



The new degree of comfort.™



## Rheem **Commercial Classic® Series** Package Gas Electric Unit



Unit shown with optional  
louvered coil protection.

### **RKNL-C Series**

With ClearControl™

Nominal Sizes 6-12.5 Tons [21.1-44.0 kW]

ASHRAE 90.1-2010 Compliant 6-8.5 Tons [21.1-29.9 kW]

ASHRAE 90.1-2007 Compliant 10-12.5 Tons [35.2-44.0 kW]

### **RKNL-H Series**

With ClearControl™

and VFD Technology

Nominal Sizes 7.5-12.5 Tons [26.4-44.0 kW]

ASHRAE 90.1-2010 Compliant



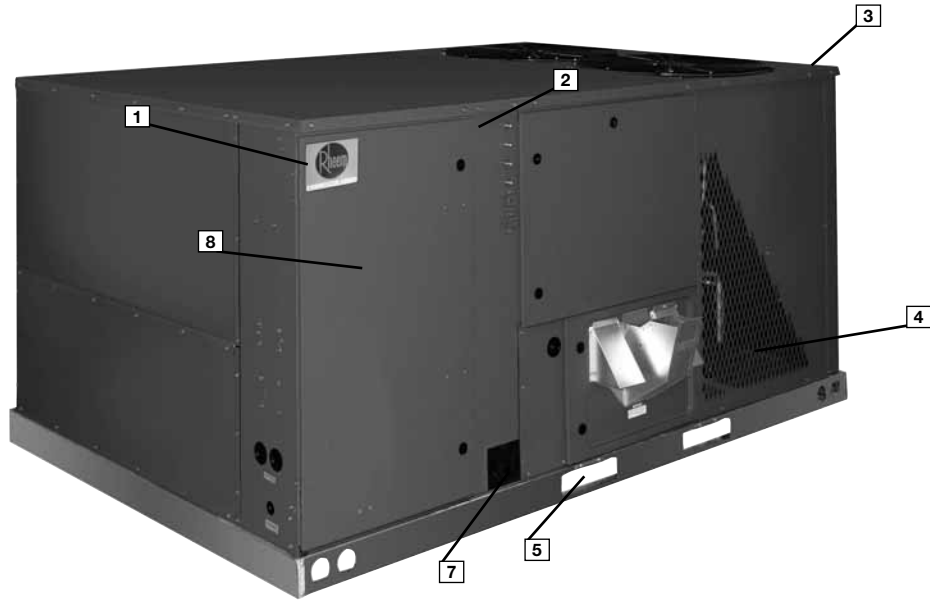
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## RKNL-C/H STANDARD FEATURES INCLUDE:

- R-410A HFC refrigerant.
- Complete factory charged, wired and run tested.
- Scroll compressors with internal line break overload and high-pressure protection.
- Single compressor on 6 ton model.
- Two compressors on 7.5-12.5 ton models.
- Convertible airflow.
- TXV refrigerant metering system on each circuit.
- High Pressure and Low Pressure/Loss of charge protection standard on all models.
- Solid Core liquid line filter drier on each circuit.
- Single slab, single pass designed evaporator and condenser coils facilitate easy cleaning for maintained high efficiencies.
- Cooling operation up to 125 degree F ambient.
- Foil faced insulation encapsulated throughout entire unit minimizes airborne fibers from the air stream.
- Hinged major access door with heavy-duty gasketing, 1/4 turn latches and door retainers.
- Slide Out Indoor fan assembly for added service convenience.
- Powder Paint Finish meets ASTM B117 steel coated on each side for maximum protection. G90 galvanized.
- One piece base pan with drawn supply and return opening for superior water management.
- Forkable base rails for easy handling and lifting.
- Single point electrical and gas connections.
- Internally sloped slide out condensate pan conforms to ASHRAE 62 standards.
- High performance belt drive motor with variable pitch pulleys and quick adjust belt system.
- Permanently lubricated evaporator, condenser and gas heat inducer motors.
- Condenser motors are internally protected, totally enclosed with shaft down design.
- 2 inch filter standard with slide out design.
- Two stage gas valve and direct spark ignition.
- Tubular heat exchange for long life and induced draft for efficiency and reliability.
- Solid state furnace control with on board diagnostics.
- 24 volt control system with resettable circuit breakers.
- Colored and labeled wiring.
- Copper tube/Aluminum Fin coils (12 1/2 ton uses MicroChannel condenser).
- Molded compressor plug.
- Factory Installed ClearControl™, a Direct Digital Control (DDC) and sensors which can connect to LonWorks™ or BACnet® BAS systems for remote monitoring and control.
- -H models with supply fan Variable Frequency Drive (VFD) meets ASHRAE 90.1-2010 and California Title 24.



Rheem Package equipment is designed from the ground up with the latest features and benefits required to compete in today's market. The clean design stands alone in the industry and is a testament to the quality, reliability, ease of installation and service-ability that goes into each unit. Outwardly, the large Rheem *Commercial Series™* label (1) identifies the brand to the customer.

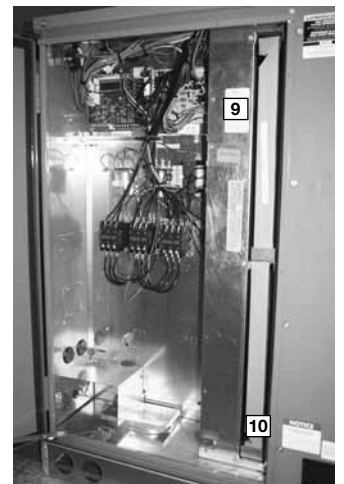
The sheet-metal cabinet (2) uses nothing less than 18-gauge material for structural components with an underlying coat of G90. To ensure the leak-proof integrity of these units, the design utilizes a one-piece top with a 1/8" drip lip (3), gasket-protected panels and screws. The Rheem hail guard (4) (optional) is its trademark, and sets the standard for coil protection in the industry. Every Rheem package unit uses the toughest finish in the industry, using electro deposition baked-on enamel tested to withstand a rigorous 1000-hour salt spray test, per ASTM B117.

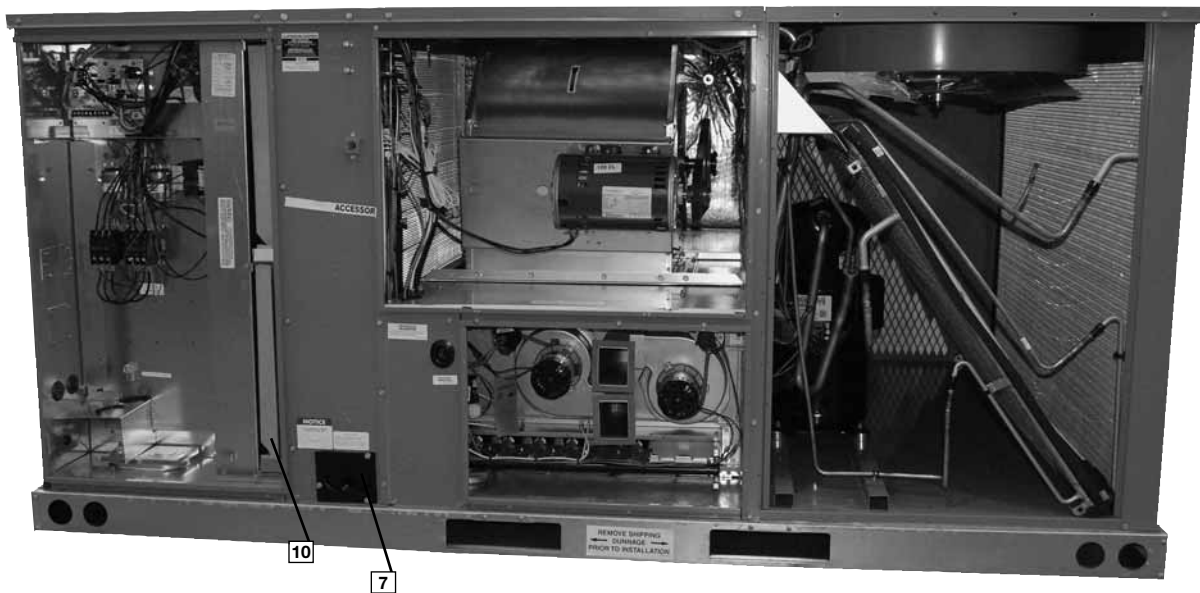
Anything built to last must start with the right foundation. In this case, the foundation is 14-gauge, commercial-grade, full-perimeter base rails (5), which integrate fork slots and rigging holes to save set-up time on the job site. The base pan is stamped, which forms a 1-1/8" flange around the supply and return opening and has eliminated the worry of water entering the conditioned space (6). The drainpan (7) is made of material that resists the growth of harmful bacteria and is sloped for the latest IAQ benefits. Furthermore, the drain pan slides out for easy cleaning. The insulation has been placed on the underside of the basepan, removing areas that would allow for potential moisture accumulation, which can facilitate growth of harmful bacteria. All insulation is secured with both adhesive and mechanical fasteners, and all edges are hidden.

During development, each unit was tested to U.L. 1995, ANSI 21.47, AHRI 340-360 and other Rheem-required reliability tests. Rheem adheres to stringent ISO 9002 quality procedures, and each unit bears the U.L. and AHRI certification labels located on the unit nameplate (8). Contractors can rest assured that when a Rheem package unit arrives at the job, it is ready to go with a factory charge and quality checks.

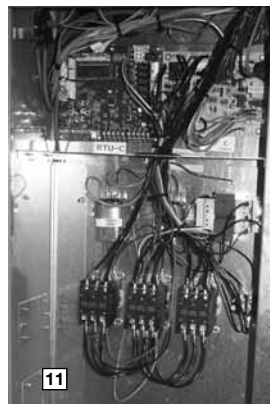
Access is granted with 1/4 turn fasteners and hinged access panels. Access to all major compartments is from the front of the unit, including the filter and electrical compartment, blower compartment, furnace section, and outdoor section. Each panel is permanently embossed with the compartment name (control/filter access, blower access and furnace access).

Electrical and filter compartment access is through a large hinged-access panel. The unit charging chart is located on the inside of the electrical and filter compartment door. Electrical wiring diagrams are found on the control box cover, which allows contractors to move them to more readable locations. To the right of the control box the model and serial number can be found. Having this information on the inside will assure model identification for the life of the product. The production line quality test assurance label is also placed in this location (9). The two-inch throwaway filters (10) are easily removed on a tracked system for easy replacement.





Inside the control box (11), each electrical component is clearly identified with a label that matches the component to the wire diagram for ease of troubleshooting. All wiring is numbered on each end of the termination and color-coded to match the wiring diagram. The integrated furnace control, used to control furnace operation, incorporates a flashing LED troubleshooting device. Flash codes are clearly outlined on the unit wiring diagram. The control transformer has a low voltage circuit breaker that trips if a low voltage electrical short occurs. There is a blower contactor and compressor contactor for each compressor.



As part of the ClearControl™ system which allows real time monitoring and communication between rooftop units, the RKNL-C/H Package Gas Electric Unit has a Rooftop Unit Controller (RTU-C) factory mounted and wired in the control panel. The RTU-C is a solid-state microprocessor-based control board that provides flexible control and extensive diagnostics for all unit functions. The RTU-C through proportional/Integral control algorithms perform specific unit functions that govern unit operation in response to: zone conditions, system temperatures, system pressures, ambient conditions and electrical inputs. The RTU-C features a 16 x 2 character LCD display and a five-button keypad for local configuration and direct diagnosis of the system (12). New features include a clogged filter switch (CFS), fan proving switch (FPS), return air temperature sensor (RAT), discharge air temperature sensor (DAT) and outdoor air temperature sensor (OAT). Freeze sensors (FS) are used in place of freezestats to allow measurement of refrigerant suction line temperatures. The RKNL-C/H Package Gas/Electric with the RTU-C is specifically designed to be applied in four distinct applications:



The RKNL-C/H is compatible with a third party building management system that supports the BACnet Application Specific Controller device profile, with the use of a field installed BACnet Communication Module. The BACnet Communication Module plugs onto the unit RTU-C controller and allows communication between the RTU-C and the BACnet MSTP network. A zone sensor, a BACnet network zone sensor, a BACnet thermostat or DDC controller may be used to send the zone temperature or thermostat demands to the RTU-C. The BACnet Communication Module is compatible with MSTP EIA-485 daisy chain networks communicating at 38.4 bps. It is compatible with twisted pair, shielded cables.

The RKNL-C/H is compatible with a third party building management system that supports the LonMark Space Comfort Controller (SCC) functional profile or LonMark Discharge Air Controller (DAC) functional profile. This is accomplished with a field installed LonMark communication module. The LonMark Communication Module plugs onto the RTU-C controller and allows communication between the RTU-C and a LonWorks Network. A zone sensor, a LonTalk network zone sensor, or a LonTalk thermostat or DDC controller may be used to send the zone temperature or thermostat demands to the RTU-C. The LonMark Communication Module utilizes an FTT-10A free topology transceiver communicating at 78.8 kbps. It is compatible with Echelon qualified twisted pair cable, Belden 8471 or NEMA Level 4 cables. The Module can communicate up to 1640 ft. with no repeater. The LonWorks limit of 64 nodes per segment applies to this device.

The RKNL-C/H is compatible with a programmable 24 volt thermostat. Connections are made via conventional thermostat screw terminals. Extensive unit status and diagnostics are displayed on the LCD screen of the RTU-C.

The RKNL-C/H is compatible with a zone sensor and mechanical or solid state time clock connected to the RTU-C. Extensive unit status and diagnostics are displayed on the LCD screen of the RTU-C.

A factory or field installed Comfort Alert® module is available for power phase-monitoring protection and additional compressor diagnostics. The alarms can be displayed on the RTU-C display, through the (BAS) network, or connected to the "L-Terminal" of a thermostat for notification.

-H models with factory installed supply fan Variable Frequency Drive (VFD) (13) optimizes energy usage year round by providing a lower speed for first stage cooling operation improving IEEER's over the conventional constant fan system. Furthermore, operating in the constant fan mode at the reduced speed can use as little as 1/5<sup>th</sup> of the energy of a conventional constant fan system. Also, by operating at a lower speed on first stage cooling up to 126% more moisture is removed improving comfort during low load operation. The VFD supply fan factory option meet's California Title 24 and ASHRAE 90.1-2010 requirements for multi blower speed control. VFD also ramps up to the desired speed reducing stress on the supply fan components and reducing the noise from sudden inrush of air. Because the airflow is cut in half during first stage cooling and constant fan operation, noise is much less during these modes of operation.



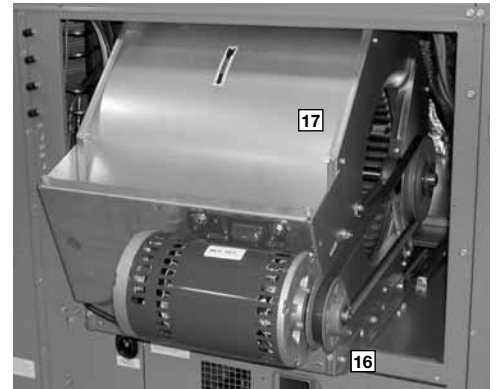
For added convenience in the field, a factory-installed convenience outlet and disconnect (14) are available. Low and High voltage can enter either from the side or through the base. Low-voltage connections are made through the low-voltage terminal strip. For ease of access, the U.L.-required low voltage barrier can be temporarily removed for low-voltage termination and then reinstalled. The high-voltage connection is terminated at the number 1 compressor contactor. The suggested mounting for the field-installed disconnect is on the exterior side of the electrical control box.



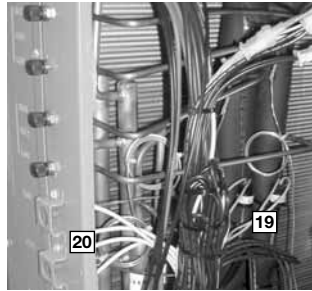
To the right of the electrical and filter compartment are the externally mounted gauge ports, which are permanently identified by embossed wording that clearly identifies the compressor circuit, high pressure connection and low pressure connection (15). With the gauge ports mounted externally, an accurate diagnostic of system operation can be performed quickly and easily. Brass caps on the schrader fitting assure that the gauge parts are leak proof.



The blower compartment is to the right of the gauge ports and can be accessed by 1/4 turn fastener. To allow easy maintenance of the blower assembly, the entire assembly easily slides out by removing two 3/8" screws from the blower retention bracket. The adjustable motor pulley (16) can easily be adjusted by loosening the bolts on either side of the motor mount. Removing the bolts allows for easy removal of the blower pulley by pushing the blower assembly up to loosen the belt. Once the belt is removed, the motor sheave can be adjusted to the desired number of turns, ranging from 0 to 6 turns open. Where the demands for the job require high static, Rheem has high-static drives available that deliver nominal airflow up to 2" of static. By referring to the airflow performance tables listed in the installation instructions, proper static pressure and CFM requirements can be dialed in. The scroll housing (17) and blower scroll provide quiet and efficient airflow. The blower sheave is secured by an "H" bushing which firmly secures the pulley to the blower shaft for years of trouble-free operation. The "H" bushing allows for easy removal of the blower pulley from the shaft, as opposed to the use of a set screw, which can score the shaft, creating burrs that make blower-pulley removal difficult.

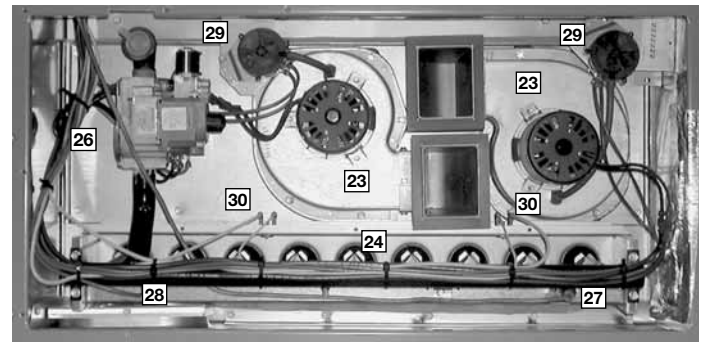
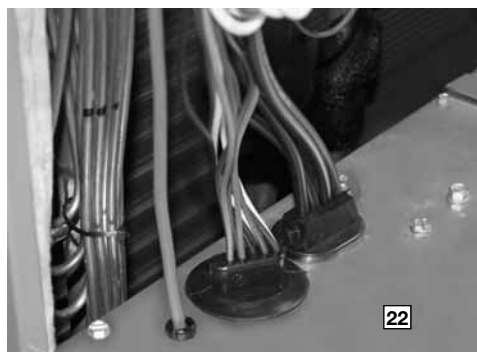


Also inside the blower compartment is the low-ambient control (18), low-pressure switch (19), high-pressure switch (20) and freeze sensor (21). The low-ambient control allows for operation of the compressor down to 0 degrees ambient temperature by cycling the outdoor fans on high pressure. The high-pressure switch will shut off the compressors if pressures in excess of 610 PSIG are detected, as may occur if the outdoor fan motor fails. The low-pressure switch shuts off the compressors if low pressure is detected due to loss of charge. The freeze sensor protects the compressor if the evaporator coil gets too cold (below freezing) due to low airflow and allows monitoring of the suction line temperature on the controller display. Each factory-installed option is brazed into the appropriate high or low side and wired appropriately. Use of polarized plugs and schrader fittings allow for easy field installation.



Inside the blower compartment the interlaced evaporator can also be viewed. The evaporator uses enhanced fin technology for maximum heat transfer. The TXV metering device assures even distribution of refrigerant throughout the evaporator. (Note: the single stage 6 ton utilizes an orifice).

Wiring throughout the unit is neatly bundled and routed. Where wire harnesses go through the condenser bulkhead or blower deck, a molded wire harness assembly (22) provides an air-tight and water-tight seal, and provides strain relief. Care is also taken to tuck raw edges of insulation behind sheet metal to improve indoor air quality.

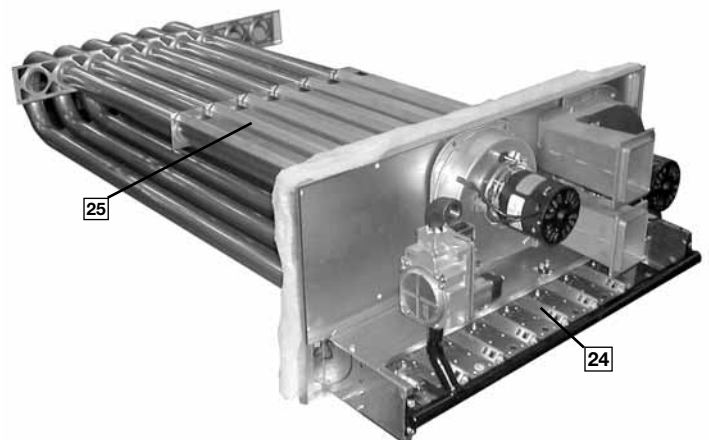


The furnace compartment contains the latest furnace technology on the market. The draft inducers (23) draw the flame from the Rheem exclusive in-shot burners (24) into the aluminized tubular heat exchanger (25) for clean, efficient gas heat. Stainless steel heat exchangers can be factory installed for those applications that have high fresh-air requirements, or applications in corrosive environments. Each furnace is equipped with a two-stage gas valve (26), which provides two stages of gas heat input. The first stage operates at 50% of the second stage (full fire). 81% steady state efficiency is maintained on both first and second stage by staging the multiple inducers to optimize the combustion airflow and maintain a near stoichiometric burn at each stage.

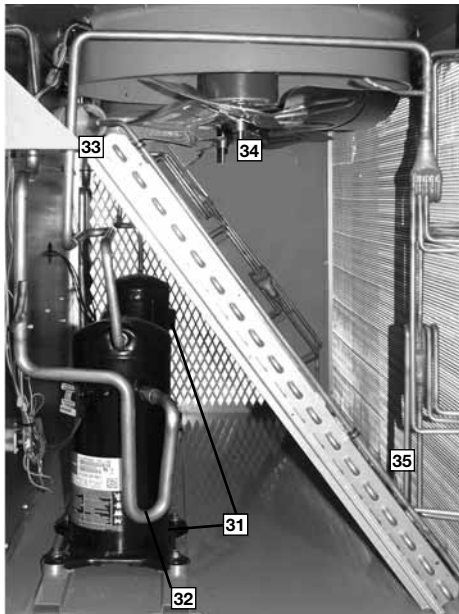
The direct spark igniter (27) assures reliable ignition in the most adverse conditions. This is coupled with remote flame sense (28) to assure that the flame has carried across the entire length of the burner assembly. Gas supply can be routed from the side or up through the base.

Each furnace has the following safety devices to assure consistent and reliable operation after ignition:

- Pressures switches (29) to assure adequate combustion airflow before ignition.
- Rollout switches (30) to assure no obstruction or cracks in the heat exchanger.
- A limit device that protects the furnace from over-temperature problems.



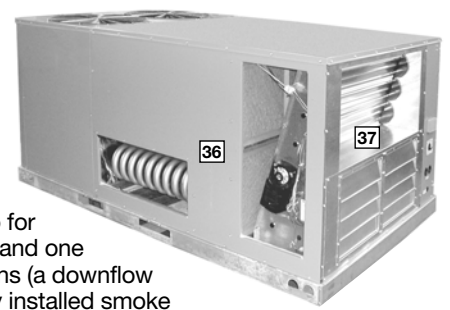
The compressor compartment houses the heart-beat of the unit. The scroll compressor (31) is known for its long life, and for reliable, quiet, and efficient operation. The suction and discharge lines are designed with shock loops (32) to absorb the strain and stress that the starting torque, steady state operation, and shut down cycle impose on the refrigerant tubing. Each compressor and circuit is independent for built-in redundancy, and each circuit is clearly marked throughout the system. Each unit has two stages of efficient cooling operation, first stage is approximately 50% of second stage. (072 single stage)



Each unit comes standard with filter dryer (33). The condenser fan motor (34) can easily be accessed and maintained through the top. The polarized plug connection allows the motor to be changed quickly and eliminates the need to snake wires through the unit.

The outdoor coil uses the latest enhanced fin design (35) for the most effective method of heat transfer. The outdoor coil is protected by optional\* louvered panels, which allow unobstructed airflow while protecting the unit from both Mother Nature and vandalism.

Each unit is designed for both downflow or horizontal applications (36) for job configuration flexibility. The return air compartment can also contain an economizer (37).



Three models exist, two for downflow applications, and one for horizontal applications (a downflow economizer with factory installed smoke detector in the return section is available). Each unit is pre-wired for the economizer to allow quick plug-in installation. The economizer is also available as a factory-installed option. The economizer, which provides free cooling when outdoor conditions are suitable and also provides fresh air to meet local requirements, comes standard with single enthalpy controls. The controls can be upgraded to dual enthalpy easily in the field. The direct drive actuator combined with gear drive dampers has eliminated the need for linkage adjustment in the field. The economizer control has a minimum position setpoint, an outdoor-air setpoint, a mix-air setpoint, and a CO<sub>2</sub> setpoint. Barometric relief is standard on all economizers. Power Exhaust (37) is easily field-installed. The power exhaust is housed in the barometric relief opening and is easily slipped in with a plug-in assembly. The wire harness to the economizer also has accommodations for a smoke detector.



The damper minimum position, actual damper position, power exhaust on/off setpoint, mixed air temperature limit setpoint and Demand Controlled Ventilation (DCV) setpoint can be read and adjusted at the unit controller display or remotely through a network connection.

The Space CO<sub>2</sub> level, mixed air temperature, and Economizer Status (Free Cooling Available, Single or Dual Enthalpy) can be read at the unit controller display or remotely through a network connection. Economizer Faults will trigger a network Alarm and can be read at the unit controller display or remotely through a network connection.

The Rheem roofcurb (38) is made for toolless assembly at the jobsite by engaging a pin into the hinged corners of adjacent curb sides, which makes the assembly process quick and easy.

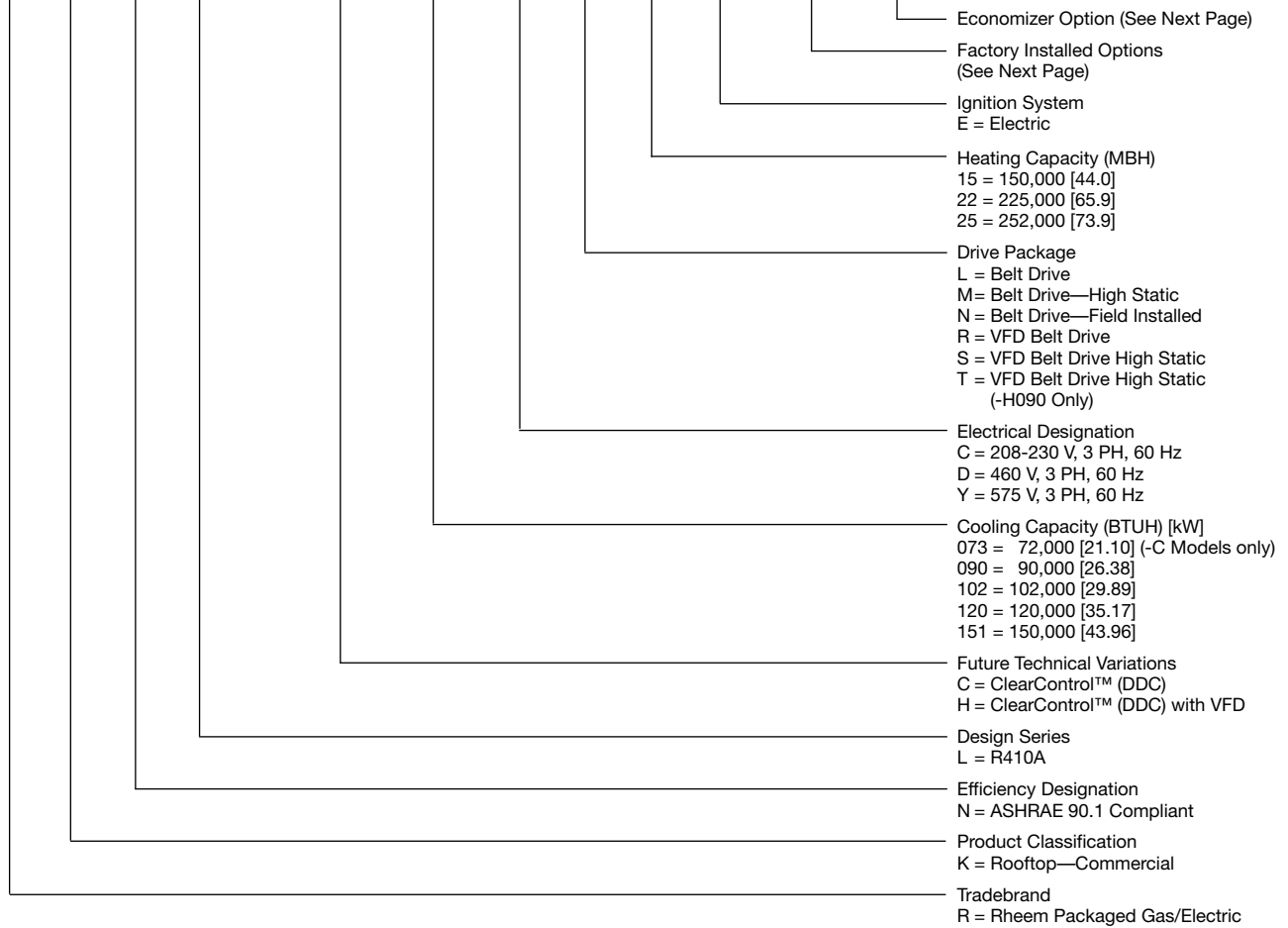






Air

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[ ] Designates Metric Conversions



## FACTORY INSTALLED OPTION CODES FOR KNL-C/H (6 TO 12.5 TON) [21.1 TO 44.0 kW]

Option Code	Hail Guard	Stainless Steel Heat Exchanger	Non-Powered Convenience Outlet/Unfused Service Disconnect	Low Ambient/Comfort Alert
AD	X			
AJ		X		
AH			X	
AR				X
BF	X			
BG	X	X		
JD	X			X
JB		X	X	X
KA	X	X		X
DP	X	X	X	X

NOTES: (1) High and low pressure is standard on all models.  
"x" indicates factory installed option.

## ECONOMIZER SELECTION FOR KNL-C/H (6 TO 12.5 TON) [21.1 TO 44.0 kW]

Option Code	No Economizer	DDC Single Enthalpy Economizer w/Barometric Relief	DDC Single Enthalpy Economizer w/Barometric Relief and Smoke Detector
A	X		
H		X	
J			X

"x" indicates factory installed option.

### Instructions for Factory Installed Option(s) Selection

**Note:** Three characters following the model number will be utilized to designate a factory-installed option or combination of options. If no factory option(s) is required, nothing follows the model number.

**Step 1.** After a basic rooftop model is selected, choose a *two-character* option code from the FACTORY INSTALLED OPTION SELECTION TABLE.

Proceed to Step 2.

**Step 2.** The last option code character is utilized for factory-installed economizers. Choose a character from the FACTORY INSTALLED ECONOMIZER SELECTION TABLE.

### Examples:

RKNL-C120CL22E .....this unit has no factory installed options.

RKNL-C120CL22EBGA .....this unit is equipped with *hail guard and stainless steel heat exchanger*.

RKNL-C120CL22EAHA.....this unit is equipped with a *non-powered convenience outlet and unfused service disconnect*.

RKNL-C120CL22EAHH .....this unit is equipped as above *and* includes an *Economizer with single enthalpy sensor and with barometric relief*.

RKNL-C120CL22EAAH.....this unit is equipped with an *Economizer with single enthalpy sensor and Barometric Relief*.

[ ] Designates Metric Conversions

To select an RKNL-C Cooling and Heating unit to meet a job requirement, follow this procedure, with example, using data supplied in this specification sheet.

### 1. DETERMINE COOLING AND HEATING REQUIREMENTS AND SPECIFIC OPERATING CONDITIONS FROM PLANS AND SPECS.

#### Example:

Voltage—	208/240V—3 Phase 60 Hz
Total cooling capacity—	106,000 BTUH [31.0 kW]
Sensible Cooling Capacity —	82,000 BTUH [24.0 kW]
Heating Capacity —	150,000 BTUH [43.9 kW]
*Condenser Entering Air —	95°F [35.0 °C] DB
*Evaporator Mixed Air Entering —	65°F [18.3 °C] WB 78°F [25.6 °C] DB
*Indoor Air Flow (vertical) —	3600 CFM [1699 L/s]
*External Static Pressure —	0.40 in. WG [.10 kPa]

### 2. SELECT UNIT TO MEET COOLING REQUIREMENTS.

Since total cooling is within the range of a nominal 10 ton [35.1 kW] unit, enter cooling performance table at 95°F [35.0 °C] DB condenser inlet air. Interpolate between 63°F [17.2 °C] WB and 67°F [19.4 °C] WB to determine total and sensible capacity and power input for 65°F [18.3 °C] WB evaporator inlet air at 3750 CFM [1770 L/s] indoor air flow (table basis):

Total Cooling Capacity = 118,900 BTUH [34.82 kW]  
 Sensible Cooling Capacity = 99,950 BTUH [29.27 kW]  
 Power Input (Compressor and Cond. Fans) = 8,950 watts

Use formula in note (1) to determine sensible capacity at 78°F [25.6 °C] DB evaporator entering air:

$$99,950 + (1.10 \times 3,600 \times (1 - 0.03) \times (78 - 80))$$

$$\text{Sensible Cooling Capacity} = 92,268 \text{ BTUH [27.02 kW]}$$

### 3. CORRECT CAPACITIES OF STEP 2 FOR ACTUAL AIR FLOW.

Select factors from airflow correction table at 3600 CFM [1699 L/s] and apply to data obtained in step 2 to obtain gross capacity:

Total Capacity = 118,900 x 0.98 = 116,522 BTUH [34.12 kW]  
 Sensible Capacity = 92,268 x 0.95 = 87,655 BTUH [25.67 kW]  
 Power Input = 8,950 x 0.99 = 8,861 Watts

These are Gross Capacities, not corrected for blower motor heat or power.

### 4. DETERMINE BLOWER SPEED AND WATTS TO MEET SYSTEM DESIGN.

Enter Indoor Blower performance table at 3600 CFM [1699 L/s]. Total ESP (external static pressure) per the spec of 0.40 in. WG [.10 kPa] includes the system duct and grilles. Add from the table 'Component Air Resistance', 0.076 in. WG [.02 kPa] for wet coil, 0 in. WG [.00 kPa] for downflow air flow, for a total selection static pressure of 0.476 (0.5) in. WG [.12 kPa], and determine:

$$\text{RPM} = 796$$

$$\text{WATTS} = 1,576$$

$$\text{DRIVE} = \text{L (standard 2 H.P. motor)}$$

### 5. CALCULATE INDOOR BLOWER BTUH HEAT EFFECT FROM MOTOR WATTS, STEP 4.

$$1,576 \times 3.412 = 5,377 \text{ BTUH [1.57 kW]}$$

### 6. CALCULATE NET COOLING CAPACITIES, EQUAL TO GROSS CAPACITY, STEP 3, MINUS INDOOR BLOWER MOTOR HEAT.

$$\text{Net Total Capacity} = 116,522 - 5,377 = 111,145 \text{ BTUH [32.54 kW]}$$

$$\text{Net Sensible Capacity} = 87,655 - 5,377 = 82,278 \text{ BTUH [24.09 kW]}$$

### 7. CALCULATE UNIT INPUT AND JOB EER.

$$\text{Total Power Input} = 8,861 \text{ (step 3)} + 1,576 \text{ (step 4)} = 10,437 \text{ Watts}$$

$$\text{EER} = \frac{\text{Net Total BTUH [kW] (step 6)}}{\text{Power Input, Watts (above)}} = \frac{111,145}{10,437} = 10.65$$

### 8. SELECT UNIT HEATING CAPACITY.

From Physical Data Table read that gas heating output (input rating x efficiency) is:

$$\text{Heating Capacity} = 182,250 \text{ BTUH [53.4 kW]}$$

### 9. CHOOSE MODEL RKNL-C120CL22E

\*NOTE: These operating conditions are typical of a commercial application in a 95°F/79°F [35°C/26°C] design area with indoor design of 76°F [24°C] DB and 50% RH and 10% ventilation air, with the unit roof mounted and centered on the zone it conditions by ducts.

