



Air

Package Air Conditioner  
RLNL-G Series

The new degree of comfort.™

## Rheem *Commercial Classic*® Series Package Air Conditioner featuring HumidiDry™ Technology



### **RLNL-G Series**

With ClearControl™  
and VFD Technology

Nominal Sizes 7.5, 10 & 12.5 Tons [26.4, 35.2 & 44 kW]  
ASHRAE 90.1-2010 Compliant



INTEGRATED AIR & WATER

FORM NO. S11-963 REV. 1

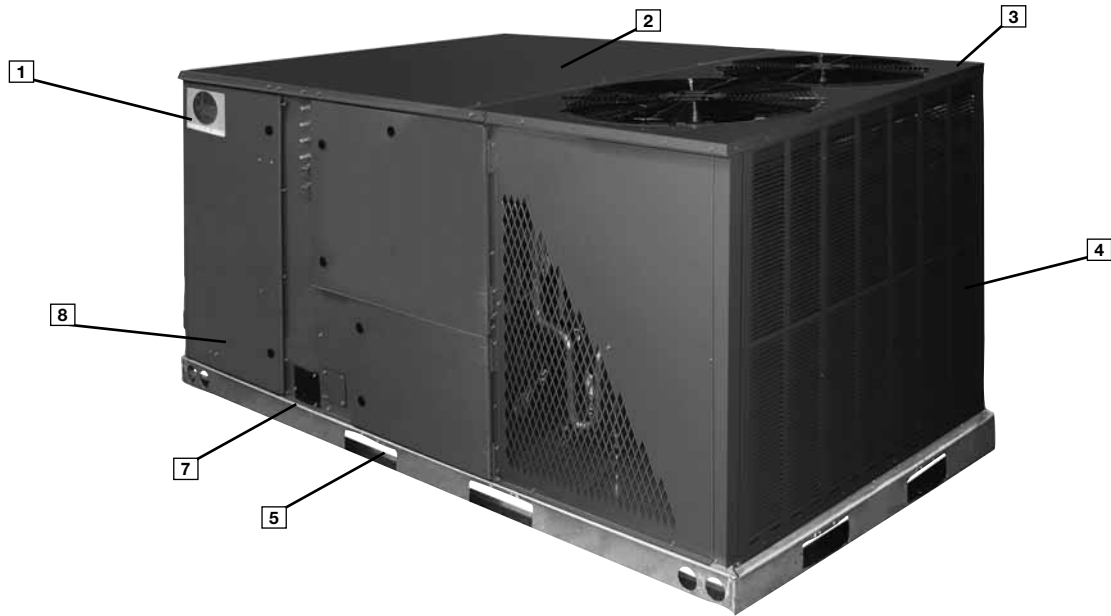
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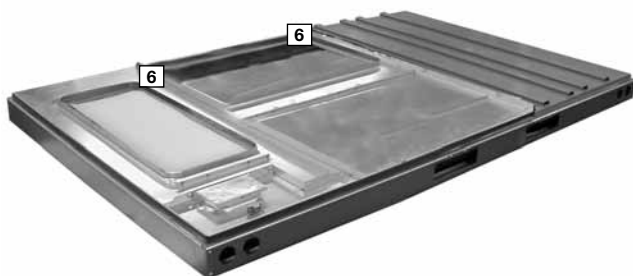
## RLNL-G STANDARD FEATURES INCLUDE:

- R-410A HFC refrigerant.
- Complete factory charged, wired and run tested.
- Scroll compressors with internal line break overload and high-pressure protection.
- Two independent scroll compressors provide two stage operation.
- 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 top cover and 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 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.
- 24 volt control system with resettable circuit breakers.
- Colored and labeled wiring.
- Copper tube/Aluminum Fin coils (12<sup>1</sup>/<sub>2</sub> ton uses MicroChannel condenser).
- Molded compressor plug.
- Supplemental electric heat provides 100% efficient heating.
- Factory Installed ClearControl™ (DDC) and sensors which can connect to LonWorks™ or BACnet® BAS systems for remote monitoring and control.
- Variable Frequency Drive (VFD).
- HumidiDry™ Dehumidification System.



Rheem Package equipment is designed from the ground up with the latest features and benefits required to compete in today's market. The clean design stands alone in the industry and is a testament to the quality, reliability, ease of installation and serviceability that goes into each unit. Outwardly, the large Rheem *Commercial Series*™ label (1) identifies the brand to the customer. The sheet-metal cabinet (2) uses nothing less than 18-gauge material for structural components with an underlying coat of G90. To ensure the leak-proof integrity of these units, the design utilizes a one-piece top with a 1/8" drip lip (3), gasket-protected panels and screws. The Rheem hail guard (optional) (4) is its trademark, and sets the standard for coil protection in the industry. Every Rheem package unit uses the toughest finish in the industry, using electro deposition baked-on enamel tested to withstand a rigorous 1000-hour salt spray test, per ASTM B117.

Anything built to last must start with the right foundation. In this case, the foundation is 14-gauge, commercial-grade, full-perimeter base rails (5), which integrate fork slots and rigging holes to save set-up time on the job site. The base pan is stamped, which forms a 1-1/8" flange around the supply and return cover and has eliminated the worry of water entering the conditioned space (6). 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. 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.

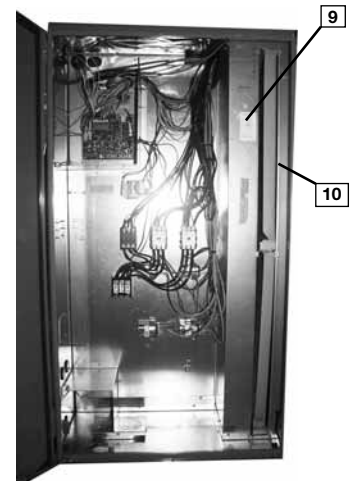


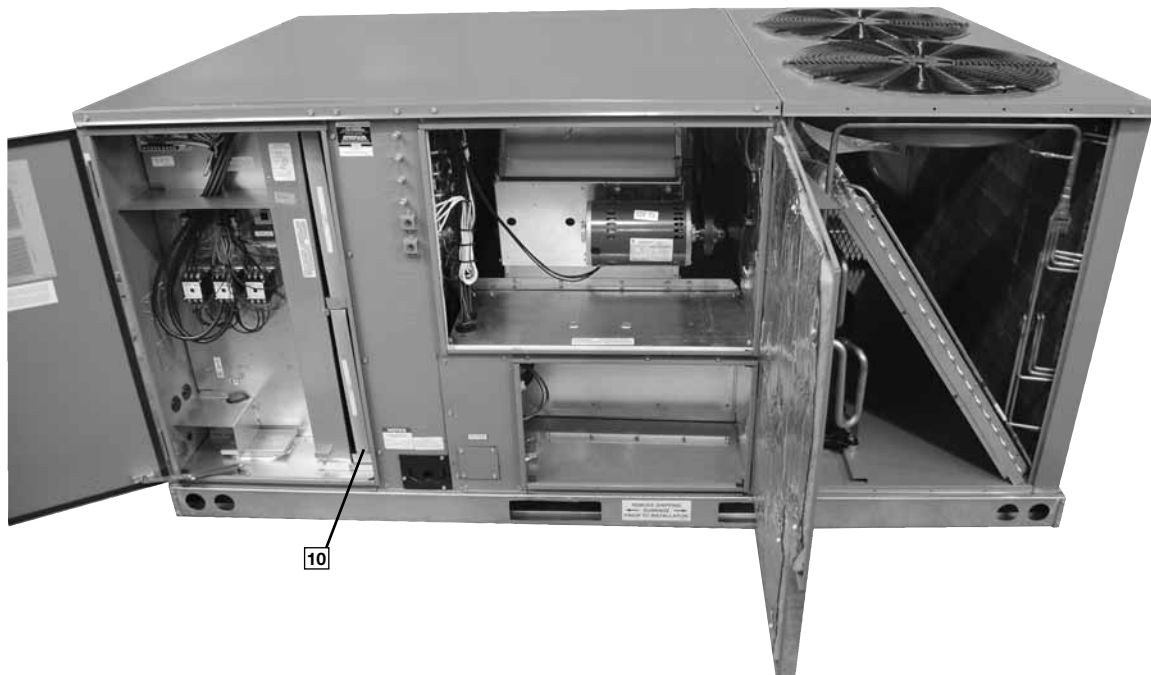
During development, each unit was tested to U.L. 1995, AHRI 340-370 and other Rheem-required reliability tests. Rheem adheres to stringent ISO 9002 quality procedures, and each unit bears the U.L. and AHRI certification labels located on the unit nameplate (8). Contractors can rest assured that when a Rheem package unit arrives at the job, it is ready to go with a factory charge and quality checks.

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

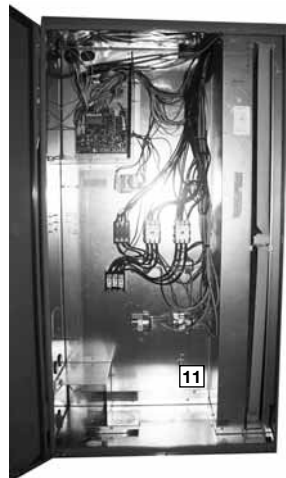
Electrical and filter compartment access is through a large, hinged-access panel. On the outside of the panel is the unit nameplate, which contains the model and serial number, electrical data and other important unit information.

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.

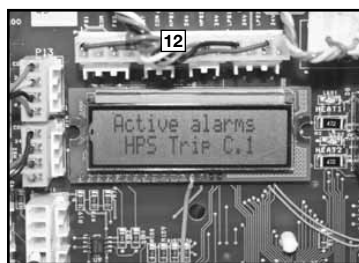




Inside the control box (11), each electrical component is clearly identified with a label that matches the component to the wire diagram for ease of troubleshooting. All wiring is numbered on each end of the termination and color-coded to match the wiring diagram. The control transformer has a low voltage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



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



The RLNL-G 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 ClearControl™ 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 RLNL-G 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 ClearControl™ 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 RLNL-G 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 RLNL-G 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.

Factory installed VFD (variable frequency drive) supply fan optimizes energy usage year round by providing a lower speed for first stage cooling operation improving IEER's by up to 33% over the conventional constant fan system. Furthermore, operating in the constant fan mode at the reduced speed can use as little as 1/5<sup>th</sup> of the energy of a conventional constant fan system. Also, by operating at a lower speed on first stage cooling up to 51% more moisture is removed improving comfort during low load operation. The VFD supply fan factory option meet's California Title 24 and ASHRAE 90.1-2010 requirements for multi blower speed control. VFD also ramps up to the desired speed reducing stress on the supply fan components and reducing the noise from sudden inrush of air. Because the airflow is cut in half during first stage cooling and constant fan operation, noise is much less during these modes of operation.



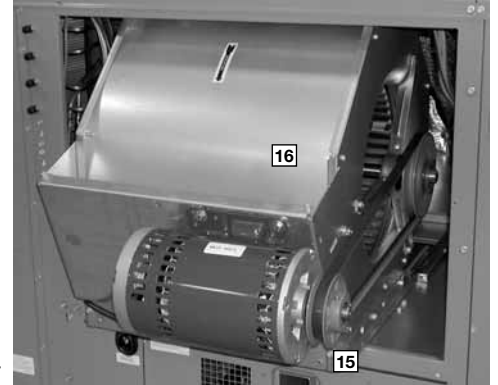
For added convenience in the field, a factory-installed convenience outlet (13) is available. Low and High voltage can enter either from the side or through the base. Low-voltage connections are made integrated cooling control. The high-voltage connection is terminated at the number 1 compressor contactor. The suggested mounting for the field-installed disconnect is on the exterior side of the electrical control box.



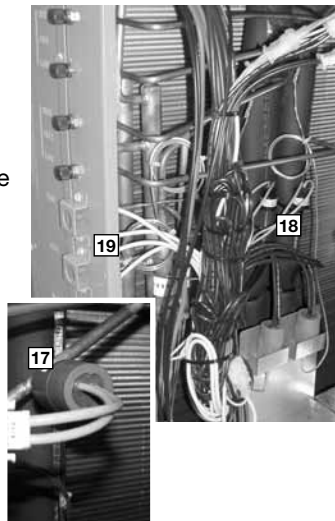
To the right of the electrical and filter compartment are the externally mounted gauge ports, which are permanently identified by embossed wording that clearly identifies the compressor circuit, high pressure connection and low pressure connection (14). With the gauge ports mounted externally, an accurate diagnostic of system operation can be performed quickly and easily. The blower compartment is to the right of the gauge ports and can be



accessed by 1/4 turn fasteners. To allow easy maintenance of the blower assembly, the entire assembly easily slides out by removing the 3/8" screws from the blower retention bracket. The adjustable motor pulley (15) 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 pulley is removed, the motor sheave can be adjusted to the desired number of turns, ranging from 0 to 6 turns open. Where the demands for the job require high static, Rheem has high-static drives available that deliver nominal airflow up to 2" of static. By referring to the airflow performance tables listed in the installation instructions, proper static pressure and CFM requirements can be dialed in. The scroll housing (16) 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.

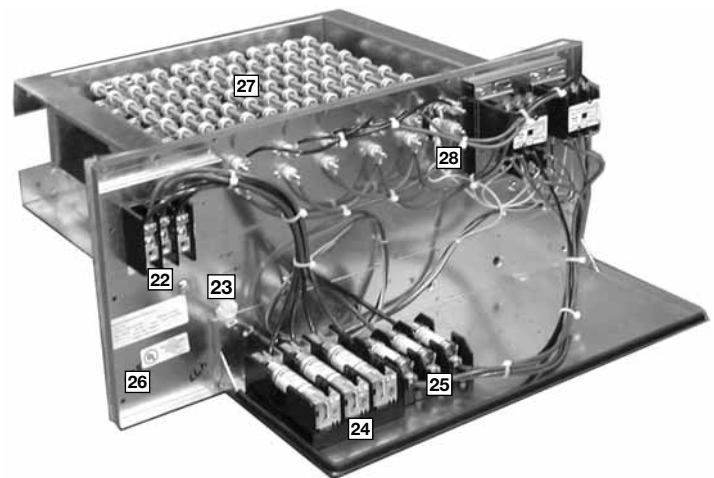
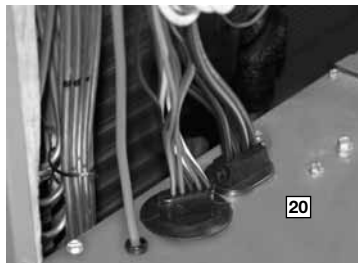


Also inside the blower compartment is the low-ambient control (17), low-pressure switch (18), high-pressure switch (19) and freeze sensor refrigerant safety device (20). The low-ambient control allows for operation of the compressor down to 0 degrees ambient temperature by cycling the outdoor fans on high pressure. The high-pressure switch will shut off the compressors if pressures in excess of 610 PSIG are detected, this 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: 6 ton single stage has an orifice refrigerant control.)

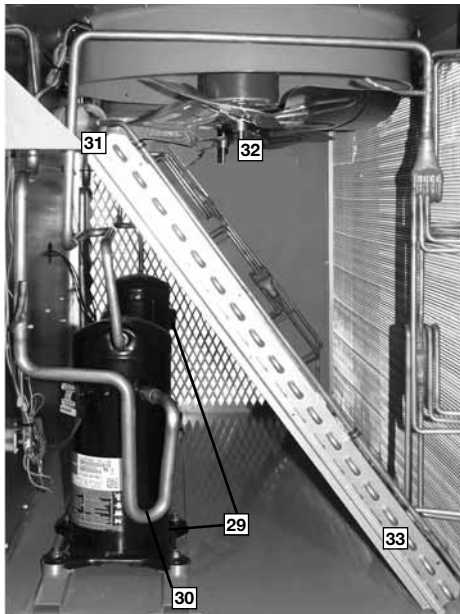
Wiring throughout the unit is neatly bundled and routed. Where wire harnesses go through the condenser bulkhead or blower deck, a molded wire harness assembly (20) provides an air-tight and water-tight seal, and provides strain relief. Care is also taken to tuck raw edges of insulation behind sheet metal to improve indoor air quality.



The heating compartment contains the latest electric furnace technology on the market. The 100% efficient electric furnace can be factory-installed or easily field-installed. Built with ease-of-installation in mind, the electric furnace is completely wired for slide-in, plug-and-play installation in the field. With choices of up to six kilowatt offerings, the contractor is assured to get the correct amount of heating output to meet the designed heating load.

Power hook-up in the field is easy with single-point wiring to a terminal block (22) and a polarized plug for the low-voltage connection (23). The electric furnace comes with fuses for the unit (24) and for the electric furnace (25), and is UL certified (26). The electric heating elements are of a wound-wire construction (27) and isolated with ceramic bushings. The limit switch (28) protects the design from over-temperature conditions. Each electric furnace has the capability to be converted from single-stage operation to two-stage operation by removing a jumper on the low-voltage terminal strip.

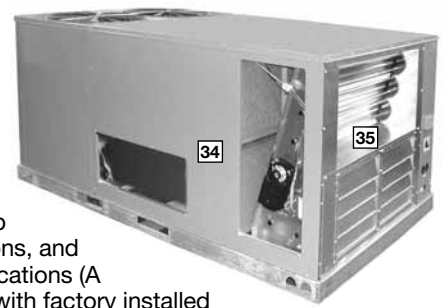
The compressor compartment houses the heart-beat of the unit. The scroll compressor (29) is known for its long life, and for reliable, quiet, and efficient operation. Each compressor has molded compressor plug eliminating potential for mis wiring. The suction and discharge lines are designed with shock loops (30) 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 ( single stage).



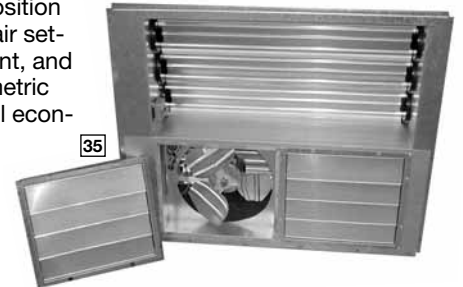
Each unit comes standard with filter dryer (31). The condenser fan motor (32) can easily be accessed and maintained through the compressor compartment. The polarized plug connection allows the motor to be changed quickly and eliminates the need to snake wires through the unit.

The outdoor coil uses the latest enhanced fin design (33) 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 (34) for job configuration flexibility. The return air compartment can also contain an economizer (35).



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



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

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

The Rheem roofcurb (36) 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.





## HUMIDIDRY™ SYSTEM FEATURES

HumidiDry™ is Rheem's exclusive dehumidification package unit solution. It delivers maximum humidity control without compromising desired temperature set point for a high degree of comfort. HumidiDry maintains humidity levels at a desired set point when there's little or no demand for air conditioning. The HumidiDry rooftop unit is controlled by a thermostat and humidistat. The thermostat takes priority on single-stage system. When the thermostat is activated by temperatures that exceed its set point, HumidiDry operates like a standard rooftop unit. It can operate on first stage cooling when demand is low or at full capacity when air conditioning load is high. Unlike other rooftop or reheat units, HumidiDry is uniquely designed so the VFD (37) will operate at a low speed, increasing moisture removal during first-stage cooling operation. This provides initial defense for controlling humidity. When temperature is desirable but humidity exceeds the humidistat set point, the HumidiDry rooftop unit initiates a dehumidification cycle using a combination of hot gas and sub-cooled liquid reheat and the VFD operates at low speed. During this cycle, the HumidiDry rooftop unit delivers dry, neutral air. On a two-stage system, it is possible for both a thermostat and humidistat to register readings above set point. Under this condition, the first-stage system runs in the dehumidification cycle, the second-stage system runs in a cooling cycle and the VFD operates on high speed. This provides dry conditioned air.

Figure 1 shows the refrigerant path during the normal cooling mode. The liquid refrigerant leaves the TXV with the sudden pressure drop causing the liquid to expand to a vapor and absorbing the heat from the supply air going through the evaporator coil. The refrigerant vapor then travels to the compressor where it is elevated to a higher pressure and temperature. The superheated refrigerant vapor next carries the heat to the outside coil where the heat is then rejected and the refrigerant condenses into a subcooled liquid where the process repeats itself.

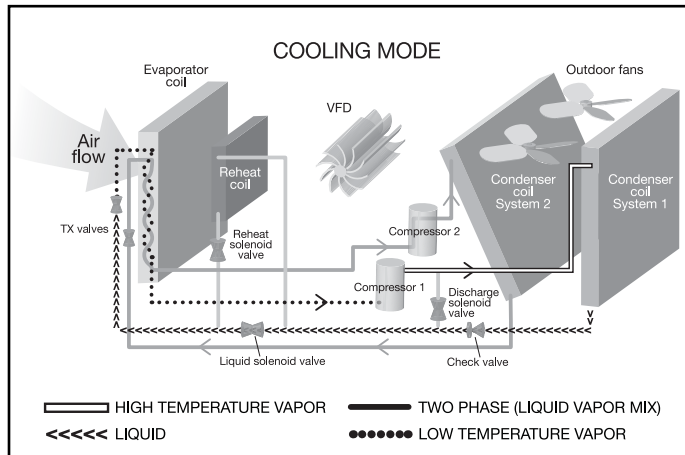


Figure 1

Figure 2 shows the refrigerant path during the reheat mode. When the reheat cycle is energized by the RTU-C, the reheat solenoid valve (38), downstream of the reheat coil (39), opens. The liquid solenoid valve (40), ahead of the TXV, closes. The discharge solenoid valve (41), in the compressor discharge line, opens. The liquid refrigerant leaves the TXV with the sudden pressure drop causing the liquid to expand to a vapor and absorbing the heat from the supply air going through the evaporator coil. The refrigerant vapor then travels to the compressor where it is elevated to a higher pressure and temperature. The refrigerant next carries the heat to a parallel path between the outside condenser coil and a bypass circuit. Some of the heat is rejected outdoors. The ratio of heat rejected outdoors versus indoors is controlled by an outdoor fan motor controller (OFMC) (42) that monitors the two phase temperature (43) and varies the fan speed. This 2-phase refrigerant vapor is then sent to the reheat coil. As the refrigerant travels through the reheat coil it condenses into a subcooled liquid where the process repeats itself.

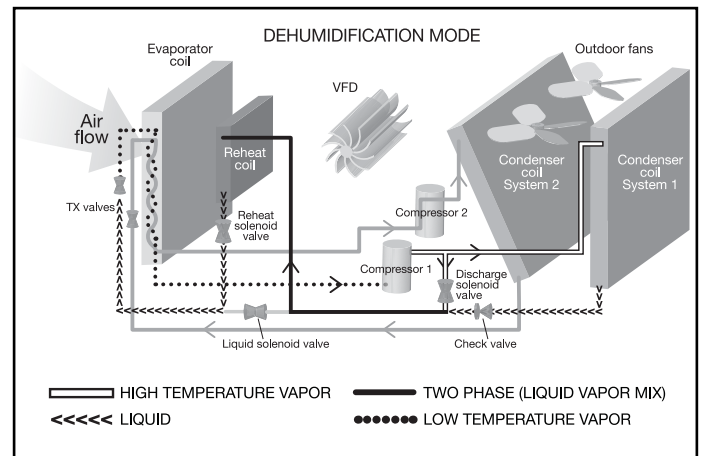
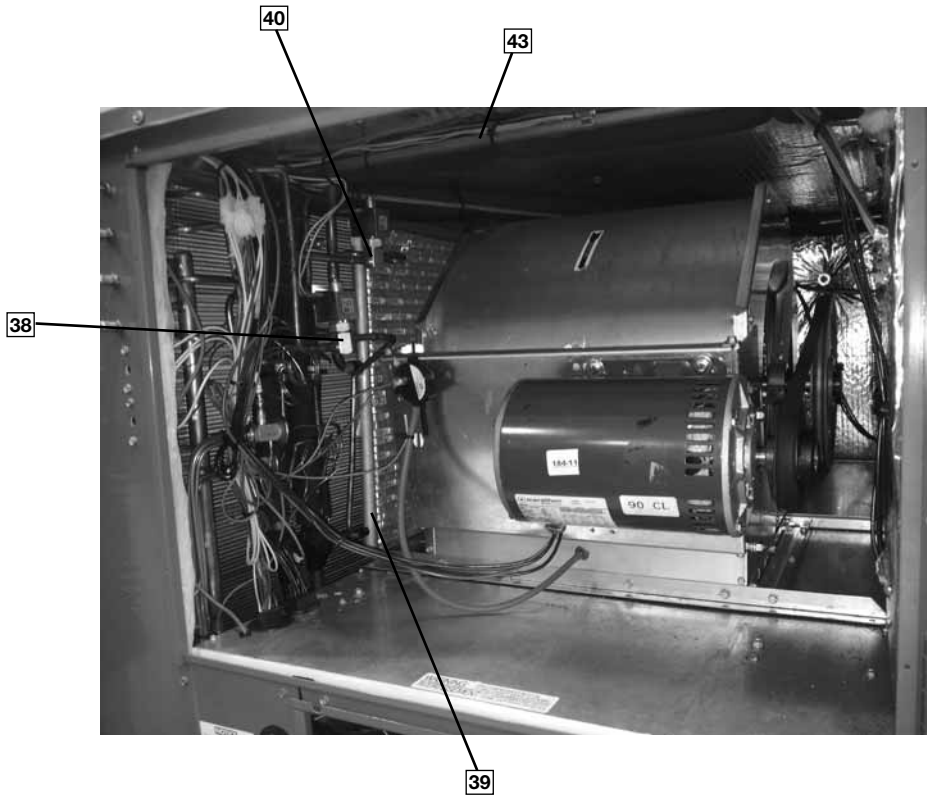
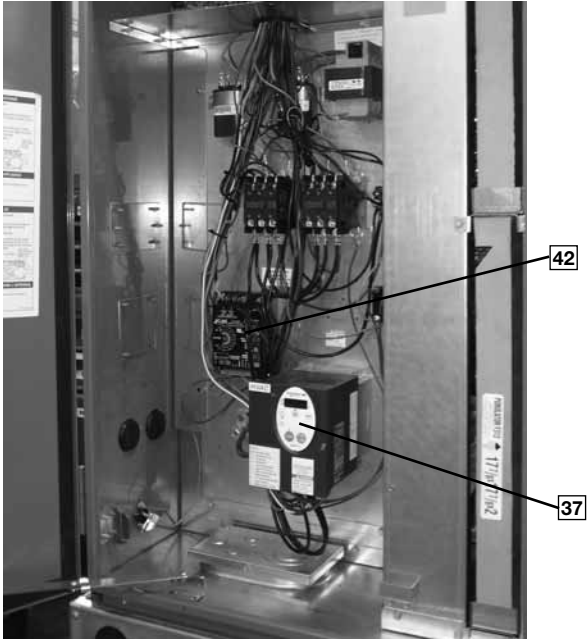
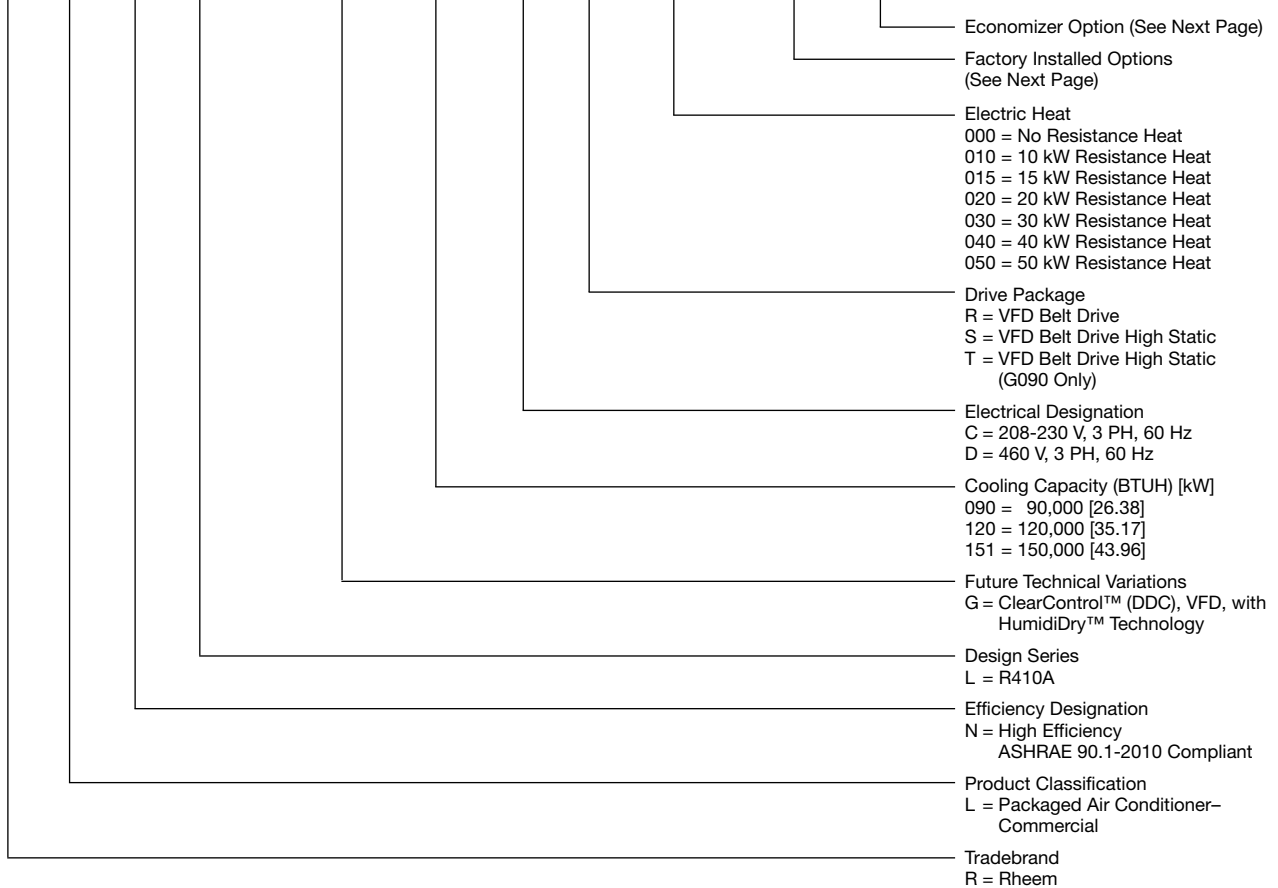


Figure 2





**R L N L - G 090 C R 000 X X X**



[ ] Designates Metric Conversions

## 7.5, 10 & 12.5 TON [26.4, 35.2 & 44 kW]

Option Code	Hail Guard	Non-Powered Convenience Outlet	Low Ambient/ Comfort Alert
AD	X		
AG		X	
AR			X
JD	X		X
BJ	X	X	
CZ	X	X	X
JE		X	X

“x” indicates factory installed option.

