



United Technologies

turn to the experts

## Package Rooftop Units – 50Hz



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

## **50TCM – 50Hz**

**Nominal Cooling Capacity 6 – 12.5 Tons**  
**HFC R-410A Refrigerant**

The 50TCM 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.

# Table of Contents

|                                                    |    |
|----------------------------------------------------|----|
| Features / Benefits .....                          | 2  |
| Shipping Information / Options / Accessories ..... | 4  |
| Model No. Nomenclature .....                       | 6  |
| AHRI Capacity Ratings .....                        | 7  |
| Physical Data .....                                | 8  |
| Unit Dimensional Drawing .....                     | 10 |
| Cooling Capacities .....                           | 16 |
| Fan Performance Table .....                        | 21 |
| Fan RPM at Motor Pulley / Sound Rating .....       | 24 |
| Electrical Data / Electric Heater Data .....       | 25 |
| Wiring Schematic .....                             | 27 |
| Application Data.....                              | 32 |
| Guide Specifications .....                         | 33 |

## 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). 2"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 can be 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 up to 34.7 kW.

## **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 non-ozone depleting refrigerant
- ASHRAE Compliant
- EER's up to 12.5
- 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
- Fresh air intake capable
- 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
- 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
  - 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 and Evaporator Al/Cu Coils<sup>1</sup>

| Unit Model Number  | EST. WT. (KG) |                      | DIMENSIONS (MM) |       |       |                          |       |       |
|--------------------|---------------|----------------------|-----------------|-------|-------|--------------------------|-------|-------|
|                    |               |                      | Net             |       |       | With Wooden create above |       |       |
|                    | NET           | GROSS<br>(with Skid) | LENGTH          | WIDTH | DEPTH | LENGTH                   | WIDTH | DEPTH |
| 50TCMA07AXA1-0A0A0 | 275           | 285                  | 1051            | 1888  | 1187  | 1089                     | 1943  | 1219  |
| 50TCMD08AXA1-0A0A0 | 345           | 360                  | 1048            | 2238  | 1510  | 1207                     | 2292  | 1543  |
| 50TCMD09AXA1-0A0A0 | 388           | 403                  | 1253            | 2238  | 1510  | 1412                     | 2292  | 1543  |
| 50TCMD12AXA1-0A0A0 | 393           | 408                  | 1253            | 2238  | 1510  | 1412                     | 2292  | 1543  |
| 50TCMD14AXA1-0A0A0 | 489           | 504                  | 1253            | 2238  | 1510  | 1412                     | 2292  | 1543  |

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

| Unit Model Number  | EST. WT. (KG) |                      | DIMENSIONS (MM) |       |       |                          |       |       |
|--------------------|---------------|----------------------|-----------------|-------|-------|--------------------------|-------|-------|
|                    |               |                      | Net             |       |       | With Wooden create above |       |       |
|                    | NET           | GROSS<br>(with Skid) | LENGTH          | WIDTH | DEPTH | LENGTH                   | WIDTH | DEPTH |
| 50TCMA07AEA1-0A0A0 | 310           | 320                  | 1051            | 1888  | 1187  | 1089                     | 1943  | 1219  |
| 50TCMD08AEA1-0A0A0 | 379           | 394                  | 1048            | 2238  | 1510  | 1207                     | 2292  | 1543  |
| 50TCMD09AEA1-0A0A0 | 430           | 445                  | 1253            | 2238  | 1510  | 1412                     | 2292  | 1543  |
| 50TCMD12AEA1-0A0A0 | 434           | 449                  | 1253            | 2238  | 1510  | 1412                     | 2292  | 1543  |
| 50TCMD14AEA1-0A0A0 | 530           | 545                  | 1253            | 2238  | 1510  | 1412                     | 2292  | 1543  |

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

| Unit Model Number  | EST. WT. (KG) |                      | DIMENSIONS (MM) |       |       |                          |       |       |
|--------------------|---------------|----------------------|-----------------|-------|-------|--------------------------|-------|-------|
|                    |               |                      | Net             |       |       | With Wooden create above |       |       |
|                    | NET           | GROSS<br>(with Skid) | LENGTH          | WIDTH | DEPTH | LENGTH                   | WIDTH | DEPTH |
| 50TCMA07AFA1-0A0A0 | 331           | 341                  | 1051            | 1888  | 1187  | 1089                     | 1943  | 1219  |
| 50TCMD08AFA1-0A0A0 | 398           | 413                  | 1048            | 2238  | 1510  | 1207                     | 2292  | 1543  |
| 50TCMD09AFA1-0A0A0 | 461           | 476                  | 1253            | 2238  | 1510  | 1412                     | 2292  | 1543  |
| 50TCMD12AFA1-0A0A0 | 465           | 480                  | 1253            | 2238  | 1510  | 1412                     | 2292  | 1543  |
| 50TCMD14AFA1-0A0A0 | 561           | 576                  | 1253            | 2238  | 1510  | 1412                     | 2292  | 1543  |

## Factory Installed Options and Field Installed Accessories

| Category             | Item Description                               | Factory Installed Option | Field Installed Accessory |
|----------------------|------------------------------------------------|--------------------------|---------------------------|
| Coil Options         | Cu/Cu indoor and/or outdoor coils              | X                        |                           |
|                      | Pre – coated outdoor coils                     | X                        |                           |
| Condenser Protection | Condenser coil hail guard (louvered design)    |                          | X                         |
| Controls             | Thermostats, temperature sensors, and subbases |                          | X                         |
|                      | PremierLink DDC communicating controller       |                          | X                         |
|                      | RTU Open –protocol controller                  |                          | X                         |
|                      | Time Guard II compressor delay control circuit |                          | X                         |
|                      | Smoke detector (supply and return)             |                          | X                         |
| Electric Heat        | Electric Resistance Heaters                    |                          | X                         |
|                      | Single Point Kit                               |                          | X                         |
| Indoor Motor & Drive | Multiple motor and drive packages              | X                        |                           |
| Low Ambient Control  | Winter start kit <sup>2</sup>                  |                          | X                         |
|                      | Motormaster head pressure control              |                          | X                         |

#### NOTES:

1. Please refer to product nomenclature for ordering information.
2. See application data for assistance.

## Factory Options and Accessories

### RTU Open, Multi-protocol Controller

Connect the rooftop to an existing BAS without complicated translators or adapter modules using the RTU Open controller. This new controller speaks the 4 most common building automation system languages (BACNET, Modbus, Johnson N2, and LonWorks). Use this controller when you have an existing BAS.

