

AIR COOLED CONDENSERS

Technical Guide



TABLE OF CONTENTS

| | |
|------------------------------------|------|
| Overview..... | 2, 3 |
| Features & Options..... | 3, 4 |
| Nomenclature..... | 3 |
| Four Solutions..... | 5 |
| Condenser Selection Procedure..... | 6-8 |

Fixed Speed A/C Series

| | |
|-----------------------|-------|
| 540 RPM | 9-12 |
| 830 RPM (1.0 HP)..... | 13-16 |
| 830 RPM (1.5 HP)..... | 17-20 |
| 1140 RPM | 21-24 |

VSEC Information

| | |
|-------------------------|----|
| EC Selection | 25 |
| Sound Data | 25 |
| Energy Comparison | 26 |

VSEC Series

| | |
|------------------------------|-------|
| 830 RPM (Rail Mounted) | 27-30 |
| 1140 RPM (Rail Mounted)..... | 31-34 |
| Venturi Mounted..... | 35-38 |

Additional Information

| | |
|---|-------|
| Dimensions..... | 39 |
| Fan Cycling | 40-41 |
| Condenser Refrigerant Charge | 42-44 |
| Calculate Refrigerant Charge | 44 |
| Typical Condenser Wiring Diagrams | 45-46 |
| Sound Data | 47 |



OVERVIEW

The Bohn VSEC and 3-Phase A/C Series of direct drive air-cooled condensers incorporate the latest condenser technology to provide the quietest and most efficient condensers in the industry.

VSEC Series

Optimized sound and energy performance.

The VSEC Series of condensers by Bohn offers the optimum solution for sound and energy performance. The VSEC Series utilizes variable speed EC (VSEC) motor technology, which provides unmatched sound and energy performance and is the perfect solution for those applications where low noise levels and significant energy savings are essential for success.



Since product improvement is a continuing effort, we reserve the right to make changes in specifications without notice.

3-Phase A/C Series

Excellence in sound, energy and capacity solutions.

The 3-Phase A/C Series of condensers by Bohn is designed specifically with the growing needs of the supermarket and grocery industry in mind. This series utilizes 830 and 540 RPM motors and incorporates advanced features that further improve sound levels and energy efficiencies, as well as provide increased capacity in a smaller footprint. In addition, there are new features designed to improve serviceability, resulting in reduced maintenance costs.

The 3-Phase A/C Series is a perfect fit for applications requiring low sound and energy levels and optimized capacities.

1140 Series

Bohn continues to offer the 1140 RPM Series for customers seeking the most economical solution for their capacity requirements.

Bohn condensers now incorporate a broader product range with capacities ranging from 11 to 265 nominal tons to address all applications.

All Bohn condenser coils incorporate the Floating Tube coil design, which virtually eliminates the possibility of tube sheet leaks. Condenser coils are designed for maximum heat transfer and are designed to operate with most common refrigerants.

OVERVIEW (continued)

As with all Bohn products, extensive testing of the condenser ensures long and trouble-free service life.

The condensers are designed for outdoor applications with housings available in aluminum finish and painted or unpainted galvanized steel.

The condensers are available in either single or double wide fan configurations.

The condenser design incorporates the features most desired in air-cooled condensers. An extensive list of options and fan cycle control panels complement the condenser design and allow the condenser to match the most rigid application requirements.



The Floating Tube Coil Design
Dramatically Reduces Tube Sheet Leaks



Venturi Mounted VSEC Series with VSEC Motor Technology

FEATURES

The Bohn air-cooled condenser is available in multiple product tiers and is designed with features to meet specific customer requirements.

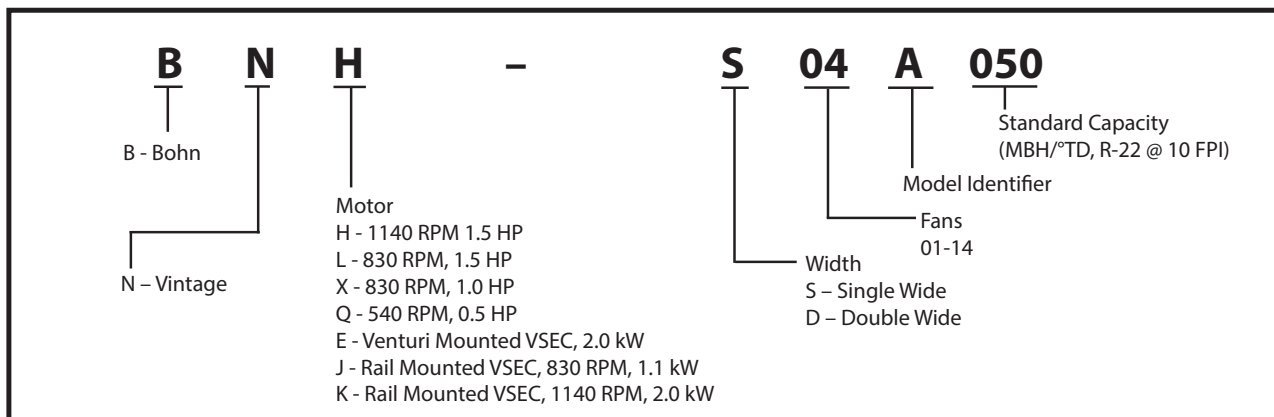
Bohn Venturi Mounted VSEC Series of Condensers

Customers seeking optimum sound and energy performance can select the Bohn VSEC Series of condensers with variable speed EC motor technology. VSEC motors provide unparalleled sound and energy performance.

Features include:

- VSEC motor, swept fan blade and Venturi incorporating integrated variable speed technology
- Broad capacity range from 16 to 264 tons
- Aluminum housing for an attractive appearance and corrosion protection, with painted galvanized steel, or galvanized steel available as an option
- Side access panels allow for ease of cleaning coils

NOMENCLATURE



Bohn 3-Phase A/C Series of Condensers

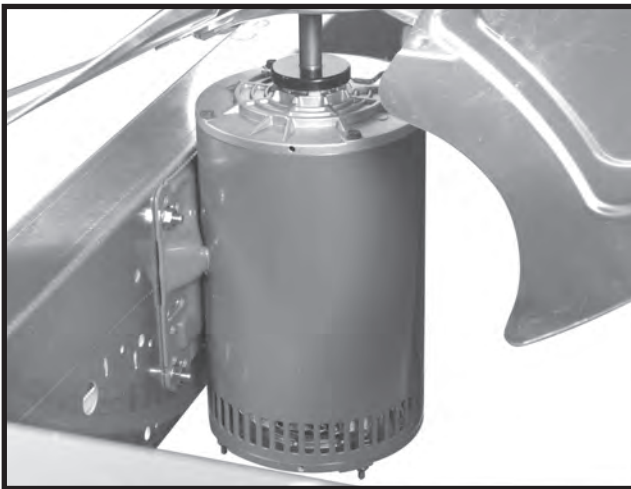
The 3-Phase A/C Series by Bohn is designed specifically with the growing needs of the supermarket and grocery industry in mind. This series utilizes 830 and 540 RPM motors and incorporates advanced features that further improve sound levels and energy efficiencies, as well as provide increased capacity in a smaller footprint. In addition, there are new features designed to improve serviceability, resulting in reduced maintenance costs. The 3-Phase A/C Series is a perfect fit for applications requiring low sound and energy levels and optimized capacities.

Features include:

- Direct drive fan motors in 830 or 540 RPM
- The patented QuietEdge fan blade provides an unprecedented sound level of 49.6 dBA (540 RPM @ 10 ft.)
- The Bohn patented (#7, 210, 661) ServiceEase motor mount feature allows for ease of motor service and reduces likelihood of damage to the coils during servicing
- Bohn condenser coils incorporate the latest coil technology to provide maximum capacity
- Broader product range to address all applications. Capacities ranging from 11 to 225 nominal tons
- Galvanized steel cabinet with the option for aluminum or painted galvanized steel
- High efficiency, three-phase fan motors with ball bearings and internal overload protection

1140 Series

For customers seeking an economical solution to their capacity needs, Bohn now offers the 1140 RPM Series with enhancements to improve capacity and serviceability.



ServiceEase Motor Mount System



Bohn's Patented QuietEdge Fan Blade for Improved Sound Performance

Features include:

- Direct drive fan motors
- The Bohn patented (#7, 210, 661) ServiceEase™ motor mount
- High efficiency condenser coil designed for optimum performance
- Expanded product range from 15 to 249 nominal tons
- Galvanized steel as a standard housing, with an option for aluminum or painted galvanized steel
- High efficiency, three-phase fan motors with ball bearings and internal overload protection

All Standard Condensers

- 10 fins per inch spacing
- Modular design with models in both single and double wide fan configurations
- All Bohn condensers incorporate the Floating Tube coil design, which virtually eliminates tube sheet leaks
- Internal baffles provided between all fan cells
- Condensers up to 3 fans in length use 3/8" diameter tube to minimize refrigerant charge. Condensers 4 or more fans in length use 1/2" diameter tube to minimize refrigerant pressure drop
- Coated steel fan guards
- Weatherproof control panel with factory-mounted door interrupt disconnect switch
- UL and UL listed for Canada

Available Options:

- Multi-circuiting at no additional charge
- Optional 8, 12 or 14 FPI spacing
- Fan-cycle control panels
- Alternate coil construction including BohnGuard coated fins, epoxy or phenolic coated fins and copper fins
- Hinged fan panels for ease of servicing (3-Phase A/C and 1140 Series only)
- Side access panels
- Extended condenser legs for increased ground clearance
- Sealtite wiring
- Frame for shipping

Four Solutions Tailored To Fit Your Unique Needs

Choose from Fixed Speed, Rail Mounted VSEC, or Venturi Mounted VSEC series of air-cooled condensers by Bohn. Choosing the Venturi Mounted VSEC Series means that you are selecting the ultimate in capacity, sound, and efficiency. The Rail Mounted VSEC option offers all of the benefits of variable speed in a conventional condenser package, while the fixed speed options continue to provide proven performance and capacity.

| FEATURE | 1140 RPM FIXED SPEED | 830 & 540 RPM FIXED SPEED | RAIL MOUNTED VSEC | VENTURI MOUNTED VSEC |
|---|-------------------------|------------------------------|-----------------------------|-----------------------------|
| Motors | | | | |
| Standard Motor | 1140 RPM | 830, 540 RPM | Variable Speed EC Motors | Variable Speed EC Motors |
| P66 Motor Option | ✓ | ✓ | | |
| Cabinet | | | | |
| Standard Cabinet | Galvanized | Galvanized | Galvanized | Aluminum |
| Galvanized Option | (standard) | (standard) | (standard) | ✓ |
| Pre-Painted Galvanized Option | ✓ | ✓ | ✓ | ✓ |
| Aluminum Option | ✓ | ✓ | ✓ | (standard) |
| Venturi Cover | | | | |
| Standard Venturi | Removable | Removable | Removable | EC Tall Optimized |
| Hinged Option | ✓ | ✓ | ✓ | - |
| Fan Blades | | | | |
| Standard Blade | Standard | QuietEdge™ | Standard/QuietEdge™ | EC Optimized |
| Motor Mounted | | | | |
| Standard Motor Mounted | Service Ease™ | Service Ease™ | Service Ease™ | EC Optimized |
| Warranty | | | | |
| Two-Year Warranty | ✓ | ✓ | ✓ | ✓ |
| Two-Year Warranty - Rail Mounted VSEC Motors | - | - | ✓ | - |
| Three-Year Warranty - Venturi Mounted VSEC Motors | - | - | - | ✓ |
| Five-Year Warranty - Floating Tube™ Coil Design | ✓ | ✓ | ✓ | ✓ |

Condenser Selection

Capacity for air-cooled condensers are based on Total Heat of Rejection (THR) at the condenser. Total heat of rejection is equal to net refrigeration at the evaporator (compressor capacity) plus the energy input into the refrigerant by the compressor (heat of compression). The heat of compression will vary depending on the compressor manufacturer, type of compressor and the operating conditions of the compressor. Whenever possible, it is recommended that you obtain the heat of compression value from the compressor manufacturer.

If this is not available, the THR can be estimated using the following formula:

$$\text{THR} = (\text{Compressor Capacity}) * (\text{Heat of Compression Factor, Tables 1 \& 2})$$

Table 1 contains heat of compression factors for suction cooled compressors and Table 2 contains factors for open drive compressors. For refrigeration systems beyond the range of Tables 1 and 2, use the following equations to estimate THR:

Open Compressors:

$$\text{THR} = \text{Compressor Capacity (BTUH)} + (2545) * (\text{Brake Horsepower, BHP})$$

Suction Cooled Compressors:

$$\text{THR} = \text{Compressor Capacity (BTUH)} + (3413 * \text{KW})$$

The compressor capacity is effected by its altitude. If the condenser location is above sea level, an additional correction is required to the THR, as follows:

$$\text{THR (altitude)} = \text{THR} * \text{Altitude Correction Factor, Table 3}$$

Selection Example

| | |
|-------------------------|-------------------------------|
| Compressor capacity: | 350,000 |
| Evaporator temperature: | +25° F |
| Condensing temperature: | 115° F |
| Ambient temperature | 95° F |
| Refrigerant: | R-22 |
| Compressor type: | Semi-hermetic, suction cooled |
| Condenser type: | 540 RPM, one row of fans |
| Condenser altitude: | 1,000 feet |

Step 1: Estimate Condenser THR

From Table 1 for suction cooled compressors, at +25° F suction, we need to determine the heat of compression factor for 115° F condensing temperature (NOT shown in table).

Therefore, select the condensing temperatures and heat of compression factor for +25° F suction temperatures as follows

From Table 1:

| 110° | 115° | 120° | Condensing Temperature |
|------|------|------|----------------------------|
| 1.31 | X | 1.36 | Heat of Compression Factor |

To determine X: (Heat of Compression Factor)

$$X = \frac{115-110}{120-110} * (1.36 - 1.31) + 1.31$$

$$X = \frac{5}{10} * (0.05) + 1.31X = (0.025) + 1.31$$

$$X = 1.335$$

Therefore heat of compression factor at 115° F condensing temperature is **1.335**

$$\begin{aligned} \text{THR} &= \text{Compressor Capacity} * \text{Heat of Compression Factor} \\ &= 350,000 * 1.335 \\ &= 467,250 \end{aligned}$$

Step 2: Correct for Altitude

From Table 3 obtain an altitude correction factor of 1.02 for 1,000 feet.

$$\begin{aligned} \text{THR} &= \text{THR (from step 1)} * \text{Altitude Correction Factor (design)} \\ &= 467,250 * 1.02 \\ &= 476,595 \end{aligned}$$

Step 3: Calculate Design Condenser T.D.

$$\begin{aligned} \text{Design Condenser T.D.} &= \text{Condensing Temp} - \text{Ambient Temp} \\ &= 115 - 95 \\ &= 20^\circ \text{T.D.} \end{aligned}$$

Step 4: Condenser Selection

Condenser capacities for condensers at 540 RPM are located in Table 7. These capacities are given in MBH/°TD. Convert the THR calculated in step 2 to MBH/°TD by dividing by 1,000 to get THR in MBH. Then divide the THR by the design TD to get MBH/°TD.

$$\text{THR (MBH)} = 476,595 / 1,000 = 476.6$$

$$\text{THR (MBH/°TD)} = 476.6 / 20 = 23.83$$

Locate the 10 FPI column for R-22 refrigerant and read down until you locate a value equal to or just larger than 23.83. This value is 25.9. Read horizontally to the left to obtain a condenser model of BNQ-S05-A026.

Step 5: Calculate Actual T.D. and Condensing Temperature

The actual condenser T.D. can be calculated by dividing the design THR by the condenser rating.

$$\begin{aligned} \text{Actual T.D.} &= \text{THR (Design)} / (\text{Rating @ } 1^\circ \text{T.D.}) \\ &= 476.6 / 25.9 \\ &= 18.4^\circ \text{F T.D.} \end{aligned}$$

The actual condensing temperature is the actual T.D. plus the ambient temperature. Actual Condensing Temperature = (Actual T.D.) + (Ambient) = 18.4 + 95 = 113.4° F.

Table 1. Heat of Compression Factor for Suction Cooled Compressors

| Suction Temp. °F | Condensing Temperature °F | | | | |
|------------------|---------------------------|------|------|------|------|
| | 90° | 100° | 110° | 120° | 130° |
| -40° | 1.56 | 1.63 | 1.72 | 1.81 | 1.94 |
| -30° | 1.49 | 1.55 | 1.62 | 1.7 | 1.8 |
| -20° | 1.43 | 1.49 | 1.55 | 1.62 | 1.7 |
| -10° | 1.38 | 1.43 | 1.49 | 1.55 | 1.63 |
| 0° | 1.34 | 1.38 | 1.43 | 1.49 | 1.56 |
| 5° | 1.31 | 1.36 | 1.41 | 1.48 | 1.55 |
| 10° | 1.29 | 1.34 | 1.39 | 1.44 | 1.52 |
| 15° | 1.26 | 1.31 | 1.36 | 1.41 | 1.48 |
| 20° | 1.24 | 1.28 | 1.33 | 1.38 | 1.44 |
| 25° | 1.22 | 1.26 | 1.31 | 1.36 | 1.42 |
| 30° | 1.2 | 1.24 | 1.28 | 1.33 | 1.39 |
| 40° | 1.17 | 1.2 | 1.24 | 1.28 | 1.33 |
| 50° | 1.13 | 1.16 | 1.2 | 1.24 | 1.28 |

Table 2. Heat of Compression Factor for Open Drive Compressors

| Evaporator Temp. °F | Condensing Temperature °F | | | | | |
|---------------------|---------------------------|------|------|------|------|------|
| | 90° | 100° | 110° | 120° | 130° | 140° |
| -30° | 1.37 | 1.42 | 1.47 | — | — | — |
| -20° | 1.33 | 1.37 | 1.42 | 1.47 | — | — |
| -10° | 1.28 | 1.32 | 1.37 | 1.42 | 1.47 | — |
| 0° | 1.24 | 1.28 | 1.32 | 1.37 | 1.41 | 1.47 |
| 5° | 1.23 | 1.26 | 1.3 | 1.35 | 1.39 | 1.45 |
| 10° | 1.21 | 1.24 | 1.28 | 1.32 | 1.36 | 1.42 |
| 15° | 1.19 | 1.22 | 1.26 | 1.3 | 1.34 | 1.4 |
| 20° | 1.17 | 1.2 | 1.24 | 1.28 | 1.32 | 1.37 |
| 25° | 1.16 | 1.19 | 1.22 | 1.26 | 1.3 | 1.35 |
| 30° | 1.14 | 1.17 | 1.2 | 1.24 | 1.27 | 1.32 |
| 40° | 1.12 | 1.15 | 1.17 | 1.2 | 1.23 | 1.28 |
| 50° | 1.09 | 1.12 | 1.14 | 1.17 | 1.2 | 1.24 |

Table 3. Altitude Correction Factors

| Altitude | Correction Factor |
|----------|-------------------|
| 0 | 1.00 |
| 1,000 | 1.02 |
| 2,000 | 1.05 |
| 3,000 | 1.07 |
| 4,000 | 1.10 |
| 5,000 | 1.12 |
| 6,000 | 1.15 |
| 7,000 | 1.17 |

Multi-Circuiting Selection

Multi-Circuiting Selection Procedure

The air-cooled condensers are available with more than one refrigerant circuit. The condenser will be factory assembled with the condenser coil divided into individual refrigerant circuits, each

sized for its own specific application. Each circuit is supplied with its own inlet and outlet connections, individually labeled.

Multi-Circuit Condenser Selection

Given four suction cooled compressors with conditions shown in Table 4. The condenser shall have 830 RPM, 1.0 HP fan motors,

with two rows of fans. The condenser location is at 3,000 ft. and the design ambient is 95°F.

Selection Procedure

Step 1: Input customer data in Table 4 in columns 1, 2, 3, 4 and 5.

Step 2: From Table 1, select the heat of compression factor for suction cooled compressors and input into Column #6.

Step 3: From Table 3 obtain the altitude correction factor and input into Column #7.

Step 4: From Table 5 obtain the refrigerant capacity factor and input into Column #8.

Step 5: Calculate the design T.D. for each circuit by subtracting the ambient temperature from the circuit design condensing temperature and input into Column #9.

T.D. = Design Condensing Temperature - Ambient Temperature

Step 6: Calculate the design THR / °T.D. for each circuit. Multiply Column #5 by Column #6 and Column #7 to calculate the THR for each circuit. Divide the result by the refrigerant correction factor, Column #8 to convert the capacities to a common refrigerant. Divide the result by the design T.D., Column #9 to calculate the design THR / °T.D. and input into Column #10.

$$\text{Design THR / } ^\circ\text{T.D.} = \frac{\text{Compressor Capacity (\#5)} * \text{Heat of Compressor Factor (\#6)} * \text{Altitude Factor (\#7)}}{\text{Refrigerant Capacity Factor (\#8)} * \text{Design T.D. (\#9)}}$$

Example for Circuit #1:

$$\text{Design THR / } ^\circ\text{T.D.} = \frac{235,000 * 1.31 * 1.07}{1.02 * 15}$$

$$= 21,529 \text{ BTUH / } ^\circ\text{T.D.}$$

Step 7: Add the design THR / °T.D. for each circuit in column #10, to get a total of 39,578 BTUH / °T.D. Divide this total by 1,000 to get 39.6 MBH / °T.D.

Step 8: From Table 11 for two rows of condenser fans with 830 RPM, 1.0 HP fan motors, locate the column for R-404A capacity with 10 FPI. Read down the column until you get to a capacity equal to or greater than 39.6 MBH / °T.D. This value is 44.5 which corresponds to a BNX-D06-A045. From Table 14 obtain the total number of feeds available as 56.

