



**Quality Assurance**  
Certificate Reg. No:  
04 100 950420



Subject to change without notice  
Manufacturing point: Jeddah, Saudi Arabia  
Nearest port of embarkation: Jeddah Islamic port  
Product classification: Commercial

### Product Data Catalog

## **50TJM – 50Hz**

**Nominal Cooling Capacity 15 - 28 Tons**  
**HFC R-410A Refrigerant**

The 50TJM units are single side discharge rooftop cooling unit utilizing electric heat as an option. Units are pre-wired, pre-charged with R-410A refrigerant, and tested at the factory. These units can be placed on the side of a building or can be placed on a roof without roof curbs. Each unit is designed to occupy a minimal space. Piping and drain connections are readily accessible.

Contact your local Carrier representative for additional reference materials.

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## Features / Benefits

Every compact one-piece unit arrives fully assembled, charged, tested, and ready to run.

### Durable-Dependable Construction

Designed for durability in any climate, the weather-resistant cabinets are constructed of galvanized steel, bonderized, and all exterior panels are coated with a pre-painted baked enamel finish. The paint finish is non-chalking, and is capable of withstanding ASTM (American Society for Testing and Materials) B117 500-hour Salt Spray Test. All internal cabinet panels are primed, permitting longer life and a more attractive appearance for the entire unit. Totally enclosed condenser-fan motor and permanently lubricated bearings provide additional unit dependability.

### Indoor-Air Quality

Non corrosive sloped condensate pans minimize biological growth in rooftop units in accordance with ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers) Standard 62-99 (IAQ). 1"inch filters provide for greater particle reduction in the return air.

### Simple, Electrical Connections

Terminal boards, located in the unit control box, facilitate connections to room thermostat, outdoor thermostat(s) and electric heater. Service panels are quickly removed, permitting easy servicing. Both power and control connections are made on the same side of the unit to simplify installation. In addition, color-coded wires permit easy tracing and diagnostics.

### Easy Installation

All units feature base rail design with forklift slots and rigging holes for easier maneuvering. Durable packaging protects all units during shipment and storage. Convenient side by side openings permit installation very close to face of buildings or on roof top. The non-corrosive sloped condensate pan minimizes residual condensate in off cycle. An external, field-supplied P-trap is required. Field-installed electric heaters are available in two convenient capacities 30kW or 40kW.

## **Installation Features**

- Single point electrical service entry
- Side discharge application
- No roof curb needed
- Side by side supply and return air
- Separate panel for control box

## **Performance Features**

- HFC R-410A refrigerant
- ASHRAE Compliant
- EER's up to 11
- TXV refrigerant metering device
- Two independent refrigerant circuits, each with a scroll compressor
- Low outdoor temperature cooling operation down to 40° F
- Liquid filter drier standard on each circuit
- 10% fresh air intake
- Non-corrosive sloped condensate drain pan in accordance to ASHRAE 62 standard
- Thermally protected and permanently lubricated condenser and evaporator fan motors
- Angle type return air section with washable type filters

## **Environmentally Sound Refrigerant Choice**

R410A refrigerant is:

- A chlorine-free refrigerant from the HFC group
- Has zero ozone depletion potential
- High pressure refrigerant, therefore less refrigerant is required
- Thermally efficient and provides high EER (energy efficiency), COP, and part load efficiencies

## **Superior Reliability, Efficiency and Safety**

- Exceptional endurance tests
  - Painted panels tested to ASTM B-117 500 hours salt spray protection
  - Pre-coated fin condenser coil for extra corrosion protection
- Compressor Protection:
  - High and low pressure cutouts
  - Compressor lockout
  - Phase protection relay
  - Crankcase heaters are standard for all units
  - Internal over temperature protection
  - Freeze protection
- Low vibration design:
  - Leak-tight refrigerant circuit
  - Brazed refrigerant connections for increased leak tightness
  - Low-noise scroll compressors with low vibration levels
- Control circuit protected by circuit breaker
- Thermally protected and permanently lubricated condenser and evaporator fan motors
- Angle type return air section with washable type filters
- Transformer for safe 24v control circuit supply included
- High Efficiency, High Static Blower
- State-of-art scroll compressor technology
- Dual, electrically and mechanically independent refrigerant circuit
- Double skin construction, Insulated cabinet

## SHIPPING INFORMATION

**Unit data with Condenser Al/Cu and Evaporator Cu/Al Coils and Condenser only Pre-coat Al/CU**

| Unit Model       | Cap. | Approximate Shipping Weight |       | Approximate Shipping Dimensions (L x D x H) |               |
|------------------|------|-----------------------------|-------|---------------------------------------------|---------------|
| Number           | Tons | kg                          | lbs   | mm                                          | in            |
| 50TJM-18AxAxxxAS | 15   | 925                         | 2,017 | 2,440 x 2,235 x 1,375                       | 96 x 88 x 54  |
| 50TJM-24AxAxxxAS | 19   | 945                         | 2,050 |                                             |               |
| 50TJM-28AxAxxxAS | 23   | 1,190                       | 2,854 | 3,200 x 2,485 x 1,400                       | 126 x 98 x 55 |
| 50TJM-34AxAxxxAS | 28   | 1,215                       | 2,877 |                                             |               |

**Unit data with Condenser Only Cu/Cu Coils**

| Unit Model       | Cap. | Approximate Shipping Weight |       | Approximate Shipping Dimensions (L x D x H) |               |
|------------------|------|-----------------------------|-------|---------------------------------------------|---------------|
| Number           | Tons | kg                          | lbs   | mm                                          | in            |
| 50TJM-18AxExxxAS | 15   | 990                         | 2,183 | 2,440 x 2,235 x 1,375                       | 96 x 88 x 54  |
| 50TJM-24AxExxxAS | 19   | 1,032                       | 2,275 |                                             |               |
| 50TJM-28AxExxxAS | 23   | 1,340                       | 2,954 | 3,200 x 2,485 x 1,400                       | 126 x 98 x 55 |
| 50TJM-34AxExxxAS | 28   | 1,365                       | 3,009 |                                             |               |

**Unit data with Condenser and Evaporator Cu/Cu Coils**

| Unit Model       | Cap. | Approximate Shipping Weight |       | Approximate Shipping Dimensions (L x D x H) |               |
|------------------|------|-----------------------------|-------|---------------------------------------------|---------------|
| Number           | Tons | kg                          | lbs   | mm                                          | in            |
| 50TJM-18AxCxxxAS | 15   | 1,074                       | 2,367 | 2,440 x 2,235 x 1,375                       | 96 x 88 x 54  |
| 50TJM-24AxCxxxAS | 19   | 1,116                       | 2,460 |                                             |               |
| 50TJM-28AxCxxxAS | 23   | 1,452                       | 3,201 | 3,200 x 2,485 x 1,400                       | 126 x 98 x 55 |
| 50TJM-34AxCxxxAS | 28   | 1,477                       | 3,256 |                                             |               |

## MINIMUM – MAXIMUM AIRFLOW

| 50TJM | Cooling (CFM) |         | Electric Heaters (CFM) |         |
|-------|---------------|---------|------------------------|---------|
|       | Minimum       | Maximum | Minimum                | Maximum |
| 18    | 4,000         | 7,000   | 4,800                  | 4,800   |
| 24    | 5,000         | 7,500   | 6,000                  | 6,000   |
| 28    | 5,000         | 8,500   | 7,000                  | 7,000   |
| 34    | 7,000         | 10,000  | 7,000                  | 7,000   |

## FACTORY INSTALLED OPTIONS

| Option                  | Description               |
|-------------------------|---------------------------|
| Indoor fan system       | Standard                  |
|                         | High efficiency motor     |
| Refrigerant sight glass | Installed on each circuit |
| Pre-coated              | Condenser only            |
| Copper fins             | Condenser only            |
| Copper fins             | Evaporator and Condenser  |

## FIELD INSTALLED ACCESSORIES

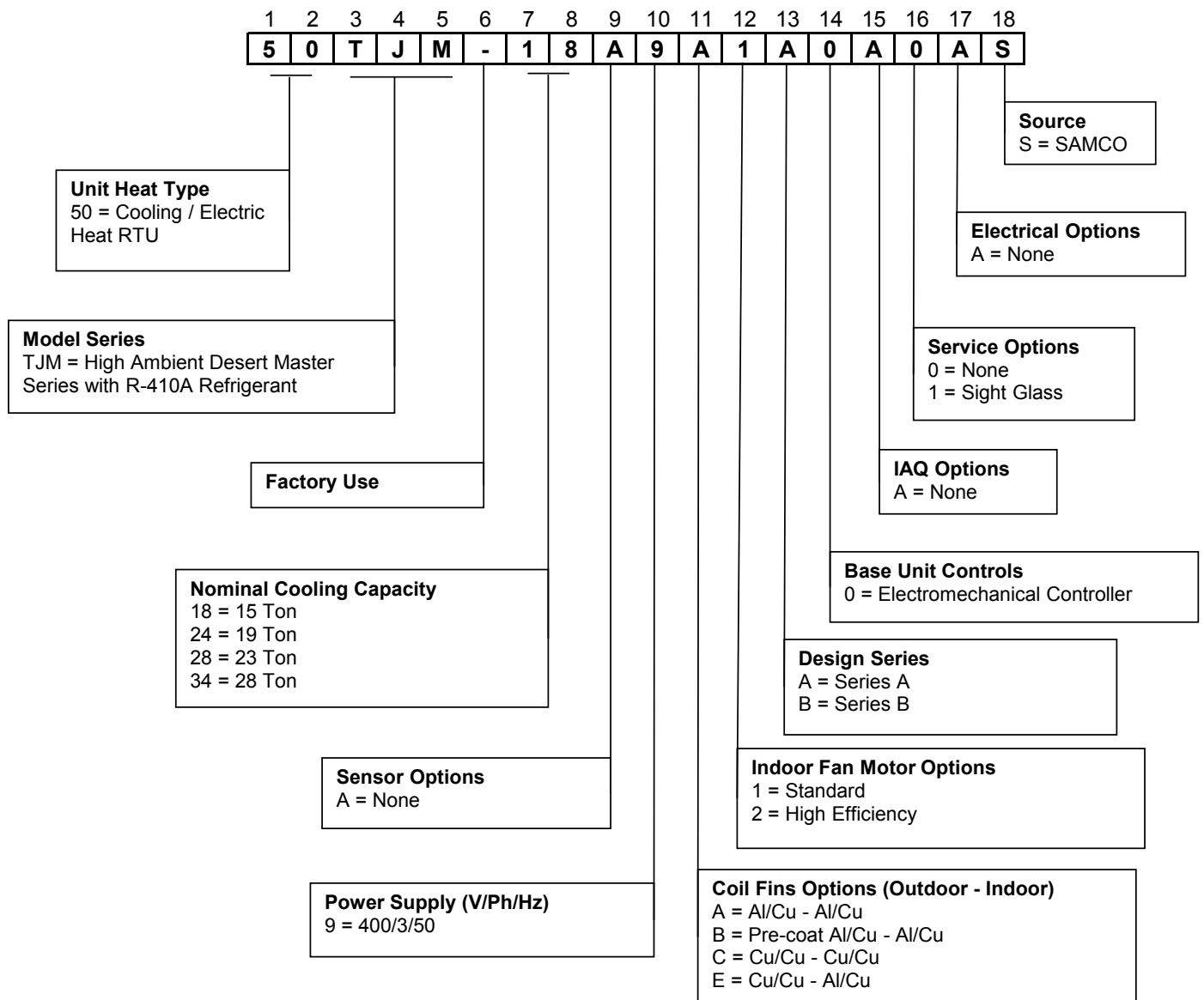
**Accessory Soft Bag Filter**

| 50TJM          | Part Number | Soft Bag Filter (mm) | Pockets No. | Quantity |
|----------------|-------------|----------------------|-------------|----------|
| Unit 18 and 24 | 50TJ600993  | 592 x 592 x 534      | 6           | 4        |
| Unit 28 and 34 | 50TJ600992  |                      |             | 6        |

**Accessory Electric Heater**

| UNIT<br>50TJM | Complete Kit P.N. | Casing P.N.   | Heater Element P. N. | Electric Heater Kits – 400V      |        |           |
|---------------|-------------------|---------------|----------------------|----------------------------------|--------|-----------|
|               |                   | ( 1 Per Kit ) | ( 2 Per Kit )        | Description                      | Stages | Size (Kw) |
| 18            | 50TJ600287        | 50TJ600289    | CPHEATER036A00       | Duct heater<br>assembly,<br>480V | 2      | 30        |
| 24            | 50TJ601162        |               | CPHEATER037A00       |                                  |        | 40        |
| 28            | 50TJ600730        | 50TJ600727    |                      |                                  |        |           |
| 34            |                   |               |                      |                                  |        |           |

# MODEL NUMBER NOMENCLATURE – 50TJM – R410A SERIES



## AHRI Capacity Rating\*

| Unit<br>50TJM | Nominal<br>Ton | Standard<br>CFM | Net Cooling<br>Capacity<br>(BTU/hr) | Net Cooling<br>Capacity<br>(Watt) | Net Cooling<br>Capacity<br>(Ton) | CFM/TON | EER  | Sound<br>Rating<br>(Decibels) |
|---------------|----------------|-----------------|-------------------------------------|-----------------------------------|----------------------------------|---------|------|-------------------------------|
| 18            | 15             | 5,300           | 169532                              | 49685                             | 14.1                             | 353     | 11.0 | 90.3                          |
| 24            | 19             | 6,700           | 204836                              | 60032                             | 17.1                             | 353     | 10.8 | 90.9                          |
| 28            | 23             | 8,000           | 254537                              | 74597                             | 21.2                             | 348     | 11.7 | 90.6                          |
| 34            | 28             | 9,000           | 292000                              | 85577                             | 24.3                             | 321     | 10.5 | 91.1                          |

Bels - Sound Levels (1 bel = 10 decibels)

EER - Energy Efficiency Ratio

\*AHRI - Air Conditioning, Heating and Refrigeration Institute.

1. Rated in accordance with AHRI Standard 340/360.
2. Ratings are net values, reflecting the effects of circulating fan heat.

Cooling Standard: 80 F db, 67 wb indoor entering-air temperature and 95 F db air entering outdoor unit, Side Discharge, 0.4 iwg External Static. .

