



**KGC**

**Xion™ Rooftop Units  
Standard Efficiency - 60 Hz**

**COMMERCIAL  
PRODUCT SPECIFICATIONS**

Bulletin No. 210994  
August 2023  
Supersedes June 2023



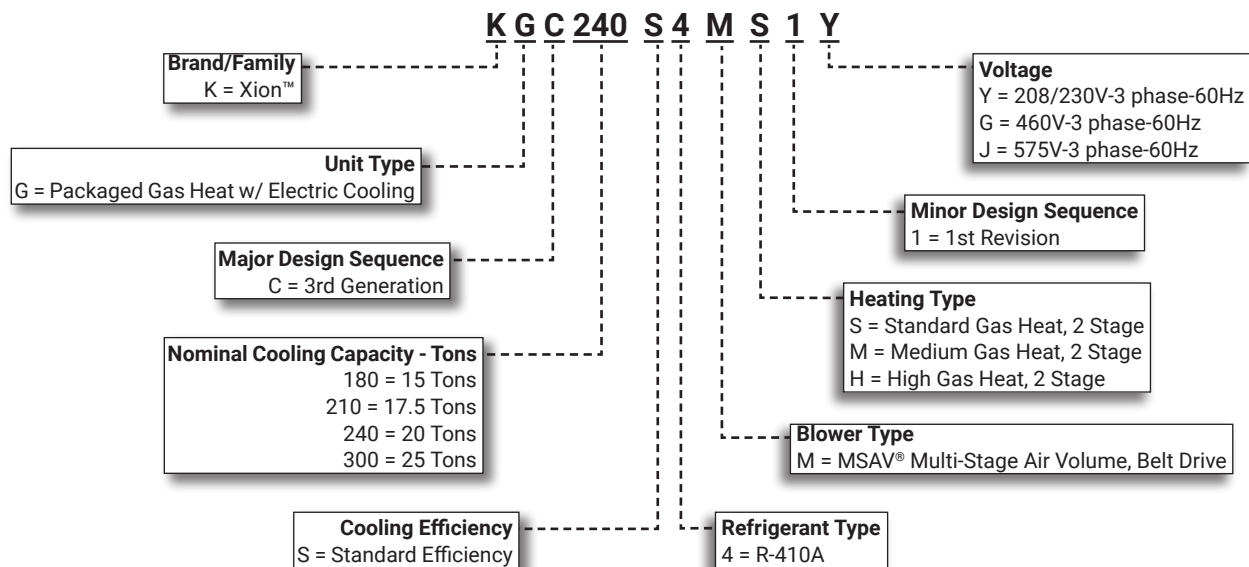
**XION**



**ASHRAE 90.1  
COMPLIANT**

**15 to 25 Tons  
Net Cooling Capacity – 172,000 to 270,000 Btuh  
Gas Input Heat Capacity – 260,000 to 480,000 Btuh**

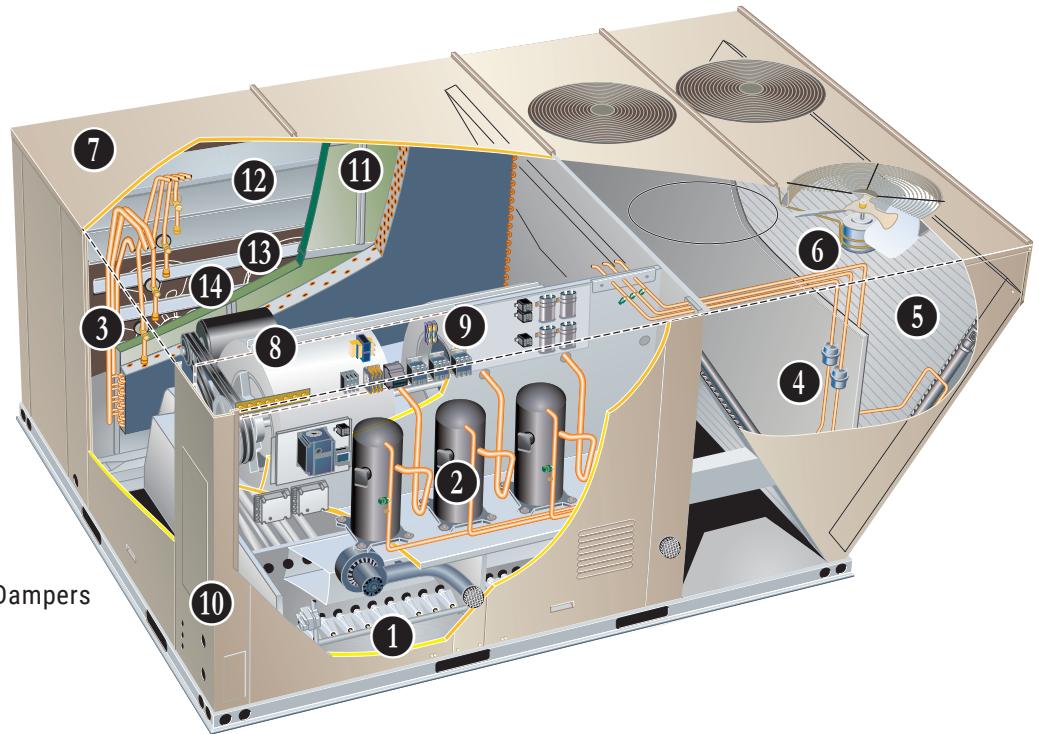
**MODEL NUMBER IDENTIFICATION**



## FEATURE HIGHLIGHTS

Xion™ rooftop units are engineered with the right technologies and options to meet standard efficiency requirements while delivering reliable performance and year-round comfort.

1. Heat Exchanger
2. Scroll Compressors
3. Thermal Expansion Valves
4. Filter/Driers
5. Environ™ Coil System
6. Outdoor Coil Fan Motors
7. Cabinet Construction
8. MSAV® Multi-Stage Air Volume Blower
9. Unit Control
10. Disconnect Switch (option)
11. Air Filters
12. Economizer (option)
13. Downflow Barometric Relief Dampers (option)
14. Power Exhaust Fans (option)



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## APPROVALS AND WARRANTY

### **APPROVALS**

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

### **WARRANTY**

- Aluminized steel heat exchanger - Limited ten years
- Stainless steel heat exchanger (optional) - Limited fifteen years
- Compressors - Limited five years
- Environ™ Coil System - Limited three years
- Variable-Frequency Drive (VFD) - Limited five years
- High Performance Economizers (optional) - Limited five years

## FEATURES AND BENEFITS

### **HEATING SYSTEM**

- Aluminized steel inshot burners
- Direct spark ignition
- Electronic flame sensor
- Combustion air inducer
- Redundant automatic dual stage gas valve with manual shut-off

#### **1 Heat Exchanger**

- Tubular construction
- Aluminized steel
- Life cycle tested

**NOTE** - Optional Stainless Steel Heat Exchanger is required if mixed air temperature is below 45°F.

#### **Electronic Pilot Ignition**

- Provides positive direct ignition of burners on each operating cycle
- System permits main gas valve to stay open only when the burners are proven to be lit
- Should a loss of flame occur, the gas valve closes, shutting off the gas to the burners
- LED indicates status and aid in troubleshooting
- Factory installed in the controls section

#### **Limit Controls**

- Factory installed
- Redundant limit controls with fixed temperature setting Protects heat exchanger and other components from overheating

### **Safety Switches**

- Protects system operation
- Flame roll-out switch
- Flame sensor
- Combustion air inducer proving switch

### **Required Selections**

#### **Gas Input Choice - Order one:**

- Standard Gas Heat, 2 Stage (169,000/260,000 Btuh)
- Medium Gas Heat, 2 Stage (234,000/360,000 Btuh)
- High Gas Heat, 2 Stage (312,000/480,000 Btuh)

### **Options / Accessories**

#### **Factory Installed**

##### **Stainless Steel Heat Exchanger**

- Required if mixed air temperature is below 45°F

##### **Field Installed**

##### **Bottom Gas Piping Kit**

- Allows bottom gas entry

##### **Low Temperature Vestibule Heater**

- Electric heater automatically controls minimum temperature in gas burner compartment when temperature is below -40°F
- CSA certified to allow operation of unit down to -60°F

## FEATURES AND BENEFITS

### HEATING SYSTEM (continued)

#### Options / Accessories

#### Field Installed

##### Combustion Air Intake Extensions

- Recommended for use with existing flue extension kits in areas where high snow areas can block intake air
- Order two kits

##### LPG/Propane Kits

- Conversion kit to field change over units from Natural Gas to LPG/Propane
- Order two kits

##### Vertical Vent Extension Kit

- Use to exhaust flue gases vertically above unit
- Required when unit vent is too close to fresh air intakes per building codes
- Also prevents ice formation on intake louvers
- Contains vent transition, vent tee, drain cap, and installation hardware

**NOTE** - Straight vent pipes (4 in. B-Vent) and caps are not furnished and must be field supplied. Refer to kit instructions for additional information.

### COOLING SYSTEM

- Designed to maximize sensible and latent cooling performance at design conditions
- System can operate from 45°F to 125°F without any additional controls

#### R-410A Refrigerant

- Non-chlorine based
- Ozone-friendly

#### 2 Scroll Compressors

- Scroll compressors on all models for high performance, reliability, and quiet operation
- Resiliently mounted on rubber grommets for quiet operation

#### Compressor Crankcase Heaters

- Protects against refrigerant migration that can occur during low ambient operation or during extended off cycles

#### 3 Thermal Expansion Valves

Ensures optimal performance throughout the application range

- Removable element head

#### 4 Filter/Driers

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

#### High Pressure Switches

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

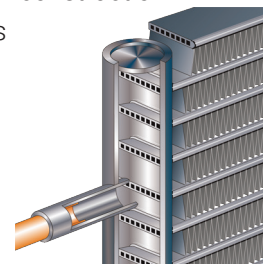
#### Indoor Coil Freeze Protection

- Protects the evaporator coil from damaging ice build-up due to conditions such as low/no airflow or low refrigerant charge

#### 5 Condenser Coil - Environ™ Coil System

Lightweight, all aluminum brazed fin construction

- Constructed of three components
  - A flat extrusion tube
  - Fins in-between the flat extrusion tube
  - Two refrigerant manifolds



#### Environ™ Coil System Features:

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

#### Evaporator Coil

- Copper tube construction
- Enhanced rippled-edge aluminum fins
- Flared shoulder tubing connections
- Silver soldered construction
- Factory leak tested
- Cross-row circuiting with rifled tubing

#### Antimicrobial Condensate Drain Pan

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

## FEATURES AND BENEFITS

### COOLING SYSTEM (continued)

- 6** Outdoor Coil Fan Motors
- Thermal overload protected
  - Totally enclosed
  - Permanently lubricated ball bearings
  - Shaft up
  - Wire basket mount

#### Outdoor Coil Fans

- PVC coated fan guard furnished

#### Required Selections

#### Cooling Capacity

- Specify nominal cooling capacity

#### Options/Accessories

#### Factory Installed

#### Conventional Fin/Tube Condenser Coil (replaces Environ™ Coil System)

- Copper tube construction
- Enhanced rippled-edge aluminum fins
- Flared shoulder tubing connections
- Silver soldered construction

**NOTE** - Required if Humiditrol® Dehumidification System is ordered (180, 210, and 240 models only).

#### Field Installed

#### Condensate Drain Trap

- Available in copper or PVC

#### Drain Pan Overflow Switch

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

#### Low Ambient Controls (0°F)

- Units operate satisfactorily down to 45°F outdoor air temperature without any additional controls
- Allows unit operation down to 0°F without evaporator coil icing
- Head pressure speed control reduces outdoor fan operation during low ambient conditions until head pressure rises to the setpoint
- Pressure transducers are mounted on the liquid lines
- Liquid line pressure switches and temperature switches are provided for field installation
- Wiring harnesses are furnished for simple plug-in wiring to fans and controller

### CABINET

**7** Construction

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

#### Airflow Choice

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

**NOTE** - Units can be field converted to horizontal air flow with optional Horizontal Return Air Panel Kit and Horizontal Roof Curb.

#### Power/Gas Entry

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

#### Exterior Panels

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

#### Insulation

- Fully insulated with non-hygroscopic fiberglass insulation (conditioned areas)
- Unit base is fully insulated
- Base insulation serves as an air seal to the roof curb, eliminating the need to add a seal during installation

#### Access Panels

- Economizer/Filter section
- Heating/Blower section
- Compressor/Controls section

## FEATURES AND BENEFITS

### CABINET (continued)

#### Options/Accessories

#### Factory Installed

##### Hinged Access Panels

- Tool-less access
- Filter section
- Heating/Blower section
- Compressor/Controls section
- Panel seals and quarter-turn latching handles provide a tight air and water seal

#### Factory or Field Installed

##### Combination Coil/Hail Guards

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

#### Field Installed

##### Horizontal Return Air Panel Kit

- Required for horizontal applications with Horizontal Roof Curb
- Contains panel with return air opening for field replacement of existing unit panel and panel to cover bottom return air opening in unit
- See dimension drawings

### BLOWER

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

#### 8 Blower Motor

- Overload protected
- Ball bearings

#### Supply Air Blower

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

#### MSAV® Multi-Stage Air Volume Operation

- MSAV® Multi-Stage Air Volume stages the amount of airflow according to compressor stages, heating demand and ventilation demand
- Units utilize a Variable Frequency Drive (VFD) to stage the supply air blower airflow
- VFD alters the frequency and voltage of the power supply to the blower to control blower speed
- The supply air blower has two speeds:
  1. Low speed for part-load cooling operation.  
**Note** - Low speed is 60% of high speed.
  2. High speed for full load cooling and all heat modes.
- Full speed blower operation is set by adjusting the motor pulley to deliver the desired air volume
- Ventilation speed is selectable between high and low speed

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

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

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



## FEATURES AND BENEFITS

### **BLOWER (continued)**

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

- Ventilation speed is determined by the VENT SPEED switch setting on VFD control board (LO or HI)
- Blower operates in low speed for mechanical cooling (Y1)
- Blower operates in high speed for any other mode (free cooling, mechanical cooling Y1+Y2, and heating)
- Economizer damper minimum position is fully closed in unoccupied mode
- In occupied mode, the economizer damper minimum position is determined by the setting of the two potentiometers on VFD control board:
  - **LO SPD MIN POS** potentiometer sets the minimum position when blower is operating at low speed
  - **HI SPD MIN POS** potentiometer sets the minimum position when blower is operating at high speed

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

#### **Ordering Information**

- Specify blower motor, motor horsepower and drive kit number when base unit is ordered

### **Options/Accessories**

#### **Field Installed**

##### **Blower Belt Auto-Tensioner**

- Provides proper tension to belt drive blower belt without the need for regular adjustments
- Maintains airflow and proper performance

##### **VFD Manual Bypass Kit**

- Bypass Kit can be used to operate the unit in single speed (CAV) blower mode if the inverter needs to be serviced or replaced
- VFD Manual Bypass Control is a manual bypass and is enabled by re-configuring the wiring on the unit

### **CONTROLS**

#### **9 Unit Control**

- All control voltage is provided via a 24V (secondary) transformer with built-in circuit breaker protection
- Up to 2 heat / 2 cool staging with a third party DDC control system or thermostat
- Low voltage terminal block provides screw terminal connections for thermostat or controller wiring

### **Options/Accessories**

#### **Field Installed**

##### **Smoke Detector**

- Photoelectric type
- Installed in supply air section, return air section or both sections
- Available with power board and single sensor (supply or return) or power board and two sensors (supply and return)
- Power board located in unit control compartment

#### **Commercial Control Systems**

##### **Thermostats**

- Control system and thermostat options see page 12

## FEATURES AND BENEFITS

### **ELECTRICAL**

All units include terminal block and fuse block in power entry junction box for single power entry application

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

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

#### **Electrical Plugs**

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

#### **Phase Monitor**

- Located in the control compartment
- Detects the phasing of incoming power
- If the incoming power is out of phase or if any of the three phases are lost, an indicator LED on the phase monitor will turn red and the unit will not start
- In normal operation with correct incoming power phasing, indicator LED will be green

### **Required Selections**

#### **Voltage Choice**

- Specify when ordering base unit

### **Options/Accessories**

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

##### **10 Disconnect Switch**

- Accessible from outside of unit
- Spring loaded weatherproof cover furnished

##### **GFI Service Outlets (2)**

- 115V ground fault circuit interrupter (GFCI) type options:
  - Factory installed, non-powered, field wired
  - Field installed, non-powered, field wired

#### **Field Installed**

##### **GFI Weatherproof Cover**

- Single-gang cover
- Heavy-duty UV-resistant polycarbonate case construction
- Hinged base cover with gasket

### **INDOOR AIR QUALITY**

##### **11 Air Filters**

- Disposable 2 inch MERV 4 filters furnished as standard

### **Options/Accessories**

#### **Field Installed**

##### **Healthy Climate® High Efficiency Air Filters**

- Disposable MERV 8, MERV 13, or MERV 16 (Minimum Efficiency Reporting Value based on ASHRAE 52.2) efficiency
- 2 inch pleated filters

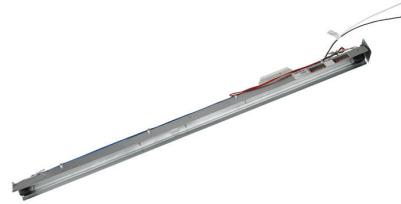
##### **Replacement Filter Media Kit With Frame**

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

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

- Monitors CO<sub>2</sub> levels
- Reports to the Unit Controller which adjusts economizer dampers as needed

##### **Healthy Climate® UVC Germicidal Lamps**



- Germicidal lamps emit ultra-violet (UV-C) energy, which has been proven to be effective in reducing microbes such as viruses, bacteria, yeasts, and molds
- UV-C energy greatly reduces the growth and proliferation of mold and other bioaerosols (bacteria and viruses) on illuminated surfaces (particularly coil and drain pan)
- Destroys the organism or controls its ability to reproduce
- Field installed in the blower/evaporator coil section
- Magnetic safety interlock terminates power when access panels are removed
- All necessary hardware for installation is included
- Lamps operate on 110/230V-1ph power supply

**NOTE** - Step-down transformer may be ordered separately for 460V and 575V units.

- Approved by ETL

##### **Needlepoint Bipolar Ionization (NPBI) Kit**

- NPBI technology has been shown to effectively reduce harmful pathogens, pollutants, and odors
- NOTE** - Please visit [www.sciencedirect.com](http://www.sciencedirect.com) for additional information.

