



**PACKAGED GAS ELECTRIC**

**KG**

**Landmark® Rooftop Units  
60 HZ**

**PRODUCT SPECIFICATIONS**

Bulletin No. 210552  
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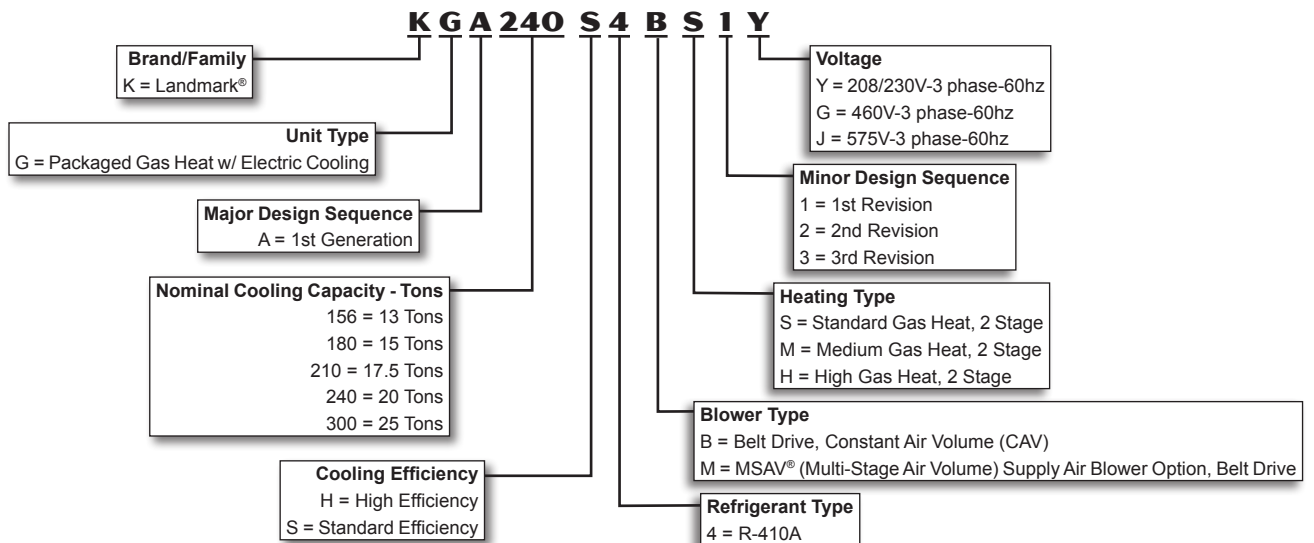


**ASHRAE 90.1  
COMPLIANT**

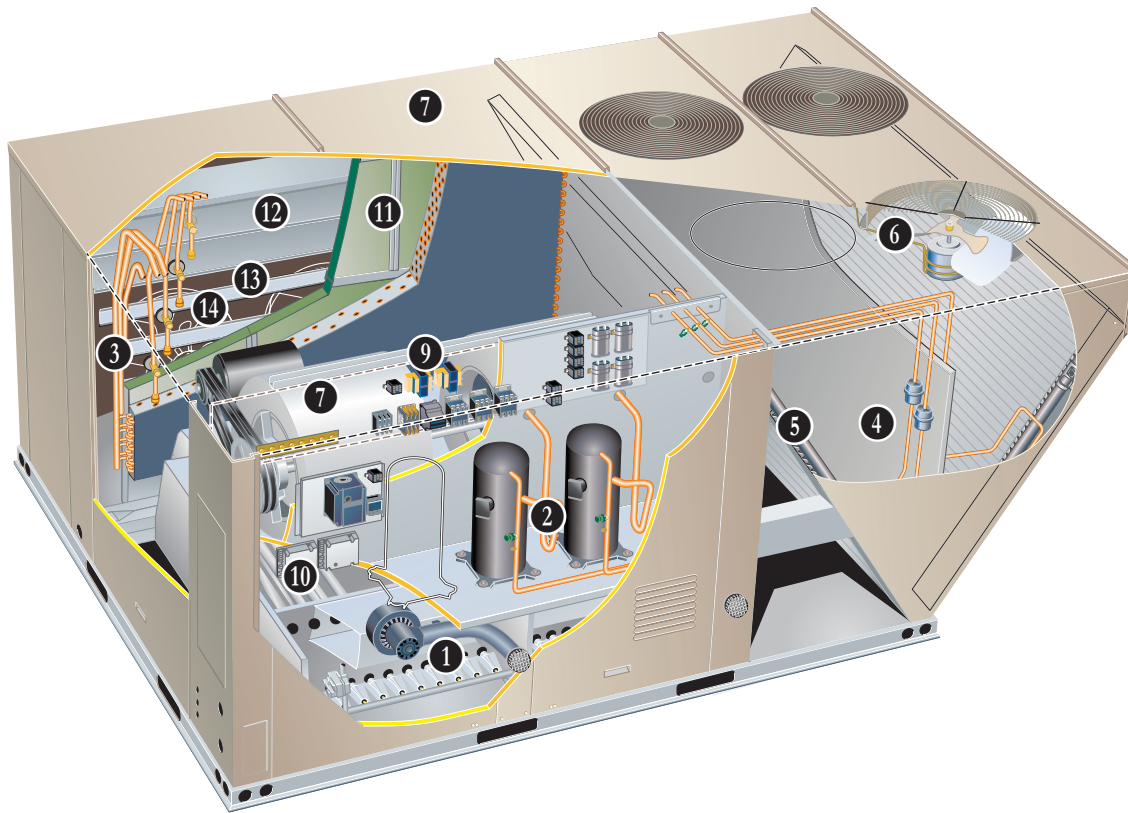
**13 to 25 Tons**

**Net Cooling Capacity – 152,000 to 270,000 Btuh  
Gas Input Heat Capacity – 260,000 to 480,000 Btuh**

**MODEL NUMBER IDENTIFICATION**



## FEATURES AND BENEFITS



Landmark® rooftop units from Lennox® are the new standard for reliable, efficient rooftop units built for long-lasting performance that can significantly improve indoor and outdoor environments. Landmark® rooftop units feature:

- **Aluminized Steel Heat Exchanger With Inshot Burners** - Life cycle tested.
- **R-410A Refrigerant** - Environmentally friendly.
- **Scroll Compressors** - Single speed scroll compressors are furnished on all models.
- **Lennox' Environ™ Crankcase Heaters** - Protect compressors from refrigerant liquid migration in the off cycle improving product reliability.
- **High Pressure Switches** - Protects compressor.
- **Isolated Compressor Compartment** - Allows performance check during normal compressor operation without disrupting airflow.
- **Independent Outdoor Fan Motor Mounts** - Allows for easy and efficient service access without removing the top panel.
- **Constant Air Volume (CAV) or MSAV® (Multi-Stage Air Volume) Supply Air Blower Option** - Allows constant or multi-staged air delivery.
- **Downflow Airflow** - Horizontal airflow with optional horizontal curb.
- **Two Fork Lift Slots on Three Sides** - Easy to pick up and transport units from almost any angle.
- **Corrosion-Resistant Removable, Drain Pan** - Provides application flexibility, durability and improved serviceability.
- **Thermostatic Expansion Valves** - Provide peak cooling performance across the entire application range.
- **MERV 8 or MERV 13 Filters** - Available as field installed option, provide an enhanced level of indoor air quality, and can help the building qualify for additional LEED credits.
- **Common Components** - Many maintenance items are standard throughout the entire product line, reducing the need to carry different parts to the job or maintain in inventory.

## FEATURES AND BENEFITS

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### APPROVALS

Efficiency rating CSA.

Components bonded for grounding to meet safety standards for servicing required by UL, ULC and National and Canadian Electrical Codes.

All models are certified in accordance with the ULE certification program, which is based on AHRI Standard 340/360-2007.

All models are ASHRAE 90.1-2010 energy efficiency compliant and meet or exceed requirements of Section 6.8.

MSAV® models meet California Code of Regulations, Title 24 and ASHRAE 90.1-2010 Section 6.4.3.10 requirements for staged airflow.

ISO 9001 Registered Manufacturing Quality System.

### WARRANTY

Limited ten years aluminized heat exchanger, limited fifteen years optional stainless steel heat exchanger.

Limited five years on compressors.

Limited three years on the Lennox' Environ™ Coil System.

Limited five years Optional High Performance Economizers.

Limited one year all other covered components.

### HEATING SYSTEM

- 1 Aluminized steel inshot burners, direct spark ignition, electronic flame sensor, combustion air inducer, redundant automatic dual stage gas valve with manual shut-off.

#### Heat Exchanger

Tubular construction, aluminized steel, life cycle tested.

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

### Electronic Pilot Ignition

Electronic spark igniter provides positive direct ignition of burners on each operating cycle. The 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. Ignition module has LED to indicate status and aid in troubleshooting.

Ignition control is factory installed in the controls section.

### Limit Controls

Factory installed, redundant limit controls with fixed temperature setting. Heat limit controls protect heat exchanger and other components from overheating.

### Safety Switches

Flame roll-out switch, flame sensor and combustion air inducer proving switch protect system operation.

### 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)**

#### **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. The vent kit also prevents ice formation on intake louvers. Order two kits.

Kit 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 30°F to 125°F without any additional controls.

#### **R-410A Refrigerant**

Non-chlorine based, ozone friendly, R-410A.



#### **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**

Protect against refrigerant migration that can occur during low ambient operation.

#### **3 Thermal Expansion Valves (High Efficiency Models)**

Assures optimal performance throughout the application range. Removable element head.

#### **Refrigerant Metering Orifice (Standard Efficiency Models)**

Accurately meters refrigerant in system.

Refrigerant control is accomplished by exact sizing of refrigerant metering orifice.

#### **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.

#### **Freezestats**

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

#### **5 Lennox' Environ™ Coil System**

Condenser coil features lightweight, all aluminum brazed fin construction.

Constructed of three components:

a flat extrusion tubes, fins in-between the flat extrusion tube and 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 (reduces unit weight).
- Easy maintenance/cleaning.
- Face split design.

Mounting brackets with rubber inserts secure coil to unit providing vibration dampening and corrosion protection.

Angled design in cabinet helps protect coil from possible contact or hail damage.

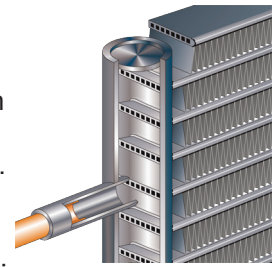
#### **Evaporator Coil**

Copper tube construction, enhanced rippled-edge aluminum fins, flared shoulder tubing connections, silver soldered construction for improved heat transfer. Factory leak tested. Cross row circuiting with rifled tubing optimizes both sensible and latent cooling capacity.

#### **Condensate Drain Pan**

Plastic pan, sloped to meet drainage requirements of ASHRAE 62.1.

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 of the unit.

#### **Options / Accessories**

##### **Field Installed**

**Condensate Drain Trap**  
Available in copper or PVC.

**Drain Pan Overflow Switch**  
Monitors condensate level in drain pan, shuts down unit if drain becomes clogged.

**Low Ambient Control**  
Cycles the outdoor fans while allowing compressor operation in the cooling cycle. This intermittent fan operation allows the system to operate without icing the evaporator coil and losing capacity. Designed for use in ambient temperatures no lower than 0°F.

### **CABINET**

- 7 Construction**  
Heavy-gauge steel panels and full perimeter heavy-gauge galvanized steel base rail provides structural integrity for transportation, handling, and installation.  
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 provide additional protection against water entering the building.

**Airflow Choice**  
Units are available in downflow (vertical) or horizontal return air flow configuration.  
Horizontal air flow requires Horizontal Roof Curb.  
Horizontal Return Air Panel Kit is also required if converting a downflow configured unit to horizontal air flow.

**Power/Gas Entry**  
Electrical and gas lines can be brought through the unit base or through horizontal access knock-outs

**Exterior Panels**  
Constructed of heavy-gauge, galvanized steel with a two-layer enamel paint finish.

**Insulation**  
All panels adjacent to conditioned air are fully insulated with non-hygroscopic fiberglass insulation.  
Unit base is fully insulated. The insulation also serves as an air seal to the roof curb, eliminating the need to add a seal during installation.

**Access Panels**  
Access panels are provided for the economizer/filter section, heating/blower section, and the compressor/controls section.

### **Options / Accessories**

#### **Factory Installed**

**Corrosion Protection**  
A completely flexible immersed coating with an electrodeposited dry film process. (AST ElectroFin E-Coat) Meets Mil Spec MIL-P-53084, ASTM B117 Standard Method Salt Spray Testing.

Indoor Corrosion Protection:

- Coated coil
- Painted blower housing
- Painted indoor base

Outdoor Corrosion Protection:

- Coated coil
- Painted outdoor base

#### **Hinged Access Panels**

Hinged access panels for the filter section, the blower section and compressor/controls section.

All hinged panels have seals and quarter-turn latching handles to provide a tight air and water seal.

#### **Field Installed**

**Combination Coil/Hail Guards**  
Heavy gauge steel frame painted to match cabinet with expanded metal mesh to protect the outdoor coil from damage.

**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.

## FEATURES AND BENEFITS

### 8 BLOWER

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

#### Motor

Overload protected, equipped with ball bearings. Belt drive motors are offered on all models and are available in several different sizes to maximize air performance.

#### Supply Air Blower

Forward curved blades, double inlet, blower wheel is statically and dynamically balanced. Equipped with ball bearings and adjustable pulley (allows speed change).

Blower assembly slides out of unit for servicing.

### Required Selections

#### Select Constant Air Volume (CAV) or MSAV® (Multi-Stage Air Volume) Supply Air Blower Option

On Constant Air volume (CAV) models, the supply air blower will provide a constant volume of air. MSAV® (Multi-Stage Air Volume) supply air blower option models utilize a Variable Frequency Drive (VFD) to stage the supply air blower airflow. The VFD alters the frequency and voltage of the power supply to the blower to control blower speed.

The supply air blower has two speeds:

- Low speed for part-load cooling operation. NOTE - Low speed is 66% of high speed.
- 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.

The ventilation speed is selectable between high and low speed.

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

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

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

#### MSAV® 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.

#### Ordering Information

Specify standard or high efficiency blower motor, motor horsepower and drive kit number when base unit is ordered, see Drive Kit Specifications Table.

### Options / Accessories

#### Field Installed

##### VFD Manual Bypass Kit

VFD Manual Bypass Control is available as a kit for MSAV® equipped models.

The 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.

**Heat/Cool Staging** - Capable of 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.

**Night Setback Mode** - Saves energy by closing outdoor air dampers and operating supply fan on thermostat demand only.

### 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

##### L Connection® Network

Complete building automation control system for single or multi-zone applications. Options include local interface, software for local or remote communication, and hardware for networking other control functions.

See L Connection Network Product Specifications Bulletin for details.

##### Thermostats

Control system and thermostat options, see page 39.

Aftermarket unit controller options, see Options/Accessories table.

## 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.

### **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, non-powered, field-wired.

#### **Field Installed**

#### **GFI Weatherproof Cover**

Single-gang cover.

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

#### **Phase Monitor**

Phase monitor 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, the LED will be green.

*NOTE - Phase Monitor is factory installed in the control compartment on all units equipped with the MSAV® Supply Air Blower option.*

### **INDOOR AIR QUALITY**

#### **⑪ Air Filters**

Disposable 2 inch filters furnished as standard.

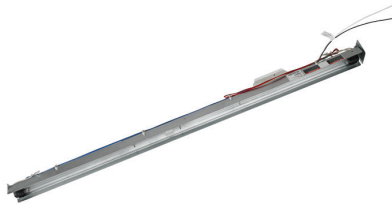
### **Options / Accessories**

#### **Field Installed**

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

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

#### **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. This process either destroys the organism or controls its ability to reproduce.

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).

Lamps are field installed in the blower/evaporator coil section.

All necessary hardware for installation is included.

Lamps operate on 208/230V power supply. Step-down transformer must be field supplied when used with 460V and 575V rooftop units.

Magnetic safety interlock terminates power when access panels are removed.

Approved by ETL.

#### **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.

**12 ECONOMIZER OPTIONS**

**Factory or Field Installed**

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

Outdoor Air Hood with mist elimination filter is furnished.

Mixed Air Sensor is furnished for field installation in the rooftop unit. Sensor is factory installed when Economizers are factory installed.

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

Gear-driven action, return air and outdoor air dampers, plug-in connections to unit, nylon bearings, neoprene seals, 24-volt, fully-modulating spring return motor.

**Standard Economizer  
Control Module**

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



**Economizer Controls:**

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

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.*

**High Performance  
Economizer Features**

Approved for California Title 24 building standards.

Low leakage dampers are Air Movement and Control Association International (AMCA) Class 1A Certified - Maximum 3 CFM per sq. ft. leakage at 1 in. w.g.

ASHRAE 90.1-2010 compliant.

Gear-driven action, high torque 24-volt fully-modulating spring return damper motor, return air and outdoor air dampers, plug-in connections to unit, stainless steel bearings, enhanced neoprene blade edge seals and flexible stainless steel jamb seals to minimize air leakage.

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

**High Performance  
Economizer Control Module**

Module provides inputs and outputs to control economizer based on parameter settings. Module automatically detects sensors by polling to determine which sensors are installed in system.



Module displays any alarm messages (fault detection and diagnostics) as an aid in troubleshooting.

Non-volatile memory retains parameter settings in case of power failure.

Keypad with four navigation buttons and LCD screen is furnished for setting economizer parameters.

- Menu Up/Exit (↑) button returns to the main menu.
- Arrow Up (▲) button moves to the previous or next parameter within the selected menu.

- Arrow Down (▼) button moves to the next parameter within the selected menu.
- Select (enter) (↵) button confirms parameter selection.

**Main Menu Structure:**

- STATUS (economizer and system operation status)
- SETPOINTS (settings for various setpoint parameters)
- SYSTEM SETUP (settings/information about the system)
- ADVANCED SETUP (freeze protection, CO<sub>2</sub> settings, stage 3 delay and additional calibration settings)
- CHECKOUT (damper positions)
- ALARMS (output signal that can be configured for remote alarm monitoring)

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

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

**Factory or Field Installed**

**Single Enthalpy Temperature Control  
(Not for Title 24)**

Outdoor air enthalpy sensor enables economizer if the outdoor enthalpy is less than the setpoint of the control. Single enthalpy control is furnished with economizer.

**Field Installed**

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

Order two Single Enthalpy Control Kits. One is field installed in the return air section, the other in the outdoor air section. Allows the economizer control board to select between outdoor air or return air, whichever has lower enthalpy.



### **EXHAUST OPTIONS**

#### **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. Requires Economizer with Outdoor Air Hood and Downflow Barometric Relief Dampers. Dual fans are 20 in. diameter with 5 blades with (2) 1/3 hp motors.

### **OUTDOOR AIR OPTIONS**

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

#### **Outdoor Air Damper - Downflow or Horizontal With Air Hood**

Linked mechanical dampers, 0 to 25% (fixed) outdoor air adjustable, installs in unit. Includes outdoor air hood.

Automatic model features fully modulating spring return damper motor with plug-in connection.

Manual model features parallel blade, gear-driven dampers with adjustable fixed position.

Outdoor Air Hood is included when damper is factory installed and is furnished with damper when ordered for field installation.

### **ROOF CURBS**

Nailer strip furnished (downflow only), mates to unit, US National Roofing Contractors Approved, shipped knocked down.

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

Roof curb can be assembled using interlocking tabs to fasten corners together. No tools required.

Curb can also be fastened together with furnished hardware.

Available in 8, 14, 18, and 24 inch heights.

#### **Adjustable Pitch Curb, Downflow**

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.

Uses interlocking tabs to fasten corners together. No tools required.

Hardware is furnished to connect upper curb with lower curb.

Available in 14 inch height.

### **Horizontal**

Converts unit from downflow to horizontal (side) air flow, return air is on unit, supply air is on curb, see dimension drawings. Curbs for rooftop applications meet National Roofing Code requirements. Requires Horizontal Return Air Panel Kit. Available in 26, 30, 37 and 41 inch heights. Optional Insulation Kit is available to help prevent sweating.

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

Curbs are regionally sourced. Dimensions will vary based upon the source. Contact your local sales representative for a detailed cut sheet with applicable dimensions.

### **CEILING DIFFUSERS**

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

Diffuser face and grilles with white powder coat finish, insulated (UL listed duct liner), diffuser box with collars for duct connection, fixed blades (flush diffusers) and double deflection blades (step-down diffusers), provisions for suspending, internally sealed (prevents 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.