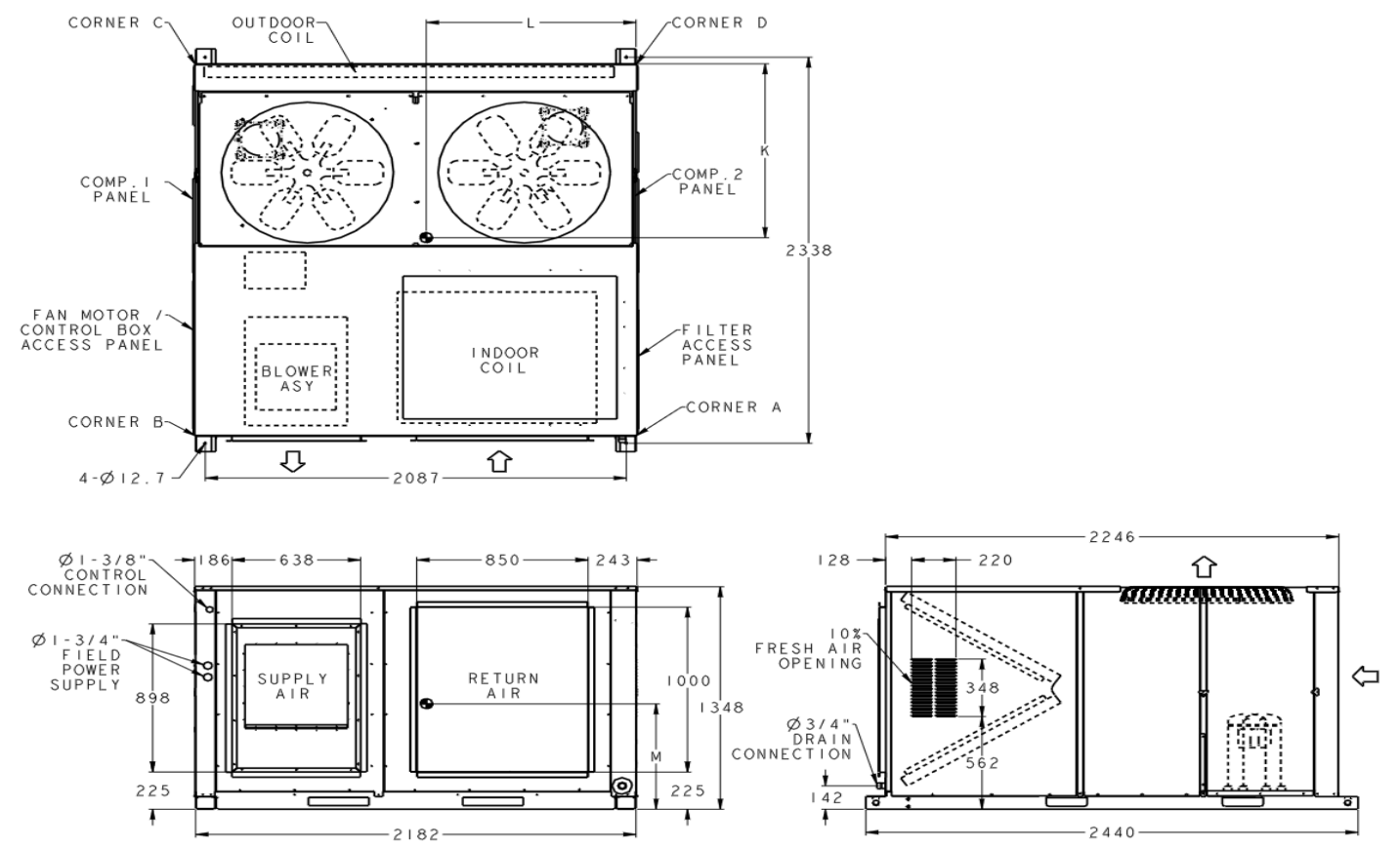
# Physical Data - English

| 50TJM Unit Physical Data (50Hz) (English)                        |                                        |                 |                 |                                |
|------------------------------------------------------------------|----------------------------------------|-----------------|-----------------|--------------------------------|
| Unit 50TJM Size                                                  | 18                                     | 24              | 28              | 34                             |
| Unit Dimensions - in (L x D x H)                                 | 96 x 88 x 54                           |                 | 126 x 98 x 55   |                                |
| Unit Operating Weight - LBS                                      | 1896                                   | 1940            | 2480            | 2535                           |
|                                                                  |                                        |                 |                 |                                |
| <b>Refrigeration System</b>                                      |                                        |                 |                 |                                |
| Compressor No. / Type                                            | 2 / Scroll                             |                 |                 |                                |
| Stage Of Capacity Control (%)                                    | 50 / 50                                |                 |                 |                                |
| Refrigerant Type                                                 | Puron ® R410A                          |                 |                 |                                |
| Circuits No.                                                     | 2                                      |                 |                 |                                |
| Charge Per Circuit (Down / Up) -LBS                              | 15.93 / 14.33                          | 21.38 / 21.38   | 31.30 / 29.32   | 28.66 / 26.01                  |
| Metering Device                                                  | TXV - Adjustable                       |                 |                 |                                |
| Filter Drier Qty / Size                                          | 2 / DML085S                            |                 | 2 / DMS165S     |                                |
| High Pressure Switch (Trip / Reset) - PSIG                       | 630 / 480                              |                 |                 |                                |
| Low Pressure Switch (Trip / Reset) - PSIG                        | 54 / 70                                |                 |                 |                                |
| Freeze Protection Thermostat (Open / Close) ±1.8 °F              | -18 / -14                              |                 |                 |                                |
|                                                                  |                                        |                 |                 |                                |
| <b>Condenser Coil</b>                                            |                                        |                 |                 |                                |
| Coil Type                                                        | Copper Tube, Aluminum Double Wavy Fins |                 |                 | Copper Tube, Aluminum LSW Fins |
| Standard Coil Material                                           | Copper / Aluminium                     |                 |                 |                                |
| Qty x Rows x FPI                                                 | 1 x 3 x 16                             | 1 x 4 x 16      | 2 x 3 x 17      |                                |
| Qty x Face Area (ft²)                                            | 1 x 26.7                               |                 | 2 x 28.8        |                                |
| Coil Test Pressure (PSIG)                                        | 450                                    |                 |                 |                                |
|                                                                  |                                        |                 |                 |                                |
| <b>Condenser Fan &amp; Motor</b>                                 |                                        |                 |                 |                                |
| Approx. Air Flow Rate (CFM)                                      | 12000                                  | 13000           | 18200           | 16700                          |
| Quantity                                                         | 2                                      |                 |                 |                                |
| Diameter (in) / No. of Blades                                    | 30 / 4                                 |                 | 30 / 6          |                                |
| Motor Type                                                       | Induction Motor - Totally Enclosed     |                 |                 |                                |
| Motor HP / RPM                                                   | 1 / 950                                |                 |                 |                                |
|                                                                  |                                        |                 |                 |                                |
| <b>Evaporator Coil</b>                                           |                                        |                 |                 |                                |
| Coil Type                                                        | Copper Tube, Aluminum LSW Fins.        |                 |                 |                                |
| Standard Coil Material                                           | Copper / Aluminium                     |                 |                 |                                |
| Qty x Rows x FPI                                                 | 2 x 3 x 17                             |                 | 2 x 4 x 17      |                                |
| Qty x Face Area (ft²)                                            | 2 x 9.75                               |                 | 2 x 10.3        |                                |
| Coil Test Pressure                                               | 350                                    |                 |                 |                                |
| Drain Pan connection Size (in)                                   | 3/4                                    |                 |                 |                                |
| Return Air Filter Qty x Size (in)                                | 4 x 33.8 x 21.7                        |                 | 4 x 35.4 x 21.7 |                                |
|                                                                  |                                        |                 |                 |                                |
| <b>Evaporator Fan and Motor Section</b>                          |                                        |                 |                 |                                |
| Fan Quantity / Fan Size (in)                                     | 1 / 15.75 x 15.75                      |                 | 1 / 17.7 x 17.7 |                                |
| Fan Type                                                         | Centrifugal - Forward Blade            |                 |                 |                                |
| Drive Type                                                       | Belt                                   |                 |                 |                                |
| Motor Type                                                       | Induction Motor - TEFC                 |                 |                 |                                |
| Motor BHP                                                        | 4.0                                    | 5.4             | 7.4             |                                |
| Motor Frame Size / Motor Shaft Diameter (mm)                     | 100 / 28                               | 112 / 28        | 132 / 38        |                                |
| Motor Pulley Pitch Diameter (Min / Max) (in)                     | 3.7 / 4.7                              |                 |                 | 4.3 / 5.6                      |
| Fan RPM Range (RPM)                                              | 1030 - 745                             | 1041 - 753      | 1029 - 740      |                                |
| Fan Pulley Pitch Diameter (in)                                   | 6.6                                    |                 |                 | 8.4                            |
| Belt, Quantity...Type                                            | 1 ... BX66                             |                 |                 | 1 ... BX71                     |
| Pulley Center To Center Distance(in)                             | 24.4 - 27.5                            |                 |                 |                                |
| Movable Pulley Maximum Full Turns From Closed Position           | 6                                      |                 |                 |                                |
| Approx.Speed Change Per Full Turn Of Movable Pulley Flange (rpm) | 48                                     |                 |                 |                                |
| Factory Speed Turns Setting                                      | 4                                      |                 |                 | 1.5                            |
| Factory Belt Standard Deflection (in) @ Force (Lb)               | 0.39 @ 6.975 Lb                        | 0.39 @ 8.985 Lb | 0.40 @ 9.945 Lb |                                |

# Physical Data - SI

| 50TJM Unit Physical Data (50Hz) (SI)                              |                                         |              |                       |                                 |
|-------------------------------------------------------------------|-----------------------------------------|--------------|-----------------------|---------------------------------|
| Unit 50TJM Size                                                   | 18                                      | 24           | 28                    | 34                              |
| Unit Dimensions - mm (L x D x H)                                  | 2,440 x 2,235 x 1,375                   |              | 3,200 x 2,485 x 1,400 |                                 |
| Unit Operating Weight - kG                                        | 860                                     | 880          | 1125                  | 1150                            |
|                                                                   |                                         |              |                       |                                 |
| Refrigeration System                                              |                                         |              |                       |                                 |
| Compressor No. / Type                                             | 2 / Scroll                              |              |                       |                                 |
| Stage Of Capacity Control (%)                                     | 50 / 50                                 |              |                       |                                 |
| Refrigerant Type                                                  | Puron ® R410A                           |              |                       |                                 |
| Circuits No.                                                      | 2                                       |              |                       |                                 |
| Charge Per Circuit (Down / Up) - kG                               | 7.23 / 6.50                             | 9.70 / 9.70  | 14.20 / 13.30         | 13.00 / 11.80                   |
| Metering Device                                                   | TXV- Adjustable                         |              |                       |                                 |
| Filter Drier Qty / Size                                           | 2 / DML085S                             |              | 2 / DMS165S           |                                 |
| High Pressure Switch (Trip / Reset) - Bar                         | 43 / 33                                 |              |                       |                                 |
| Low Pressure Switch (Trip / Reset) - Bar                          | 4 / 5                                   |              |                       |                                 |
| Freeze Protection Thermostat (Open / Close) ±1 °C                 | -1 / 7                                  |              |                       |                                 |
|                                                                   |                                         |              |                       |                                 |
| Condenser Coil                                                    |                                         |              |                       |                                 |
| Coil Type                                                         | Copper Tube, Aluminium Double Wavy Fins |              |                       | Copper Tube, Aluminium LSW Fins |
| Standard Coil Material                                            | Copper / Aluminium                      |              |                       |                                 |
| Qty x Rows x Fins                                                 | 1 x 3 x 1280                            | 1 x 4 x 1280 | 2 x 3 x 1472          |                                 |
| Qty x Face Area (m <sup>2</sup> )                                 | 1 x 2.5                                 |              | 2 x 2.7               |                                 |
| Coil Test Pressure (PSIG)                                         | 31                                      |              |                       |                                 |
|                                                                   |                                         |              |                       |                                 |
| Condenser Fan & Motor                                             |                                         |              |                       |                                 |
| Approx. Air Flow Rate (m <sup>3</sup> /hr)                        | 20376                                   | 22074        | 30904                 | 28357                           |
| Quantity                                                          | 2                                       |              |                       |                                 |
| Diameter (mm) / No. of Blades                                     | 762 / 4                                 |              | 762 / 6               |                                 |
| Motor Type                                                        | Induction Motor - Totally Enclosed      |              |                       |                                 |
| Motor HP/ RPS                                                     | 1 / 16                                  |              |                       |                                 |
|                                                                   |                                         |              |                       |                                 |
| Evaporator Coil                                                   |                                         |              |                       |                                 |
| Coil Type                                                         | Copper Tube, Aliminium LSW Fins         |              |                       |                                 |
| Standard Coil Material                                            | Copper / Aluminium                      |              |                       |                                 |
| Qty x Rows x Fins                                                 | 2 x 3 x 663                             |              | 2 x 4 x 663           |                                 |
| Qty x Face Area (m <sup>2</sup> )                                 | 2 x 0.91                                |              | 2 x 0.96              |                                 |
| Coil Test Pressure                                                | 24                                      |              |                       |                                 |
| Drain Pan connection Size (mm)                                    | 19.05                                   |              |                       |                                 |
| Return Air Filter Qty x Size (in)                                 | 4 x 860 x 550                           |              | 4 x 900 x 550         |                                 |
|                                                                   |                                         |              |                       |                                 |
| Evaporator Fan and Motor Section                                  |                                         |              |                       |                                 |
| Fan Quantity / Fan Size (mm)                                      | 1 / 400 x 400                           |              | 1 / 450 x 450         |                                 |
| Fan Type                                                          | Centrifugal- Forward Blade              |              |                       |                                 |
| Drive Type                                                        | Belt                                    |              |                       |                                 |
| Motor Type                                                        | Induction Motor - TEFC                  |              |                       |                                 |
| Motor BkW                                                         | 3.0                                     | 4.0          |                       | 5.5                             |
| Motor Frame Size / Motor Shaft Diameter (mm)                      | 100 / 28                                | 112 / 28     |                       | 132 / 38                        |
| Motor Pulley Pitch Diameter (Min / Max) (mm)                      | 94 / 119.4                              |              |                       | 109 / 141.6                     |
| Fan RPM Range (r/s)                                               | 17.2 - 12.4                             | 17.4 - 12.5  |                       | 17.2 - 12.3                     |
| Fan Pulley Pitch Diameter (mm)                                    | 167.6                                   |              |                       | 212.2                           |
| Belt, Quantity...Type                                             | 1 ... BX66                              |              |                       | 1 ... BX71                      |
| Pulley Center To Center Distance(mm)                              | 620 - 699                               |              |                       |                                 |
| Movable Pullley Maximum Full Turns From Closed Position           | 6                                       |              |                       |                                 |
| Approx. Speed Change Per Full Turn Of Movable Pulley Flange (rps) | 0.8                                     |              |                       |                                 |
| Factory Speed Turns Setting                                       | 4                                       |              |                       | 1.5                             |
| Factory Belt Standard Deflection (mm) @ Force (N)                 | 10 @ 31 N                               | 10 @ 40 N    |                       | 10.2 @ 44.3 N                   |

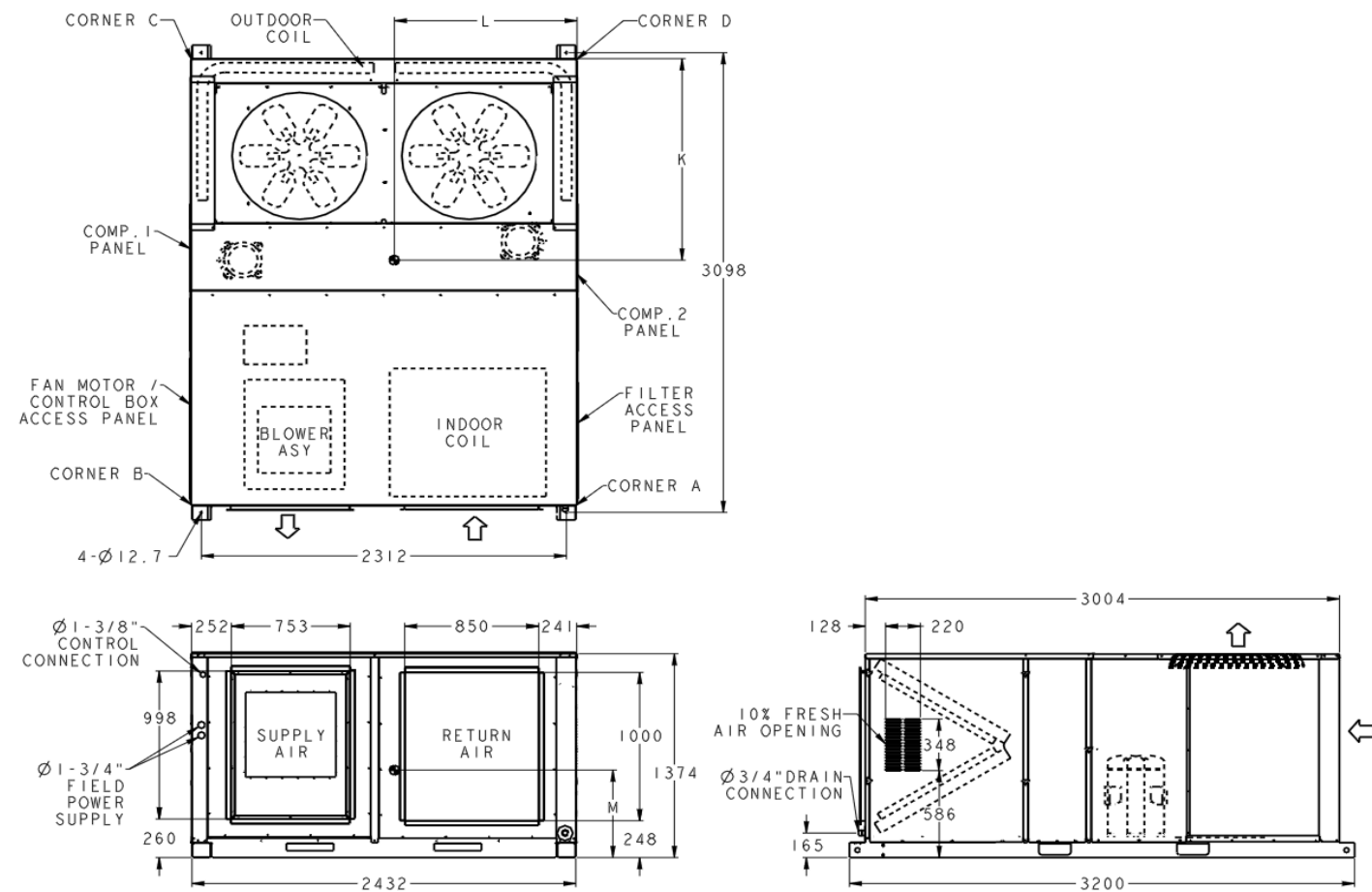
Unit Dimensional Drawing: 50TJM - Size 18 and 24 (Design Series A and B)



| UNIT       | SHIPPING DIMENSIONS (mm) |       |       | CORNER WEIGHT (Kg) |     |     |     |       | CENTER OF GRAVITY (mm) |      |     |
|------------|--------------------------|-------|-------|--------------------|-----|-----|-----|-------|------------------------|------|-----|
|            | LENGTH                   | WIDTH | DEPTH | A                  | B   | C   | D   | TOTAL | K                      | L    | M   |
| 50TJM - 18 | 2440                     | 2235  | 1375  | 192                | 178 | 236 | 254 | 860   | 1050                   | 1050 | 450 |
| 50TJM - 24 |                          |       |       | 197                | 182 | 241 | 260 | 880   |                        |      |     |

- NOTES:**
- Dimensions are in millimeters.
  - Center of Gravity.
  - Direction of Airflow
  - Minimum clearance:
    - REAR: 2134mm for coil removal. This dimension can be reduced to 1219mm if conditions permit coil removal from the top.
    - TOP: 1829mm to assure proper condenser fan operation.
    - SIDE: 1219mm for Compressor, Filter and Control boxes access.
    - Local codes or jurisdiction may prevail.
  - With the exception of clearance for the condenser coil and the damper / power exhaust as stated in Note no. 6, a removal fence or barricade requires no clearance.
  - Dimensions are from outside of corner post. Allow 8mm on each side for top cover drip edge.
  - Weights are Given for aluminum evaporator and condenser coil plate fins.

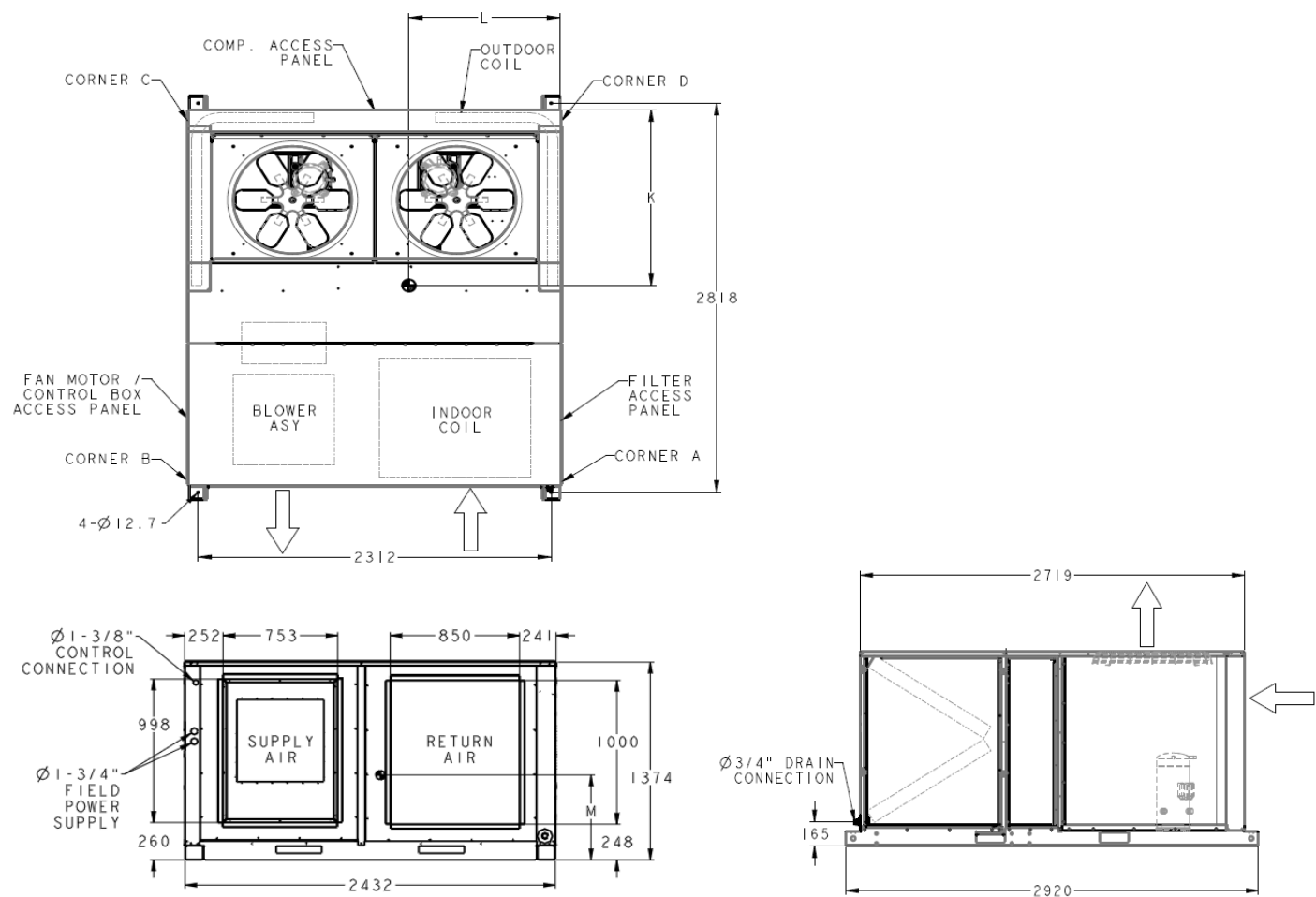
Unit Dimensional Drawing: 50TJM - Size 28 and 34 (Design Series A)



| UNIT       | SHIPPING DIMENSIONS (mm) |       |       | CORNER WEIGHT (Kg) |     |     |     |       | CENTER OF GRAVITY (mm) |      |     |
|------------|--------------------------|-------|-------|--------------------|-----|-----|-----|-------|------------------------|------|-----|
|            | LENGTH                   | WIDTH | DEPTH | A                  | B   | C   | D   | TOTAL | K                      | L    | M   |
| 50TJM - 28 | 3200                     | 2485  | 1400  | 248                | 226 | 310 | 340 | 1125  | 1350                   | 1160 | 450 |
| 50TJM - 34 |                          |       |       | 254                | 231 | 317 | 348 | 1150  |                        |      |     |

- NOTES:**
1. Dimensions are in millimeters.
  2. ⦿ Center of Gravity.
  3. ⇨ Direction of Airflow
  4. Minimum clearance:  
REAR: 2134mm for coil removal. This dimension can be reduced to 1219mm if conditions permit coil removal from the top.  
TOP: 1829mm to assure proper condenser fan operation.  
SIDE: 1219mm for Compressor, Filter and Control boxes access.  
- Local codes or jurisdiction may prevail.
  5. With the exception of clearance for the condenser coil and the damper / power exhaust as stated in Note no. 6, a removal fence or barricade requires no clearance.
  6. Dimensions are from outside of corner post. Allow 8mm on each side for top cover drip edge.
  7. Weights are Given for aluminum evaporator and condenser coil plate fins.

Unit Dimensional Drawing: 50TJM - Size 28 and 34 (Design Series B)



| UNIT       | SHIPPING DIMENSIONS (mm) |       |       | CORNER WEIGHT (Kg) |     |     |     |       | CENTER OF GRAVITY (mm) |     |     |
|------------|--------------------------|-------|-------|--------------------|-----|-----|-----|-------|------------------------|-----|-----|
|            | LENGTH                   | WIDTH | DEPTH | A                  | B   | C   | D   | TOTAL | K                      | L   | M   |
| 50TJM - 28 | 2920                     | 2485  | 1400  | 248                | 226 | 310 | 340 | 1125  | 1275                   | 990 | 450 |
| 50TJM - 34 |                          |       |       | 254                | 231 | 317 | 348 | 1150  |                        |     |     |

NOTES:

- 1. Dimensions are in millimeters.
- 2. Center of Gravity.
- 3. Direction of Airflow
- 4. Minimum clearance:
  - REAR: 2134mm for coil removal. This dimension can be reduced to 1219mm if conditions permit coil removal from the top.
  - TOP: 1829mm to assure proper condenser fan operation.
  - SIDE: 1219mm for access.
  - Local codes or jurisdiction may prevail.
- 5. With the exception of clearance for the condenser coil and the damper / power exhaust as stated in Note no. 6, a removal fence or barricade requires no clearance.
- 6. Dimensions are from outside of corner post. Allow 8mm on each side for top cover drip edge.
- 7. Weights are Given for aluminum evaporator and condenser coil plate fins.

