

Bosch BVA 2.0 Series Air Handler

2-3-4-5 Ton Capacity
R410A



BOSCH

Product Specifications



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1 Product Features

1.1 Features and Benefits

- ▶ Premium efficiency – Up to 20.5 SEER, up to 10.5 HSPF
- ▶ All aluminum evaporator coil for superior corrosion resistance
- ▶ Constant torque multi-speed ECM blower motor - designed for two stage operation
- ▶ 5, 8, 10, 15, 20 kW electric heat accessory kits available for supplemental or emergency heating needs
- ▶ Easy to install – compatible with most standard 24 VAC heat pump thermostats
- ▶ Factory-installed TXV metering
- ▶ Multi-position Installation - upflow or horizontal right standard; field convertible to horizontal left or downflow
- ▶ Multiple electrical entry locations
- ▶ Dual front panel design for ease of maintenance
- ▶ Blower and coil easy slide out for ease of maintenance
- ▶ Fully-insulated cabinet design
- ▶ Horizontal and vertical condensate drain pans standard
- ▶ Condensate drain pan is polymer with UVC inhibitor
- ▶ Primary and secondary condensate drain fittings
- ▶ Factory-sealed cabinet certified to achieve 2% or less air leakage rate at 1.0 inch water column
- ▶ Integrated filter rack with tool-less door access
- ▶ AHRI and ETL Listed

1.2 Limited Warranty

For Products installed in a one or two family residential dwelling, BTC warrants that all compressors and internal components incorporated into the Product at the time of shipment by BTC shall remain free from defects in workmanship and materials for ten (10) years* from the Commencement Date. If the Warranty Registration process has been completed and BTC determines that the Product or any part of the Product has a defect in workmanship or materials, BTC shall pay labor charges associated with the repair or replacement of the part in accordance with the Warranty Labor Allowance Schedule** for the period of ninety (90) days from the Commencement Date.

* Please refer to www.bosch-climate.us for full warranty terms and conditions.

