

**ZCD****RAIDER® ROOFTOP UNITS**Standard Efficiency | Environ™ Coil | **R-454B** | 60Hz**COMMERCIAL****PRODUCT SPECIFICATIONS (EHB)**

7.5 to 12.5 Tons

Net Cooling Capacity – 88,000 to 136,000 Btuh

Optional Electric Heat - 7.5 to 60 kW

**RAIDER****MODEL NUMBER IDENTIFICATION****Z C D 120 S 5 M N 1 Y**
**Brand/Family**  
 Z = Raider®
**Voltage**
 Y = 208/230V-3 phase-60Hz  
 G = 460V-3 phase-60Hz  
 J = 575V-3 phase-60Hz
**Unit Type**

C = Packaged Electric Cooling w/ optional Electric Heat

**Minor Design Sequence**

1 = 1st Revision

**Major Design Sequence**

D = 4th Generation

**Factory Installed Electric Heat**

N = No Heat

**Nominal Cooling Capacity - Tons**
 092 = 7.5 Tons  
 102 = 8.5 Tons  
 120 = 10 Tons  
 150 = 12.5 Tons
**Blower Type**
 M = MSAV® Multi-Stage Air Volume, Belt Drive  
 T = Belt Drive (2-Speed)
**Cooling Efficiency**

S = Standard Efficiency

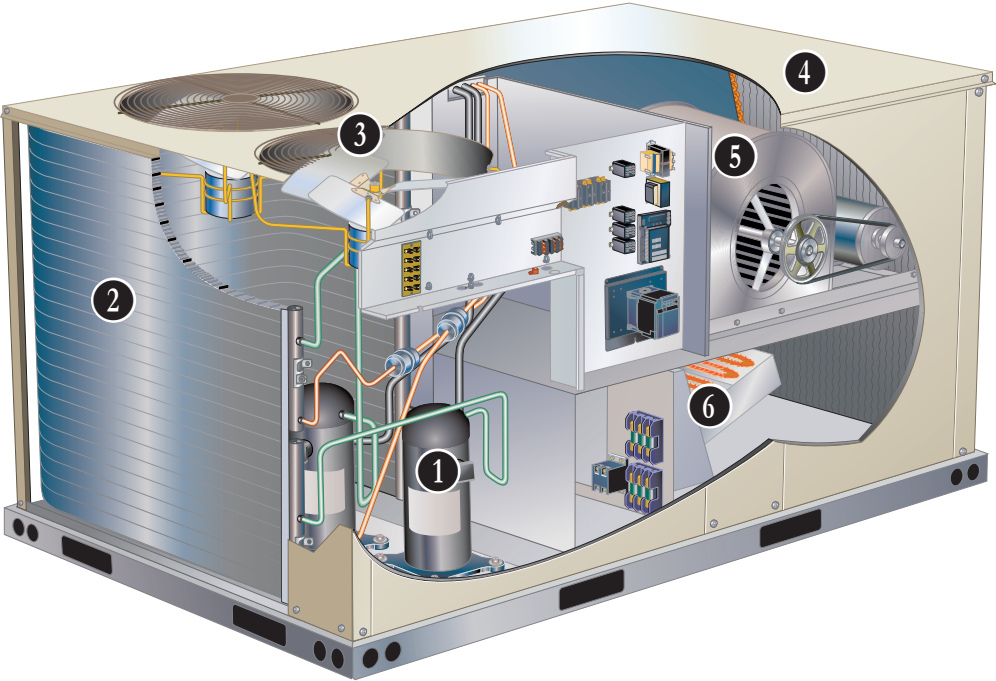
**Refrigerant Type**

5 = R-454B

FEATURE HIGHLIGHTS

Raider® rooftop units from Lennox Commercial are the new standard for cost efficient reliable, efficient rooftop units built for long-lasting performance that can significantly improve indoor environments.

- 1. Scroll Compressors
- 2. Environ™ Coil System
- 3. Outdoor Coil Fans
- 4. Heavy Gauge Steel Cabinet
- 5. MSAV Multi-Stage Air Volume Blower
- 6. Electric Heat (option)



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## APPROVALS AND WARRANTY

### APPROVALS

- AHRI Standard 340/360-2023 certified
- ETL Intertek listed
- Unit and components are ETL, NEC, and CEC bonded for grounding to meet safety standards for servicing
- All models are ASHRAE 90.1 energy efficiency compliant and meet or exceed requirements of Section 6.8
- All models meet DOE 2023 energy efficiency standards and UL 60335-2-40 Refrigerant Detector Requirements
- All models meet California Code of Regulations, Title 24 and ASHRAE 90.1 Section 6.4.3.10 requirements for staged airflow
- ISO 9001 Registered Manufacturing Quality System

### WARRANTY

- Compressors - Limited five years
- Environ™ Coil System - Limited three years
- Variable-Frequency Drive (VFD) - Limited five years
- High Performance Economizers (optional) - Limited five years
- All other covered components - Limited one year

## FEATURES AND BENEFITS

### COOLING SYSTEM

- Designed to maximize sensible and latent cooling performance at design conditions
- System can operate from 40°F to 125°F without any additional controls

#### R-454B Refrigerant

- Low GWP (Global Warming Potential)
- Zero ODP (Ozone Depletion Potential)
- Low Toxicity/Lower Flammability - A2L
- Unit is factory pre-charged

#### **1** Scroll Compressors

- System consists of one two-stage scroll compressor and one single-stage scroll compressor
- Resiliently mounted on rubber grommets for quiet operation

#### Thermal Expansion Valves

- Circuit 1 - Two-stage (all models)
- Circuit 2 - Single-stage (150 model)
- Ensures optimal performance throughout the application range
- Removable element head

#### Refrigerant Metering Orifice

- Circuit 2 - Single-stage (092, 102, 120 models)
- Accurately meters refrigerant in system
- Refrigerant control is accomplished by exact sizing of refrigerant metering orifice

#### Filter/Driers

- High capacity filter/drier protects the system from dirt and moisture

#### High Pressure Switches

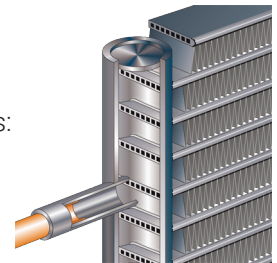
- Protects the compressor from overload conditions such as dirty condenser coils, blocked refrigerant flow or loss of outdoor fan operation

#### Low Pressure Switches

- Protects the compressor from low pressure conditions such as low refrigerant charge or low/no airflow.

#### **2** Condenser Coil - Environ™ Coil System

- Condenser and evaporator coil
- Lightweight, all aluminum brazed fin construction
- Constructed of three components:
  - A flat extrusion tube
  - Fins in-between the flat extrusion tube
  - Two refrigerant manifolds



#### Environ™ Coil System Features:

- Improved heat transfer performance due to high primary surface area (flat tubes) versus secondary surface (fins)
- Smaller internal volume (reduced refrigerant charge)
- High durability
- All aluminum construction
- Fewer brazed joints
- Compact design
- Reduced unit weight
- Easy maintenance/cleaning
- Mounting brackets with rubber inserts secure coil to unit providing vibration dampening and corrosion protection

#### Antimicrobial Condensate Drain Pan

- Composite pan, sloped to meet drainage requirements of ASHRAE 62.1
- Antimicrobial additive resists growth of mold and mildew on drain pan, which improves indoor air quality and reduces drain line blockage
- Side or bottom drain connections

## FEATURES AND BENEFITS

### **COOLING SYSTEM (continued)**

#### **3 Outdoor Coil Fan Motors**

- Thermal overload protected
- Totally enclosed
- Permanently lubricated ball bearings
- Shaft up
- Wire basket mount

#### **Outdoor Coil Fans**

- PVC coated fan guard furnished

#### **Required Selections**

#### **Cooling Capacity**

- Specify nominal cooling capacity

#### **Options/Accessories**

#### **Field Installed**

#### **Condensate Drain Trap**

- Available in copper or PVC

#### **Drain Pan Overflow Switch**

- Monitors condensate level in drain pan
- Shuts down unit if drain becomes clogged

#### **Low Ambient Kit (0°F)**

#### **(Includes Compressor Crankcase Heater)**

- Cycles the outdoor fans while allowing compressor operation in the cooling cycle
- Intermittent fan operation allows the system to operate without icing the evaporator coil and losing capacity
- Designed for use in ambient temperatures no lower than 0°F
- Controls the compressor crankcase heaters

**NOTE** - Compressor crankcase heater is furnished with the kit and protects against refrigerant migration that can occur during low ambient operation.

### **LOW GWP REFRIGERANT DETECTION SYSTEM (RDS)**

- Complies with UL 60335-2-40 approved standard
- Required for all systems using R-454B refrigerant
- Factory installed on all units
- Consists of a refrigerant detection sensor(s) and a mitigation control
- Ensures safe operation for systems equipped with R-454B refrigerant
- Sensor(s) monitors indoor coil area for R-454B refrigerant
- If R-454B refrigerant is detected the refrigerant detection system will prevent compressor and heating operation until R-454B refrigerant is no longer detected
- Refrigeration detection system energizes blower if any R-454B refrigerant is detected to mitigate any concentrations of refrigerant from the unit and the system

### **CABINET**

#### **Construction**

- 4** • Heavy-gauge steel panels
- Full perimeter heavy-gauge galvanized steel base rail
- Base rails have rigging holes
- Three sides of the base rail have forklift slots
- Raised edges around duct and power entry openings in the bottom of the unit for water protection

#### **Airflow Choice**

- Units are shipped in downflow (vertical) return air flow configuration

**NOTE** - Units can be field converted to horizontal airflow.

#### **Duct Flanges**

- Provided for horizontal duct attachment

#### **Power Entry**

- Electrical lines can be routed through the unit base or through horizontal access knock-outs

**NOTE** - Optional Bottom Power Entry Kit is available.

#### **Exterior Panels**

- Constructed of heavy-gauge, galvanized steel
- Textured pre-paint with polyurethane finish
- Cyclic salt fog and UV exposure up to 1,680 hours per ASTM D5894

#### **Insulation**

- Fully insulated with non-hygroscopic fiberglass insulation (conditioned areas)

#### **Access Panels**

- Filter section
- Blower/heating section
- Compressor/controls section
- Recessed handles for easy service access

#### **Options/Accessories**

#### **Field Installed**

#### **Combination Coil/Hail Guards**

- Heavy gauge steel frame
- Painted to match cabinet
- Expanded metal mesh protects outdoor coil

## FEATURES AND BENEFITS

### **BLOWER**

A wide selection of supply air blower options are available to meet a variety of airflow requirements

#### **5 Blower Motor**

- Overload protected
- Ball bearings
- Available in several different sizes to maximize air performance.
- Two-speed belt drive motor (low static/high static) is available on 092-102 models

#### **Supply Air Blower**

- Forward curved blades
- Double inlet
- Blower wheel statically and dynamically balanced
- Ball bearings
- Adjustable pulley (allows speed change).
- Blower assembly slides out of unit for servicing

#### **MSAV® Multi-Stage Air Volume Operation (092 and 102 Models)**

- MSAV® Multi-Stage Air Volume stages the amount of airflow according to compressor stages, heating demand and ventilation demand
- Units utilize a 2-Speed induction blower motor to stage the supply air blower airflow
  - Low Speed - 1st and 2nd Stage cooling and ventilation mode
  - High Speed - 3rd Stage (Full load) cooling and all heat modes
- High speed blower operation is set by adjusting the motor pulley to deliver the desired air volume

**NOTE:** Ventilation speed is same as low speed for improved energy savings. Lower operating costs are obtained when the blower is operated on lower speeds.

**NOTE:** Part-load airflow in cooling mode should not be set below 220 cfm/nominal full load ton to reduce the risk of evaporator coil freeze-up.

#### **MSAV® Multi-Stage Air Volume Sequence of Operation (092 and 102 Models)**

- Blower operates in low speed with (G) demand
- Blower operates in low speed for mechanical cooling (Y1) or (Y1+Y2)
- Blower operates in high-speed for any other mode: (Y1+Y2+Y3), and heating
- Economizer damper minimum position is fully closed in unoccupied mode
- In occupied mode, the economizer damper minimum position is determined by the economizer minimum position of the potentiometer
- When outdoor air is not suitable the blower operates on low speed for (Y1) or (Y1+Y2) and switches to high-speed for (Y1+Y2+Y3).
- In free cooling, the blower operates on low speed for (Y1) or (Y1+Y2)

**NOTE:** Economizer position is determined by mixed air sensor when unit is in free cooling.

#### **MSAV Multi-Stage Air Volume Operation (120-150 Models)**

- MSAV Multi-Stage Air Volume stages the amount of airflow according to compressor stages, heating demand and ventilation demand
- Units utilize a Variable Frequency Drive (VFD) to stage the supply air blower airflow
- VFD alters the frequency and voltage of the power supply to the blower to control blower speed
- The supply air blower has three speeds:
  1. Low Speed - 1st Stage Cooling
  2. Medium Speed - 2nd Stage Cooling
  3. High Speed - Full load cooling and all heat modes
- Full speed blower operation is set by adjusting the motor pulley to deliver the desired air volume
- Ventilation speed is same as low speed for improved energy savings

**NOTE** - Part load airflow in cooling mode should not be set below 220 cfm/nominal full load ton to reduce the risk of evaporator coil freeze-up.

- VFD has an operational range of -40 to 125° F outdoor air ambient temperature

**NOTE** - Lower operating costs are obtained when the blower is operated on lower speeds.

## FEATURES AND BENEFITS

### **BLOWER (continued)**

#### **MSAV Multi-Stage Air Volume Sequence of Operation**

- Blower operates in low speed with (G) demand
- Blower operates in low speed for mechanical cooling (Y1)
- Blower operates in medium speed for any other mode (mechanical cooling Y1+Y2)
- Blower operates in high speed for any other mode (mechanical cooling Y1+Y2+Y3, and heating)
- Economizer damper minimum position is fully closed in unoccupied mode
- In occupied mode, the economizer damper minimum position is determined by the economizer minimum position of the potentiometer

**NOTE** - Variable Frequency Drive (VFD) is designed to operate on balanced, three-phase power. Operating units on unbalanced three-phase power will reduce the reliability of all electrical components in the unit. Unbalanced power is a result of the power delivery system supplied by the local utility company. Factory-installed inverters are sized to drive blower motors with an equivalent current rating using balanced three-phase power. If unbalanced three-phase power is supplied the installer must replace the existing factory-installed inverter with an inverter that has a higher current rating to allow for the imbalance. Refer to the installation instructions for additional information and replacement information.  
Required Selections

#### **Required Selections**

- Order blower motor horsepower and drive kit number required when base unit is ordered
- See Drive Kit Specifications Table

### **CONTROLS**

#### **Compressor Monitor Control**

- Two controls are furnished (one for each refrigeration circuit)
- Anti-short cycle control (5 minutes)
- High and low pressure switch monitoring with five-strike lockout protection
- LEDs for diagnostic and troubleshooting

#### **Refrigerant Detection System (RDS) Control**

- Monitors leak detection sensor
- Terminal strip for thermostat, float switch and RDS alarm connections
- LED for power and sensor status

#### **24V Transformer**

- For all control voltage
- Resettable pop-up fuse

### **Options/Accessories**

#### **Field Installed**

##### **Smoke Detectors**

**NOTE** - Smoke detectors are not furnished and must be field supplied.

##### **Thermostats**

- Control system and thermostat options, see page 10.

### **ELECTRICAL**

#### **Marked & Color-Coded Wiring**

- All electrical wiring is color-coded and marked to identify which components it is connecting

#### **Electrical Plugs**

- Positive connection electrical plugs are used to connect common accessories or maintenance parts for easy removal or installation

### **Required Selections**

#### **Voltage Choice**

- Specify when ordering base unit

### **Options/Accessories**

#### **Field Installed**

#### **6 Electric Heat**

- Helix wound nichrome elements
- Individual element limit controls
- Wiring harness

**NOTE** - See Options / Accessories tables for ordering information.

**NOTE** - Unit Fuse Block is required and must be ordered separately. See Electrical / Electric Heat tables for ordering information.

#### **Bottom Power Entry Kit**

- Reduces the number of penetrations in the roof
- Includes bulkhead connectors to provide power and control wiring routing through the roof curb

### **INDOOR AIR QUALITY**

#### **Air Filters**

- Disposable 2 inch MERV 4 filters furnished as standard

### **Options/Accessories**

#### **Field Installed**

#### **Replacement Filter Media Kit With Frame**

- Replaces existing pleated filter media
- Includes washable metal mesh screen and metal frame with clip for holding replaceable non-pleated filter

#### **Indoor Air Quality (CO<sub>2</sub>) Sensors**

- Monitors CO<sub>2</sub> levels
- Reports to the economizer control to adjust the dampers as needed

## OPTIONS / ACCESSORIES

### **ECONOMIZER**

#### **Economizer**

##### **(Standard and High Performance Common Features)**

- Downflow or Horizontal models with Barometric Relief Dampers and Hood
- Barometric Relief Dampers allow relief of excess air
- Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle
- Exhaust hood with bird screen furnished
- Occupied/Unoccupied mode with field furnished setback thermostat
- Demand Control Ventilation (DCV) ready using optional CO<sub>2</sub> sensors
- Single temperature control is furnished with Economizer
- Outdoor air temperature sensor enables Economizer if the outdoor temperature is less than the setpoint of the control

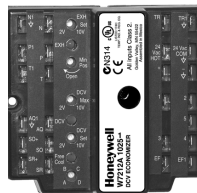
#### **Field Installed**

##### **Standard Economizer Features (Not for Title 24)**

- Gear-driven action
- Return air and outdoor air dampers
- Plug-in connections to unit
- Nylon bearings
- Neoprene seals
- 24-volt
- Fully-modulating spring return motor

##### **Standard Economizer Control Module**

The Standard Economizer Control Module can be adjusted to operate based on outdoor air temperatures.



##### **Economizer Controls:**

- **Damper Minimum Position** - Can be set lower than traditional minimum air requirements resulting in cost savings
- **IAQ Sensor** - Signals dampers to modulate and maintain 55°F when CO<sub>2</sub> is higher than the CO<sub>2</sub> setpoint
- **Demand Control Ventilation (DCV) LED** - A steady green Demand Control Ventilation LED indicates the IAQ reading is higher than setpoint and requires more fresh air
- **Free Cool LED** - A steady green LED indicates outdoor air is suitable for free cooling

**NOTE** - Free Cooling runs when outdoor air temperature is lower than the set temperature on the economizer control.

**NOTE:** The Free Cooling default setting for outdoor air temperature sensor is 55°F.

#### **Factory or Field Installed**

**NOTE** - Downflow Economizer is factory or field installed. Horizontal Economizer is field installed only.

##### **High Performance Economizer Features**

- Approved for California Title 24 building standards
- Low leakage dampers are Air Movement and Control Association International (AMCA) Class 1A Certified - Maximum 3 CFM per sq. ft. leakage at 1 in. w.g.
- ASHRAE 90.1-2010 compliant
- Gear-driven action
- High torque 24-volt fully-modulating spring return damper motor
- Return air and outdoor air dampers
- Plug-in connections to unit
- Stainless steel bearings
- Enhanced thermoplastic vulcanizate (TPV) seals
- Flexible stainless steel jamb seals minimize air leakage

**NOTE** - Outdoor Air and Barometric Relief Exhaust Hoods are included when economizer is factory installed and are furnished when ordered for field installation.