## ECONOMIZER SELECTION FOR LNL 7.5, 10 & 12.5 TON [26.4, 35.2 & 44 kW]

Option Code	No Economizer	DDC Single Enthalpy Economizer with Barometric Relief	DDC Single Enthalpy Economizer with 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:

RLNL-G120CR000 .....this unit has no factory installed options.

RLNL-G120CR000**ADA**.....this unit is equipped with *hail guards*.

RLNL-G120CR000**JDA** .....this unit is equipped with *hail guards, low ambient and comfort alert*.

RLNL-G120CR000**JDH**.....this unit is equipped as above *and* includes an *Economizer with single enthalpy sensor and with barometric relief*.

RLNL-G120CR000**AAE**.....this unit is equipped with an *Economizer with single enthalpy sensor and barometric relief with smoke detector*.

[ ] Designates Metric Conversions

To select an RLNL- 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
Total cooling capacity—	106,000 BTUH [31.26 kW]
Sensible cooling capacity—	82,000 BTUH [24.03 kW]
Heating capacity—	150,000 BTUH [43.96 kW]
*Condenser Entering Air—	95°F [35°C] DB
*Evaporator Mixed Air Entering—	65°F [18°C] WB; 78°F [26°C] DB
*Indoor Air Flow (vertical)—	3600 CFM [1699 L/s]
*External Static Pressure—	.40 in. WG

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

Since total cooling is within the range of a nominal 10 ton [35.2 kW] unit, enter cooling performance table at 95°F [35°C] DB condenser inlet air. Interpolate between 63°F [2°C] and 67°F [19°C] to determine total and sensible capacity and power input for 65°F [18°C] WB evap inlet air at 4000 CFM [1888 L/s] indoor air flow (table basis):

Total Capacity = 118,900 BTUH [34.80 kW]  
 Sensible Capacity = 99,950 BTUH [29.29 kW]  
 Power Input (Compressor and Cond. Fans) = 8,950 watts

Use formula [1.10 x CFM x (1 – DR) x (dbE – 80)] in note ① to determine sensible capacity at 80°F [26.7°C] DB evaporator entering air:

Sensible Capacity = 92,268 BTUH [27.24 kW]

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

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

Total Capacity, 118,900 x .98 = 116,522 BTUH [34.15 kW]  
 Sensible Capacity, 92,268 x .95 = 87,655 BTUH [25.67 kW]  
 Power Input 11,650 x .99 = 8,861 Watts

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

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

Enter Indoor Blower performance table at 3600 CFM [1699 L/s]. Total ESP (external static pressure) per the spec of .40 in. includes the system duct and grilles. Add from the table “Component Air Resistance,” .076 for wet coil, .13 for vertical air flow, for a total selection static pressure of .606 (.6) inches of water, and determine:

RPM = 796  
 WATTS = 1,650  
 DRIVE = L (standard 2 H.P. motor)

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

$$\text{BTUH} = 1,650 \times 3.412 = 5,630$$

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

$$\text{Net Total Capacity} = 116,522 - 5,630 = 110,892 \text{ BTUH [32.5 kW]}$$

$$\text{Net Sensible Capacity} = 87,655 - 5,630 = 82,025 \text{ BTUH [24.04 kW]}$$

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

$$\text{Total Power Input} = 88,610 \text{ (step 3)} + 1,650 \text{ (step 4)} = 10,511 \text{ Watts}$$

$$\text{EER} = \frac{\text{Net Total BTUH [kW] (step 6)}}{\text{Power Input, Watts (above)}} = \frac{110,892}{10,511} = 10.55$$

### 8. SELECT UNIT HEATING CAPACITY.

Units with heater kits section find unit heater kw and convert watts to BTU: add blower BTUH heat effect (step 5).

CC50C	Heater Kit
kW x 3412	= 163,776 BTUH [48.00 kW]
	+ 5,630 BTUH [ 1.65 kW]
Heating Capacity=	169,406 BTUH [49.65 kW]

### CHOOSE MODEL RLNL-G120CR050

\*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 7.5-12.5 TONS [26.4-44.0 kW] ASHRAE 90.1-2010 COMPLIANT MODELS

Model RLNL- Series	G090CR	G090CS	G090CT	G090DR
<b>Cooling Performance<sup>1</sup></b>				<b>CONTINUED</b> →
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]	93,000 [27.25]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	3000/2775 [1416/1310]
AHRI Net Cooling Capacity Btu [kW]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]	90,000 [26.37]
Net Sensible Capacity Btu [kW]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]	63,100 [18.49]
Net Latent Capacity Btu [kW]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]	26,900 [7.88]
IEER <sup>3</sup>	14.5	14.5	14.5	14.5
Net System Power [kW]	7.99	7.99	7.99	7.99
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>4</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube 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]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]	2 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Re-Heat Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.709 [18]	0.709 [18]	0.709 [18]	0.709 [18]
Face Area sq. ft. [sq. m]	5.9 [0.55]	5.9 [0.55]	5.9 [0.55]	5.9 [0.55]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
<b>Outdoor Fan—Type</b>				
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
<b>Indoor Fan—Type</b>				
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	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	2	2	3	2
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
<b>Filter—Type</b>				
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]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	146/112 [4139/3175]	146/112 [4139/3175]	146/112 [4139/3175]	146/112 [4139/3175]
<b>Weights</b>				
Net Weight lbs. [kg]	1049 [476]	1049 [476]	1057 [479]	1049 [476]
Ship Weight lbs. [kg]	1086 [493]	1086 [493]	1094 [496]	1086 [493]

See Page 18 for Notes.

[ ] Designates Metric Conversions

## NOM. SIZES 7.5-12.5 TONS [26.4-44.0 kW] ASHRAE 90.1-2010 COMPLIANT MODELS

Model RLNL- Series	G090DS	G090DT	G120CR	G120CS
<b>Cooling Performance<sup>1</sup></b>				<b>CONTINUED</b> →
Gross Cooling Capacity Btu [kW]	93,000 [27.25]	93,000 [27.25]	123,000 [36.04]	123,000 [36.04]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	3000/2775 [1416/1310]	3000/2775 [1416/1310]	4000/3750 [1888/1770]	4000/3750 [1888/1770]
AHRI Net Cooling Capacity Btu [kW]	90,000 [26.37]	90,000 [26.37]	118,000 [34.57]	118,000 [34.57]
Net Sensible Capacity Btu [kW]	63,100 [18.49]	63,100 [18.49]	88,800 [26.02]	88,800 [26.02]
Net Latent Capacity Btu [kW]	26,900 [7.88]	26,900 [7.88]	29,200 [8.56]	29,200 [8.56]
IEER <sup>3</sup>	14.5	14.5	14.4	14.4
Net System Power [kW]	7.99	7.99	10.49	10.49
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>4</sup></b>	88	88	88	88
<b>Outdoor Coil—Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	27 [2.51]	27 [2.51]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	1 / 22 [9]	1 / 22 [9]	2 / 22 [9]	2 / 22 [9]
<b>Indoor Coil—Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	2 / 18 [7]	2 / 18 [7]	3 / 18 [7]	3 / 18 [7]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Re-Heat Coil—Fin Type</b>	Louvered	Louvered	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.709 [18]	0.709 [18]	0.709 [18]	0.709 [18]
Face Area sq. ft. [sq. m]	5.9 [0.55]	5.9 [0.55]	5.9 [0.55]	5.9 [0.55]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]	1 / 23 [9]
<b>Outdoor Fan—Type</b>	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075	1075	1075
<b>Indoor Fan—Type</b>	FC Centrifugal	FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)	Belt (Adjustable)
No. Speeds	Multiple	Multiple	Multiple	Multiple
No. Motors	1	1	1	1
Motor HP	2	3	2	3
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	56	56	56
<b>Filter—Type</b>	Disposable	Disposable	Disposable	Disposable
Furnished	Yes	Yes	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>	146/112 [4139/3175]	146/112 [4139/3175]	221/176 [6265/4990]	221/176 [6265/4990]
<b>Weights</b>				
Net Weight lbs. [kg]	1049 [476]	1057 [479]	1144 [519]	1152 [523]
Ship Weight lbs. [kg]	1086 [493]	1094 [496]	1181 [536]	1189 [539]

See Page 18 for Notes.

[ ] Designates Metric Conversions

## NOM. SIZES 7.5-12.5 TONS [26.4-44.0 kW] ASHRAE 90.1-2010 COMPLIANT MODELS

Model RLNL- Series	G120DR	G120DS
<b>Cooling Performance<sup>1</sup></b>		
Gross Cooling Capacity Btu [kW]	123,000 [36.04]	123,000 [36.04]
EER/SEER <sup>2</sup>	11.2/NA	11.2/NA
Nominal CFM/AHRI Rated CFM [L/s]	4000/3750 [1888/1770]	4000/3750 [1888/1770]
AHRI Net Cooling Capacity Btu [kW]	118,000 [34.57]	118,000 [34.57]
Net Sensible Capacity Btu [kW]	88,800 [26.02]	88,800 [26.02]
Net Latent Capacity Btu [kW]	29,200 [8.56]	29,200 [8.56]
IEER <sup>3</sup>	14.7	14.7
Net System Power [kW]	10.49	10.49
<b>Compressor</b>		
No./Type	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>4</sup></b>		
	88	88
<b>Outdoor Coil—Fin Type</b>		
Tube Type	Louvered	Louvered
Tube Type	Rifled	Rifled
Tube Size in. [mm] OD	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	27 [2.51]	27 [2.51]
Rows / FPI [FPcm]	2 / 22 [9]	2 / 22 [9]
<b>Indoor Coil—Fin Type</b>		
Tube Type	Louvered	Louvered
Tube Type	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	3 / 18 [7]	3 / 18 [7]
Refrigerant Control	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]
<b>Re-Heat Coil—Fin Type</b>		
Tube Type	Louvered	Louvered
Tube Type	MicroChannel	MicroChannel
MicroChannel Depth in. [mm]	0.709 [18]	0.709 [18]
Face Area sq. ft. [sq. m]	5.9 [0.55]	5.9 [0.55]
Rows / FPI [FPcm]	1 / 23 [9]	1 / 23 [9]
<b>Outdoor Fan—Type</b>		
Propeller	Propeller	Propeller
No. Used/Diameter in. [mm]	2/24 [609.6]	2/24 [609.6]
Drive Type/No. Speeds	Direct/1	Direct/1
CFM [L/s]	8000 [3775]	8000 [3775]
No. Motors/HP	2 at 1/3 HP	2 at 1/3 HP
Motor RPM	1075	1075
<b>Indoor Fan—Type</b>		
FC Centrifugal	FC Centrifugal	FC Centrifugal
No. Used/Diameter in. [mm]	1/15x15 [381x381]	1/15x15 [381x381]
Drive Type	Belt (Adjustable)	Belt (Adjustable)
No. Speeds	Multiple	Multiple
No. Motors	1	1
Motor HP	2	3
Motor RPM	1725	1725
Motor Frame Size	56	56
<b>Filter—Type</b>		
Disposable	Disposable	Disposable
Furnished	Yes	Yes
(NO.) Size Recommended in. [mm x mm x mm]	(6)2x18x18 [51x457x457]	(6)2x18x18 [51x457x457]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>		
	221/176 [6265/4990]	221/176 [6265/4990]
<b>Weights</b>		
Net Weight lbs. [kg]	1144 [519]	1152 [523]
Ship Weight lbs. [kg]	1181 [536]	1189 [539]

See Page 18 for Notes.

[ ] Designates Metric Conversions



## NOM. SIZES 7.5-12.5 TONS [26.4-44.0 kW] ASHRAE 90.1-2010 COMPLIANT MODELS

Model RLNL- Series	G151CR	G151CS	G151DR	G151DS
<b>Cooling Performance<sup>1</sup></b>				
Gross Cooling Capacity Btu [kW]	148,000 [43.36]	148,000 [43.36]	148,000 [43.36]	148,000 [43.36]
EER/SEER <sup>2</sup>	11/NA	11/NA	11/NA	11/NA
Nominal CFM/AHRI Rated CFM [L/s]	5000/4250 [2360/2006]	5000/4250 [2360/2006]	5000/4250 [2360/2006]	5000/4250 [2360/2006]
AHRI Net Cooling Capacity Btu [kW]	140,000 [41.02]	140,000 [41.02]	140,000 [41.02]	140,000 [41.02]
Net Sensible Capacity Btu [kW]	99,500 [29.15]	99,500 [29.15]	99,500 [29.15]	99,500 [29.15]
Net Latent Capacity Btu [kW]	40,500 [11.87]	40,500 [11.87]	40,500 [11.87]	40,500 [11.87]
IEER <sup>3</sup>	14	14	14	14
Net System Power [kW]	13.29	13.29	13.29	13.29
<b>Compressor</b>				
No./Type	2/Scroll	2/Scroll	2/Scroll	2/Scroll
<b>Outdoor Sound Rating (dB)<sup>4</sup></b>				
	88	88	88	88
<b>Outdoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Size in. [mm] OD	MicroChannel	MicroChannel	MicroChannel	MicroChannel
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]
<b>Indoor Coil—Fin Type</b>				
Tube Type	Louvered	Louvered	Louvered	Louvered
Tube Type	Rifled	Rifled	Rifled	Rifled
Tube Size in. [mm]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]	0.375 [9.5]
Face Area sq. ft. [sq. m]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]	13.5 [1.25]
Rows / FPI [FPcm]	4 / 15 [6]	4 / 15 [6]	4 / 15 [6]	4 / 15 [6]
Refrigerant Control	TX Valves	TX Valves	TX Valves	TX Valves
Drain Connection No./Size in. [mm]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]	1/1 [25.4]
<b>Outdoor Fan—Type</b>				
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
<b>Indoor Fan—Type</b>				
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	Single	Single	Single	Single
No. Motors	1	1	1	1
Motor HP	5	5	5	5
Motor RPM	1725	1725	1725	1725
Motor Frame Size	56	184	56	184
<b>Filter—Type</b>				
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]
<b>Refrigerant Charge Oz. (Sys. 1/Sys. 2) [g]</b>				
	203/155 [5755/4394]	203/155 [5755/4394]	203/155 [5755/4394]	203/155 [5755/4394]
<b>Weights</b>				
Net Weight lbs. [kg]	1266 [574]	1238 [562]	1230 [558]	1238 [562]
Ship Weight lbs. [kg]	1303 [591]	1267 [575]	1267 [575]	1267 [575]

See Page 18 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. Outdoor Sound Rating shown is tested in accordance with AHRI Standard 270.

[ ] Designates Metric Conversions



## GROSS SYSTEMS PERFORMANCE DATA – G090

		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]
		DR ①	.17	.13	.11	.17	.13	.11	.17	.13	.11
OUTDOOR DRY BULB TEMPERATURE °F [°C]	75 [23.9]	Total BTUH [kW]	119.6 [35]	119.6 [35]	110.7 [32.4]	112.7 [33]	107 [31.3]	104.3 [30.6]	107.8 [31.6]	102.3 [30]	99.8 [29.2]
		Sens BTUH [kW]	70.3 [20.6]	70.3 [20.6]	57.9 [17]	83.3 [24.4]	73.2 [21.4]	68.5 [20.1]	96 [28.1]	84.3 [24.7]	79 [23.2]
		Power	5.2	5.2	5.0	5.1	5.0	4.9	5.1	4.9	4.9
	80 [26.7]	Total BTUH [kW]	116.1 [34]	116.1 [34]	107.4 [31.5]	109.2 [32]	103.6 [30.4]	101.1 [29.6]	104.3 [30.6]	99 [29]	96.5 [28.3]
		Sens BTUH [kW]	68.4 [20.1]	68.4 [20.1]	56.3 [16.5]	81.4 [23.9]	71.5 [20.9]	67 [19.6]	94.1 [27.6]	82.7 [24.2]	77.4 [22.7]
		Power	5.6	5.6	5.4	5.5	5.4	5.3	5.5	5.3	5.3
	85 [29.4]	Total BTUH [kW]	112.6 [33]	112.6 [33]	104.2 [30.5]	105.7 [31]	100.3 [29.4]	97.8 [28.7]	100.8 [29.5]	95.6 [28]	93.3 [27.3]
		Sens BTUH [kW]	66.6 [19.5]	66.6 [19.5]	54.8 [16]	79.5 [23.3]	69.8 [20.5]	65.4 [19.2]	92.3 [27]	81 [23.7]	75.9 [22.2]
		Power	6.0	6.0	5.8	6.0	5.8	5.8	5.9	5.8	5.7
	90 [32.2]	Total BTUH [kW]	109 [31.9]	109 [31.9]	100.9 [29.6]	102.1 [29.9]	96.9 [28.4]	94.5 [27.7]	97.2 [28.5]	92.2 [27]	90 [26.4]
Sens BTUH [kW]		64.7 [19]	64.7 [19]	53.2 [15.6]	77.7 [22.8]	68.2 [20]	63.9 [18.7]	90.4 [26.5]	79.4 [23.3]	74.4 [21.8]	
Power		6.6	6.6	6.3	6.5	6.4	6.3	6.5	6.3	6.2	
95 [35]	Total BTUH [kW]	105.4 [30.9]	105.4 [30.9]	97.5 [28.6]	98.5 [28.9]	93.5 [27.4]	91.2 [26.7]	93.6 [27.4]	88.8 [26]	86.6 [25.4]	
	Sens BTUH [kW]	62.9 [18.4]	62.9 [18.4]	51.7 [15.2]	75.8 [22.2]	66.6 [19.5]	62.4 [18.3]	88.6 [26]	77.8 [22.8]	72.9 [21.4]	
	Power	7.2	7.2	6.9	7.2	7.0	6.9	7.1	6.9	6.8	
100 [37.8]	Total BTUH [kW]	101.7 [29.8]	101.7 [29.8]	94.2 [27.6]	94.9 [27.8]	90 [26.4]	87.8 [25.7]	90 [26.4]	85.4 [25]	83.3 [24.4]	
	Sens BTUH [kW]	61 [17.9]	61 [17.9]	50.2 [14.7]	74 [21.7]	65 [19]	60.9 [17.8]	86.7 [25.4]	76.2 [22.3]	71.4 [20.9]	
	Power	7.9	7.9	7.6	7.9	7.7	7.6	7.8	7.6	7.5	
105 [40.6]	Total BTUH [kW]	98.1 [28.7]	98.1 [28.7]	90.7 [26.6]	91.2 [26.7]	86.5 [25.4]	84.4 [24.7]	86.3 [25.3]	81.9 [24]	79.8 [23.4]	
	Sens BTUH [kW]	59.3 [17.4]	59.3 [17.4]	48.8 [14.3]	72.2 [21.2]	63.4 [18.6]	59.4 [17.4]	84.9 [24.9]	74.6 [21.9]	69.9 [20.5]	
	Power	8.7	8.7	8.4	8.6	8.4	8.3	8.6	8.4	8.3	
110 [43.3]	Total BTUH [kW]	94.3 [27.6]	94.3 [27.6]	87.3 [25.6]	87.5 [25.6]	83 [24.3]	81 [23.7]	82.6 [24.2]	78.3 [23]	76.4 [22.4]	
	Sens BTUH [kW]	57.5 [16.8]	57.5 [16.8]	47.3 [13.9]	70.4 [20.6]	61.9 [18.1]	57.9 [17]	82.6 [24.2]	73 [21.4]	68.4 [20.1]	
	Power	9.5	9.5	9.2	9.5	9.2	9.1	9.4	9.2	9.1	
115 [46.1]	Total BTUH [kW]	90.6 [26.5]	90.6 [26.5]	83.8 [24.6]	83.7 [24.5]	79.4 [23.3]	77.5 [22.7]	78.8 [23.1]	74.8 [21.9]	72.9 [21.4]	
	Sens BTUH [kW]	55.7 [16.3]	55.7 [16.3]	45.8 [13.4]	68.7 [20.1]	60.3 [17.7]	56.5 [16.6]	78.8 [23.1]	71.5 [20.9]	67 [19.6]	
	Power	10.5	10.5	10.1	10.4	10.2	10.0	10.4	10.1	10.0	
120 [48.9]	Total BTUH [kW]	86.8 [25.4]	86.8 [25.4]	80.3 [23.5]	79.9 [23.4]	75.8 [22.2]	74 [21.7]	75 [22]	71.1 [20.8]	69.4 [20.3]	
	Sens BTUH [kW]	54 [15.8]	54 [15.8]	44.4 [13]	66.9 [19.6]	58.8 [17.2]	55.1 [16.1]	75 [22]	70 [20.5]	65.5 [19.2]	
	Power	11.5	11.5	11.1	11.4	11.1	11	11.4	11.1	11	
125 [51.7]	Total BTUH [kW]	82.9 [24.3]	82.9 [24.3]	76.8 [22.5]	76.1 [22.3]	72.2 [21.2]	70.4 [20.6]	71.2 [20.9]	67.5 [19.8]	65.8 [19.3]	
	Sens BTUH [kW]	52.3 [15.3]	52.3 [15.3]	43 [12.6]	65.2 [19.1]	57.3 [16.8]	53.7 [15.7]	71.2 [20.9]	67.5 [19.8]	64.1 [18.8]	
	Power	12.6	12.6	12.1	12.5	12.2	12.1	12.5	12.1	12	

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—G120

		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		.09	.03	0	.09	.03	0	.09	.03	0	
OUTDOOR DRY BULB TEMPERATURE °F [°C]	75 [23.9]	Total BTUH [kW] Sens BTUH [kW] Power	155.3 [45.5] 97.3 [28.5] 7.5	147.8 [43.3] 86.1 [25.2] 7.3	143.8 [42.2] 80.2 [23.5] 7.2	147.8 [43.3] 115.8 [33.9] 7.4	140.7 [41.2] 102.4 [30] 7.2	136.9 [40.1] 95.4 [28] 7.1	142.8 [41.8] 132.9 [38.9] 7.3	135.8 [39.8] 117.5 [34.4] 7.1	132.2 [38.7] 109.5 [32.1] 7.0
	80 [26.7]	Total BTUH [kW] Sens BTUH [kW] Power	150.6 [44.1] 94.9 [27.8] 7.9	143.4 [42] 84 [24.6] 7.7	139.5 [40.9] 78.2 [22.9] 7.6	143.2 [42] 113.5 [33.2] 7.8	136.2 [39.9] 100.3 [29.4] 7.6	132.6 [38.9] 93.5 [27.4] 7.5	138.1 [40.5] 130.5 [38.2] 7.7	131.4 [38.5] 115.4 [33.8] 7.5	127.9 [37.5] 107.5 [31.5] 7.4
	85 [29.4]	Total BTUH [kW] Sens BTUH [kW] Power	146 [42.8] 92.5 [27.1] 8.3	138.9 [40.7] 81.8 [24] 8.1	135.2 [39.6] 76.2 [22.3] 8.0	138.5 [40.6] 111 [32.5] 8.2	131.8 [38.6] 98.2 [28.8] 8.0	128.3 [37.6] 91.5 [26.8] 7.9	133.5 [39.1] 128.1 [37.5] 8.2	127 [37.2] 113.3 [33.2] 8.0	123.6 [36.2] 105.5 [30.9] 7.9
	90 [32.2]	Total BTUH [kW] Sens BTUH [kW] Power	141.4 [41.4] 90.1 [26.4] 8.8	134.5 [39.4] 79.7 [23.3] 8.6	131 [38.4] 74.2 [21.7] 8.5	133.9 [39.2] 108.6 [31.8] 8.7	127.4 [37.3] 96 [28.1] 8.5	124 [36.3] 89.5 [26.2] 8.4	128.8 [37.8] 125.6 [36.8] 8.6	122.6 [35.9] 111.1 [32.6] 8.4	119.3 [35] 103.5 [30.3] 8.3
	95 [35]	Total BTUH [kW] Sens BTUH [kW] Power	136.8 [40.1] 87.6 [25.7] 9.3	130.2 [38.1] 77.5 [22.7] 9.1	126.7 [37.1] 72.2 [21.1] 9.0	129.3 [37.9] 106.1 [31.1] 9.2	123 [36.1] 93.8 [27.5] 9.0	119.7 [35.1] 87.4 [25.6] 8.9	124.2 [36.4] 123.1 [36.1] 9.1	118.2 [34.6] 108.9 [31.9] 8.9	115.1 [33.7] 101.5 [29.7] 8.8
	100 [37.8]	Total BTUH [kW] Sens BTUH [kW] Power	132.2 [38.7] 85.1 [24.9] 9.9	125.8 [36.9] 75.2 [22] 9.6	122.4 [35.9] 70.1 [20.5] 9.5	124.7 [36.5] 103.6 [30.3] 9.8	118.7 [34.8] 91.6 [26.8] 9.5	115.5 [33.8] 85.3 [25] 9.4	119.6 [35.1] 119.6 [35.1] 9.7	113.8 [33.4] 106.7 [31.3] 9.5	110.8 [32.5] 99.4 [29.1] 9.3
	105 [40.6]	Total BTUH [kW] Sens BTUH [kW] Power	127.6 [37.4] 82.5 [24.2] 10.5	121.4 [35.6] 73 [21.4] 10.2	118.2 [34.6] 68 [19.9] 10.1	120.1 [35.2] 101 [29.6] 10.4	114.3 [33.5] 89.3 [26.2] 10.1	111.2 [32.6] 83.2 [24.4] 10.0	115.1 [33.7] 115.1 [33.7] 10.3	109.5 [32.1] 104.4 [30.6] 10.0	106.6 [31.2] 97.3 [28.5] 9.9
	110 [43.3]	Total BTUH [kW] Sens BTUH [kW] Power	123 [36.1] 79.9 [23.4] 11.1	117.1 [34.3] 70.6 [20.7] 10.8	114 [33.4] 65.8 [19.3] 10.7	115.5 [33.9] 98.4 [28.8] 11.0	109.9 [32.2] 87 [25.5] 10.7	107 [31.4] 81.1 [23.8] 10.6	110.5 [32.4] 110.5 [32.4] 10.9	105.1 [30.8] 102.1 [29.9] 10.6	102.3 [30] 95.1 [27.9] 10.5
	115 [46.1]	Total BTUH [kW] Sens BTUH [kW] Power	118.5 [34.7] 77.2 [22.6] 11.7	112.7 [33] 68.3 [20] 11.4	109.7 [32.2] 63.6 [18.6] 11.3	111 [32.5] 95.7 [28.1] 11.6	105.6 [31] 84.7 [24.8] 11.3	102.8 [30.1] 78.9 [23.1] 11.2	105.9 [31] 105.9 [31] 11.5	100.8 [29.5] 99.8 [29.2] 11.2	98.1 [28.8] 92.9 [27.2] 11.1
	120 [48.9]	Total BTUH [kW] Sens BTUH [kW] Power	113.9 [33.4] 74.5 [21.8] 12.4	108.4 [31.8] 65.9 [19.3] 12.1	105.5 [30.9] 61.4 [18] 11.9	106.5 [31.2] 93 [27.3] 12.3	101.3 [29.7] 82.3 [24.1] 12	98.6 [28.9] 76.7 [22.5] 11.8	101.4 [29.7] 101.4 [29.7] 12.2	96.5 [28.3] 96.5 [28.3] 11.9	93.9 [27.5] 90.7 [26.6] 11.7
	125 [51.7]	Total BTUH [kW] Sens BTUH [kW] Power	109.4 [32.1] 71.8 [21] 13.1	104.1 [30.5] 63.5 [18.6] 12.8	101.3 [29.7] 59.2 [17.3] 12.6	101.9 [29.9] 90.3 [26.5] 13.0	97 [28.4] 79.9 [23.4] 12.7	94.4 [27.7] 74.4 [21.8] 12.5	96.9 [28.4] 96.9 [28.4] 12.9	92.2 [27] 92.2 [27] 12.6	89.7 [26.3] 88.5 [25.9] 12.4