** Warranty Labor Allowance Schedule details are available on www.boschprohvac.com

2 Nomenclature

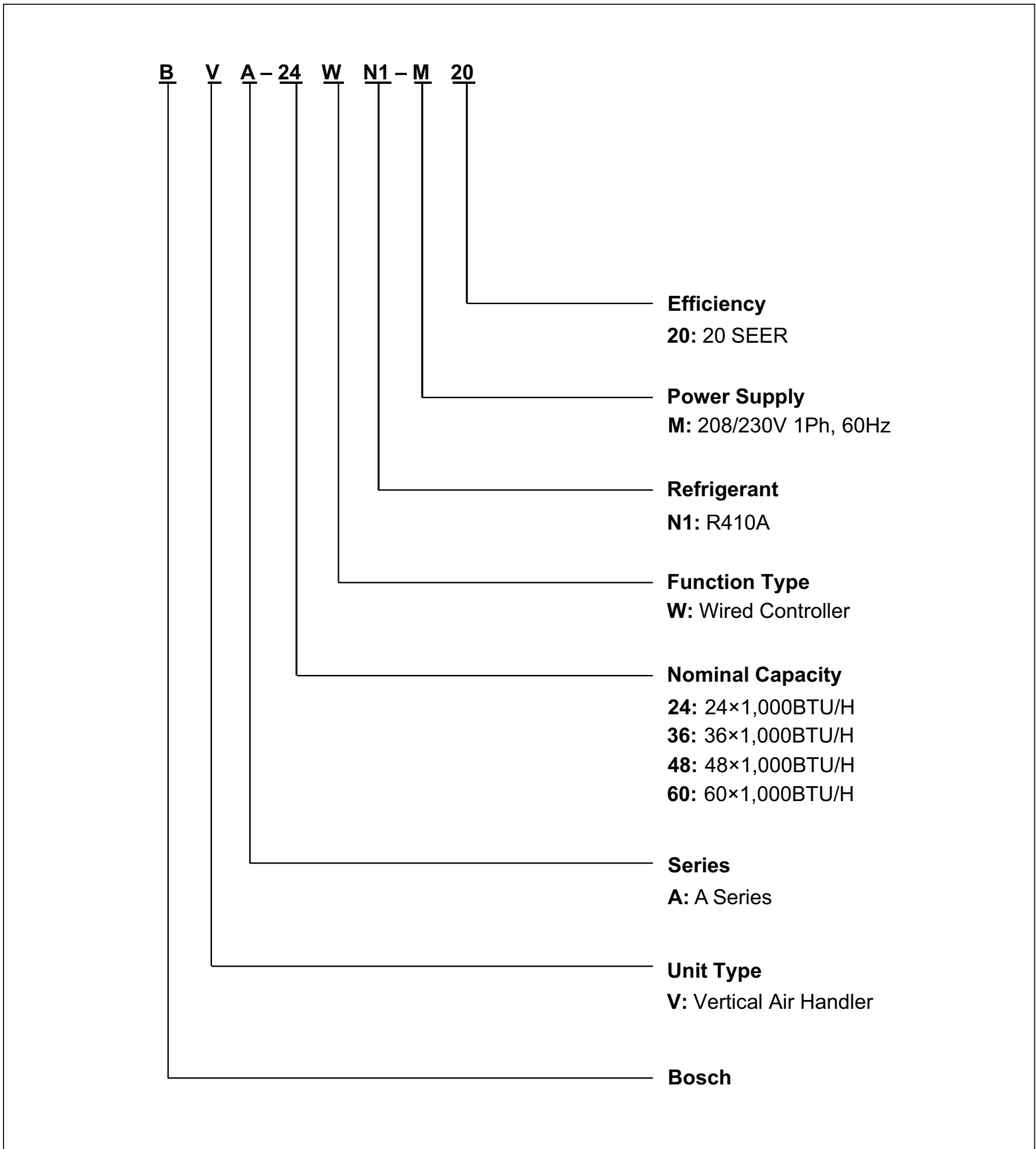


Figure 1

3 Product specifications

| | BVA024 | BVA036 | BVA048 | BVA060 |
|--|----------------------------|----------------------------|------------------------------|------------------------------|
| Cooling Capacity | | | | |
| Nominal Cooling (BTU/h) | 24000 | 34600 | 47500 | 54500 |
| Nominal Heating (BTU/h) | 24000 | 34200 | 48000 | 56000 |
| Blower | | | | |
| Diameter (mm) | 10-5/8" (270) | 10-63/64" (279) | 10-63/64" (279) | 10-63/64" (279) |
| Width (mm) | 8-5/32" (207) | 10-43/64" (271) | 10-43/64" (271) | 10-43/64" (271) |
| Fan Motor | | | | |
| Horsepower (HP) | 1/3 | 1/2 | 3/4 | 3/4 |
| Full Load Amps | 2.6 | 3 | 4.5 | 4.5 |
| Refrigeration System | | | | |
| Refrigerant Line Size ¹ | | | | |
| Liquid Line Size (O.D.) | 3/8" | 3/8" | 3/8" | 3/8" |
| Suction Line Size (O.D.) | 3/4" | 3/4" | 7/8" | 7/8" |
| Refrigerant Connection Size | | | | |
| Liquid Line Size (O.D.) | 3/8" | 3/8" | 3/8" | 3/8" |
| Suction Line Size (O.D.) | 3/4" | 3/4" | 7/8" | 7/8" |
| Expansion Device [TXV=Thermal Expansion Valve] | TXV | | | |