Multi-Circuiting Condenser

Table 4. Condenser Multi-Circuit Selection

| 1 | 2 | 3 | 4 | 5 | X | 6 | X | 7 | ÷ | 8 | ÷ | 9 | = | 10 | 11 | 12 | 13 |
|--------------|----------------|-----------------------|--------------------|-----------|---|--------------------------|---|-----------------|---|---------------------|---|-------------------|---|-------------------------------|------------------------|-------------------|-----------------------|
| Circuit Name | Evap. Temp. °F | Design Cond. Temp. °F | Comp. Refrig. Type | Cap. BTUH | X | Heat of Compress. Factor | X | Altitude Factor | ÷ | Refrig. Cap. Factor | ÷ | Design Cond. T.D. | = | Design THR/°TD | No. of Feeds Per Circ. | Actual Cond. T.D. | Actual Cond. Temp. °F |
| 1 | 25 | 110 | 22 | 235,000 | X | 1.31 | X | 1.07 | ÷ | 1.02 | ÷ | 15 | = | 21,529 | 31 | 13.1 | 108.1 |
| 2 | 20 | 110 | 134a | 61,000 | X | 1.33 | X | 1.07 | ÷ | .97 | ÷ | 15 | = | 5,966 | 8 | 14.1 | 109.1 |
| 3 | -10 | 105 | 22 | 31,000 | X | 1.46 | X | 1.07 | ÷ | 1.02 | ÷ | 10 | = | 4,748 | 7 | 8.5 | 103.5 |
| 4 | -20 | 105 | 22 | 46,000 | X | 1.52 | X | 1.07 | ÷ | 1.02 | ÷ | 10 | = | 7,335 | 10 | 9.2 | 104.2 |
| TOTAL | | | | | | | | | | | | | | = | 39,578 | 56 | |
| | | | | | | | | | | | | | | 39,578 / 1,000 = 39.6 MBH/°TD | | | |

Step 9: Determine the number of feeds per circuit. Divide the design THR / °T.D. in Column #10 by the total capacity required (39,578) and multiply this result by the number of feeds available, which is 56. Round this value to the nearest integer and place in Column #11. Add the individual feeds per circuit to get a total number of feeds for the condenser. This total must equal the total number of feeds available for the condenser (56).

$$\text{Number of feeds/circuit} = \frac{\text{Design THR} / \text{°T.D.}(\#10) * \text{Number of Circuits Available (56)}}{\text{Total Capacity Required (39,578)}}$$

Step 10: Calculate actual condensing T.D., (ATD):

$$\text{ATD} = \frac{\text{Design T.D.}(\#9) * \text{Design THR} / \text{°T.D.}(\#10) * \text{Number of Feeds Available (56)}}{\text{Number Feeds} / \text{CIR}(\#11) * \text{Condenser Capacity} / \text{°T.D.}(\text{Step} \#8) * 1,000}$$

Example for Circuit #1:

$$\text{ATD} = \frac{15 * 21,529 * 56}{31 * 44.5 * 1,000} = 13.1\text{°F.}$$

Input these T.D. values in column #12.

Step 11: Calculate the actual condensing temperature. Actual condensing temperature is equal to the actual condensing T.D., Column #12 plus the design ambient (95°). Input these values in Column #13. If the actual condensing temperature for each circuit is too high, it may be necessary to adjust the number of feeds per circuit or to select the next larger condenser size and recalculate the number of feeds per circuit.

Table 5. Refrigerant Capacity Factor

| Refrigerant | Capacity Factor |
|-------------|-----------------|
| R-22 | 1.02 |
| R-134A | 0.99 |
| R-404A | 1.00 |
| R-407A | 0.98 |
| R-407C | 0.94 |
| R-407F | 0.98 |
| R-448A | 0.99 |
| R-449A | 0.99 |
| R-410A | 1.02 |
| R-507A | 1.00 |

Table 6. Voltage Frequency Capacity Factor

| Frequency | Capacity Factor |
|--------------------|-----------------|
| 60 Hz | 1.0 |
| 50 Hz (H, L, X, Q) | 0.92 |
| 50 Hz (E) | 1.0 |

CONDENSER CAPACITY

BNQ 540 830 VSEC 1140

Table 7. BNQ Models, 540 RPM, 0.5 HP, 30" Fan Diameter

| Model | R22 / R410A MBH / 1° TD | | | | R404A/R507 MBH / 1° TD | | | |
|--------------|----------------------------|-------------|--------|--------|---------------------------|-------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNQ-S01-A005 | 4.6 | 5.2 | 5.6 | 5.9 | 4.6 | 5.1 | 5.5 | 5.8 |
| BNQ-S01-A006 | 5.5 | 6.1 | 6.4 | 6.6 | 5.4 | 5.9 | 6.2 | 6.5 |
| BNQ-S02-A008 | 7.2 | 8.0 | 8.7 | 9.1 | 7.0 | 7.8 | 8.5 | 8.9 |
| BNQ-S02-A010 | 9.4 | 10.3 | 10.8 | 11.8 | 9.2 | 10.1 | 10.6 | 11.6 |
| BNQ-S02-A011 | 10.8 | 11.5 | 11.9 | 12.3 | 10.6 | 11.2 | 11.7 | 12.0 |
| BNQ-S03-A016 | 14.1 | 15.6 | 16.2 | 16.9 | 13.8 | 15.2 | 15.9 | 16.6 |
| BNQ-S03-A017 | 16.2 | 17.2 | 17.9 | 19.8 | 15.9 | 16.9 | 17.5 | 19.4 |
| BNQ-S04-A021 | 18.8 | 20.7 | 21.6 | 23.5 | 18.4 | 20.3 | 21.2 | 23.0 |
| BNQ-S04-A023 | 21.6 | 22.9 | 23.8 | 24.5 | 21.2 | 22.4 | 23.3 | 24.0 |
| BNQ-S05-A026 | 23.5 | 25.9 | 27.0 | 29.3 | 23.1 | 25.4 | 26.4 | 28.8 |
| BNQ-S05-A029 | 27.0 | 28.6 | 29.8 | 30.7 | 26.5 | 28.1 | 29.2 | 30.1 |
| BNQ-S06-A034 | 32.4 | 34.4 | 35.7 | 36.8 | 31.8 | 33.7 | 35.0 | 36.1 |
| BNQ-S07-A042 | 38.4 | 41.6 | 42.8 | 44.3 | 37.7 | 40.7 | 41.9 | 43.4 |
| BNQ-D04-A016 | 14.3 | 16.0 | 17.3 | 18.2 | 14.0 | 15.6 | 16.9 | 17.9 |
| BNQ-D04-A021 | 18.8 | 20.7 | 21.6 | 23.6 | 18.4 | 20.3 | 21.2 | 23.2 |
| BNQ-D04-A023 | 21.6 | 22.9 | 23.8 | 24.5 | 21.2 | 22.4 | 23.3 | 24.0 |
| BNQ-D06-A031 | 28.2 | 31.0 | 32.4 | 33.8 | 27.6 | 30.4 | 31.8 | 33.1 |
| BNQ-D06-A034 | 32.4 | 34.4 | 35.7 | 39.5 | 31.8 | 33.7 | 35.0 | 38.7 |
| BNQ-D08-A041 | 37.6 | 41.4 | 43.2 | 47.0 | 36.9 | 40.6 | 42.3 | 46.1 |
| BNQ-D08-A046 | 43.2 | 45.8 | 47.6 | 49.0 | 42.4 | 44.9 | 46.7 | 48.1 |
| BNQ-D10-A052 | 47.0 | 51.8 | 54.0 | 58.7 | 46.1 | 50.7 | 52.9 | 57.5 |
| BNQ-D10-A057 | 54.0 | 57.3 | 59.5 | 61.3 | 53.0 | 56.1 | 58.3 | 60.1 |
| BNQ-D12-A069 | 64.8 | 68.7 | 71.4 | 73.6 | 63.6 | 67.3 | 70.0 | 72.1 |
| BNQ-D14-A083 | 76.8 | 83.1 | 85.5 | 88.6 | 75.3 | 81.5 | 83.8 | 86.8 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNQ 540 830 VSEC 1140

Table 8. BNQ Models, 540 RPM, 0.5 HP, 30" Fan Diameter

| Model | R407A / R407F* MBH / 1° TD | | | | R407C* MBH / 1° TD | | | |
|--------------|-------------------------------|-------------|--------|--------|-----------------------|-------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNQ-S01-A005 | 4.5 | 5.0 | 5.4 | 5.7 | 4.3 | 4.8 | 5.2 | 5.5 |
| BNQ-S01-A006 | 5.3 | 5.8 | 6.1 | 6.3 | 5.1 | 5.6 | 5.9 | 6.1 |
| BNQ-S02-A008 | 6.9 | 7.6 | 8.3 | 8.7 | 6.6 | 7.3 | 8.0 | 8.4 |
| BNQ-S02-A010 | 9.0 | 9.9 | 10.4 | 11.3 | 8.7 | 9.5 | 10.0 | 10.9 |
| BNQ-S02-A011 | 10.4 | 11.0 | 11.4 | 11.8 | 10.0 | 10.6 | 11.0 | 11.3 |
| BNQ-S03-A016 | 13.5 | 14.9 | 15.6 | 16.2 | 13.0 | 14.3 | 14.9 | 15.6 |
| BNQ-S03-A017 | 15.6 | 16.5 | 17.1 | 19.0 | 14.9 | 15.8 | 16.4 | 18.2 |
| BNQ-S04-A021 | 18.1 | 19.9 | 20.8 | 22.6 | 17.3 | 19.1 | 19.9 | 21.6 |
| BNQ-S04-A023 | 20.8 | 22.0 | 22.9 | 23.6 | 19.9 | 21.1 | 21.9 | 22.6 |
| BNQ-S05-A026 | 22.6 | 24.9 | 25.9 | 28.2 | 21.7 | 23.8 | 24.9 | 27.0 |
| BNQ-S05-A029 | 25.9 | 27.5 | 28.6 | 29.5 | 24.9 | 26.4 | 27.4 | 28.3 |
| BNQ-S06-A034 | 31.1 | 33.0 | 34.3 | 35.3 | 29.9 | 31.7 | 32.9 | 33.9 |
| BNQ-S07-A042 | 36.9 | 39.9 | 41.1 | 42.5 | 35.4 | 38.3 | 39.4 | 40.8 |
| BNQ-D04-A016 | 13.8 | 15.3 | 16.6 | 17.5 | 13.2 | 14.7 | 15.9 | 16.8 |
| BNQ-D04-A021 | 18.1 | 19.9 | 20.7 | 22.7 | 17.3 | 19.1 | 19.9 | 21.8 |
| BNQ-D04-A023 | 20.8 | 22.0 | 22.9 | 23.6 | 19.9 | 21.1 | 21.9 | 22.6 |
| BNQ-D06-A031 | 27.1 | 29.8 | 31.1 | 32.5 | 26.0 | 28.6 | 29.9 | 31.1 |
| BNQ-D06-A034 | 31.1 | 33.0 | 34.3 | 38.0 | 29.9 | 31.7 | 32.9 | 36.4 |
| BNQ-D08-A041 | 36.1 | 39.8 | 41.5 | 45.1 | 34.6 | 38.1 | 39.8 | 43.3 |
| BNQ-D08-A046 | 41.5 | 44.0 | 45.7 | 47.1 | 39.8 | 42.2 | 43.9 | 45.2 |
| BNQ-D10-A052 | 45.2 | 49.7 | 51.9 | 56.4 | 43.3 | 47.7 | 49.7 | 54.1 |
| BNQ-D10-A057 | 51.9 | 55.0 | 57.2 | 58.9 | 49.8 | 52.8 | 54.8 | 56.5 |
| BNQ-D12-A069 | 62.3 | 66.0 | 68.6 | 70.7 | 59.7 | 63.3 | 65.8 | 67.8 |
| BNQ-D14-A083 | 73.8 | 79.9 | 82.2 | 85.1 | 70.8 | 76.6 | 78.8 | 81.6 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNQ 540 830 VSEC 1140

Table 9. BNQ Models, 540 RPM, 0.5 HP, 30" Fan Diameter

| Model | R448A / R449A* MBH / 1° TD | | | |
|--------------|-------------------------------|-------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNQ-S01-A005 | 4.5 | 5.1 | 5.4 | 5.8 |
| BNQ-S01-A006 | 5.3 | 5.9 | 6.2 | 6.4 |
| BNQ-S02-A008 | 6.9 | 7.7 | 8.4 | 8.8 |
| BNQ-S02-A010 | 9.1 | 10.0 | 10.5 | 11.5 |
| BNQ-S02-A011 | 10.5 | 11.1 | 11.5 | 11.9 |
| BNQ-S03-A016 | 13.7 | 15.1 | 15.7 | 16.4 |
| BNQ-S03-A017 | 15.7 | 16.7 | 17.3 | 19.2 |
| BNQ-S04-A021 | 18.2 | 20.1 | 21.0 | 22.8 |
| BNQ-S04-A023 | 21.0 | 22.2 | 23.1 | 23.8 |
| BNQ-S05-A026 | 22.8 | 25.1 | 26.2 | 28.5 |
| BNQ-S05-A029 | 26.2 | 27.8 | 28.9 | 29.8 |
| BNQ-S06-A034 | 31.5 | 33.3 | 34.6 | 35.7 |
| BNQ-S07-A042 | 37.3 | 40.3 | 41.5 | 43.0 |
| BNQ-D04-A016 | 13.9 | 15.5 | 16.8 | 17.7 |
| BNQ-D04-A021 | 18.2 | 20.1 | 20.9 | 22.9 |
| BNQ-D04-A023 | 21.0 | 22.2 | 23.1 | 23.8 |
| BNQ-D06-A031 | 27.3 | 30.1 | 31.5 | 32.8 |
| BNQ-D06-A034 | 31.5 | 33.3 | 34.6 | 38.3 |
| BNQ-D08-A041 | 36.5 | 40.2 | 41.9 | 45.6 |
| BNQ-D08-A046 | 41.9 | 44.5 | 46.2 | 47.6 |
| BNQ-D10-A052 | 45.6 | 50.2 | 52.4 | 56.9 |
| BNQ-D10-A057 | 52.4 | 55.6 | 57.7 | 59.5 |
| BNQ-D12-A069 | 62.9 | 66.7 | 69.3 | 71.4 |
| BNQ-D14-A083 | 74.6 | 80.7 | 83.0 | 85.9 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER SPECIFICATIONS

BNQ 540 830 VSEC 1140

Table 10. BNQ Models, 540 RPM, 0.5 HP, 30" Fan Diameter

| Model | CFM | 208-230/3/60 | | | 460/3/60 | | | Unit kW | Conn. (in.) | Max. No. of Feeds | Approx. Net Weight (lbs) |
|--------------|--------|--------------|------|------|----------|------|------|---------|-------------|-------------------|--------------------------|
| | | FLA | MCA | MOPD | FLA | MCA | MOPD | | | | |
| BNQ-S01-A005 | 5,400 | 3.5 | 15.0 | 15 | 1.8 | 15.0 | 15 | 0.4 | 1 3/8 | 7 | 330 |
| BNQ-S01-A006 | 5,200 | 3.5 | 15.0 | 15 | 1.8 | 15.0 | 15 | 0.4 | 1 3/8 | 14 | 360 |
| BNQ-S02-A008 | 11,200 | 7.0 | 15.0 | 15 | 3.6 | 15.0 | 15 | 0.9 | 1 3/8 | 14 | 580 |
| BNQ-S02-A010 | 10,800 | 7.0 | 15.0 | 15 | 3.6 | 15.0 | 15 | 0.9 | 1 5/8 | 21 | 630 |
| BNQ-S02-A011 | 10,400 | 7.0 | 15.0 | 15 | 3.6 | 15.0 | 15 | 0.9 | 2 1/8 | 28 | 680 |
| BNQ-S03-A016 | 16,100 | 10.5 | 15.0 | 20 | 5.4 | 15.0 | 15 | 1.3 | 2 1/8 | 21 | 930 |
| BNQ-S03-A017 | 15,600 | 10.5 | 15.0 | 20 | 5.4 | 15.0 | 15 | 1.3 | 2 1/8 | 28 | 1,000 |
| BNQ-S04-A021 | 21,500 | 14.0 | 15.0 | 20 | 7.2 | 15.0 | 15 | 1.7 | 2 1/8 | 21 | 1,210 |
| BNQ-S04-A023 | 20,800 | 14.0 | 15.0 | 20 | 7.2 | 15.0 | 15 | 1.7 | 2 5/8 | 28 | 1,310 |
| BNQ-S05-A026 | 26,900 | 17.5 | 20.0 | 25 | 9.0 | 15.0 | 15 | 2.2 | 2 5/8 | 21 | 1,510 |
| BNQ-S05-A029 | 26,000 | 17.5 | 20.0 | 25 | 9.0 | 15.0 | 15 | 2.2 | 2 5/8 | 28 | 1,640 |
| BNQ-S06-A034 | 31,200 | 21.0 | 21.9 | 30 | 10.8 | 15.0 | 15 | 2.6 | 2 5/8 | 28 | 1,950 |
| BNQ-S07-A042 | 36,400 | 24.5 | 25.4 | 35 | 12.6 | 15.0 | 15 | 3.1 | 2 @ 2 5/8 | 28 | 2,240 |
| BNQ-D04-A016 | 22,300 | 14.0 | 15.0 | 20 | 7.2 | 15.0 | 15 | 1.7 | 2 @ 1 3/8 | 28 | 1,240 |
| BNQ-D04-A021 | 21,500 | 14.0 | 15.0 | 20 | 7.2 | 15.0 | 15 | 1.7 | 2 @ 1 5/8 | 42 | 1,340 |
| BNQ-D04-A023 | 20,800 | 14.0 | 15.0 | 20 | 7.2 | 15.0 | 15 | 1.7 | 2 @ 2 1/8 | 56 | 1,440 |
| BNQ-D06-A031 | 32,300 | 21.0 | 21.9 | 30 | 10.8 | 15.0 | 15 | 2.6 | 2 @ 2 1/8 | 42 | 1,990 |
| BNQ-D06-A034 | 31,200 | 21.0 | 21.9 | 30 | 10.8 | 15.0 | 15 | 2.6 | 2 @ 2 1/8 | 56 | 2,140 |
| BNQ-D08-A041 | 43,000 | 28.0 | 28.9 | 35 | 14.4 | 15.0 | 20 | 3.5 | 2 @ 2 1/8 | 42 | 2,630 |
| BNQ-D08-A046 | 41,600 | 28.0 | 28.9 | 35 | 14.4 | 15.0 | 20 | 3.5 | 2 @ 2 5/8 | 56 | 2,830 |
| BNQ-D10-A052 | 53,700 | 35.0 | 35.9 | 45 | 18.0 | 20.0 | 20 | 4.4 | 2 @ 2 5/8 | 42 | 3,290 |
| BNQ-D10-A057 | 52,100 | 35.0 | 35.9 | 45 | 18.0 | 20.0 | 20 | 4.4 | 2 @ 2 5/8 | 56 | 3,540 |
| BNQ-D12-A069 | 62,500 | 42.0 | 42.9 | 50 | 21.6 | 22.1 | 25 | 5.2 | 2 @ 2 5/8 | 56 | 4,230 |
| BNQ-D14-A083 | 72,900 | 49.0 | 49.9 | 60 | 25.2 | 25.7 | 30 | 6.1 | 4 @ 2 5/8 | 56 | 4,910 |

CONDENSER CAPACITY

BNX 540 830 VSEC 1140

Table 11. BNX Models, 830 RPM, 1.0 HP, 30" Fan Diameter

| Model | R22/R410A MBH / 1° TD | | | | R404A/R507 MBH / 1° TD | | | |
|--------------|--------------------------|--------------|--------|--------|---------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNX-S01-A006 | 5.6 | 6.4 | 7.0 | 7.4 | 5.5 | 6.2 | 6.8 | 7.3 |
| BNX-S01-A008 | 6.8 | 7.5 | 8.0 | 8.4 | 6.6 | 7.4 | 7.9 | 8.3 |
| BNX-S02-A010 | 8.8 | 9.8 | 10.6 | 11.2 | 8.6 | 9.6 | 10.4 | 11.0 |
| BNX-S02-A013 | 12.0 | 13.1 | 13.8 | 14.8 | 11.8 | 12.8 | 13.6 | 14.5 |
| BNX-S02-A015 | 14.0 | 15.1 | 15.7 | 16.0 | 13.7 | 14.8 | 15.3 | 15.7 |
| BNX-S03-A020 | 18.0 | 19.7 | 20.8 | 21.8 | 17.7 | 19.3 | 20.4 | 21.4 |
| BNX-S03-A023 | 21.0 | 22.7 | 23.5 | 25.3 | 20.5 | 22.3 | 23.0 | 24.8 |
| BNX-S04-A026 | 24.1 | 26.3 | 27.7 | 29.3 | 23.6 | 25.7 | 27.1 | 28.7 |
| BNX-S04-A030 | 27.9 | 30.3 | 31.3 | 32.0 | 27.4 | 29.7 | 30.7 | 31.4 |
| BNX-S05-A033 | 30.1 | 32.8 | 34.6 | 36.7 | 29.5 | 32.1 | 33.9 | 36.0 |
| BNX-S05-A038 | 34.9 | 37.8 | 39.2 | 40.1 | 34.2 | 37.1 | 38.4 | 39.3 |
| BNX-S06-A045 | 41.9 | 45.4 | 47.0 | 48.1 | 41.1 | 44.5 | 46.0 | 47.1 |
| BNX-S07-A052 | 47.7 | 52.0 | 54.8 | 56.1 | 46.8 | 51.0 | 53.7 | 55.0 |
| BNX-D04-A020 | 17.5 | 19.6 | 21.2 | 22.5 | 17.2 | 19.2 | 20.8 | 22.0 |
| BNX-D04-A026 | 24.1 | 26.2 | 27.7 | 29.7 | 23.6 | 25.7 | 27.1 | 29.1 |
| BNX-D04-A030 | 27.9 | 30.3 | 31.3 | 32.0 | 27.4 | 29.7 | 30.7 | 31.4 |
| BNX-D06-A039 | 36.1 | 39.4 | 41.5 | 43.7 | 35.4 | 38.6 | 40.7 | 42.8 |
| BNX-D06-A045 | 41.9 | 45.4 | 47.0 | 50.6 | 41.1 | 44.5 | 46.0 | 49.6 |
| BNX-D08-A052 | 48.1 | 52.5 | 55.4 | 58.6 | 47.1 | 51.4 | 54.3 | 57.5 |
| BNX-D08-A061 | 55.9 | 60.6 | 62.7 | 64.1 | 54.8 | 59.3 | 61.4 | 62.8 |
| BNX-D10-A066 | 60.1 | 65.6 | 69.2 | 73.5 | 58.9 | 64.3 | 67.8 | 72.0 |
| BNX-D10-A076 | 69.9 | 75.7 | 78.3 | 80.1 | 68.4 | 74.2 | 76.8 | 78.5 |
| BNX-D12-A091 | 83.8 | 90.8 | 94.0 | 96.1 | 82.1 | 89.0 | 92.1 | 94.2 |
| BNX-D14-A104 | 95.5 | 104.1 | 109.6 | 112.2 | 93.6 | 102.0 | 107.5 | 110.0 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNX 540 830 VSEC 1140