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—G151

wbE		ENTERING INDOOR AIR @ 80°F [26.7°C] dbE ①									
		71°F [21.7°C]			67°F [19.4°C]			63°F [17.2°C]			
		6000 [2832]	4250 [2006]	4000 [1888]	6000 [2832]	4250 [2006]	4000 [1888]	6000 [2832]	4250 [2006]	4000 [1888]	
CFM [L/s]		0.14	0.08	0.07	0.14	0.08	0.07	0.14	0.08	0.07	
DR ①											
OUTDOOR DRY BULB TEMPERATURE °F [°C]	75 [23.9]	Total BTUH [kW] Sens BTUH [kW] Power	190.2 [55.7] 115 [33.7] 9.5	177 [51.9] 96.5 [28.3] 9.1	175.1 [51.3] 93.8 [27.5] 9.1	179.1 [52.5] 136.8 [40.1] 9.3	166.6 [48.8] 114.7 [33.6] 9	164.8 [48.3] 111.6 [32.7] 9	170.2 [49.9] 157.1 [46] 9.2	158.3 [46.4] 131.8 [38.6] 8.9	156.6 [45.9] 128.1 [37.6] 8.8
	80 [26.7]	Total BTUH [kW] Sens BTUH [kW] Power	184.9 [54.2] 112.8 [33.1] 10	172 [50.4] 94.7 [27.7] 9.6	170.2 [49.9] 92.1 [27] 9.6	173.7 [50.9] 134.6 [39.4] 9.8	161.6 [47.4] 112.9 [33.1] 9.5	159.9 [46.9] 109.8 [32.2] 9.4	164.8 [48.3] 154.9 [45.4] 9.7	153.3 [44.9] 129.9 [38.1] 9.4	151.7 [44.5] 126.4 [37] 9.3
	85 [29.4]	Total BTUH [kW] Sens BTUH [kW] Power	179.6 [52.6] 110.5 [32.4] 10.5	167.1 [49] 92.7 [27.2] 10.1	165.3 [48.4] 90.2 [26.4] 10.1	168.5 [49.4] 132.3 [38.8] 10.4	156.8 [45.9] 111 [32.5] 10	155.1 [45.4] 107.9 [31.6] 10	159.6 [46.8] 152.6 [44.7] 10.2	148.5 [43.5] 128 [37.5] 9.9	146.9 [43] 124.5 [36.5] 9.8
	90 [32.2]	Total BTUH [kW] Sens BTUH [kW] Power	174.5 [51.1] 108.1 [31.7] 11.1	162.3 [47.6] 90.7 [26.6] 10.7	160.6 [47.1] 88.2 [25.8] 10.6	163.4 [47.9] 129.9 [38.1] 10.9	152 [44.5] 108.9 [31.9] 10.6	150.4 [44.1] 106 [31.1] 10.5	154.4 [45.3] 150.2 [44] 10.8	143.7 [42.1] 126 [36.9] 10.4	142.2 [41.7] 122.5 [35.9] 10.4
	95 [35]	Total BTUH [kW] Sens BTUH [kW] Power	169.5 [49.7] 105.6 [30.9] 11.7	157.7 [46.2] 88.5 [25.9] 11.3	156 [45.7] 86.1 [25.2] 11.2	158.3 [46.4] 127.3 [37.3] 11.6	147.3 [43.2] 106.8 [31.3] 11.2	145.7 [42.7] 103.9 [30.4] 11.1	149.4 [43.8] 147.6 [43.3] 11.4	139 [40.7] 123.8 [36.3] 11	137.5 [40.3] 120.4 [35.3] 11
	100 [37.8]	Total BTUH [kW] Sens BTUH [kW] Power	164.5 [48.2] 102.9 [30.1] 12.3	153.1 [44.9] 86.3 [25.3] 11.9	151.4 [44.4] 83.9 [24.6] 11.8	153.4 [45] 124.6 [36.5] 12.2	142.7 [41.8] 104.5 [30.6] 11.8	141.2 [41.4] 101.7 [29.8] 11.7	144.5 [42.3] 144.5 [42.3] 12.1	134.4 [39.4] 121.6 [35.6] 11.6	133 [39] 118.2 [34.6] 11.6
	105 [40.6]	Total BTUH [kW] Sens BTUH [kW] Power	159.7 [46.8] 100.1 [29.3] 13	148.6 [43.5] 83.9 [24.6] 12.6	147 [43.1] 81.6 [23.9] 12.5	148.6 [43.5] 121.8 [35.7] 12.9	138.2 [40.5] 102.2 [29.9] 12.4	136.8 [40.1] 99.4 [29.1] 12.4	139.7 [40.9] 139.7 [40.9] 12.7	130 [38.1] 119.2 [34.9] 12.3	128.6 [37.7] 115.9 [34] 12.2
	110 [43.3]	Total BTUH [kW] Sens BTUH [kW] Power	155 [45.4] 97.1 [28.5] 13.7	144.2 [42.3] 81.5 [23.9] 13.2	142.7 [41.8] 79.2 [23.2] 13.2	143.9 [42.2] 118.9 [34.8] 13.6	133.9 [39.2] 99.7 [29.2] 13.1	132.4 [38.8] 97 [28.4] 13	135 [39.6] 135 [39.6] 13.5	125.6 [36.8] 116.7 [34.2] 13	124.2 [36.4] 113.5 [33.3] 12.9
	115 [46.1]	Total BTUH [kW] Sens BTUH [kW] Power	150.4 [44.1] 94 [27.6] 14.5	139.9 [41] 78.9 [23.1] 14	138.4 [40.6] 76.7 [22.5] 13.9	139.3 [40.8] 115.8 [33.9] 14.3	129.6 [38] 97.2 [28.5] 13.8	128.2 [37.6] 94.5 [27.7] 13.8	130.4 [38.2] 130.4 [38.2] 14.2	121.3 [35.5] 114.2 [33.5] 13.7	120 [35.2] 111 [32.5] 13.6
	120 [48.9]	Total BTUH [kW] Sens BTUH [kW] Power	145.9 [42.8] 90.8 [26.6] 15.2	135.8 [39.8] 76.2 [22.3] 14.7	134.3 [39.4] 74.1 [21.7] 14.6	134.8 [39.5] 112.6 [33] 15.1	125.4 [36.8] 94.5 [27.7] 14.6	124.1 [36.4] 91.9 [26.9] 14.5	125.9 [36.9] 125.9 [36.9] 15	117.1 [34.3] 111.5 [32.7] 14.5	115.9 [34] 108.4 [31.8] 14.4
125 [51.7]	Total BTUH [kW] Sens BTUH [kW] Power	141.5 [41.5] 87.5 [25.6] 16.1	131.7 [38.6] 73.4 [21.5] 15.5	130.3 [38.2] 71.4 [20.9] 15.4	130.4 [38.2] 109.3 [32] 15.9	121.3 [35.6] 91.7 [26.9] 15.4	120 [35.2] 89.2 [26.1] 15.3	121.5 [35.6] 121.5 [35.6] 15.8	113 [33.1] 108.7 [31.9] 15.2	111.8 [32.8] 105.7 [31] 15.2	

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 (LOW REHEAT MODE) – G090

ENTERING INDOOR AIR @ 75°F [23.9°C] dbE ①											
wbE			65.3°F [18.5°C]			64°F [17.8°C]			62.5°F [16.9°C]		
CFM [L/s]			1800 [850]	1388 [655]	1200 [566]	1800 [850]	1388 [655]	1200 [566]	1800 [850]	1388 [655]	1200 [566]
OUTDOOR DRY BULB TEMPERATURE °F [°C]	60 [15.6]	Total BTUH [kW]	28.0 [8.2]	26.5 [7.8]	25.9 [7.6]	26.6 [7.8]	25.3 [7.4]	24.6 [7.2]	26.0 [7.6]	24.6 [7.2]	24.0 [7.0]
		Sens BTUH [kW]	6.3 [1.8]	5.5 [1.6]	5.2 [1.5]	8.6 [2.5]	7.5 [2.2]	7.0 [2.1]	11.6 [3.4]	10.2 [3.0]	9.6 [2.8]
		Power	2.8	2.7	2.7	2.8	2.7	2.7	2.8	2.7	2.7
	65 [18.3]	Total BTUH [kW]	26.7 [7.8]	25.3 [7.4]	24.7 [7.2]	25.3 [7.4]	24.0 [7.0]	23.4 [6.9]	24.7 [7.2]	23.4 [6.9]	22.8 [6.7]
		Sens BTUH [kW]	5.0 [1.5]	4.4 [1.3]	4.1 [1.2]	7.3 [2.1]	6.4 [1.9]	6.0 [1.8]	10.4 [3.0]	9.1 [2.7]	8.5 [2.5]
		Power	2.8	2.8	2.7	2.9	2.8	2.7	2.8	2.8	2.7
	70 [21.1]	Total BTUH [kW]	25.3 [7.4]	24.0 [7.0]	23.4 [6.9]	24.0 [7.0]	22.7 [6.7]	22.2 [6.5]	23.3 [6.8]	22.1 [6.5]	21.6 [6.3]
Sens BTUH [kW]		3.7 [1.1]	3.3 [1.0]	3.1 [0.9]	6.0 [1.8]	5.3 [1.5]	5.0 [1.5]	9.1 [2.7]	8.0 [2.3]	7.5 [2.2]	
Power		2.9	2.8	2.8	2.9	2.9	2.8	2.9	2.8	2.8	
75 [23.9]	Total BTUH [kW]	23.9 [7.0]	22.7 [6.6]	22.1 [6.5]	22.5 [6.6]	21.4 [6.3]	20.9 [6.1]	21.9 [6.4]	20.8 [6.1]	20.3 [5.9]	
	Sens BTUH [kW]	2.4 [0.7]	2.1 [0.6]	2.0 [0.6]	4.7 [1.4]	4.1 [1.2]	3.8 [1.1]	7.7 [2.3]	6.8 [2.0]	6.4 [1.9]	
	Power	3.0	2.9	2.9	3.0	2.9	2.9	3.0	2.9	2.9	
80 [26.7]	Total BTUH [kW]	22.4 [6.6]	21.3 [6.2]	20.7 [6.1]	21.1 [6.2]	20.0 [5.9]	19.5 [5.7]	20.4 [6.0]	19.4 [5.7]	18.9 [5.5]	
	Sens BTUH [kW]	1.0 [0.3]	0.9 [0.3]	0.8 [0.2]	3.2 [1.0]	2.9 [0.8]	2.7 [0.8]	6.3 [1.8]	5.5 [1.6]	5.2 [1.5]	
	Power	3.1	3.0	3.0	3.1	3.0	3.0	3.1	3.0	3.0	
85 [29.4]	Total BTUH [kW]	20.9 [6.1]	19.8 [5.8]	19.3 [5.7]	19.5 [5.7]	18.5 [5.4]	18.1 [5.3]	18.9 [5.5]	17.9 [5.3]	17.5 [5.1]	
	Sens BTUH [kW]	-0.5 [-0.1]	-0.4 [-0.1]	-0.4 [-0.1]	1.8 [0.5]	1.6 [0.5]	1.5 [0.4]	4.8 [1.4]	4.2 [1.2]	4.0 [1.2]	
	Power	3.2	3.2	3.1	3.2	3.2	3.1	3.2	3.1	3.1	
90 [32.2]	Total BTUH [kW]	19.3 [5.7]	18.3 [5.4]	17.9 [5.2]	18.0 [5.3]	17.0 [5.0]	16.6 [4.9]	17.3 [5.1]	16.4 [4.8]	16.0 [4.7]	
	Sens BTUH [kW]	-2.0 [-0.6]	-1.8 [-0.5]	-1.7 [-0.5]	0.2 [0.1]	0.2 [0.1]	0.2 [0.1]	3.3 [1.0]	2.9 [0.9]	2.7 [0.8]	
	Power	3.4	3.3	3.2	3.4	3.3	3.2	3.4	3.3	3.2	

## GROSS SYSTEMS PERFORMANCE DATA (HIGH REHEAT MODE) – G090

ENTERING INDOOR AIR @ 75°F [23.9°C] dbE ①											
wbE			65.3°F [18.5°C]			64°F [17.8°C]			62.5°F [16.9°C]		
CFM [L/s]			3600 [1699]	2775 [1310]	2400 [1133]	3600 [1699]	2775 [1310]	2400 [1133]	3600 [1699]	2775 [1310]	2400 [1133]
OUTDOOR DRY BULB TEMPERATURE °F [°C]	60 [15.6]	Total BTUH [kW]	91.0 [26.7]	86.3 [25.3]	84.2 [24.7]	89.8 [26.3]	85.2 [25.0]	83.1 [24.4]	88.0 [25.8]	83.5 [24.5]	81.4 [23.9]
		Sens BTUH [kW]	49.7 [14.6]	43.7 [12.8]	40.9 [12.0]	55.7 [16.3]	49.0 [14.3]	45.9 [13.4]	61.5 [18.0]	54.0 [15.8]	50.6 [14.8]
		Power	4.8	4.7	4.6	4.8	4.7	4.6	4.8	4.6	4.6
	70 [21.1]	Total BTUH [kW]	84.2 [24.7]	79.9 [23.4]	77.9 [22.8]	83.0 [24.3]	78.8 [23.1]	76.8 [22.5]	81.2 [23.8]	77.0 [22.6]	75.1 [22.0]
		Sens BTUH [kW]	43.4 [12.7]	38.1 [11.2]	35.7 [10.5]	49.5 [14.5]	43.4 [12.7]	40.7 [11.9]	55.2 [16.2]	48.5 [14.2]	45.4 [13.3]
		Power	5.3	5.2	5.1	5.3	5.2	5.1	5.3	5.2	5.1
	80 [26.7]	Total BTUH [kW]	76.6 [22.5]	72.7 [21.3]	70.9 [20.8]	75.5 [22.1]	71.6 [21.0]	69.8 [20.5]	73.6 [21.6]	69.9 [20.5]	68.1 [20.0]
Sens BTUH [kW]		37.2 [10.9]	32.7 [9.6]	30.6 [9.0]	43.3 [12.7]	38.0 [11.1]	35.6 [10.4]	49.0 [14.4]	43.0 [12.6]	40.3 [11.8]	
Power		5.9	5.8	5.7	5.9	5.8	5.7	5.9	5.8	5.7	
90 [32.2]	Total BTUH [kW]	68.3 [20.0]	64.8 [19.0]	63.2 [18.5]	67.1 [19.7]	63.7 [18.7]	62.1 [18.2]	65.3 [19.1]	61.9 [18.1]	60.4 [17.7]	
	Sens BTUH [kW]	31.1 [9.1]	27.3 [8.0]	25.6 [7.5]	37.1 [10.9]	32.6 [9.6]	30.5 [9.0]	42.9 [12.6]	37.6 [11.0]	35.3 [10.3]	
	Power	6.6	6.5	6.4	6.6	6.5	6.4	6.6	6.4	6.4	
100 [37.8]	Total BTUH [kW]	59.1 [17.3]	56.1 [16.4]	54.7 [16.0]	58.0 [17.0]	55.0 [16.1]	53.6 [15.7]	56.1 [16.4]	53.3 [15.6]	51.9 [15.2]	
	Sens BTUH [kW]	25.0 [7.3]	22.0 [6.4]	20.6 [6.0]	31.1 [9.1]	27.3 [8.0]	25.6 [7.5]	36.8 [10.8]	32.3 [9.5]	30.3 [8.9]	
	Power	7.4	7.2	7.1	7.4	7.2	7.1	7.4	7.2	7.1	
110 [43.3]	Total BTUH [kW]	49.2 [14.4]	46.7 [13.7]	45.5 [13.3]	48.0 [14.1]	45.6 [13.4]	44.5 [13.0]	46.2 [13.5]	43.8 [12.8]	42.8 [12.5]	
	Sens BTUH [kW]	19.1 [5.6]	16.7 [4.9]	15.7 [4.6]	25.1 [7.4]	22.0 [6.5]	20.7 [6.1]	30.8 [9.0]	27.1 [7.9]	25.4 [7.4]	
	Power	8.3	8.1	8.0	8.3	8.1	8.0	8.3	8.0	8.0	
120 [48.9]	Total BTUH [kW]	38.5 [11.3]	36.5 [10.7]	35.6 [10.4]	37.3 [10.9]	35.4 [10.4]	34.5 [10.1]	35.5 [10.4]	33.7 [9.9]	32.8 [9.6]	
	Sens BTUH [kW]	13.2 [3.9]	11.6 [3.4]	10.8 [3.2]	19.2 [5.6]	16.9 [4.9]	15.8 [4.6]	24.9 [7.3]	21.9 [6.4]	20.5 [6.0]	
	Power	9.2	9.0	8.9	9.2	9.0	8.9	9.2	9.0	8.9	





## GROSS SYSTEMS PERFORMANCE DATA (LOW REHEAT MODE)—G120

ENTERING INDOOR AIR @ 75°F [23.9°C] dbE ①											
wbE			65.3°F [18.5°C]			64°F [17.8°C]			62.5°F [16.9°C]		
CFM [L/s]			2400 [1133]	1875 [885]	1600 [755]	2400 [1133]	1875 [885]	1600 [755]	2400 [1133]	1875 [885]	1600 [755]
OUTDOOR DRY BULB TEMPERATURE °F [°C]	60 [15.6]	Total BTUH [kW]	30.2 [8.9]	28.7 [8.4]	28.0 [8.2]	27.6 [8.1]	26.3 [7.7]	25.6 [7.5]	24.8 [7.3]	23.6 [6.9]	23.0 [6.7]
		Sens BTUH [kW]	3.8 [1.1]	3.4 [1.0]	3.2 [0.9]	6.2 [1.8]	5.5 [1.6]	5.1 [1.5]	9.1 [2.7]	8.0 [2.3]	7.5 [2.2]
		Power	3.8	3.7	3.6	3.7	3.7	3.6	3.8	3.7	3.6
	65 [18.3]	Total BTUH [kW]	28.7 [8.4]	27.3 [8.0]	26.6 [7.8]	26.1 [7.7]	24.9 [7.3]	24.2 [7.1]	23.3 [6.8]	22.2 [6.5]	21.6 [6.3]
		Sens BTUH [kW]	2.6 [0.8]	2.3 [0.7]	2.1 [0.6]	5.0 [1.5]	4.4 [1.3]	4.1 [1.2]	7.8 [2.3]	6.9 [2.0]	6.4 [1.9]
		Power	3.8	3.7	3.7	3.8	3.7	3.7	3.8	3.7	3.7
	70 [21.1]	Total BTUH [kW]	27.2 [8.0]	25.9 [7.6]	25.2 [7.4]	24.6 [7.2]	23.4 [6.9]	22.8 [6.7]	21.8 [6.4]	20.8 [6.1]	20.2 [5.9]
Sens BTUH [kW]		1.4 [0.4]	1.2 [0.4]	1.1 [0.3]	3.7 [1.1]	3.3 [1.0]	3.1 [0.9]	6.6 [1.9]	5.8 [1.7]	5.4 [1.6]	
Power		3.9	3.8	3.8	3.9	3.8	3.7	3.9	3.8	3.8	
75 [23.9]	Total BTUH [kW]	25.7 [7.5]	24.5 [7.2]	23.8 [7.0]	23.2 [6.8]	22.0 [6.5]	21.5 [6.3]	20.4 [6.0]	19.4 [5.7]	18.9 [5.5]	
	Sens BTUH [kW]	0.1 [0.0]	0.1 [0.0]	0.1 [0.0]	2.5 [0.7]	2.2 [0.7]	2.1 [0.6]	5.4 [1.6]	4.7 [1.4]	4.4 [1.3]	
	Power	4.0	3.9	3.8	4.0	3.9	3.8	4.0	3.9	3.8	
80 [26.7]	Total BTUH [kW]	24.3 [7.1]	23.1 [6.8]	22.5 [6.6]	21.7 [6.4]	20.7 [6.1]	20.1 [5.9]	18.9 [5.6]	18.0 [5.3]	17.5 [5.1]	
	Sens BTUH [kW]	-1.1 [-0.3]	-0.9 [-0.3]	-0.9 [-0.3]	1.3 [0.4]	1.2 [0.3]	1.1 [0.3]	4.2 [1.2]	3.7 [1.1]	3.4 [1.0]	
	Power	4.1	4.0	3.9	4.0	3.9	3.9	4.1	4.0	3.9	
85 [29.4]	Total BTUH [kW]	22.9 [6.7]	21.8 [6.4]	21.2 [6.2]	20.4 [6.0]	19.4 [5.7]	18.9 [5.5]	17.6 [5.1]	16.7 [4.9]	16.3 [4.8]	
	Sens BTUH [kW]	-2.2 [-0.7]	-2.0 [-0.6]	-1.8 [-0.5]	0.2 [0.0]	0.1 [0.0]	0.1 [0.0]	3.0 [0.9]	2.7 [0.8]	2.5 [0.7]	
	Power	4.2	4.1	4.0	4.1	4.0	4.0	4.1	4.0	4.0	
90 [32.2]	Total BTUH [kW]	21.6 [6.3]	20.5 [6.0]	20.0 [5.9]	19.0 [5.6]	18.1 [5.3]	17.6 [5.2]	16.2 [4.7]	15.4 [4.5]	15.0 [4.4]	
	Sens BTUH [kW]	-3.4 [-1.0]	-3.0 [-0.9]	-2.8 [-0.8]	-1.0 [-0.3]	-0.9 [-0.3]	-0.8 [-0.2]	1.8 [0.5]	1.6 [0.5]	1.5 [0.4]	
	Power	4.3	4.2	4.1	4.2	4.1	4.1	4.2	4.1	4.1	

## GROSS SYSTEMS PERFORMANCE DATA (HIGH REHEAT MODE)—G120

ENTERING INDOOR AIR @ 75°F [23.9°C] dbE ①											
wbE			65.3°F [18.5°C]			64°F [17.8°C]			62.5°F [16.9°C]		
CFM [L/s]			4800 [2265]	3750 [1770]	3200 [1510]	4800 [2265]	3750 [1770]	3200 [1510]	4800 [2265]	3750 [1770]	3200 [1510]
OUTDOOR DRY BULB TEMPERATURE °F [°C]	60 [15.6]	Total BTUH [kW]	114.4 [33.5]	108.8 [31.9]	105.9 [31.0]	111.5 [32.7]	106.1 [31.1]	103.3 [30.3]	108.5 [31.8]	103.2 [30.3]	100.5 [29.4]
		Sens BTUH [kW]	56.8 [16.7]	50.3 [14.7]	46.8 [13.7]	62.8 [18.4]	55.5 [16.3]	51.7 [15.2]	70.8 [20.8]	62.7 [18.4]	58.4 [17.1]
		Power	6.0	5.9	5.8	6.0	5.9	5.8	5.9	5.8	5.7
	70 [21.1]	Total BTUH [kW]	106.3 [31.2]	101.2 [29.6]	98.5 [28.9]	103.5 [30.3]	98.5 [28.9]	95.8 [28.1]	100.4 [29.4]	95.6 [28.0]	93.0 [27.3]
		Sens BTUH [kW]	49.4 [14.5]	43.7 [12.8]	40.7 [11.9]	55.3 [16.2]	48.9 [14.3]	45.6 [13.4]	63.4 [18.6]	56.1 [16.4]	52.2 [15.3]
		Power	6.7	6.5	6.4	6.6	6.5	6.4	6.6	6.4	6.3
	80 [26.7]	Total BTUH [kW]	97.5 [28.6]	92.8 [27.2]	90.3 [26.5]	94.7 [27.7]	90.1 [26.4]	87.7 [25.7]	91.6 [26.9]	87.2 [25.6]	84.9 [24.9]
Sens BTUH [kW]		42.2 [12.4]	37.3 [10.9]	34.7 [10.2]	48.1 [14.1]	42.5 [12.5]	39.6 [11.6]	56.2 [16.5]	49.7 [14.6]	46.3 [13.6]	
Power		7.4	7.2	7.1	7.4	7.2	7.1	7.3	7.2	7.1	
90 [32.2]	Total BTUH [kW]	87.9 [25.8]	83.7 [24.5]	81.4 [23.9]	85.1 [24.9]	81.0 [23.7]	78.8 [23.1]	82.0 [24.0]	78.1 [22.9]	76.0 [22.3]	
	Sens BTUH [kW]	35.2 [10.3]	31.1 [9.1]	29.0 [8.5]	41.1 [12.0]	36.4 [10.7]	33.9 [9.9]	49.2 [14.4]	43.5 [12.7]	40.5 [11.9]	
	Power	8.3	8.1	8.0	8.3	8.1	8.0	8.2	8.0	7.9	
100 [37.8]	Total BTUH [kW]	77.6 [22.7]	73.8 [21.6]	71.8 [21.1]	74.7 [21.9]	71.1 [20.8]	69.2 [20.3]	71.7 [21.0]	68.2 [20.0]	66.4 [19.5]	
	Sens BTUH [kW]	28.4 [8.3]	25.1 [7.4]	23.4 [6.9]	34.4 [10.1]	30.4 [8.9]	28.3 [8.3]	42.4 [12.4]	37.5 [11.0]	35.0 [10.2]	
	Power	9.3	9.1	8.9	9.2	9.0	8.9	9.2	9.0	8.9	
110 [43.3]	Total BTUH [kW]	66.4 [19.5]	63.2 [18.5]	61.5 [18.0]	63.6 [18.6]	60.5 [17.7]	58.9 [17.3]	60.6 [17.8]	57.6 [16.9]	56.1 [16.4]	
	Sens BTUH [kW]	21.9 [6.4]	19.4 [5.7]	18.0 [5.3]	27.8 [8.2]	24.6 [7.2]	22.9 [6.7]	35.9 [10.5]	31.8 [9.3]	29.6 [8.7]	
	Power	10.4	10.1	10.0	10.4	10.1	10.0	10.3	10.1	9.9	
120 [48.9]	Total BTUH [kW]	54.6 [16.0]	51.9 [15.2]	50.5 [14.8]	51.7 [15.2]	49.2 [14.4]	47.9 [14.0]	48.7 [14.3]	46.3 [13.6]	45.1 [13.2]	
	Sens BTUH [kW]	15.6 [4.6]	13.8 [4.0]	12.9 [3.8]	21.6 [6.3]	19.1 [5.6]	17.8 [5.2]	29.6 [8.7]	26.2 [7.7]	24.4 [7.2]	
	Power	11.6	11.3	11.2	11.6	11.3	11.2	11.5	11.3	11.1	



## GROSS SYSTEMS PERFORMANCE DATA (LOW REHEAT MODE) – G151

ENTERING INDOOR AIR @ 75°F [23.9°C] dbE ①											
wbE			65.3°F [18.5°C]			64°F [17.8°C]			62.5°F [16.9°C]		
CFM [L/s]			3000 [1416]	2125 [1003]	2000 [944]	3000 [1416]	2125 [1003]	2000 [944]	3000 [1416]	2125 [1003]	1600 [755]
OUTDOOR DRY BULB TEMPERATURE °F [°C]	60 [15.6]	Total BTUH [kW]	40.1 [11.7]	37.3 [10.9]	36.9 [10.8]	38.5 [11.3]	35.8 [10.5]	35.4 [10.4]	36.9 [10.8]	34.3 [10.0]	33.9 [9.9]
		Sens BTUH [kW]	9.4 [2.8]	7.9 [2.3]	7.7 [2.2]	12.5 [3.7]	10.5 [3.1]	10.2 [3.0]	16.6 [4.9]	13.9 [4.1]	13.6 [4.0]
		Power	4.5	4.3	4.3	4.5	4.4	4.3	4.5	4.3	4.3
	65 [18.3]	Total BTUH [kW]	38.3 [11.2]	35.6 [10.4]	35.2 [10.3]	36.7 [10.7]	34.1 [10.0]	33.7 [9.9]	35 [10.3]	32.6 [9.6]	32.3 [9.5]
		Sens BTUH [kW]	7.5 [2.2]	6.3 [1.8]	6.1 [1.8]	10.6 [3.1]	8.9 [2.6]	8.7 [2.5]	14.7 [4.3]	12.3 [3.6]	12.0 [3.5]
		Power	4.6	4.4	4.4	4.6	4.4	4.4	4.6	4.4	4.4
	70 [21.1]	Total BTUH [kW]	36.5 [10.7]	33.9 [9.9]	33.6 [9.8]	34.9 [10.2]	32.5 [9.5]	32.1 [9.4]	33.3 [9.7]	30.9 [9.1]	30.6 [9.0]
Sens BTUH [kW]		5.7 [1.7]	4.8 [1.4]	4.7 [1.4]	8.8 [2.6]	7.4 [2.2]	7.2 [2.1]	12.9 [3.8]	10.8 [3.2]	10.5 [3.1]	
Power		4.6	4.5	4.5	4.6	4.5	4.5	4.6	4.5	4.5	
75 [23.9]	Total BTUH [kW]	34.7 [10.2]	32.3 [9.5]	32.0 [9.4]	33.1 [9.7]	30.8 [9.0]	30.5 [8.9]	31.5 [9.2]	29.3 [8.6]	29.0 [8.5]	
	Sens BTUH [kW]	4.0 [1.2]	3.4 [1.0]	3.3 [1.0]	7.2 [2.1]	6.0 [1.8]	5.8 [1.7]	11.3 [3.3]	9.5 [2.8]	9.2 [2.7]	
	Power	4.7	4.6	4.5	4.7	4.6	4.5	4.7	4.6	4.5	
80 [26.7]	Total BTUH [kW]	33.0 [9.7]	30.7 [9.0]	30.4 [8.9]	31.4 [9.2]	29.2 [8.6]	28.9 [8.5]	29.8 [8.7]	27.7 [8.1]	27.4 [8.0]	
	Sens BTUH [kW]	2.5 [0.7]	2.1 [0.6]	2.0 [0.6]	5.6 [1.6]	4.7 [1.4]	4.6 [1.3]	9.7 [2.8]	8.2 [2.4]	7.9 [2.3]	
	Power	4.8	4.7	4.7	4.8	4.7	4.7	4.8	4.7	4.7	
85 [29.4]	Total BTUH [kW]	31.4 [9.2]	29.2 [8.6]	28.9 [8.5]	29.8 [8.7]	27.7 [8.1]	27.4 [8.0]	28.2 [8.3]	26.2 [7.7]	25.9 [7.6]	
	Sens BTUH [kW]	1.1 [0.3]	0.9 [0.3]	0.9 [0.3]	4.2 [1.2]	3.5 [1.0]	3.4 [1.0]	8.3 [2.4]	7.0 [2.0]	6.8 [2.0]	
	Power	5	4.8	4.8	5	4.8	4.8	5	4.8	4.8	
90 [32.2]	Total BTUH [kW]	29.7 [8.7]	27.7 [8.1]	27.4 [8.0]	28.2 [8.2]	26.2 [7.7]	25.9 [7.6]	26.5 [7.8]	24.7 [7.2]	24.4 [7.2]	
	Sens BTUH [kW]	-0.2 [-0.1]	-0.2 [-0.1]	-0.2 [-0.1]	2.9 [0.9]	2.4 [0.7]	2.4 [0.7]	7.0 [2.1]	5.9 [1.7]	5.7 [1.7]	
	Power	5.1	4.9	4.9	5.1	5	4.9	5.1	4.9	4.9	

## GROSS SYSTEMS PERFORMANCE DATA (HIGH REHEAT MODE) – G151

ENTERING INDOOR AIR @ 75°F [23.9°C] dbE ①											
wbE			65.3°F [18.5°C]			64°F [17.8°C]			62.5°F [16.9°C]		
CFM [L/s]			6000 [2832]	4250 [2006]	4000 [1888]	6000 [2832]	4250 [2006]	4000 [1888]	6000 [2832]	4250 [2006]	4000 [1888]
OUTDOOR DRY BULB TEMPERATURE °F [°C]	60 [15.6]	Total BTUH [kW]	136.4 [40.0]	126.9 [37.2]	125.6 [36.8]	133.7 [39.2]	124.4 [36.5]	124.4 [36.5]	130.6 [38.3]	121.5 [35.6]	120.2 [35.2]
		Sens BTUH [kW]	71.7 [21.0]	60.2 [17.6]	58.5 [17.1]	79.7 [23.3]	66.8 [19.6]	66.8 [19.6]	89.5 [26.2]	75.0 [22.0]	73.0 [21.4]
		Power	7.2	7.0	7.0	7.2	6.9	6.9	7.1	6.9	6.9
	70 [21.1]	Total BTUH [kW]	126.3 [37.0]	117.5 [34.4]	116.2 [34.1]	123.6 [36.2]	115.0 [33.7]	113.7 [33.3]	120.4 [35.3]	112.0 [32.8]	110.8 [32.5]
		Sens BTUH [kW]	62.1 [18.2]	52.1 [15.3]	50.7 [14.9]	70.1 [20.5]	58.8 [17.2]	57.2 [16.8]	79.9 [23.4]	67.0 [19.6]	65.2 [19.1]
		Power	8.0	7.7	7.7	7.9	7.7	7.6	7.9	7.6	7.6
	80 [26.7]	Total BTUH [kW]	115.9 [34.0]	107.8 [31.6]	106.6 [31.3]	113.2 [33.2]	105.3 [30.9]	104.2 [30.5]	110.0 [32.2]	102.3 [30.0]	101.2 [29.7]
Sens BTUH [kW]		53.0 [15.5]	44.5 [13.0]	43.3 [12.7]	61.0 [17.9]	51.1 [15.0]	49.7 [14.6]	70.8 [20.7]	59.4 [17.4]	57.7 [16.9]	
Power		8.9	8.6	8.5	8.8	8.5	8.5	8.8	8.5	8.4	
90 [32.2]	Total BTUH [kW]	105.3 [30.8]	97.9 [28.7]	96.9 [28.4]	102.6 [30.1]	95.4 [28.0]	94.4 [27.7]	99.4 [29.1]	92.4 [27.1]	91.5 [26.8]	
	Sens BTUH [kW]	44.4 [13.0]	37.2 [10.9]	36.2 [10.6]	52.3 [15.3]	43.9 [12.9]	42.7 [12.5]	62.1 [18.2]	52.1 [15.3]	50.7 [14.8]	
	Power	9.9	9.6	9.5	9.8	9.5	9.5	9.8	9.5	9.4	
100 [37.8]	Total BTUH [kW]	94.4 [27.7]	87.9 [25.7]	86.9 [25.5]	91.7 [26.9]	85.3 [25.0]	84.4 [24.7]	88.5 [25.9]	82.4 [24.1]	81.5 [23.9]	
	Sens BTUH [kW]	36.1 [10.6]	30.3 [8.9]	29.5 [8.6]	44.1 [12.9]	37.0 [10.8]	36.0 [10.5]	53.9 [15.8]	45.2 [13.2]	44.0 [12.9]	
	Power	11.1	10.7	10.6	11.0	10.6	10.6	11.0	10.6	10.5	
110 [43.3]	Total BTUH [kW]	83.4 [24.4]	77.6 [22.7]	76.8 [22.5]	80.7 [23.6]	75.1 [22.0]	74.3 [21.8]	77.5 [22.7]	72.1 [21.1]	71.3 [20.9]	
	Sens BTUH [kW]	28.4 [8.3]	23.8 [7.0]	23.2 [6.8]	36.3 [10.6]	30.5 [8.9]	29.6 [8.7]	46.1 [13.5]	38.7 [11.3]	37.6 [11.0]	
	Power	12.4	11.9	11.9	12.3	11.9	11.8	12.3	11.8	11.8	
120 [48.9]	Total BTUH [kW]	72.1 [21.1]	67.1 [19.7]	66.4 [19.5]	69.4 [20.3]	64.6 [18.9]	63.9 [18.7]	66.3 [19.4]	61.6 [18.1]	61.0 [17.9]	
	Sens BTUH [kW]	21.1 [6.2]	17.7 [5.2]	17.2 [5.0]	29.0 [8.5]	24.4 [7.1]	23.7 [6.9]	38.8 [11.4]	32.6 [9.5]	31.7 [9.3]	
	Power	13.8	13.3	13.2	13.7	13.3	13.2	13.7	13.2	13.2	