### PremierLink

This CCN controller regulates your rooftop's performance to tighter tolerances and expanded limits, as well as facilitates zoning systems and digital accessories. It also unites your Carrier HVAC equipment together on one, coherent CCN network. The PremierLink can be factory-installed, or easily field-installed.

### Time Guard II Control Circuit

This accessory protects your compressor by preventing short-cycling in the event of some other failure, prevents the compressor from restarting for 30 seconds after stopping. Not required with PremierLink, RTU Open, or authorized commercial thermostats.

### Filter or Fan Status Switches

Use these differential pressure switches to detect a filter clog or indoor fan motor failure. When used in conjunction with a compatible unit controller/thermostat, the switches will activate an alarm to warn the appropriate personnel.

### Winter Start Kit

The winter start kit by Carrier extends the low ambient limit of your rooftop to 25°F (-4°C). The kit by-passes the low pressure switch, preventing nuisance tripping of the low pressure switch. Other low ambient precautions may still be prudent.

### Alternate Motors and Drives

Some applications need larger horsepower motors, some need more airflow, and some need both. Regardless of the case, your Carrier expert has a factory installed combination to meet your application. A wide selection of motors and pulleys (drives) are available, factory installed, to handle nearly any application.

### Electric Heaters

Carrier offers a full-line of field-installed accessory heaters. The heaters are very easy to use, install and are all pre-engineered and certified.



# Model Number Nomenclature - 50TCM - R410A Series

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|
| 5 | 0 | T | C | M | A | 0 | 7 | A | 9  | A  | 1  | -  | 0  | A  | 0  | A  | 0  |

**Unit Heat Type**  
50 = Cooling /  
Electric Heat RTU

**Model Series - Desert Master**  
TCM = High Ambient Application

**Refig. System Options**  
A = Standard 1 - Stage Cooling  
D = Standard 2 - Stage Cooling Models 08-14

**Nominal Ton**  
07 = 6 Ton  
08 = 7.5 Ton  
09 = 8.5 Ton  
12 = 10 Ton  
14 = 12.5 Ton

**Sensor Options**  
A = None

**Power Supply (V/Ph/Hz)**  
9 = 400/3/50

**Brand/Packaging**  
0 = Standard

**Electrical Options**  
A = None

**Service Options**  
0 = None

**Intake / Exhaust Options**  
A = None

**Base Unit Controls**  
0 = Electromechanical Controller  
1 = RTU Open Controller

**Design Review**  
- = Factory Assigned

**Indoor Fan Options**  
1 = Standard Static Option  
2 = Medium Static Option  
3 = High Static Option

**Coil Options (Outdoor - Indoor)**  
A = Al/Cu - Al/Cu  
B = Precoat Al/Cu - Al/Cu  
E = Cu/Cu - Al/Cu  
F = Cu/Cu - Cu/Cu

# AHRI Capacity Rating

| Unit 50TCM | Nominal Ton | Standard CFM | Net Cooling Capacity (BTU/hr) | Net Cooling Capacity (Watt) | Net Cooling Capacity (Ton) | EER  | Standard m3/hr | Standard L/s |
|------------|-------------|--------------|-------------------------------|-----------------------------|----------------------------|------|----------------|--------------|
| A07        | 6.0         | 2400         | 66500                         | 19496                       | 5.5                        | 11.2 | 4075           | 1133         |
| D08        | 7.5         | 3000         | 86500                         | 25359                       | 7.2                        | 12.5 | 5094           | 1416         |
| D09        | 8.5         | 3400         | 94000                         | 27558                       | 7.8                        | 11.9 | 5773           | 1604         |
| D12        | 10.0        | 4000         | 113500                        | 33274                       | 9.5                        | 11.5 | 6792           | 1888         |
| D14        | 12.5        | 4800         | 135500                        | 39724                       | 11.3                       | 11.0 | 8150           | 2265         |

## Minimum - Maximum Air Flow Rate

| Unit 50TCM | Minimum | Maximum | Minimum | Maximum |
|------------|---------|---------|---------|---------|
|            | CFM     | CFM     | L/s     | L/s     |
| A07        | 1800    | 2850    | 849     | 1345    |
| D08        | 2250    | 3750    | 1062    | 1770    |
| D09        | 2550    | 4250    | 1203    | 2006    |
| D12        | 3000    | 4500    | 1416    | 2124    |
| D14        | 3700    | 5700    | 1746    | 2690    |

## Minimum Electric Heating Air Flow Rate

| Unit 50TCM | Unit Voltage | Heater kW | Unit Configuration | Minimum | Minimum |
|------------|--------------|-----------|--------------------|---------|---------|
|            |              |           |                    | CFM     | L/s     |
| A07        | 400          | All       | Horizontal         | 1800    | 849     |
| D08        | 400          | All       | Horizontal         | 2250    | 1062    |
| D09        | 400          | All       | Horizontal         | 2250    | 1062    |
| D12        | 400          | All       | Horizontal         | 3000    | 1416    |
| D14        | 400          | All       | Horizontal         | 3000    | 1416    |