Table 12. BNX Models, 830 RPM, 1.0 HP, 30" Fan Diameter

| Model | R407A / R407F* MBH / 1° TD | | | | R407C* MBH / 1° TD | | | |
|--------------|-------------------------------|--------------|--------|--------|-----------------------|-------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNX-S01-A006 | 5.4 | 6.1 | 6.7 | 7.1 | 5.2 | 5.9 | 6.4 | 6.8 |
| BNX-S01-A008 | 6.5 | 7.2 | 7.7 | 8.1 | 6.2 | 6.9 | 7.4 | 7.8 |
| BNX-S02-A010 | 8.4 | 9.4 | 10.2 | 10.8 | 8.1 | 9.0 | 9.8 | 10.4 |
| BNX-S02-A013 | 11.6 | 12.6 | 13.3 | 14.3 | 11.1 | 12.1 | 12.7 | 13.7 |
| BNX-S02-A015 | 13.4 | 14.5 | 15.0 | 15.4 | 12.9 | 13.9 | 14.4 | 14.8 |
| BNX-S03-A020 | 17.3 | 18.9 | 19.9 | 21.0 | 16.6 | 18.1 | 19.1 | 20.1 |
| BNX-S03-A023 | 20.1 | 21.8 | 22.5 | 24.3 | 19.3 | 20.9 | 21.6 | 23.3 |
| BNX-S04-A026 | 23.1 | 25.2 | 26.6 | 28.2 | 22.2 | 24.2 | 25.5 | 27.0 |
| BNX-S04-A030 | 26.8 | 29.1 | 30.1 | 30.8 | 25.7 | 27.9 | 28.9 | 29.5 |
| BNX-S05-A033 | 28.9 | 31.5 | 33.2 | 35.3 | 27.7 | 30.2 | 31.9 | 33.9 |
| BNX-S05-A038 | 33.5 | 36.3 | 37.6 | 38.5 | 32.2 | 34.8 | 36.1 | 36.9 |
| BNX-S06-A045 | 40.2 | 43.6 | 45.1 | 46.1 | 38.6 | 41.8 | 43.3 | 44.3 |
| BNX-S07-A052 | 45.9 | 50.0 | 52.7 | 53.9 | 44.0 | 47.9 | 50.5 | 51.7 |
| BNX-D04-A020 | 16.8 | 18.8 | 20.4 | 21.6 | 16.1 | 18.0 | 19.6 | 20.7 |
| BNX-D04-A026 | 23.1 | 25.2 | 26.6 | 28.5 | 22.2 | 24.2 | 25.5 | 27.3 |
| BNX-D04-A030 | 26.8 | 29.1 | 30.1 | 30.8 | 25.7 | 27.9 | 28.9 | 29.5 |
| BNX-D06-A039 | 34.7 | 37.8 | 39.9 | 41.9 | 33.2 | 36.3 | 38.3 | 40.2 |
| BNX-D06-A045 | 40.2 | 43.6 | 45.1 | 48.6 | 38.6 | 41.8 | 43.3 | 46.6 |
| BNX-D08-A052 | 46.2 | 50.4 | 53.2 | 56.3 | 44.3 | 48.4 | 51.0 | 54.0 |
| BNX-D08-A061 | 53.7 | 58.1 | 60.2 | 61.5 | 51.5 | 55.8 | 57.7 | 59.0 |
| BNX-D10-A066 | 57.8 | 63.0 | 66.5 | 70.6 | 55.4 | 60.4 | 63.8 | 67.7 |
| BNX-D10-A076 | 67.1 | 72.7 | 75.2 | 76.9 | 64.3 | 69.7 | 72.1 | 73.8 |
| BNX-D12-A091 | 80.5 | 87.2 | 90.3 | 92.3 | 77.2 | 83.7 | 86.6 | 88.5 |
| BNX-D14-A104 | 91.7 | 100.0 | 105.3 | 107.8 | 88.0 | 95.9 | 101.0 | 103.4 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNX 540 830 VSEC 1140

Table 13. BNX Models, 830 RPM, 1.0 HP, 30" Fan Diameter

| Model | R448A / R449A* MBH / 1° TD | | | |
|--------------|-------------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNX-S01-A006 | 5.5 | 6.2 | 6.7 | 7.2 |
| BNX-S01-A008 | 6.6 | 7.3 | 7.8 | 8.2 |
| BNX-S02-A010 | 8.5 | 9.5 | 10.3 | 10.9 |
| BNX-S02-A013 | 11.7 | 12.7 | 13.4 | 14.4 |
| BNX-S02-A015 | 13.6 | 14.7 | 15.2 | 15.6 |
| BNX-S03-A020 | 17.5 | 19.1 | 20.1 | 21.2 |
| BNX-S03-A023 | 20.3 | 22.0 | 22.8 | 24.5 |
| BNX-S04-A026 | 23.3 | 25.5 | 26.8 | 28.5 |
| BNX-S04-A030 | 27.1 | 29.4 | 30.4 | 31.1 |
| BNX-S05-A033 | 29.2 | 31.8 | 33.6 | 35.7 |
| BNX-S05-A038 | 33.9 | 36.7 | 38.0 | 38.9 |
| BNX-S06-A045 | 40.7 | 44.1 | 45.6 | 46.6 |
| BNX-S07-A052 | 46.3 | 50.5 | 53.2 | 54.5 |
| BNX-D04-A020 | 17.0 | 19.0 | 20.6 | 21.8 |
| BNX-D04-A026 | 23.3 | 25.5 | 26.9 | 28.8 |
| BNX-D04-A030 | 27.1 | 29.4 | 30.4 | 31.1 |
| BNX-D06-A039 | 35.0 | 38.2 | 40.3 | 42.4 |
| BNX-D06-A045 | 40.7 | 44.1 | 45.6 | 49.1 |
| BNX-D08-A052 | 46.7 | 50.9 | 53.7 | 56.9 |
| BNX-D08-A061 | 54.2 | 58.7 | 60.8 | 62.1 |
| BNX-D10-A066 | 58.3 | 63.7 | 67.2 | 71.3 |
| BNX-D10-A076 | 67.8 | 73.4 | 76.0 | 77.7 |
| BNX-D12-A091 | 81.3 | 88.1 | 91.2 | 93.2 |
| BNX-D14-A104 | 92.6 | 101.0 | 106.4 | 108.9 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER SPECIFICATIONS

BNX 540 830 VSEC 1140

Table 14. 3-Phase A/C BNX Models, 830 RPM, 1.0 HP, 30" Fan Diameter

| Model | CFM | 208-230/3/60 | | | 460/3/60 | | | Unit kW | Conn. (in.) | Max. No. of Feeds | Approx. Net Wt. (lbs) |
|--------------|--------|--------------|------|------|----------|------|------|---------|-------------|-------------------|-----------------------|
| | | FLA | MCA | MOPD | FLA | MCA | MOPD | | | | |
| BNX-S01-A006 | 7,600 | 4.8 | 15.0 | 15 | 2.4 | 15.0 | 15 | 1.1 | 1 3/8 | 7 | 330 |
| BNX-S01-A008 | 7,300 | 4.8 | 15.0 | 15 | 2.4 | 15.0 | 15 | 1.1 | 1 3/8 | 14 | 360 |
| BNX-S02-A010 | 15,900 | 9.6 | 15.0 | 20 | 4.8 | 15.0 | 15 | 2.2 | 1 3/8 | 14 | 580 |
| BNX-S02-A013 | 15,200 | 9.6 | 15.0 | 20 | 4.8 | 15.0 | 15 | 2.2 | 1 5/8 | 21 | 630 |
| BNX-S02-A015 | 14,700 | 9.6 | 15.0 | 20 | 4.8 | 15.0 | 15 | 2.2 | 2 1/8 | 28 | 680 |
| BNX-S03-A020 | 22,900 | 14.4 | 20.0 | 25 | 7.2 | 15.0 | 15 | 3.4 | 2 1/8 | 21 | 930 |
| BNX-S03-A023 | 22,000 | 14.4 | 20.0 | 25 | 7.2 | 15.0 | 15 | 3.4 | 2 1/8 | 28 | 1,000 |
| BNX-S04-A026 | 29,800 | 19.2 | 20.4 | 30 | 9.6 | 15.0 | 15 | 4.5 | 2 1/8 | 21 | 1,210 |
| BNX-S04-A030 | 28,400 | 19.2 | 20.4 | 30 | 9.6 | 15.0 | 15 | 4.5 | 2 5/8 | 28 | 1,310 |
| BNX-S05-A033 | 37,300 | 24.0 | 25.2 | 35 | 12.0 | 15.0 | 15 | 5.6 | 2 5/8 | 21 | 1,510 |
| BNX-S05-A038 | 35,500 | 24.0 | 25.2 | 35 | 12.0 | 15.0 | 15 | 5.6 | 2 5/8 | 28 | 1,640 |
| BNX-S06-A045 | 42,600 | 28.8 | 30.0 | 40 | 14.4 | 15.0 | 20 | 6.7 | 2 5/8 | 28 | 1,950 |
| BNX-S07-A052 | 49,700 | 33.6 | 34.8 | 45 | 16.8 | 20.0 | 20 | 7.8 | 2 @ 2 5/8 | 28 | 2,240 |
| BNX-D04-A020 | 31,700 | 19.2 | 20.4 | 30 | 9.6 | 15.0 | 15 | 4.5 | 2 @ 1 3/8 | 28 | 1,240 |
| BNX-D04-A026 | 30,500 | 19.2 | 20.4 | 30 | 9.6 | 15.0 | 15 | 4.5 | 2 @ 1 5/8 | 42 | 1,340 |
| BNX-D04-A030 | 29,300 | 19.2 | 20.4 | 30 | 9.6 | 15.0 | 15 | 4.5 | 2 @ 2 1/8 | 56 | 1,440 |
| BNX-D06-A039 | 45,700 | 28.8 | 30.0 | 40 | 14.4 | 15.0 | 20 | 6.7 | 2 @ 2 1/8 | 42 | 1,990 |
| BNX-D06-A045 | 44,000 | 28.8 | 30.0 | 40 | 14.4 | 15.0 | 20 | 6.7 | 2 @ 2 1/8 | 56 | 2,140 |
| BNX-D08-A052 | 59,700 | 38.4 | 39.6 | 50 | 19.2 | 20.0 | 25 | 8.9 | 2 @ 2 1/8 | 42 | 2,630 |
| BNX-D08-A061 | 56,800 | 38.4 | 39.6 | 50 | 19.2 | 20.0 | 25 | 8.9 | 2 @ 2 5/8 | 56 | 2,830 |
| BNX-D10-A066 | 74,600 | 48.0 | 49.2 | 60 | 24.0 | 24.6 | 30 | 11.2 | 2 @ 2 5/8 | 42 | 3,290 |
| BNX-D10-A076 | 71,000 | 48.0 | 49.2 | 60 | 24.0 | 24.6 | 30 | 11.2 | 2 @ 2 5/8 | 56 | 3,540 |
| BNX-D12-A091 | 85,200 | 57.6 | 58.8 | 70 | 28.8 | 29.4 | 35 | 13.4 | 2 @ 2 5/8 | 56 | 4,230 |
| BNX-D14-A104 | 99,400 | 67.2 | 68.4 | 80 | 33.6 | 34.2 | 40 | 15.6 | 4 @ 2 5/8 | 56 | 4,910 |

CONDENSER CAPACITY

BNL 540 830 VSEC 1140

Table 15. BNL Models, 830 RPM, 1.5 HP, 30" Fan Diameter

| Model | R22 / R410A MBH / 1° TD | | | | R404A/R507 MBH / 1° TD | | | |
|--------------|----------------------------|--------------|--------|--------|---------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNL-S01-A007 | 5.9 | 6.7 | 7.3 | 7.9 | 5.8 | 6.6 | 7.2 | 7.7 |
| BNL-S01-A008 | 7.2 | 8.0 | 8.6 | 9.0 | 7.0 | 7.8 | 8.4 | 8.8 |
| BNL-S02-A010 | 9.1 | 10.1 | 11.0 | 11.7 | 8.9 | 9.9 | 10.8 | 11.4 |
| BNL-S02-A014 | 12.6 | 13.9 | 14.9 | 15.7 | 12.4 | 13.6 | 14.6 | 15.4 |
| BNL-S02-A016 | 15.0 | 16.1 | 16.8 | 17.6 | 14.7 | 15.8 | 16.5 | 17.3 |
| BNL-S03-A021 | 18.9 | 20.9 | 22.3 | 23.4 | 18.6 | 20.5 | 21.8 | 23.0 |
| BNL-S03-A024 | 22.5 | 24.2 | 25.2 | 26.9 | 22.0 | 23.8 | 24.7 | 26.3 |
| BNL-S04-A028 | 25.3 | 27.8 | 29.7 | 31.2 | 24.8 | 27.3 | 29.1 | 30.6 |
| BNL-S04-A032 | 30.0 | 32.3 | 33.6 | 35.2 | 29.4 | 31.7 | 32.9 | 34.5 |
| BNL-S05-A035 | 32.1 | 35.5 | 37.4 | 39.0 | 31.4 | 34.7 | 36.6 | 38.2 |
| BNL-S05-A042 | 38.4 | 41.6 | 43.4 | 44.7 | 37.7 | 40.8 | 42.5 | 43.8 |
| BNL-S06-A050 | 46.1 | 49.9 | 52.1 | 53.6 | 45.2 | 48.9 | 51.0 | 52.6 |
| BNL-S07-A055 | 50.5 | 55.0 | 58.0 | 60.2 | 49.5 | 53.9 | 56.8 | 59.0 |
| BNL-D04-A020 | 18.1 | 20.2 | 22.0 | 23.3 | 17.7 | 19.8 | 21.5 | 22.9 |
| BNL-D04-A028 | 25.3 | 27.8 | 29.7 | 31.4 | 24.8 | 27.3 | 29.1 | 30.7 |
| BNL-D04-A032 | 30.0 | 32.3 | 33.6 | 35.2 | 29.4 | 31.7 | 32.9 | 34.5 |
| BNL-D06-A042 | 37.9 | 41.8 | 44.5 | 46.9 | 37.2 | 40.9 | 43.7 | 45.9 |
| BNL-D06-A048 | 45.0 | 48.4 | 50.4 | 53.7 | 44.1 | 47.5 | 49.4 | 52.7 |
| BNL-D08-A056 | 50.6 | 55.7 | 59.4 | 62.4 | 49.6 | 54.6 | 58.3 | 61.1 |
| BNL-D08-A065 | 60.0 | 64.6 | 67.2 | 70.4 | 58.8 | 63.3 | 65.8 | 69.0 |
| BNL-D10-A071 | 64.2 | 70.9 | 74.7 | 78.0 | 62.9 | 69.5 | 73.2 | 76.5 |
| BNL-D10-A083 | 76.9 | 83.1 | 86.8 | 89.4 | 75.3 | 81.5 | 85.0 | 87.6 |
| BNL-D12-A100 | 90.4 | 99.8 | 104.1 | 107.3 | 92.2 | 97.8 | 102.0 | 105.1 |
| BNL-D14-A110 | 101.1 | 110.0 | 116.0 | 120.3 | 99.1 | 107.9 | 113.7 | 117.9 |

BOLD indicates standard model capacity.
 * Data based on mid point condensing temperature

CONDENSER CAPACITY

BNL 540 830 VSEC 1140

Table 16. BNL Models, 830 RPM, 1.5 HP, 30" Fan Diameter

| Model | R407A / R407F* MBH / 1° TD | | | | R407C* MBH / 1° TD | | | |
|--------------|-------------------------------|--------------|--------|--------|-----------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNL-S01-A007 | 5.7 | 6.5 | 7.0 | 7.6 | 5.5 | 6.2 | 6.8 | 7.2 |
| BNL-S01-A008 | 6.9 | 7.7 | 8.2 | 8.6 | 6.6 | 7.3 | 7.9 | 8.3 |
| BNL-S02-A010 | 8.7 | 9.7 | 10.6 | 11.2 | 8.3 | 9.3 | 10.1 | 10.8 |
| BNL-S02-A014 | 12.1 | 13.4 | 14.3 | 15.1 | 11.6 | 12.8 | 13.7 | 14.4 |
| BNL-S02-A016 | 14.4 | 15.5 | 16.1 | 16.9 | 13.8 | 14.9 | 15.5 | 16.2 |
| BNL-S03-A021 | 18.2 | 20.1 | 21.4 | 22.5 | 17.5 | 19.2 | 20.5 | 21.6 |
| BNL-S03-A024 | 21.6 | 23.3 | 24.2 | 25.8 | 20.7 | 22.3 | 23.2 | 24.8 |
| BNL-S04-A028 | 24.3 | 26.7 | 28.5 | 30.0 | 23.3 | 25.6 | 27.4 | 28.7 |
| BNL-S04-A032 | 28.8 | 31.0 | 32.3 | 33.8 | 27.6 | 29.8 | 31.0 | 32.4 |
| BNL-S05-A035 | 30.8 | 34.0 | 35.9 | 37.5 | 29.6 | 32.7 | 34.4 | 35.9 |
| BNL-S05-A042 | 36.9 | 39.9 | 41.7 | 42.9 | 35.4 | 38.3 | 40.0 | 41.2 |
| BNL-S06-A050 | 44.3 | 47.9 | 50.0 | 51.5 | 42.5 | 45.9 | 48.0 | 49.4 |
| BNL-S07-A055 | 48.5 | 52.8 | 55.7 | 57.8 | 46.6 | 50.7 | 53.4 | 55.4 |
| BNL-D04-A020 | 17.4 | 19.4 | 21.1 | 22.4 | 16.7 | 18.6 | 20.2 | 21.5 |
| BNL-D04-A028 | 24.3 | 26.7 | 28.5 | 30.1 | 23.3 | 25.6 | 27.4 | 28.9 |
| BNL-D04-A032 | 28.8 | 31.0 | 32.3 | 33.8 | 27.6 | 29.8 | 30.9 | 32.4 |
| BNL-D06-A042 | 36.4 | 40.1 | 42.8 | 45.0 | 34.9 | 38.5 | 41.0 | 43.2 |
| BNL-D06-A048 | 43.2 | 46.5 | 48.4 | 51.6 | 41.4 | 44.6 | 46.4 | 49.5 |
| BNL-D08-A056 | 48.6 | 53.5 | 57.1 | 59.9 | 46.6 | 51.3 | 54.8 | 57.5 |
| BNL-D08-A065 | 57.6 | 62.1 | 64.5 | 67.6 | 55.3 | 59.5 | 61.9 | 64.8 |
| BNL-D10-A071 | 61.6 | 68.1 | 71.8 | 74.9 | 59.1 | 65.3 | 68.9 | 71.9 |
| BNL-D10-A083 | 73.8 | 79.8 | 83.3 | 85.8 | 70.8 | 76.6 | 79.9 | 82.3 |
| BNL-D12-A100 | 90.4 | 95.8 | 99.9 | 103.0 | 86.7 | 91.9 | 95.9 | 98.8 |
| BNL-D14-A110 | 97.1 | 105.7 | 111.4 | 115.6 | 93.1 | 101.4 | 106.9 | 110.9 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNL 540 830 VSEC 1140

Table 17. BNL Models, 830 RPM, 1.5 HP, 30" Fan Diameter

| Model | R448A / R449A* MBH / 1° TD | | | |
|--------------|-------------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNL-S01-A007 | 5.8 | 6.5 | 7.1 | 7.6 |
| BNL-S01-A008 | 7.0 | 7.7 | 8.3 | 8.7 |
| BNL-S02-A010 | 8.8 | 9.8 | 10.7 | 11.3 |
| BNL-S02-A014 | 12.3 | 13.5 | 14.4 | 15.2 |
| BNL-S02-A016 | 14.6 | 15.7 | 16.3 | 17.1 |
| BNL-S03-A021 | 18.4 | 20.3 | 21.6 | 22.7 |
| BNL-S03-A024 | 21.8 | 23.5 | 24.4 | 26.1 |
| BNL-S04-A028 | 24.5 | 27.0 | 28.8 | 30.3 |
| BNL-S04-A032 | 29.1 | 31.4 | 32.6 | 34.1 |
| BNL-S05-A035 | 31.1 | 34.4 | 36.3 | 37.9 |
| BNL-S05-A042 | 37.3 | 40.4 | 42.1 | 43.4 |
| BNL-S06-A050 | 44.8 | 48.4 | 50.5 | 52.0 |
| BNL-S07-A055 | 49.0 | 53.4 | 56.3 | 58.4 |
| BNL-D04-A020 | 17.6 | 19.6 | 21.3 | 22.6 |
| BNL-D04-A028 | 24.5 | 27.0 | 28.8 | 30.4 |
| BNL-D04-A032 | 29.1 | 31.4 | 32.6 | 34.1 |
| BNL-D06-A042 | 36.8 | 40.5 | 43.2 | 45.5 |
| BNL-D06-A048 | 43.6 | 47.0 | 48.9 | 52.2 |
| BNL-D08-A056 | 49.1 | 54.0 | 57.7 | 60.5 |
| BNL-D08-A065 | 58.2 | 62.7 | 65.2 | 68.3 |
| BNL-D10-A071 | 62.2 | 68.8 | 72.5 | 75.7 |
| BNL-D10-A083 | 74.6 | 80.7 | 84.2 | 86.7 |
| BNL-D12-A100 | 91.3 | 96.8 | 101.0 | 104.1 |
| BNL-D14-A110 | 98.1 | 106.8 | 112.6 | 116.8 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER SPECIFICATIONS