- Brush-type ionizer introduces a high concentration of both positive and negative ions into the air stream
- These bipolar ions are then dispersed into the occupied space through the duct system proactively reducing the airborne contaminants
- Ions travel within the building air stream and attach to particles, pathogens, and gas molecules, making them larger and easier to capture in the filtration system
- UL 2998 certified for zero ozone emission



## OPTIONS / ACCESSORIES

### ECONOMIZER

- 12** Economizer Features  
(Standard and High Performance Common Features)
- Outdoor Air Hood with mist elimination filter furnished
  - Mixed Air Sensor furnished for field installation in the rooftop unit

**NOTE** - Sensor is factory installed when Economizer is factory installed.

#### Field Installed

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

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

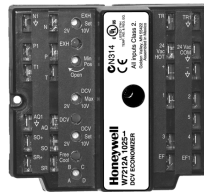
##### Standard Economizer Control Module (Not for Title 24)

- Standard Economizer Control Module operation is based on outdoor air temperatures

##### Economizer Controls:

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

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



### Factory or Field Installed

#### High Performance Economizer Features

- Approved for California Title 24 building standards
- Low leakage dampers are Air Movement and Control Association International (AMCA) Class 1A Certified - Maximum 3 CFM per sq. ft. leakage at 1 in. w.g.
- ASHRAE 90.1-2010 compliant
- Linked damper action
- High torque 24-volt fully-modulating spring return damper motor
- Return air and outdoor air dampers
- Plug-in connections to unit

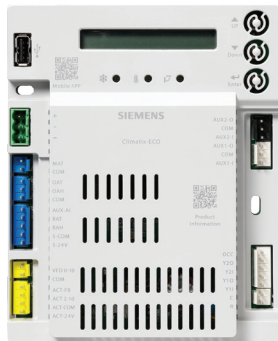
**NOTE** - High Performance Economizers are not approved for use with differential enthalpy controls in Title 24 applications.

## OPTIONS / ACCESSORIES

### ECONOMIZER (continued)

#### High Performance Economizer Control Module

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



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

- Module displays any alarm messages (fault detection and diagnostics) as an aid in troubleshooting
- RS485 port for BACnet MSTP or Modbus RTU communication
- USB port for firmware updates and WLAN connection for setup and commissioning
- QR codes on module for quick access to download Climatix Mobile App and user documentation
- User Interface for normal operation, parameter setup, and alarm notifications with an LCD display and three operation buttons:
  1. **Up Button** - Move to the previous value, step or category
  2. **Down Button** - Move to the next value, step or category
  3. **Enter Button** -
    - Press to edit the current value or option
    - Press to confirm a newly selected value or option
    - Press Enter + Up to jump up one category
    - Press Enter + Down to jump down one category

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

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

#### Factory or Field Installed

##### Single Enthalpy Temperature Control

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

**NOTE** - The factory installed economizer option comes preset for Single Enthalpy control but can be field converted to Single Sensible Temperature control by changing a parameter on the economizer control module.

#### Field Installed

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

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

##### WLAN Stick

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

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

#### EXHAUST

##### Factory or Field Installed

#### 13 Downflow Barometric Relief Dampers With Exhaust Hood

- Allow relief of excess air
- Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle
- Exhaust hood with bird screen is furnished

##### Field Installed

##### Horizontal Barometric Relief Dampers With Exhaust Hood

- For use when unit is configured for horizontal applications requiring an economizer
- Allows relief of excess air
- Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle
- Field installed in return air duct
- Exhaust hood with bird screen is furnished

#### 14 Power Exhaust Fans

- Installs internal to unit for downflow applications only with economizer option
- Provides exhaust air pressure relief
- Interlocked to run when supply air blower is operating, fans run when outdoor air dampers are 50% open (adjustable)
- Motor is overload protected
- Dual fans
- 20 in. diameter
- 5 blades
- Two 1/3 hp motors

**NOTE** - Requires Economizer with Outdoor Air Hood and Downflow Barometric Relief Dampers

## OPTIONS / ACCESSORIES

### **OUTDOOR AIR**

#### **Field Installed**

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

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

#### **ROOF CURBS**

- Nailer strip furnished (downflow only)
- Mates to unit
- US National Roofing Contractors Approved
- Shipped knocked down

#### **Downflow**

##### **Hybrid Roof Curbs**

- Interlocking tabs fasten corners together
- No tools required for assembly
- Can also be fastened together with furnished hardware
- Available in 8, 14, 18, and 24 inch heights

##### **Adjustable Pitch Curb**

- Fully adjustable pitch curbs (3/4 in. per foot in any direction) provide a level platform for rooftop units allowing flexible installations on roofs with uneven or sloped angles
- Interlocking tabs fasten corners together
- No tools required for assembly
- Hardware is furnished to connect upper curb with lower curb
- Available in 14 inch height

#### **Horizontal**

- Meet National Roofing Code requirements
- Converts unit from downflow to horizontal (side) air flow
- Return air is on unit
- Supply air is on curb
- See dimension drawings
- Available in 26, 30, 37, and 41 inch heights

**NOTE** - Requires Horizontal Return Air Panel Kit.

**NOTE** - Optional Insulation Kit is available to help prevent sweating.

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

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

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

### **CEILING DIFFUSERS**

#### **Field Installed**

##### **Ceiling Diffusers (Flush or Step-Down)**

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

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

- Used with diffusers
- Installs in roof curb
- Galvanized steel construction
- Flanges furnished for duct connection to diffusers
- Fully insulated

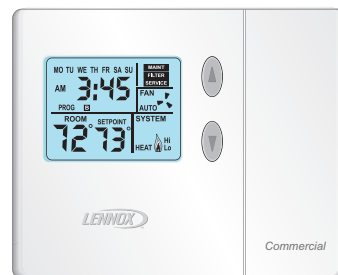
## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

### CS7500 Commercial 7-Day Programmable Thermostat



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

### CS3000 Commercial 5-2 Day Programmable Thermostat



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

### BACnet Compatible Thermostat With Reheat



Description	Catalog No.
<b>CS7500 Commercial 7-Day Programmable Thermostat</b>	
CS7500 7-Day Thermostat	<b>24K41</b>
Sensors/	<sup>1</sup> Remote non-adjustable wall-mount 20k <b>47W36</b>
Accessories	<sup>1</sup> Remote non-adjustable wall-mount 10k <b>47W37</b>
	Remote non-adjustable discharge air (duct mount) <b>19L22</b>
	Outdoor temperature sensor <b>X2658</b>
<b>CS3000 5-2 Day Programmable Thermostat</b>	
CS3000 5-2 Day Thermostat	<b>11Y05</b>
Sensor/	Remote non-adjustable wall mount 10k averaging <b>47W37</b>
Accessories	Thermostat wall mounting plate <b>X2659</b>
<b>BACnet 7-Day Programmable Thermostat</b>	
BACnet	<sup>2</sup> 7-Day BACnet Thermostat <b>24C57</b>
Controls	<sup>3</sup> BACnet Module <b>16X72</b>
<sup>4</sup> BACnet	With Display <b>97W23</b>
Room Sensors	Without Display <b>97W24</b>
<b>Universal Thermostat Guard with Lock (clear)</b>	
Inside Dimensions (H x W x D) 5-7/8 x 8-3/8 x 3 in.	<b>39P21</b>

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

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

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

<sup>4</sup> Only compatible with BACnet Module (16X70).

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

## HUMIDITROL® DEHUMIDIFICATION SYSTEM OPTION

### **OVERVIEW**

**NOTE** - Not available with Environ™ Coil System (180, 210 and 240 models only).

Conventional Fin/Tube condenser coil must be ordered as a factory option.

- Factory installed option designed to control humidity
- Provides dehumidification on demand using ASHRAE 90.1 recommended method for comfort conditioning humidity control
- Unit comes equipped with one row reheat coil, solenoid valve and humidity controller
- A thermostat with a dehumidification output, a dehumidistat, or a DDC controller with an isolated output is required to control humidity and must be located in the occupied space

### **BENEFITS**

- Improves indoor air quality
- Helps prevent damage due to high humidity levels
- Improves comfort levels by reducing space humidity levels

### **OPERATION**

#### **No Dehumidification Demand**

- Unit will operate conventionally whenever there is a demand for cooling or heating and no dehumidification demand
- Free cooling is only permitted when there is no demand for dehumidification

#### **Dehumidification Demand Only**

- Dehumidification is initiated by an output from a dehumidistat (furnished), an optional thermostat with a dehumidification output or an optional DDC controller with an isolated output to control humidity
- Reheat operation will initiate on a dehumidification demand and does not require a cooling demand
- Unit will operate in the dehumidification mode until the relative humidity of the conditioned space is below the setpoint
- This reduces sensible cooling capacity and extends compressor run time to control humidity when the cooling load is low
- A solenoid valve diverts hot gas from the compressor to the reheat coil
- Cooled and dehumidified air from the evaporator is reheated as it passes through the reheat coil
- De-superheated and partially condensed refrigerant continues to the outdoor condenser coil where condensing is completed
- Unit will continue to operate in this mode until the dehumidification demand is satisfied

### **Options/Accessories**

#### **Field Installed**

##### **CS7500 Thermostat**

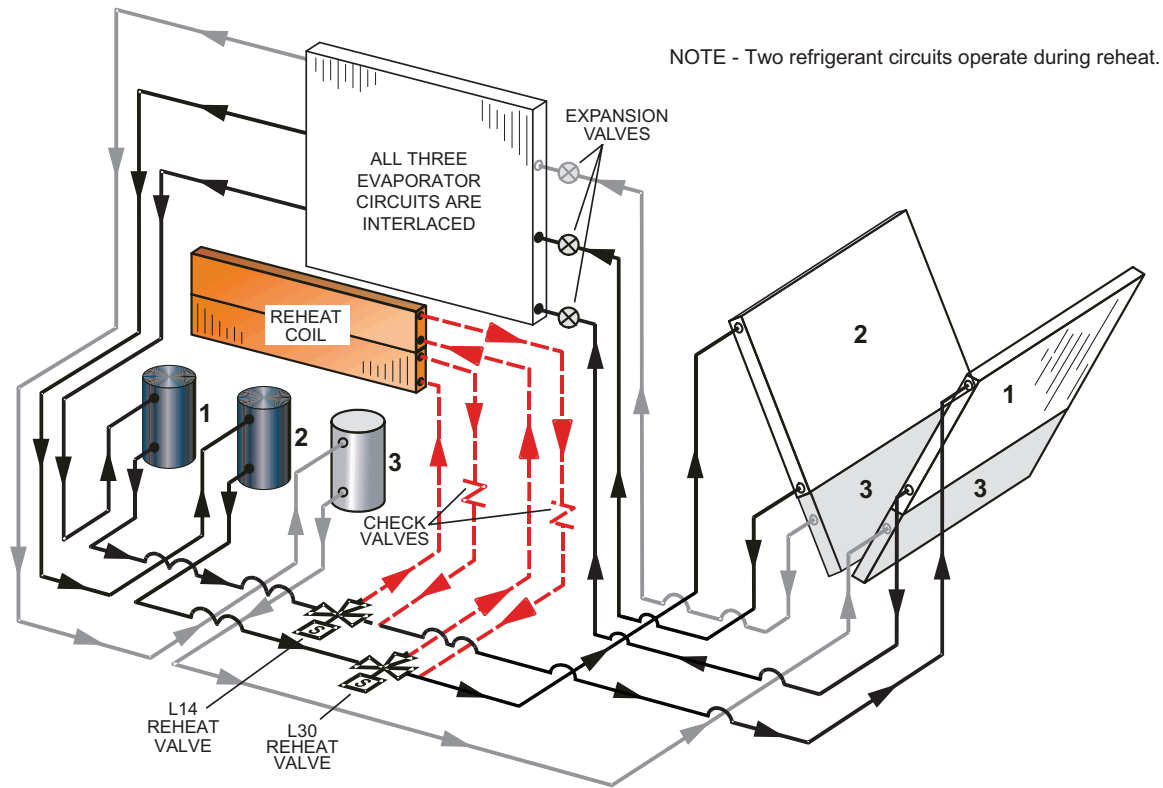
- Dehumidification control
- Adjustable from 45-60% relative humidity
- Remotely installed in the conditioned space

**NOTE** - A dehumidistat with a dehumidification output or a DDC controller with an isolated output can be used instead (field furnished).

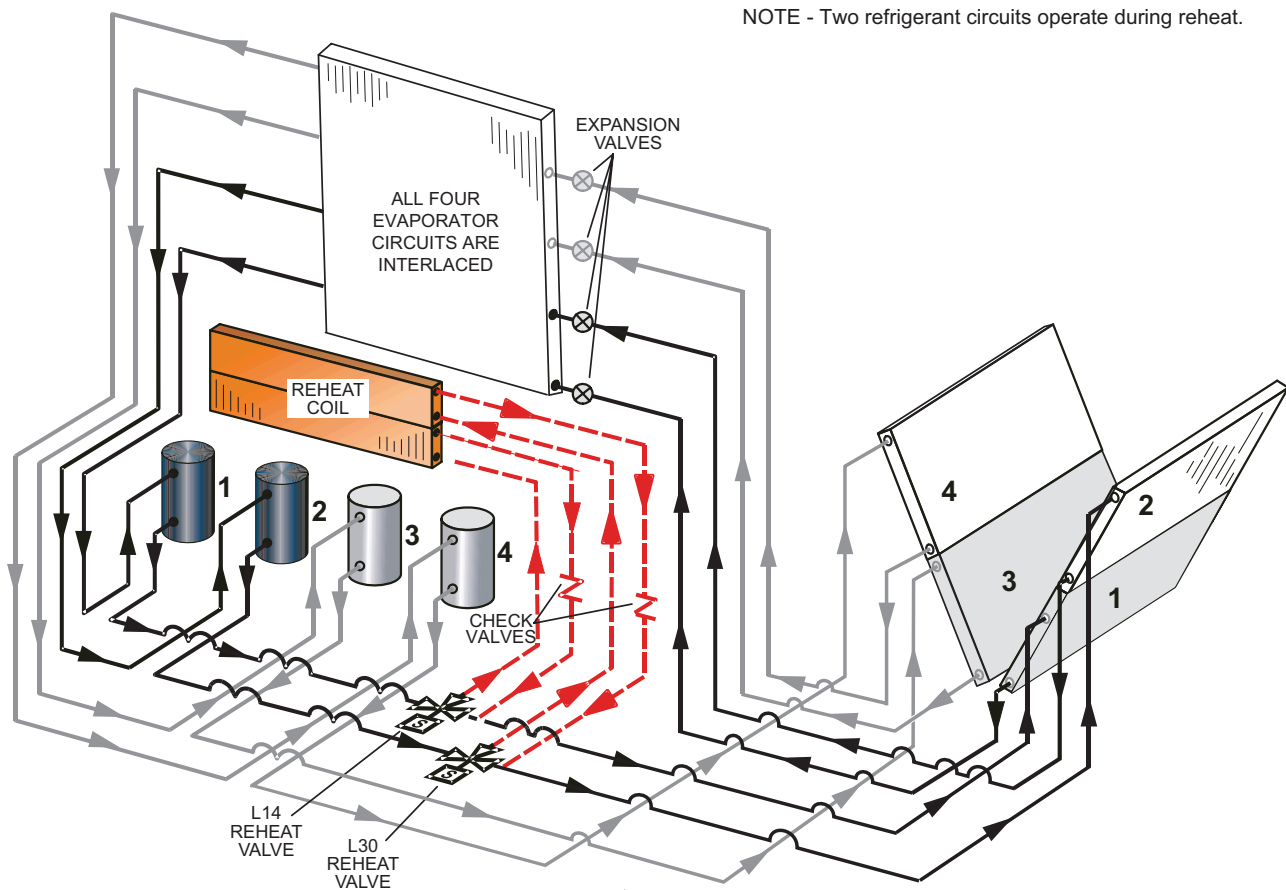
**NOTE** - See Conventional Thermostat Control Systems on page 12 for additional Humiditrol® dehumidification information.

# HUMIDITROL® DEHUMIDIFICATION SYSTEM OPTION

## REFRIGERANT SCHEMATIC (180, 210 AND 240 MODELS ONLY)



## REFRIGERANT SCHEMATIC (300S MODELS ONLY)





## OPTIONS / ACCESSORIES

Item Description	Catalog Number	180	210	240	300	
<b>COOLING SYSTEM</b>						
Condensate Drain Trap	PVC <b>22H54</b>	X	X	X	X	
	Copper <b>76W27</b>	X	X	X	X	
Conventional Fin/Tube Condenser Coil (replaces Environ™ Coil System) (Required for Humiditrol® option on 180, 210 and 240 models)	Factory	O	O	O	O	
Drain Pan Overflow Switch	<b>10C24</b>	X	X	X	X	
Low Ambient Kits (0°F)	<b>23V24</b>	X	X			
	<b>23V25</b>			X		
	<b>23V26</b>				X	
<b>HEATING SYSTEM</b>						
Bottom Gas Piping Kit	<b>85M31</b>	X	X	X	X	
Combustion Air Intake Extensions (order two)	<b>89L97</b>	X	X	X	X	
Gas Heat Input	Standard - 260,000 Btuh	Factory	O	O	O	
	Medium - 360,000 Btuh	Factory	O	O	O	
	High - 480,000 Btuh	Factory	O	O	O	
Low Temperature Vestibule Heater	208/230V-3ph <b>22H58</b>	X	X	X	X	
	460V <b>22H59</b>	X	X	X	X	
	575V <b>22V43</b>	X	X	X	X	
LPG/Propane Conversion Kits (Order 2 kits)	Standard heat <b>14N28</b>	X	X	X	X	
	Medium heat <b>14N29</b>	X	X	X	X	
	High heat <b>14N30</b>	X	X	X	X	
Stainless Steel Heat Exchanger	Factory	O	O	O	O	
Vertical Vent Extension Kit	<b>42W16</b>	X	X	X	X	
<b>BLOWER - SUPPLY AIR</b>						
Blower Motors	Belt Drive - 3 hp	Factory	O	O		
	Belt Drive - 5 hp	Factory	O	O	O	
	Belt Drive - 7.5 hp	Factory	O	O	O	
	Belt Drive - 10 hp	Factory			O	O
VFD Manual Bypass Kit	3, 5 hp (208/230V)	<b>90W52</b>	X	X	X	
	3, 5, 7.5, 10 hp (460V and 575V)					
	7.5, 10 hp (208/230V)	<b>90W51</b>	X	X	X	
Drive Kits	Kit #1 535-725 rpm	Factory	O	O		
See Blower Data Tables for usage and selection	Kit #2 710-965 rpm	Factory	O	O		
	Kit #3 685-856 rpm	Factory	O	O	O	
	Kit #4 850-1045 rpm	Factory	O	O	O	
	Kit #5 945-1185 rpm	Factory	O	O	O	
	Kit #6 850-1045 rpm	Factory	O	O	O	
	Kit #7 945-1185 rpm	Factory	O	O	O	
	Kit #8 1045-1285 rpm	Factory	O	O	O	
	Kit #10 1045-1285 rpm	Factory			O	O
	Kit #11 1135-1365 rpm	Factory			O	O
	Blower Belt Auto-Tensioner	<b>24B80</b>	X	X	X	X
	<b>HUMIDITROL® DEHUMIDIFICATION REHEAT OPTION</b>					
Humiditrol® Dehumidification Option	Factory	O	O	O	O	

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

## OPTIONS / ACCESSORIES

Item Description	Catalog Number	180	210	240	300	
<b>CABINET</b>						
Combination Coil/Hail Guards	23U69	OX	OX			
	23U71			OX	OX	
Hinged Access Panels	Factory	O	O	O	O	
<b>CONTROLS</b>						
<b>NOTE - Also see Conventional Thermostat Control Systems page 12 for Additional Options.</b>						
Smoke Detector - Supply or Return (Power board and one sensor)	22H56	X	X	X	X	
Smoke Detector - Supply and Return (Power board and two sensors)	22H57	X	X	X	X	
<b>ELECTRICAL</b>						
Voltage 60 Hz	208/230V - 3 phase	Factory	O	O	O	O
	460V - 3 phase	Factory	O	O	O	O
	575V - 3 phase	Factory	O	O	O	O
Disconnect Switch (see Disconnect Table for usage, page 12)	80 amp	54W91	OX	OX	OX	OX
	150 amp	54W92	OX	OX	OX	OX
	250 amp	54W93				OX
GFI Service Outlets	15 amp non-powered, field-wired (208/230V, 460V only)	74M70	OX	OX	OX	OX
	<sup>1</sup> 20 amp non-powered, field-wired (208/230V, 460V, 575V)	67E01	X	X	X	X
	<sup>1</sup> 20 amp non-powered, field-wired (575V)	Factory	O	O	O	O
Weatherproof Cover for GFI	10C89	X	X	X	X	
<b>INDOOR AIR QUALITY</b>						
<b>Air Filters</b>						
Healthy Climate® High Efficiency Air Filters 24 x 24 x 2 in. (Order 6 per unit)	MERV 8	54W67	X	X	X	X
	MERV 13	52W40	X	X	X	X
	MERV 16	21U42	X	X	X	X
Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media)		44N61	X	X	X	X
<b>Indoor Air Quality (CO<sub>2</sub>) Sensors</b>						
Sensor - Wall-mount, off-white plastic cover with LCD display		77N39	X	X	X	X
Sensor - Wall-mount, off-white plastic cover, no display		23V86	X	X	X	X
Sensor - Black plastic case with LCD display, rated for plenum mounting		87N52	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting		87N54	X	X	X	X
CO <sub>2</sub> Sensor Duct Mounting Kit - for downflow applications		85L43	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO <sub>2</sub> sensors (77N39)		90N43	X	X	X	X
<b>Needlepoint Bipolar Ionization (NPBI)</b>						
Needlepoint Bipolar Ionization (NPBI) Kits		21U37	X	X		
		21U38			X	
		21U39				X
<b>UVC Germicidal Light Kit</b>						
<sup>2</sup> Healthy Climate® UVC Light Kit (110/230V-1ph)		21A94	X	X	X	X
Step-Down Transformers	460V primary, 230V secondary	10H20	X	X	X	X
	575V primary, 230V secondary	10H21	X	X	X	X

<sup>1</sup> Canada requires a minimum 20 amp circuit. Select 20 amp, non-powered, field wired GFI.

