



PACKAGE GAS ELECTRIC
RKNL-C/H SERIES

Ruud Commercial Achiever® Series Package Gas Electric Unit



Unit shown with optional
louwered 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



RELY ON RUUD.™

FORM NO. R22-853

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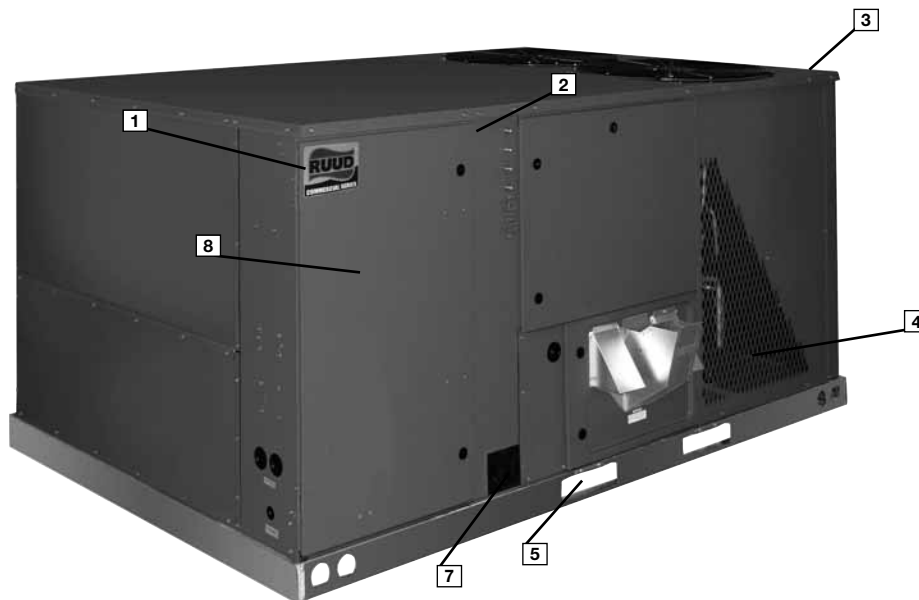
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RKNL-C/H STANDARD FEATURES INCLUDE:

- 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.



Ruud 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 serviceability that goes into each unit. Outwardly, the large Ruud *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 Ruud hail guard (4) (optional) is its trademark, and sets the standard for coil protection in the industry. Every Ruud 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.

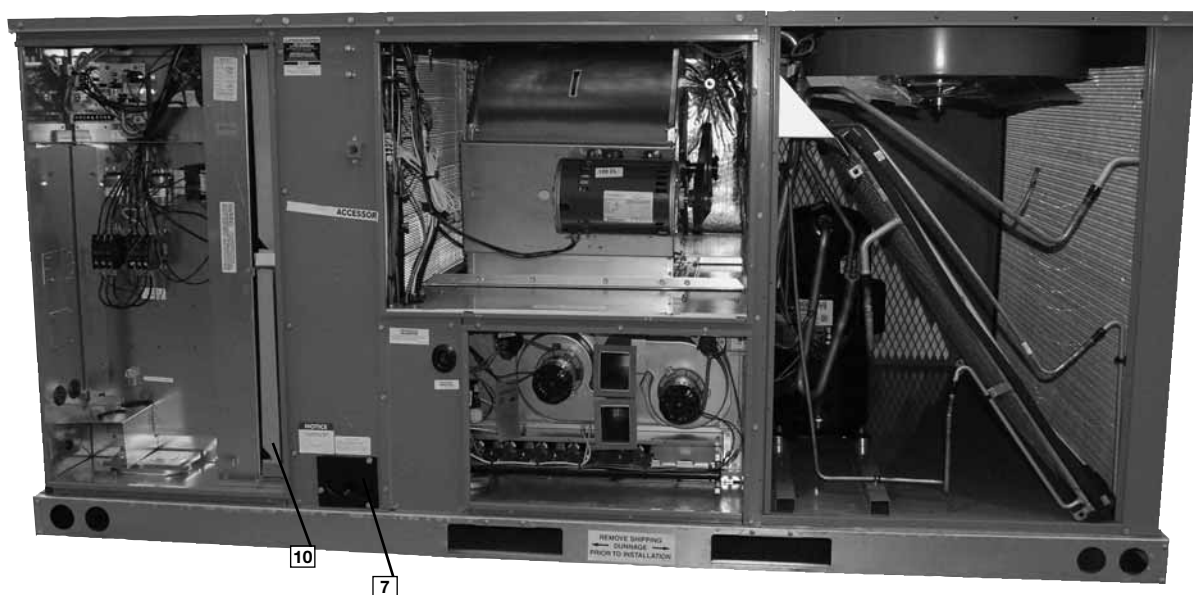
Anything built to last must start with the right foundation. In this case, the foundation is 14-gauge, commercial-grade, full-perimeter base rails (5), which integrate fork slots and rigging holes to save set-up time on the job site. The base pan is stamped, which forms a 1-1/8" flange around the supply 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 Ruud-required reliability tests. Ruud 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 Ruud package unit arrives at the job, it is ready to go with a factory charge and quality checks.

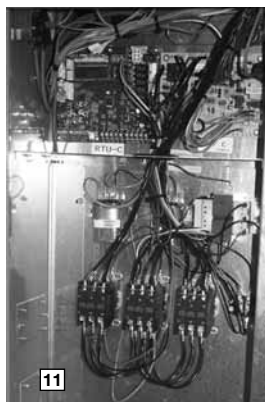
Access is granted with 1/4 turn fasteners and hinged access panels. Access to all major compartments is from the front of the unit, including the filter and electrical compartment, blower compartment, furnace section, and outdoor section. Each panel is permanently embossed with the compartment name (control/filter 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 freeze-stats 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 IEER's over the conventional constant fan system. Furthermore, operating in the constant fan mode at the reduced speed can use as little as 1/5th 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 meets 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.



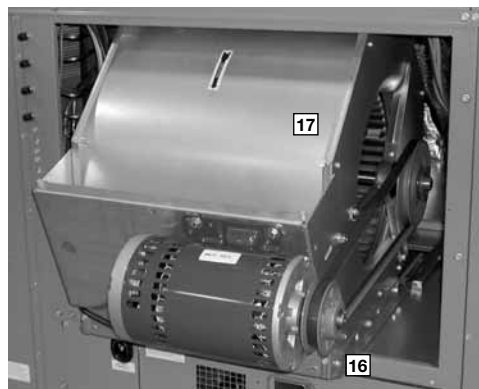
For added convenience in the field, a factory-installed convenience outlet and disconnect (14) are available. Low and High voltage can enter either from the side or through the base. Low-voltage connections are made through the low-voltage terminal strip. For ease of access, the U.L.-required low voltage 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.



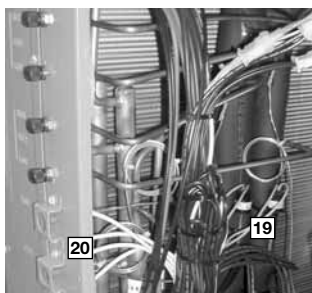
To the right of the electrical and filter compartment are the externally mounted gauge ports, which are permanently identified by embossed wording that clearly identifies the compressor circuit, high pressure connection and low pressure connection (15). With the gauge ports mounted externally, an accurate 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, Ruud 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.

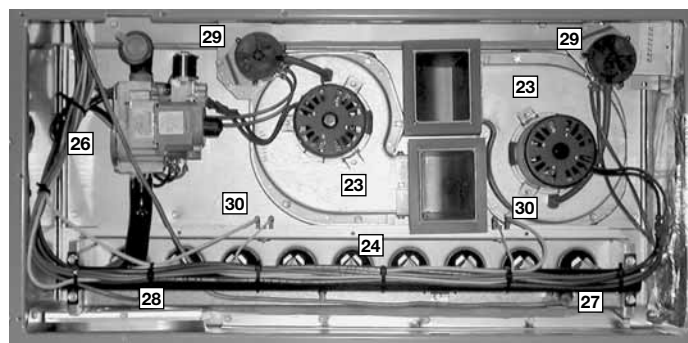
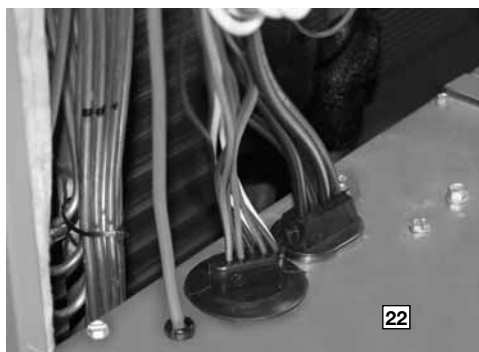


Also inside the blower compartment is the low-ambient control (18), low-pressure switch (19), high-pressure switch (20) and freeze sensor (21). The low-ambient control allows for operation of the compressor down to 0 degrees ambient temperature by cycling the outdoor fans on high pressure. The high-pressure 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.

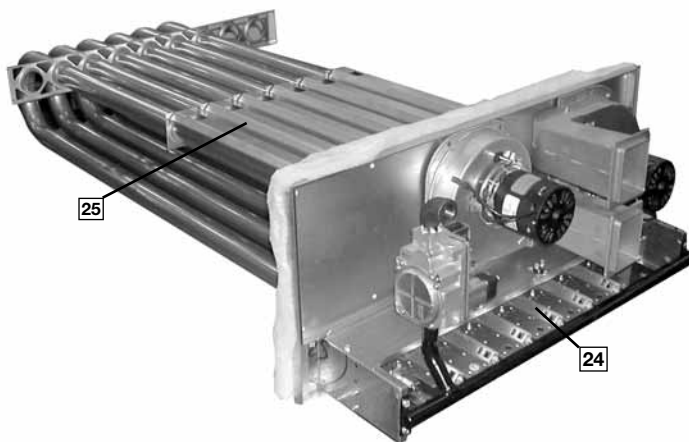


The furnace compartment contains the latest furnace technology on the market. The draft inducers (23) draw the flame from the Ruud exclusive in-shot burners (24) into the aluminized tubular heat exchanger (25) for clean, efficient gas heat. Stainless steel heat exchangers can be factory installed for 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.

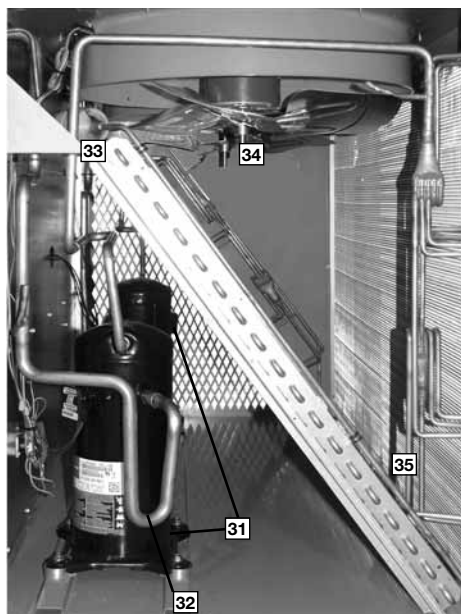
The direct spark igniter (27) assures reliable ignition in the most adverse conditions. This is coupled with remote flame sense (28) to assure that the flame has carried across the entire length of the burner assembly. Gas supply can be routed from the side or up through the base.

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.



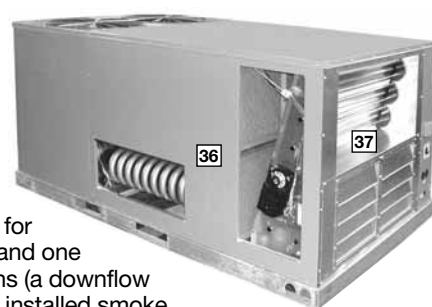
The compressor compartment houses the heart-beat of the unit. The scroll compressor (31) is known for its long life, and for reliable, quiet, and efficient operation. The suction and discharge lines are designed with shock loops (32) to absorb the strain and stress that the starting torque, steady state 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 CO₂ 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.

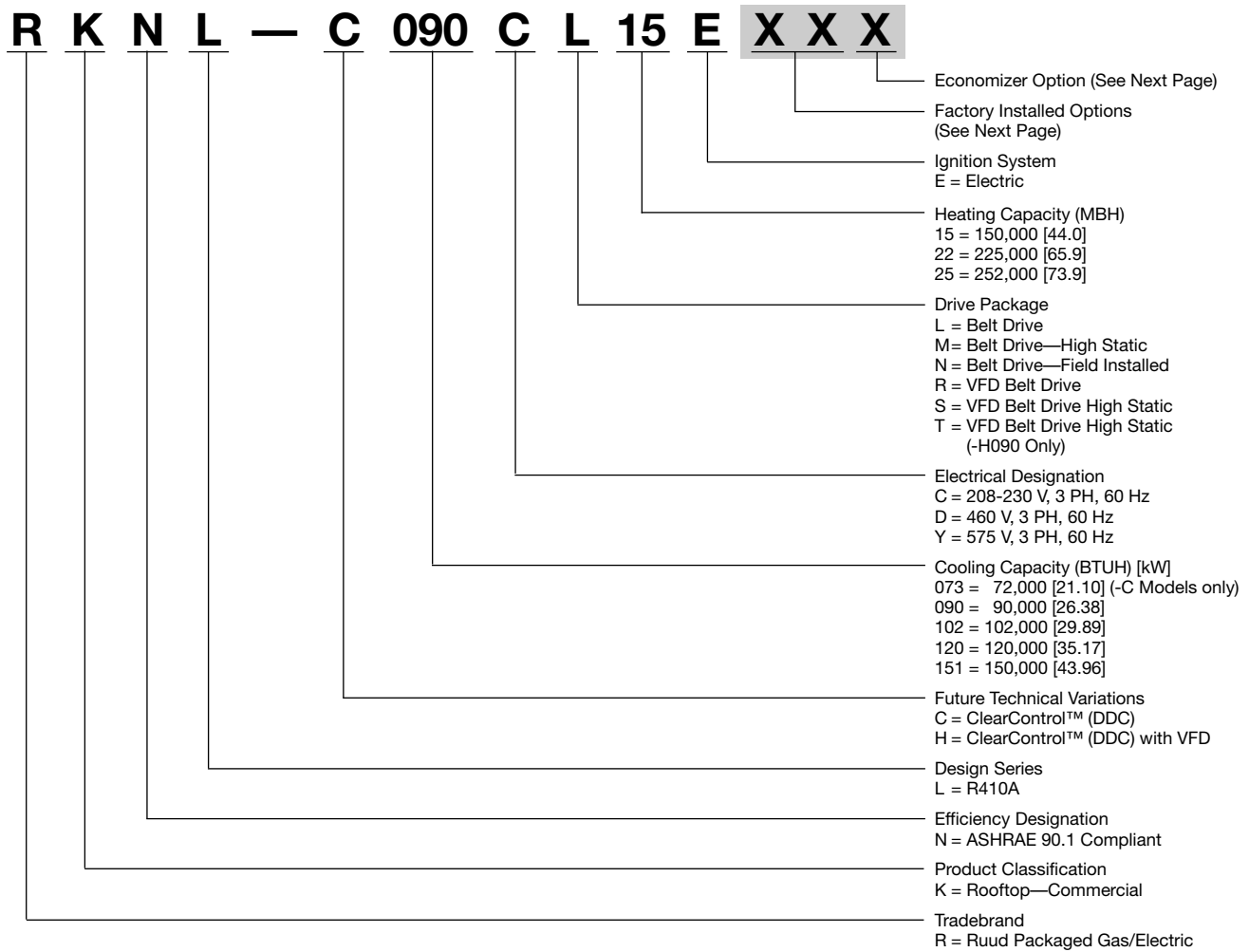


The damper minimum position, actual damper position, power exhaust on/off setpoint, mixed air temperature limit setpoint and Demand Controlled Ventilation (DCV) setpoint can be read and adjusted at the unit controller display or remotely through a network connection.

The Space CO₂ 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 Ruud 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.





[] 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-C120CL22Ethis unit has no factory installed options.

RKNL-C120CL22EBGAthis 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-C120CL22EAHHthis 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 = $118,900 \times 0.98 = 116,522 \text{ BTUH [34.12 kW]}$
Sensible Capacity = $92,268 \times 0.95 = 87,655 \text{ BTUH [25.67 kW]}$
Power Input = $8,950 \times 0.99 = 8,861 \text{ Watts}$

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
Model RKNL- Series (with VFD)				
Cooling Performance ¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	75,000 [21.97]	75,000 [21.97]	75,000 [21.97]	75,000 [21.97]
EER/SEER ²	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 ³ Latent (Standard / VFD)	11.8	11.8	11.8	11.8
Net System Power kW	6.42	6.42	6.42	6.42
Heating Performance (Gas) ⁴				
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]
Compressor				
No./Type	1/Scroll	1/Scroll	1/Scroll	1/Scroll
Outdoor Sound Rating (dB) ⁵				
	88	88	88	88
Outdoor Coil—Fin Type				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	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]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
Indoor Coil—Fin Type				
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]	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]
Outdoor Fan—Type				
Propeller	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
Indoor Fan—Type				
FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/11x12 [279x305]	1/11x12 [279x305]	1/11x12 [279x305]	1/11x12 [279x305]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds (Standard / VFD)	Single	Single	Single	Single
No. Motors	1	1	1	1
Motor HP	1 1/2	1 1/2	1 1/2	1 1/2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter—Type				
Disposable	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]				
	125 [3544]	125 [3544]	125 [3544]	125 [3544]
Weights				
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
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	75,000 [21.97]	75,000 [21.97]	93,000 [27.25]	93,000 [27.25]
EER/SEER ²	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 ³ 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
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	1/Scroll	1/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
Outdoor Coil—Fin Type	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]
Indoor Coil—Fin 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]	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]
Outdoor Fan—Type	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
Indoor Fan—Type	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
Filter—Type	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	125 [3544]	125 [3544]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
Weights				
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 Model RKNL- Series (with VFD)	C090CM15E H090CS15E	C090CM22E H090CS22E	C090CN15E H090CT15E	C090CN22E H090CT22E
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER ²	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 ³ 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
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
Outdoor Coil—Fin Type	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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
Indoor Coil—Fin 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]	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]
Outdoor Fan—Type	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
Indoor Fan—Type	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	3	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter—Type	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
Weights				
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
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER ²	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 ³ 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
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
Outdoor Coil—Fin Type	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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]	1 / 22 [9]
Indoor Coil—Fin 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]	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]
Outdoor Fan—Type	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
Indoor Fan—Type	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
Filter—Type	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
Weights				
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 Model RKNL- Series (with VFD)	C090DN15E H090DT15E	C090DN22E H090DT22E	C090YL22E	C090YM22E
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER ²	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 ³ 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
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵				
	88	88	88	88
Outdoor Coil—Fin Type				
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]
Indoor Coil—Fin Type				
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]
Outdoor Fan—Type				
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
Indoor Fan—Type				
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
Filter—Type				
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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]				
	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]	107.5/110.7 [3048/3138]
Weights				
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
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]
EER/SEER ²	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 ³ 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
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
Outdoor Coil—Fin Type	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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	1 / 22 [9]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Indoor Coil—Fin 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]	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]
Outdoor Fan—Type	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
Indoor Fan—Type	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
Filter—Type	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	107.5/110.7 [3048/3138]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]
Weights				
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
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]
EER/SEER ²	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 ³ 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
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵				
	88	88	88	88
Outdoor Coil—Fin Type				
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]
Indoor Coil—Fin Type				
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]
Outdoor Fan—Type				
	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
Indoor Fan—Type				
	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
Filter—Type				
	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]				
	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]
Weights				
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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[] 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)	C102DM22E H102DS22E	C102YL15E	C102YL22E	C102YM15E
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]	101,000 [29.59]
EER/SEER ²	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 ³ Latent (Standard / VFD)	12/14.4	12	12	12
Net System Power kW	8.59	8.59	8.59	8.59
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵				
	88	88	88	88
Outdoor Coil—Fin Type				
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]
Indoor Coil—Fin Type				
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]
Outdoor Fan—Type				
	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
Indoor Fan—Type				
	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	Single	Single
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
Filter—Type				
	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]				
	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]	154.4/166.6 [4377/4723]
Weights				
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
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	101,000 [29.59]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]
EER/SEER ²	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 ³ 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
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
Outdoor Coil—Fin Type	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]	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]
Indoor Coil—Fin 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]
Outdoor Fan—Type	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
Indoor Fan—Type	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
Filter—Type	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	154.4/166.6 [4377/4723]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]
Weights				
Net Weight lbs. [kg]	1095 [497]	1112 [504]	1148 [521]	1120 [508]
Ship Weight lbs. [kg]	1096 [497]	1149 [521]	1149 [521]	1149 [521]

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 Model RKNL- Series (with VFD)	C120CM22E H120CS22E	C120DL15E H120DR15E	C120DL22E H120DR22E	C120DM15E H120DS15E
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]
EER/SEER ²	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 ³ 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
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
Outdoor Coil—Fin Type	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]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 22 [9]	2 / 22 [9]	2 / 22 [9]	2 / 22 [9]
Indoor Coil—Fin 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]	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]
Outdoor Fan—Type	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
Indoor Fan—Type	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
Filter—Type	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]
Weights				
Net Weight lbs. [kg]	1145 [519]	1112 [504]	1148 [521]	1120 [508]
Ship Weight lbs. [kg]	1149 [521]	1149 [521]	1149 [521]	1149 [521]

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	C120DM22E	C120YL22E	C120YM22E	C151CL15E
Model RKNL- Series (with VFD)	H120DS22E			H151CR15E
Cooling Performance ¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	123,000 [36.04]	123,000 [36.04]	123,000 [36.04]	146,000 [42.78]
EER/SEER ²	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 ³ 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
Heating Performance (Gas) ⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB) ⁵				
	88	88	88	88
Outdoor Coil—Fin Type				
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]
Indoor Coil—Fin Type				
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]
Outdoor Fan—Type				
Propeller	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 1/2 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan—Type				
FC Centrifugal	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	Single	Single / Multiple
No. Motors	1	1	1	1
Motor HP	3	2	3	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
Filter—Type				
Disposable	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]				
	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	172.8/180.8 [4899/5126]	147.2/152 [4173/4309]
Weights				
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
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	146,000 [42.78]	146,000 [42.78]	146,000 [42.78]	146,000 [42.78]
EER/SEER ²	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 ³ 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
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵	88	88	88	88
Outdoor Coil—Fin Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
Tube Size in. [mm] OD	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 23 [9]	2 / 23 [9]	2 / 23 [9]	2 / 23 [9]
Indoor Coil—Fin 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]	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]
Outdoor Fan—Type	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 1/2 HP	2 at 1/2 HP	2 at 1/2 HP	2 at 1/2 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan—Type	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	5	5	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	184	184	56
Filter—Type	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	147.2/152 [4173/4309]	147.2/152 [4173/4309]	147.2/152 [4173/4309]	147.2/152 [4173/4309]
Weights				
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	
Cooling Performance¹				CONTINUED →
Gross Cooling Capacity Btu [kW]	146,000 [42.78]	146,000 [42.78]	146,000 [42.78]	146,000 [42.78]
EER/SEER ²	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 ³ 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
Heating Performance (Gas)⁴				
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]
Compressor				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
Outdoor Sound Rating (dB)⁵				
	88	88	88	88
Outdoor Coil—Fin Type				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	MicroChannel	MicroChannel	MicroChannel	MicroChannel
Tube Size in. [mm] OD	1 [25.4]	1 [25.4]	1 [25.4]	1 [25.4]
Face Area sq. ft. [sq. m]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 23 [9]	2 / 23 [9]	2 / 23 [9]	2 / 23 [9]
Indoor Coil—Fin Type				
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]	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]
Outdoor Fan—Type				
Propeller	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 1/2 HP	2 at 1/2 HP	2 at 1/2 HP	2 at 1/2 HP
Motor RPM	1075	1075	1075	1075
Indoor Fan—Type				
FC Centrifugal	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
No. Motors	1	1	1	1
Motor HP	3	5	5	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	184	184	56
Filter—Type				
Disposable	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]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]				
	147.2/152 [4173/4309]	147.2/152 [4173/4309]	147.2/152 [4173/4309]	147.2/152 [4173/4309]
Weights				
Net Weight lbs. [kg]	1266 [574]	1238 [562]	1265 [574]	1265 [574]
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	C151YM25E
Model RKNL- Series (with VFD)	
Cooling Performance¹	
Gross Cooling Capacity Btu [kW]	146,000 [42.78]
EER/SEER ²	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 ³ Latent (Standard / VFD)	10.8
Net System Power kW	12.73
Heating Performance (Gas)⁴	
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]
Compressor	
No./Type	2/Scroll
Outdoor Sound Rating (dB)⁵	
	88
Outdoor Coil—Fin Type	
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]
Indoor Coil—Fin Type	
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]
Outdoor Fan—Type	
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
Indoor Fan—Type	
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
Filter—Type	
Furnished	Disposable
(NO.) Size Recommended in. [mm x mm x mm]	Yes
	(6)2x18x18 [51x457x457]
Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]	
	147.2/152 [4173/4309]
Weights	
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 $[1.10 \times \text{CFM} \times (1 - \text{DR}) \times (\text{dbE} - 80)]$.