## OPTIONS / ACCESSORIES - STANDARD AND HIGH EFFICIENCY MODELS

Item Description	Model Number	Catalog Number	Unit Model No.				
			156	180	210	240	300
<b>COOLING SYSTEM</b>							
Condensate Drain Trap	PVC - C1TRAP20AD2	<b>76W26</b>	X	X	X	X	X
	Copper - C1TRAP10AD2	<b>76W27</b>	X	X	X	X	X
Corrosion Protection		Factory	O	O	O	O	O
Drain Pan Overflow Switch	C1SNSR71FF1-	<b>10C24</b>	X	X	X	X	X
Efficiency	Standard or High	Factory	O	O	O	O	O
Refrigerant Type		R-410A	O	O	O	O	O
<b>HEATING SYSTEM</b>							
Bottom Gas Piping Kit	C1GPKT01C-1	<b>85M31</b>	X	X	X	X	X
Combustion Air Intake Extensions (order two)	LTACA1K10/15	<b>89L97</b>	X	X	X	X	X
Gas Heat Input	Standard - 260,000 Btuh	Factory	O	O	O	O	O
	Medium - 360,000 Btuh	Factory	O	O	O	O	O
	High - 480,000 Btuh	Factory		O	O	O	O
Low Temperature Vestibule Heater	208/230V-3ph - C1LTVH10C-2Y	<b>13X66</b>	X	X	X	X	X
	460V - C1LTVH10C-2G	<b>13X67</b>	X	X	X	X	X
	575V - C1LTVH10C-2J	<b>13X68</b>	X	X	X	X	X
LPG/Propane Conversion Kits (Order 2 kits)	Standard heat - C1PROP25C11	<b>14N28</b>	X	X	X	X	X
	Medium heat - C1PROP26C11	<b>14N29</b>	X	X	X	X	X
	High heat - C1PROP27C11	<b>14N30</b>		X	X	X	X
Stainless Steel Heat Exchanger		Factory	O	O	O	O	O
Vertical Vent Extension Kit (Order two kits)	C1EXTN20FF1	<b>42W16</b>	X	X	X	X	X
<b>BLOWER - SUPPLY AIR</b>							
Blower Option	CAV (Constant Air Volume)	Factory	O	O	O	O	O
	MSAV® (Multi-Stage Air Volume)	Factory	O	O	O	O	O
Motors - Constant Air Volume (CAV)	Belt Drive (standard efficiency) - 2 hp	Factory	O				
	Belt Drive (standard efficiency) - 3 hp	Factory	O	O	O		
	Belt Drive (standard efficiency) - 5 hp	Factory	O	O	O	O	O
	Belt Drive (standard efficiency) - 7.5 hp	Factory		O	O	O	O
	Belt Drive (standard efficiency) - 10 hp	Factory				O	O
Motors - MSAV® (Multi-Stage Air Volume)	Belt Drive (standard efficiency) - 2 hp	Factory	O				
	Belt Drive (standard efficiency) - 3 hp	Factory	O	O	O		
	Belt Drive (standard efficiency) - 5 hp	Factory	O	O	O	O	O
	Belt Drive (standard efficiency) - 7.5 hp	Factory		O	O	O	O
	Belt Drive (standard efficiency) - 10 hp	Factory				O	O
VFD Manual Bypass Kit (for MSAV® equipped units)	2, 3, 5 hp (208/230V) KVFDB11C-1	<b>90W52</b>	X	X	X	X	X
	2, 3, 5, 7.5, 10 hp (460V and 575V) 7.5, 10 hp (208/230V) KVFDB10C-1	<b>90W51</b>		X	X	X	X
Drive Kits	Kit #1 535-725 rpm	Factory	O	O	O		
See Blower Data Tables for usage and selection	Kit #2 710-965 rpm	Factory	O	O	O		
	Kit #3 685-856 rpm	Factory	O	O	O	O	O
	Kit #4 850-1045 rpm	Factory	O	O	O	O	O
	Kit #5 945-1185 rpm	Factory	O	O	O	O	O
	Kit #6 850-1045 rpm	Factory		O	O	O	O
	Kit #7 945-1185 rpm	Factory		O	O	O	O
	Kit #8 1045-1285 rpm	Factory		O	O	O	O
	Kit #10 1045-1285 rpm	Factory				O	O
	Kit #11 1135-1365 rpm	Factory				O	O

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

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

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X = Field Installed

## OPTIONS / ACCESSORIES - STANDARD AND HIGH EFFICIENCY MODELS

Item Description	Model Number	Catalog Number	Unit Model No.				
			156	180	210	240	300
<b>CABINET</b>							
Hinged Access Panels		Factory	O	O	O	O	O
<b>CONTROLS</b>							
Commercial Controls	L Connection® Building Automation System	- - -	X	X	X	X	X
BACnet®	K0CTRL31C-1	<b>96W16</b>	OX	OX	OX	OX	OX
BACnet® Thermostat with Display	K0SNSR01FF1	<b>97W23</b>	X	X	X	X	X
BACnet® Thermostat without Display	K0SNSR00FF1	<b>97W24</b>	X	X	X	X	X
Novar® 2051	K0CTRL30C-1	<b>96W13</b>	OX	OX	OX	OX	OX
Plenum Cable (75 ft.)	K0MISC00FF1	<b>97W25</b>	X	X	X	X	X
Smoke Detector - Supply or Return (Power board and one sensor)	C1SNSR44C-1	<b>83W40</b>	X	X	X	X	X
Smoke Detector - Supply and Return (Power board and two sensors)	C1SNSR43C-1	<b>83W41</b>	X	X	X	X	X
<b>ELECTRICAL</b>							
Voltage 60 hz	208/230V - 3 phase	Factory	O	O	O	O	O
	460V - 3 phase	Factory	O	O	O	O	O
	575V - 3 phase	Factory	O	O	O	O	O
Disconnect Switch (see Disconnect Table for usage, page 37)	80 amp - K1DISC080C-1	<b>54W91</b>	OX	OX	OX	OX	OX
	150 amp - K1DISC150C-1	<b>54W92</b>	OX	OX	OX	OX	OX
GFI Service Outlets	15 amp non-powered, field-wired (208/230V, 460V only)	LTAGFIK10/15 <b>74M70</b>	X	OX	OX	OX	OX
	20 amp non-powered, field-wired (575V only)	C1GFCI20FF1 <b>67E01</b>	X	X	X	X	X
Weatherproof Cover for GFI	C1GFCI99FF1	<b>10C89</b>	X	X	X	X	X
<sup>1</sup> Phase Monitor	C1PHZM01FF1	<b>10C25</b>	X	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 - C1FLTR15C-1-	<b>54W67</b>	X	X	X	X	X
	MERV 13 - C1FLTR40C-1-	<b>52W40</b>	X	X	X	X	X
Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media)	C1FLTR30C-1-	<b>44N61</b>	X	X	X	X	X
<b>Indoor Air Quality (CO<sub>2</sub>) Sensors</b>							
Sensor - Wall-mount, off-white plastic cover with LCD display	C0SNSR50AE1L	<b>77N39</b>	X	X	X	X	X
Sensor - Wall-mount, off-white plastic cover, no display	C0SNSR52AE1L	<b>87N53</b>	X	X	X	X	X
Sensor - Black plastic case with LCD display, rated for plenum mounting	C0SNSR51AE1L	<b>87N52</b>	X	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting	C0MISC19AE1	<b>87N54</b>	X	X	X	X	X
CO <sub>2</sub> Sensor Duct Mounting Kit - for downflow applications	C0MISC19AE1	<b>85L43</b>	X	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO <sub>2</sub> sensors ( <b>87N53</b> or <b>77N39</b> )	C0MISC16AE1-	<b>90N43</b>	X	X	X	X	X
<b>UVC Germicidal Light Kit</b>							
<sup>2</sup> Healthy Climate® UVC Light Kit (110/230V-1ph)	C1UVCL10C-1	<b>54W65</b>	X	X	X	X	X

<sup>1</sup> Factory installed on all MSAV® equipped units.

<sup>2</sup> Lamps operate on 110-230V single-phase power supply. Step-down transformer must be field supplied for field installation in 460V and 575V rooftop units (transformer is furnished for factory installed light kits). Alternately, a separate 110V power supply may be used to directly power the UVC ballast(s).

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

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

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## OPTIONS / ACCESSORIES - STANDARD AND HIGH EFFICIENCY MODELS

Item Description	Model Number	Catalog Number	Unit Model No.				
			156	180	210	240	300
<b>ECONOMIZER</b>							
<b>Standard Economizer With Outdoor Air Hood (Not for Title 24)</b>							
Standard Economizer Downflow or Horizontal Applications - Includes Outdoor Air Hood, order Downflow or Horizontal Barometric Relief Dampers separately	K1ECON20C-3	13U48	OX	OX	OX	OX	OX
<b>Standard Economizer Controls (Not for Title 24)</b>							
Single Enthalpy Control	C1SNSR64FF1	53W64	OX	OX	OX	OX	OX
Differential Enthalpy Control (order 2)	C1SNSR64FF1	53W64	X	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 Applications - Includes Outdoor Air Hood, order Downflow or Horizontal Barometric Relief Dampers separately	K1ECON22C-1	10U61	OX	OX	OX	OX	OX
<b>High Performance Economizer Controls (Not for Title 24)</b>							
Single Enthalpy Control	C1SNSR60FF1	10Z75	OX	OX	OX	OX	OX
Differential Enthalpy Control (order 2)	C1SNSR60FF1	10Z75	X	X	X	X	X
<b>Barometric Relief Dampers With Exhaust Hood</b>							
Downflow Barometric Relief Dampers	C1DAMP50C	54W78	OX	OX	OX	OX	OX
Horizontal Barometric Relief Dampers	LAGEDH18/24	16K99	X	X	X	X	X
<b>OUTDOOR AIR</b>							
<b>Outdoor Air Dampers With Outdoor Air Hood</b>							
Motorized	C1DAMP20C-1	13U04	OX	OX	OX	OX	OX
Manual	C1DAMP10C-2	13U05	OX	OX	OX	OX	OX
<b>POWER EXHAUST (DOWNFLOW APPLICATIONS ONLY)</b>							
Standard Static	208/230V - C1PWRE11C-1Y	75W90	X	X	X	X	X
	460V - C1PWRE11C-1G	75W91	X	X	X	X	X
	575V - C1PWRE11C-1J	75W92	X	X	X	X	X
<b>ROOF CURBS</b>							
<b>Hybrid Roof Curbs, Downflow</b>							
8 in. height	C1CURB70C-1	11F58	X	X	X	X	X
14 in. height	C1CURB71C-1	11F59	X	X	X	X	X
18 in. height	C1CURB72C-1	11F60	X	X	X	X	X
24 in. height	C1CURB73C-1	11F61	X	X	X	X	X
<b>Adjustable Pitch Curb</b>							
14 in. height	L1CURB55C	43W26	X	X	X	X	X
<b>Standard Roof Curbs, Horizontal - Requires Horizontal Return Air Panel Kit</b>							
26 in. height - slab applications	C1CURB14C-1	11T89	X	X	X	X	
30 in. height - slab applications	C1CURB15C-1	11T90					X
37 in. height - rooftop applications	C1CURB16C-1	11T96	X	X	X	X	
41 in. height - rooftop applications	C1CURB17C-1	11T97					X
<b>Insulation Kit For Standard Horizontal Curbs</b>							
for C1CURB14C-1	C1INSU11C-1	73K32	X	X	X	X	
for C1CURB15C-1	C1INSU12C-1	73K33					X
for C1CURB16C-1	C1INSU13C-1	73K34	X	X	X	X	
for C1CURB17C-1	C1INSU14C-1	73K35					X
<b>Horizontal Return Air Panel Kit</b>							
Required for Horizontal Applications with Roof Curb	C1HRAP10C-1	87M00	X	X	X	X	X
<b>CEILING DIFFUSERS</b>							
Step-Down - Order one	RTD11-185S	13K63	X	X			
	RTD11-275S	13K64			X	X	X
Flush - Order one	FD11-185S	13K58	X	X			
	FD11-275S	13K59			X	X	X
Transitions (Supply and Return) - Order one	C1DIFF33C-1	12X68	X	X			
	C1DIFF34C-1	12X70			X	X	X

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

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**OPTIONS / ACCESSORIES - STANDARD EFFICIENCY MODELS ONLY**

Item Description	Model Number	Catalog Number	Unit Model No.			
			180S	210S	240S	300S
<b>COOLING SYSTEM</b>						
Low Ambient Control	K1LOAM52C11	10T62	X			
	K1LOAM53C11	10T63		X		
	K1LOAM53C21	10T64			X	X
<b>CABINET</b>						
Combination Coil/Hail Guards	C1GARD52C12	15T92	X	X		
	C1GARD52C22	15T93			X	X

**OPTIONS / ACCESSORIES - HIGH EFFICIENCY MODELS ONLY**

Item Description	Model Number	Catalog Number	Unit Model No.				
			156H	180H	210H	240H	300H
<b>COOLING SYSTEM</b>							
Low Ambient Control	K1LOAM53C11	10T63	X				
	K1LOAM53C21	10T64		X	X		
	K1LOAM54C21	10T65				X	X
<b>CABINET</b>							
Combination Coil/Hail Guards	C1GARD52C12	15T92	X				
	C1GARD52C22	15T93		X	X	X	X

## SPECIFICATIONS - STANDARD EFFICIENCY MODELS

General Data		Nominal Tonnage	15 Ton	15 Ton	17.5 Ton	17.5 Ton
		Model Number	KGA180S4B	KGA180S4M	KGA210S4B	KGA210S4M
		Efficiency Type	Standard	Standard	Standard	Standard
		Blower Type	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		182,000	182,000	204,000	204,000
	<sup>1</sup> Net Cooling Capacity - Btuh		176,000	176,000	198,000	198,000
	AHRI Rated Air Flow - cfm		5750	5750	6125	6125
	Total Unit Power - kW		16.3	16.3	18.4	18.4
	<sup>1</sup> EER (Btuh/Watt)		10.8	10.8	10.8	10.8
	<sup>2</sup> IEER (Btuh/Watt)		11.0	12.6	12.0	13.1
	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
	Refrigerant Charge Furnished	Circuit 1	7 lbs. 8 oz.	7 lbs. 8 oz.	5 lbs. 12 oz.	5 lbs. 12 oz.
	Circuit 2	7 lbs. 8 oz.	7 lbs. 8 oz.	5 lbs. 8 oz.	5 lbs. 8 oz.	
	Circuit 3	---	---	5 lbs. 8 oz.	5 lbs. 8 oz.	
<b>Gas Heat Available</b>		See page 19				
<b>Compressor Type (number)</b>			Scroll (2)	Scroll (2)	Scroll (3)	Scroll (3)
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.		41.4	41.4	41.4	41.4
	Number of rows		1	1	1	1
	Fins per inch		23	23	23	23
<b>Outdoor Coil Fans</b>	Motor - (No.) horsepower		(3) 1/3	(3) 1/3	(3) 1/3	(3) 1/3
	Motor rpm		1075	1075	1075	1075
	Total Motor watts		1100	1100	1100	1100
	Diameter - (No.) in.		(3) 24	(3) 24	(3) 24	(3) 24
	Number of blades		3	3	3	3
	Total Air volume - cfm		12,000	12,000	12,000	12,000
<b>Indoor Coils</b>	Net face area (total) - sq. ft.		18.6	18.6	21.4	21.4
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		3	3	3	3
	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		Refrigerant Metering Orifice (RFC)				
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output	3 hp, 5 hp, 7.5 hp				
	Maximum usable motor output (US Only)	3.45 hp, 5.75 hp, 8.63 hp				
	Motor - Drive kit number	<b>3 hp</b> Kit 1 535-725 rpm Kit 2 710-965 rpm <b>5 hp</b> Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm <b>7.5 hp</b> Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm				
	Blower wheel nominal diameter x width - in.	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15
<b>Filters</b>	Type of filter	Fiberglass, disposable				
	Number and size - in.	(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 – Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.

## SPECIFICATIONS - STANDARD EFFICIENCY MODELS

General Data		Nominal Tonnage	20 Ton	20 Ton	25 Ton	25 Ton
		Model Number	KGA240S4B	KGA240S4M	KGA300S4B	KGA300S4M
		Efficiency Type	Standard	Standard	Standard	Standard
		Blower Type	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		238,000	238,000	282,000	282,000
	<sup>1</sup> Net Cooling Capacity - Btuh		228,000	228,000	270,000	270,000
	AHRI Rated Air Flow - cfm		7700	7700	8750	8750
	Total Unit Power - kW		21.1	21.1	27.0	27.0
	<sup>1</sup> EER (Btuh/Watt)		10.8	10.8	10.0	10.0
	<sup>2</sup> IEER (Btuh/Watt)		11.0	13.0	10.0	12.0
	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
	Refrigerant Charge Furnished	Circuit 1 Circuit 2 Circuit 3	7 lbs. 4 oz. 7 lbs. 4 oz. 6 lbs. 14 oz.	7 lbs. 4 oz. 7 lbs. 4 oz. 6 lbs. 14 oz.	7 lbs. 4 oz. 7 lbs. 4 oz. 6 lbs. 14 oz.	7 lbs. 4 oz. 7 lbs. 4 oz. 6 lbs. 14 oz.
<b>Gas Heat Available</b>		See page 19				
<b>Compressor Type (number)</b>		Scroll (3)				
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.		55.2	55.2	55.2	55.2
	Number of rows		1	1	1	1
	Fins per inch		23	23	23	23
<b>Outdoor Coil Fans</b>	Motor - (No.) horsepower		(4) 1/3	(4) 1/3	(4) 1/3	(4) 1/3
	Motor rpm		1075	1075	1075	1075
	Total Motor watts		1500	1500	1500	1500
	Diameter - (No.) in.		(4) 24	(4) 24	(4) 24	(4) 24
	Number of blades		3	3	3	3
	Total Air volume - cfm		16,000	16,000	16,000	16,000
<b>Indoor Coils</b>	Net face area (total) - sq. ft.		21.4	21.4	21.4	21.4
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		4	4	4	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		Refrigerant Metering Orifice (RFC)				
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output	5 hp, 7.5 hp, 10 hp				
	Maximum usable motor output (US Only)	5.75 hp, 8.62 hp, 11.5 hp				
	Motor - Drive kit number	<b>5 hp</b> <b>Kit 3</b> 685-856 rpm <b>Kit 4</b> 850-1045 rpm <b>Kit 5</b> 945-1185 rpm <b>7.5 hp</b> <b>Kit 6</b> 850-1045 rpm <b>Kit 7</b> 945-1185 rpm <b>Kit 8</b> 1045-1285 rpm <b>10 hp</b> <b>Kit 7</b> 945-1185 rpm <b>Kit 10</b> 1045-1285 rpm <b>Kit 11</b> 1135-1365 rpm				
	Blower wheel nominal diameter x width - in.	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	
<b>Filters</b>	Type of filter	Fiberglass, disposable				
	Number and size - in.	(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 – Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.

## SPECIFICATIONS - HIGH EFFICIENCY MODELS

General Data		Nominal Tonnage	13 Ton	13 Ton	15 Ton	15 Ton
		Model Number	KGA156H4B	KGA156H4M	KGA180H4B	KGA180H4M
		Efficiency Type	High	High	High	High
		Blower Type	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		156,000	156,000	176,000	176,000
	<sup>1</sup> Net Cooling Capacity - Btuh		152,000	152,000	172,000	172,000
	AHRI Rated Air Flow - cfm		5000	5000	5250	5250
	Total Unit Power - kW		12.7	12.7	14.3	14.3
	<sup>1</sup> EER (Btuh/Watt)		12.0	12.0	12.0	12.0
	<sup>2</sup> IEER (Btuh/Watt)		13.6	14.1	13.5	13.7
	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
	Refrigerant Charge Furnished	Circuit				
	1	5 lbs. 14 oz.	5 lbs. 14 oz.	6 lbs. 0 oz.	6 lbs. 0 oz.	
	2	5 lbs. 8 oz.	5 lbs. 8 oz.	5 lbs. 10 oz.	5 lbs. 10 oz.	
	3	5 lbs. 12 oz.	5 lbs. 12 oz.	5 lbs. 14 oz.	5 lbs. 14 oz.	
<b>Gas Heat Available</b>		See page 19				
<b>Compressor Type (number)</b>			Scroll (3)	Scroll (3)	Scroll (3)	Scroll (3)
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.		41.4	41.4	55.2	55.2
	Number of rows		1	1	1	1
	Fins per inch		23	23	23	23
<b>Outdoor Coil Fans</b>	Motor - (No.) horsepower		(3) 1/3	(3) 1/3	(4) 1/3	(4) 1/3
	Motor rpm		1075	1075	1075	1075
	Total Motor watts		1100	1100	1500	1500
	Diameter - (No.) in.		(3) 24	(3) 24	(4) 24	(4) 24
	Number of blades		3	3	3	3
	Total Air volume - cfm		12,000	12,000	16,000	16,000
<b>Indoor Coils</b>	Net face area (total) - sq. ft.		21.4	21.4	21.4	21.4
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		3	3	3	3
	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 TXV, removable head				
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output		2 hp, 3 hp, 5 hp		3 hp, 5 hp, 7.5 hp	
	Maximum usable motor output (US Only)		2.3 hp, 3.45 hp, 5.75 hp		3.45 hp, 5.75 hp, 8.62 hp	
	Motor - Drive kit number		<b>2 hp</b> Kit 1 535-725 rpm Kit 2 710-965 rpm <b>3 hp</b> Kit 1 535-725 rpm Kit 2 710-965 rpm <b>5 hp</b> Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm		<b>3 hp</b> Kit 1 535-725 rpm Kit 2 710-965 rpm <b>5 hp</b> Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm <b>7.5 hp</b> Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm	
	Blower wheel nominal diameter x width - in.		(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15
<b>Filters</b>	Type of filter	Fiberglass, disposable				
	Number and size - in.	(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 – Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.



## SPECIFICATIONS - HIGH EFFICIENCY MODELS

General Data		Nominal Tonnage	17.5 Ton	17.5 Ton	20 Ton	20 Ton
		Model Number	KGA210H4B	KGA210H4M	KGA240H4B	KGA240H4M
		Efficiency Type	High	High	High	High
		Blower Type	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		204,000	204,000	238,000	238,000
	<sup>1</sup> Net Cooling Capacity - Btuh		194,000	194,000	230,000	230,000
	AHRI Rated Air Flow - cfm		6125	6125	6400	6400
	Total Unit Power - kW		16.5	16.5	19.2	19.2
	<sup>1</sup> EER (Btuh/Watt)		12.0	12.0	12.0	12.0
	<sup>2</sup> IEER (Btuh/Watt)		13.0	14.0	13.2	14.5
	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
	Refrigerant Charge Furnished	Circuit 1	6 lbs. 12 oz.	6 lbs. 12 oz.	6 lbs. 4 oz.	6 lbs. 4 oz.
	Circuit 2	6 lbs. 14 oz.	6 lbs. 14 oz.	6 lbs. 2 oz.	6 lbs. 2 oz.	
	Circuit 3	6 lbs. 14 oz.	6 lbs. 14 oz.	5 lbs. 14 oz.	5 lbs. 14 oz.	
	Circuit 4	---	---	5 lbs. 6 oz.	5 lbs. 6 oz.	
<b>Gas Heat Available</b>		See page 19				
<b>Compressor Type (number)</b>			Scroll (3)	Scroll (3)	Scroll (4)	Scroll (4)
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.		55.2	55.2	55.2	55.2
	Number of rows		1	1	1	1
	Fins per inch		23	23	23	23
<b>Outdoor Coil Fans</b>	Motor - (No.) horsepower		(6) 1/3	(6) 1/3	(6) 1/3	(6) 1/3
	Motor rpm		1075	1075	1075	1075
	Total Motor watts		1950	1950	1950	1950
	Diameter - (No.) in.		(6) 24	(6) 24	(6) 24	(6) 24
	Number of blades		3	3	3	3
	Total Air volume - cfm		20,000	20,000	20,000	20,000
<b>Indoor Coils</b>	Net face area (total) - sq. ft.		21.4	21.4	21.4	21.4
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		4	4	4	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 TXV, removable 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, 10hp	
	Maximum usable motor output (US Only)		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> Kit 1 535-725 rpm Kit 2 710-965 rpm <b>5 hp</b> Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm <b>7.5 hp</b> Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm		<b>5 hp</b> Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm <b>7.5 hp</b> Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm <b>10 hp</b> Kit 7 945-1185 rpm Kit 10 1045-1285 rpm Kit 11 1135-1365 rpm	
	Blower wheel nominal diameter x width - in.		(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15
<b>Filters</b>	Type of filter	Fiberglass, disposable				
	Number and size - in.	(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 – Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.