EER - Energy Efficiency Ratio

CFM - Cubic Feet per Minute

L/s - Liters per Second

BTU - British Thermal Unit

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

1. Rated in accordance with AHRI Standards 340/360.

2. Ratings are net values, reflecting the effects of circulating fan heat.

3. Cooling Standard: 80 F db, 67 wb indoor entering-air temperature and 95 F db air entering outdoor unit.

# Unit Physical Data (English)

| Unit 50TCM                               | A07                                                        | D08            | D09            | D12         | D14         |
|------------------------------------------|------------------------------------------------------------|----------------|----------------|-------------|-------------|
| Unit Dimensions                          | 41.3x74.3x46.7                                             | 41.2x88.1x59.4 | 49.3x88.1x59.4 |             |             |
| Unit Operating Weight                    | 606                                                        | 761            | 855            | 866         | 1078        |
| Refrigeration System                     |                                                            |                |                |             |             |
| Compressor No.# / Type                   | 1 / Scroll                                                 | 2 / Scroll     |                |             |             |
| Refrigerant type                         | Puron ® R410A                                              |                |                |             |             |
| Circuts No.#                             | 1                                                          | 2              |                |             |             |
| Charge per Circuit (1-Down/2-Up) -LBS    | 16.20                                                      | 8.71/8.82      | 9.48/9.92      | 10.65/10.63 | 12.79/12.24 |
| Metering Device                          | Acutrol                                                    |                |                |             |             |
| Filter Drier Qty                         | 1                                                          | 2              |                |             |             |
| High Pressure Switch (Trip/ Reset)- PSIG | 630 / 505                                                  |                |                |             |             |
| Low Pressure Switch (Trip/ Reset)- PSIG  | 54 / 117                                                   |                |                |             |             |
| Condenser Coil *                         |                                                            |                |                |             |             |
| Coil Type                                | 3/8" helical grooved copper tube, 0.75" Aluminum LSW fins. |                |                |             |             |
| Standard Coil Material                   | Cu/Al                                                      |                |                |             |             |
| Rows / FPI                               | 2 / 17                                                     |                |                | 1 / 20      | 2 / 20      |
| Face Area (ft <sup>2</sup> )             | 21.3                                                       | 20.5           | 25.1           |             |             |
| Coil test Pressure (PSIG)                | 450                                                        |                |                |             |             |
| Condenser Fan & Motor                    |                                                            |                |                |             |             |
| Approx. Air Flow Rate (CFM)              | 5000                                                       | 6400           | 7800           | 7500        | 7000        |
| Quantity                                 | 1                                                          | 2              |                | 1           |             |
| Diameter (in) / No. of Blades            | 26/3                                                       | 22/3           |                | 30/4        |             |
| Motor Type                               | Induction Motor - Totally Enclosed                         |                |                |             |             |
| Motor HP - RPM                           | 1/3-960                                                    | 1/3-1200       |                | 1-950       |             |
| Evaporator Coil *                        |                                                            |                |                |             |             |
| Coil Type                                | 3/8" helical grooved copper tube, 0.75" Aluminum LSW fins. |                |                |             |             |
| Standard Coil Material                   | Cu/Al                                                      |                |                |             |             |
| Rows / FPI                               | 4/15                                                       | 3/15           | 4/15           |             |             |
| Face Area (ft <sup>2</sup> )             | 7.3                                                        | 8.9            | 11.1           |             |             |
| Coil test Pressure (PSIG)                | 350                                                        |                |                |             |             |
| Drain Pan connection Size (in)           | 3/4                                                        |                |                |             |             |
| Return Air Filter Qty/ Size (in)         | 4 / 16x16x2                                                | 4 / 16x20x2    | 4 / 20x20x2    |             |             |
| Evaporator Fan & Motor section           |                                                            |                |                |             |             |
| Fan Quantity / Fan Size (in)             | 1 / 10 x 10                                                | 1 / 15 x 15    |                |             |             |
| Fan Type                                 | Centrifugal - Forward Blade                                |                |                |             |             |
| Drive Type                               | Belt                                                       |                |                |             |             |
| Motor Type                               | Induction Motor - TEFC                                     |                |                |             |             |
| Standard Static Drive                    |                                                            |                |                |             |             |
| Motor Qty                                | 1                                                          |                |                |             |             |
| Maximum BHP                              | 1.4                                                        | 2              |                |             | 2.4         |
| FLA                                      | 2.6                                                        |                |                |             | 3.4         |
| Efficiency @ Full Load                   | 80%                                                        |                |                |             | 81%         |
| RPM Range                                | 855-1211                                                   | 570-808        |                |             | 665-903     |
| Shaft Diamter (in)                       | 5/8                                                        |                |                |             | 7/8         |
| Motor Frame Size                         | 56Y                                                        |                |                |             |             |
| Medium Static Drive                      |                                                            |                |                |             |             |
| Motor Qty                                | 1                                                          |                |                |             |             |
| Maximum BHP                              | 2.4                                                        |                |                | 3.1         | 3.9         |
| FLA                                      | 3.4                                                        |                |                | 4.4         | 7.4         |
| Efficiency @ Full Load                   | 81%                                                        |                |                |             |             |
| RPM Range                                | 1077-1393                                                  | 692-896        |                | 808-1040    | 837-1015    |
| Shaft Diamter (in)                       | 7/8                                                        |                |                |             |             |
| Motor Frame Size                         | 56Y                                                        |                |                | 56HZ        | 145TY       |
| High Static Drive                        |                                                            |                |                |             |             |
| Motor Qty                                | 1                                                          |                |                |             |             |
| Maximum BHP                              | 3.1                                                        | 3.9            |                | 4.2         |             |
| FLA                                      | 4.4                                                        | 7.4            |                | 9.8         |             |
| Efficiency @ Full Load                   | 81%                                                        |                |                |             |             |
| RPM Range                                | 1211-1568                                                  | 881-1140       |                | 957-1160    |             |
| Shaft Diamter (in)                       | 7/8                                                        |                |                | 1 1/8       |             |
| Motor Frame Size                         | 56HZ                                                       | 145TY          |                | S184T       |             |

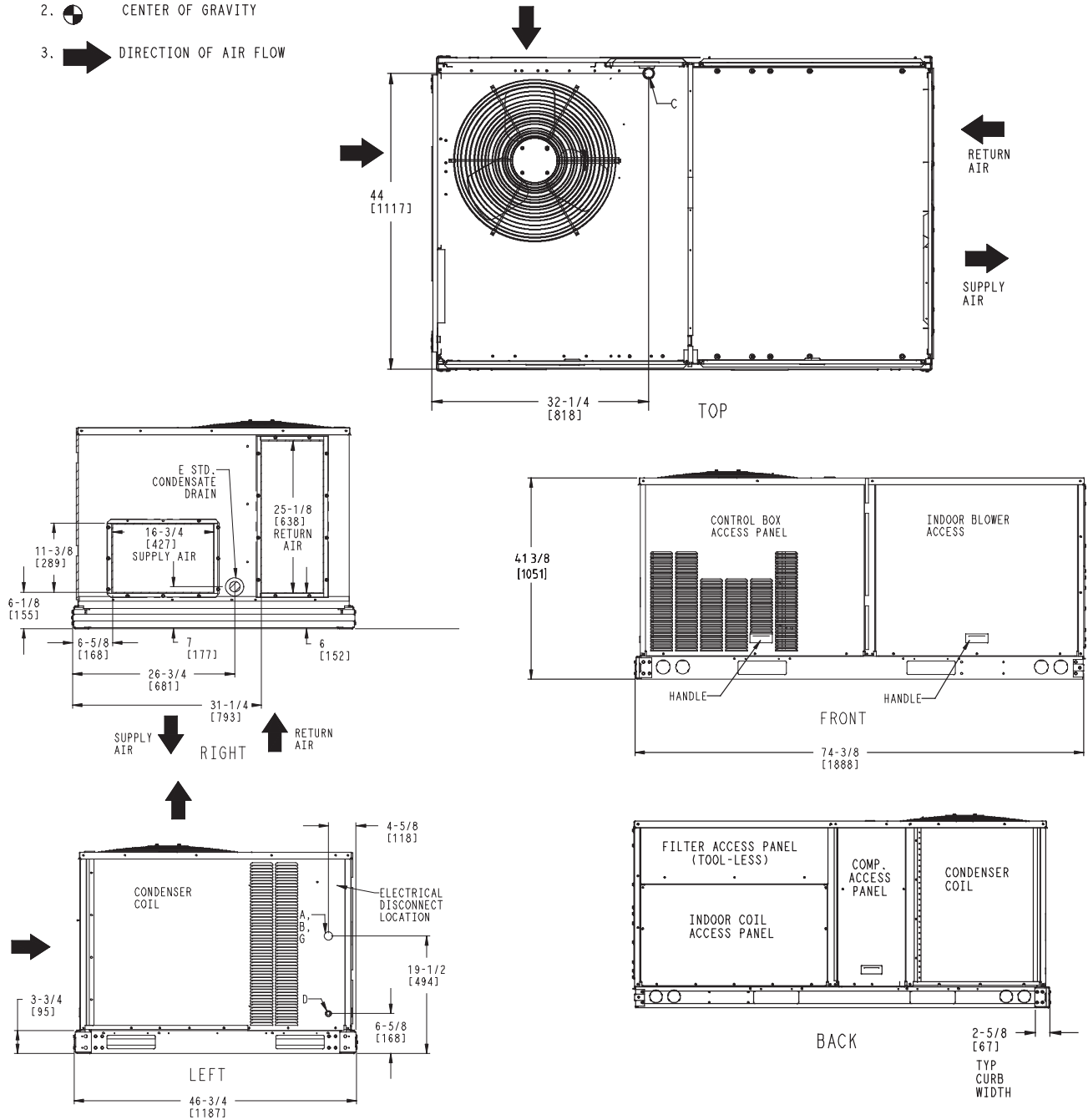
# Unit Physical Data (SI)