<sup>2</sup> Lamps operate on 110-230V single-phase power supply. Step-down transformer may be ordered separately for 460V and 575V units. Alternately, 110V power supply may be used to directly power the UVC ballast(s)

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

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## OPTIONS / ACCESSORIES

Item Description	Catalog Number	180	210	240	300	
<b>ECONOMIZER</b>						
<b>Standard Economizer With Outdoor Air Hood (Not for Title 24)</b>						
Standard Economizer (Downflow or Horizontal) Includes Economizer Dampers with Outdoor Air Hood Downflow Applications - Use furnished Outdoor Air Hood - Order Downflow Barometric Relief Dampers with Exhaust Hood separately Horizontal Applications - Use furnished Outdoor Air Hood - Order Horizontal Barometric Relief Dampers with Exhaust Hood separately	<b>13U48</b>	X	X	X	X	
<b>Standard Economizer Controls (Not for Title 24)</b>						
Single Enthalpy Control	<b>21Z09</b>	X	X	X	X	
Differential Enthalpy Control (order 2)	<b>21Z09</b>	X	X	X	X	
<b>High Performance Economizer With Outdoor Air Hood (Approved for California Title 24 Building Standards / AMCA Class 1A Certified)</b>						
High Performance Economizer (Downflow or Horizontal) Includes Economizer Dampers with Outdoor Air Hood Downflow Applications - Use furnished Outdoor Air Hood - Order Downflow Barometric Relief Dampers with Exhaust Hood separately Horizontal Applications - Use furnished Outdoor Air Hood - Order Horizontal Barometric Relief Dampers with Exhaust Hood separately Factory Installed Economizer - Enthalpy control is furnished as standard. Field programmable for Sensible Control without additional hardware. Field Installed Economizer - Sensible Sensor is furnished as standard.	<b>23G24</b>	OX	OX	OX	OX	
<b>High Performance Economizer Controls</b>						
Single Enthalpy Control	<b>23G26</b>	X	X	X	X	
Differential Enthalpy Control (order 1 for factory, order 2 for field) (Not for Title 24)	<b>23G26</b>	X	X	X	X	
<b>Economizer Accessories</b>						
WLAN Stick (For High Performance Economizer only)	<b>23K58</b>	X	X	X	X	
<b>Barometric Relief Dampers With Exhaust Hood</b>						
Downflow Barometric Relief Dampers	<b>54W78</b>	OX	OX	OX	OX	
Horizontal Barometric Relief Dampers	<b>16K99</b>	X	X	X	X	
<b>OUTDOOR AIR</b>						
<b>Outdoor Air Dampers With Outdoor Air Hood</b>						
Motorized	<b>22J27</b>	X	X	X	X	
Manual	<b>13U05</b>	X	X	X	X	
<b>1 POWER EXHAUST (DOWNFLOW APPLICATIONS ONLY)</b>						
Standard Static	208/230V	<b>22H90</b>	X	X	X	X
	460V	<b>22H91</b>	X	X	X	X
	575V	<b>75W92</b>	X	X	X	X

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

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## OPTIONS / ACCESSORIES

Item Description	Catalog Number	180	210	240	300
<b>ROOF CURBS</b>					
<b>Hybrid Roof Curbs, Downflow</b>					
8 in. height	11F58	X	X	X	X
14 in. height	11F59	X	X	X	X
18 in. height	11F60	X	X	X	X
24 in. height	11F61	X	X	X	X
<b>Adjustable Pitch Curb</b>					
14 in. height	43W26	X	X	X	X
<b>Standard Roof Curbs, Horizontal - Requires Horizontal Return Air Panel Kit</b>					
26 in. height - slab applications	11T89	X	X	X	
30 in. height - slab applications	11T90				X
37 in. height - rooftop applications	11T96	X	X	X	
41 in. height - rooftop applications	11T97				X
<b>Insulation Kit For Standard Horizontal Curbs</b>					
For 26 in. Curb	73K32	X	X	X	
For 30 in. Curb	73K33				X
For 37 in. Curb	73K34	X	X	X	
For 41 in. Curb	73K35				X
<b>Horizontal Return Air Panel Kit</b>					
Required for Horizontal Applications with Roof Curb	87M00	X	X	X	X
<b>CEILING DIFFUSERS</b>					
Step-Down - Order one	RTD11-185S	13K63	X		
	RTD11-275S	13K64		X	X
Flush - Order one	FD11-185S	13K58	X		
	FD11-275S	13K59		X	X
Transitions (Supply and Return) - Order one	C1DIFF33C-1	12X68	X		
	C1DIFF34C-1	12X70		X	X

<sup>1</sup> Field installed Power Exhaust requires Economizer with Outdoor Air Hood and Downflow Barometric Relief Dampers with Exhaust Hood. Must be ordered separately.

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

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

O = Configure To Order (Factory Installed)

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# SPECIFICATIONS

General Data		Nominal Tonnage	15 Ton	17.5 Ton	20 Ton	25 Ton
Model Number			KGC180S4M	KGC210S4M	KGC240S4M	KGC300S4M
Efficiency Type			Standard	Standard	Standard	Standard
Blower Type			MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume	MSAV® Multi-Stage Air Volume
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		178,000	206,000	236,000	282,000
	<sup>1</sup> Net Cooling Capacity - Btuh		172,000	200,000	228,000	270,000
	<sup>1</sup> AHRI Rated Air Flow - cfm		7200	6125	7000	7500
	Total Unit Power - kW		15.9	18.5	21.1	27.6
	<sup>2</sup> IEER (Btuh/Watt)		14.0	14.0	14.0	13.0
	<sup>1</sup> EER (Btuh/Watt)		10.8	10.8	10.8	9.8
<b>Refrigerant Charge</b>	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
	Environ™ Coil System	Circuit 1	7 lbs. 3 oz.	8 lbs. 0 oz.	8 lbs. 12 oz.	7 lbs. 13 oz.
		Circuit 2	6 lbs. 10 oz.	7 lbs. 2 oz.	8 lbs. 7 oz.	6 lbs. 8 oz.
		Circuit 3	6 lbs. 3 oz.	7 lbs. 6 oz.	8 lbs. 10 oz.	5 lbs. 13 oz.
		Circuit 4	---	---	---	5 lbs. 13 oz.
	Conventional Fin/Tube Coil Option	Circuit 1	11 lbs. 8 oz.	12 lbs. 12 oz.	13 lbs. 10 oz.	10 lbs. 8 oz.
		Circuit 2	9 lbs. 14 oz.	12 lbs. 0 oz.	14 lbs. 8 oz.	10 lbs. 0 oz.
		Circuit 3	8 lbs. 15 oz.	11 lbs. 2 oz.	13 lbs. 4 oz.	9 lbs. 12 oz.
		Circuit 4	---	---	---	9 lbs. 12 oz.
	Conventional Fin/Tube with Reheat Option	Circuit 1	15 lbs. 4 oz.	14 lbs. 8 oz.	14 lbs. 12 oz.	---
		Circuit 2	13 lbs. 0 oz.	13 lbs. 9 oz.	15 lbs. 4 oz.	---
		Circuit 3	8 lbs. 15 oz.	11 lbs. 2 oz.	13 lbs. 4 oz.	---
		Circuit 4	---	---	---	---
	Environ™ Coil System with Reheat Option	Circuit 1	---	---	---	7 lbs. 7 oz.
		Circuit 2	---	---	---	7 lbs. 2 oz.
		Circuit 3	---	---	---	5 lbs. 15 oz.
Circuit 4		---	---	---	6 lbs. 1 oz.	
<b>Gas Heat Available</b>		See page 20				
<b>Compressor Type (number)</b>		Scroll (3)	Scroll (3)	Scroll (3)	Scroll (4)	
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.	41.1	41.1	55.0	55.0	
	Environ™ Number of rows	1 (2)	1 (2)	1 (2)	1 (2)	
	(Fin/Tube) Fins per inch	23 (20)	23 (20)	23 (20)	23 (20)	
<b>Outdoor Coil Fans</b>	No. and type	(3) PSC	(3) PSC	(4) PSC	(6) PSC	
	Motor - (No.) horsepower	(3) 1/3	(3) 1/3	(4) 1/3	(6) 1/3	
	Motor rpm	1075	1075	1075	1075	
	Total Motor watts	1100	1100	1665	1950	
	Diameter - (No.) in. / No. of blades	(3) 24 / 3	(3) 24 / 3	(4) 24 / 3	(6) 24 / 3	
	Total Air volume - cfm	12,000	12,000	16,000	20,000	
<b>Indoor Coils</b>	Net face area (total) - sq. ft.	21.4	21.4	21.4	21.4	
	Tube diameter - in. / No. of rows	3/8 / 3	3/8 / 4	3/8 / 4	3/8 / 4	
	Fins per inch	14	14	14	14	
	Drain connection - No. and size	(1) 1 in. FPT	(1) 1 in. FPT	(1) 1 in. FPT	(1) 1 in. FPT	
	Expansion device type	Balanced Port Thermostatic Expansion Valve, removable element head				
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output	3 hp, 5 hp, 7.5 hp		5 hp, 7.5 hp, 10 hp		
	Maximum usable motor output (US)	3.45 hp, 5.75 hp, 8.62 hp		5.75 hp, 8.62 hp, 11.5 hp		
	Motor - Drive kit number	<b>3 hp</b>		<b>5 hp</b>		
		Kit 1 535-725 rpm	Kit 2 710-965 rpm	Kit 3 685-856 rpm	Kit 4 850-1045 rpm	
		<b>5 hp</b>		<b>7.5 hp</b>		
		Kit 3 685-856 rpm	Kit 4 850-1045 rpm	Kit 5 945-1185 rpm	Kit 6 850-1045 rpm	
		<b>7.5 hp</b>		<b>10 hp</b>		
		Kit 5 945-1185 rpm	Kit 6 850-1045 rpm	Kit 7 945-1185 rpm	Kit 8 1045-1285 rpm	
		<b>10 hp</b>		<b>10 hp</b>		
		Kit 7 945-1185 rpm	Kit 8 1045-1285 rpm	Kit 9 945-1185 rpm	Kit 10 1045-1285 rpm	
			Kit 11 1135-1365 rpm			
Blower wheel nominal diameter x width - in.		(2) 15 x 15				
<b>Filters</b>	Type of filter / Number and size (in.)	MERV 4, Disposable / (6) 24 x 24 x 2				
<b>Electrical characteristics</b>		208/230V, 460V or 575V - 60 hertz - 3 phase				

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

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

<sup>2</sup> Integrated Energy Efficiency Ratio tested according to AHRI Standard 340/360.

<sup>3</sup> Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE - Motor service factor limit - 1.0.

## SPECIFICATIONS - GAS HEAT

<b>Usage Data</b>		<b>Model Number</b>	<b>KGC180 KGC210 KGC240 KGC300</b>		
		<b>Heat Input Type</b>	<b>Standard (S)</b>	<b>Medium (M)</b>	<b>High (H)</b>
		<b>Number of Gas Heat Stages</b>	2	2	2
<b>Gas Heating Performance</b>	Input - Btuh	First Stage	169,000	234,000	312,000
		Second Stage	260,000	360,000	480,000
	Output - Btuh	First Stage	---	---	---
		Second Stage	211,000	292,000	389,000
		Temperature Rise Range - °F	15 - 45	30 - 60	40 - 70
		Thermal Efficiency	81.0%	81.0%	81.0%
		Gas Supply Connections	1 in. NPT	1 in. NPT	1 in. NPT
Recommended Gas Supply Pressure - Nat. / LPG			7 in. w.g. / 11 in. w.g.		
Gas Supply Pressure Range	Min./Max. (Natural)		4.7 - 10.5 in. w.g.		
	Min./Max. (LPG)		10.8 - 13.5 in. w.g.		

## HIGH ALTITUDE DERATE

**NOTE** - Units may be installed at altitudes up to 2000 feet above sea level without any modification.

At altitudes above 2000 feet, units must be derated to match gas manifold pressures shown in table below.

At altitudes above 4500 feet units must be derated 4% for each 1000 feet above sea level.

**NOTE** - This is the only permissible derate for these units.

Refer to the Installation Instructions for more detailed information.

Heat Input Type	Altitude Feet	Gas Manifold Pressure in. w.g.		Input Rate (Btuh)
		Natural Gas	LPG/Propane Gas	
Standard (2 stage)	2001 - 4500	1.6 / 3.1	4.4 / 8.9	169,000 / 239,000
Medium (2 stage)	2001 - 4500	1.6 / 3.1	4.4 / 8.9	234,000 / 331,000
High (2 stage)	2001 - 4500	1.6 / 3.1	4.4 / 8.9	312,000 / 442,000



# RATINGS

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

## 15 TON - KGC180S4M (PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	3500	125.9	5.32	0.73	0.84	0.94	119.3	6.01	0.73	0.85	0.95	112.4	6.75	0.74	0.86	0.97	105.1	7.57	0.74	0.88	0.98
	4000	130.8	5.35	0.75	0.86	0.97	123.9	6.04	0.75	0.88	0.98	116.7	6.79	0.76	0.89	0.98	109	7.6	0.77	0.92	1
	4500	134.9	5.38	0.77	0.89	0.98	127.7	6.07	0.78	0.91	0.99	120.1	6.81	0.79	0.93	1	112.3	7.63	0.8	0.95	1
67°F	3500	132.1	5.36	0.6	0.71	0.81	125.5	6.06	0.6	0.71	0.82	118.3	6.8	0.6	0.72	0.83	110.8	7.62	0.6	0.73	0.85
	4000	137.4	5.39	0.62	0.73	0.84	130.3	6.1	0.62	0.73	0.85	122.9	6.84	0.62	0.74	0.87	115	7.65	0.62	0.75	0.88
	4500	141.7	5.42	0.63	0.75	0.87	134.4	6.13	0.63	0.76	0.88	126.5	6.87	0.63	0.77	0.9	118.5	7.68	0.64	0.78	0.92
71°F	3500	137.9	5.4	0.49	0.59	0.69	131.2	6.1	0.48	0.59	0.69	123.8	6.85	0.48	0.59	0.7	116.2	7.66	0.47	0.59	0.71
	4000	143.4	5.43	0.49	0.61	0.71	136.2	6.15	0.49	0.61	0.71	128.7	6.88	0.49	0.61	0.72	120.5	7.7	0.48	0.61	0.73
	4500	148	5.46	0.5	0.62	0.73	140.3	6.18	0.5	0.62	0.74	132.4	6.92	0.5	0.63	0.75	124.2	7.73	0.49	0.63	0.76

## 15 TON - KGC180S4M (FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4800	167.2	10.03	0.73	0.87	1	156.2	11.19	0.74	0.89	1	143	12.44	0.75	0.92	1	132.3	13.9	0.77	0.94	1
	6000	176.2	10.11	0.78	0.94	1	163.7	11.26	0.8	0.97	1	151.4	12.53	0.81	0.99	1	141.1	13.99	0.84	1	1
	7200	183.5	10.19	0.83	0.99	1	171	11.32	0.85	1	1	158.7	12.59	0.88	1	1	148.6	14.07	0.91	1	1
67°F	4800	178.6	10.13	0.57	0.7	0.83	166.6	11.28	0.57	0.72	0.85	153.5	12.54	0.57	0.73	0.88	143.1	14.02	0.58	0.75	0.9
	6000	188.2	10.23	0.6	0.76	0.91	174.7	11.36	0.61	0.78	0.93	161.3	12.62	0.62	0.8	0.97	149.6	14.07	0.63	0.82	0.99
	7200	194.9	10.3	0.64	0.81	0.97	180.3	11.41	0.65	0.83	0.99	166.3	12.66	0.66	0.86	1	154.6	14.13	0.67	0.89	1
71°F	4800	189.7	10.24	0.43	0.56	0.68	176.6	11.37	0.42	0.56	0.69	163.5	12.64	0.42	0.57	0.71	152.5	14.1	0.41	0.57	0.72
	6000	198.9	10.33	0.44	0.59	0.74	185.1	11.46	0.44	0.6	0.75	171.3	12.71	0.44	0.61	0.78	159.8	14.17	0.43	0.62	0.79
	7200	205.8	10.4	0.46	0.63	0.79	191.9	11.53	0.46	0.64	0.81	176.3	12.76	0.45	0.65	0.84	164.5	14.22	0.46	0.66	0.86