Cooling Capacities

| 50TJM18-50Hz                             |     |                          |         |         |             |         |         |             |         |         |             |         |         |
|------------------------------------------|-----|--------------------------|---------|---------|-------------|---------|---------|-------------|---------|---------|-------------|---------|---------|
| Temp (F) Air Entering<br>Condenser (Edb) |     | Evaporator Air - CFM/BPF |         |         |             |         |         |             |         |         |             |         |         |
|                                          |     | 4000 / 0.15              |         |         | 5300 / 0.18 |         |         | 6300 / 0.19 |         |         | 7000 / 0.22 |         |         |
|                                          |     | Evaporator Air - EWB (F) |         |         |             |         |         |             |         |         |             |         |         |
|                                          |     | 62                       | 67      | 72      | 62          | 67      | 72      | 62          | 67      | 72      | 62          | 67      | 72      |
| 75                                       | TC  | 164,123                  | 178,180 | 193,776 | 175,986     | 190,178 | 206,306 | 185,185     | 200,292 | 216,925 | 195,996     | 206,122 | 223,320 |
|                                          | SHC | 131,993                  | 114,134 | 96,352  | 153,051     | 130,267 | 107,023 | 169,604     | 148,959 | 119,152 | 183,329     | 160,089 | 127,457 |
|                                          | kW  | 8.04                     | 8.16    | 8.30    | 8.12        | 8.25    | 8.40    | 8.20        | 8.32    | 8.47    | 8.25        | 8.34    | 8.50    |
| 85                                       | TC  | 158,492                  | 172,458 | 187,247 | 169,344     | 183,311 | 198,529 | 179,977     | 191,990 | 207,940 | 188,533     | 197,207 | 213,847 |
|                                          | SHC | 128,991                  | 110,963 | 92,629  | 147,800     | 126,822 | 102,967 | 167,231     | 144,615 | 114,827 | 176,040     | 154,809 | 123,056 |
|                                          | kW  | 9.40                     | 9.53    | 9.67    | 9.47        | 9.60    | 9.76    | 9.56        | 9.66    | 9.82    | 9.61        | 9.69    | 9.85    |
| 95                                       | TC  | 152,533                  | 165,913 | 179,837 | 161,987     | 175,372 | 189,758 | 173,764     | 182,643 | 198,030 | 181,098     | 187,980 | 203,412 |
|                                          | SHC | 123,850                  | 105,923 | 87,266  | 139,632     | 120,656 | 97,028  | 158,406     | 137,112 | 108,504 | 165,215     | 147,844 | 116,432 |
|                                          | kW  | 10.87                    | 11.01   | 11.16   | 10.95       | 11.08   | 11.24   | 11.05       | 11.13   | 11.30   | 11.10       | 11.17   | 11.32   |
| 105                                      | TC  | 143,923                  | 155,825 | 168,836 | 152,028     | 163,833 | 177,318 | 163,841     | 170,218 | 184,307 | 170,656     | 175,396 | 189,235 |
|                                          | SHC | 121,184                  | 102,659 | 83,727  | 135,060     | 116,870 | 93,265  | 150,300     | 133,352 | 104,519 | 156,552     | 143,817 | 112,301 |
|                                          | kW  | 12.23                    | 12.35   | 12.51   | 12.32       | 12.42   | 12.57   | 12.41       | 12.47   | 12.62   | 12.45       | 12.50   | 12.65   |
| 115                                      | TC  | 133,818                  | 144,809 | 156,813 | 143,621     | 151,553 | 164,004 | 153,119     | 157,411 | 170,013 | 159,384     | 161,953 | 174,742 |
|                                          | SHC | 115,117                  | 97,738  | 78,907  | 130,927     | 111,377 | 88,113  | 139,585     | 127,782 | 98,995  | 145,297     | 136,464 | 106,299 |
|                                          | kW  | 13.78                    | 13.90   | 14.05   | 13.86       | 13.95   | 14.10   | 13.96       | 14.00   | 14.15   | 14.00       | 14.03   | 14.16   |
| 118.4                                    | TC  | 126,844                  | 137,259 | 148,597 | 136,584     | 143,339 | 155,227 | 145,452     | 148,857 | 160,821 | 151,388     | 153,172 | 165,397 |
|                                          | SHC | 106,117                  | 90,430  | 72,675  | 120,060     | 102,952 | 81,274  | 127,855     | 118,083 | 91,329  | 133,073     | 125,775 | 98,068  |
|                                          | kW  | 13.93                    | 14.04   | 14.18   | 14.00       | 14.09   | 14.24   | 14.11       | 14.14   | 14.28   | 14.15       | 14.17   | 14.30   |
| 125                                      | TC  | 118,734                  | 127,396 | 137,807 | 127,571     | 132,660 | 143,641 | 135,640     | 137,670 | 148,932 | 141,143     | 141,846 | 153,246 |
|                                          | SHC | 102,134                  | 86,480  | 68,863  | 112,507     | 98,180  | 77,247  | 119,623     | 112,411 | 86,760  | 124,476     | 119,585 | 93,242  |
|                                          | kW  | 15.53                    | 15.65   | 15.79   | 15.62       | 15.70   | 15.83   | 15.72       | 15.74   | 15.87   | 15.76       | 15.78   | 15.89   |

| 50TJM18-50Hz                             |     |                            |       |       |              |       |       |              |       |       |              |       |       |
|------------------------------------------|-----|----------------------------|-------|-------|--------------|-------|-------|--------------|-------|-------|--------------|-------|-------|
| Temp (C) Air Entering<br>Condenser (Edb) |     | Evaporator Air - (L/s)/BPF |       |       |              |       |       |              |       |       |              |       |       |
|                                          |     | 1888 / 0.150               |       |       | 2501 / 0.175 |       |       | 2973 / 0.188 |       |       | 3304 / 0.220 |       |       |
|                                          |     | Evaporator Air - EWB (C)   |       |       |              |       |       |              |       |       |              |       |       |
|                                          |     | 17                         | 19    | 22    | 17           | 19    | 22    | 17           | 19    | 22    | 17           | 19    | 22    |
| 24                                       | TC  | 48.1                       | 52.2  | 56.8  | 51.6         | 55.7  | 60.5  | 54.3         | 58.7  | 63.6  | 57.4         | 60.4  | 65.5  |
|                                          | SHC | 38.7                       | 33.5  | 28.2  | 44.9         | 38.2  | 31.4  | 49.7         | 43.7  | 34.9  | 53.7         | 46.9  | 37.4  |
|                                          | kW  | 8.04                       | 8.16  | 8.30  | 8.12         | 8.25  | 8.40  | 8.20         | 8.32  | 8.47  | 8.25         | 8.34  | 8.50  |
| 29                                       | TC  | 46.5                       | 50.5  | 54.9  | 49.6         | 53.7  | 58.2  | 52.7         | 56.3  | 60.9  | 55.3         | 57.8  | 62.7  |
|                                          | SHC | 37.8                       | 32.5  | 27.1  | 43.3         | 37.2  | 30.2  | 49.0         | 42.4  | 33.7  | 51.6         | 45.4  | 36.1  |
|                                          | kW  | 9.40                       | 9.53  | 9.67  | 9.47         | 9.60  | 9.76  | 9.56         | 9.66  | 9.82  | 9.61         | 9.69  | 9.85  |
| 35                                       | TC  | 44.7                       | 48.6  | 52.7  | 47.5         | 51.4  | 55.6  | 50.9         | 53.5  | 58.0  | 53.1         | 55.1  | 59.6  |
|                                          | SHC | 36.3                       | 31.0  | 25.6  | 40.9         | 35.4  | 28.4  | 46.4         | 40.2  | 31.8  | 48.4         | 43.3  | 34.1  |
|                                          | kW  | 10.87                      | 11.01 | 11.16 | 10.95        | 11.08 | 11.24 | 11.05        | 11.13 | 11.30 | 11.10        | 11.17 | 11.32 |
| 40.6                                     | TC  | 42.2                       | 45.7  | 49.5  | 44.6         | 48.0  | 52.0  | 48.0         | 49.9  | 54.0  | 50.0         | 51.4  | 55.5  |
|                                          | SHC | 35.5                       | 30.1  | 24.5  | 39.6         | 34.3  | 27.3  | 44.1         | 39.1  | 30.6  | 45.9         | 42.2  | 32.9  |
|                                          | kW  | 12.23                      | 12.35 | 12.51 | 12.32        | 12.42 | 12.57 | 12.41        | 12.47 | 12.62 | 12.45        | 12.50 | 12.65 |
| 46                                       | TC  | 39.2                       | 42.4  | 46.0  | 42.1         | 44.4  | 48.1  | 44.9         | 46.1  | 49.8  | 46.7         | 47.5  | 51.2  |
|                                          | SHC | 33.7                       | 28.6  | 23.1  | 38.4         | 32.6  | 25.8  | 40.9         | 37.5  | 29.0  | 42.6         | 40.0  | 31.2  |
|                                          | kW  | 13.78                      | 13.90 | 14.05 | 13.86        | 13.95 | 14.10 | 13.96        | 14.00 | 14.15 | 14.00        | 14.03 | 14.16 |
| 48                                       | TC  | 37.2                       | 40.2  | 43.6  | 40.0         | 42.0  | 45.5  | 42.6         | 43.6  | 47.1  | 44.4         | 44.9  | 48.5  |
|                                          | SHC | 31.1                       | 26.5  | 21.3  | 35.2         | 30.2  | 23.8  | 37.5         | 34.6  | 26.8  | 39.0         | 36.9  | 28.7  |
|                                          | kW  | 13.93                      | 14.04 | 14.18 | 14.00        | 14.09 | 14.24 | 14.11        | 14.14 | 14.28 | 14.15        | 14.17 | 14.30 |
| 52                                       | TC  | 34.8                       | 37.3  | 40.4  | 37.4         | 38.9  | 42.1  | 39.8         | 40.3  | 43.6  | 41.4         | 41.6  | 44.9  |
|                                          | SHC | 29.9                       | 25.3  | 20.2  | 33.0         | 28.8  | 22.6  | 35.1         | 32.9  | 25.4  | 36.5         | 35.0  | 27.3  |
|                                          | kW  | 15.53                      | 15.65 | 15.79 | 15.62        | 15.70 | 15.83 | 15.72        | 15.74 | 15.87 | 15.76        | 15.78 | 15.89 |

**LEGEND**

BPF — Bypass Factor

Edb — Entering Dry-Bulb

Ewb — Entering Wet-Bulb

SHC — Sensible Heat Capacity (1000 Btuh) Gross

**Boldface** - Standard Ratings

**Notes:**

1. Direct interpolation is permissible. Do not extrapolate.

2. The following formulas may be used.

tlwb =      tedb —      sensible capacity (Btuh)

1.10 x cfm

tlwb =      Wet-bulb temprature corresponding to

enthalpy of air leaving evaporater coil (hlwb).

hlwb =      hewb —      total capacity (Btuh)

4.5 x cfm

Where: hewb = Enthalpy of air entering evaporator coil.

Ldb — Leaving Dry-Bulb

Lwb — Leaving Wet-Bulb

TC — Total Capacity (1000 Btuh) Gross

kW — Compressor Motor Power Input

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.

- Below 80 F edb, subtract (corr factor x cfm) from SHC.

- Above 80 F edb, add (corr factor x cfm) to SHC.

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.

5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additionally limited to edb and ewb conditions.

| BF   | ENTERING AIR DRY-BULB TEMP (F) |      |      |      |      |                           |
|------|--------------------------------|------|------|------|------|---------------------------|
|      | 79                             | 78   | 77   | 76   | 75   | under 75                  |
|      | 81                             | 82   | 83   | 84   | 85   | over 85                   |
|      | Correction Factor              |      |      |      |      |                           |
| 0.05 | 1.04                           | 2.07 | 3.11 | 4.14 | 5.18 | Use formula shown below.* |
| 0.10 | 0.98                           | 1.96 | 2.94 | 3.92 | 4.90 |                           |
| 0.20 | 0.87                           | 1.74 | 2.62 | 3.49 | 4.36 |                           |
| 0.30 | 0.76                           | 1.53 | 2.29 | 3.05 | 3.82 |                           |

- Interpolation is permissible.

\*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

Cooling Capacities (cont)

| 50TJM24-50Hz                             |     |                          |         |         |              |         |         |              |         |         |              |         |         |
|------------------------------------------|-----|--------------------------|---------|---------|--------------|---------|---------|--------------|---------|---------|--------------|---------|---------|
| Temp (F) Air Entering<br>Condenser (Edb) |     | Evaporator Air - CFM/BPF |         |         |              |         |         |              |         |         |              |         |         |
|                                          |     | 5000 / 0.176             |         |         | 5700 / 0.182 |         |         | 6700 / 0.214 |         |         | 7500 / 0.230 |         |         |
|                                          |     | Evaporator Air - EWB (F) |         |         |              |         |         |              |         |         |              |         |         |
|                                          |     | 62                       | 67      | 72      | 62           | 67      | 72      | 62           | 67      | 72      | 62           | 67      | 72      |
| 75                                       | TC  | 196,725                  | 213,978 | 232,610 | 204,185      | 221,923 | 241,096 | 211,823      | 231,485 | 250,898 | 221,461      | 239,050 | 258,795 |
|                                          | SHC | 153,750                  | 132,986 | 111,976 | 165,959      | 142,513 | 118,607 | 179,177      | 156,256 | 127,652 | 193,096      | 167,955 | 135,897 |
|                                          | kW  | 10.29                    | 10.44   | 10.61   | 10.33        | 10.50   | 10.68   | 10.40        | 10.58   | 10.76   | 10.45        | 10.62   | 10.81   |
| 85                                       | TC  | 190,371                  | 206,895 | 224,836 | 196,819      | 214,308 | 232,608 | 206,126      | 223,064 | 241,680 | 213,401      | 230,056 | 249,041 |
|                                          | SHC | 152,443                  | 130,879 | 109,329 | 163,548      | 140,603 | 115,829 | 179,063      | 154,250 | 124,901 | 190,517      | 165,767 | 133,069 |
|                                          | kW  | 11.72                    | 11.89   | 12.08   | 11.78        | 11.95   | 12.14   | 11.85        | 12.03   | 12.22   | 11.90        | 12.07   | 12.26   |
| 95                                       | TC  | 183,049                  | 199,130 | 216,147 | 188,040      | 205,694 | 223,183 | 198,657      | 213,598 | 231,440 | 204,758      | 220,041 | 238,244 |
|                                          | SHC | 150,337                  | 128,815 | 106,420 | 159,404      | 138,276 | 112,813 | 174,329      | 151,655 | 121,790 | 184,626      | 162,933 | 129,964 |
|                                          | kW  | 13.30                    | 13.47   | 13.66   | 13.35        | 13.53   | 13.73   | 13.45        | 13.60   | 13.80   | 13.49        | 13.64   | 13.84   |
| 105                                      | TC  | 172,690                  | 188,247 | 204,406 | 179,248      | 194,067 | 210,527 | 187,083      | 201,018 | 217,886 | 194,692      | 206,774 | 224,080 |
|                                          | SHC | 144,243                  | 123,897 | 101,506 | 155,063      | 133,109 | 107,607 | 167,216      | 145,992 | 116,412 | 176,459      | 156,818 | 124,411 |
|                                          | kW  | 14.68                    | 14.87   | 15.07   | 14.74        | 14.92   | 15.12   | 14.83        | 14.99   | 15.19   | 14.95        | 15.02   | 15.22   |
| 115                                      | TC  | 162,397                  | 177,341 | 192,558 | 169,067      | 182,371 | 197,884 | 177,288      | 188,527 | 204,408 | 185,748      | 193,594 | 209,995 |
|                                          | SHC | 137,711                  | 119,274 | 96,782  | 149,040      | 128,208 | 102,757 | 160,040      | 140,715 | 111,392 | 169,265      | 151,000 | 119,276 |
|                                          | kW  | 16.40                    | 16.59   | 16.79   | 16.47        | 16.65   | 16.84   | 16.57        | 16.70   | 16.90   | 16.64        | 16.73   | 16.93   |
| 118.4                                    | TC  | 149,791                  | 163,255 | 177,277 | 156,002      | 167,799 | 182,045 | 164,487      | 173,334 | 187,962 | 171,414      | 178,021 | 193,048 |
|                                          | SHC | 128,689                  | 111,418 | 90,119  | 138,634      | 119,854 | 95,734  | 150,496      | 131,517 | 103,900 | 156,834      | 141,254 | 111,329 |
|                                          | kW  | 17.11                    | 17.30   | 17.49   | 17.18        | 17.35   | 17.55   | 17.28        | 17.40   | 17.60   | 17.35        | 17.44   | 17.63   |
| 125                                      | TC  | 142,532                  | 153,597 | 166,725 | 147,001      | 157,643 | 170,997 | 155,710      | 162,460 | 176,337 | 162,322      | 167,053 | 181,056 |
|                                          | SHC | 122,183                  | 105,764 | 84,937  | 129,963      | 113,853 | 90,345  | 140,464      | 124,686 | 98,239  | 146,429      | 134,205 | 105,435 |
|                                          | kW  | 18.32                    | 18.50   | 18.69   | 18.38        | 18.55   | 18.74   | 18.49        | 18.59   | 18.79   | 18.56        | 18.63   | 18.82   |

| 50TJM24-50Hz                             |     |                            |       |       |              |       |       |              |       |       |              |       |       |
|------------------------------------------|-----|----------------------------|-------|-------|--------------|-------|-------|--------------|-------|-------|--------------|-------|-------|
| Temp (C) Air Entering<br>Condenser (Edb) |     | Evaporator Air - (L/s)/BPF |       |       |              |       |       |              |       |       |              |       |       |
|                                          |     | 2360 / 0.176               |       |       | 2690 / 0.182 |       |       | 3162 / 0.214 |       |       | 3540 / 0.230 |       |       |
|                                          |     | Evaporator Air - EWB (C)   |       |       |              |       |       |              |       |       |              |       |       |
|                                          |     | 17                         | 19    | 22    | 17           | 19    | 22    | 17           | 19    | 22    | 17           | 19    | 22    |
| 24                                       | TC  | 57.7                       | 62.7  | 68.2  | 59.8         | 65.0  | 70.7  | 62.1         | 67.8  | 73.5  | 64.9         | 70.1  | 75.8  |
|                                          | SHC | 45.1                       | 39.0  | 32.8  | 48.6         | 41.8  | 34.8  | 52.5         | 45.8  | 37.4  | 56.6         | 49.2  | 39.8  |
|                                          | kW  | 10.29                      | 10.44 | 10.61 | 10.33        | 10.50 | 10.68 | 10.40        | 10.58 | 10.76 | 10.45        | 10.62 | 10.81 |
| 29                                       | TC  | 55.8                       | 60.6  | 65.9  | 57.7         | 62.8  | 68.2  | 60.4         | 65.4  | 70.8  | 62.5         | 67.4  | 73.0  |
|                                          | SHC | 44.7                       | 38.4  | 32.0  | 47.9         | 41.2  | 33.9  | 52.5         | 45.2  | 36.6  | 55.8         | 48.6  | 39.0  |
|                                          | kW  | 11.72                      | 11.89 | 12.08 | 11.78        | 11.95 | 12.14 | 11.85        | 12.03 | 12.22 | 11.90        | 12.07 | 12.26 |
| 35                                       | TC  | 53.6                       | 58.4  | 63.3  | 55.1         | 60.3  | 65.4  | 58.2         | 62.6  | 67.8  | 60.0         | 64.5  | 69.8  |
|                                          | SHC | 44.1                       | 37.8  | 31.2  | 46.7         | 40.5  | 33.1  | 51.1         | 44.4  | 35.7  | 54.1         | 47.8  | 38.1  |
|                                          | kW  | 13.30                      | 13.47 | 13.66 | 13.35        | 13.53 | 13.73 | 13.45        | 13.60 | 13.80 | 13.49        | 13.64 | 13.84 |
| 40.6                                     | TC  | 50.6                       | 55.2  | 59.9  | 52.5         | 56.9  | 61.7  | 54.8         | 58.9  | 63.9  | 57.1         | 60.6  | 65.7  |
|                                          | SHC | 42.3                       | 36.3  | 29.7  | 45.4         | 39.0  | 31.5  | 49.0         | 42.8  | 34.1  | 51.7         | 46.0  | 36.5  |
|                                          | kW  | 14.68                      | 14.87 | 15.07 | 14.74        | 14.92 | 15.12 | 14.83        | 14.99 | 15.19 | 14.95        | 15.02 | 15.22 |
| 46                                       | TC  | 47.6                       | 52.0  | 56.4  | 49.6         | 53.5  | 58.0  | 52.0         | 55.3  | 59.9  | 54.4         | 56.7  | 61.5  |
|                                          | SHC | 40.4                       | 35.0  | 28.4  | 43.7         | 37.6  | 30.1  | 46.9         | 41.2  | 32.6  | 49.6         | 44.3  | 35.0  |
|                                          | kW  | 16.40                      | 16.59 | 16.79 | 16.47        | 16.65 | 16.84 | 16.57        | 16.70 | 16.90 | 16.64        | 16.73 | 16.93 |
| 48                                       | TC  | 43.9                       | 47.8  | 52.0  | 45.7         | 49.2  | 53.4  | 48.2         | 50.8  | 55.1  | 50.2         | 52.2  | 56.6  |
|                                          | SHC | 37.7                       | 32.7  | 26.4  | 40.6         | 35.1  | 28.1  | 44.1         | 38.5  | 30.5  | 46.0         | 41.4  | 32.6  |
|                                          | kW  | 17.11                      | 17.30 | 17.49 | 17.18        | 17.35 | 17.55 | 17.28        | 17.40 | 17.60 | 17.35        | 17.44 | 17.63 |
| 52                                       | TC  | 41.8                       | 45.0  | 48.9  | 43.1         | 46.2  | 50.1  | 45.6         | 47.6  | 51.7  | 47.6         | 49.0  | 53.1  |
|                                          | SHC | 35.8                       | 31.0  | 24.9  | 38.1         | 33.4  | 26.5  | 41.2         | 36.5  | 28.8  | 42.9         | 39.3  | 30.9  |
|                                          | kW  | 18.32                      | 18.50 | 18.69 | 18.38        | 18.55 | 18.74 | 18.49        | 18.59 | 18.79 | 18.56        | 18.63 | 18.82 |