[ ] Designates Metric Conversions

## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series	C073CL15E	C073CM15E	C073DL15E	C073DM15E
<b>Model RKNL- Series (with VFD)</b>				
<b>Cooling Performance<sup>1</sup></b>				
Gross Cooling Capacity Btu [kW]	75,000 [21.97]	75,000 [21.97]	75,000 [21.97]	75,000 [21.97]
EER/SEER <sup>2</sup>	11/NA	11/NA	11/NA	11/NA
Nominal CFM/AHRI Rated CFM [L/s]	2400/2325 [1133/1097]	2400/2325 [1133/1097]	2400/2325 [1133/1097]	2400/2325 [1133/1097]
AHRI Net Cooling Capacity Btu [kW]	72,000 [21.1]	72,000 [21.1]	72,000 [21.1]	72,000 [21.1]
Net Sensible Capacity Btu [kW]	52,800 [15.47]	52,800 [15.47]	52,800 [15.47]	52,800 [15.47]
Net Latent Capacity Btu [kW]	19,200 [5.63]	19,200 [5.63]	19,200 [5.63]	19,200 [5.63]
IEER <sup>3</sup> Latent (Standard / VFD)	11.8	11.8	11.8	11.8
Net System Power kW	6.42	6.42	6.42	6.42
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	30-60 [16.7-33.3] 30-60 [16.7-33.3]	30-60 [16.7-33.3] 30-60 [16.7-33.3]	30-60 [16.7-33.3] / 30-60 [16.7-33.3]	30-60 [16.7-33.3] / 30-60 [16.7-33.3]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	6	6	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.5 [12.7]	0.5 [12.7]	0.5 [12.7]
<b>Compressor</b>				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
Drive Type	1/11x12 [279x305]	1/11x12 [279x305]	1/11x12 [279x305]	1/11x12 [279x305]
No. Speeds (Standard / VFD)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Motors	Single	Single	Single	Single
Motor HP	1	1	1	1
Motor RPM	1 1/2	1 1/2	1 1/2	1 1/2
Motor Frame Size	1725	1725	1725	1725
Filter—Type	56	56	56	56
<b>Filter—Type</b>				
Furnished	Disposable	Disposable	Disposable	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes	Yes	Yes	Yes
	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	125 [3544]	125 [3544]	125 [3544]	125 [3544]
<b>Weights</b>				
Net Weight lbs. [kg]	901 [409]	901 [409]	901 [409]	901 [409]
Ship Weight lbs. [kg]	938 [425]	938 [425]	938 [425]	938 [425]

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[ ] Designates Metric Conversions

## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series Model RKNL- Series (with VFD)	C073YL15E	C073YM15E	C090CL15E H090CR15E	C090CL22E H090CR22E
<b>Cooling Performance<sup>1</sup></b>				<b>CONTINUED</b> →
Gross Cooling Capacity Btu [kW]	75,000 [21.97]	75,000 [21.97]	93,000 [27.25]	93,000 [27.25]
EER/SEER <sup>2</sup>	11/NA	11/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	2400/2325 [1133/1097]	2400/2325 [1133/1097]	3000/2775 [1416/1310]	3000/2775 [1416/1310]
AHRI Net Cooling Capacity Btu [kW]	72,000 [21.1]	72,000 [21.1]	90,000 [26.37]	90,000 [26.37]
Net Sensible Capacity Btu [kW]	52,800 [15.47]	52,800 [15.47]	63,100 [18.49]	63,100 [18.49]
Net Latent Capacity Btu [kW]	19,200 [5.63]	19,200 [5.63]	26,900 [7.88]	26,900 [7.88]
IEER <sup>3</sup> Latent (Standard / VFD)	11.8	11.8	11.9/14.5	11.9/14.5
Net System Power kW	6.42	6.42	7.99	7.99
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	30-60 [16.7-33.3] / 30-60 [16.7-33.3]	30-60 [16.7-33.3] / 30-60 [16.7-33.3]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	6	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.5 [12.7]	0.5 [12.7]	0.75 [19]
<b>Compressor</b>				
No./Type	1/Scroll	1/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>	88	88	88	88
<b>Outdoor Coil—Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	13.5 [1.25]	13.5 [1.25]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
<b>Indoor Coil—Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
<b>Indoor Fan—Type</b>	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x12 [279x305]	1/11x12 [279x305]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds (Standard / VFD)	Single	Single	Single / Multiple	Single / Multiple
No. Motors	1	1	1	1
Motor HP	1 1/2	1 1/2	2	2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
<b>Filter—Type</b>	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>	125 [3544]	125 [3544]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
<b>Weights</b>				
Net Weight lbs. [kg]	901 [409]	901 [409]	1017 [461]	1053 [478]
Ship Weight lbs. [kg]	938 [425]	938 [425]	1054 [478]	1054 [478]

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[ ] Designates Metric Conversions



## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series	C090CM15E	C090CM22E	C090CN15E	C090CN22E
Model RKNL- Series (with VFD)	H090CS15E	H090CS22E	H090CT15E	H090CT22E
<b>Cooling Performance<sup>1</sup></b>				
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]
AHRI Net Cooling Capacity Btu [kW]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]
Net Sensible Capacity Btu [kW]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]
Net Latent Capacity Btu [kW]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]
IEER <sup>3</sup> Latent (Standard / VFD)	11.9/14.5	11.9/14.5	11.9/14.5	11.9/14.5
Net System Power kW	7.99	7.99	7.99	7.99
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.5 [12.7]	0.75 [19]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Refrigerant Control	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Drain Connection No./Size in. [mm]	TX Valves	TX Valves	TX Valves	TX Valves
	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
No. Used/Diameter in. [mm]	Propeller	Propeller	Propeller	Propeller
Drive Type/No. Speeds	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
CFM [L/s]	Direct/1	Direct/1	Direct/1	Direct/1
No. Motors/HP	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
Motor RPM	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
Drive Type	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
No. Speeds (Standard / VFD)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Motors	Single / Multiple	Single / Multiple	Single / Multiple	Single / Multiple
Motor HP	1	1	1	1
Motor RPM	2	2	3	3
Motor Frame Size	1725	1725	1725	1725
	56	56	56	56
<b>Filter—Type</b>				
Furnished	Disposable	Disposable	Disposable	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes	Yes	Yes	Yes
	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
<b>Weights</b>				
Net Weight lbs. [kg]	1025 [465]	1053 [478]	1025 [465]	1050 [476]
Ship Weight lbs. [kg]	1054 [478]	1054 [478]	1054 [478]	1054 [478]

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[ ] Designates Metric Conversions



## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series Model RKNL- Series (with VFD)	C090DL15E H090DR15E	C090DL22E H090DR22E	C090DM15E H090DS15E	C090DM22E H090DS22E
<b>Cooling Performance<sup>1</sup></b>				
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]
AHRI Net Cooling Capacity Btu [kW]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]
Net Sensible Capacity Btu [kW]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]
Net Latent Capacity Btu [kW]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]
IEER <sup>3</sup> Latent (Standard / VFD)	11.9/14.5	11.9/14.5	11.9/14.5	11.9/14.5
Net System Power kW	7.99	7.99	7.99	7.99
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	6	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.5 [12.7]	0.75 [19]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds (Standard / VFD)	Single / Multiple	Single / Multiple	Single / Multiple	Single / Multiple
No. Motors	1	1	1	1
Motor HP	2	2	2	2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
<b>Filter—Type</b>				
	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
<b>Weights</b>				
Net Weight lbs. [kg]	1025 [465]	1053 [478]	1017 [461]	1053 [478]
Ship Weight lbs. [kg]	1054 [478]	1054 [478]	1054 [478]	1054 [478]

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[ ] Designates Metric Conversions



## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series	C090DN15E	C090DN22E	C090YL22E	C090YM22E
Model RKNL- Series (with VFD)	H090DT15E	H090DT22E		
<b>Cooling Performance<sup>1</sup></b>				
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]
AHRI Net Cooling Capacity Btu [kW]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]
Net Sensible Capacity Btu [kW]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]
Net Latent Capacity Btu [kW]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]
IEER <sup>3</sup> Latent (Standard / VFD)	11.9/14.5	11.9/14	11.9	11.9
Net System Power kW	7.99	7.99	7.99	7.99
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]
Steady State Efficiency (%)	81	81	81	81
No. Burners	6	9	9	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.5 [12.7]	0.75 [19]	0.75 [19]	0.75 [19]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
No. Used/Diameter in. [mm]	Propeller	Propeller	Propeller	Propeller
Drive Type/No. Speeds	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
CFM [L/s]	Direct/1	Direct/1	Direct/1	Direct/1
No. Motors/HP	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
Motor RPM	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
Drive Type	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
No. Speeds (Standard / VFD)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Motors	Single / Multiple	Single / Multiple	Single	Single
Motor HP	1	1	1	1
Motor RPM	3	3	2	2
Motor Frame Size	1725	1725	1725	1725
	56	56	56	56
<b>Filter—Type</b>				
Furnished	Disposable	Disposable	Disposable	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes	Yes	Yes	Yes
	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
<b>Weights</b>				
Net Weight lbs. [kg]	1025 [465]	1050 [476]	1053 [478]	1053 [478]
Ship Weight lbs. [kg]	1054 [478]	1054 [478]	1054 [478]	1054 [478]

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[ ] Designates Metric Conversions



## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series Model RKNL- Series (with VFD)	C090YN22E	C102CL15E H102CR15E	C102CL22E H102CR22E	C102CM15E H102CS15E
<b>Cooling Performance<sup>1</sup></b>				
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/2775 [1416/1310]	3200/3200 [1510/1510]	3200/3200 [1510/1510]	3200/3200 [1510/1510]
AHRI Net Cooling Capacity Btu [kW]	90,000 [26.37]	97,000 [28.42]	97,000 [28.42]	97,000 [28.42]
Net Sensible Capacity Btu [kW]	63,100 [18.49]	74,000 [21.68]	74,000 [21.68]	74,000 [21.68]
Net Latent Capacity Btu [kW]	26,900 [7.88]	23,000 [6.74]	23,000 [6.74]	23,000 [6.74]
IEER <sup>3</sup> Latent (Standard / VFD)	11.9	12/14.4	12/14.4	12/14.4
Net System Power kW	7.99	8.59	8.59	8.59
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	6	9	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.5 [12.7]	0.75 [19]	0.5 [12.7]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
	1 / 22 [9]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds (Standard / VFD)	Single	Single / Multiple	Single / Multiple	Single / Multiple
No. Motors	1	1	1	1
Motor HP	3	2	2	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
<b>Filter—Type</b>				
	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	107.5/110.7 [3048/3138]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]
<b>Weights</b>				
Net Weight lbs. [kg]	1050 [476]	1059 [480]	1095 [497]	1067 [484]
Ship Weight lbs. [kg]	1054 [478]	1096 [497]	1096 [497]	1096 [497]

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[ ] Designates Metric Conversions



## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series	C102CM22E	C102DL15E	C102DL22E	C102DM15E
Model RKNL- Series (with VFD)	H102CS22E	H102DR15E	H102DR22E	H102DS15E
<b>Cooling Performance<sup>1</sup></b>				
Gross Cooling Capacity Btu [kW]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3200/3200 [1510/1510]	3200/3200 [1510/1510]	3200/3200 [1510/1510]	3200/3200 [1510/1510]
AHRI Net Cooling Capacity Btu [kW]	97,000 [28.42]	97,000 [28.42]	97,000 [28.42]	97,000 [28.42]
Net Sensible Capacity Btu [kW]	74,000 [21.68]	74,000 [21.68]	74,000 [21.68]	74,000 [21.68]
Net Latent Capacity Btu [kW]	23,000 [6.74]	23,000 [6.74]	23,000 [6.74]	23,000 [6.74]
IEER <sup>3</sup> Latent (Standard / VFD)	12/14.4	12/14.4	12/14.4	12/14.4
Net System Power kW	8.59	8.59	8.59	8.59
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	6	9	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.5 [12.7]	0.75 [19]	0.5 [12.7]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
No. Used/Diameter in. [mm]	Propeller	Propeller	Propeller	Propeller
Drive Type/No. Speeds	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
CFM [L/s]	Direct/1	Direct/1	Direct/1	Direct/1
No. Motors/HP	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
Motor RPM	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
Drive Type	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
No. Speeds (Standard / VFD)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Motors	Single / Multiple	Single / Multiple	Single / Multiple	Single / Multiple
Motor HP	1	1	1	1
Motor RPM	3	2	2	3
Motor Frame Size	1725	1725	1725	1725
	56	56	56	56
<b>Filter—Type</b>				
Furnished	Disposable	Disposable	Disposable	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes	Yes	Yes	Yes
	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]
<b>Weights</b>				
Net Weight lbs. [kg]	1090 [494]	1059 [480]	1095 [497]	1067 [484]
Ship Weight lbs. [kg]	1096 [497]	1096 [497]	1096 [497]	1096 [497]

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## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series Model RKNL- Series (with VFD)	C102DM22E H102DS22E	C102YL15E	C102YL22E	C102YM15E
<b>Cooling Performance<sup>1</sup></b>				<b>CONTINUED</b> →
Gross Cooling Capacity Btu [kW]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3200/3200 [1510/1510]	3200/3200 [1510/1510]	3200/3200 [1510/1510]	3200/3200 [1510/1510]
AHRI Net Cooling Capacity Btu [kW]	97,000 [28.42]	97,000 [28.42]	97,000 [28.42]	97,000 [28.42]
Net Sensible Capacity Btu [kW]	74,000 [21.68]	74,000 [21.68]	74,000 [21.68]	74,000 [21.68]
Net Latent Capacity Btu [kW]	23,000 [6.74]	23,000 [6.74]	23,000 [6.74]	23,000 [6.74]
IEER <sup>3</sup> Latent (Standard / VFD)	12/14.4	12	12	12
Net System Power kW	8.59	8.59	8.59	8.59
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	6	9	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.5 [12.7]	0.75 [19]	0.5 [12.7]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
No. Used/Diameter in. [mm]	Propeller	Propeller	Propeller	Propeller
Drive Type/No. Speeds	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
CFM [L/s]	Direct/1	Direct/1	Direct/1	Direct/1
No. Motors/HP	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
Motor RPM	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
Drive Type	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
No. Speeds (Standard / VFD)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Motors	Single / Multiple	Single	Single	Single
Motor HP	1	1	1	1
Motor RPM	3	2	2	3
Motor Frame Size	1725	1725	1725	1725
	56	56	56	56
<b>Filter—Type</b>				
Furnished	Disposable	Disposable	Disposable	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes	Yes	Yes	Yes
	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]
<b>Weights</b>				
Net Weight lbs. [kg]	1090 [494]	1095 [497]	1095 [497]	1095 [497]
Ship Weight lbs. [kg]	1096 [497]	1096 [497]	1096 [497]	1096 [497]

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[ ] Designates Metric Conversions



## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series	C102YM22E	C120CL15E	C120CL22E	C120CM15E
Model RKNL- Series (with VFD)		H120CR15E	H120CR22E	H120CS15E
<b>Cooling Performance<sup>1</sup></b>				
Gross Cooling Capacity Btu [kW]	101,000 [29.59]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3200/3200 [1510/1510]	4000/3750 [1888/1770]	4000/3750 [1888/1770]	4000/3750 [1888/1770]
AHRI Net Cooling Capacity Btu [kW]	97,000 [28.42]	118,000 [34.57]	118,000 [34.57]	118,000 [34.57]
Net Sensible Capacity Btu [kW]	74,000 [21.68]	88,800 [26.02]	88,800 [26.02]	88,800 [26.02]
Net Latent Capacity Btu [kW]	23,000 [6.74]	29,200 [8.56]	29,200 [8.56]	29,200 [8.56]
IEER <sup>3</sup> Latent (Standard / VFD)	12	11.9/14.4	11.9/14.4	11.9/14.4
Net System Power kW	8.59	10.49	10.49	10.49
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	40-70 [22.2-38.9] / 40-70 [22.2-38.9]	15-45 [8.3-25] / 15-45 [8.3-25]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	15-45 [8.3-25] / 15-45 [8.3-25]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	6	9	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.5 [12.7]	0.75 [19]	0.5 [12.7]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 22 [9]	2 / 22 [9]	2 / 22 [9]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	3 / 18 [7]	3 / 18 [7]	3 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
No. Used/Diameter in. [mm]	Propeller	Propeller	Propeller	Propeller
Drive Type/No. Speeds	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
CFM [L/s]	Direct/1	Direct/1	Direct/1	Direct/1
No. Motors/HP	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
Motor RPM	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
Drive Type	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
No. Speeds (Standard / VFD)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Motors	Single	Single / Multiple	Single / Multiple	Single / Multiple
Motor HP	1	1	1	1
Motor RPM	3	2	2	3
Motor Frame Size	1725	1725	1725	1725
	56	56	56	56
<b>Filter—Type</b>				
Furnished	Disposable	Disposable	Disposable	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes	Yes	Yes	Yes
	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	154.4/166.6 [4377/4723]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]
<b>Weights</b>				
Net Weight lbs. [kg]	1095 [497]	1112 [504]	1148 [521]	1120 [508]
Ship Weight lbs. [kg]	1096 [497]	1149 [521]	1149 [521]	1149 [521]

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[ ] Designates Metric Conversions



## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series Model RKNL- Series (with VFD)	C120CM22E H120CS22E	C120DL15E H120DR15E	C120DL22E H120DR22E	C120DM15E H120DS15E
<b>Cooling Performance<sup>1</sup></b>				
Gross Cooling Capacity Btu [kW]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	4000/3750 [1888/1770]	4000/3750 [1888/1770]	4000/3750 [1888/1770]	4000/3750 [1888/1770]
AHRI Net Cooling Capacity Btu [kW]	118,000 [34.57]	118,000 [34.57]	118,000 [34.57]	118,000 [34.57]
Net Sensible Capacity Btu [kW]	88,800 [26.02]	88,800 [26.02]	88,800 [26.02]	88,800 [26.02]
Net Latent Capacity Btu [kW]	29,200 [8.56]	29,200 [8.56]	29,200 [8.56]	29,200 [8.56]
IEER <sup>3</sup> Latent (Standard / VFD)	11.9/14.4	11.9/14.4	11.9/14.4	11.9/14.4
Net System Power kW	10.49	10.49	10.49	10.49
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	15-45 [8.3-25] / 15-45 [8.3-25]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	15-45 [8.3-25] / 15-45 [8.3-25]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	6	9	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.5 [12.7]	0.75 [19]	0.5 [12.7]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
	2 / 22 [9]	2 / 22 [9]	2 / 22 [9]	2 / 22 [9]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
	3 / 18 [7]	3 / 18 [7]	3 / 18 [7]	3 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds (Standard / VFD)	Single / Multiple	Single / Multiple	Single / Multiple	Single / Multiple
No. Motors	1	1	1	1
Motor HP	3	2	2	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
<b>Filter—Type</b>				
	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]
<b>Weights</b>				
Net Weight lbs. [kg]	1145 [519]	1112 [504]	1148 [521]	1120 [508]
Ship Weight lbs. [kg]	1149 [521]	1149 [521]	1149 [521]	1149 [521]

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[ ] Designates Metric Conversions

## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series	C120DM22E	C120YL22E	C120YM22E	C151CL15E
Model RKNL- Series (with VFD)	H120DS22E			H151CR15E
<b>Cooling Performance<sup>1</sup></b>				<b>CONTINUED</b> →
Gross Cooling Capacity Btu [kW]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]	146,000 [42.78]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	10.8/NA
Nominal CFM/AHRI Rated CFM [L/s]	4000/3750 [1888/1770]	4000/3750 [1888/1770]	4000/3750 [1888/1770]	5000/4225 [2360/1994]
AHRI Net Cooling Capacity Btu [kW]	118,000 [34.57]	118,000 [34.57]	118,000 [34.57]	140,000 [41.02]
Net Sensible Capacity Btu [kW]	88,800 [26.02]	88,800 [26.02]	88,800 [26.02]	99,500 [29.15]
Net Latent Capacity Btu [kW]	29,200 [8.56]	29,200 [8.56]	29,200 [8.56]	40,500 [11.87]
IEER <sup>3</sup> Latent (Standard / VFD)	11.9/14.4	11.9	11.9	10.8/13.5
Net System Power kW	10.49	10.49	10.49	12.73
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]	112,500/225,000 [32.96/65.92]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]	91,125/182,250 [26.7/53.4]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	15-45 [8.3-25] / 15-45 [8.3-25]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	9	9	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.75 [19]	0.75 [19]	0.5 [12.7]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	Rifled	Rifled	Rifled	MicroChannel
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	1 [25.4]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
	2 / 22 [9]	2 / 22 [9]	2 / 22 [9]	2 / 23 [9]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
	3 / 18 [7]	3 / 18 [7]	3 / 18 [7]	4 / 15 [6]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
No. Used/Diameter in. [mm]	Propeller	Propeller	Propeller	Propeller
Drive Type/No. Speeds	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
CFM [L/s]	Direct/1	Direct/1	Direct/1	Direct/1
No. Motors/HP	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
Motor RPM	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/2 HP
	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
Drive Type	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
No. Speeds (Standard / VFD)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Motors	Single / Multiple	Single	Single	Single / Multiple
Motor HP	1	1	1	1
Motor RPM	3	2	3	3
Motor Frame Size	1725	1725	1725	1725
	56	56	56	56
<b>Filter—Type</b>				
Furnished	Disposable	Disposable	Disposable	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes	Yes	Yes	Yes
	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	147.2/152 [4173/4309]
<b>Weights</b>				
Net Weight lbs. [kg]	1145 [519]	1148 [521]	1145 [519]	1266 [574]
Ship Weight lbs. [kg]	1149 [521]	1149 [521]	1149 [521]	1303 [591]

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[ ] Designates Metric Conversions

## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series Model RKNL- Series (with VFD)	C151CL25E H151CR25E	C151CM15E H151CS15E	C151CM25E H151CS25E	C151DL15E H151DR15E
<b>Cooling Performance<sup>1</sup></b>				<b>CONTINUED</b> →
Gross Cooling Capacity Btu [kW]	146,000 [42.78]	146,000 [42.78]	146,000 [42.78]	146,000 [42.78]
EER/SEER <sup>2</sup>	10.8/NA	10.8/NA	10.8/NA	10.8/NA
Nominal CFM/AHRI Rated CFM [L/s]	5000/4225 [2360/1994]	5000/4225 [2360/1994]	5000/4225 [2360/1994]	5000/4225 [2360/1994]
AHRI Net Cooling Capacity Btu [kW]	140,000 [41.02]	140,000 [41.02]	140,000 [41.02]	140,000 [41.02]
Net Sensible Capacity Btu [kW]	99,500 [29.15]	99,500 [29.15]	99,500 [29.15]	99,500 [29.15]
Net Latent Capacity Btu [kW]	40,500 [11.87]	40,500 [11.87]	40,500 [11.87]	40,500 [11.87]
IEER <sup>3</sup> Latent (Standard / VFD)	10.8/13.5	10.8/13.5	10.8/13.5	10.8/13.5
Net System Power kW	12.73	12.73	12.73	12.73
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	126,000/252,000 [36.92/73.84]	75,000/150,000 [21.97/43.95]	126,000/252,000 [36.92/73.84]	75,000/150,000 [21.97/43.95]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	102,000/204,000 [29.89/59.77]	60,750/121,500 [17.8/35.6]	102,000/204,000 [29.89/59.77]	60,750/121,500 [17.8/35.6]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	15-45 [8.3-25] / 15-45 [8.3-25]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	15-45 [8.3-25] / 15-45 [8.3-25]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	6	9	6
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.5 [12.7]	0.75 [19]	0.5 [12.7]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	MicroChannel	MicroChannel	MicroChannel	MicroChannel
Face Area sq. ft. [sq. m]	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
	2 / 23 [9]	2 / 23 [9]	2 / 23 [9]	2 / 23 [9]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
	4 / 15 [6]	4 / 15 [6]	4 / 15 [6]	4 / 15 [6]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
No. Used/Diameter in. [mm]	Propeller	Propeller	Propeller	Propeller
Drive Type/No. Speeds	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
CFM [L/s]	Direct/1	Direct/1	Direct/1	Direct/1
No. Motors/HP	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
Motor RPM	2 at 1/2 HP	2 at 1/2 HP	2 at 1/2 HP	2 at 1/2 HP
	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
Drive Type	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
No. Speeds (Standard / VFD)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Motors	Single / Multiple	Single / Multiple	Single / Multiple	Single / Multiple
Motor HP	1	1	1	1
Motor RPM	3	5	5	3
Motor Frame Size	1725	1725	1725	1725
	56	184	184	56
<b>Filter—Type</b>				
Furnished	Disposable	Disposable	Disposable	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes	Yes	Yes	Yes
	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	147.2/152 [4173/4309]	147.2/152 [4173/4309]	147.2/152 [4173/4309]	147.2/152 [4173/4309]
<b>Weights</b>				
Net Weight lbs. [kg]	1266 [574]	1238 [562]	1265 [574]	1230 [558]
Ship Weight lbs. [kg]	1267 [575]	1267 [575]	1267 [575]	1267 [575]

See Page 26 for Notes.

[ ] Designates Metric Conversions

## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series	C151DL25E	C151DM15E	C151DM25E	C151YL25E
Model RKNL- Series (with VFD)	H151DR25E	H151DS15E	H151DS25E	
<b>Cooling Performance<sup>1</sup></b>				
Gross Cooling Capacity Btu [kW]	146,000 [42.78]	146,000 [42.78]	146,000 [42.78]	146,000 [42.78]
EER/SEER <sup>2</sup>	10.8/NA	10.8/NA	10.8/NA	10.8/NA
Nominal CFM/AHRI Rated CFM [L/s]	5000/4225 [2360/1994]	5000/4225 [2360/1994]	5000/4225 [2360/1994]	5000/4225 [2360/1994]
AHRI Net Cooling Capacity Btu [kW]	140,000 [41.02]	140,000 [41.02]	140,000 [41.02]	140,000 [41.02]
Net Sensible Capacity Btu [kW]	99,500 [29.15]	99,500 [29.15]	99,500 [29.15]	99,500 [29.15]
Net Latent Capacity Btu [kW]	40,500 [11.87]	40,500 [11.87]	40,500 [11.87]	40,500 [11.87]
IEER <sup>3</sup> Latent (Standard / VFD)	10.8/13.5	10.8/13.5	10.8/13.5	10.8
Net System Power kW	12.73	12.73	12.73	12.73
<b>Heating Performance (Gas)<sup>4</sup></b>				
Heating Input Btu [kW] (1st Stage / 2nd Stage)	126,000/252,000 [36.92/73.84]	75,000/150,000 [21.97/43.95]	126,000/252,000 [36.92/73.84]	126,000/252,000 [36.92/73.84]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	102,000/204,000 [29.89/59.77]	60,750/121,500 [17.8/35.6]	102,000/204,000 [29.89/59.77]	102,000/204,000 [29.89/59.77]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	15-45 [8.3-25] / 15-45 [8.3-25]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]	25-55 [13.9-30.6] / 25-55 [13.9-30.6]
Steady State Efficiency (%)	81	81	81	81
No. Burners	9	6	9	9
No. Stages	2	2	2	2
Gas Connection Pipe Size in. [mm]	0.75 [19]	0.5 [12.7]	0.75 [19]	0.75 [19]
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	MicroChannel	MicroChannel	MicroChannel	MicroChannel
Face Area sq. ft. [sq. m]	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Rows / FPI [FPcm]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
	2 / 23 [9]	2 / 23 [9]	2 / 23 [9]	2 / 23 [9]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm]	Rifled	Rifled	Rifled	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
	4 / 15 [6]	4 / 15 [6]	4 / 15 [6]	4 / 15 [6]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
No. Used/Diameter in. [mm]	Propeller	Propeller	Propeller	Propeller
Drive Type/No. Speeds	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
CFM [L/s]	Direct/1	Direct/1	Direct/1	Direct/1
No. Motors/HP	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
Motor RPM	2 at 1/2 HP	2 at 1/2 HP	2 at 1/2 HP	2 at 1/2 HP
	1075	1075	1075	1075
<b>Indoor Fan—Type</b>				
No. Used/Diameter in. [mm]	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
Drive Type	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
No. Speeds (Standard / VFD)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Motors	Single / Multiple	Single / Multiple	Single / Multiple	Single
Motor HP	1	1	1	1
Motor RPM	3	5	5	3
Motor Frame Size	1725	1725	1725	1725
	56	184	184	56
<b>Filter—Type</b>				
Furnished	Disposable	Disposable	Disposable	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes	Yes	Yes	Yes
	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	147.2/152 [4173/4309]	147.2/152 [4173/4309]	147.2/152 [4173/4309]	147.2/152 [4173/4309]
<b>Weights</b>				
Net Weight lbs. [kg]	1266 [574]	1238 [562]	1265 [574]	1265 [574]
Ship Weight lbs. [kg]	1267 [575]	1267 [575]	1267 [575]	1267 [575]

**CONTINUED** →

See Page 26 for Notes.

[ ] Designates Metric Conversions





## NOM. SIZES 6-12.5 TONS [21.1-44.0 kW] ASHRAE 90.1-2007 COMPLIANT MODELS

Model RKNL- Series	C151YM25E
<b>Model RKNL- Series (with VFD)</b>	
<b>Cooling Performance<sup>1</sup></b>	
Gross Cooling Capacity Btu [kW]	146,000 [42.78]
EER/SEER <sup>2</sup>	10.8/NA
Nominal CFM/AHRI Rated CFM [L/s]	5000/4225 [2360/1994]
AHRI Net Cooling Capacity Btu [kW]	140,000 [41.02]
Net Sensible Capacity Btu [kW]	99,500 [29.15]
Net Latent Capacity Btu [kW]	40,500 [11.87]
IEER <sup>3</sup> Latent (Standard / VFD)	10.8
Net System Power kW	12.73
<b>Heating Performance (Gas)<sup>4</sup></b>	
Heating Input Btu [kW] (1st Stage / 2nd Stage)	126,000/252,000 [36.92/73.84]
Heating Output Btu [kW] (1st Stage / 2nd Stage)	102,000/204,000 [29.89/59.77]
Temperature Rise Range °F [°C] (1st Stage / 2nd Stage)	25-55 [13.9-30.6] / 25-55 [13.9-30.6]
Steady State Efficiency (%)	81
No. Burners	9
No. Stages	2
Gas Connection Pipe Size in. [mm]	0.75 [19]
<b>Compressor</b>	
No./Type	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>5</sup></b>	
	88
<b>Outdoor Coil—Fin Type</b>	
Tube Type	Louvered
Tube Size in. [mm] OD	MicroChannel
Face Area sq. ft. [sq. m]	1 [25.4]
Rows / FPI [FPcm]	27 [2.51]
	2 / 23 [9]
<b>Indoor Coil—Fin Type</b>	
Tube Type	Louvered
Tube Size in. [mm]	Rifled
Face Area sq. ft. [sq. m]	0.375 [9.5]
Rows / FPI [FPcm]	13.5 [1.25]
Refrigerant Control	4 / 15 [6]
Drain Connection No./Size in. [mm]	TX Valves
	1/1 [25.4]
<b>Outdoor Fan—Type</b>	
No. Used/Diameter in. [mm]	Propeller
Drive Type/No. Speeds	2/24 [609.6]
CFM [L/s]	Direct/1
No. Motors/HP	8000 [3775]
Motor RPM	2 at 1/2 HP
	1075
<b>Indoor Fan—Type</b>	
No. Used/Diameter in. [mm]	FC Centrifugal
Drive Type	1/15x15 [381x381]
No. Speeds (Standard / VFD)	Belt (Adjustable)
No. Motors	Single
Motor HP	1
Motor RPM	5
Motor Frame Size	1725
	184
<b>Filter—Type</b>	
Furnished	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes
	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>	
	147.2/152 [4173/4309]
<b>Weights</b>	
Net Weight lbs. [kg]	1265 [574]
Ship Weight lbs. [kg]	1267 [575]

See Page 26 for Notes.

[ ] Designates Metric Conversions

## NOTES:

1. Cooling Performance is rated at 95° F ambient, 80° F entering dry bulb, 67° F entering wet bulb. Gross capacity does not include the effect of fan motor heat. AHRI capacity is net and includes the effect of fan motor heat. Units are suitable for operation to  $\pm 20\%$  of nominal cfm. Units are certified in accordance with the Unitary Air Conditioner Equipment certification program, which is based on AHRI Standard 340/360.
2. EER and/or SEER are rated at AHRI conditions and in accordance with DOE test procedures.
3. Integrated Energy Efficiency Ratio (IEER) is rated in accordance with AHRI Standard 340/360.
4. Heating Performance limit settings and rating data were established and approved under laboratory test conditions using American National Standard Institute standards. Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet, ratings should be reduced at the rate of 4% for each 1000 feet above sea level.
5. Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.



## GROSS SYSTEMS PERFORMANCE DATA—C073

		ENTERING INDOOR AIR @ 80°F [26.7°C] dbE ①									
		wbE	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]		
		CFM [L/s]	2790 [1317]	2325 [1097]	1860 [878]	2790 [1317]	2325 [1097]	1860 [878]	2790 [1317]	2325 [1097]	1860 [878]
		DR ①	.06	.01	.15	.06	.01	.15	.06	.01	.15
OUTDOOR DRY BULB TEMPERATURE °F [°C]	75 [23.9]	Total BTUH [kW]	92.8 [27.2]	89.5 [26.2]	86.3 [25.3]	86.4 [25.3]	83.4 [24.4]	80.3 [23.5]	81.8 [24.0]	78.9 [23.1]	76.1 [22.3]
		Sens BTUH [kW]	58.8 [17.2]	50.5 [14.8]	42.9 [12.6]	67.9 [19.9]	59.1 [17.3]	50.8 [14.9]	75.4 [22.1]	66.1 [19.4]	57.4 [16.8]
		Power	4.7	4.6	4.5	4.6	4.5	4.5	4.6	4.5	4.4
	80 [26.7]	Total BTUH [kW]	90.8 [26.6]	87.6 [25.7]	84.4 [24.7]	84.4 [24.7]	81.4 [23.8]	78.5 [23.0]	79.8 [23.4]	77.0 [22.6]	74.2 [21.7]
		Sens BTUH [kW]	58.1 [17.0]	49.9 [14.6]	42.3 [12.4]	67.0 [19.6]	58.3 [17.1]	50.2 [14.7]	74.7 [21.9]	65.5 [19.2]	56.8 [16.6]
		Power	4.9	4.8	4.7	4.9	4.8	4.7	4.8	4.7	4.7
	85 [29.4]	Total BTUH [kW]	88.6 [26.0]	85.5 [25.1]	82.4 [24.1]	82.2 [24.1]	79.4 [23.3]	76.5 [22.4]	77.7 [22.8]	74.9 [21.9]	72.2 [21.2]
		Sens BTUH [kW]	57.0 [16.7]	49.0 [14.4]	41.6 [12.2]	66.0 [19.3]	57.6 [16.9]	49.6 [14.5]	73.7 [21.6]	64.6 [18.9]	56.1 [16.4]
		Power	5.2	5.1	5.0	5.1	5.1	5.0	5.1	5.0	4.9
	90 [32.2]	Total BTUH [kW]	86.3 [25.3]	83.2 [24.4]	80.2 [23.5]	79.9 [23.4]	77.1 [22.6]	74.3 [21.8]	75.3 [22.1]	72.7 [21.3]	70.0 [20.5]
Sens BTUH [kW]		55.9 [16.4]	48.0 [14.1]	40.8 [12.0]	64.9 [19.0]	56.6 [16.6]	48.8 [14.3]	72.5 [21.2]	63.7 [18.7]	55.3 [16.2]	
Power		5.5	5.4	5.3	5.4	5.3	5.2	5.4	5.3	5.2	
95 [35]	Total BTUH [kW]	83.7 [24.5]	80.8 [23.7]	77.9 [22.8]	77.4 [22.7]	74.7 [21.9]	71.9 [21.1]	72.8 [21.3]	70.2 [20.6]	67.7 [19.8]	
	Sens BTUH [kW]	54.4 [15.9]	46.9 [13.7]	39.9 [11.7]	63.6 [18.6]	55.5 [16.3]	47.8 [14.0]	71.2 [20.9]	62.5 [18.3]	54.4 [15.9]	
	Power	5.8	5.7	5.6	5.7	5.6	5.5	5.7	5.6	5.5	
100 [37.8]	Total BTUH [kW]	81.0 [23.7]	78.2 [22.9]	75.4 [22.1]	74.7 [21.9]	72.1 [21.1]	69.4 [20.3]	70.1 [20.5]	67.6 [19.8]	65.2 [19.1]	
	Sens BTUH [kW]	52.9 [15.5]	45.6 [13.4]	38.8 [11.4]	62.1 [18.2]	54.2 [15.9]	46.7 [13.7]	69.6 [20.4]	61.2 [17.9]	53.3 [15.6]	
	Power	6.1	6.0	5.9	6.1	6.0	5.9	6.0	5.9	5.8	
105 [40.6]	Total BTUH [kW]	78.2 [22.9]	75.4 [22.1]	72.7 [21.3]	71.8 [21.0]	69.3 [20.3]	66.8 [19.6]	67.2 [19.7]	64.8 [19.0]	62.5 [18.3]	
	Sens BTUH [kW]	51.3 [15.0]	44.1 [12.9]	37.5 [11.0]	60.2 [17.6]	52.6 [15.4]	45.4 [13.3]	67.2 [19.7]	59.7 [17.5]	52.0 [15.2]	
	Power	6.5	6.4	6.2	6.4	6.3	6.2	6.4	6.3	6.2	
110 [43.3]	Total BTUH [kW]	75.1 [22.0]	72.5 [21.2]	69.8 [20.5]	68.7 [20.1]	66.3 [19.4]	63.9 [18.7]	64.2 [18.8]	61.9 [18.1]	59.6 [17.5]	
	Sens BTUH [kW]	49.2 [14.4]	42.4 [12.4]	36.0 [10.5]	58.3 [17.1]	50.9 [14.9]	44.0 [12.9]	64.2 [18.8]	58.0 [17.0]	50.5 [14.8]	
	Power	6.8	6.7	6.6	6.8	6.7	6.6	6.8	6.6	6.5	
115 [46.1]	Total BTUH [kW]	71.9 [21.1]	69.3 [20.3]	66.8 [19.6]	65.5 [19.2]	63.2 [18.5]	60.9 [17.8]	60.9 [17.8]	58.8 [17.2]	56.6 [16.6]	
	Sens BTUH [kW]	47.1 [13.8]	40.5 [11.9]	34.5 [10.1]	56.2 [16.5]	49.1 [14.4]	42.4 [12.4]	60.9 [17.8]	56.2 [16.5]	49.0 [14.4]	
	Power	7.2	7.1	7.0	7.2	7.1	6.9	7.1	7.0	6.9	

## GROSS SYSTEMS PERFORMANCE DATA—C/H090

		ENTERING INDOOR AIR @ 80°F [26.7°C] dbE ①									
		wbE	71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]		
		CFM [L/s]	3600 [1699]	2775 [1310]	2400 [1133]	3600 [1699]	2775 [1310]	2400 [1133]	3600 [1699]	2775 [1310]	2400 [1133]
		DR ①	.06	.13	.17	.06	.13	.17	.06	.13	.17
OUTDOOR DRY BULB TEMPERATURE °F [°C]	75 [23.9]	Total BTUH [kW]	111.2 [32.6]	105.5 [30.9]	102.9 [30.2]	107.2 [31.4]	101.7 [29.8]	99.2 [29.1]	101.3 [29.7]	96.1 [28.2]	93.8 [27.5]
		Sens BTUH [kW]	68.2 [20.0]	54.2 [15.9]	48.3 [14.2]	84.6 [24.8]	68.8 [20.2]	62.1 [18.2]	93.5 [27.4]	76.9 [22.5]	69.9 [20.5]
		Power	5.8	5.6	5.6	5.7	5.6	5.5	5.7	5.5	5.4
	80 [26.7]	Total BTUH [kW]	109.7 [32.1]	104.0 [30.5]	101.5 [29.7]	105.7 [31.0]	100.3 [29.4]	97.8 [28.7]	99.8 [29.2]	94.7 [27.8]	92.3 [27.1]
		Sens BTUH [kW]	68.3 [20.0]	54.3 [15.9]	48.5 [14.2]	84.6 [24.8]	68.9 [20.2]	62.2 [18.2]	93.5 [27.4]	77.0 [22.6]	69.9 [20.5]
		Power	6.1	6.0	5.9	6.0	5.9	5.8	6.0	5.8	5.8
	85 [29.4]	Total BTUH [kW]	107.7 [31.6]	102.2 [30.0]	99.7 [29.2]	103.7 [30.4]	98.4 [28.8]	96.0 [28.1]	97.8 [28.7]	92.8 [27.2]	90.5 [26.5]
		Sens BTUH [kW]	67.8 [19.9]	54.0 [15.8]	48.3 [14.2]	84.0 [24.6]	68.5 [20.1]	61.9 [18.2]	92.9 [27.2]	76.6 [22.5]	69.6 [20.4]
		Power	6.5	6.3	6.2	6.4	6.2	6.2	6.3	6.2	6.1
	90 [32.2]	Total BTUH [kW]	105.3 [30.9]	99.9 [29.3]	97.5 [28.6]	101.4 [29.7]	96.2 [28.2]	93.8 [27.5]	95.4 [28.0]	90.5 [26.5]	88.3 [25.9]
Sens BTUH [kW]		66.6 [19.5]	53.1 [15.6]	47.5 [13.9]	83.1 [24.4]	67.8 [19.9]	61.3 [18.0]	91.9 [26.9]	75.8 [22.2]	69.0 [20.2]	
Power		6.8	6.7	6.6	6.8	6.6	6.5	6.7	6.5	6.4	
95 [35]	Total BTUH [kW]	102.5 [30.0]	97.3 [28.5]	94.9 [27.8]	98.5 [28.9]	93.5 [27.4]	91.2 [26.7]	92.6 [27.1]	87.9 [25.8]	85.7 [25.1]	
	Sens BTUH [kW]	65.1 [19.1]	52.0 [15.2]	46.5 [13.6]	81.5 [23.9]	66.6 [19.5]	60.2 [17.7]	90.4 [26.5]	74.7 [21.9]	67.9 [19.9]	
	Power	7.2	7.0	6.9	7.2	7.0	6.9	7.1	6.9	6.8	
100 [37.8]	Total BTUH [kW]	99.3 [29.1]	94.2 [27.6]	91.9 [26.9]	95.3 [27.9]	90.4 [26.5]	88.2 [25.8]	89.4 [26.2]	84.8 [24.9]	82.7 [24.2]	
	Sens BTUH [kW]	63.2 [18.5]	50.4 [14.8]	45.1 [13.2]	79.6 [23.3]	65.0 [19.1]	58.8 [17.2]	88.4 [25.9]	73.0 [21.4]	66.4 [19.5]	
	Power	7.6	7.4	7.3	7.6	7.4	7.3	7.5	7.3	7.2	
105 [40.6]	Total BTUH [kW]	95.6 [28.0]	90.7 [26.6]	88.5 [25.9]	91.6 [26.8]	86.9 [25.5]	84.8 [24.9]	85.7 [25.1]	81.3 [23.8]	79.3 [23.2]	
	Sens BTUH [kW]	60.6 [17.8]	48.3 [14.2]	43.2 [12.7]	77.0 [22.6]	62.9 [18.4]	57.0 [16.7]	85.7 [25.1]	71.0 [20.8]	64.6 [18.9]	
	Power	8.1	7.9	7.8	8.0	7.8	7.7	7.9	7.7	7.6	
110 [43.3]	Total BTUH [kW]	91.5 [26.8]	86.8 [25.4]	84.7 [24.8]	87.5 [25.6]	83.0 [24.3]	81.0 [23.7]	81.6 [23.9]	77.4 [22.7]	75.5 [22.1]	
	Sens BTUH [kW]	57.6 [16.9]	45.9 [13.5]	41.0 [12.0]	73.9 [21.7]	60.4 [17.7]	54.7 [16.0]	81.6 [23.9]	68.5 [20.1]	62.4 [18.3]	
	Power	8.5	8.3	8.2	8.4	8.2	8.1	8.4	8.2	8.1	
115 [46.1]	Total BTUH [kW]	87.0 [25.5]	82.5 [24.2]	80.5 [23.6]	83.0 [24.3]	78.7 [23.1]	76.8 [22.5]	77.1 [22.6]	73.1 [21.4]	71.3 [20.9]	
	Sens BTUH [kW]	54.1 [15.9]	43.0 [12.6]	38.4 [11.3]	70.5 [20.7]	57.6 [16.9]	52.2 [15.3]	77.1 [22.6]	65.7 [19.3]	59.9 [17.6]	
	Power	9.0	8.8	8.6	8.9	8.7	8.6	8.8	8.6	8.5	

DR —Depression ratio  
dbE—Entering air dry bulb  
wbE—Entering air wet bulb

Total —Total capacity x 1000 BTUH  
Sens —Sensible capacity x 1000 BTUH  
Power —KW input

NOTES: ① When the entering air dry bulb is other than 80°F [27°C], adjust the sensible capacity from the table by adding [1.10 x CFM x (1 - DR) x (dbE - 80)].