BNL 540 830 VSEC 1140

Table 18. BNL Models, 830 RPM, 1.5 HP, 30" Fan Diameter

| Model | CFM | 208-230/3/60 | | | 460/3/60 | | | 575/3/60 | | | Unit kW | Conn. (in.) | Max. No. of Feeds | Approx. Net Weight (lbs) |
|--------------|---------|--------------|------|------|----------|------|------|----------|------|------|---------|-------------|-------------------|--------------------------|
| | | FLA | MCA | MOPD | FLA | MCA | MOPD | FLA | MCA | MOPD | | | | |
| BNL-S01-A007 | 8,400 | 6.6 | 15.0 | 25 | 3.3 | 15.0 | 15 | 2.6 | 15.0 | 15 | 1.4 | 1 3/8 | 7 | 330 |
| BNL-S01-A008 | 8,000 | 6.6 | 15.0 | 25 | 3.3 | 15.0 | 15 | 2.6 | 15.0 | 15 | 1.4 | 1 3/8 | 14 | 360 |
| BNL-S02-A010 | 17,500 | 13.2 | 15.0 | 30 | 6.6 | 15.0 | 15 | 5.2 | 15.0 | 15 | 2.7 | 1 3/8 | 14 | 580 |
| BNL-S02-A014 | 16,700 | 13.2 | 15.0 | 30 | 6.6 | 15.0 | 15 | 5.2 | 15.0 | 15 | 2.7 | 1 5/8 | 21 | 630 |
| BNL-S02-A016 | 16,100 | 13.2 | 15.0 | 30 | 6.6 | 15.0 | 15 | 5.2 | 15.0 | 15 | 2.7 | 2 1/8 | 28 | 680 |
| BNL-S03-A021 | 25,100 | 19.8 | 21.5 | 35 | 9.9 | 15.0 | 15 | 7.8 | 15.0 | 15 | 4.1 | 2 1/8 | 21 | 930 |
| BNL-S03-A024 | 24,100 | 19.8 | 21.5 | 35 | 9.9 | 15.0 | 15 | 7.8 | 15.0 | 15 | 4.1 | 2 1/8 | 28 | 1,000 |
| BNL-S04-A028 | 32,800 | 26.4 | 28.1 | 45 | 13.2 | 15.0 | 20 | 10.4 | 15.0 | 15 | 5.4 | 2 1/8 | 21 | 1,210 |
| BNL-S04-A032 | 31,200 | 26.4 | 28.1 | 45 | 13.2 | 15.0 | 20 | 10.4 | 15.0 | 15 | 5.4 | 2 5/8 | 28 | 1,310 |
| BNL-S05-A035 | 41,000 | 33.0 | 34.7 | 50 | 16.5 | 20.0 | 25 | 13.0 | 15.0 | 20 | 6.8 | 2 5/8 | 21 | 1,510 |
| BNL-S05-A042 | 39,100 | 33.0 | 34.7 | 50 | 16.5 | 20.0 | 25 | 13.0 | 15.0 | 20 | 6.8 | 2 5/8 | 28 | 1,640 |
| BNL-S06-A050 | 46,900 | 39.6 | 41.3 | 50 | 19.8 | 20.6 | 25 | 15.6 | 20.0 | 20 | 8.1 | 2 5/8 | 28 | 1,950 |
| BNL-S07-A055 | 54,700 | 46.2 | 47.9 | 60 | 23.1 | 23.9 | 30 | 18.2 | 20.0 | 25 | 9.5 | 2@2 5/8 | 28 | 2,240 |
| BNL-D04-A020 | 35,000 | 26.4 | 28.1 | 45 | 13.2 | 15.0 | 20 | 10.4 | 15.0 | 15 | 5.4 | 2 @ 1 3/8 | 28 | 1,240 |
| BNL-D04-A028 | 33,500 | 26.4 | 28.1 | 45 | 13.2 | 15.0 | 20 | 10.4 | 15.0 | 15 | 5.4 | 2 @ 1 5/8 | 42 | 1,340 |
| BNL-D04-A032 | 32,100 | 26.4 | 28.1 | 45 | 13.2 | 15.0 | 20 | 10.4 | 15.0 | 15 | 5.4 | 2 @ 2 1/8 | 56 | 1,440 |
| BNL-D06-A042 | 50,200 | 39.6 | 41.3 | 50 | 19.8 | 20.6 | 25 | 15.6 | 20.0 | 20 | 8.1 | 2 @ 2 1/8 | 42 | 1,990 |
| BNL-D06-A048 | 48,200 | 39.6 | 41.3 | 50 | 19.8 | 20.6 | 25 | 15.6 | 20.0 | 20 | 8.1 | 2 @ 2 1/8 | 56 | 2,140 |
| BNL-D08-A056 | 65,600 | 52.8 | 54.5 | 70 | 26.4 | 27.2 | 35 | 20.8 | 21.5 | 25 | 10.8 | 2 @ 2 1/8 | 42 | 2,630 |
| BNL-D08-A065 | 62,500 | 52.8 | 54.5 | 70 | 26.4 | 27.2 | 35 | 20.8 | 21.5 | 25 | 10.8 | 2 @ 2 5/8 | 56 | 2,830 |
| BNL-D10-A071 | 82,000 | 66.0 | 67.7 | 80 | 33.0 | 33.8 | 40 | 26.0 | 26.7 | 30 | 13.5 | 2 @ 2 5/8 | 42 | 3,290 |
| BNL-D10-A083 | 78,100 | 66.0 | 67.7 | 80 | 33.0 | 33.8 | 40 | 26.0 | 26.7 | 30 | 13.5 | 2 @ 2 5/8 | 56 | 3,540 |
| BNL-D12-A100 | 93,700 | 79.2 | 80.9 | 90 | 39.6 | 40.4 | 45 | 31.2 | 31.9 | 35 | 16.2 | 2 @ 2 5/8 | 56 | 4,230 |
| BNL-D14-A110 | 109,300 | 92.4 | 94.1 | 110 | 46.2 | 47.0 | 50 | 36.4 | 37.1 | 40 | 18.9 | 4 @ 2 5/8 | 56 | 4,910 |

CONDENSER CAPACITY

BNH 540 830 VSEC 1140

Table 19. BNH Models, 1140 RPM, 1.5 HP, 30" Fan Diameter

| Model | R22 / R410A MBH / 1° TD | | | | R404A/R507 MBH / 1° TD | | | |
|--------------|----------------------------|--------------|--------|--------|---------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNH-S01-A007 | 6.4 | 7.3 | 8.0 | 8.6 | 6.3 | 7.2 | 7.9 | 8.5 |
| BNH-S01-A009 | 7.8 | 8.7 | 9.5 | 10.0 | 7.6 | 8.6 | 9.3 | 9.8 |
| BNH-S02-A011 | 9.6 | 10.7 | 11.7 | 12.4 | 9.4 | 10.5 | 11.5 | 12.1 |
| BNH-S02-A015 | 13.1 | 14.5 | 15.6 | 16.3 | 12.8 | 14.2 | 15.3 | 16.0 |
| BNH-S02-A017 | 15.7 | 17.1 | 18.1 | 19.2 | 15.3 | 16.7 | 17.7 | 18.8 |
| BNH-S03-A022 | 19.7 | 21.8 | 23.4 | 24.5 | 19.3 | 21.4 | 22.9 | 24.0 |
| BNH-S03-A026 | 23.5 | 25.7 | 27.1 | 29.9 | 23.1 | 25.2 | 26.6 | 29.3 |
| BNH-S04-A029 | 26.2 | 29.1 | 31.2 | 32.6 | 25.7 | 28.5 | 30.5 | 32.0 |
| BNH-S04-A034 | 31.4 | 34.2 | 36.1 | 38.3 | 30.7 | 33.5 | 35.4 | 37.6 |
| BNH-S05-A037 | 33.6 | 37.1 | 39.3 | 41.3 | 32.9 | 36.4 | 38.5 | 40.5 |
| BNH-S05-A044 | 40.5 | 44.0 | 46.1 | 48.6 | 39.7 | 43.1 | 45.1 | 47.6 |
| BNH-S06-A053 | 48.6 | 52.8 | 55.3 | 58.3 | 47.7 | 51.7 | 54.1 | 57.1 |
| BNH-S07-A061 | 55.4 | 61.0 | 64.7 | 67.5 | 54.3 | 59.8 | 63.5 | 66.2 |
| BNH-D04-A021 | 19.2 | 21.4 | 23.4 | 24.8 | 18.8 | 21.0 | 22.9 | 24.3 |
| BNH-D04-A029 | 26.2 | 29.1 | 31.2 | 32.6 | 25.7 | 28.5 | 30.6 | 32.0 |
| BNH-D04-A034 | 31.4 | 34.2 | 36.1 | 38.3 | 30.7 | 33.5 | 35.4 | 37.6 |
| BNH-D06-A044 | 39.4 | 43.6 | 46.7 | 48.9 | 38.6 | 42.8 | 45.8 | 47.9 |
| BNH-D06-A051 | 47.0 | 51.3 | 54.2 | 59.8 | 46.1 | 50.3 | 53.1 | 58.7 |
| BNH-D08-A058 | 52.5 | 58.2 | 62.3 | 65.3 | 51.4 | 57.0 | 61.1 | 63.9 |
| BNH-D08-A068 | 62.7 | 68.4 | 72.3 | 76.7 | 61.5 | 67.1 | 70.8 | 75.1 |
| BNH-D10-A074 | 67.1 | 74.2 | 78.5 | 82.6 | 65.7 | 72.7 | 76.9 | 80.9 |
| BNH-D10-A088 | 81.0 | 88.0 | 92.1 | 97.2 | 79.4 | 86.2 | 90.2 | 95.2 |
| BNH-D12-A106 | 97.2 | 105.6 | 110.5 | 116.6 | 95.3 | 103.5 | 108.3 | 114.2 |
| BNH-D14-A122 | 110.8 | 121.9 | 129.5 | 135.0 | 108.6 | 119.5 | 126.9 | 132.4 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNH 540 830 VSEC 1140

Table 20. BNH Models, 1140 RPM, 1.5 HP, 30" Fan Diameter

| Model | R407A/R407F* MBH / 1° TD | | | | R407C* MBH / 1° TD | | | |
|--------------|-----------------------------|--------------|--------|--------|-----------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNH-S01-A007 | 6.1 | 7.0 | 7.7 | 8.3 | 5.9 | 6.7 | 7.4 | 8.0 |
| BNH-S01-A009 | 7.5 | 8.4 | 9.1 | 9.6 | 7.2 | 8.1 | 8.7 | 9.2 |
| BNH-S02-A011 | 9.2 | 10.3 | 11.2 | 11.9 | 8.8 | 9.9 | 10.8 | 11.4 |
| BNH-S02-A015 | 12.6 | 14.0 | 15.0 | 15.7 | 12.1 | 13.4 | 14.4 | 15.0 |
| BNH-S02-A017 | 15.0 | 16.4 | 17.4 | 18.4 | 14.4 | 15.7 | 16.6 | 17.6 |
| BNH-S03-A022 | 18.9 | 21.0 | 22.4 | 23.5 | 18.1 | 20.1 | 21.5 | 22.5 |
| BNH-S03-A026 | 22.6 | 24.6 | 26.0 | 28.8 | 21.7 | 23.6 | 25.0 | 27.6 |
| BNH-S04-A029 | 25.2 | 28.0 | 29.9 | 31.3 | 24.1 | 26.8 | 28.7 | 30.1 |
| BNH-S04-A034 | 30.1 | 32.9 | 34.7 | 36.8 | 28.9 | 31.5 | 33.3 | 35.3 |
| BNH-S05-A037 | 32.2 | 35.6 | 37.7 | 39.7 | 30.9 | 34.2 | 36.2 | 38.0 |
| BNH-S05-A044 | 38.9 | 42.3 | 44.2 | 46.7 | 37.3 | 40.5 | 42.4 | 44.8 |
| BNH-S06-A053 | 46.7 | 50.7 | 53.1 | 56.0 | 44.8 | 48.6 | 50.9 | 53.7 |
| BNH-S07-A061 | 53.2 | 58.6 | 62.2 | 64.9 | 51.1 | 56.2 | 59.7 | 62.2 |
| BNH-D04-A021 | 18.4 | 20.5 | 22.4 | 23.8 | 17.7 | 19.7 | 21.5 | 22.8 |
| BNH-D04-A029 | 25.2 | 28.0 | 29.9 | 31.3 | 24.1 | 26.8 | 28.7 | 30.1 |
| BNH-D04-A034 | 30.1 | 32.9 | 34.7 | 36.8 | 28.9 | 31.5 | 33.3 | 35.3 |
| BNH-D06-A044 | 37.8 | 41.9 | 44.9 | 47.0 | 36.3 | 40.2 | 43.1 | 45.1 |
| BNH-D06-A051 | 45.2 | 49.3 | 52.0 | 57.5 | 43.3 | 47.3 | 49.9 | 55.2 |
| BNH-D08-A058 | 50.4 | 55.9 | 59.9 | 62.7 | 48.3 | 53.6 | 57.4 | 60.1 |
| BNH-D08-A068 | 60.2 | 65.7 | 69.4 | 73.6 | 57.8 | 63.0 | 66.6 | 70.6 |
| BNH-D10-A074 | 64.4 | 71.2 | 75.4 | 79.3 | 61.8 | 68.3 | 72.3 | 76.0 |
| BNH-D10-A088 | 77.8 | 84.5 | 88.4 | 93.3 | 74.6 | 81.1 | 84.8 | 89.5 |
| BNH-D12-A106 | 93.4 | 101.4 | 106.1 | 112.0 | 89.6 | 97.3 | 101.8 | 107.4 |
| BNH-D14-A122 | 106.5 | 117.1 | 124.4 | 129.7 | 102.1 | 112.3 | 119.3 | 124.4 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNH 540 830 VSEC 1140

Table 21. BNH Models, 1140 RPM, 1.5 HP, 30" Fan Diameter

| Model | R448A / R449A* MBH / 1° TD | | | |
|--------------|-------------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNH-S01-A007 | 6.2 | 7.1 | 7.8 | 8.4 |
| BNH-S01-A009 | 7.6 | 8.5 | 9.2 | 9.7 |
| BNH-S02-A011 | 9.3 | 10.4 | 11.3 | 12.0 |
| BNH-S02-A015 | 12.7 | 14.1 | 15.1 | 15.8 |
| BNH-S02-A017 | 15.2 | 16.6 | 17.5 | 18.6 |
| BNH-S03-A022 | 19.1 | 21.2 | 22.7 | 23.7 |
| BNH-S03-A026 | 22.8 | 24.9 | 26.3 | 29.0 |
| BNH-S04-A029 | 25.4 | 28.2 | 30.2 | 31.7 |
| BNH-S04-A034 | 30.4 | 33.2 | 35.1 | 37.2 |
| BNH-S05-A037 | 32.6 | 36.0 | 38.1 | 40.1 |
| BNH-S05-A044 | 39.3 | 42.7 | 44.7 | 47.1 |
| BNH-S06-A053 | 47.2 | 51.2 | 53.6 | 56.5 |
| BNH-S07-A061 | 53.8 | 59.2 | 62.8 | 65.5 |
| BNH-D04-A021 | 18.6 | 20.8 | 22.7 | 24.0 |
| BNH-D04-A029 | 25.4 | 28.2 | 30.3 | 31.7 |
| BNH-D04-A034 | 30.4 | 33.2 | 35.1 | 37.2 |
| BNH-D06-A044 | 38.2 | 42.3 | 45.3 | 47.5 |
| BNH-D06-A051 | 45.6 | 49.8 | 52.6 | 58.1 |
| BNH-D08-A058 | 50.9 | 56.5 | 60.5 | 63.3 |
| BNH-D08-A068 | 60.9 | 66.4 | 70.1 | 74.4 |
| BNH-D10-A074 | 65.1 | 72.0 | 76.2 | 80.1 |
| BNH-D10-A088 | 78.6 | 85.4 | 89.3 | 94.3 |
| BNH-D12-A106 | 94.3 | 102.4 | 107.2 | 113.1 |
| BNH-D14-A122 | 107.5 | 118.3 | 125.7 | 131.1 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER SPECIFICATIONS

BNH 540 830 VSEC 1140

Table 22. BNH Models, 1140 RPM, 1.5 HP, 30" Fan Diameter

| Model | CFM | 208-230/3/60 | | | 460/3/60 | | | 575/3/60 | | | Unit kW | Conn. (in.) | Max. No. of Feeds | Approx. Net Wt. (lbs) |
|--------------|---------|--------------|------|------|----------|------|------|----------|------|------|---------|-------------|-------------------|-----------------------|
| | | FLA | MCA | MOPD | FLA | MCA | MOPD | FLA | MCA | MOPD | | | | |
| BNH-S01-A007 | 9,900 | 7.0 | 15.0 | 25 | 3.5 | 15.0 | 15 | 2.8 | 15.0 | 15 | 1.9 | 1 3/8 | 7 | 330 |
| BNH-S01-A009 | 9,500 | 7.0 | 15.0 | 25 | 3.5 | 15.0 | 15 | 2.8 | 15.0 | 15 | 1.9 | 1 3/8 | 14 | 360 |
| BNH-S02-A011 | 20,500 | 14.0 | 20.0 | 35 | 7.0 | 15.0 | 15 | 5.6 | 15.0 | 15 | 3.8 | 1 3/8 | 14 | 580 |
| BNH-S02-A015 | 19,800 | 14.0 | 20.0 | 35 | 7.0 | 15.0 | 15 | 5.6 | 15.0 | 15 | 3.8 | 1 5/8 | 21 | 630 |
| BNH-S02-A017 | 19,000 | 14.0 | 20.0 | 35 | 7.0 | 15.0 | 15 | 5.6 | 15.0 | 15 | 3.8 | 2 1/8 | 28 | 680 |
| BNH-S03-A022 | 29,700 | 21.0 | 22.8 | 40 | 10.5 | 15.0 | 20 | 8.4 | 15.0 | 15 | 5.8 | 2 1/8 | 21 | 930 |
| BNH-S03-A026 | 28,500 | 21.0 | 22.8 | 40 | 10.5 | 15.0 | 20 | 8.4 | 15.0 | 15 | 5.8 | 2 1/8 | 28 | 1,000 |
| BNH-S04-A029 | 38,600 | 28.0 | 29.8 | 45 | 14.0 | 15.0 | 20 | 11.2 | 15.0 | 15 | 7.7 | 2 1/8 | 21 | 1,210 |
| BNH-S04-A034 | 37,000 | 28.0 | 29.8 | 45 | 14.0 | 15.0 | 20 | 11.2 | 15.0 | 15 | 7.7 | 2 5/8 | 28 | 1,310 |
| BNH-S05-A037 | 48,300 | 35.0 | 36.8 | 50 | 17.5 | 20.0 | 25 | 14.0 | 15.0 | 20 | 9.6 | 2 5/8 | 21 | 1,510 |
| BNH-S05-A044 | 46,200 | 35.0 | 36.8 | 50 | 17.5 | 20.0 | 25 | 14.0 | 15.0 | 20 | 9.6 | 2 5/8 | 28 | 1,640 |
| BNH-S06-A053 | 55,400 | 42.0 | 43.8 | 60 | 21.0 | 21.9 | 30 | 16.8 | 20.0 | 25 | 11.5 | 2 5/8 | 28 | 1,950 |
| BNH-S07-A061 | 64,700 | 49.0 | 50.8 | 70 | 24.5 | 25.4 | 35 | 19.6 | 20.3 | 25 | 13.5 | 2 @ 2 5/8 | 28 | 2,240 |
| BNH-D04-A021 | 41,000 | 28.0 | 29.8 | 45 | 14.0 | 15.0 | 20 | 11.2 | 15.0 | 15 | 7.7 | 2 @ 1 3/8 | 28 | 1,240 |
| BNH-D04-A029 | 39,600 | 28.0 | 29.8 | 45 | 14.0 | 15.0 | 20 | 11.2 | 15.0 | 15 | 7.7 | 2 @ 1 5/8 | 42 | 1,340 |
| BNH-D04-A034 | 38,100 | 28.0 | 29.8 | 45 | 14.0 | 15.0 | 20 | 11.2 | 15.0 | 15 | 7.7 | 2 @ 2 1/8 | 56 | 1,440 |
| BNH-D06-A044 | 59,400 | 42.0 | 43.8 | 60 | 21.0 | 21.9 | 30 | 16.8 | 20.0 | 25 | 11.5 | 2 @ 2 1/8 | 42 | 1,990 |
| BNH-D06-A051 | 57,100 | 42.0 | 43.8 | 60 | 21.0 | 21.9 | 30 | 16.8 | 20.0 | 25 | 11.5 | 2 @ 2 1/8 | 56 | 2,140 |
| BNH-D08-A058 | 77,200 | 56.0 | 57.8 | 70 | 28.0 | 28.9 | 35 | 22.4 | 23.1 | 30 | 15.4 | 2 @ 2 1/8 | 42 | 2,630 |
| BNH-D08-A068 | 73,900 | 56.0 | 57.8 | 70 | 28.0 | 28.9 | 35 | 22.4 | 23.1 | 30 | 15.4 | 2 @ 2 5/8 | 56 | 2,830 |
| BNH-D10-A074 | 96,500 | 70.0 | 71.8 | 90 | 35.0 | 35.9 | 45 | 28.0 | 28.7 | 35 | 19.2 | 2 @ 2 5/8 | 42 | 3,290 |
| BNH-D10-A088 | 92,400 | 70.0 | 71.8 | 90 | 35.0 | 35.9 | 45 | 28.0 | 28.7 | 35 | 19.2 | 2 @ 2 5/8 | 56 | 3,540 |
| BNH-D12-A106 | 110,900 | 84.0 | 85.8 | 100 | 42.0 | 42.9 | 50 | 33.6 | 34.3 | 40 | 23.1 | 2 @ 2 5/8 | 56 | 4,230 |
| BNH-D14-A122 | 129,400 | 98.0 | 99.8 | 110 | 49.0 | 49.9 | 60 | 39.2 | 39.9 | 45 | 26.9 | 4 @ 2 5/8 | 56 | 4,910 |

Bohn Venturi Mounted VSEC Series Selection Tables

The Bohn Venturi Mounted VSEC Series of air-cooled condensers incorporates Venturi Mounted VSEC motor technology to provide the quietest and most efficient condensers in the industry, using integrated variable speed technology.

Simplicity: Variable speed without the complexity

The Bohn VSEC Series is a complete system that incorporates an VSEC motor, integrated drive and control electronics, optimized swept motor blade and venturi panel in one simple package. Variable speed is accomplished without the complexities typically associated with Variable Frequency Drives (VFD).

Flexibility: Maximum efficiency, minimum sound, capacity when you need it

The Venturi Mounted VSEC Series condensers' integrated variable speed capability allows optimization to your operating conditions; at higher speeds on hot summer afternoons to maintain capacity or at lower speeds at night to meet a local sound ordinance. Whatever your requirements, the Bohn VSEC Series can be selected and programmed to your specific needs; whether it is lower energy costs, lower sound or both.

Reliability: The highest quality backed by industry-leading warranties

We are so confident in the reliability of the VSEC motor that we are providing an unprecedented 3-year warranty on the VSEC motor (2-year warranty on the unit) so you can be assured of worry-free operation.

Protection at every level

The VSEC motors have several built-in features that protect against locked-rotors, under-voltage and phase failure.

Variable Speed Operation

The Venturi Mounted VSEC Series condensers provide variable speed operation automatically; providing dramatically lower sound and energy levels than would be observed with condensers using traditional AC motors.

Typical performance of a Venturi Mounted VSEC Series condenser at various loads versus a 540 RPM, 830 RPM or 1140 RPM condenser is shown in the chart on the next page.

Model Selection

Selecting the right Bohn VSEC Series unit for your needs is easier than you think, and is just as easy as selecting a standard unit.

