| | 62 (16.6) | 51.79 | 51.79 | 3.11 | 47.91 | 47.91 | 3.47 | 44.02 | 44.02 | 3.87 | 40.06 | 40.06 | 4.31 | 36.03 | 36.03 | 4.79 | 31.82 | 31.82 | 5.30 |
| | 63* (17.2) | 51.85 | 39.08 | 3.11 | 47.61 | 37.05 | 3.47 | 43.38 | 34.99 | 3.87 | 39.13 | 32.86 | 4.30 | 34.84 | 30.64 | 4.78 | 30.46 | 28.24 | 5.29 |
| | 67 (19.4) | 55.81 | 40.79 | 3.14 | 51.24 | 38.71 | 3.50 | 46.63 | 36.58 | 3.89 | 42.04 | 34.40 | 4.33 | 37.39 | 32.12 | 4.80 | 32.61 | 29.67 | 5.31 |
| | 72 (22.2) | 60.91 | 32.02 | 3.17 | 55.86 | 30.17 | 3.53 | 50.80 | 28.29 | 3.92 | 45.76 | 26.38 | 4.36 | 40.65 | 24.40 | 4.83 | 35.38 | 22.30 | 5.34 |

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.



## PHD448 HEATING EXTENDED PERFORMANCE TABLE

| INDOOR AIR | | OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –10 (–23.3) | | | 0 (–17.8) | | | 10 (–12.2) | | | 20 (–6.7) | | | 30 (–1.1) | | | 40 (4.4) | | | 50 (10) | | | 60 (15.6) | | |
| EDB | CFM | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW |
| | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | |
| 65 | 1400 | 15.21 | 14.00 | 3.19 | 19.74 | 18.16 | 3.29 | 24.43 | 22.43 | 3.40 | 29.38 | 26.64 | 3.51 | 34.68 | 30.38 | 3.63 | 40.60 | 40.60 | 3.78 | 47.66 | 47.66 | 3.97 | 55.91 | 55.91 | 4.22 |
| | 1600 | 15.51 | 14.27 | 3.22 | 20.06 | 18.45 | 3.31 | 24.77 | 22.74 | 3.40 | 29.73 | 26.97 | 3.50 | 35.08 | 30.74 | 3.61 | 41.18 | 41.18 | 3.74 | 48.35 | 48.35 | 3.90 | 57.32 | 57.32 | 4.12 |
| | 1800 | 15.79 | 14.52 | 3.26 | 20.34 | 18.71 | 3.35 | 25.07 | 23.01 | 3.42 | 30.04 | 27.25 | 3.51 | 35.44 | 31.05 | 3.60 | 41.70 | 41.70 | 3.72 | 48.93 | 48.93 | 3.87 | 57.75 | 57.75 | 4.06 |
| 70 | 1400 | 14.51 | 13.35 | 3.32 | 19.15 | 17.62 | 3.44 | 23.92 | 21.96 | 3.56 | 28.91 | 26.22 | 3.68 | 34.20 | 29.97 | 3.81 | 39.99 | 39.99 | 3.97 | 46.96 | 46.96 | 4.17 | 55.04 | 55.04 | 4.42 |
| | 1600 | 14.81 | 13.63 | 3.36 | 19.47 | 17.92 | 3.46 | 24.26 | 22.27 | 3.57 | 29.28 | 26.55 | 3.67 | 34.61 | 30.33 | 3.79 | 40.53 | 40.53 | 3.92 | 47.63 | 47.63 | 4.09 | 56.25 | 56.25 | 4.32 |
| | 1800 | 15.09 | 13.88 | 3.40 | 19.76 | 18.18 | 3.50 | 24.57 | 22.55 | 3.59 | 29.60 | 26.84 | 3.68 | 34.97 | 30.64 | 3.78 | 40.99 | 40.99 | 3.90 | 48.19 | 48.19 | 4.06 | 57.10 | 57.10 | 4.25 |
| 75 | 1400 | 13.74 | 12.64 | 3.46 | 18.50 | 17.02 | 3.59 | 23.36 | 21.44 | 3.72 | 28.41 | 25.77 | 3.86 | 33.71 | 29.54 | 4.00 | 39.42 | 39.42 | 4.16 | 46.29 | 46.29 | 4.37 | 54.20 | 54.20 | 4.63 |
| | 1600 | 14.04 | 12.92 | 3.49 | 18.83 | 17.32 | 3.62 | 23.71 | 21.77 | 3.73 | 28.79 | 26.11 | 3.85 | 34.13 | 29.90 | 3.97 | 39.91 | 39.91 | 4.11 | 46.93 | 46.93 | 4.29 | 55.09 | 55.09 | 4.52 |
| | 1800 | 14.32 | 13.17 | 3.54 | 19.12 | 17.59 | 3.65 | 24.02 | 22.05 | 3.75 | 29.12 | 26.41 | 3.85 | 34.49 | 30.22 | 3.96 | 40.36 | 40.36 | 4.08 | 47.48 | 47.48 | 4.25 | 56.24 | 56.24 | 4.46 |

See Legend and Notes following tables.