| Decibels dB(A) | | | | |
| High Speed | 63 | 65 | 67 | 68 |
| Medium Speed | 59 | 62 | 63 | 64 |
| Low Speed | 55 | 58 | 59 | 60 |
| Electrical Data | | | | |
| Voltage-Phase-Hz | 208/230-1-60 | 208/230-1-60 | 208/230-1-60 | 208/230-1-60 |
| Minimum Circuit Ampacity ² | 3.3 | 3.8 | 5.7 | 5.7 |
| Max. Overcurrent Protection ³ | 15 | 15 | 15 | 15 |
| Min / Max Volts | 172V/270V | | | |
| Air Filter | | | | |
| Air Filter Sizes | 18" x 20" | 18" x 20" | 20" x 22" | 20" x 22" |
| Weight | | | | |
| Net Weight (without packaging)(lbs) | 119 | 126 | 162 | 170 |
| Gross Weight (including packaging)(lbs) ⁴ | 132 | 139 | 180 | 188 |
| Dimensions | | | | |
| Unit D x W x H (in.) | 21-5/8 x 19-5/8 x 46-1/2 | 21-5/8 x 19-5/8 x 46-1/2 | 24 x 22 x 54-1/2 | 24 x 22 x 54-1/2 |
| Unit D x W x H (in.)(with pallet and packaging) | 25-3/8 x 22-5/16 x 52-9/16 | 25-3/8 x 22-5/16 x 52-9/16 | 27-11/16 x 24-11/16 x 60-5/8 | 27-11/16 x 24-11/16 x 60-5/8 |
| Indoor Coil | | | | |
| Net face area-sq.ft. | 4.02 | 4.02 | 5.99 | 5.99 |
| Tube diameter | 9/32" (7 mm) | 9/32" (7 mm) | 9/32" (7mm) | 9/32" (7mm) |
| No.of rows | 4 | 4 | 4 | 5 |
| Fins per inch | 17 | 17 | 17 | 17 |