# AIRFLOW PERFORMANCE— 12.5 TON [44.0 kW]

Air Flow CFM [L/s]	Capacity 12.5 Tons [43.9 kW] – Voltage 208/230, 460 – 3 Phase 60 Hz																				
	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]	
3800 [1793]	—	—	—	860 [1675]	889 [1850]	914 [1934]	939 [2020]	964 [2108]	988 [2199]	1012 [2289]	1036 [2385]	1059 [2482]	1082 [2580]	1105 [2681]	1127 [2784]	1149 [2889]	1170 [2995]	1191 [3104]	1212 [3215]	1233 [3328]	1253 [3444]
4000 [1888]	—	—	863 [1768]	893 [1850]	918 [1934]	943 [2020]	967 [2108]	991 [2199]	1015 [2289]	1038 [2385]	1061 [2482]	1083 [2580]	1106 [2681]	1127 [2784]	1149 [2889]	1170 [2995]	1191 [3104]	1212 [3215]	1233 [3328]	1253 [3444]	
4200 [1982]	—	868 [1878]	893 [1965]	918 [2053]	943 [2144]	967 [2236]	991 [2331]	1015 [2428]	1038 [2526]	1061 [2627]	1083 [2730]	1106 [2835]	1127 [2942]	1149 [3051]	1170 [3162]	1191 [3276]	1212 [3391]	1233 [3508]	1253 [3628]	1271 [3749]	
4400 [2076]	874 [2006]	899 [2097]	923 [2190]	948 [2284]	972 [2381]	995 [2480]	1019 [2581]	1041 [2685]	1064 [2790]	1086 [2897]	1108 [3006]	1130 [3118]	1151 [3231]	1172 [3347]	1192 [3464]	1212 [3584]	1232 [3706]	1252 [3830]	1271 [3955]	1290 [4083]	
4600 [2171]	906 [2246]	930 [2343]	954 [2443]	978 [2544]	1001 [2647]	1024 [2753]	1047 [2860]	1069 [2970]	1091 [3081]	1112 [3195]	1134 [3311]	1154 [3428]	1175 [3548]	1195 [3670]	1215 [3794]	1234 [3920]	1254 [4048]	1272 [4179]	1291 [4311]	—	
4800 [2265]	939 [2514]	962 [2618]	986 [2724]	1009 [2831]	1031 [2941]	1053 [3053]	1075 [3167]	1097 [3283]	1118 [3401]	1139 [3521]	1160 [3643]	1180 [3767]	1200 [3893]	1219 [4022]	1238 [4152]	1257 [4285]	1275 [4419]	1293 [4556]	—	—	
5000 [2359]	972 [2811]	995 [2921]	1018 [3033]	1040 [3147]	1062 [3263]	1083 [3381]	1105 [3501]	1125 [3624]	1146 [3748]	1166 [3875]	1186 [4003]	1205 [4134]	1225 [4267]	1243 [4401]	1262 [4538]	1280 [4677]	1298 [4818]	—	—	—	
5200 [2454]	1006 [3135]	1028 [3251]	1050 [3370]	1072 [3490]	1093 [3613]	1114 [3737]	1134 [3864]	1155 [3993]	1174 [4124]	1194 [4257]	1213 [4392]	1232 [4529]	1250 [4668]	1268 [4809]	1286 [4952]	—	—	—	—	—	
5400 [2548]	1040 [3487]	1062 [3610]	1083 [3735]	1104 [3862]	1125 [3991]	1145 [4122]	1165 [4255]	1184 [4390]	1203 [4527]	1222 [4667]	1240 [4808]	1259 [4952]	1276 [5097]	1294 [5245]	—	—	—	—	—	—	
5600 [2643]	1075 [3868]	1096 [3997]	1117 [4128]	1137 [4261]	1157 [4397]	1176 [4534]	1195 [4674]	1214 [4815]	1233 [4959]	1251 [5105]	1268 [5253]	1286 [5403]	1303 [5555]	—	—	—	—	—	—	—	
5800 [2737]	1111 [4276]	1131 [4412]	1151 [4549]	1170 [4689]	1189 [4831]	1208 [4975]	1227 [5121]	1245 [5269]	1263 [5419]	1280 [5571]	1297 [5725]	—	—	—	—	—	—	—	—	—	

NOTE: R-Drive left of bold line, S-Drive right of bold line.

Drive Package	R						S					
Motor H.P. [W]	5.0 [3728.5]						5.0 [3728.5]					
Blower Sheave	BK72H						BK85H					
Motor Sheave	1VP-44						1VP-65					
Turns Open	1	2	3	4	5	6	1	2	3	4	5	6
RPM	1075	1032	995	947	899	849	1292	1253	1216	1178	1136	1095

- 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]	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	1.07
SENSIBLE MBH	0.93	0.96	1.00	1.04	1.07	1.11	1.14	1.18	1.21	1.28
POWER kW	0.99	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.

## I J 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]	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	0.09	0.09	0.10	0.10	0.11	0.11	0.11	0.12	0.12	0.13	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
Downflow Economizer RA Damper Open	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06
Horizontal Economizer RA Damper Open	0.07	0.07	0.08	0.08	0.09	0.10	0.10	0.11	0.11	0.12	0.13	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04
Concentric Grill RXRN-AA61 or RXRN-AA71 & Transition RXMC-CE05	0.19	0.21	0.24	0.27	0.30	0.33	0.36	0.40	0.44	0.48	0.52	0.05	0.05	0.05	0.07	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14
Concentric Grill RXRN-AA66 or RXRN-AA76 & Transition RXMC-CF06	0.23	0.25	0.27	0.29	0.30	0.32	0.34	0.36	0.38	0.40	0.43	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.09	0.10	0.11	0.12	0.13

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



### ELECTRICAL DATA – RLNL- SERIES

		G090CR	G090CS	G090CT	G090DR	G090DS	G090DT	G120CR	G120CS	G120DR	G120DS
<b>Unit Information</b>	Unit Operating Voltage Range	187-253	187-253	187-253	414-506	414-506	414-506	187-253	187-253	414-506	414-506
	Volts	208/230	208/230	208/230	460	460	460	208/230	208/230	460	460
	Minimum Circuit Ampacity	43/43	43/43	48/48	21	21	24	49/49	54/54	25	28
	Minimum Overcurrent Protection Device Size	45/45	45/45	50/50	25	25	25	50/50	55/55	25	30
	Maximum Overcurrent Protection Device Size	50/50	50/50	60/60	25	25	30	60/60	60/60	30	35
<b>Compressor Motor</b>	No.	2	2	2	2	2	2	2	2	2	2
	Volts	200/240	200/240	200/240	480	480	480	200/240	200/240	480	480
	Phase	3	3	3	3	3	3	3	3	3	3
	RPM	3450	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	4 1/4	4 1/4	4 1/4	4 1/4
	Amps (RLA), Comp. 1	13.1/13.1	13.1/13.1	13.1/13.1	6.1	6.1	6.1	16/16	16/16	7.8	7.8
	Amps (LRA), Comp. 1	83.1/83.1	83.1/83.1	83.1/83.1	41	41	41	110/110	110/110	52	52
	HP, Compressor 2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4 1/4	4 1/4	4 1/4	4 1/4
	Amps (RLA), Comp. 2	13.1/13.1	13.1/13.1	13.1/13.1	6.1	6.1	6.1	16/16	16/16	7.8	7.8
Amps (LRA), Comp. 2	83.1/83.1	83.1/83.1	83.1/83.1	41	41	41	110/110	110/110	52	52	
<b>Condenser Motor</b>	No.	2	2	2	2	2	2	2	2	2	2
	Volts	208/230	208/230	208/230	460	460	460	208/230	208/230	460	460
	Phase	1	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	1/3
	Amps (FLA, each)	2.4/2.4	2.4/2.4	2.4/2.4	1.4	1.4	1.4	2.4/2.4	2.4/2.4	1.4	1.4
	Amps (LRA, each)	4.7/4.7	4.7/4.7	4.7/4.7	2.4	2.4	2.4	4.7/4.7	4.7/4.7	2.4	2.4
<b>Evaporator Fan</b>	No.	1	1	1	1	1	1	1	1	1	1
	Volts	208/230	208/230	208/230	460	460	460	208/230	208/230	460	460
	Phase	3	3	3	3	3	3	3	3	3	3
	HP	2	2	3	2	2	3	2	3	2	3
	Amps (FLA, each)	8/8	8/8	13/13	4	4	7	8/8	13/13	4	7
	Amps (LRA, each)	56/56	56/56	74.5/74.5	28	28	38.1	56/56	74.5/74.5	28	38.1

<b>ELECTRICAL DATA – RLNL- SERIES</b>					
		<b>G151CR</b>	<b>G151CS</b>	<b>G151DR</b>	<b>G151DS</b>
<b>Unit Information</b>	Unit Operating Voltage Range	187-253	187-253	414-506	414-506
	Volts	208/230	208/230	460	460
	Minimum Circuit Ampacity	68/68	68/68	32	32
	Minimum Overcurrent Protection Device Size	80/80	80/80	35	35
	Maximum Overcurrent Protection Device Size	80/80	80/80	40	40
<b>Compressor Motor</b>	No.	2	2	2	2
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	RPM	3450	3450	3450	3450
	HP, Compressor 1	5 3/4	5	5	5
	Amps (RLA), Comp. 1	19.6/19.6	19.6/19.6	8.2	8.2
	Amps (LRA), Comp. 1	136/136	136/136	66.1	66.1
	HP, Compressor 2	5	5	5	5
	Amps (RLA), Comp. 2	19.6/19.6	19.6/19.6	8.2	8.2
Amps (LRA), Comp. 2	136/136	136/136	66.1	66.1	
<b>Condenser Motor</b>	No.	2	2	2	2
	Volts	208/230	208/230	460	460
	Phase	1	1	1	1
	HP	1/2	1/2	1/2	1/2
	Amps (FLA, each)	2.3/2.3	2.3/2.3	1.5	1.5
	Amps (LRA, each)	5.6/5.6	5.6/5.6	3.1	3.1
<b>Evaporator Fan</b>	No.	1	1	1	1
	Volts	208/230	208/230	460	460
	Phase	3	3	3	3
	HP	5	5	5	5
	Amps (FLA, each)	18.8/18.8	18.8/18.8	10	10
	Amps (LRA, each)	82.6/82.6	82.6/82.6	41.3	41.3

**208/240 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION****Separate Power Supply For Both Unit and Heater Kit**

Unit Model No. RLNL-	Single Power Supply For Both Unit and Heater Kit						Separate Power Supply For Both Unit and Heater Kit					
	Heater Kit			Air Conditioner			Heater Kit			Air Conditioner		
	RXJJ-Heater Kit Nominal kW	No. of Sequence Steps	Rated Heater kW @ 208/240 V	Heater KBTU/Hr @ 208/240 V	Heater Amp. @ 208/240 V	Unit Min. Ckt. Ampacity @ 208/240 V	Over Current Protective Device Size Min./Max. @ 240 V	Min. Ckt. Ampacity 208/240 V	Max. Fuse Size 208/240 V	Min. Circuit Ampacity 208/240 V	Over Current Protective Device Size Min./Max. @ 208 V	Min./Max. @ 240 V
G090CR	No Heat	—	—	—	—	43/43	45/50	—	—	43/43	45/50	45/50
	CC10C	1	7.2/9.6	24.56/32.75	20/23.1	43/43	50/50	25/29	25/30	43/43	45/50	45/50
	CC15C	1	10.8/14.4	36.84/49.13	30/34.6	48/54	50/50	38/44	40/45	43/43	45/50	45/50
	CC20C	1	14.4/19.2	49.13/65.5	40/46.2	60/68	60/60	50/58	50/60	43/43	45/50	45/50
	CC30C	1	21.6/28.8	73.69/98.25	60/69.3	85/97	90/90	100/100	80/90	43/43	45/50	45/50
G120CR	CC40C	1	28.8/38.4	98.25/131	80.1/92.4	111/126	150/150	101/116	110/125	43/43	45/50	45/50
	CC50C	1	36.1/48	123.16/163.75	100.1/115.5	136/155	175/175	126/145	150/150	49/49	50/60	50/60
	No Heat	—	—	—	—	49/49	50/60	—	—	49/49	50/60	50/60
	CC10C	1	7.2/9.6	24.56/32.75	20/23.1	49/49	60/60	25/29	25/30	49/49	50/60	50/60
	CC15C	1	10.8/14.4	36.84/49.13	30/34.6	49/54	60/60	38/44	40/45	49/49	50/60	50/60
G151CR	CC20C	1	14.4/19.2	49.13/65.5	40/46.2	60/68	60/60	50/58	50/60	49/49	50/60	50/60
	CC30C	1	21.6/28.8	73.69/98.25	60/69.3	85/97	90/90	75/87	80/90	49/49	50/60	50/60
	CC40C	1	28.8/38.4	98.25/131	80.1/92.4	111/126	125/125	101/116	110/125	49/49	50/60	50/60
	CC50C	1	36.1/48	123.16/163.75	100.1/115.5	136/155	150/150	126/145	150/150	49/49	50/60	50/60
	No Heat	—	—	—	—	68/68	80/80	—	—	68/68	80/80	80/80
G151CR	CC10C	1	7.2/9.6	24.56/32.75	20/23.1	68/68	80/80	25/29	25/30	68/68	80/80	80/80
	CC15C	1	10.8/14.4	36.84/49.13	30/34.6	68/68	80/80	38/44	40/45	68/68	80/80	80/80
	CC20C	1	14.4/19.2	49.13/65.5	40/46.2	74/82	80/80	50/58	50/60	68/68	80/80	80/80
	CC30C	1	21.6/28.8	73.69/98.25	60/69.3	99/111	100/100	75/87	80/90	68/68	80/80	80/80
	CC40C	1	28.8/38.4	98.25/131	80.1/92.4	124/140	125/125	101/116	110/125	68/68	80/80	80/80
CC50C	1	36.1/48	123.16/163.75	100.1/115.5	149/168	150/150	126/145	150/150	68/68	80/80	80/80	

\* = For Canadian use only. Uses "P" fuses for inductive circuit.

+ = Field installed only.

208/240 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION													
Single Power Supply For Both Unit and Heater Kit						Separate Power Supply For Both Unit and Heater Kit							
Unit Model No. RLNL-	RXJJ- Heater Kit Nominal kW	No. of Sequence Steps	Heater Kit			Air Conditioner			Heater Kit			Air Conditioner	
			Rated Heater kW @ 208/240 V	Heater KBTU/Hr @ 208/240 V	Heater Amp. @ 208/240 V	Unit Min. Ampacity @ 208/240 V	Over Current Protective Device Size Min./Max. @ 208 V	Min. Ckt. Ampacity 208/240 V	Max. Fuse Size 208/240 V	Min. Circuit Ampacity 208/240 V	Over Current Protective Device Size Min./Max. @ 208 V	Min./Max. @ 240 V	
G090CS	No Heat	—	—	—	—	43/43	45/50	45/50	—	—	43/43	45/50	45/50
	CC10C	7.2/9.6	24.56/32.75	20/23.1	43/43	50/50	25/29	25/30	43/43	45/50	43/43	45/50	45/50
	CC15C	10.8/14.4	36.84/49.13	30/34.6	48/54	60/60	38/44	40/45	43/43	45/50	43/43	45/50	45/50
	CC20C	14.4/19.2	49.13/65.5	40/46.2	60/68	70/70	50/58	50/60	43/43	45/50	43/43	45/50	45/50
G120CS	CC30C	21.6/28.8	73.69/98.25	60/69.3	85/97	90/90	75/87	80/90	43/43	45/50	43/43	45/50	45/50
	CC40C	28.8/38.4	98.25/131	80.1/92.4	111/126	125/125	101/116	110/125	43/43	45/50	43/43	45/50	45/50
	CC50C	36.1/48	123.16/163.75	100.1/115.5	142/161	150/150	126/145	150/150	54/54	55/60	54/54	55/60	55/60
	No Heat	—	—	—	54/54	55/60	—	—	54/54	55/60	54/54	55/60	55/60
G151CS	CC10C	7.2/9.6	24.56/32.75	20/23.1	54/54	60/60	25/29	25/30	54/54	55/60	54/54	55/60	55/60
	CC15C	10.8/14.4	36.84/49.13	30/34.6	67/75	70/70	38/44	40/45	54/54	55/60	54/54	55/60	55/60
	CC20C	14.4/19.2	49.13/65.5	40/46.2	92/103	100/100	50/58	50/60	54/54	55/60	54/54	55/60	55/60
	CC30C	21.6/28.8	73.69/98.25	60/69.3	117/132	125/125	75/87	80/90	54/54	55/60	54/54	55/60	55/60
G090CT	CC40C	28.8/38.4	98.25/131	80.1/92.4	142/161	150/150	101/116	110/125	54/54	55/60	54/54	55/60	55/60
	CC50C	36.1/48	123.16/163.75	100.1/115.5	175/175	175/175	126/145	150/150	54/54	55/60	54/54	55/60	55/60
	No Heat	—	—	—	68/68	80/80	—	—	68/68	80/80	68/68	80/80	80/80
	CC10C	7.2/9.6	24.56/32.75	20/23.1	68/68	80/80	25/29	25/30	68/68	80/80	68/68	80/80	80/80
G090CT	CC15C	10.8/14.4	36.84/49.13	30/34.6	68/68	80/80	38/44	40/45	68/68	80/80	68/68	80/80	80/80
	CC20C	14.4/19.2	49.13/65.5	40/46.2	74/82	80/80	50/58	50/60	68/68	80/80	68/68	80/80	80/80
	CC30C	21.6/28.8	73.69/98.25	60/69.3	99/111	100/100	75/87	80/90	68/68	80/80	68/68	80/80	80/80
	CC40C	28.8/38.4	98.25/131	80.1/92.4	124/140	125/125	101/116	110/125	68/68	80/80	68/68	80/80	80/80
G090CT	CC50C	36.1/48	123.16/163.75	100.1/115.5	149/168	150/150	126/145	150/150	68/68	80/80	68/68	80/80	80/80
	No Heat	—	—	—	48/48	50/60	—	—	48/48	50/60	48/48	50/60	50/60
	CC10C	7.2/9.6	24.56/32.75	20/23.1	48/48	60/60	25/29	25/30	48/48	50/60	48/48	50/60	50/60
	CC15C	10.8/14.4	36.84/49.13	30/34.6	54/60	60/60	38/44	40/45	48/48	50/60	48/48	50/60	50/60
G090CT	CC20C	14.4/19.2	49.13/65.5	40/46.2	67/75	70/70	50/58	50/60	48/48	50/60	48/48	50/60	50/60
	CC30C	21.6/28.8	73.69/98.25	60/69.3	92/103	100/100	75/87	80/90	48/48	50/60	48/48	50/60	50/60
	CC40C	28.8/38.4	98.25/131	80.1/92.4	117/132	125/125	101/116	110/125	48/48	50/60	48/48	50/60	50/60
	CC50C	36.1/48	123.16/163.75	100.1/115.5	149/168	150/150	126/145	150/150	48/48	50/60	48/48	50/60	50/60

\* = For Canadian use only. Uses "P" fuses for inductive circuit.

+ = Field installed only.

**480 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION****Separate Power Supply for Both Unit and Heater Kit**

Unit Model No. RLNL-	Single Power Supply for Both Unit and Heater Kit						Separate Power Supply for Both Unit and Heater Kit							
	Heater Kit			Air Conditioner			Heater Kit			Air Conditioner				
	RXJJ-Heater Kit Nominal kW	No. of Sequence Steps	Rated Heater kW @ 480 V	Heater Amp. @ 480 V	Unit Min. Ampacity @ 480 V	Over Current Protective Device Size Min./Max. @ 480 V	Min. Ckt. Ampacity 480 V	Max. Fuse Size 480 V	Min. Circuit Ampacity 480 V	Over Current Protective Device Size Min./Max. @ 480 V	Min. Ckt. Ampacity 480 V	Max. Fuse Size 480 V	Min. Circuit Ampacity 480 V	Over Current Protective Device Size Min./Max. @ 480 V
G090DR	No Heat	—	—	—	21	25/25	—	—	21	25/25	—	—	21	25/25
	CC10D	1	9.6	11.5	21	25/25	15	15	21/0	25/25	15	15	21/0	25/25
	CC15D	1	14.4	17.3	27	30/30	22	25	21/0	25/25	22	25	21/0	25/25
	CC20D	1	19.2	23.1	34	35/35	29	30	21/0	25/25	29	30	21/0	25/25
	CC30D	1	28.8	34.6	49	50/50	44	45	21/0	25/25	44	45	21/0	25/25
CC40D	1	38.4	46.2	63	70/70	58	60	21/0	25/25	58	60	21/0	25/25	
G120DR	No Heat	—	—	—	25	25/30	—	—	25	25/30	—	—	25	25/30
	CC10D	1	9.6	11.5	25	30/30	15	15	25/0	25/30	15	15	25/0	25/30
	CC15D	1	14.4	17.3	27	30/30	22	25	25/0	25/30	22	25	25/0	25/30
	CC20D	1	19.2	23.1	34	35/35	29	30	25/0	25/30	29	30	25/0	25/30
	CC30D	1	28.8	34.6	49	50/50	44	45	25/0	25/30	44	45	25/0	25/30
CC40D	1	38.4	46.2	63	70/70	58	60	25/0	25/30	58	60	25/0	25/30	
CC50D	1	48	57.7	78	80/80	73	80	25/0	25/30	73	80	25/0	25/30	
G151DR	No Heat	—	—	—	32	35/40	—	—	32	35/40	—	—	32	35/40
	CC10D	1	9.6	11.5	32	35/40	15	15	32/0	35/40	15	15	32/0	35/40
	CC15D	1	14.4	17.3	35	35/40	22	25	32/0	35/40	22	25	32/0	35/40
	CC20D	1	19.2	23.1	42	45/45	29	30	32/0	35/40	29	30	32/0	35/40
	CC30D	1	28.8	34.6	56	60/60	44	45	32/0	35/40	44	45	32/0	35/40
CC40D	1	38.4	46.2	71	80/80	58	60	32/0	35/40	58	60	32/0	35/40	
CC50D	1	48	57.7	85	90/90	73	80	32/0	35/40	73	80	32/0	35/40	

\* = For Canadian use only. Uses "P" fuses for inductive circuit.

+ = Field installed only.



## 480 VOLT, THREE PHASE, 60 HZ, AUXILIARY ELECTRIC HEATER KITS CHARACTERISTICS AND APPLICATION

Single Power Supply for Both Unit and Heater Kit										Separate Power Supply for Both Unit and Heater Kit					
Unit Model No. RLNL-	RXJJ- Heater Kit Nominal kW	No. of Sequence Steps	Rated Heater kW @ 480 V	Heater KBTU/Hr @ 480 V	Heater Amp. @ 480 V	Unit Min. Ckt. Ampacity @ 480 V	Air Conditioner		Heater Kit			Air Conditioner			
							Over Current Protective Device Size Min./Max. @ 480 V	Min. Ckt. Ampacity @ 480 V	Max. Fuse Size @ 480 V	Min. Circuit Ampacity @ 480 V	Over Current Protective Device Size				
											Min./Max. @ 480 V	Min./Max. @ 480 V			
G090DS	No Heat	—	—	—	—	21	25/25	—	—	—	21	25/25	—		
	CC10D	1	9.6	32.75	11.5	21	25/25	15	15	21/0	21/0	25/25	0/0		
	CC15D	1	14.4	49.13	17.3	27	30/30	22	25	21/0	21/0	25/25	0/0		
	CC20D	1	19.2	65.5	23.1	34	35/35	29	30	21/0	21/0	25/25	0/0		
	CC30D	1	28.8	98.25	34.6	49	50/50	44	45	21/0	21/0	25/25	0/0		
CC40D	1	38.4	131	46.2	63	70/70	58	60	21/0	21/0	25/25	0/0			
G120DS	No Heat	—	—	—	—	28	30/35	—	—	—	28	30/35	—		
	CC10D	1	9.6	32.75	11.5	28	30/35	15	15	28/0	28/0	30/35	0/0		
	CC15D	1	14.4	49.13	17.3	31	35/35	22	25	28/0	28/0	30/35	0/0		
	CC20D	1	19.2	65.5	23.1	38	40/40	29	30	28/0	28/0	30/35	0/0		
	CC30D	1	28.8	98.25	34.6	52	60/60	44	45	28/0	28/0	30/35	0/0		
CC40D	1	38.4	131	46.2	67	70/70	58	60	28/0	28/0	30/35	0/0			
CC50D	1	48	163.75	57.7	81	90/90	73	80	28/0	28/0	30/35	0/0			
G151DS	No Heat	—	—	—	—	32	35/40	—	—	—	32	35/40	—		
	CC10D	1	9.6	32.75	11.5	32	35/40	15	15	32/0	32/0	35/40	0/0		
	CC15D	1	14.4	49.13	17.3	35	35/40	22	25	32/0	32/0	35/40	0/0		
	CC20D	1	19.2	65.5	23.1	42	45/45	29	30	32/0	32/0	35/40	0/0		
	CC30D	1	28.8	98.25	34.6	56	60/60	44	45	32/0	32/0	35/40	0/0		
CC40D	1	38.4	131	46.2	71	80/80	58	60	32/0	32/0	35/40	0/0			
CC50D	1	48	163.75	57.7	85	90/90	73	80	32/0	32/0	35/40	0/0			
G090DT	No Heat	—	—	—	—	24	25/30	—	—	—	24	25/30	—		
	CC10D	1	9.6	32.75	11.5	24	30/30	15	15	24/0	24/0	25/30	0/0		
	CC15D	1	14.4	49.13	17.3	31	35/35	22	25	24/0	24/0	25/30	0/0		
	CC20D	1	19.2	65.5	23.1	38	40/40	29	30	24/0	24/0	25/30	0/0		
	CC30D	1	28.8	98.25	34.6	52	60/60	44	45	24/0	24/0	25/30	0/0		
CC40D	1	38.4	131	46.2	67	70/70	58	60	24/0	24/0	25/30	0/0			

\* = For Canadian use only. Uses "P" fuses for inductive circuit.

+ = Field installed only.