**NOTE** - High Performance Economizers are not approved for use with differential enthalpy controls in Title 24 applications.

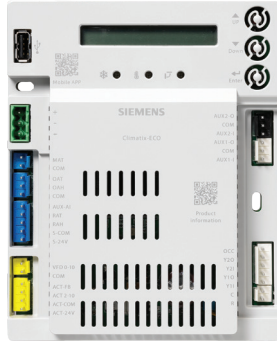
**NOTE** - The Free Cooling setpoint for Title 24 applications must be set based on the Climate Zone where the system is installed. See Section 140.4 "Prescriptive Requirements for Space Conditioning Systems" of the California Energy Commission's 2013 Building Energy Efficiency Standards. Refer to Installation Instructions for complete setup information and menu parameters available.

## OPTIONS / ACCESSORIES

### **ECONOMIZER (continued)**

#### **High Performance Economizer Control Module**

- Provides inputs and outputs to control economizer based on parameter settings
- Free cooling based on single dry bulb temperature, or combination temperature + humidity sensors
- Automatic switchover for different control modes
- Parameter settings based on climate zone, using GPS functionality in the Climatix Mobile application
- LED indication for free cooling operation, sensor operation and damper operation
- Quick installation and easy commissioning with the **Climatix Mobile App** on a mobile device



**NOTE** - WLAN Stick is required for App connection to module(s).

- Module displays any alarm messages (fault detection and diagnostics) as an aid in troubleshooting
- RS585 port for BACnet MSTP or Modbus RTU communication
- USB port for firmware updates and WLAN connection for setup and commissioning
- QR codes on module for quick access to download Climatix Mobile App and user documentation
- User Interface for normal operation, parameter setup and, alarm notifications with an LCD display and three operation buttons:
  1. **Up Button** - Move to the previous value, step or category
  2. **Down Button** - Move to the next value, step or category
  3. **Enter Button** -
    - Press to edit the current value or option
    - Press to confirm a newly selected value or option
    - Press Enter + Up to jump up one category
    - Press Enter + Down to jump down one category

**NOTE** - The Free Cooling setpoint for Title 24 applications must be set based on the Climate Zone where the system is installed. See Section 140.4 "Prescriptive Requirements for Space Conditioning Systems" of the California Energy Commission's 2013 Building Energy Efficiency Standards.

**NOTE** - Refer to Installation Instructions for complete setup information and menu parameters available.

### **Field Installed**

#### **Single Enthalpy Temperature Control**

- Outdoor air enthalpy sensor enables economizer if the outdoor enthalpy is less than the setpoint of the control

#### **Differential Enthalpy Control (Not for Title 24)**

- Order one for factory installed economizer
- Order two for field installed economizer
  - One is field installed in the return air section
  - One in the outdoor air section
- Allows the economizer control board to select between outdoor air or return air, whichever has lower enthalpy

#### **WLAN Stick**

- Required for Climatix Mobile App usage
- Plugs into USB port on Module to provide a temporary WLAN connection for setup, commissioning, and servicing

**NOTE** - Only one WLAN Stick is required and can be used on multiple modules.

### **EXHAUST**

#### **Field Installed**

#### **Power Exhaust Fan**

- Installs internal to unit for downflow applications only with Economizer option
- Provides exhaust air pressure relief
- Interlocked to run when supply air blower is operating
- Fan runs when outdoor air dampers are 50% open (adjustable)
- Motor is overload protected
- Fan is 20 in. diameter
- Five fan blades
- One 1/3 HP motor

**NOTE** - Requires Economizer and Downflow Barometric Relief Dampers.

## OPTIONS / ACCESSORIES

### **OUTDOOR AIR**

#### **Field Installed**

##### **Outdoor Air Damper**

- Downflow or Horizontal
- Linked mechanical dampers
- 0 to 25% (fixed) outdoor air adjustable
- Installs in unit
- Includes outdoor air hood
- Motorized model features fully modulating spring return damper motor with plug-in connection
- Manual model features a slide damper

**NOTE** - Maximum mixed air temperature in cooling mode is 100°F.

### **ROOF CURBS**

#### **Field Installed**

##### **Hybrid Roof Curbs, Downflow**

- Nailer strip furnished; mates to unit
- US National Roofing Contractors approved
- Shipped knocked down
- Interlocking tabs fasten corners together
- No tools required for assembly
- Can also be fastened together with furnished hardware
- Available in 8, 14, 18, and 24 inch heights

##### **Adaptor Curbs (not shown)**

- Curbs are regionally sourced
- Dimensions will vary based upon the source

**NOTE** - Contact your local sales representative for a detailed cut sheet with applicable dimensions.

### **CEILING DIFFUSERS**

#### **Field Installed**

- Flush or Step-Down
- White powder coat finish on diffuser face and grilles
- Insulated UL listed duct liner
- Diffuser box has collars for duct connection
- Step-down diffusers have double deflection blades
- Flush diffusers have fixed blades
- Provisions for suspending
- Internally sealed to prevent recirculation
- Removable return air grille
- Adapts to T-bar ceiling grids or plaster ceilings

##### **Transitions (Supply and Return)**

**NOTE** - Ceiling Diffuser Transitions are not furnished and must be field fabricated.

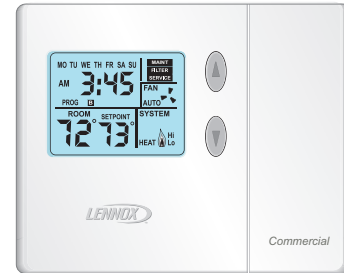
## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

### CS7500 Commercial 7-Day Programmable Thermostat



- Premium Universal Thermostat
- Full Color Touchscreen Interface
- Up To 4 Heat / 3 Cool
- Built-In Sensors For Temperature and Humidity
- Remote Sensors Options For Temperature, Discharge Air, Outdoor Air
- 5-2 or 7-Day Scheduling
- Smooth Setback Recovery
- Heat/Cool Auto-Changeover
- FDD, ASHRAE, IECC Compliant

### CS3000 Commercial 5-2 Day Programmable Thermostat



- Conventional Multi-Stage Thermostat
- Intuitive Display
- Push-Button Operation
- Up To 2 Heat / 2 Cool
- Built-In Temperature Sensor
- Remote Temperature Sensing
- Up to 5-2 Day Scheduling
- Smooth Setback Recovery
- Heat/Cool Auto-changeover

#### Optional Accessories

##### Cooling Stage-Up Timer Relay

- Allows the unit to attain an additional stage of cooling without the need for extra thermostat connections
- Adjustable - 1 to 1023 seconds
- Mounts internal to unit

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

### BACnet Compatible Thermostat With Reheat



- 7-Day Programmable
- For units with or without Humiditrol®
- BTL listed MS/TP ensures compatibility with any BACnet system
- Built-in control programs for conventional and heat pump applications
- Conventional systems up to 3-stage heat and 3-stage cool
- Heat pumps with 1 or 2 compressors and up to 2-stage auxiliary heat
- On-board temperature and humidity sensor
- Multiple configurable inputs and outputs enable advanced control strategies
- Set-up Wizard enables rapid system configuration
- No special tools required for installation or commissioning
- Seven-day (2, 4 or 6 event) occupancy scheduling per day
- Backlit 5-inch LCD touchscreen

| Description                                            |                                                   | Order Number |
|--------------------------------------------------------|---------------------------------------------------|--------------|
| <b>CS7500 Commercial 7-Day Programmable Thermostat</b> |                                                   |              |
| CS7500 7-Day Thermostat                                |                                                   | <b>24K41</b> |
| Sensors/Accessories                                    | <sup>1</sup> Remote non-adjustable wall-mount 20k | <b>47W36</b> |
|                                                        | <sup>1</sup> Remote non-adjustable wall-mount 10k | <b>47W37</b> |
|                                                        | Remote non-adjustable discharge air (duct mount)  | <b>19L22</b> |
|                                                        | Outdoor temperature sensor                        | <b>X2658</b> |
| <b>CS3000 5-2 Day Programmable Thermostat</b>          |                                                   |              |
| CS3000 5-2 Day Thermostat                              |                                                   | <b>11Y05</b> |
| Sensor/Accessories                                     | Remote non-adjustable wall mount 10k averaging    | <b>47W37</b> |
|                                                        | Thermostat wall mounting plate                    | <b>X2659</b> |
| <b>Optional Accessory</b>                              |                                                   |              |
|                                                        | Cooling Stage-Up Timer Relay                      | <b>24G40</b> |
| <b>BACnet 7-Day Programmable Thermostat</b>            |                                                   |              |
| BACnet Controls                                        | <sup>2</sup> 7-Day BACnet Thermostat              | <b>24C57</b> |
|                                                        | <sup>3</sup> BACnet Module                        | <b>16X71</b> |
| <sup>4</sup> BACnet Room Sensors                       | With Display                                      | <b>97W23</b> |
|                                                        | Without Display                                   | <b>97W24</b> |
| <b>Universal Thermostat Guard with Lock (clear)</b>    |                                                   |              |
| Inside Dimensions (H x W x D) 5-7/8 x 8-3/8 x 3 in.    |                                                   | <b>39P21</b> |

<sup>1</sup> Remote wall-mount sensors can be applied in any of the following combinations:  
 One Sensor - (1) 47W36, Two Sensors - (2) 47W37, Three Sensors - (2) 47W36 and (1) 47W37  
 Four Sensors - (4) 47W36, Five Sensors - (3) 47W36 and (2) 47W37

<sup>2</sup> BACnet Thermostat (24C57) will control units with and without the Humiditrol® option. If there is a mix of units equipped with and without Humiditrol on the same site, this thermostat can be used for all units if suitable.

<sup>3</sup> Not compatible with units equipped with Humiditrol® option.

<sup>4</sup> Only compatible with BACnet Module (16X71).

## OPTIONS / ACCESSORIES

| Item Description                                                                      |                             | Order Number | Size |     |     |     |
|---------------------------------------------------------------------------------------|-----------------------------|--------------|------|-----|-----|-----|
|                                                                                       |                             |              | 092  | 102 | 120 | 150 |
| COOLING SYSTEM                                                                        |                             |              |      |     |     |     |
| Condensate Drain Trap                                                                 | PVC                         | 38R23        | X    | X   | X   | X   |
|                                                                                       | Copper                      | 38V21        | X    | X   | X   | X   |
| Drain Pan Overflow Switch                                                             |                             | 38A64        | X    | X   | X   | X   |
| Low Ambient Kit<br>(Includes Compressor Crankcase Heater)                             | 208/230V-3ph                | 10Z35        | X    | X   |     |     |
|                                                                                       | 460V-3ph                    | 10Z36        | X    | X   |     |     |
|                                                                                       | 575V-3ph                    | 10Z37        | X    | X   |     |     |
|                                                                                       | 208/230V-3ph                | 10Z50        |      |     | X   | X   |
|                                                                                       | 460V-3ph                    | 10Z51        |      |     | X   | X   |
|                                                                                       | 575V-3ph                    | 10Z52        |      |     | X   | X   |
| BLOWER - SUPPLY AIR                                                                   |                             |              |      |     |     |     |
| Blower Motors                                                                         | Two-Speed Belt Drive - 2 HP | Factory      | O    | O   |     |     |
|                                                                                       | MSAV® Belt Drive - 3 HP     | Factory      |      |     | O   |     |
|                                                                                       | MSAV® Belt Drive - 5 HP     | Factory      |      |     |     | O   |
| Drive Kits                                                                            | Kit #1 590-890 rpm          | Factory      | O    | O   |     |     |
| See Blower Data Tables for selection                                                  | Kit #2 800-1105 rpm         | Factory      | O    | O   |     |     |
|                                                                                       | Kit #3 795-1195 rpm         | Factory      | O    | O   |     |     |
|                                                                                       | Kit #4 730-970 rpm          | Factory      |      |     | O   |     |
|                                                                                       | Kit #5 940-1200 rpm         | Factory      |      |     | O   |     |
|                                                                                       | Kit #6 1015-1300 rpm        | Factory      |      |     | O   |     |
|                                                                                       | Kit #10 900-1135 rpm        | Factory      |      |     |     | O   |
|                                                                                       | Kit #11 1040-1315 rpm       | Factory      |      |     |     | O   |
| CABINET                                                                               |                             |              |      |     |     |     |
| Combination Coil/Hail Guards                                                          |                             | 12X21        | X    | X   | X   | X   |
| CONTROLS                                                                              |                             |              |      |     |     |     |
| NOTE - See Conventional Thermostat Control Systems on page 10 for Additional Options. |                             |              |      |     |     |     |
| NOTE - Order numbers shown are for ordering field installed accessories.              |                             |              |      |     |     |     |
| OX - Configure To Order (Factory Installed) or Field Installed                        |                             |              |      |     |     |     |
| O = Configure To Order (Factory Installed)                                            |                             |              |      |     |     |     |
| X = Field Installed                                                                   |                             |              |      |     |     |     |

## OPTIONS / ACCESSORIES

| Item Description                                                                       | Order Number       | Size    |     |     |     |
|----------------------------------------------------------------------------------------|--------------------|---------|-----|-----|-----|
|                                                                                        |                    | 092     | 102 | 120 | 150 |
| INDOOR AIR QUALITY                                                                     |                    |         |     |     |     |
| Air Filters                                                                            |                    |         |     |     |     |
| Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media)     | Y3063              | X       | X   | X   | X   |
| Indoor Air Quality (CO <sub>2</sub> ) Sensors                                          |                    |         |     |     |     |
| Sensor - Wall-mount, off-white plastic cover with LCD display                          | 77N39              | X       | X   | X   | X   |
| Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting         | 23V87              | X       | X   | X   | X   |
| CO <sub>2</sub> Sensor Duct Mounting Kit - for downflow applications                   | 23Y47              | X       | X   | X   | X   |
| Aspiration Box - for duct mounting non-plenum rated CO <sub>2</sub> sensors (77N39)    | 90N43              | X       | X   | X   | X   |
| ELECTRICAL                                                                             |                    |         |     |     |     |
| Voltage 60 Hz                                                                          | 208/230V - 3 phase | Factory | O   | O   | O   |
|                                                                                        | 460V - 3 phase     | Factory | O   | O   | O   |
|                                                                                        | 575V - 3 phase     | Factory | O   | O   | O   |
| Bottom Power Entry Kit                                                                 | 11H66              | X       | X   | X   | X   |
| ELECTRIC HEAT                                                                          |                    |         |     |     |     |
| 7.5 kW                                                                                 | 208/240V-3ph       | 30V24   | X   | X   |     |
|                                                                                        | 460V-3ph           | 30V25   | X   | X   |     |
|                                                                                        | 575V-3ph           | 30V26   | X   | X   |     |
| 15 kW                                                                                  | 208/240V-3ph       | 30V30   | X   | X   | X   |
|                                                                                        | 460V-3ph           | 30V31   | X   | X   | X   |
|                                                                                        | 575V-3ph           | 30V32   | X   | X   | X   |
| 22.5 kW                                                                                | 208/240V-3ph       | 30V36   | X   | X   | X   |
|                                                                                        | 460V-3ph           | 30V37   | X   | X   | X   |
|                                                                                        | 575V-3ph           | 30V38   | X   | X   | X   |
| 30 kW                                                                                  | 208/240V-3ph       | 30V42   | X   | X   | X   |
|                                                                                        | 460V-3ph           | 30V43   | X   | X   | X   |
|                                                                                        | 575V-3ph           | 30V44   | X   | X   | X   |
| 45 kW                                                                                  | 208/240V-3ph       | 30V48   | X   | X   | X   |
|                                                                                        | 460V-3ph           | 30V49   | X   | X   | X   |
|                                                                                        | 575V-3ph           | 30V50   | X   | X   | X   |
| 60 kW                                                                                  | 208/240V-3ph       | 30V54   |     |     | X   |
|                                                                                        | 460V-3ph           | 30V55   |     |     | X   |
|                                                                                        | 575V-3ph           | 30V56   |     |     | X   |
| ELECTRIC HEAT ACCESSORIES                                                              |                    |         |     |     |     |
| Unit Fuse Block (required) - See Electrical Accessories table for Selection on page 27 |                    |         | X   | X   | X   |

NOTE - Order numbers shown are for ordering field installed accessories.

OX - Configure To Order (Factory Installed) or Field Installed

O = Configure To Order (Factory Installed)

X = Field Installed

## OPTIONS / ACCESSORIES

| Item Description                                                                                                                                                  | Order Number | Size  |     |     |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------|-----|-----|-----|
|                                                                                                                                                                   |              | 092   | 102 | 120 | 150 |
| ECONOMIZER                                                                                                                                                        |              |       |     |     |     |
| Standard Economizer (Not for Title 24)                                                                                                                            |              |       |     |     |     |
| Standard Downflow Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods                                                       | 24K57        | X     | X   | X   | X   |
| Standard Horizontal Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods                                                     | 24K58        | X     | X   | X   | X   |
| Standard Economizer Controls (Not for Title 24)                                                                                                                   |              |       |     |     |     |
| Single Enthalpy Control                                                                                                                                           | 21Z09        | X     | X   | X   | X   |
| Differential Enthalpy Control (order 2)                                                                                                                           | 21Z09        | X     | X   | X   | X   |
| High Performance Economizer (Approved for California Title 24 Building Standards / AMCA Class 1A Certified)                                                       |              |       |     |     |     |
| High Performance Downflow Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods                                               | 24F99        | OX    | OX  | OX  | OX  |
| High Performance Horizontal Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods                                             | 24G01        | X     | X   | X   | X   |
| High Performance Economizer Controls                                                                                                                              |              |       |     |     |     |
| Single Enthalpy Control                                                                                                                                           | 24G11        | X     | X   | X   | X   |
| Differential Enthalpy Control (order 2) (Not for Title 24)                                                                                                        | 24G11        | X     | X   | X   | X   |
| Economizer Accessories                                                                                                                                            |              |       |     |     |     |
| WLAN Stick (For High Performance Economizer only)                                                                                                                 | 23K58        | X     | X   | X   | X   |
| OUTDOOR AIR                                                                                                                                                       |              |       |     |     |     |
| Outdoor Air Dampers                                                                                                                                               |              |       |     |     |     |
| Motorized Dampers with outdoor air hood                                                                                                                           | 14G36        | X     | X   | X   | X   |
| Manual Dampers with outdoor air hood                                                                                                                              | 14G37        | X     | X   | X   | X   |
| POWER EXHAUST                                                                                                                                                     |              |       |     |     |     |
| Standard Static (Downflow)                                                                                                                                        | 208/230V-3ph | 10Z70 | X   | X   | X   |
| Standard Static (Horizontal)                                                                                                                                      | 208/230V-3ph | 24E01 | X   | X   | X   |
| 575V Transformer Kit                                                                                                                                              | 575V-3ph     | 59E02 | X   | X   | X   |
| NOTE - Order 575V Transformer Kit with 208/230V Power Exhaust Fan for 575V applications. Order two kits for downflow models, order one kit for horizontal models. |              |       |     |     |     |
| ROOF CURBS                                                                                                                                                        |              |       |     |     |     |
| Hybrid Roof Curbs, Downflow                                                                                                                                       |              |       |     |     |     |
| 8 in. height                                                                                                                                                      | 10Z25        | X     | X   | X   | X   |
| 14 in. height                                                                                                                                                     | 10Z26        | X     | X   | X   | X   |
| 18 in. height                                                                                                                                                     | 10Z27        | X     | X   | X   | X   |
| 24 in. height                                                                                                                                                     | 10Z28        | X     | X   | X   | X   |
| CEILING DIFFUSERS                                                                                                                                                 |              |       |     |     |     |
| Step-Down - Order one                                                                                                                                             | RTD11-95S    | 13K61 | X   |     |     |
|                                                                                                                                                                   | RTD11-135S   | 13K62 |     | X   | X   |
|                                                                                                                                                                   | RTD11-185S   | 13K63 |     |     | X   |
| Flush - Order one                                                                                                                                                 | FD11-95S     | 13K56 | X   |     |     |
|                                                                                                                                                                   | FD11-135S    | 13K57 |     | X   | X   |
|                                                                                                                                                                   | FD11-185S    | 13K58 |     |     | X   |
| NOTE - Ceiling Diffuser Transitions are not furnished and must be field fabricated.                                                                               |              |       |     |     |     |
| NOTE - Order numbers shown are for ordering field installed accessories.                                                                                          |              |       |     |     |     |
| OX - Configure To Order (Factory Installed) or Field Installed                                                                                                    |              |       |     |     |     |
| O = Configure To Order (Factory Installed)                                                                                                                        |              |       |     |     |     |
| X = Field Installed                                                                                                                                               |              |       |     |     |     |