## SPECIFICATIONS - HIGH EFFICIENCY MODELS

General Data		Nominal Tonnage	25 Ton	25 Ton
		Model Number	KGA300H4B	KGA300H4M
		Efficiency Type	High	High
		Blower Type	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		282,000	282,000
	<sup>1</sup> Net Cooling Capacity - Btuh		270,000	270,000
	AHRI Rated Air Flow - cfm		8400	8400
	Total Unit Power - kW		25.7	25.7
	<sup>1</sup> EER (Btuh/Watt)		10.5	10.5
	<sup>2</sup> IEER (Btuh/Watt)		10.9	13.8
	Refrigerant Type		R-410A	R-410A
	Refrigerant Charge Furnished	Circuit 1	6 lbs. 8 oz.	6 lbs. 8 oz.
		Circuit 2	6 lbs. 6 oz.	6 lbs. 6 oz.
	Circuit 3	6 lbs. 6 oz.	6 lbs. 6 oz.	
	Circuit 4	5 lbs. 14 oz.	5 lbs. 14 oz.	
<b>Gas Heat Available</b>		See page 19		
<b>Compressor Type (number)</b>		Scroll (4)		
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.		55.2	55.2
	Number of rows		1	1
	Fins per inch		23	23
<b>Outdoor Coil Fans</b>	Motor - (No.) horsepower		(6) 1/3	(6) 1/3
	Motor rpm		1075	1075
	Total Motor watts		1950	1950
	Diameter - (No.) in.		(6) 24	(6) 24
	Number of blades		3	3
	Total Air volume - cfm		20,000	20,000
<b>Indoor Coils</b>	Net face area (total) - sq. ft.		21.4	21.4
	Tube diameter - in.		3/8	3/8
	Number of rows		4	4
	Fins per inch		14	14
	Drain connection - No. and size		(1) 1 in. FPT	(1) 1 in. FPT
Expansion device type		Balanced port TXV, removable head		
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output	5 hp, 7.5 hp, 10 hp		
	Maximum usable motor output (US Only)	5.75 hp, 8.62 hp, 11.5 hp		
	Motor - Drive kit number	<b>5 hp</b>		
		<b>Kit 3</b> 685-856 rpm <b>Kit 4</b> 850-1045 rpm <b>Kit 5</b> 945-1185 rpm <b>7.5 hp</b> <b>Kit 6</b> 850-1045 rpm <b>Kit 7</b> 945-1185 rpm <b>Kit 8</b> 1045-1285 rpm <b>10 hp</b> <b>Kit 7</b> 945-1185 rpm <b>Kit 10</b> 1045-1285 rpm <b>Kit 11</b> 1135-1365 rpm		
Blower wheel nominal diameter x width - in.		(2) 15 x 15	(2) 15 x 15	
<b>Filters</b>	Type of filter	Fiberglass, disposable		
	Number and size - in.	(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 – Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.

## SPECIFICATIONS - GAS HEAT

Usage Data		Model Number	KGA156 KGA180 KGA210 KGA240 KGA300	KGA180 KGA210 KGA240 KGA300	
		Heat Input Type	Standard (S)	Medium (M)	High (H)
		Number of Gas Heat Stages	2	2	2
Gas Heating Performance	Input - Btuh	First Stage	169,000	234,000	312,000
		Second Stage	260,000	360,000	480,000
	Output - Btuh	First Stage	---	---	---
		Second Stage	208,000	288,000	384,000
	Temperature Rise Range - °F		15 - 45	30 - 60	40 - 70
	Thermal Efficiency		80.0%	80.0%	80.0%
Gas Supply Connections		1 in. npt	1 in. npt	1 in. npt	
Recommended Gas Supply Pressure - in. w.g.	Natural	7	7	7	
	LPG/Propane	11	11	11	

## HIGH ALTITUDE DERATE

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 2000 feet unit must be derated to match gas manifold pressures shown in the table below.

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

Gas Heat Type	Altitude - ft.	Gas Manifold Pressure - in. w.g.		Input Rate Natural Gas or LPG/Propane - Btuh	
		Natural Gas	LPG/Propane Gas	First Stage	Second Stage
Standard	2001 - 4500	3.4	9.6	169,000	249,000
Medium	2001 - 4500	3.4	9.6	234,000	345,000
High	2001 - 4500	3.4	9.6	312,000	460,000

# 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 STANDARD EFFICIENCY KGA180S4 (1ST STAGE) - CONSTANT AIR VOLUME

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	94.6	4.92	0.69	0.8	0.9	90.1	5.41	0.69	0.8	0.91	85.4	5.97	0.69	0.81	0.92	80.1	6.6	0.69	0.82	0.93				
	6000	100.7	4.97	0.72	0.84	0.95	95.7	5.47	0.73	0.85	0.97	90.7	6.02	0.73	0.86	0.98	85.2	6.67	0.73	0.88	0.99				
	7200	105.3	5.04	0.75	0.88	1.00	100.1	5.53	0.76	0.89	1.00	94.5	6.07	0.76	0.91	1.00	88.7	6.72	0.77	0.92	1.00				
67°F	4800	99.7	4.97	0.56	0.67	0.77	94.9	5.46	0.55	0.67	0.77	89.9	6.02	0.56	0.67	0.78	84.5	6.65	0.55	0.67	0.79				
	6000	105.8	5.02	0.58	0.7	0.81	100.9	5.53	0.57	0.70	0.82	95.3	6.08	0.57	0.71	0.83	89.7	6.71	0.57	0.71	0.84				
	7200	110.3	5.08	0.6	0.73	0.85	105.1	5.59	0.60	0.74	0.87	99.4	6.16	0.60	0.74	0.88	93.3	6.76	0.59	0.75	0.89				
71°F	4800	104.9	5.02	0.44	0.54	0.64	100.0	5.51	0.43	0.54	0.64	94.8	6.08	0.42	0.54	0.65	88.8	6.71	0.40	0.53	0.65				
	6000	110.4	5.08	0.44	0.56	0.68	105.3	5.57	0.43	0.56	0.68	99.8	6.15	0.43	0.56	0.69	94.0	6.78	0.42	0.56	0.69				
	7200	115.4	5.14	0.45	0.58	0.71	109.9	5.65	0.45	0.59	0.72	103.7	6.20	0.45	0.59	0.73	97.4	6.83	0.45	0.58	0.73				

## 15 TON STANDARD EFFICIENCY KGA180S4 (2ND STAGE) - CONSTANT AIR VOLUME

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	175.2	11.96	0.73	0.85	0.96	164.0	13.20	0.74	0.87	0.98	152.1	14.65	0.75	0.89	0.99	139.3	16.35	0.76	0.91	1.00				
	6000	184.8	12.10	0.78	0.91	1.00	172.9	13.34	0.79	0.93	1.00	160.4	14.8	0.8	0.95	1.00	147.0	16.50	0.82	0.98	1.00				
	7200	192.0	12.19	0.82	0.96	1.00	179.8	13.45	0.83	0.98	1.00	166.8	14.91	0.85	1.00	1.00	153.5	16.60	0.87	1.00	1.00				
67°F	4800	186.3	12.11	0.58	0.71	0.83	174.7	13.36	0.57	0.71	0.84	162.5	14.83	0.57	0.73	0.86	149.2	16.54	0.57	0.74	0.88				
	6000	196.4	12.27	0.6	0.76	0.89	184.1	13.52	0.6	0.77	0.90	170.9	14.96	0.61	0.78	0.92	157.0	16.69	0.61	0.8	0.95				
	7200	203.6	12.35	0.64	0.8	0.94	190.7	13.61	0.64	0.82	0.96	176.9	15.09	0.65	0.83	0.98	162.1	16.77	0.66	0.85	1.00				
71°F	4800	197.2	12.25	0.43	0.56	0.68	185.6	13.53	0.42	0.56	0.69	172.7	14.98	0.41	0.56	0.70	159.1	16.69	0.40	0.56	0.72				
	6000	207.8	12.41	0.44	0.59	0.74	194.7	13.66	0.43	0.6	0.75	181.6	15.17	0.43	0.6	0.76	166.9	16.87	0.42	0.61	0.78				
	7200	215.2	12.54	0.45	0.63	0.78	201.9	13.80	0.45	0.63	0.80	187.7	15.29	0.45	0.64	0.82	172.2	16.98	0.45	0.65	0.84				

## 17.5 TON STANDARD EFFICIENCY KGA210S4 (1ST STAGE) - CONSTANT AIR VOLUME

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	150.3	6.92	0.72	0.83	0.93	142.5	7.74	0.72	0.84	0.95	134.0	8.63	0.72	0.85	0.96	124.8	9.66	0.73	0.86	0.98				
	7000	159.7	6.98	0.76	0.88	0.99	150.9	7.79	0.76	0.89	1.00	141.8	8.71	0.77	0.91	1.00	132.1	9.74	0.78	0.92	1.00				
	8400	166.3	7.03	0.79	0.93	1.00	157.4	7.85	0.80	0.94	1.00	148.0	8.78	0.81	0.96	1.00	137.8	9.81	0.82	0.98	1.00				
67°F	5600	159.9	6.98	0.58	0.69	0.80	151.7	7.82	0.57	0.69	0.81	142.5	8.71	0.57	0.7	0.82	132.9	9.74	0.57	0.71	0.83				
	7000	169.0	7.05	0.6	0.73	0.85	160.2	7.89	0.60	0.74	0.86	150.5	8.80	0.60	0.75	0.88	140.3	9.83	0.60	0.76	0.90				
	8400	176.0	7.11	0.62	0.77	0.90	166.6	7.95	0.62	0.78	0.91	156.4	8.86	0.63	0.79	0.93	145.7	9.90	0.63	0.81	0.95				
71°F	5600	169.5	7.06	0.44	0.56	0.67	160.5	7.88	0.43	0.56	0.67	151.2	8.80	0.43	0.55	0.68	140.9	9.83	0.42	0.56	0.69				
	7000	178.8	7.13	0.46	0.58	0.71	168.8	7.96	0.46	0.58	0.72	158.7	8.88	0.44	0.59	0.73	148.2	9.93	0.44	0.59	0.74				
	8400	185.1	7.18	0.47	0.61	0.75	175.2	8.03	0.46	0.62	0.76	164.6	8.95	0.46	0.62	0.77	153.6	10.0	0.45	0.62	0.79				

## 17.5 TON STANDARD EFFICIENCY KGA210S4 (2ND STAGE) - CONSTANT AIR VOLUME

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	202.9	13.37	0.74	0.88	0.98	188.5	14.96	0.75	0.89	1.00	173.7	16.82	0.76	0.92	1.00	158.5	19.09	0.78	0.94	1.00				
	7000	213.9	13.51	0.8	0.94	1.00	198.9	15.10	0.81	0.96	1.00	183.1	16.95	0.83	0.98	1.00	167.9	19.21	0.85	0.99	1.00				
	8400	222.4	13.61	0.84	0.99	1.00	207.0	15.21	0.86	1.00	1.00	191.6	17.09	0.88	1.00	1.00	176.7	19.35	0.90	1.00	1.00				
67°F	5600	216.5	13.53	0.58	0.72	0.85	201.5	15.13	0.58	0.73	0.86	186.0	16.99	0.58	0.74	0.88	169.9	19.23	0.58	0.76	0.91				
	7000	227.9	13.68	0.61	0.78	0.91	211.8	15.28	0.62	0.79	0.93	195.4	17.15	0.62	0.81	0.96	178.3	19.38	0.63	0.83	0.98				
	8400	235.8	13.78	0.65	0.82	0.96	219.0	15.39	0.65	0.84	0.98	201.7	17.25	0.66	0.86	1.00	184.6	19.49	0.67	0.89	1.00				
71°F	5600	230.0	13.71	0.43	0.57	0.70	214.3	15.31	0.42	0.57	0.71	198.0	17.18	0.41	0.57	0.72	181.6	19.43	0.40	0.57	0.74				
	7000	241.3	13.86	0.44	0.6	0.76	224.7	15.48	0.44	0.61	0.77	207.6	17.34	0.43	0.62	0.79	190.2	19.57	0.43	0.62	0.81				
	8400	249.4	13.97	0.46	0.64	0.81	231.9	15.57	0.46	0.65	0.82	214.2	17.45	0.45	0.66	0.84	195.9	19.68	0.45	0.67	0.87				

# 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 STANDARD EFFICIENCY KGA240S4 (1ST STAGE) - CONSTANT AIR VOLUME

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	167.3	7.75	0.69	0.81	0.93	158.1	8.56	0.7	0.82	0.95	148.7	9.46	0.70	0.84	0.97	138.3	10.47	0.71	0.85	0.99
	8000	177.0	7.77	0.73	0.87	1.00	167.4	8.60	0.74	0.89	1.00	157.3	9.50	0.75	0.91	1.00	146.5	10.52	0.76	0.93	1.00
	9600	184.4	7.8	0.78	0.93	1.00	174.7	8.64	0.79	0.95	1.00	164.1	9.54	0.80	0.97	1.00	152.4	10.56	0.81	0.99	1.00
67°F	6400	178.3	7.78	0.55	0.67	0.79	168.9	8.60	0.54	0.67	0.79	158.8	9.51	0.55	0.68	0.81	148.2	10.53	0.55	0.68	0.82
	8000	188.2	7.81	0.58	0.71	0.84	178.1	8.65	0.58	0.72	0.86	167.7	9.57	0.58	0.73	0.87	156.2	10.59	0.58	0.74	0.90
	9600	195.8	7.85	0.60	0.76	0.90	185.3	8.69	0.60	0.77	0.92	173.9	9.61	0.61	0.78	0.94	161.9	10.63	0.61	0.80	0.96
71°F	6400	189.4	7.82	0.43	0.54	0.65	179.0	8.64	0.42	0.54	0.65	168.5	9.57	0.41	0.54	0.66	157.5	10.60	0.40	0.54	0.66
	8000	199.2	7.86	0.44	0.57	0.69	188.1	8.70	0.43	0.57	0.70	176.8	9.62	0.43	0.57	0.71	165.0	10.65	0.42	0.57	0.72
	9600	206.1	7.90	0.45	0.59	0.73	194.7	8.74	0.45	0.59	0.75	182.9	9.67	0.44	0.60	0.76	170.6	10.70	0.43	0.61	0.78

## 20 TON STANDARD EFFICIENCY KGA240S4 (2ND STAGE) - CONSTANT AIR VOLUME

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	229.2	14.28	0.72	0.87	1.00	213.1	15.83	0.73	0.89	1.00	196.7	17.56	0.74	0.91	1.00	179.0	19.54	0.76	0.95	0.99
	8000	241.7	14.36	0.78	0.95	1.00	225.1	15.91	0.80	0.97	1.00	207.9	17.66	0.82	0.99	1.00	190.3	19.63	0.84	1.00	1.00
	9600	251.8	14.43	0.84	1.00	1.00	235.3	15.99	0.85	1.00	1.00	219.3	17.75	0.88	1.00	1.00	201.7	19.72	0.91	1.00	1.00
67°F	6400	245.4	14.38	0.56	0.70	0.83	228.7	15.94	0.56	0.71	0.85	211.3	17.68	0.56	0.72	0.88	192.8	19.64	0.57	0.74	0.82
	8000	257.9	14.47	0.60	0.76	0.91	239.8	16.03	0.60	0.78	0.94	221.2	17.76	0.61	0.79	0.97	201.5	19.71	0.61	0.82	0.90
	9600	266.6	14.55	0.64	0.82	0.98	247.7	16.09	0.64	0.84	1.00	228.3	17.82	0.65	0.86	1.00	208.3	19.77	0.66	0.89	0.96
71°F	6400	262.0	14.51	0.41	0.55	0.68	243.9	16.05	0.41	0.55	0.69	226.3	17.80	0.40	0.55	0.70	207.1	19.77	0.39	0.56	0.66
	8000	274.6	14.61	0.43	0.59	0.74	255.5	16.16	0.43	0.59	0.76	236.0	17.89	0.42	0.60	0.77	215.9	19.84	0.41	0.61	0.72
	9600	283.2	14.67	0.45	0.63	0.80	263.5	16.23	0.44	0.64	0.82	242.7	17.94	0.44	0.65	0.84	222.4	19.89	0.43	0.66	0.78

## 25 TON STANDARD EFFICIENCY KGA300S4 (1ST STAGE) - CONSTANT AIR VOLUME

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	209.9	10.37	0.73	0.85	0.95	198.2	11.44	0.73	0.86	0.96	185.5	12.61	0.74	0.87	0.98	172.5	13.94	0.74	0.88	1.00
	9500	218.9	10.51	0.77	0.89	0.99	206.7	11.57	0.77	0.9	1.00	193.5	12.75	0.78	0.92	1.00	179.9	14.08	0.79	0.94	1.00
	11000	226.1	10.61	0.79	0.93	1.00	213.7	11.68	0.8	0.94	1.00	200.2	12.85	0.81	0.96	1.00	185.9	14.19	0.83	0.98	1.00
67°F	8000	224.3	10.58	0.58	0.71	0.82	211.9	11.65	0.58	0.71	0.83	199.1	12.84	0.57	0.72	0.84	184.9	14.17	0.58	0.73	0.86
	9500	233.3	10.72	0.61	0.74	0.86	220.6	11.78	0.6	0.75	0.87	206.3	12.95	0.6	0.76	0.89	191.9	14.3	0.6	0.77	0.91
	11000	240.2	10.82	0.63	0.78	0.9	226.8	11.88	0.62	0.78	0.92	212.6	13.06	0.63	0.8	0.94	197.6	14.41	0.63	0.81	0.96
71°F	8000	238.5	10.79	0.45	0.57	0.69	225.8	11.87	0.44	0.57	0.69	211.9	13.05	0.43	0.56	0.7	197.7	14.4	0.42	0.57	0.7
	9500	247.7	10.93	0.46	0.59	0.72	234.4	12.02	0.45	0.59	0.73	219.8	13.2	0.44	0.59	0.74	204.4	14.53	0.43	0.59	0.75
	11000	254.8	11.05	0.46	0.62	0.76	240.8	12.12	0.45	0.61	0.77	225.7	13.29	0.45	0.62	0.78	209.9	14.64	0.45	0.63	0.79

## 25 TON STANDARD EFFICIENCY KGA300S4 (2ND STAGE) - CONSTANT AIR VOLUME

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	281.2	18.97	0.75	0.89	1.00	259.9	20.95	0.76	0.91	1.00	238.3	23.23	0.78	0.93	1.00	216.5	25.92	0.79	0.95	1.00
	9500	292.1	19.15	0.8	0.94	1.00	270.8	21.15	0.81	0.96	1.00	248.5	23.44	0.83	0.98	1.00	226.3	26.12	0.85	1.00	1.00
	11000	302.3	19.32	0.83	0.98	1.00	280.1	21.31	0.85	1.00	1.00	258.5	23.63	0.87	1.00	1.00	237.2	26.35	0.9	1.00	1.00
67°F	8000	301.2	19.3	0.58	0.73	0.86	279.3	21.31	0.58	0.74	0.88	256.7	23.6	0.58	0.75	0.9	233.5	26.29	0.58	0.77	0.93
	9500	312.5	19.5	0.61	0.78	0.91	290	21.51	0.62	0.79	0.93	266.2	23.79	0.62	0.81	0.96	242	26.47	0.63	0.83	0.99
	11000	321.4	19.67	0.64	0.82	0.96	297.6	21.65	0.64	0.83	0.98	273.5	23.94	0.66	0.86	1.00	248.5	26.62	0.67	0.88	1.00
71°F	8000	321	19.65	0.43	0.57	0.71	298.1	21.65	0.42	0.57	0.72	275	23.96	0.41	0.58	0.73	250.9	26.67	0.4	0.58	0.75
	9500	332.8	19.86	0.45	0.6	0.75	309.2	21.89	0.44	0.61	0.77	284.6	24.17	0.43	0.61	0.79	259.8	26.86	0.42	0.62	0.81
	11000	341.7	20.03	0.46	0.63	0.8	317.2	22.03	0.45	0.64	0.82	292.5	24.33	0.45	0.65	0.84	266.6	27.01	0.44	0.66	0.87

# 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 STANDARD EFFICIENCY KGA180S4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	87	4.84	0.65	0.75	0.84	82.9	5.36	0.65	0.75	0.85	78.3	5.9	0.65	0.76	0.85	73.6	6.51	0.65	0.76	0.86	
	4000	91	4.89	0.68	0.77	0.87	86.7	5.38	0.67	0.78	0.87	82.0	5.93	0.67	0.78	0.89	77.2	6.57	0.67	0.79	0.90	
	4500	94.5	4.92	0.69	0.79	0.89	90.0	5.41	0.69	0.8	0.9	85.1	5.97	0.69	0.8	0.92	80.0	6.60	0.69	0.81	0.93	
67°F	3500	92.5	4.89	0.54	0.64	0.72	87.9	5.39	0.54	0.63	0.72	83.0	5.95	0.53	0.63	0.73	78.0	6.57	0.52	0.63	0.73	
	4000	96.2	4.93	0.55	0.65	0.74	91.5	5.44	0.54	0.65	0.75	86.6	5.98	0.54	0.65	0.75	81.5	6.60	0.53	0.65	0.76	
	4500	99.6	4.97	0.56	0.67	0.76	94.8	5.46	0.55	0.67	0.77	89.8	6.02	0.55	0.67	0.77	84.4	6.65	0.54	0.67	0.78	
71°F	3500	97.6	4.93	0.43	0.53	0.61	92.9	5.43	0.42	0.52	0.61	87.9	5.98	0.41	0.51	0.61	82.8	6.63	0.40	0.51	0.61	
	4000	101.4	4.97	0.43	0.54	0.62	96.6	5.48	0.43	0.53	0.63	91.5	6.03	0.42	0.52	0.63	86.2	6.67	0.40	0.52	0.63	
	4500	104.8	5.02	0.44	0.54	0.64	100.0	5.53	0.42	0.54	0.64	94.7	6.08	0.41	0.55	0.65	88.7	6.70	0.41	0.53	0.65	

## 15 TON STANDARD EFFICIENCY KGA180S4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	175.2	11.96	0.73	0.85	0.96	164.0	13.20	0.74	0.87	0.98	152.1	14.65	0.75	0.89	0.99	139.3	16.35	0.76	0.91	1.00	
	6000	184.8	12.10	0.78	0.91	1.00	172.9	13.34	0.79	0.93	1.00	160.4	14.80	0.80	0.95	1.00	147.0	16.50	0.82	0.98	1.00	
	7200	192.0	12.19	0.82	0.96	1.00	179.8	13.45	0.83	0.98	1.00	166.8	14.91	0.85	1.00	1.00	153.5	16.60	0.87	1.00	1.00	
67°F	4800	186.3	12.11	0.58	0.71	0.83	174.7	13.36	0.57	0.71	0.84	162.5	14.83	0.57	0.73	0.86	149.2	16.54	0.57	0.74	0.88	
	6000	196.4	12.27	0.60	0.76	0.89	184.1	13.52	0.60	0.77	0.90	170.9	14.96	0.61	0.78	0.92	157.0	16.69	0.61	0.80	0.95	
	7200	203.6	12.35	0.64	0.8	0.94	190.7	13.61	0.64	0.82	0.96	176.9	15.09	0.65	0.83	0.98	162.1	16.77	0.66	0.85	1.00	
71°F	4800	197.2	12.25	0.43	0.56	0.68	185.6	13.53	0.42	0.56	0.69	172.7	14.98	0.41	0.56	0.70	159.1	16.69	0.40	0.56	0.72	
	6000	207.8	12.41	0.44	0.59	0.74	194.7	13.66	0.43	0.60	0.75	181.6	15.17	0.43	0.6	0.76	166.9	16.87	0.42	0.61	0.78	
	7200	215.2	12.54	0.45	0.63	0.78	201.9	13.80	0.45	0.63	0.80	187.7	15.29	0.45	0.64	0.82	172.2	16.98	0.45	0.65	0.84	