## PHD460 COOLING EXTENDED PERFORMANCE TABLE

| EVAPORATOR AIR | | CONDENSER ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 75 (23.9) | | | 85 (29.4) | | | 95 (35) | | | 105 (40.6) | | | 115 (46.1) | | | 125 (51.7) | | |
| CFM / BF | EWB °F (°C) | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW |
| | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | | Total | Sens | |
| 1750 / 0.07 | 57(13.8) | 63.53 | 63.53 | 3.78 | 58.78 | 58.78 | 4.29 | 53.97 | 53.97 | 4.86 | 49.09 | 49.09 | 5.49 | 44.01 | 44.01 | 6.19 | 42.42 | 42.42 | 6.41 |
| | 62(16.6) | 65.04 | 51.03 | 3.79 | 59.74 | 50.40 | 4.30 | 54.44 | 49.51 | 4.86 | 49.15 | 49.15 | 5.50 | 44.01 | 44.01 | 6.19 | 38.66 | 38.66 | 6.95 |
| | 63*(17.2) | 65.92 | 41.28 | 3.80 | 60.47 | 40.65 | 4.31 | 54.99 | 39.84 | 4.87 | 49.48 | 38.85 | 5.50 | 43.83 | 37.60 | 6.19 | 42.07 | 38.16 | 6.40 |
| | 67(19.4) | 70.86 | 42.85 | 3.85 | 64.96 | 42.22 | 4.35 | 59.00 | 41.40 | 4.92 | 52.98 | 40.40 | 5.54 | 46.84 | 39.11 | 6.23 | 40.50 | 37.40 | 6.98 |
| | 72(22.2) | 77.33 | 34.48 | 3.90 | 70.80 | 33.73 | 4.41 | 64.19 | 32.79 | 4.98 | 57.55 | 31.67 | 5.60 | 50.77 | 30.29 | 6.29 | 43.78 | 28.58 | 7.03 |
| 2000 / 0.08 | 57(13.8) | 66.05 | 66.05 | 3.88 | 61.00 | 61.00 | 4.40 | 55.88 | 55.88 | 4.97 | 50.65 | 50.65 | 5.60 | 45.26 | 45.26 | 6.30 | 39.58 | 39.58 | 7.06 |
| | 62(16.6) | 66.61 | 54.49 | 3.89 | 61.13 | 61.13 | 4.40 | 55.88 | 55.88 | 4.97 | 50.66 | 50.66 | 5.60 | 45.25 | 45.25 | 6.30 | 39.57 | 39.57 | 7.06 |
| | 63*(17.2) | 67.26 | 43.89 | 3.89 | 61.59 | 43.24 | 4.40 | 55.88 | 42.41 | 4.97 | 50.16 | 41.35 | 5.59 | 44.32 | 39.99 | 6.29 | 38.33 | 38.21 | 7.04 |
| | 67(19.4) | 72.23 | 45.64 | 3.94 | 66.09 | 45.00 | 4.45 | 59.87 | 44.14 | 5.01 | 53.63 | 43.07 | 5.64 | 47.29 | 41.70 | 6.33 | 40.75 | 39.91 | 7.08 |
| | 72(22.2) | 78.76 | 36.15 | 4.00 | 71.95 | 35.36 | 4.51 | 65.10 | 34.38 | 5.07 | 58.23 | 33.22 | 5.70 | 51.25 | 31.78 | 6.38 | 44.04 | 29.99 | 7.12 |
| 2250 / 0.09 | 57(13.8) | 68.16 | 68.16 | 3.98 | 62.83 | 62.83 | 4.50 | 57.41 | 57.41 | 5.07 | 51.90 | 51.90 | 5.70 | 46.22 | 46.22 | 6.40 | 40.27 | 40.27 | 7.16 |
| | 62(16.6) | 68.17 | 68.17 | 3.98 | 62.83 | 62.83 | 4.50 | 57.41 | 57.41 | 5.07 | 51.90 | 51.90 | 5.71 | 46.22 | 46.22 | 6.40 | 40.27 | 40.27 | 7.16 |
| | 63*(17.2) | 68.27 | 46.41 | 3.98 | 62.41 | 45.72 | 4.49 | 56.54 | 44.84 | 5.06 | 50.64 | 43.71 | 5.69 | 44.66 | 42.24 | 6.38 | 38.53 | 40.25 | 7.13 |
| | 67(19.4) | 73.27 | 48.35 | 4.03 | 66.92 | 47.68 | 4.54 | 60.50 | 46.77 | 5.10 | 54.10 | 45.64 | 5.73 | 47.60 | 44.16 | 6.42 | 40.92 | 42.14 | 7.17 |
| | 72(22.2) | 79.84 | 37.74 | 4.09 | 72.79 | 36.91 | 4.60 | 65.73 | 35.91 | 5.16 | 58.70 | 34.70 | 5.79 | 51.53 | 33.23 | 6.48 | 44.15 | 31.39 | 7.22 |

*At 75°F (23.9 °C) entering dry bulb—Tennessee Valley Authority [TVA] rating conditions; all others at 80°F (26.7 °C) entering dry bulb. See Legend and Notes.

## PHD460 HEATING EXTENDED PERFORMANCE TABLE

| INDOOR AIR | | OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | –10 (–23.3) | | | 0 (–17.8) | | | 10 (–12.2) | | | 20 (–6.7) | | | 30 (–1.1) | | | 40 (4.4) | | | 50 (10) | | | 60 (15.6) | | |
| EDB | CFM | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW | Capacity MBtuh | | Total Sys KW |
| | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | | Total | Integ | |
| 65 | 1750 | 21.44 | 19.72 | 3.85 | 27.02 | 24.86 | 3.97 | 32.88 | 30.18 | 4.09 | 39.13 | 35.49 | 4.23 | 46.15 | 40.44 | 4.40 | 54.26 | 54.26 | 4.61 | 63.98 | 63.98 | 4.86 | 74.82 | 74.82 | 5.16 |
| | 2000 | 21.85 | 20.11 | 3.90 | 27.45 | 25.26 | 4.01 | 33.33 | 30.60 | 4.12 | 39.63 | 35.94 | 4.24 | 46.77 | 40.98 | 4.38 | 55.02 | 55.02 | 4.56 | 65.19 | 65.19 | 4.78 | 74.99 | 74.99 | 5.04 |
| | 2250 | 22.24 | 20.46 | 3.97 | 27.85 | 25.63 | 4.06 | 33.75 | 30.98 | 4.15 | 40.07 | 36.34 | 4.26 | 47.32 | 41.46 | 4.39 | 56.12 | 56.12 | 4.56 | 65.29 | 65.29 | 4.75 | 73.80 | 73.80 | 4.99 |
| 70 | 1750 | 20.75 | 19.09 | 4.03 | 26.44 | 24.33 | 4.16 | 32.38 | 29.72 | 4.30 | 38.64 | 35.04 | 4.45 | 45.62 | 39.97 | 4.62 | 53.55 | 53.55 | 4.84 | 62.76 | 62.76 | 5.10 | 73.96 | 73.96 | 5.41 |
| | 2000 | 21.17 | 19.48 | 4.09 | 26.88 | 24.73 | 4.20 | 32.84 | 30.14 | 4.32 | 39.14 | 35.50 | 4.45 | 46.18 | 40.46 | 4.60 | 54.29 | 54.29 | 4.79 | 64.31 | 64.31 | 5.02 | 74.39 | 74.39 | 5.29 |
| | 2250 | 21.56 | 19.84 | 4.15 | 27.28 | 25.11 | 4.25 | 33.25 | 30.52 | 4.36 | 39.59 | 35.91 | 4.47 | 46.68 | 40.90 | 4.61 | 54.93 | 54.93 | 4.78 | 64.77 | 64.77 | 4.98 | 73.71 | 73.71 | 5.23 |
| 75 | 1750 | 20.00 | 18.40 | 4.22 | 25.80 | 23.74 | 4.36 | 31.83 | 29.21 | 4.51 | 38.15 | 34.60 | 4.68 | 45.07 | 39.49 | 4.86 | 52.71 | 52.71 | 5.07 | 61.83 | 61.83 | 5.35 | 73.09 | 73.09 | 5.68 |
| | 2000 | 20.42 | 18.79 | 4.28 | 26.26 | 24.16 | 4.40 | 32.30 | 29.64 | 4.53 | 38.62 | 35.03 | 4.67 | 45.64 | 39.99 | 4.83 | 53.58 | 53.58 | 5.03 | 63.19 | 63.19 | 5.27 | 73.64 | 73.64 | 5.54 |
| | 2250 | 20.82 | 19.15 | 4.34 | 26.67 | 24.54 | 4.46 | 32.73 | 30.04 | 4.57 | 39.07 | 35.43 | 4.69 | 46.14 | 40.43 | 4.84 | 54.20 | 54.20 | 5.01 | 64.17 | 64.17 | 5.22 | 73.39 | 73.39 | 5.47 |