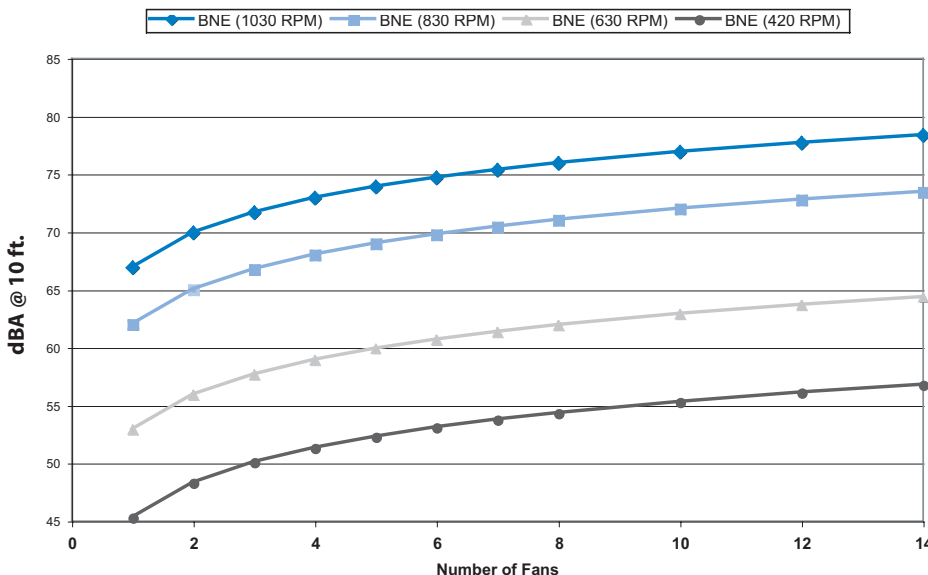
Simply use Tables 31-33 to find the model and fins per inch required to meet your capacity needs.

Selecting condensers with specific sound or energy levels

The variable speed nature allows selection to meet maximum sound or energy usage levels.

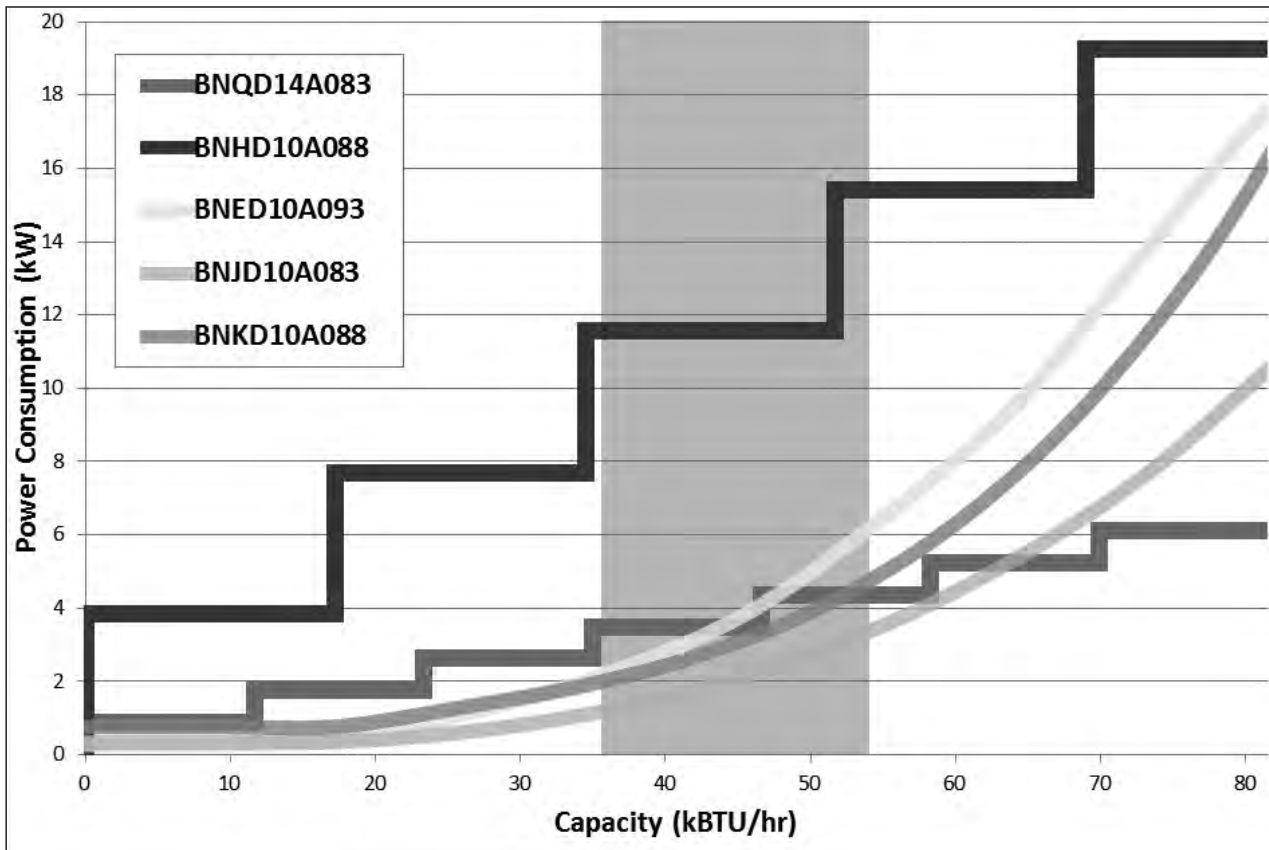
To select condensers with these goals in mind, please contact your sales representative. They will be able to help you select the appropriate model for your specific requirements.

EC Sound Data (dBA @ 10 ft.)



| Fans | BNE 1030 RPM | BNE 830 RPM | BNE 630 RPM | BNE 420 RPM |
|------|--------------|-------------|-------------|-------------|
| 1 | 66.9 | 62.0 | 52.9 | 45.3 |
| 2 | 69.9 | 65.0 | 55.9 | 48.3 |
| 3 | 71.7 | 66.8 | 57.7 | 50.1 |
| 4 | 72.9 | 68.0 | 58.9 | 51.3 |
| 5 | 73.9 | 69.0 | 59.9 | 52.3 |
| 6 | 74.7 | 69.8 | 60.7 | 53.1 |
| 7 | 75.4 | 70.5 | 61.4 | 53.8 |
| 8 | 75.9 | 71.0 | 61.9 | 54.3 |
| 10 | 76.9 | 72.0 | 62.9 | 55.3 |
| 12 | 77.7 | 72.8 | 63.7 | 56.1 |
| 14 | 78.4 | 73.5 | 64.4 | 56.8 |

Power Consumption & Variable Speed Operation Bohn VSEC vs. 540 and 1140 Series



| 10 Fan EC Motor Sound Production at Various Loads | | | | | | | | |
|---|------|------|-----|------|------|------|------|------|
| Percent of Max. Load | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| RPM | 215 | 313 | 407 | 511 | 630 | 748 | 892 | 1030 |
| dBA @ 10 ft | 49.5 | 51.8 | 55 | 58.4 | 62.9 | 67.8 | 74.8 | 76.9 |

CONDENSER CAPACITY

BNJ 540 830 VSEC 1140

Table 23. BNJ Models, 830 RPM, 1.1 kW, 30" Fan Diameter

| Model | R22/R410A MBH / 1° TD | | | | R404A / R507 MBH / 1° TD | | | |
|--------------|--------------------------|--------------|--------|--------|-----------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNJ-S01-A007 | 5.9 | 6.7 | 7.3 | 7.9 | 5.8 | 6.6 | 7.2 | 7.7 |
| BNJ-S01-A008 | 7.2 | 8.0 | 8.6 | 9.0 | 7.0 | 7.8 | 8.4 | 8.8 |
| BNJ-S02-A010 | 9.1 | 10.1 | 11.0 | 11.7 | 8.9 | 9.9 | 10.8 | 11.4 |
| BNJ-S02-A014 | 12.6 | 13.9 | 14.9 | 15.7 | 12.4 | 13.6 | 14.6 | 15.4 |
| BNJ-S02-A016 | 15.0 | 16.1 | 16.8 | 17.6 | 14.7 | 15.8 | 16.5 | 17.3 |
| BNJ-S03-A021 | 18.9 | 20.9 | 22.3 | 23.4 | 18.6 | 20.5 | 21.8 | 23.0 |
| BNJ-S03-A024 | 22.5 | 24.2 | 25.2 | 26.9 | 22.0 | 23.8 | 24.7 | 26.3 |
| BNJ-S04-A028 | 25.3 | 27.8 | 29.7 | 31.2 | 24.8 | 27.3 | 29.1 | 30.6 |
| BNJ-S04-A032 | 30.0 | 32.3 | 33.6 | 35.2 | 29.4 | 31.7 | 32.9 | 34.5 |
| BNJ-S05-A035 | 32.1 | 35.5 | 37.4 | 39.0 | 31.4 | 34.7 | 36.6 | 38.2 |
| BNJ-S05-A042 | 38.4 | 41.6 | 43.4 | 44.7 | 37.7 | 40.8 | 42.5 | 43.8 |
| BNJ-S06-A050 | 46.1 | 49.9 | 52.1 | 53.6 | 45.2 | 48.9 | 51.0 | 52.6 |
| BNJ-S07-A055 | 50.5 | 55.0 | 58.0 | 60.2 | 49.5 | 53.9 | 56.8 | 59.0 |
| BNJ-D04-A020 | 18.1 | 20.2 | 22.0 | 23.3 | 17.7 | 19.8 | 21.5 | 22.9 |
| BNJ-D04-A028 | 25.3 | 27.8 | 29.7 | 31.4 | 24.8 | 27.3 | 29.1 | 30.7 |
| BNJ-D04-A032 | 30.0 | 32.3 | 33.6 | 35.2 | 29.4 | 31.7 | 32.9 | 34.5 |
| BNJ-D06-A042 | 37.9 | 41.8 | 44.5 | 46.9 | 37.2 | 40.9 | 43.7 | 45.9 |
| BNJ-D06-A048 | 45.0 | 48.4 | 50.4 | 53.7 | 44.1 | 47.5 | 49.4 | 52.7 |
| BNJ-D08-A056 | 50.6 | 55.7 | 59.4 | 62.4 | 49.6 | 54.6 | 58.3 | 61.1 |
| BNJ-D08-A065 | 60.0 | 64.6 | 67.2 | 70.4 | 58.8 | 63.3 | 65.8 | 69.0 |
| BNJ-D10-A071 | 64.2 | 70.9 | 74.7 | 78.0 | 62.9 | 69.5 | 73.2 | 76.5 |
| BNJ-D10-A083 | 76.9 | 83.1 | 86.8 | 89.4 | 75.3 | 81.5 | 85.0 | 87.6 |
| BNJ-D12-A100 | 90.4 | 99.8 | 104.1 | 107.3 | 92.2 | 97.8 | 102.0 | 105.1 |
| BNJ-D14-A110 | 101.1 | 110.0 | 116.0 | 120.3 | 99.1 | 107.9 | 113.7 | 117.9 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNJ 540 830 VSEC 1140

Table 24. BNJ Models, 830 RPM, 1.1 kW, 30" Fan Diameter

| Model | R407A/R407F* MBH / 1° TD | | | | R407C* MBH / 1° TD | | | |
|--------------|-----------------------------|--------------|--------|--------|-----------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNJ-S01-A007 | 5.7 | 6.5 | 7.0 | 7.6 | 5.5 | 6.2 | 6.8 | 7.2 |
| BNJ-S01-A008 | 6.9 | 7.7 | 8.2 | 8.6 | 6.6 | 7.3 | 7.9 | 8.3 |
| BNJ-S02-A010 | 8.7 | 9.7 | 10.6 | 11.2 | 8.3 | 9.3 | 10.1 | 10.8 |
| BNJ-S02-A014 | 12.1 | 13.4 | 14.3 | 15.1 | 11.6 | 12.8 | 13.7 | 14.4 |
| BNJ-S02-A016 | 14.4 | 15.5 | 16.1 | 16.9 | 13.8 | 14.9 | 15.5 | 16.2 |
| BNJ-S03-A021 | 18.2 | 20.1 | 21.4 | 22.5 | 17.5 | 19.2 | 20.5 | 21.6 |
| BNJ-S03-A024 | 21.6 | 23.3 | 24.2 | 25.8 | 20.7 | 22.3 | 23.2 | 24.8 |
| BNJ-S04-A028 | 24.3 | 26.7 | 28.5 | 30.0 | 23.3 | 25.6 | 27.4 | 28.7 |
| BNJ-S04-A032 | 28.8 | 31.0 | 32.3 | 33.8 | 27.6 | 29.8 | 31.0 | 32.4 |
| BNJ-S05-A035 | 30.8 | 34.0 | 35.9 | 37.5 | 29.6 | 32.7 | 34.4 | 35.9 |
| BNJ-S05-A042 | 36.9 | 39.9 | 41.7 | 42.9 | 35.4 | 38.3 | 40.0 | 41.2 |
| BNJ-S06-A050 | 44.3 | 47.9 | 50.0 | 51.5 | 42.5 | 45.9 | 48.0 | 49.4 |
| BNJ-S07-A055 | 48.5 | 52.8 | 55.7 | 57.8 | 46.6 | 50.7 | 53.4 | 55.4 |
| BNJ-D04-A020 | 17.4 | 19.4 | 21.1 | 22.4 | 16.7 | 18.6 | 20.2 | 21.5 |
| BNJ-D04-A028 | 24.3 | 26.7 | 28.5 | 30.1 | 23.3 | 25.6 | 27.4 | 28.9 |
| BNJ-D04-A032 | 28.8 | 31.0 | 32.3 | 33.8 | 27.6 | 29.8 | 30.9 | 32.4 |
| BNJ-D06-A042 | 36.4 | 40.1 | 42.8 | 45.0 | 34.9 | 38.5 | 41.0 | 43.2 |
| BNJ-D06-A048 | 43.2 | 46.5 | 48.4 | 51.6 | 41.4 | 44.6 | 46.4 | 49.5 |
| BNJ-D08-A056 | 48.6 | 53.5 | 57.1 | 59.9 | 46.6 | 51.3 | 54.8 | 57.5 |
| BNJ-D08-A065 | 57.6 | 62.1 | 64.5 | 67.6 | 55.3 | 59.5 | 61.9 | 64.8 |
| BNJ-D10-A071 | 61.6 | 68.1 | 71.8 | 74.9 | 59.1 | 65.3 | 68.9 | 71.9 |
| BNJ-D10-A083 | 73.8 | 79.8 | 83.3 | 85.8 | 70.8 | 76.6 | 79.9 | 82.3 |
| BNJ-D12-A100 | 90.4 | 95.8 | 99.9 | 103.0 | 86.7 | 91.9 | 95.9 | 98.8 |
| BNJ-D14-A110 | 97.1 | 105.7 | 111.4 | 115.6 | 93.1 | 101.4 | 106.9 | 110.9 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNJ 540 830 VSEC 1140

Table 25. BNJ Models, 830 RPM, 1.1 kW, 30" Fan Diameter

| Model | R448A / R449A* MBH / 1° TD | | | |
|--------------|-------------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNJ-S01-A007 | 5.8 | 6.5 | 7.1 | 7.6 |
| BNJ-S01-A008 | 7.0 | 7.7 | 8.3 | 8.7 |
| BNJ-S02-A010 | 8.8 | 9.8 | 10.7 | 11.3 |
| BNJ-S02-A014 | 12.3 | 13.5 | 14.4 | 15.2 |
| BNJ-S02-A016 | 14.6 | 15.7 | 16.3 | 17.1 |
| BNJ-S03-A021 | 18.4 | 20.3 | 21.6 | 22.7 |
| BNJ-S03-A024 | 21.8 | 23.5 | 24.4 | 26.1 |
| BNJ-S04-A028 | 24.5 | 27.0 | 28.8 | 30.3 |
| BNJ-S04-A032 | 29.1 | 31.4 | 32.6 | 34.1 |
| BNJ-S05-A035 | 31.1 | 34.4 | 36.3 | 37.9 |
| BNJ-S05-A042 | 37.3 | 40.4 | 42.1 | 43.4 |
| BNJ-S06-A050 | 44.8 | 48.4 | 50.5 | 52.0 |
| BNJ-S07-A055 | 49.0 | 53.4 | 56.3 | 58.4 |
| BNJ-D04-A020 | 17.6 | 19.6 | 21.3 | 22.6 |
| BNJ-D04-A028 | 24.5 | 27.0 | 28.8 | 30.4 |
| BNJ-D04-A032 | 29.1 | 31.4 | 32.6 | 34.1 |
| BNJ-D06-A042 | 36.8 | 40.5 | 43.2 | 45.5 |
| BNJ-D06-A048 | 43.6 | 47.0 | 48.9 | 52.2 |
| BNJ-D08-A056 | 49.1 | 54.0 | 57.7 | 60.5 |
| BNJ-D08-A065 | 58.2 | 62.7 | 65.2 | 68.3 |
| BNJ-D10-A071 | 62.2 | 68.8 | 72.5 | 75.7 |
| BNJ-D10-A083 | 74.6 | 80.7 | 84.2 | 86.7 |
| BNJ-D12-A100 | 91.3 | 96.8 | 101.0 | 104.1 |
| BNJ-D14-A110 | 98.1 | 106.8 | 112.6 | 116.8 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER SPECIFICATIONS

BNJ 540 830 VSEC 1140

Table 26. BNJ Models, 1.1 kW, 30" Fan Diameter

| Model | CFM | 230/3/60 | | | 460/3/60 | | | Unit kW | Conn. (in) | Max. No. of Feeds | Approx. Net. Wt. (lbs) |
|--------------|--------|----------|------|-------|----------|------|------|---------|------------|-------------------|------------------------|
| | | FLA | MCA | MOPD | FLA | MCA | MOPD | | | | |
| BNJ-S01-A007 | 8400 | 6.6 | 15.0 | 25.0 | 3.3 | 15.0 | 15.0 | 1.1 | 1 3/8 | 7 | 340 |
| BNJ-S01-A008 | 8000 | 6.6 | 15.0 | 25.0 | 3.3 | 15.0 | 15.0 | 1.1 | 1 3/8 | 14 | 370 |
| BNJ-S02-A010 | 17500 | 13.2 | 15.0 | 30.0 | 6.6 | 15.0 | 15.0 | 2.1 | 1 3/8 | 14 | 600 |
| BNJ-S02-A014 | 16700 | 13.2 | 15.0 | 30.0 | 6.6 | 15.0 | 15.0 | 2.1 | 1 5/8 | 21 | 650 |
| BNJ-S02-A016 | 16100 | 13.2 | 15.0 | 30.0 | 6.6 | 15.0 | 15.0 | 2.1 | 2 1/8 | 28 | 700 |
| BNJ-S03-A021 | 25100 | 19.8 | 21.5 | 35.0 | 9.9 | 15.0 | 15.0 | 3.2 | 2 1/8 | 21 | 960 |
| BNJ-S03-A024 | 24100 | 19.8 | 21.5 | 35.0 | 9.9 | 15.0 | 15.0 | 3.2 | 2 1/8 | 28 | 1030 |
| BNJ-S04-A028 | 32800 | 26.4 | 28.1 | 45.0 | 13.2 | 15.0 | 20.0 | 4.2 | 2 1/8 | 21 | 1250 |
| BNJ-S04-A032 | 31200 | 26.4 | 28.1 | 45.0 | 13.2 | 15.0 | 20.0 | 4.2 | 2 5/8 | 28 | 1350 |
| BNJ-S05-A035 | 41000 | 33.0 | 34.7 | 50.0 | 16.5 | 20.0 | 25.0 | 5.2 | 2 5/8 | 21 | 1570 |
| BNJ-S05-A042 | 39100 | 33.0 | 34.7 | 50.0 | 16.5 | 20.0 | 25.0 | 5.2 | 2 5/8 | 28 | 1700 |
| BNJ-S06-A050 | 46900 | 39.6 | 41.3 | 50.0 | 19.8 | 20.6 | 25.0 | 6.3 | 2 5/8 | 28 | 2020 |
| BNJ-S07-A055 | 54700 | 46.2 | 47.9 | 60.0 | 23.1 | 23.9 | 30.0 | 7.3 | 2 @ 2 5/8 | 28 | 2320 |
| BNJ-D04-A020 | 35000 | 26.4 | 28.1 | 45.0 | 13.2 | 15.0 | 20.0 | 4.2 | 2 @ 1 3/8 | 28 | 1280 |
| BNJ-D04-A028 | 33500 | 26.4 | 28.1 | 45.0 | 13.2 | 15.0 | 20.0 | 4.2 | 2 @ 1 5/8 | 42 | 1380 |
| BNJ-D04-A032 | 32100 | 26.4 | 28.1 | 45.0 | 13.2 | 15.0 | 20.0 | 4.2 | 2 @ 2 1/8 | 56 | 1480 |
| BNJ-D06-A042 | 50200 | 39.6 | 41.3 | 50.0 | 19.8 | 20.6 | 25.0 | 6.3 | 2 @ 2 1/8 | 42 | 2060 |
| BNJ-D06-A048 | 48200 | 39.6 | 41.3 | 50.0 | 19.8 | 20.6 | 25.0 | 6.3 | 2 @ 2 1/8 | 56 | 2210 |
| BNJ-D08-A056 | 65600 | 52.8 | 54.5 | 70.0 | 26.4 | 27.2 | 35.0 | 8.4 | 2 @ 2 1/8 | 42 | 2720 |
| BNJ-D08-A065 | 62500 | 52.8 | 54.5 | 70.0 | 26.4 | 27.2 | 35.0 | 8.4 | 2 @ 2 5/8 | 56 | 2920 |
| BNJ-D10-A071 | 82000 | 66.0 | 67.7 | 80.0 | 33.0 | 33.8 | 40.0 | 10.4 | 2 @ 2 5/8 | 42 | 3400 |
| BNJ-D10-A083 | 78100 | 66.0 | 67.7 | 80.0 | 33.0 | 33.8 | 40.0 | 10.4 | 2 @ 2 5/8 | 56 | 3650 |
| BNJ-D12-A100 | 93700 | 79.2 | 80.9 | 90.0 | 39.6 | 40.4 | 45.0 | 12.5 | 2 @ 2 5/8 | 56 | 4360 |
| BNJ-D14-A110 | 109300 | 92.4 | 94.1 | 110.0 | 46.2 | 47.0 | 50.0 | 14.6 | 4 @ 2 5/8 | 56 | 5060 |