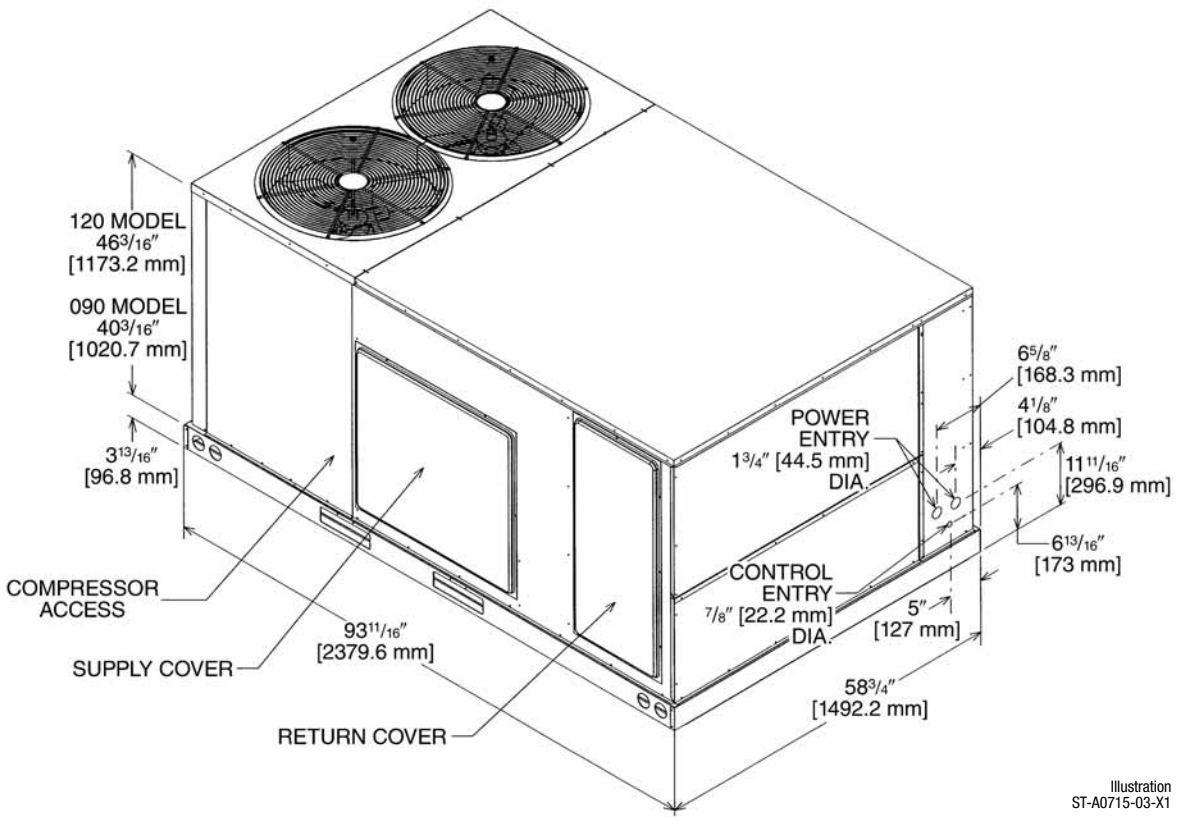
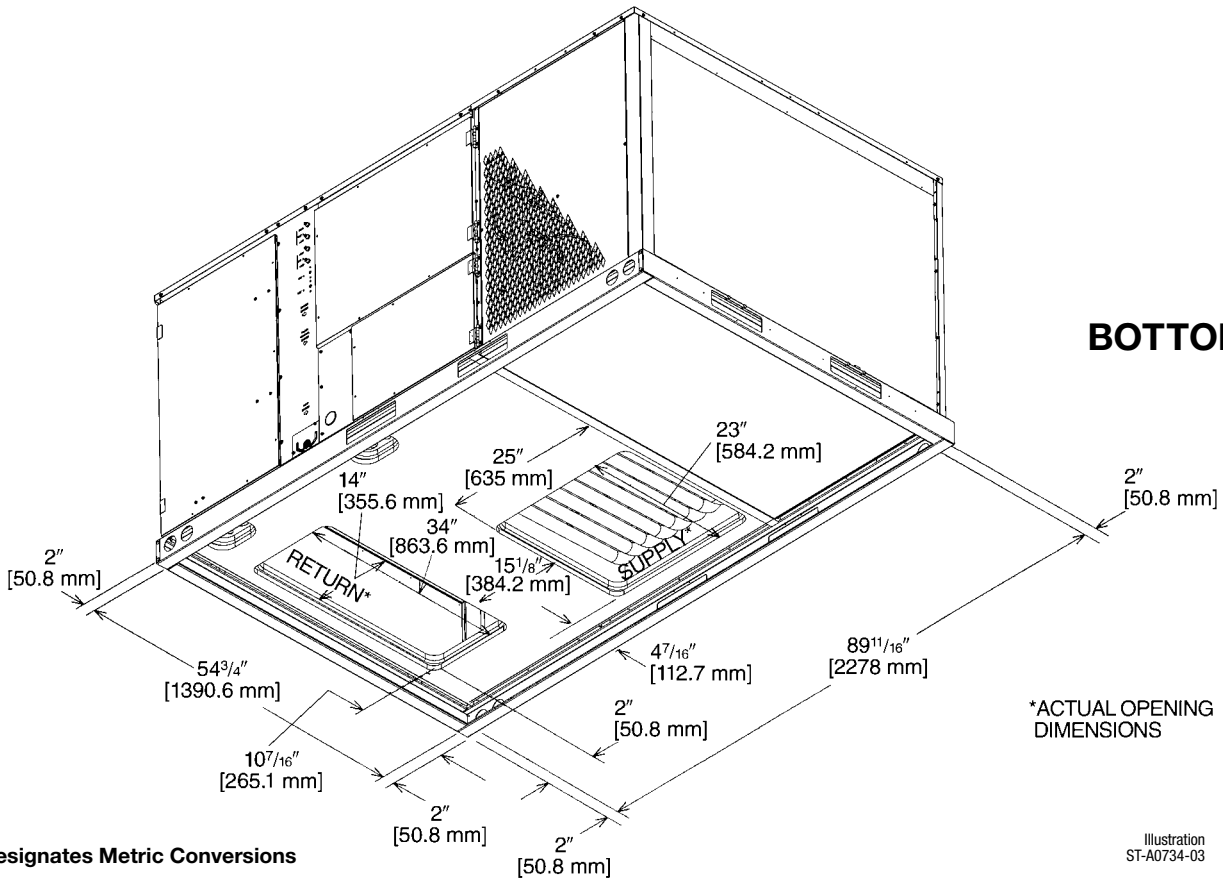


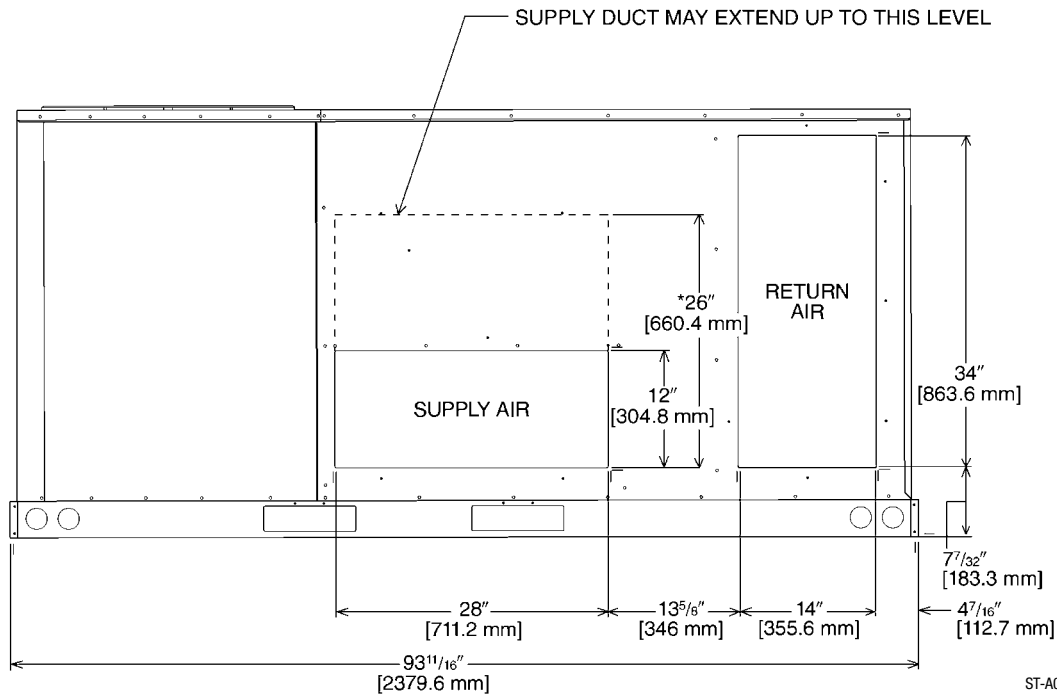
Illustration  
ST-A0715-03-X1



[ ] Designates Metric Conversions

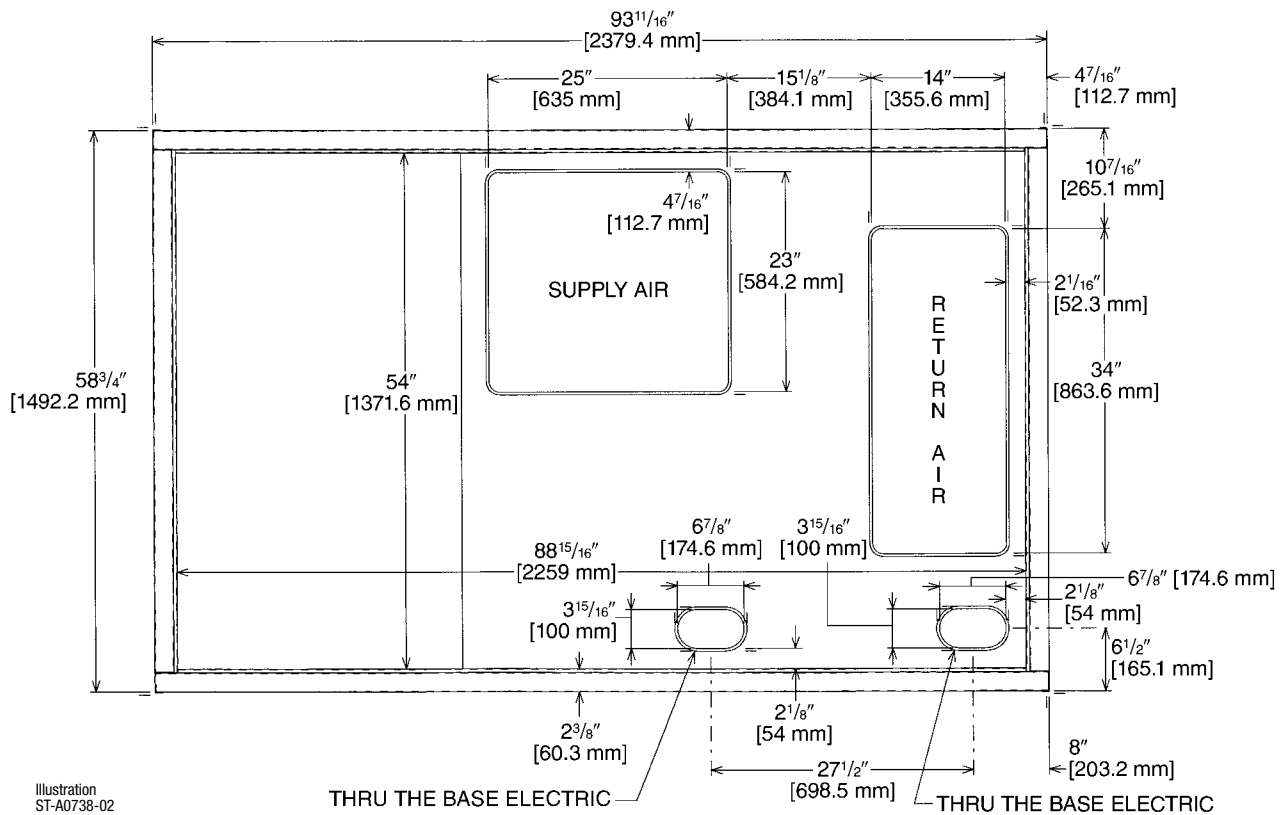
Illustration  
ST-A0734-03

**SUPPLY AND RETURN DIMENSIONS FOR HORIZONTAL APPLICATIONS**

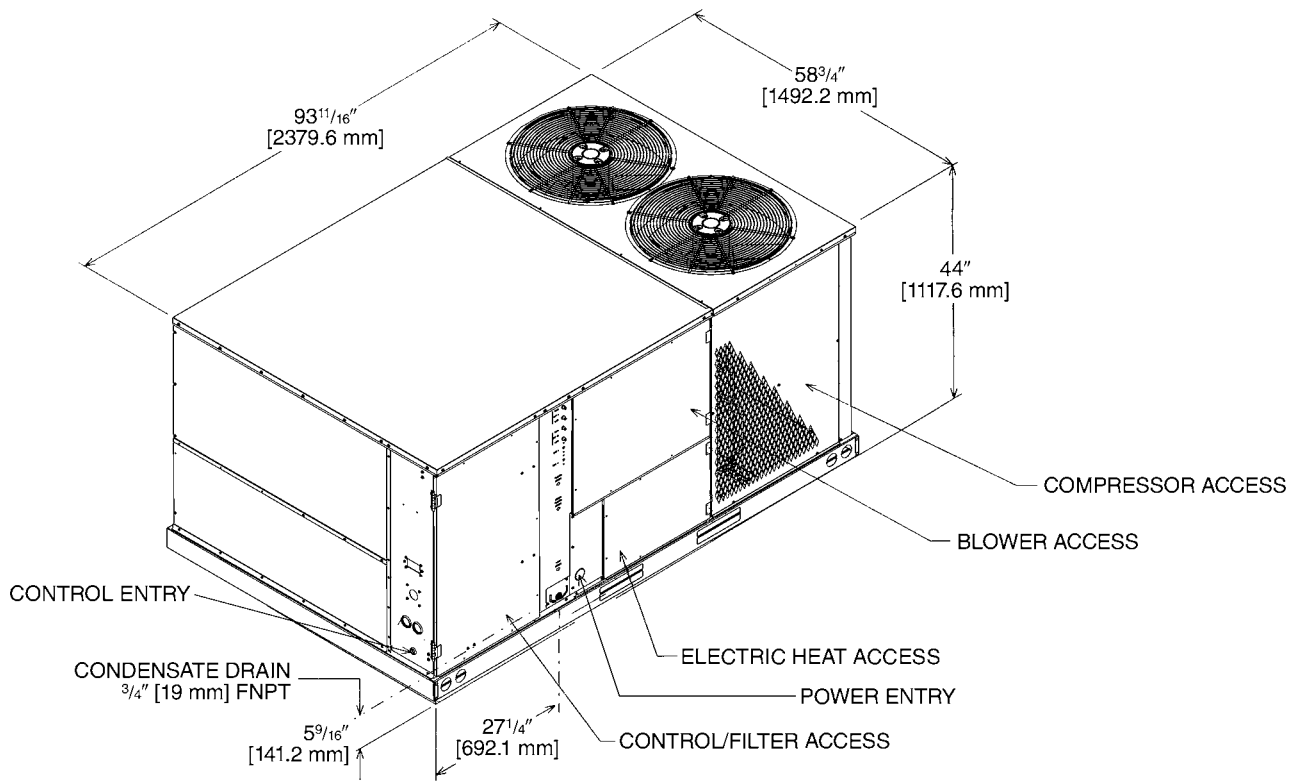


**\*RECOMMENDED DUCT DIMENSIONS ARE 26"**

**SUPPLY AND RETURN DIMENSIONS FOR DOWNFLOW APPLICATIONS**



[ ] Designates Metric Conversions

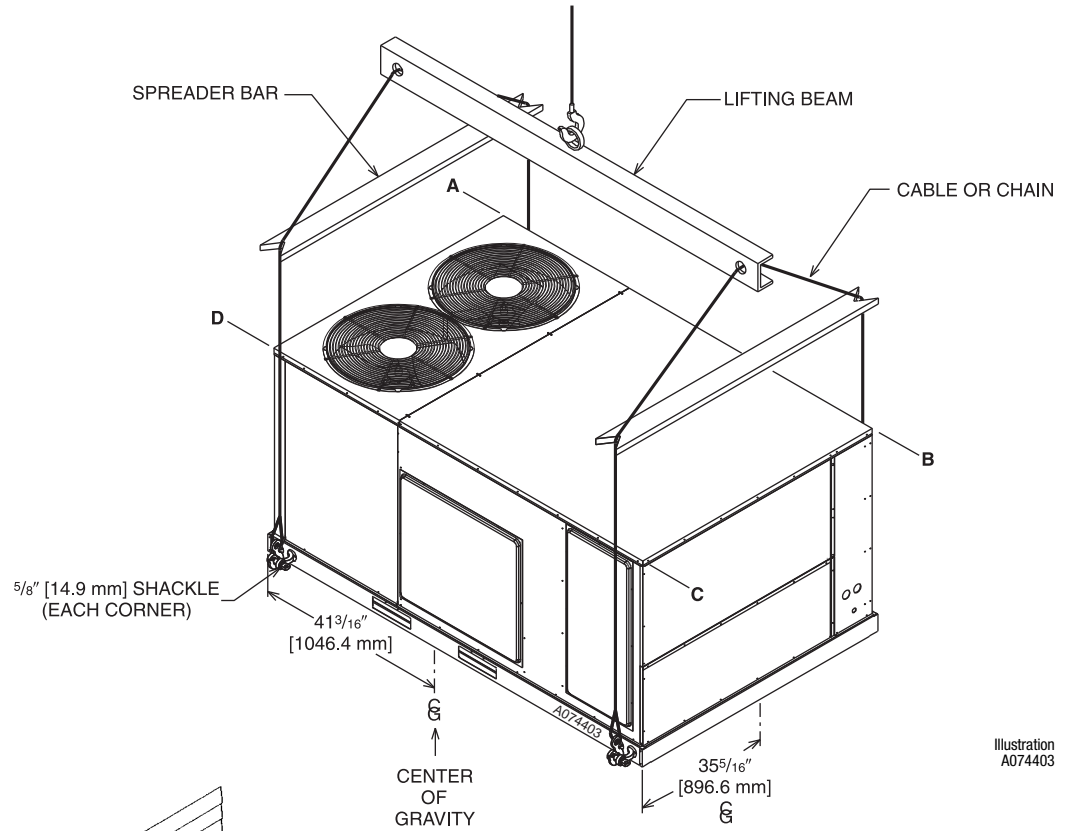


[ ] Designates Metric Conversions

## 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]

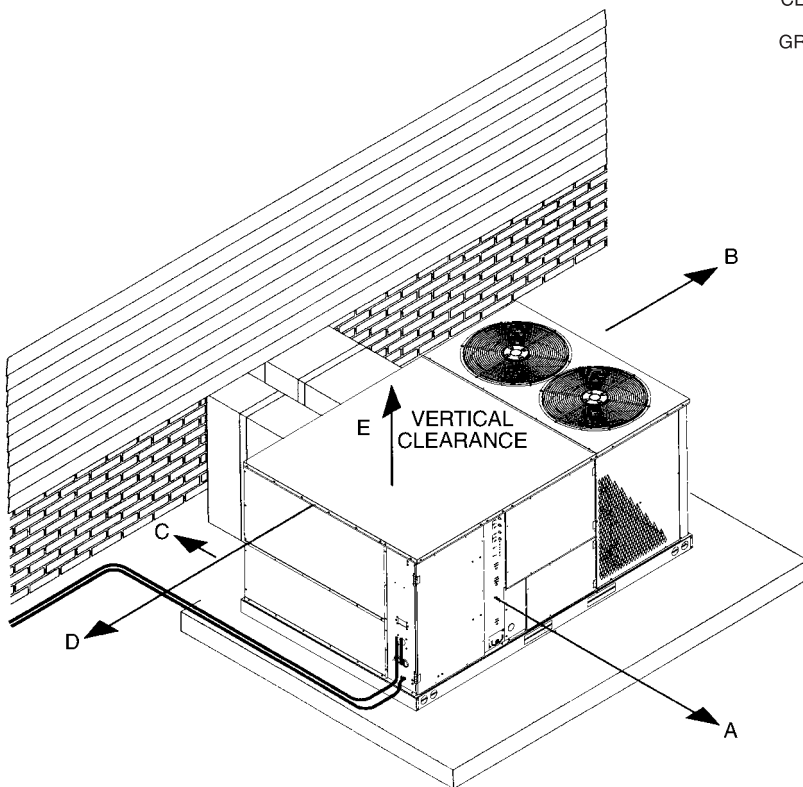
Capacity Tons [kW]	Corner Weights by Percentage			
	A	B	C	D
6-12.5 [21.1-44.0]	33%	27%	17%	23%



### CLEARANCES

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

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



[ ] Designates Metric Conversions

## FIELD INSTALLED ACCESSORY EQUIPMENT

Accessory	Model Number	Shipping Weight Lbs. [kg]	Installed Weight Lbs. [kg]	Factory Installation Available?
Thermostats	See Thermostat Specification Sheet for Details (T11-001)			No
Electric Heaters	RXJJ-CC10 (C,D,Y)	46 [20.9]	36 [16.3]	Yes
	RXJJ-CC15 (C,D,Y)	46 [20.9]	36 [16.3]	Yes
	RXJJ-CC20 (C,D,Y)	46 [20.9]	36 [16.3]	Yes
	RXJJ-CC30 (C,D,Y)	47 [21.3]	37 [16.8]	Yes
	RXJJ-CC40 (C,D,Y)	49 [22.2]	39 [17.7]	Yes
	RXJJ-CC50 (C,D,Y)	51 [23.1]	41 [18.6]	Yes
Economizer w/Single Enthalpy	AXRD-PJCM3	90 [40.8]	81 [36.7]	Yes
Economizer w/Single Enthalpy and Smoke Dectector	AXRD-SJCM3	91 [41.3]	82 [37.2]	Yes
Dual Enthalpy Kit	RXR-AR03	1 [0.5]	1 [0.5]	No
Horizontal Economizer w/Single Enthalpy	AXRD-RJCM3	94 [42.6]	89 [40.4]	No
Carbon Dioxide Sensor	RXR-AR02	3 [1.4]	2 [1.0]	No
Power Exhaust	RXR-BFF02 (C,D,Y)	43 [19.5]	38 [17.2]	No
Manual Fresh Air (Left Panel Mounted)	AXRF-KDA1	38 [17.2]	31 [14.0]	No
Manual Fresh Air (Return Panel)	AXRF-JDA1	26 [11.8]	21 [9.5]	No
Motorized Fresh Air (Return Panel)	AXRF-JDB1	43 [19.5]	21 [9.5]	No
Motor Kit for RXRF-KDA1 (Left Panel Mounted)	RXR-AW02	35 [15.19]	27 [17.7]	No
Modulating Motor Kit w/position feedback for RXRF-KDA1	RXR-AW04	38 [17.2]	30 [13.6]	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	RXR-CDCE50	300 [136.1]	290 [131.5]	No
	RXR-CFCE54	325 [147.4]	315 [142.9]	No
	RXR-CFCE56	350 [158.8]	340 [154.2]	No
	RXR-CGCC12	450 [204.1]	410 [186.0]	No
Concentric Diffuser (Step-Down, 18 x 28)	RXR-AA61	200 [90.7]	185 [83.9]	No
Concentric Diffuser (Step-Down, 18 x 32)	RXR-AA66	247 [112.0]	227 [103.0]	No
Concentric Diffuser (Flush, 18 x 28)	RXR-AA71	170 [77.1]	155 [70.3]	No
Concentric Diffuser (Flush, 18 x 32)	RXR-AA76	176 [79.8]	161 [73.0]	No
Downflow Adapters (Rect. to Round)	RXMC-CD04	15 [6.8]	13 [5.9]	No
Downflow Adapters (Rect. to Rect., 18 x 28)	RXMC-CE05 ①	18 [8.2]	16 [7.3]	No
Downflow Adapters (Rect. to Rect., 18 x 32)	RXMC-CF06 ②	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 ④	29 [11.3]	26 [11.8]	Yes
Outdoor Louver Kit	AXRX-AAD02A ⑤	29 [11.3]	26 [11.8]	Yes
Unwired Convenience Outlet	RXR-AN01	2 [1.0]	1.5 [0.7]	Yes
Comfort Alert (1 per compressor)	RXR-AZ01	3 [1.4]	2 [0.9]	Yes
BACnet Communication Card	RXR-AY01	1 [0.5]	1 [0.5]	No
LonWorks Communication Card	RXR-AY02	1 [0.5]	1 [0.5]	No
Room Humidity Sensor	RHC-ZNS4	1 [0.5]	1 [0.5]	No
Room Temperature & Relative Humidity Sensor	RHC-ZNS5	1 [0.5]	1 [0.5]	No

NOTES: ① Used with RXRN-AA61 and RXRN-AA71 concentric diffusers.

② Used with RXRN-AA66 and RXRN-AA76 concentric diffusers.

④ 6-10 Ton Models

⑤ 12.5 Ton Model

[ ] Designates Metric Conversions

# THERMOSTAT



**200-Series \***  
Programmable



**300-Series \***  
Deluxe  
Programmable

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



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



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

\* Photos are representative. Actual models may vary.

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

## FLUSH MOUNT ROOM TEMPERATURE SENSORS FOR NETWORKED DDC APPLICATIONS



**ROOM TEMPERATURE SENSOR      ZNS-101**  
**with TIMED OVERRIDE BUTTON**

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



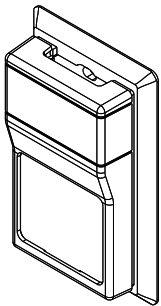
**ROOM TEMPERATURE SENSOR      ZNS-102**  
**with TIMED OVERRIDE BUTTON and STATUS INDICATOR**

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



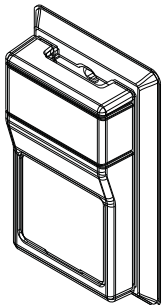
**ROOM TEMPERATURE SENSOR      ZNS-103**  
**with SETPOINT ADJUSTMENT and TIMED OVERRIDE BUTTON**

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



**ROOM HUMIDITY SENSOR      RHC-ZNS4**

Transmits room relative humidity to DDC System.



**ROOM TEMPERATURE AND RELATIVE HUMIDITY SENSOR      RHC-ZNS5**

Transmits room temperature and relative humidity to DDC System.



## COMMUNICATION CARDS

### Field Installed



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

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



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

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

## ECONOMIZER FOR DOWNFLOW DUCT INSTALLATION

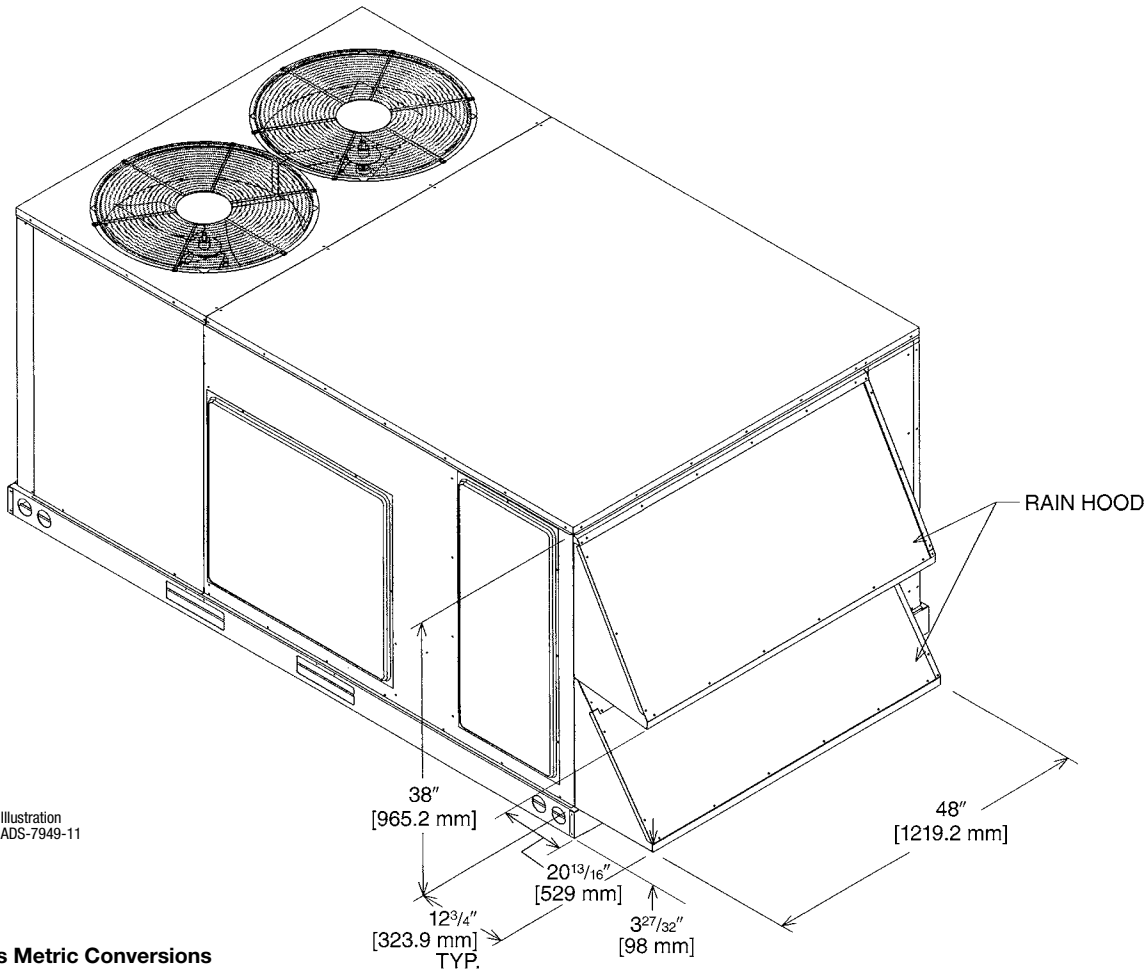
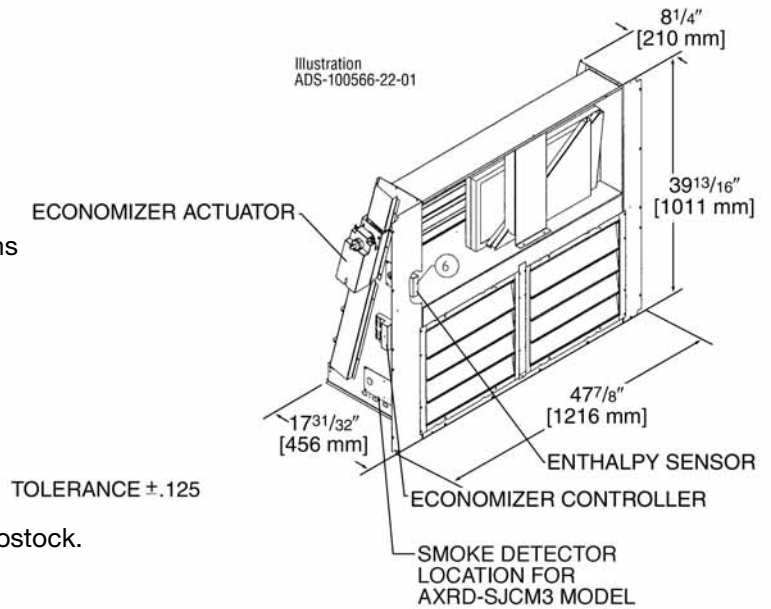
### Use to Select Factory Installed Options Only

