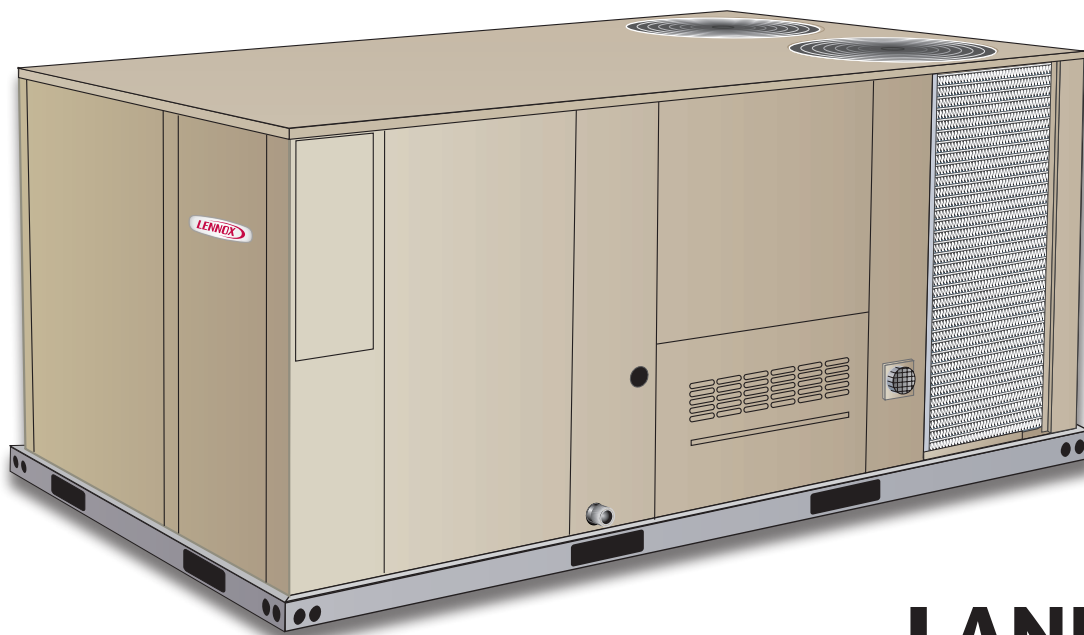




**COMMERCIAL  
PRODUCT SPECIFICATIONS**

Bulletin No. 490171  
March 2021  
Supersedes July 2020



**LANDMARK®**

Performance Marked by Flexibility™

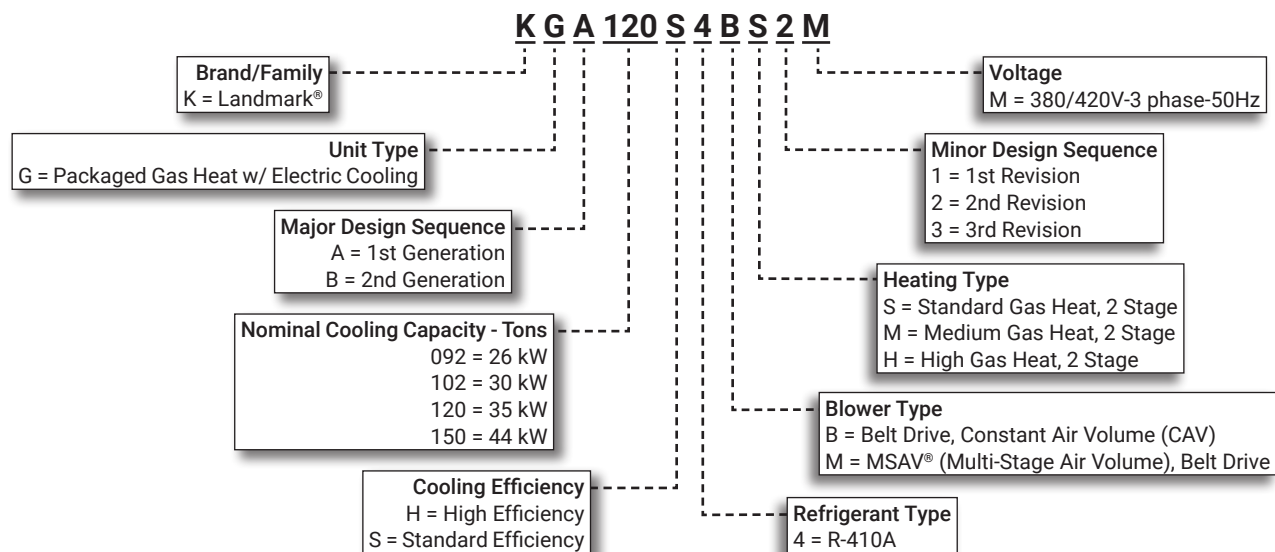


26 to 44 kW (7.5 to 12.5 Ton)

Net Cooling Capacity - 22.4 to 36.7 kW (74 500 to 123 300 Btuh)

Gas Input Heat Capacity - 24.7 to 70.3 kW (84 500 to 240 000 Btuh)

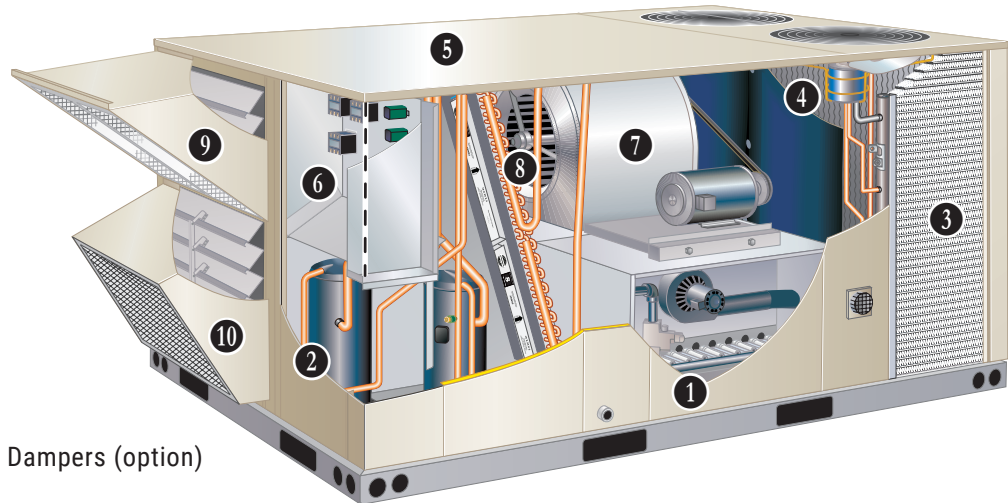
**MODEL NUMBER IDENTIFICATION**



## FEATURE HIGHLIGHTS

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

1. Heat Exchanger
2. Scroll Compressors
3. Lennox' Environ™ Coil System
4. Outdoor Coil Fan Motors
5. Heavy Gauge Steel Cabinet
6. Unit Control
7. Constant or Multi-Stage Air Volume (MSAV®) Blower
8. Air Filters
9. Economizer (option)
10. Downflow Barometric Relief Dampers (option)



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## PERFORMANCE / QUALITY

- Components bonded for grounding to meet safety standards for servicing required by Underwriters Laboratories (UL) and the International Electrotechnical Commission (IEC)
- Cooling performance is rated at test conditions included in Air-Conditioning, Heating and Refrigeration Institute (AHRI) Standard 340/360 while operating at rated voltage and air volumes
- International Organization for Standardization (ISO) 9001 Registered Manufacturing Quality System

## FEATURES AND BENEFITS

### HEATING SYSTEM

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

#### ① Heat Exchanger

- Tubular construction, aluminized steel
- Life-cycle tested

**NOTE** - Optional Stainless Steel Heat Exchanger is required if mixed air temperature is below 7°C

### Electronic Pilot Ignition

- Electronic spark igniter provides positive direct ignition of burners on each operating cycle
- Permits main gas valve to stay open only when the burners are proven to be lit
- If loss of flame occurs, gas valve closes, shutting off the gas to the burners
- LED indicates status and aids in troubleshooting
- Watchguard circuit on module automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance service calls
- Factory installed in the gas heating compartment

### Limit Controls

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

### Safety Switches

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

### Required Selections

#### Gas Input Choice - Order one:

- Standard Gas Heat, 2 Stage (24.7/38.1 kW)
- Medium Gas Heat, 2 Stage (34.3/52.7 kW)
- High Gas Heat, 2 Stage (45.7/70.3 kW)

### Options/Accessories

#### Factory Installed

##### Stainless Steel Heat Exchanger

- Required if mixed air temperature is below 7°C

#### Factory or Field Installed

##### Bottom Gas Piping Kit

- Allows bottom gas entry
- Factory installed kit is furnished with the unit for field installation

### Options/Accessories

#### Field Installed

##### Combustion Air Intake Extensions

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

##### LPG/Propane Kits

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

##### Vertical Vent Extension Kit

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

**NOTE** - Straight vent pipes (102 mm B-Vent) and caps are not furnished and must be field supplied. Refer to kit instructions for additional information.

## FEATURES AND BENEFITS

### COOLING SYSTEM

- Designed to maximize sensible and latent cooling performance at design conditions
- System can operate from 7°C to 52°C without any additional controls

#### R-410A Refrigerant

- Non-chlorine based
- Ozone friendly

### 2 Scroll Compressors

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

#### Compressor Crankcase Heaters

- Protects against refrigerant migration that can occur during low ambient operation

#### Thermal Expansion Valves

##### (All High Efficiency Models, 150S Model)

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

#### Refrigerant Metering Orifice

##### (092 through 120 Standard Efficiency Models)

- Accurately meters refrigerant in system
- Refrigerant control is accomplished by exact sizing of refrigerant metering orifice

#### Filter/Driers

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

#### High Pressure Switches

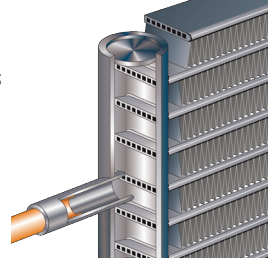
- Protects the compressor from overload conditions such as dirty condenser coils, blocked refrigerant flow, or loss of outdoor fan operation
- Automatic reset

#### Freezestats

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

### 3 Condenser Coil - Lennox' Environ™ Coil System (092 through 120 models only)

- Lightweight, all aluminum brazed fin construction
- Constructed of three components
  - A flat extrusion tube
  - Fins in-between the flat extrusion tube
  - Two refrigerant manifolds



#### Environ™ Coil System Features:

- Improved heat transfer performance due to high primary surface area (flat tubes) versus secondary surface (fins)
- Smaller internal volume (reduced refrigerant charge)
- High durability
- All aluminum construction
- Fewer brazed joints
- Compact design
- Reduced unit weight
- Easy maintenance/cleaning
- Face split design
- Mounting brackets with rubber inserts

#### Conventional Fin/Tube Condenser Coils

##### (150 models only, optional 092-120 models)

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

#### Evaporator Coil

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

#### Condensate Drain Pan

- Plastic pan, sloped to meet drainage requirements per ASHRAE 62.1
- Side or bottom drain connections
- Reversible to allow connection at back of unit

### 4 Outdoor Coil Fan Motors

- Thermal overload protected
- Totally enclosed
- Permanently lubricated ball bearings
- Shaft up
- Wire basket mount

#### Outdoor Coil Fans

- Polyvinyl Chloride (PVC) coated fan guard furnished

## FEATURES AND BENEFITS

### COOLING SYSTEM (continued)

#### Required Selections

##### Cooling Capacity

- Specify nominal cooling capacity

##### Cooling Efficiency

- Specify either standard or high efficiency

#### Options/Accessories

### Factory Installed

#### Conventional Fin/Tube Condenser Coil (replaces Environ™ Coil System - 092 through 120 models only)

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

### Field Installed

#### Condensate Drain Trap

- Available in copper or polyvinyl chloride (PVC)

#### Drain Pan Overflow Switch

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

#### Low Ambient Controls

- Units operate satisfactorily down to 7°C outdoor air temperature without any additional controls
- Two low ambient control options are available for field installation:
  1. **Low Ambient Control Kit (-1.1°C)** - Allows unit operation down to -1.1°C
  2. **Low Ambient Control Kit (-18°F)** - Allows unit operation down to -18°C without evaporator coil icing. Head pressure speed control reduces outdoor fan operation during low ambient conditions until head pressure rises to the setpoint. Pressure transducers are mounted on the liquid lines. High pressure switches are furnished to replace existing. Wiring harnesses are furnished for simple plug-in wiring to fans and controller.

### CABINET

#### 5 Construction

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

#### Airflow Choice

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

**NOTE** - Units can be field converted to horizontal airflow with optional Horizontal Discharge Kit.

#### Duct Flanges

- Provided for horizontal duct attachment

#### 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
- Two-layer enamel paint finish

#### Insulation

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

#### Access Panels

- Filter section
- Blower/heating section
- Compressor/controls section

#### Options/Accessories

### Factory Installed

#### Corrosion Protection

- Completely flexible immersed coating
- 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 base
- Outdoor Corrosion Protection:
  - Coated coil
  - Painted outdoor base

#### Hinged Access Panels

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

## FEATURES AND BENEFITS

### CABINET (continued)

#### Options/Accessories

#### Field Installed

##### Combination Coil/Hail Guards

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

##### Horizontal Discharge Kit

- Consists of duct covers to block off downflow supply and return air openings for horizontal applications
- Also includes return air duct flanges for end return air when economizer is used in horizontal applications

**NOTE** - When configuring unit for horizontal application with economizer, a separate Horizontal Barometric Relief Damper with Hood must be ordered separately for installation in the return air duct.

##### Return Air Adaptor Plate

- For same size LC/LG/LH and TC/TG/TH unit replacement
- Installs on return air opening in unit to match return air opening on existing roof curbs
- Also see Accessory Air Resistance table

### CONTROLS

#### 6 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)

### Commercial Control Systems

#### Thermostats

- Control system and thermostat options. Aftermarket unit controller options. See page 10

### BLOWER

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

#### Motor

- Overload protected
- Ball bearings
- Belt drive motors are offered on all models and are available in several different sizes to maximize air performance

#### 7 Supply Air Blower

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

#### Required Selections

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

- Order blower motor horsepower and drive kit number required when base unit is ordered
- See Drive Kit Specifications Table

##### CAV Operation

- Supply air blower will provide a constant volume of air

##### MSAV Operation

- Units 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 units should not be set below 30 L/s per kW to reduce the risk of evaporator coil freeze-up.

- The VFD has an operational range of -40 to 52°C outdoor air ambient temperature
- Lower operating costs are obtained when the blower is operated on lower speeds

## FEATURES AND BENEFITS

### **BLOWER (continued)**

#### **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

### **Options/Accessories**

#### **Field Installed**

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

- VFD Manual Bypass Control is available as a kit for units equipped with the MSAV option
- The VFD Manual Bypass Control is a manual bypass and is enabled by re-configuring the wiring on the unit

### **ELECTRICAL**

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

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

#### **Electrical Plugs**

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

#### **Phase Monitor**

##### **(Factory Installed on Units Equipped with the MSAV® Supply Air Blower Option)**

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

### **Required Selections**

#### **Voltage Choice**

- Specify when ordering base unit

### **INDOOR AIR QUALITY**

#### **8 Air Filters**

- Disposable 51 mm filters furnished as standard

### **Options / Accessories**

#### **Field Installed**

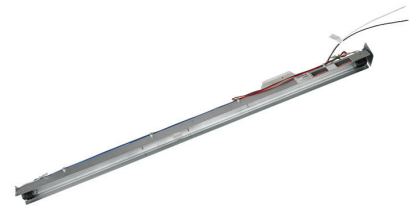
##### **Healthy Climate® High Efficiency Air Filters**

- Disposable MERV 8 or MERV 13 (Minimum Efficiency Reporting Value based on ASHRAE 52.2) efficiency 51 mm pleated filters

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

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

##### **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)
- Field installed in the blower/evaporator coil section
- Magnetic safety interlock terminates power when access panels are removed
- All necessary hardware for installation is included
- Lamps operate on 220V-1ph power supply

**NOTE** - Step-down transformer must be field supplied for field installation for 380/420V primary to 220V secondary.

##### **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

## OPTIONS / ACCESSORIES

### ECONOMIZER

#### Factory or Field Installed

- 9 Economizer  
(Standard and High Performance Common Features)
- Downflow or Horizontal with Outdoor Air Hood and Barometric Relief Dampers with Exhaust Hood
- 10 • Barometric Relief Dampers allow relief of excess air
- Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle, bird screen furnished

**NOTE** - Optional Horizontal Low Profile Barometric Relief Dampers with Exhaust Hood are available for field installation in a reduced space.

- Occupied/Unoccupied mode with field furnished setback thermostat
- Demand Control Ventilation (DCV) ready using optional CO<sub>2</sub> sensors
- Mixed Air Sensor is furnished for field installation in the rooftop unit
- Sensor is factory installed when Economizers are factory installed
- Single sensible sensor is furnished with Economizer and enables economizer operation if the outdoor temperature is less than the setpoint of the control

#### Standard Economizer Features

- 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

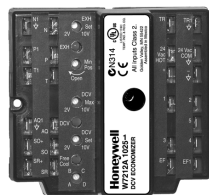
#### Standard Economizer Control Module

- 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 13°C 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 13°C.