| Unit 50TCM                                 | A07                                                        | D08            | D09            | D12         | D14         |
|--------------------------------------------|------------------------------------------------------------|----------------|----------------|-------------|-------------|
| Unit Dimensions                            | 1051x1888x1187                                             | 1048x2238x1510 | 1253x2238x1510 |             |             |
| Unit Operating Weight                      | 275                                                        | 345            | 388            | 393         | 489         |
| Refrigeration System                       |                                                            |                |                |             |             |
| Compressor No.# / Type                     | 1 / Scroll                                                 | 2 / Scroll     |                |             |             |
| Refrigerant type                           | Puron ® R410A                                              |                |                |             |             |
| Circuts No.#                               | 1                                                          | 2              |                |             |             |
| Charge per Circuit (1-Down/2-Up) - kG      | 7.35                                                       | 3.95 / 4.00    | 4.30 / 4.50    | 4.83 / 4.82 | 5.80 / 5.55 |
| Metering Device                            | Acutrol                                                    |                |                |             |             |
| Filter Drier Qty                           | 1                                                          | 2              |                |             |             |
| High Pressure Switch (Trip/ Reset) - bar   | 43 / 34                                                    |                |                |             |             |
| Low Pressure Switch (Trip/ Reset) - bar    | 4 / 8                                                      |                |                |             |             |
| Condenser Coil *                           |                                                            |                |                |             |             |
| Coil Type                                  | 3/8" helical grooved copper tube, 0.75" Aluminum LSW fins. |                |                |             |             |
| Standard Coil Material                     | Cu / Al                                                    |                |                |             |             |
| Rows / FPI                                 | 2 / 17                                                     |                |                | 1 / 20      | 2 / 20      |
| Face Area (m <sup>2</sup> )                | 1.98                                                       | 1.90           | 2.33           |             |             |
| Coil test Pressure (bar)                   | 31                                                         |                |                |             |             |
| Condenser Fan & Motor                      |                                                            |                |                |             |             |
| Approx. Air Flow Rate (m <sup>3</sup> /hr) | 8492.0                                                     | 10867.2        | 13244.4        | 12735       | 11886       |
| Quantity                                   | 1                                                          | 2              |                | 1           |             |
| Diameter (mm) / No. of Blades              | 660 / 3                                                    | 559 / 3        |                | 762 / 4     |             |
| Motor Type                                 | Induction Motor - Totally Enclosed                         |                |                |             |             |
| Motor HP - RPS                             | 1/3-38                                                     | 1/3 - 47       |                | 1-37        |             |
| Evaporator Coil *                          |                                                            |                |                |             |             |
| Coil Type                                  | 3/8" helical grooved copper tube, 0.75" Aluminum LSW fins. |                |                |             |             |
| Standard Coil Material                     | Cu/Al                                                      |                |                |             |             |
| Rows / FPI                                 | 4 / 15                                                     | 3 / 15         | 4 / 15         |             |             |
| Face Area (m <sup>2</sup> )                | 0.7                                                        | 0.8            | 1.0            |             |             |
| Coil test Pressure (bar)                   | 23.8                                                       |                |                |             |             |
| Drain Pan Connection Size (mm)             | 19                                                         |                |                |             |             |
| Return Air Filter Qty x Size (in)          | 4 / 16x16x2                                                | 4 / 16x20x2    | 4 / 20x20x2    |             |             |
| Evaporator Fan & Motor section             |                                                            |                |                |             |             |
| Fan Quantity / Fan Size (mm)               | 1 / 254 x 254                                              | 1 / 381 x 381  |                |             |             |
| Fan Type                                   | Centrifugal - Forward Blade                                |                |                |             |             |
| Drive Type                                 | Belt                                                       |                |                |             |             |
| Motor Type                                 | Induction Motor - TEFC                                     |                |                |             |             |
| Standard Static Drive                      |                                                            |                |                |             |             |
| Motor Qty                                  | 1                                                          |                |                |             |             |
| Maximum kW                                 | 1.0                                                        | 1.5            |                |             | 1.8         |
| FLA                                        | 2.6                                                        |                |                |             | 3.4         |
| Efficiency @ Full Load                     | 80%                                                        |                |                |             | 81%         |
| RPS Range                                  | 14.3 - 20.2                                                | 9.5 - 13.5     |                |             | 11.1 - 15.1 |
| Shaft Diamter (mm)                         | 15.9                                                       |                |                |             | 22.2        |
| Motor Frame Size                           | 56Y                                                        |                |                |             |             |
| Medium Static Drive                        |                                                            |                |                |             |             |
| Motor Qty                                  | 1                                                          |                |                |             |             |
| Maximum kW                                 | 1.8                                                        |                |                | 2.3         | 2.9         |
| FLA                                        | 3.4                                                        |                |                | 4.4         | 7.4         |
| Efficiency @ Full Load                     | 81%                                                        |                |                |             |             |
| RPS Range                                  | 18.0 - 23.2                                                | 11.5 - 14.9    |                | 13.5 - 17.3 | 14.0 - 16.9 |
| Shaft Diamter (mm)                         | 22.2                                                       |                |                |             |             |
| Motor Frame Size                           | 56Y                                                        |                |                | 56HZ        | 145TY       |
| High Static Drive                          |                                                            |                |                |             |             |
| Motor Qty                                  | 1                                                          |                |                |             |             |
| Maximum kW                                 | 2.3                                                        | 2.9            |                | 3.1         |             |
| FLA                                        | 4.4                                                        | 7.4            |                | 9.8         |             |
| Efficiency @ Full Load                     | 81%                                                        |                |                |             |             |
| RPS Range                                  | 20.2 - 26.1                                                | 14.7 - 19.0    |                | 16.0 - 19.3 |             |
| Shaft Diamter (mm)                         | 22.2                                                       |                |                |             | 28.5        |
| Motor Frame Size                           | 56HZ                                                       | 145TY          |                | S184T       |             |