## 17.5 TON STANDARD EFFICIENCY KGA210S4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	134.7	6.84	0.67	0.77	0.85	127.7	7.65	0.67	0.77	0.86	120.2	8.52	0.67	0.77	0.87	112.2	9.54	0.67	0.78	0.89	
	4750	143.1	6.89	0.69	0.79	0.89	135.6	7.70	0.69	0.80	0.90	127.4	8.58	0.69	0.81	0.91	118.9	9.60	0.69	0.82	0.93	
	5500	149.6	6.92	0.71	0.82	0.93	141.8	7.73	0.71	0.83	0.94	133.2	8.63	0.72	0.84	0.95	124.3	9.65	0.72	0.85	0.97	
67°F	4000	143.8	6.88	0.54	0.64	0.73	136.6	7.69	0.54	0.64	0.74	128.9	8.59	0.53	0.64	0.74	120.3	9.60	0.53	0.64	0.75	
	4750	152.4	6.93	0.56	0.67	0.76	144.8	7.76	0.55	0.67	0.77	136.1	8.65	0.55	0.67	0.78	127.1	9.68	0.54	0.67	0.79	
	5500	159.3	6.98	0.57	0.69	0.79	150.9	7.81	0.57	0.69	0.80	141.9	8.71	0.57	0.69	0.81	132.4	9.74	0.56	0.70	0.82	
71°F	4000	153.7	6.94	0.43	0.52	0.62	146.0	7.75	0.42	0.52	0.62	137.6	8.66	0.4	0.51	0.62	128.6	9.69	0.39	0.51	0.62	
	4750	162.1	6.99	0.44	0.54	0.64	153.8	7.82	0.43	0.54	0.64	144.8	8.74	0.41	0.53	0.64	135.3	9.77	0.41	0.53	0.65	
	5500	168.9	7.05	0.44	0.56	0.66	159.9	7.88	0.43	0.56	0.67	150.7	8.80	0.43	0.55	0.67	140.3	9.83	0.42	0.55	0.68	

## 17.5 TON STANDARD EFFICIENCY KGA210S4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	202.9	13.37	0.74	0.88	0.98	188.5	14.96	0.75	0.89	1.00	173.7	16.82	0.76	0.92	1.00	158.5	19.09	0.78	0.94	1.00	
	7000	213.9	13.51	0.8	0.94	1.00	198.9	15.10	0.81	0.96	1.00	183.1	16.95	0.83	0.98	1.00	167.9	19.21	0.85	0.99	1.00	
	8400	222.4	13.61	0.84	0.99	1.00	207.0	15.21	0.86	1.00	1.00	191.6	17.09	0.88	1.00	1.00	176.7	19.35	0.90	1.00	1.00	
67°F	5600	216.5	13.53	0.58	0.72	0.85	201.5	15.13	0.58	0.73	0.86	186.0	16.99	0.58	0.74	0.88	169.9	19.23	0.58	0.76	0.91	
	7000	227.9	13.68	0.61	0.78	0.91	211.8	15.28	0.62	0.79	0.93	195.4	17.15	0.62	0.81	0.96	178.3	19.38	0.63	0.83	0.98	
	8400	235.8	13.78	0.65	0.82	0.96	219.0	15.39	0.65	0.84	0.98	201.7	17.25	0.66	0.86	1.00	184.6	19.49	0.67	0.89	1.00	
71°F	5600	230.0	13.71	0.43	0.57	0.70	214.3	15.31	0.42	0.57	0.71	198.0	17.18	0.41	0.57	0.72	181.6	19.43	0.40	0.57	0.74	
	7000	241.3	13.86	0.44	0.6	0.76	224.7	15.48	0.44	0.61	0.77	207.6	17.34	0.43	0.62	0.79	190.2	19.57	0.43	0.62	0.81	
	8400	249.4	13.97	0.46	0.64	0.81	231.9	15.57	0.46	0.65	0.82	214.2	17.45	0.45	0.66	0.84	195.9	19.68	0.45	0.67	0.87	

**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 STANDARD EFFICIENCY KGA240S4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER**

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	150.3	7.71	0.64	0.75	0.84	142.4	8.51	0.64	0.75	0.85	133.8	9.39	0.64	0.75	0.87	125.0	10.40	0.64	0.76	0.88
	5500	161.0	7.74	0.67	0.79	0.90	152.4	8.54	0.67	0.79	0.91	143.0	9.43	0.67	0.80	0.92	133.3	10.44	0.68	0.81	0.94
	6500	169.0	7.75	0.70	0.82	0.94	159.8	8.56	0.71	0.84	0.96	149.9	9.46	0.70	0.85	0.98	139.7	10.48	0.71	0.86	0.99
67°F	4500	161.1	7.73	0.53	0.62	0.71	152.8	8.54	0.52	0.62	0.72	144.0	9.43	0.51	0.62	0.72	134.5	10.44	0.50	0.62	0.73
	5500	171.9	7.76	0.54	0.65	0.75	162.8	8.58	0.54	0.65	0.76	153.3	9.49	0.53	0.65	0.77	142.9	10.49	0.53	0.66	0.78
	6500	179.8	7.79	0.56	0.67	0.79	170.4	8.62	0.55	0.68	0.80	160.2	9.52	0.55	0.68	0.81	149.4	10.54	0.55	0.69	0.83
71°F	4500	172.7	7.76	0.42	0.51	0.60	164.0	8.58	0.40	0.50	0.60	154.3	9.48	0.39	0.50	0.59	144.2	10.51	0.38	0.49	0.59
	5500	183.1	7.80	0.42	0.53	0.63	173.4	8.63	0.41	0.52	0.63	163.2	9.53	0.41	0.52	0.63	152.3	10.55	0.39	0.51	0.63
	6500	191.0	7.83	0.43	0.54	0.65	180.4	8.66	0.42	0.54	0.66	169.9	9.57	0.41	0.54	0.67	158.6	10.60	0.41	0.54	0.67

**20 TON STANDARD EFFICIENCY KGA240S4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER**

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	229.2	14.28	0.72	0.87	1.00	213.1	15.83	0.73	0.89	1.00	196.7	17.56	0.74	0.91	1.00	179.0	19.54	0.76	0.95	0.99
	8000	241.7	14.36	0.78	0.95	1.00	225.1	15.91	0.80	0.97	1.00	207.9	17.66	0.82	0.99	1.00	190.3	19.63	0.84	1.00	1.00
	9600	251.8	14.43	0.84	1.00	1.00	235.3	15.99	0.85	1.00	1.00	219.3	17.75	0.88	1.00	1.00	201.7	19.72	0.91	1.00	1.00
67°F	6400	245.4	14.38	0.56	0.70	0.83	228.7	15.94	0.56	0.71	0.85	211.3	17.68	0.56	0.72	0.88	192.8	19.64	0.57	0.74	0.82
	8000	257.9	14.47	0.60	0.76	0.91	239.8	16.03	0.60	0.78	0.94	221.2	17.76	0.61	0.79	0.97	201.5	19.71	0.61	0.82	0.90
	9600	266.6	14.55	0.64	0.82	0.98	247.7	16.09	0.64	0.84	1.00	228.3	17.82	0.65	0.86	1.00	208.3	19.77	0.66	0.89	0.96
71°F	6400	262.0	14.51	0.41	0.55	0.68	243.9	16.05	0.41	0.55	0.69	226.3	17.80	0.40	0.55	0.70	207.1	19.77	0.39	0.56	0.66
	8000	274.6	14.61	0.43	0.59	0.74	255.5	16.16	0.43	0.59	0.76	236.0	17.89	0.42	0.60	0.77	215.9	19.84	0.41	0.61	0.72
	9600	283.2	14.67	0.45	0.63	0.80	263.5	16.23	0.44	0.64	0.82	242.7	17.94	0.44	0.65	0.84	222.4	19.89	0.43	0.66	0.78

**25 TON STANDARD EFFICIENCY KGA300S4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER**

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	191.1	10.16	0.68	0.78	0.87	180.6	11.22	0.68	0.78	0.88	169.1	12.4	0.68	0.79	0.89	156.8	13.74	0.68	0.8	0.91
	6750	201.2	10.28	0.7	0.81	0.91	189.8	11.36	0.7	0.82	0.92	177.6	12.54	0.71	0.83	0.94	164.5	13.86	0.71	0.84	0.96
	7750	209	10.4	0.72	0.84	0.95	197.2	11.46	0.73	0.85	0.96	184.4	12.65	0.73	0.86	0.98	171.1	13.98	0.74	0.88	1.00
67°F	5750	204.7	10.33	0.55	0.65	0.75	193.8	11.41	0.54	0.65	0.75	181.8	12.6	0.54	0.65	0.76	169.3	13.95	0.53	0.66	0.77
	6750	215.1	10.49	0.56	0.68	0.78	203.5	11.56	0.56	0.68	0.79	190.7	12.76	0.56	0.68	0.8	177.2	14.09	0.55	0.69	0.81
	7750	223.3	10.61	0.58	0.7	0.81	211.1	11.68	0.58	0.71	0.82	197.7	12.86	0.57	0.71	0.83	183.6	14.21	0.57	0.72	0.85
71°F	5750	218.4	10.53	0.43	0.53	0.63	207	11.61	0.42	0.53	0.63	194.6	12.81	0.41	0.52	0.63	181.3	14.16	0.4	0.52	0.63
	6750	229.2	10.7	0.44	0.55	0.66	217	11.77	0.43	0.55	0.66	203.7	12.97	0.42	0.54	0.66	189.7	14.33	0.41	0.54	0.67
	7750	237.4	10.83	0.45	0.57	0.68	224.8	11.91	0.44	0.56	0.69	211.1	13.1	0.43	0.56	0.69	196.5	14.45	0.42	0.56	0.7

**25 TON STANDARD EFFICIENCY KGA300S4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER**

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	281.2	18.97	0.75	0.89	1.00	259.9	20.95	0.76	0.91	1.00	238.3	23.23	0.78	0.93	1.00	216.5	25.92	0.79	0.95	1.00
	9500	292.1	19.15	0.8	0.94	1.00	270.8	21.15	0.81	0.96	1.00	248.5	23.44	0.83	0.98	1.00	226.3	26.12	0.85	1.00	1.00
	11000	302.3	19.32	0.83	0.98	1.00	280.1	21.31	0.85	1.00	1.00	258.5	23.63	0.87	1.00	1.00	237.2	26.35	0.9	1.00	1.00
67°F	8000	301.2	19.3	0.58	0.73	0.86	279.3	21.31	0.58	0.74	0.88	256.7	23.6	0.58	0.75	0.9	233.5	26.29	0.58	0.77	0.93
	9500	312.5	19.5	0.61	0.78	0.91	290	21.51	0.62	0.79	0.93	266.2	23.79	0.62	0.81	0.96	242	26.47	0.63	0.83	0.99
	11000	321.4	19.67	0.64	0.82	0.96	297.6	21.65	0.64	0.83	0.98	273.5	23.94	0.66	0.86	1.00	248.5	26.62	0.67	0.88	1.00
71°F	8000	321	19.65	0.43	0.57	0.71	298.1	21.65	0.42	0.57	0.72	275	23.96	0.41	0.58	0.73	250.9	26.67	0.4	0.58	0.75
	9500	332.8	19.86	0.45	0.6	0.75	309.2	21.89	0.44	0.61	0.77	284.6	24.17	0.43	0.61	0.79	259.8	26.86	0.42	0.62	0.81
	11000	341.7	20.03	0.46	0.63	0.8	317.2	22.03	0.45	0.64	0.82	292.5	24.33	0.45	0.65	0.84	266.6	27.01	0.44	0.66	0.87

# RATINGS

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

## 13 TON HIGH EFFICIENCY KGA156H4 (1ST STAGE) - CONSTANT AIR VOLUME

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	4160	110.6	4.68	0.67	0.80	0.93	103.7	5.30	0.68	0.81	0.95	96.4	5.97	0.68	0.82	0.97	88.8	6.74	0.68	0.84	0.99
	5200	117.9	4.73	0.72	0.87	0.99	110.4	5.34	0.72	0.88	1.00	102.7	6.01	0.73	0.90	1.00	94.7	6.78	0.74	0.93	1.00
	6240	123.1	4.77	0.76	0.93	1.00	115.4	5.38	0.77	0.95	1.00	107.5	6.05	0.79	0.97	1.00	99.3	6.81	0.80	0.99	1.00
67°F	4160	118.4	4.73	0.54	0.65	0.77	111.2	5.34	0.53	0.65	0.78	103.8	6.02	0.52	0.66	0.79	96.0	6.79	0.52	0.66	0.80
	5200	126.0	4.79	0.57	0.70	0.83	118.4	5.39	0.56	0.70	0.85	110.5	6.07	0.56	0.71	0.86	102.2	6.83	0.56	0.72	0.89
	6240	131.7	4.83	0.59	0.74	0.90	123.6	5.43	0.59	0.75	0.91	115.4	6.11	0.59	0.76	0.94	106.7	6.87	0.59	0.78	0.96
71°F	4160	126.1	4.78	0.42	0.53	0.63	118.8	5.39	0.40	0.52	0.63	111.2	6.07	0.39	0.52	0.63	103.1	6.84	0.37	0.51	0.64
	5200	134.1	4.84	0.43	0.55	0.67	126.1	5.45	0.41	0.55	0.68	118.0	6.13	0.4	0.55	0.69	109.6	6.89	0.39	0.55	0.70
	6240	140.0	4.88	0.44	0.58	0.72	131.7	5.49	0.42	0.58	0.73	123.3	6.17	0.42	0.59	0.74	114.3	6.93	0.40	0.59	0.76

## 13 TON HIGH EFFICIENCY KGA156H4 (2ND STAGE) - CONSTANT AIR VOLUME

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	4160	148.1	9.05	0.70	0.85	0.99	136.5	10.20	0.71	0.87	1.00	124.5	11.51	0.72	0.9	1.00	112.1	13.01	0.73	0.93	1.00
	5200	157.1	9.11	0.76	0.94	1.00	145.1	10.26	0.77	0.96	1.00	132.6	11.57	0.79	0.99	1.00	120.5	13.08	0.81	1.00	1.00
	6240	164.5	9.17	0.82	0.99	1.00	152.7	10.32	0.83	1.00	1.00	141.1	11.64	0.86	1.00	1.00	129.1	13.15	0.89	1.00	1.00
67°F	4160	159.3	9.13	0.54	0.68	0.82	147.4	10.28	0.54	0.69	0.84	135.3	11.59	0.53	0.70	0.86	122.4	13.09	0.53	0.71	0.89
	5200	169.0	9.20	0.58	0.74	0.90	156.5	10.35	0.58	0.75	0.92	143.4	11.66	0.58	0.77	0.95	129.8	13.16	0.58	0.79	0.98
	6240	175.9	9.25	0.61	0.80	0.97	162.7	10.40	0.62	0.81	0.99	149.1	11.71	0.62	0.83	1.00	135.2	13.2	0.63	0.86	1.00
71°F	4160	170.4	9.21	0.40	0.53	0.66	158.1	10.36	0.38	0.53	0.66	145.8	11.68	0.37	0.53	0.67	132.6	13.18	0.35	0.52	0.69
	5200	180.5	9.29	0.41	0.57	0.72	167.6	10.44	0.41	0.57	0.73	154.2	11.75	0.39	0.57	0.74	140.5	13.25	0.37	0.58	0.76
	6240	187.9	9.35	0.43	0.61	0.77	174.4	10.50	0.42	0.61	0.79	160.4	11.81	0.41	0.61	0.81	146.2	13.31	0.40	0.62	0.84

## 15 TON HIGH EFFICIENCY KGA180H4 (1ST STAGE) - CONSTANT AIR VOLUME

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	127.8	5.04	0.70	0.82	0.93	120.4	5.79	0.7	0.82	0.94	112.8	6.62	0.70	0.83	0.96	104.8	7.53	0.70	0.85	0.98
	6000	136.3	5.05	0.74	0.87	0.99	128.3	5.81	0.75	0.88	1.00	120.1	6.64	0.75	0.90	1.00	111.6	7.56	0.76	0.92	1.00
	7200	142.4	5.05	0.78	0.92	1.00	134.1	5.82	0.79	0.94	1.00	125.4	6.66	0.80	0.96	1.00	116.7	7.58	0.81	0.98	1.00
67°F	4800	136.5	5.05	0.56	0.68	0.79	129.0	5.81	0.55	0.68	0.79	121.1	6.65	0.55	0.68	0.80	112.8	7.56	0.54	0.68	0.81
	6000	145.4	5.06	0.59	0.72	0.84	137.2	5.83	0.58	0.72	0.85	128.8	6.67	0.58	0.73	0.86	120.1	7.60	0.58	0.74	0.88
	7200	151.9	5.06	0.61	0.76	0.89	143.3	5.84	0.61	0.77	0.91	134.5	6.69	0.61	0.78	0.93	125.3	7.62	0.61	0.79	0.95
71°F	4800	145.1	5.06	0.44	0.55	0.65	137.2	5.83	0.42	0.54	0.65	129.2	6.67	0.41	0.54	0.66	120.6	7.60	0.40	0.53	0.66
	6000	154.3	5.07	0.45	0.57	0.70	145.9	5.85	0.43	0.57	0.70	137.2	6.70	0.42	0.57	0.71	128.1	7.63	0.41	0.57	0.71
	7200	161.0	5.08	0.46	0.6	0.74	152.3	5.86	0.44	0.6	0.74	143.1	6.72	0.44	0.6	0.76	133.6	7.66	0.43	0.61	0.77

## 15 TON HIGH EFFICIENCY KGA180H4 (2ND STAGE) - CONSTANT AIR VOLUME

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	172.5	9.96	0.71	0.85	0.99	160.1	11.32	0.71	0.87	1.00	146.8	12.83	0.72	0.90	1.00	132.7	14.51	0.74	0.93	1.00
	6000	182.6	9.99	0.77	0.93	1.00	169.5	11.37	0.78	0.95	1.00	155.7	12.89	0.79	0.98	1.00	141.3	14.57	0.81	1.00	1.00
	7200	190.3	10.02	0.82	0.99	1.00	177.3	11.41	0.83	1.00	1.00	164.3	12.94	0.86	1.00	1.00	150.5	14.64	0.89	1.00	1.00
67°F	4800	185.0	10.00	0.55	0.69	0.82	172.1	11.38	0.55	0.69	0.84	158.6	12.90	0.54	0.70	0.86	144.0	14.59	0.54	0.72	0.89
	6000	195.8	10.04	0.58	0.74	0.90	182.1	11.43	0.58	0.76	0.92	167.5	12.96	0.59	0.77	0.95	152.2	14.65	0.59	0.79	0.98
	7200	203.7	10.07	0.62	0.8	0.97	189.3	11.46	0.62	0.81	0.99	173.9	13.00	0.63	0.84	1.00	157.8	14.69	0.63	0.86	1.00
71°F	4800	197.2	10.04	0.41	0.54	0.67	183.9	11.43	0.39	0.54	0.67	169.9	12.97	0.38	0.53	0.68	155.0	14.67	0.36	0.53	0.69
	6000	208.4	10.09	0.42	0.58	0.72	194.2	11.48	0.41	0.58	0.73	179.4	13.03	0.4	0.58	0.75	163.3	14.73	0.38	0.59	0.77
	7200	216.6	10.12	0.43	0.61	0.78	201.8	11.52	0.42	0.62	0.79	186.2	13.07	0.42	0.62	0.81	169.7	14.78	0.41	0.63	0.84



# RATINGS

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

## 17.5 TON HIGH EFFICIENCY KGA210H4 (1ST STAGE) - CONSTANT AIR VOLUME

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	142.9	5.49	0.71	0.85	0.97	134.4	6.23	0.72	0.86	0.99	125.5	7.05	0.72	0.88	1.00	116.4	7.97	0.74	0.90	1.00
	7000	151.1	5.54	0.76	0.92	1.00	142.3	6.29	0.77	0.94	1.00	133	7.11	0.79	0.96	1.00	123.5	8.03	0.80	0.98	1.00
	8400	157.9	5.58	0.82	0.98	1.00	148.7	6.34	0.83	1.00	1.00	139.3	7.16	0.84	1.00	1.00	130.5	8.08	0.87	1.00	1.00
67°F	5600	153.6	5.55	0.56	0.69	0.81	144.5	6.30	0.56	0.69	0.83	135.3	7.13	0.56	0.70	0.84	125.7	8.04	0.56	0.71	0.86
	7000	161.9	5.61	0.60	0.74	0.88	152.1	6.36	0.6	0.75	0.90	142.5	7.19	0.60	0.77	0.92	132.2	8.10	0.61	0.78	0.95
	8400	167.9	5.65	0.63	0.79	0.95	157.9	6.41	0.63	0.81	0.97	147.6	7.23	0.63	0.82	0.99	137.0	8.14	0.63	0.84	1.00
71°F	5600	164.4	5.63	0.43	0.55	0.67	154.9	6.38	0.42	0.55	0.67	145.2	7.21	0.41	0.54	0.68	135.3	8.13	0.40	0.55	0.69
	7000	172.9	5.69	0.45	0.59	0.72	162.9	6.45	0.44	0.59	0.73	152.6	7.27	0.43	0.59	0.74	142.1	8.19	0.42	0.60	0.76
	8400	179.1	5.74	0.45	0.62	0.77	168.6	6.49	0.46	0.63	0.79	157.8	7.32	0.45	0.63	0.8	146.5	8.24	0.44	0.64	0.82