[ ] Designates Metric Conversions



## GROSS SYSTEMS PERFORMANCE DATA—C/H102

		ENTERING INDOOR AIR @ 80°F [26.7°C] dbE ①									
wbE		71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			
CFM [L/s]		4100 [6035]	3200 [1510]	2700 [1274]	4100 [6035]	3200 [1510]	2700 [1274]	4100 [6035]	3200 [1510]	2700 [1274]	
DR ①		0	.05	.08	0	.05	.08	0	.05	.08	
OUTDOOR DRY BULB TEMPERATURE °F [°C]	75 [23.9]	Total BTUH [kW] Sens BTUH [kW] Power	113.8 [33.4] 69.9 [20.5] 6.4	108.3 [31.7] 56.3 [16.5] 6.3	105.2 [30.8] 49.3 [14.5] 6.2	110.1 [32.3] 91.3 [26.8] 6.3	104.7 [30.7] 75.3 [22.1] 6.2	101.7 [29.8] 67.0 [19.6] 6.1	105.0 [30.8] 103.1 [30.2] 6.2	99.9 [29.3] 86.0 [25.2] 6.1	97.0 [28.4] 77.0 [22.6] 6.0
	80 [26.7]	Total BTUH [kW] Sens BTUH [kW] Power	113.7 [33.3] 71.7 [21.0] 6.7	108.2 [31.7] 57.9 [17.0] 6.6	105.1 [30.8] 50.8 [14.9] 6.5	110.0 [32.2] 93.1 [27.3] 6.7	104.6 [30.7] 76.9 [22.5] 6.5	101.7 [29.8] 68.6 [20.1] 6.4	104.9 [30.7] 104.9 [30.8] 6.6	99.8 [29.2] 87.6 [25.7] 6.4	96.9 [28.4] 78.5 [23.0] 6.3
	85 [29.4]	Total BTUH [kW] Sens BTUH [kW] Power	112.9 [33.1] 72.6 [21.3] 7.1	107.5 [31.5] 58.8 [17.2] 6.9	104.4 [30.6] 51.6 [15.1] 6.8	109.2 [32.0] 94.0 [27.6] 7.0	103.9 [30.5] 77.8 [22.8] 6.8	101.0 [29.6] 69.4 [20.3] 6.7	104.1 [30.5] 104.1 [30.5] 6.9	99.1 [29.0] 88.5 [25.9] 6.7	96.2 [28.2] 79.4 [23.3] 6.7
	90 [32.2]	Total BTUH [kW] Sens BTUH [kW] Power	111.5 [32.7] 72.9 [21.4] 7.4	106.1 [31.1] 59.0 [17.3] 7.3	103.1 [30.2] 51.9 [15.2] 7.2	107.8 [31.6] 94.2 [27.6] 7.4	102.5 [30.0] 78.0 [22.9] 7.2	99.6 [29.2] 69.6 [20.4] 7.1	102.7 [30.1] 102.7 [30.1] 7.3	97.7 [28.6] 88.7 [26.0] 7.1	94.9 [27.8] 79.6 [23.3] 7.0
	95 [35]	Total BTUH [kW] Sens BTUH [kW] Power	109.4 [32.1] 72.2 [21.2] 7.8	104.1 [30.5] 58.5 [17.2] 7.6	101.1 [29.6] 51.5 [15.1] 7.5	105.7 [31.0] 93.6 [27.4] 7.7	100.5 [29.5] 77.5 [22.7] 7.6	97.7 [28.6] 69.3 [20.3] 7.4	100.6 [29.5] 100.6 [29.5] 7.7	95.7 [28.0] 88.2 [25.9] 7.5	93.0 [27.3] 79.3 [23.3] 7.4
	100 [37.8]	Total BTUH [kW] Sens BTUH [kW] Power	106.6 [31.2] 70.7 [20.7] 8.2	101.4 [29.7] 57.3 [16.8] 8.0	98.6 [28.9] 50.5 [14.8] 7.9	102.9 [30.2] 92.1 [27.0] 8.1	97.9 [28.7] 76.4 [22.4] 8.0	95.1 [27.9] 68.2 [20.0] 7.8	97.8 [28.7] 97.8 [28.7] 8.1	93.0 [27.3] 87.0 [25.5] 7.9	90.4 [26.5] 78.2 [22.9] 7.8
	105 [40.6]	Total BTUH [kW] Sens BTUH [kW] Power	103.2 [30.2] 68.4 [20.1] 8.7	98.1 [28.8] 55.4 [16.2] 8.4	95.4 [28.0] 48.9 [14.3] 8.3	99.4 [29.1] 89.7 [26.3] 8.6	94.6 [27.7] 74.5 [21.8] 8.4	91.9 [26.9] 66.6 [19.5] 8.2	94.3 [27.6] 94.3 [27.6] 8.5	89.8 [26.3] 85.2 [25.0] 8.3	87.2 [25.6] 76.6 [22.5] 8.2
	110 [43.3]	Total BTUH [kW] Sens BTUH [kW] Power	99.0 [29.0] 65.2 [19.1] 9.1	94.2 [27.6] 52.8 [15.5] 8.9	91.5 [26.8] 46.4 [13.6] 8.8	95.3 [27.9] 86.7 [25.4] 9.0	90.7 [26.6] 72.0 [21.1] 8.8	88.1 [25.8] 64.3 [18.9] 8.7	90.2 [26.4] 90.2 [26.4] 8.9	85.8 [25.1] 82.5 [24.2] 8.7	83.4 [24.4] 74.3 [21.8] 8.6
	115 [46.1]	Total BTUH [kW] Sens BTUH [kW] Power	94.2 [27.6] 61.3 [18.0] 9.6	89.6 [26.3] 49.6 [14.5] 9.3	87.1 [25.5] 43.7 [12.8] 9.2	90.5 [26.5] 82.7 [24.2] 9.5	86.1 [25.2] 68.7 [20.1] 9.3	83.7 [24.5] 61.5 [18.0] 9.1	85.4 [25.0] 85.4 [25.0] 9.4	81.3 [23.8] 79.4 [23.3] 9.2	78.9 [23.1] 71.4 [20.9] 9.1

## GROSS SYSTEMS PERFORMANCE DATA—C/H120

		ENTERING INDOOR AIR @ 80°F [26.7°C] dbE ①									
wbE		71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			
CFM [L/s]		4800 [2265]	3750 [1770]	3200 [1510]	4800 [2265]	3750 [1770]	3200 [1510]	4800 [2265]	3750 [1770]	3200 [1510]	
DR ①		0	.03	.07	0	.03	.07	0	.03	.07	
OUTDOOR DRY BULB TEMPERATURE °F [°C]	75 [23.9]	Total BTUH [kW] Sens BTUH [kW] Power	149.3 [43.8] 99.7 [29.2] 7.3	142.1 [41.6] 81.0 [23.7] 7.2	138.3 [40.5] 71.9 [21.1] 7.1	139.6 [40.9] 117.9 [34.6] 7.2	132.8 [38.9] 97.5 [28.6] 7.0	129.3 [37.9] 87.6 [25.7] 6.9	130.9 [38.4] 130.9 [38.4] 7.1	124.6 [36.5] 109.7 [32.2] 6.9	121.3 [35.5] 99.1 [29.1] 6.8
	80 [26.7]	Total BTUH [kW] Sens BTUH [kW] Power	147.2 [43.1] 99.2 [29.1] 7.8	140.0 [41.0] 80.5 [23.6] 7.6	136.3 [39.9] 71.5 [21.0] 7.5	137.4 [40.3] 117.1 [34.3] 7.7	130.8 [38.3] 97.0 [28.4] 7.5	127.3 [37.3] 87.1 [25.5] 7.4	128.8 [37.7] 128.8 [37.8] 7.6	122.6 [35.9] 109.3 [32.0] 7.4	119.3 [35.0] 98.7 [28.9] 7.3
	85 [29.4]	Total BTUH [kW] Sens BTUH [kW] Power	144.7 [42.4] 98.0 [28.7] 8.3	137.7 [40.4] 79.7 [23.4] 8.1	134.0 [39.3] 70.8 [20.8] 8.0	135.0 [39.6] 116.2 [34.1] 8.2	128.5 [37.7] 96.3 [28.2] 8.0	125.0 [36.6] 86.4 [25.3] 7.9	126.4 [37.0] 126.4 [37.1] 8.0	120.2 [35.2] 108.4 [31.8] 7.8	117.0 [34.3] 98.0 [28.7] 7.7
	90 [32.2]	Total BTUH [kW] Sens BTUH [kW] Power	142.0 [41.6] 96.8 [28.4] 8.8	135.1 [39.6] 78.7 [23.1] 8.6	131.5 [38.5] 70.0 [20.5] 8.5	132.3 [38.8] 114.9 [33.7] 8.7	125.9 [36.9] 95.2 [27.9] 8.5	122.5 [35.9] 85.5 [25.1] 8.4	123.6 [36.2] 123.6 [36.2] 8.6	117.7 [34.5] 107.5 [31.5] 8.4	114.5 [33.6] 97.2 [28.5] 8.3
	95 [35]	Total BTUH [kW] Sens BTUH [kW] Power	139.0 [40.7] 95.1 [27.9] 9.4	132.3 [38.8] 77.4 [22.7] 9.1	128.8 [37.7] 68.8 [20.2] 9.0	129.3 [37.9] 113.2 [33.2] 9.2	123.0 [36.0] 93.8 [27.5] 9.0	119.7 [35.1] 84.3 [24.7] 8.9	120.7 [35.4] 120.7 [35.4] 9.1	114.8 [33.6] 106.1 [31.1] 8.9	111.8 [32.8] 96.0 [28.1] 8.8
	100 [37.8]	Total BTUH [kW] Sens BTUH [kW] Power	135.8 [39.8] 93.1 [27.3] 9.9	129.2 [37.9] 75.7 [22.2] 9.7	125.7 [36.8] 67.3 [19.7] 9.6	126.0 [36.9] 111.1 [32.6] 9.8	119.9 [35.1] 92.2 [27.0] 9.6	116.7 [34.2] 82.9 [24.3] 9.5	117.4 [34.4] 117.4 [34.4] 9.7	111.7 [32.7] 104.4 [30.6] 9.5	108.7 [31.9] 94.5 [27.7] 9.3
	105 [40.6]	Total BTUH [kW] Sens BTUH [kW] Power	132.2 [38.7] 90.7 [26.6] 10.6	125.8 [36.9] 73.8 [21.6] 10.3	122.5 [35.9] 65.7 [19.3] 10.2	122.5 [35.9] 108.8 [31.9] 10.4	116.5 [34.1] 90.2 [26.4] 10.2	113.4 [33.2] 81.1 [23.8] 10.1	113.8 [33.4] 113.8 [33.4] 10.3	108.3 [31.7] 102.5 [30.0] 10.1	105.4 [30.9] 92.8 [27.2] 9.9
	110 [43.3]	Total BTUH [kW] Sens BTUH [kW] Power	128.4 [37.6] 88.0 [25.8] 11.2	122.2 [35.8] 71.6 [21.0] 10.9	118.9 [34.8] 63.6 [18.6] 10.8	118.7 [34.8] 106.2 [31.1] 11.1	112.9 [33.1] 88.1 [25.8] 10.8	109.9 [32.2] 79.3 [23.3] 10.7	110.0 [32.2] 110.0 [32.2] 11.0	104.7 [30.7] 100.3 [29.4] 10.7	101.9 [29.9] 90.8 [26.6] 10.6
	115 [46.1]	Total BTUH [kW] Sens BTUH [kW] Power	124.3 [36.4] 85.0 [24.9] 11.9	118.3 [34.7] 69.2 [20.3] 11.6	115.1 [33.7] 61.5 [18.0] 11.4	114.6 [33.6] 103.1 [30.2] 11.7	109.0 [31.9] 85.6 [25.1] 11.5	106.1 [31.1] 77.0 [22.6] 11.3	105.9 [31.0] 105.9 [31.0] 11.6	100.8 [29.5] 97.9 [28.7] 11.3	98.1 [28.8] 88.7 [26.0] 11.2

DR —Depression ratio  
dbE —Entering air dry bulb  
wbE —Entering air wet bulb

Total —Total capacity x 1000 BTUH  
Sens —Sensible capacity x 1000 BTUH  
Power —kW input

NOTES: ① When the entering air dry bulb is other than 80°F [27°C], adjust the sensible capacity from the table by adding  $[1.10 \times \text{CFM} \times (1 - \text{DR}) \times (\text{dbE} - 80)]$ .

[ ] Designates Metric Conversions



# GROSS SYSTEMS PERFORMANCE DATA—C/H151

ENTERING INDOOR AIR @ 80°F [26.7°C] ①											
wbE		71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			
CFM [L/s]		5800 [2737]	4225 [1994]	3800 [1793]	5800 [2737]	4225 [1994]	3800 [1793]	5800 [2737]	4225 [1994]	3800 [1793]	
DR ①		0	.03	.06	0	.03	.06	0	.03	.06	
OUTDOOR DRY BULB TEMPERATURE °F [°C]	75 [23.9]	Total BTUH [kW] Sens BTUH [kW] Power	196.8 [57.7] 135.5 [39.7] 10.2	184.4 [54.0] 103.0 [30.2] 9.9	181.0 [53.0] 94.9 [27.8] 9.8	186.8 [54.7] 156.7 [45.9] 10.0	175.0 [51.3] 121.7 [35.7] 9.7	171.8 [50.3] 112.9 [33.1] 9.6	178.6 [52.3] 177.9 [52.1] 9.7	167.3 [49.0] 140.2 [41.1] 9.4	164.2 [48.1] 130.7 [38.3] 9.3
	80 [26.7]	Total BTUH [kW] Sens BTUH [kW] Power	192.1 [56.3] 132.7 [38.9] 10.7	179.9 [52.7] 100.8 [29.6] 10.3	176.6 [51.8] 92.9 [27.2] 10.3	182.1 [53.4] 153.9 [45.1] 10.5	170.6 [50.0] 119.6 [35.1] 10.1	167.4 [49.1] 110.9 [32.5] 10.0	173.9 [51.0] 173.9 [51.0] 10.2	162.9 [47.7] 138.2 [40.5] 9.9	159.9 [46.9] 128.9 [37.8] 9.8
	85 [29.4]	Total BTUH [kW] Sens BTUH [kW] Power	187.2 [54.9] 129.7 [38.0] 11.2	175.3 [51.4] 98.6 [28.9] 10.9	172.1 [50.4] 90.9 [26.7] 10.8	177.2 [51.9] 151.1 [44.3] 11.0	166.0 [48.6] 117.5 [34.4] 10.6	162.9 [47.7] 109.0 [32.0] 10.5	169.0 [49.5] 169.0 [49.5] 10.7	158.3 [46.4] 136.0 [39.9] 10.4	155.4 [45.5] 126.9 [37.2] 10.3
	90 [32.2]	Total BTUH [kW] Sens BTUH [kW] Power	182.1 [53.4] 126.8 [37.2] 11.8	170.5 [50.0] 96.4 [28.3] 11.4	167.4 [49.1] 88.9 [26.1] 11.3	172.1 [50.4] 148.0 [43.4] 11.5	161.2 [47.2] 115.2 [33.8] 11.2	158.2 [46.4] 106.9 [31.3] 11.1	163.9 [48.0] 163.9 [48.0] 11.3	153.5 [45.0] 133.7 [39.2] 10.9	150.7 [44.2] 124.8 [36.6] 10.8
	95 [35]	Total BTUH [kW] Sens BTUH [kW] Power	176.8 [51.8] 123.6 [36.2] 12.3	165.6 [48.5] 94.1 [27.6] 11.9	162.5 [47.6] 86.7 [25.4] 11.8	166.8 [48.9] 144.9 [42.5] 12.1	156.2 [45.8] 112.8 [33.1] 11.7	153.3 [44.9] 104.7 [30.7] 11.6	158.6 [46.5] 158.6 [46.5] 11.9	148.5 [43.5] 131.3 [38.5] 11.5	145.8 [42.7] 122.6 [35.9] 11.4
	100 [37.8]	Total BTUH [kW] Sens BTUH [kW] Power	171.3 [50.2] 120.3 [35.3] 13.0	160.4 [47.0] 91.6 [26.9] 12.5	157.5 [46.2] 84.5 [24.8] 12.4	161.3 [47.3] 141.6 [41.5] 12.7	151.0 [44.3] 110.3 [32.3] 12.3	148.3 [43.5] 102.5 [30.0] 12.2	153.1 [44.9] 153.1 [44.9] 12.5	143.3 [42.0] 128.8 [37.8] 12.1	140.7 [41.2] 120.3 [35.3] 12.0
	105 [40.6]	Total BTUH [kW] Sens BTUH [kW] Power	165.6 [48.5] 116.9 [34.3] 13.6	155.1 [45.5] 89.1 [26.1] 13.2	152.2 [44.6] 82.2 [24.1] 13.0	155.6 [45.6] 138.2 [40.5] 13.4	145.7 [42.7] 107.8 [31.6] 12.9	143.0 [41.9] 100.2 [29.4] 12.8	147.4 [43.2] 147.4 [43.2] 13.1	138.0 [40.4] 126.3 [37.0] 12.7	135.5 [39.7] 118.0 [34.6] 12.6
	110 [43.3]	Total BTUH [kW] Sens BTUH [kW] Power	159.7 [46.8] 113.4 [33.2] 14.3	149.6 [43.8] 86.5 [25.4] 13.8	146.8 [43.0] 79.8 [23.4] 13.7	149.7 [43.9] 134.7 [39.5] 14.0	140.2 [41.1] 105.2 [30.8] 13.6	137.6 [40.3] 97.8 [28.7] 13.5	141.5 [41.5] 141.5 [41.5] 13.8	132.5 [38.8] 123.7 [36.3] 13.4	130.1 [38.1] 115.6 [33.9] 13.3
	115 [46.1]	Total BTUH [kW] Sens BTUH [kW] Power	153.6 [45.0] 109.8 [32.2] 15.0	143.9 [42.2] 83.8 [24.6] 14.5	141.2 [41.4] 77.3 [22.7] 14.4	143.6 [42.1] 131.0 [38.4] 14.7	134.5 [39.4] 102.5 [30.0] 14.3	132.0 [38.7] 95.3 [27.9] 14.2	135.4 [39.7] 135.4 [39.7] 14.5	126.8 [37.2] 121.0 [35.5] 14.1	124.5 [36.5] 113.1 [33.2] 13.9

DR —Depression ratio  
dbE —Entering air dry bulb  
wbE—Entering air wet bulb

Total —Total capacity x 1000 BTUH  
Sens —Sensible capacity x 1000 BTUH  
Power —KW input

NOTES: ① When the entering air dry bulb is other than 80°F [27°C], adjust the sensible capacity from the table by adding [1.10 x CFM x (1 – DR) x (dbE – 80)].

[ ] Designates Metric Conversions



# AIRFLOW PERFORMANCE—6 TON [21.1 kW]

Air Flow CFM [L/s]		External Static Pressure—Inches of Water [kPa]																											
		0.1 [0.02]		0.2 [0.05]		0.3 [0.07]		0.4 [0.10]		0.5 [0.12]		0.6 [0.15]		0.7 [0.17]		0.8 [0.20]		0.9 [0.22]		1.0 [0.25]		1.1 [0.27]		1.2 [0.30]		1.3 [0.32]		1.4 [0.35]	
		RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W
1800 [849]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1900 [897]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2000 [944]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2100 [991]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2200 [1038]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2300 [1085]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2400 [1133]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2500 [1180]	805	751	852	826	897	900	940	973	981	1046	1021	1118	1069	1188	1095	1258	1129	1327	1162	1395	1192	1462	1221	1529	1248	1594	1273	1658	—
2600 [1227]	831	813	877	890	922	967	964	1043	1005	1118	1044	1191	1081	1265	1116	1337	1149	1408	1181	1478	1211	1548	1239	1616	1265	1684	—	—	—
2700 [1274]	858	878	904	958	947	1037	989	1115	1029	1192	1067	1268	1103	1344	1137	1418	1170	1492	1201	1565	1230	1637	1257	1708	1282	1778	—	—	—
2800 [1321]	886	947	931	1029	973	1110	1014	1190	1053	1270	1091	1349	1126	1426	1160	1503	1191	1579	1221	1654	1250	1728	1276	1802	—	—	—	—	—

NOTE: L-Drive left of bold line, M-Drive right of bold line.

Drive Package	L												M											
	0	1	2	3	4	5	0	1	2	3	4	5	1.5 [1118.6]	AK66	1VP-44	1VP-50								
Motor H.P. [W]	1.5 [1118.6]												1.5 [1118.6]											
Blower Sheave	AK66												AK66											
Motor Sheave	1VP-44												1VP-50											
Turns Open	0	1	2	3	4	5	0	1	2	3	4	5	3	4	5	3	4	5						
RPM	1119	1072	1019	967	915	859	1267	1215	1163	1113	1064	1015	1163	1113	1064	1015	1163	1113	1064	1015				

- NOTES: 1. Factory sheave settings are shown in bold type.  
 2. Do not set motor sheave below minimum turns open shown.  
 3. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum E.S.P.  
 4. Drive data shown is for horizontal airflow with dry coil. Add component resistance to duct resistance to determine total E.S.P.

# AIRFLOW CORRECTION FACTORS 6 TON [21.1 kW]

ACTUAL—CFM [L/s]	1800 [849]	2000 [944]	2200 [1038]	2400 [1133]	2600 [1227]	2800 [1321]
TOTAL MBH	0.97	0.98	0.99	1.00	1.01	1.02
SENSIBLE MBH	0.91	0.94	0.97	1.00	1.02	1.05
POWER kW	0.99	0.99	0.99	1.00	1.00	1.01

- NOTES: 1. Multiply correction factor times gross performance data.  
 2. Resulting sensible capacity cannot exceed total capacity.

## [ ] Designates Metric Conversions

# COMPONENT AIR RESISTANCE, IWC 6 TON [21.1 kW]

Component	Standard Indoor Airflow—CFM [L/s]						Resistance—Inches Water [kPa]					
	1800 [849]	2000 [944]	2200 [1038]	2400 [1133]	2600 [1227]	2800 [1321]	0.031 [0.008]	0.036 [0.009]	0.041 [0.01]	0.047 [0.012]	0.051 [0.013]	0.055 [0.014]
Wet Coil	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA
Concentric Diffuser RXRN-FA65 or FA75 & Transition RXMC-CD04	DNA	DNA	DNA	DNA	DNA	DNA	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]
Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	DNA	DNA	DNA	DNA	DNA	DNA	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]
Economizer	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]
100% R.A. Damper Open	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]
Horizontal Economizer	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]
100% R.A. Damper Open	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]
Horizontal Economizer	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]
100% O.A. Damper Open	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]	0.02 [0.005]	0.03 [0.007]	0.04 [0.01]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]

NOTE: Add component resistance to duct resistance to determine total external static pressure.  
 DNA = Data not Available.

# AIRFLOW PERFORMANCE—7.5 TON [26.4 kW]

Air Flow CFM [L/s]	Capacity 7.5 Ton [26.4 kW]																			
	External Static Pressure—Inches of Water [kPa]																			
	0.1 [0.02]	0.2 [0.05]	0.3 [0.07]	0.4 [0.10]	0.5 [0.12]	0.6 [0.15]	0.7 [0.17]	0.8 [0.20]	0.9 [0.22]	1.0 [0.25]	1.1 [0.27]	1.2 [0.30]	1.3 [0.32]	1.4 [0.35]	1.5 [0.37]	1.6 [0.40]	1.7 [0.42]	1.8 [0.45]	1.9 [0.47]	2.0 [0.50]
2400 [1133]	—	—	—	540	580	624	664	704	740	770	804	836	868	896	924	952	976	1000	1024	1048
2500 [1180]	—	—	—	552	592	636	676	716	752	784	816	848	880	908	936	964	988	1012	1036	1060
2600 [1227]	—	—	—	564	604	648	688	728	764	796	828	860	892	920	948	976	1000	1024	1048	1072
2700 [1274]	—	—	559	604	648	688	728	764	796	828	860	892	920	948	976	1000	1024	1048	1072	1096
2800 [1321]	—	—	554	604	648	688	728	764	796	828	860	892	920	948	976	1000	1024	1048	1072	1096
2900 [1369]	—	—	569	616	660	700	736	772	804	836	868	900	928	956	984	1012	1040	1068	1096	1124
3000 [1416]	546	741	854	869	917	931	960	1024	1068	1104	1144	1184	1224	1264	1304	1344	1384	1424	1464	1504
3100 [1463]	560	804	940	940	984	1010	1040	1072	1104	1136	1168	1200	1232	1264	1296	1328	1360	1392	1424	1456
3200 [1510]	576	876	1016	1016	1056	1088	1120	1152	1184	1216	1248	1280	1312	1344	1376	1408	1440	1472	1504	1536
3300 [1557]	592	954	1096	1096	1136	1168	1200	1232	1264	1296	1328	1360	1392	1424	1456	1488	1520	1552	1584	1616
3400 [1605]	607	1030	1176	1176	1216	1248	1280	1312	1344	1376	1408	1440	1472	1504	1536	1568	1600	1632	1664	1696
3500 [1652]	622	1112	1264	1264	1304	1336	1368	1400	1432	1464	1496	1528	1560	1592	1624	1656	1688	1720	1752	1784
3600 [1699]	638	1202	1360	1360	1400	1432	1464	1496	1528	1560	1592	1624	1656	1688	1720	1752	1784	1816	1848	1880

NOTE: L-Drive left of 1st bold line, M-Drive in middle of bold lines, N-Drive right of 2nd bold line.

Drive Package	L, R						M, S						N, T					
Motor H.P. [W]	2.0 [1491.4]						2.0 [1491.4]						3.0 [2237.1]					
Blower Sheave	BK110						BK90						BK65					
Motor Sheave	1VP-44						1VP-44						1VP-44					
Turns Open	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
RPM	682	650	620	587	555	523	806	774	742	710	678	646	1157	1106	1056	1005	954	904

- NOTES: 1. Factory sheave settings are shown in bold print.  
 2. Re-adjustment of sheave required to achieve rated airflow at AHR1 minimum E.S.P.  
 3. Do not operate above blower RPM shown as motor overloading will occur.  
 4. Do not set motor sheave below one turn open.

# AIRFLOW CORRECTION FACTORS

## 7.5 TON [26.4 kW]

ACTUAL—CFM [L/s]	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1605]	3600 [1699]	3800 [1793]
TOTAL MBH	0.97	0.98	0.99	1.00	1.01	1.02	1.03
SENSIBLE MBH	0.91	0.94	0.97	1.00	1.02	1.05	1.08
POWER kW	0.99	0.99	0.99	1.00	1.00	1.01	1.02

- NOTES: 1. Multiply correction factor times gross performance data.  
 2. Resulting sensible capacity cannot exceed total capacity.

### [ ] Designates Metric Conversions

# COMPONENT AIR RESISTANCE, IWC

## 7.5 TON [26.4 kW]

Component	Standard Indoor Airflow—CFM [L/s]								Resistance—Inches Water [kPa]							
	2400 [1133]	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1604]	3600 [1699]	2400 [1133]	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1604]	3600 [1699]		
Wet Coil	0.047 [0.012]	0.051 [0.013]	0.055 [0.014]	0.060 [0.015]	0.065 [0.016]	0.071 [0.018]	0.076 [0.019]	0.047 [0.012]	0.051 [0.013]	0.055 [0.014]	0.060 [0.015]	0.065 [0.016]	0.071 [0.018]	0.076 [0.019]		
Concentric Diffuser RXRN-FA65 or FA75 & Transition RXMC-CD04	DNA	.017 [0.042]	.020 [0.050]	.025 [0.062]	.031 [0.077]	.037 [0.092]	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA		
Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA		
Economizer	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]	0.08 [0.020]	0.09 [0.022]	0.10 [0.025]	0.11 [0.027]	0.05 [0.012]	0.06 [0.015]	0.07 [0.017]	0.08 [0.020]	0.09 [0.022]	0.10 [0.025]	0.11 [0.027]		
100% R.A. Damper Open	0.03 [0.007]	0.04 [0.009]	0.04 [0.010]	0.05 [0.011]	0.05 [0.012]	0.06 [0.014]	0.06 [0.015]	0.03 [0.007]	0.04 [0.009]	0.04 [0.010]	0.05 [0.011]	0.05 [0.012]	0.06 [0.014]	0.06 [0.015]		
Horizontal Economizer	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]		
100% O.A. Damper Open	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]		

NOTE: Add component resistance to duct resistance to determine total external static pressure.  
 DNA = Data not Available.



# AIRFLOW PERFORMANCE—8.5 TON [29.9 kW]

Air Flow CFM [L/s]	Capacity 8.5 Ton [29.9 kW]																																						
	External Static Pressure—Inches of Water [kPa]																																						
	0.1 [0.02]	0.2 [0.05]	0.3 [0.07]	0.4 [0.10]	0.5 [0.12]	0.6 [0.15]	0.7 [0.17]	0.8 [0.20]	0.9 [0.22]	1.0 [0.25]	1.1 [0.27]	1.2 [0.30]	1.3 [0.32]	1.4 [0.35]	1.5 [0.37]	1.6 [0.40]	1.7 [0.42]	1.8 [0.45]	1.9 [0.47]	2.0 [0.50]																			
2700 [127.4]	—	—	—	—	—	708	1009	737	1070	766	1132	796	1194	825	1256	854	1318	883	1380	921	1645	950	1730	980	1816	1009	1901	1038	1966	1068	2072	1097	2157	1127	2243				
2800 [132.1]	—	—	—	—	—	717	1069	748	1131	775	1192	804	1254	834	1316	863	1378	892	1440	928	1709	958	1794	987	1880	1016	1965	1046	2050	1075	2136	1104	2221	1134	2307				
2900 [136.9]	—	—	—	—	—	725	1129	755	1191	784	1253	813	1315	842	1376	872	1438	906	1688	936	1773	965	1858	994	1944	1024	2029	1053	2115	1082	2200	1112	2285	1141	2371				
3000 [141.6]	—	—	—	—	—	705	1127	734	1189	763	1251	792	1313	822	1375	851	1437	880	1498	913	1752	943	1837	972	1923	1002	2008	1031	2093	1060	2179	1090	2264	1119	2350	1148	2435		
3100 [146.3]	—	—	—	—	—	713	1187	743	1249	772	1311	801	1373	830	1435	860	1497	889	1559	921	1816	950	1961	979	1987	1009	2072	1038	2157	1068	2243	1097	2328	1126	2414	—	—		
3200 [151.0]	—	—	—	—	—	693	1185	722	1247	761	1309	781	1371	810	1433	839	1495	868	1557	898	1619	928	1880	937	1965	987	2051	1018	2136	1045	2222	1075	2307	1104	2392	1134	2478		
3300 [155.7]	—	—	—	—	—	701	1246	731	1307	760	1369	789	1431	818	1493	848	1555	877	1617	906	1856	935	1944	968	2029	994	2115	1023	2200	1053	2286	1082	2371	1111	2456	1141	2542		
3400 [160.5]	—	—	—	—	—	681	1244	710	1306	739	1368	769	1430	798	1491	827	1553	856	1615	886	1677	913	1923	943	2008	972	2094	1001	2179	1031	2264	1060	2350	1089	2435	1119	2521	1148	2606
3500 [165.2]	—	—	—	—	—	673	1270	690	1304	719	1366	748	1428	777	1490	807	1552	836	1613	865	1675	894	1737	920	1987	950	2072	979	2158	1009	2243	1038	2328	1067	2414	1097	2499	1126	2585
3600 [169.9]	—	—	—	—	—	686	1352	698	1364	728	1426	757	1488	786	1550	815	1612	844	1674	874	1735	903	1797	928	2051	957	2136	986	2222	1016	2307	1045	2393	1071	2478	1104	2563	1133	2649
3700 [174.6]	672	1361	700	1435	727	1510	755	1584	782	1659	810	1733	837	1808	865	1882	933	1956	956	973	2070	993	2183	1002	2297	1030	2410	1054	2524	1075	2637	1111	2751	1140	2864	—	—		
3800 [179.3]	686	1443	713	1518	741	1592	768	1667	796	1741	823	1816	851	1890	878	1965	940	2003	960	2075	981	2189	1001	2302	1016	2416	1043	2529	1062	2643	1082	2756	1119	2870	1147	2983	—	—	
3900 [184.1]	699	1526	727	1601	754	1675	782	1750	809	1824	837	1899	864	1973	927	2015	948	2080	968	2194	988	2307	1008	2421	1029	2534	1057	2648	1069	2761	1090	2875	1127	2988	—	—			
4000 [188.8]	713	1609	740	1683	768	1758	795	1832	823	1907	850	1981	878	2056	935	2085	955	2199	975	2312	996	2426	1016	2539	1043	2653	1070	2767	1077	2880	1097	2994	1135	3107	—	—			
4100 [193.5]	726	1692	754	1766	781	1841	809	1915	836	1990	864	2064	922	2091	942	2204	963	2318	983	2431	1003	2545	1024	2658	1056	2772	1084	2885	1084	2999	1105	3112	1144	3226	—	—			

NOTE: L-Drive left of bold line, M-Drive right of bold line.

Drive Package	L, R						M, S					
Motor H.P. [W]	2.0 [1491.4]						3.0 [2237.1]					
Blower Sheave	BK90						BK65					
Motor Sheave	1VP-44						1VP-44					
Turns Open	1	2	3	4	5	6	1	2	3	4	5	6
RPM	860	824	791	757	723	690	1148	1098	1049	999	949	899

- NOTES: 1. Factory sheave settings are shown in bold print.  
 2. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum E.S.P.  
 3. Do not operate above blower RPM shown as motor overloading will occur.  
 4. Do not set motor sheave below one turn open.

# COMPONENT AIR RESISTANCE, IWC 8.5 TON [29.9 kW]

## AIRFLOW CORRECTION FACTORS 8.5 TON [29.9 kW]

ACTUAL—CFM [L/s]	2600 [122.7]	2800 [132.1]	3000 [141.6]	3200 [151.0]	3400 [160.5]	3600 [169.9]	3800 [179.3]	4000 [188.8]	4200 [198.2]
TOTAL MBH	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.03	1.04
SENSIBLE MBH	0.88	0.91	0.94	0.97	1.00	1.03	1.05	1.07	1.09
POWER kW	0.99	0.99	0.99	1.00	1.00	1.01	1.01	1.02	1.03

- NOTES: 1. Multiply correction factor times gross performance data.  
 2. Resulting sensible capacity cannot exceed total capacity.

## [ ] Designates Metric Conversions

Component	Standard Indoor Airflow—CFM [L/s]									
	2600 [122.7]	2800 [132.1]	3000 [141.6]	3200 [151.0]	3400 [160.4]	3600 [169.9]	3800 [179.3]	4000 [188.8]	4200 [198.2]	
Wet Coil	0.051 [0.013]	0.055 [0.014]	0.060 [0.015]	0.065 [0.016]	0.071 [0.018]	0.076 [0.019]	0.082 [0.020]	0.087 [0.022]	0.093 [0.023]	
Concentric Diffuser RXRM-FA65 or FA75 & Transition RXMC-CDD4	0.17 [0.042]	0.20 [0.050]	0.25 [0.062]	0.31 [0.077]	0.37 [0.092]	DNA	DNA	DNA	DNA	
Concentric Diffuser RXRM-AA61 or AA71 & Transition RXMC-CE05	DNA	DNA	DNA	DNA	DNA	0.17 [0.042]	0.18 [0.045]	0.21 [0.052]	0.24 [0.060]	
Economizer	0.06 [0.015]	0.07 [0.017]	0.08 [0.020]	0.09 [0.022]	0.10 [0.025]	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]	0.14 [0.035]	
100% R.A. Damper Open	0.04 [0.009]	0.04 [0.010]	0.05 [0.011]	0.05 [0.012]	0.06 [0.014]	0.06 [0.015]	0.07 [0.017]	0.08 [0.020]	0.09 [0.021]	
Horizontal Economizer	0.08 [0.020]	0.08 [0.020]	0.10 [0.024]	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]	0.15 [0.036]	0.16 [0.040]	0.18 [0.044]	

NOTE: Add component resistance to duct resistance to determine total external static pressure.  
 DNA = Data not Available.