**LEGEND**

BF — Bypass Factor
edb — Entering Dry–Bulb
Ewb — Entering Wet–Bulb
kW — Total Unit Power Input
SHC — Sensible Heat Capacity (1000 Btuh)
TC — Total Capacity (1000 Btuh) (net)
rh —Relative Humidity

**COOLING NOTES**:

1. Ratings are net; they account for the effects of the evaporator–fan motor power and heat.
2. Direct interpolation is permissible. Do not extrapolate.
3. The following formulas may be used:

$$^{t}ldb = {}^{t}edb - \frac{\text{Sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

$$^{t}lwb = \text{Wet–bulb temperature corresponding to enthalpy air leaving evaporator coil } (^{h}lwb)$$

$$^{h}lwb = {}^{h}ewb - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: $^{h}ewb$ = Enthalpy of air entering evaporator coil

4. The SHC is based on 80°F (26.7 °C) edb temperature of air entering evaporator coil. Below 80°F (26.7°C) edb, subtract (corr factor x cfm) from SHC. Above 80°F (26.7°C) edb, add (corr factor x cfm) to SHC.
Correction Factor = 1.10 x (1 + BF) x (edb + 80).

5. Integrated capacity is maximum (instantaneous) capacity less the effect of frost on the outdoor coil and the heat required to defrost it.

## UNIT DIMENSIONS − PHD424−30

| UNIT | SERIES | ELECTRICAL CHARACTERISTICS | UNIT WT. | | UNIT HEIGHT IN/MM | CENTER OF GRAVITY IN/MM | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LB | KG | "A" | X | | Y | | Z | |
| 24 | 1 | 208/230-1 | 348 | 158 | 44-1/8 | 1121 | 20-1/2 | 521 | 15-1/2 | 394 | 16-1/2 | 419 |
| 30 | 1 | 208/230-1, 208/230-3-60 | 340 | 154 | 44-1/8 | 1121 | 20-1/2 | 521 | 15-1/2 | 394 | 16-1/2 | 419 |

| UNITS | VOLTAGE | CORNER WEIGHT LB/KG | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | "1" | | "2" | | "3" | | "4" | |
| 24 | 208/230 | 93 | 42 | 73 | 33 | 80 | 36 | 102 | 46 |
| 30 | 208/230 | 90 | 41 | 71 | 32 | 79 | 36 | 100 | 45 |

NOTE: ALL TABLE DATA RELEVANT FOR ALL FACTORY INSTALLED OPTIONS EXCEPT ECONOMIZER

**REQUIRED CLEARANCES TO COMBUSTIBLE MATL.** INCHES [MM]

| | |
|---|---|
| TOP OF UNIT | 14 [355.6] |
| DUCT SIDE OF UNIT | 2 [50.8] |
| SIDE OPPOSITE DUCTS | 14 [355.6] |
| BOTTOM OF UNIT | 0 [0.0] |
| ELECTRICAL PANEL | 36 [914.4] |

**NEC. REQUIRED CLEARANCES.** INCHES [MM]

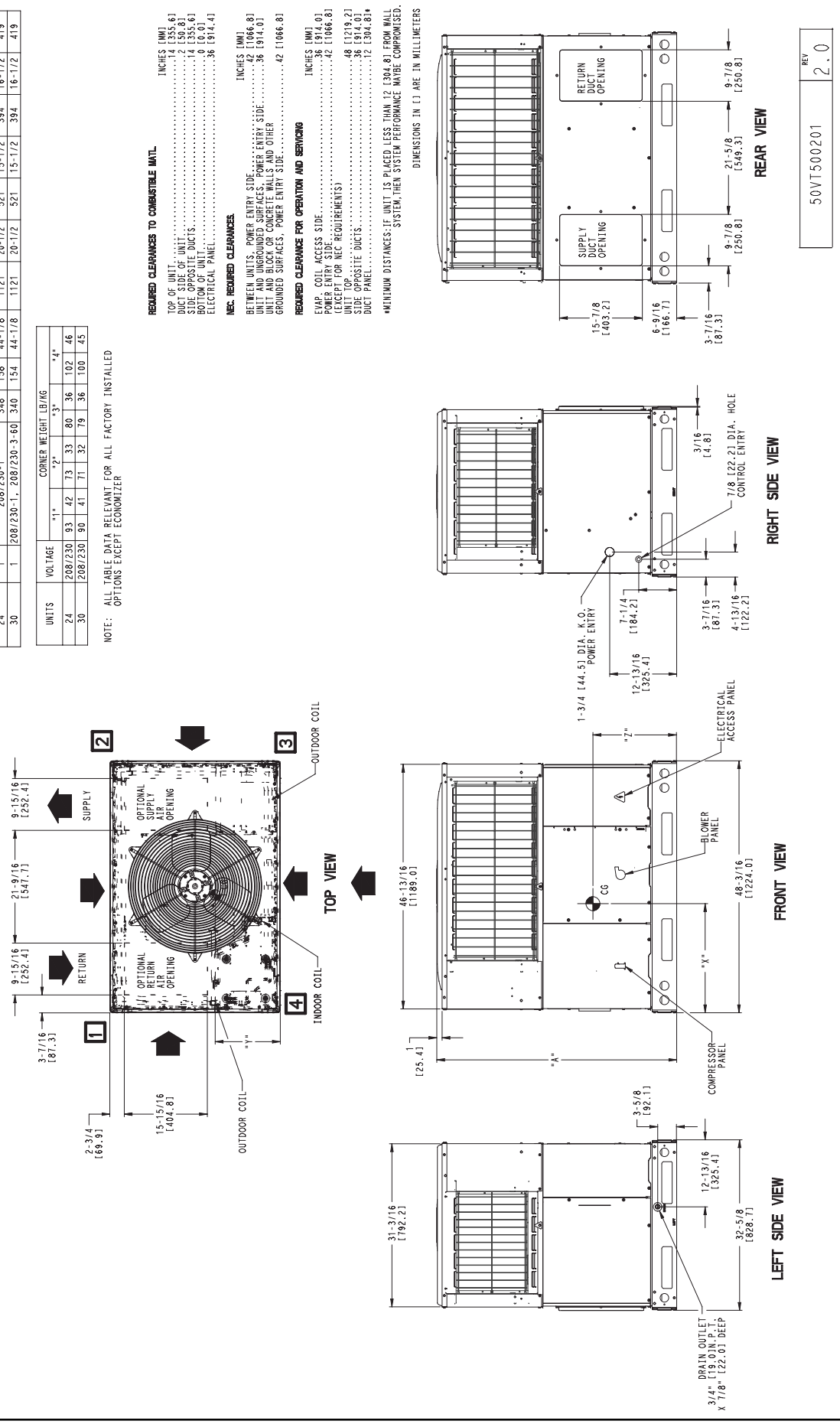
| | |
|---|---|
| BETWEEN UNITS, POWER ENTRY SIDE | 42 [1066.8] |
| UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE | 36 [914.4] |
| UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE | 42 [1066.8] |