## 17.5 TON - KGC210S4M (PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4000	154.1	6.87	0.71	0.82	0.93	146.7	7.73	0.71	0.83	0.95	138.8	8.64	0.72	0.84	0.97	130.5	9.69	0.72	0.86	0.98
	4750	161.8	6.94	0.73	0.86	0.98	153.9	7.81	0.74	0.87	0.98	145.5	8.74	0.75	0.89	0.99	136.1	9.78	0.76	0.92	1
	5500	167.8	7.01	0.76	0.9	0.99	159.6	7.88	0.77	0.92	1	150.1	8.81	0.78	0.95	1	141.5	9.86	0.8	0.96	1
67°F	4000	162.3	6.95	0.58	0.68	0.79	154.6	7.82	0.58	0.69	0.8	146.4	8.76	0.58	0.7	0.81	137.6	9.81	0.58	0.7	0.83
	4750	170.2	7.04	0.6	0.71	0.83	162	7.91	0.6	0.72	0.84	153.3	8.86	0.6	0.73	0.86	144.1	9.91	0.6	0.74	0.88
	5500	176.4	7.1	0.61	0.74	0.87	167.8	7.98	0.62	0.75	0.89	158.8	8.94	0.62	0.76	0.91	149.1	9.99	0.62	0.78	0.93
71°F	4000	169.9	7.03	0.46	0.57	0.66	162.1	7.92	0.46	0.57	0.67	153.7	8.86	0.46	0.57	0.68	144.7	9.92	0.45	0.57	0.68
	4750	178.4	7.13	0.47	0.59	0.69	170	8.01	0.47	0.59	0.7	160.9	8.98	0.47	0.59	0.71	151.5	10.03	0.46	0.6	0.72
	5500	184.7	7.2	0.48	0.6	0.72	176.2	8.09	0.48	0.61	0.73	166.7	9.07	0.48	0.61	0.74	156.8	10.12	0.48	0.62	0.76

## 17.5 TON - KGC210S4M (FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	5600	201.9	12.89	0.71	0.86	0.99	188.9	14.4	0.72	0.87	1	173.9	16.1	0.73	0.9	1	158.3	17.99	0.74	0.93	1
	7000	214.1	13.09	0.77	0.93	1	198.7	14.55	0.78	0.96	1	184.2	16.26	0.8	0.98	1	168.1	18.13	0.82	1	1
	8400	223.7	13.24	0.82	0.99	1	208.5	14.7	0.84	1	1	194.6	16.44	0.87	1	1	178.9	18.32	0.9	1	1
67°F	5600	217.9	13.14	0.55	0.69	0.82	202.6	14.61	0.55	0.7	0.84	187.7	16.32	0.55	0.71	0.86	170.8	18.17	0.55	0.72	0.89
	7000	229.8	13.33	0.59	0.74	0.9	212.6	14.77	0.59	0.76	0.92	196.9	16.47	0.59	0.78	0.96	179.8	18.33	0.6	0.8	0.99
	8400	237.8	13.46	0.62	0.8	0.97	219.9	14.88	0.63	0.82	0.99	203.9	16.59	0.63	0.84	1	186	18.44	0.65	0.88	1
71°F	5600	234.1	13.39	0.41	0.54	0.66	217.2	14.83	0.4	0.54	0.67	201.8	16.54	0.39	0.54	0.68	184.8	18.42	0.38	0.54	0.7
	7000	245.4	13.57	0.42	0.57	0.72	227.5	15	0.41	0.58	0.74	211.5	16.71	0.41	0.59	0.76	193.4	18.57	0.4	0.59	0.78
	8400	253.4	13.69	0.44	0.61	0.78	235.3	15.15	0.43	0.62	0.8	218.4	16.83	0.43	0.63	0.83	199.8	18.68	0.43	0.65	0.86

# RATINGS

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

## 20 TON - KGC240S4M (PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4500	179.6	7.37	0.71	0.83	0.95	171.3	8.41	0.71	0.84	0.96	162.3	9.53	0.72	0.86	0.97	152.6	10.78	0.73	0.88	0.98
	5500	189.3	7.42	0.74	0.88	0.98	180.4	8.47	0.75	0.9	0.99	169.6	9.6	0.76	0.93	1	160	10.85	0.78	0.95	1
	6500	195.2	7.46	0.78	0.95	1	186.6	8.51	0.79	0.96	1	177	9.65	0.81	0.96	1	166.9	10.91	0.82	0.97	1
67°F	4500	189	7.43	0.57	0.68	0.79	180.7	8.48	0.58	0.69	0.81	171.3	9.62	0.58	0.7	0.82	161.3	10.87	0.58	0.71	0.84
	5500	199.2	7.48	0.6	0.72	0.85	189.8	8.54	0.6	0.73	0.87	180	9.68	0.6	0.74	0.9	169.5	10.95	0.61	0.76	0.92
	6500	206.6	7.53	0.62	0.76	0.92	196.9	8.59	0.62	0.77	0.94	186.7	9.74	0.63	0.78	0.95	175.4	10.99	0.64	0.8	0.97
71°F	4500	198	7.48	0.45	0.56	0.66	189.3	8.54	0.45	0.56	0.67	179.8	9.69	0.45	0.57	0.68	169.6	10.94	0.44	0.57	0.69
	5500	208.5	7.54	0.46	0.58	0.7	199.1	8.61	0.46	0.59	0.71	189	9.76	0.46	0.59	0.72	178.2	11.02	0.46	0.6	0.74
	6500	216.5	7.59	0.48	0.61	0.74	206.7	8.67	0.48	0.61	0.75	195.9	9.81	0.48	0.62	0.76	184.8	11.09	0.48	0.63	0.78

## 20 TON - KGC240S4M (FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	6400	238.4	15.16	0.67	0.84	0.99	218.9	17.01	0.68	0.86	1	198.1	19.1	0.69	0.89	1	176.7	21.46	0.7	0.93	1
	8000	252.9	15.3	0.74	0.93	1	232.6	17.16	0.75	0.96	1	211.9	19.27	0.77	0.99	1	190.6	21.65	0.8	1	1
	9600	264.9	15.43	0.8	1	1	245.3	17.3	0.83	1	1	225	19.43	0.85	1	1	204.1	21.84	0.89	1	1
67°F	6400	257.9	15.35	0.5	0.65	0.8	237.7	17.22	0.49	0.65	0.82	216	19.32	0.49	0.67	0.85	193.5	21.69	0.48	0.68	0.88
	8000	271.7	15.5	0.54	0.72	0.9	250.6	17.37	0.54	0.73	0.92	228.2	19.47	0.54	0.75	0.96	204.1	21.85	0.54	0.78	0.99
	9600	282.1	15.61	0.58	0.78	0.98	260	17.49	0.58	0.8	1	236.5	19.57	0.59	0.83	1	211.7	21.92	0.6	0.87	1
71°F	6400	277.4	15.56	0.36	0.49	0.63	256.4	17.43	0.34	0.49	0.63	234.4	19.55	0.32	0.48	0.64	210.8	21.92	0.3	0.48	0.66
	8000	291.9	15.71	0.37	0.53	0.69	269.8	17.6	0.36	0.53	0.71	246.6	19.7	0.35	0.54	0.73	221.7	22.08	0.33	0.54	0.75
	9600	302.1	15.83	0.39	0.57	0.76	279.2	17.71	0.38	0.58	0.78	254.7	19.81	0.37	0.59	0.81	229.1	22.18	0.36	0.6	0.84

## 25 TON - KGC300S4M (PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	5750	159.2	6.52	0.79	0.93	1	152.7	7.37	0.8	0.95	1	146.1	8.33	0.81	0.96	1	139.4	9.43	0.83	0.98	1
	6750	164.1	6.57	0.82	0.97	1	157.8	7.43	0.83	0.99	1	151.2	8.4	0.85	0.99	1	144.3	9.49	0.87	1	1
	7750	168.8	6.61	0.85	0.99	1	162.4	7.48	0.87	1	1	155.6	8.45	0.89	1	1	148.7	9.55	0.91	1	1
67°F	5750	168	6.61	0.62	0.76	0.9	161.1	7.47	0.63	0.78	0.92	153.9	8.43	0.64	0.79	0.94	146.3	9.52	0.65	0.81	0.96
	6750	172.6	6.66	0.64	0.8	0.95	165.5	7.52	0.65	0.82	0.97	157.9	8.48	0.66	0.83	0.98	149.7	9.56	0.67	0.85	0.99
	7750	176.2	6.69	0.66	0.84	0.99	168.7	7.56	0.66	0.85	0.99	160.8	8.52	0.68	0.87	1	152.4	9.6	0.7	0.89	1
71°F	5750	175.5	6.68	0.46	0.61	0.74	168.6	7.56	0.47	0.62	0.76	161.2	8.52	0.47	0.63	0.77	153.3	9.61	0.47	0.64	0.79
	6750	180.7	6.74	0.47	0.63	0.78	173.3	7.61	0.48	0.64	0.8	165.6	8.58	0.48	0.65	0.81	152.2	9.76	0.48	0.65	0.83
	7750	184.6	6.78	0.49	0.65	0.82	176.9	7.66	0.49	0.67	0.83	168.9	8.63	0.49	0.68	0.85	160.2	9.71	0.47	0.69	0.88

## 25 TON - KGC300S4M (FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	8000	286.5	17.99	0.73	0.85	0.95	273	20.2	0.75	0.86	0.97	258.7	22.75	0.76	0.88	0.99	242.7	25.67	0.78	0.9	1
	9500	297.5	18.17	0.76	0.89	0.99	283.3	20.39	0.79	0.91	1	267.9	22.93	0.8	0.93	1	250.9	25.84	0.81	0.95	1
	11,000	306	18.32	0.8	0.93	1	291.1	20.53	0.82	0.95	1	274.9	23.06	0.84	0.97	1	258.1	25.99	0.86	0.99	1
67°F	8000	299.3	18.21	0.56	0.7	0.83	284.3	20.42	0.58	0.71	0.84	268.1	22.95	0.58	0.73	0.86	251.1	25.88	0.58	0.76	0.88
	9500	308.1	18.38	0.59	0.75	0.87	292.7	20.59	0.59	0.76	0.88	276.4	23.12	0.6	0.78	0.9	258.8	26.05	0.62	0.81	0.93
	11,000	315.6	18.51	0.61	0.79	0.91	299.8	20.71	0.61	0.81	0.92	283	23.26	0.63	0.83	0.95	265.1	26.19	0.64	0.83	0.97
71°F	8000	316.1	18.5	0.42	0.56	0.69	300.6	20.73	0.42	0.56	0.69	283.5	23.26	0.42	0.57	0.71	265	26.17	0.42	0.57	0.73
	9500	325.4	18.68	0.44	0.58	0.72	308.7	20.9	0.42	0.59	0.73	291.2	23.42	0.43	0.6	0.76	272.3	26.35	0.43	0.6	0.78
	11,000	332.3	18.81	0.44	0.61	0.76	315.3	21.03	0.42	0.6	0.78	296.6	23.55	0.43	0.62	0.8	277.1	26.45	0.44	0.63	0.83

# HUMIDITROL® DEHUMIDIFICATION SYSTEM RATINGS

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

## 15 TON - KGC180S4 WITH HUMIDITROL® OPERATING (PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4800	83.32	5.14	0.62	0.84	0.85	57.45	5.67	0.59	0.83	0.83	35.21	6.26	0.54	0.81	0.82	17.78	6.91	0.44	0.78	0.79
	6000	89.21	5.17	0.70	0.84	0.85	60.13	5.73	0.68	0.83	0.84	36.50	6.32	0.66	0.81	0.82	17.69	6.95	0.60	0.78	0.80
	7200	92.48	5.22	0.76	0.85	0.85	61.87	5.78	0.75	0.83	0.84	36.94	6.36	0.74	0.82	0.82	17.03	6.99	0.71	0.79	0.80
67°F	4800	92.30	5.18	0.26	0.61	0.83	63.68	5.72	0.16	0.58	0.83	39.74	6.30	-0.01	0.55	0.82	20.47	6.92	-0.36	0.50	0.79
	6000	94.19	5.21	0.30	0.68	0.85	63.75	5.76	0.20	0.67	0.84	39.04	6.33	0.01	0.66	0.82	18.62	6.97	-0.43	0.63	0.80
	7200	95.97	5.23	0.34	0.74	0.85	63.70	5.79	0.24	0.74	0.84	37.87	6.37	0.04	0.74	0.82	17.18	7.01	-0.53	0.72	0.80
71°F	4800	107.68	5.24	-0.07	0.29	0.59	76.17	5.79	-0.22	0.21	0.58	49.87	6.37	-0.46	0.10	0.55	27.89	7.01	-0.90	-0.09	0.52
	6000	108.19	5.27	-0.08	0.34	0.67	75.11	5.82	-0.26	0.26	0.66	47.92	6.40	-0.55	0.15	0.65	25.44	7.03	-1.16	-0.07	0.64
	7200	108.40	5.30	-0.10	0.39	0.73	74.22	5.84	-0.30	0.31	0.73	46.15	6.41	-0.64	0.21	0.73	22.82	7.06	-1.45	-0.04	0.72

## 15 TON - KGC180S4 WITH HUMIDITROL® OPERATING (FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4800	131.28	7.83	0.57	0.72	0.93	107.13	8.74	0.53	0.63	0.74	79.86	9.69	0.40	0.58	0.81	59.04	10.80	0.33	0.45	0.56
	6000	141.60	7.93	0.65	0.74	0.83	109.67	8.81	0.54	0.72	0.95	86.82	9.78	0.49	0.59	0.69	58.49	10.87	0.34	0.55	0.83
	7200	144.70	7.97	0.65	0.82	1.06	118.75	8.90	0.62	0.70	0.78	86.74	9.85	0.49	0.68	0.97	64.57	10.97	0.46	0.51	0.62
67°F	4800	149.51	7.93	0.50	0.59	0.72	119.50	8.80	0.39	0.55	0.80	95.65	9.78	0.33	0.44	0.60	68.78	10.86	0.19	0.38	0.67
	6000	153.90	7.99	0.49	0.67	0.94	126.37	8.91	0.45	0.57	0.73	95.26	9.85	0.31	0.53	0.85	71.09	10.96	0.24	0.39	0.58
	7200	161.13	8.08	0.56	0.67	0.83	126.28	8.96	0.43	0.64	0.98	99.19	9.94	0.38	0.53	0.70	67.50	10.99	0.21	0.50	0.89
71°F	4800	161.74	7.99	0.39	0.53	0.49	136.67	8.91	0.32	0.42	0.57	106.56	9.86	0.22	0.38	0.34	83.44	10.96	0.13	0.25	0.42
	6000	173.26	8.10	0.42	0.52	0.68	138.53	8.97	0.31	0.49	0.45	112.57	9.97	0.24	0.37	0.55	81.35	11.03	0.10	0.31	0.26
	7200	174.83	8.13	0.41	0.59	0.60	144.67	9.08	0.35	0.47	0.67	110.34	10.01	0.20	0.43	0.45	83.74	11.11	0.11	0.29	0.53

## 17.5 TON - KGC210S4 WITH HUMIDITROL® OPERATING (PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	5600	81.20	6.68	0.67	0.88	1.00	49.89	7.26	0.49	0.75	0.94	26.26	7.84	0.24	0.54	0.76	9.75	8.45	-0.01	0.10	0.35
	7000	86.94	6.79	0.71	0.97	1.00	53.07	7.38	0.52	0.85	1.00	27.99	7.97	0.26	0.67	0.84	10.27	8.59	-0.07	0.28	0.52
	8400	91.65	6.88	0.72	1.00	1.00	55.86	7.47	0.54	0.94	1.00	29.26	8.07	0.27	0.77	0.88	10.71	8.70	-0.19	0.42	0.61
67°F	5600	95.25	6.80	0.47	0.71	0.89	60.62	7.39	0.29	0.57	0.78	34.55	7.98	0.05	0.38	0.62	14.99	8.61	-0.16	0.08	0.31
	7000	100.81	6.90	0.47	0.75	0.97	64.16	7.50	0.27	0.62	0.88	36.33	8.11	-0.03	0.40	0.74	15.42	8.73	-0.38	0.11	0.45
	8400	106.11	6.99	0.45	0.77	1.00	67.06	7.59	0.21	0.63	0.96	37.22	8.20	-0.15	0.44	0.83	15.37	8.82	-0.67	0.13	0.57
71°F	5600	109.42	6.91	0.25	0.54	0.74	72.28	7.51	0.09	0.39	0.63	43.13	8.12	-0.18	0.20	0.46	20.86	8.75	-0.40	-0.03	0.21
	7000	115.10	7.01	0.24	0.55	0.78	75.95	7.61	-0.01	0.39	0.65	44.17	8.21	-0.32	0.18	0.49	21.08	8.85	-0.75	-0.10	0.26
	8400	118.81	7.06	0.14	0.55	0.79	78.18	7.68	-0.17	0.37	0.69	45.05	8.30	-0.49	0.14	0.53	20.59	8.92	-1.16	-0.26	0.30

## 17.5 TON - KGC210S4 WITH HUMIDITROL® OPERATING (FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	5600	137.35	10.22	0.54	0.74	0.92	103.75	11.21	0.51	0.74	0.96	74.55	12.25	0.46	0.75	1.00	49.22	13.37	0.37	0.76	1.00
	7000	149.10	10.41	0.60	0.82	1.00	112.20	11.42	0.57	0.84	1.00	80.75	12.47	0.53	0.87	1.00	53.17	13.60	0.45	0.91	1.00
	8400	157.91	10.55	0.64	0.89	1.00	118.74	11.57	0.62	0.92	1.00	84.96	12.63	0.58	0.97	1.00	55.80	13.77	0.51	1.00	1.00
67°F	5600	159.35	10.44	0.36	0.53	0.70	122.79	11.46	0.30	0.51	0.70	91.16	12.52	0.22	0.47	0.71	62.74	13.65	0.06	0.41	0.72
	7000	171.41	10.62	0.39	0.59	0.78	131.58	11.65	0.32	0.57	0.79	97.02	12.72	0.24	0.54	0.82	66.64	13.86	0.08	0.49	0.85
	8400	180.09	10.75	0.41	0.64	0.85	137.46	11.78	0.35	0.62	0.88	101.02	12.85	0.25	0.60	0.91	69.29	14.02	0.03	0.56	0.97
71°F	5600	181.64	10.65	0.20	0.37	0.52	142.08	11.68	0.11	0.32	0.50	107.01	12.75	0.03	0.26	0.47	76.06	13.90	-0.15	0.16	0.43
	7000	192.77	10.82	0.21	0.40	0.58	149.42	11.84	0.14	0.36	0.57	113.10	12.93	-0.07	0.28	0.54	79.68	14.09	-0.29	0.19	0.51
	8400	201.05	10.92	0.13	0.42	0.63	157.25	11.99	0.04	0.37	0.61	115.67	13.03	-0.08	0.31	0.60	80.81	14.17	-0.29	0.20	0.58