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

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

AIRFLOW PERFORMANCE—6 TON [21.1 kW]

INDOOR AIRFLOW PERFORMANCE
RKNL-C/H SERIES

Air Flow CFM [L/s]		Capacity 6 Ton [21.1 kW] Voltage 208/230, 460, 575 — 3 phase																													
		External Static Pressure—Inches of Water [kPa]																													
		0.1 [.02]		0.2 [.05]		0.3 [.07]		0.4 [.10]		0.5 [.12]		0.6 [.15]		0.7 [.17]		0.8 [.20]		0.9 [.22]		1.0 [.25]		1.1 [.27]		1.2 [.30]		1.3 [.32]		1.4 [.35]		1.5 [.37]	
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	RPM	W	RPM	W
1800 [849]	—	—	—	—	—	—	—	—	—	835	631	880	686	924	740	965	794	1005	847	1043	898	949	949	1113	999	1146	1048	1177	1096	1206	1144
1900 [897]	—	—	—	—	—	—	—	—	—	808	622	854	681	899	739	941	795	982	851	1021	906	1058	1013	1127	1065	1159	1117	1189	1167	1217	1127
2000 [944]	—	—	—	—	—	—	—	—	—	828	673	874	734	918	794	959	911	1037	968	1074	1025	1108	1080	1141	1135	1172	1189	1201	1242	1228	1293
2100 [991]	—	—	—	—	—	—	—	—	—	803	663	850	727	894	790	937	853	978	914	1017	974	1055	1034	1090	1093	1124	1151	1156	1208	1219	1241
2200 [1038]	—	—	—	—	—	—	—	—	—	826	718	871	784	915	850	957	914	997	978	1036	1041	1072	1103	1107	1164	1140	1224	1211	1283	1201	1342
2300 [1085]	—	—	—	—	—	—	—	—	—	802	706	849	775	894	844	937	912	978	979	1017	1045	1055	1110	1091	1174	1125	1238	1157	1300	1187	1362
2400 [1133]	—	—	—	—	—	—	—	—	—	826	764	872	836	916	907	959	977	999	1047	1038	1115	1075	1183	1110	1249	1143	1315	1174	1380	1204	1444
2500 [1180]	805	751	852	826	897	900	940	973	981	1046	1021	1118	1059	1188	1095	1258	1129	1327	1162	1395	1192	1462	1221	1529	1248	1594	1273	1569	1282	1630	
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			
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
RPM	1119	1072	1019	967	915	859	1267	1215
							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]					
	1800 [849]	2000 [944]	2200 [1038]	2400 [1133]	2600 [1227]	2800 [1321]
	Resistance—Inches Water [kPa]					
Wet Coil	0.031 [0.008]	0.036 [0.009]	0.041 [0.01]	0.047 [0.012]	0.051 [0.013]	0.055 [0.014]
Concentric Diffuser RXRN-FA65 or FA75 & Transition RXMC-CD04	DNA	DNA	DNA	DNA	0.017 [0.042]	0.02 [0.050]
Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	DNA	DNA	DNA	DNA	DNA	DNA
Economizer 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]
Horizontal Economizer 100% R.A. Damper Open	0.02 [0.005]	0.02 [0.005]	0.03 [0.007]	0.03 [0.007]	0.04 [0.01]	0.04 [0.01]
Horizontal Economizer 100% O.A. Damper Open	0.07 [0.017]	0.07 [0.017]	0.07 [0.017]	0.08 [0.02]	0.08 [0.02]	0.08 [0.02]

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]																				
	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	RPM	W	RPM	W								
2400 [1133]	—	—	—	540	580	582	664	612	729	645	812	711	890	740	952	770	1014	799	1076	828	1138	857	1200	887	1261	929	1538	958	1623	987	1709	1017	1794	1046	1879	1075	1965	1105	2050	
2500 [1180]	—	—	—	552	633	593	717	624	791	656	878	720	950	749	1012	778	1074	808	1136	837	1198	866	1260	895	1322	936	1602	965	1687	995	1773	1024	1858	1053	1944	1083	2029	1112	2114	
2600 [1227]	—	—	—	564	687	603	769	635	853	667	945	729	1010	758	1072	787	1134	816	1196	846	1258	875	1320	914	1581	943	1666	972	1751	1002	1837	1031	1922	1061	2008	1090	2093	1119	2178	
2700 [1274]	—	539	670	744	614	828	648	923	680	1017	737	1070	766	1132	796	1194	825	1256	854	1318	883	1380	921	1645	950	1730	980	1816	1009	1901	1038	1986	1068	2072	1097	2157	1127	2243		
2800 [1321]	—	554	733	590	801	625	887	660	993	708	1069	746	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 [1369]	—	569	801	604	866	638	956	673	1069	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 [1416]	546	741	854	869	617	931	650	1024	685	1144	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 [1463]	560	804	598	940	632	1010	664	1107	713	1187	743	1249	772	1311	801	1373	830	1435	860	1497	889	1559	921	1816	950	1901	979	1987	1009	2072	1038	2157	1068	2243	1097	2328	1126	2414	1156	2499
3200 [1510]	576	876	612	1011	646	1089	678	1189	722	1247	751	1309	781	1371	810	1433	839	1495	868	1557	898	1619	928	1880	957	1965	987	2051	1016	2136	1045	2222	1075	2307	1104	2392	1134	2478	1163	2563
3300 [1557]	592	954	628	1096	660	1168	692	1274	731	1307	760	1369	789	1431	818	1493	848	1555	877	1617	906	1859	935	1944	965	2029	994	2115	1023	2200	1053	2286	1082	2371	1111	2456	1141	2542	1170	2627
3400 [1605]	607	1030	643	1180	673	1247	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	1178	2691
3500 [1652]	622	1112	658	1271	689	1344	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	1155	2670	1185	2756
3600 [1699]	638	1202	672	1361	704	1440	728	1426	757	1488	786	1550	815	1612	844	1674	874	1735	903	1797	928	2051	957	2136	986	2222	1016	2307	1045	2393	1075	2478	1104	2563	1133	2649	1163	2734	1192	2820

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	869	838	806	774	742	710	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 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.

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]							
	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]							
Wet Coil	DNA	.017 [0.042]	.020 [0.050]	.025 [0.062]	.031 [0.077]	.037 [0.092]	DNA							
Concentric Diffuser RXRN-FA65 or FA75 & Transition RXMC-CD04	DNA	DNA	DNA	DNA	DNA	DNA	DNA							
Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	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]							
100% R.A. Damper Open	Horizontal Economizer	0.03 [0.007]	0.04 [0.009]	0.04 [0.010]	0.05 [0.011]	0.05 [0.012]	0.06 [0.015]							
100% R.A. Damper Open	Horizontal Economizer	0.08 [0.020]	0.08 [0.020]	0.08 [0.020]	0.10 [0.024]	0.11 [0.027]	0.12 [0.030]							
100% O.A. Damper Open														

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]

INDOOR AIRFLOW PERFORMANCE
RKNL-C/H SERIES

Air Flow CFM [L/s]	Capacity										External Static Pressure—Inches of Water [kPa]																									
	8.5 Ton [29.9 kW]																																			
	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]																
RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W	RPM	W															
2700 [1274]	—	—	—	—	—	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 [1321]	—	—	—	—	—	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 [1369]	—	—	—	—	—	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 [1416]	—	—	—	—	—	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 [1463]	—	—	—	—	—	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 [1510]	—	—	—	—	—	752	1307	761	1309	781	1371	810	1433	839	1495	868	1577	928	1880	937	1965	987	2051	1018	2136	1045	2222	1075	2307	1104	2392	1134	2478	—	—	
3300 [1557]	—	—	—	—	—	760	1369	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 [1605]	—	—	—	—	—	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 [1652]	—	—	—	—	—	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 [1699]	—	—	—	—	—	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 [1746]	672	1361	700	1435	727	1510	755	1584	782	1659	810	1733	837	1808	865	1882	933	1896	953	1956	973	2070	993	2183	1002	2297	1030	2410	1054	2524	1075	2637	1111	2751	1140	2864
3800 [1793]	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 [1841]	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 [1888]	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 [1935]	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.

AIRFLOW CORRECTION FACTORS
8.5 TON [29.9 kW]

ACTUAL—CFM [L/s]	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1605]	3600 [1699]	3800 [1793]	4000 [1888]	4200 [1982]
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 AIR RESISTANCE, IWC
8.5 TON [29.9 kW]

Component	Standard Indoor Airflow—CFM [L/s]										Resistance—Inches Water [kPa]							
	2600 [1227]	2800 [1321]	3000 [1416]	3200 [1510]	3400 [1604]	3600 [1699]	3800 [1793]	4000 [1888]	4200 [1982]									
	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]									
Wet Coil	0.17 [0.042]	0.20 [0.050]	0.25 [0.062]	0.31 [0.077]	0.37 [0.092]	DNA	DNA	DNA	DNA	0.17 [0.042]	0.18 [0.045]	0.21 [0.052]	0.24 [0.060]					
Concentric Diffuser RXRN-FA65 or FA75 & Transition RXMC-CD04	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0.17 [0.042]	0.18 [0.045]	0.21 [0.052]	0.24 [0.060]					
Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	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]	0.17 [0.042]	0.18 [0.045]	0.21 [0.052]	0.24 [0.060]					
Economizer 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 [0.019]	0.09 [0.021]	0.10 [0.025]	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]	0.14 [0.035]				
Horizontal Economizer 100% R.A. Damper Open	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]	0.17 [0.042]	0.18 [0.045]	0.21 [0.052]	0.24 [0.060]					
Horizontal Economizer 100% O.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 [0.019]	0.09 [0.021]	0.10 [0.025]	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]	0.14 [0.035]				

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

AIRFLOW PERFORMANCE—10 TON [35.2 kW]

Air Flow CFM [L/s]		Capacity 10 Ton [35.2 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]	2.1 [0.52]	2.2 [0.55]	2.3 [0.57]																
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															
3200 [1510]	—	—	—	—	657	1170	715	1245	742	1319	770	1394	797	1468	825	1543	852	1617	880	1692	956	1698	976	1703	996	1817	1017	1930	1037	2044	1057	2157	1077	2271	1098	2384	1118	2498	1138	2611
3300 [1557]	—	—	—	673	1179	701	1358	728	1336	742	1410	769	1485	787	1557	824	1634	852	1703	943	1705	963	1718	981	1822	994	2054	1024	2168	1052	2281	1072	2395	1092	2508	1115	2503	1175	2617	
3400 [1605]	—	—	687	1261	714	1336	742	1410	769	1485	787	1557	824	1634	852	1703	943	1705	963	1718	981	1822	994	2054	1024	2168	1052	2281	1072	2395	1092	2508	1115	2503	1175	2617				
3500 [1652]	—	673	1270	700	1344	728	1419	755	1493	783	1588	810	1642	838	1717	865	1791	938	1813	958	1832	978	1946	975	2059	1003	2173	1039	2286	1059	2400	1080	2513	1100	2627	1120	2740			
3600 [1699]	—	686	1352	714	1427	741	1501	769	1576	796	1650	824	1725	851	1799	879	1874	945	1892	966	1951	986	2055	999	2178	1016	2292	1047	2405	1067	2519	1087	2632	1108	2746	1128	2859			
3700 [1746]	672	1361	700	1435	727	1510	755	1584	782	1659	810	1733	837	1808	865	1882	933	1896	963	1956	973	2070	993	2183	1002	2297	1030	2410	1054	2524	1075	2637	1095	2751	1115	2864	1135	2978		
3800 [1793]	686	1443	713	1518	741	1592	768	1667	796	1741	823	1818	861	1890	878	1965	940	2003	960	2075	981	2189	1001	2302	1016	2416	1043	2529	1062	2643	1082	2756	1102	2870	1123	2983				
3900 [1841]	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	2875	1110	2988	1130	3102						
4000 [1888]	713	1609	740	1683	768	1758	795	1822	823	1907	850	1961	878	2056	935	2085	955	2191	975	2312	996	2426	1016	2539	1043	2653	1070	2767	1077	2880	1097	2994	1117	3107	1138	3221				
4100 [1935]	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	1125	3226						
4200 [1982]	740	1774	767	1849	795	1923	822	1998	850	2072	877	2147	930	2209	950	2323	970	2438	990	2550	1011	2663	1031	2777	1070	2890	1097	3004	1092	3117	1112	3231	1133	3345						
4300 [2029]	753	1857	781	1932	808	2006	836	2081	853	2155	917	2215	937	2328	957	2442	978	2555	998	2669	1018	2782	1039	2896	1083	3009	1111	3123	1099	3236	1120	3350	1140	3453						
4400 [2077]	767	1940	794	2014	822	2089	849	2163	877	2238	924	2333	945	2447	965	2560	985	2674	1006	2787	1026	2901	1046	3014	1097	3128	1124	3241	1107	3355	1127	3468								
4500 [2124]	780	2023	808	2097	835	2172	863	2248	892	2338	932	2452	952	2565	973	2679	993	2793	1013	2906	1033	3020	1054	3133	1110	3247	1138	3360	1115	3474	1135	3587								
4600 [2171]	794	2105	821	2180	840	2254	876	2329	919	2457	940	2571	960	2684	980	2798	1000	2911	1021	3025	1041	3138	1061	3252	1124	3365	1151	3479	1122	3592										
4700 [2218]	807	2188	835	2263	862	2337	906	2462	927	2576	947	2689	967	2803	988	2916	1008	3030	1028	3143	1048	3257	1069	3371	1137	3484	1165	3598	1130	3711										
4800 [2265]	821	2271	848	2345	876	2420	914	2561	934	2695	955	2808	975	2922	995	3035	1015	3149	1036	3262	1056	3376	1076	3489	1151	3603	1178	3716	1137	3830										

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	845	810	775	739	704	669	1138	1089	1041	992	943	894

- 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.

AIRFLOW CORRECTION FACTORS
10 TON [35.2 kW]

ACTUAL—CFM [L/s]	3200 [1510]	3400 [1605]	3600 [1699]	3800 [1793]	4000 [1888]	4200 [1982]	4400 [2077]	4600 [2171]	4800 [2265]
TOTAL MBH	0.96	0.97	0.98	0.99	1.00	1.01	1.02	1.03	1.04
SENSIBLE MBH	0.91	0.93	0.95	0.97	1.00	1.02	1.05	1.07	1.09
POWER kW	0.98	0.98	0.99	0.99	1.00	1.00	1.01	1.01	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 10 TON [35.2 kW]

Component	Standard Indoor Airflow—CFM [L/s]									
	3200 [1510]	3400 [1604]	3600 [1699]	3800 [1793]	4000 [1888]	4200 [1982]	4400 [2076]	4600 [2171]	4800 [2265]	
	Resistance—Inches Water [kPa]									
Wet Coil	0.065 [0.016]	0.071 [0.018]	0.076 [0.019]	0.082 [0.020]	0.087 [0.022]	0.093 [0.023]	0.099 [0.025]	0.105 [0.026]	0.110 [0.027]	
Concentric Diffuser RXRN-FA65 or FA75 & Transition RXMC-CD04	0.31 [0.077]	0.37 [0.092]	DNA	DNA	DNA	DNA	DNA	DNA	DNA	
Concentric Diffuser RXRN-AA61 or AA71 & Transition RXMC-CE05	DNA	DNA	0.17 [0.042]	0.18 [0.045]	0.21 [0.052]	0.24 [0.060]	0.27 [0.067]	DNA	DNA	
Concentric Diffuser RXRN-AA66 or AA76 & Transition RXMC-CF06	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0.31 [0.077]	0.32 [0.080]	
Economizer 100% R.A. Damper Open	0.09 [0.022]	0.10 [0.025]	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]	0.14 [0.035]	0.15 [0.037]	0.16 [0.040]	0.17 [0.042]	
Horizontal Economizer 100% R.A. Damper Open	0.05 [0.012]	0.06 [0.014]	0.06 [0.015]	0.07 [0.017]	0.08 [0.020]	0.09 [0.021]	0.09 [0.022]	0.10 [0.024]	0.10 [0.025]	
Horizontal Economizer 100% O.A. Damper Open	0.11 [0.027]	0.12 [0.030]	0.13 [0.032]	0.15 [0.036]	0.16 [0.040]	0.18 [0.044]	0.19 [0.047]	0.20 [0.050]	0.21 [0.052]	

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

AIRFLOW PERFORMANCE—12.5 TON [44.0 kW]

Capacity 12.5 Ton [44.0 kW]		Voltage 208/230, 460, 575 — 3 phase 60 Hz																							
Air Flow CFM [L/s]		External Static Pressure—Inches of Water [kPa]																							
		0.1 [0.02]												0.2 [0.05]											
		RPM	W	—	—	—	—	—	—	—	—	—	—	RPM	W	—	—	—	—	—	—	—	—	—	—
3800 [1793]	—	—	—	—	—	—	—	—	—	—	—	—	—	828	1605	854	1661	879	1722	904	1786	929	1853	954	1924
4000 [1888]	—	—	—	—	—	—	—	—	—	—	—	—	—	830	1735	855	1796	880	1859	905	1927	930	1997	955	2072
4200 [1982]	—	—	—	—	—	—	—	—	—	—	—	—	—	832	1877	858	1941	883	2008	908	2079	932	2153	957	2230
4400 [2076]	836	2029	862	2096	886	2167	911	2241	936	2319	960	2400	984	2485	1008	2573	1031	2664	1055	2759	1078	2858	1101	2959	1124
4600 [2171]	867	2263	891	2337	916	2415	940	2496	964	2581	988	2669	1012	2760	1035	2855	1058	2954	1081	3056	1104	3161	1127	3270	1149
4800 [2265]	891	3093	984	3188	1007	3286	1030	3388	1053	3494	1076	3603	1098	3715	1120	3831	1142	3950	1164	4072	1186	4199	1207	4328	1228
5000 [2359]	929	2795	953	2883	976	2975	1000	3070	1023	3168	1046	3270	1069	3375	1091	3484	1114	3597	1136	3712	1158	3831	1179	3954	1201
5200 [2454]	961	3093	984	3188	1007	3286	1030	3388	1053	3494	1076	3603	1098	3715	1120	3831	1142	3950	1164	4072	1186	4199	1207	4328	1228
5400 [2548]	993	3412	1016	3514	1039	3619	1062	3728	1084	3841	1106	3956	1128	4076	1150	4198	1171	4324	1193	4454	1214	4587	1235	4723	1256
5600 [2643]	1026	3752	1049	3861	1071	3974	1093	4089	1115	4209	1137	4331	1159	4458	1180	4587	1201	4720	1222	4857	1243	4997	1263	5140	1284
5800 [2737]	1060	4114	1082	4230	1104	4349	1126	4472	1147	4598	1169	4728	1190	4861	1211	4997	1232	5137	1252	5281	1272	5428	1292	5578	—

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

Drive Package	L, R	M, S
Motor H.P. [W]	3.0 [2237.1]	5.0 [3728.5]
Blower Sheave	BK72H	BK85H
Motor Sheave	1VP-44	1VP-65
Turns Open	1 2 3 4 5 6	3 4 5 6
RPM	1051 1009 966 920 876 824	1216 1177 1136 1094

- NOTES: 1. Factory sheave settings are shown in bold print.
2. Do not set motor sheave below minimum or maximum turns open shown.
3. Re-adjustment of sheave required to achieve rated airflow at AHRI minimum External Static Pressure.
4. Drive data shown is for horizontal airflow with dry coil. Add component resistance (below) to duct resistance to determine total External Static Pressure.