## 17.5 TON HIGH EFFICIENCY KGA210H4 (2ND STAGE) - CONSTANT AIR VOLUME

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	197.5	11.26	0.71	0.86	0.99	183.2	12.71	0.73	0.89	1.00	168.8	14.37	0.74	0.91	1.00	153.6	16.25	0.75	0.94	1.00
	7000	209.3	11.34	0.78	0.95	1.00	194.5	12.8	0.79	0.97	1.00	179.6	14.45	0.81	0.99	1.00	164.6	16.33	0.83	1.00	1.00
	8400	219.3	11.42	0.83	0.99	1.00	205.2	12.89	0.85	1.00	1.00	190.5	14.55	0.88	1.00	1.00	175.2	16.42	0.91	1.00	1.00
67°F	5600	212.6	11.36	0.55	0.69	0.83	198.1	12.83	0.55	0.70	0.85	182.6	14.48	0.55	0.71	0.87	166.4	16.34	0.55	0.73	0.90
	7000	224.4	11.46	0.59	0.76	0.91	208.9	12.92	0.60	0.77	0.94	192.3	14.56	0.60	0.79	0.96	175.2	16.41	0.60	0.81	0.98
	8400	232.7	11.52	0.62	0.81	0.98	216.2	12.98	0.63	0.83	0.99	199.3	14.62	0.64	0.85	1.00	181.7	16.47	0.64	0.88	1.00
71°F	5600	228.4	11.49	0.41	0.54	0.67	212.9	12.95	0.40	0.54	0.68	197.0	14.60	0.39	0.55	0.69	180.1	16.46	0.38	0.55	0.71
	7000	240.3	11.59	0.42	0.59	0.73	223.9	13.05	0.42	0.59	0.75	206.9	14.69	0.41	0.59	0.76	189.0	16.54	0.40	0.60	0.78
	8400	248.5	11.66	0.44	0.62	0.79	231.5	13.12	0.44	0.63	0.81	214.0	14.75	0.43	0.64	0.83	195.1	16.60	0.42	0.64	0.86

## 20 TON HIGH EFFICIENCY KGA240H4 (1ST STAGE) - CONSTANT AIR VOLUME

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	130.1	5.15	0.69	0.81	0.94	123.5	5.86	0.69	0.83	0.96	116.6	6.64	0.70	0.84	0.98	109.3	7.52	0.71	0.86	0.99
	8000	137.5	5.20	0.73	0.88	0.99	130.5	5.91	0.74	0.90	1.00	123.1	6.69	0.75	0.92	1.00	115.6	7.57	0.77	0.94	1.00
	9600	143.4	5.25	0.78	0.94	1.00	136.1	5.96	0.79	0.96	1.00	128.4	6.74	0.81	0.98	1.00	120.6	7.62	0.83	0.99	1.00
67°F	6400	139.2	5.22	0.55	0.66	0.78	132.2	5.93	0.55	0.67	0.79	124.7	6.71	0.55	0.68	0.81	117.0	7.58	0.55	0.69	0.83
	8000	146.6	5.27	0.57	0.71	0.85	139.1	5.99	0.58	0.72	0.86	131.3	6.77	0.58	0.73	0.88	123.0	7.64	0.58	0.75	0.91
	9600	152.1	5.31	0.60	0.76	0.91	144.2	6.03	0.61	0.77	0.93	135.9	6.81	0.62	0.79	0.96	127.2	7.68	0.62	0.81	0.98
71°F	6400	148.1	5.28	0.42	0.53	0.64	140.8	6.00	0.42	0.53	0.65	133.2	6.79	0.41	0.54	0.65	125.1	7.66	0.41	0.53	0.66
	8000	155.9	5.34	0.43	0.56	0.69	148.1	6.06	0.43	0.56	0.69	139.8	6.85	0.42	0.57	0.71	131.2	7.73	0.42	0.58	0.73
	9600	161.6	5.39	0.44	0.59	0.73	153.2	6.11	0.44	0.60	0.75	144.7	6.90	0.44	0.61	0.76	135.7	7.77	0.44	0.62	0.78

## 20 TON HIGH EFFICIENCY KGA240H4 (2ND STAGE) - CONSTANT AIR VOLUME

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	236.6	13.31	0.73	0.88	1.00	221.6	15.06	0.74	0.91	1.00	205.8	17.06	0.76	0.94	1.00	189.2	19.35	0.78	0.97	1.00
	8000	249.2	13.43	0.79	0.97	1.00	233.7	15.17	0.80	0.98	1.00	217.5	17.17	0.83	0.99	1.00	201.1	19.47	0.86	1.00	1.00
	9600	260.1	13.53	0.85	1.00	1.00	244.7	15.28	0.87	1.00	1.00	228.9	17.29	0.90	1.00	1.00	212.1	19.59	0.94	1.00	1.00
67°F	6400	252.7	13.46	0.56	0.71	0.85	236.8	15.20	0.57	0.72	0.87	220.0	17.20	0.57	0.73	0.90	202.2	19.48	0.58	0.76	0.93
	8000	264.4	13.57	0.60	0.77	0.93	247.3	15.31	0.61	0.78	0.96	229.6	17.30	0.62	0.81	0.98	210.9	19.57	0.63	0.84	0.99
	9600	272.8	13.66	0.64	0.83	0.99	255.3	15.39	0.64	0.85	1.00	236.8	17.38	0.65	0.88	1.00	217.9	19.65	0.67	0.92	1.00
71°F	6400	269.2	13.62	0.41	0.55	0.68	252.6	15.37	0.41	0.56	0.70	235.2	17.36	0.41	0.56	0.71	216.6	19.64	0.40	0.57	0.73
	8000	281.5	13.75	0.43	0.59	0.74	263.7	15.49	0.43	0.60	0.76	245.0	17.48	0.43	0.61	0.78	225.2	19.74	0.42	0.62	0.81
	9600	289.9	13.83	0.45	0.63	0.81	271.3	15.57	0.45	0.64	0.83	252.0	17.55	0.45	0.65	0.86	231.3	19.81	0.44	0.67	0.89

# RATINGS

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

## 25 TON HIGH EFFICIENCY KGA300H4 (1ST STAGE) - CONSTANT AIR VOLUME

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	151.1	6.82	0.69	0.81	0.93	144.0	7.68	0.70	0.82	0.95	136.5	8.64	0.70	0.84	0.96	128.5	9.72	0.71	0.86	0.98				
	9500	157.6	6.88	0.72	0.86	0.98	150.1	7.74	0.73	0.87	0.99	142.3	8.70	0.74	0.89	0.99	134.0	9.79	0.75	0.91	1.00				
	11000	163.2	6.94	0.75	0.90	1.00	155.2	7.80	0.76	0.92	1.00	147.3	8.76	0.78	0.94	1.00	138.7	9.85	0.80	0.96	1.00				
67°F	8000	161.2	6.92	0.55	0.67	0.78	153.7	7.78	0.55	0.67	0.79	145.9	8.74	0.56	0.68	0.80	137.3	9.83	0.56	0.69	0.82				
	9500	168.0	6.99	0.57	0.70	0.82	160.0	7.85	0.58	0.71	0.84	151.7	8.81	0.57	0.72	0.86	142.7	9.90	0.58	0.73	0.88				
	11000	173.4	7.05	0.59	0.73	0.87	164.9	7.91	0.59	0.74	0.89	156.0	8.87	0.60	0.75	0.91	146.8	9.96	0.61	0.77	0.93				
71°F	8000	171.3	7.02	0.43	0.54	0.64	163.6	7.89	0.42	0.54	0.65	155.3	8.86	0.42	0.54	0.66	146.4	9.95	0.42	0.54	0.67				
	9500	178.3	7.10	0.44	0.55	0.67	170.0	7.97	0.43	0.56	0.68	161.3	8.94	0.43	0.57	0.69	151.9	10.03	0.43	0.57	0.71				
	11000	183.8	7.16	0.44	0.58	0.71	175.1	8.03	0.44	0.58	0.71	165.9	8.99	0.44	0.59	0.73	156.2	10.09	0.44	0.60	0.75				

## 25 TON HIGH EFFICIENCY KGA300H4 (2ND STAGE) - CONSTANT AIR VOLUME

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	277.0	17.49	0.74	0.89	1.00	260.5	19.68	0.75	0.91	1.00	243.6	22.20	0.77	0.93	1.00	225.6	25.14	0.79	0.97	1.00				
	9500	288.0	17.62	0.78	0.94	1.00	270.9	19.81	0.80	0.97	1.00	253.2	22.34	0.82	0.99	1.00	235.0	25.27	0.85	1.00	1.00				
	11000	296.4	17.74	0.82	0.99	1.00	280.0	19.94	0.84	1.00	1.00	262.2	22.47	0.87	1.00	1.00	244.7	25.43	0.90	1.00	1.00				
67°F	8000	295.2	17.72	0.57	0.71	0.85	278.0	19.91	0.58	0.73	0.87	259.8	22.44	0.59	0.74	0.90	240.0	25.36	0.60	0.76	0.93				
	9500	305.8	17.86	0.60	0.76	0.91	287.4	20.05	0.61	0.77	0.94	268.4	22.57	0.62	0.80	0.97	247.8	25.49	0.63	0.82	0.99				
	11000	313.6	17.96	0.62	0.80	0.97	294.7	20.16	0.64	0.82	0.99	274.7	22.67	0.65	0.85	1.00	253.4	25.57	0.66	0.88	1.00				
71°F	8000	313.8	17.97	0.43	0.56	0.69	295.5	20.16	0.42	0.57	0.70	276.5	22.70	0.42	0.57	0.72	256.1	25.62	0.42	0.59	0.74				
	9500	324.4	18.11	0.44	0.59	0.73	305.4	20.31	0.44	0.6	0.75	285.3	22.84	0.44	0.61	0.77	264.1	25.76	0.44	0.62	0.80				
	11000	332.6	18.24	0.45	0.62	0.78	313.0	20.43	0.45	0.63	0.80	292.1	22.95	0.45	0.64	0.83	269.8	25.85	0.45	0.66	0.85				

## 13 TON HIGH EFFICIENCY KGA156H4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	3000	101.3	4.50	0.67	0.77	0.86	95.0	5.11	0.67	0.77	0.87	88.4	5.78	0.66	0.78	0.88	81.4	6.53	0.66	0.78	0.90				
	3500	107.4	4.53	0.69	0.8	0.9	100.7	5.14	0.69	0.80	0.91	93.7	5.81	0.69	0.81	0.93	86.4	6.56	0.69	0.82	0.94				
	4000	112.3	4.56	0.71	0.83	0.94	105.3	5.16	0.71	0.83	0.95	98.0	5.83	0.71	0.85	0.97	90.4	6.58	0.72	0.86	0.99				
67°F	3000	108.8	4.54	0.54	0.65	0.74	102.3	5.15	0.53	0.64	0.74	95.5	5.81	0.52	0.64	0.74	88.3	6.57	0.51	0.64	0.75				
	3500	115.1	4.57	0.56	0.67	0.77	108.2	5.18	0.55	0.67	0.77	101.0	5.84	0.54	0.67	0.78	93.5	6.59	0.53	0.67	0.79				
	4000	120.3	4.60	0.57	0.69	0.80	113.1	5.21	0.57	0.69	0.80	105.5	5.87	0.56	0.69	0.81	97.7	6.62	0.55	0.70	0.83				
71°F	3000	116.1	4.57	0.43	0.53	0.62	109.4	5.18	0.41	0.52	0.62	102.4	5.85	0.4	0.51	0.61	95.1	6.60	0.38	0.50	0.61				
	3500	122.7	4.61	0.44	0.54	0.65	115.6	5.22	0.42	0.54	0.65	108.2	5.88	0.41	0.53	0.64	100.5	6.63	0.39	0.52	0.65				
	4000	128.1	4.64	0.44	0.56	0.67	120.7	5.25	0.43	0.55	0.67	113.0	5.91	0.42	0.55	0.67	104.9	6.66	0.40	0.54	0.68				

## 13 TON HIGH EFFICIENCY KGA156H4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	4160	148.1	9.05	0.70	0.85	0.99	136.5	10.20	0.71	0.87	1.00	124.5	11.51	0.72	0.9	1.00	112.1	13.01	0.73	0.93	1.00				
	5200	157.1	9.11	0.76	0.94	1.00	145.1	10.26	0.77	0.96	1.00	132.6	11.57	0.79	0.99	1.00	120.5	13.08	0.81	1.00	1.00				
	6240	164.5	9.17	0.82	0.99	1.00	152.7	10.32	0.83	1.00	1.00	141.1	11.64	0.86	1.00	1.00	129.1	13.15	0.89	1.00	1.00				
67°F	4160	159.3	9.13	0.54	0.68	0.82	147.4	10.28	0.54	0.69	0.84	135.3	11.59	0.53	0.70	0.86	122.4	13.09	0.53	0.71	0.89				
	5200	169.0	9.20	0.58	0.74	0.90	156.5	10.35	0.58	0.75	0.92	143.4	11.66	0.58	0.77	0.95	129.8	13.16	0.58	0.79	0.98				
	6240	175.9	9.25	0.61	0.80	0.97	162.7	10.40	0.62	0.81	0.99	149.1	11.71	0.62	0.83	1.00	135.2	13.20	0.63	0.86	1.00				
71°F	4160	170.4	9.21	0.40	0.53	0.66	158.1	10.36	0.38	0.53	0.66	145.8	11.68	0.37	0.53	0.67	132.6	13.18	0.35	0.52	0.69				
	5200	180.5	9.29	0.41	0.57	0.72	167.6	10.44	0.41	0.57	0.73	154.2	11.75	0.39	0.57	0.74	140.5	13.25	0.37	0.58	0.76				
	6240	187.9	9.35	0.43	0.61	0.77	174.4	10.50	0.42	0.61	0.79	160.4	11.81	0.41	0.61	0.81	146.2	13.31	0.40	0.62	0.84				

# 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 HIGH EFFICIENCY KGA180H4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	117.6	5.01	0.66	0.76	0.85	110.9	5.76	0.66	0.76	0.86	103.9	6.57	0.65	0.76	0.87	96.6	7.47	0.65	0.77	0.88
	4000	123.6	5.02	0.68	0.78	0.88	116.6	5.77	0.67	0.79	0.89	109.3	6.59	0.67	0.79	0.91	101.6	7.49	0.67	0.80	0.92
	4500	128.7	5.02	0.69	0.81	0.91	121.3	5.78	0.69	0.81	0.93	113.8	6.60	0.69	0.82	0.94	105.7	7.51	0.70	0.83	0.96
67°F	3500	126.1	5.02	0.54	0.63	0.73	119.1	5.77	0.53	0.63	0.73	112.0	6.59	0.52	0.63	0.73	104.3	7.50	0.51	0.63	0.74
	4000	132.3	5.03	0.55	0.65	0.75	125.1	5.78	0.54	0.65	0.76	117.5	6.61	0.53	0.65	0.76	109.6	7.52	0.52	0.65	0.77
	4500	137.6	5.03	0.56	0.67	0.78	130.0	5.80	0.55	0.67	0.78	122.1	6.63	0.55	0.67	0.79	113.9	7.54	0.54	0.68	0.80
71°F	3500	134.4	5.03	0.42	0.52	0.61	127.2	5.79	0.41	0.51	0.61	119.7	6.62	0.40	0.50	0.61	112.0	7.53	0.38	0.49	0.60
	4000	140.9	5.03	0.43	0.53	0.63	133.3	5.80	0.42	0.53	0.63	125.5	6.64	0.40	0.52	0.63	117.3	7.55	0.39	0.51	0.63
	4500	146.3	5.04	0.43	0.54	0.65	138.5	5.81	0.42	0.54	0.65	130.3	6.65	0.41	0.53	0.65	121.8	7.57	0.40	0.53	0.65

## 15 TON HIGH EFFICIENCY KGA180H4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	172.5	9.96	0.71	0.85	0.99	160.1	11.32	0.71	0.87	1.00	146.8	12.83	0.72	0.90	1.00	132.7	14.51	0.74	0.93	1.00
	6000	182.6	9.99	0.77	0.93	1.00	169.5	11.37	0.78	0.95	1.00	155.7	12.89	0.79	0.98	1.00	141.3	14.57	0.81	1.00	1.00
	7200	190.3	10.02	0.82	0.99	1.00	177.3	11.41	0.83	1.00	1.00	164.3	12.94	0.86	1.00	1.00	150.5	14.64	0.89	1.00	1.00
67°F	4800	185.0	10.00	0.55	0.69	0.82	172.1	11.38	0.55	0.69	0.84	158.6	12.90	0.54	0.70	0.86	144.0	14.59	0.54	0.72	0.89
	6000	195.8	10.04	0.58	0.74	0.90	182.1	11.43	0.58	0.76	0.92	167.5	12.96	0.59	0.77	0.95	152.2	14.65	0.59	0.79	0.98
	7200	203.7	10.07	0.62	0.80	0.97	189.3	11.46	0.62	0.81	0.99	173.9	13.00	0.63	0.84	1.00	157.8	14.69	0.63	0.86	1.00
71°F	4800	197.2	10.04	0.41	0.54	0.67	183.9	11.43	0.39	0.54	0.67	169.9	12.97	0.38	0.53	0.68	155.0	14.67	0.36	0.53	0.69
	6000	208.4	10.09	0.42	0.58	0.72	194.2	11.48	0.41	0.58	0.73	179.4	13.03	0.4	0.58	0.75	163.3	14.73	0.38	0.59	0.77
	7200	216.6	10.12	0.43	0.61	0.78	201.8	11.52	0.42	0.62	0.79	186.2	13.07	0.42	0.62	0.81	169.7	14.78	0.41	0.63	0.84

## 17.5 TON HIGH EFFICIENCY KGA210H4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	132.5	5.42	0.67	0.78	0.89	124.8	6.17	0.67	0.78	0.90	116.7	6.99	0.66	0.79	0.91	108.3	7.91	0.67	0.80	0.93
	4750	140.2	5.46	0.69	0.82	0.93	131.8	6.21	0.70	0.83	0.95	123.3	7.04	0.70	0.84	0.97	114.2	7.96	0.70	0.86	0.99
	5500	146.1	5.50	0.72	0.86	0.98	137.3	6.25	0.73	0.87	0.99	128.4	7.07	0.73	0.89	1.00	119.1	7.99	0.75	0.91	1.00
67°F	4000	143.1	5.48	0.54	0.64	0.75	134.9	6.23	0.53	0.64	0.75	126.4	7.05	0.52	0.64	0.76	117.6	7.98	0.52	0.64	0.77
	4750	150.9	5.52	0.55	0.67	0.78	142.3	6.28	0.55	0.67	0.79	133.3	7.10	0.54	0.68	0.81	123.7	8.03	0.54	0.68	0.82
	5500	157.2	5.56	0.57	0.70	0.82	147.9	6.32	0.57	0.70	0.84	138.6	7.15	0.57	0.71	0.85	128.5	8.06	0.57	0.72	0.87
71°F	4000	153.5	5.54	0.42	0.52	0.62	145.1	6.29	0.41	0.52	0.62	136.3	7.12	0.40	0.51	0.62	126.9	8.05	0.38	0.50	0.62
	4750	161.7	5.59	0.43	0.54	0.65	152.6	6.35	0.42	0.54	0.65	143.3	7.18	0.41	0.53	0.66	133.3	8.10	0.39	0.53	0.66
	5500	168.2	5.63	0.43	0.56	0.68	158.5	6.39	0.42	0.56	0.68	148.9	7.22	0.41	0.56	0.69	138.7	8.15	0.41	0.56	0.70

## 17.5 TON HIGH EFFICIENCY KGA210H4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	197.5	11.26	0.71	0.86	0.99	183.2	12.71	0.73	0.89	1.00	168.8	14.37	0.74	0.91	1.00	153.6	16.25	0.75	0.94	1.00
	7000	209.3	11.34	0.78	0.95	1.00	194.5	12.80	0.79	0.97	1.00	179.6	14.45	0.81	0.99	1.00	164.6	16.33	0.83	1.00	1.00
	8400	219.3	11.42	0.83	0.99	1.00	205.2	12.89	0.85	1.00	1.00	190.5	14.55	0.88	1.00	1.00	175.2	16.42	0.91	1.00	1.00
67°F	5600	212.6	11.36	0.55	0.69	0.83	198.1	12.83	0.55	0.70	0.85	182.6	14.48	0.55	0.71	0.87	166.4	16.34	0.55	0.73	0.90
	7000	224.4	11.46	0.59	0.76	0.91	208.9	12.92	0.60	0.77	0.94	192.3	14.56	0.60	0.79	0.96	175.2	16.41	0.60	0.81	0.98
	8400	232.7	11.52	0.62	0.81	0.98	216.2	12.98	0.63	0.83	0.99	199.3	14.62	0.64	0.85	1.00	181.7	16.47	0.64	0.88	1.00
71°F	5600	228.4	11.49	0.41	0.54	0.67	212.9	12.95	0.40	0.54	0.68	197.0	14.60	0.39	0.55	0.69	180.1	16.46	0.38	0.55	0.71
	7000	240.3	11.59	0.42	0.59	0.73	223.9	13.05	0.42	0.59	0.75	206.9	14.69	0.41	0.59	0.76	189.0	16.54	0.40	0.60	0.78
	8400	248.5	11.66	0.44	0.62	0.79	231.5	13.12	0.44	0.63	0.81	214.0	14.75	0.43	0.64	0.83	195.1	16.60	0.42	0.64	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 HIGH EFFICIENCY KGA240H4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	117.1	5.20	0.66	0.75	0.85	111.5	5.97	0.66	0.76	0.86	105.5	6.80	0.66	0.77	0.87	99.20	7.72	0.66	0.78	0.89
	5500	125.0	5.22	0.68	0.80	0.90	118.9	5.99	0.69	0.80	0.92	112.4	6.83	0.69	0.81	0.93	105.6	7.76	0.69	0.83	0.95
	6500	131.1	5.23	0.71	0.83	0.95	124.5	6.01	0.71	0.84	0.97	117.7	6.86	0.72	0.86	0.98	110.6	7.79	0.73	0.88	0.99
67°F	4500	125.7	5.22	0.53	0.63	0.72	119.8	5.99	0.53	0.63	0.73	113.5	6.83	0.52	0.63	0.73	106.9	7.77	0.52	0.63	0.74
	5500	133.9	5.24	0.55	0.66	0.76	127.5	6.02	0.55	0.66	0.77	120.8	6.87	0.54	0.67	0.78	113.7	7.81	0.55	0.67	0.79
	6500	140.2	5.25	0.57	0.69	0.80	133.4	6.04	0.57	0.69	0.81	126.3	6.90	0.56	0.70	0.83	118.6	7.84	0.56	0.71	0.84
71°F	4500	134.2	5.24	0.42	0.51	0.60	128.2	6.02	0.41	0.51	0.61	121.6	6.87	0.41	0.51	0.61	114.6	7.81	0.40	0.50	0.61
	5500	142.9	5.26	0.43	0.53	0.63	136.1	6.05	0.42	0.53	0.64	129.2	6.91	0.41	0.53	0.64	121.7	7.86	0.41	0.53	0.65
	6500	149.4	5.27	0.43	0.55	0.66	142.4	6.07	0.43	0.55	0.67	134.8	6.94	0.43	0.55	0.67	126.8	7.89	0.42	0.55	0.68