## CURBS & WEIGHTS DIMENSIONS - 50TCM07

### NOTES:

1. DIMENSIONS ARE IN INCHES, DIMENSIONS IN ( ) ARE IN MILLIMETERS.
2.  CENTER OF GRAVITY
3.  DIRECTION OF AIR FLOW

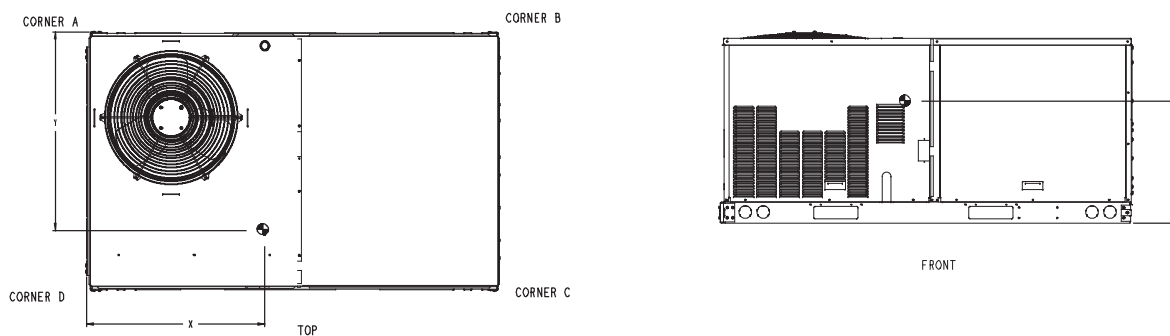


| CONNECTION SIZES |                                         |
|------------------|-----------------------------------------|
| A                | 1 3/8" DIA [35] FIELD POWER SUPPLY HOLE |
| B                | 2" DIA [51] POWER SUPPLY KNOCKOUT       |
| C                | 1 3/4" DIA [44] GAUGE ACCESS PLUG       |
| D                | 7/8" DIA [22] FIELD CONTROL WIRING HOLE |
| E                | 3/4"-14 NPT CONDENSATE DRAIN            |
| G                | 2 1/2 " DIA [64] POWER SUPPLY KNOCK-OUT |

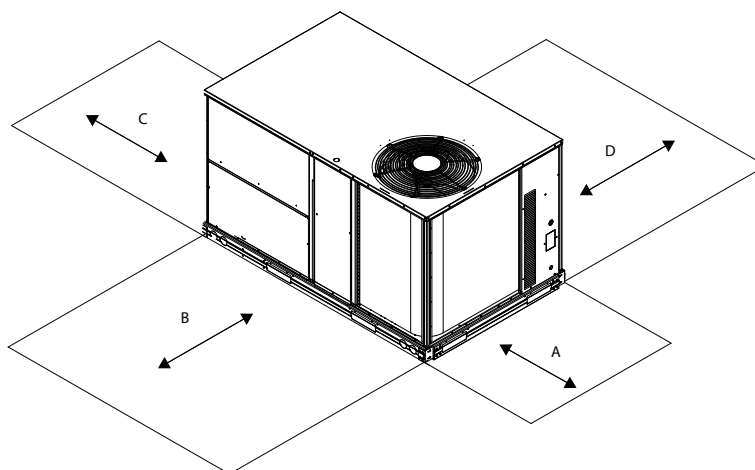
**Dimensions 50TCMA07**

## CURBS & WEIGHTS DIMENSIONS - 50TCM07 (cont.)

| UNIT     | STD. UNIT WEIGHT |     | CORNER WEIGHT (A) |     | CORNER WEIGHT (B) |     | CORNER WEIGHT (C) |     | CORNER WEIGHT (D) |     | C.G.     |          | HEIGHT       |
|----------|------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|----------|----------|--------------|
|          | LBS.             | KG. | LBS.              | KG. | LBS.              | KG. | LBS.              | KG. | LBS.              | KG. | X        | Y        | Z            |
| 50TCMA07 | 607              | 275 | 150               | 68  | 160               | 73  | 153               | 69  | 144               | 65  | 38 [965] | 22 [559] | 20 3/4 [527] |