### ELECTRICAL DATA – RKNL- SERIES

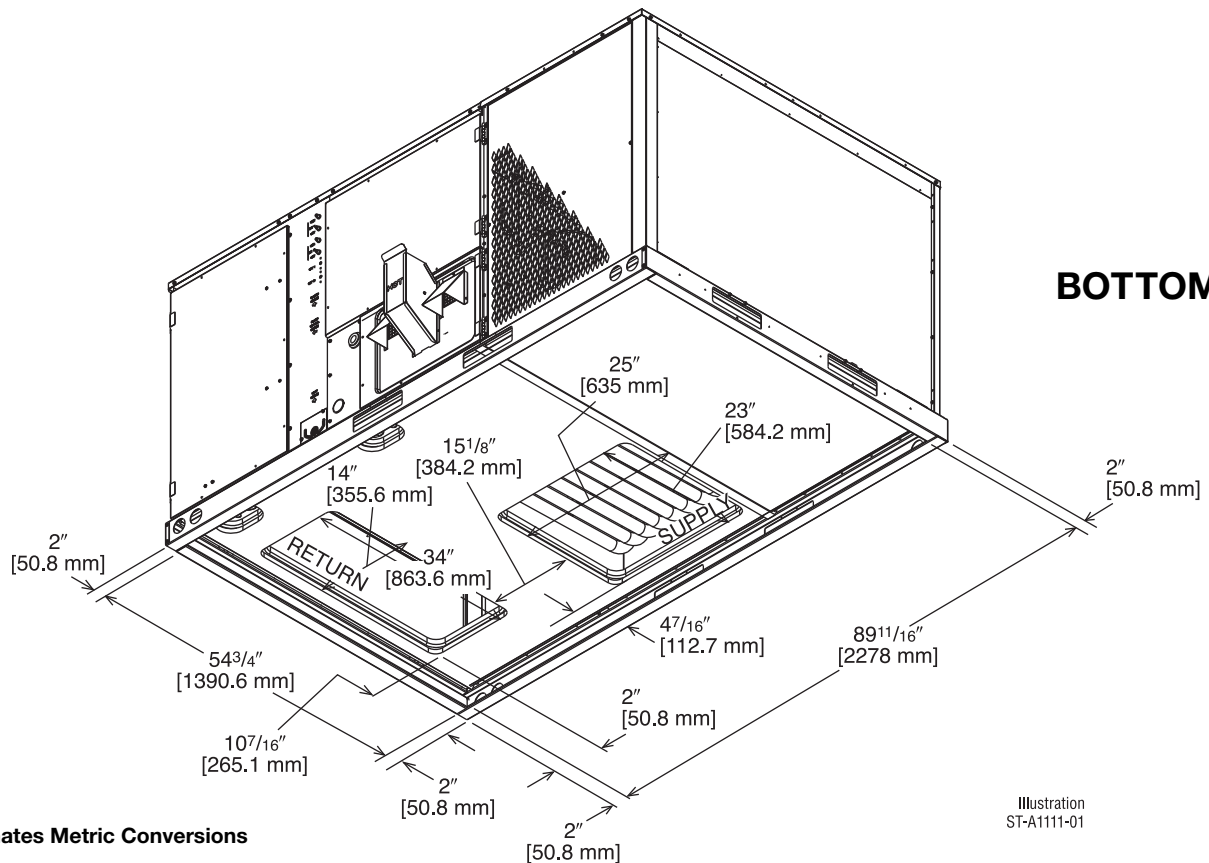
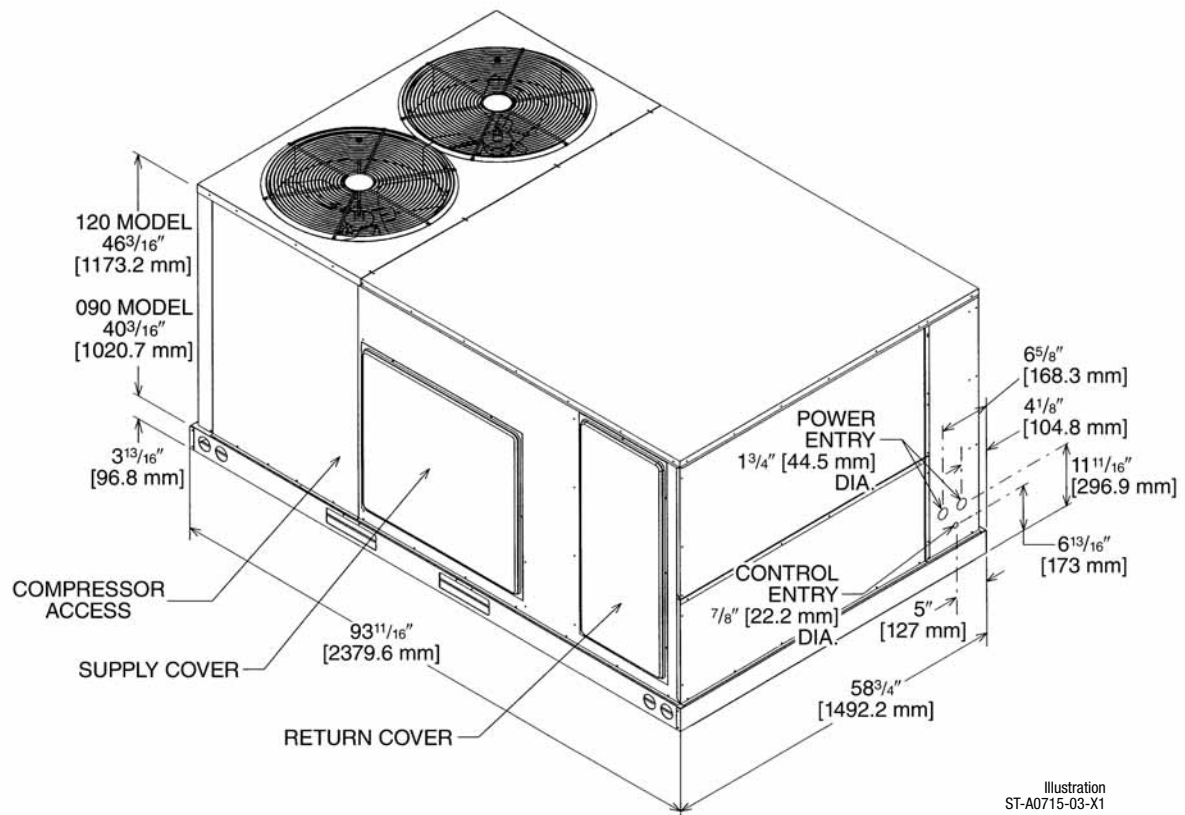
		C073CL	C073CM	C073DL	C073DM	C073YL	C073YM	C090CL H090CR	C090CM H090CS	C090CN H090CT
<b>Unit Information</b>	Unit Operating Voltage Range	187-253	187-253	414-506	414-506	518-632	518-632	187-253	187-253	187-253
	Volts	208/230	208/230	460	460	575	575	208/230	208/230	208/230
	Minimum Circuit Ampacity	35/35	35/35	16	16	13	13	43/43	43/43	48/48
	Minimum Overcurrent Protection Device Size	40/40	40/40	20	20	15	15	45/45	45/45	50/50
	Maximum Overcurrent Protection Device Size	50/50	50/50	20	20	15	15	50/50	50/50	60/60
<b>Compressor Motor</b>	No.	1	1	1	1	1	1	2	2	2
	Volts	200/240	200/240	480	480	600	600	200/240	200/240	200/240
	Phase	3	3	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	6	6	5	6	5	6	3 1/4	3 1/4	3 1/4
	Amps (RLA), Comp. 1	19.6/19.6	19.6/19.6	8.2	8.2	6.6	6.6	13.1/13.1	13.1/13.1	13.1/13.1
	Amps (LRA), Comp. 1	136/136	136/136	66.1	66.1	55.3	55.3	83.1/83.1	83.1/83.1	83.1/83.1
	HP, Compressor 2	—	—	—	—	—	—	3 1/4	3 1/4	3 1/4
	Amps (RLA), Comp. 2	—	—	—	—	—	—	13.1/13.1	13.1/13.1	13.1/13.1
Amps (LRA), Comp. 2	—	—	—	—	—	—	83.1/83.1	83.1/83.1	83.1/83.1	
<b>Compressor Motor</b>	No.	2	2	2	2	2	2	2	2	2
	Volts	208/230	208/230	460	460	575	575	208/230	208/230	208/230
	Phase	1	1	1	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA, each)	2.4/2.4	2.4/2.4	1.4	1.4	1	1	2.4/2.4	2.4/2.4	2.4/2.4
	Amps (LRA, each)	4.7/4.7	4.7/4.7	2.4	2.4	1.5	1.5	4.7/4.7	4.7/4.7	4.7/4.7
<b>Evaporator Fan</b>	No.	1	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	575	575	208/230	208/230	208/230
	Phase	3	3	3	3	3	3	3	3	3
	HP	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	2	2	3
	Amps (FLA, each)	5.6/5.6	5.6/5.6	2.8	2.8	1.9	1.9	8/8	8/8	13/13
	Amps (LRA, each)	28.8/28.8	28.8/28.8	14.4	14.4	14	14	56/56	56/56	74.5/74.5

<b>ELECTRICAL DATA – RKNL- SERIES</b>										
		<b>C090DL H090DR</b>	<b>C090DM H090DS</b>	<b>C090DN H090DT</b>	<b>C090YL</b>	<b>C090YM</b>	<b>C090YN</b>	<b>C102CL H102CR</b>	<b>C102CM H102CS</b>	<b>C102DL H102DR</b>
<b>Unit Information</b>	Unit Operating Voltage Range	414-506	414-506	414-506	518-632	518-632	518-632	187-253	187-253	414-506
	Volts	460	460	460	575	575	575	208/230	208/230	460
	Minimum Circuit Ampacity	21	21	24	16	16	21	49/49	54/54	23
	Minimum Overcurrent Protection Device Size	25	25	25	20	20	25	50/50	55/55	25
	Maximum Overcurrent Protection Device Size	25	25	30	20	20	25	60/60	60/60	25
<b>Compressor Motor</b>	No.	2	2	2	2	2	2	2	2	2
	Volts	480	480	480	600	600	600	200/230	200/230	460
	Phase	3	3	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 3/4	3 3/4	3 3/4
	Amps (RLA), Comp. 1	6.1	6.1	6.1	4.4	4.4	4.4	16/16	16/16	7.1
	Amps (LRA), Comp. 1	41	41	41	33	33	33	91/91	91/91	46
	HP, Compressor 2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 3/4	3 3/4	3 3/4
	Amps (RLA), Comp. 2	6.1	6.1	6.1	4.4	4.4	4.4	16/16	16/16	7.1
Amps (LRA), Comp. 2	41	41	41	33	33	33	91/91	91/91	46	
<b>Compressor Motor</b>	No.	2	2	2	2	2	2	2	2	2
	Volts	460	460	460	575	575	575	208/230	208/230	460
	Phase	1	1	1	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA, each)	1.4	1.4	1.4	1	1	1	2.4/2.4	2.4/2.4	1.4
	Amps (LRA, each)	2.4	2.4	2.4	1.5	1.5	1.5	4.7/4.7	4.7/4.7	2.4
<b>Evaporator Fan</b>	No.	1	1	1	1	1	1	1	1	1
	Volts	460	460	460	575	575	575	208/230	208/230	460
	Phase	3	3	3	3	3	3	3	3	3
	HP	2	2	3	2	2	3	2	3	2
	Amps (FLA, each)	4	4	7	4	4	8	8/8	13/13	4
	Amps (LRA, each)	28	28	38.1	19	19	20	56/56	74.5/74.5	28

<b>ELECTRICAL DATA – RKNL- SERIES</b>										
		<b>C102DM H102DS</b>	<b>C102YL</b>	<b>C102YM</b>	<b>C120CL H120CR</b>	<b>C120CM H120CS</b>	<b>C120DL H120DR</b>	<b>C120DM H120DS</b>	<b>C120YL</b>	<b>C120YM</b>
<b>Unit Information</b>	Unit Operating Voltage Range	414-506	518-632	518-632	187-253	187-253	414-506	414-506	518-632	518-632
	Volts	460	575	575	208/230	208/230	460	460	575	575
	Minimum Circuit Ampacity	26	19	24	49/49	54/54	25	28	19	24
	Minimum Overcurrent Protection Device Size	30	20	25	50/50	55/55	25	30	20	25
	Maximum Overcurrent Protection Device Size	30	20	30	60/60	60/60	30	35	20	30
<b>Compressor Motor</b>	No.	2	2	2	2	2	2	2	2	2
	Volts	460	575	575	200/240	200/240	480	480	575	575
	Phase	3	3	3	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	3 3/4	3 3/4	3 3/4	4 1/4	4 1/4	4 1/4	4 1/4	4 1/4	4 1/4
	Amps (RLA), Comp. 1	7.1	5.6	5.6	16/16	16/16	7.8	7.8	5.7	5.7
	Amps (LRA), Comp. 1	46	37	37	110/110	110/110	52	52	38.9	38.9
	HP, Compressor 2	3 3/4	3 3/4	3 3/4	4 1/4	4 1/4	4 1/4	4 1/4	4 1/4	4 1/4
	Amps (RLA), Comp. 2	7.1	5.6	5.6	16/16	16/16	7.8	7.8	5.7	5.7
Amps (LRA), Comp. 2	46	37	37	110/110	110/110	52	52	38.9	38.9	
<b>Compressor Motor</b>	No.	2	2	2	2	2	2	2	2	2
	Volts	460	575	575	208/230	208/230	460	460	575	575
	Phase	1	1	1	1	1	1	1	1	1
	HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
	Amps (FLA, each)	1.4	1	1	2.4/2.4	2.4/2.4	1.4	1.4	1	1
	Amps (LRA, each)	2.4	1.5	1.5	4.7/4.7	4.7/4.7	2.4	2.4	1.5	1.5
<b>Evaporator Fan</b>	No.	1	1	1	1	1	1	1	1	1
	Volts	460	575	575	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3	3	3	3
	HP	3	2	3	2	3	2	3	2	3
	Amps (FLA, each)	7	4	8	8/8	13/13	4	7	4	8
	Amps (LRA, each)	38.1	19	20	56/56	74.5/74.5	28	38.1	19	20

### ELECTRICAL DATA – RKNL- SERIES

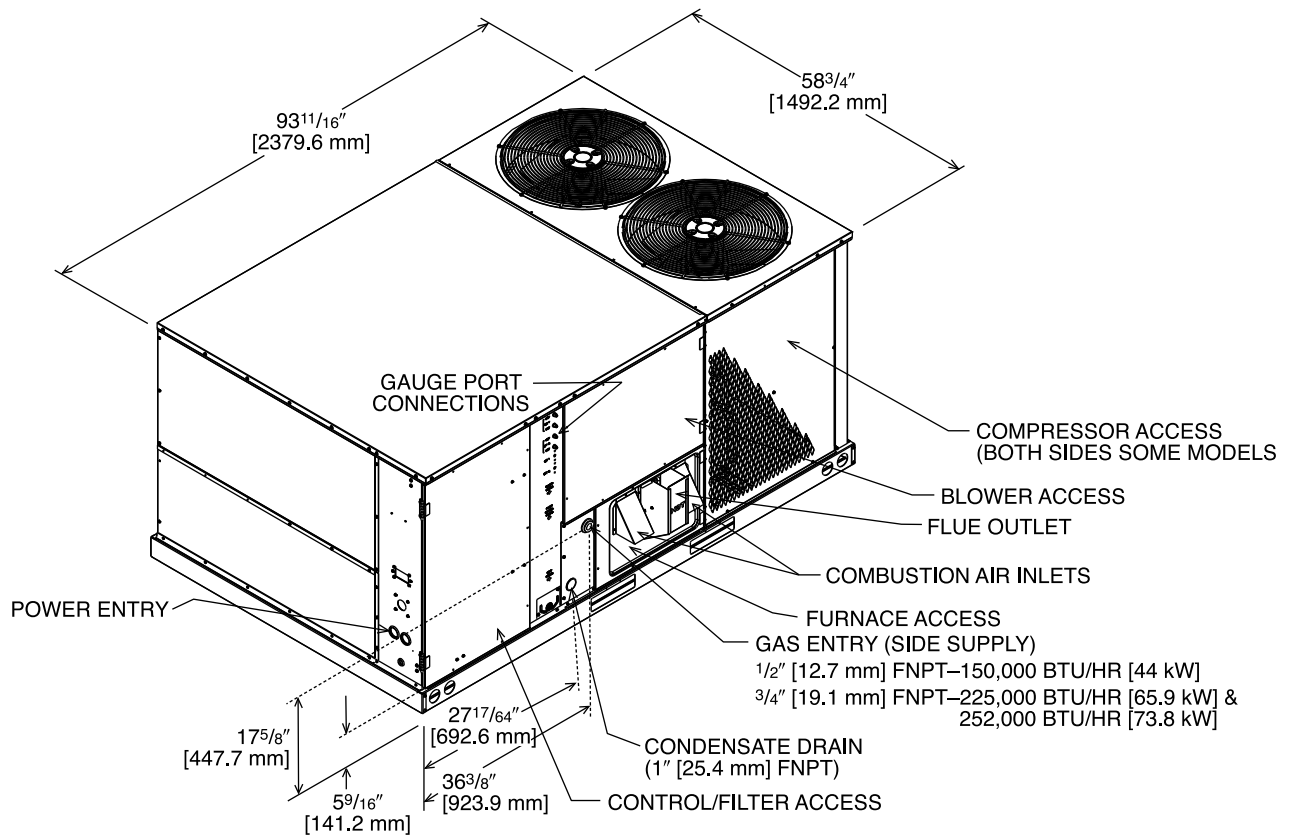
		<b>C151CL H151CR</b>	<b>C151CM H151CS</b>	<b>C151DL H151DR</b>	<b>C151DM H151DS</b>	<b>C151YL</b>	<b>C151YM</b>
<b>Unit Information</b>	Unit Operating Voltage Range	187-253	187-253	414-506	414-506	518-632	518-632
	Volts	208/230	208/230	460	460	575	575
	Minimum Circuit Ampacity	67/67	71/71	33	36	28	28
	Minimum Overcurrent Protection Device Size	70/70	75/75	35	40	30	30
	Maximum Overcurrent Protection Device Size	80/80	90/90	40	45	35	35
<b>Compressor Motor</b>	No.	2	2	2	2	2	2
	Volts	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3
	RPM	3450	3450	3450	3450	3450	3450
	HP, Compressor 1	5 3/4	5 3/4	5 3/4	5 3/4	5 3/4	5 3/4
	Amps (RLA), Comp. 1	22.4/22.4	22.4/22.4	10.6	10.6	7.7	7.7
	Amps (LRA), Comp. 1	149/149	149/149	75	75	54	54
	HP, Compressor 2	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4
	Amps (RLA), Comp. 2	19/19	19/19	9.7	9.7	7.4	7.4
Amps (LRA), Comp. 2	123/123	123/123	62	62	50	50	
<b>Compressor Motor</b>	No.	2	2	2	2	2	2
	Volts	208/230	208/230	460	460	575	575
	Phase	1	1	1	1	1	1
	HP	1/2	1/2	1/2	1/2	1/2	1/2
	Amps (FLA, each)	2.3/2.3	2.3/2.3	1.5	1.5	1	1
	Amps (LRA, each)	5.6/5.6	5.6/5.6	3.1	3.1	2.2	2.2
<b>Evaporator Fan</b>	No.	1	1	1	1	1	1
	Volts	208/230	208/230	460	460	575	575
	Phase	3	3	3	3	3	3
	HP	3	5	3	5	3	5
	Amps (FLA, each)	15/15	18.8/18.8	7	10	8	8
	Amps (LRA, each)	74.5/74.5	82.6/82.6	38.1	41.3	20	33



[ ] Designates Metric Conversions







[ ] Designates Metric Conversions

Illustration  
 ST-A1111-03

# WEIGHTS

Accessory	Shipping—lbs [kg]	Operating—lbs [kg]
Economizer	90 [40.82]	81 [36.70]
Power Exhaust	44 [19.96]	42 [19.05]
Fresh Air Damper (Manual)	26 [11.79]	21 [9.53]
Fresh Air Damper (Motorized)	43 [19.50]	38 [17.24]
Roof Curb 14"	90 [40.82]	85 [38.60]
Roof Curb 24"	140 [63.50]	135 [61.23]

Capacity Tons [kW]	Corner Weights by Percentage			
	A	B	C	D
6-12.5 [21.1-44.0]	33%	27%	17%	23%

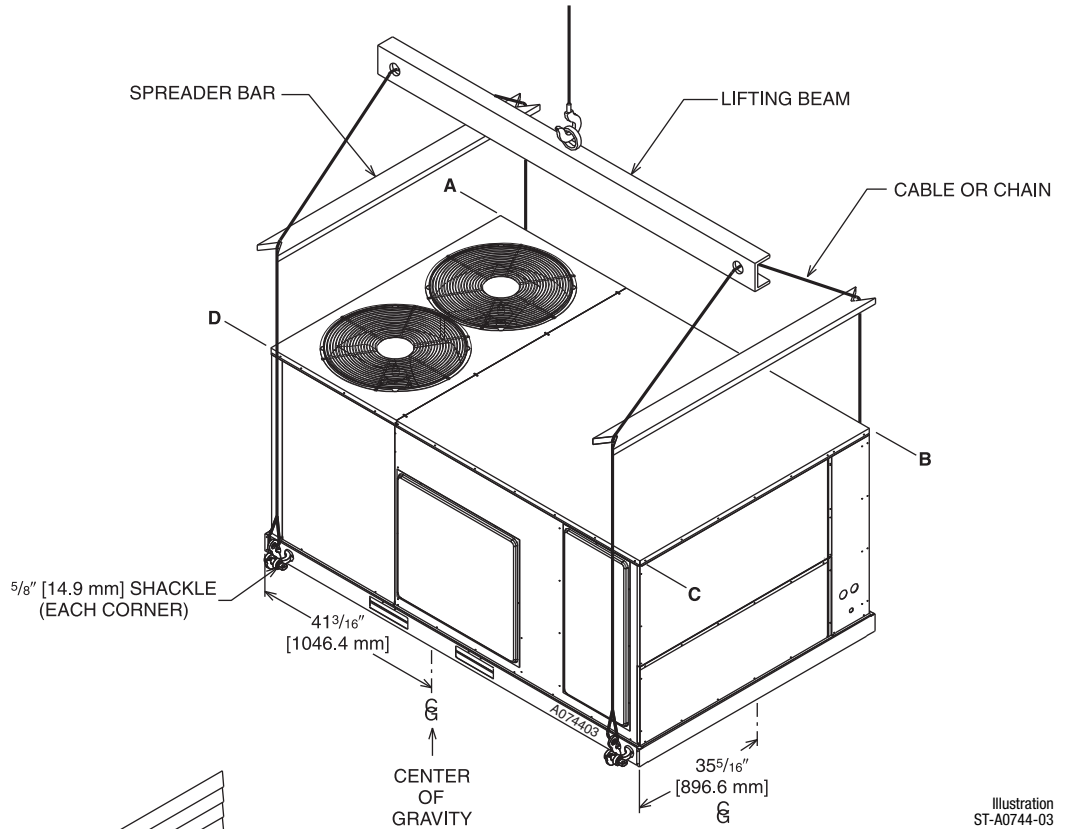
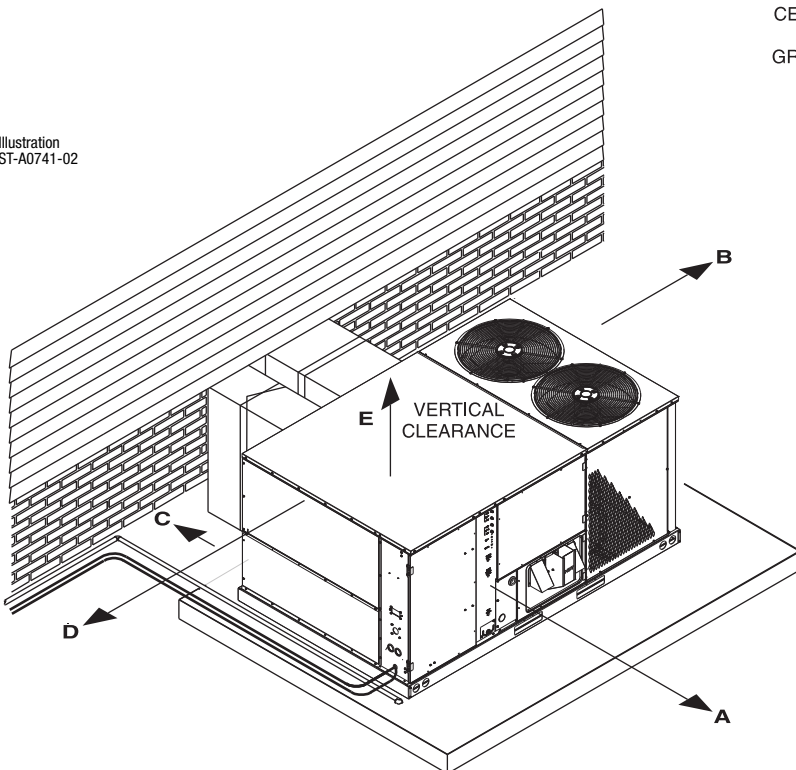


Illustration ST-A0744-03

Illustration ST-A0741-02



### CLEARANCES

The following minimum clearances must be observed for proper unit performance and serviceability.

Recommended Clearance In. [mm]	Location
48 [1219]	A - Front
18 [457]	B - Condenser Coil
18 [457]	C - Duct Side
18 [457]	*D - Evaporator End
60 [1524]	E - Above
*Without Economizer. 48" [1219 mm] With Economizer	

[ ] Designates Metric Conversions

## FIELD INSTALLED ACCESSORY EQUIPMENT

Accessory	Model Number	Shipping Weight Lbs. [kg]	Installed Weight Lbs. [kg]	Factory Installation Available?
Thermostats	See Thermostat Specification Sheet for Details (T11-001)			No
Economizer w/Single Enthalpy (Downflow)	AXRD-PJCM3	90 [40.8]	81 [36.7]	Yes
Economizer w/Single Enthalpy and Smoke Detector (Downflow)	AXRD-SJCM3	91 [41.3]	82 [37.2]	Yes
Dual Enthalpy Kit	RXRX-AV03	1 [.5]	1 [.5]	No
Horizontal Economizer w/Single Enthalpy	AXRD-RJCM3	94 [42.6]	89 [40.4]	No
Carbon Dioxide Sensor (Wall Mount)	RXRX-AR02	3 [1.4]	2 [1.0]	No
Power Exhaust	RXRX-BFF02 (C,D,Y)	43 [19.5]	38 [17.2]	No
Manual Fresh Air Damper (Horizontal Return Mounted)	AXRF-JDA1	26 [11.8]	21 [9.5]	No
Manual Fresh Air Damper (Left Panel Mounted)	AXRF-KDA1	38 [17.2]	31 [14.1]	No
Motor Kit for RXRF-KDA1 (Left Panel Mounted)	RXRX-AW02	35 [15.9]	27 [12.2]	No
Modulating Motor Kit w/position feedback for RXRF-KDA1	RXRX-AW04	38 [17.2]	30 [13.6]	No
Motorized Fresh Air Damper (Horizontal Return Mounted)	AXRF-JDB1	43 [19.5]	38 [17.2]	No
Roofcurb, 14"	RXKG-CAE14	90 [40.8]	85 [38.5]	No
Roofcurb, 24"	RXKG-CAE24	140 [63.5]	135 [61.2]	No
Roofcurb Adapters	RXRX-CDCE50	300 [136.1]	290 [131.5]	No
	RXRX-CFCE54	325 [147.4]	315 [142.9]	No
	RXRX-CFCE56	350 [158.8]	340 [154.2]	No
	RXRX-CGCC12	450 [204.1]	410 [186.0]	No
Concentric Diffuser (Step-Down, 20" Round)	RXRN-FA65	139 [63.0]	60 [27.2]	No
Concentric Diffuser (Step-Down, 18 x 28)	RXRN-AA61	200 [90.7]	185 [83.9]	No
Concentric Diffuser (Step-Down, 18 x 32)	RXRN-AA66	247 [112.0]	227 [103.0]	No
Concentric Diffuser (Flush, 20" Round)	RXRN-FA75	54 [24.4]	42 [19.0]	No
Concentric Diffuser (Flush, 18 x 28)	RXRN-AA71	170 [77.1]	155 [70.3]	No
Concentric Diffuser (Flush, 18 x 32)	RXRN-AA76	176 [79.8]	161 [73.0]	No
Downflow Transition (Rect. to 20" Round)	RXMC-CD04 ①	15 [6.8]	13 [5.9]	No
Downflow Transition (Rect. to Rect., 18 x 28)	RXMC-CE05 ②	18 [8.2]	16 [7.3]	No
Downflow Transition (Rect. to Rect., 18 x 32)	RXMC-CF06 ③	20 [9.1]	18 [8.2]	No
Low-Ambient Control Kit (1 Per Compressor)	RXRZ-C02	3 [1.4]	2 [1.0]	Yes
Outdoor Coil Louver Kit	AXRX-AAD01C (6-10 Ton)	29 [11.3]	26 [11.8]	Yes
Outdoor Coil Louver Kit	AXRX-AAD02A (12.5 Ton)	29 [11.3]	26 [11.8]	Yes
Unwired Convenience Outlet	RXRX-AN01	2 [1.0]	1.5 [.7]	Yes
Unfused Service Disconnect	RXRX-AP01	10 [4.5]	9 [4.1]	Yes
Comfort Alert (1 per compressor)	RXRX-AZ01	3 [1.5]	2 [0.9]	Yes
BACnet Communication Card	RXRX-AY01	1 [0.5]	1 [0.5]	No
LonWorks Communication Card	RXRX-AY02	1 [0.5]	1 [0.5]	No

NOTES: ① Used with RXRN-FA65 and RXRN-FA75 concentric diffusers.

② Used with RXRN-AA61 and RXRN-AA71 concentric diffusers.

③ Used with RXRN-AA66 and RXRN-AA76 concentric diffusers.

NOTICE: Please refer to conversion kit index provided with the unit for LP conversion kit.

[ ] Designates Metric Conversions

## THERMOSTATS



**200-Series \***  
 Programmable



**300-Series \***  
 Deluxe Programmable

**400-Series \***  
 Special Applications/  
 Programmable



**500-Series \***  
 Communicating/  
 Programmable

Brand	Descriptor (3 Characters)	Series (3 Characters)	System (2 Characters)	Type (2 Characters)
<b>RHC</b>	<b>- TST</b>	<b>213</b>	<b>UN</b>	<b>MS</b>
RHC=Rheem	TST=Thermostat	200=Programmable 300=Deluxe Programmable 400=Special Applications/ Programmable 500=Communicating/ Programmable	GE=Gas/Electric UN=Universal (AC/HP/GE) MD=Modulating Furnace DF=Dual Fuel CM=Communicating	SS=Single-Stage MS=Multi-Stage

\* Photos are representative. Actual models may vary.

For detailed thermostat match-up information,  
 see specification sheet form number T11-001.

## FLUSH MOUNT ROOM TEMPERATURE SENSORS FOR NETWORKED DDC APPLICATIONS



### ROOM TEMPERATURE SENSOR **RHC-ZNS1** with **TIMED OVERRIDE BUTTON**

10k $\Omega$  room temperature sensor transmits room temperature to DDC system. Timed override button allows tenant to change from unoccupied temperature setpoint to occupied temperature setpoint for a preset time.



### ROOM TEMPERATURE SENSOR **RHC-ZNS2** with **TIMED OVERRIDE BUTTON** and **STATUS INDICATOR**

10k $\Omega$  room temperature sensor transmits room temperature to DDC system. Timed override button allows tenant to change from unoccupied temperature setpoint to occupied temperature setpoint for a preset time. Status Indicator Light transmits ALARM flash code to occupied space.



### ROOM TEMPERATURE SENSOR **RHC-ZNS3** with **SETPOINT ADJUSTMENT** and **TIMED OVERRIDE BUTTON**

10k $\Omega$  room temperature sensor with setpoint adjustment transmits room temperature to DDC system along with desired occupied room temperature setpoint. Timed override button allows tenant to change from unoccupied temperature setpoint to occupied temperature setpoint for a preset time.

## COMMUNICATION CARDS Field Installed



### **BACnet® COMMUNICATION CARD** **RXRX-AY01**

The field installed BACnet® Communication Card allows the RTU-C unit controller to communicate with a third party building management system that supports the BACnet Application Specific Controller device profile. The BACnet® Communication Module plugs onto the unit RTU-C controller and allows communication between the RTU-C and the BACnet MSTP network.



### **LonWorks® COMMUNICATION CARD** **RXRX-AY02**

The field installed LonWorks® Communication Card allows the RTU-C unit controller to communicate with a third party building management system that supports the LonMark Space Comfort Controller (SCC) functional profile or LonMark Discharge Air Controller (DAC) functional profile. The LonMark Communication Module plugs onto the RTU-C controller and allows communication between the RTU-C and a LonWorks Network.

## ECONOMIZER FOR DOWNFLOW DUCT INSTALLATION

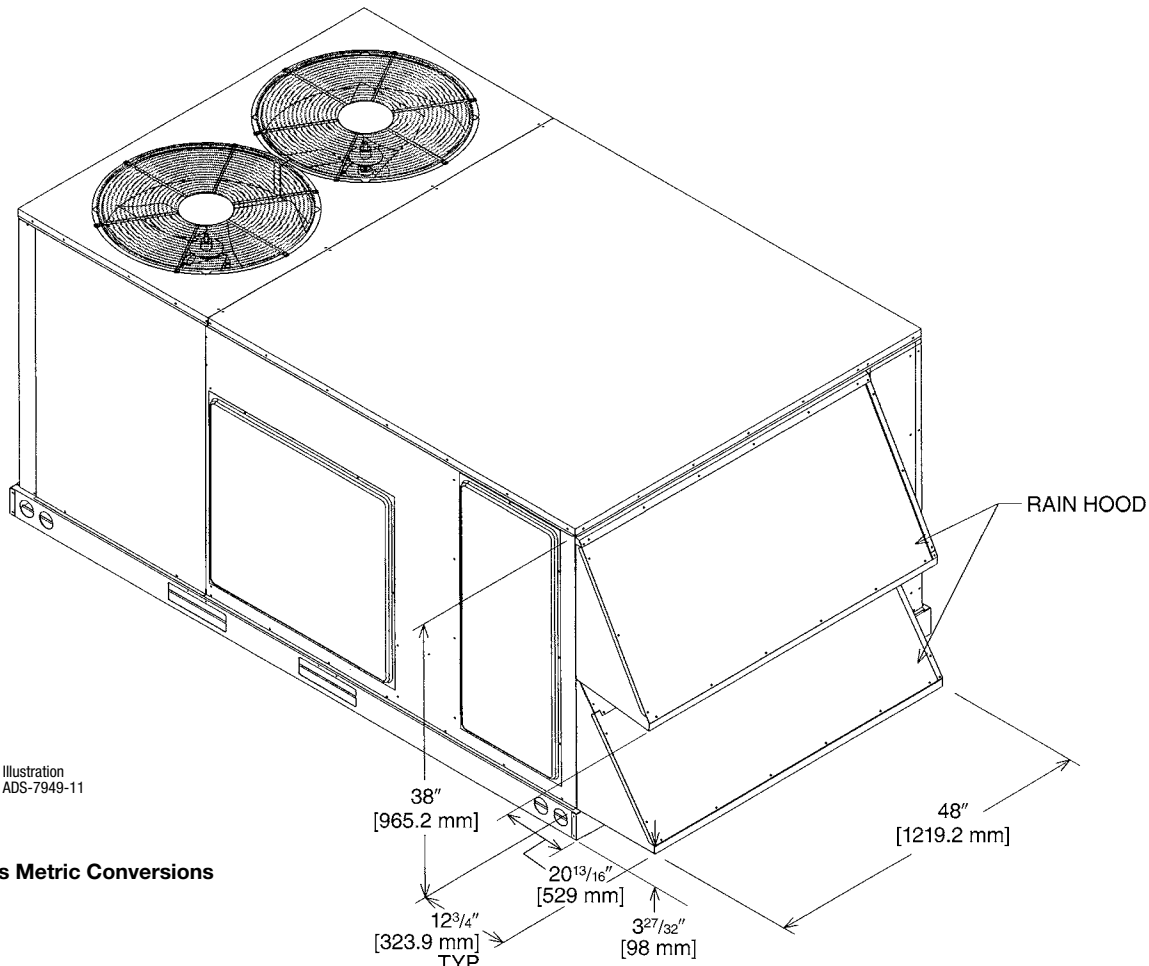
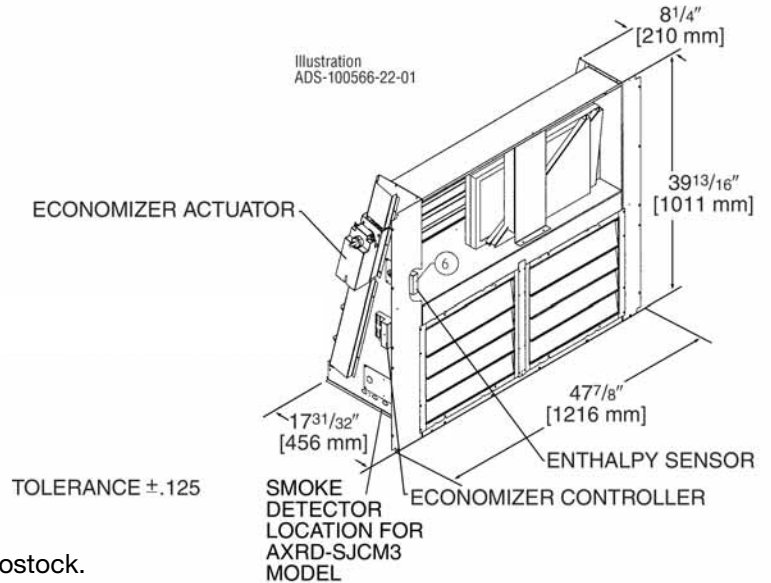
### Use to Select Factory Installed Options Only

**AXRD-PJCM3—Single Enthalpy (Outdoor) and AXRD-SJCM3 Single Enthalpy with Smoke Detector**

**RXXR-AV03—Dual Enthalpy Upgrade Kit**

**RXXR-AR02—Optional Wall-Mounted CO<sub>2</sub> Sensor**

- Features **Honeywell Controls**
- Available Factory Installed or Field Accessory
- Gear Driven Direct Drive Actuator
- Fully Modulating (0-100%)
- Low Leakage Dampers
- Slip-In Design for Easy Installation
- Plug-In Polarized 12-pin and 4-pin Electrical Connections
- Pre-Configured—No Field Adjustments Necessary
- Standard Barometric Relief Damper
- Single Enthalpy with Dual Enthalpy Upgrade Kit Available
- CO<sub>2</sub> Input Sensor Available
- Field Assembled Hood Ships with Economizer
- Economizer Ships Complete for Downflow Duct Application.
- Optional Remote Minimum Position Potentiometer (270 ohm) (Honeywell #S963B1136) is Available from Prostock.
- Field Installed Power Exhaust Available
- Prewired for Smoke Detector
- If connected to a Building Automation System (BAS), all economizer functions can be viewed on the (BAS), or 16 x 2 LCD screen
- If connected to thermostat, all economizer functions can be viewed on 16 x 2 LCD screen



[ ] Designates Metric Conversions

# ECONOMIZER FOR HORIZONTAL DUCT INSTALLATION

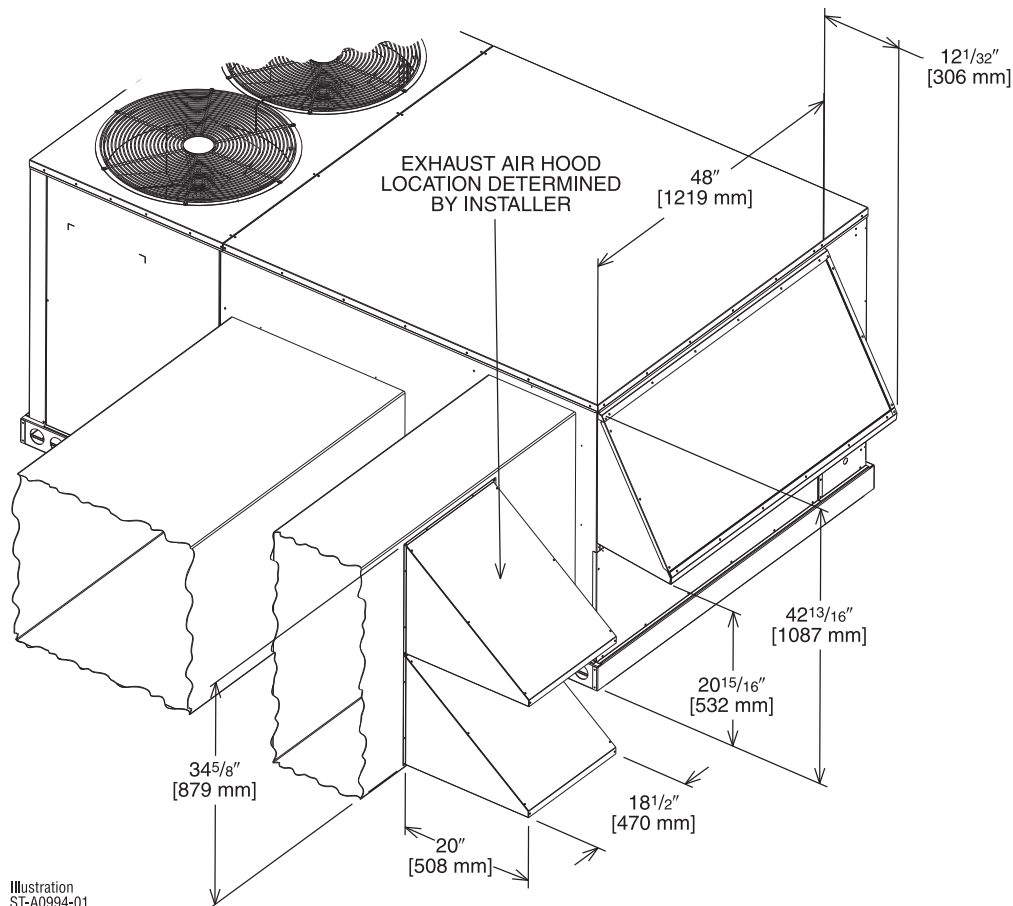
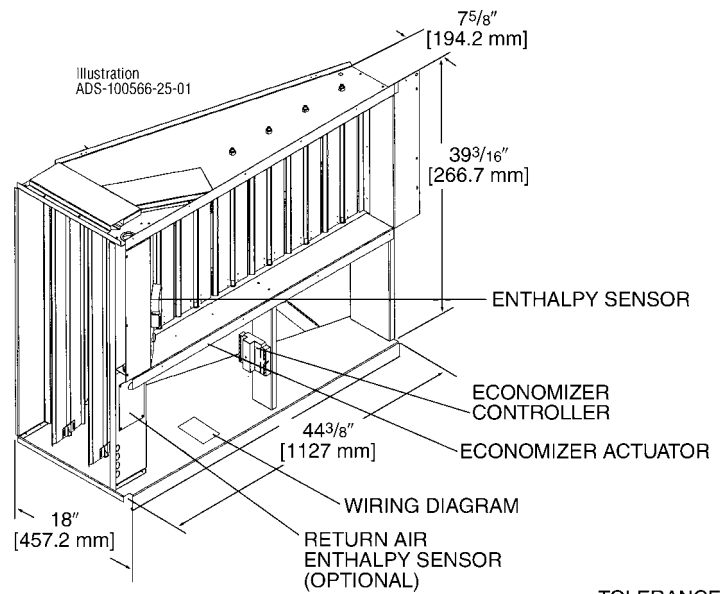
## Field Installed Only