#### High Performance Economizer Features

- 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 thermoplastic vulcanizate (TPV) blade edge seals
- Flexible stainless steel jamb seals minimize air leakage

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

#### Factory or Field Installed

##### Single Enthalpy Temperature Control

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

##### Field Installed

##### Differential Enthalpy Control

- Order two Single Enthalpy Controls
- 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



## OPTIONS / ACCESSORIES

### **EXHAUST**

#### **Field Installed**

##### **Horizontal Low Profile Barometric Relief Dampers**

- Replaces barometric relief dampers furnished with Economizer
- For use when unit is configured for horizontal applications in a reduced space 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 furnished

**NOTE** - Requires Horizontal Discharge Kit

##### **Power Exhaust Fan**

- 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,
- Fan runs when outdoor air dampers are 50% open (adjustable)
- Motor is overload protected
- Fan - 508 mm diameter
- Five blades
- One 0.25 kW motor

**NOTE** - Requires Economizer and Downflow Barometric Relief Dampers.

### **OUTDOOR AIR**

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

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

- Downflow or Horizontal
- Linked mechanical dampers
- 0 to 25% (fixed) outdoor air adjustable
- Installs in unit
- Includes outdoor air hood
- 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

**NOTE** - Maximum mixed air temperature in cooling mode: 38°C.

### **ROOF CURBS**

#### **Field Installed**

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

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

- Interlocking tabs fasten corners together
- No tools required
- Can also be fastened together with furnished hardware
- Available in 203, 356, 457, and 610 mm heights

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

- Fully adjustable pitch curbs provide a level platform for rooftop units allowing flexible installations on roofs with uneven or sloped angles
- Maximum slope is 19 mm per 300 mm in any direction
- Uses interlocking tabs to fasten corners together
- No tools required
- Hardware is furnished to connect upper curb with lower curb
- Available in 356 mm height

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

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

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

### **CEILING DIFFUSERS**

#### **Field Installed**

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

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

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

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

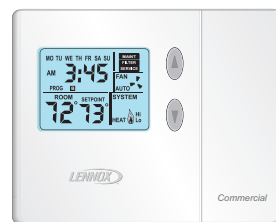
## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

### ComfortSense® 7500 Commercial 7-Day Programmable Thermostat



- Four-Stage Heating / Two-Stage Cooling
- Universal Multi-Stage
- Intuitive Touchscreen Interface
- Automatic Changeover between Heating and Cooling
- Full Seven-Day Programming
- Four Time Periods Per Day
- Temperature and Humidity Control
- One-Touch Away Mode
- Holiday Scheduling
- Smooth Setback Recovery (SSR)
- Performance Reports
- Notifications/Reminders
- Dehumidification/Humiditrol® Control for Split Systems and Rooftop Units
- Economizer Relay Control
- Backlit Display
- Wallplate Furnished
- FDD, ASHRAE and IECC Compliant

### ComfortSense® 3000 Commercial 5-2 Day Programmable Thermostat



- Two-Stage Heating / Two-Stage Cooling
- Conventional Systems
- Intuitive Interface
- 5-2 Day Programming
- Program Hold
- Remote Indoor Temperature Sensing
- Smooth Setback Recovery (SSR)
- Economizer Relay Control
- Maintenance/Filter/Service Reminders
- Backlit Display
- Wallplate Furnished
- Simple Up and Down Temperature Control

### Bacnet Compatible Thermostat With Reheat Function



Description	Catalog No.
<b>ComfortSense® 7500 Commercial 7-Day Programmable Thermostat</b>	
CS7500 7-Day Thermostat	<b>17G74</b>
Sensors/	<sup>1</sup> Remote non-adjustable wall-mount 20k <b>47W36</b>
Accessories	<sup>1</sup> Remote non-adjustable wall-mount 10k <b>47W37</b>
	Remote non-adjustable discharge air (duct mount) <b>19L22</b>
	Outdoor temperature sensor <b>X2658</b>
<b>ComfortSense® 3000 5-2 Day Programmable</b>	
CS3000 5-2 Day Thermostat	<b>11Y05</b>
Sensor/	Remote non-adjustable wall mount 10k averaging <b>47W37</b>
Accessories	Thermostat wall mounting plate <b>X2659</b>
BACnet Controls	<sup>2</sup> 7-Day BACnet Thermostat <b>Y8241</b>
	<sup>3</sup> BACnet Module (factory or field) <b>16X71</b>
<sup>4</sup> BACnet Room Sensors	With Display <b>97W23</b>
	Without Display <b>97W24</b>
<b>Universal Thermostat Guard with Lock (clear)</b>	
	Inside Dimensions (H x W) 5 7/8 x 8 3/8 in. <b>39P21</b>

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

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

<sup>2</sup> BACnet Thermostat (Y8241) will control units with and without the Humiditrol® option. If there is a mix of units equipped with and without Humiditrol on the same site, this thermostat can be used for all units if suitable.

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

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

## OPTIONS / ACCESSORIES

Item Description	Model Number	Catalog Number	Unit Model No				
			092	102	120	150	
<b>COOLING SYSTEM</b>							
Condensate Drain Trap	Polyvinyl Chloride (PVC) - C1TRAP20AD2	<b>22H54</b>	X	X	X	X	
	Copper - C1TRAP10AD2	<b>76W27</b>	X	X	X	X	
Conventional Fin/Tube Condenser Coil (replaces Environ™ Coil System)		Factory	O	O	O		
Corrosion Protection		Factory	O	O	O	O	
Drain Pan Overflow Switch	K1SNSR71AB1	<b>74W42</b>	X	X	X	X	
Efficiency		Standard	O	O	O	O	
Low Ambient Kit	30°F - K1SNSR33B-1	<b>54W16</b>	X	X	X	X	
	0°F - K1LOAM62B-1	<b>18B87</b>	X	X	X		
	0°F - K1LOAM62BS1	<b>18B94</b>				X	
Refrigerant Type		R-410A	O	O	O	O	
<b>HEATING SYSTEM</b>							
Bottom Gas Piping Kit	C1GPKT01B-01	<b>54W95</b>	X	X	X	X	
Combustion Air Intake Extensions	T1EXTN10AN1	<b>19W51</b>	X	X	X	X	
Gas Heat Input	Standard Heat 38.1 kW (130,000 Btuh)	Factory	O	O	O	O	
	Medium Heat 52.7 kW (180,000 Btuh)	Factory	O	O	O	O	
	High Heat 70.3 kW (240,000 Btuh)	Factory	O	O	O	O	
LPG/Propane Conversion Kits	Standard Heat - C1PROP23BS1	<b>14N22</b>	X	X	X	X	
	Medium Heat - C1PROP22BS1	<b>14N23</b>	X	X	X	X	
	High Heat - C1PROP21BS1	<b>14N25</b>	X	X	X	X	
Stainless Steel Heat Exchanger		Factory	O	O	O	O	
Vertical Vent Extension	C1EXTN2021	<b>42W16</b>	X	X	X	X	
<b>BLOWER - SUPPLY AIR</b>							
Blower Option	CAV (Constant Air Volume)	Factory	O	O	O	O	
	MSAV® (Multi-Stage Air Volume)	Factory	O	O	O	O	
Blower Motors	Belt Drive - 1.5 kW (2 hp)	Factory	O	O	O	O	
	Belt Drive - 2.2 kW (3 hp)	Factory	O	O	O	O	
	Belt Drive - 3.7 kW (5 hp)	Factory	O	O	O	O	
Drive Kits	<b>CAV (rev/min)</b>	<b>MSAV (rev/min)</b>					
See Blower Data Tables for selection	Kit #1 490-740	Kit #1 590-890	Factory	O	O	O	O
	Kit #2 665-920	Kit #2 800-1105	Factory	O	O	O	O
	Kit #3 660-995	Kit #3 795-1195	Factory	O	O	O	O
	Kit #7 610-810	Kit #7 730-970	Factory	O	O	O	O
	Kit #8 780-1000	Kit #8 940-1200	Factory	O	O	O	O
	Kit #9 845-1085	Kit #9 1015-1300	Factory	O	O	O	O
	Kit #10 750-945	Kit #10 900-1135	Factory	O	O	O	O
	Kit #11 865-1095	Kit #11 1040-1315	Factory	O	O	O	O
	Kit #12 940-1190	Kit #12 1125-1425	Factory	O	O	O	O
	<b>CABINET</b>						
	Combination Coil/Hail Guards	C1GARD52B-1	<b>13T05</b>	X	X	X	X
	Hinged Access Panels		Factory	O	O	O	O
Horizontal Discharge Kit	K1HECK00B-1	<b>51W25</b>	X	X	X	X	
Return Air Adaptor Plate (for LC/LG/LH and TC/TG/TH replacement)	C1CONV10B-1	<b>54W96</b>	X	X	X	X	

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

## OPTIONS / ACCESSORIES

Item Description	Model Number	Catalog Number	Unit Model No			
			092	102	120	150
<b>CONTROLS</b>						
<b>NOTE - Also see Conventional Thermostat Control Systems page 10 for Additional Options.</b>						
Smoke Detector - Supply or Return (Power board and one sensor)	C1SNSR44B-2	<b>11K76</b>	X	X	X	X
Smoke Detector - Supply and Return (Power board and two sensors)	C1SNSR43B-2	<b>11K80</b>	X	X	X	X
<b>INDOOR AIR QUALITY</b>						
<b>Air Filters</b>						
Healthy Climate® High Efficiency Air Filters 208 x 635 x 51 mm (Order 4 per unit)	MERV 8 - C1FLTR15B-1	<b>50W61</b>	X	X	X	X
	MERV 13 - C1FLTR40B-1	<b>52W41</b>	X	X	X	X
Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media)	C1FLTR30B-1-	<b>Y3063</b>	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
Sensor - Wall-mount, off-white plastic cover, no display	C0SNSR52AE1L	<b>87N53</b>	X	X	X	X
Sensor - Black plastic case with LCD display, rated for plenum mounting	C0SNSR51AE1L	<b>87N52</b>	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting	C0MISC19AE1	<b>87N54</b>	X	X	X	X
CO <sub>2</sub> Sensor Duct Mounting Kit - for downflow applications	C0MISC19AE1-	<b>85L43</b>	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO <sub>2</sub> sensors (87N53 or 77N39)	C0MISC16AE1-	<b>90N43</b>	X	X	X	X
<b>UVC Germicidal Lamps</b>						
<sup>1</sup> Healthy Climate® UVC Light Kit (220V-1ph)	C1UVCL10B-1	<b>54W62</b>	X	X	X	X
<b>ELECTRICAL</b>						
Voltage 50 Hz with neutral	380/420V - 3 phase	Factory	O	O	O	O
<b>ECONOMIZER</b>						
<b>Standard Economizer</b>						
Standard Economizer with Single Temperature Control Downflow or Horizontal Applications - Includes Barometric Relief Dampers and Air Hoods	K1ECON20B-2	<b>13U45</b>	OX	OX	OX	OX
<b>Standard Economizer Controls</b>						
Single Enthalpy Control	C1SNSR64FF1	<b>21Z09</b>	OX	OX	OX	OX
Differential Enthalpy Control (order 2)	C1SNSR64FF1	<b>21Z09</b>	X	X	X	X
<b>High Performance Economizer</b>						
High Performance Economizer with Single Temperature Control Downflow or Horizontal Applications - Includes Barometric Relief Dampers and Air Hoods	K1ECON22B-4	<b>20U81</b>	OX	OX	OX	OX
<b>High Performance Economizer Controls</b>						
Single Enthalpy Control	C1SNSR60FF1	<b>10Z75</b>	OX	OX	OX	OX
Differential Enthalpy Control (order 2)	C1SNSR60FF1	<b>10Z75</b>	X	X	X	X
<b>Horizontal Low Profile Barometric Relief Dampers With Exhaust Hood</b>						
Horizontal Low Profile Barometric Relief Dampers With Exhaust Hood	LAGEDH03/15	<b>53K04</b>	X	X	X	X

<sup>1</sup> Lamps operate on 220V single-phase power supply. Step-down transformer must be field supplied for field installation for 380/420V primary to 220V secondary. Alternately, a separate 220V 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  
 O = Configure To Order (Factory Installed)  
 X = Field Installed

## OPTIONS / ACCESSORIES

Item Description	Model Number	Catalog Number	Unit Model No			
			092	102	120	150
<b>OUTDOOR AIR</b>						
<b>Outdoor Air Dampers With Outdoor Air Hood</b>						
Motorized	C1DAMP20B-1	<b>14G28</b>	OX	OX	OX	OX
Manual	C1DAMP10B-1	<b>14G29</b>	OX	OX	OX	OX
<b>POWER EXHAUST</b>						
Standard Static	380/420V-3ph - K1PWRE10B-1G	<b>53W45</b>	X	X	X	X
<b>ROOF CURBS</b>						
<b>Hybrid Roof Curbs, Downflow</b>						
203 mm height	C1CURB70B-1	<b>11F54</b>	X	X	X	X
356 mm height	C1CURB71B-1	<b>11F55</b>	X	X	X	X
457 mm height	C1CURB72B-1	<b>11F56</b>	X	X	X	X
610 mm height	C1CURB73B-1	<b>11F57</b>	X	X	X	X
<b>Adjustable Pitch Curb</b>						
356 mm height	C1CURB55B-1	<b>54W50</b>	X	X	X	X
<b>CEILING DIFFUSERS</b>						
Step-Down - Order one	RTD11-95S	<b>13K61</b>	X			
	RTD11-135S	<b>13K62</b>		X	X	
	RTD11-185S	<b>13K63</b>				X
Flush - Order one	FD11-95S	<b>13K56</b>	X			
	FD11-135S	<b>13K57</b>		X	X	
	FD11-185S	<b>13K58</b>				X
Transitions (Supply and Return) - Order one	C1DIFF30B-1	<b>12X65</b>	X			
	C1DIFF31B-1	<b>12X66</b>		X	X	
	C1DIFF32B-1	<b>12X67</b>				X

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

## SPECIFICATIONS

General Data		Nominal kW (Tons)	26 (7.5)	26 (7.5)	26 (7.5)
		Model Number	KGB092S4B	KGB092S4M	KGA092H4B
		Efficiency Type	Standard	Standard	High
		Blower Type	CAV (Constant Air Volume)	MSAV® (Multi-Stage Air Volume)	CAV (Constant Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - kW (Btuh)		22.5 (76 700)	22.5 (76 700)	23.6 (80 500)
	<sup>1</sup> Net Cooling Capacity - kW (Btuh)		21.8 (74 500)	21.8 (74 500)	22.7 (77 500)
	AHRI Rated Air Flow - L/s (cfm)		1133 (2400)	1133 (2400)	1416 (3000)
	Total Unit Power - kW		6.6	6.6	6.4
	<sup>1</sup> EER (Btuh/Watt) at 35°C (95°F)		11.3	11.3	12.7
	<sup>2</sup> EER (Btuh/Watt) at 46°C (115°F)		8.7	8.7	8.8
	<sup>1</sup> IEER (Btuh/Watt)		12.7	13.4	12.9
<b>Refrigerant Type</b>			R-410A	R-410A	R-410A
<b>Refrigerant Charge</b>	Environ™ Coil System	Circuit 1	1.9 kg (4 lbs. 0 oz.)	1.9 kg (4 lbs. 0 oz.)	2.90 kg (6 lbs. 6 oz.)
		Circuit 2	1.5 kg (3 lbs. 6 oz.)	1.5 kg (3 lbs. 6 oz.)	2.93 kg (6 lbs. 7 oz.)
	Conventional Fin/Tube Coil	Circuit 1	4.1 kg (9 lbs. 0 oz.)	4.1 kg (9 lbs. 0 oz.)	---
		Circuit 2	3.1 kg ( 6 lbs. 13 oz.)	3.1 kg ( 6 lbs. 13 oz.)	---
<b>Gas Heating Options Available - See page 11</b>			Standard (2 stage), Medium (2 Stage), High (2 Stage)		
<b>Compressor Type (number)</b>			Scroll (2)	Scroll (2)	Scroll (2)
<b>Outdoor Coils</b>	Net face area (total) - m <sup>2</sup> (sq. ft.)		1.9 (20.5)	1.9 (20.5)	2.6 (28.0)
	Number of rows		1 (2)	1 (2)	1
	Fins per m (inch)		906 (23) 787 (20)	906 (23) 787 (20)	787 (20)
<b>Outdoor Coil Fans</b>	Motor - (No.) W (HP)		(2) 249 (1/3)	(2) 249 (1/3)	(2) 249 (1/3)
	Motor rev/min		896	896	896
	Total Motor watts		565	565	611
	Diameter - (No.) mm (in.)		(2) 610 (24)	(2) 610 (24)	(2) 610 (24)
	Number of blades		3	3	3
	Total Air volume - L/s (cfm)		3460 (7335)	3460 (7335)	3460 (7335)
<b>Indoor Coils</b>	Net face area (total) - m <sup>2</sup> (sq. ft.)		1.19 (12.8)	1.19 (12.8)	1.19 (12.8)
	Tube diameter - mm (in.)		9.5 (3/8)	9.5 (3/8)	9.5 (3/8)
	Number of rows		2	2	4
	Fins per m (inch)		551 (14)	551 (14)	551 (14)
	Drain connection - Number and size		(1) 1 in. NPT coupling		
	Expansion device type		Refrigerant Metering Orifice (RFC)	Refrigerant Metering Orifice (RFC)	Balance port TXV, removable head
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor kW (HP)		1.5 (2)	1.5 (2)	1.5 (2)
	Maximum usable motor kW (HP)		1.7 (2.3)	1.7 (2.3)	1.7 (2.3)
	Kit # and rev/min range		#1 (490-740)	#1 (590-890)	#1 (490-740)
			#2 (665-920)	#2 (800-1105)	#2 (665-920)
			#3 (660-995)	#3 (795-1195)	#3 (660-995)
	Nominal motor kW (HP)		2.2 (3)	2.2 (3)	2.2 (3)
	Maximum usable motor kW (HP)		2.6 (3.45)	2.6 (3.45)	2.6 (3.45)
	Kit # and rev/min range		#7 (610-810)	#7 (730-970)	#7 (610-810)
			#8 (780-1000)	#8 (940-1200)	#8 (780-1000)
			#9 (845-1085)	#9 (1015-1300)	#9 (845-1085)
	Nominal motor kW (HP)		3.7 (5)	3.7 (5)	3.7 (5)
	Maximum usable motor kW (HP)		4.3 (5.75)	4.3 (5.75)	4.3 (5.75)
Kit # and rev/min range		#10 (750-945)	#10 (900-1135)	#10 (750-945)	
		#11 (865-1095)	#11 (1040-1315)	#11 (865-1095)	
		#12 (940-1190)	#12 (1125-1425)	#12 (940-1190)	
Blower wheel nominal diameter x width - mm (in.)		(1) 381 x 381 (15 X 15)	(1) 381 x 381 (15 X 15)	(1) 381 x 381 (15 X 15)	
<b>Filters</b>	Type of filter		Disposable		
	Number and size - mm (in.)		(4) 508 x 508 x 51 (20 x 25 x 2)		
<b>Electrical characteristics</b>			380/420V - 50 hertz - 3 phase with neutral		

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

<sup>1</sup> Tested at conditions included in AHRI Standard 340/360; 35°C (95°F) outdoor air temperature and 27°C (80°F) dry bulb /19°C (67°F) wet bulb entering evaporator air; minimum external duct static pressure while operating at rated voltage and air volumes.

<sup>2</sup> Rated at 46°C (115°F) outdoor air temperature and 27°C (80°F) db/19°C (67°F) wb entering evaporator air (T3 Conditions).