**Dimensions 50TCMA07**



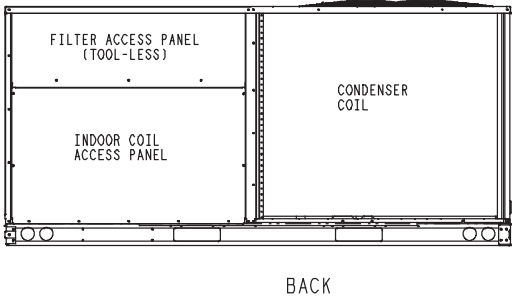
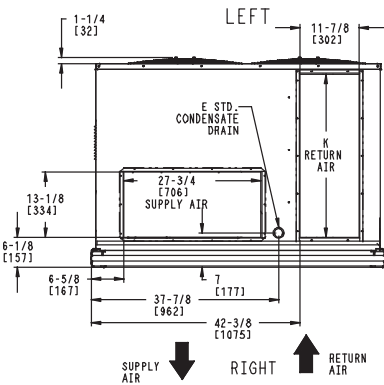
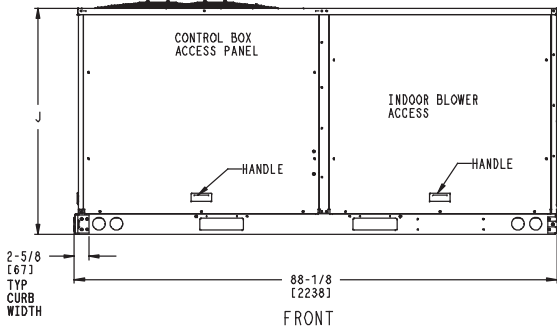
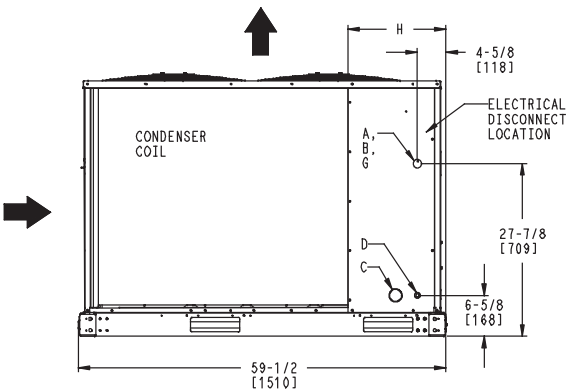
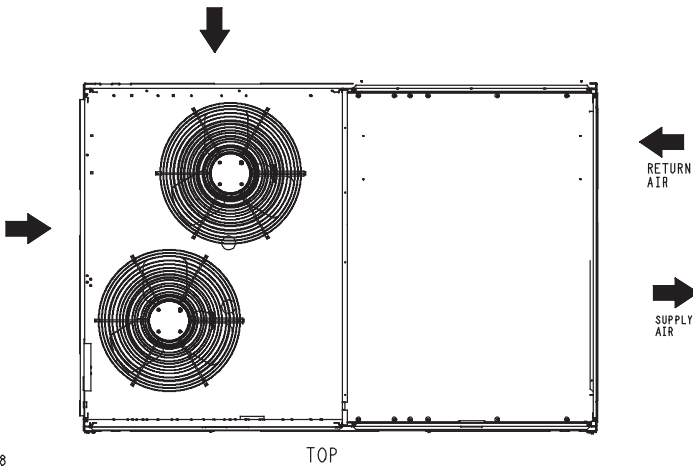
**Service Clearance**

| LOC | DIMENSION                 | CONDITION                                                                                                                                                        |
|-----|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A   | 48-in (1219 mm)           | Unit disconnect is mounted on panel                                                                                                                              |
|     | 18-in (457 mm)            | No disconnect, convenience outlet option                                                                                                                         |
|     | 18-in (457 mm)            | Recommended service clearance                                                                                                                                    |
|     | 12-in (305 mm)            | Minimum clearance                                                                                                                                                |
| B   | 42-in (1067 mm)           | Surface behind servicer is grounded (e.g., metal, masonry wall)                                                                                                  |
|     | 36-in (914 mm)<br>Special | Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)<br>Check for sources of flue products within 10-ft of unit fresh air intake hood |
| C   | 36-in (914 mm)            | Side condensate drain is used                                                                                                                                    |
|     | 18-in (457 mm)            | Minimum clearance                                                                                                                                                |
| D   | 42-in (1067 mm)           | Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)                                                                                    |
|     | 36-in (914 mm)            | Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)                                                                                  |

CURBS & WEIGHTS DIMENSIONS - 50TCMD08/09

- NOTES:
- 1. DIMENSIONS ARE IN INCHES, DIMENSIONS IN ( ) ARE IN MILLIMETERS.
  - 2.  CENTER OF GRAVITY
  - 3.  DIRECTION OF AIR FLOW

|   | CONNECTION SIZES                        |
|---|-----------------------------------------|
| A | 1 3/8" DIA [35] FIELD POWER SUPPLY HOLE |
| B | 2 1/2" [64] DIA POWER SUPPLY KNOCKOUT   |
| C | 1 3/4" DIA [51] GAUGE ACCESS PLUG       |
| D | 7/8" DIA [22] FIELD CONTROL WIRING HOLE |
| E | 3/4"-14 NPT CONDENSATE DRAIN            |
| G | 2 " DIA [51] POWER SUPPLY KNOCK-OUT     |

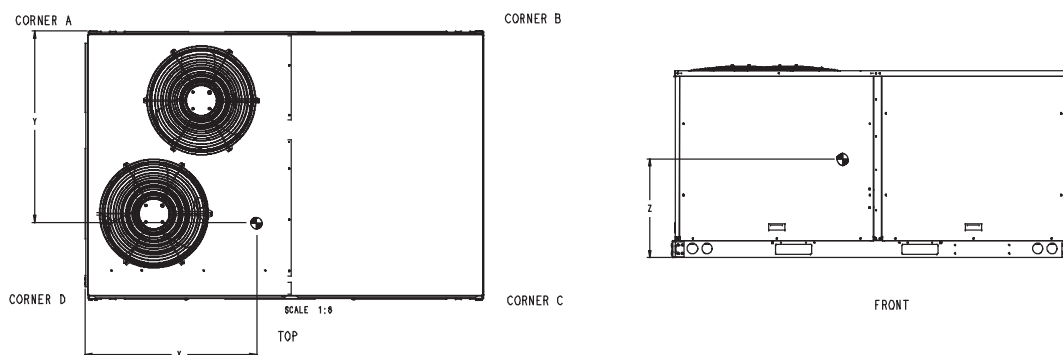


| UNIT                                       | OUTDOOR COIL TYPE | J             | K            | H            |
|--------------------------------------------|-------------------|---------------|--------------|--------------|
| 50TCMD08                                   | RTPF              | 41 1/4 [1048] | 33 [858]     | 15 7/8 [403] |
| 50TCMD09                                   | RTPF              | 49 3/8 [1253] | 37 1/4 [946] | 15 7/8 [403] |
| RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM) |                   |               |              |              |