**LEGEND**

BPF — Bypass Factor

Edb — Entering Dry-Bulb

Ewb — Entering Wet-Bulb

SHC — Sensible Heat Capacity (1000 Btuh) Gross

**Boldface** - Standard Ratings

**Notes:**

1. Direct interpolation is permissible. Do not extrapolate.

2. The following formulas may be used.

tlwb =

tedb —

sensible capacity (Btuh)

1.10 x cfm

tlwb =

Wet-bulb temprature corresponding to

enthalpy of air leaving evaporater coil (hlwb).

hlwb =

hewb —

total capacity (Btuh)

4.5 x cfm

Where: hewb = Enthaply of air entering evaporator coil.

Ldb — Leaving Dry-Bulb

Lwb — Leaving Wet-Bulb

TC — Total Capacity (1000 Btuh) Gross

kW — Compressor Motor Power Input

3. The SHC is based on 80 F edb temprature of air entering evaporator coil.

- Below 80 F edb, subtract (corr factor x cfm) from SHC.

- Above 80 F edb, add (corr factor x cfm) to SHC.

| BF   | ENTERING AIR DRY-BULB TEMP (F) |      |      |      |      |                                    |
|------|--------------------------------|------|------|------|------|------------------------------------|
|      | 79                             | 78   | 77   | 76   | 75   | under 75                           |
|      | 81                             | 82   | 83   | 84   | 85   | over 85                            |
|      | Correction Factor              |      |      |      |      |                                    |
| 0.05 | 1.04                           | 2.07 | 3.11 | 4.14 | 5.18 | Use<br>formula<br>shown<br>below.* |
| 0.10 | 0.98                           | 1.96 | 2.94 | 3.92 | 4.90 |                                    |
| 0.20 | 0.87                           | 1.74 | 2.62 | 3.49 | 4.36 |                                    |
| 0.30 | 0.76                           | 1.53 | 2.29 | 3.05 | 3.82 |                                    |

- Interpolation is permissible.

\*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.

5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additionally limited to edb and ewb conditions.

| Temp (F) Air Entering<br>Condenser (Edb) |     | Evaporator Air - CFM/BPF |         |         |              |         |         |              |         |         |              |         |         |
|------------------------------------------|-----|--------------------------|---------|---------|--------------|---------|---------|--------------|---------|---------|--------------|---------|---------|
|                                          |     | 5000 / 0.097             |         |         | 6500 / 0.120 |         |         | 8000 / 0.152 |         |         | 8500 / 0.170 |         |         |
|                                          |     | Evaporator Air - EWB (F) |         |         |              |         |         |              |         |         |              |         |         |
|                                          |     | 62                       | 67      | 72      | 62           | 67      | 72      | 62           | 67      | 72      | 62           | 67      | 72      |
| 75                                       | TC  | 239,775                  | 261,882 | 285,876 | 259,838      | 282,722 | 307,689 | 268,781      | 291,502 | 317,017 | 275,551      | 297,236 | 323,085 |
|                                          | SHC | 178,249                  | 153,511 | 128,506 | 209,619      | 178,703 | 146,614 | 227,625      | 193,614 | 156,449 | 239,727      | 205,005 | 164,007 |
|                                          | kW  | 11.69                    | 11.90   | 12.13   | 11.83        | 12.05   | 12.29   | 11.91        | 12.13   | 12.37   | 11.97        | 12.18   | 12.42   |
| 85                                       | TC  | 230,023                  | 251,614 | 274,742 | 248,968      | 271,137 | 295,158 | 257,905      | 279,276 | 303,745 | 265,919      | 284,402 | 309,317 |
|                                          | SHC | 174,132                  | 149,633 | 124,613 | 204,505      | 174,582 | 142,495 | 222,229      | 189,432 | 152,241 | 233,673      | 200,579 | 159,708 |
|                                          | kW  | 13.36                    | 13.59   | 13.83   | 13.51        | 13.74   | 13.99   | 13.60        | 13.81   | 14.07   | 13.67        | 13.86   | 14.12   |
| 95                                       | TC  | 219,644                  | 239,981 | 262,117 | 237,315      | 258,220 | 281,098 | 246,428      | 265,436 | 288,849 | 254,561      | 270,295 | 293,899 |
|                                          | SHC | 169,379                  | 144,625 | 119,721 | 198,703      | 169,253 | 137,323 | 215,118      | 183,681 | 146,864 | 224,555      | 194,856 | 154,233 |
|                                          | kW  | 15.21                    | 15.45   | 15.71   | 15.36        | 15.60   | 15.86   | 15.46        | 15.68   | 15.94   | 15.54        | 15.73   | 15.99   |
| 105                                      | TC  | 205,433                  | 224,535 | 245,163 | 222,226      | 241,085 | 262,441 | 232,978      | 247,480 | 269,302 | 239,213      | 251,897 | 273,745 |
|                                          | SHC | 167,407                  | 142,517 | 117,131 | 196,590      | 167,235 | 134,816 | 210,603      | 181,767 | 144,420 | 219,312      | 193,118 | 151,829 |
|                                          | kW  | 16.70                    | 16.97   | 17.23   | 16.87        | 17.11   | 17.38   | 16.99        | 17.19   | 17.46   | 17.08        | 17.24   | 17.50   |
| 115                                      | TC  | 190,476                  | 208,250 | 227,409 | 207,266      | 223,144 | 242,988 | 217,698      | 228,749 | 248,941 | 223,451      | 232,726 | 252,871 |
|                                          | SHC | 156,571                  | 132,945 | 108,424 | 184,169      | 156,520 | 125,286 | 193,147      | 170,448 | 134,465 | 201,218      | 181,095 | 141,569 |
|                                          | kW  | 18.55                    | 18.83   | 19.10   | 18.74        | 18.97   | 19.24   | 18.88        | 19.04   | 19.31   | 18.95        | 19.09   | 19.36   |
| 118.4                                    | TC  | 180,596                  | 197,568 | 215,796 | 197,485      | 211,548 | 230,441 | 206,310      | 216,983 | 235,956 | 212,656      | 220,557 | 239,604 |
|                                          | SHC | 145,657                  | 123,814 | 100,714 | 170,828      | 145,929 | 116,552 | 180,665      | 159,230 | 125,167 | 186,222      | 169,050 | 131,856 |
|                                          | kW  | 19.55                    | 19.83   | 20.12   | 19.75        | 19.98   | 20.26   | 19.89        | 20.05   | 20.33   | 19.98        | 20.09   | 20.37   |
| 125                                      | TC  | 172,604                  | 188,427 | 205,825 | 189,368      | 201,633 | 219,541 | 198,121      | 206,545 | 224,570 | 204,088      | 209,864 | 227,910 |
|                                          | SHC | 140,576                  | 118,910 | 96,134  | 163,607      | 140,683 | 111,639 | 171,170      | 153,439 | 120,086 | 176,325      | 162,795 | 126,642 |
|                                          | kW  | 20.65                    | 20.93   | 21.21   | 20.86        | 21.07   | 21.34   | 21.00        | 21.13   | 21.41   | 21.09        | 21.18   | 21.45   |

| 50TJM28-50Hz                             |     |                            |       |       |              |       |       |              |       |       |              |       |       |
|------------------------------------------|-----|----------------------------|-------|-------|--------------|-------|-------|--------------|-------|-------|--------------|-------|-------|
| Temp (C) Air Entering<br>Condenser (Edb) |     | Evaporator Air - (L/s)/BPF |       |       |              |       |       |              |       |       |              |       |       |
|                                          |     | 2360 / 0.097               |       |       | 3068 / 0.120 |       |       | 3776 / 0.152 |       |       | 4012 / 0.170 |       |       |
|                                          |     | Evaporator Air - EWB (C)   |       |       |              |       |       |              |       |       |              |       |       |
|                                          |     | 17                         | 19    | 22    | 17           | 19    | 22    | 17           | 19    | 22    | 17           | 19    | 22    |
| 24                                       | TC  | 70.3                       | 76.8  | 83.8  | 76.2         | 82.9  | 90.2  | 78.8         | 85.4  | 92.9  | 80.8         | 87.1  | 94.7  |
|                                          | SHC | 52.2                       | 45.0  | 37.7  | 61.4         | 52.4  | 43.0  | 66.7         | 56.7  | 45.9  | 70.3         | 60.1  | 48.1  |
|                                          | KW  | 11.69                      | 11.90 | 12.13 | 11.83        | 12.05 | 12.29 | 11.91        | 12.13 | 12.37 | 11.97        | 12.18 | 12.42 |
| 29                                       | TC  | 67.4                       | 73.7  | 80.5  | 73.0         | 79.5  | 86.5  | 75.6         | 81.9  | 89.0  | 77.9         | 83.4  | 90.7  |
|                                          | SHC | 51.0                       | 43.9  | 36.5  | 59.9         | 51.2  | 41.8  | 65.1         | 55.5  | 44.6  | 68.5         | 58.8  | 46.8  |
|                                          | KW  | 13.36                      | 13.59 | 13.83 | 13.51        | 13.74 | 13.99 | 13.60        | 13.81 | 14.07 | 13.67        | 13.86 | 14.12 |
| 35                                       | TC  | 64.4                       | 70.3  | 76.8  | 69.6         | 75.7  | 82.4  | 72.2         | 77.8  | 84.7  | 74.6         | 79.2  | 86.1  |
|                                          | SHC | 49.6                       | 42.4  | 35.1  | 58.2         | 49.6  | 40.2  | 63.0         | 53.8  | 43.0  | 65.8         | 57.1  | 45.2  |
|                                          | KW  | 15.21                      | 15.45 | 15.71 | 15.36        | 15.60 | 15.86 | 15.46        | 15.68 | 15.94 | 15.54        | 15.73 | 15.99 |
| 40.6                                     | TC  | 60.2                       | 65.8  | 71.9  | 65.1         | 70.7  | 76.9  | 68.3         | 72.5  | 78.9  | 70.1         | 73.8  | 80.2  |
|                                          | SHC | 49.1                       | 41.8  | 34.3  | 57.6         | 49.0  | 39.5  | 61.7         | 53.3  | 42.3  | 64.3         | 56.6  | 44.5  |
|                                          | KW  | 16.70                      | 16.97 | 17.23 | 16.87        | 17.11 | 17.38 | 16.99        | 17.19 | 17.46 | 17.08        | 17.24 | 17.50 |
| 46                                       | TC  | 55.8                       | 61.0  | 66.6  | 60.7         | 65.4  | 71.2  | 63.8         | 67.0  | 73.0  | 65.5         | 68.2  | 74.1  |
|                                          | SHC | 45.9                       | 39.0  | 31.8  | 54.0         | 45.9  | 36.7  | 56.6         | 50.0  | 39.4  | 59.0         | 53.1  | 41.5  |
|                                          | KW  | 18.55                      | 18.83 | 19.10 | 18.74        | 18.97 | 19.24 | 18.88        | 19.04 | 19.31 | 18.95        | 19.09 | 19.36 |
| 48                                       | TC  | 52.9                       | 57.9  | 63.2  | 57.9         | 62.0  | 67.5  | 60.5         | 63.6  | 69.2  | 62.3         | 64.6  | 70.2  |
|                                          | SHC | 42.7                       | 36.3  | 29.5  | 50.1         | 42.8  | 34.2  | 52.9         | 46.7  | 36.7  | 54.6         | 49.5  | 38.6  |
|                                          | KW  | 19.55                      | 19.83 | 20.12 | 19.75        | 19.98 | 20.26 | 19.89        | 20.05 | 20.33 | 19.98        | 20.09 | 20.37 |
| 52                                       | TC  | 50.6                       | 55.2  | 60.3  | 55.5         | 59.1  | 64.3  | 58.1         | 60.5  | 65.8  | 59.8         | 61.5  | 66.8  |
|                                          | SHC | 41.2                       | 34.9  | 28.2  | 48.0         | 41.2  | 32.7  | 50.2         | 45.0  | 35.2  | 51.7         | 47.7  | 37.1  |
|                                          | KW  | 20.65                      | 20.93 | 21.21 | 20.86        | 21.07 | 21.34 | 21.00        | 21.13 | 21.41 | 21.09        | 21.18 | 21.45 |

BPF — Bypass Factor  
Edb — Entering Dry-Bulb  
Ewb — Entering Wet-Bulb  
SHC — Sensible Heat Capacity (1000 Btuh) Gross  
**Boldface** - Standard Ratings

Ldb — Leaving Dry-Bulb  
Lwb — Leaving Wet-Bulb  
TC — Total Capacity (1000 Btuh) Gross  
kW — Compressor Motor Power Input

1. Direct interpolation is permissible. Do not extrapolate.
2. The following formulas may be used.

tlwb = Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (hlwb).

Where: hewb = Enthaply of air entering evaporator coil.

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.
5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additionally limited to edb and ewb conditions.

3. The SHC is based on 80 F edb temperature of air entering evaporator coil.
- Below 80 F edb, subtract (corr factor x cfm) from SHC.
  - Above 80 F edb, add (corr factor x cfm) to SHC.

| BF   | ENTERING AIR DRY-BULB TEMP (F) |      |      |      |      |                                    |
|------|--------------------------------|------|------|------|------|------------------------------------|
|      | 79                             | 78   | 77   | 76   | 75   | under 75                           |
|      | 81                             | 82   | 83   | 84   | 85   | over 85                            |
|      | Correction Factor              |      |      |      |      |                                    |
| 0.05 | 1.04                           | 2.07 | 3.11 | 4.14 | 5.18 | Use<br>formula<br>shown<br>below.* |
| 0.10 | 0.98                           | 1.96 | 2.94 | 3.92 | 4.90 |                                    |
| 0.20 | 0.87                           | 1.74 | 2.62 | 3.49 | 4.36 |                                    |
| 0.30 | 0.76                           | 1.53 | 2.29 | 3.05 | 3.82 |                                    |

- Interpolation is permissible.

\*Correction Factor =  $1.10 \times (1 - BF) \times (edb - 80)$ .

Cooling Capacities (cont)

| 50TJM34-50Hz                             |     |                          |         |         |              |         |         |              |         |         |               |         |         |
|------------------------------------------|-----|--------------------------|---------|---------|--------------|---------|---------|--------------|---------|---------|---------------|---------|---------|
| Temp (F) Air Entering<br>Condenser (Edb) |     | Evaporator Air - CFM/BPF |         |         |              |         |         |              |         |         |               |         |         |
|                                          |     | 7000 / 0.088             |         |         | 8000 / 0.137 |         |         | 9000 / 0.164 |         |         | 10000 / 0.187 |         |         |
|                                          |     | Evaporator Air - EWB (F) |         |         |              |         |         |              |         |         |               |         |         |
|                                          |     | 62                       | 67      | 72      | 62           | 67      | 72      | 62           | 67      | 72      | 62            | 67      | 72      |
| 75                                       | TC  | 296,407                  | 322,322 | 350,445 | 304,481      | 330,544 | 359,242 | 314,935      | 340,929 | 370,084 | 321,474       | 346,101 | 375,629 |
|                                          | SHC | 230,805                  | 197,739 | 164,287 | 246,458      | 209,072 | 170,651 | 264,411      | 224,490 | 181,816 | 276,507       | 235,900 | 189,091 |
|                                          | kW  | 16.11                    | 16.53   | 16.98   | 16.24        | 16.66   | 17.12   | 16.35        | 16.76   | 17.23   | 16.46         | 16.85   | 17.32   |
| 85                                       | TC  | 285,582                  | 310,357 | 337,372 | 292,640      | 317,884 | 345,404 | 303,352      | 327,758 | 355,683 | 310,505       | 332,333 | 360,669 |
|                                          | SHC | 221,030                  | 188,913 | 156,233 | 235,918      | 199,898 | 162,353 | 252,940      | 214,892 | 173,198 | 263,050       | 225,898 | 180,220 |
|                                          | kW  | 18.01                    | 18.45   | 18.93   | 18.23        | 18.58   | 19.07   | 18.26        | 18.69   | 19.18   | 18.40         | 18.78   | 19.27   |
| 95                                       | TC  | 273,833                  | 297,407 | 323,220 | 280,798      | 304,277 | 330,568 | 291,515      | 313,566 | 340,216 | 298,925       | 317,874 | 344,723 |
|                                          | SHC | 216,055                  | 184,261 | 151,628 | 230,680      | 195,218 | 157,689 | 246,964      | 210,090 | 168,436 | 254,929       | 221,312 | 175,407 |
|                                          | kW  | 20.07                    | 20.54   | 21.03   | 20.21        | 20.67   | 21.17   | 20.35        | 20.77   | 21.28   | 20.50         | 20.87   | 21.37   |
| 105                                      | TC  | 258,582                  | 280,469 | 304,730 | 265,424      | 286,587 | 311,223 | 276,608      | 295,186 | 320,158 | 282,676       | 298,932 | 324,096 |
|                                          | SHC | 210,940                  | 179,264 | 146,679 | 224,608      | 190,155 | 152,649 | 237,755      | 204,966 | 163,317 | 247,748       | 215,910 | 170,222 |
|                                          | kW  | 21.84                    | 22.30   | 22.80   | 21.99        | 22.43   | 22.93   | 22.15        | 22.53   | 23.04   | 22.28         | 22.61   | 23.13   |
| 115                                      | TC  | 243,144                  | 263,382 | 286,134 | 250,524      | 268,787 | 291,857 | 261,131      | 276,856 | 300,135 | 267,541       | 280,108 | 303,533 |
|                                          | SHC | 204,616                  | 173,820 | 141,334 | 216,845      | 184,650 | 147,245 | 230,564      | 199,527 | 157,848 | 236,223       | 210,168 | 164,694 |
|                                          | kW  | 23.89                    | 24.33   | 24.84   | 24.06        | 24.46   | 24.96   | 24.21        | 24.56   | 25.06   | 24.36         | 24.64   | 25.14   |
| 118.4                                    | TC  | 218,932                  | 237,019 | 257,412 | 226,252      | 241,717 | 262,434 | 235,779      | 248,950 | 269,846 | 241,493       | 251,866 | 272,813 |
|                                          | SHC | 181,977                  | 154,711 | 125,473 | 191,666      | 164,449 | 130,781 | 203,780      | 177,710 | 140,295 | 208,912       | 187,284 | 146,443 |
|                                          | kW  | 25.72                    | 26.18   | 26.71   | 25.91        | 26.31   | 26.83   | 26.07        | 26.41   | 26.93   | 26.23         | 26.49   | 27.01   |
| 125                                      | TC  | 203,152                  | 218,652 | 237,359 | 209,518      | 222,848 | 241,772 | 218,982      | 229,468 | 248,510 | 224,212       | 231,969 | 251,095 |
|                                          | SHC | 170,820                  | 145,230 | 117,183 | 179,421      | 154,704 | 122,262 | 188,877      | 167,205 | 131,353 | 193,388       | 176,119 | 137,234 |
|                                          | kW  | 26.74                    | 27.18   | 27.69   | 26.93        | 27.30   | 27.81   | 27.10        | 27.39   | 27.90   | 27.26         | 27.46   | 27.98   |