AIRFLOW CORRECTION FACTORS
12.5 TON [44.0 kW]

ACTUAL—CFM [L/s]	3800 [1793]	4000 [1888]	4200 [1982]	4400 [2077]	4600 [2171]	4800 [2265]	5000 [2360]	5200 [2454]	5400 [2549]	5600 [2643]	5800 [2737]
TOTAL MBH	0.98	0.99	1.00	1.01	1.02	1.02	1.03	1.04	1.05	1.06	1.07
SENSIBLE MBH	0.93	0.96	1.00	1.04	1.07	1.11	1.14	1.18	1.21	1.25	1.28
POWER kW	0.99	1.00	1.00	1.00	1.01	1.01	1.02	1.02	1.03	1.03	1.03

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

[] Designates Metric Conversions

COMPONENT AIR RESISTANCE,
IWC 12.5 TON [44.0 kW]

Component	Standard Indoor Airflow—CFM [L/s]												Resistance—Inches Water [kPa]											
	3800 [1793]	4000 [1888]	4200 [1982]	4400 [2076]	4600 [2171]	4800 [2265]	5000 [2359]	5200 [2454]	5400 [2548]	5600 [2643]	5800 [2737]													
Wet Coil	0.08 [.02]	0.09 [.02]	0.09 [.02]	0.10 [.02]	0.10 [.02]	0.11 [.03]	0.11 [.03]	0.12 [.03]	0.13 [.03]	0.13 [.03]	0.14 [.03]	Downflow Economizer RA Damper Open	0.12 [.03]	0.13 [.03]	0.14 [.03]	0.15 [.04]	0.16 [.04]	0.17 [.04]	0.18 [.04]	0.19 [.05]	0.20 [.05]	0.21 [.05]	0.22 [.05]	
Horizontal Economizer RA Damper Open	0.07 [.02]	0.07 [.02]	0.08 [.02]	0.08 [.02]	0.09 [.02]	0.10 [.02]	0.10 [.02]	0.11 [.03]	0.11 [.03]	0.12 [.03]	0.13 [.03]		0.07 [.02]	0.07 [.02]	0.08 [.02]	0.08 [.02]	0.09 [.02]	0.10 [.02]	0.10 [.02]	0.11 [.03]	0.11 [.03]	0.12 [.03]	0.13 [.03]	
Concentric Grill RXRN-AA61 or RXRN-AA71 & Transition RXMC-CE05	0.19 [.05]	0.21 [.05]	0.24 [.05]	0.27 [.07]	0.30 [.07]	0.33 [.08]	0.36 [.09]	0.40 [.10]	0.44 [.11]	0.48 [.12]	0.52 [.13]		0.19 [.05]	0.21 [.05]	0.24 [.05]	0.27 [.07]	0.30 [.08]	0.33 [.09]	0.36 [.10]	0.40 [.11]	0.44 [.12]	0.48 [.13]	0.52 [.14]	
Concentric Grill RXRN-AA66 or RXRN-AA76 & Transition RXMC-CF06	0.23 [.06]	0.25 [.06]	0.27 [.07]	0.29 [.07]	0.30 [.07]	0.32 [.08]	0.34 [.08]	0.36 [.08]	0.38 [.09]	0.40 [.10]	0.43 [.11]		0.23 [.06]	0.25 [.06]	0.27 [.07]	0.29 [.07]	0.30 [.07]	0.32 [.08]	0.34 [.08]	0.36 [.08]	0.38 [.09]	0.40 [.10]	0.43 [.11]	

NOTE: Add component resistance to duct resistance to determine total external static pressure.

ELECTRICAL DATA – RKNL- SERIES										
		C073CL	C073CM	C073DL	C073DM	C073YL	C073YM	C090CL H090CR	C090CM H090CS	C090CN H090CT
Unit Information	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
Compressor Motor	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
Compressor Motor	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
Evaporator Fan	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

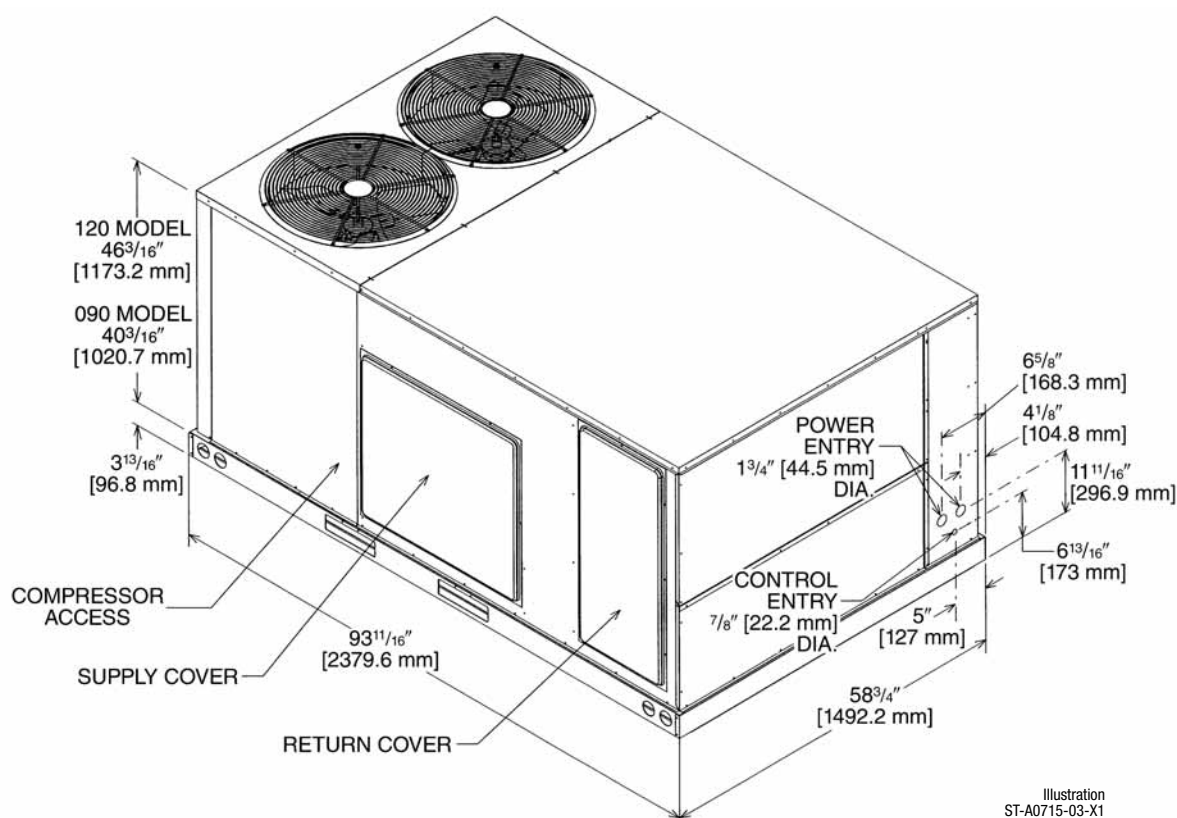
ELECTRICAL DATA – RKNL- SERIES

		C090DL H090DR	C090DM H090DS	C090DN H090DT	C090YL	C090YM	C090YN	C102CL H102CR	C102CM H102CS	C102DL H102DR
Unit Information	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
Compressor Motor	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
Compressor Motor	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
Evaporator Fan	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

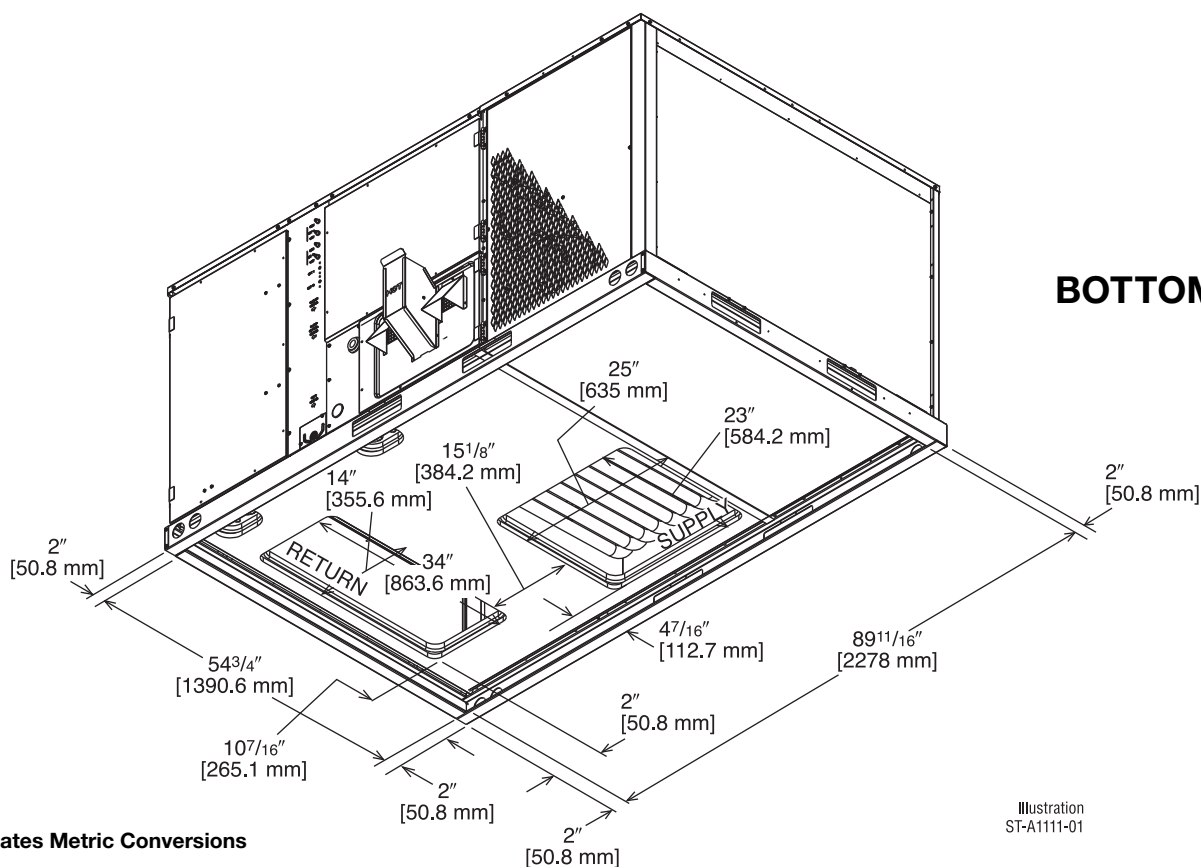
ELECTRICAL DATA – RKNL- SERIES										
		C102DM H102DS	C102YL	C102YM	C120CL H120CR	C120CM H120CS	C120DL H120DR	C120DM H120DS	C120YL	C120YM
Unit Information	Unit Operating Voltage Range	414-506	518-632	518-632	187-253	187-253	414-506	414-506	518-632	518-632
	Volts	460	575	575	208/230	208/230	460	460	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
Compressor Motor	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
Compressor Motor	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
Evaporator Fan	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

		C151CL H151CR	C151CM H151CS	C151DL H151DR	C151DM H151DS	C151YL	C151YM
Unit Information	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
Compressor Motor	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
Compressor Motor	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
Evaporator Fan	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

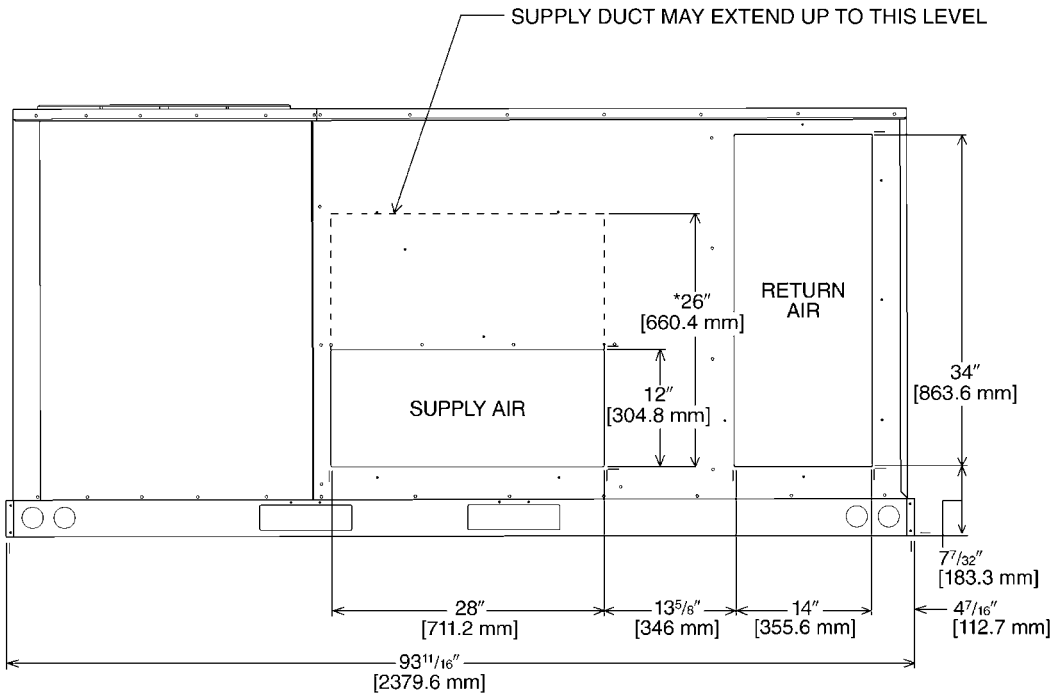


BOTTOM VIEW



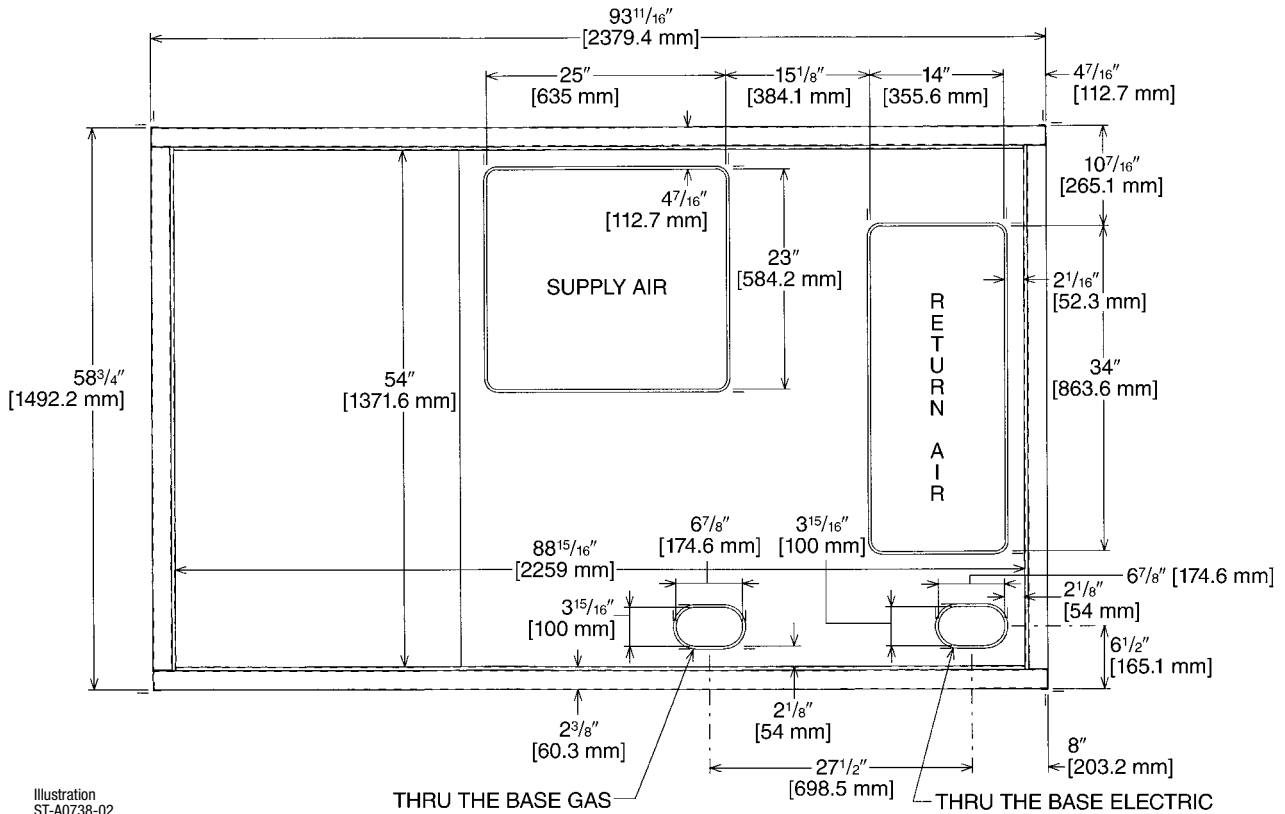
[] Designates Metric Conversions

SUPPLY AND RETURN DIMENSIONS FOR HORIZONTAL APPLICATIONS

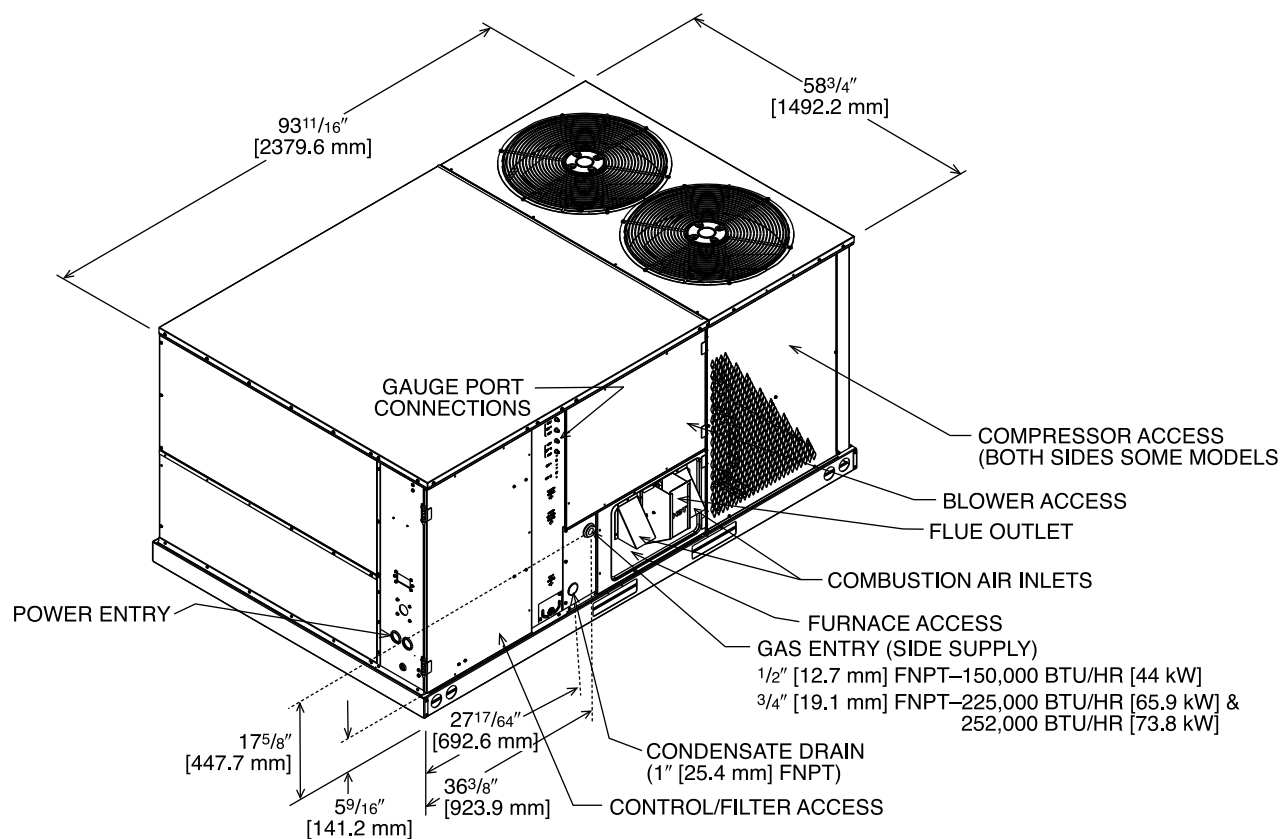


*RECOMMENDED DUCT DIMENSIONS ARE 26"

SUPPLY AND RETURN DIMENSIONS FOR DOWNFLOW APPLICATIONS



[] 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%

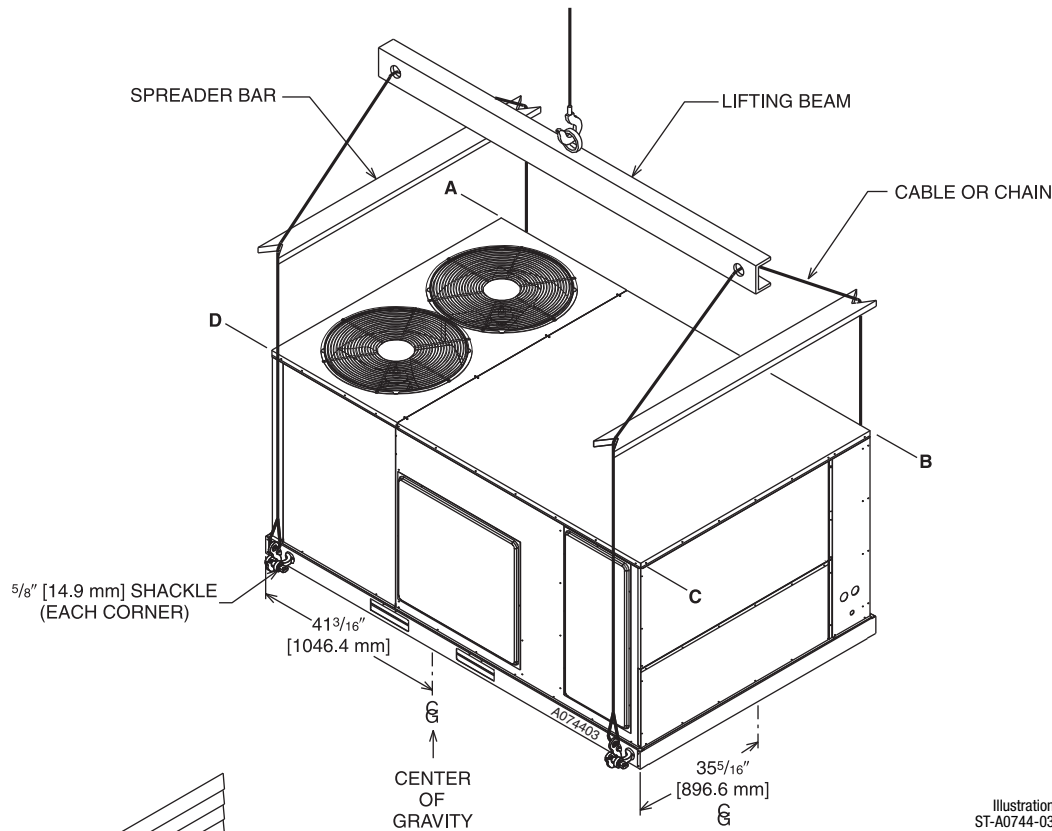
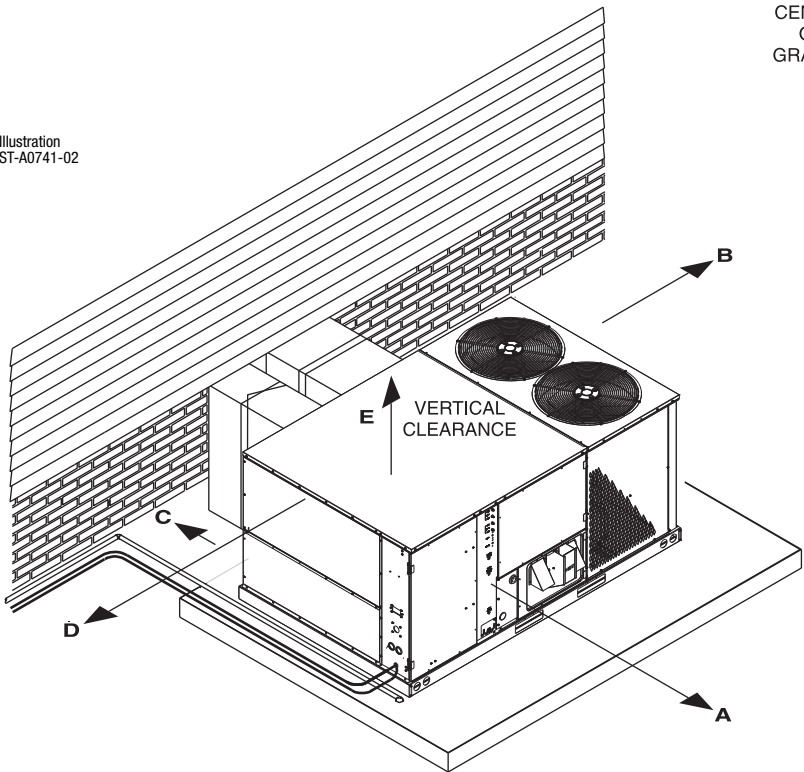


Illustration
ST-A0744-03

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 (T22-001)			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	RXXR-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)	RXXR-AR02	3 [1.4]	2 [1.0]	No
Power Exhaust	RXXR-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)	RXXR-AW02	35 [15.9]	27 [12.2]	No
Modulating Motor Kit w/position feedback for RXRF-KDA1	RXXR-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	RXXR-CDCE50	300 [136.1]	290 [131.5]	No
	RXXR-CFCE54	325 [147.4]	315 [142.9]	No
	RXXR-CFCE56	350 [158.8]	340 [154.2]	No
	RXXR-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	RXXR-AN01	2 [1.0]	1.5 [.7]	Yes
Unfused Service Disconnect	RXXR-AP01	10 [4.5]	9 [4.1]	Yes
Comfort Alert (1 per compressor)	RXXR-AZ01	3 [1.5]	2 [0.9]	Yes
BACnet Communication Card	RXXR-AY01	1 [0.5]	1 [0.5]	No
LonWorks Communication Card	RXXR-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



500-Series *
Communicating/
Programmable

400-Series *
Special Applications/
Programmable

Brand	Descriptor (3 Characters)	Series (3 Characters)	System (2 Characters)	Type (2 Characters)
UHC	- TST	213	UN	MS
UHC=Ruud	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

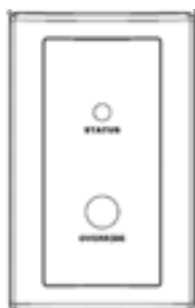
** Photos are representative. Actual models may vary.
For detailed thermostat match-up information,
see specification sheet form number T22-001.*

FLUSH MOUNT ROOM TEMPERATURE SENSORS FOR NETWORKED DDC APPLICATIONS



ROOM TEMPERATURE SENSOR RHC-ZNS1 with TIMED OVERRIDE BUTTON

10k Ω 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 Ω 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

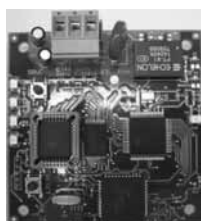
10k Ω room temperature sensor with setpoint adjustment transmits room temperature to DDC system along with desired occupied room temperature setpoint. Timed override button allows tenant to change from unoccupied temperature setpoint to occupied temperature setpoint for a preset time.