<sup>3</sup> Using total air volume and system static pressure requirements determine from blower performance tables rev/min and motor output required. Maximum usable output of motors furnished are shown. 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

General Data		Nominal kW (Tons)	30 (8.5)	30 (8.5)	30 (8.5)
		Model Number	KGB102S4B	KGB102S4M	KGA102H4B
		Efficiency Type	Standard	Standard	High
		Blower Type	CAV (Constant Air Volume)	MSAV® (Multi-Stage Air Volume)	CAV (Constant Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - kW (Btuh)		25.5 (86 900)	25.5 (86 900)	26.8 (91 500)
	<sup>1</sup> Net Cooling Capacity - kW (Btuh)		24.7 (84 300)	24.7 (84 300)	25.6 (87 500)
	AHRI Rated Air Flow - L/s (cfm)		1320 (2800)	1320 (2800)	1605 (3400)
	Total Unit Power - kW		7.5	7.5	7.3
	<sup>1</sup> EER (Btuh/Watt) at 35°C (95°F)		11.2	11.2	12.4
	<sup>2</sup> EER (Btuh/Watt) at 46°C (115°F)		7.5	7.5	8.5
	<sup>1</sup> IEER (Btuh/Watt)		12.7	13.6	12.9
<b>Refrigerant Type</b>			R-410A	R-410A	R-410A
<b>Refrigerant Charge</b>	Environ™ Coil System	Circuit 1	2.0 kg (4 lbs. 5 oz.)	2.0 kg (4 lbs. 5 oz.)	2.96 kg (6 lbs. 8 oz.)
		Circuit 2	1.9 kg (4 lbs. 3 oz.)	1.9 kg (4 lbs. 3 oz.)	3.07 kg (6 lbs. 12 oz.)
	Conventional Fin/Tube Coil	Circuit 1	4.2 kg (9 lbs. 3 oz.)	4.2 kg (9 lbs. 3 oz.)	---
		Circuit 2	3.6 kg (7 lbs. 14 oz.)	3.6 kg (7 lbs. 14 oz.)	---
<b>Gas Heating Options Available - See page 11</b>			Standard (2 stage), Medium (2 Stage), High (2 Stage)		
<b>Compressor Type (number)</b>			Scroll (2)	Scroll (2)	Scroll (2)
<b>Outdoor Coils</b>	Net face area (total) - m <sup>2</sup> (sq. ft.)		1.9 (20.5)	1.9 (20.5)	2.6 (28.0)
	Number of rows		1(2)	1 (2)	1
	Fins per m (inch)		906 (23) 787 (20)	906 (23) 787 (20)	787 (20)
<b>Outdoor Coil Fans</b>	Motor - (No.) W (HP)		(2) 249 (1/3)	(2) 249 (1/3)	(2) 249 (1/3)
	Motor rev/min		896	896	896
	Total Motor watts		564	564	611
	Diameter - (No.) mm (in.)		(2) 610 (24)	(2) 610 (24)	(2) 610 (24)
	Number of blades		3	3	3
	Total Air volume - L/s (cfm)		3460 (7335)	3460 (7335)	3460 (7335)
<b>Indoor Coils</b>	Net face area (total) - m <sup>2</sup> (sq. ft.)		1.19 (12.8)	1.19 (12.8)	1.19 (12.8)
	Tube diameter - mm (in.)		9.5 (3/8)	9.5 (3/8)	9.5 (3/8)
	Number of rows		3	3	4
	Fins per m (inch)		551 (14)	551 (14)	551 (14)
	Drain connection - Number and size		(1) 1 in. NPT coupling		
	Expansion device type		Refrigerant Metering Orifice (RFC)	Refrigerant Metering Orifice (RFC)	Balance port TXV, removable head
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor kW (HP)		1.5 (2)	1.5 (2)	1.5 (2)
	Maximum usable motor kW (HP)		1.7 (2.3)	1.7 (2.3)	1.7 (2.3)
	Kit # and rev/min range		#1 (490-740)	#1 (590-890)	#1 (490-740)
			#2 (665-920)	#2 (800-1105)	#2 (665-920)
			#3 (660-995)	#3 (795-1195)	#3 (660-995)
	Nominal motor kW (HP)		2.2 (3)	2.2 (3)	2.2 (3)
	Maximum usable motor kW (HP)		2.6 (3.45)	2.6 (3.45)	2.6 (3.45)
	Kit # and rev/min range		#7 (610-810)	#7 (730-970)	#7 (610-810)
			#8 (780-1000)	#8 (940-1200)	#8 (780-1000)
			#9 (845-1085)	#9 (1015-1300)	#9 (845-1085)
	Nominal motor kW (HP)		3.7 (5)	3.7 (5)	3.7 (5)
	Maximum usable motor kW (HP)		4.3 (5.75)	4.3 (5.75)	4.3 (5.75)
Kit # and rev/min range		#10 (750-945)	#10 (900-1135)	#10 (750-945)	
		#11 (865-1095)	#11 (1040-1315)	#11 (865-1095)	
		#12 (940-1190)	#12 (1125-1425)	#12 (940-1190)	
Blower wheel nominal diameter x width - mm (in.)		(1) 381 x 381 (15 X 15)	(1) 381 x 381 (15 X 15)	(1) 381 x 381 (15 X 15)	
<b>Filters</b>	Type of filter		Disposable		
	Number and size - mm (in.)		(4) 508 x 508 x 51 (20 x 25 x 2)		
<b>Electrical characteristics</b>			380/420V - 50 hertz - 3 phase with neutral		

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

<sup>1</sup> Tested at conditions included in AHRI Standard 340/360; 35°C (95°F) outdoor air temperature and 27°C (80°F) dry bulb /19°C (67°F) wet bulb entering evaporator air; minimum external duct static pressure while operating at rated voltage and air volumes.

<sup>2</sup> Rated at 46°C (115°F) outdoor air temperature and 27°C (80°F) db/19°C (67°F) wb entering evaporator air (T3 Conditions).

<sup>3</sup> Using total air volume and system static pressure requirements determine from blower performance tables rev/min and motor output required. Maximum usable output of motors furnished are shown. 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

General Data		Nominal kW (Tons)	35 (10)	35 (10)	
		Model Number	KGB120S4B	KGB120S4M	
		Efficiency Type	Standard	Standard	
		Blower Type	CAV (Constant Air Volume)	MSAV® (Multi-Stage Air Volume)	
<b>Cooling Performance</b>	Gross Cooling Capacity - kW (Btuh)		30.3 (103 500)	30.3 (103 500)	
	<sup>1</sup> Net Cooling Capacity - kW (Btuh)		29.3 (100 000)	29.3 (100 000)	
	AHRI Rated Air Flow - L/s (cfm)		1416 (3000)	1416 (3000)	
	Total Unit Power - kW		9.0	9.0	
	<sup>1</sup> EER (Btuh/Watt) at 35°C (95°F)		11.1	11.1	
	<sup>2</sup> EER (Btuh/Watt) at 46°C (115°F)		8.2	8.2	
	<sup>1</sup> IEER (Btuh/Watt)		12.7	13.4	
<b>Refrigerant Type</b>			R-410A	R-410A	
<b>Refrigerant Charge</b>	Environ™ Coil System	Circuit 1	2.5 kg (5 lbs. 7 oz.)	2.5 kg (5 lbs. 7 oz.)	
		Circuit 2	2.6 kg (5 lbs. 12 oz.)	2.6 kg (5 lbs. 12 oz.)	
	Conventional Fin/Tube Coil	Circuit 1	4.5 kg (9 lbs. 15 oz.)	4.5 kg (9 lbs. 15 oz.)	
		Circuit 2	4.1 kg (9 lbs. 1 oz.)	4.1 kg (9 lbs. 1 oz.)	
<b>Gas Heating Options Available - See page 11</b>			Standard (2 stage), Medium (2 Stage), High (2 Stage)		
<b>Compressor Type (number)</b>			Scroll (2)	Scroll (2)	
<b>Outdoor Coils</b>	Net face area (total) - m <sup>2</sup> (sq. ft.)		2.6 (28.0)	2.6 (28.0)	
		Number of rows	1 (2)	1 (2)	
		Fins per m (inch)	906 (23) 787 (20)	906 (23) 787 (20)	
<b>Outdoor Coil Fans</b>	Motor - (No.) W (HP)		(2) 249 (1/3)	(2) 249 (1/3)	
	Motor rev/min		896	896	
	Total Motor watts		527	527	
	Diameter - (No.) mm (in.)		(2) 610 (24)	(2) 610 (24)	
	Number of blades		3	3	
	Total Air volume - L/s (cfm)		3660 (7750)	3660 (7750)	
<b>Indoor Coils</b>	Net face area (total) - m <sup>2</sup> (sq. ft.)		1.19 (12.8)	1.19 (12.8)	
		Tube diameter - mm (in.)		9.5 (3/8)	9.5 (3/8)
		Number of rows		4	4
		Fins per m (inch)		551 (14)	551 (14)
		Drain connection - Number and size		(1) 1 in. NPT coupling	
	Expansion device type		Refrigerant Metering Orifice (RFC)	Refrigerant Metering Orifice (RFC)	
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor kW (HP)		1.5 (2)	1.5 (2)	
		Maximum usable motor kW (HP)		1.7 (2.3)	1.7 (2.3)
		Kit # and rev/min range		#1 (490-740) #2 (665-920) #3 (660-995)	#1 (590-890) #2 (800-1105) #3 (795-1195)
	Nominal motor kW (HP)		2.2 (3)	2.2 (3)	
		Maximum usable motor kW (HP)		2.6 (3.45)	2.6 (3.45)
		Kit # and rev/min range		#7 (610-810) #8 (780-1000) #9 (845-1085)	#7 (730-970) #8 (940-1200) #9 (1015-1300)
	Nominal motor kW (HP)		3.7 (5)	3.7 (5)	
		Maximum usable motor kW (HP)		4.3 (5.75)	4.3 (5.75)
		Kit # and rev/min range		#10 (750-945) #11 (865-1095) #12 (940-1190)	#10 (900-1135) #11 (1040-1315) #12 (1125-1425)
	Blower wheel nominal diameter x width - mm (in.)		(1) 381 x 381 (15 X 15)	(1) 381 x 381 (15 X 15)	
	<b>Filters</b>	Type of filter		Disposable	
		Number and size - mm (in.)		(4) 508 x 508 x 51 (20 x 25 x 2)	
<b>Electrical characteristics</b>			380/420V - 50 hertz - 3 phase with neutral		

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

<sup>1</sup> Tested at conditions included in AHRI Standard 340/360; 35°C (95°F) outdoor air temperature and 27°C (80°F) dry bulb /19°C (67°F) wet bulb entering evaporator air; minimum external duct static pressure while operating at rated voltage and air volumes.

<sup>2</sup> Rated at 46°C (115°F) outdoor air temperature and 27°C (80°F) db/19°C (67°F) wb entering evaporator air (T3 Conditions).

<sup>3</sup> Using total air volume and system static pressure requirements determine from blower performance tables rev/min and motor output required. Maximum usable output of motors furnished are shown. 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

General Data		Nominal kW (Tons)	44 (12.5)	44 (12.5)	
		Model Number	KGB150S4B	KGB150S4M	
		Efficiency Type	Standard	Standard	
		Blower Type	CAV (Constant Air Volume)	MSAV® (Multi-Stage Air Volume)	
<b>Cooling Performance</b>	Gross Cooling Capacity - kW (Btuh)		38.1 (130 000)	38.1 (130 000)	
	<sup>1</sup> Net Cooling Capacity - kW (Btuh)		36.1 (123 300)	36.1 (123 300)	
	AHRI Rated Air Flow - L/s (cfm)		1864 (3950)	1864 (3950)	
	Total Unit Power - kW		11.0	11.0	
	<sup>1</sup> EER (Btuh/Watt) at 35°C (95°F)		11.2	11.2	
	<sup>2</sup> EER (Btuh/Watt) at 46°C (115°F)		7.7	7.7	
	<sup>1</sup> IEER (Btuh/Watt)		12.4	13.5	
<b>Refrigerant Type</b>			R-410A	R-410A	
<b>Refrigerant Charge</b>	Conventional Fin/Tube	Circuit 1	6.35 kg (14 lbs. 0 oz.)	6.35 kg (14 lbs. 0 oz.)	
	Coil	Circuit 2	6.12 kg (13 lbs. 8 oz.)	6.12 kg (13 lbs. 8 oz.)	
<b>Gas Heating Options Available - See page 11</b>			Standard (2 stage), Medium (2 Stage), High (2 Stage)		
<b>Compressor Type (number)</b>			Scroll (2)	Scroll (2)	
<b>Outdoor Coils</b>	Net face area (total) - m <sup>2</sup> (sq. ft.)		2.6 (28.0)	2.6 (28.0)	
	Number of rows		3	3	
	Fin/Tube	Fins per m (inch)	787 (20)	787 (20)	
<b>Outdoor Coil Fans</b>	Motor - (No.) W (HP)		(2) 373 (1/2)	(2) 373 (1/2)	
	Motor rev/min		896	896	
	Total Motor watts		802	802	
	Diameter - (No.) mm (in.)		(2) 610 (24)	(2) 610 (24)	
	Number of blades		3	3	
	Total Air volume - L/s (cfm)		3815 (8085)	3815 (8085)	
	<b>Indoor Coils</b>	Net face area (total) - m <sup>2</sup> (sq. ft.)		1.26 (13.5)	1.26 (13.5)
		Tube diameter - mm (in.)		9.5 (3/8)	9.5 (3/8)
Number of rows			4	4	
Fins per m (inch)			551 (14)	551 (14)	
Drain connection - Number and size			(1) 1 in. NPT coupling		
	Expansion device type		Balance port TXV, removable head	Balance port TXV, removable head	
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor kW (HP)		1.5 (2)	1.5 (2)	
	Maximum usable motor kW (HP)		1.7 (2.3)	1.7 (2.3)	
	Kit # and rev/min range			#1 (490-740)	#1 (590-890)
				#2 (665-920)	#2 (800-1105)
				#3 (660-995)	#3 (795-1195)
	Nominal motor kW (HP)		2.2 (3)	2.2 (3)	
	Maximum usable motor kW (HP)		2.6 (3.45)	2.6 (3.45)	
	Kit # and rev/min range			#7 (610-810)	#7 (730-970)
				#8 (780-1000)	#8 (940-1200)
				#9 (845-1085)	#9 (1015-1300)
	Nominal motor kW (HP)		3.7 (5)	3.7 (5)	
	Maximum usable motor kW (HP)		4.3 (5.75)	4.3 (5.75)	
	Kit # and rev/min range			#10 (750-945)	#10 (900-1135)
				#11 (865-1095)	#11 (1040-1315)
				#12 (940-1190)	#12 (1125-1425)
Blower wheel nominal diameter x width - mm (in.)			(1) 381 x 381 (15 X 15)	(1) 381 x 381 (15 X 15)	
<b>Filters</b>	Type of filter		Disposable		
	Number and size - mm (in.)		(4) 508 x 508 x 51 (20 x 25 x 2)		
<b>Electrical characteristics</b>			380/420V - 50 hertz - 3 phase with neutral		

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

<sup>1</sup> Tested at conditions included in AHRI Standard 340/360; 35°C (95°F) outdoor air temperature and 27°C (80°F) dry bulb /19°C (67°F) wet bulb entering evaporator air; minimum external duct static pressure while operating at rated voltage and air volumes.

<sup>2</sup> Rated at 46°C (115°F) outdoor air temperature and 27°C (80°F) db/19°C (67°F) wb entering evaporator air (T3 Conditions).

<sup>3</sup> Using total air volume and system static pressure requirements determine from blower performance tables rev/min and motor output required. Maximum usable output of motors furnished are shown. 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

		Heat Input Type	Standard	Medium	High	
		Number of Gas Heat Stages	2	2	2	
Gas Heating Performance	Input - kW (Btuh)	First Stage	24.8 (84 500)	34.3 (117 000)	45.7 (156 000)	
		Second Stage	33.4 (114 000)	46.7 (159 500)	61.5 (210 000)	
	Output - kW (Btuh)		Second Stage	26.7 (91 200)	36.9 (126 000)	49.2 (168 000)
	Temperature Rise Range - °C (°F)			8 - 25 (15 - 45)	17 - 33 (30 - 60)	22 - 39 (40 - 70)
		Thermal Efficiency	81%	81%	81%	
Gas Supply Connections			3/4 in. NPT	3/4 in. NPT	3/4 in. NPT	
Recommended Gas Supply Pressure - kPa (in. w.g.)	Natural		0.70 (2.8)	0.70 (2.8)	0.70 (2.8)	
	LPG/Propane		1.97 (7.9)	1.97 (7.9)	1.97 (7.9)	

## HIGH ALTITUDE DERATE

Units may be installed at altitudes up to 610 m (2000 feet) above sea level without any modification.

At altitudes above 610 m (2000 feet), units must be derated to match gas manifold pressures shown in table below.

At altitudes above 1372 m (4500 feet) unit must be derated 2% for each 305 m (1000 feet) above sea level.