**AXRD-RJCM3—Single Enthalpy (Outdoor)**

**RXX-AV03—Dual Enthalpy Upgrade Kit**

**RXX-AR02—Wall-mounted CO<sub>2</sub> Sensor**

- Features **Honeywell** Controls
- Available as a Field Installed Accessory Only
- Gear Driven Direct Drive Actuator
- Fully Modulating (0-100%)
- Low Leakage Dampers
- Slip-In Design for Easy Installation
- Plug-In Polarized 12-pin and 4-pin Electrical Connections
- Pre-Configured—No Field Adjustments Necessary
- Standard Barometric Relief Damper
- Single Enthalpy with Dual Enthalpy Upgrade Kit Available
- CO<sub>2</sub> Input Sensor Available
- Field Assembled Hood Ships with Economizer
- Economizer Ships Complete for Horizontal Duct Application
- Optional Remote Minimum Position Potentiometer (270 ohm) (Honeywell #S963B1136) is Available from Prostock
- Field Installed Power Exhaust Available
- If connected to a Building Automation System (BAS), all economizer functions can be viewed on the (BAS), or 16 x 2 LCD screen
- If connected to thermostat, all economizer functions can be viewed on 16 x 2 LCD screen



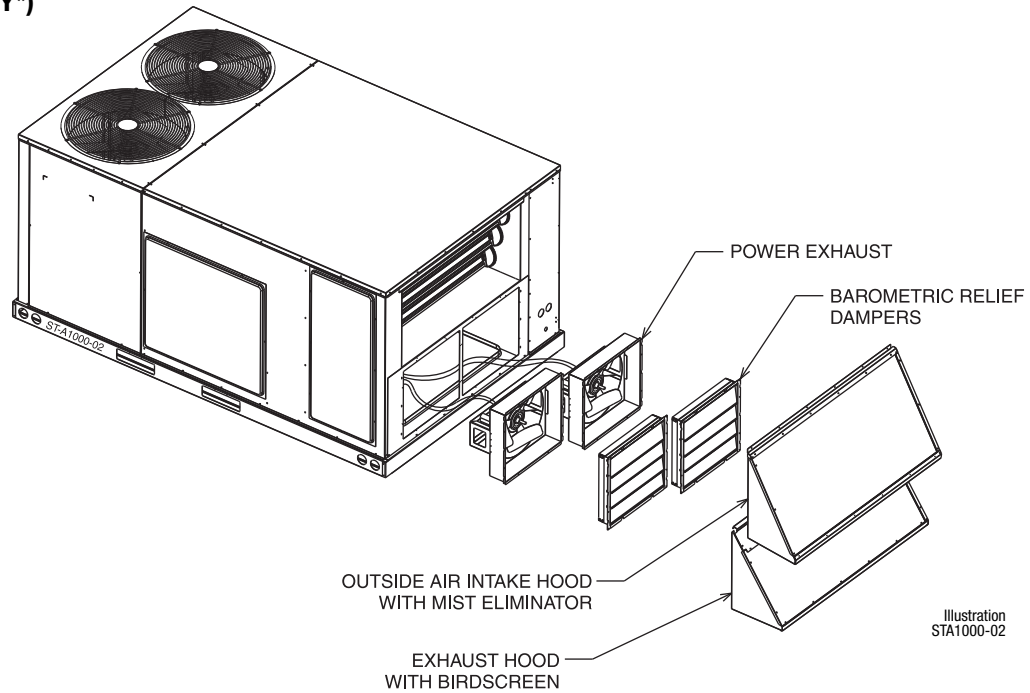
[ ] Designates Metric Conversions

# POWER EXHAUST KIT FOR AXRD-PJCM3(-), AXRD-SJCM3(-), AXRD-RJCM3 ECONOMIZERS

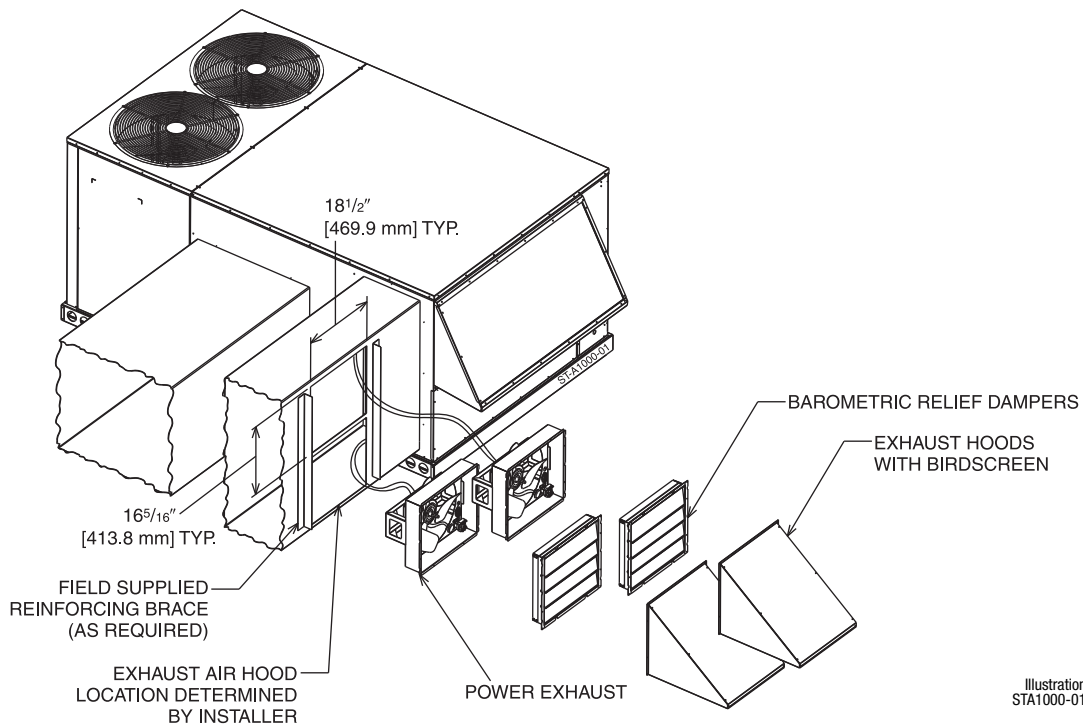
RXRX-BFF02 (C, D, or Y\*)

\*Voltage Code

## VERTICAL AIRFLOW



## HORIZONTAL AIRFLOW



Model No.	No. of Fans	Volts	Phase	HP (ea.)	Low Speed		High Speed ①		FLA (ea.)	LRA (ea.)
					CFM [L/s] ②	RPM	CFM [L/s] ②	RPM		
RXRX-BFF02C	2	208-230	1	0.33	2200 [1038]	1518	2500 [1179]	1670	1.48	3.6
RXRX-BFF02D	2	460	1	0.33	2200 [1038]	1518	2500 [1179]	1670	0.75	1.8
RXRX-BFF02Y	2	575	1	0.33	2200 [1038]	1518	2500 [1179]	1670	0.81	1.5

NOTES: ① Power exhaust is factory set on high speed motor tap.  
② CFM is per fan at 0" w.c. external static pressure.

[ ] Designates Metric Conversions



## FRESH AIR DAMPER

### MOTORIZED DAMPER KIT RXRX-AW02 (Motor Kit for AXRF-KDA1)

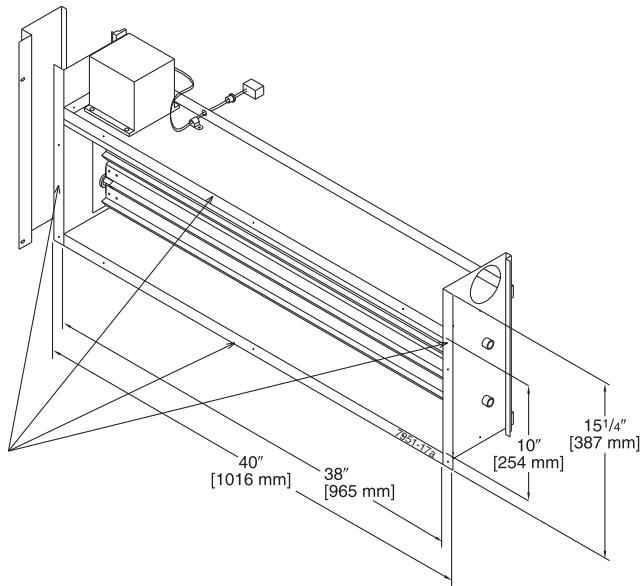


Illustration  
ST-7951-17

[ ] Designates Metric Conversions

### MOTORIZED DAMPER KIT RXRX-AW04 (Modulating Motor Kit with position feedback for AXRF-KDA1)

- Features **Honeywell** Controls
- Gear Driven Direct Drive Actuator
- Fully Modulating (0-100%)
- Low Leakage Dampers
- Slip-In Design for Easy Installation
- Plug-In Polarized 12-pin and 4-pin Electrical Connections
- Pre-Configured—No Field Adjustments Necessary
- Addition of Dual Enthalpy Upgrade Kit allows limited economizer function
- CO<sub>2</sub> Sensor Input Available for Demand Control Ventilation (DCV)
- Optional Remote Minimum Position Potentiometer (270 ohm) (Honeywell #S963B1136) is available from Prostock.
- All fresh air damper functions can be viewed at the RTU-C unit controller display
- If connected to a Building Automation System (BAS), all fresh air damper functions can be viewed on the (BAS), or 16 x 2 LCD screen
- If connected to thermostat, all fresh air damper functions can be viewed on 16 x 2 LCD screen

### AXRF-KDA1 (Manual)

### DOWNFLOW OR HORIZONTAL APPLICATION

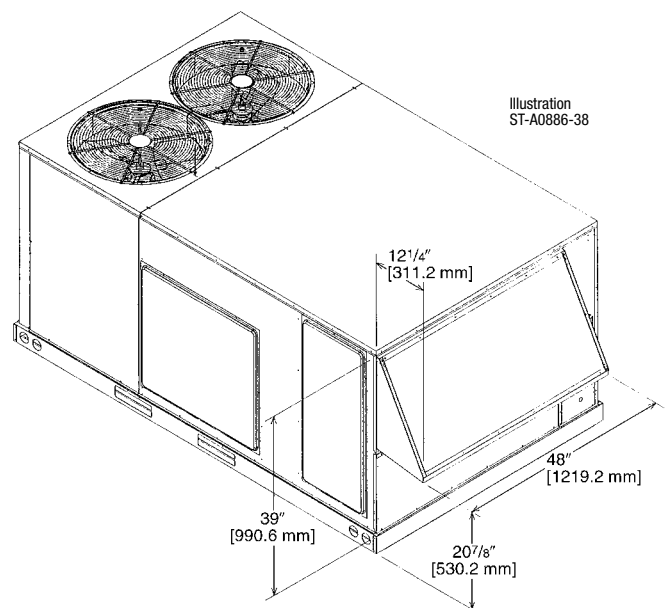


Illustration  
ST-A0886-38

## FRESH AIR DAMPER (Cont.)

AXRF-JDA1 (Manual)  
 AXRF-JDB1 (Motorized)

### DOWNFLOW APPLICATION

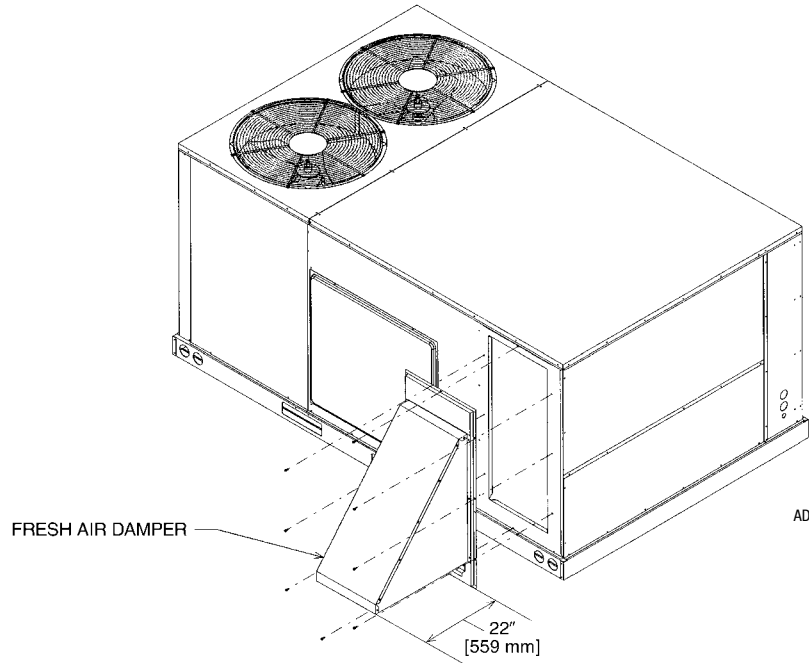
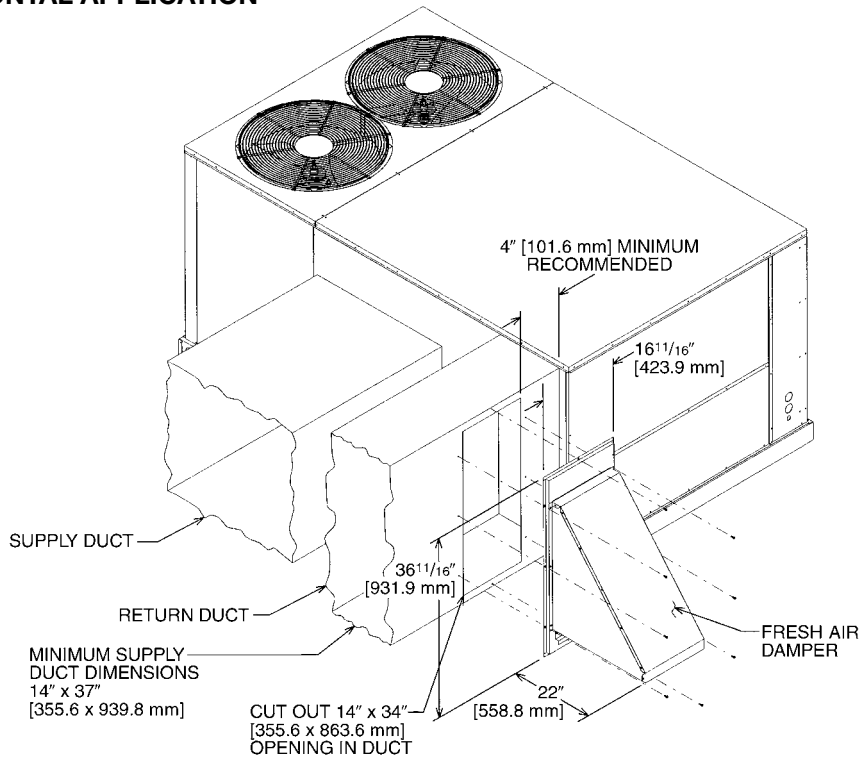


Illustration  
ADS-7937-58

### HORIZONTAL APPLICATION

Illustration  
ST-A0901-01



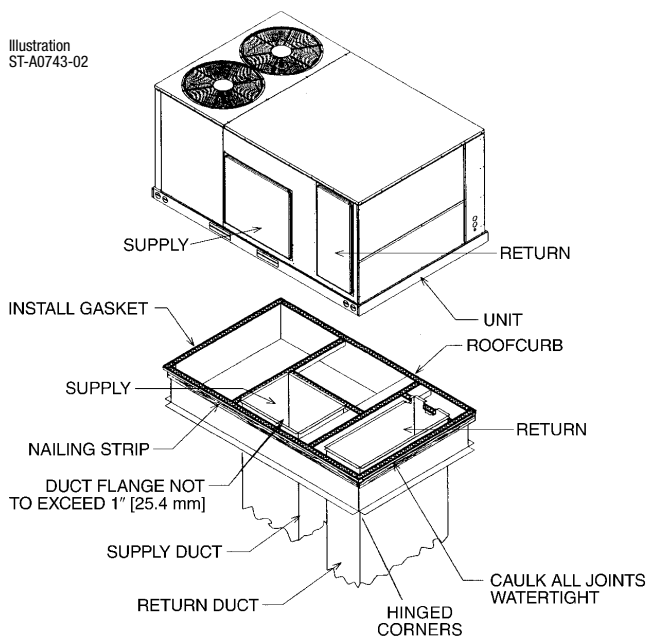
[ ] Designates Metric Conversions

## ROOFCURBS (Full Perimeter)

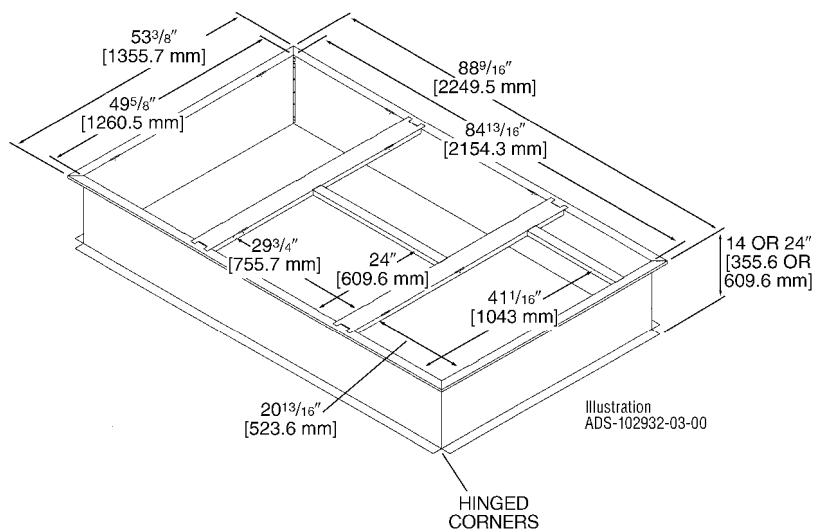
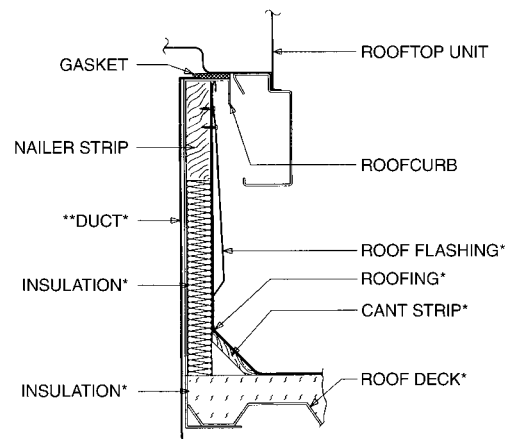
- Rheem's roofcurb design can be utilized on all 6-12.5 ton [21.1-44.0 kW] RKNL- models.
- Two available heights (14" [356 mm] and 24" [610 mm]) for ALL models.
- Quick assembly corners for simple and fast assembly.
- Opening provided in bottom pan to match the "Thru the Curb" electrical connection opening provided on the unit base pan.
- 1" [25 mm] x 4" [102 mm] Nailer provided.
- Insulating panels not required because of insulated outdoor base pan.
- Sealing gasket (40' [12.2 m]) provided with Roofcurb.
- Packaged for easy field assembly.

Roofcurb Model	Height of Curb
RXKG-CAE14	14" [356 mm]
RXKG-CAE24	24" [610 mm]

## TYPICAL INSTALLATION

 Illustration  
 ST-A0743-02


## ROOFCURB INSTALLATION


 Illustration  
 ADS-102932-03-00


\*BY CONTRACTOR

\*\*FOR INSTALLATION OF DUCT AS SHOWN, USE RECOMMENDED DUCT SIZES FROM ROOFCURB INSTALLATION INSTRUCTIONS. FOR DUCT FLANGE ATTACHMENT TO UNIT, SEE UNIT INSTALLATION INSTRUCTIONS FOR RECOMMENDED DUCT SIZES.

 Illustration  
 ST-A0743-02

[ ] Designates Metric Conversions

# ROOFCURB ADAPTERS

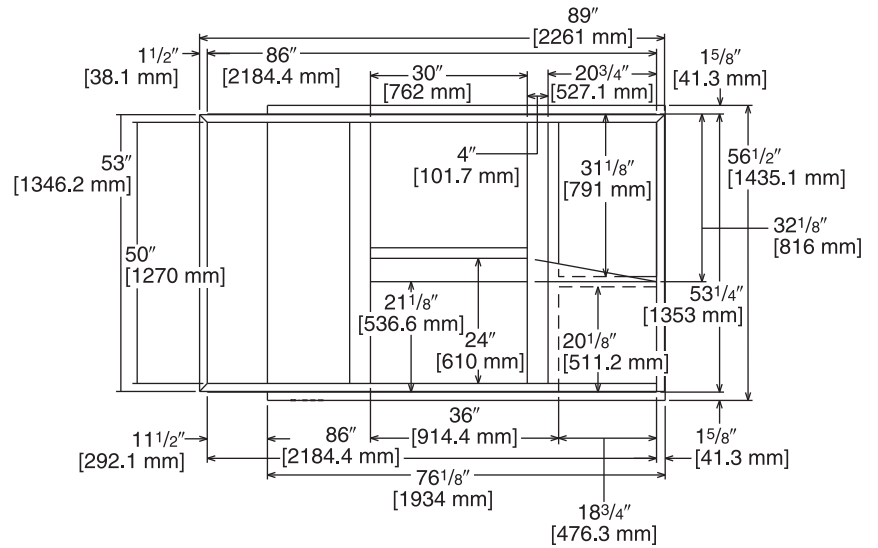
OLD MODELS	OLD ROOFCURB	ROOFCURB ADAPTER	NEW MODELS (All Share Common Cabinet)
(-)RCF, (-)REF-075/076 (-)RGF-150075, (-)RGF-131076 (-)RGF-201076	RXRK-E50	RXRX-CDCE50	RKNL- C073, C090, C102, C120, C151  RKNL- H090, H102, H120, H151
(-)RGF-200075 (-)RGG, (-)REG, (-)RCG-075 (-)RGF, (-)REF, (-)RCF-085 (-)RGF, (-)REF, (-)RCF-100 (-)RGG, (-)REG, (-)RCG-100	RXRK-E54	RXRX-CFCE54	
(-)RGF, (-)REF, (-)RCF-125	RXRK-E56	RXRX-CFCE56	
(-)PDC-075 (-)PDC-100/101	RXPK-C12	RXRX-CGCC12	

NOTE: Ductwork modifications may be necessary if the capacity and/or indoor airflow rate of replacement unit is not equivalent to that of the unit being replaced.  
 RKNL-C073, -C/H090, -C/H102, -C/H120, -C/H151 fit on the same curb as the RKKB-A090, A102, A120, A150, A181, RKMB- A090, A102, A120, A150, RKNB- A090, A102, A120

# ROOFCURB ADAPTERS (Cont.)

RXRX-CDCE50

Illustration  
ADS-7952-02  
Sheet 2



**TOP VIEW**

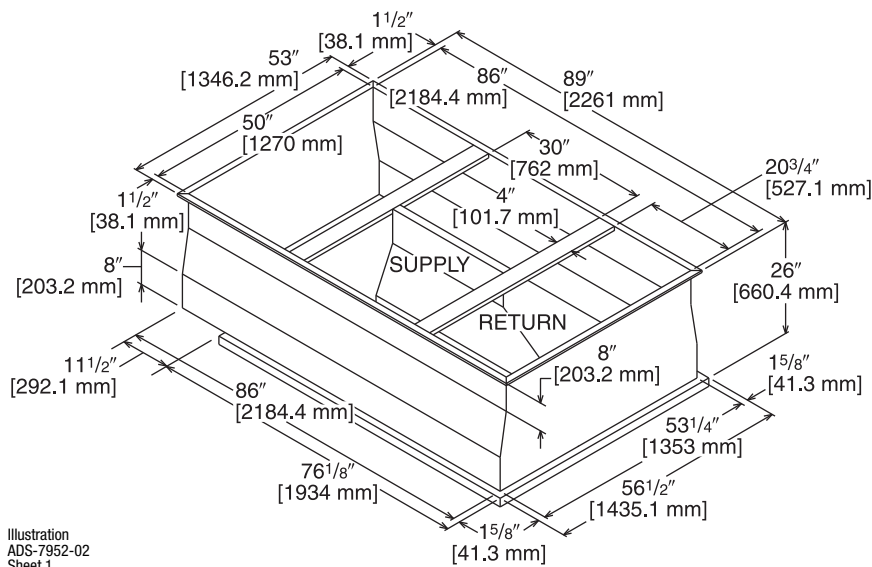


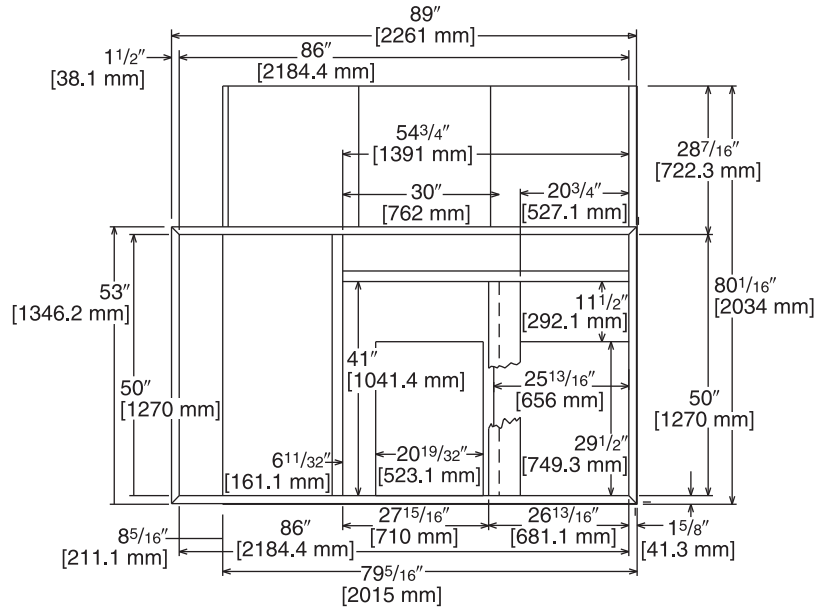
Illustration  
ADS-7952-02  
Sheet 1

[ ] Designates Metric Conversions

# ROOFCURB ADAPTERS (Cont.)

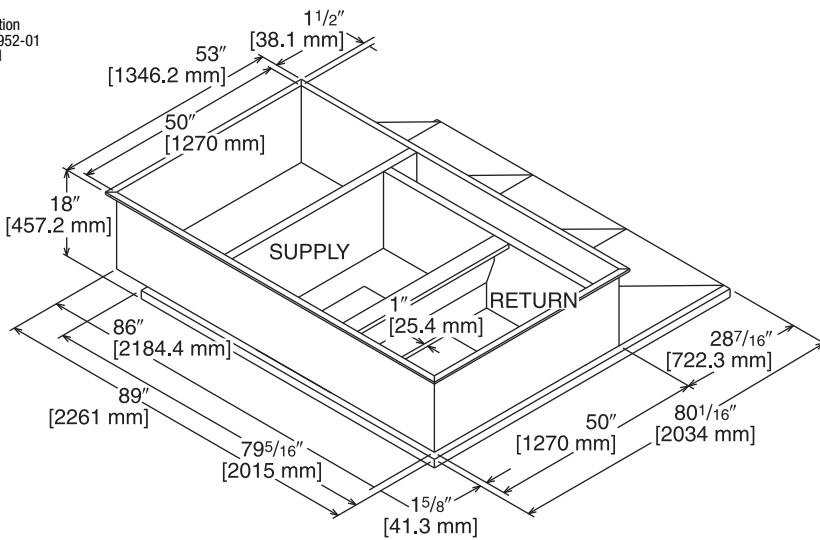
RXRX-CFCE54

Illustration  
ADS-7952-01  
Sheet 2



**TOP VIEW**

Illustration  
ADS-7952-01  
Sheet 1

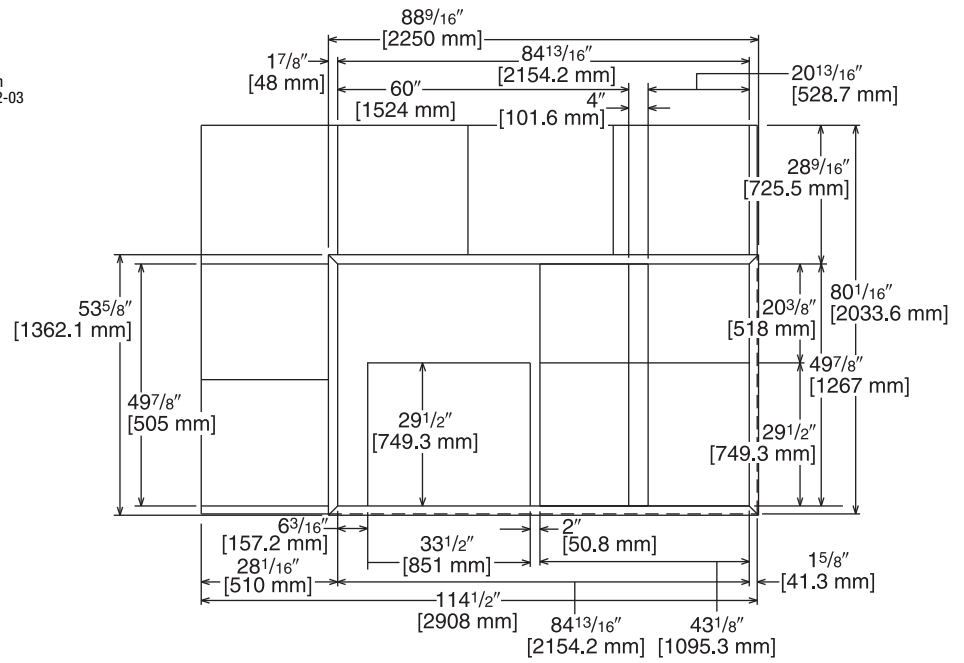


[ ] Designates Metric Conversions

# ROOFCURB ADAPTERS (Cont.)

RXXR-CFCE56

Illustration  
ADS-7952-03  
Sheet 2



**TOP VIEW**

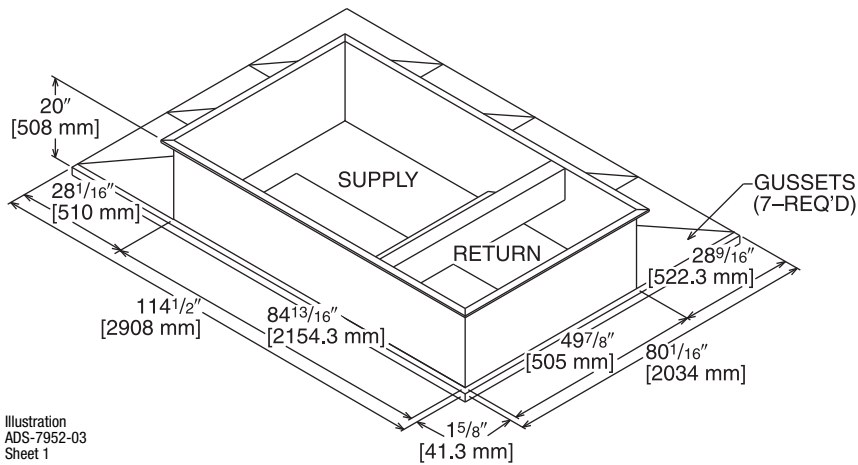


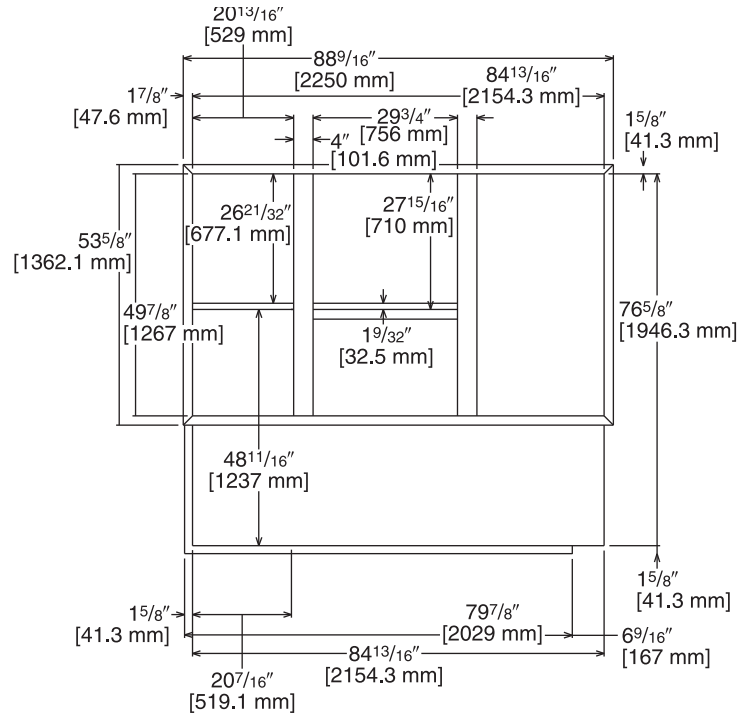
Illustration  
ADS-7952-03  
Sheet 1

[ ] Designates Metric Conversions

# ROOFCURB ADAPTERS (Cont.)

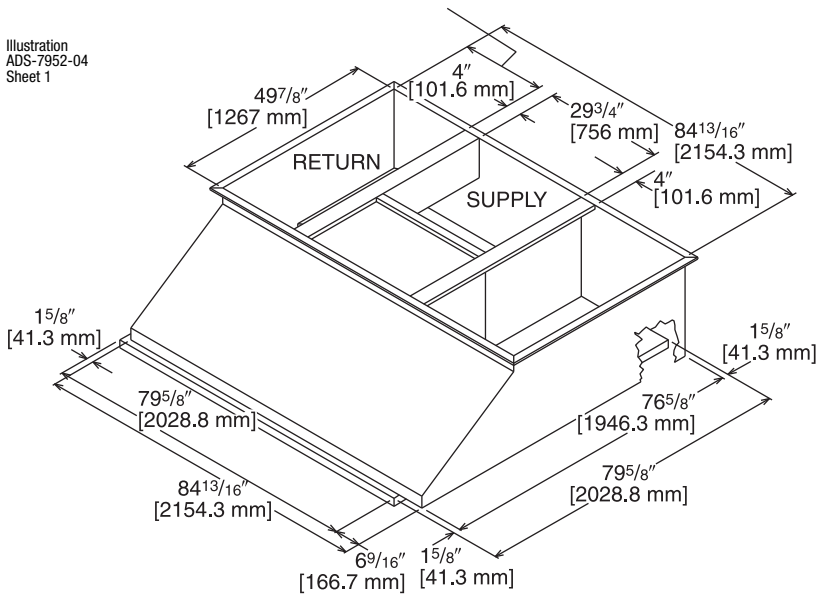
RXRX-CGCC12

Illustration  
ADS-7952-04  
Sheet 2



TOP VIEW

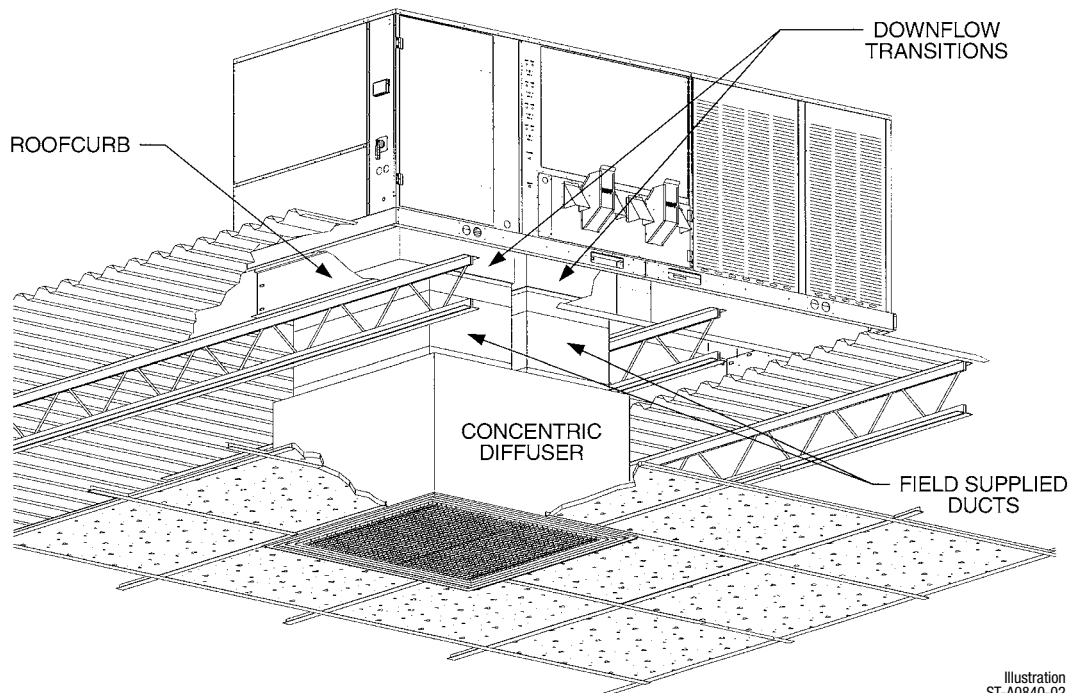
Illustration  
ADS-7952-04  
Sheet 1



[ ] Designates Metric Conversions



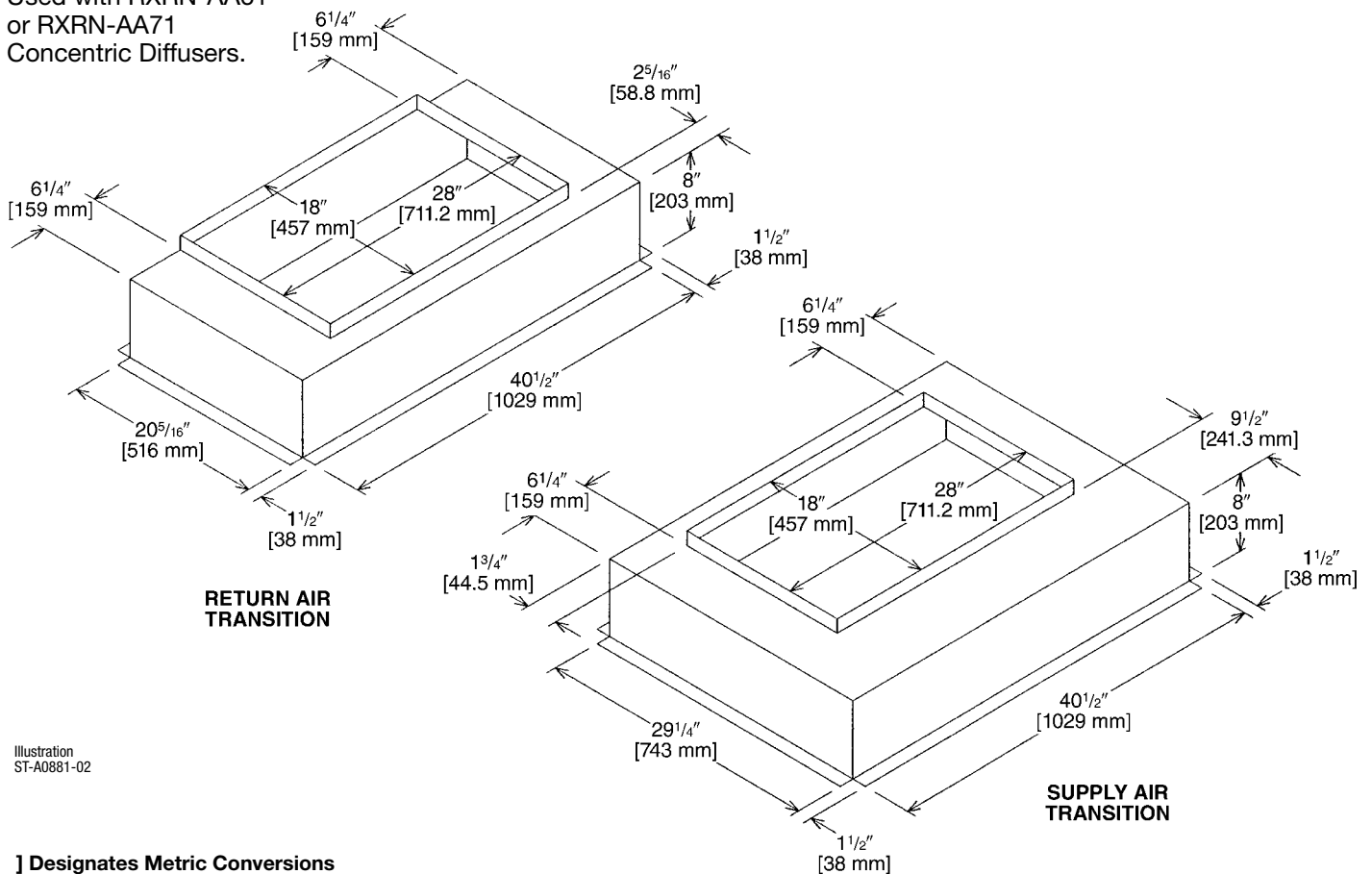
# CONCENTRIC DIFFUSER APPLICATION


 Illustration  
 ST-A0840-02

## DOWNFLOW TRANSITION DRAWINGS

### RXMC-CE05

- Used with RXRN-AA61 or RXRN-AA71 Concentric Diffusers.