## SPECIFICATIONS

| Model                                        |                                          | ZCD092S5T                                                                                                                  | ZCD102S5T            | ZCD120S5M                                                                  | ZCD150S5M                                                                          |    |
|----------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------|----|
| Nominal Tonnage                              |                                          | 7.5 Ton                                                                                                                    | 8.5 Ton              | 10 Ton                                                                     | 12.5 Ton                                                                           |    |
| Efficiency Type                              |                                          | Standard                                                                                                                   | Standard             | Standard                                                                   | Standard                                                                           |    |
| Blower Type                                  |                                          | Two Speed Belt Drive                                                                                                       | Two Speed Belt Drive | MSAV® Multi-Stage Air Volume                                               | MSAV® Multi-Stage Air Volume                                                       |    |
| Cooling Performance                          | Gross Cooling Capacity (Btuh)            | 89,700                                                                                                                     | 100,200              | 118,200                                                                    | 140,200                                                                            |    |
|                                              | <sup>1</sup> Net Cooling Capacity (Btuh) | 88,000                                                                                                                     | 98,000               | 115,000                                                                    | 136,000                                                                            |    |
|                                              | <sup>1</sup> AHRI Rated Air Flow (cfm)   | 2700                                                                                                                       | 2800                 | 3200                                                                       | 4100                                                                               |    |
|                                              | <sup>1</sup> IEER (Btuh/Watt)            | 15.0                                                                                                                       | 14.8                 | 15.0                                                                       | 15.0                                                                               |    |
|                                              | <sup>1</sup> EER (Btuh/Watt)             | 11.2                                                                                                                       | 11.2                 | 11.2                                                                       | 11.0                                                                               |    |
|                                              | Total Unit Power - kW                    | 7.9                                                                                                                        | 8.8                  | 9.7                                                                        | 12.8                                                                               |    |
| Sound Rating Number                          |                                          | dBA                                                                                                                        | 84                   | 84                                                                         | 90                                                                                 | 91 |
| Refrigerant                                  | Type                                     | R-454B                                                                                                                     | R-454B               | R-454B                                                                     | R-454B                                                                             |    |
|                                              | Circuit 1                                | 3 lbs. 14 oz.                                                                                                              | 3 lbs. 15 oz.        | 4 lbs. 0 oz.                                                               | 4 lbs. 12 oz.                                                                      |    |
|                                              | Circuit 2                                | 4 lbs. 4 oz.                                                                                                               | 3 lbs. 12 oz.        | 4 lbs. 4 oz.                                                               | 5 lbs. 12 oz.                                                                      |    |
| Electric Heat Available - See page 13        |                                          | 7.5,15,22.5,30 & 45 kW                                                                                                     |                      | 15, 22.5, 30, 45 and 60 KW                                                 |                                                                                    |    |
| Compressor Type (number)                     |                                          | Two-Stage Scroll (1), Single-Stage Scroll (1)                                                                              |                      |                                                                            |                                                                                    |    |
| Outdoor Coils                                | Net face area - ft. <sup>2</sup>         | 20.9                                                                                                                       | 20.9                 | 28.0                                                                       | 28.0                                                                               |    |
|                                              | Rows                                     | 1                                                                                                                          | 1                    | 1                                                                          | 1                                                                                  |    |
|                                              | Fins - in.                               | 23                                                                                                                         | 23                   | 23                                                                         | 20                                                                                 |    |
| Outdoor Coil Fans                            | Motor HP (number and type)               | 1/3 (2 PSC)                                                                                                                | 1/3 (2 PSC)          | 1/2 (2 PSC)                                                                | 1/2 (2 PSC)                                                                        |    |
|                                              | Rpm                                      | 1075                                                                                                                       | 1075                 | 1075                                                                       | 1075                                                                               |    |
|                                              | Watts                                    | 740                                                                                                                        | 740                  | 930                                                                        | 950                                                                                |    |
|                                              | Diameter (Number) - in.                  | (2) 24                                                                                                                     | (2) 24               | (2) 24                                                                     | (2) 24                                                                             |    |
|                                              | Blades                                   | 3                                                                                                                          | 3                    | 3                                                                          | 3                                                                                  |    |
|                                              | Total Air volume - cfm                   | 8800                                                                                                                       | 8800                 | 9600                                                                       | 9600                                                                               |    |
|                                              |                                          |                                                                                                                            |                      |                                                                            |                                                                                    |    |
| Indoor Coils                                 | Net face area - ft. <sup>2</sup>         | 11.6                                                                                                                       | 11.6                 | 11.6                                                                       | 11.6                                                                               |    |
|                                              | Number of rows                           | 2                                                                                                                          | 2                    | 2                                                                          | 2                                                                                  |    |
|                                              | Fins - in.                               | 20                                                                                                                         | 20                   | 20                                                                         | 20                                                                                 |    |
|                                              | Condensate drain size (NPT) - in.        | (1) 1                                                                                                                      |                      |                                                                            |                                                                                    |    |
|                                              | Expansion device type                    | Circuit 1 - Balanced Port Thermostatic Expansion Valve, removable element head<br>Circuit 2 - Refrigerant Metering Orifice |                      |                                                                            | Both Circuits - Balanced Port Thermostatic Expansion Valve, removable element head |    |
|                                              |                                          |                                                                                                                            |                      |                                                                            |                                                                                    |    |
|                                              |                                          |                                                                                                                            |                      |                                                                            |                                                                                    |    |
| <sup>2</sup> Indoor Blower & Drive Selection | Nominal motor HP                         | 2                                                                                                                          |                      | 3                                                                          | 5                                                                                  |    |
|                                              | Motor - Drive kit number                 | Kit #1<br>590-890 rpm<br>Kit #2<br>800-1105 rpm<br>Kit #3<br>795-1195 rpm                                                  |                      | Kit #4<br>730-970 rpm<br>Kit #5<br>940-1200 rpm<br>Kit #6<br>1015-1300 rpm | Kit #10<br>900-1135 rpm<br>Kit #11<br>1040-1315 rpm                                |    |
|                                              |                                          |                                                                                                                            |                      |                                                                            |                                                                                    |    |
|                                              |                                          |                                                                                                                            |                      |                                                                            |                                                                                    |    |
|                                              |                                          |                                                                                                                            |                      |                                                                            |                                                                                    |    |
| Wheel (Number) diameter x width - in.        |                                          | (1) 15 X 15                                                                                                                |                      |                                                                            |                                                                                    |    |
| Filters                                      | Type of filter                           | Disposable                                                                                                                 |                      |                                                                            |                                                                                    |    |
|                                              | Number and size - in.                    | (4) 20 x 24 x 2                                                                                                            |                      |                                                                            |                                                                                    |    |
| Line voltage data (Volts-Phase-Hz)           |                                          | 208/230-3-60<br>460-3-60<br>575-3-60                                                                                       |                      |                                                                            |                                                                                    |    |

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

<sup>1</sup> AHRI Certified to AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

<sup>2</sup> Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE - Motor service factor limit - 1.0.

## RATINGS

NOTE – For Temperatures and Capacities not shown in tables, see bulletin – Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

### 7.5 TON - ZCD092S5T (1 COMPRESSOR - PART LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |      |                 |                   |                               |      |      |                 |                   |                               |      |      |                 |                   |                               |      |      |  |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|------|-----------------|-------------------|-------------------------------|------|------|-----------------|-------------------|-------------------------------|------|------|-----------------|-------------------|-------------------------------|------|------|--|
|                               |                  | 65°F                                          |                   |                               |      |      |                 | 75°F              |                               |      |      |                 | 85°F              |                               |      |      |                 | 95°F              |                               |      |      |  |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      |  |
|                               |                  |                                               |                   | Dry Bulb                      |      |      |                 |                   | Dry Bulb                      |      |      |                 |                   | Dry Bulb                      |      |      |                 |                   | Dry Bulb                      |      |      |  |
|                               | cfm              | kBtuh                                         | kW                | 75°F                          | 80°F | 85°F | kBtuh           | kW                | 75°F                          | 80°F | 85°F | kBtuh           | kW                | 75°F                          | 80°F | 85°F | kBtuh           | kW                | 75°F                          | 80°F | 85°F |  |
| 63°F                          | 1600             | 45.3                                          | 2.35              | 0.81                          | 0.97 | 1    | 42.2            | 2.76              | 0.83                          | 0.99 | 1    | 38.7            | 3.22              | 0.85                          | 1    | 1    | 35.6            | 3.73              | 0.88                          | 1    | 1    |  |
|                               | 1980             | 48.3                                          | 2.3               | 0.87                          | 1    | 1    | 45.3            | 2.71              | 0.89                          | 1    | 1    | 42.1            | 3.17              | 0.92                          | 1    | 1    | 38.2            | 3.7               | 0.97                          | 1    | 1    |  |
|                               | 2360             | 51                                            | 2.28              | 0.93                          | 1    | 1    | 47.8            | 2.68              | 0.95                          | 1    | 1    | 44.1            | 3.14              | 0.98                          | 1    | 1    | 40.4            | 3.66              | 1                             | 1    | 1    |  |
| 67°F                          | 1600             | 48                                            | 2.31              | 0.63                          | 0.78 | 0.93 | 44.7            | 2.72              | 0.63                          | 0.8  | 0.96 | 40.7            | 3.19              | 0.64                          | 0.83 | 0.99 | 37              | 3.71              | 0.65                          | 0.86 | 1    |  |
|                               | 1980             | 50.4                                          | 2.28              | 0.67                          | 0.85 | 1    | 47.1            | 2.69              | 0.68                          | 0.87 | 1    | 43.4            | 3.15              | 0.69                          | 0.89 | 1    | 39              | 3.68              | 0.71                          | 0.94 | 1    |  |
|                               | 2360             | 52.3                                          | 2.26              | 0.71                          | 0.91 | 1    | 48.8            | 2.66              | 0.72                          | 0.93 | 1    | 44.6            | 3.13              | 0.73                          | 0.97 | 1    | 40.4            | 3.66              | 0.75                          | 1    | 1    |  |
| 71°F                          | 1600             | 50.8                                          | 2.28              | 0.47                          | 0.62 | 0.76 | 47.5            | 2.68              | 0.46                          | 0.62 | 0.78 | 43.5            | 3.15              | 0.46                          | 0.63 | 0.8  | 39.5            | 3.68              | 0.45                          | 0.65 | 0.83 |  |
|                               | 1980             | 53.3                                          | 2.25              | 0.49                          | 0.66 | 0.83 | 49.9            | 2.65              | 0.48                          | 0.67 | 0.85 | 45.6            | 3.12              | 0.49                          | 0.69 | 0.87 | 41.4            | 3.65              | 0.47                          | 0.71 | 0.91 |  |
|                               | 2360             | 55                                            | 2.23              | 0.5                           | 0.7  | 0.89 | 51.4            | 2.63              | 0.5                           | 0.71 | 0.91 | 47.1            | 3.1               | 0.51                          | 0.73 | 0.94 | 42.9            | 3.63              | 0.51                          | 0.75 | 0.98 |  |

### 7.5 TON - ZCD092S5T (2 COMPRESSORS - PART LOAD / FULL LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |       |      |  |  |  |  |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|-------|------|--|--|--|--|
|                               |                  | 85°F                                          |                   |                               |      |       |                 | 95°F              |                               |      |       |                 |                   | 105°F                         |      |       |                 |                   |                               | 115°F |      |  |  |  |  |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |       |      |  |  |  |  |
|                               |                  |                                               |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |       |      |  |  |  |  |
|                               |                  |                                               |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |       |      |  |  |  |  |
| cfm                           | kBtuh            | kW                                            | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F  |      |  |  |  |  |
| 63°F                          | 1800             | 75.1                                          | 4.28              | 0.84                          | 1    | 1     | 70.2            | 4.95              | 0.86                          | 1    | 1     | 64.9            | 5.69              | 0.88                          | 1    | 1     | 59.2            | 6.56              | 0.91                          | 1     | 1    |  |  |  |  |
|                               | 2250             | 80.2                                          | 4.26              | 0.9                           | 1    | 1     | 74.8            | 4.94              | 0.93                          | 1    | 1     | 69.1            | 5.67              | 0.96                          | 1    | 1     | 63.5            | 6.54              | 0.99                          | 1     | 1    |  |  |  |  |
|                               | 2700             | 83.8                                          | 4.24              | 0.97                          | 1    | 1     | 78.4            | 4.92              | 0.99                          | 1    | 1     | 72.4            | 5.67              | 1                             | 1    | 1     | 66.3            | 6.51              | 1                             | 1     | 1    |  |  |  |  |
| 67°F                          | 1800             | 78.8                                          | 4.26              | 0.64                          | 0.82 | 0.98  | 73.4            | 4.94              | 0.65                          | 0.84 | 1     | 67.2            | 5.68              | 0.66                          | 0.86 | 1     | 61.2            | 6.56              | 0.67                          | 0.89  | 1    |  |  |  |  |
|                               | 2250             | 82.6                                          | 4.25              | 0.69                          | 0.88 | 1     | 76.5            | 4.93              | 0.7                           | 0.91 | 1     | 70.2            | 5.67              | 0.71                          | 0.94 | 1     | 64              | 6.54              | 0.72                          | 0.97  | 1    |  |  |  |  |
|                               | 2700             | 84.9                                          | 4.23              | 0.73                          | 0.95 | 1     | 79              | 4.91              | 0.74                          | 0.98 | 1     | 72.6            | 5.67              | 0.76                          | 1    | 1     | 66.3            | 6.51              | 0.77                          | 1     | 1    |  |  |  |  |
| 71°F                          | 1800             | 82.8                                          | 4.25              | 0.47                          | 0.64 | 0.8   | 76.9            | 4.92              | 0.46                          | 0.65 | 0.81  | 70.8            | 5.67              | 0.46                          | 0.66 | 0.84  | 64.6            | 6.54              | 0.45                          | 0.67  | 0.87 |  |  |  |  |
|                               | 2250             | 86.4                                          | 4.22              | 0.49                          | 0.68 | 0.87  | 80.6            | 4.91              | 0.49                          | 0.69 | 0.89  | 74.1            | 5.66              | 0.49                          | 0.71 | 0.92  | 67.5            | 6.5               | 0.48                          | 0.72  | 0.95 |  |  |  |  |
|                               | 2700             | 89                                            | 4.21              | 0.52                          | 0.73 | 0.93  | 82.9            | 4.9               | 0.52                          | 0.74 | 0.96  | 76.4            | 5.65              | 0.51                          | 0.76 | 0.99  | 69.6            | 6.49              | 0.5                           | 0.78  | 1    |  |  |  |  |

### 7.5 TON - ZCD092S5T (2 COMPRESSORS - FULL LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |      |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|
|                               |                  | 85°F                                          |                   |                               |      |       | 95°F            |                   |                               |      |       | 105°F           |                   |                               |      |       | 115°F           |                   |                               |      |      |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      |
|                               |                  |                                               |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |      |
| cfm                           | kBtuh            | kW                                            | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F |      |
| 63°F                          | 2400             | 98.3                                          | 5.4               | 0.86                          | 0.99 | 1     | 92.2            | 6.09              | 0.88                          | 1    | 1     | 86.5            | 6.89              | 0.9                           | 1    | 1     | 80.1            | 7.8               | 0.92                          | 1    | 1    |
|                               | 3000             | 103.5                                         | 5.45              | 0.93                          | 1    | 1     | 97.5            | 6.15              | 0.95                          | 1    | 1     | 91.3            | 6.95              | 0.96                          | 1    | 1     | 84.8            | 7.87              | 0.98                          | 1    | 1    |
|                               | 3600             | 107.7                                         | 5.49              | 0.97                          | 1    | 1     | 101.5           | 6.2               | 0.99                          | 1    | 1     | 95              | 7                 | 1                             | 1    | 1     | 88.1            | 7.92              | 1                             | 1    | 1    |
| 67°F                          | 2400             | 102.2                                         | 5.45              | 0.66                          | 0.84 | 0.98  | 95.8            | 6.14              | 0.67                          | 0.86 | 0.99  | 89              | 6.93              | 0.68                          | 0.88 | 1     | 82              | 7.84              | 0.69                          | 0.91 | 1    |
|                               | 3000             | 105.8                                         | 5.49              | 0.7                           | 0.91 | 1     | 99.3            | 6.19              | 0.71                          | 0.93 | 1     | 92.5            | 6.98              | 0.73                          | 0.95 | 1     | 85.6            | 7.89              | 0.74                          | 0.97 | 1    |
|                               | 3600             | 109                                           | 5.52              | 0.75                          | 0.96 | 1     | 102.3           | 6.22              | 0.76                          | 0.98 | 1     | 95.5            | 7.02              | 0.78                          | 1    | 1     | 88.3            | 7.92              | 0.79                          | 1    | 1    |
| 71°F                          | 2400             | 107.1                                         | 5.49              | 0.48                          | 0.66 | 0.82  | 100.6           | 6.2               | 0.48                          | 0.66 | 0.84  | 93.8            | 6.99              | 0.47                          | 0.67 | 0.86  | 86.7            | 7.91              | 0.47                          | 0.69 | 0.89 |
|                               | 3000             | 111.1                                         | 5.54              | 0.5                           | 0.7  | 0.89  | 104.4           | 6.24              | 0.5                           | 0.71 | 0.92  | 97.2            | 7.04              | 0.5                           | 0.73 | 0.94  | 89.7            | 7.94              | 0.5                           | 0.74 | 0.97 |
|                               | 3600             | 113.8                                         | 5.57              | 0.52                          | 0.75 | 0.95  | 106.6           | 6.26              | 0.53                          | 0.76 | 0.97  | 99.6            | 7.07              | 0.53                          | 0.78 | 0.99  | 91.6            | 7.97              | 0.53                          | 0.8  | 1    |

## RATINGS

NOTE – For Temperatures and Capacities not shown in tables, see bulletin – Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