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

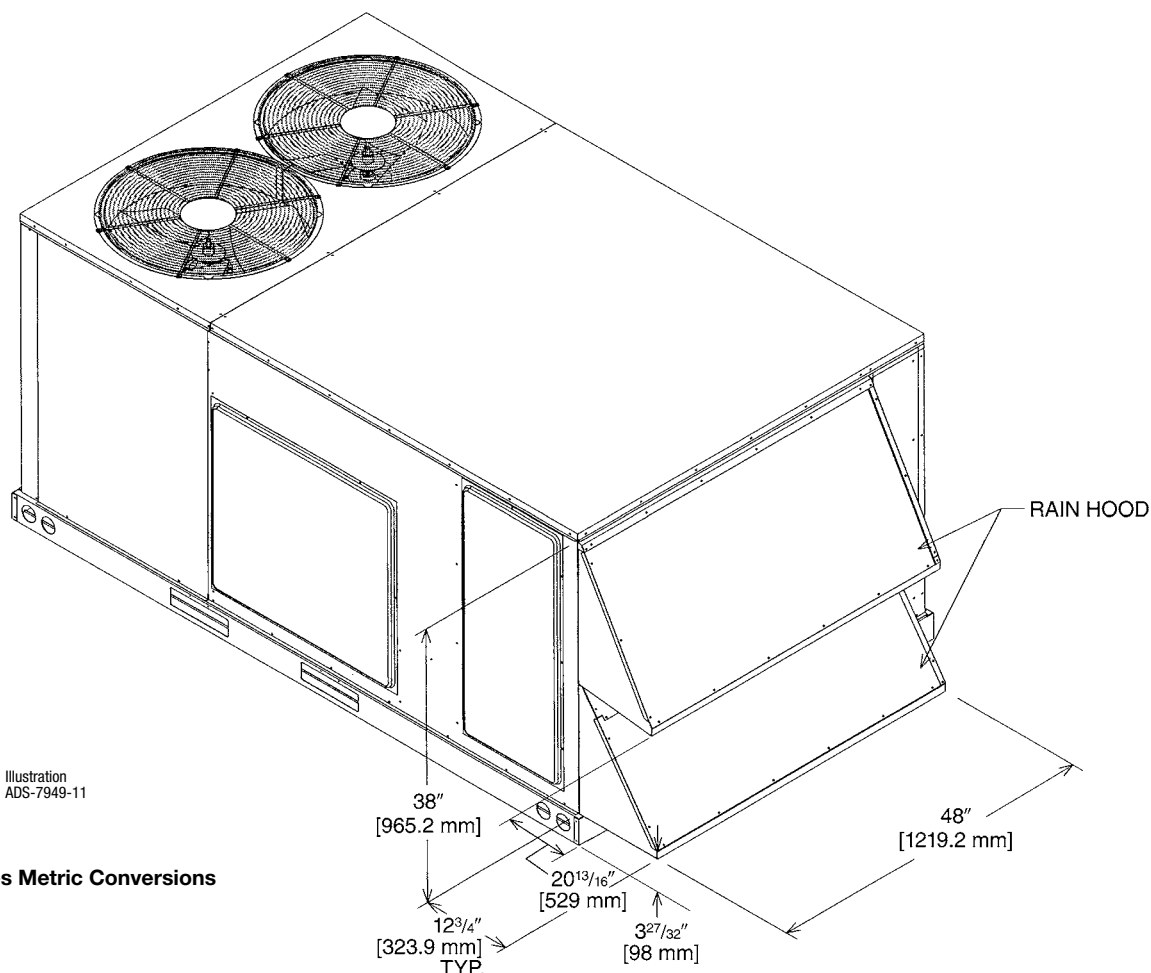
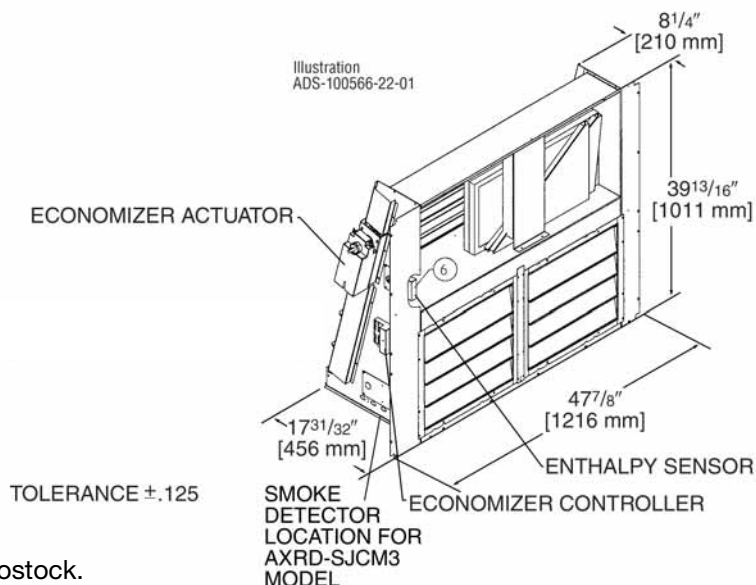
Use to Select Factory Installed Options Only

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

RXXR-AV03—Dual Enthalpy Upgrade Kit

RXXR-AR02—Optional Wall-Mounted CO₂ 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
- CO₂ 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

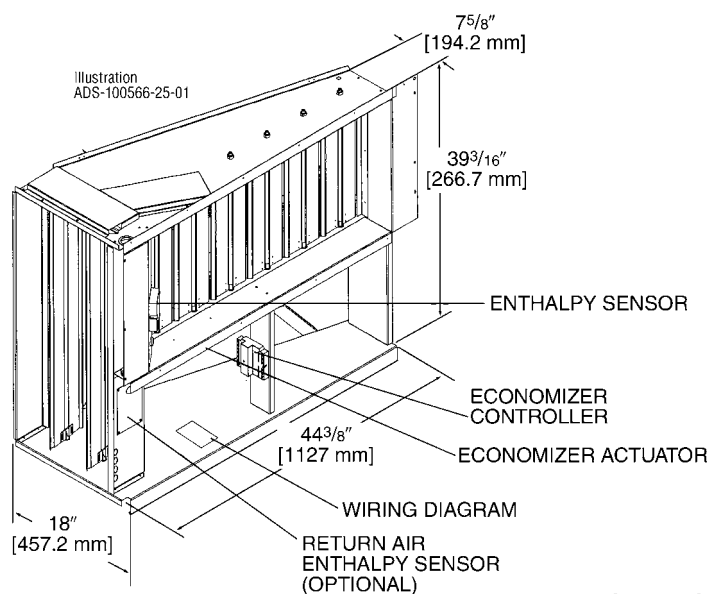
Field Installed Only

AXRD-RJCM3—Single Enthalpy (Outdoor)

RXXR-AV03—Dual Enthalpy Upgrade Kit

RXXR-AR02—Wall-mounted CO₂ 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
- CO₂ 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



TOLERANCE $\pm .125$

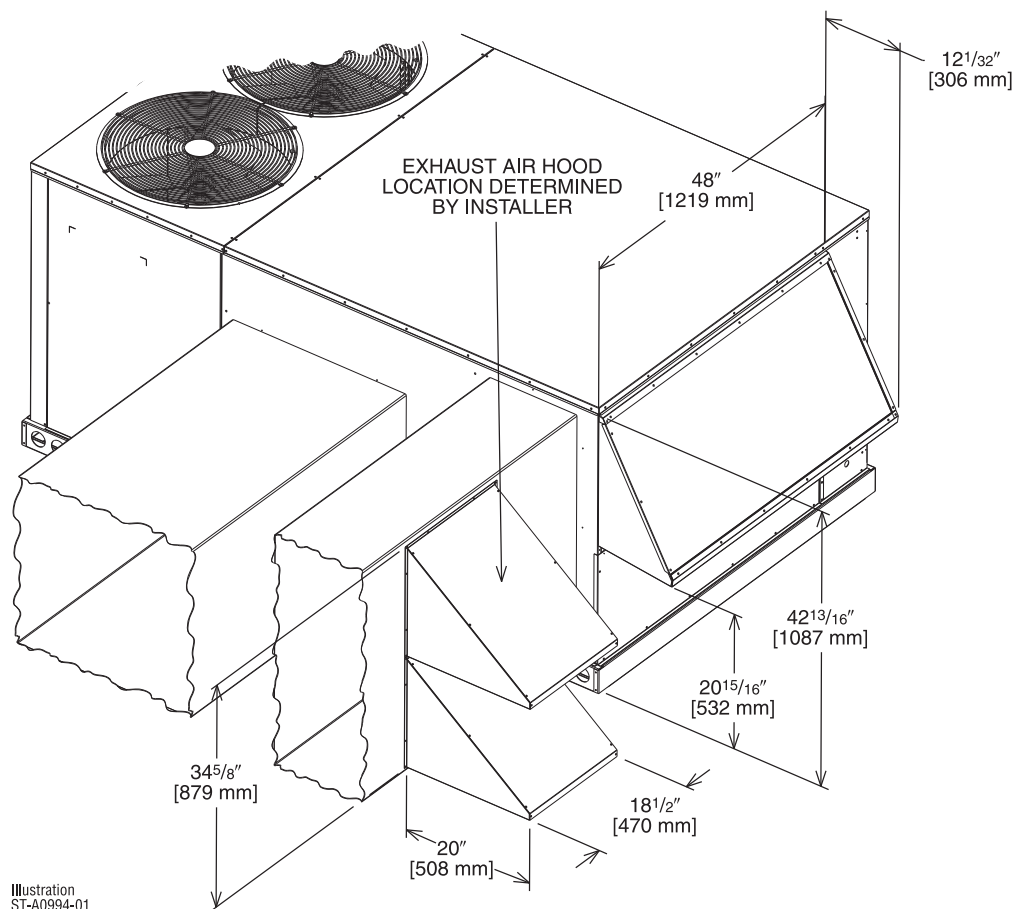


Illustration ST-A0994-01

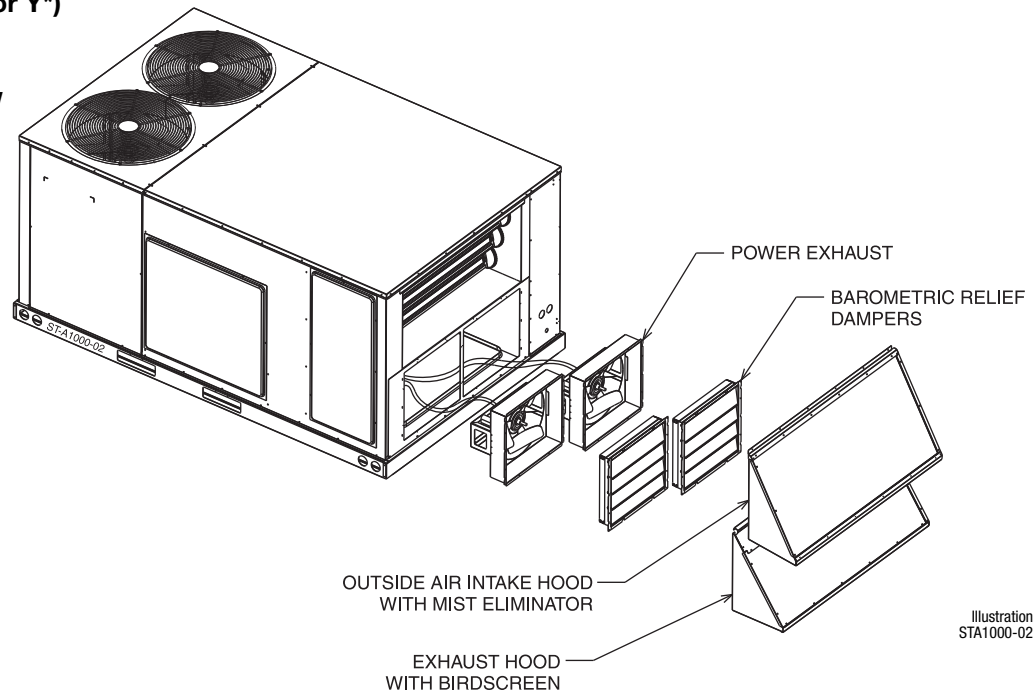
[] Designates Metric Conversions

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

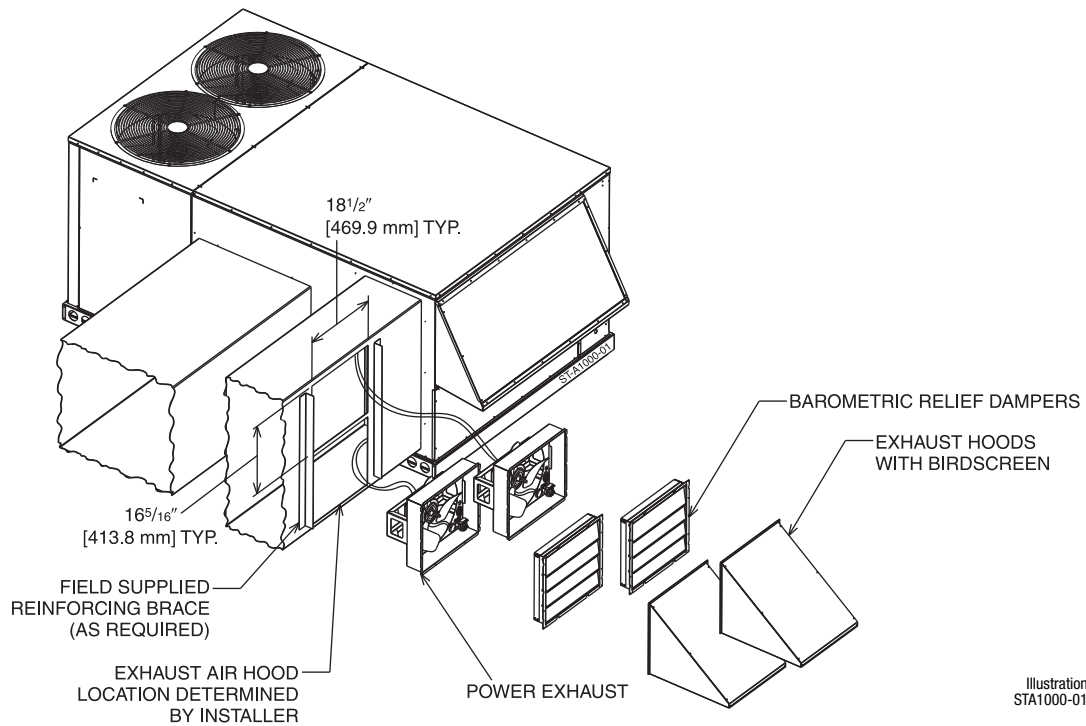
RXXRX-BFF02 (C, D, or Y*)

*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		
RXXRX-BFF02C	2	208-230	1	0.33	2200 [1038]	1518	2500 [1179]	1670	1.48	3.6
RXXRX-BFF02D	2	460	1	0.33	2200 [1038]	1518	2500 [1179]	1670	0.75	1.8
RXXRX-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)

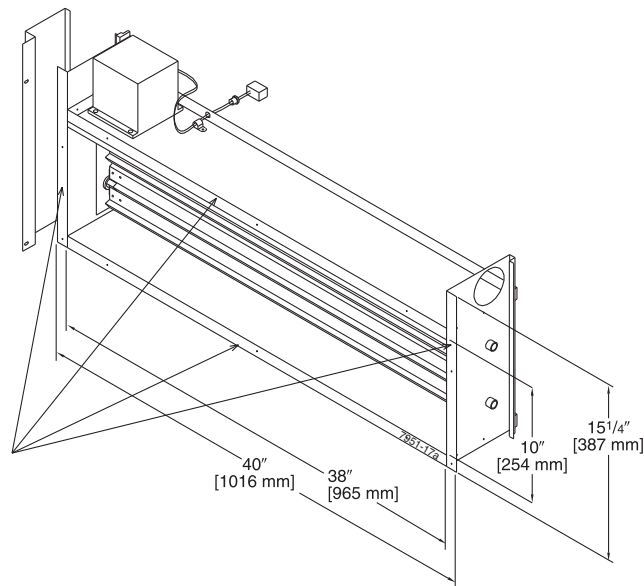


Illustration
ST-7951-17

[] 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
- CO₂ 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

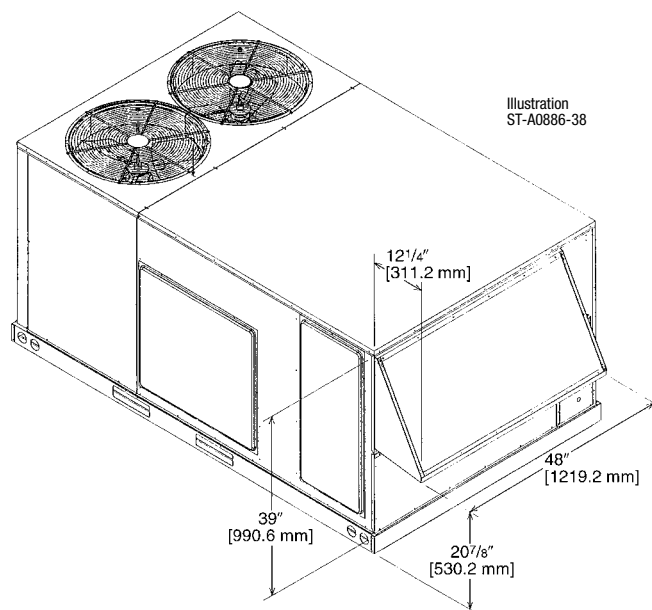
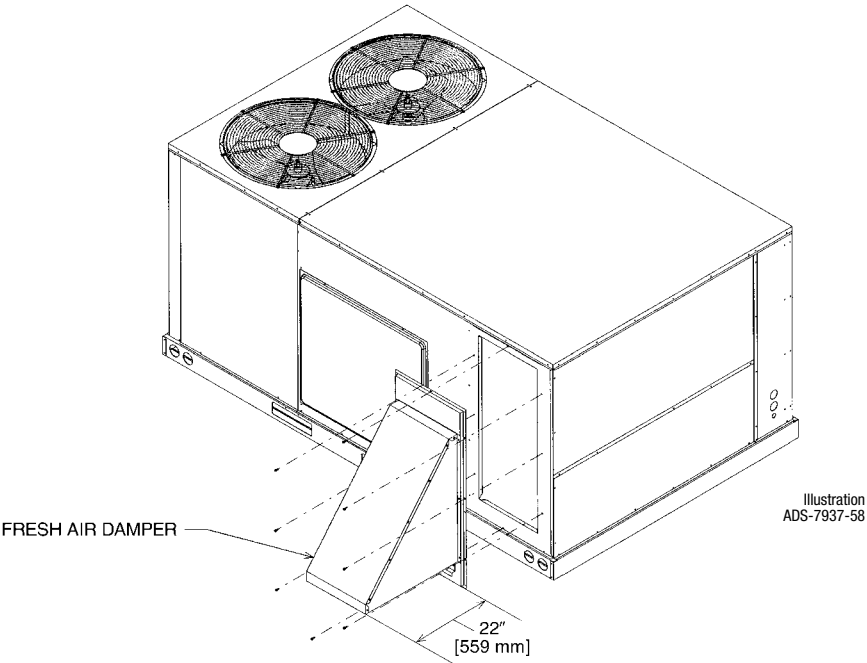


Illustration
ST-A0886-38

FRESH AIR DAMPER (Cont.)