**REQUIRED CLEARANCE FOR OPERATION AND SERVICING** INCHES [MM]

| | |
|---|---|
| EVAP. COIL ACCESS SIDE | 36 [914.0] |
| POWER ENTRY SIDE (EXCEPT FOR NEC REQUIREMENTS) | 42 [1066.8] |
| UNIT TOP | 48 [1219.2] |
| SIDE OPPOSITE DUCTS | 36 [914.0] |
| DUCT PANEL | 12 [304.8]* |

*MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 12 [304.8] FROM WALL SYSTEM, THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.

DIMENSIONS IN [] ARE IN MILLIMETERS



| UNIT | SERIES | ELECTRICAL CHARACTERISTICS | UNIT WT. LB | UNIT WT. KG | UNIT HEIGHT IN/MM "A" | CENTER OF GRAVITY IN/MM X | CENTER OF GRAVITY IN/MM Y | CENTER OF GRAVITY IN/MM Z |
|---|---|---|---|---|---|---|---|---|
| 36 | 1 | 208/230−1, 208/230−3−60 | 418 | 190 | 44−3/4 | 20−1/2 | 17−1/2 | 17−3/8 |
| | 1 | 460−3−60 | 432 | 196 | 44−3/4 | 20−1/2 | 17−1/2 | 17−3/8 |
| 42 | 1 | 208/230−1, 208/230−3−60 | 464 | 210 | 48−3/4 | 20−1/2 | 17−1/2 | 17−3/8 |
| | 1 | 460−3−60 | 476 | 216 | 48−3/4 | 20−1/2 | 17−1/2 | 17−3/8 |
| 48 | 1 | 208/230−1, 208/230−3−60 | 452 | 205 | 48−3/4 | 20−1/2 | 17−1/2 | 17−3/8 |
| | 1 | 460−3−60 | 466 | 211 | 48−3/4 | 20−1/2 | 17−1/2 | 17−3/8 |
| 60 | 1 | 208/230−1, 208/230−3−60 | 506 | 230 | 54−3/4 | 20−1/2 | 17−1/2 | 18 |
| | 1 | 460−3−60 | 520 | 236 | 54−3/4 | 20−1/2 | 17−1/2 | 18 |

| UNIT | VOLTAGE | CORNER WEIGHTS LB/KG "1" | "2" | "3" | "4" |
|---|---|---|---|---|---|
| 36 | 208/230 | 92 | 42 | 73 | 33 | 111 | 50 | 142 | 64 |
| | 460 | 96 | 43 | 75 | 34 | 115 | 52 | 146 | 66 |
| 42 | 208/230 | 103 | 47 | 81 | 37 | 124 | 56 | 157 | 71 |
| | 460 | 105 | 48 | 83 | 38 | 127 | 57 | 161 | 73 |
| 48 | 208/230 | 100 | 45 | 79 | 36 | 120 | 55 | 153 | 69 |
| | 460 | 103 | 47 | 81 | 37 | 124 | 56 | 158 | 72 |
| 60 | 208/230 | 112 | 51 | 88 | 40 | 135 | 61 | 171 | 78 |
| | 460 | 115 | 52 | 90 | 41 | 138 | 63 | 176 | 80 |

NOTE: ALL TABLE DATA RELEVANT FOR ALL FACTORY INSTALLED OPTIONS EXCEPT ECONOMIZER

**REQUIRED CLEARANCES TO COMBUSTIBLE MATL** INCHES [MM]

| | |
|---|---|
| TOP OF UNIT | 14 [355.6] |
| DUCT SIDE OF UNIT | 2 [50.8] |
| SIDE OPPOSITE DUCTS | 14 [355.6] |
| BOTTOM OF UNIT | 0 [0.0] |
| ELECTRICAL PANEL | 36 [914.4] |

**NEC. REQUIRED CLEARANCES.** INCHES [MM]

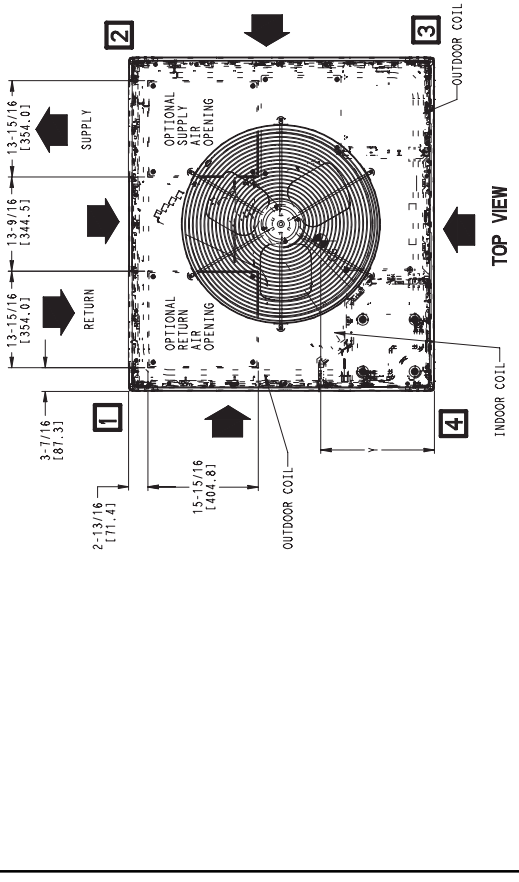
| | |
|---|---|
| BETWEEN UNITS, POWER ENTRY SIDE | 42 [1066.8] |
| UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE | 36 [914.0] |
| UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, POWER ENTRY SIDE | 42 [1066.8] |