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

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

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

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



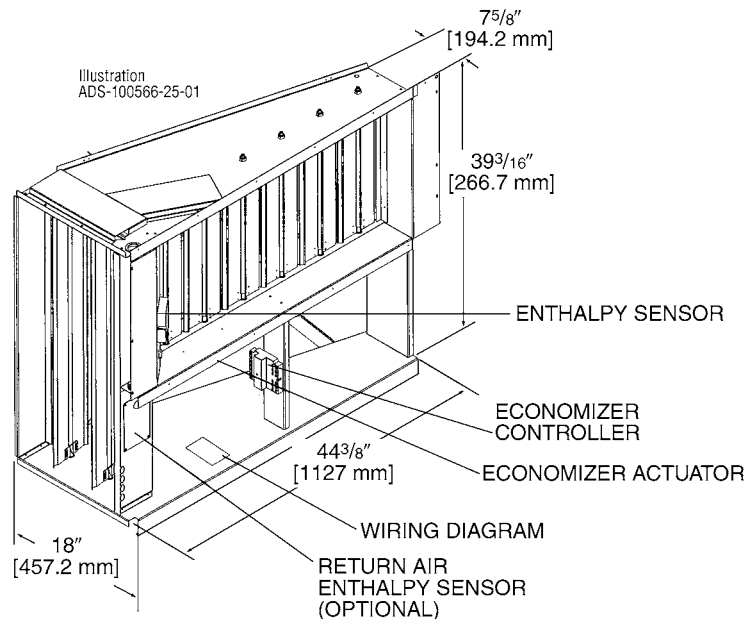
[ ] Designates Metric Conversions

# ECONOMIZER FOR HORIZONTAL DUCT INSTALLATION

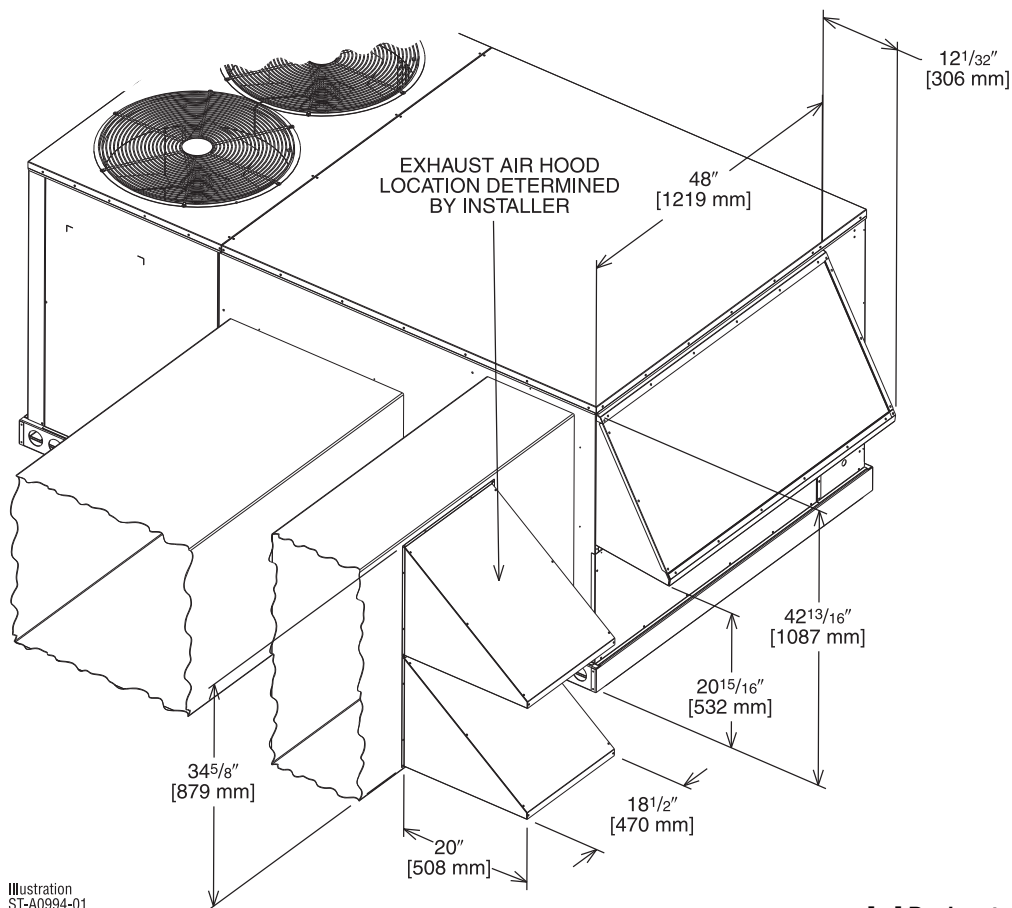
## Field Installed Only

**AXRD-RJCM3—Single Enthalpy (Outdoor)**  
**RXXR-AV03—Dual Enthalpy Upgrade Kit**  
**RXXR-AR02—Wall-mounted CO<sub>2</sub> Sensor**

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



TOLERANCE ± .125



[ ] Designates Metric Conversions

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

RXRX-BFF02 (C, D)

\*Voltage Code

## VERTICAL AIRFLOW

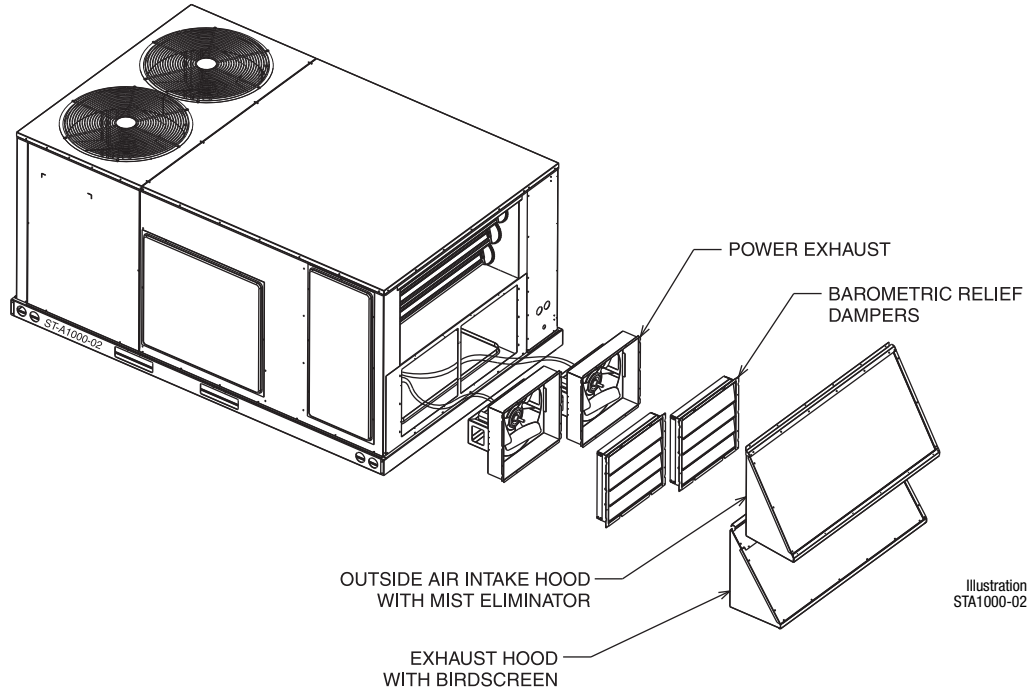


Illustration STA1000-02

## HORIZONTAL AIRFLOW

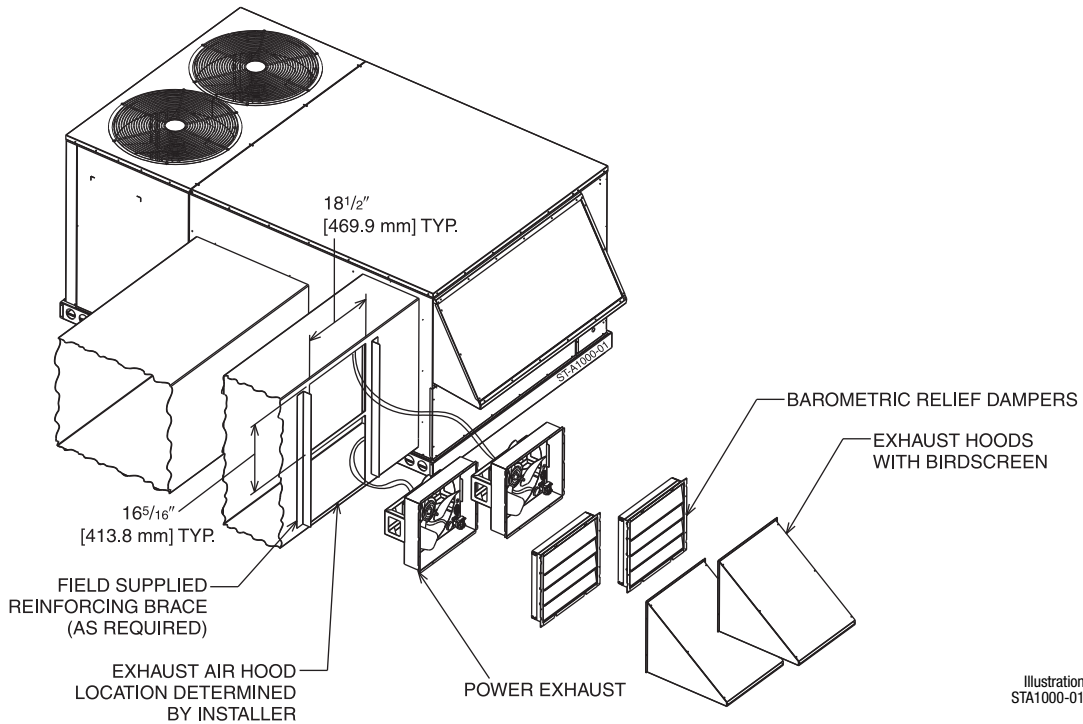


Illustration STA1000-01

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

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)**

**RXRX-AW04  
(Modulating Motor Kit with position feedback for AXRF-KDA1)**

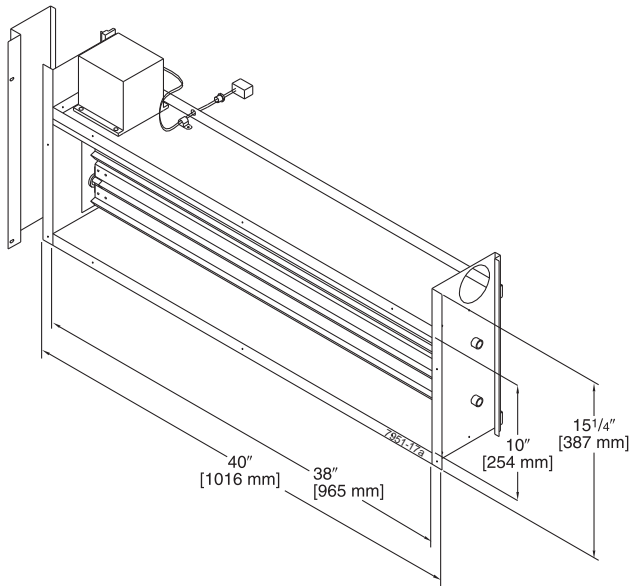


Illustration  
ST-7951-17

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

**RXRX-AW04  
(Modulating Motor Kit w/position feedback for AXRF-KDA1)**

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

[ ] Designates Metric Conversions

**AXRF-KDA1 (Manual)  
DOWNFLOW OR  
HORIZONTAL APPLICATION**

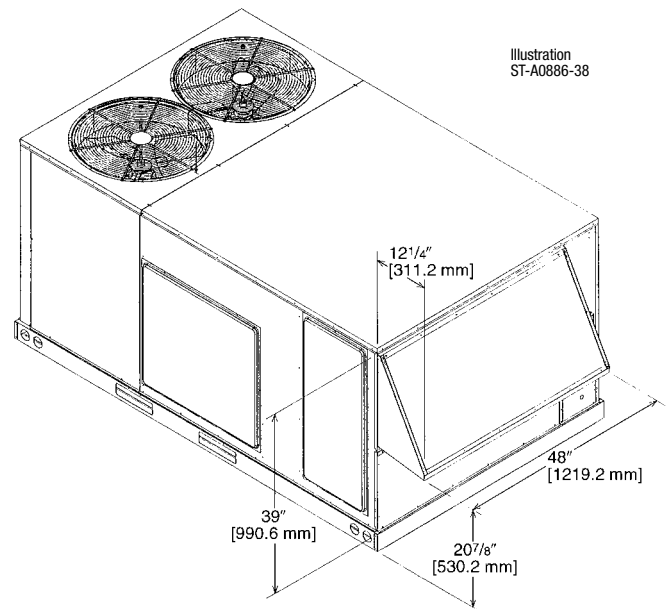


Illustration  
ST-A0886-38

## FRESH AIR DAMPER (Cont.)

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

### DOWNFLOW APPLICATION

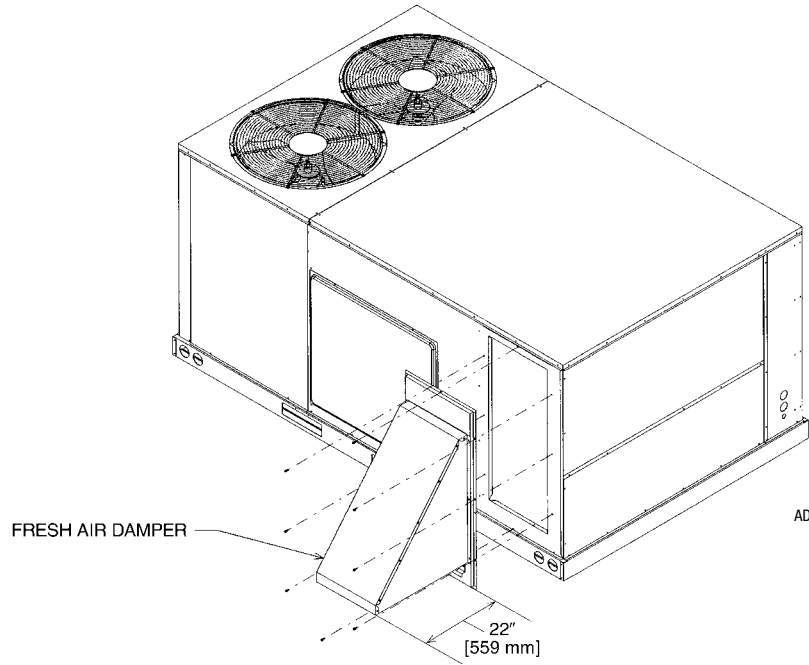
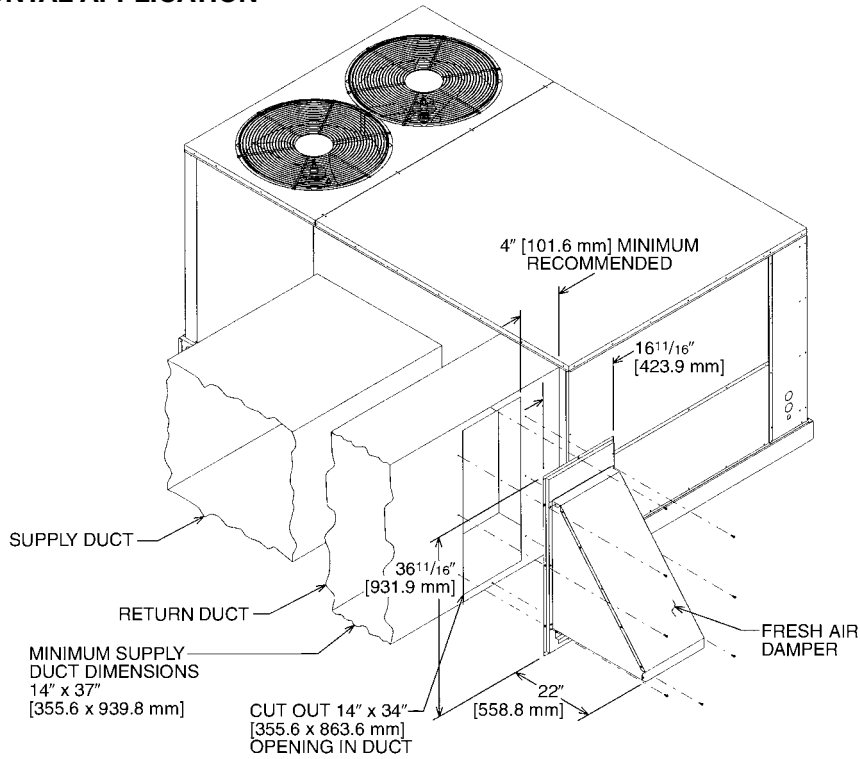


Illustration  
ADS-7937-58

### HORIZONTAL APPLICATION

Illustration  
ST-A0901-01



[ ] Designates Metric Conversions

## ROOFCURBS (Full Perimeter)

- Rheem’s roofcurb design can be utilized on all 6-12.5 ton [21.1-44.0 kW] RLNL-G 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]

## ROOFCURB INSTALLATION

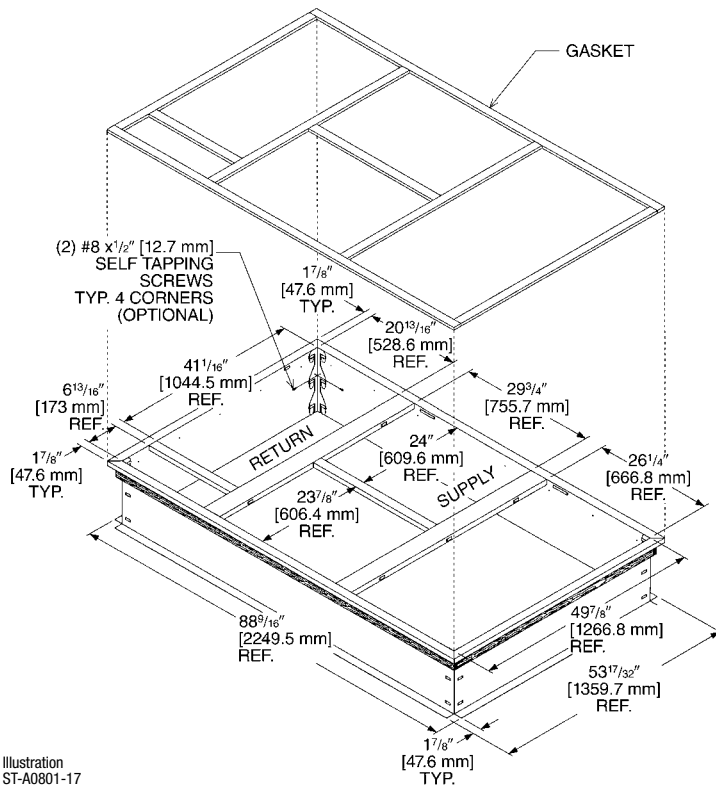
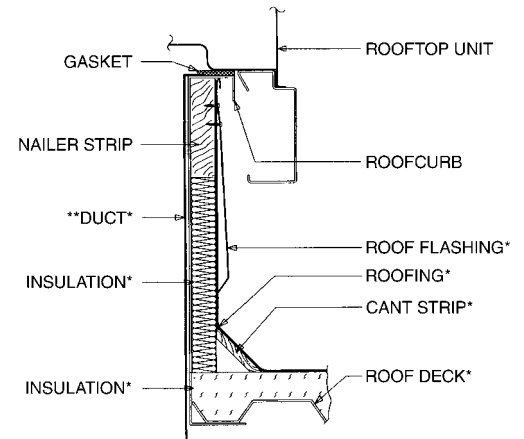
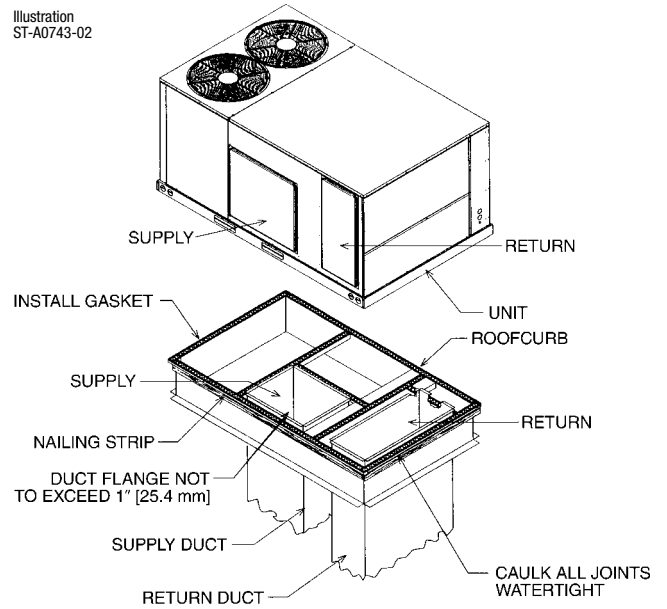


Illustration ST-A0801-17

[ ] Designates Metric Conversions

## TYPICAL INSTALLATION

Illustration ST-A0743-02



\*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

## 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	RXRK-CDCE50	RLNL-G090 RLNL-G120 RLNL-G151
(-)RGF-200075 (-)RGG, (-)REG, (-)RCG-075 (-)RGF, (-)REF, (-)RCF-085 (-)RGF, (-)REF, (-)RCF-100 (-)RGG, (-)REG, (-)RCG-100	RXRK-E54	RXRK-CFCE54	
(-)RGF, (-)REF, (-)RCF-125	RXRK-E56	RXRK-CFCE56	
(-)PDC-075 (-)PDC-100/101	RXPK-C12	RXRK-CGCC12	

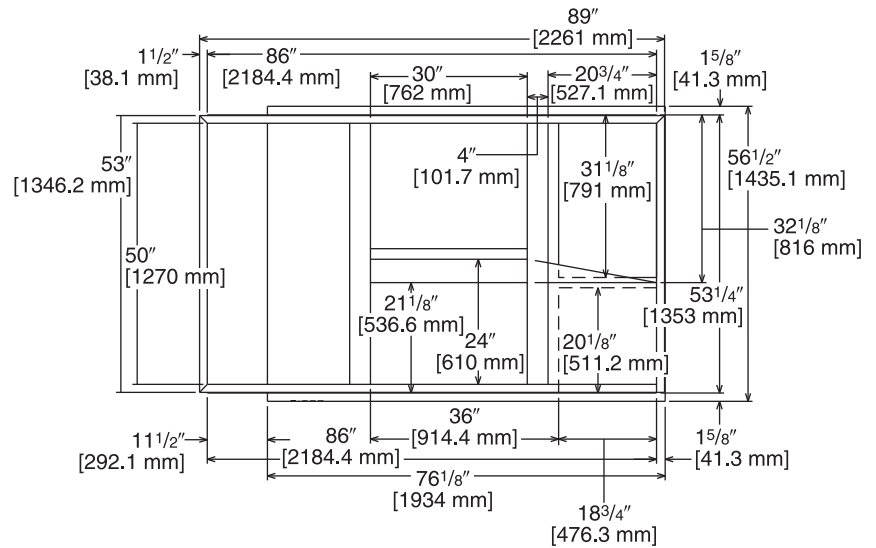
NOTE: Ductwork modifications may be necessary if the capacity and/or indoor airflow rate of replacement unit is not equivalent to that of the unit being replaced.  
 RLNL-G090 & 120 fit on same roofcurb as the RLKB-A090, A120, RLMB- A090, A120, RLNB- A090, A120