Table 1

¹ Tested and rated in accordance with AHRI Standard 210/240.

² Wire size should be determined in accordance with National Electrical Codes; extensive wire runs will require larger wire sizes.

³ Must use time-delay fuses or HACR-type circuit breakers of the same size as noted.

⁴ Weight shown includes packaging

4 Dimensions

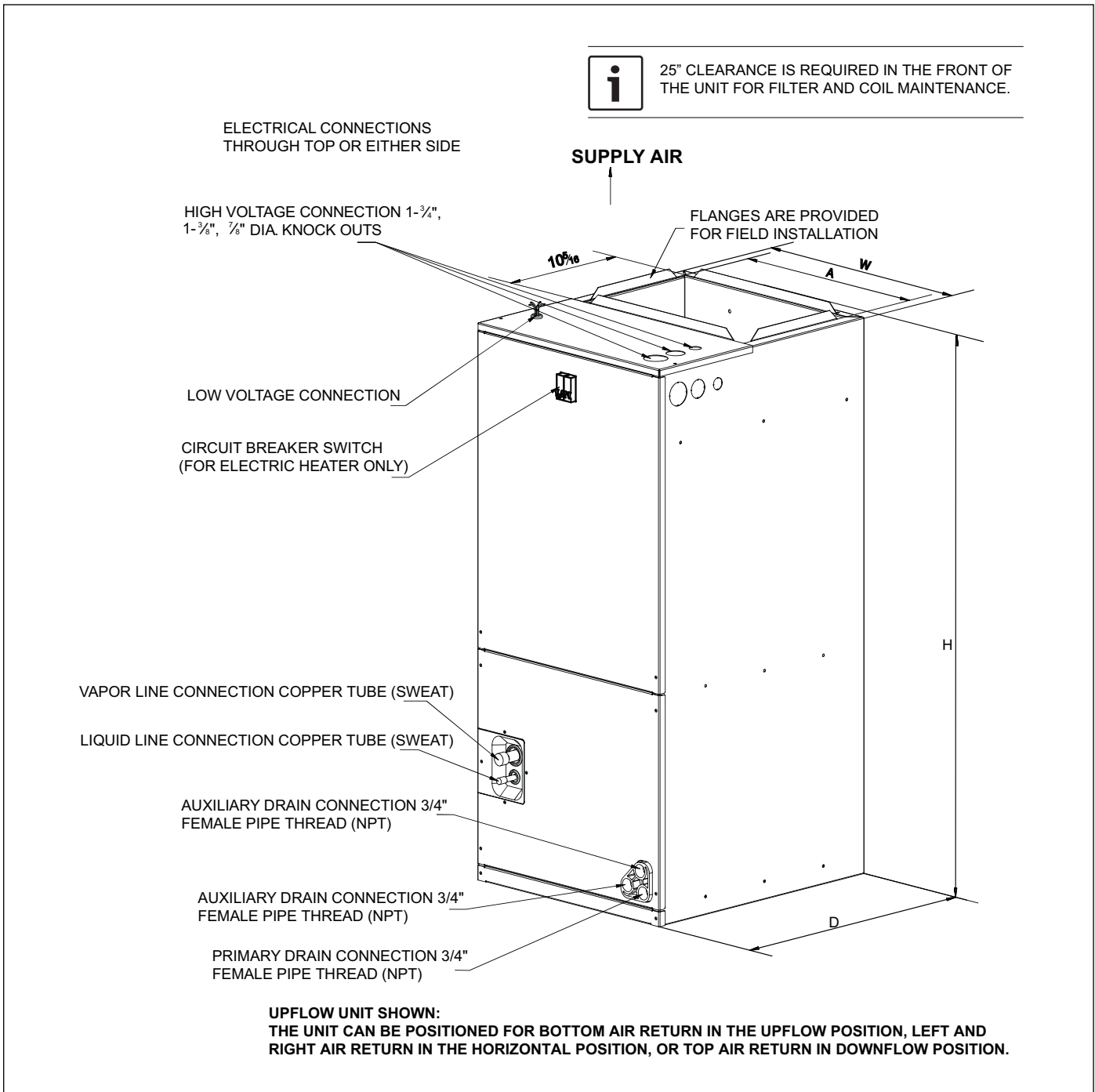


Figure 2

| Model Size | Dimensions Inch [mm] | | | | |
|------------|----------------------|----------------|-----------------|-----------------|--------------------------|
| | Unit Height "H" | Unit Width "W" | Unit Length "D" | Supply Duct "A" | Liquid Line / Vapor Line |
| 24 | 46-1/2 [1180] | 19-5/8 [500] | 21-5/8 [550] | 18 [456] | 3/8 / 3/4 [9.5]/[19] |
| 36 | 46-1/2 [1180] | 19-5/8 [500] | 21-5/8 [550] | 18 [456] | 3/8 / 3/4 [9.5]/[19] |
| 48 | 54-1/2 [1385] | 22 [560] | 24 [610] | 19-1/2 [496] | 3/8 / 7/8 [9.5]/[22] |
| 60 | 54-1/2 [1385] | 22 [560] | 24 [610] | 19-1/2 [496] | 3/8 / 7/8 [9.5]/[22] |

Table 2

5 Airflow Performance

Airflow performance data is based on cooling performance with a coil and no filter in place. Check the performance table for appropriate unit size selection. External static pressure should stay within the minimum and maximum limits