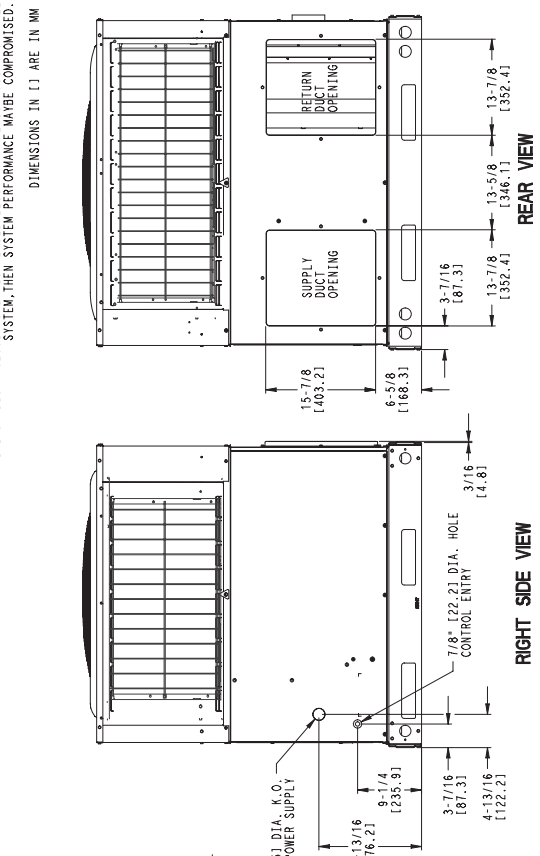
**REQUIRED CLEARANCE FOR OPERATION AND SERVICING** INCHES [MM]

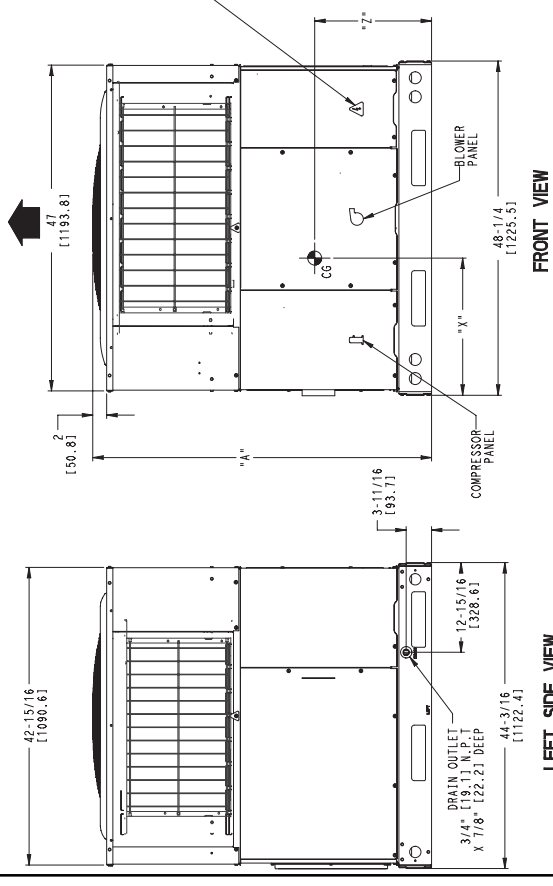
| | |
|---|---|
| EVAP. COIL ACCESS SIDE | 36 [914.0] |
| POWER ENTRY SIDE (EXCEPT FOR NEC REQUIREMENTS) | 42 [1066.8] |
| UNIT TOP | 48 [1219.2] |
| SIDE OPPOSITE DUCTS | 36 [914.0] |
| DUCT PANEL | 12 [304.8]* |

*MINIMUM DISTANCES: IF UNIT IS PLACED LESS THAN 12 [304.8] FROM WALL SYSTEM, THEN SYSTEM PERFORMANCE MAYBE COMPROMISED.

DIMENSIONS IN [ ] ARE IN MM




50VT500202 REV 2.0

# CONNECTION WIRING DIAGRAM

## DANGER: ELECTRICAL SHOCK HAZARD DISCONNECT POWER BEFORE SERVICING

SCHEMATIC
208/230-1-60

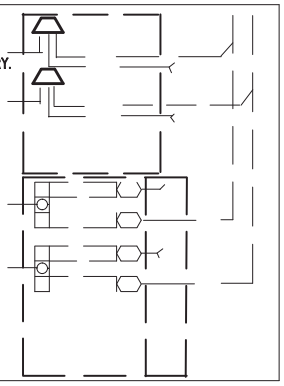
NOTES:
1. IF ANY OF THE ORIGINAL WIRES FURNISHED ARE REPLACED, THEY MUST BE REPLACED WITH THE SAME WIRE OR ITS EQUIVALENT.
2. SEE PRICE PAGES FOR THERMOSTATS.
3. USE 75 DEG. COPPER CONDUCTORS FOR FIELD INSTALLATION.
4. SEE INSTALLATION INSTRUCTIONS FOR PROPER HEATING AND COOLING CONNECTIONS FOR YOUR UNIT. INDOOR FAN MOTOR PLUGS - "DO NOT DISCONNECT UNDER LOAD"
5. CCH NOT USED ON ALL UNITS.
6. THIS FUSE IS MANUFACTURED BY LITTELFUSE, P/N 257003.
7. UNIT FACTORY-SHIPPED IN STD MODE.

LEGEND

| | | | |
|---|---|---|---|
| △ | FIELD SPLICE | COMP | COMPRESSOR MOTOR |
| ⬡ | TERMINAL (MARKED) | DB | DEFROST BOARD |
| ○ | TERMINAL (UNMARKED) | DEHUM | DEHUMIDIFICATION MODE |
| ● | SPLICE | DFT | DEFROST TEMPERATURE SWITCH |
| ⬠ | SPLICE (MARKED) | DR | DEFROST RELAY |
| —— | FACTORY WIRING | EQUIP | EQUIPMENT |
| - - | FIELD CONTROL WIRING | GND | GROUND |
| —— | FIELD POWER WIRING | HPS | HIGH PRESSURE SWITCH |
| --- | ACCESSORY OR OPTIONAL WIRING | HR | HEATER RELAY |
| —— | TO INDICATE COMMON POTENTIAL ONLY; NOT TO REPRESENT WIRING | IFB | INDOOR FAN BOARD |
| | | IFM | INDOOR FAN MOTOR |
| | | LPS | LOW PRESSURE SWITCH |
| | | OFM | OUTDOOR FAN MOTOR |
| | | RVS | REVERSING VALVE |
| | | STD | STANDARD MODE |
| | | TRAN | TRANSFORMER |
| | | T-STAT | THERMOSTAT |

| | |
|---|---|
| C | CONTACTOR |
| CAP 1 | CAPACITOR, COMP |
| CCH | CRANK CASE HEATER |

**FOR WIRING WITH ELECTRIC HEATERS SEE SCHEMATIC ON HEATER ACCESSORY.**






COLOR CODE

| | |
|---|---|
| BLK | BLACK |
| BLU | BLUE |
| BRN | BROWN |
| GRY | GRAY |
| GRN | GREEN |
| ORN | ORANGE |
| PNK | PINK |
| RED | RED |
| VIO | VIOLET |
| WHT | WHITE |
| YEL | YELLOW |