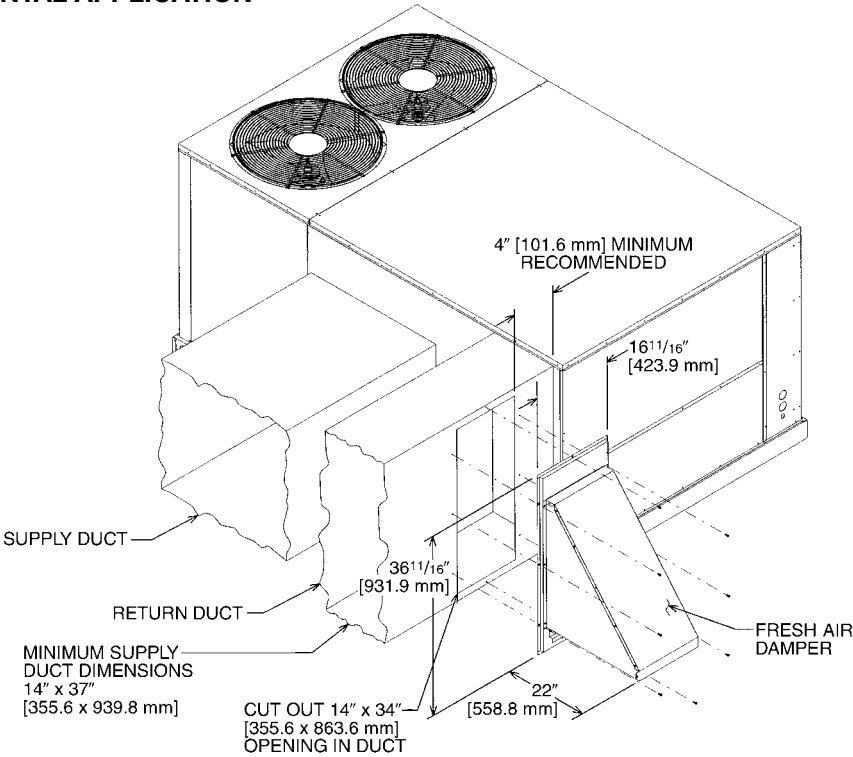
AXRF-JDA1 (Manual)
AXRF-JDB1 (Motorized)

DOWNFLOW APPLICATION



HORIZONTAL APPLICATION

Illustration
ST-A0901-01



[] Designates Metric Conversions

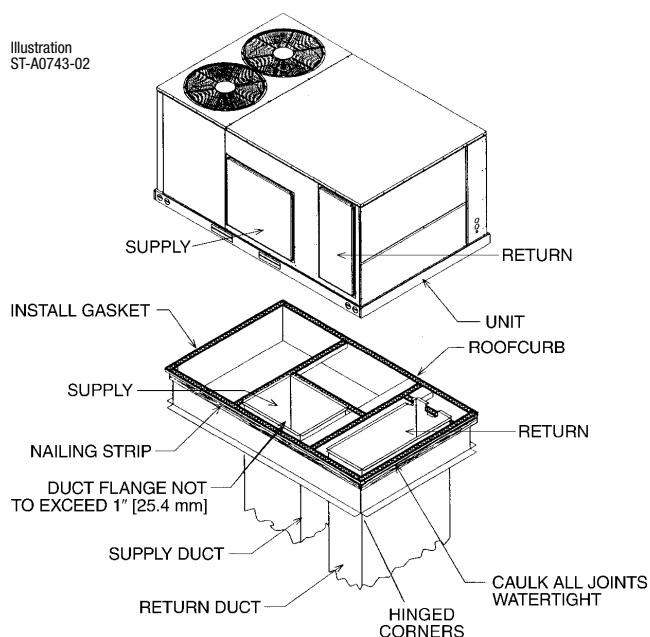
ROOFCURBS (Full Perimeter)

- Ruud'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.

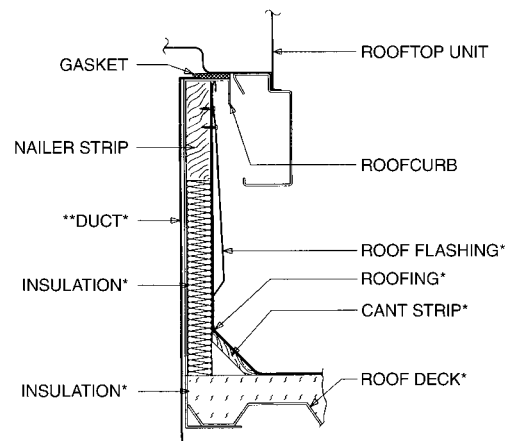
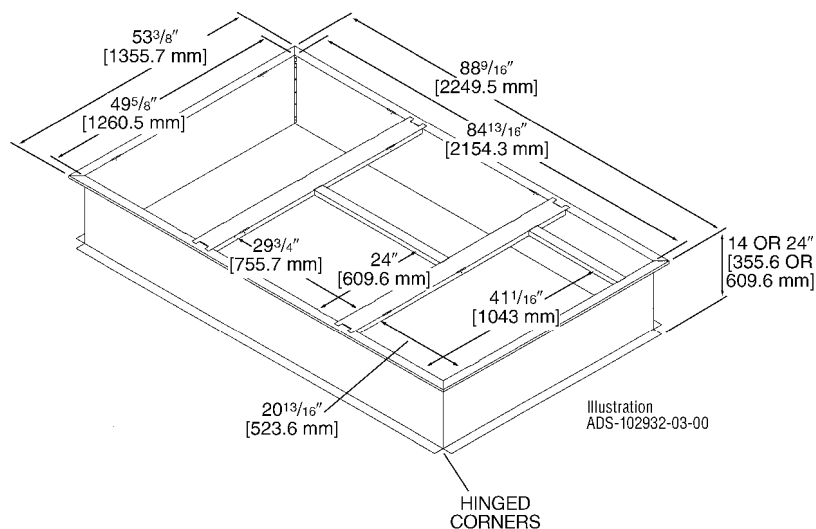
Roofcurb Model	Height of Curb
RXKG-CAE14	14" [356 mm]
RXKG-CAE24	24" [610 mm]

TYPICAL INSTALLATION

Illustration
ST-A0743-02



ROOFCURB INSTALLATION



*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

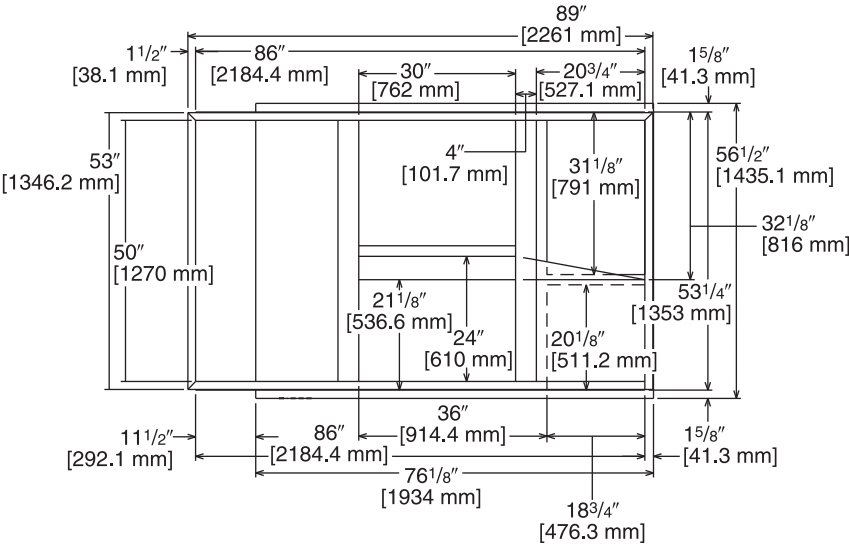
OLD MODELS	OLD ROOFCURB	ROOFCURB ADAPTER	NEW MODELS (All Share Common Cabinet)
(-)RCF, (-)REF-075/076 (-)RGF-150075, (-)RGF-131076 (-)RGF-201076	RXRK-E50	RXRX-CDCE50	RKNL- C073, C090, C102, C120, C151 RKNL- H090, H102, H120, H151
(-)RGF-200075 (-)RGG, (-)REG, (-)RCG-075 (-)RGF, (-)REF, (-)RCF-085 (-)RGF, (-)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

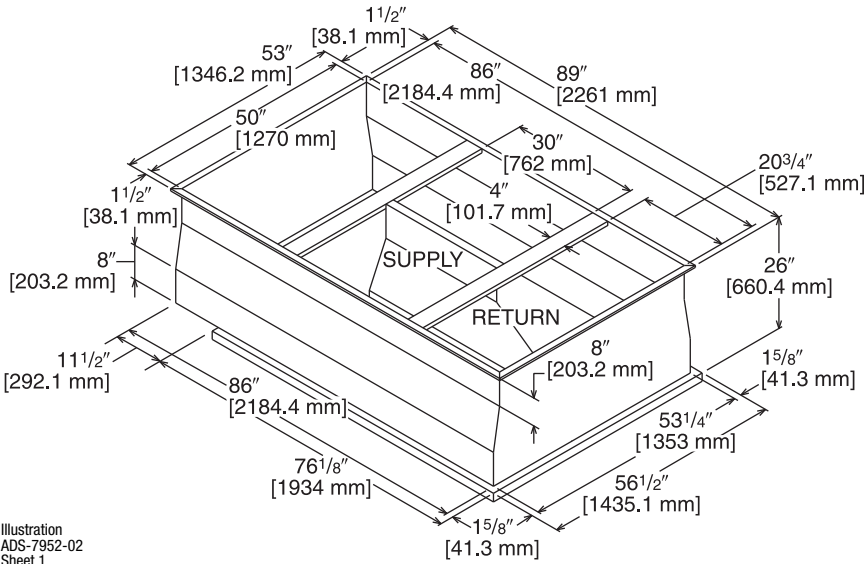
ROOFCURB ADAPTERS (Cont.)

RXRX-CDCE50

Illustration
ADS-7952-02
Sheet 2



TOP VIEW

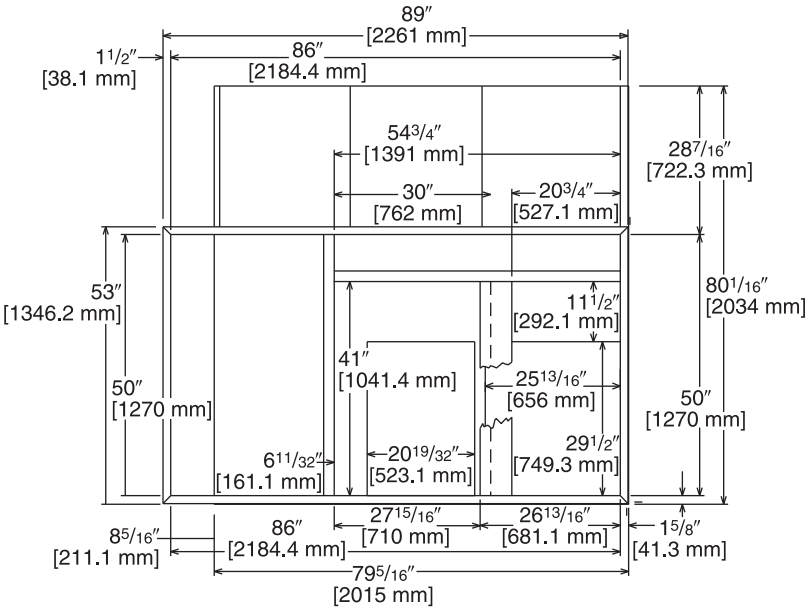


[] Designates Metric Conversions

ROOFCURB ADAPTERS (Cont.)

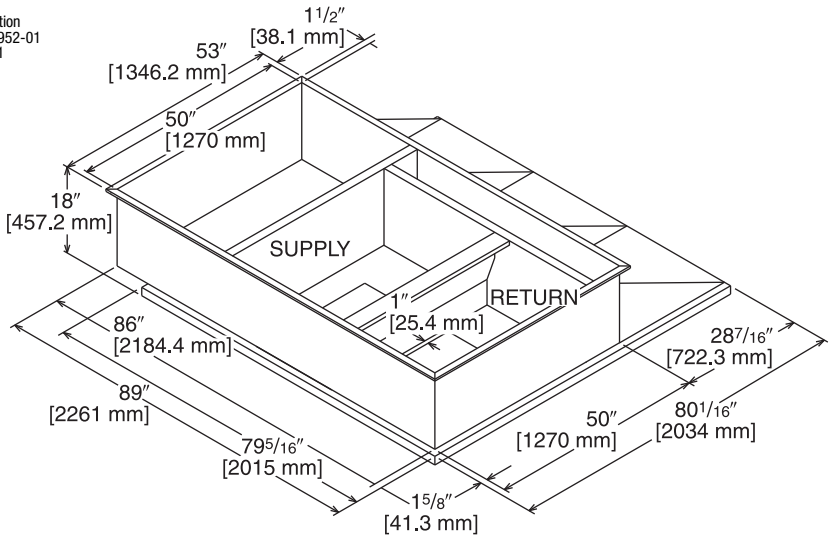
RXRX-CFCE54

Illustration
ADS-7952-01
Sheet 2



TOP VIEW

Illustration
ADS-7952-01
Sheet 1

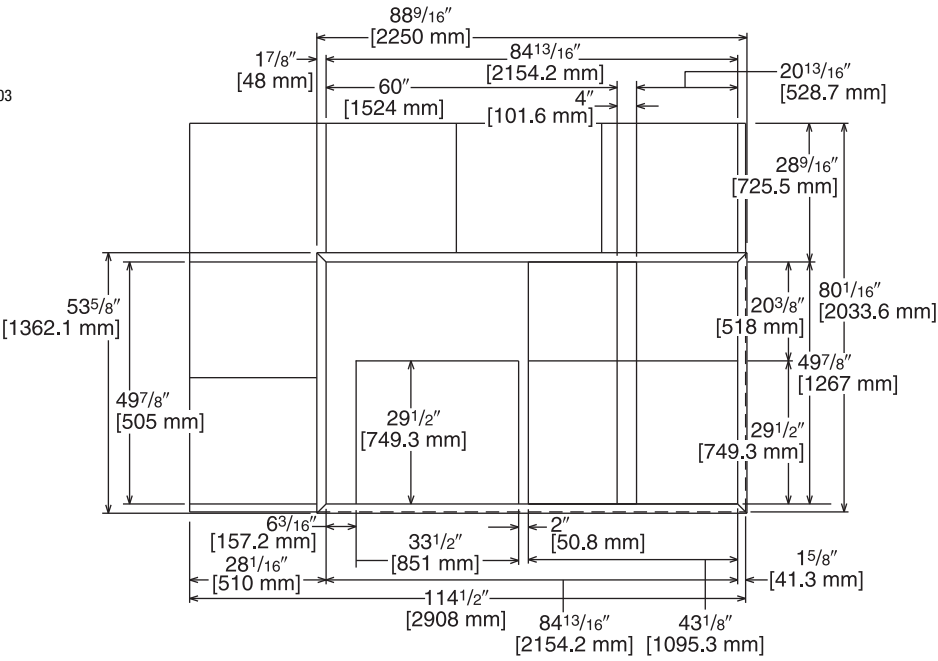


[] Designates Metric Conversions

ROOFCURB ADAPTERS (Cont.)

RXRX-CFCE56

Illustration
ADS-7952-03
Sheet 2



TOP VIEW

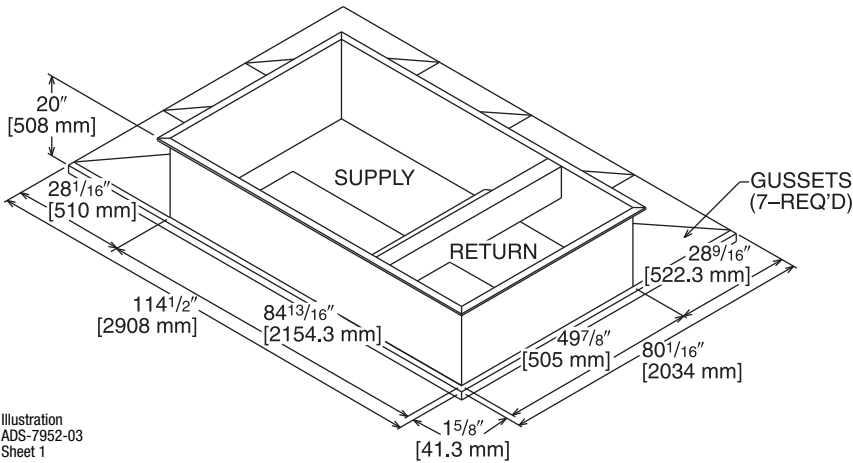


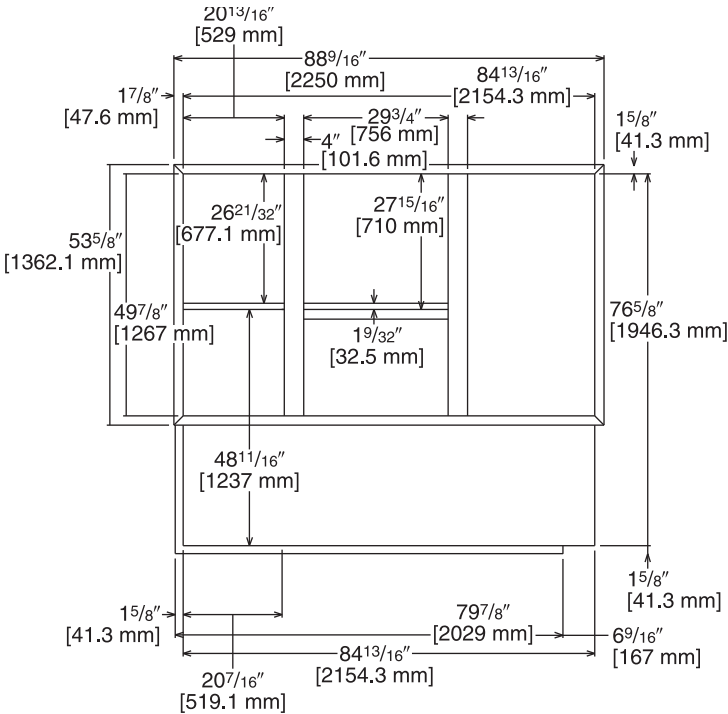
Illustration
ADS-7952-03
Sheet 1

[] Designates Metric Conversions

ROOFCURB ADAPTERS (Cont.)