# ROOFCURB ADAPTERS (Cont.)

RXRX-CDCE50

Illustration  
ADS-7952-02  
Sheet 2



TOP VIEW

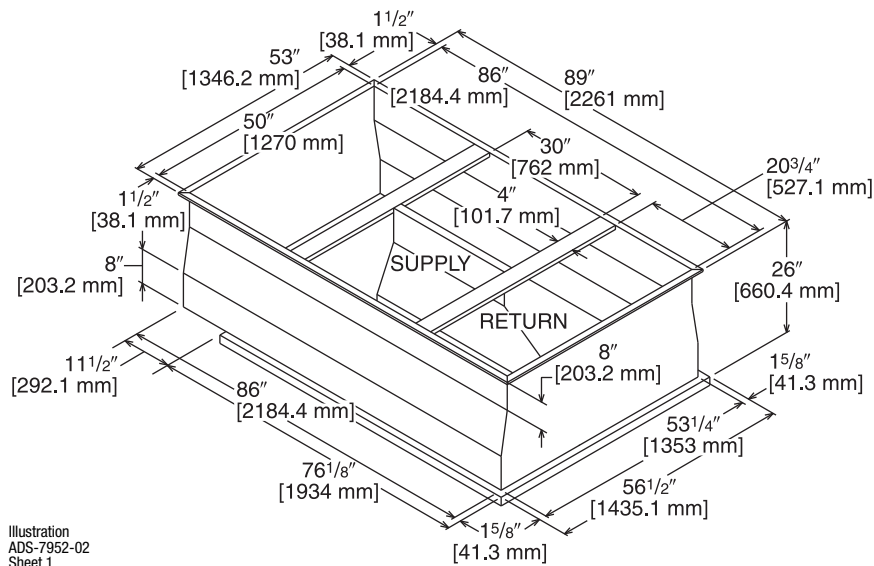


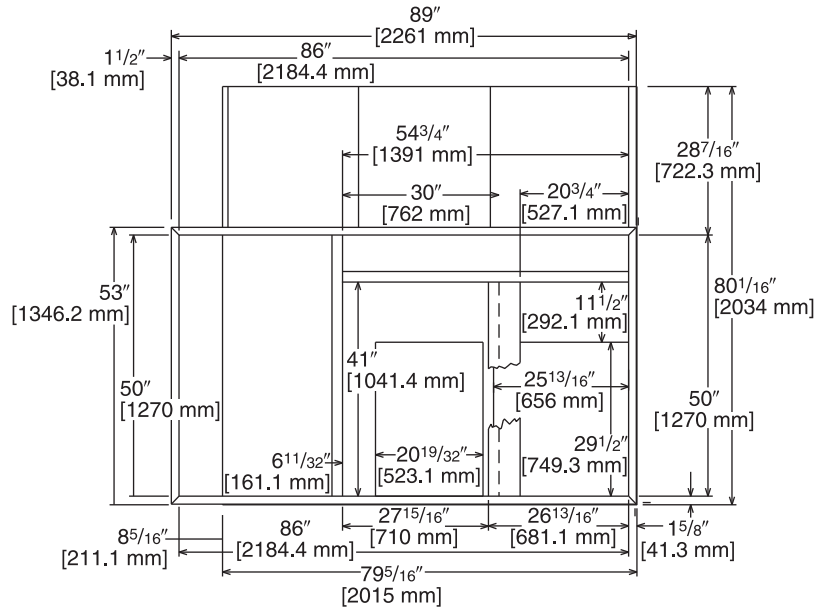
Illustration  
ADS-7952-02  
Sheet 1

[ ] Designates Metric Conversions

# ROOFCURB ADAPTERS (Cont.)

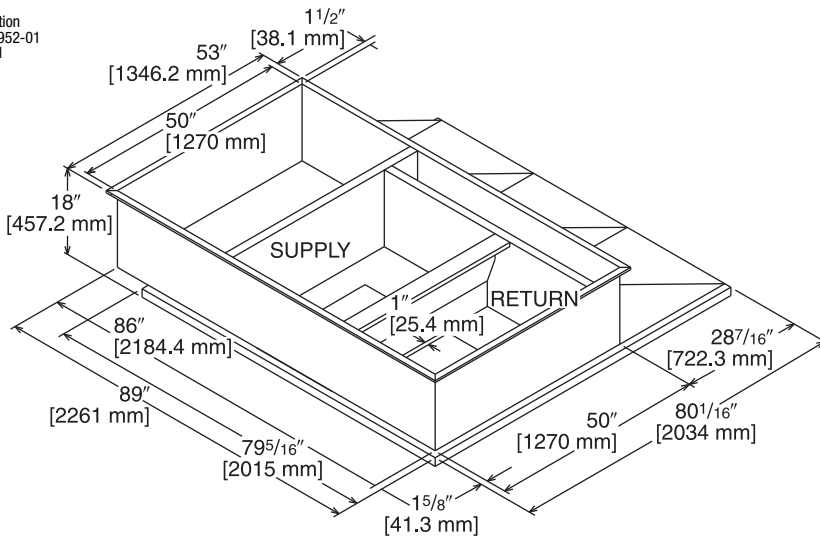
RXRX-CFCE54

Illustration  
ADS-7952-01  
Sheet 2



**TOP VIEW**

Illustration  
ADS-7952-01  
Sheet 1

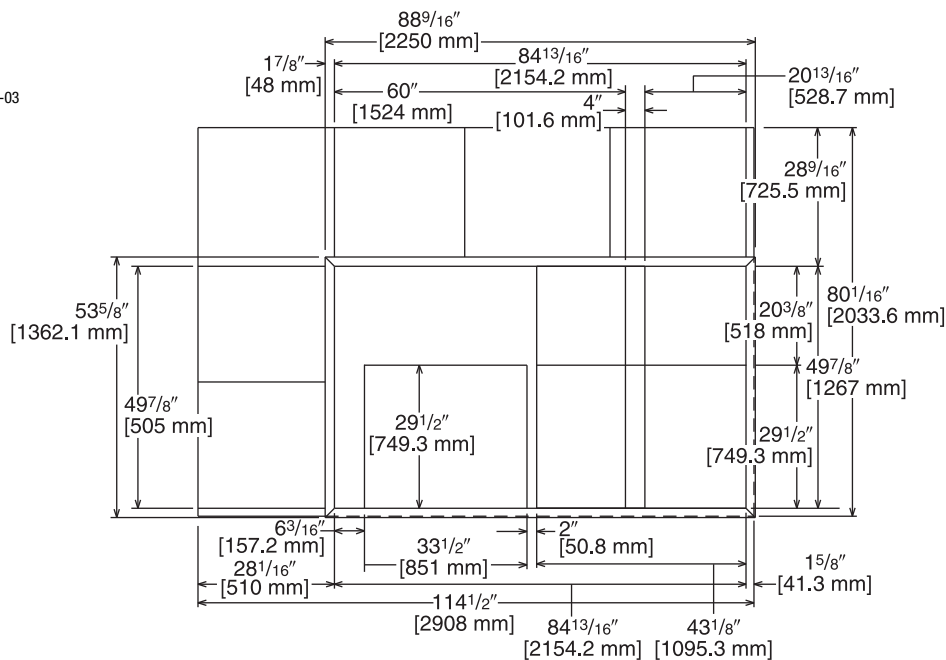


[ ] Designates Metric Conversions

# ROOFCURB ADAPTERS (Cont.)

RXRX-CFCE56

Illustration  
ADS-7952-03  
Sheet 2



**TOP VIEW**

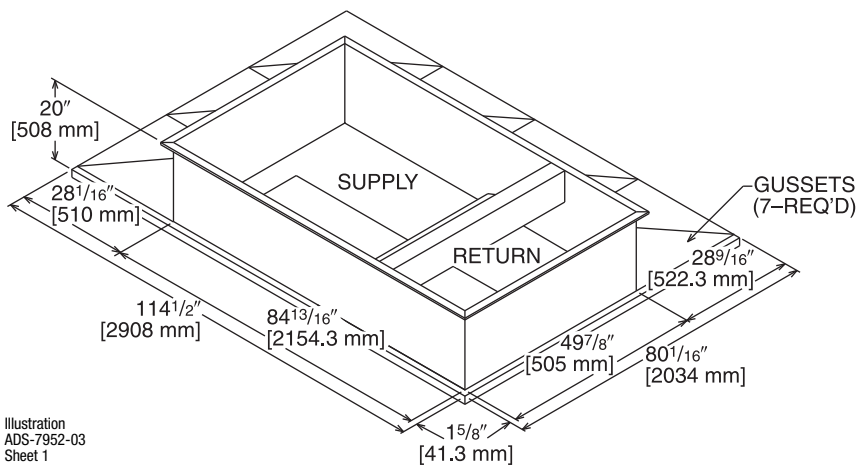


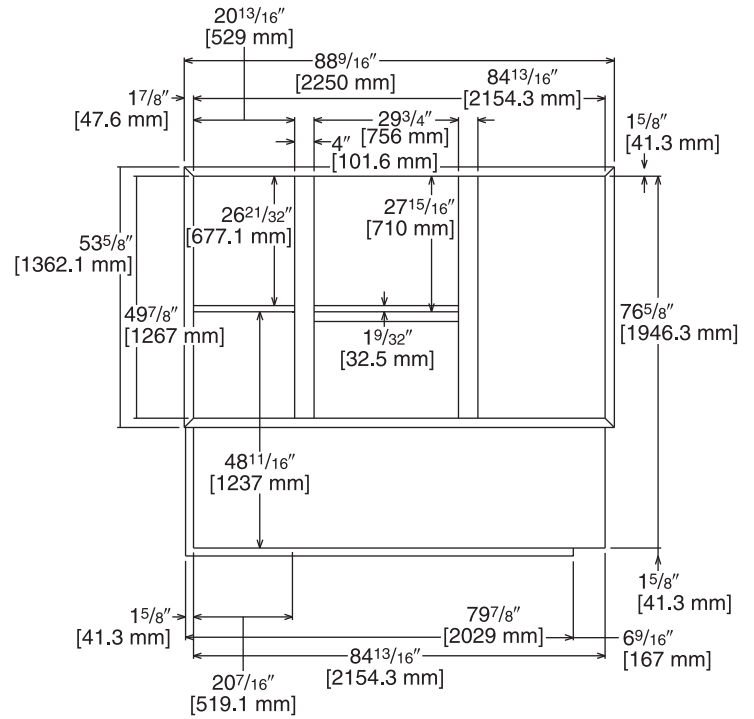
Illustration  
ADS-7952-03  
Sheet 1

[ ] Designates Metric Conversions

# ROOFCURB ADAPTERS (Cont.)

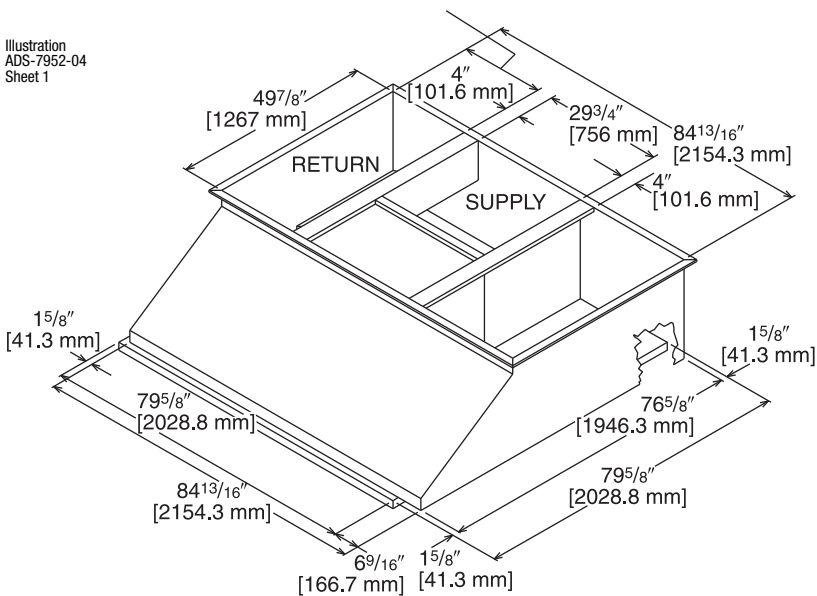
RXRX-CGCC12

Illustration  
ADS-7952-04  
Sheet 2



TOP VIEW

Illustration  
ADS-7952-04  
Sheet 1



[ ] Designates Metric Conversions

# CONCENTRIC DIFFUSER APPLICATION

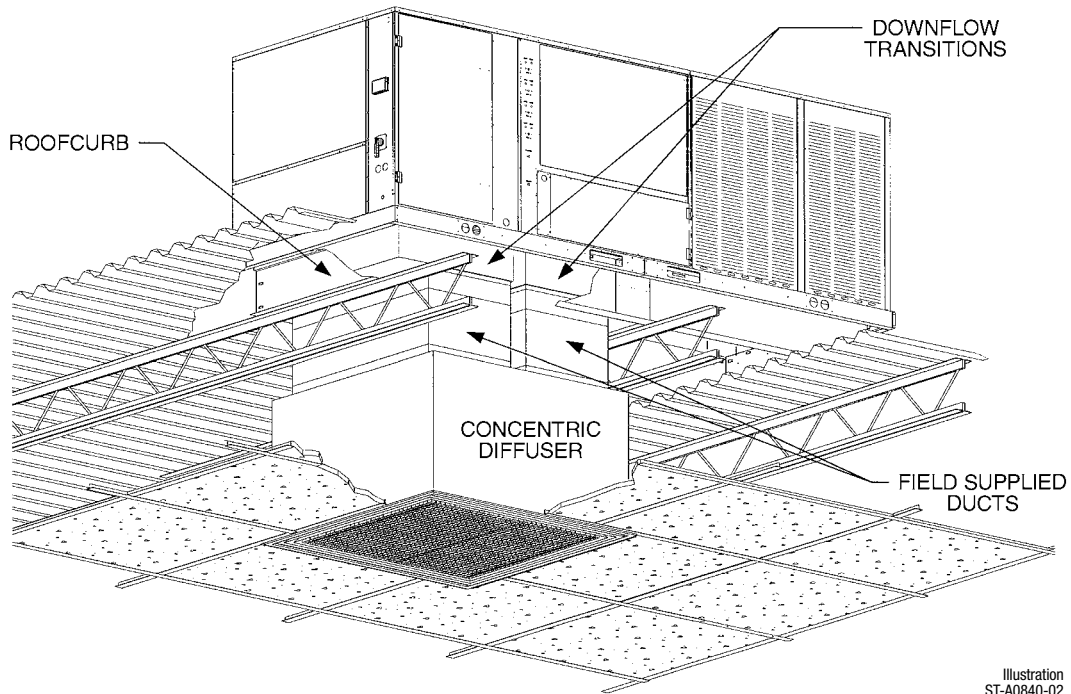


Illustration  
ST-A0840-02

## DOWNFLOW TRANSITION DRAWINGS

### RXMC-CE05

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

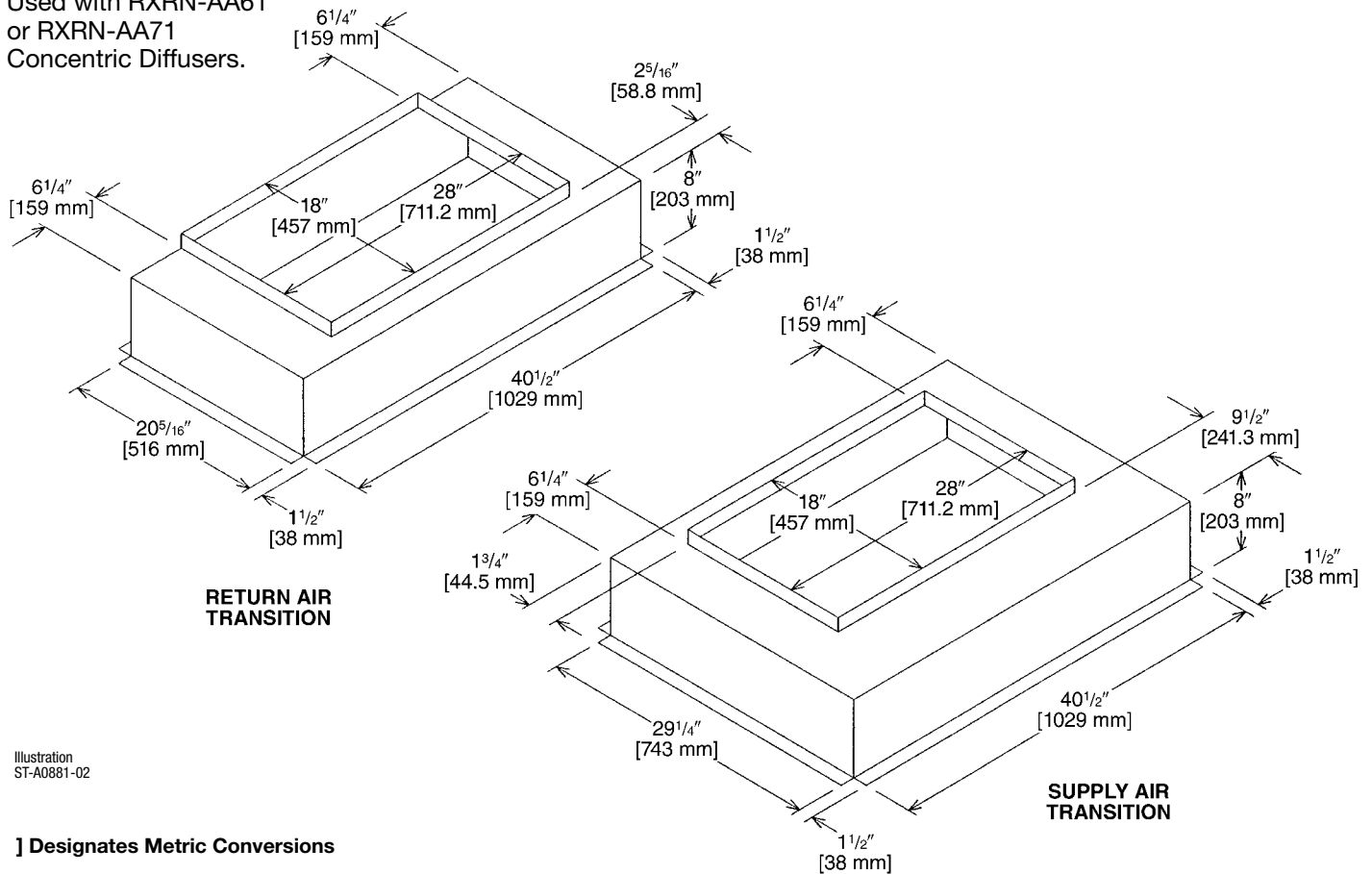


Illustration  
ST-A0881-02

[ ] Designates Metric Conversions

## DOWNFLOW TRANSITION DRAWINGS (Cont.)

### RXMC-CF06

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

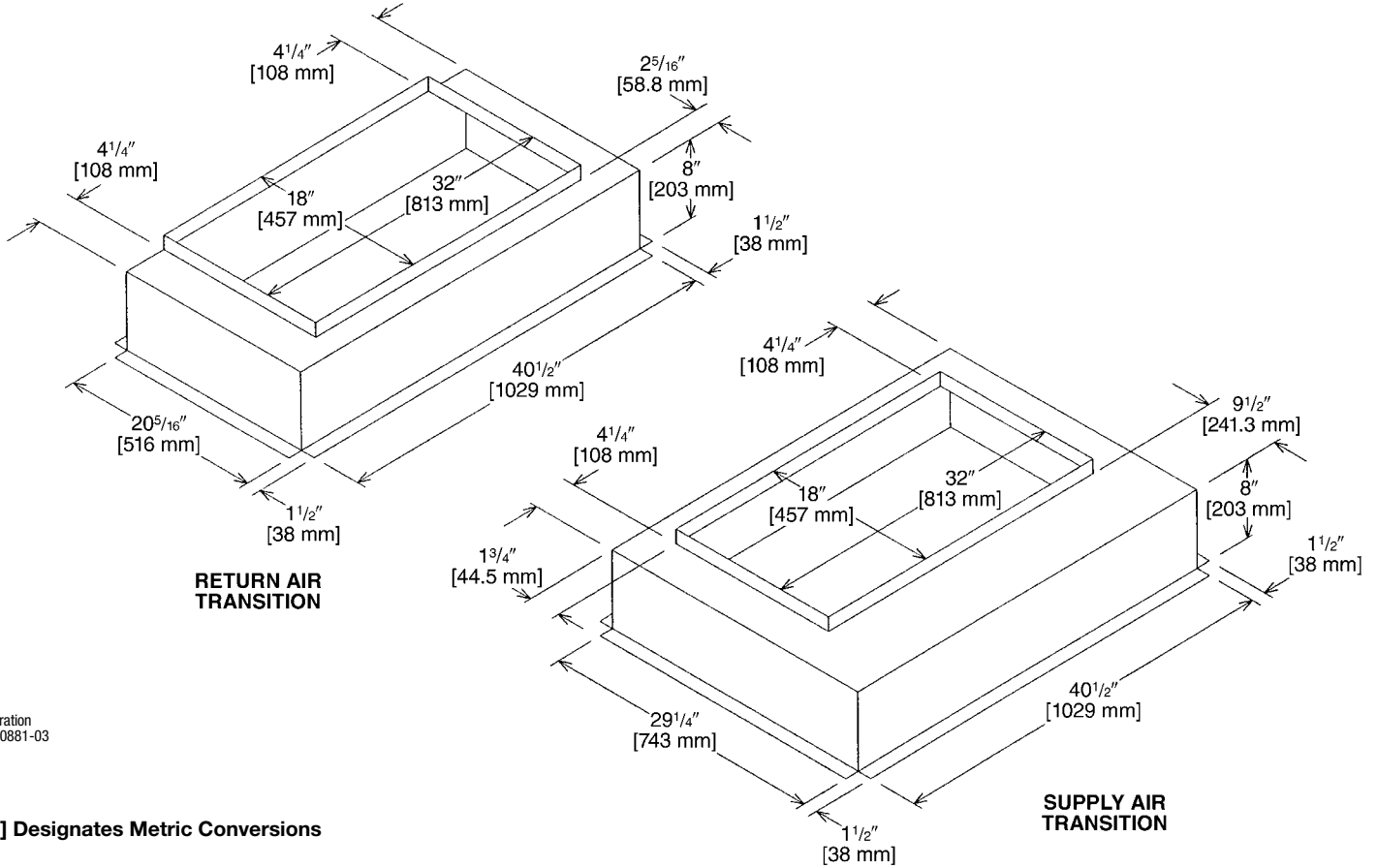


Illustration  
ST-A0881-03

[ ] Designates Metric Conversions

## DOWNFLOW TRANSITION DRAWINGS (Cont.)

### RXMC-CD04

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

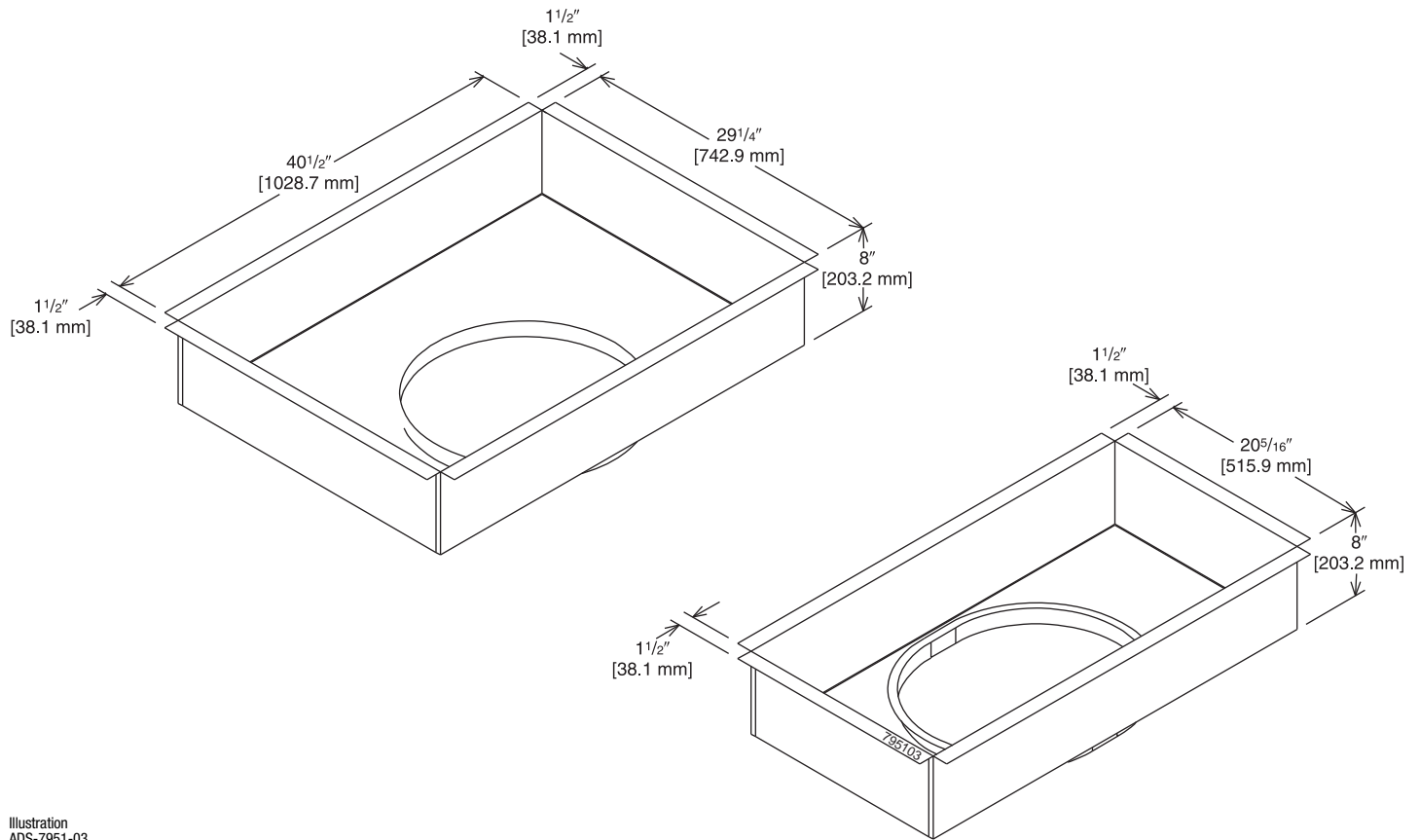


Illustration  
ADS-7951-03

[ ] Designates Metric Conversions

## CONCENTRIC DIFFUSER—STEP DOWN

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

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

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

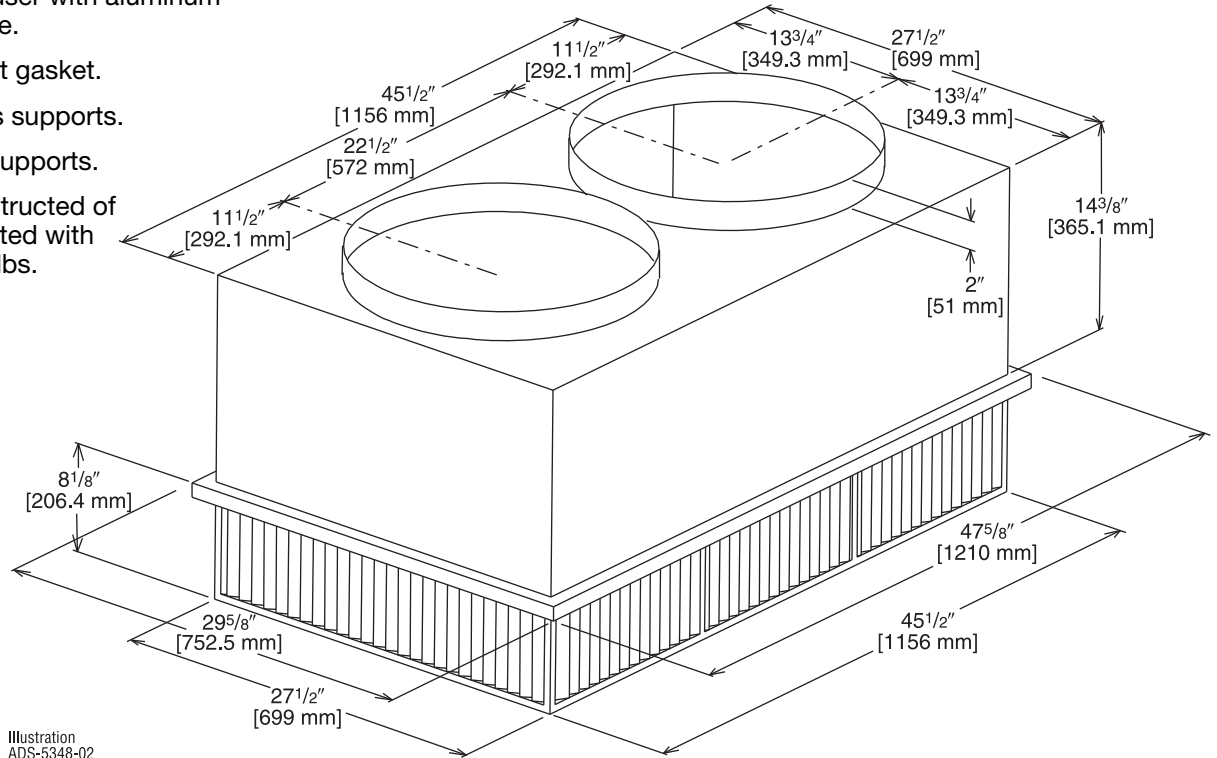


Illustration  
ADS-5348-02

## ENGINEERING DATA<sup>①</sup>

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

NOTES: <sup>①</sup> All data is based on the air diffusion council guidelines.

<sup>②</sup> Throw data is based on 75 FPM Terminal Velocities using isothermal air.

<sup>③</sup> Throw is based on diffuser blades being directed in a straight pattern.

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

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

[ ] Designates Metric Conversions



# CONCENTRIC DIFFUSER – STEP DOWN 18" x 28" [457.2 x 711.2 mm]

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

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

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

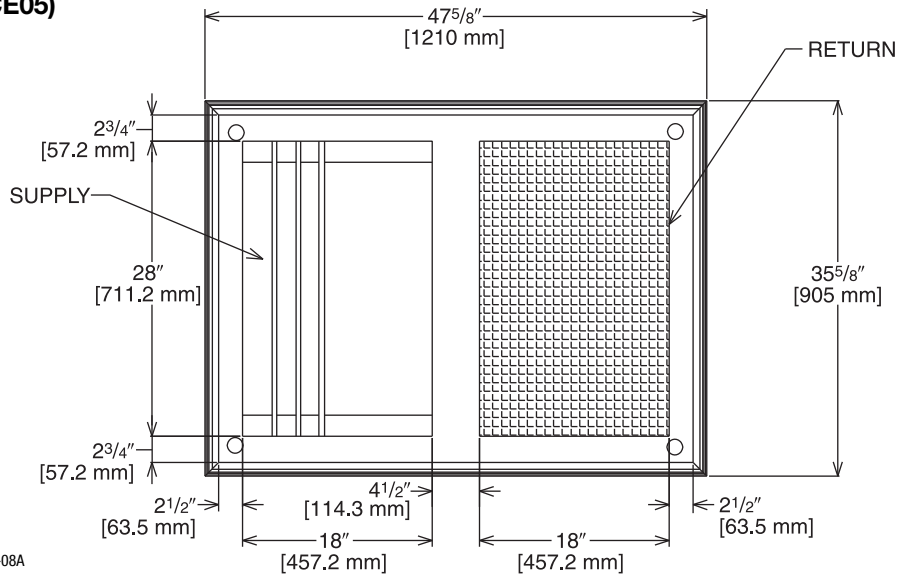


Illustration  
ADS-7951-08A

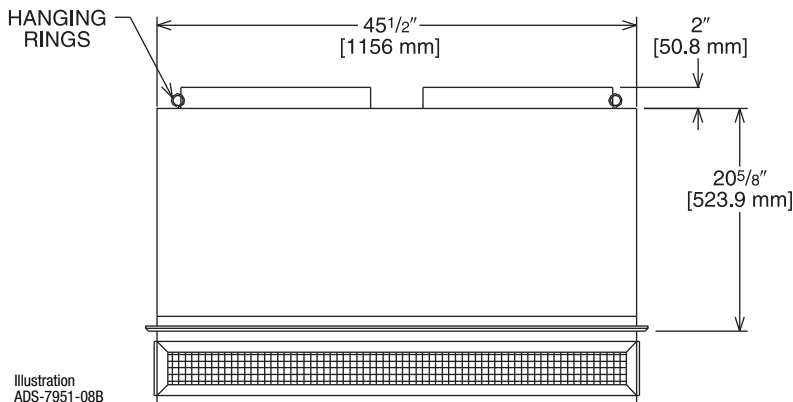


Illustration  
ADS-7951-08B

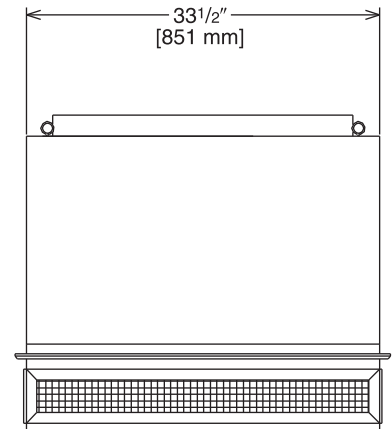


Illustration  
ADS-7951-08C

## ENGINEERING DATA<sup>①</sup>

Model No.	Flow Rate CFM [L/s]	Static Pressure in w.c. [kPa]	Throw <sup>②③</sup> Feet [m]	Neck Velocity fpm [m/s]	Noise Level <sup>④</sup> (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 Ton [44.0 kW] Models)

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

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

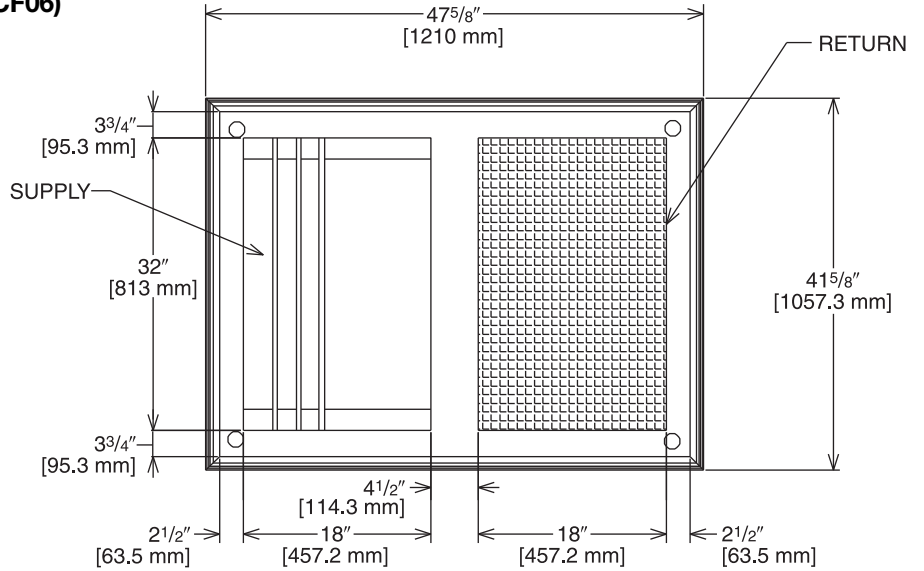


Illustration  
ADS-7951-09A

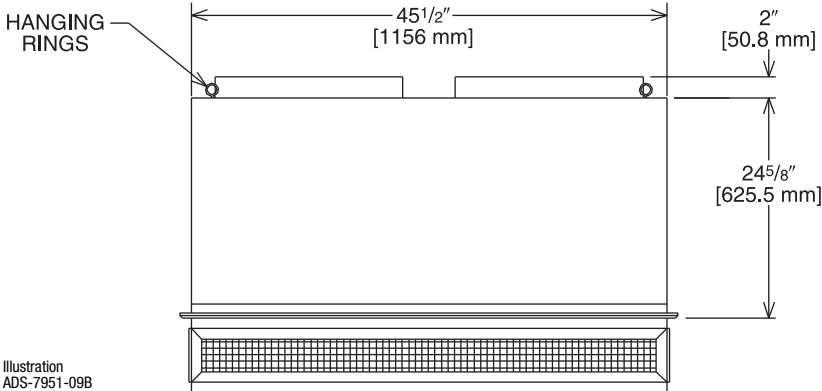


Illustration  
ADS-7951-09B

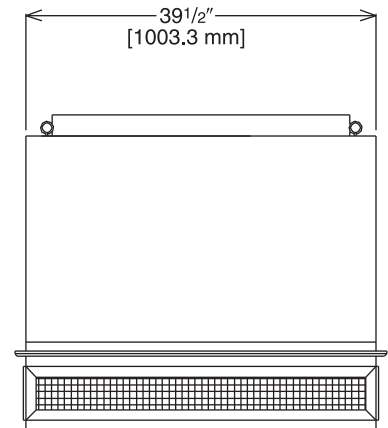


Illustration  
ADS-7951-09C

## ENGINEERING DATA<sup>①</sup>

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

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

[ ] Designates Metric Conversions

# FLUSH MOUNT CONCENTRIC DIFFUSER—FLUSH

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

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

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

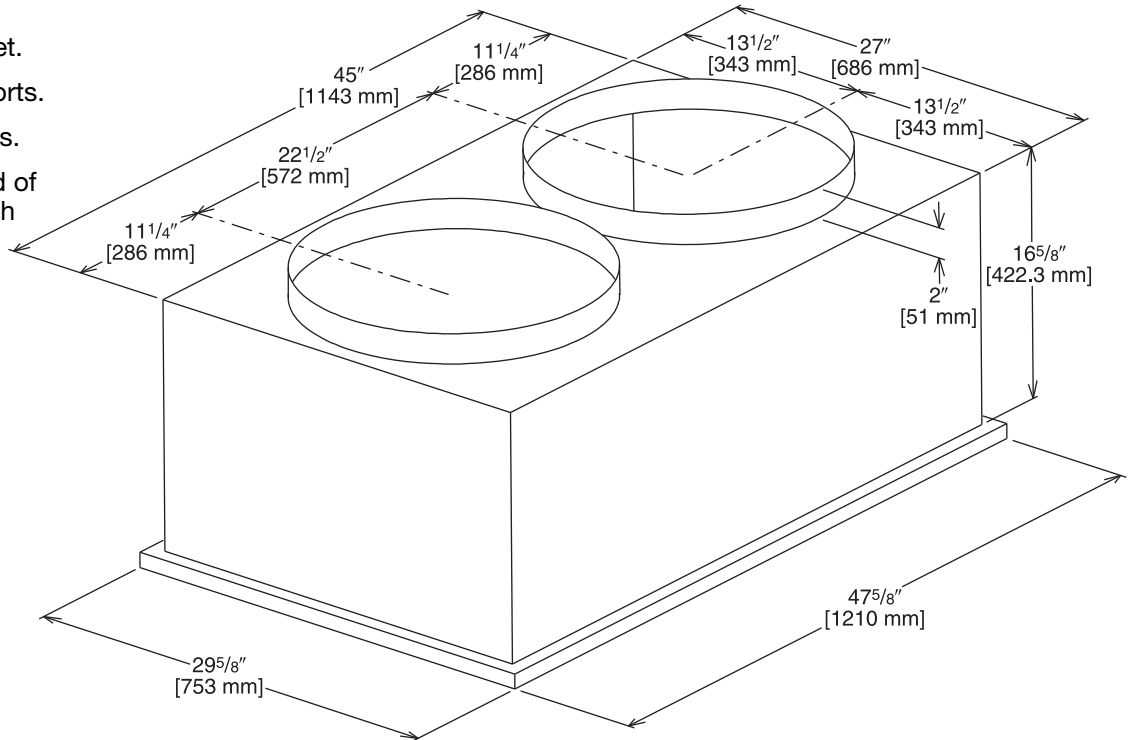


Illustration  
ADS-5348-04

## ENGINEERING DATA<sup>①</sup>

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

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

[ ] Designates Metric Conversions

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

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

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

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

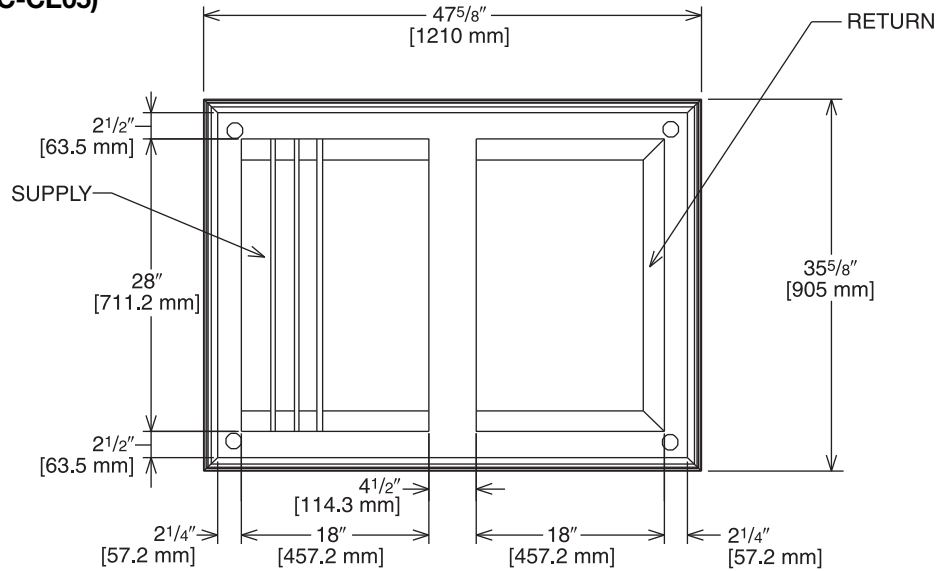


Illustration  
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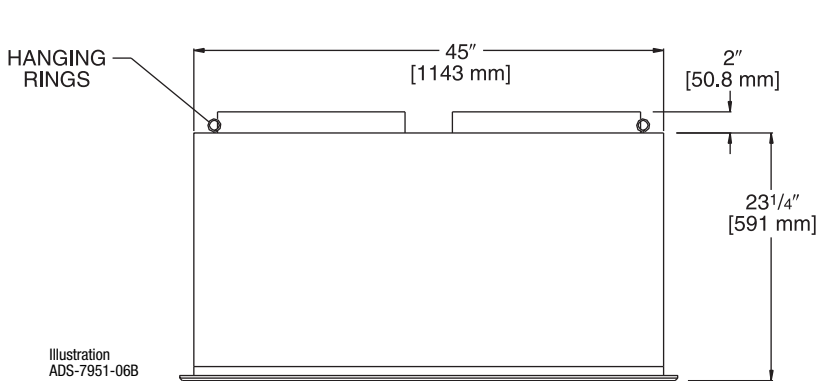


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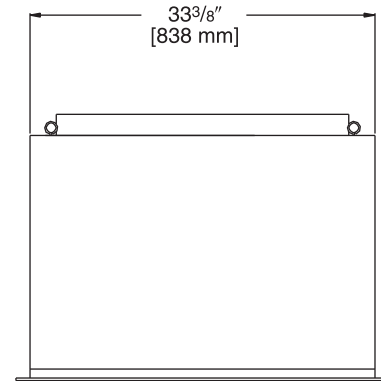


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## ENGINEERING DATA<sup>①</sup>

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

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

[ ] Designates Metric Conversions

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

RXRN-AA76 (12.5 Ton [44.0 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.