COOLING FAN LOGIC
Q T T+90
G G
ENERGIZED DE-ENERGIZED

HEATING FAN LOGIC
Q 45 T T+45
W BR W BR
ENERGIZED DE-ENERGIZED

DIP SWITCH SETTINGS




FIELD SELECTABLE OPTIONS FOR TIME PERIOD BETWEEN DEFROST CYCLES (MINUTES)

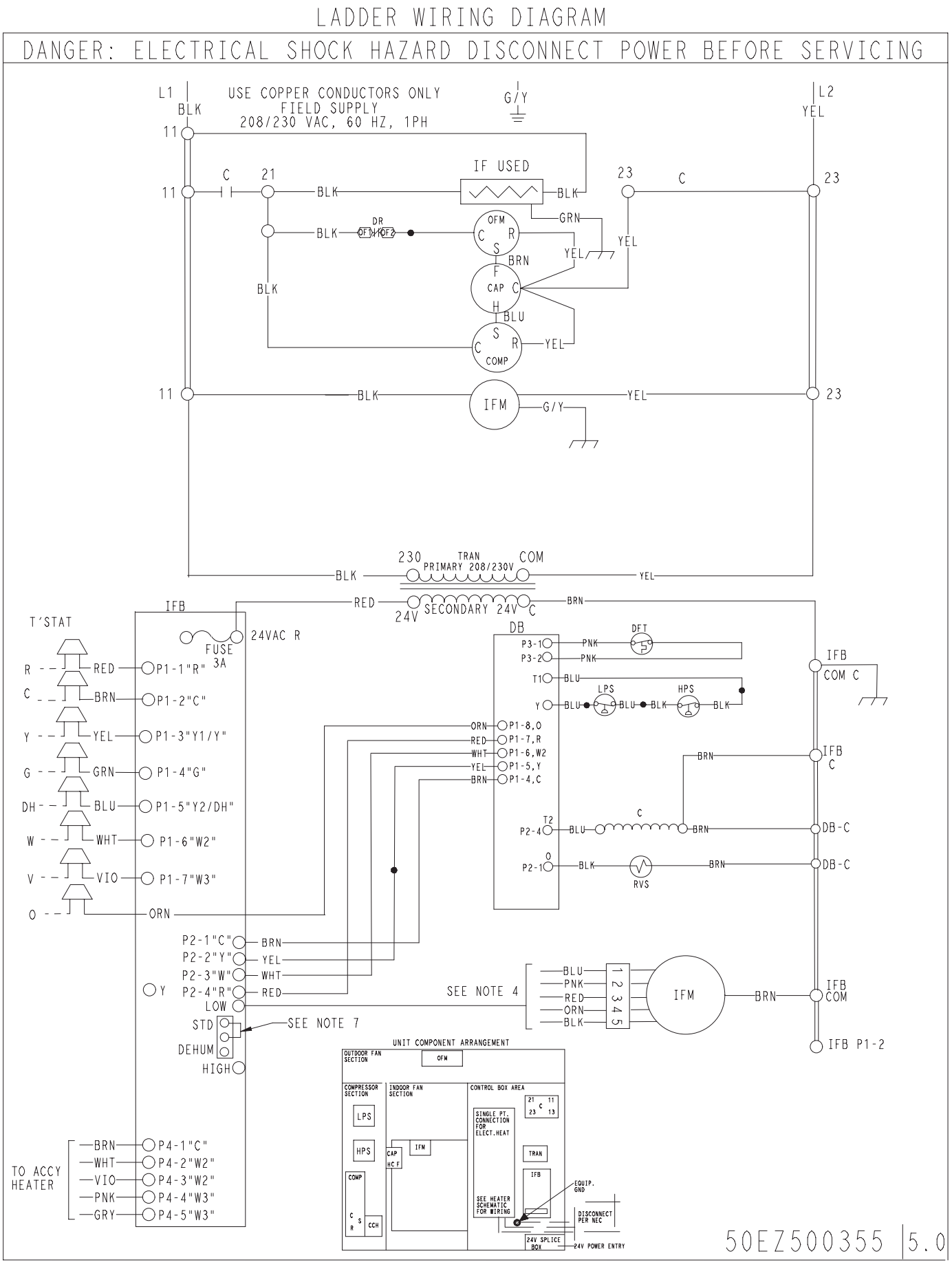
SPEED UP — JUMPERED TEST PINS (USE METAL OBJECT) FIELD SPEED-UP CYCLE

1) MOMENTARILY SHORT PINS AND RELEASE TO BYPASS COMPRESSOR OFF DELAY.
2) SHORT FOR 5+ SEC. AND RELEASE FOR FORCED DEFROST.
3) PERMANENT SHORT WILL BE IGNORED.

DEFROST WILL TERMINATE IN 30 SEC. IF DFT OPEN. DEFROST WILL TERMINATE NORMALLY IF DFT IS CLOSED.

THE COMPRESSOR WILL SHUT OFF FOR 30 SEC. ON DEFROST INITIATION AND TERMINATION IN THE "QUIET SHIFT" ON POSITION

## TYPICAL WIRING SCHEMATIC − 208/230−1−60 (CONT)



## CONTROLS

### Operating sequence

When power is supplied to unit, the transformer (TRAN) is energized.

On units with crankcase heater, heater is also energized.

**Cooling —** With the thermostat in the cooling position, the thermostat makes circuit R−O. This energizes the reversing valve solenoid (RVS) and places the unit in standby condition for cooling.

As the space temperature rises, the thermostat closes circuit R−Y. A circuit is made to contactor (C), starting the compressor (COMP) and outdoor−fan motor (OFM). Circuit R−G is made at the same time and starts the indoor−fan motor (IFM).

When the thermostat is satisfied, contacts open, deenergizing C. The COMP and OFM stop, and the IFM stops after the preselected time delay.

**Heating —** On a call for heat, thermostat makes circuits R−Y and R−G.

A circuit is made to C, starting COMP and OFM. Circuit R−G also is completed, energizing IFR and starting IFM after the selected time delay.