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

Gas Heat Type	Altitude m (Feet)	Gas Manifold Pressure kPa (in. w.g.)		Input Rate - Btuh (Natural Gas or LPG/Propane)	
		Natural Gas	LPG/Propane Gas	First Stage	Second Stage
Standard	610 - 1372 (2001-4500)	0.62 (2.5)	1.82 (7.3)	24.8 (84 500)	31.7 (108 000)
Medium	610 - 1372 (2001-4500)	0.62 (2.5)	1.82 (7.3)	34.3 (117 000)	43.7 (149 000)
High	610 - 1372 (2001-4500)	0.62 (2.5)	1.82 (7.3)	45.7 (156 000)	58 (198 000)

# RATINGS

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

## 26 KW STANDARD EFFICIENCY - KGB092S4B (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1135	16.6	2.27	0.68	0.81	0.95	15.9	2.53	0.69	0.83	0.97	15.1	2.83	0.70	0.84	0.99	14.2	3.19	0.71	0.87	1.00
	1415	17.5	2.29	0.72	0.87	1.00	16.7	2.55	0.73	0.89	1.00	15.9	2.85	0.74	0.91	1.00	14.9	3.21	0.76	0.94	1.00
	1700	18.2	2.30	0.76	0.93	1.00	17.4	2.56	0.77	0.95	1.00	16.5	2.86	0.78	0.98	1.00	15.5	3.22	0.80	1.00	1.00
19.4°C	1135	17.4	2.28	0.55	0.66	0.78	16.6	2.55	0.55	0.67	0.79	15.8	2.85	0.55	0.68	0.81	14.9	3.20	0.56	0.69	0.83
	1415	18.4	2.30	0.57	0.70	0.84	17.5	2.56	0.57	0.71	0.86	16.6	2.87	0.58	0.72	0.88	15.6	3.22	0.58	0.73	0.90
	1700	19.0	2.32	0.59	0.74	0.90	18.1	2.58	0.59	0.75	0.92	17.1	2.88	0.60	0.76	0.94	16.1	3.23	0.61	0.78	0.97
21.7°C	1135	18.2	2.30	0.42	0.53	0.64	17.4	2.56	0.42	0.54	0.65	16.5	2.86	0.42	0.54	0.66	15.6	3.22	0.42	0.55	0.67
	1415	19.2	2.32	0.43	0.56	0.68	18.3	2.58	0.43	0.56	0.69	17.3	2.88	0.42	0.57	0.70	16.3	3.23	0.42	0.57	0.72
	1700	19.9	2.34	0.45	0.58	0.71	19.0	2.59	0.44	0.59	0.73	17.9	2.89	0.45	0.59	0.74	16.8	3.25	0.45	0.60	0.76

## 26 KW STANDARD EFFICIENCY - KGB092S4B (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1135	23.0	4.47	0.71	0.86	0.99	20.8	5.36	0.73	0.90	1.00	18.4	6.46	0.76	0.95	1.00	17.7	6.87	.80	.98	1.00
	1415	24.2	4.50	0.76	0.94	1.00	21.9	5.39	0.79	0.98	1.00	19.5	6.50	0.83	1.00	1.00	18.8	6.91	.88	1.00	1.00
	1700	25.1	4.51	0.81	0.99	1.00	22.8	5.41	0.85	1.00	1.00	20.5	6.53	0.91	1.00	1.00	19.8	6.94	.95	1.00	1.00
19.4°C	1135	24.3	4.50	0.56	0.69	0.82	22.0	5.39	0.57	0.71	0.86	19.6	6.50	0.57	0.74	0.91	18.8	6.91	.60	.80	.92
	1415	25.6	4.52	0.59	0.74	0.90	23.2	5.42	0.60	0.76	0.95	20.5	6.53	0.62	0.81	0.99	19.6	6.94	.65	.87	.99
	1700	26.5	4.54	0.62	0.79	0.97	24.0	5.44	0.63	0.82	1.00	21.1	6.55	0.65	0.88	1.00	20.2	6.96	.70	.95	1.00
21.7°C	1135	25.5	4.52	0.42	0.55	0.67	23.2	5.42	0.41	0.56	0.69	20.7	6.54	0.40	0.57	0.71	19.9	6.95	.42	.60	.72
	1415	26.8	4.54	0.43	0.58	0.72	24.4	5.45	0.43	0.59	0.74	21.7	6.57	0.43	0.61	0.78	20.8	6.98	.44	.65	.79
	1700	27.8	4.56	0.44	0.61	0.76	25.3	5.47	0.44	0.63	0.80	22.4	6.60	0.45	0.65	0.86	21.5	7.01	.47	.70	.85

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C					50°C					51.7°C							
		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					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1135	17.0	7.19	0.78	0.98	1.00	16.4	7.53	0.80	0.99	1.00	15.9	7.84	0.81	1.00	1.00			
	1415	18.1	7.23	0.87	1.00	1.00	17.5	7.58	0.88	1.00	1.00	17.0	7.88	0.90	1.00	1.00			
	1700	19.0	7.27	0.94	1.00	1.00	18.3	7.61	0.96	1.00	1.00	17.8	7.92	0.97	1.00	1.00			
19.4°C	1135	18.1	7.23	0.58	0.76	0.95	17.4	7.58	0.59	0.77	0.97	16.8	7.88	0.59	0.78	0.98			
	1415	18.9	7.26	0.63	0.84	1.00	18.1	7.60	0.64	0.86	1.00	17.5	7.91	0.64	0.88	1.00			
	1700	19.4	7.29	0.67	0.92	1.00	18.7	7.63	0.68	0.94	1.00	18.0	7.94	0.69	0.96	1.00			
21.7°C	1135	19.1	7.27	0.40	0.58	0.74	18.4	7.61	0.40	0.58	0.75	17.8	7.92	0.40	0.59	0.76			
	1415	20.0	7.31	0.43	0.62	0.82	19.3	7.65	0.43	0.63	0.83	18.6	7.96	0.43	0.64	0.85			
	1700	20.6	7.33	0.45	0.67	0.90	19.8	7.68	0.45	0.68	0.92	19.2	7.99	0.46	0.69	0.94			

# RATINGS

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

## 26 KW HIGH EFFICIENCY - KGA092H4B (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1135	12.4	1.62	0.7	0.85	1	11.9	1.83	0.71	0.87	1	11.3	2.06	0.72	0.89	1	10.6	2.33	0.74	0.93	1
	1415	13	1.62	0.76	0.95	1	12.5	1.83	0.77	0.98	1	11.8	2.07	0.78	1	1	11.2	2.33	0.81	1	1
	1700	13.6	1.63	0.81	1	1	13	1.84	0.84	1	1	12.5	2.07	0.86	1	1	11.8	2.33	0.9	1	1
19.4°C	1135	13.2	1.62	0.55	0.68	0.81	12.6	1.83	0.56	0.69	0.83	12	2.07	0.56	0.7	0.85	11.3	2.33	0.56	0.72	0.89
	1415	13.8	1.63	0.59	0.74	0.91	13.2	1.84	0.6	0.75	0.94	12.5	2.07	0.6	0.76	0.97	11.8	2.33	0.61	0.78	1
	1700	14.2	1.63	0.61	0.79	1	13.6	1.84	0.63	0.81	1	12.9	2.07	0.63	0.84	1	12.1	2.33	0.65	0.87	1
21.7°C	1135	13.9	1.63	0.41	0.53	0.66	13.3	1.84	0.42	0.53	0.67	12.7	2.07	0.42	0.55	0.68	12	2.33	0.42	0.56	0.7
	1415	14.5	1.63	0.43	0.57	0.72	13.9	1.84	0.44	0.59	0.73	13.2	2.07	0.44	0.59	0.74	12.5	2.33	0.43	0.6	0.76
	1700	15	1.64	0.45	0.61	0.77	14.3	1.85	0.44	0.62	0.79	13.5	2.08	0.45	0.63	0.82	12.8	2.34	0.45	0.64	0.84

## 26 KW HIGH EFFICIENCY - KGA092H4B (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1135	23.2	3.89	0.72	0.88	1	21.3	4.66	0.74	0.93	1	19.3	5.61	0.76	0.98	1	18.8	5.97	.82	1.00	1.00
	1415	24.3	3.89	0.78	0.99	1	22.5	4.66	0.81	1	1	20.6	5.62	0.86	1	1	20.1	5.96	.91	1.00	1.00
	1700	25.5	3.9	0.85	1	1	23.7	4.67	0.9	1	1	21.6	5.62	0.96	1	1	21.1	5.96	.99	1.00	1.00
19.4°C	1135	24.6	3.9	0.55	0.69	0.84	22.6	4.66	0.57	0.72	0.89	20.5	5.61	0.58	0.74	0.94	19.8	5.96	.61	.81	.94
	1415	25.7	3.9	0.6	0.76	0.95	23.6	4.67	0.61	0.78	0.99	21.3	5.62	0.62	0.83	1	20.6	5.96	.67	.90	1.00
	1700	26.4	3.91	0.63	0.83	1	24.3	4.67	0.65	0.87	1	22	5.62	0.68	0.94	1	21.2	5.97	.73	.99	1.00
21.7°C	1135	26	3.91	0.41	0.53	0.67	24	4.67	0.42	0.56	0.7	21.8	5.62	0.42	0.57	0.72	21.0	5.96	.43	.61	.73
	1415	27.1	3.91	0.43	0.59	0.74	24.9	4.67	0.43	0.6	0.76	22.6	5.62	0.44	0.62	0.8	21.9	5.96	.45	.67	.82
	1700	27.9	3.92	0.45	0.62	0.8	25.6	4.68	0.45	0.64	0.84	23.2	5.62	0.46	0.68	0.91	22.4	5.96	.48	.74	.91

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C					50°C					51.7°C							
		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					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1135	18.2	6.25	0.78	1	1	17.7	6.55	0.80	1	1	17.3	6.81	0.81	1	1			
	1415	19.5	6.25	0.90	1	1	18.9	6.54	0.92	1	1	18.4	6.8	0.94	1	1			
	1700	20.4	6.25	0.99	1	1	19.8	6.54	1.00	1	1	19.4	6.8	1	1	1			
19.4°C	1135	19.2	6.25	0.59	0.76	0.98	18.7	6.55	0.59	0.77	0.99	18.2	6.81	0.6	0.79	1			
	1415	20.0	6.25	0.64	0.87	1	19.4	6.54	0.65	0.89	1	18.9	6.8	0.66	0.91	1			
	1700	20.5	6.25	0.70	0.98	1	19.9	6.54	0.71	0.99	1	19.4	6.8	0.71	1	1			
21.7°C	1135	20.4	6.25	0.42	0.58	0.74	19.8	6.54	0.42	0.58	0.75	19.3	6.8	0.42	0.59	0.76			
	1415	21.2	6.24	0.44	0.63	0.84	20.6	6.54	0.44	0.65	0.86	20	6.79	0.45	0.66	0.88			
	1700	21.7	6.24	0.47	0.69	0.95	21.1	6.54	0.47	0.70	0.97	20.5	6.79	0.47	0.71	0.99			

# RATINGS

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

## 30 KW STANDARD EFFICIENCY - KGB102S4B (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1285	14.9	2.05	0.66	0.81	0.98	14.0	2.28	0.66	0.82	1.00	12.9	2.55	0.66	0.85	1.00	11.8	2.86	0.67	0.88	1.00
	1605	15.9	2.05	0.70	0.90	1.00	14.8	2.29	0.71	0.92	1.00	13.7	2.56	0.72	0.95	1.00	12.5	2.87	0.73	0.98	1.00
	1925	16.5	2.06	0.75	0.97	1.00	15.4	2.29	0.77	1.00	1.00	14.3	2.57	0.79	1.00	1.00	13.2	2.88	0.81	1.00	1.00
19.4°C	1285	15.9	2.05	0.52	0.64	0.77	14.9	2.29	0.51	0.64	0.78	13.8	2.56	0.51	0.64	0.80	12.7	2.87	0.50	0.65	0.83
	1605	16.9	2.05	0.55	0.68	0.85	15.8	2.29	0.55	0.69	0.87	14.6	2.56	0.54	0.70	0.91	13.4	2.88	0.54	0.71	0.94
	1925	17.6	2.06	0.57	0.73	0.94	16.4	2.30	0.57	0.74	0.96	15.2	2.57	0.58	0.76	0.99	14.0	2.89	0.58	0.79	1.00
21.7°C	1285	16.8	2.06	0.40	0.51	0.62	15.8	2.29	0.39	0.51	0.62	14.7	2.57	0.37	0.50	0.63	13.5	2.88	0.36	0.50	0.63
	1605	17.8	2.06	0.41	0.54	0.66	16.7	2.30	0.40	0.54	0.67	15.5	2.57	0.39	0.54	0.68	14.3	2.89	0.38	0.54	0.69
	1925	18.6	2.07	0.43	0.57	0.71	17.4	2.31	0.42	0.57	0.72	16.1	2.58	0.41	0.57	0.74	14.8	2.90	0.40	0.58	0.76

## 30 KW STANDARD EFFICIENCY - KGB102S4B (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1285	25.6	5.07	0.70	0.86	1.00	22.4	6.02	0.71	0.89	1.00	19.0	7.26	0.73	0.95	1.00	17.9	7.72	.76	.99	1.00
	1605	27.1	5.08	0.76	0.94	1.00	23.7	6.04	0.77	0.98	1.00	20.3	7.26	0.81	1.00	1.00	19.5	7.72	.85	1.00	1.00
	1925	28.3	5.09	0.81	1.00	1.00	25.0	6.04	0.84	1.00	1.00	21.7	7.27	0.89	1.00	1.00	20.7	7.73	.93	1.00	1.00
19.4°C	1285	27.3	5.08	0.54	0.68	0.83	24.1	6.03	0.53	0.69	0.85	20.6	7.26	0.52	0.71	0.90	19.4	7.73	.54	.76	.90
	1605	28.9	5.08	0.58	0.74	0.91	25.5	6.05	0.58	0.75	0.95	21.8	7.28	0.57	0.78	0.99	20.5	7.73	.60	.85	.99
	1925	30.1	5.10	0.61	0.79	0.98	26.5	6.06	0.61	0.82	1.00	22.6	7.28	0.62	0.86	1.00	21.3	7.73	.65	.93	1.00
21.7°C	1285	29.0	5.09	0.40	0.54	0.67	25.6	6.05	0.37	0.53	0.67	22.0	7.26	0.34	0.52	0.69	21.0	7.73	.34	.55	.68
	1605	30.6	5.11	0.42	0.57	0.72	27.1	6.07	0.40	0.57	0.74	23.3	7.29	0.37	0.57	0.76	22.2	7.74	.37	.61	.76
	1925	31.8	5.11	0.43	0.61	0.77	28.1	6.08	0.42	0.61	0.80	24.2	7.30	0.39	0.62	0.84	23.0	7.74	.40	.66	.83

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C					50°C					51.7°C							
		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					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1285	17.0	8.09	0.74	0.98	1.00	16.1	8.50	0.75	0.99	1.00	15.3	8.86	0.75	1.00	1.00			
	1605	18.4	8.10	0.83	1.00	1.00	17.6	8.51	0.85	1.00	1.00	16.9	8.89	0.87	1.00	1.00			
	1925	19.7	8.12	0.93	1.00	1.00	18.8	8.52	0.95	1.00	1.00	18.0	8.88	0.96	1.00	1.00			
19.4°C	1285	18.5	8.10	0.52	0.72	0.94	17.6	8.51	0.51	0.73	0.96	16.7	8.88	0.51	0.74	0.97			
	1605	19.5	8.10	0.57	0.81	1.00	18.6	8.51	0.57	0.83	1.00	17.7	8.87	0.57	0.84	1.00			
	1925	20.3	8.10	0.62	0.90	1.00	19.3	8.52	0.63	0.92	1.00	18.4	8.88	0.63	0.94	1.00			
21.7°C	1285	19.9	8.11	0.32	0.52	0.70	19.0	8.52	0.30	0.52	0.71	18.1	8.89	0.30	0.52	0.72			
	1605	21.0	8.12	0.35	0.58	0.79	20.0	8.53	0.34	0.58	0.80	19.2	8.89	0.34	0.58	0.82			
	1925	21.9	8.13	0.38	0.63	0.88	20.8	8.52	0.38	0.63	0.90	19.9	8.89	0.37	0.64	0.91			

# RATINGS

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

## 30 KW HIGH EFFICIENCY - KGA102H4B (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1285	13.8	1.79	0.64	0.82	1	13	2.03	0.65	0.85	1	12.2	2.29	0.66	0.89	1	11.3	2.59	0.67	0.93	1
	1605	14.5	1.8	0.7	0.97	1	13.7	2.04	0.71	0.99	1	12.9	2.3	0.72	1	1	12.1	2.6	0.76	1	1
	1925	15.2	1.81	0.77	1	1	14.4	2.04	0.79	1	1	13.6	2.3	0.83	1	1	12.8	2.6	0.88	1	1
19.4°C	1285	14.7	1.8	0.5	0.63	0.77	13.9	2.04	0.5	0.63	0.79	13.1	2.3	0.51	0.65	0.83	12.1	2.6	0.51	0.66	0.87
	1605	15.4	1.81	0.54	0.68	0.91	14.5	2.04	0.54	0.69	0.95	13.6	2.3	0.54	0.7	0.98	12.7	2.6	0.55	0.72	1
	1925	15.9	1.81	0.56	0.74	1	15	2.05	0.57	0.77	1	14.1	2.31	0.57	0.8	1	13.1	2.6	0.59	0.86	1
21.7°C	1285	15.6	1.81	0.38	0.49	0.61	14.7	2.04	0.37	0.49	0.61	13.9	2.3	0.37	0.5	0.63	13	2.6	0.37	0.5	0.64
	1605	16.3	1.82	0.4	0.53	0.66	15.4	2.05	0.39	0.54	0.68	14.5	2.31	0.38	0.54	0.68	13.5	2.6	0.38	0.55	0.71
	1925	16.8	1.82	0.41	0.56	0.71	15.9	2.05	0.41	0.57	0.74	14.9	2.31	0.4	0.58	0.76	13.9	2.61	0.4	0.58	0.82

## 30 KW HIGH EFFICIENCY - KGA102H4B (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1285	26.1	4.32	0.73	0.91	1	23.5	5.19	0.75	0.95	1	20.7	6.27	0.77	1	1	20.4	6.89	.81	1.00	1.00
	1605	27.5	4.33	0.79	1	1	25.1	5.2	0.83	1	1	22.4	6.27	0.88	1	1	22.1	6.86	.92	1.00	1.00
	1925	29	4.34	0.87	1	1	26.4	5.2	0.92	1	1	23.7	6.28	0.98	1	1	23.4	6.83	1.00	1.00	1.00
19.4°C	1285	27.9	4.33	0.57	0.71	0.87	25.2	5.2	0.57	0.73	0.91	22.2	6.27	0.57	0.75	0.96	21.7	6.87	.59	.81	.95
	1605	29.1	4.34	0.61	0.78	0.98	26.3	5.2	0.61	0.8	1	23.2	6.27	0.62	0.85	1	22.7	6.84	.65	.91	1.00
	1925	30	4.35	0.64	0.85	1	27.1	5.21	0.66	0.9	1	24	6.28	0.68	0.96	1	23.4	6.82	.72	1.00	1.00
21.7°C	1285	29.6	4.34	0.41	0.56	0.69	26.8	5.21	0.41	0.56	0.71	23.8	6.27	0.39	0.56	0.73	23.4	6.83	.40	.59	.73
	1605	30.9	4.35	0.43	0.6	0.76	28	5.21	0.42	0.61	0.79	24.8	6.27	0.42	0.62	0.82	24.4	6.81	.43	.66	.82
	1925	31.9	4.36	0.45	0.64	0.83	28.8	5.22	0.45	0.65	0.87	25.6	6.28	0.45	0.68	0.94	25.1	6.80	.46	.73	.91

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C					50°C					51.7°C							
		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					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1285	19.5	7.25	0.79	1	1	18.8	7.65	0.80	1	1	18.1	7.63	0.82	1	1			
	1605	21.2	7.20	0.91	1	1	20.5	7.58	0.93	1	1	19.5	7.61	0.96	1	1			
	1925	22.5	7.18	1	1	1	21.7	7.55	1.00	1	1	20.7	7.62	1	1	1			
19.4°C	1285	20.9	7.23	0.57	0.76	0.99	20.1	7.61	0.57	0.78	1.00	19.1	7.62	0.58	0.8	1			
	1605	21.9	7.19	0.63	0.88	1.00	21.1	7.58	0.64	0.90	1.00	20	7.62	0.65	0.93	1			
	1925	22.6	7.18	0.69	0.98	1.00	21.7	7.53	0.70	1.00	1.00	20.6	7.61	0.71	1	1			
21.7°C	1285	22.5	7.18	0.38	0.56	0.74	21.7	7.56	0.37	0.57	0.75	20.5	7.61	0.38	0.58	0.78			
	1605	23.5	7.16	0.41	0.62	0.85	22.7	7.51	0.40	0.63	0.87	21.5	7.61	0.41	0.65	0.9			
	1925	24.2	7.16	0.44	0.69	0.96	23.4	7.52	0.44	0.70	0.98	22	7.61	0.44	0.72	1			