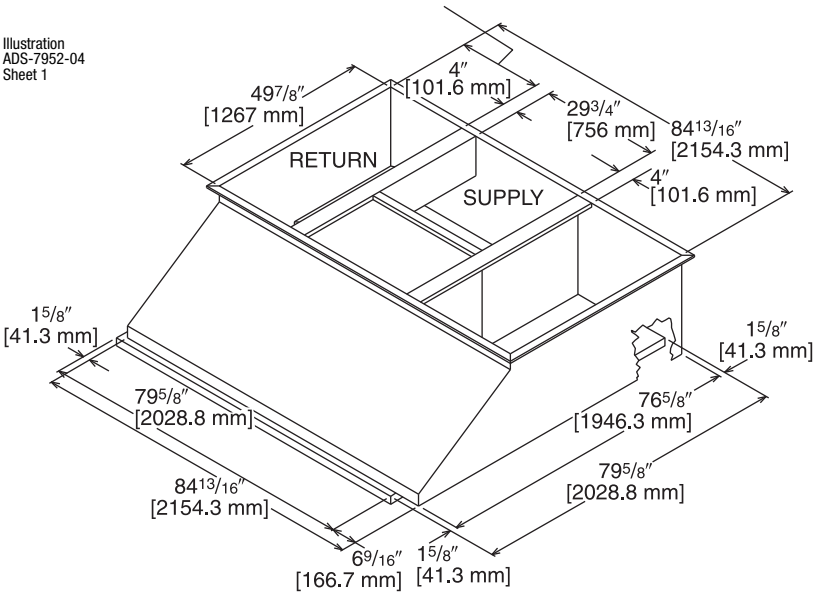
RXRX-CGCC12

Illustration
ADS-7952-04
Sheet 2



TOP VIEW

Illustration
ADS-7952-04
Sheet 1



[] Designates Metric Conversions

CONCENTRIC DIFFUSER APPLICATION

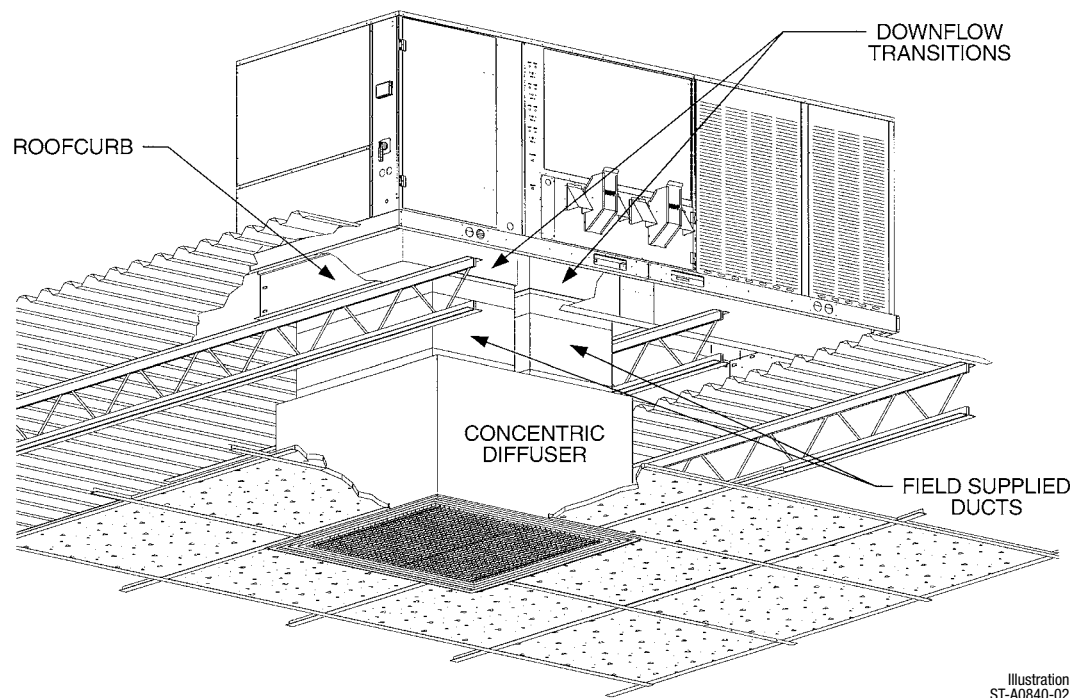


Illustration
ST-A0840-02

DOWNFLOW TRANSITION DRAWINGS

RXMC-CE05

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

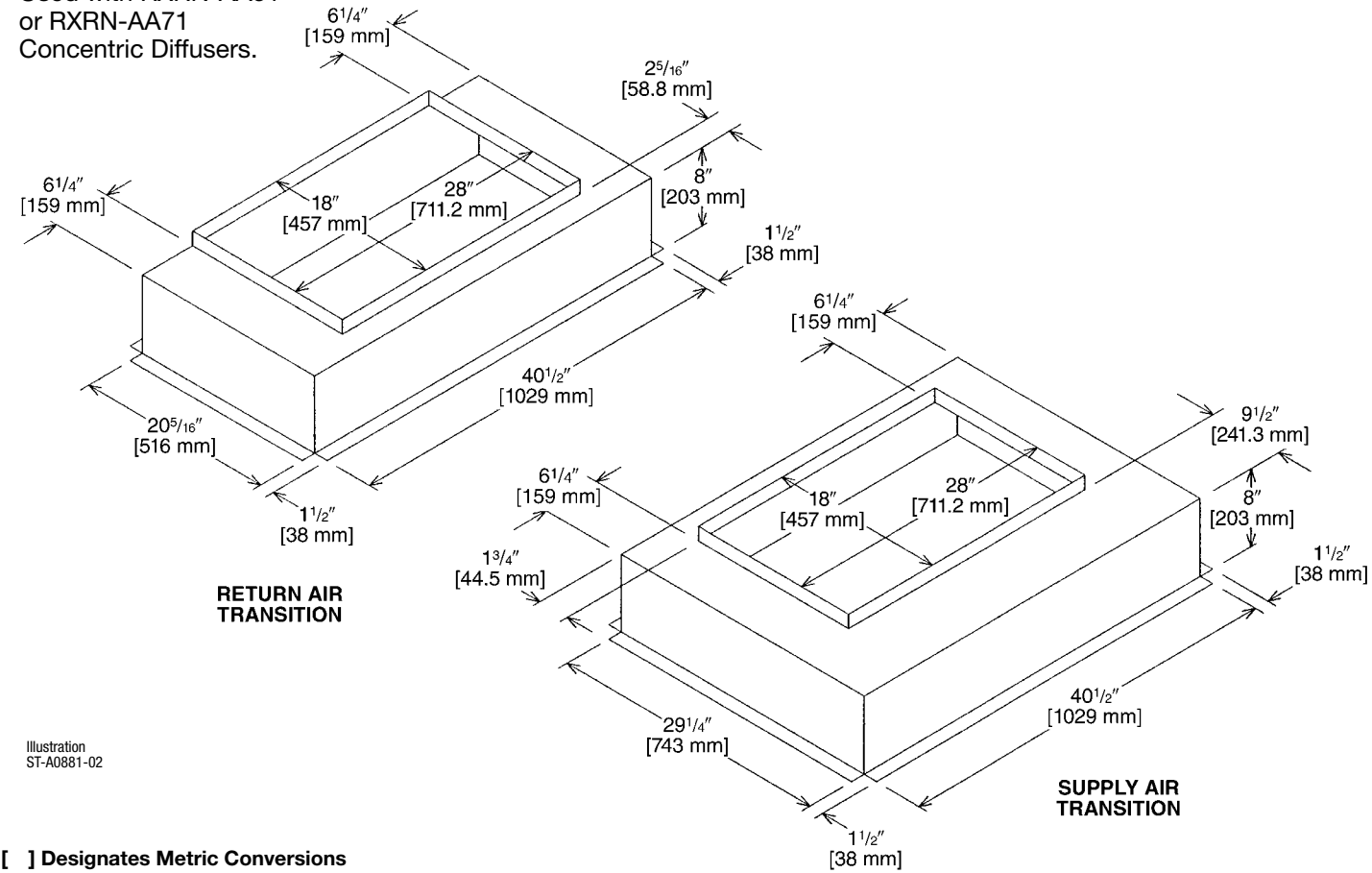


Illustration
ST-A0881-02

[] Designates Metric Conversions

DOWNFLOW TRANSITION DRAWINGS

RXMC-CF06

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

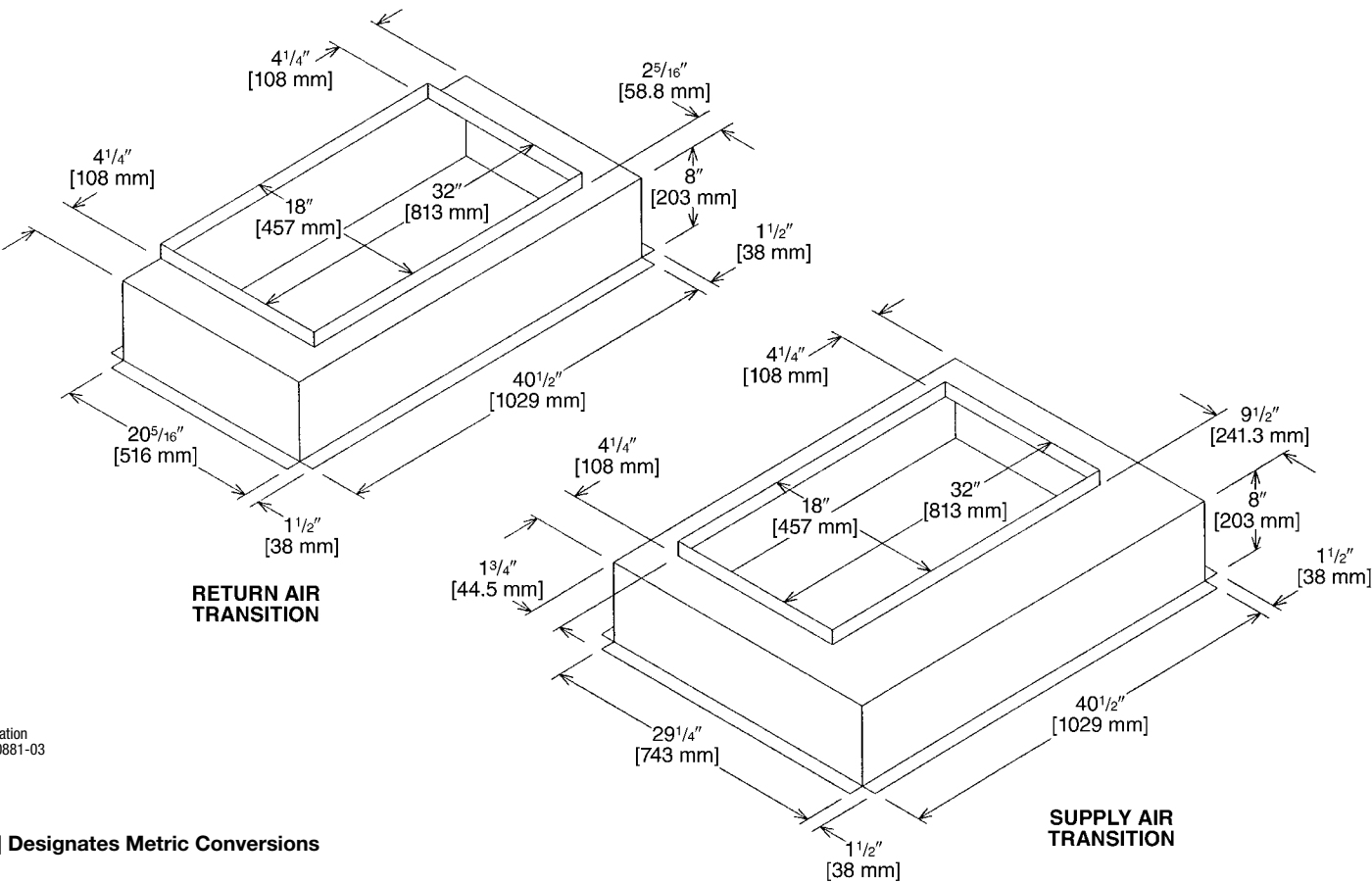


Illustration
ST-A0881-03

[] Designates Metric Conversions

DOWNFLOW TRANSITION DRAWINGS

RXMC-CD04

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

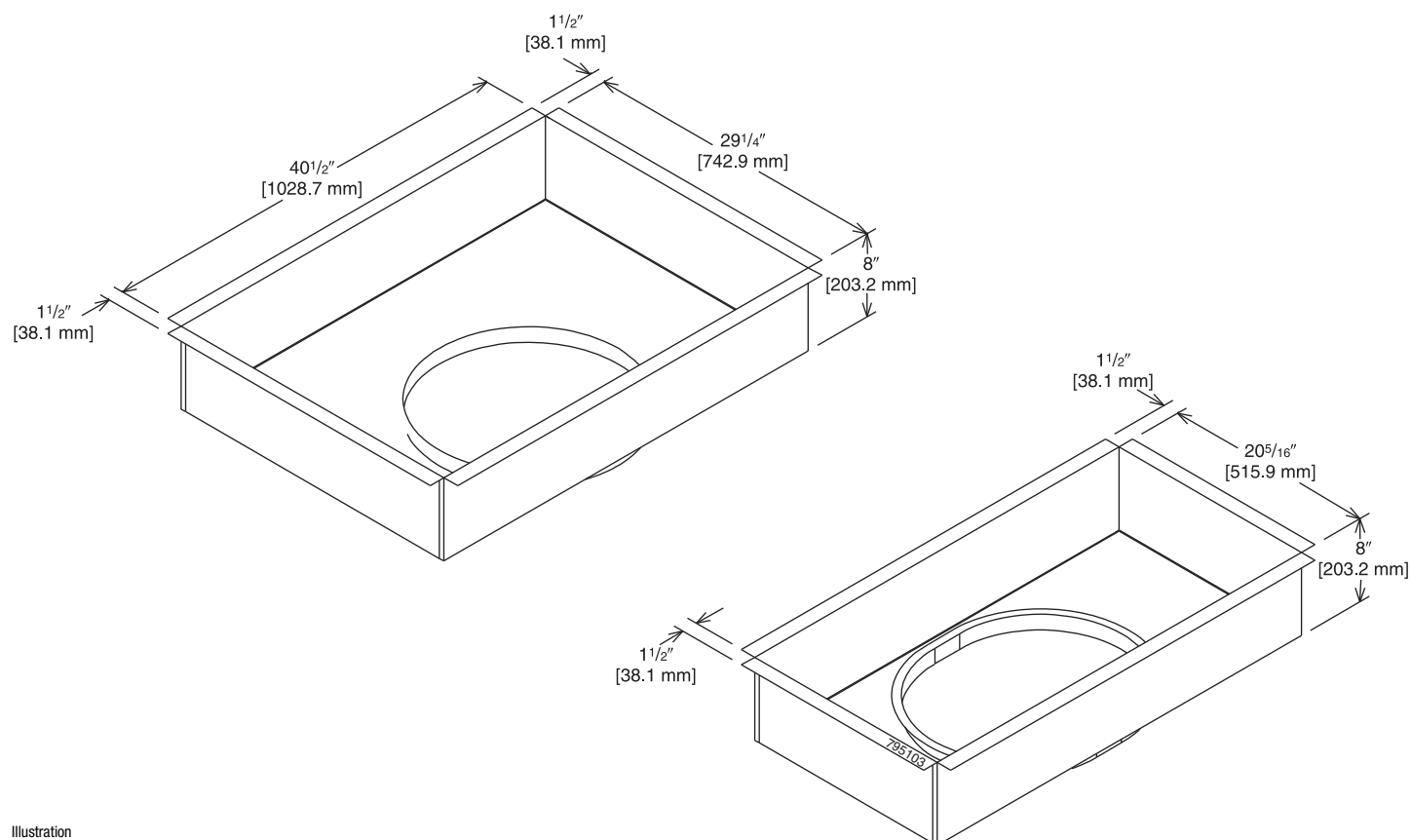


Illustration
ADS-7951-03

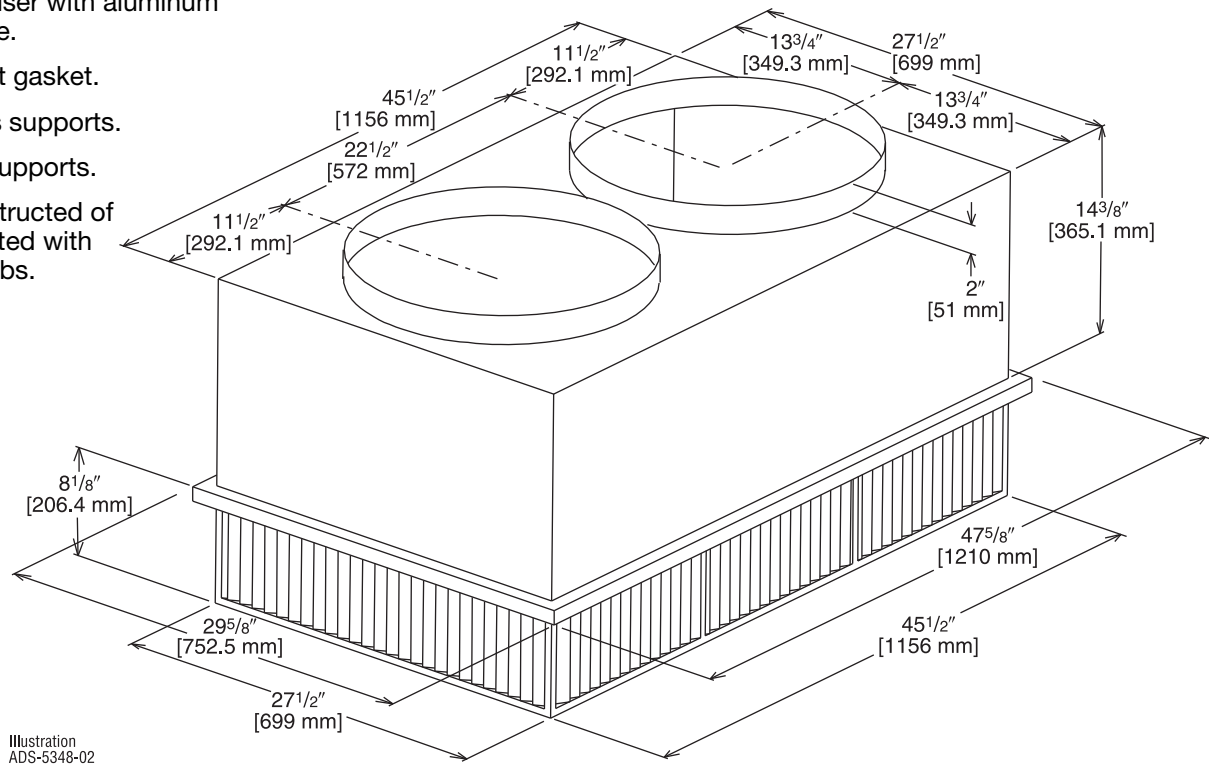
[] Designates Metric Conversions

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.



ENGINEERING DATA^①

Model No.	Flow Rate CFM [L/s]	Static Pressure in. w.c. [kPa]	Throw ^② ^③ Feet [m]	Neck Velocity fpm [m/s]	Noise Level ^④ (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.

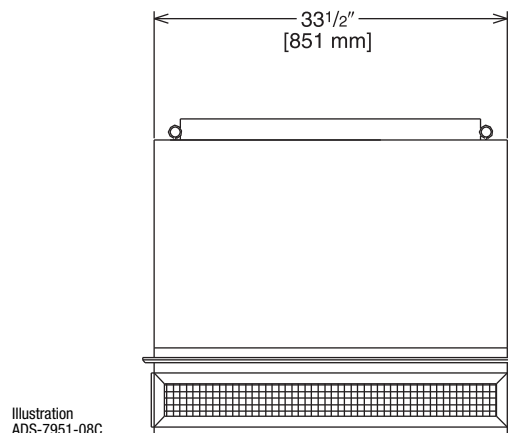
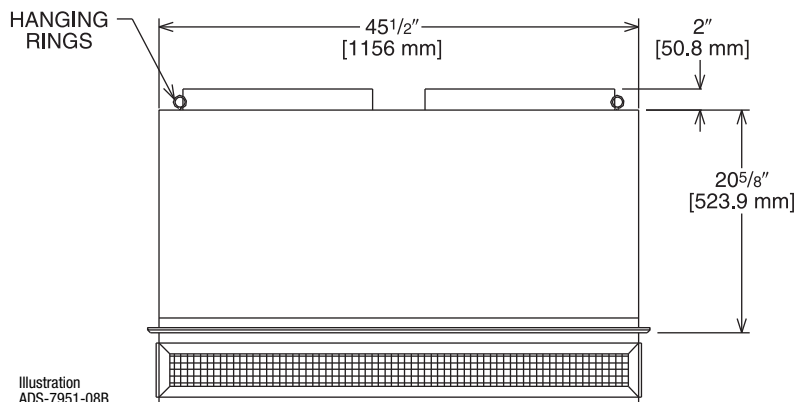
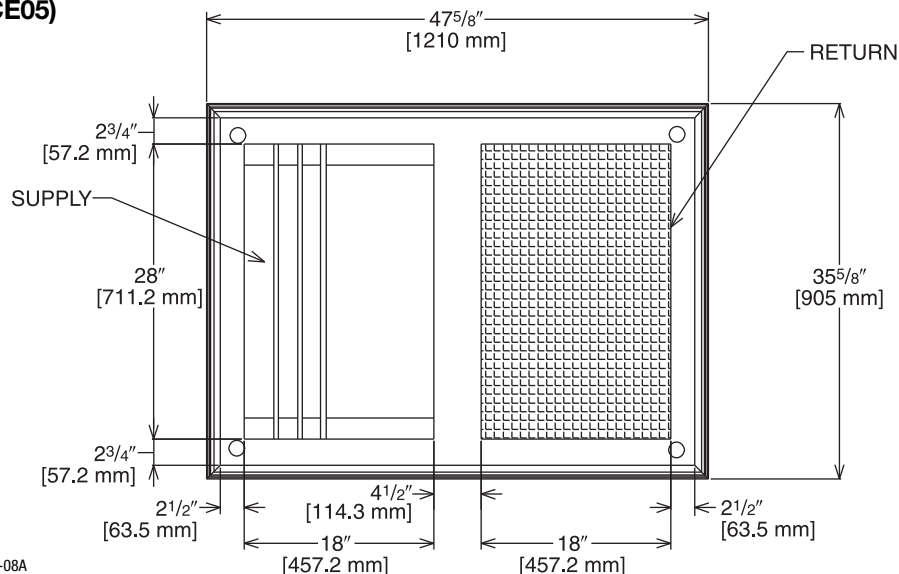
[] Designates Metric Conversions

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.



ENGINEERING DATA^①

Model No.	Flow Rate CFM [L/s]	Static Pressure in w.c. [kPa]	Throw ^{② ③} Feet [m]	Neck Velocity fpm [m/s]	Noise Level ^④ (dbA)
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.

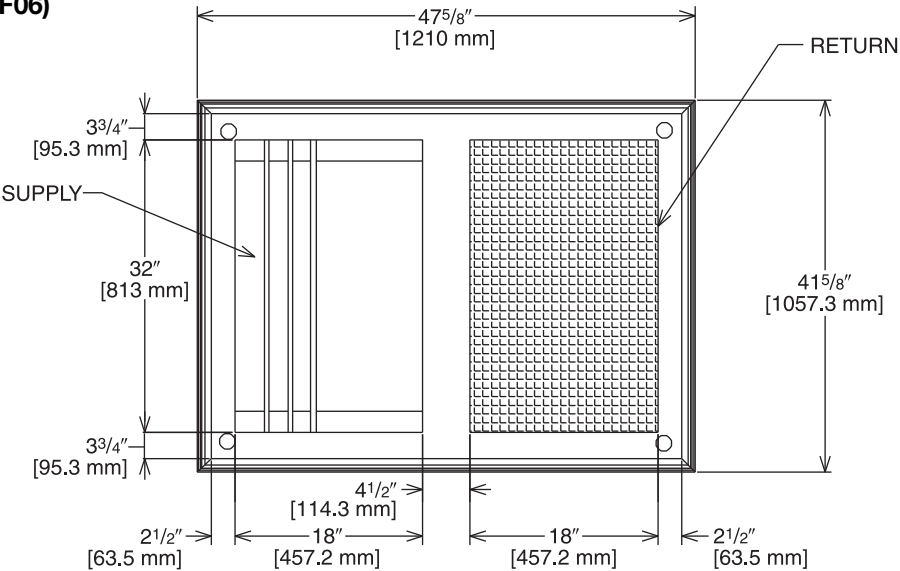


Illustration
ADS-7951-09A

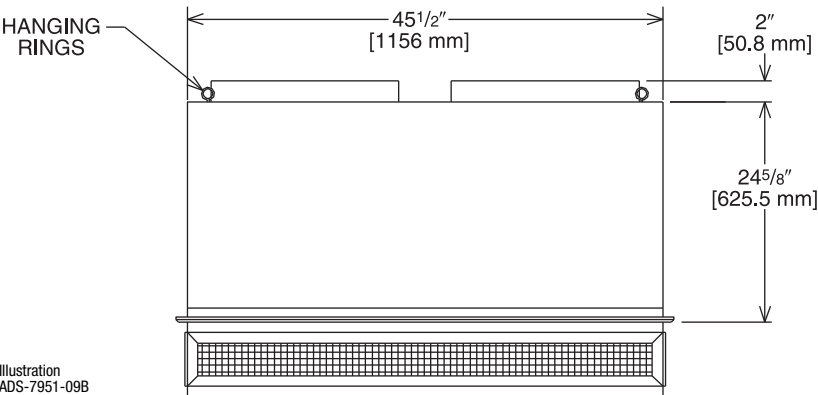


Illustration
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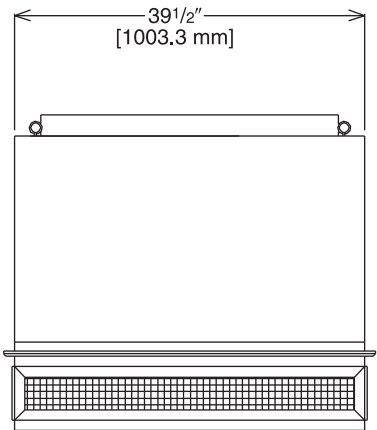


Illustration
ADS-7951-09C

ENGINEERING DATA^①

Model No.	Flow Rate CFM [L/s]	Static Pressure in w.c. [kPa]	Throw ② ③ Feet [m]	Neck Velocity fpm [m/s]	Noise Level ④ (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.