Should room temperature continue to fall, circuit R−W is made through second−stage thermostat. If optional electric heat package is used, a relay is energized, bringing on first bank of supplemental electric heat. When thermostat is satisfied, contacts open, deenergizing contactor and relay; motors and heaters deenergize.

**Defrost —** Defrost board (DB) is a time and temperature control, which includes a field−selectable time period (dip switch 1 and 2 on the board) between checks for defrost (30, 60, 90, or 120 minutes). Electronic timer and defrost cycle start only when contactor is energized and defrost thermostat (DFT) is closed.

The defrost board is also equipped with a third dip switch for selecting Quiet Shift operation. The Quiet Shift operation turns compressor off at defrost initiation and termination. Unit is factory shipped with quiet shift turned off.

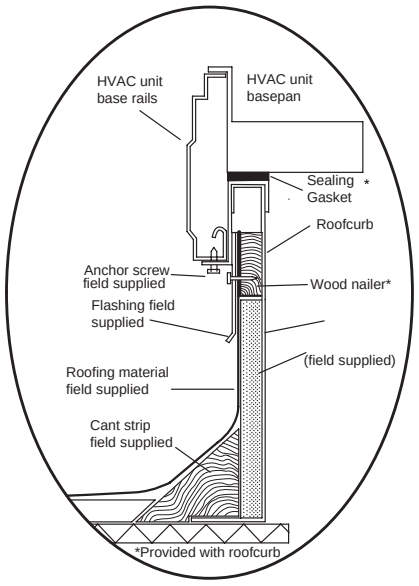
Defrost mode is identical to cooling mode, except outdoor fan motor stops and a bank of optional electric heat turns on to warm air supplying the conditioned space.

**NOTE**:

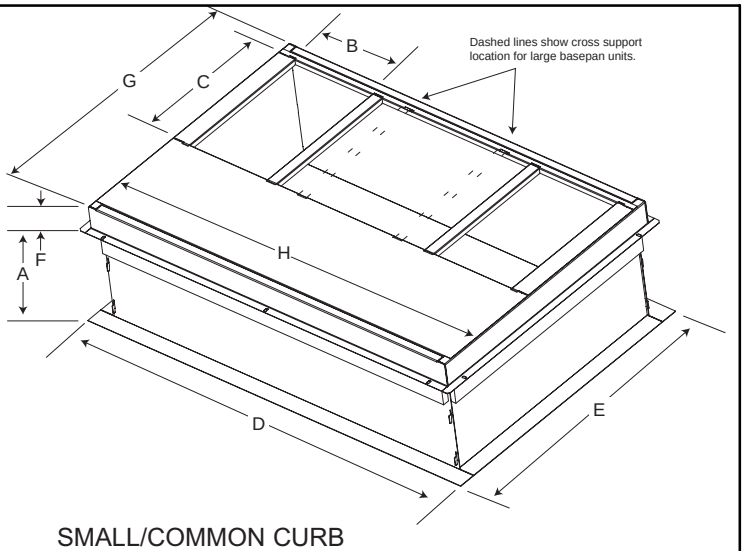
1. Compressor time delay occurs through the defrost control board.
2. Defrost control board has built in 5 minute compressor delay; once the compressor has started and then stopped, it cannot be restarted again until 5 minutes have elapsed.

## ACCESSORIES

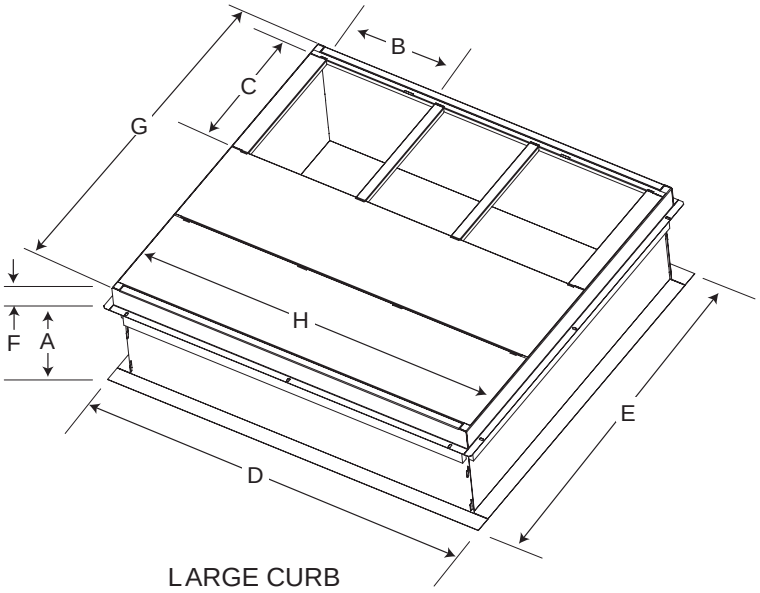
## ROOF CURBS



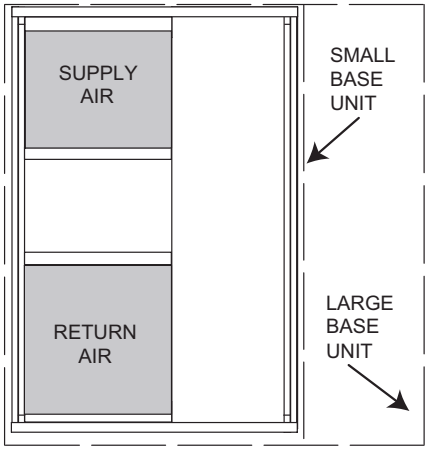

ROOF CURB DETAIL




SMALL/COMMON CURB




LARGE CURB




UNIT PLACEMENT ON COMMON CURB

SMALL OR LARGE BASE UNIT

| UNIT SIZE | CATALOG NUMBER | A IN. (mm) | B (small/common base) IN. (mm)* | B (large base) IN. (mm)* | C IN. (mm) | D IN. (mm) | E IN. (mm) | F IN. (mm) | G IN. (mm) | H IN. (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| Small or Large | CPRFCURB010A00 | 11 (279) | 10 (254) | 14 (356) | 16 (406) | 47.8 (1214) | 32.4 (822) | 2.7 (69) | 30.6 (778) | 46.1 (1170) |
| | CPRFCURB011A00 | 14 (356) | | | | | | | | |
| Large | CPRFCURB012A00 | 11 (279) | 14 (356) | | | | 43.9 (1116) | | 42.2 (1072) | |
| | CPRFCURB013A00 | 14 (356) | | | | | | | | |

* Part Numbers CPRCURB010A00 and CPRCURB011A00 can be used on both small and large basepan units. The cross supports must be located based on whether the unit is a small basepan or a large basepan.