### 8.5 TON - ZCD102S5T (1 COMPRESSOR - PART LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |      |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|
|                               |                  | 65°F                                          |                   |                               |      |       | 75°F            |                   |                               |      |       | 85°F            |                   |                               |      |       | 95°F            |                   |                               |      |      |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      |
|                               |                  |                                               |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |      |
| cfm                           | kBtuh            | kW                                            | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F |      |
| 63°F                          | 1800             | 48.2                                          | 2.35              | 0.84                          | 1    | 1     | 45.3            | 2.75              | 0.86                          | 1    | 1     | 41.9            | 3.22              | 0.89                          | 1    | 1     | 38.1            | 3.75              | 0.93                          | 1    | 1    |
|                               | 2250             | 51.7                                          | 2.31              | 0.91                          | 1    | 1     | 48.6            | 2.71              | 0.94                          | 1    | 1     | 44.9            | 3.18              | 0.97                          | 1    | 1     | 41              | 3.7               | 1                             | 1    | 1    |
|                               | 2700             | 54.3                                          | 2.28              | 0.98                          | 1    | 1     | 51.1            | 2.68              | 1                             | 1    | 1     | 47.4            | 3.14              | 1                             | 1    | 1     | 43.2            | 3.67              | 1                             | 1    | 1    |
| 67°F                          | 1800             | 50.8                                          | 2.31              | 0.65                          | 0.82 | 0.98  | 47.5            | 2.73              | 0.66                          | 0.84 | 1     | 43.7            | 3.2               | 0.67                          | 0.86 | 1     | 39.3            | 3.73              | 0.69                          | 0.9  | 1    |
|                               | 2250             | 53.4                                          | 2.29              | 0.7                           | 0.89 | 1     | 49.8            | 2.69              | 0.72                          | 0.92 | 1     | 45.9            | 3.16              | 0.72                          | 0.95 | 1     | 41.3            | 3.7               | 0.75                          | 0.99 | 1    |
|                               | 2700             | 55.1                                          | 2.27              | 0.74                          | 0.95 | 1     | 51.6            | 2.67              | 0.75                          | 0.98 | 1     | 47.5            | 3.15              | 0.77                          | 1    | 1     | 43.2            | 3.67              | 0.8                           | 1    | 1    |
| 71°F                          | 1800             | 53.8                                          | 2.28              | 0.48                          | 0.64 | 0.8   | 50.3            | 2.69              | 0.48                          | 0.65 | 0.82  | 46.1            | 3.16              | 0.47                          | 0.66 | 0.84  | 41.9            | 3.69              | 0.47                          | 0.68 | 0.87 |
|                               | 2250             | 56.2                                          | 2.25              | 0.49                          | 0.69 | 0.87  | 52.6            | 2.66              | 0.49                          | 0.7  | 0.89  | 48.1            | 3.14              | 0.5                           | 0.72 | 0.92  | 43.8            | 3.67              | 0.51                          | 0.74 | 0.96 |
|                               | 2700             | 57.9                                          | 2.23              | 0.52                          | 0.74 | 0.94  | 53.9            | 2.64              | 0.53                          | 0.75 | 0.96  | 49.8            | 3.12              | 0.53                          | 0.77 | 1     | 45.3            | 3.64              | 0.54                          | 0.8  | 1    |

### 8.5 TON - ZCD102S5T (2 COMPRESSORS - PART LOAD / FULL LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |      |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|
|                               |                  | 85°F                                          |                   |                               |      |       | 95°F            |                   |                               |      |       | 105°F           |                   |                               |      |       | 115°F           |                   |                               |      |      |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      |
|                               |                  |                                               |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |      |
| cfm                           | kBtuh            | kW                                            | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F |      |
| 63°F                          | 2040             | 87.3                                          | 4.95              | 0.83                          | 0.98 | 1     | 81.5            | 5.72              | 0.85                          | 0.99 | 1     | 75.8            | 6.6               | 0.87                          | 1    | 1     | 69.5            | 7.59              | 0.9                           | 1    | 1    |
|                               | 2550             | 91.9                                          | 4.94              | 0.9                           | 1    | 1     | 86.2            | 5.72              | 0.92                          | 1    | 1     | 80.5            | 6.6               | 0.94                          | 1    | 1     | 74.1            | 7.56              | 0.95                          | 1    | 1    |
|                               | 3060             | 96                                            | 4.93              | 0.95                          | 1    | 1     | 90.3            | 5.7               | 0.96                          | 1    | 1     | 83.5            | 6.57              | 0.97                          | 1    | 1     | 76.8            | 7.55              | 0.99                          | 1    | 1    |
| 67°F                          | 2040             | 90.8                                          | 4.95              | 0.65                          | 0.81 | 0.96  | 84.6            | 5.73              | 0.65                          | 0.83 | 0.97  | 78.7            | 6.6               | 0.66                          | 0.85 | 0.98  | 71.7            | 7.59              | 0.67                          | 0.88 | 1    |
|                               | 2550             | 95                                            | 4.94              | 0.69                          | 0.88 | 1     | 88.6            | 5.71              | 0.69                          | 0.9  | 1     | 81.9            | 6.58              | 0.7                           | 0.93 | 1     | 74.7            | 7.57              | 0.72                          | 0.95 | 1    |
|                               | 3060             | 98                                            | 4.94              | 0.72                          | 0.94 | 1     | 91.5            | 5.71              | 0.74                          | 0.96 | 1     | 84.8            | 6.58              | 0.75                          | 0.97 | 1     | 78              | 7.58              | 0.77                          | 0.98 | 1    |
| 71°F                          | 2040             | 94.9                                          | 4.94              | 0.47                          | 0.64 | 0.8   | 89              | 5.7               | 0.46                          | 0.65 | 0.81  | 82              | 6.57              | 0.47                          | 0.66 | 0.84  | 75              | 7.56              | 0.45                          | 0.67 | 0.86 |
|                               | 2550             | 99.2                                          | 4.93              | 0.49                          | 0.69 | 0.86  | 92.5            | 5.71              | 0.49                          | 0.69 | 0.88  | 85.8            | 6.58              | 0.49                          | 0.7  | 0.91  | 78.9            | 7.58              | 0.49                          | 0.72 | 0.93 |
|                               | 3060             | 102.1                                         | 4.93              | 0.51                          | 0.72 | 0.92  | 95.4            | 5.7               | 0.51                          | 0.73 | 0.95  | 88.3            | 6.58              | 0.51                          | 0.75 | 0.96  | 81.2            | 7.58              | 0.51                          | 0.77 | 0.97 |

### 8.5 TON - ZCD102S5T (2 COMPRESSORS - FULL LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |      |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|
|                               |                  | 85°F                                          |                   |                               |      |       | 95°F            |                   |                               |      |       | 105°F           |                   |                               |      |       | 115°F           |                   |                               |      |      |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      |
|                               |                  |                                               |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |      |
|                               |                  |                                               |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |      |
| cfm                           | kBtuh            | kW                                            | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F |      |
| 63°F                          | 2720             | 107.2                                         | 6.09              | 0.92                          | 1    | 1     | 100.9           | 7.05              | 0.94                          | 1    | 1     | 94.5            | 8.18              | 0.96                          | 1    | 1     | 87              | 9.38              | 0.97                          | 1    | 1    |
|                               | 3400             | 112.8                                         | 6.07              | 0.97                          | 1    | 1     | 106             | 7.04              | 0.98                          | 1    | 1     | 99              | 8.14              | 0.99                          | 1    | 1     | 91.5            | 9.39              | 1                             | 1    | 1    |
|                               | 4080             | 116.5                                         | 6.06              | 1                             | 1    | 1     | 109.6           | 7.04              | 1                             | 1    | 1     | 102             | 8.14              | 1                             | 1    | 1     | 94.7            | 9.39              | 1                             | 1    | 1    |
| 67°F                          | 2720             | 110.4                                         | 6.09              | 0.7                           | 0.9  | 1     | 103.2           | 7.06              | 0.71                          | 0.92 | 1     | 95.7            | 8.16              | 0.72                          | 0.94 | 1     | 87.8            | 9.39              | 0.74                          | 0.96 | 1    |
|                               | 3400             | 114.4                                         | 6.08              | 0.75                          | 0.96 | 1     | 107.3           | 7.05              | 0.76                          | 0.97 | 1     | 99.6            | 8.14              | 0.78                          | 0.99 | 1     | 92              | 9.39              | 0.8                           | 1    | 1    |
|                               | 4080             | 117.4                                         | 6.07              | 0.79                          | 0.99 | 1     | 110.1           | 7.04              | 0.81                          | 1    | 1     | 101.9           | 8.14              | 0.83                          | 1    | 1     | 94.7            | 9.39              | 0.85                          | 1    | 1    |
| 71°F                          | 2720             | 115.2                                         | 6.08              | 0.5                           | 0.7  | 0.88  | 107.9           | 7.05              | 0.5                           | 0.71 | 0.9   | 100.2           | 8.15              | 0.5                           | 0.72 | 0.93  | 92.5            | 9.4               | 0.49                          | 0.74 | 0.95 |
|                               | 3400             | 119.2                                         | 6.07              | 0.53                          | 0.75 | 0.95  | 111.8           | 7.07              | 0.53                          | 0.76 | 0.96  | 103.4           | 8.15              | 0.53                          | 0.78 | 0.98  | 95.5            | 9.4               | 0.53                          | 0.8  | 1    |
|                               | 4080             | 122                                           | 6.06              | 0.55                          | 0.79 | 0.99  | 114.1           | 7.06              | 0.55                          | 0.81 | 1     | 105.8           | 8.15              | 0.55                          | 0.83 | 1     | 97.8            | 9.41              | 0.55                          | 0.86 | 1    |

## RATINGS

NOTE – For Temperatures and Capacities not shown in tables, see bulletin – Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

### 10 TON - ZCD120S5M (1 COMPRESSOR - PART LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |      |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|
|                               |                  | 65°F                                          |                   |                               |      |       | 75°F            |                   |                               |      |       | 85°F            |                   |                               |      |       | 95°F            |                   |                               |      |      |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      |
|                               |                  |                                               |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |      |
| cfm                           | kBtuh            | kW                                            | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F |      |
| 63°F                          | 2110             | 46.3                                          | 2.31              | 0.86                          | 1    | 1     | 43.2            | 2.7               | 0.88                          | 1    | 1     | 39.6            | 3.15              | 0.9                           | 1    | 1     | 35.8            | 3.65              | 0.94                          | 1    | 1    |
|                               | 2640             | 49.2                                          | 2.28              | 0.92                          | 1    | 1     | 45.9            | 2.67              | 0.94                          | 1    | 1     | 42.2            | 3.12              | 0.98                          | 1    | 1     | 38              | 3.63              | 1                             | 1    | 1    |
|                               | 3170             | 51.5                                          | 2.25              | 0.98                          | 1    | 1     | 47.7            | 2.65              | 1                             | 1    | 1     | 44.1            | 3.1               | 1                             | 1    | 1     | 39.5            | 3.61              | 1                             | 1    | 1    |
| 67°F                          | 2110             | 48.4                                          | 2.29              | 0.66                          | 0.84 | 1     | 45              | 2.68              | 0.67                          | 0.86 | 1     | 40.9            | 3.14              | 0.68                          | 0.89 | 1     | 36.7            | 3.64              | 0.69                          | 0.92 | 1    |
|                               | 2640             | 50.6                                          | 2.26              | 0.7                           | 0.91 | 1     | 46.9            | 2.66              | 0.71                          | 0.93 | 1     | 42.6            | 3.11              | 0.72                          | 0.96 | 1     | 38.3            | 3.62              | 0.73                          | 1    | 1    |
|                               | 3170             | 52.1                                          | 2.25              | 0.73                          | 0.98 | 1     | 48.1            | 2.65              | 0.74                          | 0.99 | 1     | 44.1            | 3.1               | 0.75                          | 1    | 1     | 39.5            | 3.61              | 0.76                          | 1    | 1    |
| 71°F                          | 2110             | 50.4                                          | 2.27              | 0.49                          | 0.66 | 0.82  | 46.9            | 2.66              | 0.48                          | 0.67 | 0.84  | 42.8            | 3.11              | 0.49                          | 0.68 | 0.86  | 38.5            | 3.62              | 0.45                          | 0.69 | 0.9  |
|                               | 2640             | 52.3                                          | 2.25              | 0.5                           | 0.7  | 0.89  | 48.7            | 2.65              | 0.49                          | 0.71 | 0.91  | 44.4            | 3.1               | 0.46                          | 0.72 | 0.94  | 39.9            | 3.61              | 0.48                          | 0.74 | 0.98 |
|                               | 3170             | 53.8                                          | 2.23              | 0.5                           | 0.74 | 0.95  | 49.4            | 2.64              | 0.5                           | 0.74 | 0.97  | 45.5            | 3.08              | 0.51                          | 0.76 | 1     | 40.6            | 3.59              | 0.52                          | 0.78 | 1    |

### 10 TON - ZCD120S5M (2 COMPRESSORS - PART LOAD / FULL LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |      |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|
|                               |                  | 85°F                                          |                   |                               |      |       | 95°F            |                   |                               |      |       | 105°F           |                   |                               |      |       | 115°F           |                   |                               |      |      |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      |
|                               |                  |                                               |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |      |
| cfm                           | kBtuh            | kW                                            | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F |      |
| 63°F                          | 2400             | 101.7                                         | 5.79              | 0.86                          | 0.99 | 1     | 95.6            | 6.61              | 0.88                          | 1    | 1     | 88.7            | 7.62              | 0.9                           | 1    | 1     | 81.6            | 8.78              | 0.92                          | 1    | 1    |
|                               | 3000             | 107.5                                         | 5.77              | 0.93                          | 1    | 1     | 100.8           | 6.63              | 0.94                          | 1    | 1     | 94.1            | 7.65              | 0.95                          | 1    | 1     | 86.5            | 8.77              | 0.97                          | 1    | 1    |
|                               | 3600             | 112.1                                         | 5.78              | 0.97                          | 1    | 1     | 105.4           | 6.66              | 0.98                          | 1    | 1     | 97.9            | 7.62              | 0.99                          | 1    | 1     | 90.3            | 8.77              | 1                             | 1    | 1    |
| 67°F                          | 2400             | 105.4                                         | 5.78              | 0.66                          | 0.84 | 0.97  | 98.6            | 6.62              | 0.67                          | 0.86 | 0.98  | 91              | 7.66              | 0.68                          | 0.88 | 1     | 83.3            | 8.79              | 0.69                          | 0.91 | 1    |
|                               | 3000             | 110                                           | 5.77              | 0.71                          | 0.91 | 1     | 102.4           | 6.64              | 0.72                          | 0.93 | 1     | 95.4            | 7.66              | 0.73                          | 0.95 | 1     | 87.6            | 8.78              | 0.75                          | 0.96 | 1    |
|                               | 3600             | 113.8                                         | 5.79              | 0.76                          | 0.96 | 1     | 106.9           | 6.72              | 0.77                          | 0.97 | 1     | 99              | 7.63              | 0.78                          | 0.99 | 1     | 90.9            | 8.77              | 0.8                           | 1    | 1    |
| 71°F                          | 2400             | 110.1                                         | 5.77              | 0.48                          | 0.66 | 0.82  | 102.7           | 6.63              | 0.48                          | 0.67 | 0.84  | 95.7            | 7.66              | 0.48                          | 0.68 | 0.86  | 87.7            | 8.78              | 0.48                          | 0.69 | 0.89 |
|                               | 3000             | 114.4                                         | 5.78              | 0.51                          | 0.71 | 0.9   | 106.9           | 6.72              | 0.51                          | 0.72 | 0.92  | 99.1            | 7.62              | 0.51                          | 0.74 | 0.94  | 91.1            | 8.78              | 0.51                          | 0.75 | 0.96 |
|                               | 3600             | 117.8                                         | 5.78              | 0.53                          | 0.76 | 0.95  | 110.1           | 6.72              | 0.54                          | 0.77 | 0.97  | 101.9           | 7.62              | 0.54                          | 0.79 | 0.98  | 93.5            | 8.78              | 0.53                          | 0.81 | 1    |

### 10 TON - ZCD120S5M (2 COMPRESSORS - FULL LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |      |                 |                   |                               |      |      |                 |                   |                               |      |      |                 |                   |                               |      |      |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|------|-----------------|-------------------|-------------------------------|------|------|-----------------|-------------------|-------------------------------|------|------|-----------------|-------------------|-------------------------------|------|------|
|                               |                  | 85°F                                          |                   |                               |      |      | 95°F            |                   |                               |      |      | 105°F           |                   |                               |      |      | 115°F           |                   |                               |      |      |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      |
|                               |                  |                                               |                   | Dry Bulb                      |      |      |                 |                   | Dry Bulb                      |      |      |                 |                   | Dry Bulb                      |      |      |                 |                   | Dry Bulb                      |      |      |
|                               | cfm              | kBtuh                                         | kW                | 75°F                          | 80°F | 85°F | kBtuh           | kW                | 75°F                          | 80°F | 85°F | kBtuh           | kW                | 75°F                          | 80°F | 85°F | kBtuh           | kW                | 75°F                          | 80°F | 85°F |
| 63°F                          | 3200             | 127.5                                         | 7.09              | 0.89                          | 1    | 1    | 120.2           | 7.97              | 0.91                          | 1    | 1    | 112.9           | 9.05              | 0.93                          | 1    | 1    | 105.1           | 10.19             | 0.96                          | 1    | 1    |
|                               | 4000             | 133.8                                         | 7.16              | 0.97                          | 1    | 1    | 126.2           | 8.1               | 0.99                          | 1    | 1    | 118.2           | 9.07              | 1                             | 1    | 1    | 110             | 10.3              | 1                             | 1    | 1    |
|                               | 4800             | 138.7                                         | 7.23              | 1                             | 1    | 1    | 130.7           | 8.15              | 1                             | 1    | 1    | 122.2           | 9.13              | 1                             | 1    | 1    | 113.2           | 10.35             | 1                             | 1    | 1    |
| 67°F                          | 3200             | 131.4                                         | 7.13              | 0.69                          | 0.88 | 1    | 123.2           | 8                 | 0.7                           | 0.9  | 1    | 115.1           | 9.08              | 0.7                           | 0.92 | 1    | 107.4           | 10.21             | 0.72                          | 0.94 | 1    |
|                               | 4000             | 135.6                                         | 7.18              | 0.74                          | 0.95 | 1    | 127.7           | 8.11              | 0.74                          | 0.98 | 1    | 118.9           | 9.07              | 0.76                          | 1    | 1    | 110.4           | 10.3              | 0.77                          | 1    | 1    |
|                               | 4800             | 138.9                                         | 7.23              | 0.78                          | 1    | 1    | 131.2           | 8.16              | 0.79                          | 1    | 1    | 122.3           | 9.13              | 0.8                           | 1    | 1    | 113.5           | 10.36             | 0.83                          | 1    | 1    |
| 71°F                          | 3200             | 136.8                                         | 7.21              | 0.5                           | 0.69 | 0.86 | 128.8           | 8.13              | 0.5                           | 0.7  | 0.88 | 120.3           | 9.1               | 0.5                           | 0.71 | 0.91 | 111.3           | 10.32             | 0.5                           | 0.72 | 0.93 |
|                               | 4000             | 141.4                                         | 7.27              | 0.53                          | 0.74 | 0.94 | 132.7           | 8.17              | 0.53                          | 0.75 | 0.96 | 123.8           | 9.15              | 0.53                          | 0.76 | 0.99 | 114.6           | 10.36             | 0.52                          | 0.78 | 1    |
|                               | 4800             | 144.1                                         | 7.3               | 0.54                          | 0.78 | 1    | 135.5           | 8.16              | 0.54                          | 0.8  | 1    | 126.3           | 9.24              | 0.55                          | 0.82 | 1    | 116.2           | 10.41             | 0.56                          | 0.84 | 1    |