CONDENSER CAPACITY

BNK 540 830 VSEC 1140

Table 27. BNK Models, 1140 RPM, 2.0 kW, 30" Fan Diameter

| Model | R22/R410A MBH / 1° TD | | | | R404A / R507 MBH / 1° TD | | | |
|--------------|--------------------------|--------------|--------|--------|-----------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNK-S01-A007 | 6.4 | 7.3 | 8.0 | 8.6 | 6.3 | 7.2 | 7.9 | 8.5 |
| BNK-S01-A009 | 7.8 | 8.7 | 9.5 | 10.0 | 7.6 | 8.6 | 9.3 | 9.8 |
| BNK-S02-A011 | 9.6 | 10.7 | 11.7 | 12.4 | 9.4 | 10.5 | 11.5 | 12.1 |
| BNK-S02-A015 | 13.1 | 14.5 | 15.6 | 16.3 | 12.8 | 14.2 | 15.3 | 16.0 |
| BNK-S02-A017 | 15.7 | 17.1 | 18.1 | 19.2 | 15.3 | 16.7 | 17.7 | 18.8 |
| BNK-S03-A022 | 19.7 | 21.8 | 23.4 | 24.5 | 19.3 | 21.4 | 22.9 | 24.0 |
| BNK-S03-A026 | 23.5 | 25.7 | 27.1 | 29.9 | 23.0 | 25.1 | 26.6 | 29.3 |
| BNK-S04-A029 | 26.2 | 29.1 | 31.2 | 32.6 | 25.7 | 28.5 | 30.5 | 32.0 |
| BNK-S04-A034 | 31.4 | 34.2 | 36.1 | 38.3 | 30.7 | 33.5 | 35.4 | 37.6 |
| BNK-S05-A037 | 33.6 | 37.1 | 39.3 | 41.3 | 32.9 | 36.4 | 38.5 | 40.5 |
| BNK-S05-A044 | 40.5 | 44.0 | 46.0 | 48.6 | 39.7 | 43.1 | 45.1 | 47.6 |
| BNK-S06-A053 | 48.6 | 52.8 | 55.2 | 58.3 | 47.7 | 51.7 | 54.1 | 57.1 |
| BNK-S07-A061 | 55.4 | 61.0 | 64.7 | 67.5 | 54.3 | 59.8 | 63.5 | 66.2 |
| BNK-D04-A021 | 19.2 | 21.4 | 23.4 | 24.8 | 18.8 | 21.0 | 22.9 | 24.3 |
| BNK-D04-A029 | 26.2 | 29.1 | 31.2 | 32.6 | 25.7 | 28.5 | 30.6 | 32.0 |
| BNK-D04-A034 | 31.4 | 34.2 | 36.1 | 38.3 | 30.7 | 33.5 | 35.4 | 37.6 |
| BNK-D06-A044 | 39.4 | 43.6 | 46.7 | 48.9 | 38.6 | 42.8 | 45.8 | 47.9 |
| BNK-D06-A051 | 47.0 | 51.3 | 54.2 | 59.8 | 46.1 | 50.3 | 53.1 | 58.7 |
| BNK-D08-A058 | 52.5 | 58.2 | 62.3 | 65.3 | 51.4 | 57.0 | 61.1 | 63.9 |
| BNK-D08-A068 | 62.7 | 68.4 | 72.3 | 76.7 | 61.5 | 67.1 | 70.8 | 75.1 |
| BNK-D10-A074 | 67.1 | 74.2 | 78.5 | 82.6 | 65.7 | 72.7 | 76.9 | 80.9 |
| BNK-D10-A088 | 81.0 | 88.0 | 92.1 | 97.2 | 79.4 | 86.2 | 90.2 | 95.2 |
| BNK-D12-A106 | 97.2 | 105.6 | 110.5 | 116.6 | 95.3 | 103.5 | 108.3 | 114.2 |
| BNK-D14-A122 | 110.8 | 121.9 | 129.5 | 135.0 | 108.6 | 119.5 | 126.9 | 132.4 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNK 540 830 VSEC 1140

Table 28. BNK Models, 1140 RPM, 2.0 kW, 30" Fan Diameter

| Model | R407A/407F* MBH / 1° TD | | | | 407C* MBH / 1° TD | | | |
|--------------|----------------------------|--------------|--------|--------|----------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNK-S01-A007 | 6.1 | 7.0 | 7.7 | 8.3 | 5.9 | 6.7 | 7.4 | 8.0 |
| BNK-S01-A009 | 7.5 | 8.4 | 9.1 | 9.6 | 7.2 | 8.1 | 8.7 | 9.2 |
| BNK-S02-A011 | 9.2 | 10.3 | 11.2 | 11.9 | 8.8 | 9.9 | 10.8 | 11.4 |
| BNK-S02-A015 | 12.6 | 14.0 | 15.0 | 15.7 | 12.1 | 13.4 | 14.4 | 15.0 |
| BNK-S02-A017 | 15.0 | 16.4 | 17.4 | 18.4 | 14.4 | 15.7 | 16.6 | 17.6 |
| BNK-S03-A022 | 18.9 | 21.0 | 22.4 | 23.5 | 18.1 | 20.1 | 21.5 | 22.5 |
| BNK-S03-A026 | 22.6 | 24.6 | 26.0 | 28.8 | 21.7 | 23.6 | 25.0 | 27.6 |
| BNK-S04-A029 | 25.2 | 28.0 | 29.9 | 31.3 | 24.1 | 26.8 | 28.7 | 30.1 |
| BNK-S04-A034 | 30.1 | 32.9 | 34.7 | 36.8 | 28.9 | 31.5 | 33.3 | 35.3 |
| BNK-S05-A037 | 32.2 | 35.6 | 37.7 | 39.7 | 30.9 | 34.2 | 36.2 | 38.0 |
| BNK-S05-A044 | 38.9 | 42.3 | 44.2 | 46.7 | 37.3 | 40.5 | 42.4 | 44.8 |
| BNK-S06-A053 | 46.7 | 50.7 | 53.1 | 56.0 | 44.8 | 48.6 | 50.9 | 53.7 |
| BNK-S07-A061 | 53.2 | 58.6 | 62.2 | 64.9 | 51.1 | 56.2 | 59.7 | 62.2 |
| BNK-D04-A021 | 18.4 | 20.5 | 22.4 | 23.8 | 17.7 | 19.7 | 21.5 | 22.8 |
| BNK-D04-A029 | 25.2 | 28.0 | 29.9 | 31.3 | 24.1 | 26.8 | 28.7 | 30.1 |
| BNK-D04-A034 | 30.1 | 32.9 | 34.7 | 36.8 | 28.9 | 31.5 | 33.3 | 35.3 |
| BNK-D06-A044 | 37.8 | 41.9 | 44.9 | 47.0 | 36.3 | 40.2 | 43.1 | 45.1 |
| BNK-D06-A051 | 45.2 | 49.3 | 52.0 | 57.5 | 43.3 | 47.3 | 49.9 | 55.2 |
| BNK-D08-A058 | 50.4 | 55.9 | 59.9 | 62.7 | 48.3 | 53.6 | 57.4 | 60.1 |
| BNK-D08-A068 | 60.2 | 65.7 | 69.4 | 73.6 | 57.8 | 63.0 | 66.6 | 70.6 |
| BNK-D10-A074 | 64.4 | 71.2 | 75.4 | 79.3 | 61.8 | 68.3 | 72.3 | 76.0 |
| BNK-D10-A088 | 77.8 | 84.5 | 88.4 | 93.3 | 74.6 | 81.1 | 84.8 | 89.5 |
| BNK-D12-A106 | 93.4 | 101.4 | 106.1 | 112.0 | 89.6 | 97.3 | 101.8 | 107.4 |
| BNK-D14-A122 | 106.5 | 117.1 | 124.4 | 129.7 | 102.1 | 112.3 | 119.3 | 124.4 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNK 540 830 VSEC 1140

Table 29. BNK Models, 1140 RPM, 2.0 kW, 30" Fan Diameter

| Model | R448A / R449A* MBH/ 1° TD | | | |
|--------------|------------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNK-S01-A007 | 6.2 | 7.1 | 7.8 | 8.4 |
| BNK-S01-A009 | 7.6 | 8.5 | 9.2 | 9.7 |
| BNK-S02-A011 | 9.3 | 10.4 | 11.3 | 12.0 |
| BNK-S02-A015 | 12.7 | 14.1 | 15.1 | 15.8 |
| BNK-S02-A017 | 15.2 | 16.6 | 17.5 | 18.6 |
| BNK-S03-A022 | 19.1 | 21.2 | 22.7 | 23.7 |
| BNK-S03-A026 | 22.8 | 24.9 | 26.3 | 29.0 |
| BNK-S04-A029 | 25.4 | 28.2 | 30.2 | 31.7 |
| BNK-S04-A034 | 30.4 | 33.2 | 35.1 | 37.2 |
| BNK-S05-A037 | 32.6 | 36.0 | 38.1 | 40.1 |
| BNK-S05-A044 | 39.3 | 42.7 | 44.7 | 47.1 |
| BNK-S06-A053 | 47.2 | 51.2 | 53.6 | 56.5 |
| BNK-S07-A061 | 53.8 | 59.2 | 62.8 | 65.5 |
| BNK-D04-A021 | 18.6 | 20.8 | 22.7 | 24.0 |
| BNK-D04-A029 | 25.4 | 28.2 | 30.3 | 31.7 |
| BNK-D04-A034 | 30.4 | 33.2 | 35.1 | 37.2 |
| BNK-D06-A044 | 38.2 | 42.3 | 45.3 | 47.5 |
| BNK-D06-A051 | 45.6 | 49.8 | 52.6 | 58.1 |
| BNK-D08-A058 | 50.9 | 56.5 | 60.5 | 63.3 |
| BNK-D08-A068 | 60.9 | 66.4 | 70.1 | 74.4 |
| BNK-D10-A074 | 65.1 | 72.0 | 76.2 | 80.1 |
| BNK-D10-A088 | 78.6 | 85.4 | 89.3 | 94.3 |
| BNK-D12-A106 | 94.3 | 102.4 | 107.2 | 113.1 |
| BNK-D14-A122 | 107.5 | 118.3 | 125.7 | 131.1 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER SPECIFICATIONS

BNK 540 830 VSEC 1140

Table 30. BNK Models, 1140 RPM, 2.0 kW, 30" Fan Diameter

| Model | CFM | 230/3/60 | | | 460/3/60 | | | Unit kW | Conn. (in) | Max. No. of Feeds | Approx. Net. Wt. (lbs) |
|--------------|--------|----------|------|-------|----------|------|------|---------|------------|-------------------|------------------------|
| | | FLA | MCA | MOPD | FLA | MCA | MOPD | | | | |
| BNK-S01-A007 | 9900 | 6.6 | 15.0 | 25.0 | 3.3 | 15.0 | 15.0 | 2.0 | 1 3/8 | 7 | 340 |
| BNK-S01-A009 | 9500 | 6.6 | 15.0 | 25.0 | 3.3 | 15.0 | 15.0 | 2.0 | 1 3/8 | 14 | 370 |
| BNK-S02-A011 | 20500 | 13.2 | 15.0 | 30.0 | 6.6 | 15.0 | 15.0 | 3.9 | 1 3/8 | 14 | 600 |
| BNK-S02-A015 | 19800 | 13.2 | 15.0 | 30.0 | 6.6 | 15.0 | 15.0 | 3.9 | 1 5/8 | 21 | 650 |
| BNK-S02-A017 | 19000 | 13.2 | 15.0 | 30.0 | 6.6 | 15.0 | 15.0 | 3.9 | 2 1/8 | 28 | 700 |
| BNK-S03-A022 | 29700 | 19.8 | 21.5 | 35.0 | 9.9 | 15.0 | 15.0 | 5.9 | 2 1/8 | 21 | 960 |
| BNK-S03-A026 | 28500 | 19.8 | 21.5 | 35.0 | 9.9 | 15.0 | 15.0 | 5.9 | 2 1/8 | 28 | 1030 |
| BNK-S04-A029 | 38600 | 26.4 | 28.1 | 45.0 | 13.2 | 15.0 | 20.0 | 7.8 | 2 1/8 | 21 | 1250 |
| BNK-S04-A034 | 37000 | 26.4 | 28.1 | 45.0 | 13.2 | 15.0 | 20.0 | 7.8 | 2 5/8 | 28 | 1350 |
| BNK-S05-A037 | 48300 | 33.0 | 34.7 | 50.0 | 16.5 | 20.0 | 25.0 | 9.7 | 2 5/8 | 21 | 1570 |
| BNK-S05-A044 | 46200 | 33.0 | 34.7 | 50.0 | 16.5 | 20.0 | 25.0 | 9.7 | 2 5/8 | 28 | 1700 |
| BNK-S06-A053 | 55400 | 39.6 | 41.3 | 50.0 | 19.8 | 20.6 | 25.0 | 11.7 | 2 5/8 | 28 | 2020 |
| BNK-S07-A061 | 64700 | 46.2 | 47.9 | 60.0 | 23.1 | 23.9 | 30.0 | 13.6 | 2 @ 2 5/8 | 28 | 2320 |
| BNK-D04-A021 | 41000 | 26.4 | 28.1 | 45.0 | 13.2 | 15.0 | 20.0 | 7.8 | 2 @ 1 3/8 | 28 | 1280 |
| BNK-D04-A029 | 39600 | 26.4 | 28.1 | 45.0 | 13.2 | 15.0 | 20.0 | 7.8 | 2 @ 1 5/8 | 42 | 1380 |
| BNK-D04-A034 | 38100 | 26.4 | 28.1 | 45.0 | 13.2 | 15.0 | 20.0 | 7.8 | 2 @ 2 1/8 | 56 | 1480 |
| BNK-D06-A044 | 59400 | 39.6 | 41.3 | 50.0 | 19.8 | 20.6 | 25.0 | 11.7 | 2 @ 2 1/8 | 42 | 2060 |
| BNK-D06-A051 | 57100 | 39.6 | 41.3 | 50.0 | 19.8 | 20.6 | 25.0 | 11.7 | 2 @ 2 1/8 | 56 | 2210 |
| BNK-D08-A058 | 77200 | 52.8 | 54.5 | 70.0 | 26.4 | 27.2 | 35.0 | 15.5 | 2 @ 2 1/8 | 42 | 2720 |
| BNK-D08-A068 | 73900 | 52.8 | 54.5 | 70.0 | 26.4 | 27.2 | 35.0 | 15.5 | 2 @ 2 5/8 | 56 | 2920 |
| BNK-D10-A074 | 96500 | 66.0 | 67.7 | 80.0 | 33.0 | 33.8 | 40.0 | 19.4 | 2 @ 2 5/8 | 42 | 3400 |
| BNK-D10-A088 | 92400 | 66.0 | 67.7 | 80.0 | 33.0 | 33.8 | 40.0 | 19.4 | 2 @ 2 5/8 | 56 | 3650 |
| BNK-D12-A106 | 110900 | 79.2 | 80.9 | 90.0 | 39.6 | 40.4 | 45.0 | 23.3 | 2 @ 2 5/8 | 56 | 4360 |
| BNK-D14-A122 | 129400 | 92.4 | 94.1 | 110.0 | 46.2 | 47.0 | 50.0 | 27.2 | 4 @ 2 5/8 | 56 | 5060 |

CONDENSER CAPACITY

BNE 540 830 VSEC 1140

Table 31. BNE Models, 2.0 kW, 31.5" Fan Diameter

| Model | R22 / R-410A MBH / 1° TD | | | | R404/R507 MBH / 1° TD | | | |
|--------------|-----------------------------|--------------|--------|--------|--------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNE-S01-A008 | 6.8 | 7.7 | 8.5 | 9.1 | 6.6 | 7.6 | 8.3 | 9.0 |
| BNE-S01-A009 | 8.3 | 9.3 | 10.0 | 10.6 | 8.1 | 9.1 | 9.8 | 10.4 |
| BNE-S02-A011 | 10.2 | 11.3 | 12.4 | 13.1 | 10.0 | 11.1 | 12.1 | 12.9 |
| BNE-S02-A015 | 13.9 | 15.4 | 16.5 | 17.3 | 13.6 | 15.1 | 16.2 | 17.0 |
| BNE-S02-A018 | 16.6 | 18.1 | 19.2 | 20.3 | 16.3 | 17.8 | 18.8 | 19.9 |
| BNE-S03-A023 | 20.9 | 23.1 | 24.8 | 25.9 | 20.4 | 22.7 | 24.3 | 25.4 |
| BNE-S03-A027 | 24.9 | 27.2 | 28.7 | 31.7 | 24.4 | 26.7 | 28.2 | 31.1 |
| BNE-S04-A031 | 27.8 | 30.8 | 33.0 | 34.6 | 27.2 | 30.2 | 32.4 | 33.9 |
| BNE-S04-A036 | 33.2 | 36.3 | 38.3 | 40.6 | 32.6 | 35.5 | 37.5 | 39.8 |
| BNE-S05-A039 | 35.6 | 39.3 | 41.6 | 43.8 | 34.9 | 38.5 | 40.8 | 42.9 |
| BNE-S05-A047 | 43.0 | 46.6 | 48.8 | 51.5 | 42.1 | 45.7 | 47.8 | 50.5 |
| BNE-S06-A056 | 51.6 | 56.0 | 58.6 | 61.8 | 50.5 | 54.8 | 57.4 | 60.5 |
| BNE-S07-A065 | 58.7 | 64.6 | 68.6 | 71.6 | 57.6 | 63.3 | 67.3 | 70.2 |
| BNE-D04-A023 | 20.4 | 22.7 | 24.8 | 26.2 | 19.9 | 22.2 | 24.3 | 25.7 |
| BNE-D04-A031 | 27.8 | 30.8 | 33.1 | 34.6 | 27.2 | 30.2 | 32.4 | 33.9 |
| BNE-D04-A036 | 33.2 | 36.3 | 38.3 | 40.6 | 32.6 | 35.5 | 37.5 | 39.8 |
| BNE-D06-A046 | 41.7 | 46.2 | 49.5 | 51.9 | 40.9 | 45.3 | 48.6 | 50.8 |
| BNE-D06-A054 | 49.8 | 54.4 | 57.4 | 63.4 | 48.8 | 53.3 | 56.3 | 62.2 |
| BNE-D08-A062 | 55.6 | 61.7 | 66.1 | 69.2 | 54.5 | 60.5 | 64.7 | 67.8 |
| BNE-D08-A073 | 66.5 | 72.5 | 76.6 | 81.3 | 65.2 | 71.1 | 75.1 | 79.7 |
| BNE-D10-A079 | 71.1 | 78.6 | 83.2 | 87.5 | 69.7 | 77.0 | 81.6 | 85.8 |
| BNE-D10-A093 | 85.9 | 93.3 | 97.6 | 103.0 | 84.2 | 91.4 | 95.7 | 100.9 |
| BNE-D12-A112 | 103.1 | 111.9 | 117.1 | 123.6 | 101.0 | 109.7 | 114.8 | 121.1 |
| BNE-D14-A129 | 117.5 | 129.2 | 137.2 | 143.1 | 115.2 | 126.7 | 134.5 | 140.3 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNE 540 830 VSEC 1140

Table 32. BNE Models, 2.0 kW, 31.5" Fan Diameter

| Model | R407A/R407F* MBH / 1° TD | | | | R407C* MBH / 1° TD | | | |
|--------------|-----------------------------|--------------|--------|--------|-----------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNE-S01-A008 | 6.5 | 7.4 | 8.2 | 8.8 | 6.2 | 7.1 | 7.8 | 8.4 |
| BNE-S01-A009 | 7.9 | 8.9 | 9.6 | 10.2 | 7.6 | 8.5 | 9.2 | 9.7 |
| BNE-S02-A011 | 9.8 | 10.9 | 11.9 | 12.6 | 9.4 | 10.4 | 11.4 | 12.1 |
| BNE-S02-A015 | 13.3 | 14.8 | 15.9 | 16.6 | 12.8 | 14.2 | 15.2 | 15.9 |
| BNE-S02-A018 | 15.9 | 17.4 | 18.4 | 19.5 | 15.3 | 16.7 | 17.6 | 18.7 |
| BNE-S03-A023 | 20.0 | 22.2 | 23.8 | 24.9 | 19.2 | 21.3 | 22.8 | 23.9 |
| BNE-S03-A027 | 23.9 | 26.1 | 27.6 | 30.5 | 23.0 | 25.1 | 26.5 | 29.2 |
| BNE-S04-A031 | 26.7 | 29.6 | 31.7 | 33.2 | 25.6 | 28.4 | 30.4 | 31.9 |
| BNE-S04-A036 | 31.9 | 34.8 | 36.8 | 39.0 | 30.6 | 33.4 | 35.3 | 37.4 |
| BNE-S05-A039 | 34.2 | 37.8 | 40.0 | 42.0 | 32.8 | 36.2 | 38.3 | 40.3 |
| BNE-S05-A047 | 41.3 | 44.8 | 46.9 | 49.5 | 39.6 | 43.0 | 45.0 | 47.5 |
| BNE-S06-A056 | 49.5 | 53.8 | 56.2 | 59.3 | 47.5 | 51.6 | 53.9 | 56.9 |
| BNE-S07-A065 | 56.4 | 62.1 | 65.9 | 68.8 | 54.1 | 59.5 | 63.2 | 66.0 |
| BNE-D04-A023 | 19.5 | 21.8 | 23.8 | 25.2 | 18.8 | 20.9 | 22.8 | 24.2 |
| BNE-D04-A031 | 26.7 | 29.6 | 31.7 | 33.2 | 25.6 | 28.4 | 30.5 | 31.9 |
| BNE-D04-A036 | 31.9 | 34.8 | 36.8 | 39.0 | 30.6 | 33.4 | 35.3 | 37.4 |
| BNE-D06-A046 | 40.1 | 44.4 | 47.6 | 49.8 | 38.4 | 42.6 | 45.6 | 47.8 |
| BNE-D06-A054 | 47.9 | 52.2 | 55.2 | 61.0 | 45.9 | 50.1 | 52.9 | 58.5 |
| BNE-D08-A062 | 53.4 | 59.2 | 63.4 | 66.4 | 51.2 | 56.8 | 60.9 | 63.7 |
| BNE-D08-A073 | 63.9 | 69.7 | 73.6 | 78.1 | 61.3 | 66.8 | 70.6 | 74.9 |
| BNE-D10-A079 | 68.3 | 75.5 | 79.9 | 84.0 | 65.5 | 72.4 | 76.7 | 80.6 |
| BNE-D10-A093 | 82.5 | 89.6 | 93.7 | 98.9 | 79.1 | 85.9 | 89.9 | 94.9 |
| BNE-D12-A112 | 99.0 | 107.5 | 112.5 | 118.7 | 94.9 | 103.1 | 107.9 | 113.8 |
| BNE-D14-A129 | 112.8 | 124.1 | 131.9 | 137.5 | 108.2 | 119.1 | 126.5 | 131.9 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER CAPACITY

BNE 540 830 VSEC 1140

Table 33. BNE Models, 2.0 kW, 31.5" Fan Diameter

| Model | R448A / R449A* MBH / 1° TD | | | |
|--------------|-------------------------------|--------------|--------|--------|
| | 8 FPI | 10 FPI | 12 FPI | 14 FPI |
| BNE-S01-A008 | 6.6 | 7.5 | 8.3 | 8.9 |
| BNE-S01-A009 | 8.0 | 9.0 | 9.7 | 10.3 |
| BNE-S02-A011 | 9.9 | 11.0 | 12.0 | 12.7 |
| BNE-S02-A015 | 13.5 | 14.9 | 16.0 | 16.8 |
| BNE-S02-A018 | 16.1 | 17.6 | 18.6 | 19.7 |
| BNE-S03-A023 | 20.2 | 22.4 | 24.0 | 25.2 |
| BNE-S03-A027 | 24.2 | 26.4 | 27.9 | 30.8 |
| BNE-S04-A031 | 27.0 | 29.9 | 32.0 | 33.6 |
| BNE-S04-A036 | 32.3 | 35.2 | 37.2 | 39.4 |
| BNE-S05-A039 | 34.5 | 38.2 | 40.4 | 42.5 |
| BNE-S05-A047 | 41.7 | 45.2 | 47.4 | 50.0 |
| BNE-S06-A056 | 50.0 | 54.3 | 56.8 | 59.9 |
| BNE-S07-A065 | 57.0 | 62.7 | 66.6 | 69.5 |
| BNE-D04-A023 | 19.7 | 22.0 | 24.0 | 25.5 |
| BNE-D04-A031 | 27.0 | 29.9 | 32.1 | 33.6 |
| BNE-D04-A036 | 32.3 | 35.2 | 37.2 | 39.4 |
| BNE-D06-A046 | 40.5 | 44.9 | 48.1 | 50.3 |
| BNE-D06-A054 | 48.4 | 52.8 | 55.7 | 61.6 |
| BNE-D08-A062 | 54.0 | 59.9 | 64.1 | 67.1 |
| BNE-D08-A073 | 64.5 | 70.4 | 74.3 | 78.9 |
| BNE-D10-A079 | 69.0 | 76.3 | 80.7 | 84.9 |
| BNE-D10-A093 | 83.3 | 90.5 | 94.7 | 99.9 |
| BNE-D12-A112 | 100.0 | 108.6 | 113.6 | 119.9 |
| BNE-D14-A129 | 114.0 | 125.4 | 133.2 | 138.9 |

BOLD indicates standard model capacity.