# RATINGS

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

## 35 KW STANDARD EFFICIENCY - KGB120S4B (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1510	16.1	2.32	0.69	0.85	1.00	15.0	2.63	0.69	0.86	1.00	13.7	2.98	0.70	0.88	1.00	12.4	3.37	0.71	0.91	1.00
	1890	17.1	2.32	0.75	0.93	1.00	15.9	2.64	0.75	0.96	1.00	14.6	3.00	0.76	0.98	1.00	13.3	3.39	0.78	1.00	1.00
	2265	17.9	2.33	0.80	1.00	1.00	16.7	2.65	0.81	1.00	1.00	15.4	3.01	0.83	1.00	1.00	14.2	3.41	0.86	1.00	1.00
19.4°C	1510	17.3	2.32	0.55	0.67	0.81	16.1	2.64	0.54	0.67	0.82	14.8	3.00	0.53	0.68	0.84	13.5	3.40	0.52	0.69	0.87
	1890	18.3	2.34	0.57	0.72	0.90	17.0	2.65	0.57	0.74	0.92	15.6	3.02	0.57	0.74	0.94	14.3	3.41	0.57	0.76	0.98
	2265	19.0	2.34	0.61	0.78	0.97	17.6	2.66	0.61	0.79	0.99	16.3	3.03	0.60	0.81	1.00	14.8	3.43	0.61	0.83	1.00
21.7°C	1510	18.6	2.34	0.41	0.54	0.65	17.3	2.66	0.40	0.53	0.66	15.9	3.02	0.38	0.52	0.66	14.6	3.42	0.36	0.52	0.67
	1890	19.5	2.35	0.42	0.57	0.70	18.1	2.67	0.42	0.57	0.72	16.8	3.04	0.40	0.57	0.73	15.3	3.44	0.39	0.57	0.74
	2265	20.2	2.35	0.45	0.61	0.76	18.8	2.68	0.44	0.61	0.77	17.3	3.05	0.42	0.60	0.79	15.8	3.45	0.40	0.61	0.81

## 35 KW STANDARD EFFICIENCY - KGB120S4B (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1510	30.4	5.70	0.71	0.88	1.00	26.4	6.86	0.72	0.92	1.00	22.2	8.23	0.74	0.98	1.00	21.0	8.73	.78	1.00	1.00
	1890	32.3	5.72	0.78	0.98	1.00	28.3	6.90	0.80	1.00	1.00	24.2	8.29	0.84	1.00	1.00	23.2	8.79	.88	1.00	1.00
	2265	34.1	5.75	0.84	1.00	1.00	30.1	6.94	0.88	1.00	1.00	25.9	8.34	0.93	1.00	1.00	24.8	8.85	.97	1.00	1.00
19.4°C	1510	32.9	5.73	0.54	0.69	0.84	28.8	6.91	0.53	0.70	0.88	24.3	8.30	0.52	0.72	0.93	22.8	8.78	.54	.78	.93
	1890	34.7	5.76	0.59	0.76	0.94	30.3	6.95	0.58	0.78	0.98	25.6	8.33	0.58	0.81	1.00	24.1	8.83	.60	.88	1.00
	2265	36.0	5.78	0.62	0.82	1.00	31.4	6.97	0.63	0.85	1.00	26.7	8.37	0.63	0.91	1.00	25.1	8.86	.67	.97	1.00
21.7°C	1510	35.3	5.76	0.40	0.54	0.67	31.1	6.96	0.37	0.53	0.68	26.5	8.36	0.33	0.52	0.70	25.1	8.85	.33	.55	.69
	1890	37.2	5.80	0.42	0.58	0.74	32.7	7.00	0.40	0.58	0.76	27.9	8.40	0.37	0.58	0.79	26.4	8.90	.36	.62	.78
	2265	38.5	5.82	0.44	0.62	0.80	33.8	7.03	0.42	0.62	0.83	28.9	8.44	0.40	0.64	0.88	27.4	8.94	.40	.68	.87

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C					50°C					51.7°C							
		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					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1510	19.8	9.12	0.76	1.00	1.00	18.8	9.53	0.76	1.00	1.00	17.9	9.90	0.78	1.00	1.00			
	1890	21.8	9.19	0.87	1.00	1.00	20.8	9.60	0.89	1.00	1.00	19.9	9.97	0.91	1.00	1.00			
	2265	23.4	9.24	0.97	1.00	1.00	22.3	9.66	0.99	1.00	1.00	21.3	10.03	1.00	1.00	1.00			
19.4°C	1510	21.7	9.18	0.51	0.74	0.97	20.5	9.59	0.51	0.75	0.99	19.5	9.96	0.50	0.75	1.00			
	1890	22.9	9.23	0.58	0.84	1.00	21.7	9.64	0.58	0.86	1.00	20.6	10.00	0.58	0.88	1.00			
	2265	23.9	9.26	0.64	0.95	1.00	22.6	9.67	0.64	0.97	1.00	21.6	10.04	0.65	0.98	1.00			
21.7°C	1510	23.8	9.25	0.31	0.52	0.72	22.6	9.67	0.29	0.52	0.73	21.5	10.04	0.28	0.51	0.73			
	1890	25.1	9.30	0.34	0.58	0.82	23.8	9.71	0.33	0.59	0.83	22.7	10.08	0.33	0.59	0.85			
	2265	25.9	9.30	0.38	0.65	0.92	24.6	9.74	0.37	0.65	0.94	23.5	10.12	0.36	0.66	0.96			

# RATINGS

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

## 44 KW STANDARD EFFICIENCY - KGB150S4B (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1795	19.8	2.85	.71	.86	1.00	18.5	3.16	.71	.88	1.00	17.2	3.49	.72	.91	1.00	15.7	3.87	.72	.93	1.00
	2075	20.5	2.86	.74	.93	1.00	19.3	3.17	.75	.94	1.00	17.9	3.50	.76	.97	1.00	16.5	3.88	.78	1.00	1.00
	2360	21.2	2.87	.78	.98	1.00	19.9	3.17	.79	1.00	1.00	18.5	3.51	.81	1.00	1.00	17.2	3.88	.83	1.00	1.00
19.4°C	1795	21.3	2.87	.55	.68	.83	20.0	3.17	.54	.69	.84	18.6	3.51	.54	.70	.86	17.1	3.88	.53	.70	.88
	2075	22.0	2.88	.57	.72	.89	20.7	3.18	.57	.73	.91	19.3	3.52	.57	.74	.93	17.7	3.88	.57	.75	.96
	2360	22.7	2.89	.60	.76	.94	21.3	3.19	.60	.77	.97	19.8	3.52	.60	.79	.99	18.3	3.89	.60	.80	1.00
21.7°C	1795	22.7	2.89	.42	.55	.67	21.4	3.19	.40	.54	.67	20.0	3.52	.39	.53	.67	18.5	3.89	.38	.53	.68
	2075	23.6	2.90	.42	.57	.70	22.2	3.20	.42	.57	.71	20.7	3.53	.40	.56	.71	19.1	3.90	.39	.56	.73
	2360	24.1	2.91	.44	.59	.73	22.8	3.21	.43	.59	.75	21.2	3.54	.42	.59	.76	19.7	3.91	.41	.60	.78

## 44 KW STANDARD EFFICIENCY - KGB150S4B (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1795	37.7	7.59	.73	.90	1.00	34.6	8.42	.74	.92	1.00	29.9	9.86	.78	.99	1.00	28.4	10.39	.79	1.00	1.00
	2075	39.2	7.61	.78	.96	1.00	36.1	8.45	.79	.99	1.00	31.7	9.89	.83	1.00	1.00	30.3	10.43	.85	1.00	1.00
	2360	40.5	7.64	.82	1.00	1.00	37.6	8.47	.84	1.00	1.00	33.4	9.92	.89	1.00	1.00	31.9	10.44	.91	1.00	1.00
19.4°C	1795	40.6	7.63	.55	.71	.86	37.5	8.46	.55	.72	.88	32.6	9.91	.56	.77	.91	30.9	10.43	.56	.78	.93
	2075	42.1	7.66	.58	.75	.92	38.8	8.49	.58	.77	.95	33.8	9.93	.60	.83	.98	32.0	10.45	.60	.84	.99
	2360	43.3	7.69	.61	.80	.98	40.0	8.51	.61	.81	1.00	34.8	9.94	.63	.89	1.00	32.9	10.47	.64	.90	1.00
21.7°C	1795	43.6	7.68	.40	.55	.69	40.4	8.51	.39	.54	.70	35.5	9.96	.37	.56	.69	33.7	10.48	.36	.56	.70
	2075	45.0	7.71	.42	.58	.73	41.7	8.54	.40	.58	.75	36.7	9.98	.39	.61	.75	34.9	10.50	.38	.61	.75
	2360	46.2	7.73	.43	.61	.77	42.9	8.56	.42	.61	.79	37.7	10.00	.41	.64	.79	35.9	10.53	.40	.65	.81
Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		48°C					50°C					51.7°C									
		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							
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C						
17.2°C	1795	27.0	10.80	.78	1.00	1.00	25.8	11.23	.79	1.00	1.00	25.2	11.60	.81	1.00	1.00					
	2075	28.8	10.84	.84	1.00	1.00	27.6	11.26	.86	1.00	1.00	27.0	11.63	.88	1.00	1.00					
	2360	30.3	10.86	.90	1.00	1.00	29.2	11.29	.92	1.00	1.00	28.5	11.66	.96	1.00	1.00					
19.4°C	1795	29.6	10.84	.54	.75	.96	28.3	11.27	.54	.76	.98	27.1	11.62	.56	.81	.97					
	2075	30.7	10.86	.58	.82	1.00	29.4	11.29	.58	.83	1.00	28.2	11.66	.60	.88	1.00					
	2360	31.5	10.88	.62	.88	1.00	30.2	11.30	.62	.89	1.00	29.0	11.67	.64	.95	1.00					
21.7°C	1795	32.2	10.90	.34	.54	.73	30.9	11.32	.34	.54	.74	29.9	11.68	.34	.57	.72					
	2075	33.4	10.91	.37	.58	.79	32.0	11.33	.36	.58	.80	30.9	11.70	.36	.61	.78					
	2360	34.3	10.93	.39	.62	.85	32.8	11.34	.38	.62	.87	31.7	11.72	.38	.66	.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.

## 26 KW STANDARD EFFICIENCY - KGB092S4M (1ST STAGE) - MSAV® (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																							
		18.3°C						23.9°C						29.4°C						35°C					
		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						
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C					
17.2°C	795	14.5	2.11	0.68	0.78	0.88	13.8	2.43	0.68	0.79	0.90	13	2.78	0.69	0.8	0.91	12.3	3.17	0.69	0.81	0.93				
	990	15.5	2.14	0.71	0.83	0.94	14.8	2.46	0.72	0.84	0.96	14	2.81	0.72	0.85	0.97	13.1	3.19	0.73	0.87	0.99				
	1190	16.3	2.15	0.74	0.87	0.99	15.5	2.47	0.75	0.89	1.00	14.6	2.82	0.76	0.90	1.00	13.7	3.21	0.77	0.92	1.00				
19.4°C	795	15.2	2.13	0.55	0.66	0.75	14.5	2.45	0.55	0.66	0.76	13.8	2.8	0.55	0.66	0.77	13.0	3.19	0.55	0.67	0.78				
	990	16.4	2.15	0.57	0.69	0.8	15.6	2.47	0.57	0.69	0.81	14.7	2.83	0.57	0.7	0.82	13.9	3.22	0.57	0.71	0.84				
	1190	17.2	2.17	0.59	0.72	0.84	16.4	2.49	0.59	0.73	0.85	15.5	2.84	0.6	0.74	0.87	14.6	3.23	0.60	0.75	0.89				
21.7°C	795	15.9	2.14	0.43	0.54	0.63	15.2	2.46	0.43	0.54	0.64	14.4	2.82	0.42	0.54	0.64	13.7	3.21	0.42	0.53	0.65				
	990	17.1	2.17	0.44	0.56	0.66	16.3	2.49	0.43	0.56	0.67	15.5	2.84	0.44	0.56	0.68	14.6	3.23	0.43	0.56	0.69				
	1190	18.0	2.18	0.45	0.58	0.7	17.1	2.51	0.44	0.58	0.71	16.3	2.86	0.43	0.58	0.72	15.3	3.25	0.42	0.59	0.73				

## 26 KW STANDARD EFFICIENCY - KGB092S4M (2ND STAGE) - MSAV® (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																							
		26.7°C						35°C						43.3°C						46°C					
		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						
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C					
17.2°C	1135	23.9	4.32	0.75	0.89	1.00	21.5	5.27	0.76	0.92	1.00	19.0	6.37	0.79	0.95	1.00	18.2	6.75	.79	.97	1.00				
	1415	25.2	4.34	0.8	0.95	1.00	22.7	5.30	0.82	0.98	1.00	20.3	6.4	0.85	1.00	1.00	19.4	6.78	.86	1.00	1.00				
	1700	26.2	4.36	0.84	0.99	1.00	23.8	5.32	0.87	1.00	1.00	21.3	6.43	0.91	1.00	1.00	20.5	6.81	.92	1.00	1.00				
19.4°C	1135	25.3	4.34	0.58	0.73	0.86	22.9	5.30	0.58	0.74	0.88	20.3	6.4	0.59	0.76	0.92	19.5	6.78	.59	.76	.93				
	1415	26.7	4.36	0.62	0.78	0.92	24.1	5.32	0.62	0.80	0.95	21.4	6.43	0.63	0.83	0.98	20.4	6.80	.63	.83	.99				
	1700	27.6	4.38	0.65	0.82	0.98	25	5.34	0.66	0.85	0.99	22.1	6.44	0.67	0.89	1.00	21.2	6.82	.68	.90	1.00				
21.7°C	1135	26.7	4.36	0.42	0.57	0.70	24.3	5.32	0.42	0.57	0.72	21.6	6.43	0.41	0.58	0.74	20.7	6.81	.41	.58	.74				
	1415	28.1	4.38	0.45	0.61	0.76	25.5	5.35	0.44	0.62	0.78	22.7	6.46	0.44	0.63	0.81	21.7	6.83	.43	.63	.81				
	1700	29.2	4.39	0.46	0.64	0.80	26.5	5.36	0.46	0.65	0.83	23.5	6.47	0.46	0.67	0.87	22.5	6.85	.46	.67	.88				

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C						50°C						51.7°C					
		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					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1135	17.6	7.04	.80	.97	1.00	16.9	7.34	.81	.98	1.00	16.4	7.61	0.82	0.99	1.00			
	1415	18.8	7.07	.87	1.00	1.00	18.1	7.38	.88	1.00	1.00	17.6	7.65	0.9	1.00	1.00			
	1700	19.8	7.10	.93	1.00	1.00	19.2	7.40	.95	1.00	1.00	18.6	7.68	0.96	1.00	1.00			
19.4°C	1135	18.8	7.08	.59	.77	.94	18.1	7.37	.59	.78	.96	17.4	7.64	0.6	0.8	0.97			
	1415	19.7	7.10	.64	.85	1.00	19.0	7.40	.64	.86	1.00	18.3	7.66	0.65	0.88	1.00			
	1700	20.4	7.11	.68	.91	1.00	19.6	7.42	.69	.93	1.00	19	7.68	0.7	0.94	1.00			
21.7°C	1135	20.0	7.11	.40	.58	.75	19.3	7.41	.40	.59	.76	18.6	7.68	0.4	0.6	0.78			
	1415	21.0	7.13	.43	.63	.82	20.2	7.43	.43	.64	.84	19.6	7.7	0.43	0.65	0.85			
	1700	21.7	7.14	.46	.68	.89	20.9	7.45	.46	.68	.90	20.3	7.72	0.46	0.7	0.92			

## RATINGS

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

### 30 KW STANDARD EFFICIENCY - KGB102S4M (1ST STAGE) - MSAV® (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	905	13.5	2	0.69	0.8	0.91	12.8	2.23	0.69	0.81	0.93	12.1	2.51	0.7	0.83	0.94	11.4	2.84	0.7	0.84	0.97
	1135	14.4	2	0.73	0.86	0.98	13.6	2.24	0.74	0.87	0.99	12.8	2.53	0.75	0.89	1.00	12	2.86	0.76	0.91	1.00
	1360	15	2	0.77	0.91	1.00	14.2	2.24	0.78	0.93	1.00	13.4	2.54	0.79	0.95	1.00	12.6	2.88	0.81	0.97	1.00
19.4°C	905	14.4	2	0.55	0.67	0.77	13.7	2.24	0.55	0.67	0.78	12.9	2.52	0.55	0.67	0.79	12.1	2.86	0.55	0.68	0.81
	1135	15.3	2	0.58	0.71	0.83	14.5	2.25	0.58	0.71	0.84	13.7	2.54	0.58	0.72	0.86	12.9	2.88	0.59	0.74	0.88
	1360	15.9	1.99	0.60	0.75	0.88	15.1	2.25	0.61	0.76	0.90	14.3	2.55	0.61	0.77	0.92	13.4	2.9	0.62	0.79	0.94
21.7°C	905	15.2	2	0.43	0.54	0.64	14.5	2.25	0.42	0.54	0.64	13.7	2.54	0.42	0.54	0.65	13.0	2.89	0.41	0.54	0.66
	1135	16.1	1.99	0.44	0.56	0.68	15.4	2.25	0.44	0.57	0.69	14.5	2.56	0.43	0.57	0.70	13.7	2.91	0.42	0.57	0.72
	1360	16.9	1.99	0.45	0.59	0.72	16.0	2.25	0.45	0.60	0.74	15.1	2.57	0.44	0.6	0.75	14.2	2.92	0.44	0.61	0.77

### 30 KW STANDARD EFFICIENCY - KGB102S4M (2ND STAGE) - MSAV® (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1285	27.3	4.82	0.77	0.92	1.00	24.7	5.82	0.79	0.95	1.00	22	7.01	0.82	0.99	1.00	21.1	7.42	.82	1.00	1.00
	1605	28.7	4.84	0.83	0.99	1.00	26.1	5.86	0.86	1.00	1.00	23.5	7.07	0.89	1.00	1.00	22.7	7.50	.90	1.00	1.00
	1925	30	4.86	0.89	1.00	1.00	27.5	5.9	0.92	1.00	1.00	24.6	7.12	0.96	1.00	1.00	23.8	7.55	.98	1.00	1.00
19.4°C	1285	29.1	4.85	0.6	0.75	0.89	26.4	5.87	0.6	0.77	0.92	23.5	7.08	0.61	0.80	0.96	22.5	7.49	.61	.80	.97
	1605	30.4	4.87	0.64	0.81	0.97	27.5	5.9	0.64	0.84	1.00	24.4	7.11	0.66	0.87	1.00	23.4	7.53	.66	.88	1.00
	1925	31.3	4.87	0.67	0.87	1.00	28.3	5.92	0.69	0.9	1.00	25.1	7.15	0.71	0.95	1.00	24.1	7.57	.71	.96	1.00
21.7°C	1285	30.8	4.87	0.44	0.58	0.72	28	5.91	0.43	0.59	0.75	25	7.14	0.43	0.6	0.77	24.0	7.56	.42	.60	.78
	1605	32.2	4.89	0.46	0.63	0.79	29.2	5.94	0.45	0.64	0.82	26	7.18	0.45	0.66	0.85	24.9	7.60	.45	.66	.86
	1925	33.1	4.90	0.48	0.67	0.85	30.1	5.97	0.47	0.69	0.88	26.7	7.21	0.48	0.71	0.93	25.5	7.62	.47	.71	.94