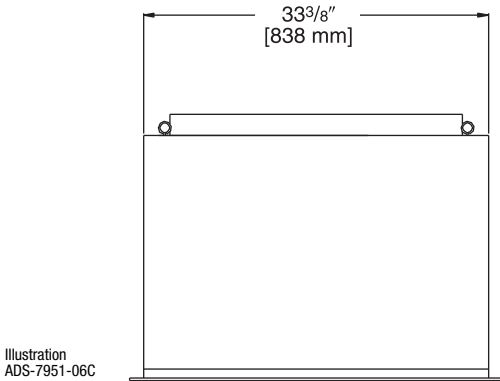
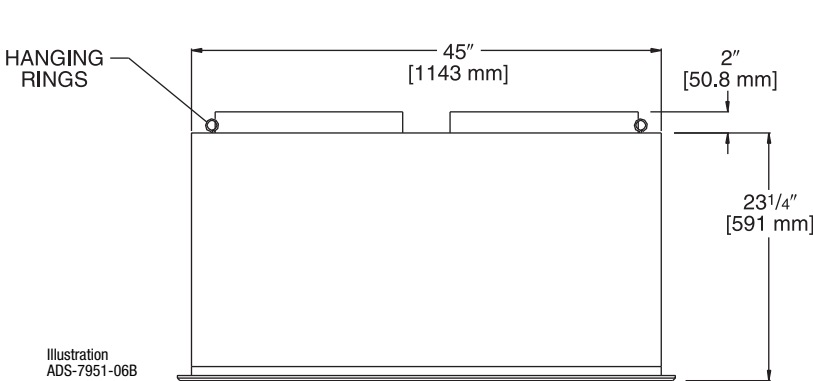
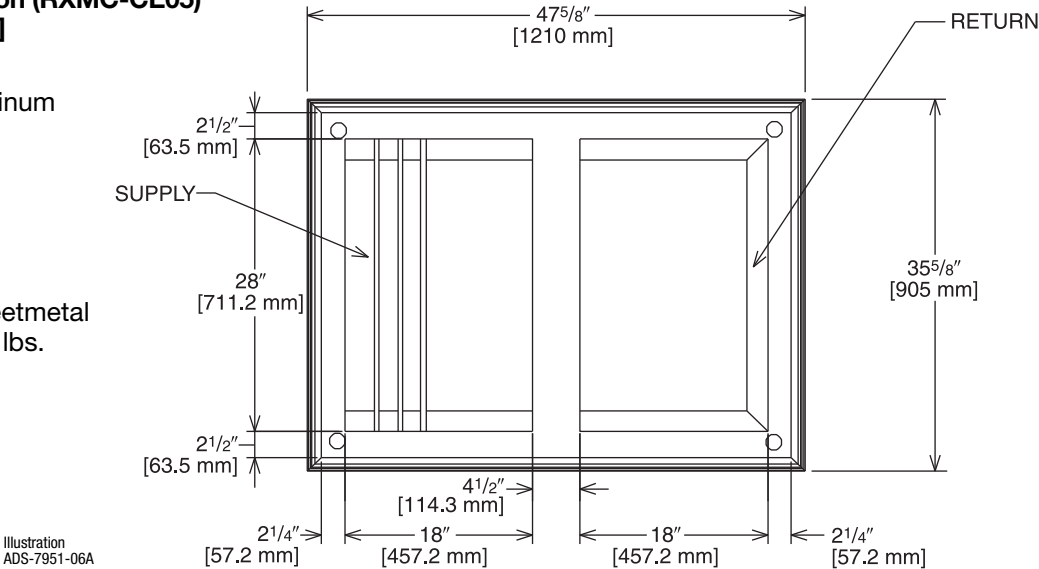
[] Designates Metric Conversions

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.



ENGINEERING DATA^①

Model No.	Flow Rate CFM [L/s]	Static Pressure in w.c. [kPa]	Throw ^② ^③ Feet [m]	Neck Velocity fpm [m/s]	Noise Level ^④ (dB)
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.

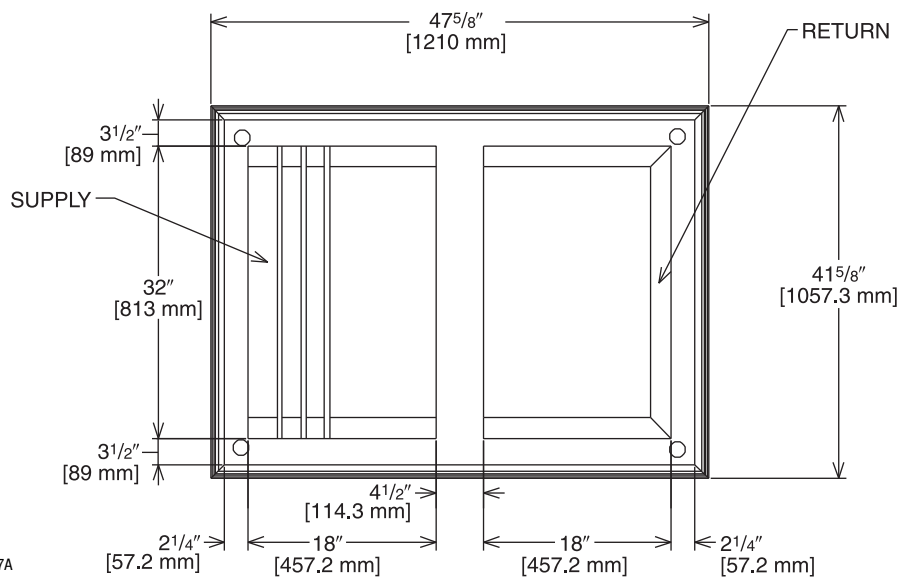


Illustration
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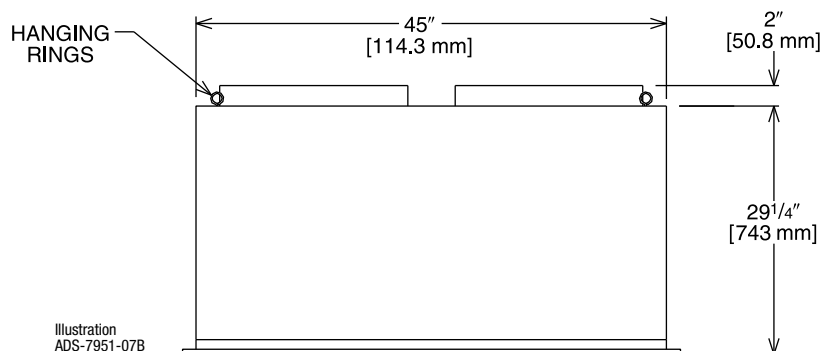


Illustration
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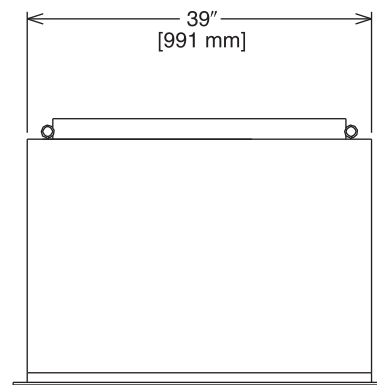


Illustration
ADS-7951-07C

ENGINEERING DATA^①

Model No.	Flow Rate CFM [L/s]	Static Pressure in w.c. [kPa]	Throw ② ③ Feet [m]	Neck Velocity fpm [m/s]	Noise Level ④ (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

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GAS HEAT PACKAGED ROOFTOP

HVAC Guide Specifications

Size Range: 6 to 12¹/₂ Nominal Tons

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

23 07 16	HVAC Equipment Insulation
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23 07 16.13	Decentralized, Rooftop Units:
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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.

23 09 13	Instrumentation and Control Devices for HVAC
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23 09 13.23	Sensors and Transmitters:
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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.

23 09 23	Direct-digital Control system for HVAC
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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 CO₂ 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 $\pm 10\%$ 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 a 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.

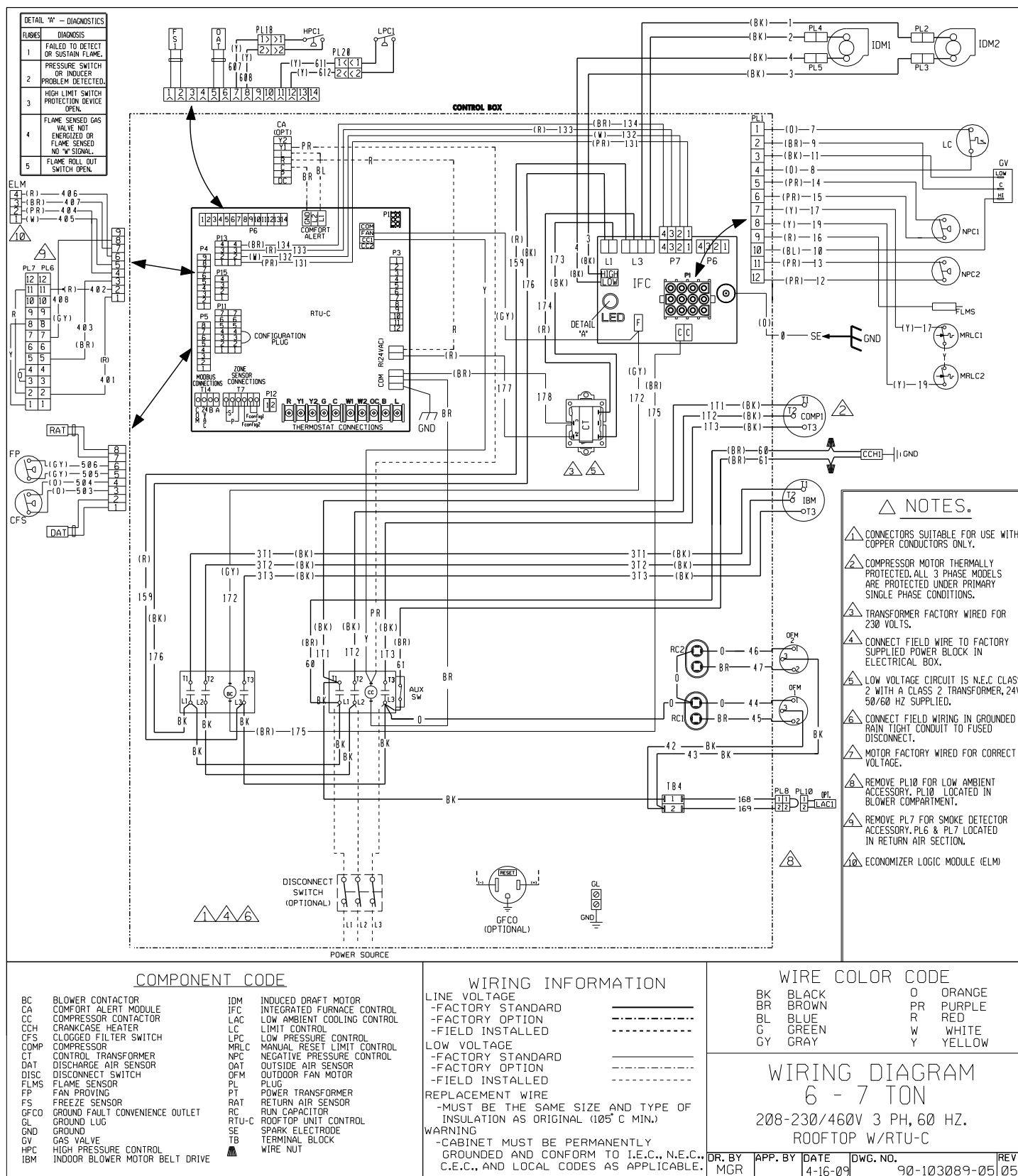
23 81 19.13.O. Special Features

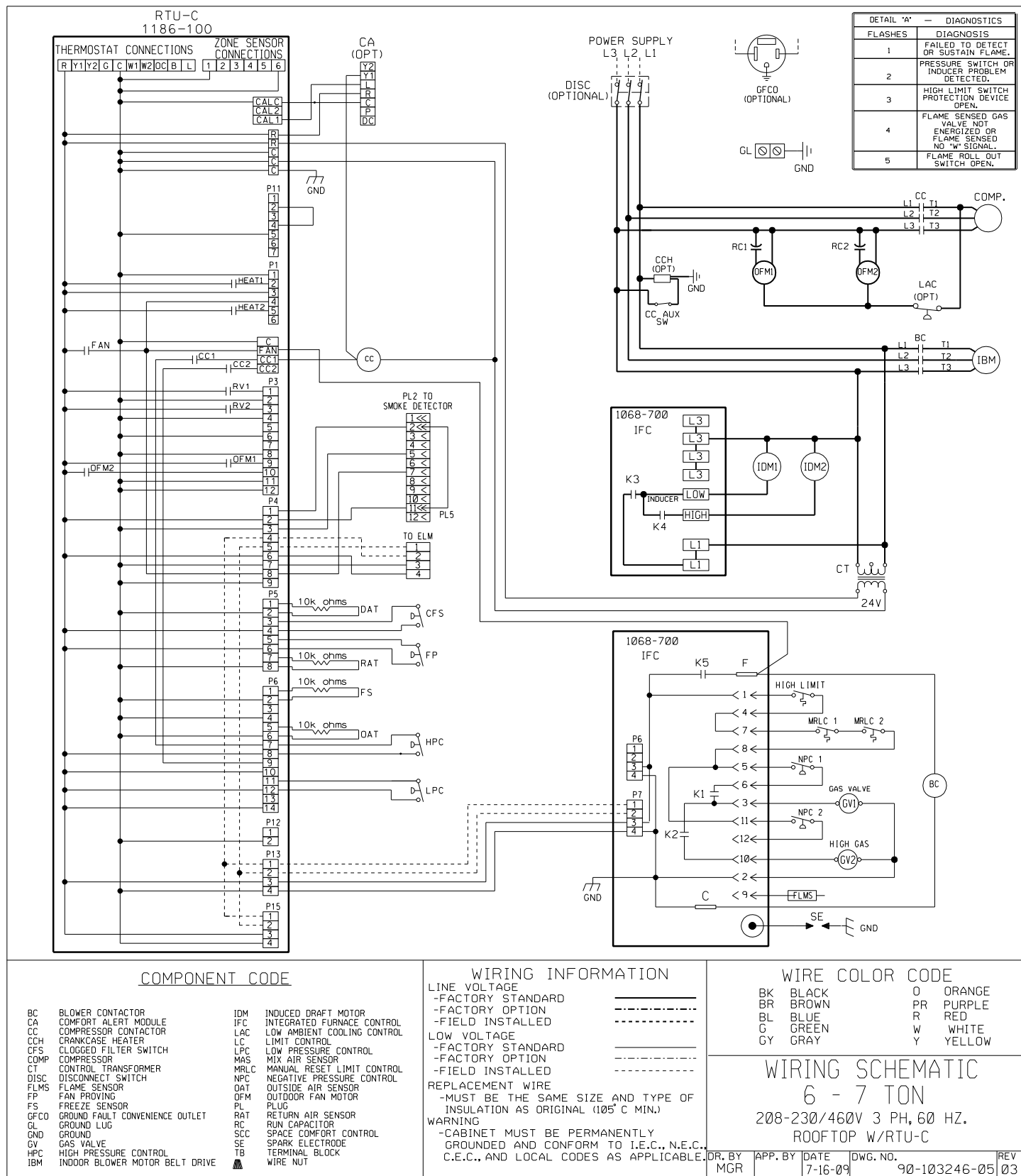
1. Integrated Economizers:
 - a. Integrated, gear-driven parallel modulating blade design type capable of simultaneous economizer and compressor operation.
 - b. Independent modules for vertical or horizontal return configurations shall be available. Vertical return modules shall be available as a factory 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.

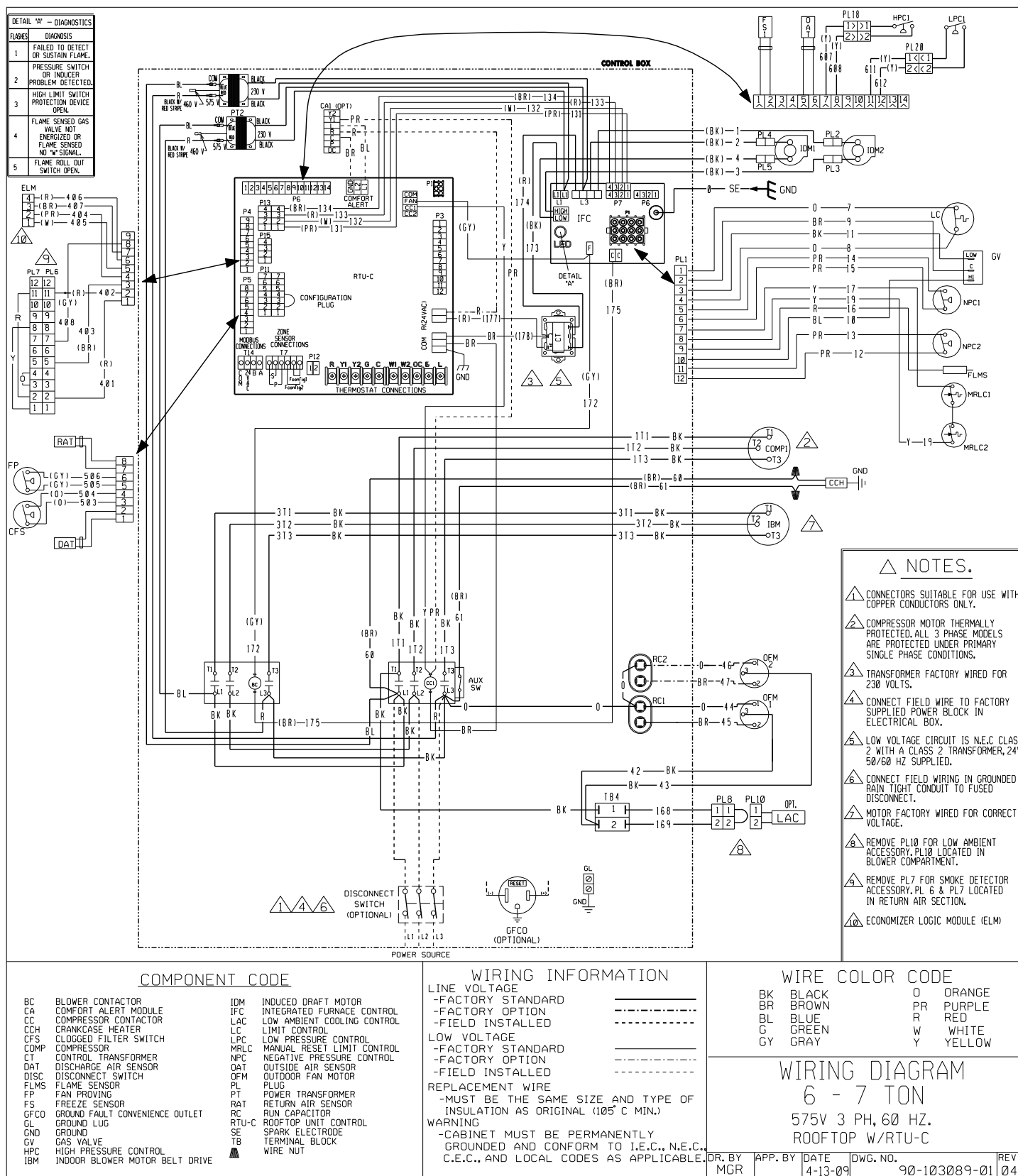
7. Convenience Outlet:
 - a. Non-Powered convenience outlet.
 - b. Outlet shall be powered from a separate 115-120v power source.
 - c. A transformer shall not be included.
 - d. Outlet shall be field-installed and internally mounted with easily accessible 115-v female receptacle.
 - e. Outlet shall 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 (CO2) 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.