| Air Handler Model Size | Motor Speed | | SCFM | | | | | | | | |
|------------------------|-----------------------------------|-------|--|----------|----------|----------|----------|----------|----------|----------|----------|
| | | | External Static Pressure-Inches W.C. [kPa] | | | | | | | | |
| | | | 0[0] | 0.1[.02] | 0.2[.05] | 0.3[.07] | 0.4[.10] | 0.5[.12] | 0.6[.15] | 0.7[.17] | 0.8[.20] |
| 24 | Tap(5) | SCFM | 1181 | 1144 | 1104 | 1063 | 1021 | 991 | 961 | 919 | 902 |
| | | Watts | 263 | 274 | 283 | 289 | 298 | 304 | 314 | 323 | 328 |
| | Tap(4)-Default High Stage Setting | SCFM | 961 | 913 | 872 | 826 | 792 | 748 | 717 | 673 | 638 |
| | | Watts | 146 | 151 | 160 | 166 | 175 | 180 | 190 | 195 | 205 |
| | Tap(3) | SCFM | 852 | 797 | 760 | 708 | 674 | 626 | 589 | 535 | 500 |
| | | Watts | 109 | 114 | 122 | 127 | 137 | 142 | 150 | 155 | 157 |
| | Tap(2)-Default Low Stage Setting | SCFM | 755 | 711 | 653 | 615 | 563 | 505 | 499 | 413 | 382 |
| | | Watts | 81 | 98 | 94 | 103 | 108 | 112 | 119 | 125 | 133 |
| | Tap(1) | SCFM | 712 | 647 | 604 | 548 | 490 | 481 | 452 | 427 | 368 |
| | | Watts | 71 | 75 | 84 | 88 | 93 | 98 | 101 | 109 | 114 |
| 36 | Tap(5) | SCFM | 1460 | 1420 | 1371 | 1329 | 1228 | 1224 | 1195 | 1093 | 1041 |
| | | Watts | 283 | 294 | 301 | 311 | 322 | 327 | 340 | 356 | 367 |
| | Tap(4)-Default High Stage Setting | SCFM | 1269 | 1213 | 1170 | 1121 | 1085 | 996 | 911 | 867 | 810 |
| | | Watts | 191 | 197 | 207 | 213 | 223 | 238 | 247 | 255 | 266 |
| | Tap(3) | SCFM | 1152 | 1093 | 1046 | 988 | 895 | 829 | 764 | 717 | 707 |
| | | Watts | 147 | 152 | 161 | 167 | 181 | 192 | 198 | 207 | 208 |
| | Tap(2)-Default Low Stage Setting | SCFM | 925 | 879 | 808 | 700 | 623 | 573 | 516 | 495 | 442 |
| | | Watts | 87 | 96 | 100 | 111 | 116 | 125 | 129 | 134 | 143 |
| | Tap(1) | SCFM | 889 | 727 | 456 | 225 | / | / | / | / | / |
| | | Watts | 74 | 66 | 51 | 44 | / | / | / | / | / |
| 48 | Tap(5) | SCFM | 2051 | 2006 | 1961 | 1914 | 1867 | 1819 | 1777 | 1735 | 1695 |
| | | Watts | 454 | 471 | 487 | 503 | 518 | 531 | 545 | 559 | 572 |
| | Tap(4) | SCFM | 1914 | 1875 | 1831 | 1782 | 1735 | 1691 | 1649 | 1611 | 1581 |
| | | Watts | 384 | 401 | 416 | 430 | 442 | 455 | 467 | 480 | 492 |
| | Tap(3)-Default High Stage Setting | SCFM | 1714 | 1661 | 1611 | 1560 | 1513 | 1469 | 1424 | 1380 | 1314 |
| | | Watts | 273 | 289 | 304 | 317 | 330 | 343 | 353 | 366 | 386 |
| | Tap(2) | SCFM | 1499 | 1451 | 1398 | 1340 | 1288 | 1247 | 1188 | 1058 | 993 |
| | | Watts | 198 | 212 | 224 | 234 | 243 | 256 | 271 | 290 | 303 |
| | Tap(1)-Default Low Stage Setting | SCFM | 1363 | 1307 | 1250 | 1181 | 1134 | 1062 | 938 | 875 | 835 |
| | | Watts | 151 | 163 | 175 | 181 | 193 | 206 | 224 | 232 | 243 |
| 60 | Tap(5) | SCFM | 2029 | 1988 | 1947 | 1900 | 1858 | 1815 | 1771 | 1716 | 1671 |
| | | Watts | 466 | 482 | 498 | 514 | 528 | 541 | 553 | 565 | 572 |
| | Tap(4)-Default High Stage Setting | SCFM | 1881 | 1843 | 1800 | 1754 | 1708 | 1666 | 1626 | 1590 | 1558 |
| | | Watts | 391 | 407 | 423 | 438 | 449 | 462 | 474 | 487 | 498 |
| | Tap(3) | SCFM | 1677 | 1633 | 1586 | 1543 | 1499 | 1449 | 1409 | 1370 | 1281 |
| | | Watts | 281 | 297 | 311 | 325 | 338 | 346 | 358 | 370 | 386 |
| | Tap(2)-Default Low Stage Setting | SCFM | 1491 | 1439 | 1380 | 1334 | 1285 | 1246 | 1180 | 1047 | 988 |
| | | Watts | 205 | 217 | 226 | 238 | 250 | 259 | 269 | 292 | 300 |
| | Tap(1) | SCFM | 1348 | 1280 | 1227 | 1180 | 1130 | 1042 | 933 | 871 | 825 |
| | | Watts | 157 | 165 | 176 | 187 | 196 | 206 | 225 | 233 | 245 |

Table 3

□ Bold outlined areas represent airflow outside of the required 300-450 cfm/ton range.