NOTES:
1. Roof curb must be set up for unit being installed.
2. Seal strip must be applied, as required, to unit being installed.
3. Roof curb is made of 16−gauge steel.
4. Attach ductwork to curb (flanges of duct rest on curb).
5. Insulated panels: 1−in. (25 mm) thick fiberglass 1 lb. density.

| PHD4 ACCESSORIES (Continued) | | |
|---|---|---|
| **Accessory Model Number** | **Description** | **Use With** |
| **CURBS** | | |
| CPRFCURB010A00 | Roof Curb, 11” High | 24 − 60 |
| CPRFCURB011A00 | Roof Curb, 14” High | 24 − 60 |
| CPRFCURB012A00 | Roof Curb, 11” High | 36 − 60 |
| CPRFCURB013A00 | Roof Curb, 14” High | 36 − 60 |
| **Note: CPRFCURB010A00 AND CPRFCURB011A00 can be used with 42−60 size units with some overhang.** | | |
| **ADAPTER CURBS*** | | |
| CPADCURB001A00 | Adapter curb for use with NPRFCURB006A00 & NPRFCURB007A00 | 24, 30 |
| CPADCURB002A00 | Adapter curb for use with NPRFCURB008A00 & NPRFCURB009A00 | 36 − 60 |
| * Can also be used when replacing other manufacturer’s older generation units that contain a composite base without a metal base rail. | | |
| **CONCENTRIC ADAPTERS − (Use with curb only)** | | |
| NPCONADP001A00 | For 18” round duct (use with curbs CPRFCURB010A00, CPRFCURB011A00) | Small Curb |
| NPCONADP002A00 | For 18” round duct (use with curbs CPRFCURB012A00, CPRFCURB013A00) | Large Curb |
| **CONCENTRIC DIFFUSERS − (Ceiling or under roof))** | | |
| AXB020CSA* | Step Down Diffuser − Fits 2’ x 4’ Ceiling Grid (16” round collars for flex conn.) | 24 − 42 |
| AXB020CFA* | Flush Mount Diffuser − Fits 2’ x 4’ Ceiling Grid (16” round collars for flex conn.) | 24 − 42 |
| AXB030CSA | Step Down Diffuser − Fits 2’ x 4’ Ceiling Grid (18” round collars for flex conn.) | 24 − 60 |
| AXB030CFA | Flush Mount Diffuser − Fits 2’ x 4’ Ceiling Grid (18” round collars for flex conn.) | 24 − 60 |
| * A field supplied 18” to 16” round reducer required when used with NP concentric adaptor | | |
| **ECONOMIZERS** | | |
| CPECOMZR007A00 | Dedicated Vertical Economizer − Internal with solid state controller, gear driven, fully modulating damper, spring return actuator, up to 50% barometric relief, supply and dry bulb outdoor air sensors. Includes filter rack with 1” filters*. | 24, 30 |
| CPECOMZR008A00 | | 36, 42 |
| CPECOMZR009A00 | | 48, 60 |
| CPECOMZR010A00 | Dedicated Horizontal Economizer − Internal with solid state controller, fully modulating damper, spring return actuator, supply and dry bulb outdoor air sensor, and low ambient compressor lockout switch included. Includes filter rack with 1−inch filters*. | 24, 30 |
| CPECOMZR011A00 | | 36, 42 |
| CPECOMZR012A00 | | 48, 60 |
| CPRLYKIT001A00 | Economizer Relay for Heat Pumps | ALL |
| AXB078ENT | Outdoor Enthalpy Control | ALL |
| * Outdoor enthalpy available as field installed accessory; Filter rack and 1” filter, same as CPFILTRK kit | | |
| **DAMPERS** | | |
| CPMANDPR007A00 | Manual Outside Air Damper − (Includes filter rack and 1” filter, same as CPFILTRK kit) | 24, 30 |
| CPMANDPR008A00 | | 36, 42 |
| CPMANDPR009A00 | | 48, 60 |
| **INTERNAL FILTER RACKS** | | |
| CPFILTRK007A00 | Internal Filter Rack (includes 1−inch filters) | 24, 30 |
| CPFILTRK008A00 | | 36, 42 |
| CPFILTRK009A00 | | 48, 60 |
| **CRANKCASE HEATERS** | | |
| NPCRKHTR008A00 | 240V Crankcase Heater ((included on 24 & 30 models) | 36 |
| **LOW AMBIENT, ANTI−CYCLE TIMER, COMPRESSOR START ASSIST** | | |
| CPLOWAMB001A00 | Low Ambient Control − enables cooling system to operate down to 0 Deg. F by cycling condenser fan on and off. | ALL |
| NRTIMEGD001A00 | Five Minute Compressor Delay | ALL |
| CPHSTART002A00 | PTC Compressor Start Assist Kit | ALL |
| **HAIL GUARDS / COIL PROTECTION (Factory installed on PHD**000K<u>TP</u> models)** | | |
| NAPA00701GR | 3/8” spacing dense wire grilles | 24, 30 |
| NAPA00601GR | 3/8” spacing dense wire grilles | 36 |
| NAPA01001GR | 3/8” spacing dense wire grilles | 42, 48 |
| NAPA01301GR | 3/8” spacing dense wire grilles | 60 |

| **ELECTRIC HEATERS** | **Voltage / Nominal Capacity kW / Fuses** | | | | |
|---|---|---|---|---|---|
| **PART NO.** | **NOMINAL CAPACITY (kW)** | **FUSED** | **# FUSES** | **STAGES** | **USED WITH** |
| EHNA05K0N | 3.8 / 5.0 | NO | 0 | 1 | 24 − 36 |
| EHNA05K4F | 3.8 / 5.0 | YES | 4 | 1 | ALL |
| EHNA07K4F | 5.4 / 7.2 | YES | 4 | 2 | ALL |
| EHNA10K4F | 7.5 / 10.0 | YES | 4 | 2 | ALL |
| EHNA15K6F | 11.3 / 15.0 | YES | 6 | 2 | 30 − 60 |
| EHNA20K6F | 15.0 / 20.0 | YES | 6 | 2 | 42 − 60 |

| PHD4 ACCESSORIES (Continued) | | |
|---|---|---|
| **Accessory Model Number** | **Description** | **Use With** |
| **DUAL POINT WIRING KIT** | | |
| CPDUALPT001A00 | Dual Point Wiring kit, 5−20kW Heaters | ALL |
| **DUCT TRANSITIONS** | | |
| NPDUCFLG002A00 | Square to Round (1 set of 2, use with horizontal duct flanges only) | 24−48 |