## 20 TON HIGH EFFICIENCY KGA240H4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	236.6	13.31	0.73	0.88	1.00	221.6	15.06	0.74	0.91	1.00	205.8	17.06	0.76	0.94	1.00	189.2	19.35	0.78	0.97	1.00
	8000	249.2	13.43	0.79	0.97	1.00	233.7	15.17	0.80	0.98	1.00	217.5	17.17	0.83	0.99	1.00	201.1	19.47	0.86	1.00	1.00
	9600	260.1	13.53	0.85	1.00	1.00	244.7	15.28	0.87	1.00	1.00	228.9	17.29	0.90	1.00	1.00	212.1	19.59	0.94	1.00	1.00
67°F	6400	252.7	13.46	0.56	0.71	0.85	236.8	15.20	0.57	0.72	0.87	220.0	17.20	0.57	0.73	0.90	202.2	19.48	0.58	0.76	0.93
	8000	264.4	13.57	0.60	0.77	0.93	247.3	15.31	0.61	0.78	0.96	229.6	17.30	0.62	0.81	0.98	210.9	19.57	0.63	0.84	0.99
	9600	272.8	13.66	0.64	0.83	0.99	255.3	15.39	0.64	0.85	1.00	236.8	17.38	0.65	0.88	1.00	217.9	19.65	0.67	0.92	1.00
71°F	6400	269.2	13.62	0.41	0.55	0.68	252.6	15.37	0.41	0.56	0.70	235.2	17.36	0.41	0.56	0.71	216.6	19.64	0.40	0.57	0.73
	8000	281.5	13.75	0.43	0.59	0.74	263.7	15.49	0.43	0.60	0.76	245.0	17.48	0.43	0.61	0.78	225.2	19.74	0.42	0.62	0.81
	9600	289.9	13.83	0.45	0.63	0.81	271.3	15.57	0.45	0.64	0.83	252.0	17.55	0.45	0.65	0.86	231.3	19.81	0.44	0.67	0.89

## 25 TON HIGH EFFICIENCY KGA300H4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	141.5	6.58	0.66	0.76	0.86	135.2	7.42	0.66	0.77	0.88	128.3	8.37	0.67	0.78	0.89	121.3	9.44	0.67	0.79	0.91
	6750	148.5	6.64	0.68	0.79	0.9	141.5	7.48	0.69	0.81	0.92	134.5	8.42	0.69	0.82	0.94	126.7	9.50	0.70	0.83	0.96
	7750	154.1	6.69	0.70	0.83	0.94	146.9	7.53	0.71	0.84	0.96	139.2	8.47	0.72	0.85	0.98	131.3	9.55	0.73	0.87	0.99
67°F	5750	151.2	6.66	0.53	0.63	0.73	144.4	7.51	0.54	0.64	0.74	137.5	8.45	0.53	0.64	0.75	129.9	9.54	0.53	0.65	0.76
	6750	158.7	6.73	0.55	0.66	0.76	151.4	7.57	0.55	0.66	0.77	143.9	8.52	0.55	0.67	0.78	135.7	9.59	0.55	0.68	0.80
	7750	164.5	6.79	0.56	0.68	0.79	156.8	7.63	0.56	0.68	0.80	148.8	8.58	0.56	0.69	0.82	140.3	9.65	0.57	0.71	0.84
71°F	5750	160.9	6.75	0.42	0.52	0.61	154.0	7.60	0.42	0.52	0.61	146.5	8.55	0.41	0.52	0.62	138.5	9.63	0.41	0.52	0.62
	6750	168.8	6.82	0.43	0.53	0.63	161.0	7.68	0.42	0.53	0.64	153.2	8.63	0.42	0.53	0.64	144.5	9.71	0.42	0.53	0.65
	7750	174.7	6.89	0.43	0.55	0.66	166.6	7.74	0.43	0.55	0.66	158.4	8.69	0.42	0.55	0.67	149.4	9.77	0.42	0.55	0.68

## 25 TON HIGH EFFICIENCY KGA300H4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

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	277.0	17.49	0.74	0.89	1.00	260.5	19.68	0.75	0.91	1.00	243.6	22.20	0.77	0.93	1.00	225.6	25.14	0.79	0.97	1.00
	9500	288.0	17.62	0.78	0.94	1.00	270.9	19.81	0.80	0.97	1.00	253.2	22.34	0.82	0.99	1.00	235.0	25.27	0.85	1.00	1.00
	11000	296.4	17.74	0.82	0.99	1.00	280.0	19.94	0.84	1.00	1.00	262.2	22.47	0.87	1.00	1.00	244.7	25.43	0.90	1.00	1.00
67°F	8000	295.2	17.72	0.57	0.71	0.85	278.0	19.91	0.58	0.73	0.87	259.8	22.44	0.59	0.74	0.90	240.0	25.36	0.60	0.76	0.93
	9500	305.8	17.86	0.60	0.76	0.91	287.4	20.05	0.61	0.77	0.94	268.4	22.57	0.62	0.80	0.97	247.8	25.49	0.63	0.82	0.99
	11000	313.6	17.96	0.62	0.80	0.97	294.7	20.16	0.64	0.82	0.99	274.7	22.67	0.65	0.85	1.00	253.4	25.57	0.66	0.88	1.00
71°F	8000	313.8	17.97	0.43	0.56	0.69	295.5	20.16	0.42	0.57	0.70	276.5	22.70	0.42	0.57	0.72	256.1	25.62	0.42	0.59	0.74
	9500	324.4	18.11	0.44	0.59	0.73	305.4	20.31	0.44	0.60	0.75	285.3	22.84	0.44	0.61	0.77	264.1	25.76	0.44	0.62	0.80
	11000	332.6	18.24	0.45	0.62	0.78	313.0	20.43	0.45	0.63	0.80	292.1	22.95	0.45	0.64	0.83	269.8	25.85	0.45	0.66	0.85

## 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 30 for wet coil and option/accessory air resistance data.

See page 30 for factory installed drive kit specifications.

### MINIMUM AIR VOLUME REQUIRED FOR DIFFERENT GAS HEAT SIZES

Standard (S) and Medium Heat (M) - 4500 cfm minimum

High Heat (H) - 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	1.50	950	1.70	1015	1.90	1080	2.10	1145	2.30	1210	2.50	1275	2.70
3000	395	0.35	515	0.55	610	0.75	695	1.00	760	1.20	825	1.45	890	1.65	955	1.85	1020	2.05	1085	2.25	1150	2.45	1215	2.65	1280	2.85
3250	405	0.40	520	0.60	615	0.85	695	1.10	765	1.30	830	1.60	890	1.85	955	2.10	1020	2.35	1085	2.60	1150	2.85	1215	3.10	1280	3.35
3500	415	0.45	530	0.70	620	0.95	700	1.20	775	1.45	840	1.70	900	2.00	965	2.25	1030	2.50	1095	2.75	1160	3.00	1225	3.25	1290	3.50
3750	425	0.50	540	0.75	630	1.05	710	1.30	780	1.60	845	1.85	905	2.15	970	2.40	1035	2.65	1100	2.90	1165	3.15	1230	3.40	1295	3.65
4000	435	0.55	545	0.85	635	1.10	715	1.40	785	1.70	850	2.00	910	2.30	975	2.55	1040	2.80	1105	3.05	1170	3.30	1235	3.55	1300	3.80
4250	445	0.60	555	0.90	645	1.25	725	1.55	795	1.85	855	2.15	915	2.45	980	2.70	1045	2.95	1110	3.20	1175	3.45	1240	3.70	1305	3.95
4500	455	0.70	565	1.00	655	1.35	730	1.65	800	2.00	865	2.35	925	2.65	990	2.90	1055	3.15	1120	3.40	1185	3.65	1250	3.90	1315	4.15
4750	470	0.75	575	1.10	660	1.45	740	1.80	810	2.15	870	2.50	930	2.85	995	3.10	1060	3.35	1125	3.60	1190	3.85	1255	4.10	1320	4.35
5000	480	0.85	585	1.25	670	1.60	750	1.95	815	2.30	880	2.70	940	3.05	1000	3.35	1065	3.60	1130	3.85	1195	4.10	1260	4.35	1325	4.60
5250	495	0.95	595	1.35	680	1.70	755	2.10	825	2.50	890	2.90	945	3.25	1000	3.55	1065	3.80	1130	4.05	1195	4.30	1260	4.55	1325	4.80
5500	505	1.05	605	1.45	690	1.85	765	2.25	835	2.65	895	3.05	955	3.45	1010	3.75	1075	4.05	1140	4.30	1205	4.55	1270	4.80	1335	5.05
5750	520	1.15	615	1.60	700	2.00	775	2.45	840	2.85	905	3.25	960	3.65	1015	4.05	1080	4.35	1145	4.60	1210	4.85	1275	5.10	1340	5.30
6000	530	1.30	630	1.75	710	2.15	785	2.60	850	3.05	910	3.45	970	3.90	1025	4.35	1090	4.65	1155	4.90	1220	5.15	1285	5.40	1350	5.65
6250	545	1.40	640	1.90	720	2.35	795	2.80	860	3.25	920	3.70	975	4.15	1030	4.60	1095	4.95	1160	5.20	1225	5.45	1290	5.70	1355	5.90
6500	560	1.55	650	2.05	730	2.50	805	3.00	870	3.45	930	3.95	985	4.40	1040	4.85	1100	5.15	1165	5.45	1230	5.70	1295	6.00	1360	6.25
6750	570	1.70	665	2.20	745	2.70	815	3.20	880	3.70	940	4.20	995	4.65	1055	5.10	1115	5.45	1180	5.70	1245	6.00	1310	6.25	1370	6.50
7000	585	1.85	675	2.35	755	2.90	825	3.40	890	3.95	950	4.45	1005	4.95	1065	5.35	1125	5.70	1190	6.00	1255	6.25	1320	6.50	1380	6.75
7250	600	2.00	690	2.60	765	3.10	835	3.65	900	4.15	955	4.65	1015	5.25	1075	5.65	1135	6.00	1200	6.30	1265	6.55	1330	6.80	1390	7.05
7500	615	2.20	700	2.75	775	3.30	845	3.85	910	4.45	965	4.95	1020	5.50	1080	5.90	1140	6.25	1205	6.55	1270	6.80	1335	7.05	1400	7.30
7750	630	2.40	715	3.00	790	3.55	855	4.10	920	4.70	975	5.25	1030	5.80	1090	6.20	1150	6.55	1215	6.85	1280	7.10	1345	7.35	1410	7.60
8000	640	2.55	725	3.20	800	3.80	865	4.35	930	4.95	985	5.50	1040	6.10	1100	6.45	1160	6.80	1225	7.10	1290	7.35	1355	7.60	1420	7.85
8250	655	2.80	740	3.40	810	4.00	880	4.65	940	5.25	995	5.85	1050	6.45	1110	6.75	1170	7.10	1235	7.40	1300	7.65	1365	7.90	1430	8.10
8500	670	3.00	750	3.65	825	4.30	890	4.90	950	5.55	1005	6.15	1060	6.80	1120	7.10	1180	7.45	1245	7.70	1310	7.95	1375	8.15	1440	8.35
8750	685	3.25	765	3.90	835	4.55	900	5.20	960	5.85	1015	6.45	1070	7.15	1130	7.45	1190	7.80	1255	8.05	1320	8.30	1385	8.55	1450	8.80
9000	700	3.50	780	4.20	850	4.85	910	5.50	970	6.15	1025	6.80	1080	7.50	1140	7.85	1200	8.15	1265	8.40	1330	8.65	1395	8.90	1460	9.15
9250	715	3.75	790	4.45	860	5.15	925	5.85	985	6.55	1040	7.20	1090	7.85	1150	8.15	1210	8.45	1275	8.70	1340	8.95	1405	9.20	1470	9.45
9500	730	4.00	805	4.75	875	5.45	935	6.15	995	6.90	1050	7.60	1100	8.25	1160	8.55	1220	8.85	1285	9.10	1350	9.35	1415	9.60	1480	9.85
9750	745	4.30	820	5.05	885	5.75	950	6.55	1005	7.20	1060	7.95	1110	8.65	1170	9.00	1230	9.30	1295	9.55	1360	9.80	1425	10.05	1490	10.30
10,000	760	4.60	835	5.40	900	6.15	960	6.85	1015	7.60	1070	8.35	1120	9.05	1180	9.35	1240	9.65	1305	9.90	1370	10.15	1435	10.40	1500	10.65
10,250	775	4.90	845	5.65	910	6.45	970	7.20	1030	8.00	1080	8.75	1135	9.55	1190	9.85	1250	10.15	1315	10.40	1380	10.65	1445	10.90	1510	10.90
10,500	790	5.20	860	6.00	925	6.85	985	7.65	1040	8.40	1095	9.20	1145	10.00	1200	10.30	1260	10.60	1325	10.90	1390	11.20	1455	11.50	1520	11.20
10,750	805	5.55	875	6.40	940	7.25	1000	8.05	1055	8.85	1105	9.65	1155	10.45	1210	11.00	1270	11.30	1335	11.60	1400	11.90	1465	12.20	1530	12.50
11,000	820	5.90	890	6.80	950	7.60	1010	8.45	1065	9.30	1115	10.05	1165	10.90	1220	11.30	1280	11.60	1345	11.90	1410	12.20	1475	12.50	1540	12.80

## BLOWER DATA

### FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

Motor Efficiency	Nominal hp	Maximum hp	Drive Kit Number	RPM Range
Standard or High	2	2.30	1	535 - 725
Standard or High	2	2.30	2	710 - 965
Standard	3	3.45	1	535 - 725
Standard	3	3.45	2	710 - 965
Standard	5	5.75	3	685 - 856
Standard	5	5.75	4	850 - 1045
Standard	5	5.75	5	945 - 1185
Standard	7.5	8.63	6	850 - 1045
Standard	7.5	8.63	7	945 - 1185
Standard	7.5	8.63	8	1045 - 1285
Standard	10	11.50	7	945 - 1185
Standard	10	11.50	10	1045 - 1285
Standard	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 - Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.

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

Air Volume cfm	Wet Indoor Coil			Gas Heat Exchanger			Economizer	Filters		Horizontal Roof Curb	
	180S	156H 180H 210S	210H 240H 240S 300H 300S	Standard Heat	Medium Heat	High Heat		MERV 8	MERV 13	156H 180H 180S 210H 210S 240H 240S	300H 300S
2750	0.01	0.01	0.02	0.02	0.04	0.05	---	0.01	0.03	0.03	---
3000	0.01	0.01	0.02	0.03	0.04	0.05	---	0.01	0.03	0.04	---
3250	0.02	0.01	0.03	0.03	0.05	0.06	---	0.01	0.04	0.04	0.01
3500	0.02	0.01	0.03	0.03	0.05	0.06	---	0.01	0.04	0.05	0.01
3750	0.02	0.01	0.03	0.04	0.06	0.07	---	0.01	0.04	0.05	0.01
4000	0.02	0.02	0.04	0.04	0.06	0.07	---	0.01	0.04	0.06	0.02
4250	0.02	0.02	0.04	0.04	0.06	0.08	---	0.01	0.05	0.07	0.02
4500	0.02	0.02	0.05	0.05	0.07	0.09	---	0.01	0.05	0.07	0.02
4750	0.02	0.02	0.05	0.05	0.08	0.10	---	0.02	0.05	0.08	0.03
5000	0.03	0.02	0.05	0.05	0.09	0.11	---	0.02	0.06	0.08	0.03
5250	0.03	0.02	0.06	0.06	0.10	0.12	---	0.02	0.06	0.09	0.04
5500	0.03	0.02	0.07	0.06	0.10	0.13	---	0.02	0.06	0.10	0.04
5750	0.03	0.03	0.07	0.06	0.11	0.14	---	0.02	0.07	0.11	0.05
6000	0.04	0.03	0.08	0.07	0.12	0.15	---	0.03	0.07	0.11	0.06
6250	0.04	0.03	0.08	0.07	0.12	0.16	0.01	0.03	0.07	0.12	0.07
6500	0.04	0.03	0.09	0.08	0.13	0.17	0.02	0.03	0.08	0.13	0.08
6750	0.05	0.04	0.10	0.08	0.14	0.18	0.03	0.03	0.08	0.14	0.08
7000	0.05	0.04	0.10	0.09	0.15	0.19	0.04	0.04	0.08	0.15	0.09
7250	0.06	0.04	0.11	0.09	0.16	0.20	0.05	0.04	0.09	0.16	0.10
7500	0.06	0.05	0.12	0.10	0.17	0.21	0.06	0.04	0.09	0.17	0.11
8000	0.07	0.05	0.13	0.11	0.19	0.24	0.09	0.05	0.10	0.19	0.13
8500	0.08	0.06	0.15	0.12	0.20	0.26	0.11	0.05	0.10	0.21	0.15
9000	0.09	0.07	0.16	0.13	0.23	0.29	0.14	0.06	0.11	0.24	0.17
9500	0.10	0.08	0.18	0.14	0.25	0.32	0.16	0.07	0.12	0.26	0.19
10000	0.11	0.08	0.20	0.16	0.27	0.35	0.19	0.07	0.12	0.29	0.21
10500	0.12	0.09	0.22	0.17	0.30	0.38	0.22	0.08	0.13	0.31	0.24
11000	0.14	0.11	0.24	0.18	0.31	0.40	0.25	0.09	0.14	0.34	0.27

## BLOWER DATA

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

Air Volume cfm	Step-Down Diffuser						Flush Diffuser	
	RTD11-185S			RTD11-275			FD11-185S	FD11-275
	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	<sup>1</sup> Effective Throw Range - ft.		Model No.	Air Volume cfm	<sup>1</sup> Effective Throw Range - ft.	
		RTD11-185S Step-Down	FD11-185S Flush			RTD11-275 Step-Down	FD11-275 Flush
156 180	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 outletor 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 STANDARD EFFICIENCY****KGA180S4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Compressor 2	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Outdoor Fan Motors (3)	Full Load Amps (total)	2.4 (7.2)			1.3 (3.9)			1 (3)		
Power Exhaust (2) 0.33 HP	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (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	Unit Only With (2) 0.33 HP Power Exhaust	90 100	100 100	110 110	45 50	50 50	50 50	35 35	35 40	40 40
<sup>3</sup> Minimum Circuit Ampacity	Unit Only With (2) 0.33 HP Power Exhaust	75 79	81 85	88 93	37 39	39 42	43 45	28 30	30 32	33 35

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.**17.5 TON STANDARD EFFICIENCY****KGA210S4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 2	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 3	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Outdoor Fan Motors (3)	Full Load Amps (total)	2.4 (7.2)			1.3 (3.9)			1 (3)		
Power Exhaust (2) 0.33 HP	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (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	Unit Only With (2) 0.33 HP Power Exhaust	100 100	100 110	110 125	40 45	45 50	50 50	30 35	35 35	40 45
<sup>3</sup> Minimum Circuit Ampacity	Unit Only With (2) 0.33 HP Power Exhaust	82 87	88 93	97 102	36 38	39 41	43 45	29 31	31 33	35 37

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 STANDARD EFFICIENCY****KGA240S4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Compressor 2	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Compressor 3	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Outdoor Fan Motors (4)	Full Load Amps (total)	2.4 (9.6)			1.3 (5.2)			1 (4)		
Power Exhaust (2) 0.33 HP	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (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	Unit Only	110	125	125	50	60	60	40	45	50
	With (2) 0.33 HP Power Exhaust	125	125	150	60	60	70	40	45	50
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	100	108	116	48	51	55	36	39	41
	With (2) 0.33 HP Power Exhaust	104	112	121	50	54	58	38	41	43

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.**25 TON STANDARD EFFICIENCY****KGA300S4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Compressor 2	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Compressor 3	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Outdoor Fan Motors (4)	Full Load Amps (total)	2.4 (9.6)			1.3 (5.2)			1 (4)		
Power Exhaust (2) 0.33 HP	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (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	Unit Only	125	125	150	60	60	70	45	50	50
	With (2) 0.33 HP Power Exhaust	125	125	150	60	70	70	50	50	50
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	108	116	124	53	56	60	40	43	45
	With (2) 0.33 HP Power Exhaust	113	120	128	56	59	62	42	45	47

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****13 TON HIGH EFFICIENCY****KGA156H4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	11.9			6.7			5.4		
	Locked Rotor Amps	109			59			40		
Compressor 2	Rated Load Amps	11.9			6.7			5.4		
	Locked Rotor Amps	109			59			40		
Compressor 3	Rated Load Amps	11.9			6.7			5.4		
	Locked Rotor Amps	109			59			40		
Outdoor Fan Motors (3)	Full Load Amps (total)	2.4 (7.2)			1.3 (3.9)			1 (3)		
Power Exhaust (2) 0.33 HP	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (2)		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	2	3	5	2	3	5	2	3	5
	Full Load Amps	7.5	10.6	16.7	3.4	4.8	7.6	2.7	3.9	6.1
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	60	60	80	35	35	40	25	25	30
	With (2) 0.33 HP Power Exhaust	70	70	80	35	35	40	30	30	30
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	54	57	64	30	31	34	24	25	27
	With (2) 0.33 HP Power Exhaust	59	62	69	32	34	37	26	27	29

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.**15 TON HIGH EFFICIENCY****KGA180H4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Compressor 2	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Compressor 3	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Outdoor Fan Motors (4)	Full Load Amps (total)	2.4 (9.6)			1.3 (5.2)			1 (4)		
Power Exhaust (2) 0.33 HP	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (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	Unit Only	70	80	100	40	45	50	25	30	35
	With (2) 0.33 HP Power Exhaust	80	90	100	45	45	50	30	30	40
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	65	71	81	36	39	43	25	27	31
	With (2) 0.33 HP Power Exhaust	69	76	86	39	42	46	27	29	33

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****17.5 TON HIGH EFFICIENCY****KA210H4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	15.6			7.8			5.8		
	Locked Rotor Amps	110			52			38.9		
Compressor 2	Rated Load Amps	15.6			7.8			5.8		
	Locked Rotor Amps	110			52			38.9		
Compressor 3	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Outdoor Fan Motors (6)	Full Load Amps (total)	2.4 (14.4)			1.3 (7.8)			1 (6)		
Power Exhaust (2) 0.33 HP	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (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	Unit Only	100	100	110	45	45	50	35	35	40
	With (2) 0.33 HP Power Exhaust	100	110	110	45	50	50	35	40	45
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	81	87	96	39	42	46	30	32	36
	With (2) 0.33 HP Power Exhaust	86	92	101	42	44	48	32	34	38