## RATINGS

NOTE – For Temperatures and Capacities not shown in tables, see bulletin – Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

### 12.5 TON - ZCD150S5M (1 COMPRESSOR - PART LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |   |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|---|
|                               |                  | 65°F                                          |                   |                               |      |       | 75°F            |                   |                               |      |       | 85°F            |                   |                               |      |       | 95°F            |                   |                               |      |   |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |   |
|                               |                  |                                               |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |   |
| cfm                           | kBtuh            | kW                                            | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F |   |
| 63°F                          | 2640             | 60                                            | 2.67              | 0.96                          | 1    | 1     | 55.5            | 3.13              | 0.99                          | 1    | 1     | 50.6            | 3.64              | 1                             | 1    | 1     | 45.6            | 4.2               | 1                             | 1    | 1 |
|                               | 3300             | 64.4                                          | 2.64              | 1                             | 1    | 1     | 59.6            | 3.1               | 1                             | 1    | 1     | 54.5            | 3.62              | 1                             | 1    | 1     | 49.1            | 4.18              | 1                             | 1    | 1 |
|                               | 3960             | 67.8                                          | 2.61              | 1                             | 1    | 1     | 62.8            | 3.08              | 1                             | 1    | 1     | 57.4            | 3.6               | 1                             | 1    | 1     | 51.8            | 4.16              | 1                             | 1    | 1 |
| 67°F                          | 2640             | 60.9                                          | 2.66              | 0.71                          | 0.94 | 1     | 55.8            | 3.13              | 0.73                          | 0.97 | 1     | 50.7            | 3.64              | 0.74                          | 0.99 | 1     | 45.6            | 4.2               | 0.77                          | 1    | 1 |
|                               | 3300             | 64.5                                          | 2.63              | 0.8                           | 1    | 1     | 59.6            | 3.1               | 0.82                          | 1    | 1     | 54.5            | 3.62              | 0.85                          | 1    | 1     | 49.1            | 4.18              | 0.89                          | 1    | 1 |
|                               | 3960             | 67.8                                          | 2.61              | 0.88                          | 1    | 1     | 62.8            | 3.08              | 0.9                           | 1    | 1     | 57.4            | 3.6               | 0.94                          | 1    | 1     | 51.7            | 4.16              | 0.98                          | 1    | 1 |
| 71°F                          | 2640             | 65.4                                          | 2.63              | 0.49                          | 0.71 | 0.92  | 59.8            | 3.1               | 0.48                          | 0.72 | 0.95  | 54.2            | 3.62              | 0.47                          | 0.74 | 0.98  | 48.1            | 4.18              | 0.47                          | 0.77 | 1 |
|                               | 3300             | 67.8                                          | 2.62              | 0.53                          | 0.79 | 1     | 62.3            | 3.09              | 0.53                          | 0.81 | 1     | 56.5            | 3.61              | 0.53                          | 0.84 | 1     | 50.5            | 4.17              | 0.53                          | 0.88 | 1 |
|                               | 3960             | 69.6                                          | 2.6               | 0.57                          | 0.87 | 1     | 64              | 3.08              | 0.58                          | 0.9  | 1     | 58              | 3.59              | 0.58                          | 0.94 | 1     | 52              | 4.16              | 0.59                          | 0.98 | 1 |

### 12.5 TON - ZCD150S5M (2 COMPRESSORS - PART LOAD / FULL LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |      |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|
|                               |                  | 85°F                                          |                   |                               |      |       | 95°F            |                   |                               |      |       | 105°F           |                   |                               |      |       | 115°F           |                   |                               |      |      |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      |
|                               |                  |                                               |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |      |
| cfm                           | kBtuh            | kW                                            | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F |      |
| 63°F                          | 3000             | 121.9                                         | 7.62              | 0.44                          | 0.71 | 0.96  | 112.4           | 8.71              | 0.46                          | 0.73 | 0.99  | 102.7           | 9.92              | 0.48                          | 0.75 | 1     | 92.7            | 11.26             | 0.5                           | 0.81 | 0.98 |
|                               | 3750             | 129.7                                         | 7.64              | 0.52                          | 0.86 | 1     | 120.3           | 8.76              | 0.57                          | 0.9  | 1     | 111.2           | 9.98              | 0.61                          | 0.98 | 1     | 102.4           | 11.32             | 0.64                          | 1    | 1    |
|                               | 4500             | 135.4                                         | 7.64              | 0.64                          | 0.96 | 1     | 126.4           | 8.78              | 0.69                          | 1    | 1     | 117.8           | 10                | 0.75                          | 1    | 1     | 109.3           | 11.39             | 0.79                          | 1    | 1    |
| 67°F                          | 3000             | 132.5                                         | 7.63              | 0.16                          | 0.42 | 0.62  | 122.7           | 8.75              | 0.14                          | 0.44 | 0.68  | 112.4           | 9.98              | 0.12                          | 0.41 | 0.7   | 101.4           | 11.33             | 0.12                          | 0.43 | 0.74 |
|                               | 3750             | 138.5                                         | 7.65              | 0.2                           | 0.49 | 0.81  | 127.8           | 8.78              | 0.19                          | 0.52 | 0.83  | 117.4           | 10                | 0.2                           | 0.53 | 0.89  | 107             | 11.36             | 0.23                          | 0.59 | 0.96 |
|                               | 4500             | 143.8                                         | 7.66              | 0.26                          | 0.6  | 0.93  | 132.9           | 8.79              | 0.28                          | 0.64 | 0.94  | 122.6           | 10.03             | 0.32                          | 0.71 | 1     | 110.9           | 11.39             | 0.34                          | 0.77 | 1    |
| 71°F                          | 3000             | 144                                           | 7.65              | 0.1                           | 0.15 | 0.36  | 133.6           | 8.79              | 0.11                          | 0.14 | 0.39  | 122.9           | 10.02             | 0.13                          | 0.14 | 0.41  | 111.3           | 11.38             | 0.15                          | 0.12 | 0.4  |
|                               | 3750             | 151.2                                         | 7.67              | 0.1                           | 0.2  | 0.45  | 139.5           | 8.81              | 0.1                           | 0.18 | 0.47  | 128.1           | 10.06             | 0.14                          | 0.18 | 0.5   | 116.2           | 11.42             | 0.16                          | 0.19 | 0.56 |
|                               | 4500             | 155.6                                         | 7.67              | 0.14                          | 0.27 | 0.58  | 144.5           | 8.83              | 0.2                           | 0.28 | 0.62  | 132.5           | 10.08             | 0.18                          | 0.3  | 0.63  | 120             | 11.44             | 0.12                          | 0.3  | 0.72 |

### 12.5 TON - ZCD150S5M (2 COMPRESSORS - FULL LOAD)

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |      |
|-------------------------------|------------------|-----------------------------------------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|
|                               |                  | 85°F                                          |                   |                               |      |       | 95°F            |                   |                               |      |       | 105°F           |                   |                               |      |       | 115°F           |                   |                               |      |      |
|                               |                  | Total Cool Cap.                               | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |       | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) |      |      |
|                               |                  |                                               |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |       |                 |                   | Dry Bulb                      |      |      |
|                               |                  |                                               |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |       |                 |                   |                               |      |      |
| cfm                           | kBtuh            | kW                                            | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F | kBtuh | kW              | 75°F              | 80°F                          | 85°F |      |
| 63°F                          | 4000             | 151.1                                         | 8.91              | 0.5                           | 0.78 | 1     | 140.8           | 10.12             | 0.52                          | 0.82 | 1     | 130.3           | 11.47             | 0.54                          | 0.86 | 1     | 119.4           | 12.97             | 0.57                          | 0.91 | 1    |
|                               | 5000             | 159.7                                         | 8.98              | 0.64                          | 0.94 | 1     | 148.9           | 10.2              | 0.66                          | 0.98 | 1     | 138.6           | 11.57             | 0.69                          | 1    | 1     | 128.9           | 13.09             | 0.74                          | 1    | 1    |
|                               | 6000             | 167.7                                         | 9.04              | 0.76                          | 1    | 1     | 157.4           | 10.28             | 0.79                          | 1    | 1     | 146.8           | 11.66             | 0.84                          | 1    | 1     | 136.3           | 13.19             | 0.9                           | 1    | 1    |
| 67°F                          | 4000             | 162.2                                         | 8.98              | 0.19                          | 0.46 | 0.72  | 151.7           | 10.21             | 0.18                          | 0.47 | 0.75  | 140.2           | 11.57             | 0.18                          | 0.49 | 0.79  | 128.5           | 13.07             | 0.18                          | 0.52 | 0.85 |
|                               | 5000             | 169.4                                         | 9.05              | 0.27                          | 0.59 | 0.88  | 157.7           | 10.28             | 0.28                          | 0.63 | 0.93  | 146.6           | 11.65             | 0.29                          | 0.65 | 0.97  | 134.4           | 13.15             | 0.3                           | 0.69 | 1    |
|                               | 6000             | 175                                           | 9.09              | 0.35                          | 0.72 | 0.99  | 163.2           | 10.33             | 0.37                          | 0.77 | 1     | 151.3           | 11.71             | 0.39                          | 0.8  | 1     | 138.8           | 13.21             | 0.41                          | 0.86 | 1    |
| 71°F                          | 4000             | 175.1                                         | 9.07              | 0.1                           | 0.16 | 0.41  | 163.5           | 10.31             | 0.11                          | 0.16 | 0.43  | 151.6           | 11.69             | 0.13                          | 0.16 | 0.44  | 139.8           | 13.2              | 0.15                          | 0.16 | 0.47 |
|                               | 5000             | 182.3                                         | 9.13              | 0.1                           | 0.25 | 0.54  | 170.2           | 10.38             | 0.1                           | 0.26 | 0.58  | 157.6           | 11.76             | 0.14                          | 0.27 | 0.6   | 144.5           | 13.26             | 0.16                          | 0.29 | 0.65 |
|                               | 6000             | 187.3                                         | 9.17              | 0.14                          | 0.34 | 0.68  | 174.7           | 10.43             | 0.2                           | 0.35 | 0.71  | 161.6           | 11.81             | 0.18                          | 0.38 | 0.78  | 148.4           | 13.32             | 0.12                          | 0.4  | 0.81 |

## BLOWER DATA

### BASE UNIT

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY (NO HEAT SECTION) WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE. FOR ALL UNITS ADD:**

1 – Wet indoor coil air resistance of selected unit.

2 – Any factory installed options air resistance (heat section, economizer, etc.)

3 – Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from blower table blower motor output required.

See page 21 for blower motors and drives and air resistance for wet coil and options/accessories.

### Minimum Air Volume Required For Use With Optional Electric Heat:

15 kW, 22.5 kW - 2065 cfm; 30 kW - 2250 cfm; 45 kW - 2625 cfm

| Total<br>Air<br>Volume<br>cfm | Total Static Pressure – in. w.g. |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
|-------------------------------|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
|                               | 0.2                              |      | 0.4  |      | 0.6  |      | 0.8  |      | 1.0  |      | 1.2  |      | 1.4  |      | 1.6  |      | 1.8  |      | 2    |      | 2.2  |      | 2.4  |      | 2.6  |      |  |  |
|                               | RPM                              | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  |  |  |
| 2000                          | 542                              | 0.43 | 602  | 0.60 | 664  | 0.75 | 732  | 0.89 | 802  | 1.02 | 869  | 1.15 | 927  | 1.27 | 979  | 1.41 | 1029 | 1.57 | 1079 | 1.75 | 1129 | 1.95 | 1179 | 2.15 | 1230 | 2.37 |  |  |
| 2250                          | 560                              | 0.55 | 619  | 0.71 | 681  | 0.86 | 748  | 1.00 | 817  | 1.14 | 882  | 1.27 | 939  | 1.41 | 991  | 1.57 | 1041 | 1.74 | 1090 | 1.93 | 1140 | 2.13 | 1190 | 2.35 | 1241 | 2.57 |  |  |
| 2500                          | 579                              | 0.68 | 637  | 0.83 | 699  | 0.98 | 766  | 1.12 | 834  | 1.26 | 897  | 1.41 | 953  | 1.57 | 1005 | 1.74 | 1054 | 1.92 | 1103 | 2.12 | 1152 | 2.33 | 1202 | 2.55 | 1254 | 2.79 |  |  |
| 2750                          | 599                              | 0.81 | 657  | 0.97 | 719  | 1.11 | 785  | 1.25 | 851  | 1.41 | 913  | 1.57 | 968  | 1.74 | 1020 | 1.93 | 1068 | 2.13 | 1116 | 2.34 | 1165 | 2.56 | 1215 | 2.78 | 1268 | 3.01 |  |  |
| 3000                          | 620                              | 0.95 | 678  | 1.11 | 741  | 1.25 | 806  | 1.40 | 870  | 1.58 | 930  | 1.75 | 985  | 1.94 | 1036 | 2.14 | 1084 | 2.36 | 1131 | 2.58 | 1180 | 2.80 | 1230 | 3.02 | 1283 | 3.26 |  |  |
| 3250                          | 643                              | 1.10 | 701  | 1.26 | 764  | 1.41 | 828  | 1.57 | 891  | 1.76 | 950  | 1.95 | 1003 | 2.16 | 1053 | 2.38 | 1100 | 2.61 | 1148 | 2.83 | 1196 | 3.06 | 1246 | 3.29 | 1299 | 3.52 |  |  |
| 3500                          | 667                              | 1.26 | 726  | 1.43 | 788  | 1.58 | 851  | 1.77 | 913  | 1.97 | 970  | 2.17 | 1023 | 2.41 | 1071 | 2.65 | 1118 | 2.88 | 1165 | 3.11 | 1213 | 3.33 | 1264 | 3.57 | 1317 | 3.81 |  |  |
| 3750                          | 693                              | 1.44 | 752  | 1.61 | 813  | 1.78 | 876  | 1.98 | 936  | 2.20 | 992  | 2.43 | 1043 | 2.68 | 1091 | 2.93 | 1137 | 3.17 | 1183 | 3.40 | 1232 | 3.64 | 1284 | 3.88 | 1338 | 4.13 |  |  |
| 4000                          | 720                              | 1.65 | 779  | 1.82 | 840  | 2.00 | 902  | 2.22 | 961  | 2.46 | 1015 | 2.71 | 1064 | 2.98 | 1111 | 3.24 | 1156 | 3.48 | 1203 | 3.72 | 1253 | 3.96 | 1305 | 4.22 | 1359 | 4.48 |  |  |
| 4250                          | 748                              | 1.86 | 807  | 2.04 | 868  | 2.24 | 929  | 2.48 | 986  | 2.75 | 1038 | 3.02 | 1086 | 3.30 | 1132 | 3.57 | 1177 | 3.81 | 1224 | 4.05 | 1274 | 4.31 | 1327 | 4.57 | 1382 | 4.85 |  |  |
| 4500                          | 778                              | 2.09 | 837  | 2.28 | 898  | 2.51 | 957  | 2.78 | 1012 | 3.07 | 1062 | 3.37 | 1108 | 3.65 | 1154 | 3.92 | 1199 | 4.17 | 1247 | 4.41 | 1297 | 4.67 | 1350 | 4.94 | 1405 | 5.22 |  |  |
| 4750                          | 809                              | 2.34 | 868  | 2.56 | 929  | 2.82 | 986  | 3.12 | 1038 | 3.43 | 1087 | 3.74 | 1132 | 4.03 | 1177 | 4.29 | 1223 | 4.54 | 1270 | 4.79 | 1321 | 5.04 | 1374 | 5.31 | 1428 | 5.58 |  |  |
| 5000                          | 841                              | 2.62 | 901  | 2.87 | 960  | 3.17 | 1015 | 3.50 | 1065 | 3.83 | 1112 | 4.14 | 1157 | 4.43 | 1201 | 4.69 | 1247 | 4.94 | 1295 | 5.18 | 1345 | 5.42 | 1398 | 5.68 | ---  | ---  |  |  |
| 5250                          | 875                              | 2.93 | 935  | 3.23 | 992  | 3.56 | 1044 | 3.91 | 1092 | 4.26 | 1138 | 4.57 | 1182 | 4.85 | 1226 | 5.10 | 1272 | 5.34 | 1320 | 5.57 | ---  | ---  | ---  | ---  | ---  | ---  |  |  |
| 5500                          | 911                              | 3.30 | 969  | 3.63 | 1024 | 4.00 | 1074 | 4.37 | 1120 | 4.71 | 1165 | 5.02 | 1208 | 5.29 | 1253 | 5.53 | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  |  |  |
| 5750                          | 948                              | 3.71 | 1004 | 4.08 | 1056 | 4.48 | 1104 | 4.85 | 1148 | 5.19 | 1192 | 5.49 | 1235 | 5.74 | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  |  |  |
| 6000                          | 985                              | 4.18 | 1039 | 4.59 | 1088 | 5.00 | 1134 | 5.37 | 1177 | 5.69 | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  |  |  |
| 6250                          | 1022                             | 4.70 | 1073 | 5.14 | 1120 | 5.54 | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  | ---  |  |  |

## BLOWER DATA

### FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

| Nominal HP | Drive Kit Number | RPM Range   |
|------------|------------------|-------------|
| 2          | 1                | 590 - 890   |
| 2          | 2                | 800 - 1105  |
| 2          | 3                | 795 - 1195  |
| 3          | 4                | 730 - 970   |
| 3          | 5                | 940 - 1200  |
| 3          | 6                | 1015 - 1300 |
| 5          | 10               | 900 - 1135  |
| 5          | 11               | 1040 - 1315 |

NOTE - Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE - Motor service factor limit - 1.0.