| 50TJM34-50Hz                             |     |                            |       |       |              |       |       |              |       |       |              |       |       |
|------------------------------------------|-----|----------------------------|-------|-------|--------------|-------|-------|--------------|-------|-------|--------------|-------|-------|
| Temp (C) Air Entering<br>Condenser (Edb) |     | Evaporator Air - (L/s)/BPF |       |       |              |       |       |              |       |       |              |       |       |
|                                          |     | 3304 / 0.088               |       |       | 3776 / 0.137 |       |       | 4248 / 0.164 |       |       | 4719 / 0.187 |       |       |
|                                          |     | Evaporator Air - EWB (C)   |       |       |              |       |       |              |       |       |              |       |       |
|                                          |     | 17                         | 19    | 22    | 17           | 19    | 22    | 17           | 19    | 22    | 17           | 19    | 22    |
| 24                                       | TC  | 86.9                       | 94.5  | 102.7 | 89.2         | 96.9  | 105.3 | 92.3         | 99.9  | 108.5 | 94.2         | 101.4 | 110.1 |
|                                          | SHC | 67.6                       | 58.0  | 48.1  | 72.2         | 61.3  | 50.0  | 77.5         | 65.8  | 53.3  | 81.0         | 69.1  | 55.4  |
|                                          | kW  | 16.11                      | 16.53 | 16.98 | 16.24        | 16.66 | 17.12 | 16.35        | 16.76 | 17.23 | 16.46        | 16.85 | 17.32 |
| 29                                       | TC  | 83.7                       | 91.0  | 98.9  | 85.8         | 93.2  | 101.2 | 88.9         | 96.1  | 104.2 | 91.0         | 97.4  | 105.7 |
|                                          | SHC | 64.8                       | 55.4  | 45.8  | 69.1         | 58.6  | 47.6  | 74.1         | 63.0  | 50.8  | 77.1         | 66.2  | 52.8  |
|                                          | kW  | 18.01                      | 18.45 | 18.93 | 18.23        | 18.58 | 19.07 | 18.26        | 18.69 | 19.18 | 18.40        | 18.78 | 19.27 |
| 35                                       | TC  | 80.3                       | 87.2  | 94.7  | 82.3         | 89.2  | 96.9  | 85.4         | 91.9  | 99.7  | 87.6         | 93.2  | 101.0 |
|                                          | SHC | 63.3                       | 54.0  | 44.4  | 67.6         | 57.2  | 46.2  | 72.4         | 61.6  | 49.4  | 74.7         | 64.9  | 51.4  |
|                                          | kW  | 20.07                      | 20.54 | 21.03 | 20.21        | 20.67 | 21.17 | 20.35        | 20.77 | 21.28 | 20.50        | 20.87 | 21.37 |
| 40.6                                     | TC  | 75.8                       | 82.2  | 89.3  | 77.8         | 84.0  | 91.2  | 81.1         | 86.5  | 93.8  | 82.8         | 87.6  | 95.0  |
|                                          | SHC | 61.8                       | 52.5  | 43.0  | 65.8         | 55.7  | 44.7  | 69.7         | 60.1  | 47.9  | 72.6         | 63.3  | 49.9  |
|                                          | kW  | 21.84                      | 22.30 | 22.80 | 21.99        | 22.43 | 22.93 | 22.15        | 22.53 | 23.04 | 22.28        | 22.61 | 23.13 |
| 46                                       | TC  | 71.3                       | 77.2  | 83.9  | 73.4         | 78.8  | 85.5  | 76.5         | 81.1  | 88.0  | 78.4         | 82.1  | 89.0  |
|                                          | SHC | 60.0                       | 50.9  | 41.4  | 63.6         | 54.1  | 43.2  | 67.6         | 58.5  | 46.3  | 69.2         | 61.6  | 48.3  |
|                                          | kW  | 23.89                      | 24.33 | 24.84 | 24.06        | 24.46 | 24.96 | 24.21        | 24.56 | 25.06 | 24.36        | 24.64 | 25.14 |
| 48                                       | TC  | 64.2                       | 69.5  | 75.4  | 66.3         | 70.8  | 76.9  | 69.1         | 73.0  | 79.1  | 70.8         | 73.8  | 80.0  |
|                                          | SHC | 53.3                       | 45.3  | 36.8  | 56.2         | 48.2  | 38.3  | 59.7         | 52.1  | 41.1  | 61.2         | 54.9  | 42.9  |
|                                          | kW  | 25.72                      | 26.18 | 26.71 | 25.91        | 26.31 | 26.83 | 26.07        | 26.41 | 26.93 | 26.23        | 26.49 | 27.01 |
| 52                                       | TC  | 59.5                       | 64.1  | 69.6  | 61.4         | 65.3  | 70.9  | 64.2         | 67.3  | 72.8  | 65.7         | 68.0  | 73.6  |
|                                          | SHC | 50.1                       | 42.6  | 34.3  | 52.6         | 45.3  | 35.8  | 55.4         | 49.0  | 38.5  | 56.7         | 51.6  | 40.2  |
|                                          | kW  | 26.74                      | 27.18 | 27.69 | 26.93        | 27.30 | 27.81 | 27.10        | 27.39 | 27.90 | 27.26        | 27.46 | 27.98 |

LEGEND  
BPF — Bypass Factor  
Edb — Entering Dry-Bulb  
Ewb — Entering Wet-Bulb  
SHC — Sensible Heat Capacity (1000 Btuh) Gross  
**Boldface** - Standard Ratings

Ldb — Leaving Dry-Bulb  
Lwb — Leaving Wet-Bulb  
TC — Total Capacity (1000 Btuh) Gross  
kW — Compressor Motor Power Input

- Notes:  
1. Direct interpolation is permissible. Do not extrapolate.  
2. The following formulas may be used.  
$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times cfm}$$
$$t_{lwb} = \text{Wet-bulb temperature corresponding to enthalpy of air leaving evaporater coil (hlwb).}$$
$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times cfm}$$
Where: hewb = Enthalpy of air entering evaporator coil.
3. The SHC is based on 80 F edb temperature of air entering evaporator coil.  
- Below 80 F edb, subtract (corr factor x cfm) from SHC.  
- Above 80 F edb, add (corr factor x cfm) to SHC.

| BF   | ENTERING AIR DRY-BULB TEMP (F) |      |      |      |      |                           |
|------|--------------------------------|------|------|------|------|---------------------------|
|      | 79                             | 78   | 77   | 76   | 75   | under 75                  |
|      | 81                             | 82   | 83   | 84   | 85   | over 85                   |
|      | Correction Factor              |      |      |      |      |                           |
| 0.05 | 1.04                           | 2.07 | 3.11 | 4.14 | 5.18 | Use formula shown below.* |
| 0.10 | 0.98                           | 1.96 | 2.94 | 3.92 | 4.90 |                           |
| 0.20 | 0.87                           | 1.74 | 2.62 | 3.49 | 4.36 |                           |
| 0.30 | 0.76                           | 1.53 | 2.29 | 3.05 | 3.82 |                           |

4. Cooling capacities are gross and do not include deductions for indoor fan motor heat.  
5. Variable Air Volume units will operate down to 70 cfm/ton. Performance at 70 cfm/ton is limited to unloaded operation and may be additionally limited to edb and ewb conditions.

- Interpolation is permissible.  
\*Correction Factor = 1.10 x (1 - BF) x (edb - 80).

# Fan Performance Table

Unit - 50TJM - 018 - 15 Tons - 50Hz (Standard Motor)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |            |             |             |            |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|
|                        | 0.2                                         |             |             | 0.4        |             |             | 0.6        |             |             | 0.8        |             |             | 1.0        |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         |
| 4000                   | 555                                         | 0.93        | 1.04        | 622        | 1.13        | 1.27        | 686        | 1.36        | 1.52        | <b>747</b> | <b>1.59</b> | <b>1.78</b> | <b>804</b> | <b>1.84</b> | <b>2.06</b> |
| 4500                   | 589                                         | 1.20        | 1.34        | 652        | 1.42        | 1.59        | 711        | 1.65        | 1.86        | <b>767</b> | <b>1.90</b> | <b>2.14</b> | <b>823</b> | <b>2.17</b> | <b>2.43</b> |
| 5000                   | 624                                         | 1.51        | 1.69        | 682        | 1.75        | 1.96        | 737        | 2.01        | 2.25        | <b>790</b> | <b>2.27</b> | <b>2.54</b> | <b>841</b> | <b>2.54</b> | <b>2.85</b> |
| 5500                   | 658                                         | 1.87        | 2.10        | 711        | 2.13        | 2.39        | <b>762</b> | <b>2.40</b> | <b>2.69</b> | <b>813</b> | <b>2.68</b> | <b>3.00</b> | <b>861</b> | <b>2.96</b> | <b>3.32</b> |
| 6000                   | 689                                         | 2.28        | 2.56        | 739        | 2.55        | 2.86        | <b>788</b> | <b>2.83</b> | <b>3.18</b> | <b>835</b> | <b>3.13</b> | <b>3.51</b> | <b>881</b> | <b>3.43</b> | <b>3.85</b> |
| 6500                   | 721                                         | 2.74        | 3.07        | <b>765</b> | <b>3.01</b> | <b>3.38</b> | <b>811</b> | <b>3.31</b> | <b>3.71</b> | <b>855</b> | <b>3.62</b> | <b>4.06</b> | 899        | 3.93        | 4.41        |
| 7000                   | <b>745</b>                                  | <b>3.20</b> | <b>3.59</b> | <b>788</b> | <b>3.49</b> | <b>3.92</b> | 830        | 3.80        | 4.26        | 873        | 4.12        | 4.62        | 914        | 4.45        | 4.99        |

Unit - 50TJM - 018 - 15 Tons - 50Hz (Standard Motor) (cont)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |             |             |             |      |      |      |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|------|------|------|
|                        | 1.2                                         |             |             | 1.4        |             |             | 1.6        |             |             | 1.8         |             |             | 2.0  |      |      |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM         | KWI         | BHP         | RPM  | KWI  | BHP  |
| 4000                   | <b>859</b>                                  | <b>2.09</b> | <b>2.35</b> | <b>910</b> | <b>2.43</b> | <b>2.72</b> | <b>959</b> | <b>2.62</b> | <b>2.94</b> | <b>1007</b> | <b>2.90</b> | <b>3.25</b> | 1052 | 3.18 | 3.57 |
| 4500                   | <b>875</b>                                  | <b>2.44</b> | <b>2.73</b> | <b>924</b> | <b>2.72</b> | <b>3.05</b> | <b>971</b> | <b>3.00</b> | <b>3.37</b> | <b>1018</b> | <b>3.29</b> | <b>3.70</b> | 1062 | 3.60 | 4.04 |
| 5000                   | <b>891</b>                                  | <b>2.83</b> | <b>3.17</b> | <b>939</b> | <b>3.13</b> | <b>3.51</b> | <b>986</b> | <b>3.43</b> | <b>3.85</b> | 1030        | 3.74        | 4.20        | 1073 | 4.06 | 4.55 |
| 5500                   | <b>909</b>                                  | <b>3.27</b> | <b>3.66</b> | <b>955</b> | <b>3.58</b> | <b>4.01</b> | 998        | 3.89        | 4.36        | 1042        | 4.23        | 4.74        | 1083 | 4.56 | 5.11 |
| 6000                   | 925                                         | 3.74        | 4.20        | 969        | 4.07        | 4.56        | 1012       | 4.40        | 4.94        | 1054        | 4.75        | 5.32        | 1094 | 5.10 | 5.72 |
| 6500                   | 942                                         | 4.26        | 4.78        | 983        | 4.60        | 5.15        | 1024       | 4.94        | 5.54        | 1065        | 5.30        | 5.94        | 1104 | 5.66 | 6.35 |
| 7000                   | 954                                         | 4.79        | 5.37        | 994        | 5.13        | 5.76        | 1034       | 5.49        | 6.16        | 1072        | 5.86        | 6.57        | 1110 | 6.24 | 7.00 |

**Bold, Italics** - Standard Motor and Drive Package

Unit - 50TJM - 18 - 15 Tons - 50Hz (High Efficiency Motor)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |            |             |             |            |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|
|                        | 0.2                                         |             |             | 0.4        |             |             | 0.6        |             |             | 0.8        |             |             | 1.0        |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         |
| 4000                   | 555                                         | 0.87        | 1.02        | 622        | 1.06        | 1.25        | 686        | 1.27        | 1.50        | <b>747</b> | <b>1.49</b> | <b>1.75</b> | <b>804</b> | <b>1.72</b> | <b>2.03</b> |
| 4500                   | 589                                         | 1.12        | 1.32        | 652        | 1.33        | 1.57        | 711        | 1.55        | 1.83        | <b>767</b> | <b>1.79</b> | <b>2.10</b> | <b>823</b> | <b>2.03</b> | <b>2.39</b> |
| 5000                   | 624                                         | 1.42        | 1.67        | 682        | 1.64        | 1.93        | 737        | 1.88        | 2.21        | <b>790</b> | <b>2.13</b> | <b>2.50</b> | <b>841</b> | <b>2.39</b> | <b>2.81</b> |
| 5500                   | 658                                         | 1.76        | 2.07        | 711        | 2.00        | 2.35        | <b>762</b> | <b>2.25</b> | <b>2.65</b> | <b>813</b> | <b>2.51</b> | <b>2.95</b> | <b>861</b> | <b>2.78</b> | <b>3.27</b> |
| 6000                   | 689                                         | 2.14        | 2.52        | 739        | 2.39        | 2.81        | <b>788</b> | <b>2.66</b> | <b>3.12</b> | <b>835</b> | <b>2.94</b> | <b>3.45</b> | <b>881</b> | <b>3.22</b> | <b>3.79</b> |
| 6500                   | 721                                         | 2.57        | 3.02        | <b>765</b> | <b>2.83</b> | <b>3.32</b> | <b>811</b> | <b>3.11</b> | <b>3.65</b> | <b>855</b> | <b>3.40</b> | <b>3.99</b> | 899        | 3.69        | 4.34        |
| 7000                   | <b>745</b>                                  | <b>3.01</b> | <b>3.53</b> | <b>788</b> | <b>3.28</b> | <b>3.86</b> | <b>830</b> | <b>3.57</b> | <b>4.19</b> | 873        | 3.87        | 4.55        | 914        | 4.18        | 4.91        |

Unit - 50TJM - 18 - 15 Tons - 50Hz (High Efficiency Motor) (cont)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |             |             |             |      |      |      |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|------|------|------|
|                        | 1.2                                         |             |             | 1.4        |             |             | 1.6        |             |             | 1.8         |             |             | 2.0  |      |      |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM         | KWI         | BHP         | RPM  | KWI  | BHP  |
| 4000                   | <b>859</b>                                  | <b>1.96</b> | <b>2.31</b> | <b>910</b> | <b>2.28</b> | <b>2.68</b> | <b>959</b> | <b>2.46</b> | <b>2.89</b> | <b>1007</b> | <b>2.72</b> | <b>3.20</b> | 1052 | 2.99 | 3.51 |
| 4500                   | <b>875</b>                                  | <b>2.29</b> | <b>2.69</b> | <b>924</b> | <b>2.55</b> | <b>3.00</b> | <b>971</b> | <b>2.82</b> | <b>3.31</b> | <b>1018</b> | <b>3.09</b> | <b>3.64</b> | 1062 | 3.38 | 3.97 |
| 5000                   | <b>891</b>                                  | <b>2.66</b> | <b>3.12</b> | <b>939</b> | <b>2.94</b> | <b>3.45</b> | <b>986</b> | <b>3.22</b> | <b>3.79</b> | <b>1030</b> | <b>3.51</b> | <b>4.13</b> | 1073 | 3.81 | 4.48 |
| 5500                   | <b>909</b>                                  | <b>3.07</b> | <b>3.60</b> | <b>955</b> | <b>3.36</b> | <b>3.95</b> | 998        | 3.65        | 4.29        | 1042        | 3.97        | 4.66        | 1083 | 4.28 | 5.03 |
| 6000                   | <b>925</b>                                  | <b>3.51</b> | <b>4.13</b> | 969        | 3.82        | 4.49        | 1012       | 4.13        | 4.86        | 1054        | 4.46        | 5.24        | 1094 | 4.79 | 5.63 |
| 6500                   | 942                                         | 4.00        | 4.71        | 983        | 4.31        | 5.07        | 1024       | 4.64        | 5.45        | 1065        | 4.98        | 5.85        | 1104 | 5.32 | 6.25 |
| 7000                   | 954                                         | 4.49        | 5.28        | 994        | 4.82        | 5.66        | 1034       | 5.15        | 6.06        | 1072        | 5.50        | 6.47        | 1110 | 5.86 | 6.88 |

**Bold, Italics** - High Efficiency Motor and Drive Package

## Legend:

**RPM** - Revolutions Per Minute

**KWI** - Kilo Watts Input to Motor

**BHP** - Brake Horsepower Input to Fan

**CFM** - Cubic Feet per Minute

**in.wg** - Inch Water Gauge

## Notes:

1. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.

2. Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.

3. Interpolation is permissible. Do not extrapolate.

4. Fan performance is based on wet coils, clean filters and casing losses.

5. Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence.

Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

6. Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.

7. Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.