 Illustration  
 ST-A0881-02

[ ] Designates Metric Conversions

# DOWNFLOW TRANSITION DRAWINGS

## RXMC-CF06

- Used with RXRN-AA66 or RXRN-AA76 Concentric Diffusers.

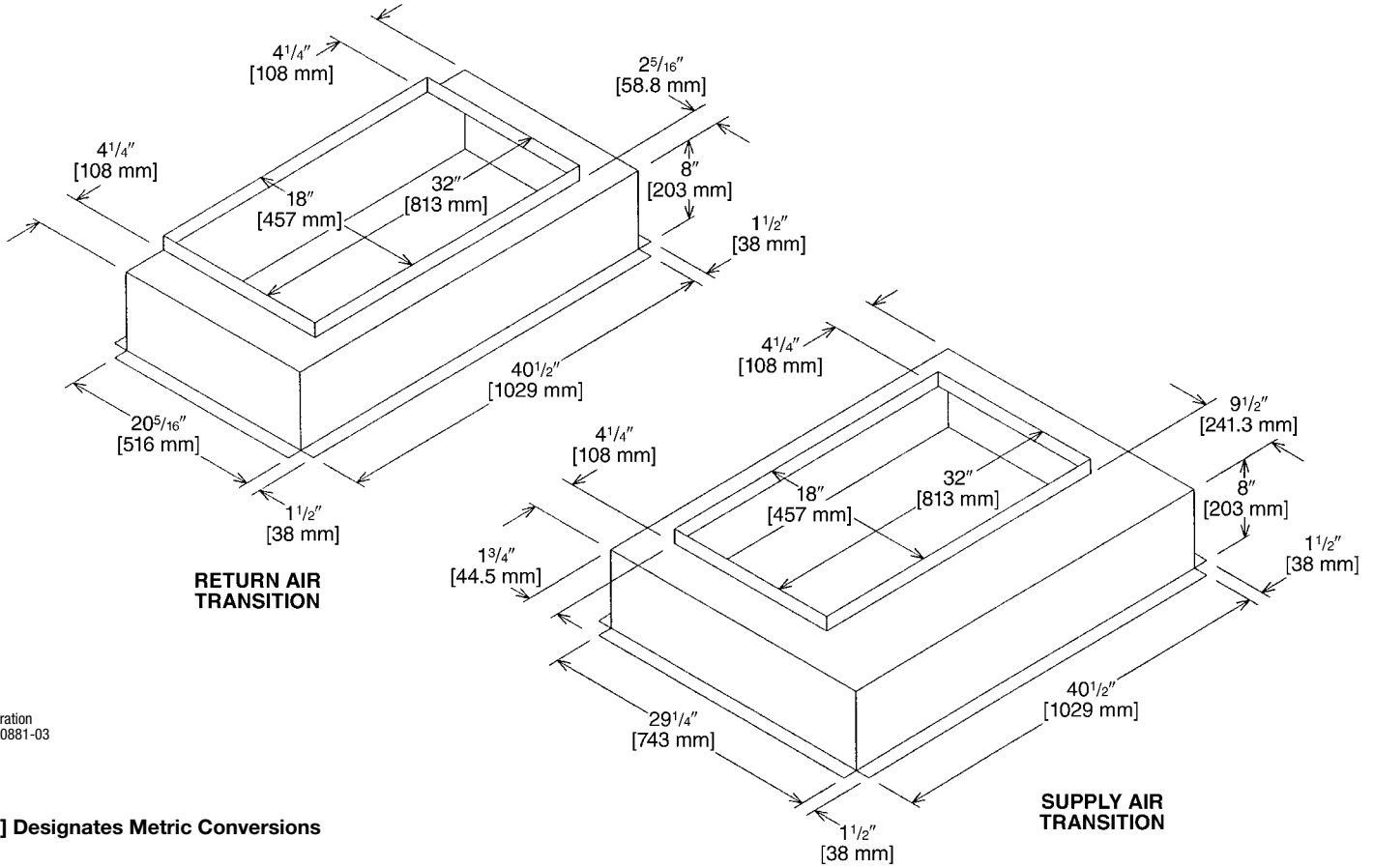


Illustration  
ST-A0881-03

[ ] Designates Metric Conversions

## DOWNFLOW TRANSITION DRAWINGS

### RXMC-CD04

- Used with RXRN-FA65 or RXRN-FA75 Concentric Diffusers.

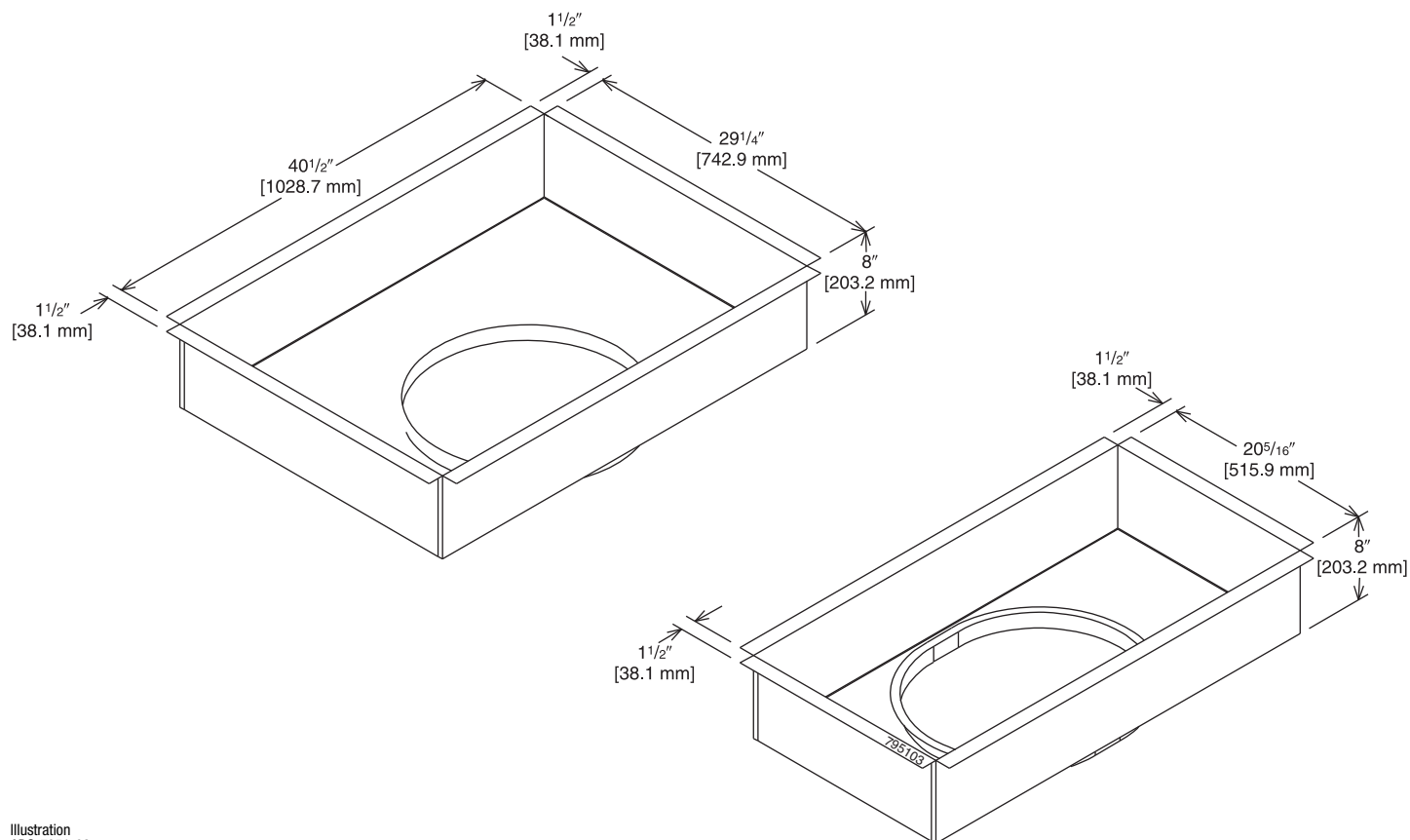


Illustration  
ADS-7951-03

[ ] Designates Metric Conversions

## CONCENTRIC DIFFUSER—STEP DOWN

RXRN-FA65 (7.5 & 8.5 Ton [26.4 & 29.9 kW] Models)

For Use With Downflow Transition (RXMC-CD04) and 20" [508 mm] Round Supply and Return Ducts

- All aluminum diffuser with aluminum return air eggcrate.
- Built-in anti-sweat gasket.
- Molded fiberglass supports.
- Built-in hanging supports.
- Diffuser box constructed of sheetmetal insulated with 1" [25.4 mm] 1.5 lbs. [.7 kg] duct liner.

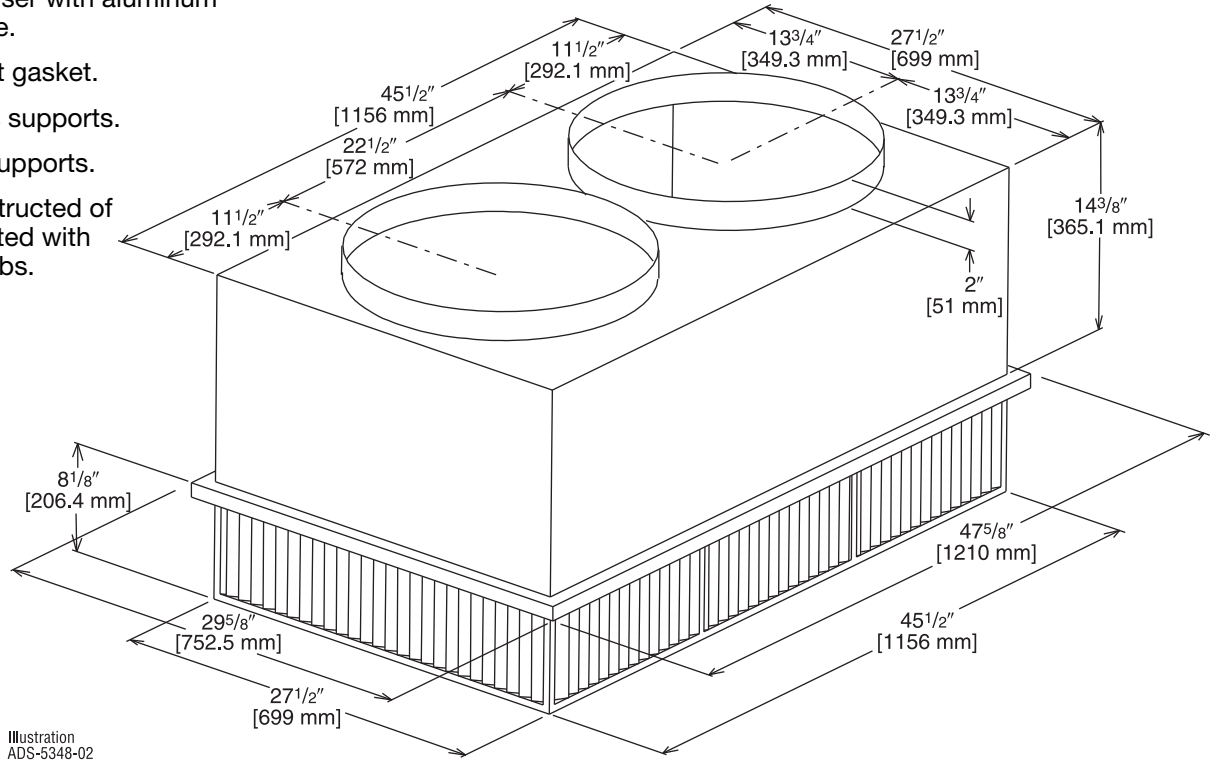


Illustration  
ADS-5348-02

## ENGINEERING DATA<sup>①</sup>

Model No.	Flow Rate CFM [L/s]	Static Pressure in. w.c. [kPa]	Throw <sup>② ③</sup> Feet [m]	Neck Velocity fpm [m/s]	Noise Level <sup>④</sup> (dbA)
RXRN-FA65	2600 [1227]	0.17 [0.042]	24-29 [7.3-8.8]	669 [3.4]	20
	2800 [1321]	0.20 [0.050]	25-30 [7.6-9.1]	720 [3.7]	25
	3000 [1416]	0.25 [0.062]	27-33 [8.2-10.1]	772 [3.9]	25
	3200 [1510]	0.31 [0.077]	28-35 [8.5-10.7]	823 [4.2]	25
	3400 [1604]	0.37 [0.092]	30-37 [9.1-11.3]	874 [4.4]	30

NOTES: ① All data is based on the air diffusion council guidelines.

② Throw data is based on 75 FPM Terminal Velocities using isothermal air.

③ Throw is based on diffuser blades being directed in a straight pattern.

④ Actual noise levels may vary due to duct design and do not include transmitted unit noise.

Adequate duct attenuation must be provided to reduce sound output from the unit.

[ ] Designates Metric Conversions

# CONCENTRIC DIFFUSER—STEP DOWN

## 18" x 28" [457.2 x 711.2 mm]

RXRN-AA61 (8.5 & 10 Ton [29.9 kW & 35.2] Models)

For Use With Downflow Transition (RXMC-CE05)  
 and 18" x 28" [457.2 x 711.2 mm]  
 Supply and Return Ducts

- All aluminum diffuser with aluminum return air eggcrate.
- Built-in anti-sweat gasket.
- Molded fiberglass supports.
- Built-in hanging supports.
- Diffuser box constructed of sheetmetal insulated with 1" [25.4 mm] 1.5 lbs. [.7 kg] duct liner.
- Double deflection diffuser with the blades secured by spring steel.

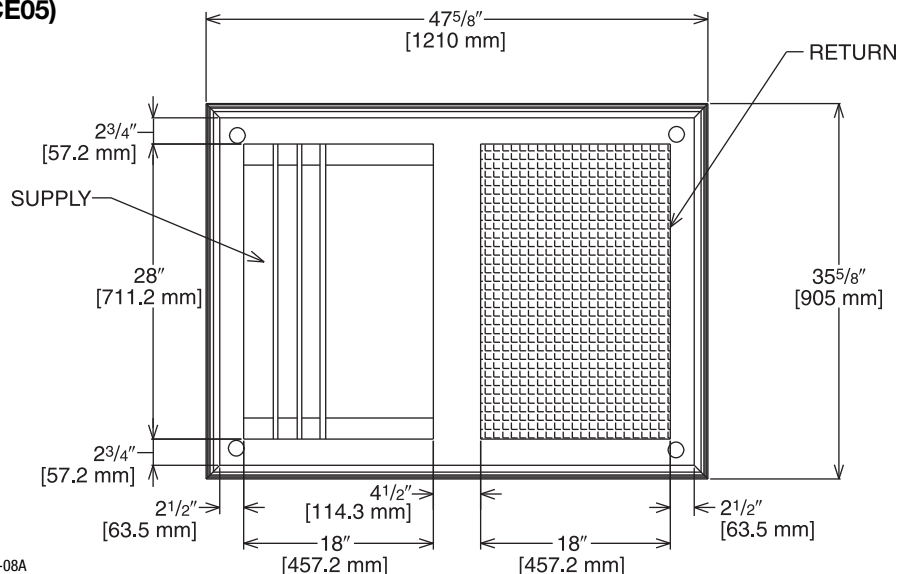


Illustration  
 ADS-7951-08A

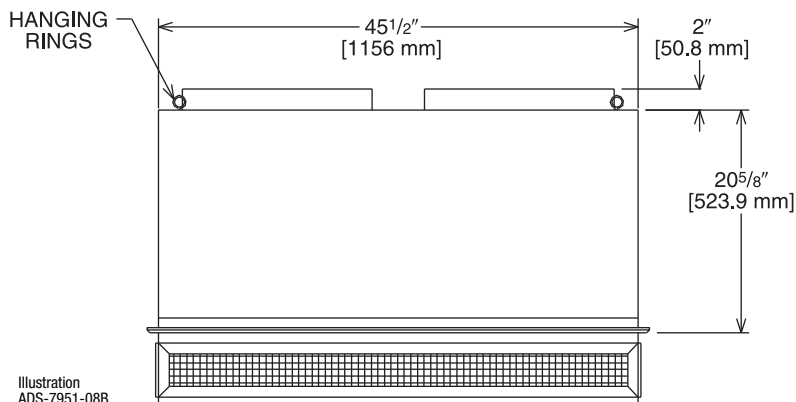


Illustration  
 ADS-7951-08B

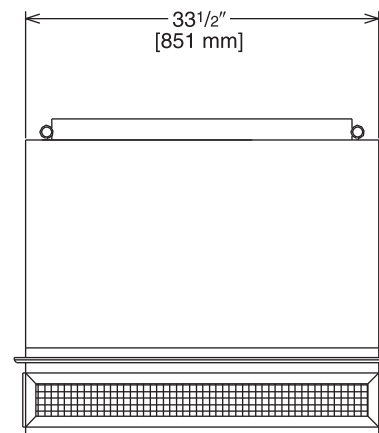


Illustration  
 ADS-7951-08C

## ENGINEERING DATA<sup>①</sup>

Model No.	Flow Rate CFM [L/s]	Static Pressure in w.c. [kPa]	Throw <sup>② ③</sup> Feet [m]	Neck Velocity fpm [m/s]	Noise Level <sup>④</sup> (dB)
RXRN-AA61	3600 [1699]	0.17 [0.042]	25-33 [7.6-10.1]	851 [4.3]	30
	3800 [1793]	0.18 [0.045]	27-35 [8.2-10.7]	898 [4.6]	30
	4000 [1888]	0.21 [0.052]	29-37 [8.8-11.3]	946 [4.8]	30
	4200 [1982]	0.24 [0.060]	32-40 [9.8-12.2]	993 [5.0]	30
	4400 [2076]	0.27 [0.067]	34-42 [10.4-12.8]	1040 [5.3]	30

- NOTES: ① All data is based on the air diffusion council guidelines.  
 ② Throw data is based on 75 FPM Terminal Velocities using isothermal air.  
 ③ Throw is based on diffuser blades being directed in a straight pattern.  
 ④ Actual noise levels may vary due to duct design and do not include transmitted unit noise. Adequate duct attenuation must be provided to reduce sound output from the unit.

[ ] Designates Metric Conversions

# CONCENTRIC DIFFUSER—STEP DOWN 18" x 32" [457.2 x 813 mm]

RXRN-AA66 (12.5 & 15 Ton [44.0 & 52.8 kW] Models)

For Use With Downflow Transition (RXMC-CF06)  
and 18" x 32" [457.2 x 813 mm]  
Supply and Return Ducts

- All aluminum diffuser with aluminum return air eggcrate.
- Built-in anti-sweat gasket.
- Molded fiberglass supports.
- Built-in hanging supports.
- Diffuser box constructed of sheetmetal insulated with 1" [25.4 mm] 1.5 lbs. [.7 kg] duct liner.
- Double deflection diffuser with the blades secured by spring steel.

Illustration  
ADS-7951-09A

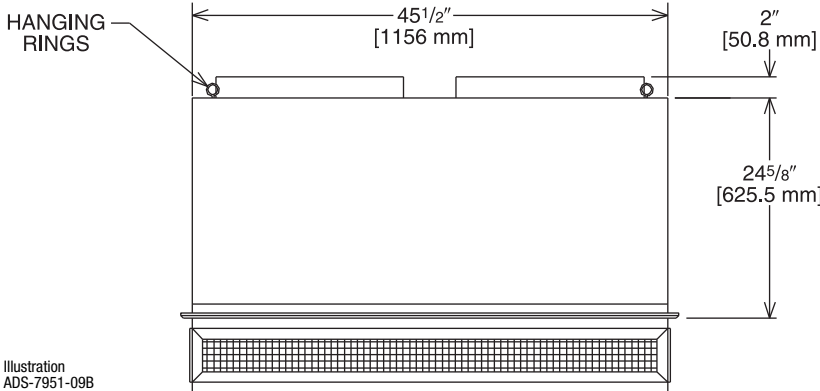
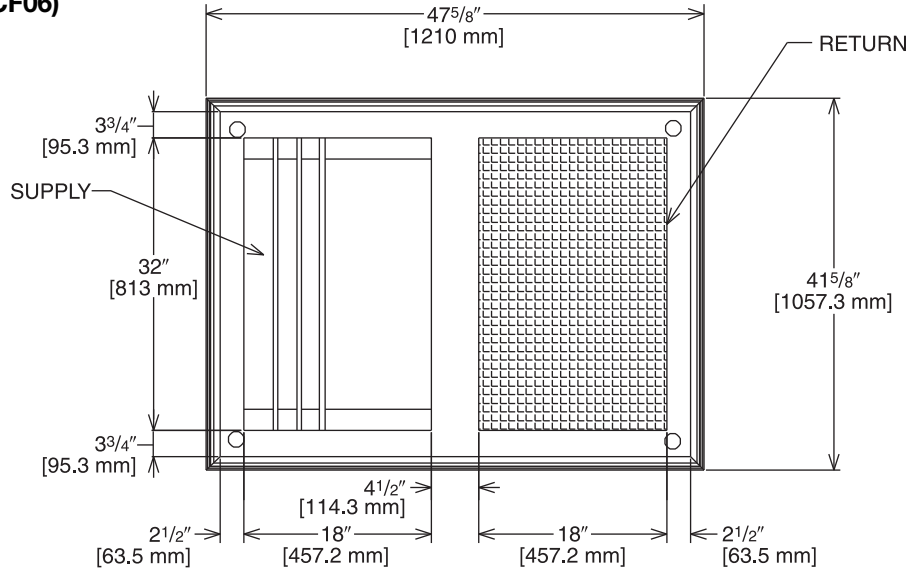
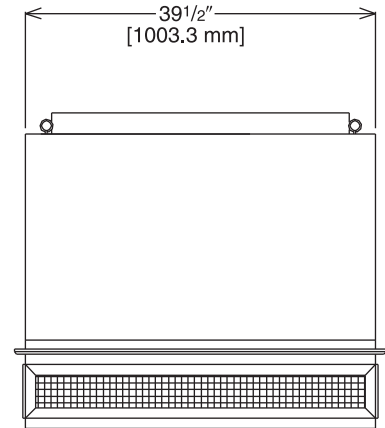


Illustration  
ADS-7951-09B

Illustration  
ADS-7951-09C



## ENGINEERING DATA<sup>①</sup>

Model No.	Flow Rate CFM [L/s]	Static Pressure in w.c. [kPa]	Throw <sup>② ③</sup> Feet [m]	Neck Velocity fpm [m/s]	Noise Level <sup>④</sup> (dba)
RXRN-AA66	4600 [2171]	0.31 [0.077]	26-31 [7.9-9.4]	841 [4.3]	30
	4800 [2265]	0.32 [0.080]	27-32 [8.2-9.8]	878 [4.5]	30
	5000 [2359]	0.34 [0.085]	28-33 [8.5-10.1]	915 [4.6]	30
	5200 [2454]	0.36 [0.090]	28-34 [8.5-10.4]	951 [4.8]	30
	5400 [2548]	0.39 [0.097]	29-35 [8.8-10.7]	988 [6.0]	30

- NOTES: ① All data is based on the air diffusion council guidelines.  
② Throw data is based on 75 FPM Terminal Velocities using isothermal air.  
③ Throw is based on diffuser blades being directed in a straight pattern.  
④ Actual noise levels may vary due to duct design and do not include transmitted unit noise. Adequate duct attenuation must be provided to reduce sound output from the unit.

[ ] Designates Metric Conversions

# FLUSH MOUNT CONCENTRIC DIFFUSER—FLUSH

RXRN-FA75 (7.5 & 8.5 Ton [26.4 & 29.9 kW] Models)

For Use With Downflow Transition (RXMC-CD04)  
and 20" [508 mm] Round Supply and Return Ducts

- All aluminum diffuser with aluminum return air eggcrate.
- Built-in anti-sweat gasket.
- Molded fiberglass supports.
- Built-in hanging supports.
- Diffuser box constructed of sheetmetal insulated with 1" [25.4 mm] 1.5 lbs. [.7 kg] duct liner.

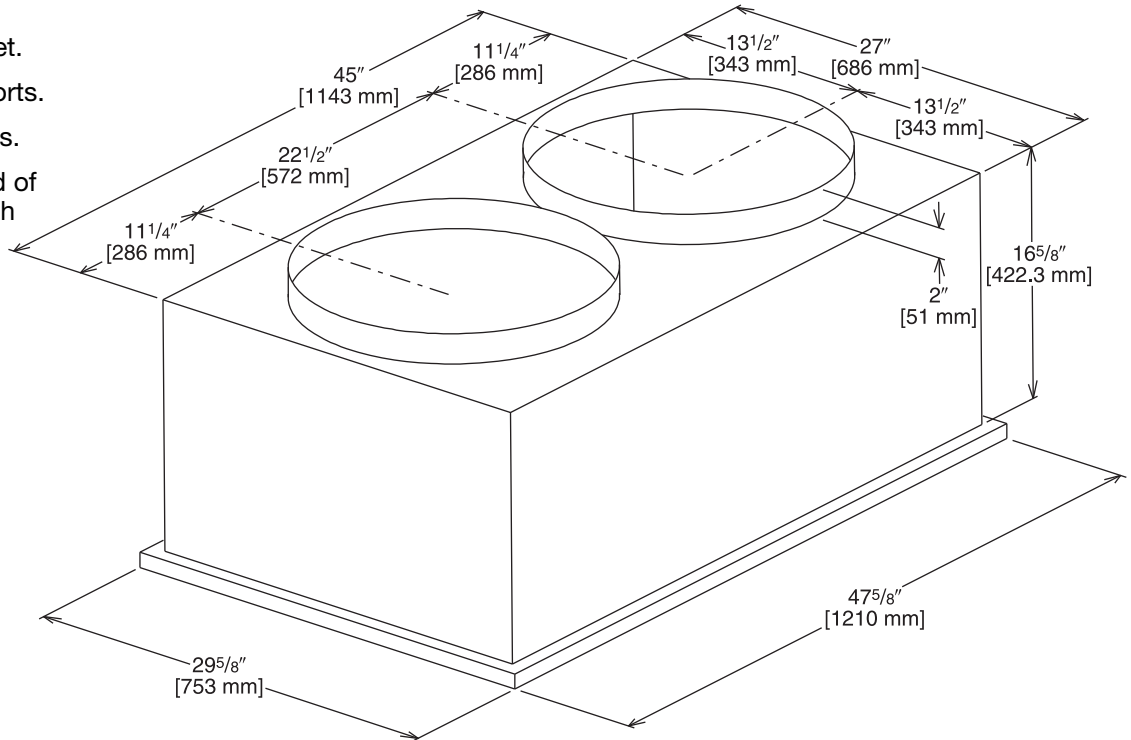


Illustration  
ADS-5348-04

## ENGINEERING DATA<sup>①</sup>

Model No.	Flow Rate CFM [L/s]	Static Pressure in. w.c. [kPa]	Throw <sup>② ③</sup> Feet [m]	Neck Velocity fpm [m/s]	Noise Level <sup>④</sup> (dbA)
RXRN-FA75	2600 [1227]	.17 [0.042]	19-24 [5.8-7.3]	663 [3.4]	30
	2800 [1321]	.20 [0.050]	20-28 [6.1-8.5]	714 [3.6]	35
	3000 [1416]	.25 [0.062]	21-29 [6.4-8.8]	765 [3.9]	35
	3200 [1510]	.31 [0.077]	22-29 [6.7-8.8]	816 [4.1]	40
	3400 [1604]	.37 [0.092]	22-30 [6.7-9.1]	867 [4.4]	40

NOTES: ① All data is based on the air diffusion council guidelines.

② Throw data is based on 75 FPM Terminal Velocities using isothermal air.

③ Throw is based on diffuser blades being directed in a straight pattern.

④ Actual noise levels may vary due to duct design and do not include transmitted unit noise.

Adequate duct attenuation must be provided to reduce sound output from the unit.

[ ] Designates Metric Conversions

# CONCENTRIC DIFFUSER—FLUSH and 18" x 28" [457.2 x 711.2 mm]

RXRN-AA71 (8.5 & 10 Ton [29.9 & 35.2] Models)

For Use With Downflow Transition (RXMC-CE05)  
and 18" x 28" [457.2 x 711.2 mm]  
Supply and Return Ducts

- All aluminum diffuser with aluminum return air eggcrate.
- Built-in anti-sweat gasket.
- Molded fiberglass supports.
- Built-in hanging supports.
- Diffuser box constructed of sheetmetal insulated with 1" [25.4 mm] 1.5 lbs. [.7 kg] duct liner.

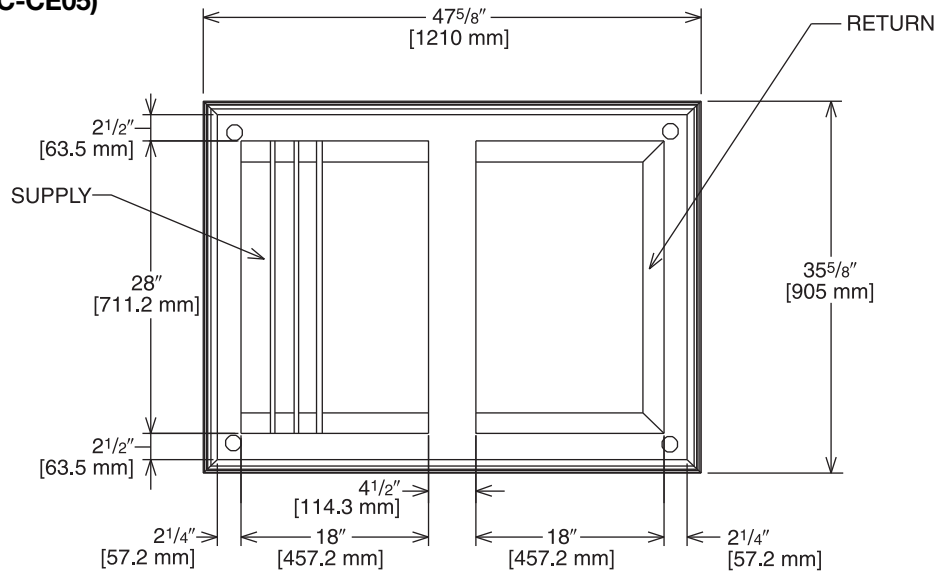


Illustration  
ADS-7951-06A

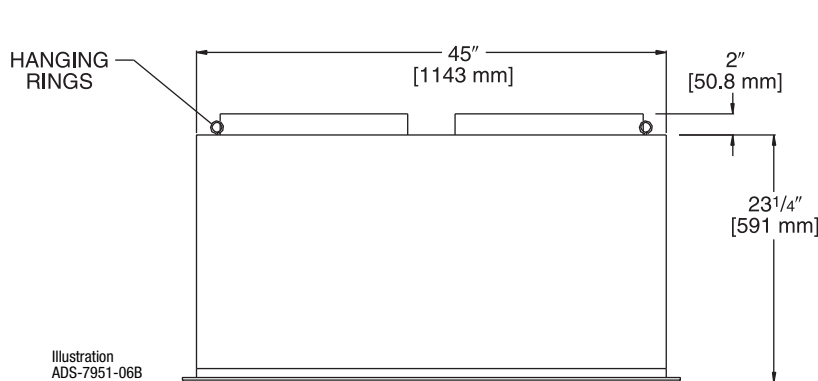


Illustration  
ADS-7951-06B

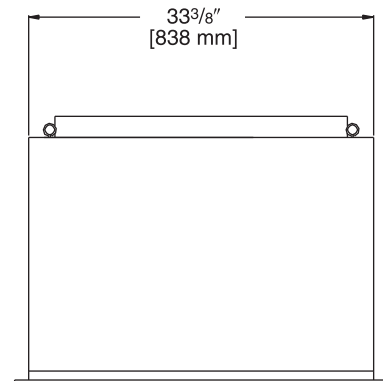


Illustration  
ADS-7951-06C

## ENGINEERING DATA<sup>①</sup>

Model No.	Flow Rate CFM [L/s]	Static Pressure in w.c. [kPa]	Throw <sup>② ③</sup> Feet [m]	Neck Velocity fpm [m/s]	Noise Level <sup>④</sup> (dbA)
RXRN-AA71	3600 [1699]	0.17 [0.042]	22-29 [6.7-8.8]	844 [4.3]	35
	3800 [1793]	0.18 [0.045]	22-30 [6.7-9.1]	891 [4.5]	40
	4000 [1888]	0.21 [0.052]	24-33 [7.3-10.1]	938 [4.8]	40
	4200 [1982]	0.24 [0.060]	26-35 [7.9-10.7]	985 [5.0]	40
	4400 [2076]	0.27 [0.067]	28-37 [8.5-11.3]	1032 [5.2]	40

- NOTES: ① All data is based on the air diffusion council guidelines.  
 ② Throw data is based on 75 FPM Terminal Velocities using isothermal air.  
 ③ Throw is based on diffuser blades being directed in a straight pattern.  
 ④ Actual noise levels may vary due to duct design and do not include transmitted unit noise.  
 Adequate duct attenuation must be provided to reduce sound output from the unit.

[ ] Designates Metric Conversions



# CONCENTRIC DIFFUSER—FLUSH 18" x 32" [457.2 x 813 mm]

RXRN-AA76 (12.5 & 15 Ton [44.0 & 52.8 kW] Models)

For Use With Downflow Transition (RXMC-CF06)  
and 18" x 32" [457.2 x 813 mm]  
Supply and Return Ducts

- All aluminum diffuser with aluminum return air eggcrate.
- Built-in anti-sweat gasket.
- Molded fiberglass supports.
- Built-in hanging supports.
- Diffuser box constructed of sheetmetal insulated with 1" [25.4 mm] 1.5 lbs. [.7 kg] duct liner.

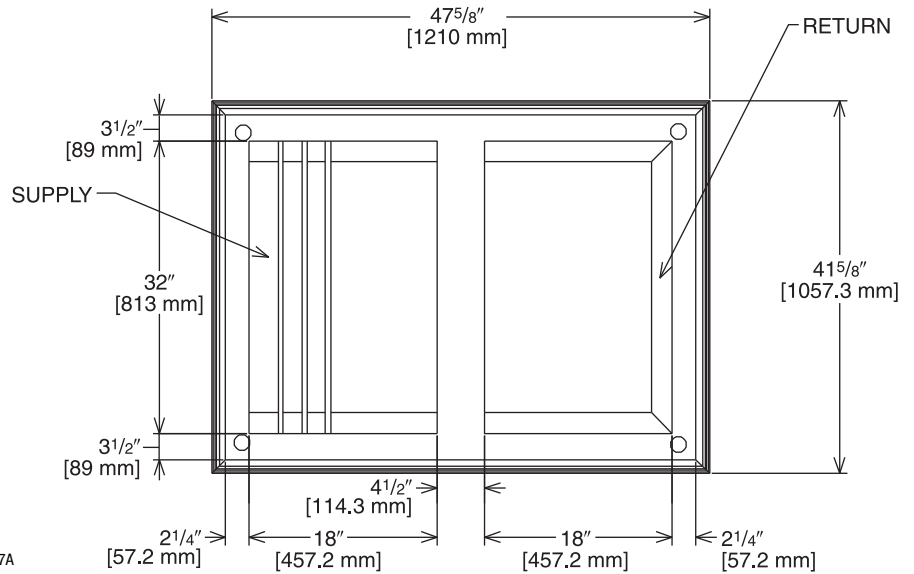


Illustration  
ADS-7951-07A

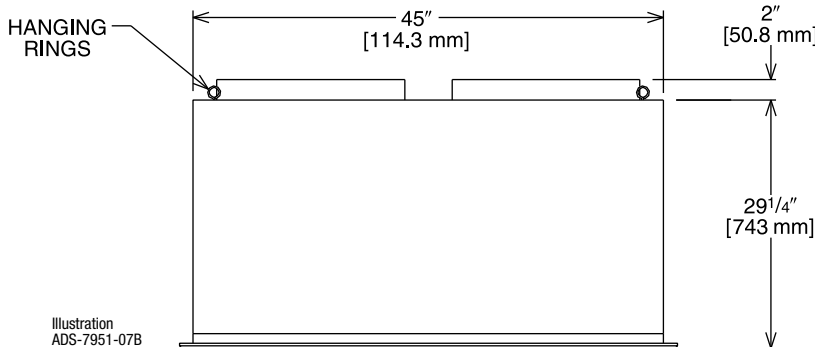


Illustration  
ADS-7951-07B

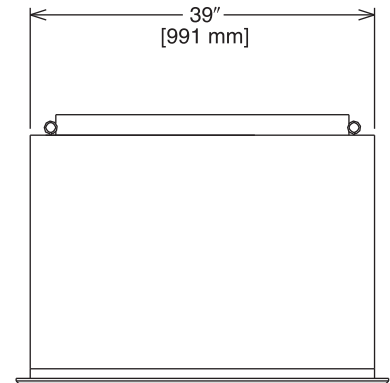


Illustration  
ADS-7951-07C

## ENGINEERING DATA<sup>①</sup>

Model No.	Flow Rate CFM [L/s]	Static Pressure in w.c. [kPa]	Throw <sup>② ③</sup> Feet [m]	Neck Velocity fpm [m/s]	Noise Level <sup>④</sup> (dbA)
RXRN-AA76	4600 [2171]	0.31 [0.077]	25-34 [7.6-10.4]	922 [4.7]	40
	4800 [2265]	0.32 [0.080]	26-35 [7.9-10.7]	962 [4.9]	40
	5000 [2359]	0.34 [0.085]	27-36 [8.2-11.0]	1002 [5.1]	40
	5200 [2454]	0.36 [0.090]	30-39 [9.1-11.9]	1043 [5.3]	45
	5400 [2548]	0.39 [0.097]	32-41 [9.8-12.5]	1083 [5.5]	45

NOTES: ① All data is based on the air diffusion council guidelines.

② Throw data is based on 75 FPM Terminal Velocities using isothermal air.

③ Throw is based on diffuser blades being directed in a straight pattern.