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C					50°C					51.7°C							
		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					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1285	20.4	7.74	.83	1.00	1.00	19.8	8.09	.84	1.00	1.00	19.2	8.38	0.86	1.00	1.00			
	1605	22.0	7.83	.92	1.00	1.00	21.2	8.16	.93	1.00	1.00	20.6	8.46	0.95	1.00	1.00			
	1925	23.1	7.88	.99	1.00	1.00	22.3	8.22	1.00	1.00	1.00	21.6	8.51	1.00	1.00	1.00			
19.4°C	1285	21.7	7.81	.61	.81	.99	20.9	8.14	.61	.82	1.00	20.3	8.43	0.62	0.84	1.00			
	1605	22.6	7.85	.67	.90	1.00	21.7	8.18	.67	.91	1.00	21.0	8.48	0.69	0.93	1.00			
	1925	23.3	7.89	.72	.97	1.00	22.5	8.22	.73	.99	1.00	21.7	8.52	0.75	1.00	1.00			
21.7°C	1285	23.2	7.88	.42	.61	.79	22.4	8.22	.42	.61	.80	21.6	8.5	0.42	0.62	0.82			
	1605	24.1	7.93	.44	.67	.88	23.2	8.26	.44	.67	.89	22.5	8.56	0.45	0.69	0.91			
	1925	24.7	7.96	.47	.72	.96	23.9	8.30	.47	.73	.97	23.1	8.59	0.48	0.75	0.99			

# RATINGS

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

## 35 KW HIGH EFFICIENCY - KGB120S4M (1ST STAGE) - MSAV® (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		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		
		L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C
17.2°C	906	14.9	2.19	0.67	0.77	0.87	14.2	2.51	0.67	0.78	0.89	13.4	2.87	0.68	0.79	0.9	12.6	3.26	0.68	0.8	0.92
	1133	15.9	2.22	0.7	0.82	0.93	15.2	2.54	0.71	0.83	0.95	14.3	2.9	0.72	0.85	0.97	13.5	3.29	0.73	0.86	0.99
	1359	16.7	2.24	0.74	0.87	0.99	15.9	2.56	0.74	0.88	1.00	15.0	2.92	0.75	0.90	1.00	14.1	3.32	0.77	0.92	1.00
19.4°C	906	15.9	2.21	0.54	0.64	0.74	15.1	2.54	0.54	0.65	0.75	14.3	2.9	0.54	0.65	0.76	13.5	3.29	0.54	0.66	0.77
	1133	17.0	2.24	0.56	0.68	0.79	16.1	2.57	0.56	0.68	0.8	15.3	2.93	0.56	0.69	0.81	14.4	3.32	0.57	0.7	0.83
	1359	17.8	2.26	0.58	0.71	0.83	16.9	2.59	0.59	0.72	0.85	16.0	2.95	0.59	0.73	0.87	15.1	3.34	0.59	0.74	0.89
21.7°C	906	16.8	2.24	0.43	0.53	0.62	16.0	2.56	0.42	0.52	0.62	15.2	2.93	0.42	0.52	0.63	14.4	3.32	0.41	0.52	0.63
	1133	18.0	2.26	0.43	0.55	0.65	17.1	2.59	0.43	0.55	0.66	16.2	2.95	0.43	0.55	0.67	15.4	3.35	0.42	0.55	0.68
	1359	18.9	2.28	0.44	0.57	0.69	18.0	2.61	0.44	0.57	0.70	17.0	2.97	0.44	0.58	0.71	16.1	3.37	0.43	0.58	0.72

## 35 KW HIGH EFFICIENCY - KGB120S4M (2ND STAGE) - MSAV® (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		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		
		L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C
17.2°C	1285	30	5.47	0.74	0.88	1.00	27.3	6.63	0.76	0.91	1.00	24.3	7.96	0.78	0.95	1.00	23.3	8.42	.78	.96	1.00
	1605	31.7	5.52	0.79	0.95	1.00	28.8	6.68	0.82	0.98	1.00	25.8	8.01	0.85	1.00	1.00	24.9	8.47	.86	1.00	1.00
	1925	33	5.55	0.84	1.00	1.00	30.2	6.72	0.87	1.00	1.00	27.3	8.06	0.91	1.00	1.00	26.3	8.52	.93	1.00	1.00
19.4°C	1285	32.1	5.53	0.58	0.72	0.85	29.3	6.69	0.58	0.73	0.87	26.2	8.02	0.59	0.76	0.91	25.1	8.48	.58	.76	.92
	1605	33.8	5.57	0.61	0.77	0.92	30.8	6.73	0.62	0.79	0.95	27.5	8.06	0.63	0.83	0.99	26.3	8.52	.63	.83	1.00
	1925	35.1	5.59	0.65	0.82	0.98	31.9	6.76	0.66	0.85	1.00	28.4	8.09	0.68	0.89	1.00	27.2	8.55	.68	.90	1.00
21.7°C	1285	34.1	5.57	0.43	0.57	0.69	31.2	6.74	0.43	0.57	0.71	28	8.07	0.42	0.58	0.73	26.9	8.53	.41	.58	.73
	1605	35.9	5.61	0.45	0.6	0.75	32.8	6.78	0.44	0.61	0.77	29.4	8.11	0.44	0.63	0.8	28.2	8.57	.44	.63	.81
	1925	37.2	5.63	0.46	0.64	0.8	34	6.8	0.46	0.65	0.83	30.4	8.13	0.46	0.67	0.87	29.2	8.59	.46	.67	.88

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C					50°C					51.7°C							
		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					
		L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C		
17.2°C	1285	22.5	8.77	.79	.97	1.00	21.7	9.15	.80	.99	1.00	21	9.48	0.82	1.00	1.00			
	1605	24.1	8.83	.87	1.00	1.00	23.3	9.21	.88	1.00	1.00	22.7	9.54	0.9	1.00	1.00			
	1925	25.5	8.88	.94	1.00	1.00	24.8	9.25	.95	1.00	1.00	24	9.58	0.97	1.00	1.00			
19.4°C	1285	24.3	8.84	.59	.77	.94	23.4	9.21	.59	.77	.95	22.6	9.54	0.6	0.79	0.97			
	1605	25.4	8.88	.64	.84	1.00	24.5	9.24	.64	.85	1.00	23.7	9.57	0.66	0.87	1.00			
	1925	26.3	8.90	.68	.92	1.00	25.4	9.27	.69	.93	1.00	24.5	9.59	0.71	0.95	1.00			
21.7°C	1285	26.0	8.89	.41	.58	.74	25.1	9.26	.41	.58	.75	24.4	9.59	0.41	0.59	0.77			
	1605	27.3	8.93	.44	.63	.82	26.4	9.30	.43	.64	.83	25.6	9.62	0.44	0.65	0.85			
	1925	28.2	8.95	.46	.68	.89	27.3	9.32	.46	.69	.91	26.3	9.64	0.46	0.7	0.93			

## RATINGS

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

### 44 KW STANDARD EFFICIENCY - KGB150S4M (1ST STAGE) - MSAV® (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1208	18.8	2.96	0.69	0.8	0.9	18.0	3.29	0.69	0.8	0.92	17.1	3.64	0.69	0.82	0.93	16.1	4.03	0.70	0.83	0.96
	1510	20.0	2.98	0.72	0.85	0.97	19.1	3.30	0.73	0.87	0.99	18.2	3.66	0.74	0.88	1.00	17.1	4.05	0.75	0.90	1.00
	1642	20.5	2.99	0.74	0.88	1.00	19.6	3.31	0.75	0.89	1.00	18.6	3.66	0.76	0.91	1.00	17.5	4.05	0.77	0.93	1.00
19.4°C	1208	20.1	2.98	0.55	0.66	0.77	19.3	3.30	0.55	0.66	0.77	18.3	3.66	0.55	0.67	0.78	17.4	4.05	0.55	0.68	0.80
	1510	21.3	3.00	0.57	0.7	0.82	20.5	3.32	0.58	0.71	0.83	19.5	3.67	0.58	0.72	0.85	18.3	4.06	0.58	0.73	0.86
	1642	21.8	3.01	0.58	0.72	0.84	20.8	3.33	0.59	0.73	0.86	19.8	3.68	0.59	0.74	0.87	18.7	4.07	0.60	0.75	0.89
21.7°C	1208	21.5	3.00	0.44	0.54	0.64	20.5	3.32	0.43	0.53	0.64	19.6	3.67	0.42	0.54	0.64	18.5	4.06	0.42	0.53	0.65
	1510	22.7	3.03	0.44	0.56	0.67	21.8	3.34	0.44	0.56	0.68	20.8	3.69	0.43	0.57	0.69	19.7	4.08	0.43	0.57	0.70
	1642	23.2	3.03	0.44	0.57	0.69	22.2	3.35	0.44	0.57	0.70	21.1	3.70	0.44	0.58	0.71	20.0	4.09	0.44	0.58	0.72

### 44 KW STANDARD EFFICIENCY - KGB150S4M (2ND STAGE) - MSAV® (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		29.4°C					35°C					43.3°C					46°C				
		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		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1795	40.1	7.33	0.76	0.91	1.00	36.8	8.56	0.78	0.94	1.00	33.2	10.04	0.81	0.98	1.00	31.9	10.57	.81	.99	1.00
	2075	41.4	7.38	0.8	0.96	1.00	38.0	8.60	0.82	0.99	1.00	34.4	10.09	0.85	1.00	1.00	33.3	10.63	.86	1.00	1.00
	2360	42.6	7.41	0.84	0.99	1.00	39.2	8.65	0.86	1.00	1.00	35.9	10.14	0.9	1.00	1.00	34.7	10.69	.91	1.00	1.00
19.4°C	1795	42.7	7.42	0.59	0.74	0.87	39.2	8.65	0.6	0.76	0.90	35.5	10.13	0.61	0.79	0.95	34.2	10.67	.61	.79	.96
	2075	44	7.46	0.62	0.78	0.92	40.4	8.69	0.63	0.8	0.96	36.5	10.18	0.64	0.83	0.99	35.1	10.70	.64	.84	1.00
	2360	45.1	7.50	0.64	0.81	0.97	41.4	8.72	0.65	0.84	1.00	37.3	10.2	0.67	0.87	1.00	35.9	10.73	.67	.88	1.00
21.7°C	1795	45.2	7.50	0.44	0.58	0.72	41.7	8.73	0.44	0.59	0.73	37.7	10.23	0.44	0.6	0.76	36.5	10.76	.43	.60	.76
	2075	46.6	7.55	0.46	0.61	0.75	42.9	8.78	0.45	0.62	0.78	38.8	10.27	0.45	0.63	0.81	37.4	10.80	.45	.63	.81
	2360	47.7	7.60	0.46	0.63	0.79	43.9	8.82	0.46	0.65	0.82	39.7	10.31	0.46	0.66	0.85	38.2	10.84	.46	.66	.86

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C					50°C					51.7°C							
		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					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1795	31.0	11.00	.82	1.00	1.00	30.0	11.45	.83	1.00	1.00	29.3	11.85	0.85	1.00	1.00			
	2075	32.5	11.06	.87	1.00	1.00	31.6	11.50	.88	1.00	1.00	30.8	11.92	0.9	1.00	1.00			
	2360	33.8	11.11	.92	1.00	1.00	32.9	11.56	.93	1.00	1.00	32.0	11.96	0.95	1.00	1.00			
19.4°C	1795	33.2	11.09	.62	.80	.97	32.1	11.54	.62	.80	.98	31.2	11.93	0.63	0.82	0.99			
	2075	34.1	11.12	.65	.84	1.00	33.0	11.57	.65	.86	1.00	32.1	11.97	0.66	0.88	1.00			
	2360	34.8	11.15	.68	.90	1.00	33.8	11.59	.68	.91	1.00	32.9	12.00	0.69	0.93	1.00			
21.7°C	1795	35.4	11.18	.43	.60	.77	34.4	11.63	.43	.61	.78	33.4	12.03	0.43	0.62	0.8			
	2075	36.4	11.22	.45	.64	.82	35.3	11.66	.45	.64	.83	34.3	12.08	0.45	0.65	0.85			
	2360	37.2	11.25	.46	.67	.87	36.0	11.71	.46	.68	.88	35.0	12.10	0.46	0.69	0.9			

## BLOWER DATA

### 092S STANDARD EFFICIENCY BELT DRIVE BLOWER – BASE UNIT

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY (NO HEAT SECTION) WITH DRY INDOOR COIL AND 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 (duct resistance, diffuser, etc.)

Then determine from blower table blower motor output required.

See page 33 for blower motors and drives.

See page 33 for wet coil and option/accessory air resistance data.

**MAXIMUM STATIC PRESSURE WITH GAS HEAT - 500 Pa (2.0 in. w.g.)**

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																				
		50 (0.20)			100 (0.40)			150 (0.60)			200 (0.80)			250 (1.00)			300 (1.20)			350 (1.40)		
L/s	cfm	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP
825	1750	608	0.04	0.05	651	0.02	0.03	696	0.04	0.06	744	0.16	0.22	794	0.45	0.60	845	0.71	0.95	894	0.93	1.24
945	2000	615	0.05	0.07	657	0.04	0.05	702	0.07	0.10	748	0.27	0.36	797	0.54	0.72	846	0.78	1.05	892	0.97	1.30
1062	2250	624	0.07	0.09	664	0.05	0.07	707	0.10	0.14	753	0.37	0.50	800	0.63	0.84	847	0.86	1.15	892	1.03	1.38
1180	2500	632	0.08	0.11	672	0.07	0.09	714	0.22	0.29	758	0.48	0.64	803	0.72	0.97	849	0.94	1.26	893	1.10	1.48
1298	2750	641	0.10	0.13	680	0.08	0.11	721	0.34	0.45	763	0.58	0.78	807	0.81	1.09	852	1.02	1.37	896	1.18	1.58
1416	3000	651	0.11	0.15	689	0.22	0.29	728	0.46	0.61	770	0.69	0.93	812	0.92	1.23	856	1.11	1.49	901	1.27	1.70
1534	3250	661	0.13	0.17	698	0.34	0.46	737	0.58	0.78	777	0.81	1.09	819	1.03	1.38	862	1.22	1.63	908	1.37	1.84
1652	3500	672	0.27	0.36	708	0.48	0.65	746	0.71	0.95	786	0.93	1.25	827	1.14	1.53	870	1.33	1.78	916	1.48	1.99
1770	3750	684	0.42	0.56	719	0.63	0.85	756	0.85	1.14	795	1.07	1.43	836	1.27	1.7	880	1.45	1.95	927	1.61	2.16
1888	4000	697	0.58	0.78	731	0.78	1.05	768	1.00	1.34	807	1.21	1.62	848	1.41	1.89	892	1.59	2.13	940	1.75	2.34
2006	4250	710	0.75	1.0	745	0.95	1.27	781	1.16	1.55	819	1.37	1.83	861	1.56	2.09	906	1.74	2.33	954	1.90	2.55

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																	
		400 (1.60)			450 (1.80)			500 (2.00)			550 (2.20)			600 (2.40)			650 (2.60)		
L/s	cfm	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP
825	1750	934	1.03	1.38	978	1.10	1.47	1047	1.24	1.66	1120	1.41	1.89	1179	1.60	2.15	1230	1.79	2.40
945	2000	933	1.08	1.45	977	1.16	1.55	1049	1.31	1.75	1124	1.49	2.00	1181	1.66	2.23	1234	1.84	2.47
1062	2250	934	1.14	1.53	979	1.23	1.65	1051	1.39	1.86	1126	1.58	2.12	1183	1.76	2.36	1238	1.95	2.62
1180	2500	936	1.22	1.63	983	1.31	1.75	1052	1.46	1.96	1124	1.66	2.22	1184	1.86	2.49	1241	2.07	2.77
1298	2750	940	1.30	1.74	989	1.40	1.88	1053	1.55	2.08	1121	1.75	2.34	1185	1.96	2.63	1244	2.19	2.93
1416	3000	947	1.40	1.87	996	1.51	2.02	1055	1.65	2.21	1120	1.84	2.47	1186	2.07	2.78	1248	2.31	3.10
1534	3250	955	1.50	2.01	1004	1.62	2.17	1059	1.76	2.36	1122	1.95	2.62	1189	2.19	2.94	1252	2.45	3.28
1652	3500	965	1.62	2.17	1013	1.74	2.33	1065	1.88	2.52	1126	2.08	2.79	1193	2.33	3.12	1257	2.59	3.47
1770	3750	976	1.75	2.34	1023	1.87	2.51	1073	2.02	2.71	1133	2.22	2.98	1198	2.48	3.32	1263	2.74	3.67
1888	4000	988	1.89	2.53	1034	2.02	2.71	1083	2.17	2.91	1141	2.38	3.19	1205	2.63	3.53	1270	2.90	3.89
2006	4250	1001	2.04	2.74	1046	2.19	2.93	1094	2.34	3.14	1151	2.55	3.42	1214	2.80	3.76	1278	3.07	4.12

## BLOWER DATA

### 092H AND 102H HIGH EFFICIENCY BELT DRIVE BLOWER – BASE UNIT

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY (NO HEAT SECTION) WITH DRY INDOOR COIL AND 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 (duct resistance, diffuser, etc.)

Then determine from blower table blower motor output required.

See page 33 for blower motors and drives.

See page 33 for wet coil and option/accessory air resistance data.