* Data based on mid point condensing temperature

CONDENSER SPECIFICATIONS

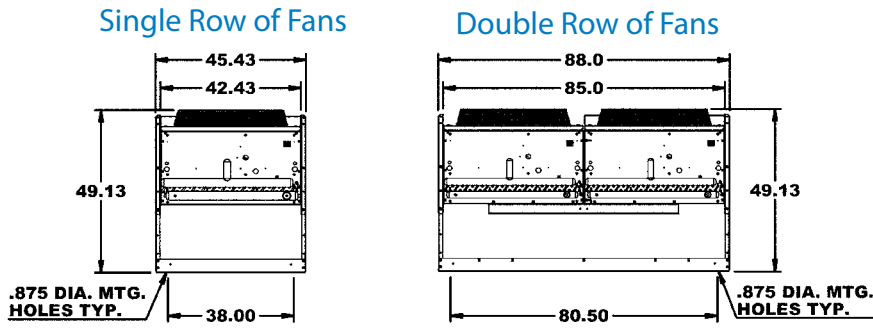
BNE 540 830 VSEC 1140

Table 34. BNE Models, 2.0 kW, 31.5" Fan Diameter

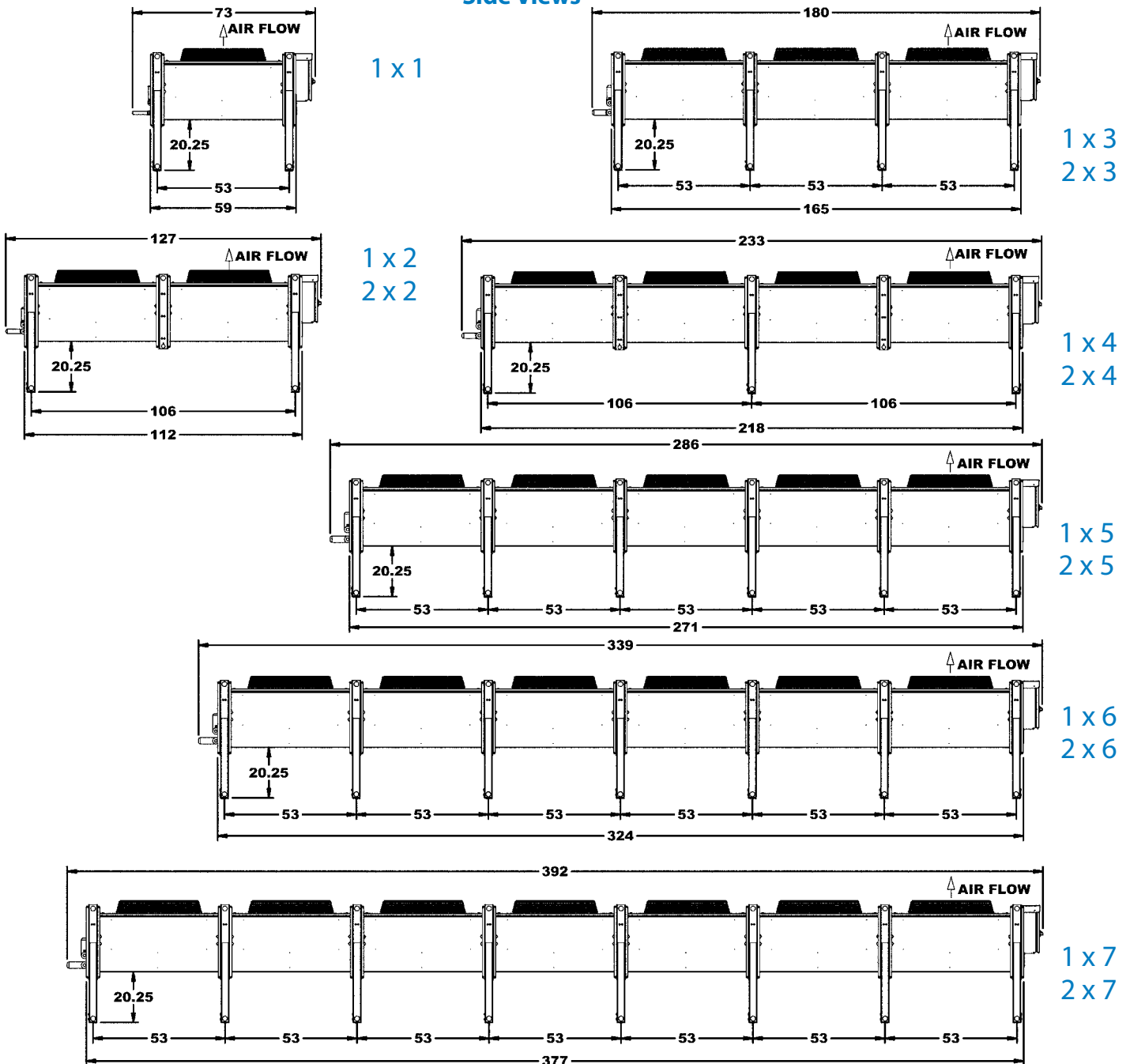
| Model | CFM | 208-230/3/60 | | | 460/3/60 | | | Unit kW | Conn. (in.) | Max. Number of Feeds | Approx. Net Weight (lbs) |
|--------------|---------|--------------|------|------|----------|------|------|---------|-------------|----------------------|--------------------------|
| | | FLA | MCA | MOPD | FLA | MCA | MOPD | | | | |
| BNE-S01-A008 | 11,000 | 7.0 | 15.0 | 25 | 3.5 | 15.0 | 15 | 2.0 | 1 3/8 | 7 | 330 |
| BNE-S01-A009 | 10,500 | 7.0 | 15.0 | 25 | 3.5 | 15.0 | 15 | 2.0 | 1 3/8 | 14 | 360 |
| BNE-S02-A011 | 23,400 | 14.0 | 20.0 | 35 | 7.0 | 15.0 | 15 | 4.0 | 1 3/8 | 14 | 590 |
| BNE-S02-A015 | 22,000 | 14.0 | 20.0 | 35 | 7.0 | 15.0 | 15 | 4.0 | 1 5/8 | 21 | 640 |
| BNE-S02-A018 | 20,900 | 14.0 | 20.0 | 35 | 7.0 | 15.0 | 15 | 4.0 | 2 1/8 | 28 | 690 |
| BNE-S03-A023 | 33,100 | 21.0 | 22.8 | 40 | 10.5 | 15.0 | 20 | 6.0 | 2 1/8 | 21 | 930 |
| BNE-S03-A027 | 31,400 | 21.0 | 22.8 | 40 | 10.5 | 15.0 | 20 | 6.0 | 2 1/8 | 28 | 1,010 |
| BNE-S04-A031 | 42,600 | 28.0 | 29.8 | 45 | 14.0 | 15.0 | 20 | 8.0 | 2 1/8 | 21 | 1,220 |
| BNE-S04-A036 | 40,000 | 28.0 | 29.8 | 45 | 14.0 | 15.0 | 20 | 8.0 | 2 5/8 | 28 | 1,320 |
| BNE-S05-A039 | 53,200 | 35.0 | 36.8 | 50 | 17.5 | 20.0 | 25 | 10.0 | 2 5/8 | 21 | 1,520 |
| BNE-S05-A047 | 50,000 | 35.0 | 36.8 | 50 | 17.5 | 20.0 | 25 | 10.0 | 2 5/8 | 28 | 1,650 |
| BNE-S06-A056 | 60,000 | 42.0 | 43.8 | 60 | 21.0 | 21.9 | 30 | 12.0 | 2 5/8 | 28 | 1,960 |
| BNE-S07-A065 | 70,000 | 49.0 | 50.8 | 70 | 24.5 | 25.4 | 35 | 14.0 | 2 @ 2 5/8 | 28 | 2,260 |
| BNE-D04-A023 | 46,700 | 28.0 | 29.8 | 45 | 14.0 | 15.0 | 20 | 8.0 | 2 @ 1 3/8 | 28 | 1,290 |
| BNE-D04-A031 | 44,100 | 28.0 | 29.8 | 45 | 14.0 | 15.0 | 20 | 8.0 | 2 @ 1 5/8 | 42 | 1,390 |
| BNE-D04-A036 | 41,800 | 28.0 | 29.8 | 45 | 14.0 | 15.0 | 20 | 8.0 | 2 @ 2 1/8 | 56 | 1,490 |
| BNE-D06-A046 | 66,100 | 42.0 | 43.8 | 60 | 21.0 | 21.9 | 30 | 12.0 | 2 @ 2 1/8 | 42 | 2,060 |
| BNE-D06-A054 | 62,700 | 42.0 | 43.8 | 60 | 21.0 | 21.9 | 30 | 12.0 | 2 @ 2 1/8 | 56 | 2,210 |
| BNE-D08-A062 | 85,100 | 56.0 | 57.8 | 70 | 28.0 | 28.9 | 35 | 16.0 | 2 @ 2 1/8 | 42 | 2,730 |
| BNE-D08-A073 | 80,000 | 56.0 | 57.8 | 70 | 28.0 | 28.9 | 35 | 16.0 | 2 @ 2 5/8 | 56 | 2,930 |
| BNE-D10-A079 | 106,400 | 70.0 | 71.8 | 90 | 35.0 | 35.9 | 45 | 20.0 | 2 @ 2 5/8 | 42 | 3,410 |
| BNE-D10-A093 | 100,100 | 70.0 | 71.8 | 90 | 35.0 | 35.9 | 45 | 20.0 | 2 @ 2 5/8 | 56 | 3,660 |
| BNE-D12-A112 | 120,100 | 84.0 | 85.8 | 100 | 42.0 | 42.9 | 50 | 24.0 | 2 @ 2 5/8 | 56 | 4,370 |
| BNE-D14-A129 | 140,100 | 98.0 | 99.8 | 110 | 49.0 | 49.9 | 60 | 28.0 | 4 @ 2 5/8 | 56 | 5,070 |

CONDENSER DIMENSIONS

End Views



Side Views



Fan Cycle Control Panels

Fan cycling panels are available to cycle fans on ambient temperature or condensing pressure or custom built control panels can be factory installed to interface with electronic refrigeration controllers.

- All fans are cycled with contactors.
- Condensers with a single row of fans cycle fans separately with one contactor per fan.
- Condensers with two rows of fans are typically cycled in pairs, with one contactor per pair of fans.
- Fans closest to the header end of the unit are wired to run continuously.

- Standard control circuit voltage is 230 volts. Control circuits with 24 or 115 volts are available on request.
- Control circuits are factory wired to a control circuit terminal board for convenient single point field wiring.
- Standard control circuits require an external power supply for powering control circuit (by others).
- A control circuit transformer is available on 460 volt condensers as a factory mounted option to provide power to the control circuit.

Ambient Fan Cycle

Condenser fans are controlled by ambient temperature using electronic temperature controls. Ambient fan cycling is recommended for multi-circuited condensers or single circuit condensers where there is little variation in condenser load.

pressure control, such as condenser flooding controls or variable speed. Combining these controls with ambient fan cycling has the additional advantage of reducing the amount of refrigerant required to flood the condenser.

Ambient fan cycling is limited in its ability to control head pressure to mild ambient conditions, see Table 35 for minimum ambients for fan cycling. Full year head pressure control can be obtained by combining ambient fan cycling with another means of head

See Table 36 for typical settings for ambient thermostats.

Pressure Fan Cycling

Condenser fans are controlled by pressure switches which monitor condenser pressure. Pressure fan cycling is ideal for those condensers which see a significant change in condenser load. Since the controls sense condensing pressure, they can cycle fans at any ambient temperature, in response to a change in condensing pressure.

An additional pressure switch is available as an option to cycle the fan closest to the header end of the condenser. This option is only recommended for condensers with large variations in condenser load caused by heat reclaim, hot gas defrost or a high percentage of compressor unloading.

Table 35. Minimum Ambient for Fan Cycling

| Number of Fans | | Design T.D.* | | | | |
|----------------|------------|--------------|----|----|----|----|
| Single Row | Double Row | 30 | 25 | 20 | 15 | 10 |
| 2 | 4 | 35 | 45 | 55 | 60 | 70 |
| 3 | 6 | 15 | 30 | 40 | 55 | 65 |
| 4 | 8 | 0 | 15 | 30 | 45 | 60 |
| 5 | 10 | 0 | 10 | 20 | 35 | 55 |
| 6/7 | 12/14 | 0 | 0 | 10 | 30 | 50 |

*Based on maintaining 90° F minimum condensing temperature.

Table 36. Fan Cycling Thermostat Settings

| Number of Fans | | Design T.D. | Thermostat Setting | | | | |
|----------------|-------------|----------------|--------------------|----|----|----|----|
| Single Row | Double Rows | | 1 | 2 | 3 | 4 | 5 |
| 2 | 4 | 30 | 60 | | | | |
| | | 25 | 65 | | | | |
| | | 20 | 70 | | | | |
| | | 15 | 75 | | | | |
| | | 10 | 80 | | | | |
| 3 | 6 | 30 | 60 | 40 | | | |
| | | 25 | 65 | 55 | | | |
| | | 20 | 70 | 60 | | | |
| | | 15 | 75 | 65 | | | |
| | | 10 | 80 | 75 | | | |
| 4 | 8 | 30 | 60 | 50 | 30 | | |
| | | 25 | 65 | 55 | 40 | | |
| | | 20 | 70 | 65 | 50 | | |
| | | 15 | 75 | 70 | 60 | | |
| | | 10 | 80 | 75 | 70 | | |
| 5 | 10 | 30 | 60 | 55 | 45 | 30 | |
| | | 25 | 65 | 60 | 50 | 35 | |
| | | 20 | 70 | 65 | 60 | 40 | |
| | | 15 | 75 | 70 | 65 | 55 | |
| | | 10 | 80 | 75 | 70 | 65 | |
| 6/7 | 12/14 | 30 | 55 | 50 | 40 | 30 | 25 |
| | | 25 | 65 | 60 | 55 | 45 | 35 |
| | | 20 | 70 | 65 | 60 | 50 | 40 |
| | | 15 | 75 | 70 | 65 | 60 | 50 |
| | | 10 | 80 | 75 | 70 | 65 | 60 |

Variable Speed

Condenser head pressure control is provided by varying the air flow through the condenser by changing the RPM of the condenser fan. This control package is offered in combination with ambient fan cycling. The fan motor next to the header end of the condenser is the variable speed fan. The remainder of the fans are constant speed and are cycled separately using ambient sensing thermostats. On condensers with two rows of fans, two variable speed fans are provided (one per row) and the remainder of the fans are constant speed and are cycled in pairs. The variable speed control package consists of a special variable speed motor (1140 RPM, single phase) and an electronic speed control which controls the speed of the motor in response to condensing pressure. Fan motor, speed control and all related components are all factory mounted and wired. Two speed controls are provided on units with two rows of fans to allow for separate control of each fan motor.

Splitting Controls

Additional head pressure can be provided by valving off a portion of the condenser circuit and removing that portion from the refrigeration circuit, or splitting the condenser. In addition to providing a means of head pressure control, this control will reduce the amount of refrigerant required to operate the condenser with a flooded head pressure control. Condenser splitting is recommended as a seasonal adjustment controlled by ambient temperature. A pressure switch is also provided as a backup control to prevent high head pressures from occurring during heavy load conditions. On condensers with a single row of fans the control package consists of an ambient sensing thermostat, a pressure switch sensing condensing pressure and a splitting relay. The splitting relay provides a set of dry contacts to control the valves required to split the condenser (valves supplied by others). On condensers with double rows of fans, additional controls and contactors are provided to cycle all of the fans on the side of the condenser which has been split off. Except as noted above, the splitting packages do not control fan cycling. It is recommended that fan cycling be controlled by combining the splitting package with pressure fan cycling.

Control Panels for Electronic Controllers

Custom control panels can often be fabricated to interface with many of the microprocessor based electronic refrigeration controls. These panels often include individual motor fusing, individual fan motor contactors, splitting relays and printed circuit boards to interface with the microprocessor control. Contact the factory with your specific requirements.

Condenser Refrigerant Charge

The normal summer operating charge for condensers is shown in Table 37. This charge can also be used in condensers with fan cycling kits, since added refrigerant is not required for mild weather control. Table 37 also contains the additional refrigerant charge required when using flooded style head pressure controls.

Combining fan cycling with flooded head pressure controls significantly reduces the amount of winter charge required to flood the condenser. Table 39 shows the refrigerant charge required when fan cycling is used in conjunction with a flooded style head pressure control.

Table 37. Refrigerant Charge, Lbs. R-404A for Flooded Condenser

| Model* | Refrigerant R404A Charge for Summer Operation, Lbs. | Additional Refrigerant R404A Charge Required for Flooded Condenser Operation Lbs. For 20°F TD Minimum Ambient at Condenser | | | | |
|--------|---|--|-----|-----|-----|-----|
| | | +60 | +40 | +20 | +0 | -20 |
| 1 | 7 | 7 | 9 | 10 | 10 | 10 |
| 2 | 9 | 9 | 12 | 13 | 14 | 14 |
| 3 | 9 | 9 | 12 | 13 | 13 | 14 |
| 4 | 14 | 13 | 17 | 19 | 19 | 20 |
| 5 | 18 | 17 | 23 | 26 | 27 | 28 |
| 6 | 21 | 19 | 25 | 28 | 29 | 30 |
| 7 | 28 | 25 | 33 | 37 | 38 | 40 |
| 8 | 47 | 44 | 59 | 65 | 68 | 70 |
| 9 | 65 | 57 | 76 | 84 | 88 | 91 |
| 10 | 59 | 55 | 73 | 81 | 84 | 87 |
| 11 | 80 | 72 | 96 | 106 | 111 | 115 |
| 12 | 95 | 87 | 115 | 128 | 133 | 139 |
| 13 | 109 | 102 | 136 | 151 | 157 | 163 |
| 14 | 18 | 17 | 23 | 25 | 27 | 28 |
| 15 | 27 | 26 | 34 | 38 | 40 | 41 |
| 16 | 37 | 34 | 45 | 50 | 52 | 54 |
| 17 | 40 | 39 | 52 | 57 | 60 | 62 |
| 18 | 53 | 52 | 69 | 77 | 80 | 83 |
| 19 | 97 | 86 | 114 | 127 | 132 | 138 |
| 20 | 130 | 114 | 152 | 169 | 176 | 183 |
| 21 | 116 | 110 | 147 | 163 | 170 | 176 |
| 22 | 160 | 144 | 192 | 212 | 221 | 230 |
| 23 | 186 | 176 | 234 | 260 | 271 | 281 |
| 24 | 219 | 204 | 271 | 301 | 313 | 326 |

* See Model Cross Reference Table #40.