④ Actual noise levels may vary due to duct design and do not include transmitted unit noise.

Adequate duct attenuation must be provided to reduce sound output from the unit.

[ ] Designates Metric Conversions

## Guide Specifications RKNL-C/H 073 thru C/H151

You may copy this document directly into your building specification. This specification is written to comply with the 2004 version of the "master format" as published by the Construction Specification institute. [www.csinet.org](http://www.csinet.org).

### GAS HEAT PACKAGED ROOFTOP

#### HVAC Guide Specifications

#### Size Range: 6 to 12<sup>1/2</sup> Nominal Tons

Section	Description
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<b>23 06 80</b>	<b>Schedules for Decentralized HVAC Equipment</b>
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<b>23 06 80.13</b>	<b>Decentralized Unitary HVAC Equipment Schedule</b>
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23 06 80.13.A.	Rooftop unit schedule
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1. Schedule is per the project specification requirements.

<b>23 07 16</b>	<b>HVAC Equipment Insulation</b>
-----------------	----------------------------------

<b>23 07 16.13</b>	<b>Decentralized, Rooftop Units:</b>
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23 07 16.13.A.	Evaporator fan compartment:
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1. Interior cabinet surfaces shall be insulated with a minimum 3/4-in. thick, minimum 1-1/2 lb density, flexible fiberglass insulation bonded with foil face on the air side.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
3. Insulation shall also be mechanically fastened with welded pin and retainer washer.

23 07 16.13.B.	Gas heat compartment:
----------------	-----------------------

1. Aluminum foil-faced fiberglass insulation shall be used.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
3. Insulation shall also be mechanically fastened with welded pin and retainer washer.

<b>23 09 13</b>	<b>Instrumentation and Control Devices for HVAC</b>
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<b>23 09 13.23</b>	<b>Sensors and Transmitters:</b>
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23 09 13.23.A.	Thermostats
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1. Thermostat must
  - a. have capability to energize 2 different stages of cooling, and 2 different stages of heating.
  - b. must include capability for occupancy scheduling.

<b>23 09 23</b>	<b>Direct-digital Control system for HVAC</b>
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23 09 23.13	Decentralized, Rooftop Units:
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23 09 23.13.A.	RTU-C controller
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1. Shall be ASHRAE 62-2001 compliant.
2. Shall accept 18-32VAC input power.
3. Shall have an operating temperature range from -40°F (-40°C) to 158°F (70°C), 10% - 95% RH (non-condensing).
4. Controller shall accept the following inputs: space temperature, setpoint adjustment, outdoor air temperature, indoor air quality, outdoor air enthalpy, fire shutdown, return air enthalpy, fan status, remote time clock/door switch.
5. Shall accept a CO<sub>2</sub> sensor in the conditioned space, and be Demand Control Ventilation (DCV) ready.
6. Shall provide the following outputs: Economizer, fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2/exhaust/occupied.
7. Unit shall provide surge protection for the controller through a circuit breaker.
8. Shall have a field installed communication card allowing the unit to be Internet capable, and communicate at a Baud rate of 19.2K or faster
9. Shall have an LED display independently showing the status of activity on the communication bus, and processor operation.
10. Shall have either a field installed BACnet® plug-in communication card which includes an EIA-485 protocol communication port, or a field installed LonWorks™ plug-in communications card.
11. Software upgrades will be accomplished by local download. Software upgrades through chip replacements are not allowed.
12. Shall be shock resistant in all planes to 5G peak, 11ms during operation, and 100G peak, 11ms during storage.
13. Shall be vibration resistant in all planes to 1.5G @ 20-300 Hz.
14. Shall support a bus length of 4000 ft max, 60 devices per 1000 ft section, and 1 RS-485 repeater per 1000 ft sections.

**23 09 23.13.B. Open protocol, direct digital controller:**

1. Shall be ASHRAE 62-2001 compliant.
2. Shall accept 18-30VAC, 50-60Hz, and consumer 15VA or less power.
3. Shall have an operating temperature range from -40°F (-40°C) to 130°F (54°C), 10% - 90% RH (non-condensing).
4. Shall have either a field installed BACnet® plug-in communication card which includes an EIA-485 protocol communication port, or a field installed LonWorks™ plug-in communications card.
5. The BACnet® plug in communication card shall include built-in protocol for BACNET (MS/TP and PTP modes)
6. The LonWorks™ plug in communication card shall include the Echelon processor required for all Lon applications.
7. Shall allow access of up to 62 network variables (SNVT). Shall be compatible with all open controllers
8. Baud rate Controller shall be selectable through the EIA-485 protocol communication port.
9. Shall have an LED display independently showing the status of serial communication, running, errors, power, all digital outputs, and all analog inputs.
10. Shall accept the following inputs: space temperature, setpoint adjustment, outdoor air temperature, indoor air quality, outdoor air enthalpy, compressor lock-out, fire shutdown, enthalpy switch, and fan status/filter status/ humidity/ remote occupancy.
11. Shall provide the following outputs: economizer, fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2, exhaust.
12. Software upgrades will be accomplished by either local or remote download. No software upgrades through chip replacements are allowed.

**23 09 33 Electric and Electronic Control System for HVAC****23 09 33.13 Decentralized, Rooftop Units:****23 09 13.13.A. General:**

1. Shall be complete with self-contained low-voltage control circuit protected by a fuse on the 24-V transformer side (C072-C151 units have a resettable circuit breaker).
2. Shall utilize color-coded wiring.
3. Unit shall include self-contained low-voltage control circuit protected by a fuse on the 24-V transformer side with a resettable circuit breaker.
4. Shall include a central control terminal board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, economizer, thermostat, DDC control options, loss of charge, freeze sensor, high pressure switches.
5. The heat exchanger shall be controlled by an integrated furnace controller (IFC) microprocessor. See heat exchanger section of this specification.
6. Unit shall include a minimum of one 10-pin screw terminal connection board for connection of control wiring.

**23 09 33.23.B. Safeties:**

1. Compressor over-temperature, over current.
2. Loss of charge switch.
  - a. Units with 2 compressors shall have different colored wires for the circuit 1 and circuit 2 low and high pressure switches.
  - b. Loss of charge switch shall use different color wire than the high pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.
  - c. Loss of charge switch shall have a different sized connector than the high pressure switch. They shall physically prevent the cross-wiring of the safety switches between the high and low pressure side of the system.
3. High-pressure switch.
  - a. Units with 2 compressors shall have different colored wires for the circuit 1 and circuit 2 low and high pressure switches.
  - b. High pressure switch shall use different color wire than the low pressure switch. The purpose is to assist the installer and service person to correctly wire and or troubleshoot the rooftop unit.
  - c. High pressure switch shall have a different sized connector than the loss of charge switch. They shall physically prevent the cross-wiring of the safety switches between the high and low pressure side of the system.
4. Freeze protection sensor, evaporator coil.
5. Automatic reset, motor thermal overload protector.
6. Heating section shall be provided with the following minimum protections:
  - a. High-temperature limit switches.
  - b. Induced draft motor pressure switch.
  - c. Flame rollout switch.
  - d. Flame proving controls.

**23 09 33 Sequence of Operations for HVAC Controls****23 09 93.13 Decentralized, Rooftop Units:**

23 09 93.13 INSERT SEQUENCE OF OPERATION

**23 40 13 Panel Air Filters****23 40 13.13 Decentralized, Rooftop Units:**

23 40 13.13.A. Standard filter section shall

1. Shall consist of factory-installed, low velocity, throwaway 2-in. thick fiberglass filters of commercially available sizes.
2. Unit shall use only one filter size. Multiple sizes are not acceptable.
3. Filter face velocity shall not exceed 365 fpm at nominal airflows.
4. Filters shall be accessible through an access panel with “no-tool” removal as described in the unit cabinet section of the specification (23 81 19.13.H).

**23 81 19 Self-Contained Air Conditioners****23 81 19.13 (6-12.5 Ton) Capacity Self-Contained Air Conditioners**

23 81 19.13.A. General

1. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing a(n) hermetic scroll compressor(s) for cooling duty and gas combustion for heating duty.
2. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
3. Unit shall use environmentally safe, R410A refrigerant.
4. Unit shall be installed in accordance with the manufacturer’s instructions.
5. Unit must be selected and installed in compliance with local, state, and federal codes.

23 81 19.13.B. Quality Assurance

1. Unit meets ASHRAE 90.1-2010 minimum efficiency requirements.
2. 3 phase units are Energy Star qualified.
3. Unit shall be rated in accordance with AHRI Standards 210 and 360.
4. Unit shall be designed to conform to ASHRAE 15, 2001.
5. Unit shall be UL-tested and certified in accordance with ANSI Z21.47 Standards and UL-listed and certified under Canadian standards as a total package for safety requirements.
6. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
7. Unit casing shall be capable of withstanding 1000-hour salt spray exposure per ASTM B117 (scribed specimen).
8. Unit casing shall be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 5000-hour salt spray.
9. Unit shall be designed in accordance with ISO 9001:2000, and shall be manufactured in a facility registered by ISO 9001:2000.
10. Roof curb shall be designed to conform to NRCA Standards.
11. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
12. Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain.
13. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.

23 81 19.13.C. Delivery, Storage, and Handling

1. Unit shall be stored and handled per manufacturer’s recommendations.
2. Lifted by crane requires either shipping top panel or spreader bars.
3. Unit shall only be stored or positioned in the upright position.

23 81 19.13.E. Project Conditions

1. As specified in the contract.

23 81 19.13.F. Operating Characteristics

1. Unit shall be capable of starting and running at 115°F (46°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 210/240 or 360 at ± 10% voltage.
2. Compressor with standard controls shall be capable of operation down to 50°F (10°C), ambient outdoor temperatures. Low ambient accessory kit is necessary if mechanically cooling at ambient temperatures to 0°F (-17.7°C).
3. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.
4. Unit shall be factory configured for vertical supply & return configurations.
5. Unit shall be field convertible from vertical to horizontal configuration.

23 81 19.13.G. Electrical Requirements

1. Main power supply voltage, phase, and frequency must match those required by the manufacturer.

**23 81 19.13.H. Unit Cabinet**

1. Unit cabinet shall be constructed of galvanized steel.
2. Unit cabinet exterior paint shall be: powder coat paint.
3. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 210 or 360 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 3/4-in. thick, 1-1/2 lb density, flexible fiberglass insulation, foil faced on the air side. Aluminum foil-faced fiberglass insulation shall be used in the gas heat compartment.
4. Base of unit shall have a location for thru-the-base gas and electrical connections standard.
5. Base Rail
  - a. Unit shall have base rails on a minimum of 4 sides.
  - b. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
  - c. Holes shall be provided in the base rail for moving the rooftop for fork truck.
  - d. Base rail shall be a minimum of 14 gauge thickness.
6. Condensate pan and connections:
  - a. Shall be a sloped condensate drain pan made of a non-corrosive material and be removable for cleaning.
  - b. Shall comply with ASHRAE Standard 62.
  - c. Shall use a 1" x 11-1/2 NPT drain connection, through the side of the drain pan. Connection shall be made per manufacturer's recommendations.
  - d. Shall be able to be easily removed.
7. Top panel:
  - a. Shall be a single piece top panel over indoor section.
8. Gas Connections:
  - a. All gas piping connecting to unit gas valve shall enter the unit cabinet at a single location on side of unit (horizontal plane).
  - b. Thru-the-base capability
    - i. Standard unit shall have a thru-the-base gas-line location using a continuous raised, flange around opening in the basepan.
    - ii. No basepan penetration, other than those authorized by the manufacturer, is permitted.
9. Electrical Connections
  - a. All unit power wiring shall enter unit cabinet at a single, factory-prepared, continuous raised flange opening in the basepan.
  - b. Thru-the-base capability
    - i. Standard unit shall have a thru-the-base electrical location(s) using a raised, continuous raised flange opening in the basepan.
    - ii. No basepan penetration, other than those authorized by the manufacturer, is permitted.
10. Component access panels (standard)
  - a. Cabinet panels shall be easily opened for servicing.
  - b. Panels covering control box, indoor fan, indoor fan motor, gas components (where applicable), and filters shall have hinges with 1/4 turn fasteners.
  - c. 1/4 fasteners shall be permanently attached.

**23 81 19.13.I. Gas Heat**

1. General
  - a. Heat exchanger shall be an induced draft design. Positive pressure heat exchanger designs shall not be allowed.
  - b. Shall incorporate a direct-spark ignition system and redundant main gas valve.
  - c. Heat exchanger design shall allow combustion process condensate to gravity drain; maintenance to drain the gas heat exchanger shall not be required.
  - d. Gas supply pressure at the inlet to the rooftop unit gas valve must match that required by the manufacturer.
2. The heat exchanger shall be controlled by an integrated furnace controller (IFC) microcompressor.
  - a. IFC board shall notify users of fault using a LED (light-emitting diode).
3. Standard Heat Exchanger construction
  - a. Heat exchanger shall be of the tubular-section type constructed of a minimum of 20-gauge steel coated with a nominal 1.2 mil aluminum-silicone alloy for corrosion resistance.
  - b. Burners shall be of the in-shot type constructed of aluminum-coated steel.
  - c. Burners shall incorporate orifices for rated heat output up to 2000 ft (610m) elevation. Additional accessory kits may be required for applications above 2000 ft (610m) elevation, depending on local gas supply conditions.
  - d. Each heat exchanger tube shall contain tubulators for increased heating effectiveness.

4. Optional Stainless Steel Heat Exchanger construction
  - a. Use energy saving, direct-spark ignition system.
  - b. Use a redundant main gas valve.
  - c. Burners shall be of the in-shot type constructed of aluminum-coated steel.
  - d. All gas piping shall enter the unit cabinet at a single location on side of unit (horizontal plane).
  - e. The optional stainless steel heat exchanger shall be of the tubular-section type, constructed of a minimum of 20-gauge type 409 stainless steel.
  - f. Type 409 stainless steel shall be used in heat exchanger tubes.
  - g. Complete stainless steel heat exchanger allows for greater application flexibility.
5. Induced draft combustion motor and blower
  - a. Shall be a direct-drive, single inlet, forward-curved centrifugal type.
  - b. Shall be made from steel with a corrosion-resistant finish.
  - c. Shall be permanently lubricated sealed bearings.
  - d. Shall have inherent thermal overload protection.
  - e. Shall have an automatic reset feature.

## 23 81 19.13.J. Coils

1. Standard Aluminum/Copper Coils:
  - a. Standard evaporator and condenser coils shall be aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed. (Note: 12-1/2 ton utilizes MicroChannel condensing coil).
  - b. Evaporator and condenser coils shall be leak tested to 150 psig, pressure tested to 400 psig, and qualified to UL 1995 burst test at 2,200 psi.

## 23 81 19.13.K. Refrigerant Components

1. Refrigerant circuit shall include the following control, safety, and maintenance features:
  - a. TXV metering system shall prevent mal-distribution of two-phase refrigerant. C072 shall use orifice refrigerant control.
  - b. Refrigerant filter drier.
  - c. Service gauge connections on suction and discharge lines.
  - d. External pressure gauge ports access shall be located in front exterior of cabinet.
2. Compressors
  - a. Unit shall use one fully hermetic, scroll compressor for each independent refrigeration circuit.
  - b. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
  - c. Compressors shall be internally protected from high discharge temperature conditions.
  - d. Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor over-load device.
  - e. Compressor shall be factory mounted on rubber grommets.
  - f. Compressor motors shall have internal line break thermal and current overload protection.
  - g. Crankcase heaters shall not be required for normal operating range.
  - h. Compressor shall have molded electrical plug.

## 23 81 19.13.L. Filter Section

1. Filters access is specified in the unit cabinet section of this specification.
2. Filters shall be held in place by filter tray, facilitating easy removal and installation.
3. Shall consist of factory-installed, low velocity, throw-away 2-in. thick fiberglass filters.
4. Filter face velocity shall not exceed 320 fpm at nominal airflows.
5. Filters shall be standard, commercially available sizes.
6. Only one size filter per unit is allowed.

## 23 81 19.13.M. Evaporator Fan and Motor

1. Evaporator fan motor:
  - a. Shall have permanently lubricated bearings
  - b. Shall have inherent automatic-reset thermal overload protection.
  - c. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
2. Belt-driven Evaporator Fan:
  - a. Belt drive shall include an adjustable-pitch motor pulley.
  - b. Shall use sealed, permanently lubricated ball-bearing type.
  - c. Blower fan shall be double-inlet type with forward-curved blades.
  - d. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.

## 23 81 19.13.N. Condenser Fans and Motors

1. Condenser fan motors:
  - a. Shall be a totally enclosed motor.
  - b. Shall use permanently lubricated bearings.
  - c. Shall have inherent thermal overload protection with an automatic reset feature.
  - d. Shall use a shaft-down design. Shaft-up designs including those with “rain-slinger devices” shall not be allowed.
2. Condenser Fans shall:
  - a. Shall be a direct-driven propeller type fan
  - b. Shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

## 23 81 19.13.O. Special Features

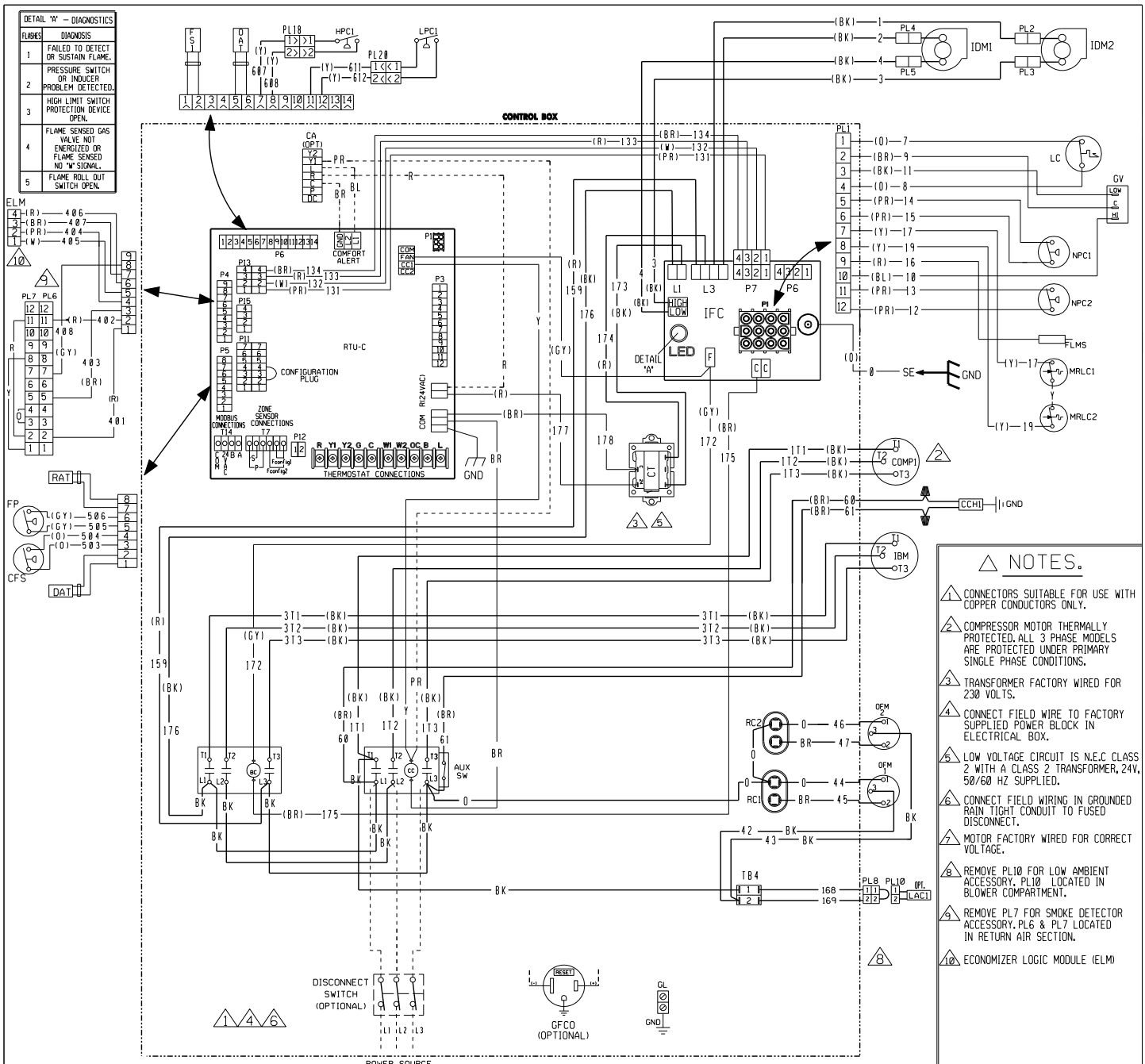
1. Integrated Economizers:
  - a. Integrated, gear-driven parallel modulating blade design type capable of simultaneous economizer and compressor operation.
  - b. Independent modules for vertical or horizontal return configurations shall be available. Vertical return modules shall be available as a factory installed option.
  - c. Damper blades shall be galvanized steel with metal gears. Plastic or composite blades on intake or return shall not be acceptable.
  - d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.
  - e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
  - f. Shall be capable of introducing up to 100% outdoor air.
  - g. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air.
  - h. Shall be designed to close damper(s) during loss-of-power situations with spring return built into motor.
  - i. Enthalpy sensor shall be provided as standard. Outdoor air sensor set point shall be adjustable and shall range from 40 to 100°F / 4 to 38°C. Additional sensor options shall be available as accessories.
  - j. The economizer controller shall also provide control of an accessory power exhaust unit function. Factory set at 70%, with a range of 0% to 100%.
  - k. The economizer shall maintain minimum airflow into the building during occupied period and provide design ventilation rate for full occupancy. A remote potentiometer may be used to override the damper set point.
  - l. Dampers shall be completely closed when the unit is in the unoccupied mode.
  - m. Economizer controller shall accept a 2-10Vdc CO2 sensor input for IAQ/DCV control. In this mode, dampers shall modulate the outdoor-air damper to provide ventilation based on the sensor input.
  - n. Compressor lockout sensor on the unit controller is factory set at 35°F and is adjustable from 30°F (-1°C) to 50°F (10°C) and resets the cooling lockout at 5°F (+2.7°C) above the set point.
  - o. Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.
  - p. Economizer controller shall provide indications when in free cooling mode, in the DCV mode, or the exhaust fan contact is closed.
  - q. Economizer wire harness will have provision for smoke detector.
2. Manual damper
  - a. Manual damper package shall consist of damper, air inlet screen, and rain hood which can be preset to admit up to 50% outdoor air for year round ventilation.
3. Liquid Propane (LP) Conversion Kit
  - a. Package shall contain all the necessary hardware and instructions to convert a standard natural gas unit for use with liquefied propane, up to 2000 ft (610m) elevation.
4. Flue Shield
  - a. Flue shield shall provide protection from the hot sides of the gas flue hood.
5. Condenser Coil Hail Guard Assembly
  - a. Shall protect against damage from hail.
  - b. Shall be louvered style.
6. Unit-Mounted, Non-Fused Disconnect Switch:
  - a. Switch shall be factory-installed, internally mounted.
  - b. National Electric Code (NEC) and UL approved non-fused switch shall provide unit power shutoff.
  - c. Shall be accessible from outside the unit.
  - d. Shall provide local shutdown and lockout capability.

7. Convenience Outlet:
  - a. Non-Powered convenience outlet.
  - b. Outlet shall be powered from a separate 115-120v power source.
  - c. A transformer shall not be included.
  - d. Outlet shall be field-installed and internally mounted with easily accessible 115-v female receptacle.
  - e. Outlet shall include 15 amp GFI receptacle with independent fuse protection.
  - f. Outlet shall be accessible from outside the unit.
8. Flue Discharge Deflector:
  - a. Flue discharge deflector shall direct unit exhaust vertically instead of horizontally.
  - b. Deflector shall be defined as a “natural draft” device by the National Fuel and Gas (NFG) code.
9. Propeller Power Exhaust:
  - a. Power exhaust shall be used in conjunction with an integrated economizer.
  - b. Independent modules for vertical or horizontal return configurations shall be available.
  - c. Horizontal power exhaust shall be mounted in return ductwork.
  - d. Power exhaust shall be controlled by economizer controller operation. Exhaust fans shall be energized when dampers open past the 0-100% adjustable setpoint on the economizer control.
10. Roof Curbs (Vertical):
  - a. Formed galvanized steel with wood nailer strip and shall be capable of supporting entire unit weight.
  - b. Permits installation and securing of ductwork to curb prior to mounting unit on the curb.
11. Universal Gas Conversion Kit:
  - a. Package shall contain all the necessary hardware and instructions to convert a standard natural gas unit to operate from 2000-7000 ft (610 to 2134m) elevation with natural gas or from 0-7000 ft (90-2134m) elevation with liquefied propane.
12. Return Air Enthalpy Sensor:
  - a. The return air enthalpy sensor shall be used in conjunction with an outdoor air enthalpy sensor to provide differential enthalpy control.
13. Indoor Air Quality (CO<sub>2</sub>) Sensor:
  - a. Shall be able to provide demand ventilation indoor air quality (IAQ) control.
  - b. The IAQ sensor shall be available in duct mount, wall mount, or wall mount with LED display. The set point shall have adjustment capability.
14. Smoke detectors:
  - a. Shall be a Four-Wire Controller and Detector.
  - b. Shall be environmental compensated with differential sensing for reliable, stable, and drift-free sensitivity.
  - c. Shall use magnet-activated test/reset sensor switches.
  - d. Shall have tool-less connection terminal access.
  - e. Shall have a recessed momentary switch for testing and resetting the detector.
  - f. Controller shall include:
    - i. One set of normally open alarm initiation contacts for connection to an initiating device circuit on a fire alarm control panel
    - ii. Two Form-C auxiliary alarm relays for interface with rooftop unit or other equipment
    - iii. One Form-C supervision (trouble) relay to control the operation of the Trouble LED on a remote test/reset station
    - iv. Capable of direct connection to two individual detector modules.
    - v. Can be wired to up to 14 other duct smoke detectors for multiple fan shutdown applications.
15. Barometric relief
  - a. Shall include damper, seals, hard-ware, and hoods to relieve excess building pressure.
  - b. Damper shall gravity-close upon shutdown.

**26 29 23.12 Adjustable Frequency Drive**

1. Unit shall be supplied with an electronic variable frequency drive for the supply air fan.
2. Drive shall be factory installed in an enclosed cabinet.
3. Drive shall meet UL Standard 95-5V.
4. The completed unit assembly shall be UL listed.
5. Drives are to be accessible through a tooled access hinged door assembly.
6. The unit manufacturer shall install all power and control wiring.
7. The supply air fan drive output shall be controlled by the factory installed main unit control system and drive status and operating speed shall be monitored and displayed at the main unit control panel.
8. Drive shall be programmed and factory run tested in the unit.





FLAMES	DIAGNOSIS
1	FAILED TO DETECT OR SUSTAIN FLAME.
2	PRESSURE SWITCH OR INDUCER PROBLEM DETECTED.
3	HIGH LIMIT SWITCH PROTECTION DEVICE OPEN.
4	FLAME SENSED GAS VALVE NOT ENERGIZED OR FLAME SENSED NO 'M' SIGNAL.
5	FLAME ROLL OUT SWITCH OPEN.

- △ NOTES.**
1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
  2. COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
  3. TRANSFORMER FACTORY WIRED FOR 230 VOLTS.
  4. CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRICAL BOX.
  5. LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
  6. CONNECT FIELD WIRING IN GROUND RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
  7. MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
  8. REMOVE PL10 FOR LOW AMBIENT ACCESSORY. PL10 LOCATED IN BLOWER COMPARTMENT.
  9. REMOVE PL7 FOR SMOKE DETECTOR ACCESSORY. PL6 & PL7 LOCATED IN RETURN AIR SECTION.
  10. ECONOMIZER LOGIC MODULE (ELM)

**COMPONENT CODE**

BC	BLOWER CONTACTOR	IDM	INDUCED DRAFT MOTOR
CA	COMFORT ALERT MODULE	IFC	INTEGRATED FURNACE CONTROL
CC	COMPRESSOR CONTACTOR	LAC	LOW AMBIENT COOLING CONTROL
CCH	CRANKCASE HEATER	LC	LIMIT CONTROL
CFS	CLOGGED FILTER SWITCH	LPC	LOW PRESSURE CONTROL
COMP	COMPRESSOR	MRLC	MANUAL RESET LIMIT CONTROL
CT	CONTROL TRANSFORMER	NPC	NEGATIVE PRESSURE CONTROL
DASC	DISCHARGE AIR SENSOR	OAT	OUTSIDE AIR SENSOR
DISC	DISCONNECT SWITCH	RTU-C	ROOFTOP UNIT CONTROL
FLMS	FLAME SENSOR	OFM	OUTDOOR FAN MOTOR
FP	FAN PROVING	PL	PLUG
FS	FREEZE SENSOR	PT	POWER TRANSFORMER
GF	GROUND FAULT CONVENIENCE OUTLET	RAT	RETURN AIR SENSOR
GL	GROUND LUG	RC	RUN CAPACITOR
GND	GROUND	RTU-C	ROOFTOP UNIT CONTROL
GV	GAS VALVE	SE	SPARK ELECTRODE
HPC	HIGH PRESSURE CONTROL	TB	TERMINAL BLOCK
IBM	INDOOR BLOWER MOTOR BELT DRIVE	▲	WIRE NUT

**WIRING INFORMATION**

**LINE VOLTAGE**  
 -FACTORY STANDARD \_\_\_\_\_  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - · - · - ·

**LOW VOLTAGE**  
 -FACTORY STANDARD \_\_\_\_\_  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - · - · - ·

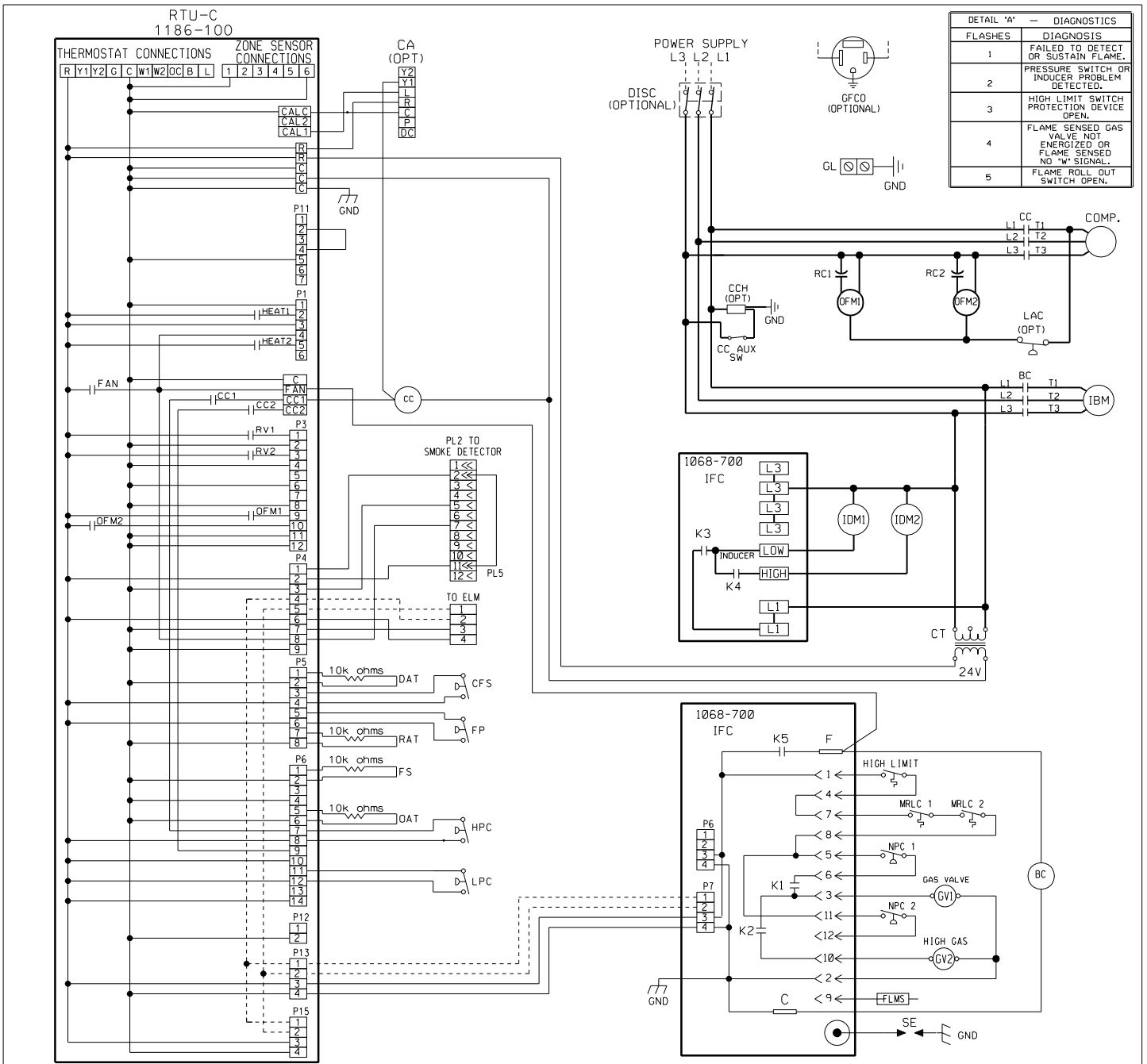
**REPLACEMENT WIRE**  
 -MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)  
 WARNING  
 -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

**WIRE COLOR CODE**

BK	BLACK	O	ORANGE
BR	BROWN	PR	PURPLE
BL	BLUE	R	RED
G	GREEN	W	WHITE
GY	GRAY	Y	YELLOW

**WIRING DIAGRAM**  
**6 - 7 TON**  
 208-230/460V 3 PH, 60 HZ.  
 ROOFTOP W/RTU-C

DR. BY	APP. BY	DATE	DWC. NO.	REV
MGR		4-16-09	90-103089-05	05



FLASHES	DIAGNOSIS
1	FAILED TO DETECT OR SUSTAIN FLAME.
2	PRESSURE SWITCH OR INDUCER PROBLEM DETECTED.
3	HIGH LIMIT SWITCH PROTECTION DEVICE OPEN.
4	FLAME SENSED GAS VALVE NOT ENERGIZED OR FLAME SENSED NO "W" SIGNAL.
5	FLAME ROLL OUT SWITCH OPEN.