8. Conversion - Bhp to KWI

$$KWI = \frac{Bhp \times 0.746}{\text{Motor efficiency}}$$

# Fan Performance Table (cont)

## Unit - 50TJM - 24 - 19 Tons - 50Hz (Standard Motor)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |            |             |             |            |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|
|                        | 0.2                                         |             |             | 0.4        |             |             | 0.6        |             |             | 0.8        |             |             | 1.0        |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         |
| 5000                   | 583                                         | 1.30        | 1.48        | 642        | 1.51        | 1.73        | 698        | 1.75        | 2.00        | <b>754</b> | <b>1.99</b> | <b>2.28</b> | <b>805</b> | <b>2.25</b> | <b>2.58</b> |
| 5500                   | 617                                         | 1.62        | 1.86        | 672        | 1.86        | 2.13        | 724        | 2.10        | 2.41        | <b>775</b> | <b>2.36</b> | <b>2.70</b> | <b>825</b> | <b>2.63</b> | <b>3.01</b> |
| 6000                   | 654                                         | 2.01        | 2.30        | 704        | 2.26        | 2.58        | 752        | 2.51        | 2.88        | <b>800</b> | <b>2.79</b> | <b>3.19</b> | <b>847</b> | <b>3.07</b> | <b>3.51</b> |
| 6500                   | 689                                         | 2.44        | 2.80        | 735        | 2.71        | 3.10        | <b>781</b> | <b>2.98</b> | <b>3.41</b> | <b>826</b> | <b>3.27</b> | <b>3.74</b> | <b>871</b> | <b>3.57</b> | <b>4.08</b> |
| 7000                   | 725                                         | 2.95        | 3.37        | <b>768</b> | <b>3.22</b> | <b>3.69</b> | <b>811</b> | <b>3.51</b> | <b>4.02</b> | <b>854</b> | <b>3.81</b> | <b>4.36</b> | <b>895</b> | <b>4.12</b> | <b>4.72</b> |
| 7500                   | <b>761</b>                                  | <b>3.51</b> | <b>4.02</b> | <b>802</b> | <b>3.80</b> | <b>4.35</b> | <b>842</b> | <b>4.11</b> | <b>4.70</b> | <b>882</b> | <b>4.42</b> | <b>5.06</b> | 921        | 4.74        | 5.43        |

## Unit - 50TJM - 24 - 19 Tons - 50Hz (Standard Motor) (cont)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |             |             |             |             |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                        | 1.2                                         |             |             | 1.4        |             |             | 1.6        |             |             | 1.8         |             |             | 2.0         |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM         | KWI         | BHP         | RPM         | KWI         | BHP         |
| 5000                   | <b>856</b>                                  | <b>2.52</b> | <b>2.88</b> | <b>906</b> | <b>2.80</b> | <b>3.20</b> | <b>954</b> | <b>3.08</b> | <b>3.53</b> | <b>998</b>  | <b>3.37</b> | <b>3.86</b> | <b>1040</b> | <b>3.67</b> | <b>4.20</b> |
| 5500                   | <b>874</b>                                  | <b>2.91</b> | <b>3.34</b> | <b>920</b> | <b>3.20</b> | <b>3.67</b> | <b>966</b> | <b>3.50</b> | <b>4.01</b> | <b>1009</b> | <b>3.81</b> | <b>4.36</b> | 1052        | 4.13        | 4.72        |
| 6000                   | <b>893</b>                                  | <b>3.37</b> | <b>3.85</b> | <b>938</b> | <b>3.67</b> | <b>4.20</b> | <b>980</b> | <b>3.98</b> | <b>4.56</b> | <b>1023</b> | <b>4.30</b> | <b>4.93</b> | 1064        | 4.63        | 5.30        |
| 6500                   | <b>913</b>                                  | <b>3.87</b> | <b>4.43</b> | <b>956</b> | <b>4.19</b> | <b>4.79</b> | <b>998</b> | <b>4.51</b> | <b>5.17</b> | 1038        | 4.85        | 5.55        | 1077        | 5.20        | 5.95        |
| 7000                   | <b>936</b>                                  | <b>4.44</b> | <b>5.08</b> | 976        | 4.77        | 5.46        | 1016       | 5.11        | 5.85        | 1055        | 5.46        | 6.25        | 1094        | 5.82        | 6.66        |
| 7500                   | 959                                         | 5.07        | 5.80        | 998        | 5.41        | 6.20        | 1035       | 5.77        | 6.60        | 1073        | 6.13        | 7.02        | 1110        | 6.50        | 7.44        |

**Bold, Italics** - Standard Motor and Drive Package

## Unit - 50TJM - 24 - 19 Tons - 50Hz (High Efficiency Motor)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |            |             |             |            |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|
|                        | 0.2                                         |             |             | 0.4        |             |             | 0.6        |             |             | 0.8        |             |             | 1.0        |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         |
| 5000                   | 583                                         | 1.25        | 1.48        | 642        | 1.46        | 1.73        | 698        | 1.69        | 2.00        | <b>754</b> | <b>1.92</b> | <b>2.28</b> | <b>805</b> | <b>2.17</b> | <b>2.58</b> |
| 5500                   | 617                                         | 1.57        | 1.86        | 672        | 1.79        | 2.13        | 724        | 2.03        | 2.41        | <b>775</b> | <b>2.28</b> | <b>2.70</b> | <b>825</b> | <b>2.54</b> | <b>3.01</b> |
| 6000                   | 654                                         | 1.94        | 2.30        | 704        | 2.18        | 2.58        | 752        | 2.42        | 2.88        | <b>800</b> | <b>2.69</b> | <b>3.19</b> | <b>847</b> | <b>2.96</b> | <b>3.52</b> |
| 6500                   | 689                                         | 2.36        | 2.80        | 735        | 2.61        | 3.10        | <b>781</b> | <b>2.88</b> | <b>3.41</b> | <b>826</b> | <b>3.15</b> | <b>3.74</b> | <b>871</b> | <b>3.44</b> | <b>4.08</b> |
| 7000                   | 725                                         | 2.84        | 3.37        | <b>768</b> | <b>3.11</b> | <b>3.69</b> | <b>811</b> | <b>3.39</b> | <b>4.02</b> | <b>854</b> | <b>3.68</b> | <b>4.36</b> | <b>895</b> | <b>3.98</b> | <b>4.72</b> |
| 7500                   | <b>761</b>                                  | <b>3.39</b> | <b>4.02</b> | <b>802</b> | <b>3.67</b> | <b>4.35</b> | <b>842</b> | <b>3.96</b> | <b>4.70</b> | <b>882</b> | <b>4.26</b> | <b>5.06</b> | 921        | 4.57        | 5.43        |

## Unit - 50TJM - 24 - 19 Tons - 50Hz (High Efficiency Motor) (cont)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |             |             |             |             |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                        | 1.2                                         |             |             | 1.4        |             |             | 1.6        |             |             | 1.8         |             |             | 2.0         |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM         | KWI         | BHP         | RPM         | KWI         | BHP         |
| 5000                   | <b>856</b>                                  | <b>2.43</b> | <b>2.88</b> | <b>906</b> | <b>2.70</b> | <b>3.20</b> | <b>954</b> | <b>2.97</b> | <b>3.53</b> | <b>998</b>  | <b>3.25</b> | <b>3.86</b> | <b>1040</b> | <b>3.54</b> | <b>4.20</b> |
| 5500                   | <b>874</b>                                  | <b>2.81</b> | <b>3.34</b> | <b>920</b> | <b>3.09</b> | <b>3.67</b> | <b>966</b> | <b>3.38</b> | <b>4.01</b> | <b>1009</b> | <b>3.67</b> | <b>4.36</b> | 1052        | 3.98        | 4.72        |
| 6000                   | <b>893</b>                                  | <b>3.25</b> | <b>3.86</b> | <b>938</b> | <b>3.54</b> | <b>4.20</b> | <b>980</b> | <b>3.84</b> | <b>4.56</b> | <b>1023</b> | <b>4.15</b> | <b>4.93</b> | 1064        | 4.47        | 5.31        |
| 6500                   | <b>913</b>                                  | <b>3.73</b> | <b>4.43</b> | <b>956</b> | <b>4.04</b> | <b>4.80</b> | <b>998</b> | <b>4.36</b> | <b>5.17</b> | 1038        | 4.68        | 5.56        | 1077        | 5.01        | 5.95        |
| 7000                   | <b>936</b>                                  | <b>4.28</b> | <b>5.08</b> | 976        | 4.60        | 5.46        | 1016       | 4.93        | 5.85        | 1055        | 5.26        | 6.25        | 1094        | 5.61        | 6.66        |
| 7500                   | 959                                         | 4.89        | 5.81        | 998        | 5.22        | 6.20        | 1035       | 5.56        | 6.60        | 1073        | 5.91        | 7.02        | 1110        | 6.27        | 7.44        |

**Bold, Italics** - High Efficiency Motor and Drive Package

### Legend:

**RPM** - Revolutions Per Minute

**KWI** - Kilo Watts Input to Motor

**BHP** - Brake Horsepower Input to Fan

**CFM** - Cubic Feet per Minute

**in.wg** - Inch Water Gauge

### Notes:

- Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
- Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
- Interpolation is permissible. Do not extrapolate.
- Fan performance is based on wet coils, clean filters and casing loses.
- Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
- Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
- Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
- Conversion - Bhp to KWI

$$\text{KWI} = \frac{\text{Bhp} \times 0.746}{\text{Motor efficiency}}$$

# Fan Performance Table (cont)

Unit - 50TJM - 28 - 23 Tons - 50Hz (Standard Motor)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |      |      |            |             |             |            |             |             |            |             |             |            |             |             |
|------------------------|---------------------------------------------|------|------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|
|                        | 0.2                                         |      |      | 0.4        |             |             | 0.6        |             |             | 0.8        |             |             | 1.0        |             |             |
|                        | RPM                                         | KWI  | BHP  | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         |
| 5000                   | 535                                         | 1.06 | 1.21 | 592        | 1.27        | 1.45        | 647        | 1.50        | 1.71        | 700        | 1.75        | 2.00        | <b>753</b> | <b>2.02</b> | <b>2.31</b> |
| 5500                   | 564                                         | 1.30 | 1.49 | 618        | 1.53        | 1.75        | 669        | 1.77        | 2.03        | 718        | 2.03        | 2.32        | <b>766</b> | <b>2.29</b> | <b>2.62</b> |
| 6000                   | 596                                         | 1.59 | 1.82 | 643        | 1.82        | 2.09        | 692        | 2.07        | 2.37        | 738        | 2.34        | 2.68        | <b>783</b> | <b>2.63</b> | <b>3.01</b> |
| 6500                   | 625                                         | 1.92 | 2.19 | 671        | 2.16        | 2.47        | 715        | 2.43        | 2.78        | <b>759</b> | <b>2.70</b> | <b>3.09</b> | <b>801</b> | <b>2.99</b> | <b>3.43</b> |
| 7000                   | 656                                         | 2.28 | 2.61 | 698        | 2.54        | 2.91        | 740        | 2.82        | 3.22        | <b>781</b> | <b>3.10</b> | <b>3.55</b> | <b>821</b> | <b>3.40</b> | <b>3.89</b> |
| 7500                   | 686                                         | 2.70 | 3.09 | 726        | 2.97        | 3.40        | <b>766</b> | <b>3.26</b> | <b>3.73</b> | <b>804</b> | <b>3.55</b> | <b>4.06</b> | <b>843</b> | <b>3.86</b> | <b>4.42</b> |
| 8000                   | 714                                         | 3.15 | 3.61 | <b>753</b> | <b>3.43</b> | <b>3.93</b> | <b>790</b> | <b>3.74</b> | <b>4.28</b> | <b>827</b> | <b>4.04</b> | <b>4.63</b> | <b>864</b> | <b>4.37</b> | <b>5.00</b> |
| 8500                   | 743                                         | 3.64 | 4.17 | <b>779</b> | <b>3.94</b> | <b>4.51</b> | <b>815</b> | <b>4.25</b> | <b>4.87</b> | <b>849</b> | <b>4.56</b> | <b>5.22</b> | 884        | 4.89        | 5.60        |

Unit - 50TJM - 28 - 23 Tons - 50Hz (Standard Motor) (cont)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |            |             |             |             |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|
|                        | 1.2                                         |             |             | 1.4        |             |             | 1.6        |             |             | 1.8        |             |             | 2.0         |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM         | KWI         | BHP         |
| 5000                   | <b>801</b>                                  | <b>2.30</b> | <b>2.64</b> | <b>849</b> | <b>2.61</b> | <b>2.98</b> | <b>898</b> | <b>2.93</b> | <b>3.36</b> | <b>944</b> | <b>3.28</b> | <b>3.75</b> | <b>989</b>  | <b>3.64</b> | <b>4.17</b> |
| 5500                   | <b>813</b>                                  | <b>2.60</b> | <b>2.97</b> | <b>859</b> | <b>2.90</b> | <b>3.32</b> | <b>904</b> | <b>3.23</b> | <b>3.70</b> | <b>948</b> | <b>3.58</b> | <b>4.10</b> | <b>990</b>  | <b>3.94</b> | <b>4.51</b> |
| 6000                   | <b>827</b>                                  | <b>2.93</b> | <b>3.36</b> | <b>870</b> | <b>3.23</b> | <b>3.70</b> | <b>913</b> | <b>3.57</b> | <b>4.09</b> | <b>955</b> | <b>3.92</b> | <b>4.48</b> | <b>996</b>  | <b>4.28</b> | <b>4.90</b> |
| 6500                   | <b>843</b>                                  | <b>3.30</b> | <b>3.77</b> | <b>884</b> | <b>3.62</b> | <b>4.15</b> | <b>924</b> | <b>3.96</b> | <b>4.53</b> | <b>964</b> | <b>4.30</b> | <b>4.93</b> | <b>1002</b> | <b>4.67</b> | <b>5.34</b> |
| 7000                   | <b>861</b>                                  | <b>3.72</b> | <b>4.25</b> | <b>900</b> | <b>4.05</b> | <b>4.64</b> | <b>939</b> | <b>4.39</b> | <b>5.02</b> | 976        | 4.74        | 5.43        | 1013        | 5.11        | 5.85        |
| 7500                   | <b>880</b>                                  | <b>4.19</b> | <b>4.79</b> | <b>917</b> | <b>4.52</b> | <b>5.18</b> | 954        | 4.87        | 5.57        | 989        | 5.22        | 5.98        | 1025        | 5.60        | 6.41        |
| 8000                   | 899                                         | 4.69        | 5.37        | 935        | 5.04        | 5.76        | 969        | 5.39        | 6.17        | 1004       | 5.76        | 6.59        | 1038        | 6.14        | 7.03        |
| 8500                   | 919                                         | 5.23        | 5.99        | 952        | 5.59        | 6.40        | 985        | 5.96        | 6.82        | 1017       | 6.32        | 7.24        | 1051        | 6.71        | 7.68        |

**Bold, Italics** - Standard Motor and Drive Package

Unit - 50TJM - 28 - 23 Tons - 50Hz (High Efficiency Motor)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |      |      |            |             |             |            |             |             |            |             |             |            |             |             |
|------------------------|---------------------------------------------|------|------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|
|                        | 0.2                                         |      |      | 0.4        |             |             | 0.6        |             |             | 0.8        |             |             | 1.0        |             |             |
|                        | RPM                                         | KWI  | BHP  | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         |
| 5000                   | 535                                         | 1.02 | 1.21 | 592        | 1.22        | 1.45        | 647        | 1.44        | 1.71        | 700        | 1.69        | 2.00        | <b>753</b> | <b>1.95</b> | <b>2.31</b> |
| 5500                   | 564                                         | 1.25 | 1.49 | 618        | 1.47        | 1.75        | 669        | 1.71        | 2.02        | 718        | 1.96        | 2.32        | <b>766</b> | <b>2.21</b> | <b>2.62</b> |
| 6000                   | 596                                         | 1.53 | 1.82 | 643        | 1.76        | 2.08        | 692        | 2.00        | 2.37        | 738        | 2.26        | 2.68        | <b>783</b> | <b>2.53</b> | <b>3.01</b> |
| 6500                   | 625                                         | 1.85 | 2.19 | 671        | 2.08        | 2.47        | 715        | 2.34        | 2.78        | <b>759</b> | <b>2.60</b> | <b>3.09</b> | <b>801</b> | <b>2.89</b> | <b>3.43</b> |
| 7000                   | 656                                         | 2.20 | 2.61 | 698        | 2.45        | 2.91        | 740        | 2.71        | 3.22        | <b>781</b> | <b>2.99</b> | <b>3.55</b> | <b>821</b> | <b>3.28</b> | <b>3.89</b> |
| 7500                   | 686                                         | 2.60 | 3.09 | 726        | 2.87        | 3.40        | <b>766</b> | <b>3.14</b> | <b>3.73</b> | <b>804</b> | <b>3.42</b> | <b>4.06</b> | <b>843</b> | <b>3.72</b> | <b>4.42</b> |
| 8000                   | 714                                         | 3.04 | 3.61 | <b>753</b> | <b>3.31</b> | <b>3.93</b> | <b>790</b> | <b>3.60</b> | <b>4.28</b> | <b>827</b> | <b>3.90</b> | <b>4.62</b> | <b>864</b> | <b>4.21</b> | <b>5.00</b> |
| 8500                   | 743                                         | 3.51 | 4.17 | <b>779</b> | <b>3.79</b> | <b>4.50</b> | <b>815</b> | <b>4.10</b> | <b>4.86</b> | <b>849</b> | <b>4.40</b> | <b>5.22</b> | 884        | 4.71        | 5.60        |

Unit - 50TJM - 28 - 23 Tons - 50Hz (High Efficiency Motor) (cont)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |            |             |             |             |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|
|                        | 1.2                                         |             |             | 1.4        |             |             | 1.6        |             |             | 1.8        |             |             | 2.0         |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM         | KWI         | BHP         |
| 5000                   | <b>801</b>                                  | <b>2.22</b> | <b>2.64</b> | <b>849</b> | <b>2.51</b> | <b>2.98</b> | <b>898</b> | <b>2.83</b> | <b>3.35</b> | <b>944</b> | <b>3.16</b> | <b>3.75</b> | <b>989</b>  | <b>3.51</b> | <b>4.17</b> |
| 5500                   | <b>813</b>                                  | <b>2.50</b> | <b>2.97</b> | <b>859</b> | <b>2.80</b> | <b>3.32</b> | <b>904</b> | <b>3.12</b> | <b>3.70</b> | <b>948</b> | <b>3.45</b> | <b>4.10</b> | <b>990</b>  | <b>3.79</b> | <b>4.50</b> |
| 6000                   | <b>827</b>                                  | <b>2.83</b> | <b>3.35</b> | <b>870</b> | <b>3.12</b> | <b>3.70</b> | <b>913</b> | <b>3.44</b> | <b>4.09</b> | <b>955</b> | <b>3.77</b> | <b>4.48</b> | <b>996</b>  | <b>4.13</b> | <b>4.90</b> |
| 6500                   | <b>843</b>                                  | <b>3.18</b> | <b>3.77</b> | <b>884</b> | <b>3.49</b> | <b>4.15</b> | <b>924</b> | <b>3.81</b> | <b>4.53</b> | <b>964</b> | <b>4.15</b> | <b>4.92</b> | <b>1002</b> | <b>4.50</b> | <b>5.34</b> |
| 7000                   | <b>861</b>                                  | <b>3.58</b> | <b>4.25</b> | <b>900</b> | <b>3.91</b> | <b>4.64</b> | <b>939</b> | <b>4.23</b> | <b>5.02</b> | 976        | 4.57        | 5.43        | 1013        | 4.92        | 5.85        |
| 7500                   | <b>880</b>                                  | <b>4.04</b> | <b>4.79</b> | <b>917</b> | <b>4.36</b> | <b>5.18</b> | 954        | 4.69        | 5.57        | 989        | 5.04        | 5.98        | 1025        | 5.40        | 6.41        |
| 8000                   | 899                                         | 4.52        | 5.37        | 935        | 4.85        | 5.76        | 969        | 5.20        | 6.17        | 1004       | 5.55        | 6.59        | 1038        | 5.92        | 7.03        |
| 8500                   | 919                                         | 5.05        | 5.99        | 952        | 5.39        | 6.40        | 985        | 5.74        | 6.82        | 1017       | 6.10        | 7.24        | 1051        | 6.47        | 7.68        |

**Bold, Italics** - High Efficiency Motor and Drive Package

## Legend:

**RPM** - Revolutions Per Minute

**KWI** - Kilo Watts Input to Motor

**BHP** - Brake Horsepower Input to Fan

**CFM** - Cubic Feet per Minute

**in.wg** - Inch Water Gauge

## Notes:

- Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
- Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
- Interpolation is permissible. Do not extrapolate.
- Fan performance is based on wet coils, clean filters and casing losses.
- Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
- Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
- Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
- Conversion - Bhp to KWI

$$\text{KWI} = \frac{\text{Bhp} \times 0.746}{\text{Motor efficiency}}$$

# Fan Performance Table (cont)

Unit - 50TJM - 34 - 28 Tons - 50Hz (Standard Motor)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |            |             |             |            |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|
|                        | 0.2                                         |             |             | 0.4        |             |             | 0.6        |             |             | 0.8        |             |             | 1.0        |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         |
| 7000                   | 661                                         | 2.42        | 2.79        | 704        | 2.69        | 3.11        | <b>746</b> | <b>2.98</b> | <b>3.44</b> | <b>787</b> | <b>3.29</b> | <b>3.79</b> | <b>827</b> | <b>3.60</b> | <b>4.15</b> |
| 7500                   | 691                                         | 2.86        | 3.30        | 732        | 3.15        | 3.63        | <b>773</b> | <b>3.46</b> | <b>3.99</b> | <b>811</b> | <b>3.77</b> | <b>4.34</b> | <b>849</b> | <b>4.10</b> | <b>4.72</b> |
| 8000                   | 723                                         | 3.36        | 3.87        | <b>761</b> | <b>3.65</b> | <b>4.22</b> | <b>798</b> | <b>3.96</b> | <b>4.57</b> | <b>836</b> | <b>4.30</b> | <b>4.95</b> | <b>872</b> | <b>4.64</b> | <b>5.35</b> |
| 8500                   | <b>754</b>                                  | <b>3.90</b> | <b>4.50</b> | <b>791</b> | <b>4.22</b> | <b>4.86</b> | <b>826</b> | <b>4.55</b> | <b>5.25</b> | <b>860</b> | <b>4.88</b> | <b>5.63</b> | <b>896</b> | <b>5.23</b> | <b>6.04</b> |
| 9000                   | <b>785</b>                                  | <b>4.49</b> | <b>5.18</b> | <b>819</b> | <b>4.83</b> | <b>5.57</b> | <b>853</b> | <b>5.17</b> | <b>5.96</b> | <b>887</b> | <b>5.52</b> | <b>6.37</b> | <b>920</b> | <b>5.89</b> | <b>6.79</b> |
| 9500                   | <b>814</b>                                  | <b>5.13</b> | <b>5.92</b> | <b>846</b> | <b>5.48</b> | <b>6.32</b> | <b>879</b> | <b>5.83</b> | <b>6.72</b> | <b>910</b> | <b>6.19</b> | <b>7.14</b> | 943        | 6.57        | 7.58        |
| 10000                  | <b>843</b>                                  | <b>5.83</b> | <b>6.72</b> | <b>875</b> | <b>6.19</b> | <b>7.14</b> | 905        | 6.56        | 7.56        | 936        | 6.93        | 8.00        | 966        | 7.32        | 8.44        |