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.**20 TON HIGH EFFICIENCY****KA240H4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Compressor 2	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Compressor 3	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Compressor 4	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Outdoor Fan Motors (6)	Full Load Amps (total)	2.4 (14.4)			1.3 (7.8)			1 (6)		
Power Exhaust (2) 0.33 HP	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (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	Unit Only	100	110	125	50	60	70	35	45	50
	With (2) 0.33 HP Power Exhaust	110	125	125	60	60	70	40	45	50
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	90	99	107	50	54	58	34	38	40
	With (2) 0.33 HP Power Exhaust	95	104	112	53	57	60	36	40	42

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****25 TON****25 TON HIGH EFFICIENCY****KGA300H4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 2	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 3	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 4	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Outdoor Fan Motors (6)	Full Load Amps (total)	2.4 (14.4)			1.3 (7.8)			1 (6)		
Power Exhaust (2) 0.33 HP	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (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	Unit Only With (2) 0.33 HP Power Exhaust	125	125	150	60	60	70	45	50	50
<sup>3</sup> Minimum Circuit Ampacity	Unit Only With (2) 0.33 HP Power Exhaust	115	124	132	51	55	59	41	44	47

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 - HIGH EFFICIENCY

Voltage	208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
Model No.	KGA156H4											
Blower Motor HP	2		3		5		2	3	5	2	3	5
Unit Only	54W91	54W91	54W91	54W91	54W91	54W91	54W91	54W91	54W91	54W91	54W91	54W91
Unit w/ Power Exhaust	54W91	54W91	54W91	54W91	54W92	54W92	54W91	54W91	54W91	54W91	54W91	54W91
Model No.	KGA180H4											
Blower Motor HP	3		5		7.5		3	5	7.5	3	5	7.5
Unit Only	54W91	54W91	54W91	54W91	54W92	54W92	54W91	54W91	54W91	54W91	54W91	54W91
Unit w/ Power Exhaust	54W91	54W91	54W92	54W92	54W92	54W92	54W91	54W91	54W91	54W91	54W91	54W91
Model No.	KGA210H4											
Blower Motor HP	3		5		7.5		3	5	7.5	3	5	7.5
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
Model No.	KGA240H4											
Blower Motor HP	5		7.5		10		5	7.5	10	5	7.5	10
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
Model No.	KGA300H4											
Blower Motor HP	5		7.5		10		5	7.5	10	5	7.5	10
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

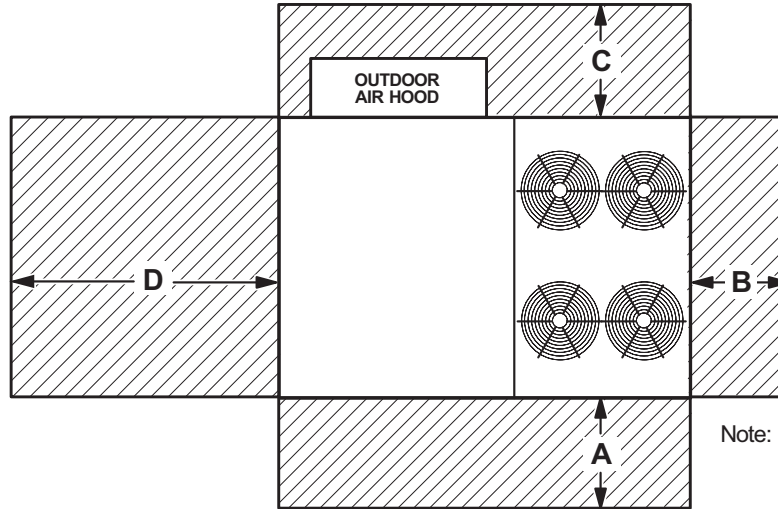
## ELECTRICAL ACCESSORIES

### DISCONNECTS - STANDARD EFFICIENCY

Voltage	208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
Model No.	KGA180S4											
Blower Motor HP	3		5		7.5		3	5	7.5	3	5	7.5
Unit Only	54W91	54W91	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
Model No.	KGA210S4											
Blower Motor HP	3		5		7.5		3	5	7.5	3	5	7.5
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
Model No.	KGA240S4											
Blower Motor HP	5		7.5		10		5	7.5	10	5	7.5	10
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
Model No.	KGA300S4											
Blower Motor HP	5		7.5		10		5	7.5	10	5	7.5	10
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

## UNIT CLEARANCES - INCHES (MM)

### Unit With Economizer



Note: 180H, 240S, 300S sizes shown

<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.

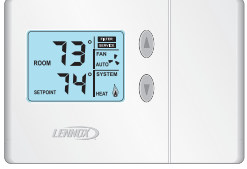
## OUTDOOR SOUND DATA

Unit Model Number	Octave Band Linear Sound Power Levels dB, re 10 <sup>-12</sup> Watts - Center Frequency - Hz							<sup>1</sup> Sound Rating Number (SRN) (dBA)
	125	250	500	1000	2000	4000	8000	
156H, 180S, 210S	71	78	81	81	76	71	63	86
180H, 240S, 300S	80	83	87	88	84	80	71	93
210H, 240H, 300H	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 ARI Standard 370-2001 (includes pure tone penalty). "SRN" is the overall A-Weighted Sound Power Level, (LWA), dB (100 Hz to 10,000 Hz).

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Item	Model No.	Catalog No.
<p><b>COMFORTSENSE® 7500 COMMERCIAL 7-DAY PROGRAMMABLE THERMOSTAT</b></p>  <ul style="list-style-type: none"> <li>• Four-Stage Heating / Two-Stage Cooling Universal Multi-Stage</li> <li>• Intuitive Touchscreen Interface</li> <li>• Remote Indoor Temperature Sensing with Averaging</li> <li>• Outside or Discharge Air Temperature Display</li> <li>• Full Seven-Day Programming</li> <li>• Four Time Periods Per Day</li> <li>• Occupancy Scheduling with Economizer Relay Control</li> <li>• Away Mode</li> <li>• Holiday Scheduling</li> <li>• Smooth Setback Recovery (SSR)</li> <li>• Performance Reports</li> <li>• Notifications/Reminders</li> <li>• Dehumidification/Humiditrol® Control for Split Systems and Rooftop Units</li> <li>• Economizer Relay Control</li> <li>• Backlit Display</li> <li>• Wallplate Furnished</li> </ul>	C0STAT06FF1L	<b>13H15</b>
<b>Optional Accessories</b>		
<sup>1</sup> Remote non-adjustable wall mount 20k temperature sensor	C0SNZN01AE2-	<b>47W36</b>
<sup>1</sup> Remote non-adjustable wall mount 10k temperature sensor	C0SNZN73AE1-	<b>47W37</b>
Remote non-adjustable discharge air (duct mount) temperature sensor	C0SNDC00AE1-	<b>19L22</b>
Outdoor temperature sensor	C0SNSR03AE1-	<b>X2658</b>
Locking cover (clear)	C0MISC15AE1-	<b>39P21</b>
<sup>1</sup> Remote 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		
<p><b>COMFORTSENSE® 3000 COMMERCIAL 5-2 DAY PROGRAMMABLE THERMOSTAT</b></p>  <ul style="list-style-type: none"> <li>• Two-Stage Heating / Two-Stage Cooling Conventional Systems</li> <li>• Intuitive Interface</li> <li>• 5-2 Day Programming</li> <li>• Program Hold</li> <li>• Remote Indoor Temperature Sensing</li> <li>• Smooth Setback Recovery (SSR)</li> <li>• Economizer Relay Control</li> <li>• Maintenance/Filter/Service Reminders</li> <li>• Backlit Display</li> <li>• Wallplate Furnished</li> <li>• Simple Up and Down Temperature Control.</li> </ul>	C0STAT05FF1L	<b>11Y05</b>
<b>Optional Accessories</b>		
Remote non-adjustable wall mount 10k averaging temperature sensor	C0SNZN73AE1-	<b>47W37</b>
Optional wall mounting plate	C0MISC17AE1-	<b>X2659</b>
<p><b>DIGITAL NON-PROGRAMMABLE THERMOSTAT</b></p>  <ul style="list-style-type: none"> <li>• One-Stage Heating / Cooling Conventional Systems</li> <li>• Intuitive Interface</li> <li>• Automatic Changeover</li> <li>• Backlit Display</li> <li>• Simple Up and Down Temperature Control.</li> </ul>	C0STAT12AE1L	<b>51M32</b>
<b>Optional Accessories</b>		
Outdoor temperature sensor	C0SNSR04AE1-	<b>X2658</b>
Optional wall mounting plate	C0MISC17AE1-	<b>X2659</b>

## WEIGHT DATA

Model Number	Net		Shipping		Model Number	Net		Shipping	
	lbs.	kg	lbs.	kg		lbs.	kg	lbs.	kg
156H Base Unit	1935	878	2135	968	180S Base Unit	1790	812	1990	903
156H Max. Unit	2205	1000	2405	1091	180S Max. Unit	2115	959	2315	1050
180H Base Unit	2115	959	2315	1050	210S Base Unit	1935	878	2135	968
180H Max. Unit	2400	1089	2600	1179	210S Max. Unit	2260	1025	2460	1116
210H Base Unit	2240	1016	2440	1107	240S Base Unit	2180	989	2380	1080
210H Max. Unit	2525	1145	2725	1236	240S Max. Unit	2505	1136	2705	1227
240H Base Unit	2325	1055	2525	1145	300S Base Unit	2180	989	2380	1080
240H Max. Unit	2610	1184	2810	1275	300S Max. Unit	2505	1136	2705	1227
300H Base Unit	2430	1102	2630	1193					
300H Max. Unit	2715	1232	2915	1322					

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

Description	Shipping Weight		
	lbs.	kg	
<b>ECONOMIZER / OUTDOOR AIR / EXHAUST</b>			
<b>Economizer</b>			
Economizer Dampers	102	46	
Barometric Relief Dampers (downflow)	30	14	
Barometric Relief Dampers (horizontal)	20	9	
<b>Outdoor Air Dampers</b>			
Outdoor Air Damper Section (downflow) - Automatic	52	24	
Outdoor Air Damper Section (downflow) - Manual	49	22	
Outdoor Air Damper Hood (downflow)	65	29	
<b>Power Exhaust</b>	62	28	
<b>GAS HEAT EXCHANGER (NET WEIGHT)</b>			
Medium Heat (adder over standard heat)	18	8	
High Heat (adder over standard heat)	64	29	
<b>MSAV® (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER OPTION</b>			
Variable Frequency Drive (VFD) and associated components	10	5	
<b>ROOF CURBS</b>			
<b>Hybrid Roof Curb, Downflow</b>			
8 in. height	75	34	
14 in. height	105	48	
18 in. height	125	57	
24 in. height	155	70	
<b>Adjustable Pitch Curb, Downflow</b>			
14 in. height	262	119	
<b>Horizontal Roof Curbs, Standard</b>			
26 in. height	470	213	
37 in. height	505	229	
30 in. height	575	261	
41 in. height	610	277	
<b>CEILING DIFFUSERS</b>			
<b>Step-Down</b>			
	RTD11-185S	168	76
	RTD11-275S	238	108
<b>Flush</b>			
	FD11-185S	168	76
	FD11-275S	238	108
<b>Transitions</b>			
	C1DIFF33C-1	80	36
	C1DIFF34C-1	75	34
<b>PACKAGING</b>			
LTL Packaging (less than truck load)	310	141	



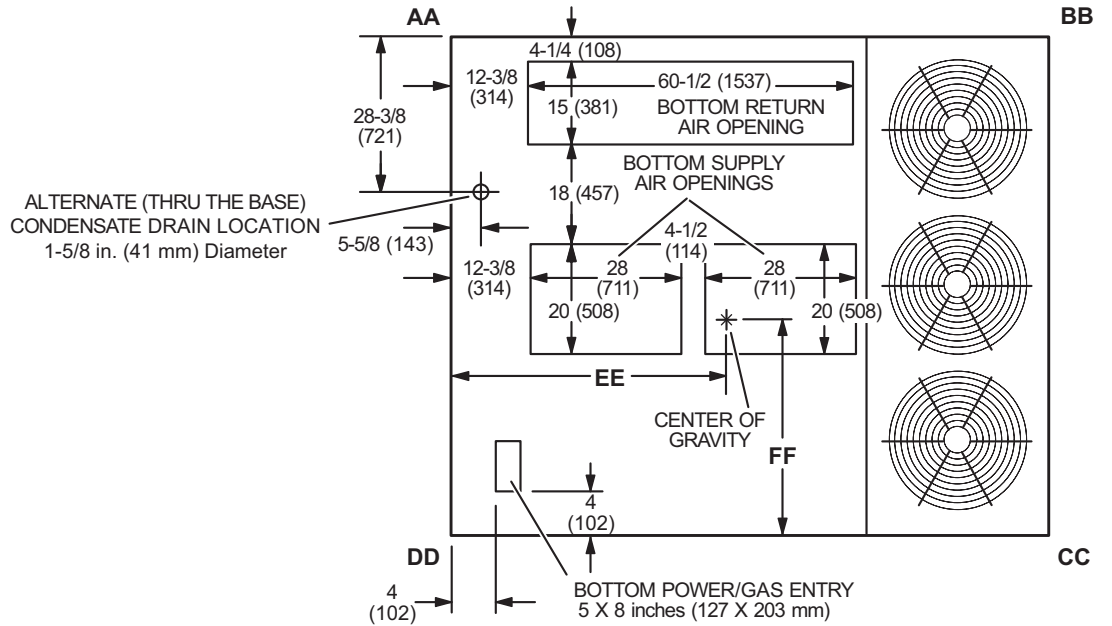
**DIMENSIONS - UNIT - INCHES (MM)**

**KGA156H, KGA180S, KGA210S**

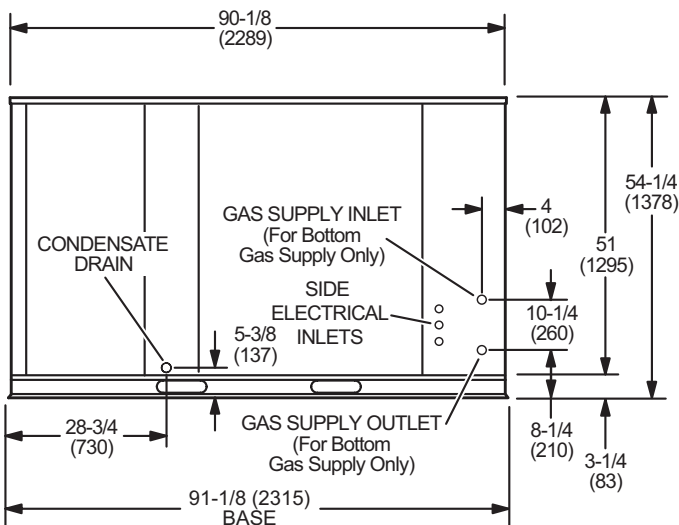
Model No.	CORNER WEIGHTS												CENTER OF GRAVITY											
	AA				BB				CC				DD				EE				FF			
	Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm	in.	mm	in.	mm
156H	473	215	586	266	367	167	447	203	483	219	510	232	612	278	663	301	47-1/4	1200	46 3/4	1187	39 1/2	1003	42 3/4	1086
180S	425	193	547	249	361	164	439	200	461	210	503	229	543	247	626	284	49 1/2	1257	48	1219	40	1016	42 1/2	1080
210S	450	204	573	261	379	172	456	207	506	230	545	248	601	273	685	312	49 1/4	1251	47 3/4	1213	39	991	41 1/2	1054

Base Unit - The unit with NO INTERNAL OPTIONS.

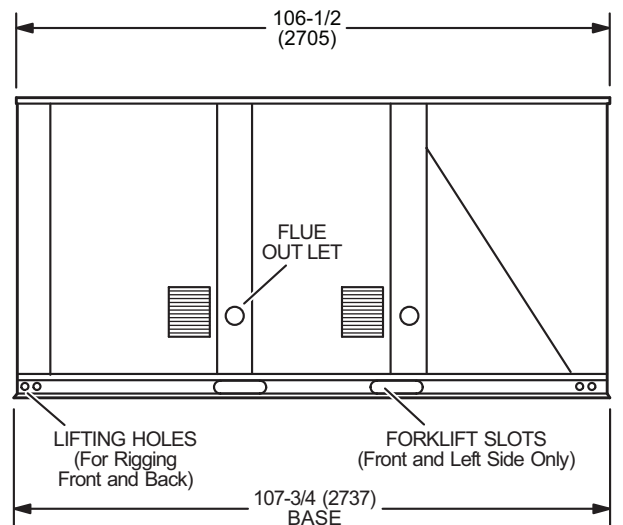
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



**TOP VIEW**



**END VIEW**



**SIDE VIEW**

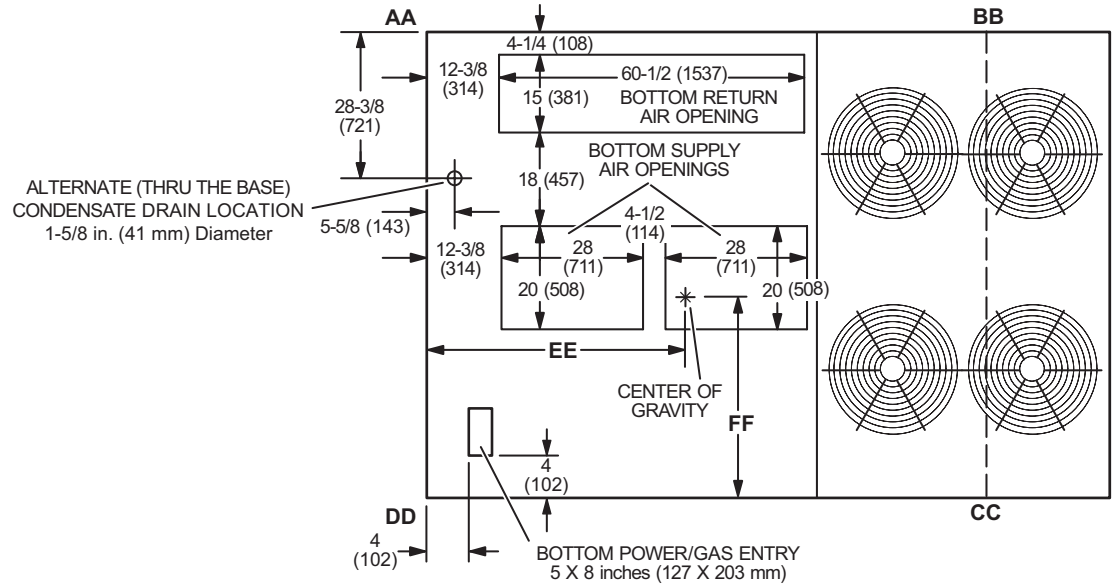
**DIMENSIONS - UNIT - INCHES (MM)**

**KGA180H, KGA240S, KGA300S**

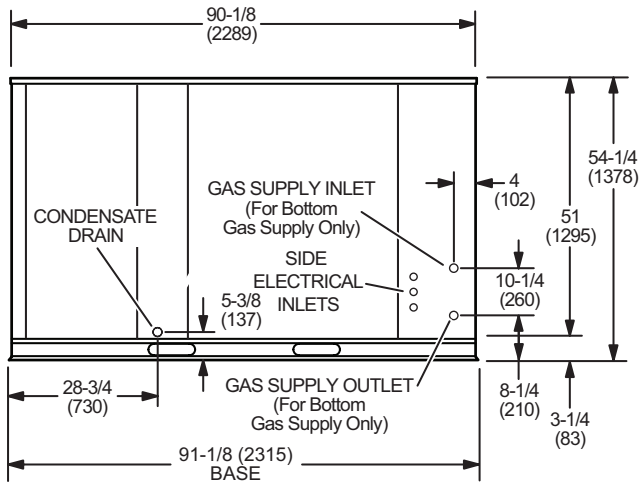
Model No.	CORNER WEIGHTS												CENTER OF GRAVITY											
	AA		BB		CC		DD		EE		FF		Base		Max.		Base		Max.					
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm				
180H	487	221	597	272	423	192	505	229	569	259	599	272	636	289	699	318	50 3/4	1289	49 3/4	1264	39 1/4	997	42	1067
240S	456	207	573	261	429	195	506	230	628	285	668	304	667	303	758	344	51 1/4	1327	50 1/2	1283	37	940	39 1/4	997
300S	456	207	573	261	429	195	506	230	628	285	668	304	667	303	758	344	52 1/4	1327	50 1/2	1283	37	940	39 1/4	997

Base Unit - The unit with NO INTERNAL OPTIONS.