# HUMIDITROL® DEHUMIDIFICATION SYSTEM RATINGS

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

## 20 TON - KGC240S4 WITH HUMIDITROL® DEHUMIDIFICATION OPERATING (PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	6400	101.73	7.17	0.62	0.81	0.94	68.26	7.91	0.48	0.70	0.85	40.64	8.66	0.27	0.54	0.70	19.30	9.40	0.03	0.28	0.46
	8000	108.45	7.26	0.65	0.88	0.98	72.52	8.01	0.51	0.79	0.89	42.78	8.77	0.32	0.65	0.76	20.35	9.53	0.02	0.41	0.56
	9600	113.77	7.32	0.68	0.94	1.00	76.37	8.09	0.54	0.85	0.91	45.96	8.86	0.34	0.73	0.79	21.09	9.63	-0.01	0.50	0.61
67°F	6400	115.36	7.26	0.46	0.65	0.82	79.97	8.03	0.31	0.54	0.72	49.34	8.77	0.12	0.38	0.59	26.53	9.55	-0.12	0.16	0.39
	8000	122.44	7.35	0.47	0.70	0.89	84.96	8.12	0.30	0.57	0.80	52.49	8.88	0.08	0.41	0.70	27.03	9.67	-0.24	0.20	0.51
	9600	128.54	7.42	0.44	0.72	0.95	88.08	8.19	0.27	0.61	0.88	54.15	8.97	-0.01	0.46	0.77	27.17	9.74	-0.40	0.24	0.59
71°F	6400	129.89	7.36	0.29	0.51	0.68	92.25	8.13	0.12	0.39	0.58	59.75	8.91	-0.08	0.23	0.45	33.17	9.68	-0.30	0.04	0.27
	8000	136.23	7.44	0.26	0.52	0.73	95.54	8.21	0.09	0.40	0.61	60.97	8.98	-0.21	0.22	0.49	32.94	9.76	-0.58	0.00	0.32
	9600	140.58	7.48	0.19	0.52	0.74	98.41	8.27	-0.05	0.38	0.65	62.05	9.05	-0.27	0.21	0.53	32.94	9.85	-0.70	-0.09	0.36

## 20 TON - KGC240S4 WITH HUMIDITROL® DEHUMIDIFICATION OPERATING (FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	6400	172.37	11.59	0.51	0.68	0.83	139.02	12.77	0.47	0.65	0.83	108.13	14.03	0.42	0.63	0.82	80.01	15.41	0.34	0.60	0.81
	8000	184.56	11.78	0.57	0.76	0.89	148.80	12.98	0.54	0.75	0.87	115.40	14.26	0.49	0.74	0.85	84.84	15.64	0.42	0.72	0.82
	9600	194.36	11.93	0.63	0.83	0.90	156.68	13.14	0.59	0.82	0.88	121.78	14.44	0.55	0.81	0.86	89.75	15.84	0.50	0.79	0.83
67°F	6400	195.24	11.83	0.36	0.51	0.65	160.43	13.03	0.30	0.47	0.63	127.02	14.31	0.23	0.43	0.61	96.16	15.70	0.14	0.37	0.59
	8000	207.09	12.00	0.39	0.57	0.74	169.35	13.22	0.34	0.54	0.72	134.05	14.52	0.26	0.50	0.71	101.17	15.92	0.17	0.45	0.70
	9600	216.37	12.13	0.42	0.62	0.81	176.71	13.37	0.37	0.60	0.80	138.63	14.66	0.29	0.56	0.79	103.69	16.07	0.20	0.52	0.78
71°F	6400	217.93	12.06	0.22	0.37	0.50	180.68	13.27	0.16	0.32	0.47	146.30	14.58	0.08	0.26	0.43	113.10	15.98	-0.03	0.19	0.39
	8000	230.10	12.23	0.24	0.41	0.56	190.18	13.45	0.18	0.36	0.53	152.25	14.76	0.08	0.30	0.50	116.87	16.17	-0.04	0.23	0.46
	9600	237.96	12.34	0.25	0.44	0.61	195.80	13.57	0.18	0.40	0.59	156.91	14.89	0.06	0.33	0.57	119.51	16.31	-0.09	0.26	0.53

## 25 TON - KGC300S4 WITH HUMIDITROL® DEHUMIDIFICATION OPERATING (PART LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	8000	90.50	7.63	0.78	1.00	1.00	50.46	8.23	0.73	1.00	1.00	21.46	8.84	0.65	1.00	1.00	3.87	9.42	0.33	1.00	1.00
	9500	98.23	7.77	0.87	1.00	1.00	55.06	8.40	0.85	1.00	1.00	24.00	9.01	0.84	1.00	1.00	5.20	9.61	0.66	1.00	1.00
	11000	103.49	7.90	0.95	1.00	1.00	58.09	8.52	0.97	1.00	1.00	25.45	9.14	0.99	1.00	1.00	5.71	9.75	0.94	1.00	1.00
67°F	8000	105.42	7.79	0.45	0.78	1.00	60.17	8.38	0.32	0.75	1.00	26.80	8.97	0.06	0.70	1.00	5.93	9.54	-0.69	0.60	1.00
	9500	107.51	7.88	0.48	0.86	1.00	60.65	8.48	0.36	0.85	1.00	26.68	9.07	0.07	0.85	1.00	5.94	9.65	-0.84	0.83	1.00
	11000	108.36	7.95	0.52	0.94	1.00	60.56	8.55	0.38	0.96	1.00	26.22	9.16	0.08	0.98	1.00	5.82	9.76	-1.26	1.00	1.00
71°F	8000	126.35	7.99	0.20	0.49	0.77	76.34	8.61	0.02	0.40	0.75	38.12	9.22	-0.37	0.24	0.72	11.82	9.82	-1.09	-0.07	0.67
	9500	128.22	8.08	0.14	0.54	0.85	76.97	8.70	-0.07	0.44	0.85	37.83	9.32	-0.70	0.28	0.85	11.67	9.92	-1.43	-0.07	0.86
	11000	128.73	8.15	0.04	0.58	0.92	76.38	8.78	-0.10	0.48	0.94	36.75	9.40	-0.55	0.33	0.97	11.11	10.01	-1.83	-0.06	1.00

## 25 TON - KGC300S4 WITH HUMIDITROL® DEHUMIDIFICATION OPERATING (FULL LOAD)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	8000	220.06	15.16	0.59	0.92	1.00	180.82	16.61	0.60	1.00	1.00	143.42	18.15	0.52	1.00	1.00	107.89	19.81	0.42	1.00	1.00
	9500	225.34	15.42	0.63	1.00	1.00	183.65	16.87	0.66	1.00	1.00	143.69	18.42	0.60	1.00	1.00	106.05	20.09	0.50	1.00	1.00
	11000	227.41	15.61	0.67	1.00	1.00	183.97	17.08	0.71	1.00	1.00	142.26	18.63	0.65	1.00	1.00	103.53	20.32	0.59	1.00	1.00
67°F	8000	244.80	15.49	0.30	0.57	0.81	203.48	16.94	0.22	0.57	0.93	164.10	18.50	0.03	0.58	1.00	127.22	20.21	-0.26	0.50	1.00
	9500	249.78	15.73	0.27	0.60	0.89	206.07	17.20	0.19	0.64	1.00	164.79	18.78	0.03	0.62	1.00	125.53	20.48	-0.29	0.58	1.00
	11000	251.47	15.93	0.28	0.64	0.95	206.16	17.40	0.19	0.70	1.00	162.92	18.98	-0.01	0.67	1.00	121.30	20.67	-0.37	0.66	1.00
71°F	8000	272.42	15.85	0.06	0.30	0.53	229.64	17.34	-0.10	0.25	0.55	188.77	18.93	-0.28	0.17	0.54	149.82	20.66	-0.67	-0.07	0.54
	9500	277.43	16.10	0.01	0.29	0.57	232.35	17.60	-0.15	0.26	0.59	188.63	19.18	-0.41	0.13	0.62	147.14	20.90	-0.80	-0.07	0.55
	11000	278.75	16.29	-0.05	0.32	0.59	232.08	17.79	-0.17	0.24	0.65	186.53	19.37	-0.45	0.13	0.70	144.03	21.11	-0.99	-0.08	0.66

## BLOWER DATA

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL & AIR FILTERS IN PLACE FOR ALL UNITS ADD:

- 1 - Wet indoor coil air resistance of selected unit.
- 2 - Any factory installed options air resistance (heat section, economizer, etc.)
- 3 - Any field installed accessories air resistance (heat section, duct resistance, diffuser, etc.)

Then determine from blower table blower motor output and drive required.

See page 26 for wet coil, option/accessory air resistance data, and factory installed drive kit specifications.

### Minimum Air Volume Required For Different Gas Heat Sizes:

Standard and Medium Heat - 4500 cfm minimum; High Heat - 5125 cfm minimum

Air Volume cfm	TOTAL STATIC PRESSURE - Inches Water Gauge (Pa)																											
	0.20		0.40		0.60		0.80		1.00		1.20		1.40		1.60		1.80		2.00		2.20		2.40		2.60			
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
2750	385	0.30	505	0.50	600	0.70	680	0.90	755	1.10	820	1.30	885	1.45	950	1.60	1005	1.75	1060	1.90	1115	2.05	1170	2.20	1225	2.35	1280	2.50
3000	395	0.35	515	0.55	610	0.75	685	1.00	760	1.20	825	1.45	890	1.60	955	1.75	1020	1.90	1085	2.05	1150	2.20	1215	2.35	1280	2.50	1345	2.65
3250	405	0.40	520	0.60	615	0.85	695	1.10	765	1.30	830	1.60	895	1.75	960	1.90	1025	2.05	1090	2.20	1155	2.35	1220	2.50	1285	2.65	1350	2.80
3500	415	0.45	530	0.70	620	0.95	700	1.20	775	1.45	840	1.70	905	1.85	970	2.00	1035	2.15	1100	2.30	1165	2.45	1230	2.60	1295	2.75	1360	2.90
3750	425	0.50	540	0.75	630	1.05	710	1.30	780	1.60	845	1.85	905	2.00	970	2.15	1035	2.30	1100	2.45	1165	2.60	1230	2.75	1295	2.90	1360	3.05
4000	435	0.55	545	0.85	635	1.10	715	1.40	785	1.70	850	2.00	910	2.15	975	2.30	1040	2.45	1105	2.60	1170	2.75	1235	2.90	1300	3.05	1365	3.20
4250	445	0.60	555	0.90	645	1.25	725	1.55	795	1.85	855	2.15	915	2.30	980	2.45	1045	2.60	1110	2.75	1175	2.90	1240	3.05	1305	3.20	1370	3.35
4500	455	0.70	565	1.00	655	1.35	730	1.65	800	2.00	865	2.35	925	2.45	990	2.60	1055	2.75	1120	2.90	1185	3.05	1250	3.20	1315	3.35	1380	3.50
4750	470	0.75	575	1.10	660	1.45	740	1.80	810	2.15	870	2.50	930	2.60	995	2.75	1060	2.90	1125	3.05	1190	3.20	1255	3.35	1320	3.50	1385	3.65
5000	480	0.85	585	1.25	670	1.60	750	1.95	815	2.30	880	2.70	940	2.80	1005	2.95	1070	3.10	1135	3.20	1200	3.35	1265	3.50	1330	3.65	1395	3.80
5250	495	0.95	595	1.35	680	1.70	755	2.10	825	2.50	890	2.90	945	3.00	1010	3.15	1075	3.25	1140	3.40	1205	3.55	1270	3.70	1335	3.85	1400	4.00
5500	505	1.05	605	1.45	690	1.85	765	2.25	835	2.65	895	3.05	955	3.15	1020	3.30	1085	3.40	1150	3.55	1215	3.70	1280	3.85	1345	4.00	1410	4.10
5750	520	1.15	615	1.60	700	2.00	775	2.45	840	2.85	905	3.25	960	3.35	1025	3.50	1090	3.60	1155	3.75	1220	3.90	1285	4.05	1350	4.20	1415	4.25
6000	530	1.30	630	1.75	710	2.15	785	2.60	850	3.05	910	3.45	970	3.55	1035	3.70	1100	3.80	1165	3.95	1230	4.10	1295	4.25	1360	4.40	1425	4.45
6250	545	1.40	640	1.90	720	2.35	795	2.80	860	3.25	920	3.70	985	3.80	1050	3.95	1115	4.05	1180	4.15	1245	4.30	1310	4.45	1375	4.60	1440	4.65
6500	560	1.55	650	2.05	730	2.50	805	3.00	870	3.45	930	3.95	985	4.00	1050	4.15	1115	4.25	1180	4.35	1245	4.50	1310	4.65	1375	4.80	1440	4.85
6750	570	1.70	665	2.20	745	2.70	815	3.20	880	3.70	940	4.20	995	4.30	1060	4.45	1125	4.55	1190	4.65	1255	4.80	1320	4.95	1385	5.10	1450	5.15
7000	585	1.85	675	2.35	755	2.90	825	3.40	890	3.95	950	4.45	1005	4.55	1070	4.70	1135	4.80	1200	4.90	1265	5.05	1330	5.20	1395	5.35	1460	5.40
7250	600	2.00	690	2.60	765	3.10	835	3.65	900	4.15	955	4.65	1015	4.75	1080	4.90	1145	5.00	1210	5.10	1275	5.25	1340	5.40	1405	5.55	1470	5.60
7500	615	2.20	700	2.75	775	3.30	845	3.85	910	4.45	965	4.95	1020	5.05	1085	5.20	1150	5.30	1215	5.40	1280	5.55	1345	5.70	1410	5.85	1475	5.90
7750	630	2.40	715	3.00	790	3.55	855	4.10	920	4.70	975	5.25	1030	5.35	1095	5.50	1160	5.60	1225	5.70	1290	5.85	1355	6.00	1420	6.15	1485	6.20
8000	640	2.55	725	3.20	800	3.80	865	4.35	930	4.95	985	5.50	1040	5.60	1105	5.75	1170	5.85	1235	5.95	1300	6.10	1365	6.25	1430	6.40	1495	6.45
8250	655	2.80	740	3.40	810	4.00	880	4.65	940	5.25	995	5.85	1050	5.90	1115	6.05	1180	6.15	1245	6.25	1310	6.40	1375	6.55	1440	6.70	1505	6.75
8500	670	3.00	750	3.65	825	4.30	890	4.90	950	5.55	1005	6.15	1060	6.20	1125	6.35	1190	6.45	1255	6.55	1320	6.70	1385	6.85	1450	7.00	1515	7.05
8750	685	3.25	765	3.90	835	4.55	900	5.20	960	5.85	1015	6.45	1070	6.50	1135	6.60	1200	6.70	1265	6.80	1330	6.95	1395	7.10	1460	7.25	1525	7.30
9000	700	3.50	780	4.20	850	4.85	910	5.50	970	6.15	1025	6.80	1080	6.85	1145	6.95	1210	7.05	1275	7.15	1340	7.30	1405	7.45	1470	7.60	1535	7.65
9250	715	3.75	790	4.45	860	5.15	925	5.85	985	6.45	1040	7.20	1095	7.25	1160	7.35	1225	7.45	1290	7.55	1355	7.70	1420	7.85	1485	8.00	1550	8.05
9500	730	4.00	805	4.75	875	5.45	935	6.15	995	6.90	1050	7.60	1105	7.65	1170	7.75	1235	7.85	1300	7.95	1365	8.10	1430	8.25	1495	8.40	1560	8.45
9750	745	4.30	820	5.05	885	5.75	950	6.55	1005	7.20	1060	7.95	1115	8.00	1180	8.10	1245	8.20	1310	8.30	1375	8.45	1440	8.60	1505	8.75	1570	8.80
10,000	760	4.60	835	5.40	900	6.15	960	6.85	1015	7.60	1070	8.35	1120	8.40	1190	8.50	1255	8.60	1320	8.70	1385	8.85	1450	9.00	1515	9.15	1580	9.20
10,250	775	4.90	845	5.65	910	6.45	970	7.20	1030	8.00	1080	8.75	1135	8.80	1200	8.90	1265	9.00	1330	9.10	1395	9.25	1460	9.40	1525	9.50	1595	9.55
10,500	790	5.20	860	6.00	925	6.85	985	7.65	1040	8.40	1095	9.20	1145	9.25	1215	9.35	1280	9.45	1345	9.55	1410	9.70	1475	9.85	1540	9.95	1605	10.00
10,750	805	5.55	875	6.40	940	7.25	1000	8.05	1055	8.85	1105	9.65	1155	9.70	1225	9.80	1290	9.90	1355	10.00	1420	10.15	1485	10.30	1550	10.40	1615	10.45
11,000	820	5.90	890	6.80	950	7.60	1010	8.45	1065	9.30	1115	10.05	1165	10.10	1235	10.20	1300	10.30	1365	10.40	1430	10.55	1495	10.70	1560	10.80	1625	10.85



## BLOWER DATA

### FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

Nominal hp	Maximum hp	Drive Kit Number	RPM Range
3	3.45	1	535 - 725
3	3.45	2	710 - 965
5	5.75	3	685 - 856
5	5.75	4	850 - 1045
5	5.75	5	945 - 1185
7.5	8.63	6	850 - 1045
7.5	8.63	7	945 - 1185
7.5	8.63	8	1045 - 1285
10	11.50	7	945 - 1185
10	11.50	10	1045 - 1285
10	11.50	11	1135 - 1365

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

NOTE - Motor service factor limit - 1.0.