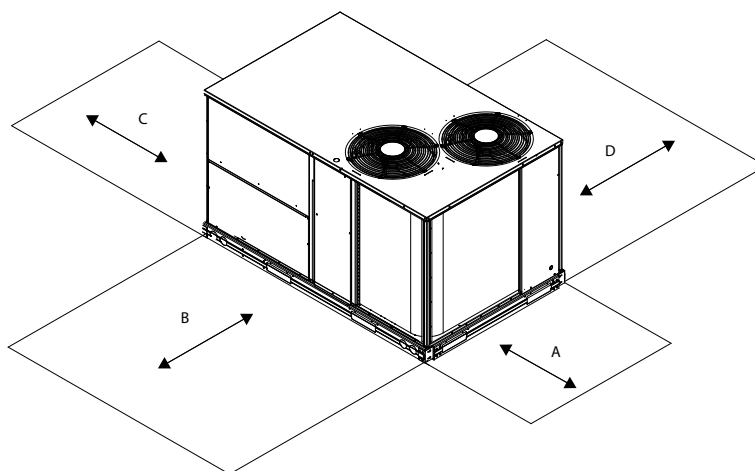
Dimensions 50TCMD08/09

## CURBS & WEIGHTS DIMENSIONS - 50TCMD08/09 (cont.)

| UNIT                                       | OUTDOOR COIL TYPE | STD. UNIT WEIGHT *** |       | CORNER WEIGHT (A) |       | CORNER WEIGHT (B) |      | CORNER WEIGHT (C)                                                                                                                              |       | CORNER WEIGHT (D) |       | C.G.            |              |              |
|--------------------------------------------|-------------------|----------------------|-------|-------------------|-------|-------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------|-------|-----------------|--------------|--------------|
|                                            |                   | LBS.                 | KG.   | LBS.              | KG.   | LBS.              | KG.  | LBS.                                                                                                                                           | KG.   | LBS.              | KG.   | X               | Y            | Z            |
| <b>50TCMD08</b>                            | RTPF              | 760                  | 345   | 158               | 71.7  | 155               | 70.4 | 222                                                                                                                                            | 100.8 | 225               | 102.2 | 43 3/4 [1111.3] | 35 [889]     | 20 [508]     |
| <b>50TCMD09</b>                            | RTPF              | 855                  | 388.2 | 223               | 101.2 | 171               | 77.6 | 200                                                                                                                                            | 90.8  | 261               | 118.5 | 38 3/8 [975]    | 32 1/8 [816] | 19 1/8 [486] |
| RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM) |                   |                      |       |                   |       |                   |      | *** STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING. FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG. |       |                   |       |                 |              |              |



**Dimensions 50TCMD08/09**



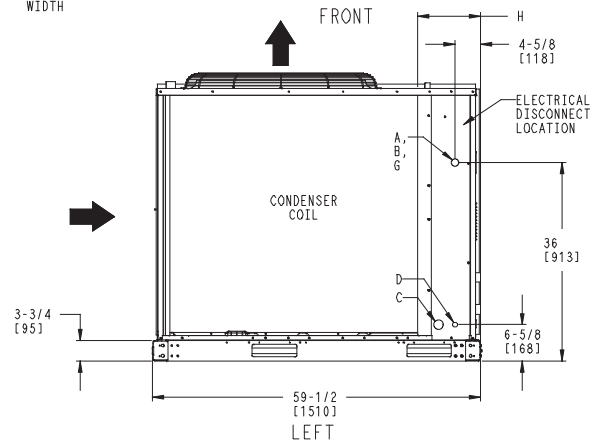
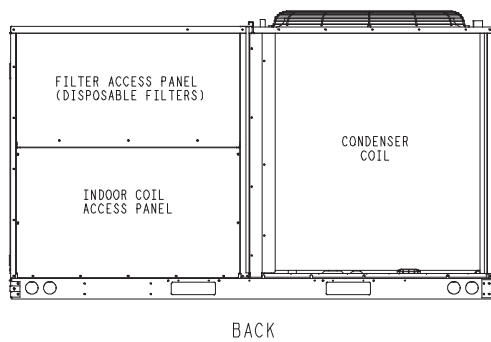
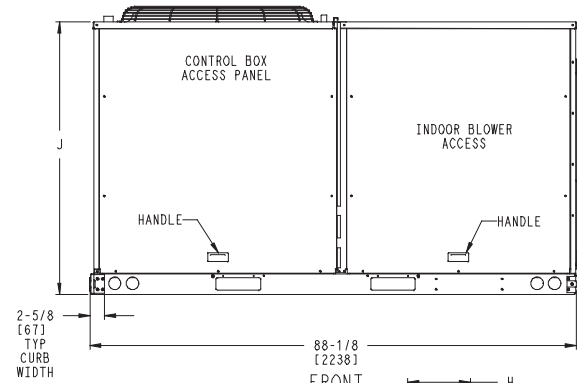
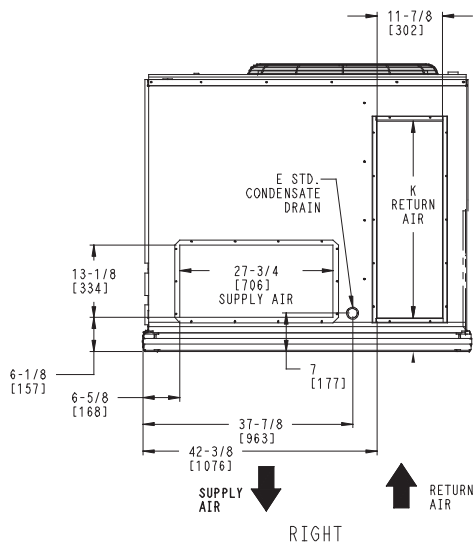
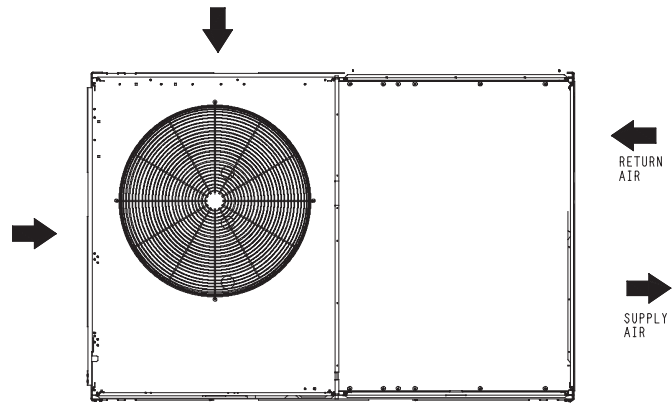
**Service Clearance**

| LOC | DIMENSION                 | CONDITION                                                                                                         |
|-----|---------------------------|-------------------------------------------------------------------------------------------------------------------|
| A   | 48-in (1219 mm)           | Unit disconnect is mounted on panel                                                                               |
|     | 36-in (914 mm)            | If dimension-B is 12-in (305 mm)                                                                                  |
|     | 18-in (457 mm)            | No disconnect, convenience outlet option                                                                          |
|     | 18-in (457 mm)            | Recommended service clearance (use electric screwdriver)                                                          |
|     | 12-in (305 mm)            | Minimum clearance (use manual ratchet screwdriver)                                                                |
| B   | 12-in (305 mm)<br>Special | If dimension-A is 36-in (914 mm)<br>Check for sources of flue products within 10-ft of unit fresh air intake hood |
| C   | 36-in (914 mm)            | Side condensate drain is used                                                                                     |
|     | 18-in (457 mm)            | Minimum clearance                                                                                                 |
| D   | 42-in (1067 mm)           | Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)                                     |
|     | 36-in (914 mm)            | Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)                                   |