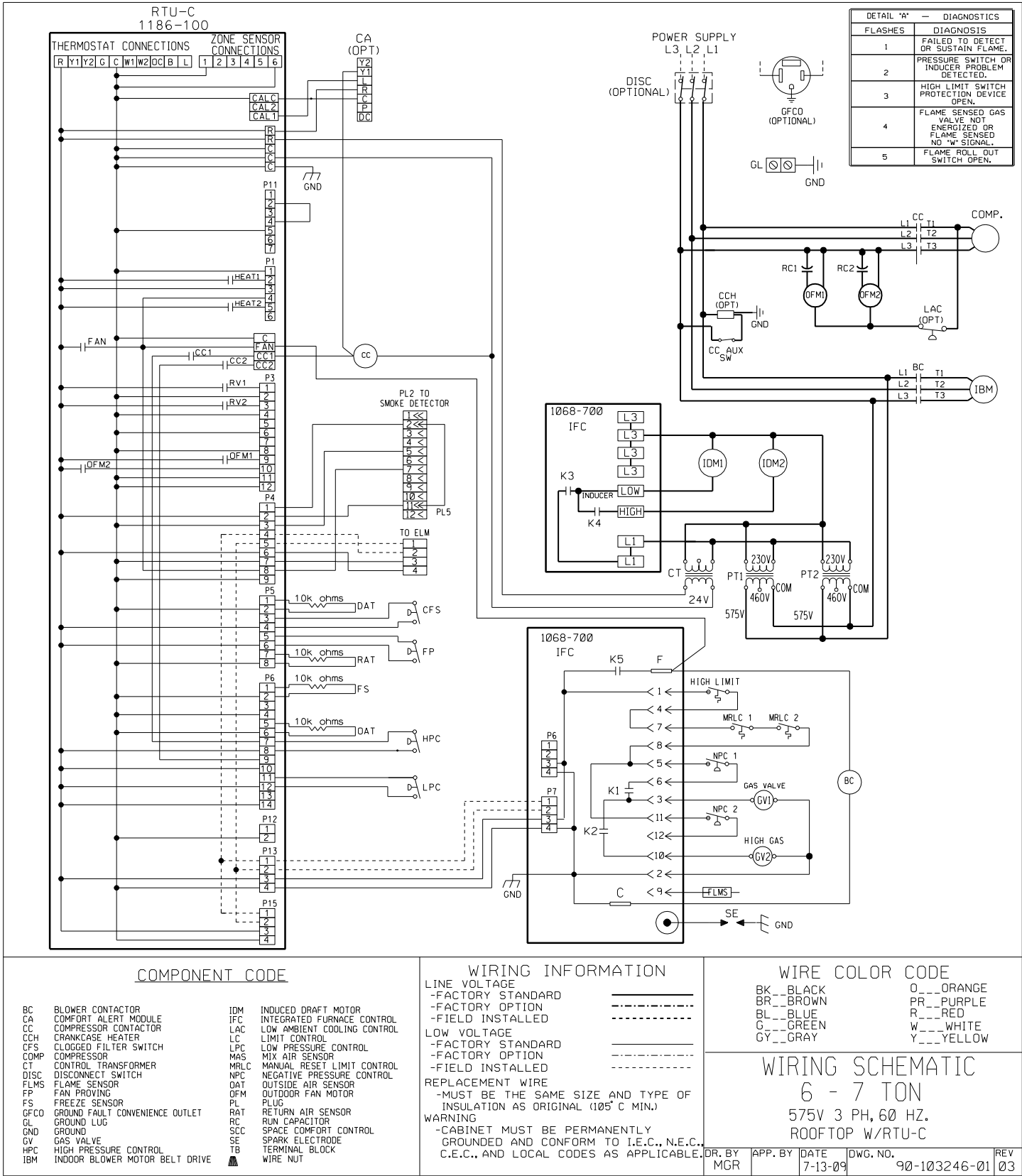
26 29 23.12 Adjustable Frequency Drive

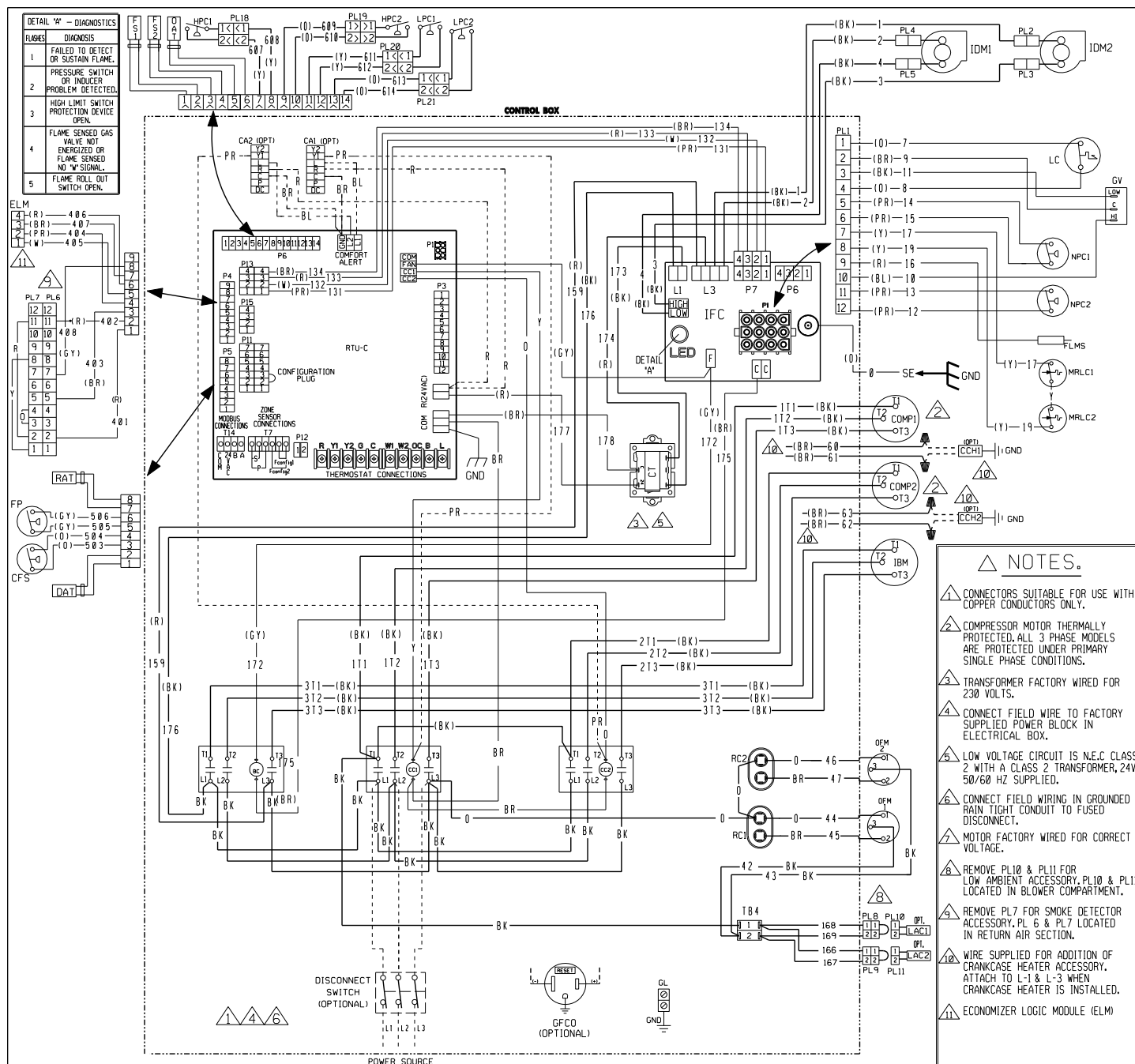
1. Unit shall be supplied with an electronic variable frequency drive for the supply air fan.
2. Drive shall be factory installed in an enclosed cabinet.
3. Drive shall meet UL Standard 95-5V.
4. The completed unit assembly shall be UL listed.
5. Drives are to be accessible through a tooled access hinged 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.



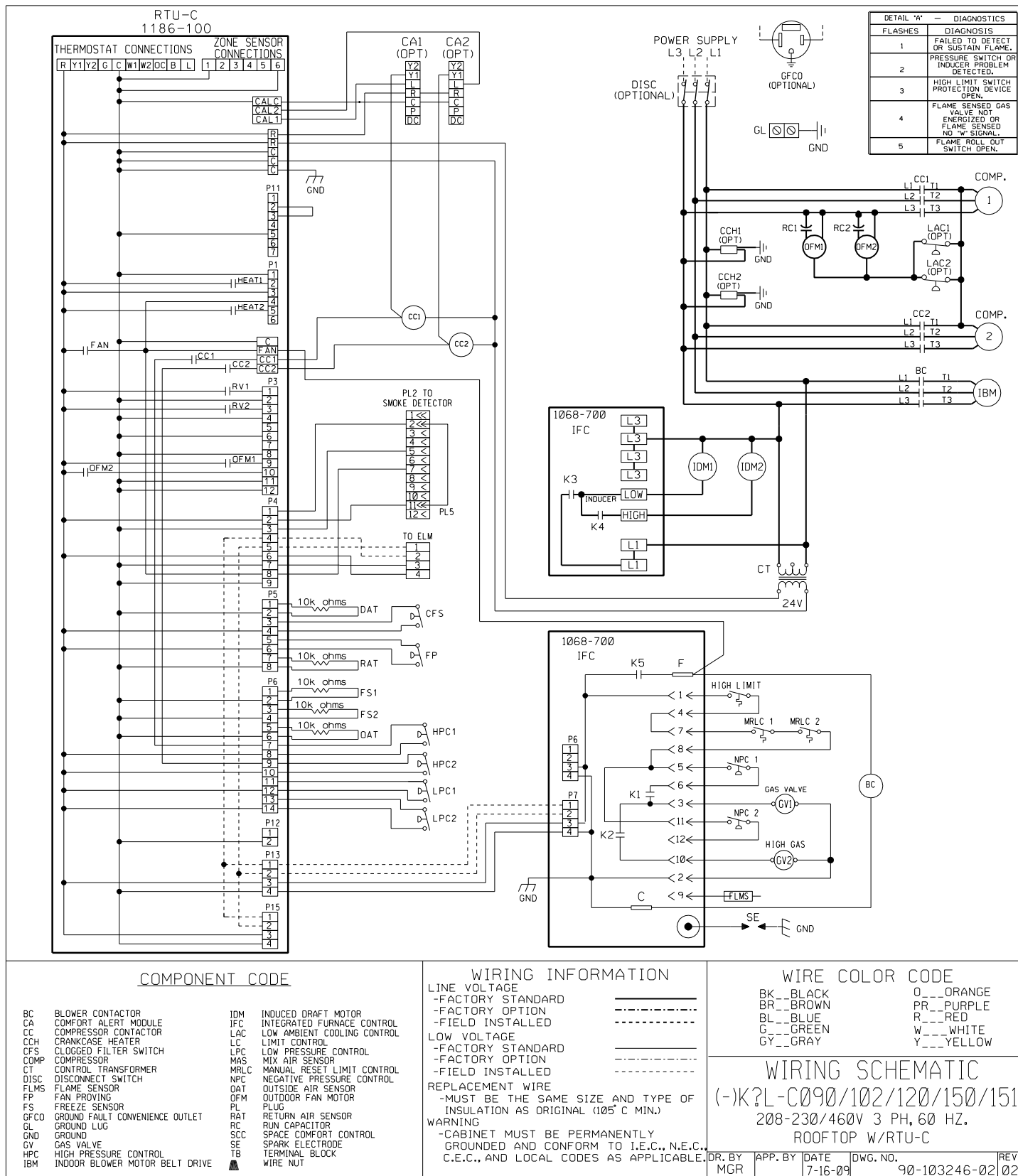


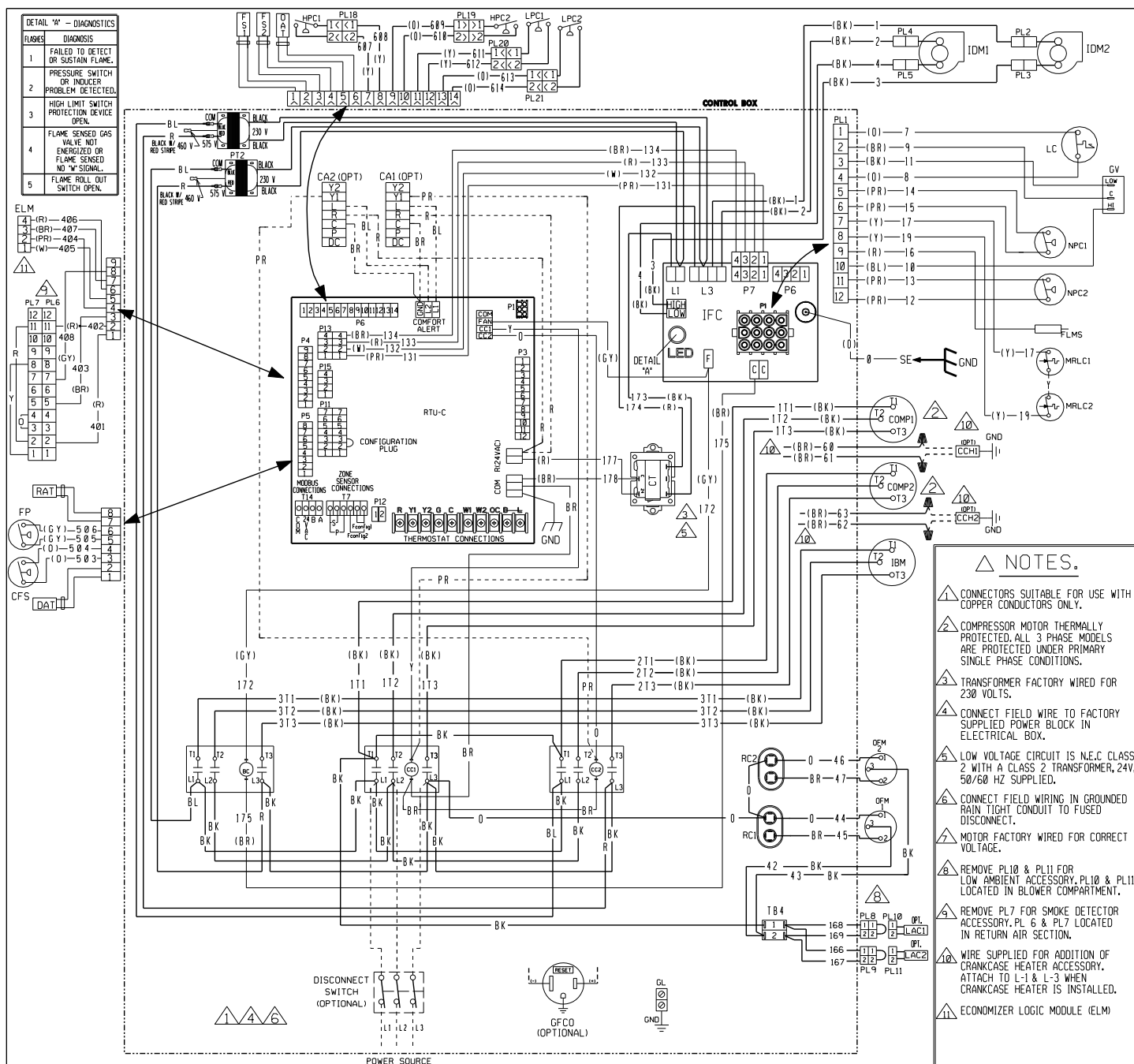






<p>COMPONENT CODE</p> <p>BC BLOWER CONTACTOR CA COMFORT ALERT MODULE CC COMPRESSOR CONTACTOR CCH CRANKCASE HEATER CFS CLOGGED FILTER SWITCH COMP COMPRESSOR CT CONTROL TRANSFORMER DAT DISCHARGE AIR SENSOR DISC DISCONNECT SWITCH FLMS FLAME SENSOR FP FAN PROVING FS FREEZE SENSOR GFCO GROUND FAULT CONVENIENCE OUTLET GL GROUND LUG GV GAS VALVE HPC HIGH PRESSURE CONTROL IBM INDOOR BLOWER MOTOR BELT DRIVE</p>	<p>COMPONENT CODE</p> <p>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 PT POWER TRANSFORMER RAT RETURN AIR SENSOR RC RUN CAPACITOR RTU-C ROOFTOP UNIT CONTROL SE SPARK ELECTRODE TB TERMINAL BLOCK WIRE NUT</p>	<p>WIRING INFORMATION</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.) -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>WIRE COLOR CODE</p> <p>BK BLACK BR BROWN BL BLUE C GREEN GY GRAY</p> <p>O ORANGE PR PURPLE R RED W WHITE Y YELLOW</p> <p>WIRING DIAGRAM (-)K?L-C090/102/120/150/151 208-230/460V 3 PH, 60 HZ. ROOFTOP W/RTU-C</p> <p>DR. BY APP. BY DATE DWG. NO. REV MGR 4-14-09 90-103089-02 03</p>
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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
LPC LIMIT CONTROL
LPC LOW PRESSURE CONTROL
MRLC MANUAL RESET LIMIT CONTROL
NPC NEGATIVE PRESSURE CONTROL
OAT OUTSIDE AIR SENSOR
OFM OUTDOOR FAN MOTOR
PLUG PLUG
PT POWER TRANSFORMER
RAT RETURN AIR SENSOR
RC RETURN AIR SENSOR
RTU-C ROOFTOP UNIT CONTROL
SE SPARK ELECTRODE
TB TERMINAL BLOCK
WIRE NUT

WIRING INFORMATION

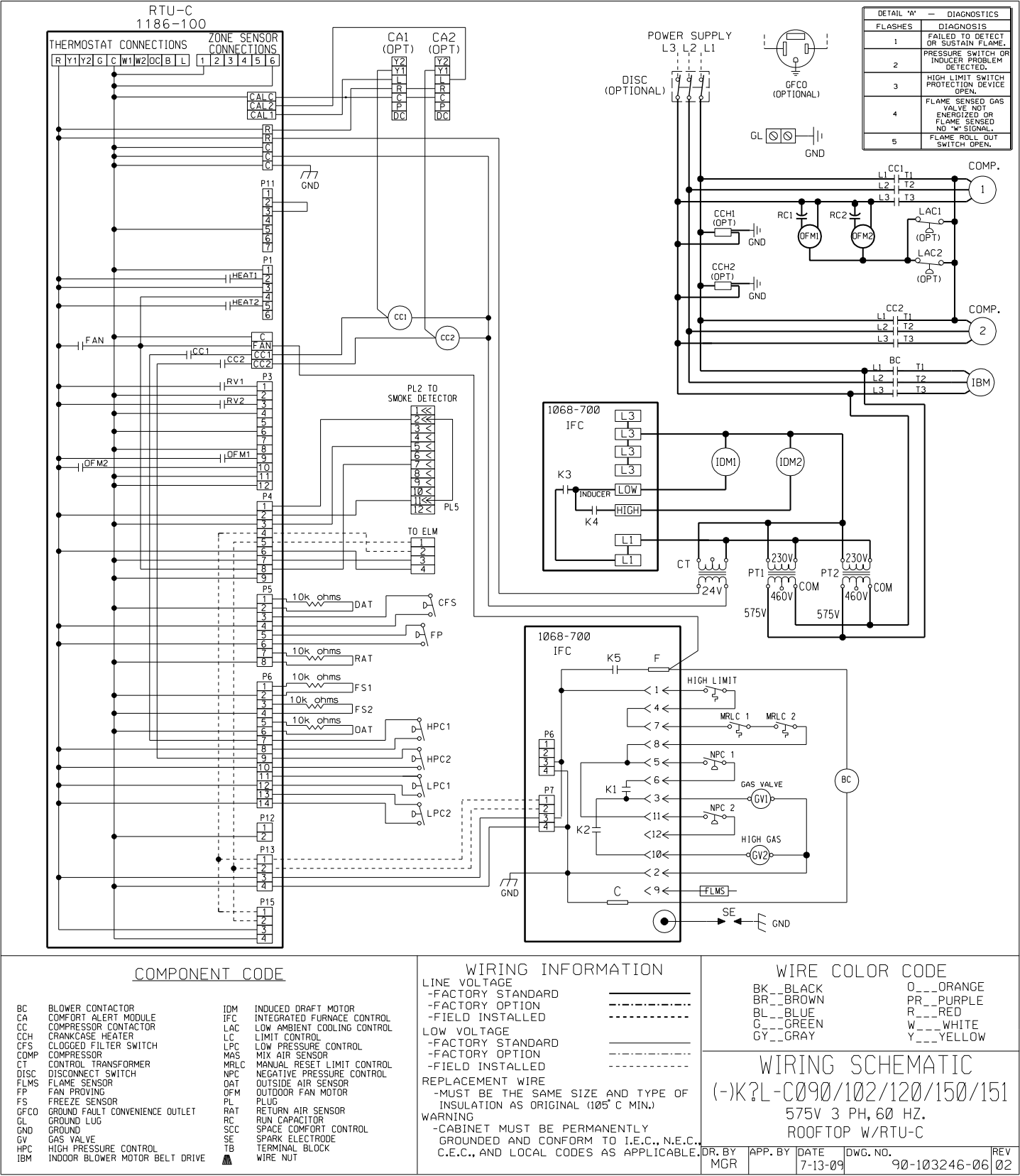
LINE VOLTAGE
-FACTORY STANDARD
-FACTORY OPTION
-FIELD INSTALLED
LOW VOLTAGE
-FACTORY STANDARD
-FACTORY OPTION
-FIELD INSTALLED
REPLACEMENT WIRE
-MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN.)
WARNING
-CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C.,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

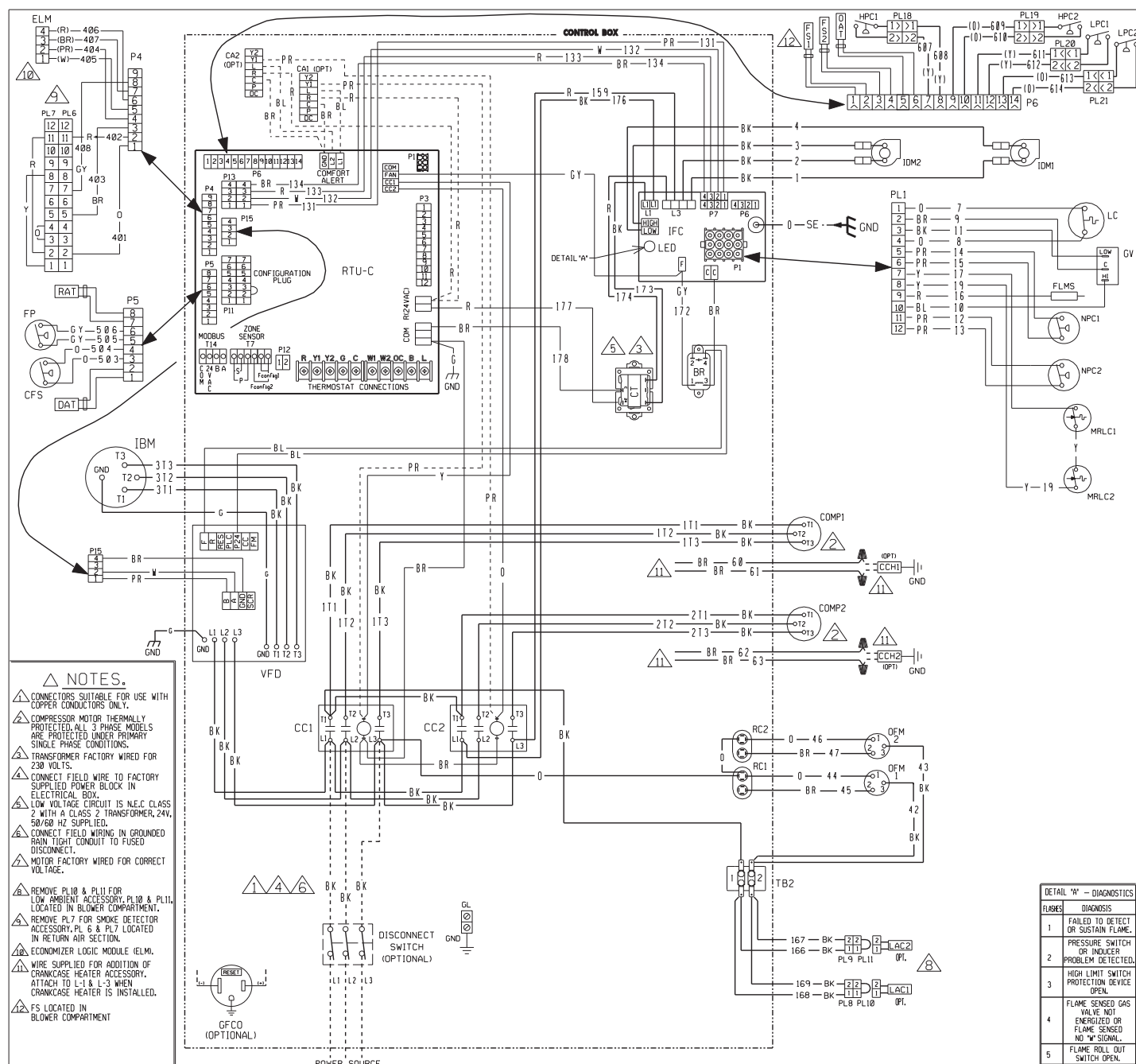
WIRE COLOR CODE

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





COMPONENT CODE		WIRING INFORMATION		WIRE COLOR CODE	
BR	BLOWER RELAY	IDM	INDUCED DRAFT MOTOR	BK	BLACK
CA	COMFORT ALERT MODULE	IFC	INTEGRATED FURNACE CONTROL	BR	BROWN
CC	COMPRESSOR CONTACTOR	LAC	LOW AMBIENT COOLING CONTROL	BL	BLUE
CCH	CRANKCASE HEATER	LC	LIMIT CONTROL	G	GREEN
CFS	CLOGGED FILTER SWITCH	LPC	LOW PRESSURE CONTROL	GY	GRAY
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	OEM	OUTDOOR FAN MOTOR PLUG		
FLMS	FLAME SENSOR	PL	PLUG		
FP	FAN PROVING	RAT	RETURN AIR SENSOR		
FS	FREIZE SENSOR	RC	RUN CAPACITOR		
GFCD	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				
IBM	INDOOR BLOWER MOTOR BELT DRIVE				
		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.			
		DR. BY	APP. BY	DATE	DWG. NO.
		JRJ		01-03-12	90-103089-29
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BEFORE PURCHASING THIS APPLIANCE, READ IMPORTANT ENERGY COST AND EFFICIENCY INFORMATION AVAILABLE FROM YOUR RETAILER.

GENERAL TERMS OF LIMITED WARRANTY*

Ruud 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 ApplicationsFive (5) Years

Parts

3 Phase, Commercial ApplicationsOne (1) Year



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

Ruud Heating, Cooling & Water Heating • P.O. Box 17010
Fort Smith, Arkansas 72917 • www.ruud.com

Ruud Canada • 125 Edgeware Road, Unit 1
Brampton, Ontario • L6Y 0P5

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PRINTED IN U.S.A 06/12 QG FORM NO. R22-853