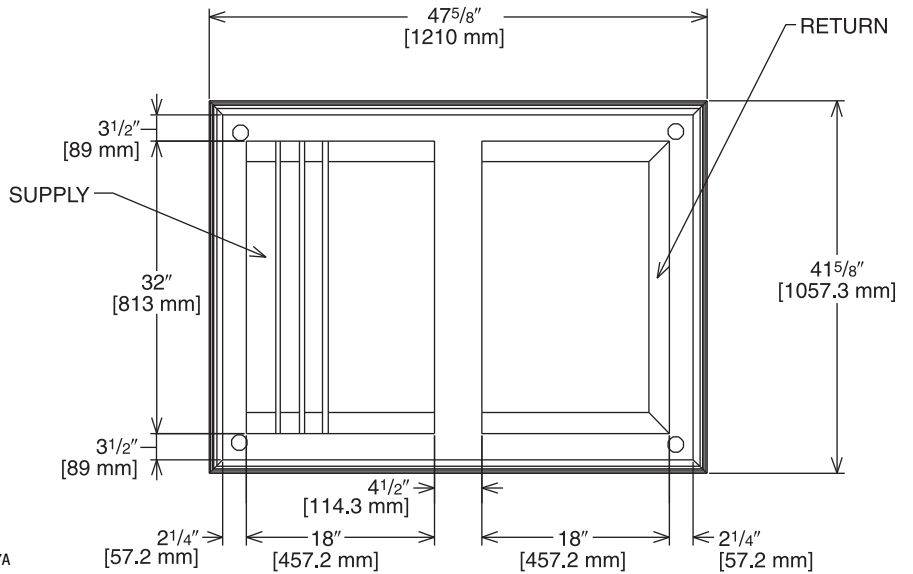


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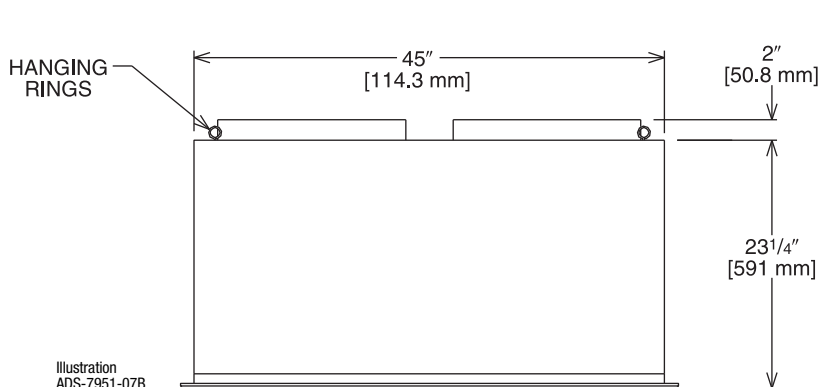


Illustration  
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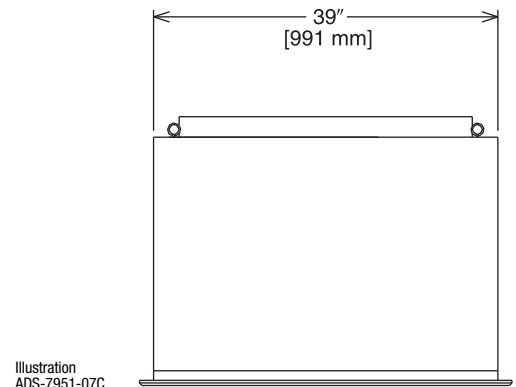


Illustration  
ADS-7951-07C

## ENGINEERING DATA<sup>①</sup>

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

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

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

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

④ Actual noise levels may vary due to duct design and do not include transmitted unit noise.  
Adequate duct attenuation must be provided to reduce sound output from the unit.

[ ] Designates Metric Conversions

## GUIDE SPECIFICATIONS – RLNL-G090, G120 & G151

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

### ELECTRIC HEAT PACKAGED ROOFTOP

#### HVAC Guide Specifications

##### Size Range: 6 to 12.5 Nominal Tons

Section	Description
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<b>23 06 80</b>	<b>Schedules for Decentralized HVAC Equipment</b>
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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.

<b>23 07 16</b>	<b>HVAC Equipment Insulation</b>
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23 07 16.13	Decentralized, Rooftop Units:
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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 a phenolic binder, with aluminum foil facing on the air side.

2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

<b>23 09 13</b>	<b>Instrumentation and Control Devices for HVAC</b>
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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.

<b>23 09 23</b>	<b>Direct-digital Control system for HVAC</b>
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23 09 23.13	Decentralized, Rooftop Units:
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23 09 23.13.A.	RTU-C controller
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1. Shall be ASHRAE 62-2001 compliant.

2. Shall accept 18-32VAC input power.

3. Shall have an operating temperature range from -40°F (-40°C) to 158°F (70°C), 10% - 95% RH (non-condensing).

4. Controller shall accept the following inputs: space temperature, setpoint adjustment, outdoor air temperature, indoor air quality, outdoor air enthalpy, fire shutdown, return air enthalpy, fan status, remote time clock/door switch.

5. Shall accept a CO<sub>2</sub> sensor in the conditioned space, and be Demand Control Ventilation (DCV) ready.

6. Shall provide the following outputs: Economizer, fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2, exhaust, occupied.

7. Unit shall provide surge protection for the controller through a circuit breaker.

8. Shall have a field installed communication card allowing the unit to be Internet capable, and communicate at a Baud rate of 19.2K or faster

9. Shall have an LED display independently showing the status of activity on the communication bus, and processor operation.

10. Shall have either a field installed BACnet® plug-in communication card which includes an EIA-485 protocol communication port, or a field installed LonWorks™ plug-in communications card.

11. Software upgrades will be accomplished by local download. Software upgrades through chip replacements are not allowed.

12. Shall be shock resistant in all planes to 5G peak, 11ms during operation, and 100G peak, 11ms during storage.

13. Shall be vibration resistant in all planes to 1.5G @ 20-300 Hz.

14. Shall support a bus length of 4000 ft max, 60 devices per 1000 ft section, and 1 RS-485 repeater per 1000 ft sections.

<b>23 09 23.13.B.</b>	<b>Open protocol, direct digital controller:</b>
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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 33.13.A. General:

1. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side. Transformer shall have 100VA capabilities.
2. Shall utilize color-coded wiring.
3. 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.
4. 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.

**23 09 93 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. Filters shall be accessible through an access panel as described in the unit cabinet section of this specification (23 81 19.13.H).

23 81 19 Self-Contained Air Conditioners

23 81 19.13 Small-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 heat pump 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 sound R-410a 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 90.1-2004 minimum efficiency requirements.
2. 3 phase units are Energy Star qualified.
3. Unit shall be rated in accordance with AHRI Standards 210/240 and 340/360.
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 500-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 340/360 at  $\pm 10\%$  voltage.
  2. Compressor with standard controls shall be capable of operation from 40°F (4°C), ambient outdoor temperatures. Accessory low ambient kit is necessary if mechanically cooling at ambient temperatures below 40°F (4°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, and shall be bonderized and coated with a baked enamel finish on all externally exposed surfaces.
  2. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 inches minimum, gloss (per ASTM D523, 60°F): 60, Hardness: H-2H Pencil hardness.
  3. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 210/240 or 340/360 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 3/4-in. thick, 1 lb density, flexible fiberglass insulation, aluminum foil-faced on the air side.
  4. Base of unit shall have locations for thru-the-base electrical connections (factory installed or field installed), standard.
  5. Base Rail
    - a. Unit shall have base rails on all 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 by 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.
    - b. Shall comply with ASHRAE Standard 62.
    - c. Shall use a 1" -11 1/2 NPT drain connection, through the side of the drain pan. Connection shall be made per manufacturer's recommendations.
  7. Top panel:
    - a. Indoor section shall be a single piece top panel.
  8. Electrical Connections
    - a. All unit power wiring shall enter unit cabinet at a single, factory-prepared, knockout location.
    - b. Thru-the-base capability
      - (1.) Standard unit shall have a thru-the-base electrical location(s) using a raised, embossed portion of the unit basepan.
      - (2.) No basepan penetration, other than those authorized by the manufacturer, is permitted.
  9. Component access panels (standard)
    - a. Cabinet panels shall be easily removable for servicing.
    - b. Stainless steel metal hinges are standard on all doors.
    - c. Panels covering control box, indoor fan, indoor fan motor, and electric or gas heater components (where applicable), shall have 1/4 turn latches.
- 23 81 19.13.J. Coils
1. Standard Aluminum/Copper Coils: on all models.
    - a. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
    - b. Evaporator and Condenser coils shall be leak tested to 150 psig, pressure tested to 550 psig, and qualified to UL 1995 burst test at 2,200 psig.
- 23 81 19.13.K. Refrigerant Components
1. Refrigerant circuit shall include the following control, safety, and maintenance features:
    - a. Thermal Expansion Valve (TXV) with venturi type distributor.
    - b. Refrigerant filter drier.
    - c. External service gauge connections to unit suction and discharge lines.
  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.
- d. Compressors shall be internally protected from high discharge temperature conditions.
- e. Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.
- f. Compressor shall be factory mounted on rubber grommets.
- g. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
- h. Crankcase heaters shall not be required for normal operating range.

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 a sliding filter tray, facilitating easy removal and installation.
3. Shall consist of factory-installed, low velocity, throw-away 2-in. thick fiberglass filters.
4. Filters shall be standard, commercially available sizes.
5. Filter face velocity shall not exceed 365 fpm at nominal airflows.

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 or circuit breaker.
  - 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:
  - 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, Options and Accessories

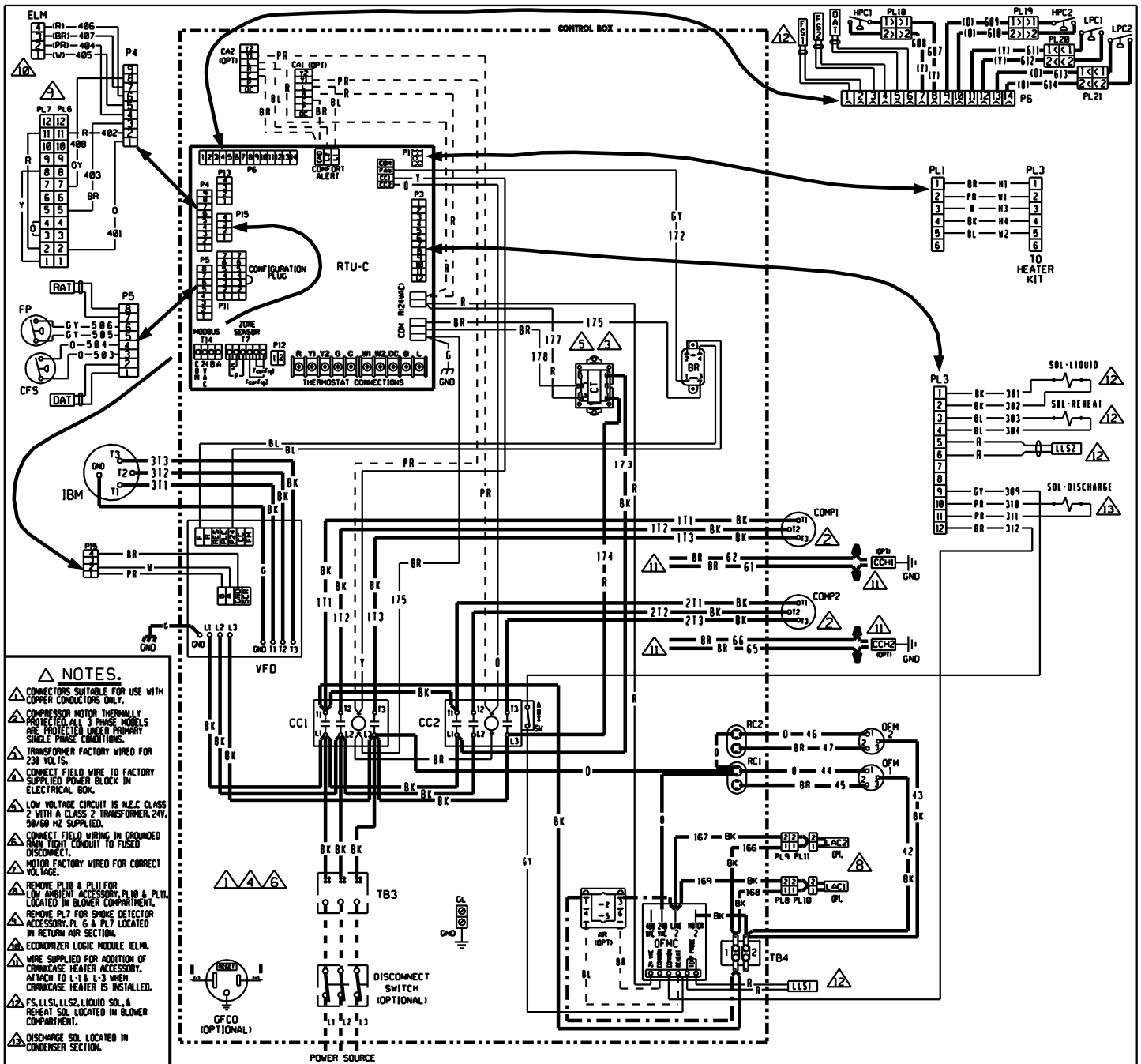
1. Integrated Economizers:
  - a. Integrated, gear-driven parallel modulating blade design type capable of simultaneous economizer and compressor operation.
  - b. Independent modules for vertical or horizontal return configurations shall be available. Vertical return modules shall be available as a 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. An outdoor single enthalpy sensor shall be provided as standard. Outdoor air sensor setpoint shall be adjustable and shall range from the enthalpy equivalent of 63°F @ 50% rh to 73°F @ 50% rh. 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 setpoint.
  - l. Dampers shall be completely closed when the unit is in the unoccupied mode.
  - m. Economizer controller shall accept a 2-10Vdc CO<sub>2</sub> 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. Two-Position Motorized Damper
  - a. Damper shall be a Two-Position Motorized Damper. Damper travel shall be from the full closed position to the field adjustable %-open setpoint.
  - b. Damper shall include adjustable damper travel from 25% to 100% (full open).
  - c. Damper shall include single or dual blade, gear driven dampers and actuator motor.
  - d. Actuator shall be direct coupled to damper gear. No linkage arms or control rods shall be acceptable.
  - e. Damper will admit up to 100% outdoor air for applicable rooftop units.
  - f. Damper shall close upon indoor (evaporator) fan shutoff and/or loss of power.
  - g. The damper actuator shall plug into the rooftop unit's wiring harness plug. No hard wiring shall be required.
  - h. Outside air hood shall include aluminum water entrainment filter
- 3. 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.
- 4. Head Pressure Control Package
  - a. Controller shall control coil head pressure by condenser-fan cycling.
- 5. Condenser Coil Hail Guard Assembly
  - a. Shall protect against damage from hail.
  - b. Shall be louvered design.
- 6. Convenience Outlet:
  - a. Non-Powered convenience outlet.
    - (1.) Outlet shall be powered from a separate 115-120v power source.
    - (2.) A transformer shall not be included.
    - (3.) Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
    - (4.) Outlet shall include 15 amp GFI receptacles.
    - (5.) Outlet shall be accessible from outside the unit.
- 7. Fan/Filter Status Switch:
  - a. Switch shall provide status of indoor evaporator fan (ON/OFF) or filter (CLEAN/DIRTY).
  - b. Status shall be displayed either over communication bus (when used with direct digital controls) or through the controller LCD display inside the unit control box.
- 8. 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 is 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.
- 9. Roof Curbs (Vertical):
  - a. Full perimeter roof curb with exhaust capability providing separate air streams for energy recovery from the exhaust air without supply air contamination.
  - b. Formed galvanized steel with wood nailer strip and shall be capable of supporting entire unit weight.
  - c. Permits installation and securing of ductwork to curb prior to mounting unit on the curb.
- 10. High-Static Indoor Fan Motor(s) and Drive(s):
  - a. High-static motor(s) and drive(s) shall be factory-installed to provide additional performance range.
- 11. Outdoor Air Enthalpy Sensor:
  - a. The outdoor air enthalpy sensor shall be used to provide single enthalpy control. When used in conjunction with a return air enthalpy sensor, the unit will provide differential enthalpy control. The sensor allows the unit to determine if outside air is suitable for free cooling.
- 13. 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.
- 14. Indoor Air Quality (CO<sub>2</sub>) Sensor:
  - a. Shall be able to provide demand ventilation indoor air quality (IAQ) control.
  - b. The IAQ sensor shall be available in wall mount with LED display. The setpoint shall have adjustment capability.

15. 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 a recessed momentary switch for testing and resetting the detector.
  - e. Controller shall include:
    - (1.) One set of normally open alarm initiation contacts for connection to an initiating device circuit on a fire alarm control panel.
    - (2.) Two Form-C auxiliary alarm relays for interface with rooftop unit or other equipment.
    - (3.) One Form-C supervision (trouble) relay to control the operation of the Trouble LED on a remote test/reset station.
    - (4.) Capable of direct connection to two individual detector modules.
    - (5.) Can be wired to up to 14 other duct smoke detectors for multiple fan shutdown applications.
16. Electric Heat:
- a. Heating Section
    - (1.) Heater element open coil resistance wire, nickel-chrome alloy, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.
    - (2.) Heater assemblies are provided with integral fusing for protection of internal heater circuits not exceeding 48 amps each. Auto reset thermo limit controls, magnetic heater contactors (24 v coil) and terminal block all mounted in electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.

**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.



- NOTES.**
- ▲ CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
  - ▲ COMPRESSOR MOTOR THERMALLY PROTECTED. ALL 3 PHASE MODELS ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
  - ▲ TRANSFORMER FACTORY WIRED FOR 230 VOLTS.
  - ▲ CONNECT FIELD WIRE TO FACTORY SUPPLIED POWER BLOCK IN ELECTRICAL BOX.
  - ▲ LOW VOLTAGE CIRCUIT IS N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER, 24V, 50/60 HZ SUPPLIED.
  - ▲ CONNECT FIELD WIRING IN GROUNDED RAIN TIGHT CONDUIT TO FUSED DISCONNECT.
  - ▲ MOTOR FACTORY WIRED FOR CORRECT VOLTAGE.
  - ▲ REMOVE PL10 & PL11 FOR LOW AMBIENT ACCESSORY. PL10 & PL11 LOCATED IN BLOWER COMPARTMENT.
  - ▲ REMOVE PL7 FOR SMOKE DETECTOR ACCESSORY. PL6 & PL7 LOCATED IN RETURN AIR SECTION.
  - ▲ ECONOMIZER LOGIC MODULE (ELM) WIRE SUPPLIED FOR ADDITION OF CRANKCASE HEATER ACCESSORY. ATTACH TO L-1 & L-3 WHEN CRANKCASE HEATER IS INSTALLED.
  - ▲ FS, LLS1, LLS2, LIQUID SOL., & REHEAT SOL. LOCATED IN BLOWER COMPARTMENT.
  - ▲ DISCHARGE SOL. LOCATED IN CONDENSER SECTION.

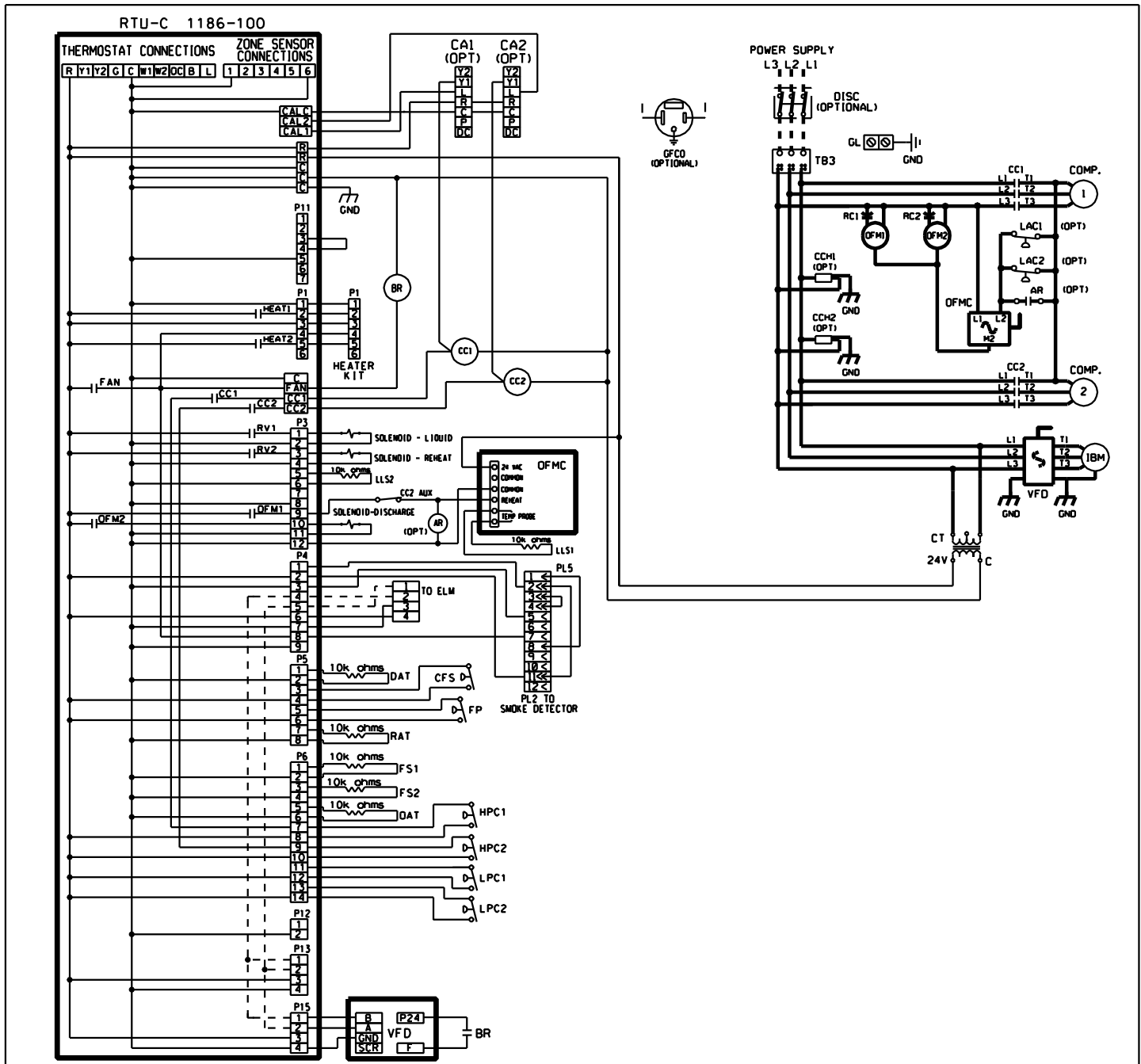
COMPONENT CODE	
BR	BLOWER RELAY
CA	COMFORT ALERT MODULE
CC	COMPRESSOR CONTACTOR
CC#H	CRANKCASE HEATER
CFS	CLOGGED FILTER SWITCH
COMP	COMPRESSOR
CT	CONTROL TRANSFORMER
DAT	DISCHARGE AIR SENSOR
DSR	DISCHARGE SOLENOID RELAY
DJSC	DISCONNECT SWITCH
FP	FAN PROWING
FS	FREEZE SENSOR
GFCD	GROUND FAULT CONVENIENCE OUTLET
GL	GROUND LUG
GND	GROUND
HPC	HIGH PRESSURE CONTROL
IBM	INDOOR BLOWER MOTOR BELT DRIVE
LAC	LOW AMBIENT COOLING CONTROL
LC	LIMIT CONTROL
LPC	LOW PRESSURE CONTROL
DAT	OUTSIDE AIR SENSOR
OFM	OUTDOOR FAN MOTOR
OFMC	OUTDOOR FAN MOTOR CONTROLLER
PL	PLUG
RAT	RETURN AIR SENSOR
RC	RUN CAPACITOR
RTU-C	ROOFTOP UNIT CONTROL
TB	TERMINAL BLOCK
VFD	VARIABLE FREQUENCY DRIVE
▲	WIRE NUT

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

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

WIRING DIAGRAM			
REHEAT 090/120/151			
208-230/460V 3 PH, 60 HZ.			
PACKAGED A/C W/RTU-C			
DR. BY	APP. BY	DATE	DWG. NO.
JRJ		10-24-11	90-103089-22
			REV 03



**COMPONENT CODE**

AR	ACCESSORY RELAY	HPC	HIGH PRESSURE CONTROL
BR	BLOWER RELAY	IBM	INDOOR BLOWER MOTOR BELT DRIVE
CA	COMFORT ALERT MODULE	LAC	LOW AMBIENT COOLING CONTROL
CC	COMPRESSOR CONTACTOR	LC	LIMIT CONTROL
CCH	CRANKCASE HEATER	LLS	LIQUID LINE SENSOR
CFS	CLOGGED FILTER SWITCH	LPC	LOW PRESSURE CONTROL
COMP	COMPRESSOR	DAT	DISCHARGE AIR SENSOR
CT	CONTROL TRANSFORMER	OFM	OUTDOOR FAN MOTOR
DSR	DISCHARGE SOLENOID RELAY	OFMC	OUTDOOR FAN MOTOR CONTROLLER
DISC	DISCONNECT SWITCH	PL	PLUG
FP	FAN PROVING	RAT	RETURN AIR SENSOR
FS	FREEZE SENSOR	RC	RUN CAPACITOR
GL	GROUND LUG CONVENIENCE OUTLET	RTU-C	ROOF TOP UNIT CONTROL
GND	GROUND	TB	TERMINAL BLOCK
		VFD	VARIABLE FREQUENCY DRIVE
		W	WIRE NUT

**WIRING INFORMATION**

LINE VOLTAGE  
 -FACTORY STANDARD —————  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - - - - -

LOW VOLTAGE  
 -FACTORY STANDARD —————  
 -FACTORY OPTION - - - - -  
 -FIELD INSTALLED - - - - -

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

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

**WIRE COLOR CODE**

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

**WIRING SCHEMATIC**  
 REHEAT 090/120/151  
 208-230/460V 3 PH, 60 HZ.  
 PACKAGED A/C

DR. BY	APP. BY	DATE	DWG. NO.	REV
JRJ		10-24-11	90-103246-19	03

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

**GENERAL TERMS OF LIMITED WARRANTY\***

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

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

<b>Compressor</b>	
3 Phase, Commercial Applications.....	Five (5) Years
<b>Parts</b>	
3 Phase, Commercial Applications.....	One (1) Year





The new degree of comfort.™

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

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Rheem Canada Ltd./Ltée • 125 Edgeware Road, Unit 1  
Brampton, Ontario • L6Y 0P5



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