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

Air Volume cfm	Wet Indoor Coil		Humiditrol® Reheat Coil	Gas Heat Exchanger			Economizer	Filters			Horizontal Roof Curb	
	180	210 240 300		Standard Heat	Medium Heat	High Heat		MERV 8	MERV 13	MERV 16	180 thru 240	300
2750	.01	.02	.01	.02	.04	.05	---	.01	.03	.06	.03	---
3000	.01	.02	.01	.03	.04	.05	---	.01	.03	.06	.04	---
3250	.01	.03	.01	.03	.05	.06	---	.01	.04	.07	.04	.01
3500	.01	.03	.02	.03	.05	.06	---	.01	.04	.08	.05	.01
3750	.01	.03	.02	.04	.06	.07	---	.01	.04	.08	.05	.01
4000	.02	.04	.02	.04	.06	.07	---	.01	.04	.09	.06	.02
4250	.02	.04	.02	.04	.06	.08	---	.01	.05	.10	.07	.02
4500	.02	.05	.02	.05	.07	.09	---	.01	.05	.10	.07	.02
4750	.02	.05	.02	.05	.08	.10	---	.02	.05	.11	.08	.03
5000	.02	.05	.02	.05	.09	.11	---	.02	.06	.12	.08	.03
5250	.02	.06	.03	.06	.10	.12	---	.02	.06	.12	.09	.04
5500	.02	.07	.03	.06	.10	.13	---	.02	.06	.13	.10	.04
5750	.03	.07	.03	.06	.11	.14	---	.02	.07	.14	.11	.05
6000	.03	.08	.03	.07	.12	.15	---	.03	.07	.14	.11	.06
6250	.03	.08	.03	.07	.12	.16	.01	.03	.07	.15	.12	.07
6500	.03	.09	.04	.08	.13	.17	.02	.03	.08	.16	.13	.08
6750	.04	.10	.04	.08	.14	.18	.03	.03	.08	.17	.14	.08
7000	.04	.10	.04	.09	.15	.19	.04	.04	.08	.17	.15	.09
7250	.04	.11	.04	.09	.16	.20	.05	.04	.09	.18	.16	.10
7500	.05	.12	.05	.10	.17	.21	.06	.04	.09	.19	.17	.11
8000	.05	.13	.05	.11	.19	.24	.09	.05	.10	.21	.19	.13
8500	.06	.15	.05	.12	.20	.26	.11	.05	.10	.22	.21	.15
9000	.07	.16	.06	.13	.23	.29	.14	.06	.11	.24	.24	.17
9500	.08	.18	.07	.14	.25	.32	.16	.07	.12	.25	.26	.19
10,000	.08	.20	.07	.16	.27	.35	.19	.07	.12	.27	.29	.21
10,500	.09	.22	.08	.17	.30	.38	.22	.08	.13	.29	.31	.24
11,000	.11	.24	.08	.18	.31	.40	.25	.09	.14	.30	.34	.27



## BLOWER DATA

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

Air Volume cfm	Step-Down Diffuser						Flush Diffuser	
	RTD11-185S			RTD11-275S			FD11-185S	FD11-275S
	2 Ends Open	1 Side/2 Ends Open	All Ends & Sides Open	2 Ends Open	1 Side/2 Ends Open	All Ends & Sides Open		
5000	.51	.44	.39	---	---	---	.27	---
5200	.56	.48	.42	---	---	---	.30	---
5400	.61	.52	.45	---	---	---	.33	---
5600	.66	.56	.48	---	---	---	.36	---
5800	.71	.59	.51	---	---	---	.39	---
6000	.76	.63	.55	.36	.31	.27	.42	.29
6200	.80	.68	.59	---	---	---	.46	---
6400	.86	.72	.63	---	---	---	.50	---
6500	---	---	---	.42	.36	.31	---	.34
6600	.92	.77	.67	---	---	---	.54	---
6800	.99	.83	.72	---	---	---	.58	---
7000	1.03	.87	.76	.49	.41	.36	.62	.40
7200	1.09	.92	.80	---	---	---	.66	---
7400	1.15	.97	.84	---	---	---	.70	---
7500	---	---	---	.51	.46	.41	---	.45
7600	1.20	1.02	.88	---	---	---	.74	---
8000	---	---	---	.59	.49	.43	---	.50
8500	---	---	---	.69	.58	.50	---	.57
9000	---	---	---	.79	.67	.58	---	.66
9500	---	---	---	.89	.75	.65	---	.74
10,000	---	---	---	1.00	.84	.73	---	.81
10,500	---	---	---	1.10	.92	.80	---	.89
11,000	---	---	---	1.21	1.01	.88	---	.96

### CEILING DIFFUSER AIR THROW DATA

Model No.	Air Volume cfm	1 Effective Throw Range - ft.		Model No.	Air Volume cfm	1 Effective Throw Range - ft.	
		RTD11-185S Step-Down	FD11-185S Flush			RTD11-275S Step-Down	FD11-275S Flush
180	5600	39 - 49	28 - 37	210 240 300	7200	33 - 38	26 - 35
	5800	42 - 51	29 - 38		7400	35 - 40	28 - 37
	6000	44 - 54	40 - 50		7600	36 - 41	29 - 38
	6200	45 - 55	42 - 51		7800	38 - 43	40 - 50
	6400	46 - 55	43 - 52		8000	39 - 44	42 - 51
	6600	47 - 56	45 - 56		8200	41 - 46	43 - 52
					8400	43 - 49	44 - 54
			8600		44 - 50	46 - 57	
			8800		47 - 55	48 - 59	

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

### POWER EXHAUST FAN PERFORMANCE

Return Air System Static Pressure	Air Volume Exhausted
in. w.g.	cfm
0.00	8630
0.05	8210
0.10	7725
0.15	7110
0.20	6470
0.25	5790
0.30	5060
0.35	4300
0.40	3510
0.45	2690
0.50	1840

**ELECTRICAL DATA**

**15 TON | 17.5 TON**

Model No.		KGC180S4								
		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
<sup>1</sup> Voltage - 60Hz	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 1 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 2 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Compressor 3 (Non-Inverter)	Rated Load Amps	13.2			6.3			4.9		
	Locked Rotor Amps	93			60			41		
Outdoor Fan Motors (3)	Full Load Amps (3 Non-ECM)	2.4			1.3			1		
	Total	7.2			3.9			3		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	70	80	100	35	35	45	25	30	35
	With (2) 0.33 HP Power Exhaust	70	80	100	35	40	50	25	30	35
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	61	68	78	30	33	37	23	26	29
	With (2) 0.33 HP Power Exhaust	66	73	82	32	35	40	25	28	31

Disconnects - 54W91 - 80A  
54W92 - 150A

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

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

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

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

Model No.		KGC210S4								
		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
<sup>1</sup> Voltage - 60Hz	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 1 (Non-Inverter)	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 2 (Non-Inverter)	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 3 (Non-Inverter)	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Outdoor Fan Motors (3)	Full Load Amps (3 Non-ECM)	2.4			1.3			1		
	Total	7.2			3.9			3		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	100	100	110	40	45	50	30	35	40
	With (2) 0.33 HP Power Exhaust	100	110	125	45	45	50	35	35	45
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	82	88	97	36	39	43	29	31	35
	With (2) 0.33 HP Power Exhaust	87	93	102	38	41	45	31	33	37

Disconnects - 54W91 - 80A  
54W92 - 150A

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

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

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

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

**ELECTRICAL DATA**

**20 TON | 25 TON**

Model No.		KGC240S4								
		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
<sup>1</sup> Voltage - 60Hz										
		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	22.6			10			7.5		
	Locked Rotor Amps	166.2			74.6			54		
Compressor 2 (Non-Inverter)	Rated Load Amps	22.6			10			7.5		
	Locked Rotor Amps	166.2			74.6			54		
Compressor 3 (Non-Inverter)	Rated Load Amps	25			12.8			9.6		
	Locked Rotor Amps	164			100			78		
Outdoor Fan Motors (4)	Full Load Amps (4 Non-ECM)	2.4			1.3			1		
	Total	9.6			5.2			4		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	125	125	125	60	60	60	45	45	50
	With (2) 0.33 HP Power Exhaust	125	125	150	60	60	70	45	50	50
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	103	111	119	49	53	56	38	40	43
	With (2) 0.33 HP Power Exhaust	108	116	124	52	55	59	40	42	45

Disconnects - 54W91 - 80A  
54W92 - 150A

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

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

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

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

Model No.		KGC300S4								
		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
<sup>1</sup> Voltage - 60Hz										
		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1 (Non-Inverter)	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 2 (Non-Inverter)	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 3 (Non-Inverter)	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Compressor 4 (Non-Inverter)	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Outdoor Fan Motors (6)	Full Load Amps (6 Non-ECM)	2.4			1.3			1		
	Total	14.4			7.8			6		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	Total	4.8			2.6			2		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	125	150	150	60	70	70	50	50	50
	With (2) 0.33 HP Power Exhaust	150	150	150	60	70	70	50	50	60
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	121	129	137	56	60	63	43	46	49
	With (2) 0.33 HP Power Exhaust	126	134	142	59	62	66	45	48	51

Disconnects - 54W91 - 80A  
54W92 - 150A

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

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

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

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

## ELECTRICAL ACCESSORIES - DISCONNECTS

### 15 TON | KGC180S4

Motor Horsepower	3		5		7.5		3	5	7.5	3	5	7.5
	208V	230V	208V	230V	208V	230V	460V	460V	460V	575V	575V	575V
Unit Only	54W91	54W91	54W91	54W91	54W92	54W92	54W91	54W91	54W91	54W91	54W91	54W91
Unit w/ Power Exhaust	54W91	54W91	54W91	54W91	54W92	54W92	54W91	54W91	54W91	54W91	54W91	54W91

### 17.5 TON | KGC210S4

Motor Horsepower	3		5		7.5		3	5	7.5	3	5	7.5
	208V	230V	208V	230V	208V	230V	460V	460V	460V	575V	575V	575V
Unit Only	54W92	54W92	54W92	54W92	54W92	54W92	54W91	54W91	54W91	54W91	54W91	54W91
Unit w/ Power Exhaust	54W92	54W92	54W92	54W92	54W92	54W92	54W91	54W91	54W91	54W91	54W91	54W91

### 20 TON | KGC240S4

Motor Horsepower	5		7.5		10		5	7.5	10	5	7.5	10
	208V	230V	208V	230V	208V	230V	460V	460V	460V	575V	575V	575V
Unit Only	54W92	54W92	54W92	54W92	54W92	54W92	54W91	54W91	54W91	54W91	54W91	54W91
Unit w/ Power Exhaust	54W92	54W92	54W92	54W92	54W92	54W92	54W91	54W91	54W91	54W91	54W91	54W91

### 25 TON | KGC300S4

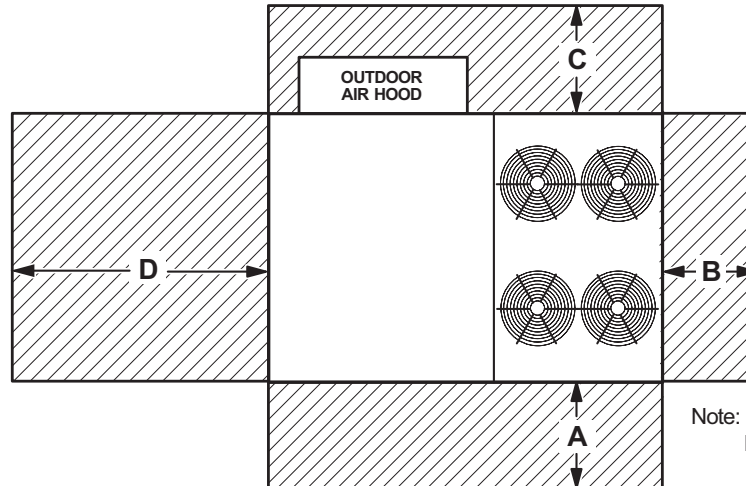
Motor Horsepower	5		7.5		10		5	7.5	10	5	7.5	10
	208V	230V	208V	230V	208V	230V	460V	460V	460V	575V	575V	575V
Unit Only	54W92	54W92	54W92	54W92	54W92	54W92	54W91	54W91	54W91	54W91	54W91	54W91
Unit w/ Power Exhaust	54W92	54W92	54W92	54W92	54W93	54W93	54W91	54W91	54W91	54W91	54W91	54W91

#### **FIELD WIRING NOTES**

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

## UNIT CLEARANCES

### Unit With Economizer



Note: Models with four outdoor fans shown.  
Dimension clearances are for all sizes.

<sup>1</sup> Unit Clearance	A		B		C		D		Top Clearance
	in.	mm	in.	mm	in.	mm	in.	mm	
<b>Service Clearance</b>	60	1524	36	914	36	914	66	1676	Unobstructed
<b>Clearance to Combustibles</b>	36	914	1	25	1	25	1	25	
<b>Minimum Operation Clearance</b>	45	1143	36	914	36	914	41	1041	

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

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

Clearance to Combustibles - Required clearance to combustible material.

Minimum Operation Clearance - Required clearance for proper unit operation.

## OUTDOOR SOUND DATA

Unit Model Number	Octave Band Sound Power Levels dBA, re 10 <sup>-12</sup> Watts - Center Frequency - Hz							<sup>1</sup> Sound Rating Number (SRN) (dBA)
	125	250	500	1000	2000	4000	8000	
180, 210	71	78	81	81	76	71	63	86
240	80	83	87	88	84	80	71	93
300	79	84	88	89	85	82	73	94

Note - The octave sound power data does not include tonal corrections.

<sup>1</sup> Sound Rating Number according to AHRI Standard 270-95 (includes pure tone penalty). Sound Rating Number is the overall A-Weighted Sound Power Level, (LWA), dBA (100 Hz to 10,000 Hz).

## WEIGHT DATA

Model Number	Outdoor Coil	Net		Shipping		Outdoor Coil	Net		Shipping	
		lbs.	kg	lbs.	kg		lbs.	kg		
180S Base Unit	Environ™	1884	855	2084	945	Fin/Tube	1930	875	2130	966
180S Max. Unit	Environ™	2204	1000	2404	1090	Fin/Tube	2250	1021	2450	1111
210S Base Unit	Environ™	2044	927	2244	1018	Fin/Tube	2090	948	2290	1039
210S Max. Unit	Environ™	2374	1077	2574	1167	Fin/Tube	2420	1098	2620	1188
240S Base Unit	Environ™	2216	1005	2416	1096	Fin/Tube	2296	1041	2496	1132
240S Max. Unit	Environ™	2546	1155	2746	1246	Fin/Tube	2626	1191	2826	1282
300S Base Unit	Environ™	2460	1116	2660	1207	Fin/Tube	2525	1145	2725	1236
300S Max. Unit	Environ™	2750	1247	2950	1338	Fin/Tube	2815	1277	3015	1368

NOTE - Max. Unit is the unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories EXTERNAL to unit.

## OPTIONS / ACCESSORIES

	Shipping Weight	
	lbs.	kg

### ECONOMIZER / OUTDOOR AIR / EXHAUST

#### Economizer

Economizer Dampers	102	46
Barometric Relief Dampers (downflow)	30	14
Barometric Relief Dampers (horizontal)	20	9

#### Outdoor Air Dampers

Motorized	52	24
Manual	49	22
Outdoor Air Damper Hood (downflow)	65	29
Power Exhaust	62	28

### GAS HEAT EXCHANGER (NET WEIGHT)

Medium Heat (adder over standard heat)	54	25
High Heat (adder over standard heat)	90	41

### COIL/HAIL GUARDS

Environ™ Coil System	180/210	30	13
	240/300	36	16
Fin/Tube Condenser Coil	180/210	30	14
	240/300	36	17

### ROOF CURBS

#### Hybrid Roof Curb, Downflow

8 in. height	136	62
14 in. height	169	77
18 in. height	191	87
24 in. height	224	102

#### Adjustable Pitch Curb, Downflow

14 in. height	224	102
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#### Horizontal Roof Curbs, Standard

26 in. height	450	204
37 in. height	540	245
30 in. height	495	225
41 in. height	575	261

### CEILING DIFFUSERS

Step-Down	RTD11-185S	168	76
	RTD11-275S	238	108
Flush	FD11-185S	168	76
	FD11-275S	238	108
Transitions	C1DIFF33C-1	80	36
	C1DIFF34C-1	75	34

### HUMIDITROL® DEHUMIDIFICATION SYSTEM

Humiditrol® Dehumidification Option (Net Weight)	50	23
--------------------------------------------------	----	----



**DIMENSIONS - UNIT**

**KGC180 | KGC210**

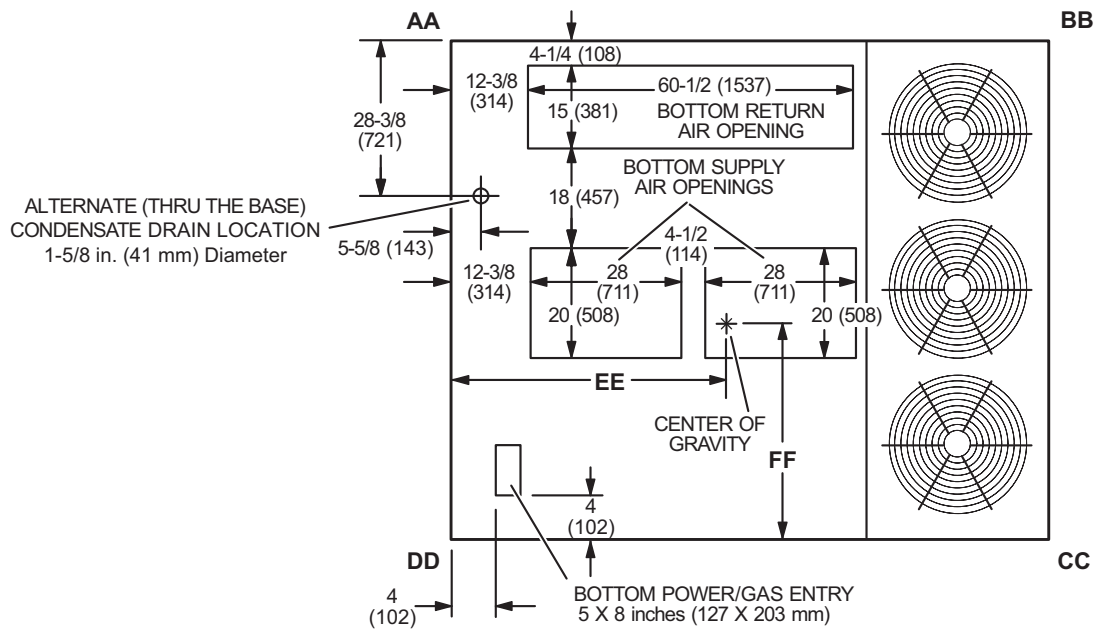
**CORNER WEIGHTS**

**CENTER OF GRAVITY**

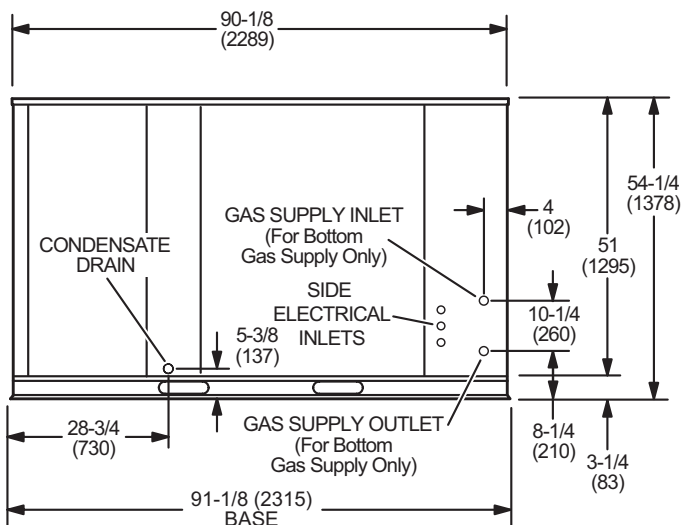
Model No.	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
KGC180S Base Unit (Environ™ Coil)	426	194	378	172	508	231	572	260	50-5/8	1286	38-7/8	987
KGC180S Max. Unit (Environ™ Coil)	541	246	452	206	551	251	659	300	49	1247	41	1043
KGC180S Base Unit (Fin/Tube Coil)	458	208	385	175	497	226	591	268	49-1/4	1250	39-3/4	1011
KGC180S Max. Unit (Fin/Tube Coil)	581	264	475	216	537	244	657	299	48-1/2	1231	42-3/4	1086
KGC210S Base Unit (Environ™ Coil)	468	213	419	190	546	248	611	278	50-7/8	1292	39-1/2	1004
KGC210S Max. Unit (Environ™ Coil)	593	270	499	227	585	266	696	317	49-1/4	1250	42	1065
KGC210S Base Unit (Fin/Tube Coil)	489	222	427	194	547	249	627	285	50-1/4	1276	40	1015
KGC210S Max. Unit (Fin/Tube Coil)	617	280	521	237	587	267	695	316	49-3/8	1253	42-7/8	1088

Base Unit - The unit with NO INTERNAL OPTIONS.