Unit - 50TJM - 34 - 28 Tons - 50Hz (Standard Motor) (cont)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |             |             |             |             |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                        | 1.2                                         |             |             | 1.4        |             |             | 1.6        |             |             | 1.8         |             |             | 2.0         |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM         | KWI         | BHP         | RPM         | KWI         | BHP         |
| 7000                   | <b>867</b>                                  | <b>3.94</b> | <b>4.55</b> | <b>906</b> | <b>4.28</b> | <b>4.94</b> | <b>945</b> | <b>4.65</b> | <b>5.36</b> | <b>983</b>  | <b>5.02</b> | <b>5.79</b> | <b>1020</b> | <b>5.41</b> | <b>6.24</b> |
| 7500                   | <b>887</b>                                  | <b>4.44</b> | <b>5.12</b> | <b>924</b> | <b>4.79</b> | <b>5.53</b> | <b>961</b> | <b>5.16</b> | <b>5.95</b> | <b>996</b>  | <b>5.53</b> | <b>6.38</b> | 1032        | 5.93        | 6.84        |
| 8000                   | <b>908</b>                                  | <b>4.99</b> | <b>5.76</b> | <b>944</b> | <b>5.36</b> | <b>6.18</b> | <b>978</b> | <b>5.73</b> | <b>6.61</b> | <b>1012</b> | <b>6.12</b> | <b>7.05</b> | 1046        | 6.51        | 7.51        |
| 8500                   | <b>930</b>                                  | <b>5.60</b> | <b>6.46</b> | <b>964</b> | <b>5.97</b> | <b>6.89</b> | <b>997</b> | <b>6.36</b> | <b>7.34</b> | 1029        | 6.75        | 7.78        | 1062        | 7.16        | 8.25        |
| 9000                   | <b>952</b>                                  | <b>6.25</b> | <b>7.21</b> | 985        | 6.64        | 7.65        | 1017       | 7.03        | 8.11        | 1049        | 7.44        | 8.58        | 1080        | 7.86        | 9.07        |
| 9500                   | 973                                         | 6.96        | 8.02        | 1004       | 7.34        | 8.47        | 1035       | 7.75        | 8.94        | 1065        | 8.16        | 9.41        | 1095        | 8.59        | 9.91        |
| 10000                  | 996                                         | 7.72        | 8.90        | 1026       | 8.12        | 9.36        | 1055       | 8.54        | 9.84        | 1085        | 8.97        | 10.34       | 1114        | 9.40        | 10.84       |

**Bold, Italics** - Standard Motor and Drive Package

Unit - 50TJM - 34 - 28 Tons - 50Hz (High Efficiency Motor)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |            |             |             |            |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|
|                        | 0.2                                         |             |             | 0.4        |             |             | 0.6        |             |             | 0.8        |             |             | 1.0        |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         |
| 7000                   | 661                                         | 2.32        | 2.79        | 704        | 2.59        | 3.11        | <b>746</b> | <b>2.87</b> | <b>3.44</b> | <b>787</b> | <b>3.16</b> | <b>3.80</b> | <b>827</b> | <b>3.46</b> | <b>4.15</b> |
| 7500                   | 691                                         | 2.75        | 3.30        | 732        | 3.02        | 3.63        | <b>773</b> | <b>3.32</b> | <b>3.99</b> | <b>811</b> | <b>3.62</b> | <b>4.34</b> | <b>849</b> | <b>3.94</b> | <b>4.73</b> |
| 8000                   | 723                                         | 3.23        | 3.87        | <b>761</b> | <b>3.51</b> | <b>4.22</b> | <b>798</b> | <b>3.81</b> | <b>4.57</b> | <b>836</b> | <b>4.13</b> | <b>4.96</b> | <b>872</b> | <b>4.46</b> | <b>5.35</b> |
| 8500                   | <b>754</b>                                  | <b>3.75</b> | <b>4.50</b> | <b>791</b> | <b>4.05</b> | <b>4.87</b> | <b>826</b> | <b>4.37</b> | <b>5.25</b> | <b>860</b> | <b>4.69</b> | <b>5.63</b> | <b>896</b> | <b>5.03</b> | <b>6.04</b> |
| 9000                   | <b>785</b>                                  | <b>4.32</b> | <b>5.19</b> | <b>819</b> | <b>4.64</b> | <b>5.57</b> | <b>853</b> | <b>4.97</b> | <b>5.96</b> | <b>887</b> | <b>5.31</b> | <b>6.37</b> | <b>920</b> | <b>5.66</b> | <b>6.79</b> |
| 9500                   | <b>814</b>                                  | <b>4.93</b> | <b>5.92</b> | <b>846</b> | <b>5.26</b> | <b>6.32</b> | <b>879</b> | <b>5.60</b> | <b>6.73</b> | <b>910</b> | <b>5.95</b> | <b>7.15</b> | 943        | 6.31        | 7.58        |
| 10000                  | <b>843</b>                                  | <b>5.60</b> | <b>6.73</b> | <b>875</b> | <b>5.95</b> | <b>7.15</b> | 905        | 6.30        | 7.57        | 936        | 6.66        | 8.00        | 966        | 7.04        | 8.45        |

Unit - 50TJM - 34 - 28 Tons - 50Hz (High Efficiency Motor) (cont)

| Air Flow Rate<br>(CFM) | Available External Static Pressure (in. wg) |             |             |            |             |             |            |             |             |             |             |             |             |             |             |
|------------------------|---------------------------------------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                        | 1.2                                         |             |             | 1.4        |             |             | 1.6        |             |             | 1.8         |             |             | 2.0         |             |             |
|                        | RPM                                         | KWI         | BHP         | RPM        | KWI         | BHP         | RPM        | KWI         | BHP         | RPM         | KWI         | BHP         | RPM         | KWI         | BHP         |
| 7000                   | <b>867</b>                                  | <b>3.79</b> | <b>4.55</b> | <b>906</b> | <b>4.12</b> | <b>4.94</b> | <b>945</b> | <b>4.47</b> | <b>5.36</b> | <b>983</b>  | <b>4.83</b> | <b>5.80</b> | <b>1020</b> | <b>5.20</b> | <b>6.24</b> |
| 7500                   | <b>887</b>                                  | <b>4.27</b> | <b>5.12</b> | <b>924</b> | <b>4.61</b> | <b>5.53</b> | <b>961</b> | <b>4.96</b> | <b>5.95</b> | <b>996</b>  | <b>5.32</b> | <b>6.38</b> | 1032        | 5.70        | 6.84        |
| 8000                   | <b>908</b>                                  | <b>4.80</b> | <b>5.76</b> | <b>944</b> | <b>5.15</b> | <b>6.18</b> | <b>978</b> | <b>5.51</b> | <b>6.61</b> | <b>1012</b> | <b>5.88</b> | <b>7.06</b> | 1046        | 6.26        | 7.52        |
| 8500                   | <b>930</b>                                  | <b>5.38</b> | <b>6.46</b> | <b>964</b> | <b>5.74</b> | <b>6.89</b> | <b>997</b> | <b>6.11</b> | <b>7.34</b> | 1029        | 6.48        | 7.78        | 1062        | 6.88        | 8.26        |
| 9000                   | <b>952</b>                                  | <b>6.01</b> | <b>7.21</b> | 985        | 6.38        | 7.66        | 1017       | 6.76        | 8.12        | 1049        | 7.15        | 8.59        | 1080        | 7.56        | 9.07        |
| 9500                   | 973                                         | 6.69        | 8.03        | 1004       | 7.06        | 8.47        | 1035       | 7.45        | 8.94        | 1065        | 7.84        | 9.42        | 1095        | 8.26        | 9.91        |
| 10000                  | 996                                         | 7.42        | 8.91        | 1026       | 7.80        | 9.36        | 1055       | 8.20        | 9.85        | 1085        | 8.62        | 10.35       | 1114        | 9.03        | 10.84       |

**Bold, Italics** - High Efficiency Motor and Drive Package

## Legend:

**RPM** - Revolutions Per Minute

**KWI** - Kilo Watts Input to Motor

**BHP** - Brake Horsepower Input to Fan

**CFM** - Cubic Feet per Minute

**in.wg** - Inch Water Gauge

## Notes:

- Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operatin cfm.
- Static Pressure (i.e Filters) must be added to external static pressure before entering fan performance table.
- Interpolation is permissible. Do not extrapolate.
- Fan performance is based on wet coils, clean filters and casing losses.
- Extensive motor and drive testing on these units ensures that the full brake horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.
- Bold data shows the range of air flow rate for unit management system, other rpms require field-supplied drive.
- Use of field-supplied motor may affect wiring size. Contact your Carrier representative for details.
- Conversion - Bhp to KWI

$$\text{KWI} = \frac{\text{Bhp} \times 0.746}{\text{Motor efficiency}}$$

## Fan RPM At Motor Pulley Settings

| Freq. | Unit 50TJM | Motor Pulley Turns Open - (English) |     |      |            |     |       |     |       |            |       |     |       |     |
|-------|------------|-------------------------------------|-----|------|------------|-----|-------|-----|-------|------------|-------|-----|-------|-----|
|       |            | 0                                   | 1/2 | 1    | 1 1/2      | 2   | 2 1/2 | 3   | 3 1/2 | 4          | 4 1/2 | 5   | 5 1/2 | 6   |
| 50Hz  | 18         | -                                   | -   | 1030 | 1001       | 978 | 946   | 918 | 884   | <b>860</b> | 830   | 804 | 775   | 745 |
|       | 24         | -                                   | -   | 1041 | 1011       | 989 | 956   | 928 | 894   | <b>870</b> | 839   | 813 | 784   | 753 |
|       | 28         | -                                   | -   | 1041 | 1011       | 989 | 956   | 928 | 894   | <b>870</b> | 839   | 813 | 784   | 753 |
|       | 34         | 1029                                | 996 | 960  | <b>928</b> | 902 | 875   | 847 | 830   | 813        | 791   | 774 | 757   | 740 |

| Freq. | Unit 50TJM | Motor Pulley Turns Open - (SI) |      |      |             |      |       |      |       |             |       |      |       |      |
|-------|------------|--------------------------------|------|------|-------------|------|-------|------|-------|-------------|-------|------|-------|------|
|       |            | 0                              | 1/2  | 1    | 1 1/2       | 2    | 2 1/2 | 3    | 3 1/2 | 4           | 4 1/2 | 5    | 5 1/2 | 6    |
| 50Hz  | 18         | -                              | -    | 17.2 | 16.7        | 16.3 | 15.8  | 15.3 | 14.7  | <b>14.3</b> | 13.8  | 13.4 | 12.9  | 12.4 |
|       | 24         | -                              | -    | 17.4 | 16.9        | 16.5 | 15.9  | 15.5 | 14.9  | <b>14.5</b> | 14.0  | 13.5 | 13.1  | 12.5 |
|       | 28         | -                              | -    | 17.4 | 16.9        | 16.5 | 15.9  | 15.5 | 14.9  | <b>14.5</b> | 14.0  | 13.5 | 13.1  | 12.5 |
|       | 34         | 17.2                           | 16.6 | 16.0 | <b>15.5</b> | 15.0 | 14.6  | 14.1 | 13.8  | 13.5        | 13.2  | 12.9 | 12.6  | 12.3 |

The standard belt size may not cover all the above range. Other RPMs require field supplied drive package.

Bold RPM is the factory setting .

## Motor Efficiency Table

| Unit                | 50TJM-18 | 50TJM-24 | 50TJM-28 | 50TJM-34  |
|---------------------|----------|----------|----------|-----------|
| HP (kW)             | 4 (3)    | 5 (4)    | 5 (4)    | 7.5 (5.5) |
| Standard Efficiency | 0.83     | 0.85     | 0.85     | 0.86      |
| High Efficiency     | 0.88     | 0.89     | 0.89     | 0.90      |

## Sound Rating Data

| Unit Sound (dB) at 50Hz (Based on cooling mode) |                |            |    |     |     |     |      |      |      |      |
|-------------------------------------------------|----------------|------------|----|-----|-----|-----|------|------|------|------|
| Unit 50TJM                                      | Cooling Stages | A-Weighted | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 18                                              | 2              | 90.3       | 96 | 88  | 88  | 88  | 85.6 | 82.4 | 77.8 | 71.6 |
| 24                                              | 2              | 90.9       | 96 | 87  | 90  | 89  | 85.7 | 82.5 | 78.6 | 72.4 |
| 28                                              | 2              | 90.6       | 90 | 91  | 88  | 88  | 86   | 82   | 79.1 | 72.1 |
| 34                                              | 2              | 91.1       | 91 | 92  | 89  | 89  | 86.3 | 82.6 | 79.8 | 72.7 |

dB – Decibel

### NOTES:

1. Outdoor sound data is measure in accordance with AHRI standard 370 – 2011.
2. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure accounts for specific environment factors which do not match individual applications. Sound power values are independent of the environment and therefore more accurate.
3. A – Weighted sound ratings filter out very high and very low frequencies, to better approximate the response of an “average” human ear. A – Weighted measurements for Carrier units are taken in accordance with 370 – 2011.

# Electrical Data Table

| 50TJM Size 18 - 34 |             |             |                             | Compressor |     |      |     | OFM |    |     | IFM Type  | IFM |      | Electric Heater |      | MCA  | MOCP◇ |
|--------------------|-------------|-------------|-----------------------------|------------|-----|------|-----|-----|----|-----|-----------|-----|------|-----------------|------|------|-------|
| Unit Size<br>50TJM | Min Voltage | Max Voltage | Power Supply<br>V / Ph / Hz | No.1       |     | No.2 |     |     |    |     |           |     |      |                 |      |      |       |
|                    |             |             |                             | RLA        | LRA | RLA  | LRA | Qty | HP | FLA |           | HP  | FLA  | Appl.<br>KW     | FLA  |      |       |
| 18                 | 360         | 440         | 400 / 3 / 50                | 12.2       | 101 | 12.2 | 101 | 2   | 1  | 3.4 | Std. Eff. | 4   | 6.3  | -               | -    | 40.6 | 50    |
|                    | 360         | 440         | 400 / 3 / 50                | 12.2       | 101 | 12.2 | 101 | 2   | 1  | 3.4 | High Eff. | 4   | 6.15 | -               | -    | 40.4 | 50    |
|                    | 360         | 440         | 400 / 3 / 50                | 12.2       | 101 | 12.2 | 101 | 2   | 1  | 3.4 | Std. Eff. | 4   | 6.3  | 21              | 30.3 | 44.2 | 50    |
|                    | 360         | 440         | 400 / 3 / 50                | 12.2       | 101 | 12.2 | 101 | 2   | 1  | 3.4 | High Eff. | 4   | 6.15 | 21              | 30.3 | 44.0 | 50    |
| 24                 | 360         | 440         | 400 / 3 / 50                | 16.7       | 111 | 16.7 | 111 | 2   | 1  | 3.4 | Std. Eff. | 5.5 | 8.3  | -               | -    | 52.7 | 60    |
|                    | 360         | 440         | 400 / 3 / 50                | 16.7       | 111 | 16.7 | 111 | 2   | 1  | 3.4 | High Eff. | 5.5 | 8    | -               | -    | 52.4 | 60    |
|                    | 360         | 440         | 400 / 3 / 50                | 16.7       | 111 | 16.7 | 111 | 2   | 1  | 3.4 | Std. Eff. | 5.5 | 8.3  | 28              | 40.4 | 58.8 | 90    |
|                    | 360         | 440         | 400 / 3 / 50                | 16.7       | 111 | 16.7 | 111 | 2   | 1  | 3.4 | High Eff. | 5.5 | 8    | 28              | 40.4 | 58.5 | 90    |
| 28                 | 360         | 440         | 400 / 3 / 50                | 17.9       | 118 | 17.9 | 118 | 2   | 1  | 3   | Std. Eff. | 5.5 | 8.3  | -               | -    | 57.6 | 70    |
|                    | 360         | 440         | 400 / 3 / 50                | 17.9       | 118 | 17.9 | 118 | 2   | 1  | 3   | High Eff. | 5.5 | 8    | -               | -    | 57.3 | 70    |
|                    | 360         | 440         | 400 / 3 / 50                | 17.9       | 118 | 17.9 | 118 | 2   | 1  | 3   | Std. Eff. | 5.5 | 8.3  | 28              | 40.4 | 61.8 | 100   |
|                    | 360         | 440         | 400 / 3 / 50                | 17.9       | 118 | 17.9 | 118 | 2   | 1  | 3   | High Eff. | 5.5 | 8    | 28              | 40.4 | 61.5 | 100   |
| 34                 | 360         | 440         | 400 / 3 / 50                | 21.8       | 140 | 21.8 | 140 | 2   | 1  | 3   | Std. Eff. | 7.5 | 11.3 | -               | -    | 66.4 | 80    |
|                    | 360         | 440         | 400 / 3 / 50                | 21.8       | 140 | 21.8 | 140 | 2   | 1  | 3   | High Eff. | 7.5 | 11   | -               | -    | 66.1 | 80    |
|                    | 360         | 440         | 400 / 3 / 50                | 21.8       | 140 | 21.8 | 140 | 2   | 1  | 3   | Std. Eff. | 7.5 | 11.3 | 28              | 40.4 | 66.4 | 100   |
|                    | 360         | 440         | 400 / 3 / 50                | 21.8       | 140 | 21.8 | 140 | 2   | 1  | 3   | High Eff. | 7.5 | 11   | 28              | 40.4 | 66.1 | 100   |

## Legend and Notes for Electrical Data Table

**FLA** - Full Load Amps

**IFM** - Indoor (Evaporator) Fan Motor

**LRA** - Locked Rotor Amps

**MCA** - Minimum Circuit Amps

**MOCP** - Maximum Overcurrent Protection

\* Application heater kW @ 400 volt (Using multiplication factor table in Electric Resistance Heater Data table on page 13)

**NEC** - National Electrical Code

**OFM** - Outdoor (Condenser) Fan Motor

**RLA** - Rated Load Amps

**HACR** - Heating, Air-Conditioning and Refrigeration

◇ Fuse or HACR Circuit Breaker

## Unbalanced 3-Phase Supply Voltage

*Never operate a motor where phase imbalance in supply voltage is greater than 2%.*

Use the following formula to determine the percentage of voltage imbalance

$$= 100 \times \frac{\text{Maximum Deviation From Average Voltage}}{\text{Average Voltage}}$$

Example: Supply Voltage is 400V - 3ph - 50Hz

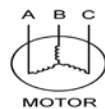
|           |                                               |
|-----------|-----------------------------------------------|
| AB = 392v | Average Voltage = $\frac{392 + 404 + 395}{3}$ |
| BC = 404v |                                               |
| AC = 395v | $= \frac{1191}{3} = 397V$                     |

Determine maximum deviation from average voltage.

(AB) 397 - 392 = 5v

(BC) 404 - 397 = 7v

(AC) 457 - 397 = 2v



Maximum Deviation is 7v.