## CURBS & WEIGHTS DIMENSIONS - 50TCMD12/14

### NOTES:

1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN ( ) ARE IN MILLIMETERS.
2.  CENTER OF GRAVITY
3.  DIRECTION OF AIR FLOW



| CONNECTION SIZES |                                         |
|------------------|-----------------------------------------|
| A                | 1 3/8" [35] DIA FIELD POWER SUPPLY HOLE |
| B                | 2 1/2" [64] DIA POWER SUPPLY KNOCKOUT   |
| C                | 1 3/4" [51] DIA GAUGE ACCESS PLUG       |
| D                | 7/8" [22] DIA FIELD CONTROL WIRING HOLE |
| E                | 3/4"-14 NPT CONDENSATE DRAIN            |
| G                | 2" [51] DIA POWER SUPPLY KNOCK-OUT      |

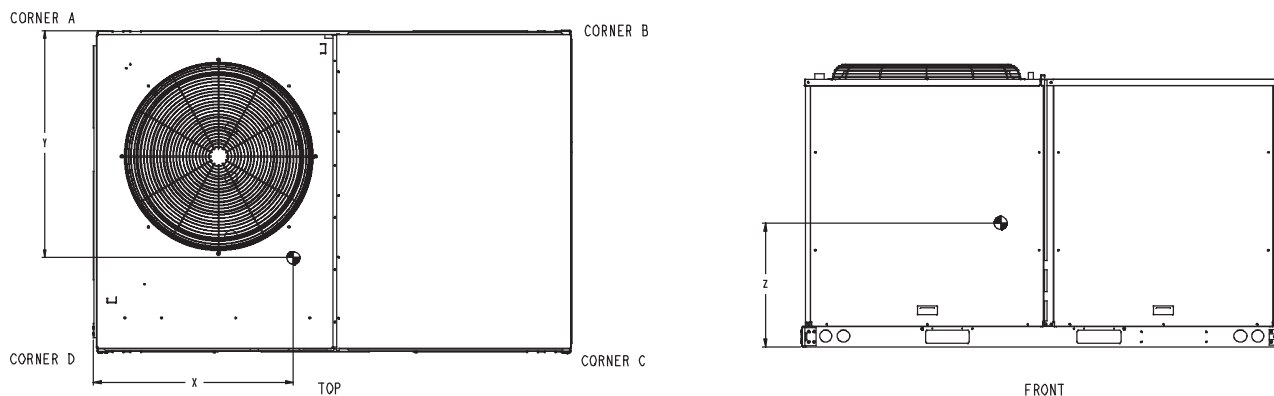
| UNIT     | H            | J             | K            |
|----------|--------------|---------------|--------------|
| 50TCMD12 | 11 3/8 [289] | 49 3/8 [1253] | 35 5/8 [905] |
| 50TCMD14 | 11 3/8 [289] | 49 3/8 [1253] | 35 5/8 [905] |

**Dimensions 50TCMD12/14**

## CURBS & WEIGHTS DIMENSIONS - 50TCMD12/14 (cont.)

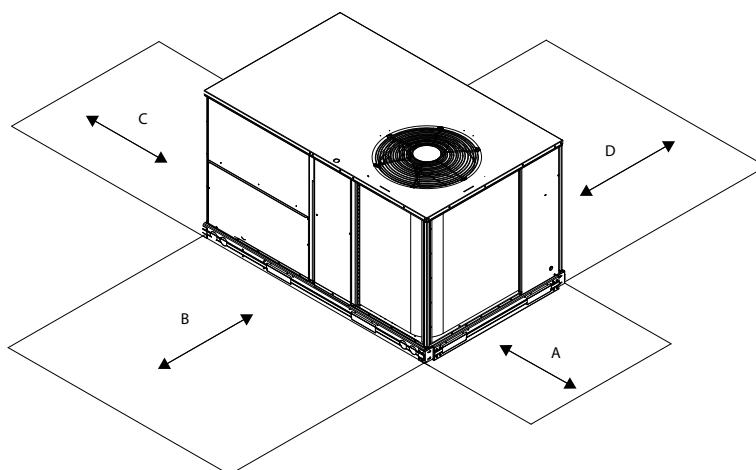
| UNIT     | STD. UNIT WEIGHT |     | CORNER WEIGHT (A) |     | CORNER WEIGHT (B) |     | CORNER WEIGHT (C) |     | CORNER WEIGHT (D) |     | CENTER OF GRAVITY (C.G.) |             |              |
|----------|------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|--------------------------|-------------|--------------|
|          | LBS.             | KG. | LBS.              | KG. | LBS.              | KG. | LBS.              | KG. | LBS.              | KG. | X                        | Y           | Z            |
| 50TCMD12 | 1030             | 467 | 294               | 133 | 146               | 66  | 197               | 89  | 395               | 179 | 28 3/8 (721)             | 33 1/8(841) | 21 3/8 (543) |
| 50TCMD14 | 1030             | 467 | 294               | 133 | 146               | 66  | 197               | 89  | 395               | 179 | 28 3/8 (721)             | 33 1/8(841) | 21 3/8 (543) |

**NOTE:** The STD. UNIT WEIGHT in the table above is for the unit equipped with NOVATION coils.  
Add 65 lbs (29.5 kg) for units equipped with RTPF coils.



**Dimensions 50TCMD12/14**

C10329



**Service Clearance**

C08337

| LOC | DIMENSION       | CONDITION                                                                       |
|-----|-----------------|---------------------------------------------------------------------------------|
| A   | 48-in (1219 mm) | Unit disconnect is mounted on panel                                             |
|     | 18-in (457 mm)  | No disconnect, convenience outlet option                                        |
|     | 18-in (457 mm)  | Recommended service clearance                                                   |
|     | 12-in (305 mm)  | Minimum clearance                                                               |
| B   | 42-in (1067 mm) | Surface behind servicer is grounded (e.g., metal, masonry wall)                 |
|     | 36-in (914 mm)  | Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass) |
|     | Special         | Check for sources of flue products within 10-ft of unit fresh air intake hood   |
| C   | 36-in (914 mm)  | Side condensate drain is used                                                   |
|     | 18-in (457 mm)  | Minimum clearance                                                               |
| D   | 42-in (1067 mm) | Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)   |
|     | 36-in (914 mm)  | Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass) |