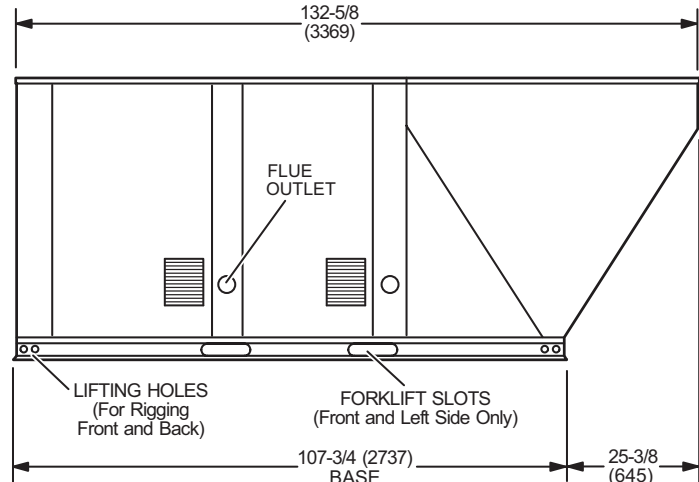
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



**TOP VIEW**



**END VIEW**



**SIDE VIEW**

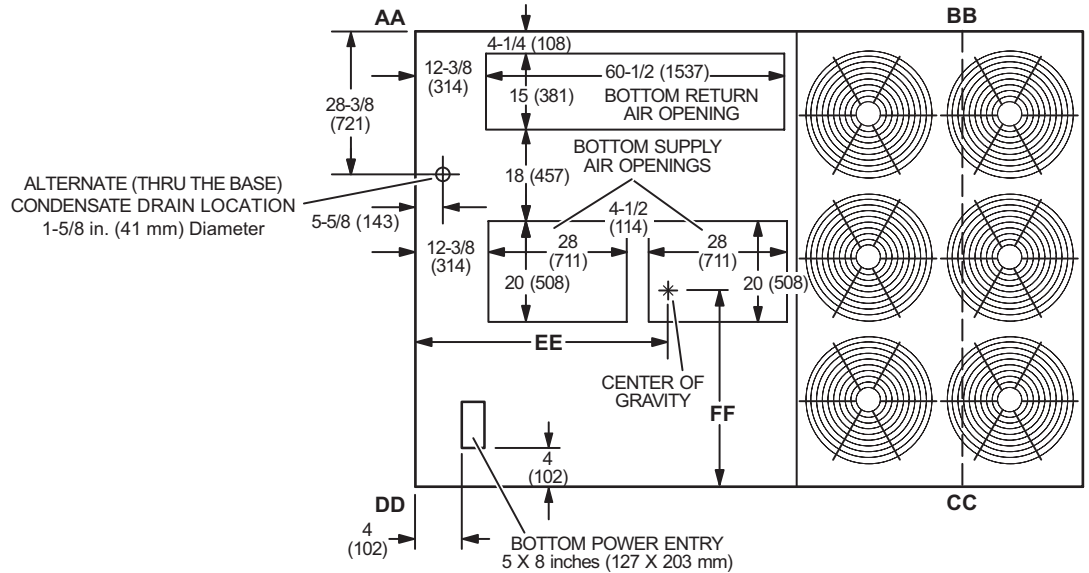
**DIMENSIONS - UNIT - INCHES (MM)**

**KGA210H, KGA240H, KGA300H**

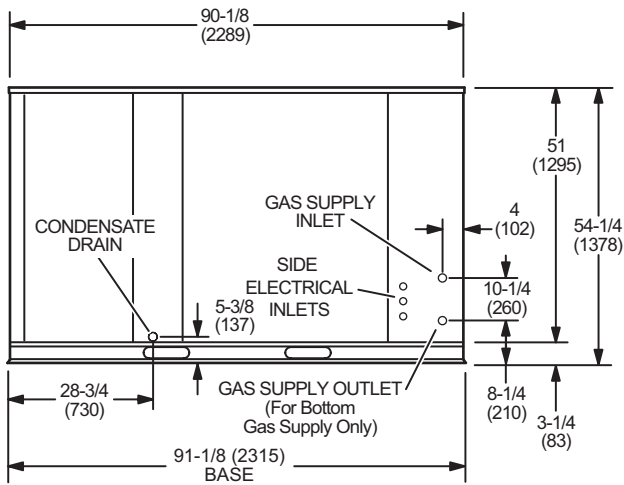
Model No.	CORNER WEIGHTS												CENTER OF GRAVITY											
	AA				BB				CC				DD				EE				FF			
	Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm	in.	mm	in.	mm		
210H	497	226	607	276	468	213	553	252	626	284	655	298	649	295	710	323	52 3/4	1340	51 1/2	1308	39 1/4	997	42	1067
240H	507	230	617	280	481	219	567	258	660	300	688	313	677	308	738	335	53	1346	52	1321	38 3/4	984	41 1/2	1054
300H	513	233	623	283	502	228	588	267	706	321	734	334	709	322	770	350	53 1/2	1359	52 1/2	1334	38	965	40 3/4	1035

Base Unit - The unit with NO INTERNAL OPTIONS.

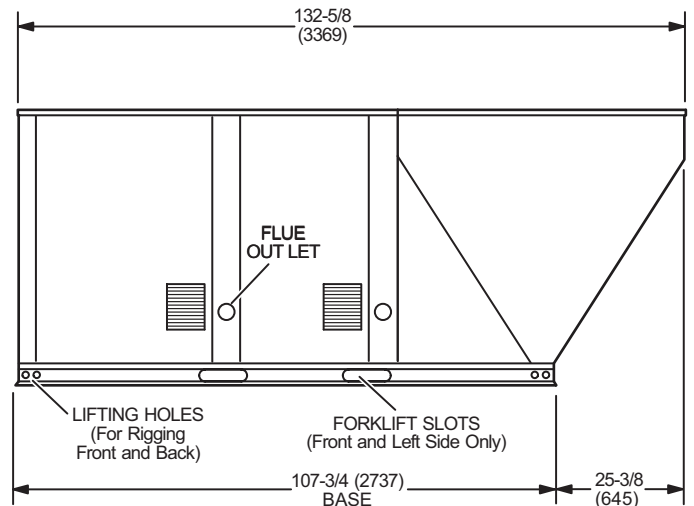
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



**TOP VIEW**

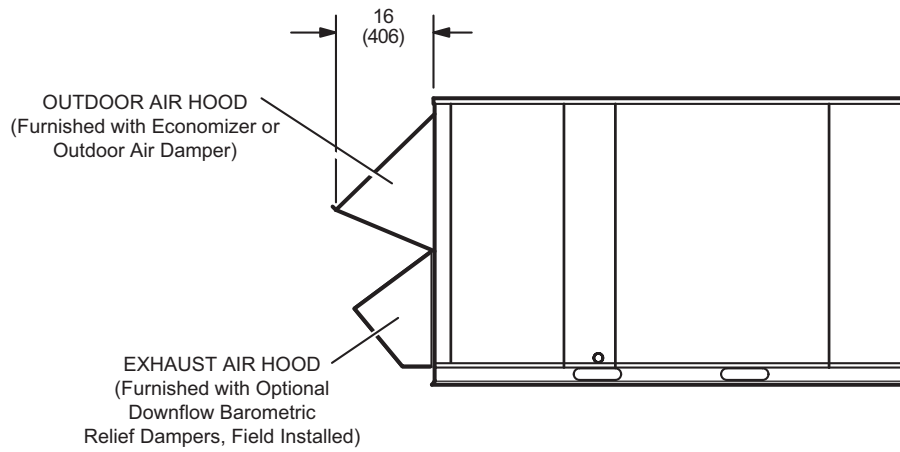


**END VIEW**

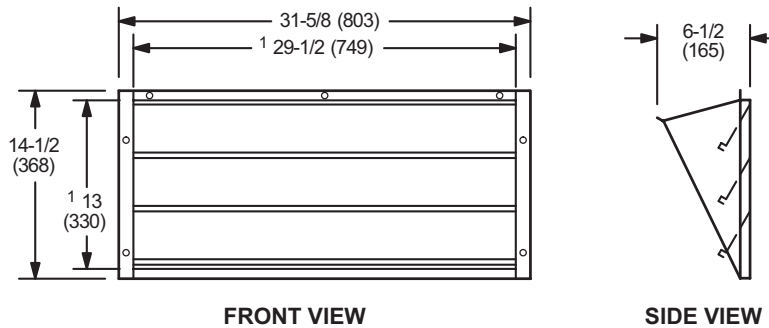


**SIDE VIEW**

**OUTDOOR AIR HOOD DETAIL**



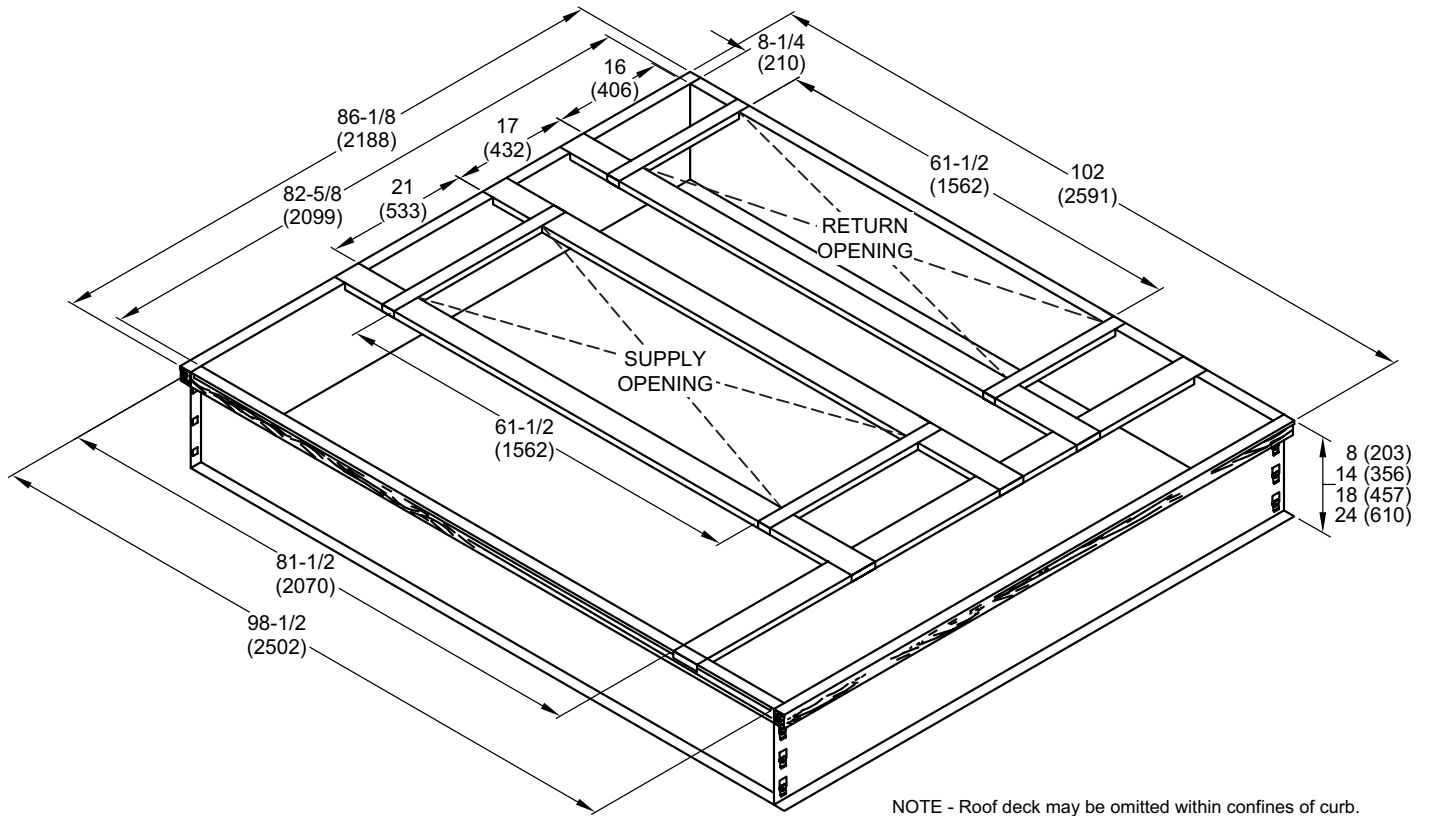
**OPTIONAL HORIZONTAL BAROMETRIC RELIEF DAMPERS WITH HOOD**  
(Field installed in horizontal return air duct adjacent to unit)



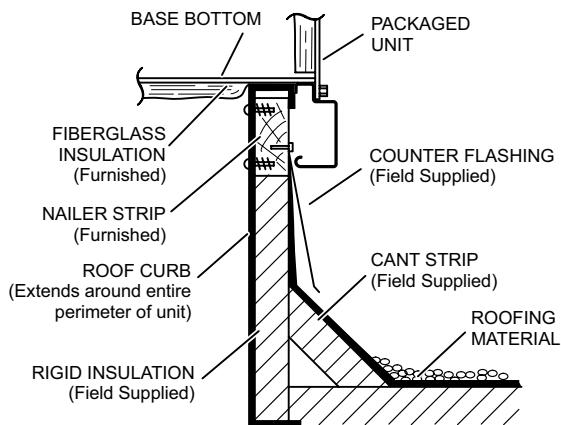
NOTE - Two furnished per order no.  
<sup>1</sup> NOTE - Opening size required in return air duct.

# DIMENSIONS - ACCESSORIES - INCHES (MM)

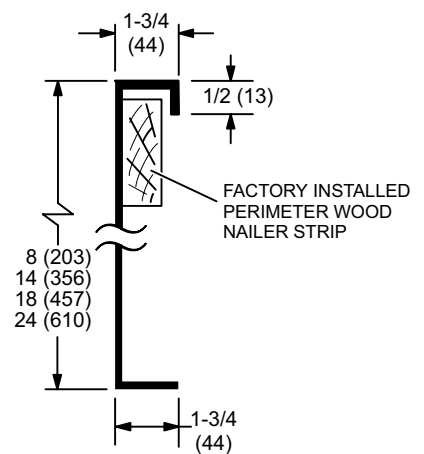
## HYBRID ROOF CURBS - DOUBLE DUCT OPENING



### TYPICAL FLASHING DETAIL FOR ROOF CURB



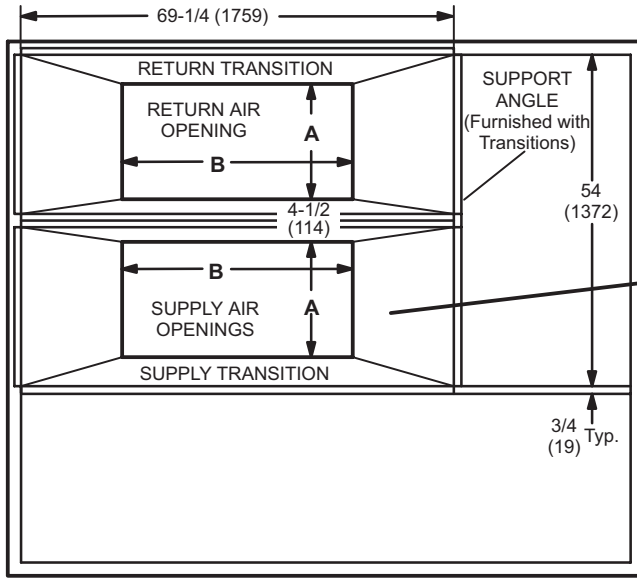
### DETAIL ROOF CURB



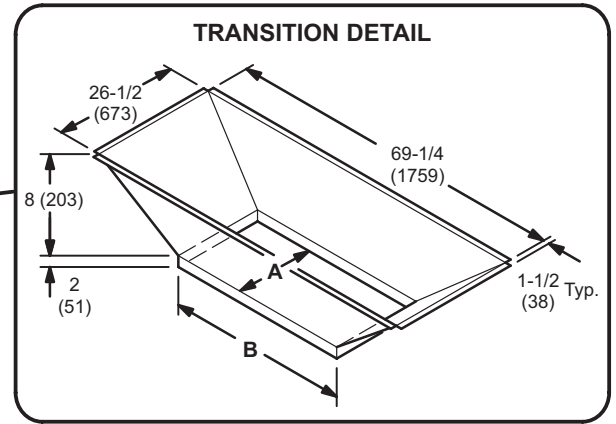


**DIMENSIONS - ACCESSORIES - INCHES (MM)**

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



**TOP VIEW**

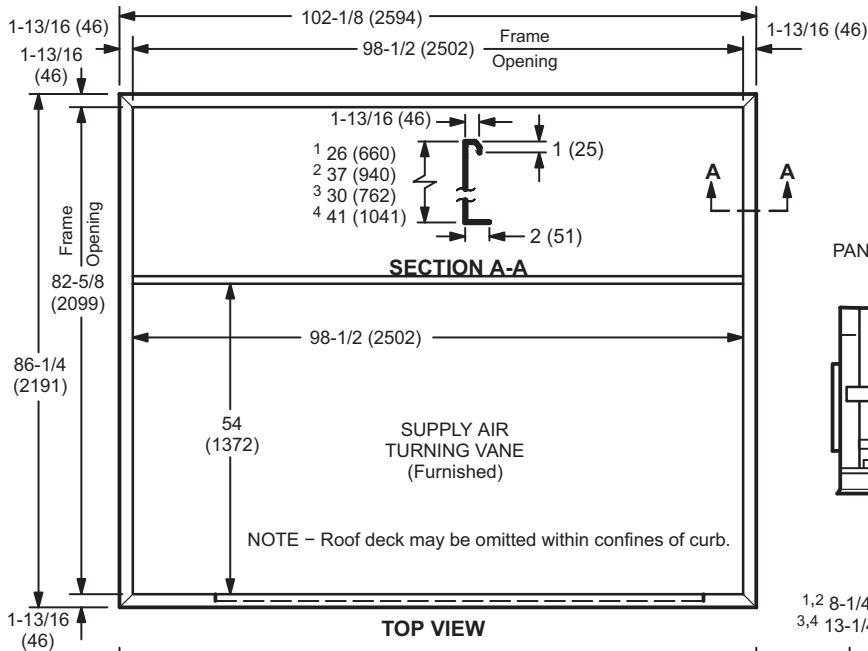


**TRANSITION OPENING SIZES**

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

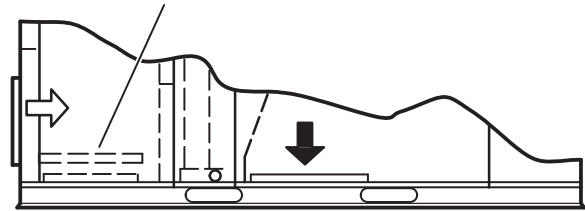
# DIMENSIONS - ACCESSORIES - INCHES (MM)

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

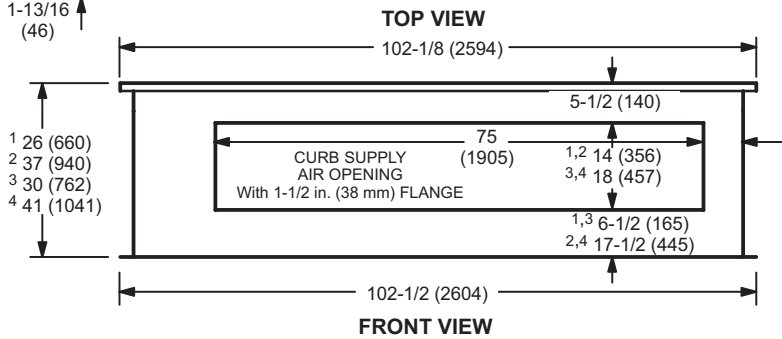


NOTE C1CURB14C-1 and C1CURB15C-1 are designed for horizontal discharge when unit is mounted on a slab. C1CURB16C-1 and C1CURB17C-1 are designed for horizontal discharge when unit is mounted on a rooftop.

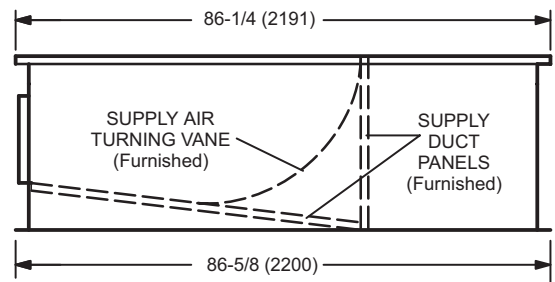
PANEL TO COVER RETURN AIR OPENING IN BOTTOM OF UNIT (Furnished With Optional Horizontal Return Air Panel Kit)



**SIDE VIEW**  
(Packaged Unit)



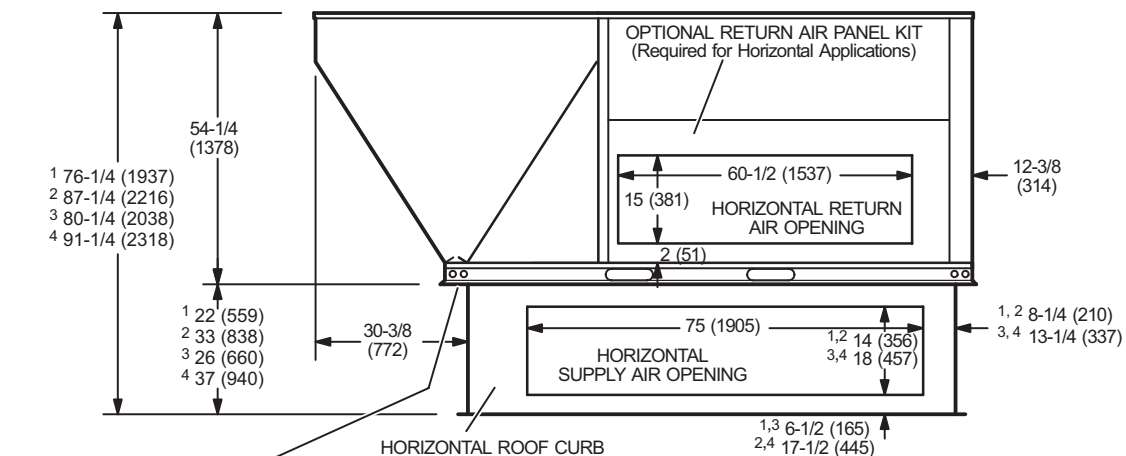
<sup>1,2</sup> 8-1/4 (210)  
<sup>3,4</sup> 13-1/4 (337)



**SIDE VIEW**

- 1 C1CURB14C-1    2 C1CURB16C-1    3 C1CURB15C-1 (used with 300)    4 C1CURB17C-1 (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.

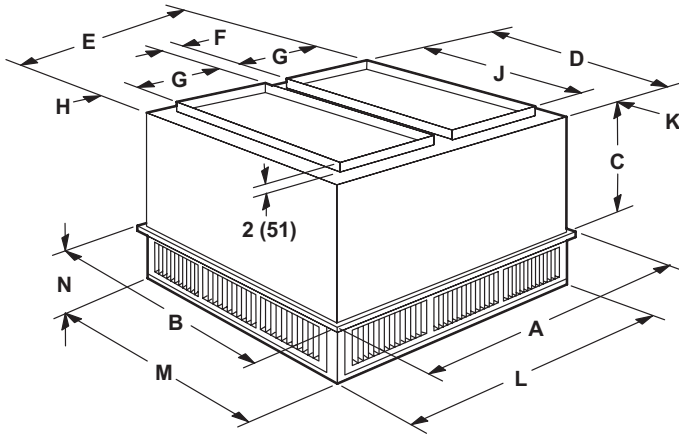
- 1 C1CURB14C-1  
2 C1CURB16C-1  
3 C1CURB15C-1 (used with 300 Models Only)  
4 C1CURB17C-1 (used with 300 Models Only)



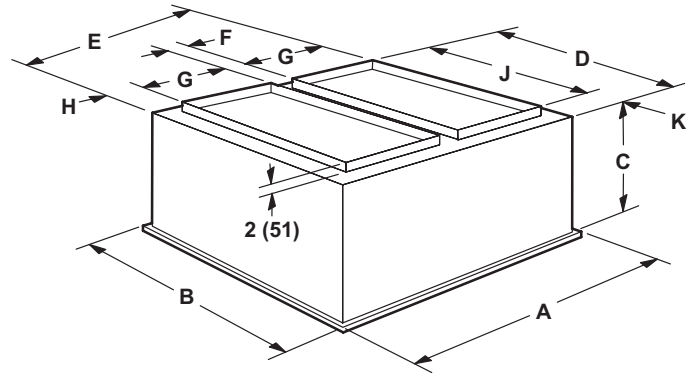
## DIMENSIONS - ACCESSORIES - INCHES (MM)

### 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

Section	Description
Dimensions - Accessories	Removed nailer strip from Horizontal Roof Curbs.



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Contact us at 1-800-4-LENNOX

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