Determine Percentage Voltage Imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{7}{397} = 1.76\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%

**IMPORTANT:** If the supply voltage phase imbalance is more than 2% contact your local electric utility company

# Electric Resistance Heater Data

| UNIT<br>50TJM | Unit Voltage |                        | Heater<br>Stages | Heat Per<br>Stages | Minimum Heating |      |
|---------------|--------------|------------------------|------------------|--------------------|-----------------|------|
|               | 460          |                        |                  |                    | Cfm             | L/s  |
|               | Heater kW    | Heater FLA (Per Stage) |                  |                    |                 |      |
| 18            | 28kW         | 17.3                   | 2                | 50/50              | 4800            | 2265 |
| 24            | 37kW         | 23                     |                  |                    | 6000            | 2832 |
| 28            |              |                        |                  |                    | 7000            | 3304 |
| 34            |              |                        |                  |                    |                 |      |

| Accessory Heater Part Number |                   |                |                      |                |                              |           |
|------------------------------|-------------------|----------------|----------------------|----------------|------------------------------|-----------|
| UNIT<br>50TJM                | 400V              |                |                      |                |                              |           |
|                              | Complete Kit P.N. | Casing P.N.    | Heater Element P. N. | Description    | Stages                       | Size (KW) |
|                              |                   | ( 1 Per Kit )  | ( 2 Per Kit )        |                |                              |           |
|                              | 18                | 50TJ600287     | 50TJ600289           | CPHEATER036A00 | Duct heater<br>assembly 480V | 2         |
| 24                           | 50TJ601162        | CPHEATER037A00 |                      | 40             |                              |           |
| 28                           | 50TJ600730        |                | 50TJ600727           |                |                              |           |
| 34                           |                   |                |                      |                |                              |           |

NOTE: Heaters are rated at 480 V. Use the Multiplication Factors table below to determine heater capacity for your particular voltage.

| Multiplication Factors   |                       |     |     |
|--------------------------|-----------------------|-----|-----|
| Heater Rating<br>Voltage | Actual Heater Voltage |     |     |
|                          | 380                   | 400 | 480 |
| 480                      | 0.62                  | 0.7 | 1   |

NOTE: The following equation converts kW of heat energy to Btuh: kW x 3.413 = Btuh.

EXAMPLE: 30 kW (at 480V) heater on 400V

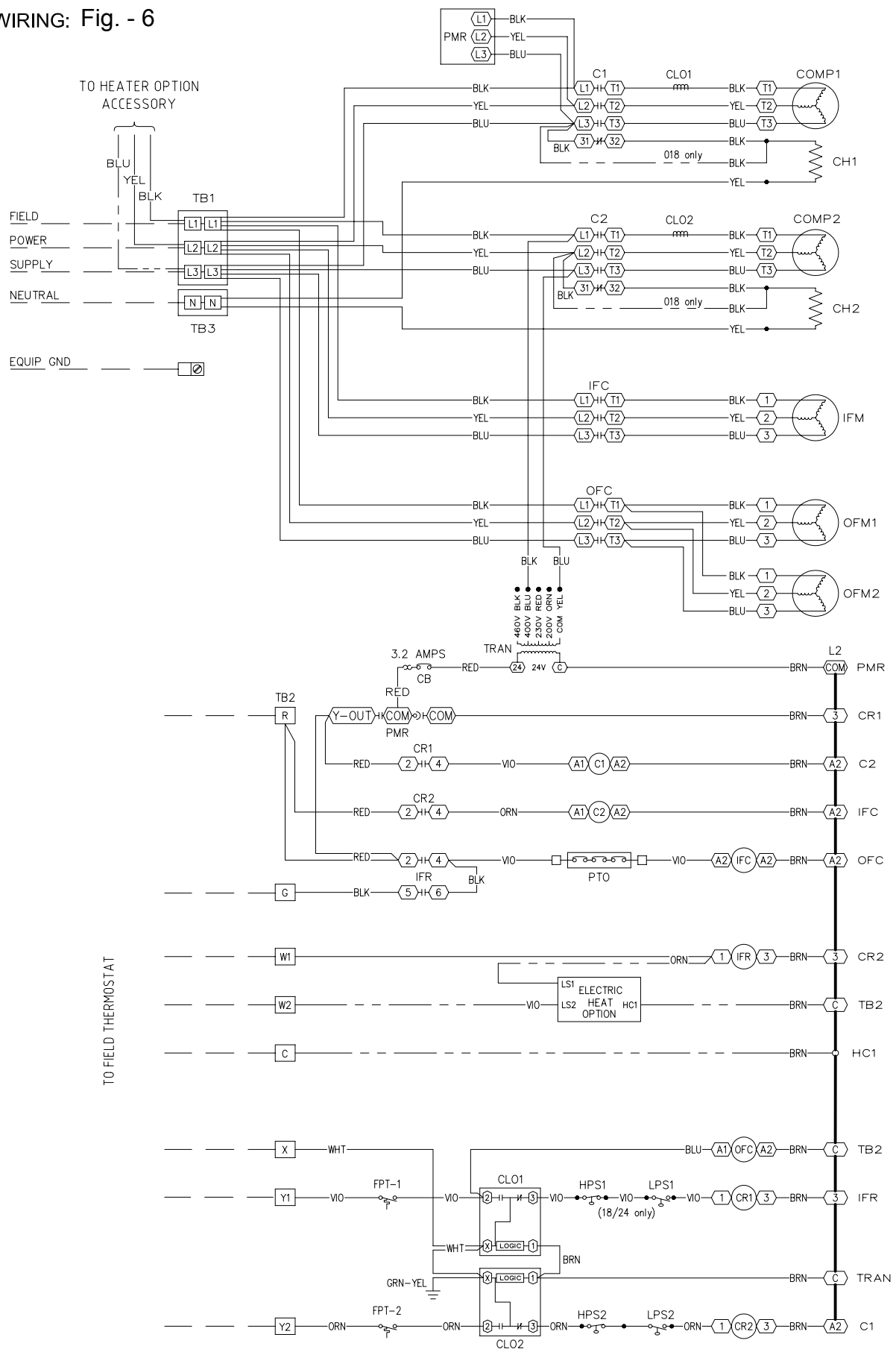
= 30.0 (0.7 multiplication factor)

= 21kW

Heater capacity(kW) is based on heater voltage of 380v or 480v. If power distribution voltage to unit varies from heater voltage, heater kW will vary accordingly. To Determine heater capacity at actual unit voltage, multiply 480v capacity by multipliers found in table " Multiplication Factors" above.

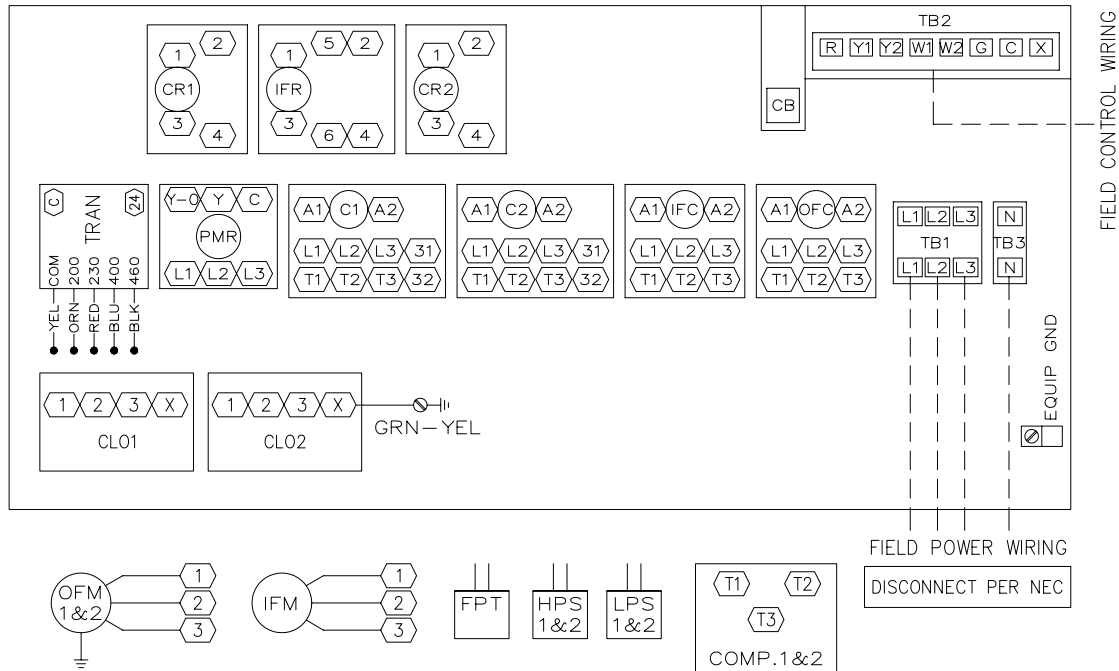
MCA calculation for 50TJM 18 - 34 size units with electric heaters over 50 kW = (1.25 x IFM amps) + (1.00 x heater FLA).

WIRING: Fig. - 6



## Typical wiring schematic (Continued)

CONTROL BOX COMPONENT ARRANGEMENT: Fig. - 7



### LEGEND:

- ◻ TERMINAL (MARKED)
- TERMINAL (UNMARKED)
- ◻ TERMINAL BLOCK
- SPLICE

- FACTORY WIRING
- - - - - FIELD WIRING
- . - . - . OPTION / ACCESSORY WIRING
- TO INDICATE COMMON POTENTIAL ONLY:  
NOT TO REPRESENT WIRING

|      |                              |      |                       |
|------|------------------------------|------|-----------------------|
| C    | CONTACTOR                    | IFC  | INDOOR FAN CONTACTOR  |
| CB   | CIRCUIT BREAKER              | IFM  | INDDOOR FAN MOTOR     |
| CH   | CRANKCASE HEATER             | IFR  | INDOOR FAN RELAY      |
| CLO  | COMPRESSOR LOCKOUT           | LPS  | LOW PRESSURE SWITCH   |
| COMP | COMPRESSOR MOTOR             | OFC  | OUTDOOR FAN CONTACTOR |
| CR   | COMPRESSOR RELAY             | OFM  | OUTDOOR FAN MOTOR     |
| FPT  | FREEZE PROTECTION THERMOSTAT | PMR  | PHASE MONITOR RELAY   |
| FU   | FUSE                         | PTO  | MOTOR THERMOSTAT (NC) |
| GND  | GROUND                       | TB   | TERMINAL BLOCK        |
| HC   | HEATER CONTACTOR             | TRAN | TRANSFORMER           |
| HPS  | HIGH PRESSURE SWITCH         |      |                       |

### NOTES:

- 1) IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 105°C WIRE OR ITS EQUIVALENT.
- 2) USE COPPER, COPPER CLAD, OR ALUMINUM CONNECTORS.
- 3) USE COPPER CONDUCTOR ONLY.
- 4) COMPRESSORS & FAN MOTORS ARE THERMALLY PROTECTED. THREE PHASE MOTORS ARE PROTECTED AGAINST PRIMARY SINGLE PHASING CONDITIONS.
- 5) THE CLO LOCKS OUT THE COMPRESSOR TO PREVENT SHORT CYCLING ON THE COMPRESSOR OVERLOAD AND SAFETY DEVICES. BEFORE REPLACING CLO, CHECK THESE DEVICES.

# Controls

## Operating Sequence

### Cooling Units

When thermostat calls for cooling, terminals G and Y1 are energized. The indoor evaporator fan contactor (IFC) and compressor contactor no. 1 (C1) are energized, and evaporator-fan motor (IFM), compressor no. 1 and condenser fan(s) start. The condenser-fan motor(s) runs continuously while unit is cooling. When the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts.

### Application Data

#### Thermostat

Use of 2-stage cooling thermostat with 3-5 min. time delay for compressor is recommended for all units. A 2-stage cooling thermostat is required on units if the economizer is used to provide integrated cooling.

#### Heating-To-Cooling Changeover

All units are automatic changeover from heating to cooling when automatic changeover thermostat and sub-base are used.

#### Airflow

Units are draw-thru on cooling and blow-thru on heating.

#### Maximum Airflow

To minimize the possibility of condensate blow-off from evaporator, airflow through the unit should not exceed 500 CFM/nominal ton (67.1 L/s per kW) on size 016-024 unit, and 375 CFM/nominal ton (50.3 L/s per kW) on size 018-034 unit.

#### Minimum Airflow

The minimum airflow for cooling is 300 CFM/nominal ton (40 L/s per kW) on size 016-024 unit and 280 nominal CFM/ton (38 L/s per kW) on size 018-034 unit.

#### Minimum Ambient Cooling Operation Temperature

Units are designed to operate at outdoor temperatures down to 41 F (5 C). To operate at lower outdoor-air temperatures, contact your local Carrier representative for appropriate accessories for specific applications.

#### Maximum Operating Outdoor-Air Temperature

For cooling, this temperature is 125 F (52 C) for all sizes.

#### If Accessory or Optional Heater Is Installed

Upon a call for heating through terminal W1, IFC and heater contactor no. 1 (HC1) are energized. On units equipped for 2 stages of heat, when additional heat is needed, HC2 is energized through W2.

### IMPORTANT

1. Field installed thermostat should include time delay between stages to limit the inrush current during the unit starting and to ensure proper operation of unit control.
2. The minimum heating CFM must be maintained to ensure proper operation in the Heating mode.
3. The minimum heating CFM value takes precedence over the minimum cooling CFM value.

# GUIDE SPECIFICATIONS - 50TJM SIZE 18 TO 34

## Packaged Rooftop Electric Cooling, Electric Heat, Constant Volume Application

### HVAC Guide Specifications

Carrier Model Number: **50TJM SIDE – DISCHARGE PACKAGE UNITS**

Size Range: **15 to 30 Tons**

**180,000 to 288,000 Btuh, Gross**

**20 to 30 kW (Electric Heat)**

### Part 1 — General

#### 1.01 SYSTEM DESCRIPTION

Unit is an outdoor rooftop (or building side) mounted, electrically controlled cooling and heating (optional) unit utilizing scroll hermetic compressors for cooling duty and electric heat. Unit is specifically designed for horizontal supply and return ducts, as shown on contract drawings. Standard unit shall include a manual outdoor-air inlet.

#### 1.02 QUALITY ASSURANCE

- A. Unit meets ASHRAE 90.1 minimum efficiency requirements.
- B. Unit shall be rated in accordance with AHRI Standard 340/360.
- C. Unit shall be designed to conform to ASHRAE 15.
- D. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- E. Unit casing shall be capable of withstanding 500-hour salt spray exposure per ASTM B117.
- F. Unit shall be designed and manufactured in a facility in accordance and registered by ISO 9001:2015
- G. Unit shall have a completely run test on the assembly line with copy of the run test data inside the unit.
- H. Unit shall be designed in accordance with UL Standard 1995.

#### 1.03 DELIVERY, STORAGE, AND HANDLING

- A. Unit shall be stored and handled per manufacturer's recommendations, positioned in upright position.
- B. Lifted by crane requires either shipping top panel or spreader bars.

### PART 2 — PRODUCTS

#### 2.01 EQUIPMENT (STANDARD)

##### A. General:

The 50TJM unit shall be a factory assembled, single piece cooling unit, with optional electric heat. Contained within the unit enclosure shall be all factory wiring, piping, controls, refrigerant charge (R-410a), and special features required prior to field start-up.

##### B. Unit Cabinet:

- 1. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a pre-painted baked enamel finish on all externally exposed surfaces.
- 2. Indoor blower compartment interior surfaces shall be insulated with a minimum 1-in thick, 1lb (.45 kg) density neoprene coated. Evaporator panels shall be double skin.
- 3. Base of unit shall have a minimum of four locations for factory thru-the-base electrical connections; connections shall be internal to the cabinet to protect from environmental issues.
- 4. Base Rail
  - a. Unit shall have base rails on a minimum of 2 sides.
  - b. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging. Holes also shall be provided in the base rail for moving the rooftop by fork truck.
  - d. Base rail shall be a minimum of 12 gauge thickness.
- 5. Condensate pan and connections:
  - a. Shall be a sloped condensate drain pan made of a non-corrosive material.
  - b. Shall comply with ASHRAE Standard 62.
  - c. Shall use a 19mm (3/4-in.) -14 NPT drain connection at the end of the drain pan. Connection shall be made per manufacturer's recommendations.
- 6. Top panel shall be a multi-piece top panel linked with water tight flanges and interlocking systems.
- 7. Component access panels (standard) shall be easily removable for servicing.

##### C. Fans:

- 1. Indoor blower (evaporator fan) shall be belt-driven, double inlet, forward-curved, centrifugal type. Belt drive shall include an adjustable-pitch motor pulley.
- 2. Indoor blower (evaporator fan) shall be made from steel with a corrosion-resistant finish and shall be dynamically balanced.
- 3. Bearings shall be of the sealed, permanently lubricated, ball-bearing type for longer life and lower maintenance.
- 4. Condenser fan shall be of the direct-driven propeller type and shall discharge air vertically.

5. Condenser fan shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

D. Compressor(s):

1. Unit shall use one fully hermetic, scroll compressor for each independent refrigeration circuit.
2. Motors shall be cooled by refrigerant gas passing through motor windings.
3. Internally protected from high discharge temperature conditions.
4. Protected from an over-temperature and over-current conditions by an internal motor overload device.
5. Compressor shall be factory mounted on rubber grommets.

E. Coils:

1. Standard evaporator and condenser coils shall have aluminum fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
2. Evaporator coils shall be leak tested to 150 psig, pressure tested to 350 psig. Condenser coils shall be leak tested to 150 psig; pressure tested to 450 psig, and qualified to UL 1995 burst test at 1980 psig.
3. Optional condenser coil only shall be aluminum-fin coils with a durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments fins with copper tubes.
4. Optional condenser coil only shall be constructed of copper-fins mechanically bonded to copper tube, condenser coil available with 15 Fins per Inch (FPI) for the 50TJM-18/24 and 16 FPI for 50TJM-28/34.
5. Optional condenser and evaporator coil shall be constructed of copper-fins bonded to copper tube with evaporator copper coils available with 16 FPI and condenser coils available with 15 FPI for the 50TJM-18/24 and 16 FPI for 50TJM-28/34.
6. Copper fins provide increased corrosion resistance in moderate coastal environments where industrial air pollution is not present, copper-fin coils have extended life compared to standard or pre-coated aluminum-fin coils. All copper coils eliminate bimetallic contact to eliminate the potential for galvanic corrosion. Application in industrial environments is not recommended due to potential attack from sulfur oxide, nitrogen oxides, carbon and several other industrial airborne contaminants.

F. Refrigerant Circuit Components Shall Include:

1. Thermostatic expansion valve (TXV).
2. Refrigerant filter driers.

G. Filter Section:

1. Filters access is specified in the unit cabinet section of this specification.
2. Filters shall be held in place by a preformed filter tray, facilitating easy removal and installation.
3. Shall consist of factory-installed, low velocity, angle type (1-in.) thick washable aluminum filters.
4. Filters shall be standard, commercially available sizes.
5. Only one size filter per unit is allowed.

H. Controls and Safeties:

1. Unit Controls
  - a. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side.
  - b. Shall utilize color-coded wiring.
2. Safeties:
  - a. Unit shall incorporate a solid-state compressor lockout which provides reset capability at the space thermostat, should High/Low pressure safety devices trip and shut off compressor.
  - b. Low and High-pressure switch.
  - c. Phase monitors to protect against phase loss, phase reverse and phase unbalance.
  - d. Freeze protection thermostat.
  - e. Crankcase heater is standard is for each compressor.
  - f. Automatic reset, condenser motor thermal overload protector.
  - g. Protection Thermal Overload (PTO) motor thermostat is standard for Indoor Fan Motor (IFM) protection.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature per maximum load criteria of AHRI Standard 360.
2. Unit with standard controls will operate in cooling down to outdoor ambient temperature of 40°F (4.4°C).

J. Electrical Requirements:

1. Electrical Connections all unit power wiring shall enter unit cabinet at a single location.

K. Motors:

1. Evaporator Motor:

- a. Shall have TEFC motor, IP55 with class F insulation.
- b. Shall use permanently lubricated bearings.
- c. Shall have thermal overload protection with an automatic reset feature.

2. Condenser Motor:

- a. Shall use permanently lubricated bearings.
- b. Shall have thermal overload protection with an automatic reset feature.
- c. TE motor with class F insulation

**Field Installed Options**

1. Electric Heater Package: The electric heater package is factory supplied for field installed. Heater assemblies are provided with internal fusing for protection of heater circuits not exceeding 25 amps each. All power wiring leads are 8 AWG and control wiring are 18AWG, both rated at 105°C. Auto reset thermo limit controls, magnetic heater contractors (24v coil) and terminal block are mounted in electric heater control box attached to heater assembly.
2. UVC Ready: The unit shall be UVC ready for easy installation. UVC Lamp is field supplied and field installed.
3. Softbag Filters: Softbag filters are factory supplied and field installed. Softbag filters are in compliance of Eurovent EU7.