### POWER EXHAUST FAN PERFORMANCE

| Return Air System Static Pressure | Air Volume Exhausted |
|-----------------------------------|----------------------|
| in. w.g.                          | cfm                  |
| 0                                 | 3575                 |
| 0.05                              | 3405                 |
| 0.10                              | 3550                 |
| 0.15                              | 3245                 |
| 0.20                              | 3115                 |
| 0.25                              | 3020                 |
| 0.30                              | 2900                 |
| 0.35                              | 2785                 |

### FACTORY INSTALLED OPTIONS/FIELD INSTALLED ACCESSORY AIR RESISTANCE - in. w.g.

| Air Volume cfm | Wet Indoor Coil | Electric Heat | Economizer |
|----------------|-----------------|---------------|------------|
| 1750           | 0.04            | 0.03          | 0.03       |
| 2000           | 0.05            | 0.03          | 0.05       |
| 2250           | 0.06            | 0.04          | 0.06       |
| 2500           | 0.07            | 0.04          | 0.08       |
| 2750           | 0.08            | 0.05          | 0.09       |
| 3000           | 0.09            | 0.06          | 0.11       |
| 3250           | 0.10            | 0.06          | 0.13       |
| 3500           | 0.11            | 0.09          | 0.15       |
| 3750           | 0.13            | 0.09          | 0.17       |
| 4000           | 0.14            | 0.09          | 0.19       |
| 4250           | 0.15            | 0.13          | 0.21       |
| 4500           | 0.17            | 0.14          | 0.24       |
| 4750           | 0.18            | 0.17          | 0.26       |
| 5000           | 0.20            | 0.20          | 0.29       |
| 5250           | 0.22            | 0.22          | 0.32       |
| 5500           | 0.23            | 0.25          | 0.34       |
| 5750           | 0.25            | 0.31          | 0.37       |
| 6000           | 0.27            | 0.33          | 0.40       |

## BLOWER DATA

### CEILING DIFFUSERS AIR RESISTANCE - in. w.g.

| Size      | RTD11 Step-Down Diffuser |             |                        |                          | FD11 Flush Diffuser |
|-----------|--------------------------|-------------|------------------------|--------------------------|---------------------|
|           | Air Volume<br>cfm        | 2 Ends Open | 1 Side, 2 Ends<br>Open | All Ends & Sides<br>Open |                     |
| 092       | 2400                     | 0.21        | 0.18                   | 0.15                     | 0.14                |
|           | 2600                     | 0.24        | 0.21                   | 0.18                     | 0.17                |
|           | 2800                     | 0.27        | 0.24                   | 0.21                     | 0.20                |
|           | 3000                     | 0.32        | 0.29                   | 0.25                     | 0.25                |
|           | 3200                     | 0.41        | 0.37                   | 0.32                     | 0.31                |
|           | 3400                     | 0.50        | 0.45                   | 0.39                     | 0.37                |
|           | 3600                     | 0.61        | 0.54                   | 0.48                     | 0.44                |
|           | 3800                     | 0.73        | 0.63                   | 0.57                     | 0.51                |
| 102 & 120 | 3600                     | 0.36        | 0.28                   | 0.23                     | 0.15                |
|           | 3800                     | 0.40        | 0.32                   | 0.26                     | 0.18                |
|           | 4000                     | 0.44        | 0.36                   | 0.29                     | 0.21                |
|           | 4200                     | 0.49        | 0.40                   | 0.33                     | 0.24                |
|           | 4400                     | 0.54        | 0.44                   | 0.37                     | 0.27                |
|           | 4600                     | 0.60        | 0.49                   | 0.42                     | 0.31                |
|           | 4800                     | 0.65        | 0.53                   | 0.46                     | 0.35                |
|           | 5000                     | 0.69        | 0.58                   | 0.50                     | 0.39                |
| 150       | 5200                     | 0.75        | 0.62                   | 0.54                     | 0.43                |
|           | 4200                     | 0.22        | 0.19                   | 0.16                     | 0.10                |
|           | 4400                     | 0.28        | 0.24                   | 0.20                     | 0.12                |
|           | 4600                     | 0.34        | 0.29                   | 0.24                     | 0.15                |
|           | 4800                     | 0.40        | 0.34                   | 0.29                     | 0.19                |
|           | 5000                     | 0.46        | 0.39                   | 0.34                     | 0.23                |
|           | 5200                     | 0.52        | 0.44                   | 0.39                     | 0.27                |
|           | 5400                     | 0.58        | 0.49                   | 0.43                     | 0.31                |
|           | 5600                     | 0.64        | 0.54                   | 0.47                     | 0.35                |
|           | 5800                     | 0.70        | 0.59                   | 0.51                     | 0.39                |

### CEILING DIFFUSER AIR THROW DATA

| Size     | Air Volume<br>cfm | <sup>1</sup> Effective Throw Range |            |
|----------|-------------------|------------------------------------|------------|
|          |                   | RTD11 Step-Down                    | FD11 Flush |
|          |                   | ft.                                | ft.        |
| 092      | 2600              | 24 - 29                            | 19 - 24    |
|          | 2800              | 25 - 30                            | 20 - 28    |
|          | 3000              | 27 - 33                            | 21 - 29    |
|          | 3200              | 28 - 35                            | 22 - 29    |
|          | 3400              | 30 - 37                            | 22 - 30    |
| 102, 120 | 3600              | 25 - 33                            | 22 - 29    |
|          | 3800              | 27 - 35                            | 22 - 30    |
|          | 4000              | 29 - 37                            | 24 - 33    |
|          | 4200              | 32 - 40                            | 26 - 35    |
|          | 4400              | 34 - 42                            | 28 - 37    |
| 150      | 5600              | 39 - 49                            | 28 - 37    |
|          | 5800              | 42 - 51                            | 29 - 38    |
|          | 6000              | 44 - 54                            | 40 - 50    |
|          | 6200              | 45 - 55                            | 42 - 51    |
|          | 6400              | 46 - 55                            | 43 - 52    |
|          | 6600              | 47 - 56                            | 45 - 56    |

<sup>1</sup> Throw is the horizontal or vertical distance an air stream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 50 ft. per minute. Four sides open.

# ELECTRICAL/ELECTRIC HEAT DATA 7.5 TON

| Model                                                    |                                   | ZCD092S5T       |             |             |
|----------------------------------------------------------|-----------------------------------|-----------------|-------------|-------------|
| <sup>1</sup> Voltage - 60Hz                              |                                   | 208/230V - 3 Ph | 460V - 3 Ph | 575V - 3 Ph |
| Compressor 1<br>(Non-Inverter)                           | Rated Load Amps                   | 12.4            | 6.5         | 4.8         |
|                                                          | Locked Rotor Amps                 | 93              | 60          | 41          |
| Compressor 2<br>(Non-Inverter)                           | Rated Load Amps                   | 12.8            | 5.1         | 4.5         |
|                                                          | Locked Rotor Amps                 | 97.5            | 44.3        | 27.1        |
| Outdoor Fan<br>Motors (2)                                | Full Load Amps (2 Non-ECM)        | 3               | 1.5         | 1.2         |
|                                                          | Total                             | 6               | 3           | 2.4         |
| Power Exhaust<br>(2) 0.33 HP                             | Full Load Amps                    | 2.4             | 1.3         | 1           |
|                                                          | Total                             | 4.8             | 2.6         | 2           |
| Indoor Blower<br>Motor                                   | Horsepower                        | 2               | 2           | 2           |
|                                                          | Full Load Amps                    | 7.5             | 3.4         | 2.7         |
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit Only                         | 50              | 25          | 15          |
|                                                          | With (2) 0.33 HP<br>Power Exhaust | 50              | 25          | 20          |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit Only                         | 40              | 19          | 15          |
|                                                          | With (2) 0.33 HP<br>Power Exhaust | 45              | 22          | 17          |

## ELECTRIC HEAT DATA

| Electric Heat Voltage                                    |                                  |         |  | 208V | 240V | 480V | 600V |
|----------------------------------------------------------|----------------------------------|---------|--|------|------|------|------|
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit+                            | 7.5 kW  |  | 50   | 50   | 25   | 15   |
|                                                          | Electric Heat                    | 15 kW   |  | 50   | 60   | 30   | 25   |
|                                                          |                                  | 22.5 kW |  | 70   | 80   | 40   | 35   |
|                                                          |                                  | 30 kW   |  | 90   | 100  | 50   | 40   |
|                                                          |                                  | 45 kW   |  | 150  | 150  | 80   | 60   |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit+                            | 7.5 kW  |  | 40   | 40   | 19   | 15   |
|                                                          | Electric Heat                    | 15 kW   |  | 49   | 55   | 27   | 22   |
|                                                          |                                  | 22.5 kW |  | 69   | 78   | 39   | 31   |
|                                                          |                                  | 30 kW   |  | 88   | 100  | 50   | 40   |
|                                                          |                                  | 45 kW   |  | 127  | 145  | 72   | 58   |
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit+                            | 7.5 kW  |  | 50   | 50   | 25   | 20   |
|                                                          | Electric Heat                    | 15 kW   |  | 60   | 70   | 35   | 25   |
|                                                          | and (2) 0.33 HP<br>Power Exhaust | 22.5 kW |  | 80   | 90   | 45   | 35   |
|                                                          |                                  | 30 kW   |  | 100  | 110  | 60   | 45   |
|                                                          |                                  | 45 kW   |  | 150  | 175  | 80   | 70   |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit+                            | 7.5 kW  |  | 45   | 45   | 22   | 17   |
|                                                          | Electric Heat                    | 15 kW   |  | 55   | 61   | 31   | 24   |
|                                                          | and (2) 0.33 HP<br>Power Exhaust | 22.5 kW |  | 75   | 84   | 42   | 33   |
|                                                          |                                  | 30 kW   |  | 94   | 106  | 53   | 42   |
|                                                          |                                  | 45 kW   |  | 133  | 151  | 76   | 61   |

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

<sup>1</sup> Extremes of operating range are plus and minus 10% of line voltage.

<sup>2</sup> HACR type breaker or fuse.

<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

|                                      |                |
|--------------------------------------|----------------|
| <b>ELECTRICAL/ELECTRIC HEAT DATA</b> | <b>8.5 TON</b> |
|--------------------------------------|----------------|

| Model                                                    |                                   | ZCD102S5T       |             |             |
|----------------------------------------------------------|-----------------------------------|-----------------|-------------|-------------|
| <sup>1</sup> Voltage - 60Hz                              |                                   | 208/230V - 3 Ph | 460V - 3 Ph | 575V - 3 Ph |
| Compressor 1<br>(Non-Inverter)                           | Rated Load Amps                   | 12.4            | 6.5         | 4.8         |
|                                                          | Locked Rotor Amps                 | 93              | 60          | 41          |
| Compressor 2<br>(Non-Inverter)                           | Rated Load Amps                   | 12.2            | 6.4         | 5.1         |
|                                                          | Locked Rotor Amps                 | 120             | 50          | 41          |
| Outdoor Fan<br>Motors (2)                                | Full Load Amps (2 Non-ECM)        | 3               | 1.5         | 1.2         |
|                                                          | Total                             | 6               | 3           | 2.4         |
| Power Exhaust<br>(2) 0.33 HP                             | Full Load Amps                    | 2.4             | 1.3         | 1           |
|                                                          | Total                             | 4.8             | 2.6         | 2           |
| Indoor Blower<br>Motor                                   | Horsepower                        | 2               | 2           | 2           |
|                                                          | Full Load Amps                    | 7.5             | 3.4         | 2.7         |
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit Only                         | 50              | 25          | 20          |
|                                                          | With (2) 0.33 HP<br>Power Exhaust | 50              | 25          | 20          |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit Only                         | 39              | 20          | 16          |
|                                                          | With (2) 0.33 HP<br>Power Exhaust | 44              | 23          | 18          |

|                           |
|---------------------------|
| <b>ELECTRIC HEAT DATA</b> |
|---------------------------|

| Electric Heat Voltage                                    |                                                           |         |  | 208V | 240V | 480V | 600V |
|----------------------------------------------------------|-----------------------------------------------------------|---------|--|------|------|------|------|
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit+<br>Electric Heat                                    | 7.5 kW  |  | 50   | 50   | 25   | 20   |
|                                                          |                                                           | 15 kW   |  | 50   | 60   | 30   | 25   |
|                                                          |                                                           | 22.5 kW |  | 70   | 80   | 40   | 35   |
|                                                          |                                                           | 30 kW   |  | 90   | 100  | 50   | 40   |
|                                                          |                                                           | 45 kW   |  | 150  | 150  | 80   | 60   |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit+<br>Electric Heat                                    | 7.5 kW  |  | 39   | 39   | 20   | 16   |
|                                                          |                                                           | 15 kW   |  | 49   | 55   | 27   | 22   |
|                                                          |                                                           | 22.5 kW |  | 69   | 78   | 39   | 31   |
|                                                          |                                                           | 30 kW   |  | 88   | 100  | 50   | 40   |
|                                                          |                                                           | 45 kW   |  | 127  | 145  | 72   | 58   |
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit+<br>Electric Heat<br>and (2) 0.5 HP<br>Power Exhaust | 7.5 kW  |  | 50   | 50   | 25   | 20   |
|                                                          |                                                           | 15 kW   |  | 60   | 70   | 35   | 25   |
|                                                          |                                                           | 22.5 kW |  | 80   | 90   | 45   | 35   |
|                                                          |                                                           | 30 kW   |  | 100  | 110  | 60   | 45   |
|                                                          |                                                           | 45 kW   |  | 150  | 175  | 80   | 70   |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit+<br>Electric Heat<br>and (2) 0.5 HP<br>Power Exhaust | 7.5 kW  |  | 44   | 44   | 23   | 18   |
|                                                          |                                                           | 15 kW   |  | 55   | 61   | 31   | 24   |
|                                                          |                                                           | 22.5 kW |  | 75   | 84   | 42   | 33   |
|                                                          |                                                           | 30 kW   |  | 94   | 106  | 53   | 42   |
|                                                          |                                                           | 45 kW   |  | 133  | 151  | 76   | 61   |

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

<sup>1</sup> Extremes of operating range are plus and minus 10% of line voltage.

<sup>2</sup> HACR type breaker or fuse.

<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

## ELECTRICAL/ELECTRIC HEAT DATA

10 TON

| Model                                                    |                                   | ZCD120S5M       |             |             |
|----------------------------------------------------------|-----------------------------------|-----------------|-------------|-------------|
| <sup>1</sup> Voltage - 60Hz                              |                                   | 208/230V - 3 Ph | 460V - 3 Ph | 575V - 3 Ph |
| Compressor 1<br>(Non-Inverter)                           | Rated Load Amps                   | 12.4            | 6.5         | 4.8         |
|                                                          | Locked Rotor Amps                 | 93              | 60          | 41          |
| Compressor 2<br>(Non-Inverter)                           | Rated Load Amps                   | 16              | 7.1         | 6.4         |
|                                                          | Locked Rotor Amps                 | 156             | 69          | 47.8        |
| Outdoor Fan<br>Motors (2)                                | Full Load Amps (2 Non-ECM)        | 3               | 1.5         | 1.2         |
|                                                          | Total                             | 6               | 3           | 2.4         |
| Power Exhaust<br>(2) 0.33 HP                             | Full Load Amps                    | 2.4             | 1.3         | 1           |
|                                                          | Total                             | 4.8             | 2.6         | 2           |
| Indoor Blower<br>Motor                                   | Horsepower                        | 3               | 3           | 3           |
|                                                          | Full Load Amps                    | 10.6            | 4.8         | 3.9         |
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit Only                         | 60              | 30          | 25          |
|                                                          | With (2) 0.33 HP<br>Power Exhaust | 60              | 30          | 25          |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit Only                         | 49              | 24          | 20          |
|                                                          | With (2) 0.33 HP<br>Power Exhaust | 54              | 26          | 22          |

## ELECTRIC HEAT DATA

| Electric Heat Voltage                                    |                                                            |         | 208V | 240V | 480V | 600V |
|----------------------------------------------------------|------------------------------------------------------------|---------|------|------|------|------|
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit+<br>Electric Heat                                     | 15 kW   | 60   | 60   | 30   | 25   |
|                                                          |                                                            | 22.5 kW | 80   | 90   | 40   | 35   |
|                                                          |                                                            | 30 kW   | 100  | 110  | 60   | 45   |
|                                                          |                                                            | 45 kW   | 150  | 150  | 80   | 60   |
|                                                          |                                                            | 60 kW   | 150  | 175  | 80   | 70   |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit+<br>Electric Heat                                     | 15 kW   | 53   | 59   | 29   | 23   |
|                                                          |                                                            | 22.5 kW | 72   | 81   | 40   | 32   |
|                                                          |                                                            | 30 kW   | 92   | 104  | 52   | 41   |
|                                                          |                                                            | 45 kW   | 131  | 149  | 74   | 60   |
|                                                          |                                                            | 60 kW   | 139  | 158  | 79   | 63   |
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit+<br>Electric Heat<br>and (2) 0.33 HP<br>Power Exhaust | 15 kW   | 60   | 70   | 35   | 30   |
|                                                          |                                                            | 22.5 kW | 80   | 90   | 45   | 35   |
|                                                          |                                                            | 30 kW   | 100  | 110  | 60   | 45   |
|                                                          |                                                            | 45 kW   | 150  | 175  | 80   | 70   |
|                                                          |                                                            | 60 kW   | 150  | 175  | 90   | 70   |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit+<br>Electric Heat<br>and (2) 0.33 HP<br>Power Exhaust | 15 kW   | 59   | 65   | 32   | 26   |
|                                                          |                                                            | 22.5 kW | 78   | 87   | 44   | 35   |
|                                                          |                                                            | 30 kW   | 98   | 110  | 55   | 44   |
|                                                          |                                                            | 45 kW   | 137  | 155  | 77   | 62   |
|                                                          |                                                            | 60 kW   | 145  | 164  | 82   | 66   |

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

<sup>1</sup> Extremes of operating range are plus and minus 10% of line voltage.<sup>2</sup> HACR type breaker or fuse.<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

## ELECTRICAL/ELECTRIC HEAT DATA

| Model                                                    |                                   | ZCD0150S5M      |             |             |
|----------------------------------------------------------|-----------------------------------|-----------------|-------------|-------------|
| <sup>1</sup> Voltage - 60Hz                              |                                   | 208/230V - 3 Ph | 460V - 3 Ph | 575V - 3 Ph |
| Compressor 1<br>(Non-Inverter)                           | Rated Load Amps                   | 19.2            | 9.1         | 6.2         |
|                                                          | Locked Rotor Amps                 | 162             | 70.8        | 58.2        |
| Compressor 2<br>(Non-Inverter)                           | Rated Load Amps                   | 22.4            | 9.1         | 7.2         |
|                                                          | Locked Rotor Amps                 | 166             | 74.6        | 54          |
| Outdoor Fan<br>Motors (2)                                | Full Load Amps (2 Non-ECM)        | 3               | 1.5         | 1.2         |
|                                                          | Total                             | 6               | 3           | 2.4         |
| Power Exhaust<br>(2) 0.33 HP                             | Full Load Amps                    | 2.4             | 1.3         | 1           |
|                                                          | Total                             | 4.8             | 2.6         | 2           |
| Indoor Blower<br>Motor                                   | Horsepower                        | 5               | 5           | 5           |
|                                                          | Full Load Amps                    | 16.7            | 7.6         | 6.1         |
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit Only                         | 90              | 40          | 30          |
|                                                          | With (2) 0.33 HP<br>Power Exhaust | 90              | 40          | 30          |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit Only                         | 70              | 32          | 24          |
|                                                          | With (2) 0.33 HP<br>Power Exhaust | 75              | 34          | 26          |

## ELECTRIC HEAT DATA

| Electric Heat Voltage                                    |                                                            |         | 208V | 240V | 480V | 600V |
|----------------------------------------------------------|------------------------------------------------------------|---------|------|------|------|------|
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit+<br>Electric Heat<br>and (2) 0.33 HP<br>Power Exhaust | 15 kW   | 90   | 90   | 40   | 30   |
|                                                          |                                                            | 22.5 kW | 90   | 90   | 45   | 35   |
|                                                          |                                                            | 30 kW   | 100  | 125  | 60   | 45   |
|                                                          |                                                            | 45 kW   | 150  | 175  | 80   | 70   |
|                                                          |                                                            | 60 kW   | 150  | 175  | 90   | 70   |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit+<br>Electric Heat<br>and (2) 0.33 HP<br>Power Exhaust | 15 kW   | 70   | 70   | 33   | 26   |
|                                                          |                                                            | 22.5 kW | 80   | 89   | 44   | 35   |
|                                                          |                                                            | 30 kW   | 100  | 112  | 55   | 44   |
|                                                          |                                                            | 45 kW   | 139  | 157  | 78   | 62   |
|                                                          |                                                            | 60 kW   | 146  | 166  | 82   | 66   |
| <sup>2</sup> Maximum<br>Overcurrent<br>Protection (MOCP) | Unit+<br>Electric Heat<br>and (2) 0.33 HP<br>Power Exhaust | 15 kW   | 90   | 90   | 40   | 30   |
|                                                          |                                                            | 22.5 kW | 90   | 100  | 50   | 40   |
|                                                          |                                                            | 30 kW   | 110  | 125  | 60   | 50   |
|                                                          |                                                            | 45 kW   | 150  | 175  | 90   | 70   |
|                                                          |                                                            | 60 kW   | 175  | 175  | 90   | 70   |
| <sup>3</sup> Minimum<br>Circuit<br>Ampacity (MCA)        | Unit+<br>Electric Heat<br>and (2) 0.33 HP<br>Power Exhaust | 15 kW   | 75   | 75   | 36   | 29   |
|                                                          |                                                            | 22.5 kW | 86   | 95   | 47   | 38   |
|                                                          |                                                            | 30 kW   | 106  | 118  | 58   | 47   |
|                                                          |                                                            | 45 kW   | 145  | 163  | 81   | 65   |
|                                                          |                                                            | 60 kW   | 152  | 172  | 85   | 68   |

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

<sup>1</sup> Extremes of operating range are plus and minus 10% of line voltage.