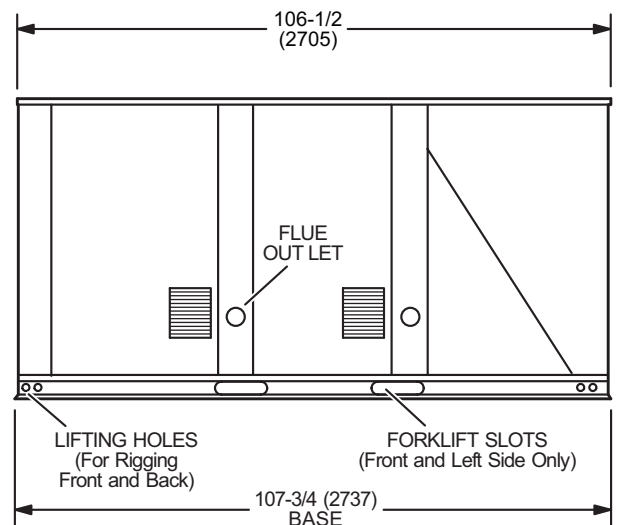
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



**TOP VIEW**



**END VIEW**



**SIDE VIEW**

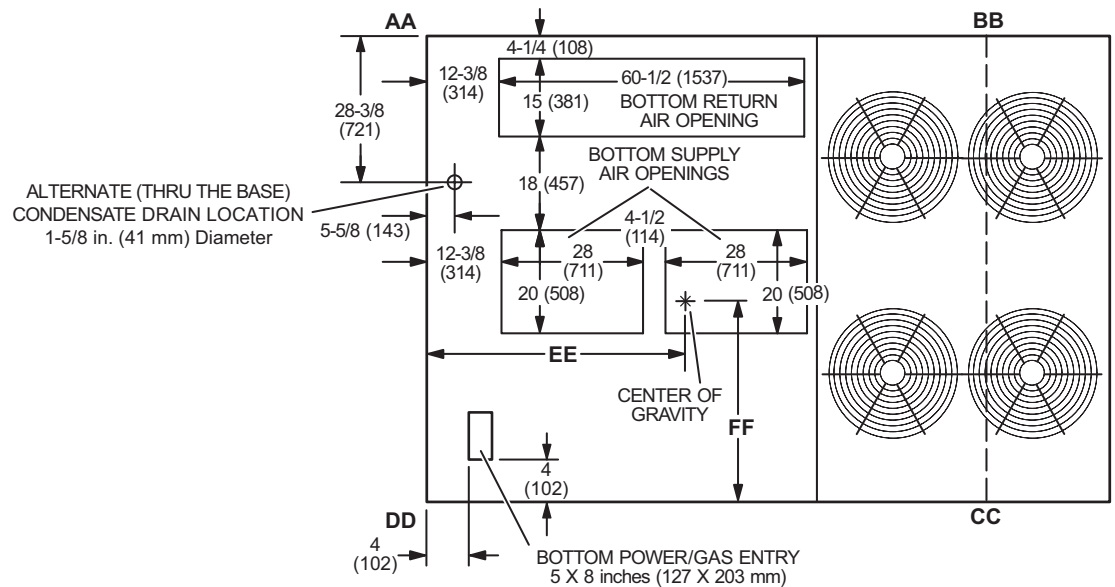
**CORNER WEIGHTS**

**CENTER OF GRAVITY**

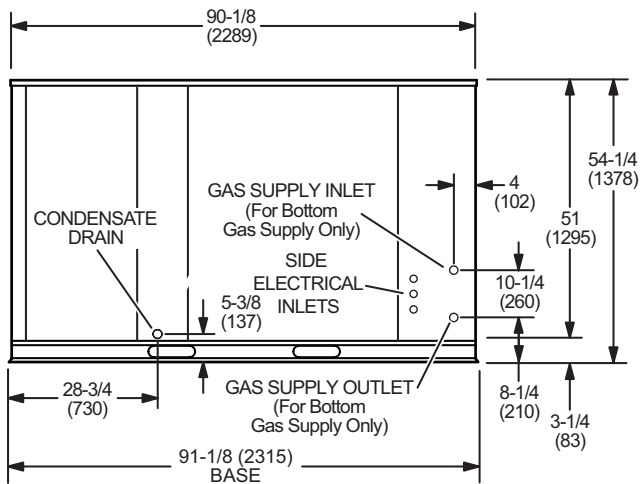
Model No.	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
KGC240S Base Unit (Environ™ Coil)	466	212	437	199	635	289	677	308	52-1/8	1325	37-1/8	944
KGC240S Max. Unit (Environ™ Coil)	576	262	524	238	689	313	758	344	51-1/4	1303	39-3/8	1000
KGC240S Base Unit (Fin/Tube Coil)	501	228	495	225	646	293	654	297	53-1/2	1359	39-1/2	1004
KGC240S Max. Unit (Fin/Tube Coil)	624	284	587	267	686	312	729	331	52-1/4	1327	42	1067

Base Unit - The unit with NO INTERNAL OPTIONS.

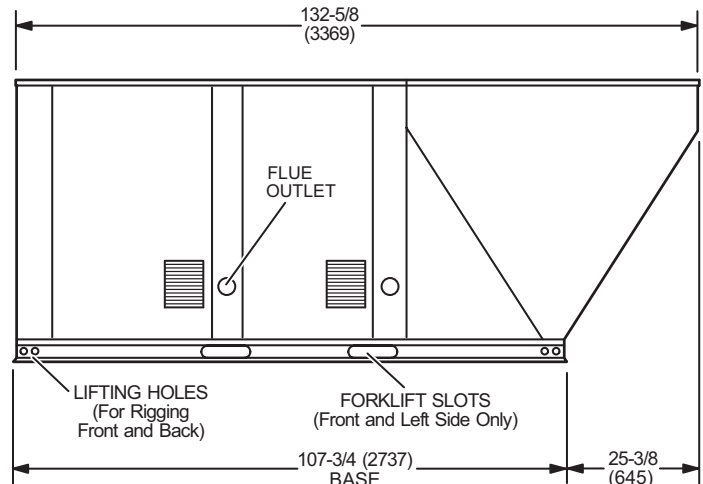
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



**TOP VIEW**



**END VIEW**



**SIDE VIEW**

# DIMENSIONS - UNIT

KGC300

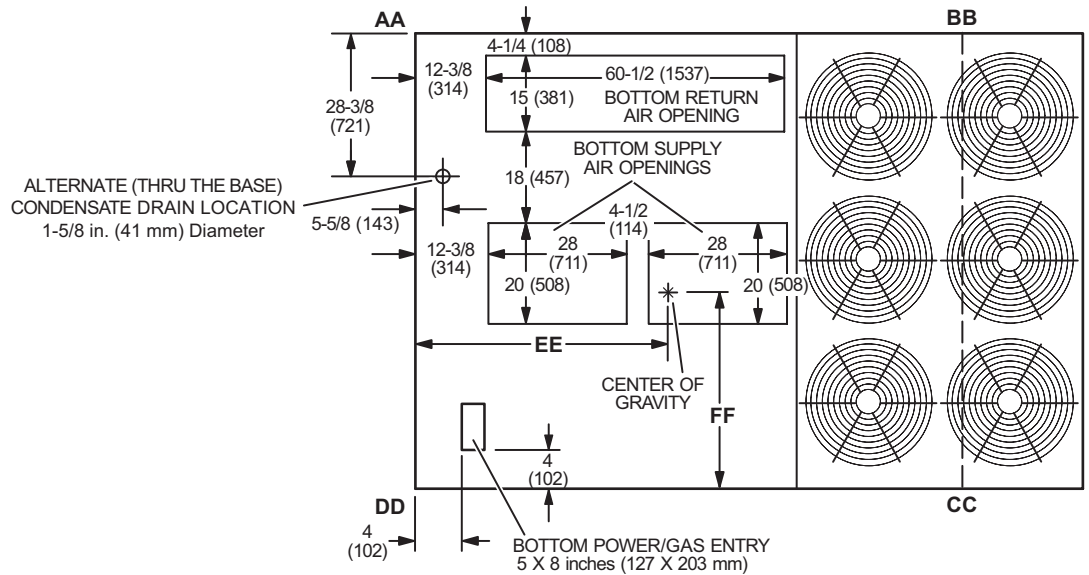
## CORNER WEIGHTS

## CENTER OF GRAVITY

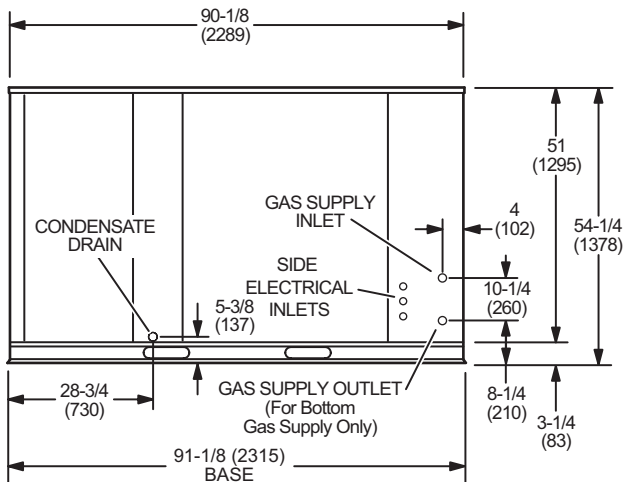
Model No.	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
KGC300S Base Unit (Environ™ Coil)	512	233	509	231	718	326	722	328	53-3/4	1364	37-3/4	960
KGC300S Max. Unit (Environ™ Coil)	625	284	598	272	747	339	780	355	52-3/4	1339	40-1/2	1029
KGC300S Base Unit (Fin/Tube Coil)	525	239	522	237	737	335	741	337	53-3/4	1364	37-3/4	960
KGC300S Max. Unit (Fin/Tube Coil)	640	291	612	278	764	347	799	363	52-5/8	1338	40-1/2	1029

Base Unit - The unit with NO INTERNAL OPTIONS.

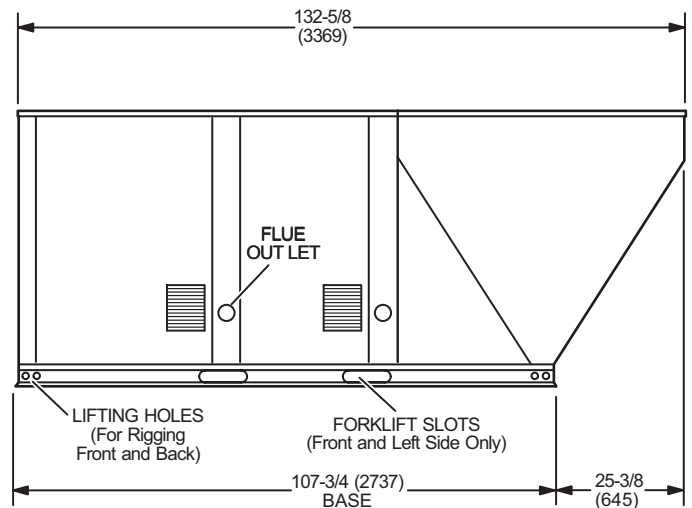
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



TOP VIEW

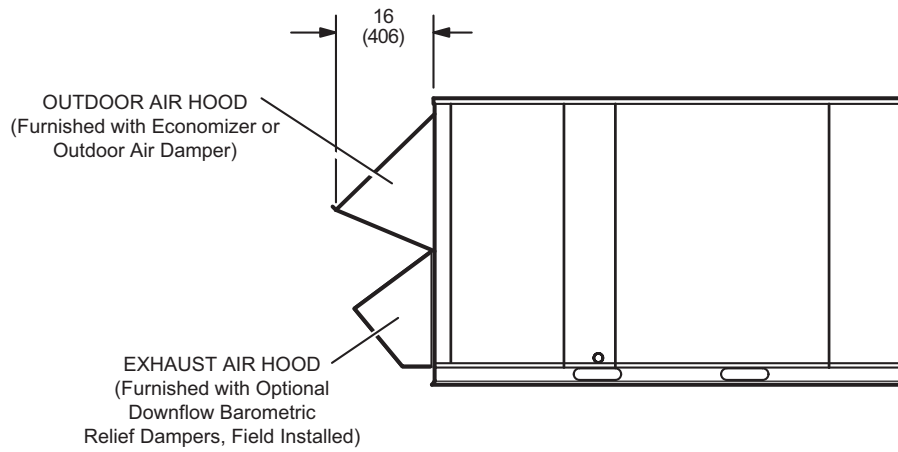


END VIEW



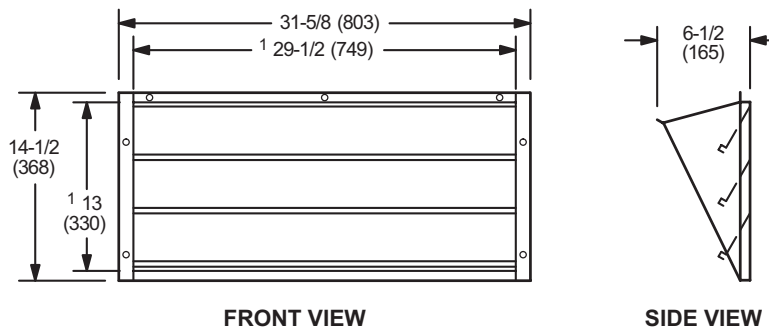
SIDE VIEW

**OUTDOOR AIR HOOD DETAIL**



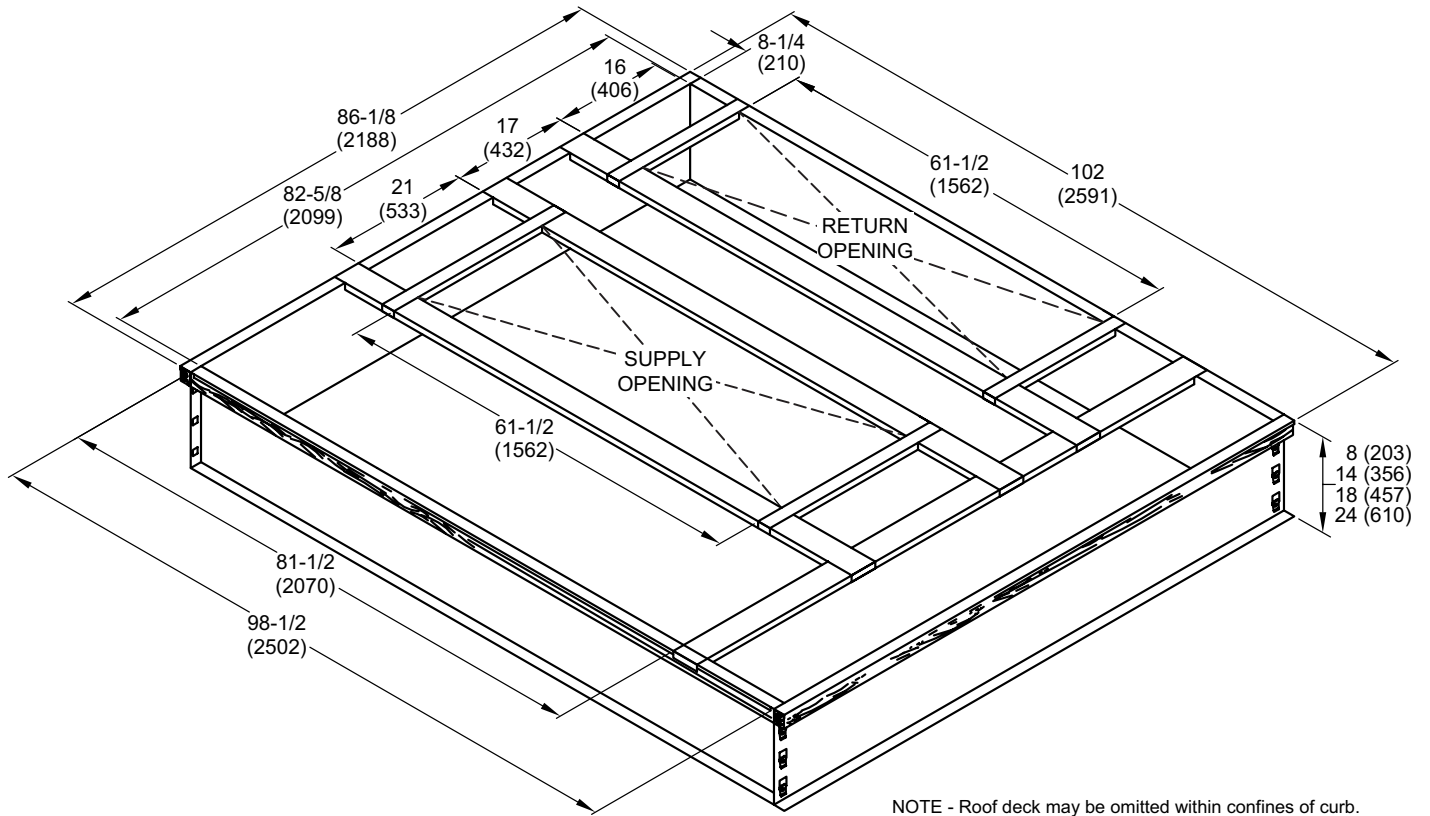
**OPTIONAL HORIZONTAL BAROMETRIC RELIEF DAMPERS WITH HOOD**

(Field installed in horizontal return air duct adjacent to unit)



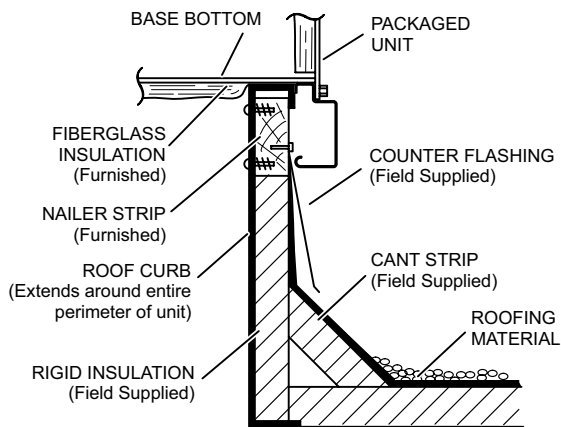
NOTE - Two furnished per order no.  
<sup>1</sup> NOTE - Opening size required in return air duct.