**MAXIMUM STATIC PRESSURE WITH GAS HEAT - 500 Pa (2.0 in. w.g.)**

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																				
		50 (0.20)			100 (0.40)			150 (0.60)			200 (0.80)			250 (1.00)			300 (1.20)			350 (1.40)		
L/s	cfm	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP
825	1750	481	0.16	0.21	549	0.30	0.4	618	0.43	0.57	688	0.52	0.70	758	0.61	0.82	824	0.69	0.93	885	0.81	1.08
945	2000	493	0.22	0.29	561	0.35	0.47	629	0.48	0.64	700	0.57	0.77	768	0.67	0.90	832	0.76	1.02	892	0.87	1.17
1062	2250	507	0.28	0.37	574	0.42	0.56	643	0.54	0.72	712	0.64	0.86	779	0.74	0.99	842	0.84	1.13	900	0.95	1.28
1180	2500	521	0.34	0.46	588	0.48	0.64	657	0.60	0.81	727	0.71	0.95	792	0.81	1.09	853	0.93	1.24	909	1.04	1.40
1298	2750	537	0.42	0.56	604	0.55	0.74	674	0.68	0.91	743	0.79	1.06	806	0.90	1.21	865	1.01	1.36	920	1.14	1.53
1416	3000	554	0.50	0.67	622	0.64	0.86	692	0.76	1.02	760	0.88	1.18	822	1.00	1.34	878	1.12	1.50	931	1.25	1.68
1534	3250	572	0.58	0.78	641	0.73	0.98	712	0.86	1.15	778	0.98	1.32	838	1.11	1.49	892	1.24	1.66	943	1.37	1.84
1652	3500	592	0.67	0.90	663	0.84	1.12	733	0.97	1.30	798	1.10	1.47	855	1.23	1.65	907	1.37	1.83	956	1.51	2.02
1770	3750	614	0.78	1.04	687	0.95	1.28	756	1.10	1.47	818	1.23	1.65	872	1.37	1.83	923	1.51	2.02	970	1.66	2.22
1888	4000	639	0.91	1.22	713	1.10	1.48	780	1.24	1.66	838	1.37	1.83	890	1.51	2.02	939	1.66	2.22	984	1.82	2.44
2006	4250	667	1.07	1.43	741	1.26	1.69	805	1.39	1.86	859	1.51	2.02	909	1.66	2.22	956	1.83	2.45	998	2.00	2.68

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																	
		400 (1.60)			450 (1.80)			500 (2.00)			550 (2.20)			600 (2.40)			650 (2.60)		
L/s	cfm	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP
825	1750	941	0.92	1.23	991	1.04	1.39	1038	1.15	1.54	1082	1.25	1.68	1124	1.36	1.82	1166	1.45	1.95
945	2000	946	0.99	1.33	995	1.11	1.49	1041	1.24	1.66	1085	1.35	1.81	1126	1.47	1.97	1167	1.58	2.12
1062	2250	953	1.07	1.44	1001	1.20	1.61	1045	1.33	1.78	1088	1.45	1.95	1128	1.58	2.12	1168	1.72	2.30
1180	2500	960	1.17	1.57	1007	1.30	1.74	1050	1.44	1.93	1091	1.57	2.11	1130	1.71	2.29	1170	1.85	2.48
1298	2750	969	1.28	1.71	1014	1.41	1.89	1055	1.55	2.08	1095	1.69	2.27	1133	1.84	2.47	1172	1.98	2.66
1416	3000	979	1.39	1.86	1021	1.54	2.06	1061	1.69	2.26	1099	1.84	2.46	1136	1.98	2.65	1174	2.13	2.85
1534	3250	989	1.51	2.03	1030	1.67	2.24	1068	1.83	2.45	1105	1.98	2.65	1141	2.13	2.85	1178	2.28	3.06
1652	3500	1000	1.66	2.22	1039	1.82	2.44	1076	1.98	2.65	1111	2.13	2.86	1146	2.29	3.07	1183	2.44	3.27
1770	3750	1011	1.81	2.43	1049	1.98	2.65	1084	2.14	2.87	1118	2.31	3.09	1152	2.45	3.29	1189	2.62	3.51
1888	4000	1023	1.98	2.66	1059	2.16	2.89	1093	2.32	3.11	1126	2.48	3.33	1160	2.64	3.54	1197	2.81	3.77
2006	4250	1036	2.18	2.92	1070	2.35	3.15	1103	2.51	3.37	1135	2.68	3.59	1169	2.84	3.81	1207	3.02	4.05

## BLOWER DATA

### 102S AND 120S STANDARD EFFICIENCY BELT DRIVE BLOWER – BASE UNIT

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY (NO HEAT SECTION) WITH DRY INDOOR COIL AND 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 (duct resistance, diffuser, etc.)

Then determine from blower table blower motor output required.

See page 33 for blower motors and drives.

See page 33 for wet coil and option/accessory air resistance data.

**MAXIMUM STATIC PRESSURE WITH GAS HEAT - 500 Pa (2.0 in. w.g.)**

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																				
		50 (0.20)			100 (0.40)			150 (0.60)			200 (0.80)			250 (1.00)			300 (1.20)			350 (1.40)		
L/s	cfm	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP
944	2000	593	0.08	0.11	636	0.05	0.07	682	0.07	0.10	731	0.16	0.22	784	0.45	0.60	840	0.72	0.96	898	0.94	1.26
1062	2250	604	0.11	0.15	645	0.08	0.11	690	0.11	0.15	739	0.29	0.39	790	0.55	0.74	846	0.81	1.08	901	1.00	1.34
1180	2500	615	0.14	0.19	655	0.11	0.15	699	0.15	0.20	747	0.41	0.55	797	0.66	0.89	851	0.90	1.20	906	1.07	1.44
1298	2750	626	0.17	0.23	666	0.14	0.19	709	0.28	0.37	755	0.53	0.71	805	0.77	1.03	858	0.98	1.32	912	1.16	1.55
1416	3000	637	0.20	0.27	677	0.18	0.24	719	0.41	0.55	764	0.65	0.87	813	0.88	1.18	866	1.08	1.45	920	1.25	1.67
1534	3250	650	0.23	0.31	688	0.32	0.43	730	0.54	0.73	775	0.78	1.04	823	1.00	1.34	875	1.19	1.60	930	1.35	1.81
1652	3500	663	0.26	0.35	700	0.47	0.63	741	0.69	0.92	786	0.91	1.22	834	1.12	1.50	886	1.31	1.76	942	1.46	1.96
1770	3750	676	0.43	0.57	714	0.63	0.84	754	0.84	1.12	798	1.05	1.41	846	1.25	1.68	899	1.44	1.93	956	1.60	2.14
1888	4000	691	0.59	0.79	728	0.78	1.05	768	0.99	1.33	812	1.20	1.61	860	1.40	1.88	914	1.58	2.12	971	1.75	2.34
2006	4250	706	0.77	1.03	743	0.95	1.28	783	1.16	1.55	827	1.36	1.82	876	1.56	2.09	931	1.74	2.33	987	1.90	2.55
2124	4500	722	0.95	1.27	759	1.13	1.52	799	1.33	1.78	844	1.53	2.05	894	1.72	2.31	949	1.91	2.56	1003	2.08	2.79
2242	4750	739	1.14	1.53	776	1.32	1.77	817	1.51	2.03	862	1.72	2.30	913	1.91	2.56	968	2.10	2.81	1020	2.27	3.04
2360	5000	757	1.34	1.79	794	1.52	2.04	835	1.72	2.30	882	1.91	2.56	934	2.11	2.83	988	2.30	3.08	1036	2.48	3.32

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																	
		400 (1.60)			450 (1.80)			500 (2.00)			550 (2.20)			600 (2.40)			650 (2.60)		
L/s	cfm	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP
944	2000	948	1.03	1.38	996	1.10	1.47	1045	1.17	1.57	1092	1.28	1.71	1140	1.43	1.92	1188	1.73	2.32
1062	2250	953	1.10	1.48	1002	1.17	1.57	1052	1.27	1.70	1100	1.39	1.86	1149	1.56	2.09	1197	1.81	2.42
1180	2500	959	1.18	1.58	1009	1.25	1.68	1059	1.37	1.83	1108	1.50	2.01	1158	1.69	2.26	1206	1.88	2.52
1298	2750	966	1.27	1.70	1017	1.35	1.81	1067	1.47	1.97	1117	1.62	2.17	1166	1.82	2.44	1215	2.02	2.71
1416	3000	975	1.36	1.82	1026	1.46	1.96	1076	1.59	2.13	1126	1.75	2.35	1176	1.96	2.63	1225	2.18	2.92
1534	3250	985	1.47	1.97	1036	1.58	2.12	1086	1.72	2.31	1136	1.89	2.54	1186	2.11	2.83	1235	2.33	3.13
1652	3500	997	1.60	2.14	1048	1.72	2.31	1097	1.87	2.51	1147	2.05	2.75	1196	2.27	3.04	1245	2.50	3.35
1770	3750	1010	1.73	2.32	1060	1.87	2.51	1109	2.03	2.72	1158	2.22	2.98	1207	2.44	3.27	1255	2.67	3.58
1888	4000	1023	1.89	2.53	1072	2.04	2.73	1121	2.20	2.95	1169	2.40	3.22	1218	2.62	3.51	1266	2.86	3.83
2006	4250	1037	2.06	2.76	1085	2.22	2.97	1133	2.39	3.20	1181	2.59	3.47	1229	2.80	3.76	1277	3.04	4.08
2124	4500	1052	2.24	3.00	1098	2.40	3.22	1145	2.58	3.46	1193	2.78	3.73	1241	3.01	4.03	1289	3.24	4.34
2242	4750	1066	2.44	3.27	1112	2.60	3.49	1158	2.79	3.74	1205	2.99	4.01	1253	3.21	4.30	1301	3.44	4.61
2360	5000	1081	2.65	3.55	1125	2.82	3.78	1171	3.00	4.02	1218	3.20	4.29	1265	3.42	4.59	1312	3.65	4.89





## BLOWER DATA

### FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

Nominal		Maximum		Drive Kit Number	Rev/Min Range	
kW	hp	kW	hp		CAV	MSAV
1.5	2	1.7	2.3	1	490 - 740	590-890
1.5	2	1.7	2.3	2	665 - 920	800-1105
1.5	2	1.7	2.3	3	660 - 995	795-1195
2.2	3	2.6	3.45	7	610 - 810	730-970
2.2	3	2.6	3.45	8	780 - 1000	940-1200
2.2	3	2.6	3.45	9	845 - 1085	1015-1300
3.7	5	4.3	5.75	10	750 - 945	900-1135
3.7	5	4.3	5.75	11	865 - 1095	1040-1315
3.7	5	4.3	5.75	12	940 - 1190	1125-1425

NOTE - Using total air volume and system static pressure requirements determine from blower performance tables rev/min and motor output required. Maximum usable output of motors furnished are shown. 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.

### POWER EXHAUST FAN PERFORMANCE

Return Air System Static Pressure		Air Volume Exhausted	
Pa	in. w.g.	L/s	cfm
0	0	1498	3175
12	0.05	1394	2955
25	0.10	1267	2685
37	0.15	1137	2410
50	0.20	1022	2165
62	0.25	906	1920
75	0.30	670	1420
87	0.35	566	1200

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

Air Volume cfm	Wet Indoor Coil		Gas Heat Exchanger			Economizer	Filters		Return Air Adaptor Plate
	092, 102	120, 150	Standard Heat	Medium Heat	High Heat		MERV 8	MERV 13	
1750	0.04	0.04	0.06	0.02	0.02	0.05	0.01	0.03	0.00
2000	0.05	0.05	0.07	0.05	0.06	0.06	0.01	0.03	0.00
2250	0.06	0.06	0.07	0.07	0.08	0.08	0.01	0.04	0.00
2500	0.07	0.07	0.09	0.10	0.11	0.11	0.01	0.05	0.00
2750	0.08	0.08	0.09	0.11	0.12	0.12	0.02	0.05	0.00
3000	0.10	0.09	0.11	0.12	0.13	0.13	0.02	0.06	0.02
3250	0.11	0.10	0.12	0.15	0.16	0.15	0.02	0.06	0.02
3500	0.12	0.11	0.12	0.16	0.17	0.15	0.03	0.07	0.04
3750	0.14	0.13	0.14	0.19	0.20	0.15	0.03	0.08	0.07
4000	0.15	0.14	0.14	0.21	0.22	0.19	0.04	0.08	0.09
4250	0.17	0.15	0.14	0.24	0.28	0.19	0.04	0.09	0.11
4500	0.19	0.17	0.15	0.26	0.32	0.22	0.04	0.09	0.12
4750	0.20	0.18	0.16	0.29	0.37	0.25	0.05	0.10	0.16
5000	0.22	0.20	0.16	0.34	0.43	0.29	0.06	0.10	0.18
5250	0.24	0.22	0.16	0.37	0.47	0.32	0.06	0.11	0.19
5500	0.25	0.23	0.18	0.44	0.54	0.34	0.07	0.12	0.22
5750	0.27	0.25	0.19	0.49	0.59	0.45	0.07	0.12	0.25
6000	0.29	0.27	0.20	0.54	0.64	0.52	0.08	0.13	0.27

## OUTDOOR SOUND DATA

Unit Model Number	Octave Band Sound Power Levels dBA, re 10 <sup>-12</sup> Watts - Center Frequency - Hz							1 Sound Rating Number (dBA)
	125	250	500	1000	2000	4000	8000	
092, 102 and 120	76	79	84	83	79	73	66	88
150	75	81	87	85	80	73	67	90

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

<sup>1</sup> Sound Rating Number according to AHRI Standard 270-95 or AHRI Standard 370-2001 (includes pure tone penalty). Sound Rating Number is the overall A-Weighted Sound Power Level, (LWA), dBA (100 Hz to 10,000 Hz).

## BLOWER DATA

### CEILING DIFFUSERS AIR RESISTANCE

Unit Size	RTD11 Step-Down Diffuser								FD11 Flush Diffuser	
	Air Volume		2 Ends Open		1 Side, 2 Ends Open		All Ends & Sides Open			
	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.
092 Models	1133	2400	52	0.21	45	0.18	37	0.15	35	0.14
	1227	2600	60	0.24	52	0.21	45	0.18	42	0.17
	1321	2800	67	0.27	60	0.24	52	0.21	50	0.20
	1416	3000	80	0.32	72	0.29	62	0.25	62	0.25
	1510	3200	102	0.41	92	0.37	80	0.32	77	0.31
	1604	3400	124	0.50	112	0.45	97	0.39	92	0.37
	1699	3600	152	0.61	134	0.54	119	0.48	109	0.44
102 & 120 Models	1793	3800	182	0.73	157	0.63	142	0.57	127	0.51
	1699	3600	90	0.36	70	0.28	57	0.23	37	0.15
	1793	3800	99	0.40	80	0.32	65	0.26	45	0.18
	1888	4000	109	0.44	90	0.36	72	0.29	52	0.21
	1982	4200	122	0.49	99	0.40	82	0.33	60	0.24
	2076	4400	134	0.54	109	0.44	92	0.37	67	0.27
	2171	4600	149	0.60	122	0.49	104	0.42	77	0.31
	2265	4800	162	0.65	132	0.53	114	0.46	87	0.35
150 Models	2360	5000	172	0.69	144	0.58	124	0.50	97	0.39
	2454	5200	186	0.75	154	0.62	134	0.54	107	0.43
	1982	4200	55	0.22	47	0.19	40	0.16	25	0.10
	2076	4400	70	0.28	60	0.24	50	0.20	30	0.12
	2171	4600	85	0.34	72	0.29	60	0.24	37	0.15
	2265	4800	99	0.40	85	0.34	72	0.29	47	0.19
	2360	5000	114	0.46	97	0.39	85	0.34	57	0.23
	2454	5200	129	0.52	109	0.44	97	0.39	67	0.27
	2548	5400	144	0.58	122	0.49	107	0.43	77	0.31
2643	5600	159	0.64	134	0.54	117	0.47	87	0.35	
2737	5800	174	0.70	147	0.59	127	0.51	97	0.39	

### CEILING DIFFUSER AIR THROW DATA

Model No.	Air Volume		<sup>1</sup> Effective Throw Range			
			RTD11 Step-Down		FD11 Flush	
	L/s	cfm	m	ft.	m	ft.
092 Models	1227	2600	7 - 9	24 - 29	6 - 7	19 - 24
	1321	2800	8 - 9	25 - 30	6 - 9	20 - 28
	1416	3000	8 - 10	27 - 33	6 - 9	21 - 29
	1510	3200	9 - 11	28 - 35	7 - 9	22 - 29
	1604	3400	9 - 11	30 - 37	7 - 9	22 - 30
102, 120 Models	1699	3600	8 - 10	25 - 33	7 - 9	22 - 29
	1793	3800	8 - 11	27 - 35	7 - 9	22 - 30
	1888	4000	9 - 11	29 - 37	7 - 10	24 - 33
	1982	4200	10 - 12	32 - 40	8 - 11	26 - 35
	2076	4400	10 - 13	34 - 42	9 - 11	28 - 37
150 Models	2643	5600	12 - 15	39 - 49	9 - 11	28 - 37
	2737	5800	13 - 16	42 - 51	9 - 12	29 - 38
	2831	6000	13 - 17	44 - 54	12 - 15	40 - 50
	2926	6200	14 - 17	45 - 55	13 - 16	42 - 51
	3020	6400	14 - 17	46 - 55	13 - 16	43 - 52
3115	6600	14 - 17	47 - 56	14 - 17	45 - 56	

<sup>1</sup> Throw is the horizontal or vertical distance an air stream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 15 m (50 ft.) per minute. Four sides open.

## ELECTRICAL DATA

Model No.		KGB092S4			KGA092H4			KGB102S4			KGA102H4		
<sup>1</sup> Voltage - 50hz 3 Phase with neutral		380/420V			380/420V			380/420V			380/420V		
Compressor 1	Rated Load Amps	6.1			6.1			6			6.1		
	Locked Rotor Amps	41			41			51			43		
Compressor 2	Rated Load Amps	6.1			6.1			6			6.1		
	Locked Rotor Amps	41			41			51			43		
Outdoor Fan Motors (2)	Full Load Amps	1.3			1.3			1.3			1.3		
	(total)	(2.6)			(2.6)			(2.6)			(2.6)		
Power Exhaust (1) 0.25 kW (0.33 HP)	Full Load Amps	1.3			1.3			1.3			1.3		
Indoor Blower Motor	kW	1.5	2.2	3.7	1.5	2.2	3.7	1.5	2.2	3.7	1.5	2.2	3.7
	Full Load Amps	3.6	5.3	8.2	3.6	5.3	8.2	3.6	5.3	8.2	3.6	5.3	8.2
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	25	25	30	25	25	30	25	25	30	25	25	30
	With 0.25 kW (0.33 HP) Power Exhaust	25	25	30	25	25	30	25	25	30	25	25	30
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	20	22	26	20	22	26	20	22	25	20	22	26
	With 0.25 kW (0.33 HP) Power Exhaust	22	23	27	22	23	27	22	23	27	22	23	27

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

<sup>2</sup> Heating / Air Conditioning / Refrigeration (HACR) type breaker or fuse.

<sup>3</sup> Refer to local codes to determine wire, fuse and disconnect size requirements.