<sup>2</sup> HACR type breaker or fuse.

<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

<sup>4</sup> Factory installed circuit breaker not available.

## ELECTRICAL ACCESSORIES - FUSE BLOCKS

### 7.5 TON | ZCD092S5T

| Motor Horsepower      | 2     |       |       |       |
|-----------------------|-------|-------|-------|-------|
| Electric Heat Voltage | 208V  | 240V  | 480V  | 600V  |
| Unit Only             | 10Z41 | 10Z41 | 10Z39 | 10Z38 |
| Unit + Power Exhaust  | 10Z41 | 10Z41 | 10Z39 | 10Z38 |

### 8.5 TON | ZCD102S5T

| Motor Horsepower      | 2     |       |       |       |
|-----------------------|-------|-------|-------|-------|
| Electric Heat Voltage | 208V  | 240V  | 480V  | 600V  |
| Unit Only             | 10Z41 | 10Z41 | 10Z39 | 10Z38 |
| Unit + Power Exhaust  | 10Z41 | 10Z41 | 10Z39 | 10Z38 |

### 10 TON | ZCD120S5M

| Motor Horsepower      | 3     |       |       |       |
|-----------------------|-------|-------|-------|-------|
| Electric Heat Voltage | 208V  | 240V  | 480V  | 600V  |
| Unit Only             | 10Z41 | 10Z41 | 10Z39 | 10Z39 |
| Unit + Power Exhaust  | 10Z41 | 10Z41 | 10Z39 | 10Z39 |

### 12.5 TON | ZCD0150S5M

| Motor Horsepower      | 5     |       |       |       |       |
|-----------------------|-------|-------|-------|-------|-------|
| Electric Heat Voltage | 208V  | 240V  | 480V  | 480V  | 600V  |
| Unit Only             | 10Z42 | 10Z42 | 10Z40 | 10Z40 | 10Z39 |
| Unit + Power Exhaust  | 10Z42 | 10Z42 | 10Z40 | 10Z40 | 10Z39 |

#### **FIELD WIRING NOTES**

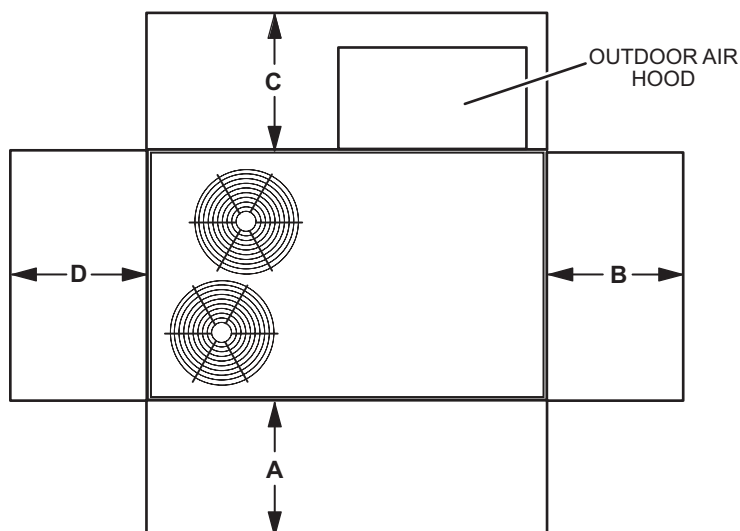
- For use with copper wiring only
- Field wiring not furnished
- All wiring must conform to NEC or CEC and local electrical codes
- For specific wiring information, please refer to the installation instructions

## ELECTRIC HEAT CAPACITIES

| Volts Input | 7.5 kW   |             |        | 15 kW    |             |        | 22.5 kW  |             |        | 30 kW    |             |        | 45 kW    |             |        | 60 kW    |             |        |
|-------------|----------|-------------|--------|----------|-------------|--------|----------|-------------|--------|----------|-------------|--------|----------|-------------|--------|----------|-------------|--------|
|             | kW Input | Btuh Output | Stages | kW Input | Btuh Output | Stages | kW Input | Btuh Output | Stages | kW Input | Btuh Output | Stages | kW Input | Btuh Output | Stages | kW Input | Btuh Output | Stages |
| 208         | 5.6      | 19,100      | 1      | 11.3     | 38,600      | 1      | 16.9     | 57,700      | 2      | 22.5     | 76,800      | 2      | 33.8     | 115,300     | 2      | 45.0     | 153,600     | 2      |
| 220         | 6.3      | 21,500      | 1      | 12.6     | 43,000      | 1      | 18.9     | 64,500      | 2      | 25.2     | 86,000      | 2      | 37.8     | 129,000     | 2      | 50.4     | 172,000     | 2      |
| 230         | 6.9      | 23,600      | 1      | 13.8     | 47,100      | 1      | 20.7     | 70,700      | 2      | 27.5     | 93,900      | 2      | 41.3     | 141,000     | 2      | 55.1     | 188,000     | 2      |
| 240         | 7.5      | 25,600      | 1      | 15.0     | 51,200      | 1      | 22.5     | 76,800      | 2      | 30.0     | 102,400     | 2      | 45.0     | 153,600     | 2      | 60.0     | 204,800     | 2      |
| 440         | 6.9      | 21,500      | 1      | 12.6     | 43,000      | 1      | 18.9     | 64,500      | 2      | 25.2     | 86,000      | 2      | 37.8     | 129,000     | 2      | 50.4     | 172,000     | 2      |
| 460         | 6.9      | 23,600      | 1      | 13.8     | 47,100      | 1      | 20.7     | 70,700      | 2      | 27.5     | 93,900      | 2      | 41.3     | 141,000     | 2      | 55.1     | 188,000     | 2      |
| 480         | 7.5      | 25,600      | 1      | 15.0     | 51,200      | 1      | 22.5     | 76,800      | 2      | 30.0     | 102,400     | 2      | 45.0     | 153,600     | 2      | 60.0     | 204,800     | 2      |
| 550         | 6.3      | 21,500      | 1      | 12.6     | 43,000      | 1      | 18.9     | 64,500      | 2      | 25.2     | 86,000      | 2      | 37.8     | 129,000     | 2      | 50.4     | 172,000     | 2      |
| 575         | 6.9      | 23,600      | 1      | 13.8     | 47,100      | 1      | 20.7     | 70,700      | 2      | 27.5     | 93,900      | 2      | 41.3     | 141,000     | 2      | 55.1     | 188,000     | 2      |
| 600         | 7.5      | 25,600      | 1      | 15.0     | 51,200      | 1      | 22.5     | 76,800      | 2      | 30.0     | 102,400     | 2      | 45.0     | 153,600     | 2      | 60.0     | 204,800     | 2      |

## UNIT CLEARANCES

### UNIT WITH ECONOMIZER



| <sup>1</sup> Unit Clearance | A   |      | B   |     | C   |     | D   |      | Top Clearance |
|-----------------------------|-----|------|-----|-----|-----|-----|-----|------|---------------|
|                             | in. | mm   | in. | mm  | in. | mm  | in. | mm   |               |
| Service Clearance           | 60  | 1524 | 36  | 914 | 36  | 914 | 60  | 1524 | Unobstructed  |
| Minimum Operation Clearance | 36  | 914  | 36  | 914 | 36  | 914 | 36  | 914  |               |

NOTE - Entire perimeter of unit base requires support when elevated above the mounting surface.

<sup>1</sup> Service Clearance - Required for removal of serviceable parts.

Minimum Operation Clearance - Required clearance for proper unit operation.

## OUTDOOR SOUND DATA

| Size     | Octave Band Sound Power Levels dBA, re 10 <sup>-12</sup> Watts - Center Frequency - Hz |     |     |      |      |      |      | <sup>1</sup> Sound Rating Number dBA |
|----------|----------------------------------------------------------------------------------------|-----|-----|------|------|------|------|--------------------------------------|
|          | 125                                                                                    | 250 | 500 | 1000 | 2000 | 4000 | 8000 |                                      |
| 092, 102 | 72                                                                                     | 74  | 79  | 80   | 76   | 70   | 63   | 84                                   |
| 120      | 76                                                                                     | 73  | 82  | 80   | 75   | 74   | 73   | 90                                   |
| 150      | 76                                                                                     | 81  | 87  | 86   | 80   | 77   | 76   | 91                                   |

<sup>1</sup> Sound Rating Number according to ARI Standard 270-2008. Sound Rating Number is the overall A-Weighted Sound Power Level, (LWA), dB (100 Hz to 10,000 Hz).

## WEIGHT DATA

| Size           | Net  |     | Shipping |     |
|----------------|------|-----|----------|-----|
|                | lbs. | kg  | lbs.     | kg  |
| 092S Base Unit | 793  | 258 | 878      | 398 |
| 092S Max. Unit | 950  | 431 | 1035     | 470 |
| 102S Base Unit | 793  | 360 | 878      | 398 |
| 102S Max. Unit | 950  | 431 | 1035     | 470 |
| 120S Base Unit | 833  | 378 | 918      | 416 |
| 120S Max. Unit | 997  | 452 | 1082     | 491 |
| 150S Base Unit | 923  | 419 | 1008     | 457 |
| 150S Max. Unit | 1077 | 489 | 1162     | 527 |

## FACTORY / FIELD INSTALLED OPTIONS AND ACCESSORIES - NET WEIGHTS

| Description                                                |            | lbs. | kg |
|------------------------------------------------------------|------------|------|----|
| ECONOMIZER / OUTDOOR AIR / POWER EXHAUST                   |            |      |    |
| Economizer - With Barometric Relief Dampers and Hoods      |            |      |    |
| Downflow                                                   |            | 90   | 41 |
| Horizontal                                                 |            | 95   | 43 |
| Horizontal Low Profile Barometric Relief Dampers with Hood |            | 8    | 4  |
| Outdoor Air Dampers With Hood                              |            |      |    |
| Motorized                                                  |            | 44   | 20 |
| Manual                                                     |            | 27   | 12 |
| Power Exhaust                                              |            |      |    |
| Downflow                                                   |            | 60   | 27 |
| Horizontal                                                 |            | 41   | 19 |
| ELECTRIC HEAT                                              |            |      |    |
| 7.5 kW                                                     |            | 90   | 41 |
| 15 kW                                                      |            | 90   | 41 |
| 22.5 kW                                                    |            | 90   | 41 |
| 30 kW                                                      |            | 90   | 41 |
| 45 kW                                                      |            | 90   | 41 |
| 60 kW                                                      |            | 90   | 41 |
| COMBINATION COIL/HAIL GUARDS                               |            |      |    |
| All models                                                 |            | 50   | 23 |
| ROOF CURBS                                                 |            |      |    |
| Hybrid Roof Curbs, Downflow                                |            |      |    |
| 8 in. height                                               |            | 79   | 36 |
| 14 in. height                                              |            | 104  | 47 |
| 18 in. height                                              |            | 120  | 54 |
| 24 in. height                                              |            | 145  | 66 |
| CEILING DIFFUSERS                                          |            |      |    |
| Step-Down                                                  | RTD11-95S  | 118  | 54 |
|                                                            | RTD11-135S | 135  | 61 |
|                                                            | RTD11-185S | 168  | 76 |
| Flush                                                      | FD11-95S   | 118  | 54 |
|                                                            | FD11-135S  | 135  | 61 |
|                                                            | FD11-185S  | 168  | 76 |

# DIMENSIONS

# UNIT

| Size | CORNER WEIGHTS |     |      |     |      |    |      |     |      |    |      |     |      |     |      |     | CENTER OF GRAVITY |      |      |      |      |     |      |     |
|------|----------------|-----|------|-----|------|----|------|-----|------|----|------|-----|------|-----|------|-----|-------------------|------|------|------|------|-----|------|-----|
|      | AA             |     |      |     | BB   |    |      |     | CC   |    |      |     | DD   |     |      |     | EE                |      |      |      | FF   |     |      |     |
|      | Base           |     | Max. |     | Base |    | Max. |     | Base |    | Max. |     | Base |     | Max. |     | Base              |      | Max. |      | Base |     | Max. |     |
|      | lbs.           | kg  | lbs. | kg  | lbs. | kg | lbs. | kg  | lbs. | kg | lbs. | kg  | lbs. | kg  | lbs. | kg  | in.               | mm   | in.  | mm   | in.  | mm  | in.  | mm  |
| 092S | 250            | 113 | 293  | 133 | 185  | 84 | 231  | 105 | 187  | 85 | 224  | 102 | 252  | 114 | 283  | 128 | 47.5              | 1207 | 48.5 | 1232 | 25.5 | 648 | 26.5 | 673 |
| 102S | 250            | 113 | 293  | 133 | 185  | 84 | 231  | 105 | 187  | 85 | 224  | 102 | 252  | 114 | 283  | 128 | 47.5              | 1207 | 48.5 | 1232 | 25.5 | 648 | 26.5 | 673 |
| 120S | 262            | 119 | 306  | 139 | 193  | 88 | 242  | 110 | 195  | 88 | 234  | 106 | 264  | 120 | 296  | 134 | 47.5              | 1207 | 48.5 | 1232 | 25.5 | 648 | 26.5 | 673 |
| 150S | 287            | 130 | 332  | 150 | 212  | 96 | 262  | 119 | 214  | 97 | 254  | 115 | 290  | 131 | 321  | 145 | 47.5              | 1207 | 48.5 | 1232 | 25.5 | 648 | 26.5 | 673 |

Base Unit - The unit with NO OPTIONS.

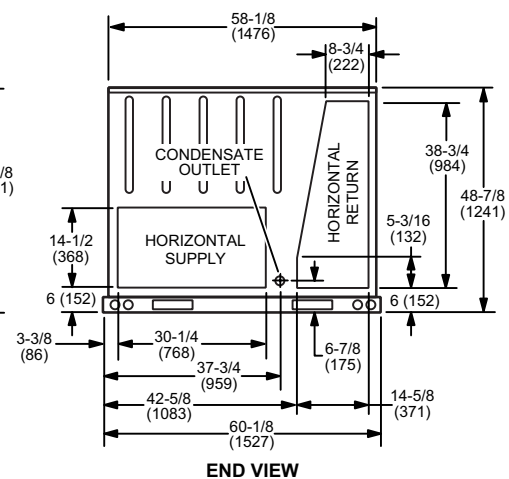
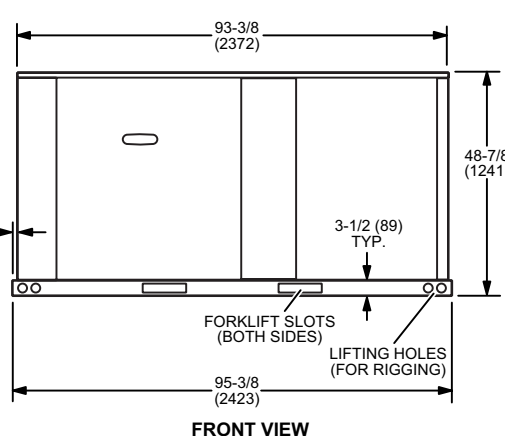
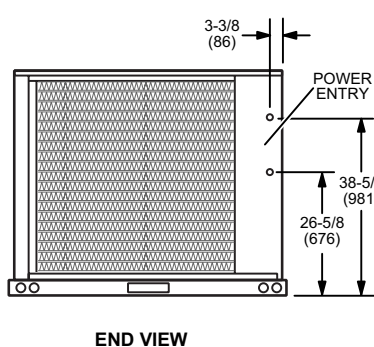
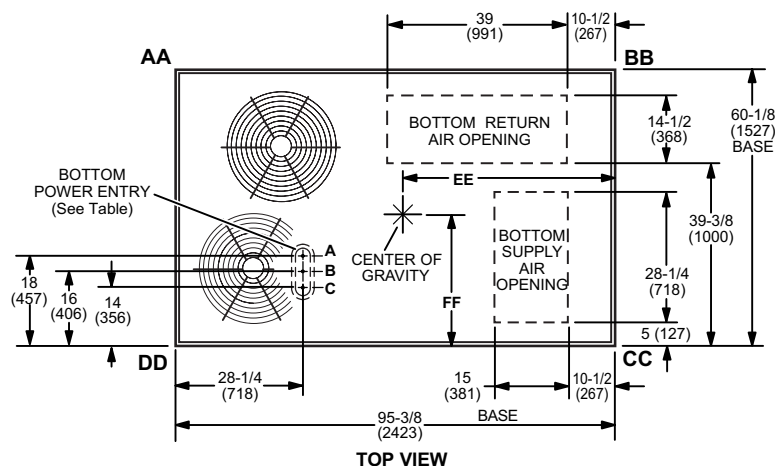
Max. Unit - The unit with ALL OPTIONS Installed. (Economizer, etc.)

## BOTTOM POWER ENTRY

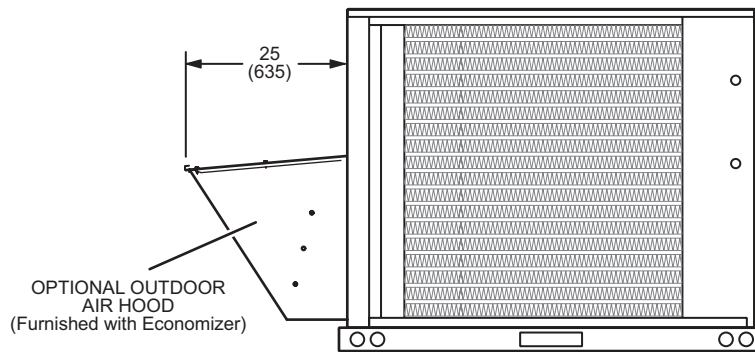
Holes required for Optional Bottom Power Entry Kit

|          | Threaded<br>Conduit Fittings<br>(Provided in Kit) | Wire<br>Use | Hole Diameter<br>Required in<br>Unit Base (Max.) |
|----------|---------------------------------------------------|-------------|--------------------------------------------------|
| <b>A</b> | <sup>1</sup> 1 1/2                                | ACC         | 7/8 (23)                                         |
| <b>B</b> | 1/2                                               | 24V         | 7/8 (23)                                         |
| <b>C</b> | 1-1/4                                             | POWER       | 1-3/4 (44)                                       |

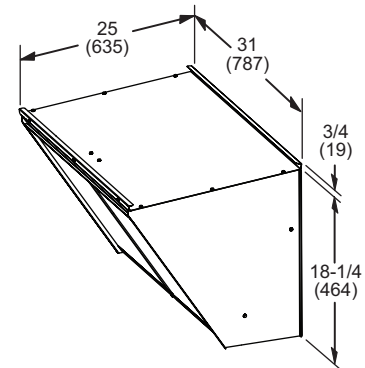
<sup>1</sup> Field provided.