**HYBRID ROOF CURBS - DOUBLE DUCT OPENING**

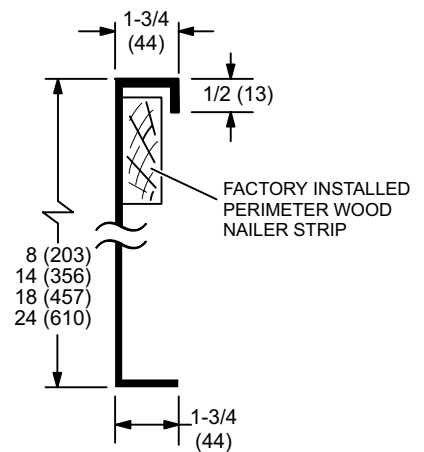


NOTE - Roof deck may be omitted within confines of curb.

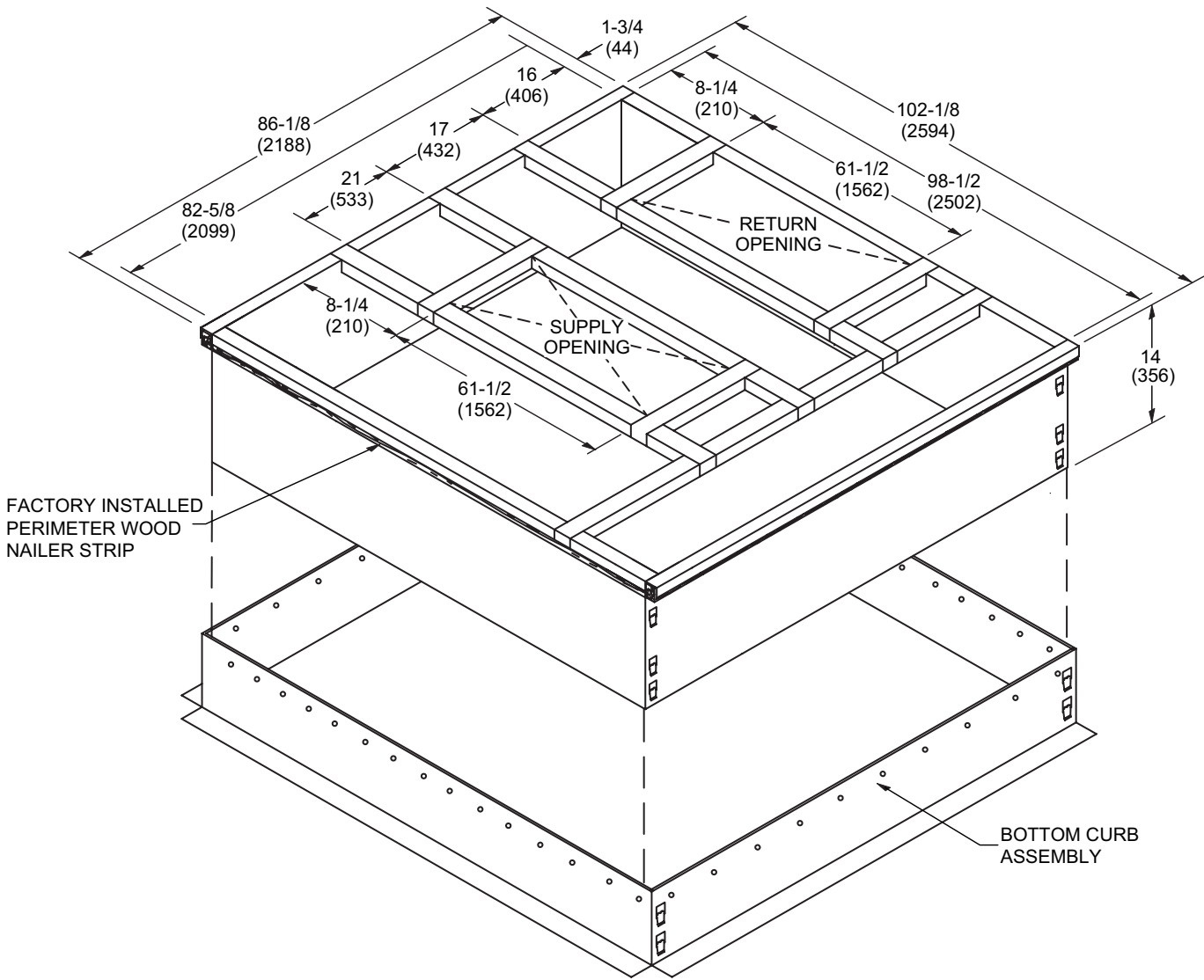
**TYPICAL FLASHING DETAIL FOR ROOF CURB**



**DETAIL ROOF CURB**

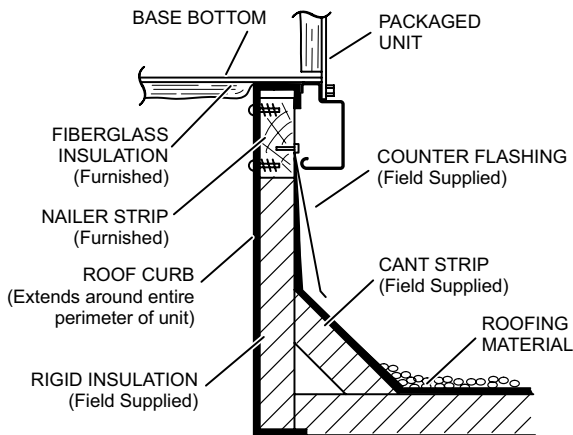


**ADJUSTABLE PITCH CURB - DOUBLE DUCT OPENING**

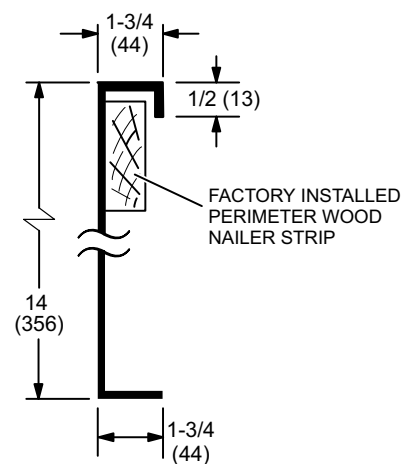


NOTE - Maximum slope pitch is 3/4 in. per 1 foot (19 mm per 305 mm) in any one direction.

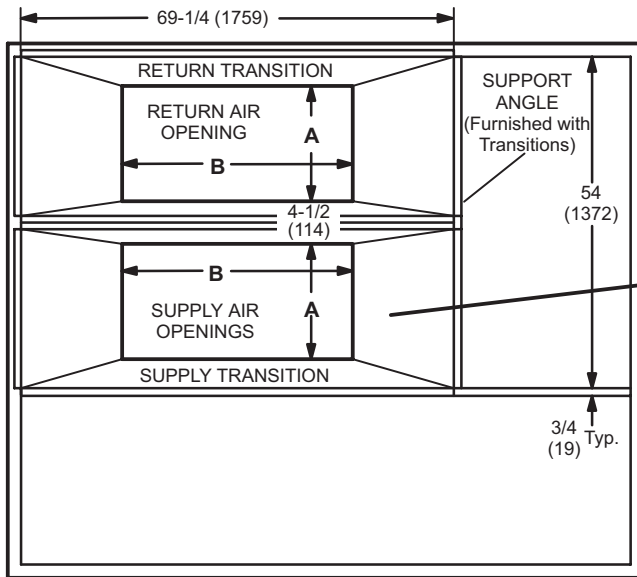
**TYPICAL FLASHING DETAIL FOR ROOF CURB**



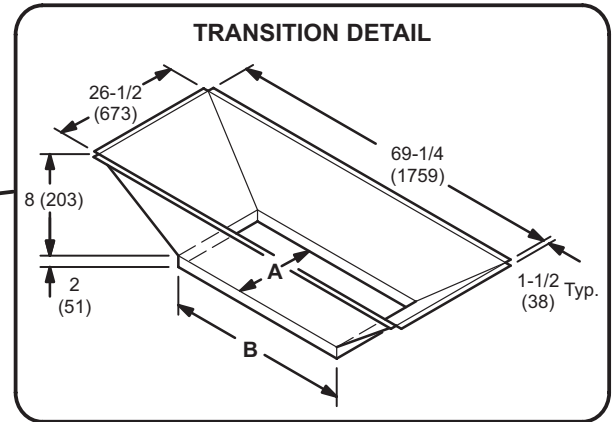
**DETAIL ROOF CURB**



**ROOF CURBS WITH SUPPLY & RETURN AIR TRANSITIONS FOR CEILING DIFFUSERS**



**TOP VIEW**

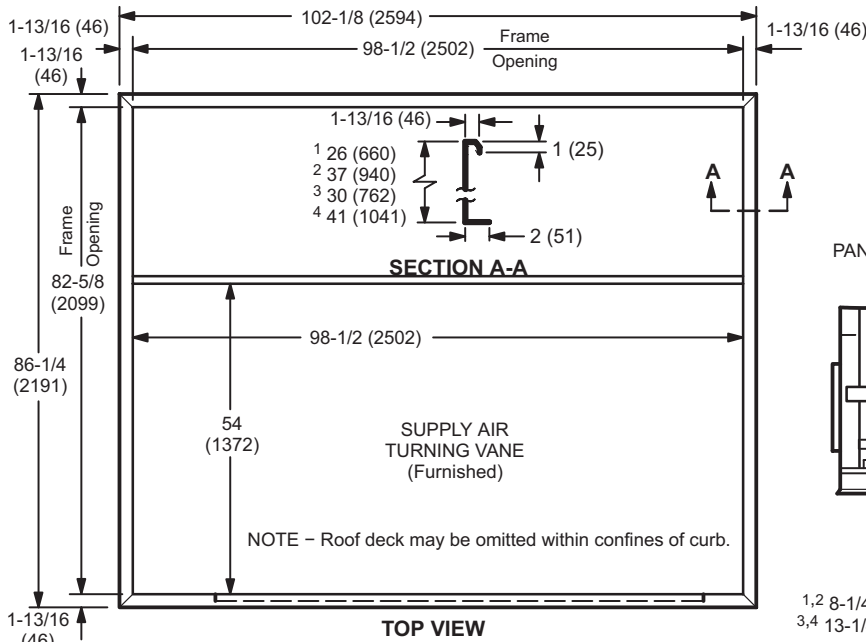


**TRANSITION OPENING SIZES**

Model Number	A		B	
	inch	mm	inch	mm
C1DIFF33C-1	18	457	36	914
C1DIFF34C-1	24	610	48	1219

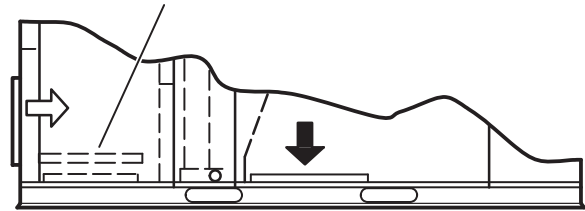


**HORIZONTAL ROOF CURBS – Requires Optional Horizontal Return Air Panel Kit**

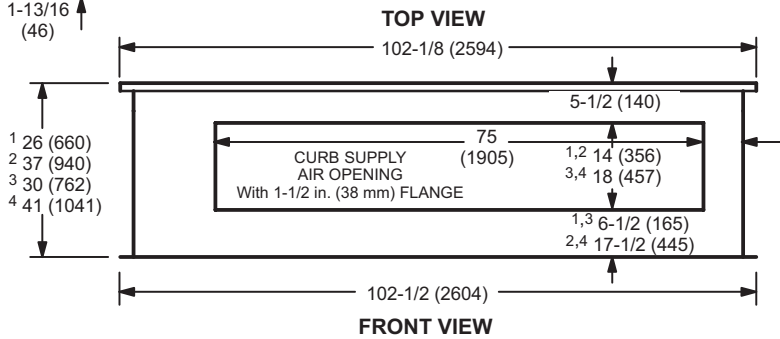


NOTE 26 in. (660 mm) and 30 in. (762 mm) height Curbs are designed for horizontal discharge when unit is mounted on a slab.  
37 in. (940 mm) and 41 in. (1041 mm) height Curbs are designed for horizontal discharge when unit is mounted on a rooftop.

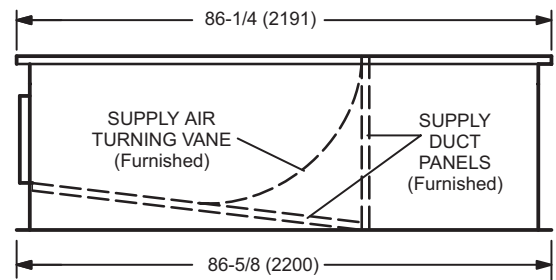
PANEL TO COVER RETURN AIR OPENING IN BOTTOM OF UNIT (Furnished With Optional Horizontal Return Air Panel Kit)



**SIDE VIEW**  
(Packaged Unit)



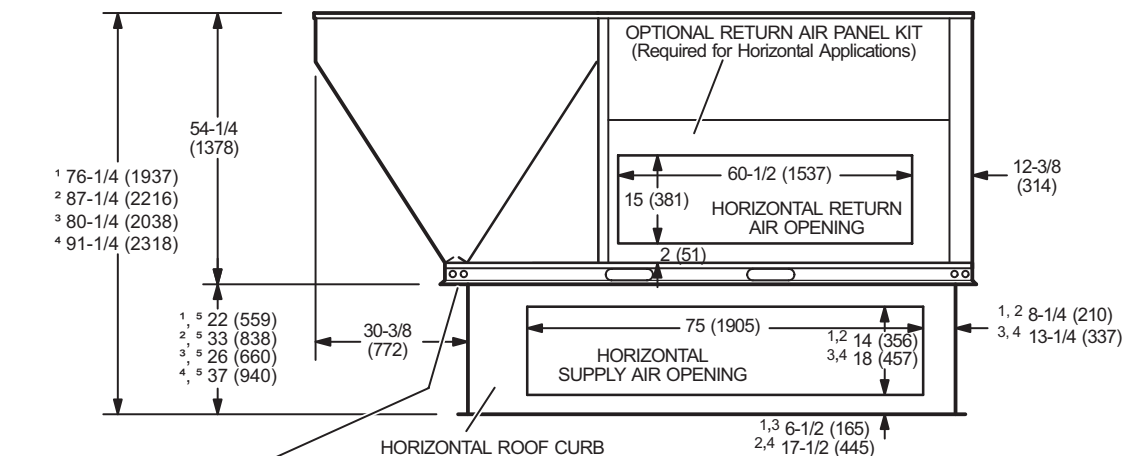
1,2 8-1/4 (210)  
3,4 13-1/4 (337)



**SIDE VIEW**

1 Slab Applications    2 Rooftop Applications    3 Slab Applications (used with 300)    4 Rooftop Applications (used with 300)

**HORIZONTAL SUPPLY AND RETURN AIR OPENINGS WITH HORIZONTAL ROOF CURB**

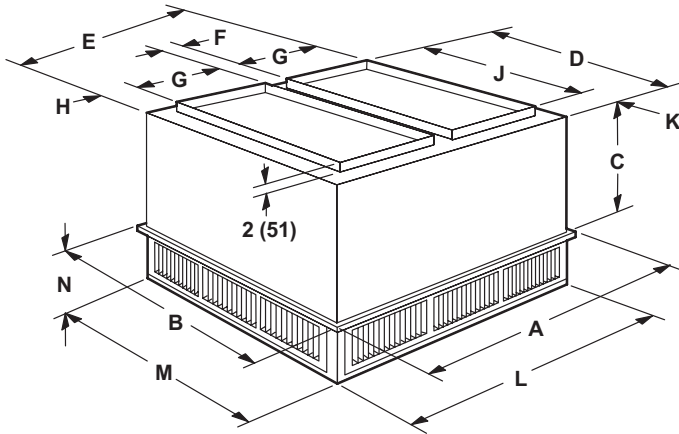


NOTE – Top of Roof Curb extends 4 inch (102 mm) inside bottom of unit base. See Typical flashing detail.

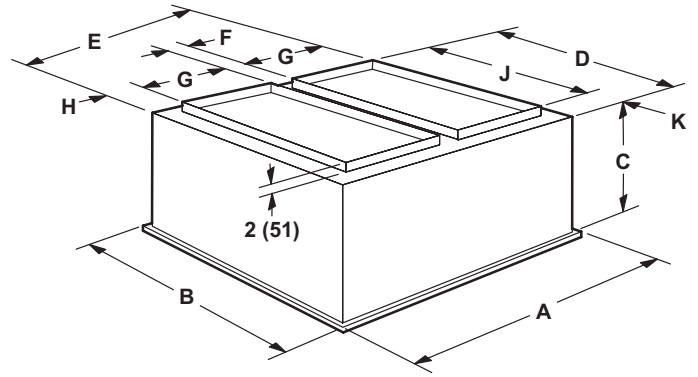
1 Slab Applications  
2 Rooftop Applications  
3 Slab Applications (used with 300 Models Only)  
4 Rooftop Applications (used with 300 Models Only)

**COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS**

**STEP-DOWN CEILING DIFFUSER**



**FLUSH CEILING DIFFUSER**



Model Number		RTD11-185S	RTD11-275
<b>A</b>	in.	47-5/8	59-5/8
	mm	1210	1514
<b>B</b>	in.	47-5/8	59-5/8
	mm	1210	1514
<b>C</b>	in.	24-5/8	30-5/8
	mm	625	778
<b>D</b>	in.	45-1/2	57-1/2
	mm	1156	1461
<b>E</b>	in.	45-1/2	57-1/2
	mm	1156	1461
<b>F</b>	in.	4-1/2	4-1/2
	mm	114	114
<b>G</b>	in.	18	24
	mm	457	610
<b>H</b>	in.	2-1/2	2-1/2
	mm	64	64
<b>J</b>	in.	36	48
	mm	914	1219
<b>K</b>	in.	4-3/4	4-3/4
	mm	121	121
<b>L</b>	in.	45-1/2	57-1/2
	mm	1156	1461
<b>M</b>	in.	45-1/2	57-1/2
	mm	1156	1461
<b>N</b>	in.	10-1/8	11-1/8
	mm	257	283
<b>Duct Size</b>	in.	18 x 36	24 x 48
	mm	457 x 914	610 x 1219

Model Number		FD11-185S	FD11-275
<b>A</b>	in.	47-5/8	59-5/8
	mm	1210	1514
<b>B</b>	in.	47-5/8	59-5/8
	mm	1210	1514
<b>C</b>	in.	29-1/4	35-1/4
	mm	743	895
<b>D</b>	in.	45	57
	mm	1143	1148
<b>E</b>	in.	45	57
	mm	1143	1448
<b>F</b>	in.	4-1/2	4-1/2
	mm	114	114
<b>G</b>	in.	18	24
	mm	457	610
<b>H</b>	in.	2-1/4	2-1/4
	mm	57	57
<b>J</b>	in.	36	48
	mm	914	1219
<b>K</b>	in.	4-1/2	4-1/2
	mm	114	114
<b>Duct Size</b>	in.	18 x 36	24 x 48
	mm	457 x 914	610 x 1219

## REVISIONS

Sections	Description of Change
Weight Data	Updated Roof Curb weights.



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