**COMPONENT CODE**

BC	BLOWER CONTACTOR	IDM	INDUCED DRAFT MOTOR
CA	COMFORT ALERT MODULE	IFC	INTEGRATED FURNACE CONTROL
CC	COMPRESSOR CONTACTOR	LAC	LOW AMBIENT COOLING CONTROL
CCH	CRANKCASE HEATER	LC	LIMIT CONTROL
CFS	CLOGGED FILTER SWITCH	LPC	LOW PRESSURE CONTROL
COMP	COMPRESSOR	MAS	MIX AIR SENSOR
CT	CONTROL TRANSFORMER	MRLC	MANUAL RESET LIMIT CONTROL
DISC	DISCONNECT SWITCH	NPC	NEGATIVE PRESSURE CONTROL
FLMS	FLAME SENSOR	OAT	OUTSIDE AIR SENSOR
FP	FAN PROVING	OFM	OUTDOOR FAN MOTOR
FS	FREEZE SENSOR	PL	PLUG
GFCO	GROUND FAULT CONVENIENCE OUTLET	RAT	RETURN AIR SENSOR
GL	GROUND LUG	RC	RUN CAPACITOR
GND	GROUND	SCC	SPACE COMFORT CONTROL
GV	GAS VALVE	SE	SPARK ELECTRODE
HPC	HIGH PRESSURE CONTROL	TB	TERMINAL BLOCK
IBM	INDOOR BLOWER MOTOR BELT DRIVE	TB	WIRE NUT

**WIRING INFORMATION**

LINE VOLTAGE  
 -FACTORY STANDARD \_\_\_\_\_  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - - - - -

LOW VOLTAGE  
 -FACTORY STANDARD \_\_\_\_\_  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - - - - -

REPLACEMENT WIRE  
 -MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)

WARNING  
 -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

**WIRE COLOR CODE**

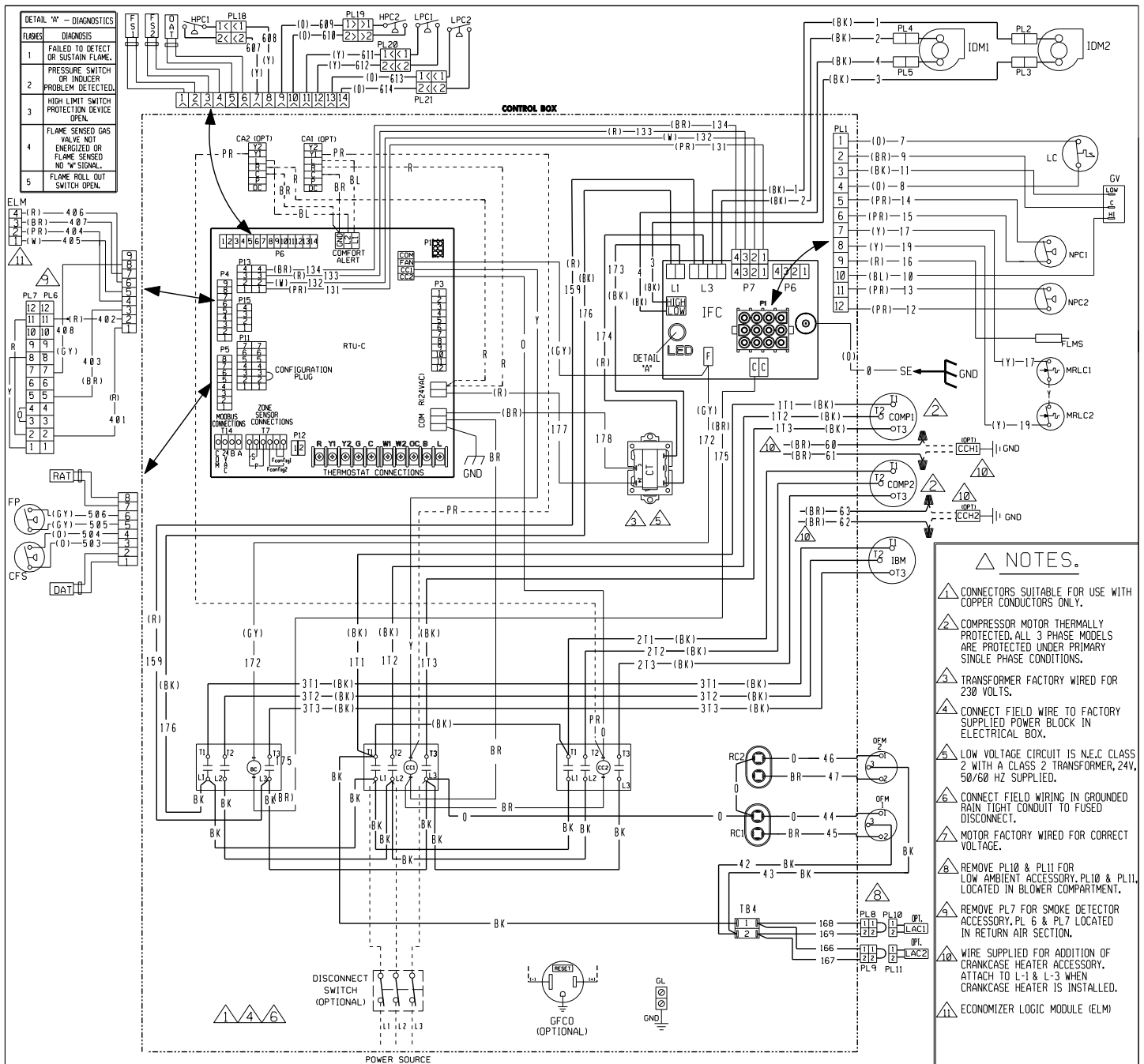
BK	BLACK	O	ORANGE
BR	BROWN	PR	PURPLE
BL	BLUE	R	RED
G	GREEN	W	WHITE
GY	GRAY	Y	YELLOW

**WIRING SCHEMATIC**  
 6 - 7 TON  
 208-230/460V 3 PH, 60 HZ.  
 ROOFTOP W/RTU-C

DR. BY MGR    APP. BY    DATE 7-16-09    DWG. NO. 90-103246-05    REV 03



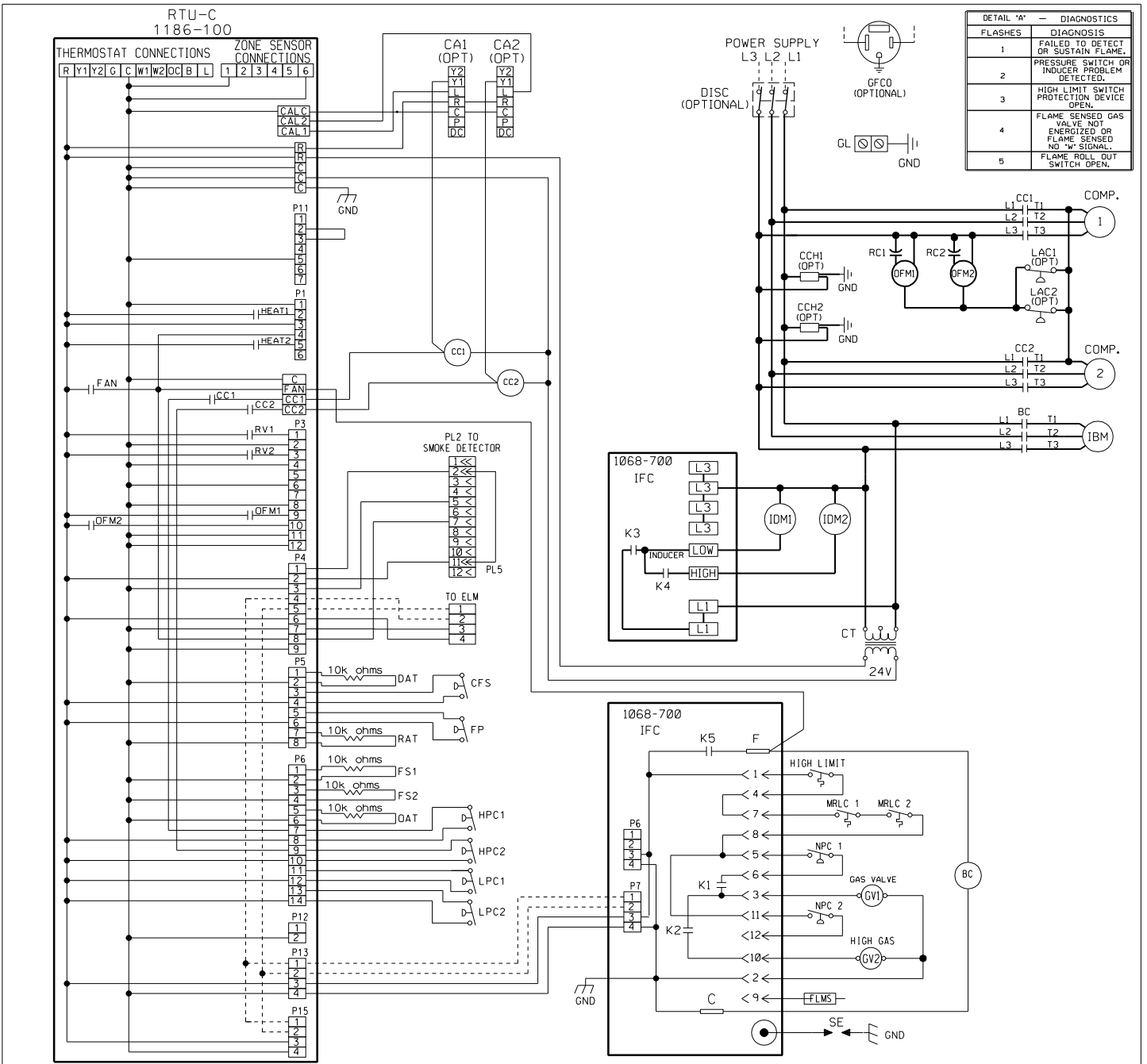




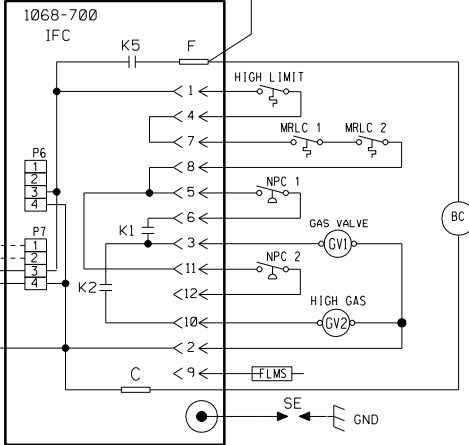
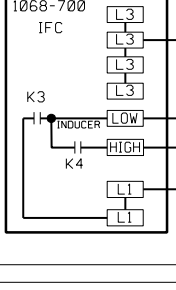
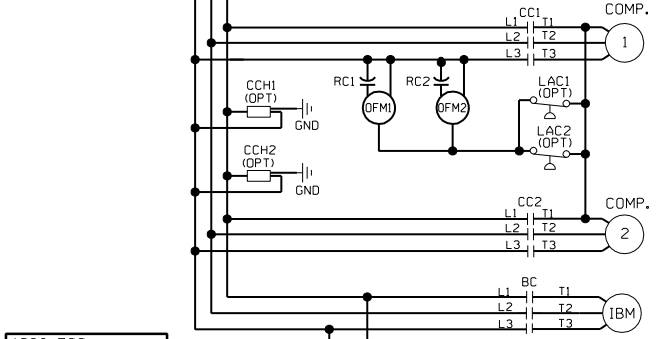
- NOTES.**
- 1 CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
  - 2 COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
  - 3 TRANSFORMER FACTORY WIRED FOR 230 VOLTS.
  - 4 CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRICAL BOX.
  - 5 LOW VOLTAGE CIRCUIT IS N.E.C CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
  - 6 CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
  - 7 MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
  - 8 REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11 LOCATED IN BLOWER COMPARTMENT.
  - 9 REMOVE PL7 FOR SMOKE DETECTOR ACCESSORY. PL 6 & PL7 LOCATED IN RETURN AIR SECTION.
  - 10 WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY. ATTACH TO L-1 & L-3 WHEN CRANKCASE HEATER IS INSTALLED.
  - 11 ECONOMIZER LOGIC MODULE (ELM)

COMPONENT CODE		WIRING INFORMATION		WIRE COLOR CODE	
BC	BLOWER CONTACTOR	LINE VOLTAGE	_____	BK	BLACK
CA	COMFORT ALERT MODULE	-FACTORY STANDARD	_____	BR	BROWN
CC	COMPRESSOR CONTACTOR	-FACTORY OPTION	-----	BL	BLUE
CCH	CRANKCASE HEATER	-FIELD INSTALLED	-----	G	GREEN
CFS	CLOGGED FILTER SWITCH	LOW VOLTAGE	_____	GY	GRAY
COMP	COMPRESSOR	-FACTORY STANDARD	_____	O	ORANGE
CT	CONTROL TRANSFORMER	-FACTORY OPTION	-----	PR	PURPLE
DAT	DISCHARGE AIR SENSOR	-FIELD INSTALLED	-----	R	RED
DISC	DISCONNECT SWITCH	REPLACEMENT WIRE	_____	W	WHITE
FLMS	FLAME SENSOR	-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)	_____	Y	YELLOW
FP	FAN PROVING	WARNING	_____		
FS	FREEZE SENSOR	-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.	_____		
GFCD	GROUND FAULT CONVENIENCE OUTLET		_____		
GL	GROUND LUG		_____		
GND	GROUND		_____		
GV	GAS VALVE		_____		
HPC	HIGH PRESSURE CONTROL		_____		
IBM	INDOOR BLOWER MOTOR BELT DRIVE		_____		
IDM	INDUCED DRAFT MOTOR		_____		
IFC	INTEGRATED FURNACE CONTROL		_____		
LAC	LOW AMBIENT COOLING CONTROL		_____		
LC	LIMIT CONTROL		_____		
LPC	LOW PRESSURE CONTROL		_____		
MRLC	MANUAL RESET LIMIT CONTROL		_____		
NPC	NEGATIVE PRESSURE CONTROL		_____		
OAT	OUTSIDE AIR SENSOR		_____		
OFM	OUTDOOR FAN MOTOR		_____		
PL	PLUG		_____		
PT	POWER TRANSFORMER		_____		
RAT	RETURN AIR SENSOR		_____		
RC	RUN CAPACITOR		_____		
RTU-C	ROOFTOP UNIT CONTROL		_____		
SE	SPARK ELECTRODE		_____		
TB	TERMINAL BLOCK		_____		
W	WIRE NUT		_____		

DR. BY MGR    APP. BY    DATE 4-14-09    DWC. NO. 90-103089-02    REV 03



DETAIL 'W' - DIAGNOSTICS	
FLASHES	DIAGNOSIS
1	FAILED TO DETECT OR SUSTAIN FLAME.
2	PRESSURE SWITCH OR INDUCER PROBLEM DETECTED.
3	HIGH LIMIT SWITCH PROTECTION DEVICE OPEN.
4	FLAME SENSED GAS VALVE NOT ENERGIZED OR FLAME SENSED NO "W" SIGNAL.
5	FLAME ROLL OUT SWITCH OPEN.



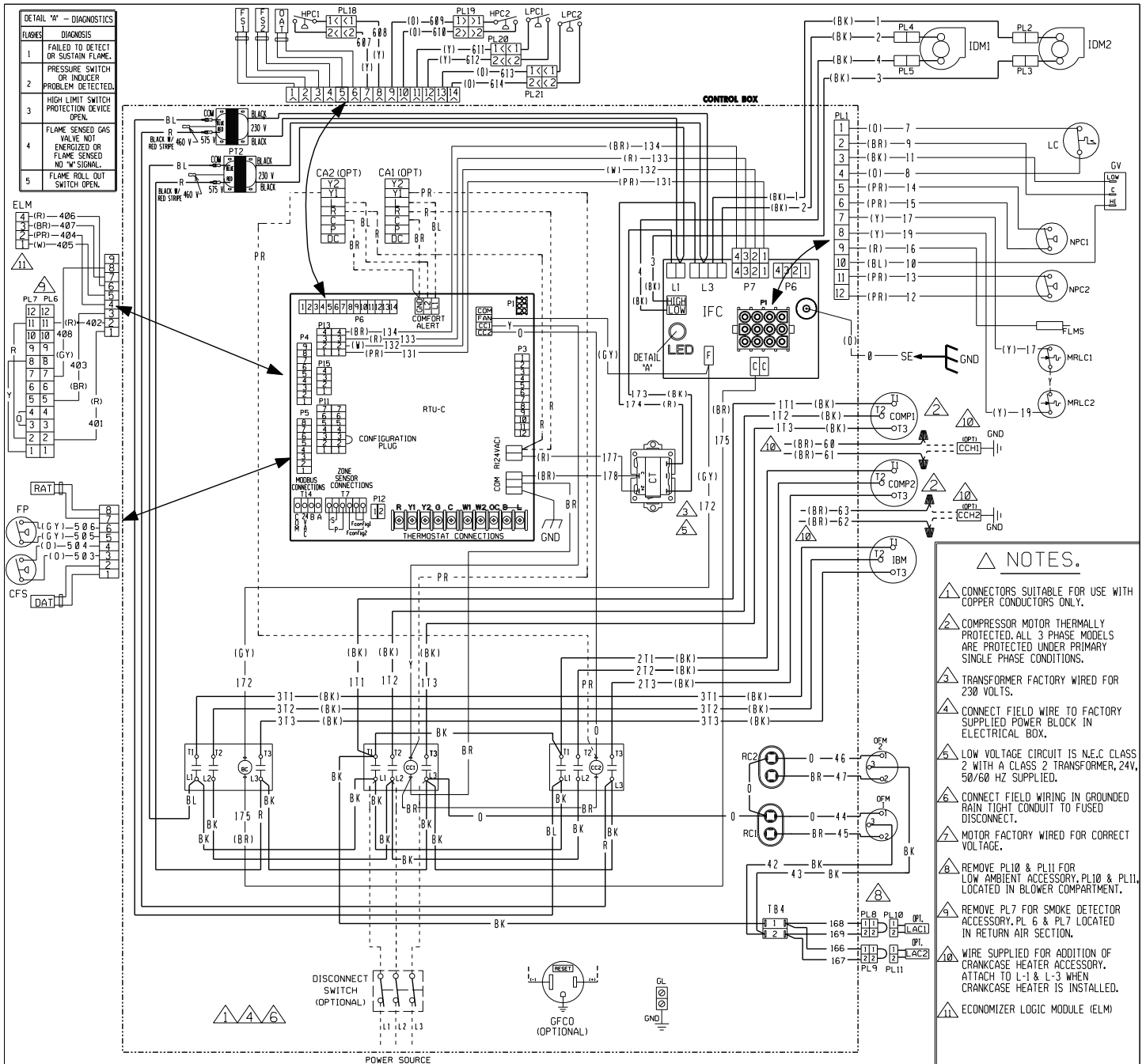
COMPONENT CODE	
BC	BLOWER CONTACTOR
CA	COMFORT ALERT MODULE
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
CFS	CLOGGED FILTER SWITCH
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
DISC	DISCONNECT SWITCH
FLMS	FLAME SENSOR
FF	FAN PROVING
FS	FREEZE SENSOR
GFCO	GROUND FAULT CONVENIENCE OUTLET
GL	GROUND LUG
GND	GROUND
GV	GAS VALVE
HPC	HIGH PRESSURE CONTROL
IBM	INDOOR BLOWER MOTOR BELT DRIVE
IDM	INDUCED DRAFT MOTOR
IFC	INTEGRATED FURNACE CONTROL
LAC	LOW AMBIENT COOLING CONTROL
LC	LIMIT CONTROL
LPC	LOW PRESSURE CONTROL
MAS	MIX AIR SENSOR
MRLC	MANUAL RESET LIMIT CONTROL
NPC	NEGATIVE PRESSURE CONTROL
OAT	OUTSIDE AIR SENSOR
OFM	OUTDOOR FAN MOTOR
PL	PLUG
PLM	RETURN AIR SENSOR
RC	RUN CAPACITOR
SCC	SPACE COMFORT CONTROL
SE	SPARK ELECTRODE
TB	TERMINAL BLOCK
TB	WIRE NUT

WIRING INFORMATION	
LINE VOLTAGE	_____
-FACTORY STANDARD	_____
-FACTORY OPTION	-----
-FIELD INSTALLED	-----
LOW VOLTAGE	_____
-FACTORY STANDARD	_____
-FACTORY OPTION	-----
-FIELD INSTALLED	-----
REPLACEMENT WIRE	_____
-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)	
WARNING	
-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.	

WIRE COLOR CODE			
BK	BLACK	O	ORANGE
BR	BROWN	PR	PURPLE
BL	BLUE	R	RED
G	GREEN	W	WHITE
GY	GRAY	Y	YELLOW

**WIRING SCHEMATIC**  
 (-)K?L-C090/102/120/150/151  
 208-230/460V 3 PH, 60 HZ.  
 ROOFTOP W/RTU-C

DR. BY	APP. BY	DATE	DWG. NO.	REV
MGR		7-16-09	90-103246-02	02



- NOTES.**
1. CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
  2. COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
  3. TRANSFORMER FACTORY WIRED FOR 230 VOLTS.
  4. CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRICAL BOX.
  5. LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
  6. CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
  7. MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
  8. REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11 LOCATED IN BLOWER COMPARTMENT.
  9. REMOVE PL7 FOR SMOKE DETECTOR ACCESSORY. PL 6 & PL7 LOCATED IN RETURN AIR SECTION.
  10. WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY. ATTACH TO L-1 & L-3 WHEN CRANKCASE HEATER IS INSTALLED.
  11. ECONOMIZER LOGIC MODULE (ELM)

COMPONENT CODE	
BC	BLOWER CONTACTOR
CA	COMFORT ALERT MODULE
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
CFS	CLOGGED FILTER SWITCH
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
DAT	DISCHARGE AIR SENSOR
DISC	DISCONNECT SWITCH
FLMS	FLAME SENSOR
FP	FAN PROVING
FS	FREEZE SENSOR
GFCO	GROUND FAULT CONVENIENCE OUTLET
GL	GROUND LUG
GND	GROUND
GV	GAS VALVE
HPC	HIGH PRESSURE CONTROL
IBM	INDOOR BLOWER MOTOR BELT DRIVE
IDM	INDUCED DRAFT MOTOR
IFC	INTEGRATED FURNACE CONTROL
LAC	LOW AMBIENT COOLING CONTROL
LC	LIMIT CONTROL
LPC	LOW PRESSURE CONTROL
MRLC	MANUAL RESET LIMIT CONTROL
NPC	NEGATIVE PRESSURE CONTROL
OAT	OUTSIDE AIR SENSOR
OFM	OUTDOOR FAN MOTOR
PL	PLUG
PT	POWER TRANSFORMER
RAT	RETURN AIR SENSOR
RC	RUN CAPACITOR
RTU-C	ROOFTOP UNIT CONTROL
SE	SPARK ELECTRODE
TB	TERMINAL BLOCK
W	WIRE NUT

**WIRING INFORMATION**

LINE VOLTAGE  
 -FACTORY STANDARD \_\_\_\_\_  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - - - - -

LOW VOLTAGE  
 -FACTORY STANDARD \_\_\_\_\_  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - - - - -

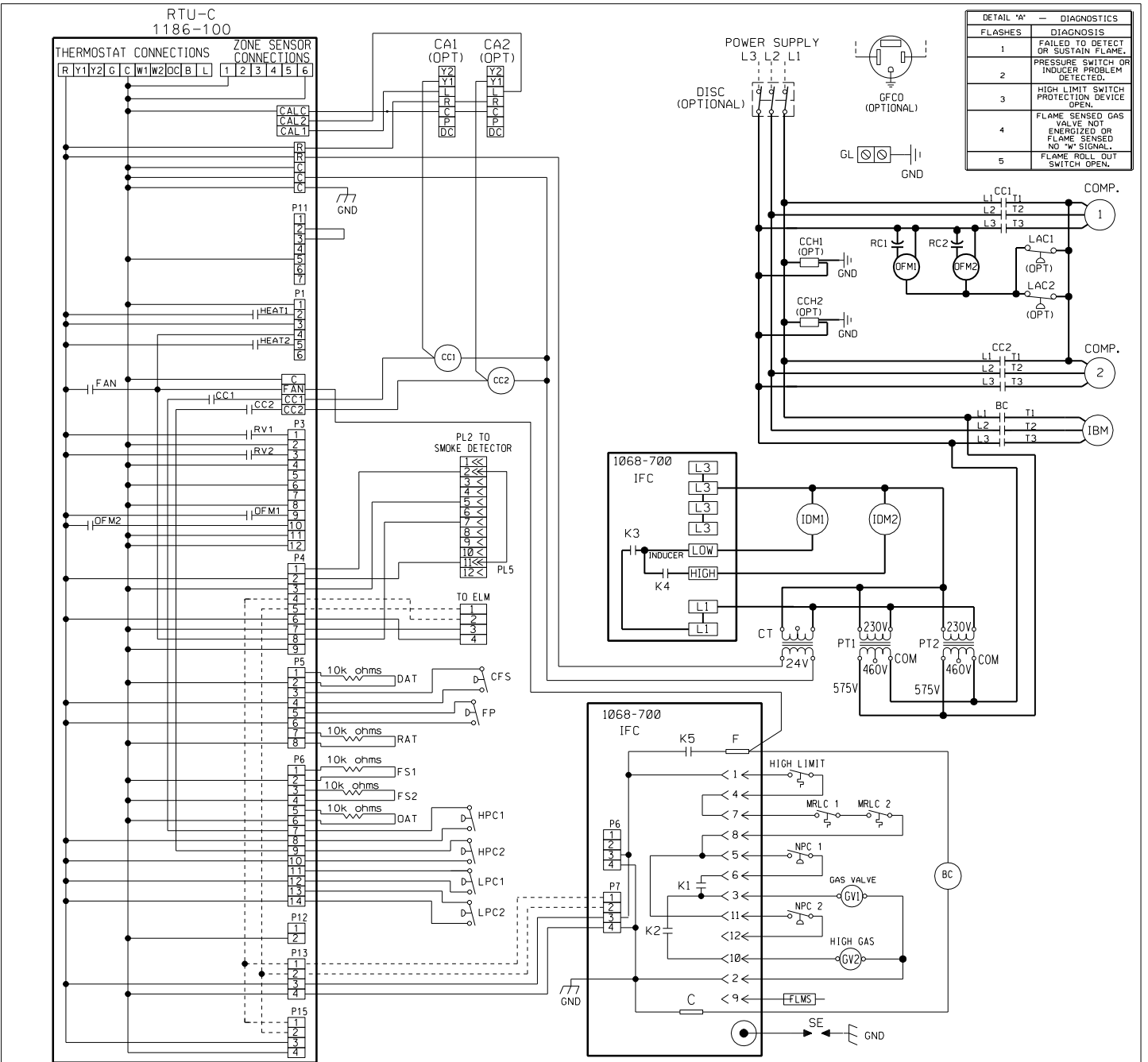
REPLACEMENT WIRE  
 -MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)

WARNING  
 -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

WIRE COLOR CODE	
BK	BLACK
BR	BROWN
BL	BLUE
G	GREEN
GY	GRAY
O	ORANGE
PR	PURPLE
R	RED
W	WHITE
Y	YELLOW

**WIRING DIAGRAM**  
 (-)K?L-C090/102/120/150/151  
 575V 3 PH, 60 HZ.  
 ROOFTOP W/RTU-C

DR. BY	APP. BY	DATE	DWG. NO.	REV
MGR		4-14-09	90-103089-06	03



DETAIL "A"	DIAGNOSTICS
FLASHES	DIAGNOSIS
1	FAILED TO DETECT OR SUSTAIN FLAME.
2	PRESSURE SWITCH OR INDUCER PROBLEM DETECTED.
3	HIGH LIMIT SWITCH PROTECTION DEVICE OPEN.
4	FLAME SENSED GAS VALVE NOT ENERGIZED OR FLAME SENSED NO "W" SIGNAL.
5	FLAME FROLD OUT SWITCH OPEN.

**COMPONENT CODE**

BC	BLOWER CONTACTOR	IDM	INDUCED DRAFT MOTOR
CA	COMFORT ALERT MODULE	IFC	INTEGRATED FURNACE CONTROL
CC	COMPRESSOR CONTACTOR	LAC	LOW AMBIENT COOLING CONTROL
CCH	CRANKCASE HEATER	LC	LIMIT CONTROL
COMP	CLOGGED FILTER SWITCH	LPC	LOW PRESSURE CONTROL
CT	COMPRESSOR	MAS	MIX AIR SENSOR
DISC	CONTROL TRANSFORMER	MRLC	MANUAL RESET LIMIT CONTROL
FLMS	DISCONNECT SWITCH	NPC	NEGATIVE PRESSURE CONTROL
GV	FLAME SENSOR	OAT	OUTSIDE AIR SENSOR
HPC	FAN PROVING	OFM	OUTDOOR FAN MOTOR
IBM	FREZE SENSOR	PL	PLUS
		RAT	RETURN AIR SENSOR
		RC	RUN CAPACITOR
		SCC	SPACE COMFORT CONTROL
		SE	SPARK ELECTRODE
		TB	TERMINAL BLOCK
		WN	WIRE NUT

**WIRING INFORMATION**

LINE VOLTAGE  
 -FACTORY STANDARD \_\_\_\_\_  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - - - - -

LOW VOLTAGE  
 -FACTORY STANDARD \_\_\_\_\_  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - - - - -

REPLACEMENT WIRE  
 -MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)

WARNING  
 -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

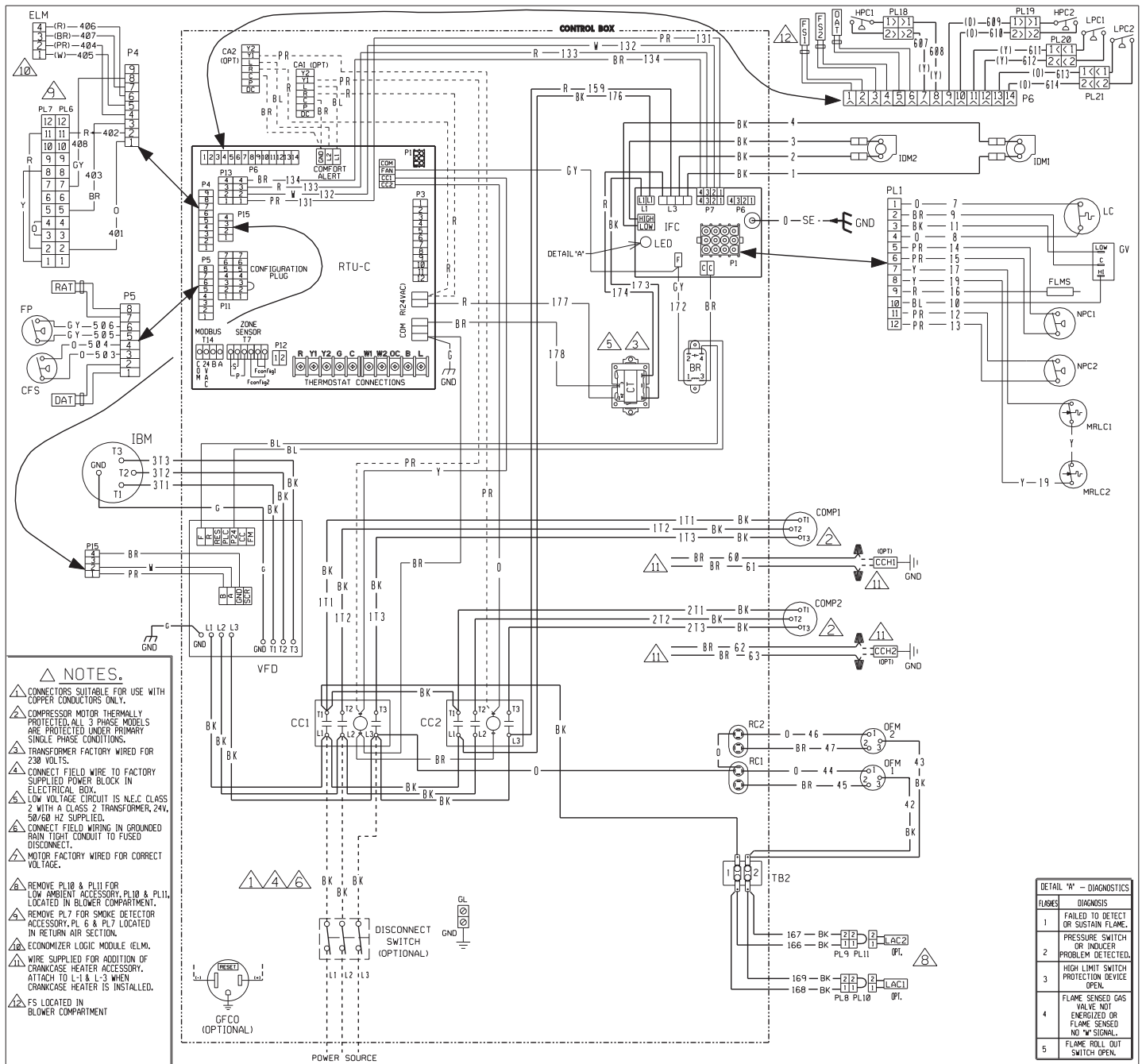
**WIRE COLOR CODE**

BK	BLACK	O	ORANGE
BR	BROWN	PR	PURPLE
BL	BLUE	R	RED
G	GREEN	W	WHITE
GY	GRAY	Y	YELLOW

**WIRING SCHEMATIC**  
 (-)K?L-C090/102/120/150/151  
 575V 3 PH, 60 HZ.  
 ROOFTOP W/RTU-C

DR. BY	APP. BY	DATE	DWG. NO.	REV
MGR		7-13-09	90-103246-06	02





- NOTES.**
- ▲ CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
  - ▲ COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
  - ▲ TRANSFORMER FACTORY WIRED FOR 230 VOLTS.
  - ▲ CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRICAL BOX.
  - ▲ LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
  - ▲ CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
  - ▲ MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
  - ▲ REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11, LOCATED IN BLOWER COMPARTMENT.
  - ▲ REMOVE PL7 FOR SMOKE DETECTOR ACCESSORY. PL 6 & PL7 LOCATED IN RETURN AIR SECTION.
  - ▲ ECONOMIZER LOGIC MODULE (ELM).
  - ▲ WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY. ATTACH TO L-1 & L-3 WHEN CRANKCASE HEATER IS INSTALLED.
  - ▲ FS LOCATED IN BLOWER COMPARTMENT

**DETAIL 'A' - DIAGNOSTICS**

FLASHES	DIAGNOSIS
1	FAILED TO DETECT OR SUSTAIN FLAME.
2	PRESSURE SWITCH OR INDUCER PROBLEM DETECTED.
3	HIGH LIMIT SWITCH PROTECTION DEVICE OPEN.
4	FLAME SENSED GAS VALVE NOT ENERGIZED OR FLAME SENSED NO "W" SIGNAL.
5	FLAME ROLL OUT SWITCH OPEN.

**COMPONENT CODE**

BR	BLOWER RELAY	IDM	INDUCED DRAFT MOTOR
CA	COMFORT ALERT MODULE	IFC	INTEGRATED FURNACE CONTROL
CC	COMPRESSOR CONTACTOR	LAC	LOW AMBIENT COOLING CONTROL
CCH	CRANKCASE HEATER	LC	LIMIT CONTROL
CFS	CLOGGED FILTER SWITCH	LPC	LOW PRESSURE CONTROL
COMP	COMPRESSOR	MRLC	MANUAL RESET LIMIT CONTROL
CT	CONTROL TRANSFORMER	NPC	NEGATIVE PRESSURE CONTROL
DAT	DISCHARGE AIR SENSOR	OAT	OUTSIDE AIR SENSOR
DISC	DISCONNECT SWITCH	OPM	OUTDOOR FAN MOTOR
FLMS	FLAME SENSOR	PLUG	PLUG
FP	FAN PROVING	PL	RETURN AIR SENSOR
FS	FREEZE SENSOR	RC	RUN CAPACITOR
GFCO	GROUND FAULT CONVENIENCE OUTLET	RTU-C	ROOFTOP UNIT CONTROL
GL	GROUND LUG	SE	SPARK ELECTRODE
GND	GROUND	TB	TERMINAL BLOCK
GV	GAS VALVE	VFD	VARIABLE FREQUENCY DRIVE
HPC	HIGH PRESSURE CONTROL	WIRE NUT	
IBM	INDOOR BLOWER MOTOR BELT DRIVE		

**WIRING INFORMATION**

LINE VOLTAGE  
 -FACTORY STANDARD \_\_\_\_\_  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - - - - -

LOW VOLTAGE  
 -FACTORY STANDARD \_\_\_\_\_  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - - - - -

REPLACEMENT WIRE  
 -MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)

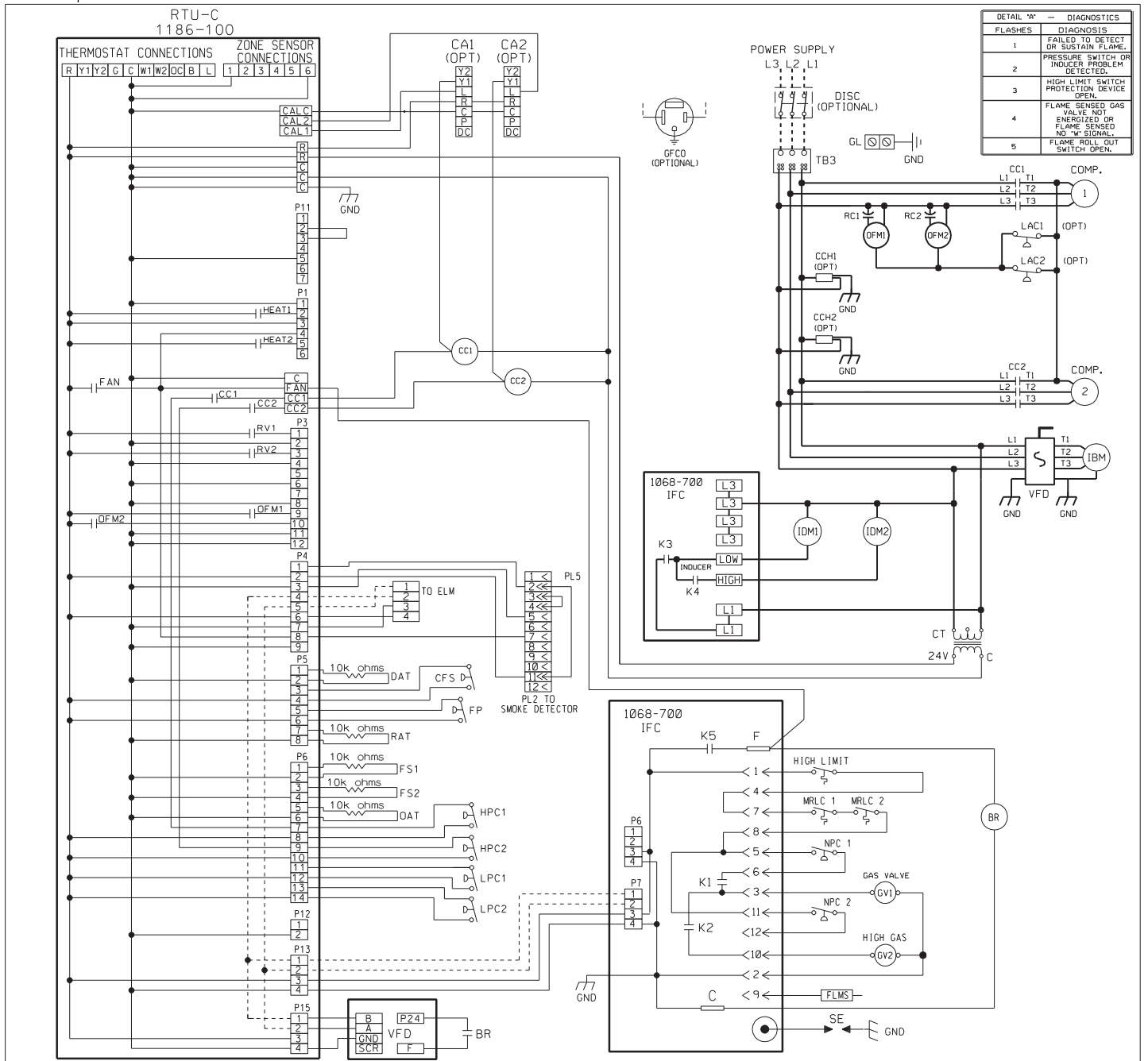
WARNING  
 -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.

**WIRE COLOR CODE**

BK	BLACK	O	ORANGE
BR	BROWN	PR	PURPLE
BL	BLUE	R	RED
G	GREEN	W	WHITE
GY	GRAY	Y	YELLOW

**WIRING DIAGRAM**  
 090/102/120/151 W/VFD  
 208-230/460V 3 PH, 60 HZ.  
 ROOFTOP W/RTU-C

DR. BY	APP. BY	DATE	DWG. NO.	REV
JRJ		01-03-12	90-103089-29	00



**DETAIL 'A' - DIAGNOSTICS**

FLASHES	DIAGNOSIS
1	FAILED TO DETECT OR SUSTAIN FLAME.
2	PRESSURE SWITCH OR INDUCER PROBLEM DETECTED.
3	HIGH LIMIT SWITCH PROTECTION DEVICE OPEN.
4	FLAME SENSED GAS VALVE NOT ENERGIZED OR FLAME SENSED NO "W" SIGNAL.
5	FLAME ROLL OUT SWITCH OPEN.

<p><b>COMPONENT CODE</b></p> <p>BR BLOWER RELAY          CA COMFORT ALERT MODULE          CC COMPRESSOR CONTACTOR          CCH CRANKCASE HEATER          CFS CLOGGED FILTER SWITCH          COMP COMPRESSOR          CT CONTROL TRANSFORMER          DAT DISCHARGE AIR SENSOR          DISC DISCONNECT SWITCH          FLMS FLAME SENSOR          FP FAN PROVING          FS FREEZE SENSOR          GFCO GROUND FAULT CONVENIENCE OUTLET          GL GROUND LUG          GND GROUND          GV GAS VALVE          HPC HIGH PRESSURE CONTROL</p>	<p><b>WIRING INFORMATION</b></p> <p>LINE VOLTAGE          -FACTORY STANDARD _____          -FACTORY OPTION - - - - -          -FIELD INSTALLED - - - - -</p> <p>LOW VOLTAGE          -FACTORY STANDARD _____          -FACTORY OPTION - - - - -          -FIELD INSTALLED - - - - -</p> <p>REPLACEMENT WIRE          -MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)</p> <p>WARNING          -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.</p>	<p><b>WIRE COLOR CODE</b></p> <p>BK BLACK          BR BROWN          BL BLUE          G GREEN          GY GRAY</p> <p>OR ORANGE          P PURPLE          R RED          W WHITE          Y YELLOW</p> <p><b>WIRING SCHEMATIC</b>          090/102/120/151 W/VFD          208-230/460V 3 PH, 60 HZ.          ROOFTOP W/RTU-C</p>
<p><b>COMPONENT CODE</b></p> <p>IBM INDOOR BLOWER MOTOR BELT DRIVE          IFC INDUCED DRAFT MOTOR          IAC INTEGRATED FURNACE CONTROL          LAC LOW AMBIENT COOLING CONTROL          LC LIMIT CONTROL          LPC LOW PRESSURE CONTROL          MRLC MANUAL RESET LIMIT CONTROL          NPC NEGATIVE PRESSURE CONTROL          DAT OUTSIDE AIR SENSOR          OFM OUTDOOR FAN MOTOR          PL PLUG          RAT RETURN AIR SENSOR          RC RUN CAPACITOR          RTU-C ROOFTOP UNIT CONTROL          SE SPARK ELECTRODE          TB TERMINAL BLOCK          VFD VARIABLE FREQUENCY DRIVE          WIRE NUT</p>	<p><b>WIRING INFORMATION</b></p> <p>LINE VOLTAGE          -FACTORY STANDARD _____          -FACTORY OPTION - - - - -          -FIELD INSTALLED - - - - -</p> <p>LOW VOLTAGE          -FACTORY STANDARD _____          -FACTORY OPTION - - - - -          -FIELD INSTALLED - - - - -</p> <p>REPLACEMENT WIRE          -MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)</p> <p>WARNING          -CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., AND LOCAL CODES AS APPLICABLE.</p>	<p><b>WIRE COLOR CODE</b></p> <p>BK BLACK          BR BROWN          BL BLUE          G GREEN          GY GRAY</p> <p>OR ORANGE          P PURPLE          R RED          W WHITE          Y YELLOW</p> <p><b>WIRING SCHEMATIC</b>          090/102/120/151 W/VFD          208-230/460V 3 PH, 60 HZ.          ROOFTOP W/RTU-C</p>

DR. BY	APP. BY	DATE	DWG. NO.	REV
JRJ		01-03-12	90-103246-26	01

**BEFORE PURCHASING THIS APPLIANCE, READ IMPORTANT ENERGY COST AND EFFICIENCY INFORMATION AVAILABLE FROM YOUR RETAILER.**

### **GENERAL TERMS OF LIMITED WARRANTY\***

Rheem will furnish a replacement for any part of this product which fails in normal use and service within the applicable periods stated, in accordance with the terms of the limited warranty.

**\*For complete details of the Limited and Conditional Warranties, including applicable terms and conditions, contact your local contractor or the Manufacturer for a copy of the product warranty certificate.**

#### **Compressor**

- 1 Phase, Residential Applications.....Ten (10) Years
- 3 Phase, Commercial Applications .....Five (5) Years

#### **Parts**

- 3 Phase, Commercial Applications.....One (1) Year



The new degree of comfort.™

*In keeping with its policy of continuous progress and product improvement, Rheem reserves the right to make changes without notice.*

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INTEGRATED AIR & WATER

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