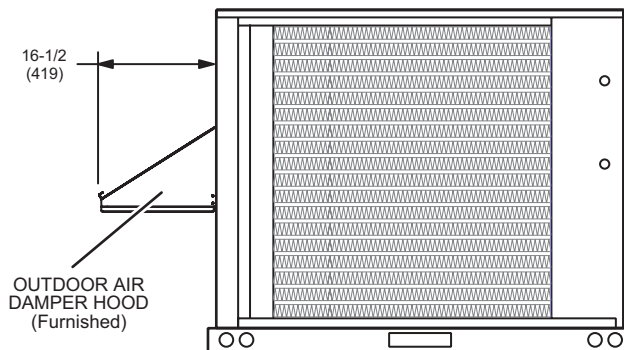
**OUTDOOR AIR HOOD DETAIL FOR OPTIONAL DOWNFLOW ECONOMIZER  
(Downflow Applications)**



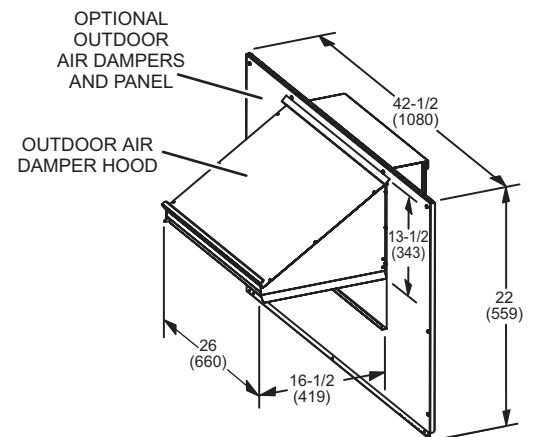
**END VIEW**



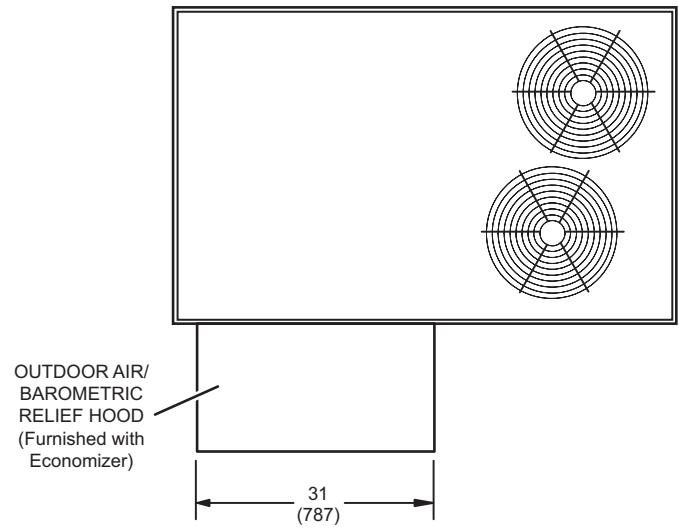
**OUTDOOR AIR DAMPER HOOD DETAIL FOR OPTIONAL MANUAL OR MOTORIZED OUTDOOR AIR DAMPERS  
(Downflow or Horizontal Applications)**



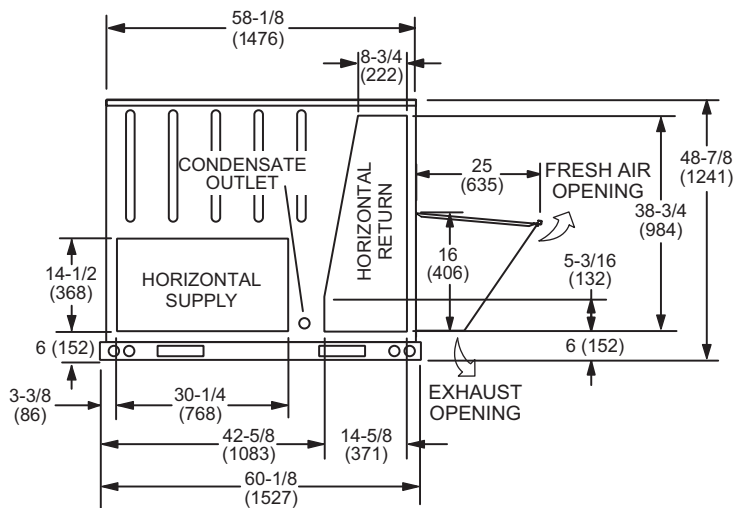
**END VIEW**



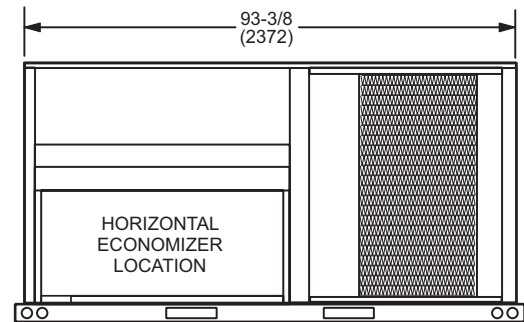
**OUTDOOR AIR HOOD DETAIL WITH OPTIONAL HORIZONTAL ECONOMIZER AND BAROMETRIC RELIEF DAMPERS  
(Horizontal Applications)**



**TOP VIEW**



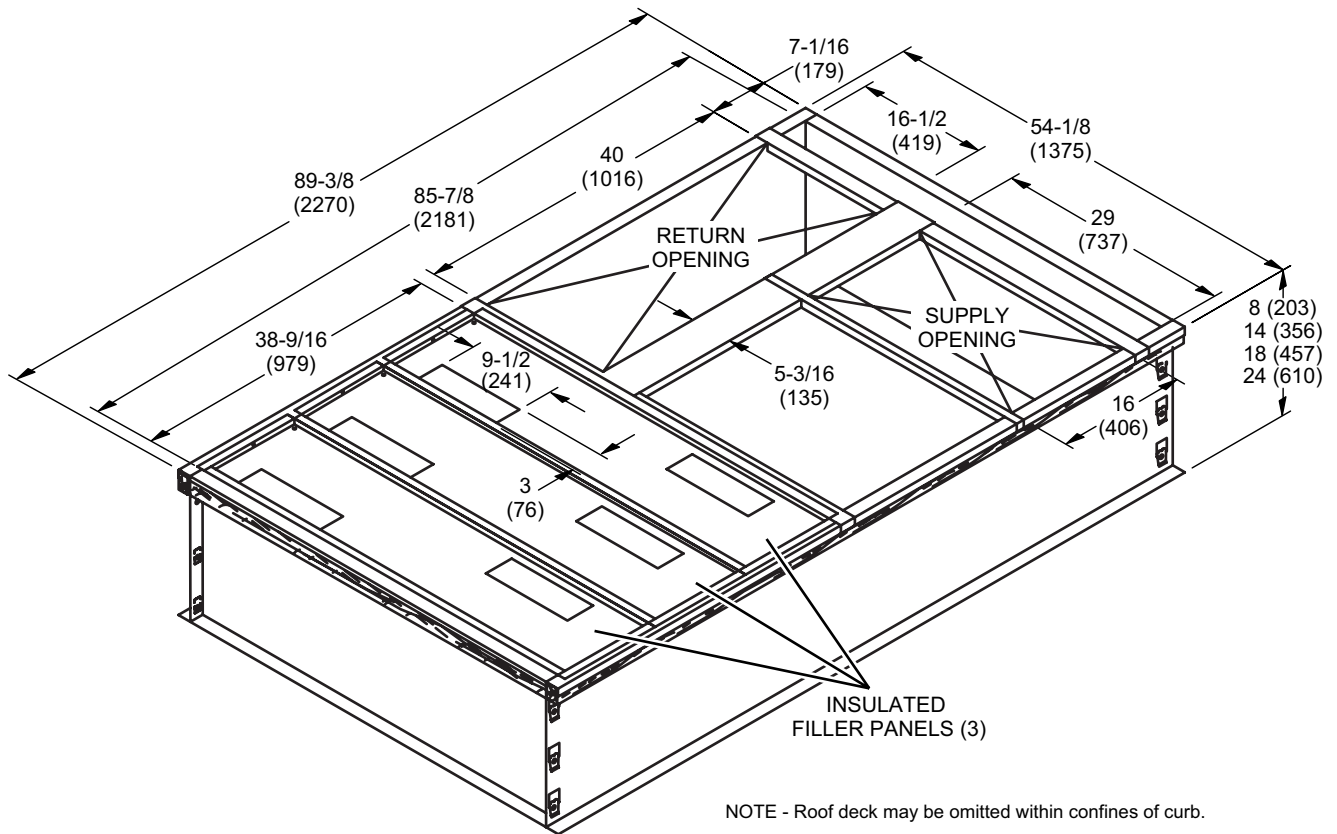
**END VIEW**



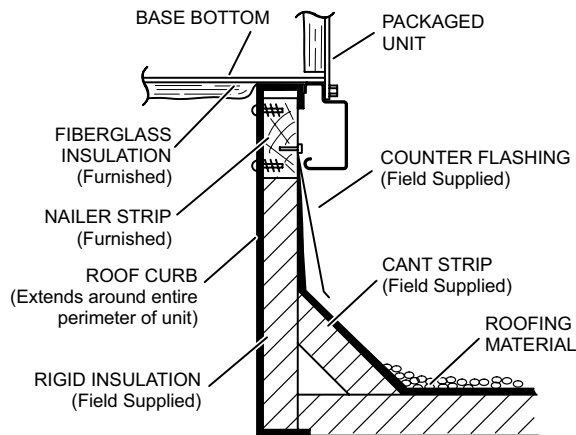
**BACK VIEW**

Note - Supply and Return Air Ducts must be supported.

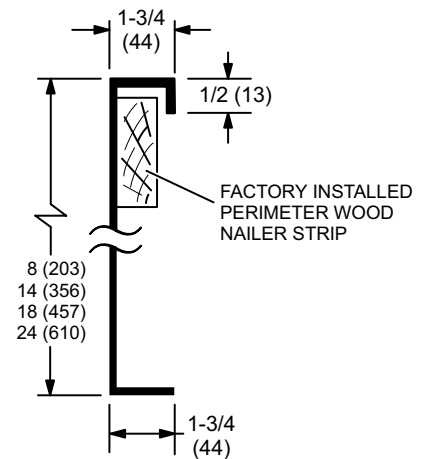
**HYBRID CURBS - DOUBLE DUCT OPENING**



**TYPICAL FLASHING DETAIL FOR ROOF CURB**

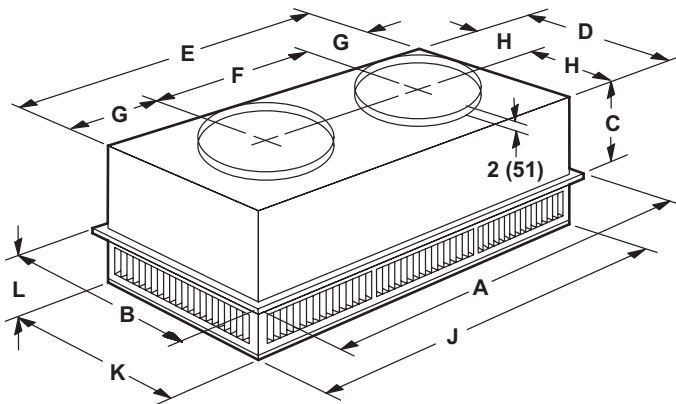


**DETAIL ROOF CURB**

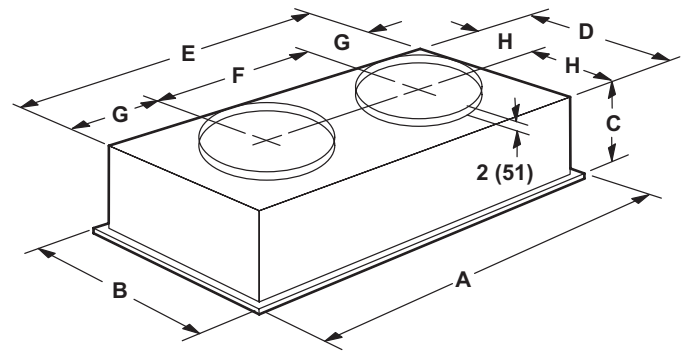


**COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS**

**STEP-DOWN CEILING DIFFUSER**



**FLUSH CEILING DIFFUSER**

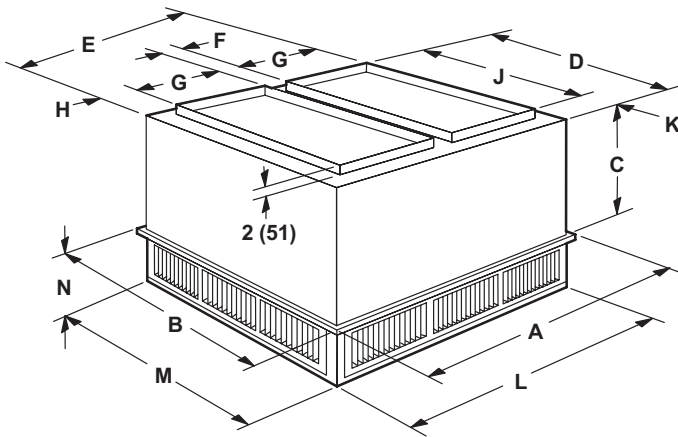


| Model     |     | RTD11-95S |
|-----------|-----|-----------|
| A         | in. | 47-5/8    |
|           | mm  | 1159      |
| B         | in. | 29-5/8    |
|           | mm  | 752       |
| C         | in. | 14-3/8    |
|           | mm  | 365       |
| D         | in. | 27-1/2    |
|           | mm  | 699       |
| E         | in. | 45-1/2    |
|           | mm  | 1158      |
| F         | in. | 22-1/2    |
|           | mm  | 572       |
| G         | in. | 11-1/2    |
|           | mm  | 292       |
| H         | in. | 13-3/4    |
|           | mm  | 349       |
| J         | in. | 45-1/2    |
|           | mm  | 1156      |
| K         | in. | 27-1/2    |
|           | mm  | 699       |
| L         | in. | 8-1/8     |
|           | mm  | 206       |
| Duct Size | in. | 20 round  |
|           | mm  | 508 round |

| Model     |     | FD11-95S  |
|-----------|-----|-----------|
| A         | in. | 47-5/8    |
|           | mm  | 1159      |
| B         | in. | 29-5/8    |
|           | mm  | 752       |
| C         | in. | 16-5/8    |
|           | mm  | 422       |
| D         | in. | 27        |
|           | mm  | 686       |
| E         | in. | 45        |
|           | mm  | 1143      |
| F         | in. | 22-1/2    |
|           | mm  | 572       |
| G         | in. | 11-1/4    |
|           | mm  | 286       |
| H         | in. | 13-1/2    |
|           | mm  | 343       |
| Duct Size | in. | 20 round  |
|           | mm  | 508 round |

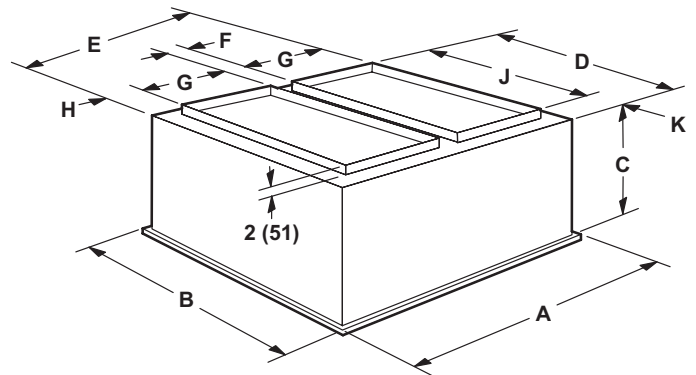
**COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS**

**STEP-DOWN CEILING DIFFUSER**



| Model     |     | RTD11-135S | RTD11-185S |
|-----------|-----|------------|------------|
| A         | in. | 47-5/8     | 47-5/8     |
|           | mm  | 1210       | 1210       |
| B         | in. | 35-5/8     | 47-5/8     |
|           | mm  | 905        | 1210       |
| C         | in. | 20-5/8     | 24-5/8     |
|           | mm  | 524        | 625        |
| D         | in. | 33-1/2     | 45-1/2     |
|           | mm  | 851        | 1156       |
| E         | in. | 45-1/2     | 45-1/2     |
|           | mm  | 1156       | 1156       |
| F         | in. | 4-1/2      | 4-1/2      |
|           | mm  | 114        | 114        |
| G         | in. | 18         | 18         |
|           | mm  | 457        | 457        |
| H         | in. | 2-1/2      | 2-1/2      |
|           | mm  | 64         | 64         |
| J         | in. | 28         | 36         |
|           | mm  | 711        | 914        |
| K         | in. | 2-3/4      | 4-3/4      |
|           | mm  | 70         | 121        |
| L         | in. | 45-1/2     | 45-1/2     |
|           | mm  | 1156       | 1156       |
| M         | in. | 33-1/2     | 45-1/2     |
|           | mm  | 851        | 1156       |
| N         | in. | 9-1/8      | 10-1/8     |
|           | mm  | 232        | 257        |
| Duct Size | in. | 18 x 28    | 18 x 36    |
|           | mm  | 457 x 711  | 457 x 914  |

**FLUSH CEILING DIFFUSER**



| Model     |     | FD11-135S | FD11-185S |
|-----------|-----|-----------|-----------|
| A         | in. | 47-5/8    | 47-5/8    |
|           | mm  | 1210      | 1210      |
| B         | in. | 35-5/8    | 47-5/8    |
|           | mm  | 905       | 1210      |
| C         | in. | 23-1/4    | 29-1/4    |
|           | mm  | 591       | 743       |
| D         | in. | 33        | 45        |
|           | mm  | 838       | 1143      |
| E         | in. | 45        | 45        |
|           | mm  | 1143      | 1143      |
| F         | in. | 4-1/2     | 4-1/2     |
|           | mm  | 114       | 114       |
| G         | in. | 18        | 18        |
|           | mm  | 457       | 457       |
| H         | in. | 2-1/4     | 2-1/4     |
|           | mm  | 57        | 57        |
| J         | in. | 28        | 36        |
|           | mm  | 711       | 914       |
| K         | in. | 2-1/2     | 4-1/2     |
|           | mm  | 64        | 114       |
| Duct Size | in. | 18 x 28   | 18 x 36   |
|           | mm  | 457 x 711 | 457 x 914 |

## REVISIONS

| Sections              | Description of Change         |
|-----------------------|-------------------------------|
| Options / Accessories | Removed Corrosion Protection. |



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