Table 38. Flooded Charge Temperature Difference Factor

| Ambient | Design T.D. | | | | |
|---------|-------------|------|------|------|------|
| | 30°F | 25°F | 20°F | 15°F | 10°F |
| 60°F | — | 0.29 | 1.00 | 1.71 | 2.43 |
| 40°F | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 |
| 20°F | 0.77 | 0.88 | 1.00 | 1.12 | 1.23 |
| 0°F | 0.84 | 0.92 | 1.00 | 1.08 | 1.16 |
| -20°F | 0.87 | 0.94 | 1.00 | 1.06 | 1.13 |

Table 39. Refrigerant Charge for Fan Cycling plus Flooded Condenser (lbs. R-404A)

| Model* | Summer Charge | 25° TD | | | | 20° TD | | | | 15° TD | | | | 10° TD | | | |
|--------|---------------|--------|------|-----|-------|--------|------|-----|-------|--------|------|-----|-------|--------|------|-----|-------|
| | | 40°F | 20°F | 0°F | -20°F | 40°F | 20°F | 0°F | -20°F | 40°F | 20°F | 0°F | -20°F | 40°F | 20°F | 0°F | -20°F |
| 1 | 7 | 5 | 7 | 8 | 8 | 6 | 8 | 9 | 9 | 7 | 9 | 10 | 10 | 8 | 10 | 11 | 10 |
| 2 | 9 | 7 | 10 | 11 | 12 | 9 | 11 | 12 | 13 | 11 | 12 | 13 | 14 | 13 | 14 | 14 | 15 |
| 3 | 9 | 0 | 5 | 7 | 9 | 3 | 7 | 9 | 10 | 6 | 9 | 11 | 12 | 9 | 12 | 13 | 13 |
| 4 | 14 | 0 | 6 | 10 | 12 | 4 | 9 | 12 | 14 | 8 | 12 | 14 | 16 | 12 | 15 | 17 | 18 |
| 5 | 18 | 0 | 9 | 14 | 17 | 5 | 13 | 17 | 20 | 10 | 17 | 21 | 23 | 16 | 22 | 24 | 26 |
| 6 | 21 | 0 | 0 | 7 | 12 | 0 | 6 | 12 | 16 | 0 | 12 | 17 | 20 | 0 | 18 | 22 | 24 |
| 7 | 28 | 0 | 0 | 10 | 16 | 0 | 8 | 16 | 22 | 0 | 16 | 23 | 28 | 0 | 23 | 29 | 33 |
| 8 | 47 | 0 | 0 | 4 | 17 | 0 | 0 | 18 | 29 | 0 | 0 | 32 | 41 | 0 | 0 | 47 | 53 |
| 9 | 65 | 0 | 0 | 5 | 22 | 0 | 0 | 23 | 37 | 0 | 0 | 41 | 52 | 0 | 0 | 59 | 67 |
| 10 | 59 | 0 | 0 | 0 | 9 | 0 | 0 | 10 | 26 | 0 | 0 | 29 | 43 | 0 | 0 | 47 | 60 |
| 11 | 80 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | 33 | 0 | 0 | 34 | 54 | 0 | 0 | 57 | 76 |
| 12 | 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 53 | 0 | 0 | 0 | 81 |
| 13 | 109 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 46 | 0 | 0 | 0 | 77 |
| 14 | 18 | 0 | 9 | 14 | 16 | 5 | 13 | 17 | 19 | 10 | 17 | 21 | 22 | 16 | 22 | 24 | 25 |
| 15 | 27 | 0 | 13 | 20 | 25 | 7 | 19 | 25 | 29 | 14 | 26 | 30 | 33 | 22 | 32 | 35 | 37 |
| 16 | 37 | 0 | 17 | 26 | 33 | 10 | 25 | 33 | 38 | 21 | 34 | 40 | 44 | 31 | 42 | 46 | 49 |
| 17 | 40 | 0 | 1 | 15 | 25 | 0 | 13 | 25 | 34 | 0 | 26 | 35 | 43 | 0 | 38 | 45 | 51 |
| 18 | 53 | 0 | 1 | 20 | 34 | 0 | 18 | 34 | 46 | 0 | 35 | 48 | 58 | 0 | 53 | 61 | 70 |
| 19 | 97 | 0 | 0 | 7 | 33 | 0 | 0 | 34 | 56 | 0 | 0 | 61 | 79 | 0 | 0 | 88 | 102 |
| 20 | 130 | 0 | 0 | 10 | 44 | 0 | 0 | 46 | 74 | 0 | 0 | 82 | 104 | 0 | 0 | 119 | 135 |
| 21 | 116 | 0 | 0 | 0 | 18 | 0 | 0 | 19 | 51 | 0 | 0 | 54 | 84 | 0 | 0 | 90 | 117 |
| 22 | 160 | 0 | 0 | 0 | 24 | 0 | 0 | 25 | 67 | 0 | 0 | 72 | 110 | 0 | 0 | 118 | 154 |
| 23 | 186 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 0 | 0 | 0 | 109 | 0 | 0 | 0 | 165 |
| 24 | 219 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 90 | 0 | 0 | 0 | 149 |

* See Model Cross Reference Table #40.

| Refrigerant | Multiply charge by: |
|-------------|---------------------|
| R404A | 1.00 |
| R407A | 1.04 |
| R407C | 1.05 |
| R407F | 1.07 |
| R448A | 1.05 |
| R449A | 1.05 |
| R410A | 1.07 |
| R507A | 1.00 |

Note: For other refrigerants, use the table at the right. For alternate T.D.s, multiply by flooded charge T.D. factors in Table 38.

Table 40. Model Cross Reference

| Model Reference | BNH | BNK | BNL | BNJ | BNX | BNQ | BNE |
|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 1 | BNH-S01-A007 | BNK-S01-A007 | BNL-S01-A007 | BNJ-S01-A007 | BNX-S01-A006 | BNQ-S01-A005 | BNE-S01-A008 |
| 2 | BNH-S01-A009 | BNK-S01-A009 | BNL-S01-A008 | BNJ-S01-A008 | BNX-S01-A008 | BNQ-S01-A006 | BNE-S01-A009 |
| 3 | BNH-S02-A011 | BNK-S02-A011 | BNL-S02-A010 | BNJ-S02-A010 | BNX-S02-A010 | BNQ-S02-A008 | BNE-S02-A011 |
| 4 | BNH-S02-A015 | BNK-S02-A015 | BNL-S02-A014 | BNJ-S02-A014 | BNX-S02-A013 | BNQ-S02-A010 | BNE-S02-A015 |
| 5 | BNH-S02-A017 | BNK-S02-A017 | BNL-S02-A016 | BNJ-S02-A016 | BNX-S02-A015 | BNQ-S02-A011 | BNE-S02-A018 |
| 6 | BNH-S03-A022 | BNK-S03-A022 | BNL-S03-A021 | BNJ-S03-A021 | BNX-S03-A020 | BNQ-S02-A016 | BNE-S03-A023 |
| 7 | BNH-S03-A026 | BNK-S03-A026 | BNL-S03-A024 | BNJ-S03-A024 | BNX-S03-A023 | BNQ-S03-A017 | BNE-S03-A027 |
| 8 | BNH-S04-A029 | BNK-S04-A029 | BNL-S04-A028 | BNJ-S04-A028 | BNX-S04-A026 | BNQ-S04-A021 | BNE-S04-A031 |
| 9 | BNH-S04-A034 | BNK-S04-A034 | BNL-S04-A032 | BNJ-S04-A032 | BNX-S04-A030 | BNQ-S04-A023 | BNE-S04-A036 |
| 10 | BNH-S05-A037 | BNK-S05-A037 | BNL-S05-A035 | BNJ-S05-A035 | BNX-S05-A033 | BNQ-S05-A026 | BNE-S05-A039 |
| 11 | BNH-S05-A044 | BNK-S05-A044 | BNL-S05-A042 | BNJ-S05-A042 | BNX-S05-A038 | BNQ-S05-A029 | BNE-S05-A047 |
| 12 | BNH-S06-A053 | BNK-S06-A053 | BNL-S06-A050 | BNJ-S06-A050 | BNX-S06-A045 | BNQ-S06-A034 | BNE-S06-A056 |
| 13 | BNH-S07-A061 | BNK-S07-A061 | BNL-S07-A055 | BNJ-S07-A055 | BNX-S07-A052 | BNQ-S07-A042 | BNE-S07-A065 |
| 14 | BNH-D04-A021 | BNK-D04-A021 | BNL-D04-A020 | BNJ-D04-A020 | BNX-D04-A020 | BNQ-D04-A016 | BNE-D04-A023 |
| 15 | BNH-D04-A029 | BNK-D04-A029 | BNL-D04-A028 | BNJ-D04-A028 | BNX-D04-A026 | BNQ-D04-A021 | BNE-D04-A031 |
| 16 | BNH-D04-A034 | BNK-D04-A034 | BNL-D04-A032 | BNJ-D04-A032 | BNX-D04-A030 | BNQ-D04-A023 | BNE-D04-A036 |
| 17 | BNH-D06-A044 | BNK-D06-A044 | BNL-D06-A042 | BNJ-D06-A042 | BNX-D06-A039 | BNQ-D06-A031 | BNE-D06-A046 |
| 18 | BNH-D06-A051 | BNK-D06-A051 | BNL-D06-A048 | BNJ-D06-A048 | BNX-D06-A045 | BNQ-D06-A034 | BNE-D06-A054 |
| 19 | BNH-D08-A058 | BNK-D08-A058 | BNL-D08-A056 | BNJ-D08-A056 | BNX-D08-A052 | BNQ-D08-A041 | BNE-D08-A062 |
| 20 | BNH-D08-A068 | BNK-D08-A068 | BNL-D08-A065 | BNJ-D08-A065 | BNX-D08-A061 | BNQ-D08-A046 | BNE-D08-A073 |
| 21 | BNH-D10-A074 | BNK-D10-A074 | BNL-D10-A071 | BNJ-D10-A071 | BNX-D10-A066 | BNQ-D10-A052 | BNE-D10-A079 |
| 22 | BNH-D10-A088 | BNK-D10-A088 | BNL-D10-A083 | BNJ-D10-A083 | BNX-D10-A076 | BNQ-D10-A057 | BNE-D10-A093 |
| 23 | BNH-D12-A106 | BNK-D12-A106 | BNL-D12-A100 | BNJ-D12-A100 | BNX-D12-A091 | BNQ-D12-A069 | BNE-D12-A112 |
| 24 | BNH-D14-A122 | BNK-D14-A122 | BNL-D14-A110 | BNJ-D14-A110 | BNX-D14-A104 | BNQ-D14-A083 | BNE-D14-A129 |

Calculate Refrigerant Charge

Refrigeration operating charges are located in Table 37 for flooded condenser and Table 39 for fan cycling plus flooded condenser.

Charge for flooded condenser = summer charge (Table 37) + additional flooding charge (Table 37) * flooded charge T.D. factor (Table 38)

Charge for fan cycling + flooding = summer charge (Table 39) + additional charge for fan cycling (Table 39)

Example:

Obtain the summer charge for a BNH-S05-A037. What is the flooding charge required to operate this condenser at 0° ambient at a 20°T.D. with R-404A refrigerant? What is the reduction in operating charge if fan cycling is combined with flooding?

Procedure:

From Table 40, obtain the model reference for BNH-S05-A037 as model 10. From Table 37, obtain the summer operating charge for model 10 at 59 lbs. The charge for winter operation with flooded controls is equal to the summer operating charge of 59 lbs. plus the additional charge at 0° ambient (Table 37) of 84 lbs., times the flooded charge T.D. factor (Table 38) of 1.0 for 20°T.D.

$$\begin{aligned} \text{Charge for flooded condenser} &= 59 + (84) * 1.0 \\ &= 143 \text{ lbs.} \end{aligned}$$

The charge for fan cycling plus flooded condenser is obtained using Table 39. Using this table obtain the additional charge for 20°T.D. at 0° ambient, which is 10 lbs. The total charge is the summer charge (59 lbs.) plus the additional charge.

$$\begin{aligned} \text{Charge for fan cycle + flooding} &= 59 + 10 \\ &= 69 \text{ lbs.} \end{aligned}$$

$$\begin{aligned} \text{The savings in refrigerant charge} &= 143 - 69 \\ &= 74 \text{ lbs.} \end{aligned}$$

Diagram 1. Typical Condenser Wiring Diagram With No Fan Cycle Controls

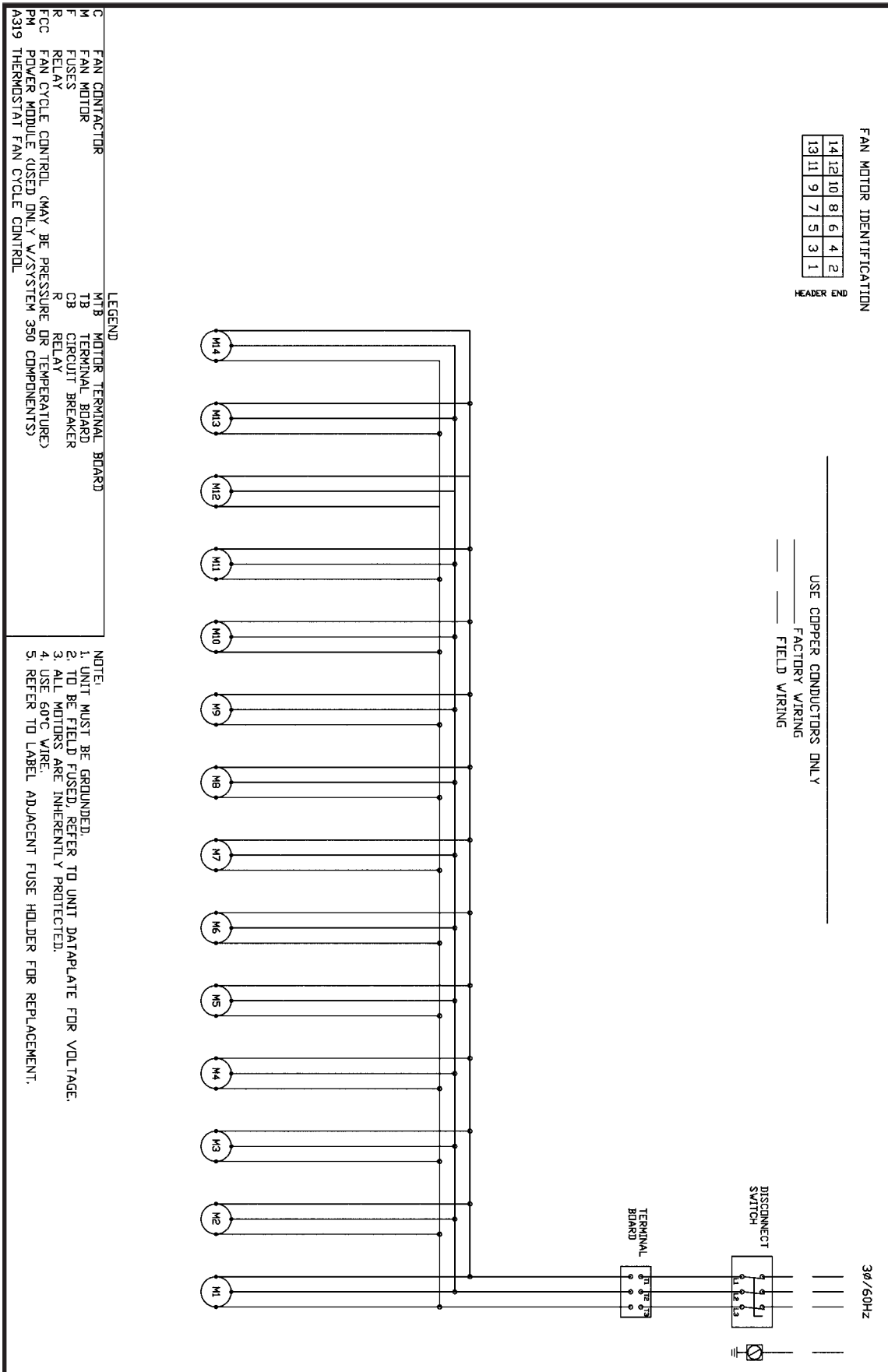
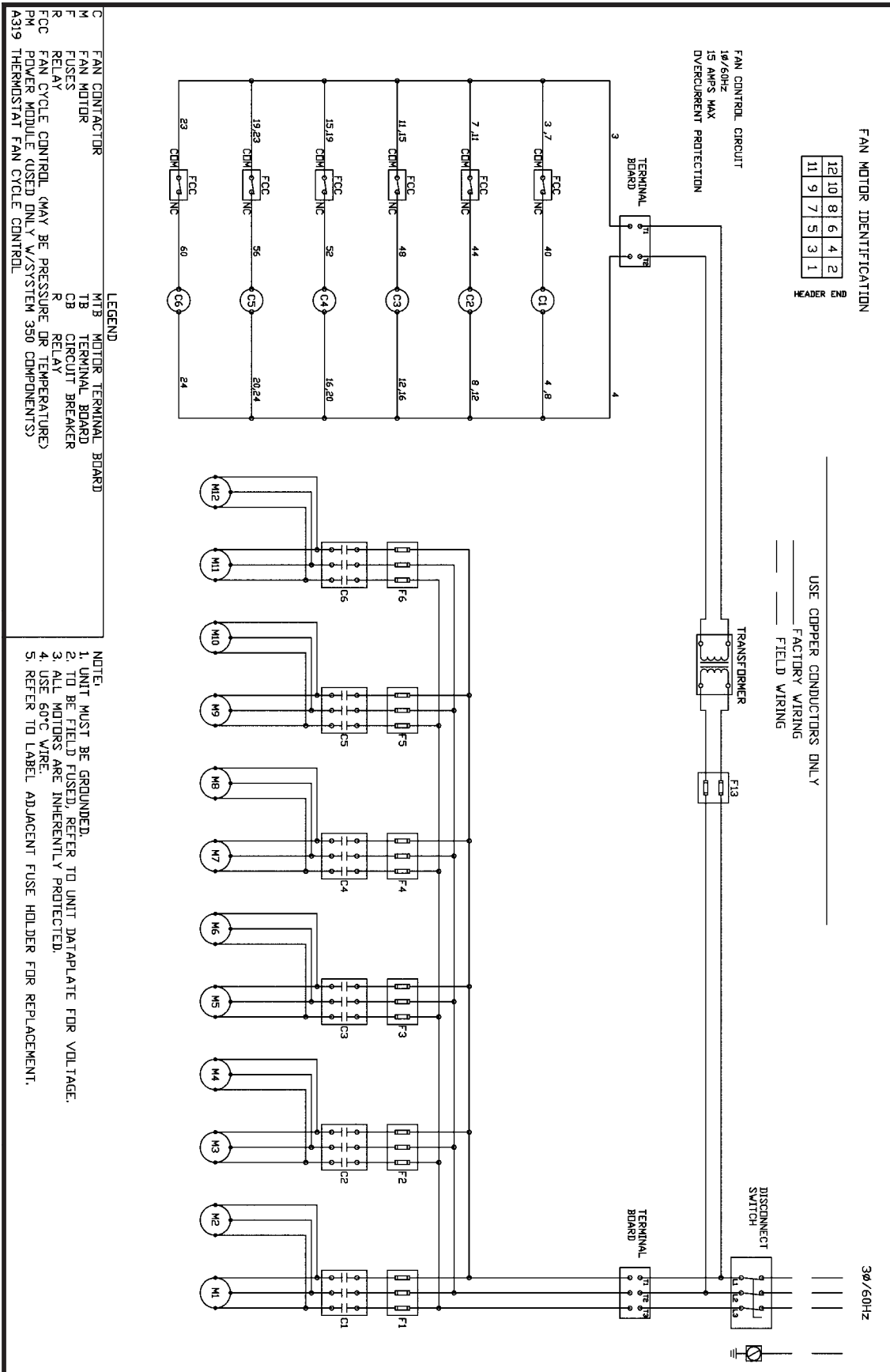
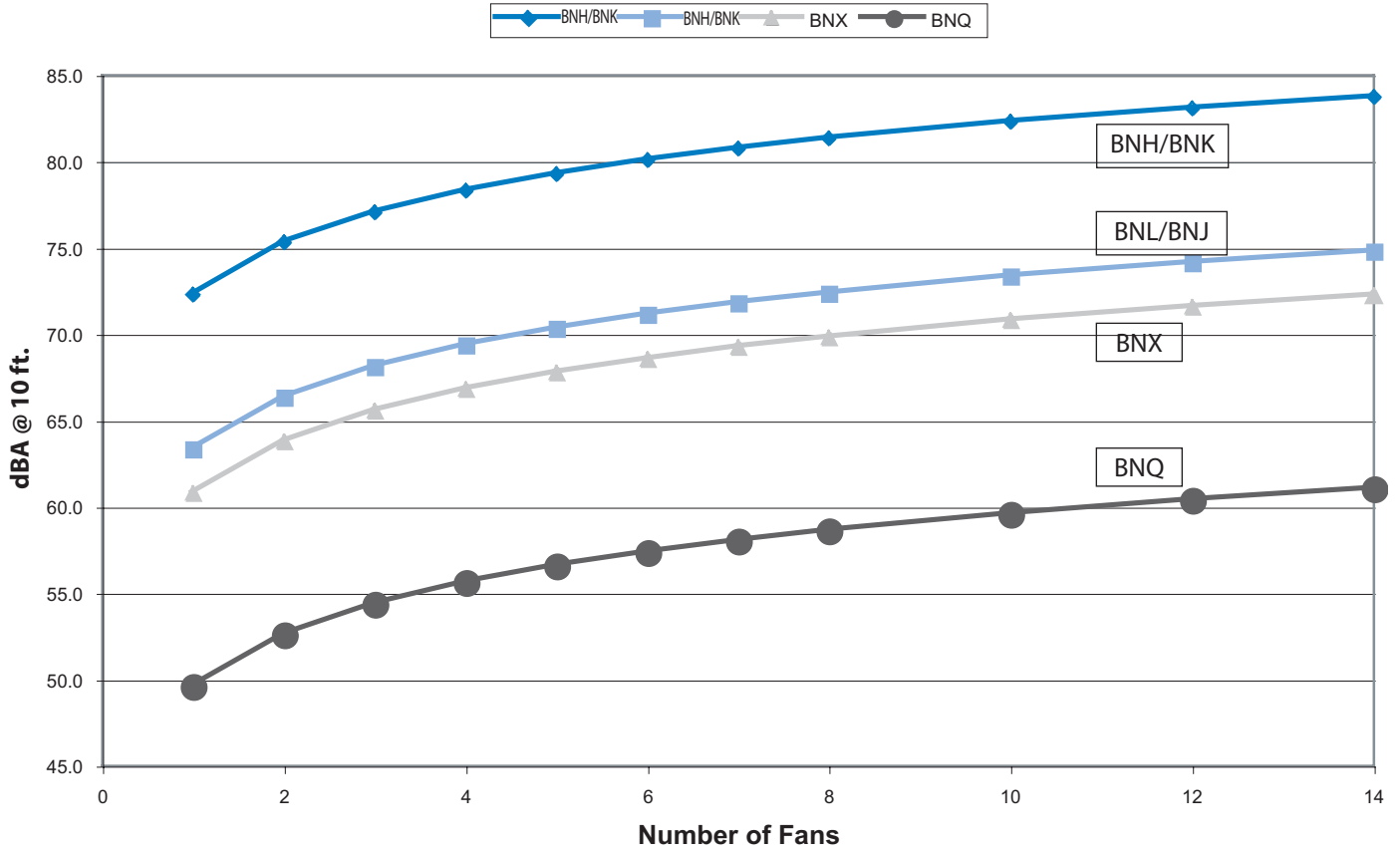


Diagram 2. Typical Condenser Wiring Diagram With Fan Cycle Controls



Sound Data for 3-Phase A/C , 1140 Series and Rail Mounted VSEC

Unit Sound Data (dBA @ 10 ft.)



Unit Sound Data (dBA @ 10 ft.)

| Fans | BNH/BNK | BNL/BNJ | BNX | BNQ |
|------|---------|---------|------|------|
| 1 | 72.3 | 63.4 | 60.8 | 49.6 |
| 2 | 75.3 | 66.4 | 63.8 | 52.6 |
| 3 | 77.1 | 68.1 | 65.6 | 54.4 |
| 4 | 78.3 | 69.4 | 66.8 | 55.6 |
| 5 | 79.3 | 70.3 | 67.8 | 56.6 |
| 6 | 80.1 | 71.1 | 68.6 | 57.4 |
| 7 | 80.8 | 71.8 | 69.3 | 58.1 |
| 8 | 81.3 | 72.4 | 69.8 | 58.6 |
| 10 | 82.3 | 73.4 | 70.8 | 59.6 |
| 12 | 83.1 | 74.1 | 71.6 | 60.4 |
| 14 | 83.8 | 74.8 | 72.3 | 61.1 |



2175 West Park Place Blvd.

Stone Mountain, GA 30087

Phone: 800.537.7775 · Fax: 770.465.5900

heatcraftprd.com

Since product improvement is a continuing effort, we reserve the right to make changes in specifications without notice.

BN-ACCTG-1120 | Version 002

©2020 Heatcraft Refrigeration Products LLC