NOTES:

- The high stage airflow must be used as the rated airflow for the full load operation of machine.
- The rated airflow of systems without electric heater kits requires between 300 and 450 cubic feet of air per minute (CFM).
- The rated airflow of systems with electric heater kits requires between 350 and 450 cubic feet of air per minute (CFM).
- The air distribution system has the greatest effect on airflow. Therefore, the contractor should use only industry-recognized procedures.
- Duct design and construction should be carefully done. System performance can be lowered dramatically through poor design or workmanship.
- Air supplier ducts should be located along the perimeter of the conditioned space and properly sized. Improper location or insufficient air flow may cause drafts or noise in the ductwork.
- Installers should balance the air distribution system to ensure proper quiet airflow to all rooms in the home. An air velocity meter or airflow hood can be used to balance and verify branch and system airflow (CFM).

6 Heater Kit Data

| Heat Kit Model | Air Handler Model | (kW) Electric Heat | MIN. Circuit Ampacity | | MAX. Fuse or Breaker (HACR) Ampacity | | Fan speed | | | | |
|----------------|-------------------|--------------------|-----------------------|-----------|--------------------------------------|---------|-----------|---|---|---|---|
| | | | 240 VAC | 208 VAC | 240 VAC | 208 VAC | 1 | 2 | 3 | 4 | 5 |
| EHK-05B | 24 | 5 | 29.4 | 25.9 | 30 | 30 | ● | ● | ● | ● | ● |
| EHK-08B | | 7.5 | 42.4 | 37.2 | 45 | 40 | X | X | ● | ● | ● |
| EHK-10B | | 10 | 55.4 | 48.5 | 60 | 50 | X | X | ● | ● | ● |
| EHK-05B | 36 | 5 | 29.9 | 26.4 | 30 | 30 | ● | ● | ● | ● | ● |
| EHK-08B | | 7.5 | 42.9 | 37.7 | 45 | 40 | X | ● | ● | ● | ● |
| EHK-10B | | 10 | 55.9 | 49 | 60 | 50 | X | X | ● | ● | ● |
| EHK-15B | 48 | 15 | 55.9/26.1 | 49/22.6 | 60/30 | 50/25 | X | X | ● | ● | ● |
| EHK-05B | | 5 | 31.8 | 28.3 | 35 | 30 | ● | ● | ● | ● | ● |
| EHK-08B | | 7.5 | 44.8 | 39.6 | 45 | 40 | ● | ● | ● | ● | ● |
| EHK-10B | 60 | 10 | 57.8 | 50.9 | 60 | 60 | X | ● | ● | ● | ● |
| EHK-15B | | 15 | 57.8/26.1 | 50.9/22.6 | 60/30 | 60/25 | X | X | ● | ● | ● |
| EHK-20B | | 20 | 57.8/52.1 | 50.9/45.2 | 60/60 | 60/50 | X | X | X | ● | ● |
| EHK-05B | 60 | 5 | 31.8 | 28.3 | 35 | 30 | X | X | ● | ● | ● |
| EHK-08B | | 7.5 | 44.8 | 39.6 | 45 | 40 | X | X | ● | ● | ● |
| EHK-10B | | 10 | 57.8 | 50.9 | 60 | 60 | X | X | ● | ● | ● |
| EHK-15B | 60 | 15 | 57.8/26.1 | 50.9/22.6 | 60/30 | 60/25 | X | X | ● | ● | ● |
| EHK-20B | | 20 | 57.8/52.1 | 50.9/45.2 | 60/60 | 60/50 | X | X | X | ● | ● |

Table 4 Suitable heat kits for AHU multi position installation

- Heat kit suitable for AHU 4-way position installation.
- Ampacities for MCA and Fuse/breaker including the blower motor
- Heat pump systems require a specified airflow. Each ton of cooling requires between 350 and 450 cubic feet of air per minute (CFM), or 400 CFM nominally.

Heater Kit Accessories

| Model | Description | 24 | 36 | 48 | 60 |
|--------|--------------------------------------|----|----|----|----|
| EHK05B | 5 kW Heat Kit, Double Pole Breaker | ● | ● | ● | ● |
| EHK08B | 7.5 kW Heat Kit, Double Pole Breaker | ● | ● | ● | ● |
| EHK10B | 10 kW Heat Kit, Double Pole Breaker | ● | ● | ● | ● |
| EHK15B | 15 kW Heat Kit, Double Pole Breaker | X | ● | ● | ● |
| EHK20B | 20 kW Heat Kit, Double Pole Breaker | X | X | ● | ● |

Table 5

[● means available, X means not available]

United States and Canada

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