## ELECTRICAL DATA

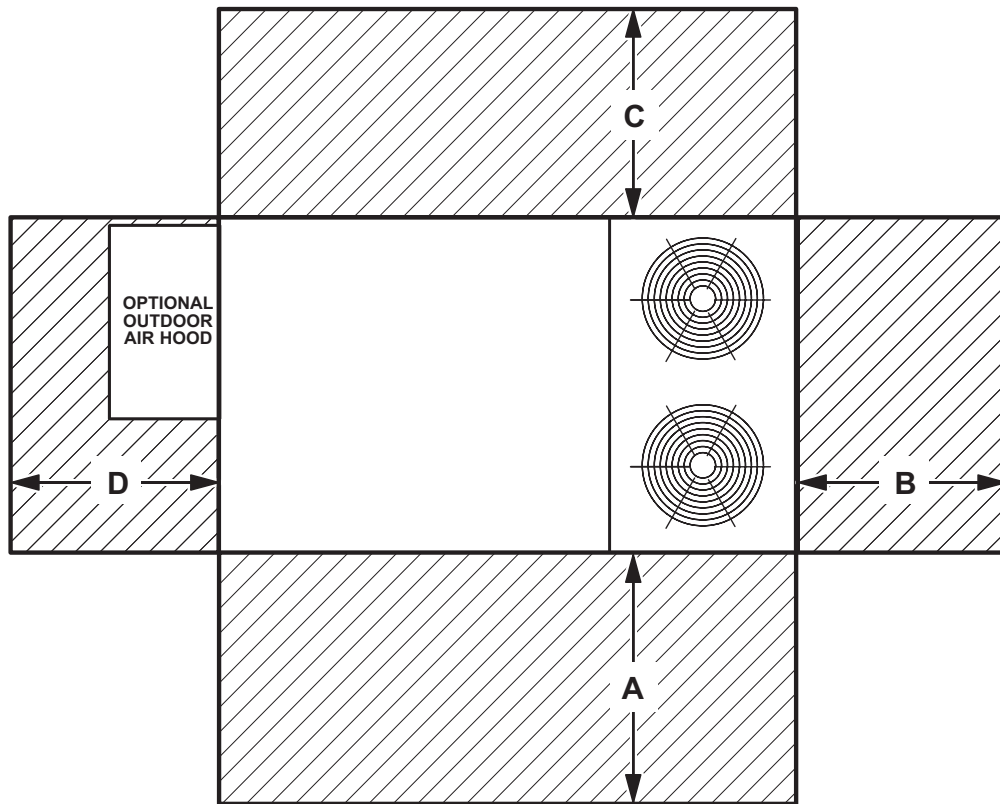
Model No.		KGB120S4			KGB150S4		
<sup>1</sup> Voltage - 50hz 3 Phase with neutral		380/420V			380/420V		
Compressor 1	Rated Load Amps	8			8		
	Locked Rotor Amps	59			67		
Compressor 2	Rated Load Amps	8			10.6		
	Locked Rotor Amps	59			74		
Outdoor Fan Motors (2)	Full Load Amps	1.3			1.5		
	(total)	(2.6)			(3.0)		
Power Exhaust (1) 0.25 kW (0.33 HP)	Full Load Amps	1.3			1.3		
Indoor Blower Motor	kW	1.5	2.2	3.7	1.5	2.2	3.7
	Full Load Amps	3.6	5.3	8.2	3.6	5.3	8.2
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	30	30	35	35	40	40
	With 0.25 kW (0.33 HP) Power Exhaust	30	35	35	35	40	40
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	25	26	29	28	30	33
	With 0.25 kW (0.33 HP) Power Exhaust	26	28	31	30	31	34

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

<sup>2</sup> Heating / Air Conditioning / Refrigeration (HACR) type breaker or fuse.

<sup>3</sup> Refer to local codes to determine wire, fuse and disconnect size requirements.

## UNIT CLEARANCES



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

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 for clearance to combustible material.

Minimum Operation Clearance - Required clearance for proper unit operation.

WEIGHT DATA										UNIT
Model Number	Outdoor Coil	Net		Shipping		Outdoor Coil	Net		Shipping	
		kg	lbs.	kg	lbs.		kg	lbs.	kg	lbs.
092H Base Unit	Environ™	499	1100	538	1185	---	---	---	---	---
092H Max. Unit	Environ™	567	1251	606	1336	---	---	---	---	---
102H Base Unit	Environ™	502	1107	541	1192	---	---	---	---	---
102H Max. Unit	Environ™	571	1258	609	1343	---	---	---	---	---
092S Base Unit	Environ™	416	918	455	1003	Fin/Tube	442	975	480	1060
092S Max. Unit	Environ™	485	1069	523	1154	Fin/Tube	510	1126	549	1211
102S Base Unit	Environ™	425	938	464	1023	Fin/Tube	451	995	489	1080
102S Max. Unit	Environ™	494	1089	533	1174	Fin/Tube	519	1146	558	1231
120S Base Unit	Environ™	454	1002	493	1087	Fin/Tube	486	1073	525	1158
120S Max. Unit	Environ™	523	1153	561	1238	Fin/Tube	555	1224	593	1309
150S Base Unit	---	---	---	---	---	Fin/Tube	513	1132	551	1217
150S Max. Unit	---	---	---	---	---	Fin/Tube	581	1282	619	1367

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.

WEIGHT DATA		OPTIONS / ACCESSORIES	
Model Number	Shipping Weight		
	kg	lbs.	
<b>ECONOMIZER / OUTDOOR AIR / EXHAUST</b>			
<b>Economizer</b>			
Economizer Dampers	27	60	
Barometric Relief Dampers (downflow)	4	8	
Barometric Relief Damper Hood (downflow)	11	25	
Outdoor Air Hood (downflow)	10	23	
<b>Outdoor Air Dampers</b>			
Outdoor Air Damper Section (downflow) - Automatic	23	51	
Outdoor Air Damper Section (downflow) - Manual	18	39	
<b>Power Exhaust</b>	14	31	
<b>GAS HEAT EXCHANGER (NET WEIGHT)</b>			
Medium Heat (add over standard heat)	4	9	
High Heat (add over standard heat)	15	32	
<b>MSAV (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER OPTION</b>			
Variable Frequency Drive (VFD) and associated components	5	10	
<b>ROOF CURBS</b>			
<b>Hybrid Roof Curbs, Downflow</b>			
203 mm height	27	60	
356 mm height	39	85	
457 mm height	45	100	
610 mm height	57	125	
<b>Adjustable Pitch Curb</b>			
356 mm height	82	191	
<b>CEILING DIFFUSERS</b>			
<b>Step-Down</b>			
	RTD11-95S	54	118
	RTD11-135S	61	135
	RTD11-185S	76	168
<b>Flush</b>			
	FD11-95S	54	118
	FD11-135S	61	135
	FD11-185S	76	168
<b>Transitions</b>			
	C1DIFF30B-1	14	30
	C1DIFF31B-1	15	32
	C1DIFF32B-1	16	36
<b>PACKAGING</b>			
LTL Packaging (less than truck load)		48	105

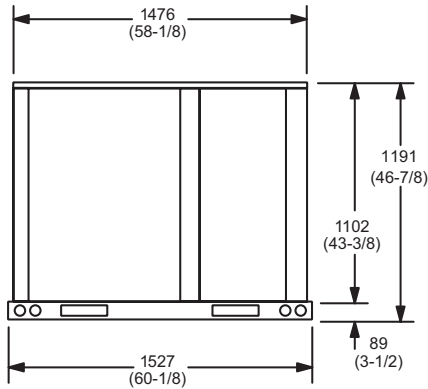
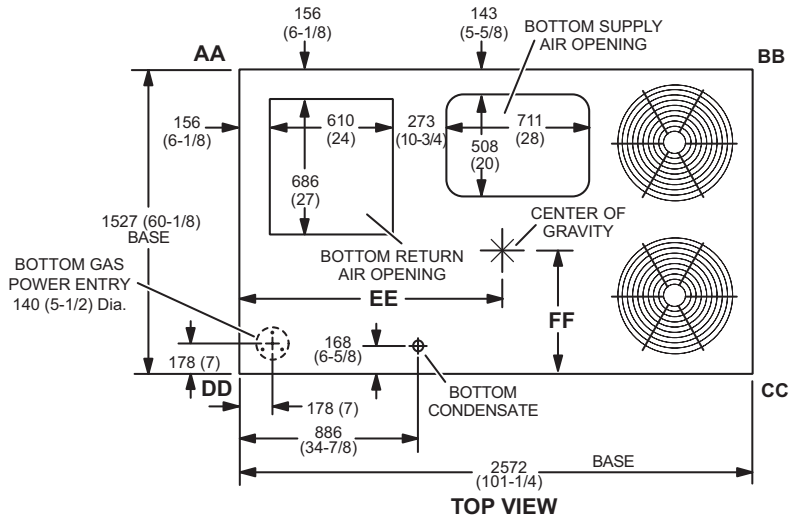
# DIMENSIONS

# UNIT

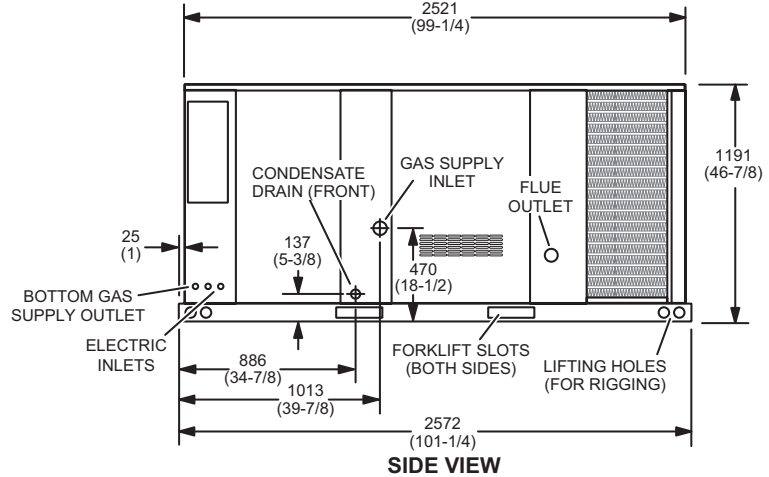
Model No.	CORNER WEIGHTS												CENTER OF GRAVITY											
	AA				BB				CC				DD				EE				FF			
	Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	mm	in.	mm	in.	mm	in.	mm	in.
092S	107	236	147	325	91	201	120	264	99	218	125	278	120	264	160	353	1130	44-1/2	1105	43-1/2	622	24-1/2	648	25-1/2
092H	128	282	149	328	109	241	123	272	118	261	131	290	143	316	164	361	1130	44-1/2	1105	43-1/2	622	24-1/2	648	25-1/2
102S	109	241	150	332	93	205	122	269	101	222	127	282	122	270	163	359	1130	44-1/2	1105	43-1/2	622	24-1/2	648	25-1/2
102H	129	284	150	330	110	242	124	273	119	263	132	291	144	318	165	363	1130	44-1/2	1105	43-1/2	622	24-1/2	648	25-1/2
120S	116	255	155	344	97	215	124	276	105	231	132	292	129	285	171	378	1118	44	1092	43	629	24-3/4	654	25-3/4
150S	125	275	146	321	105	232	119	263	115	253	128	282	142	312	162	358	1118	44	1092	43	610	24	635	25

Base Unit - The unit with NO OPTIONS.

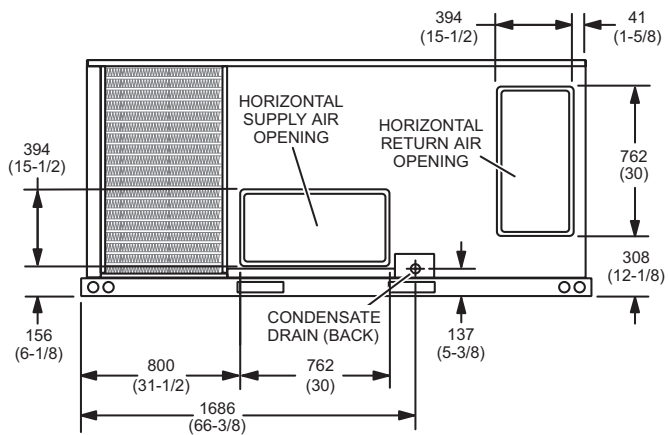
Max. Unit - The unit with ALL OPTIONS Installed. (Economizer, etc.)



END VIEW

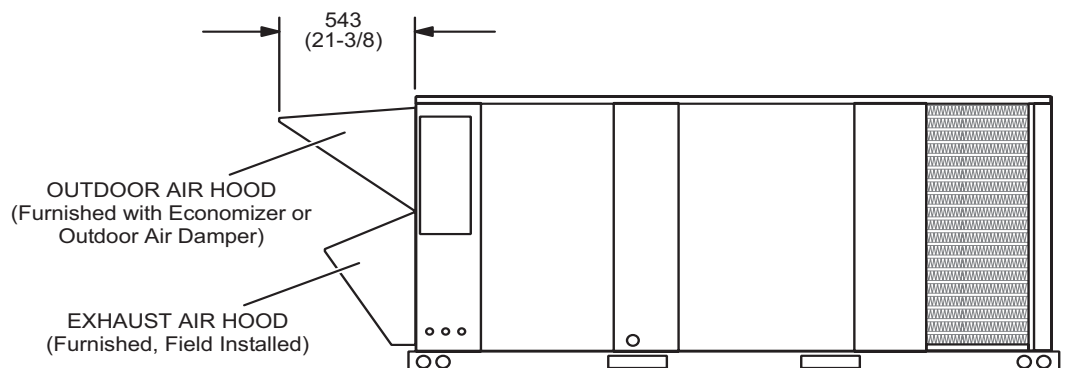


SIDE VIEW



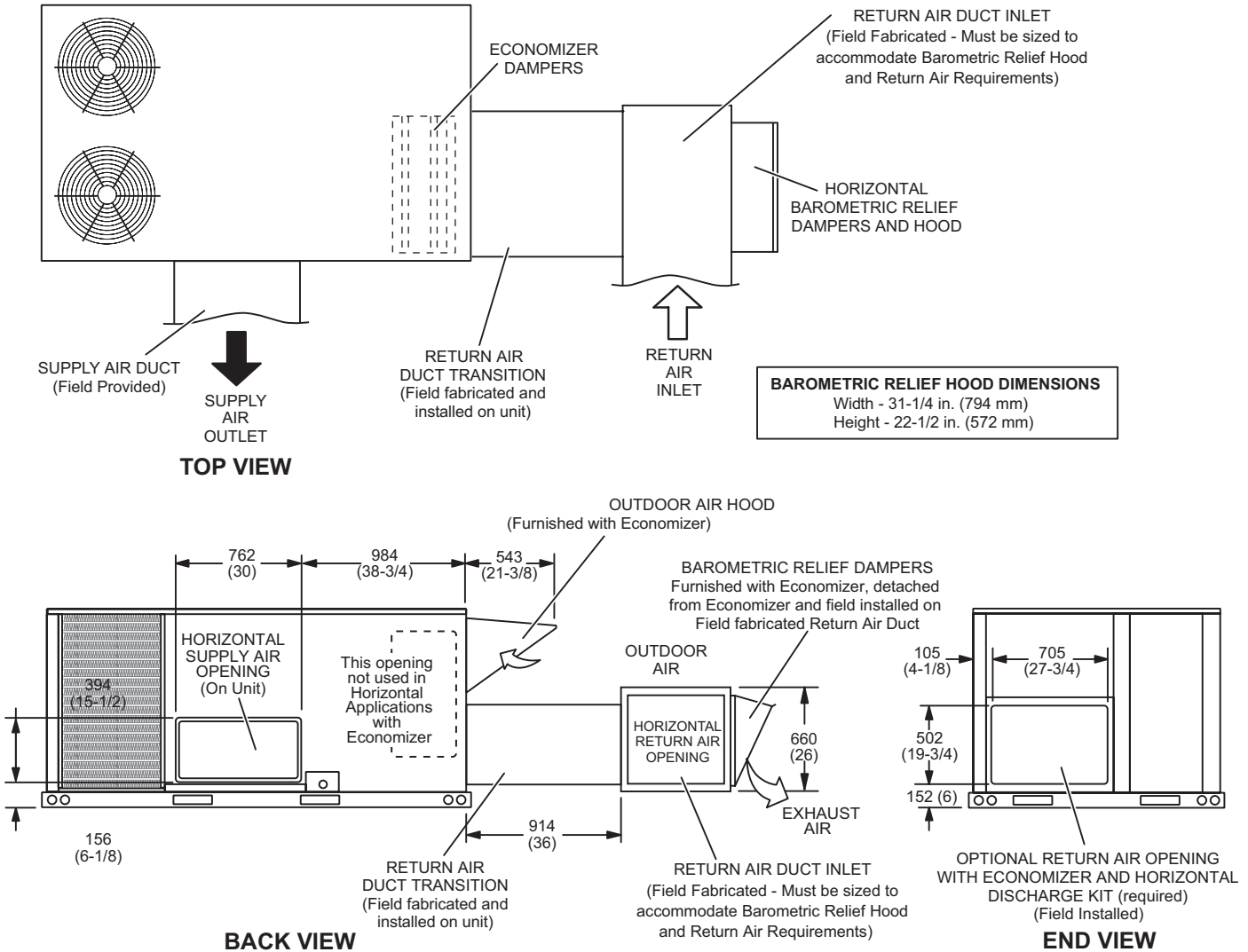
SIDE VIEW (Horizontal Openings)

OUTDOOR AIR HOOD DETAIL



**HORIZONTAL ECONOMIZER APPLICATION**

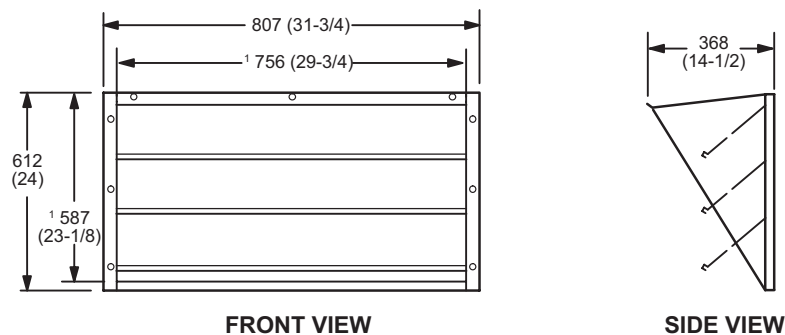
**(With Furnished Barometric Relief Dampers and Optional Horizontal Discharge Kit - Required)**



**NOTE** - Return Air Duct and Transition must be supported.

**BAROMETRIC RELIEF DAMPERS**  
**(Furnished with Economizer)**

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

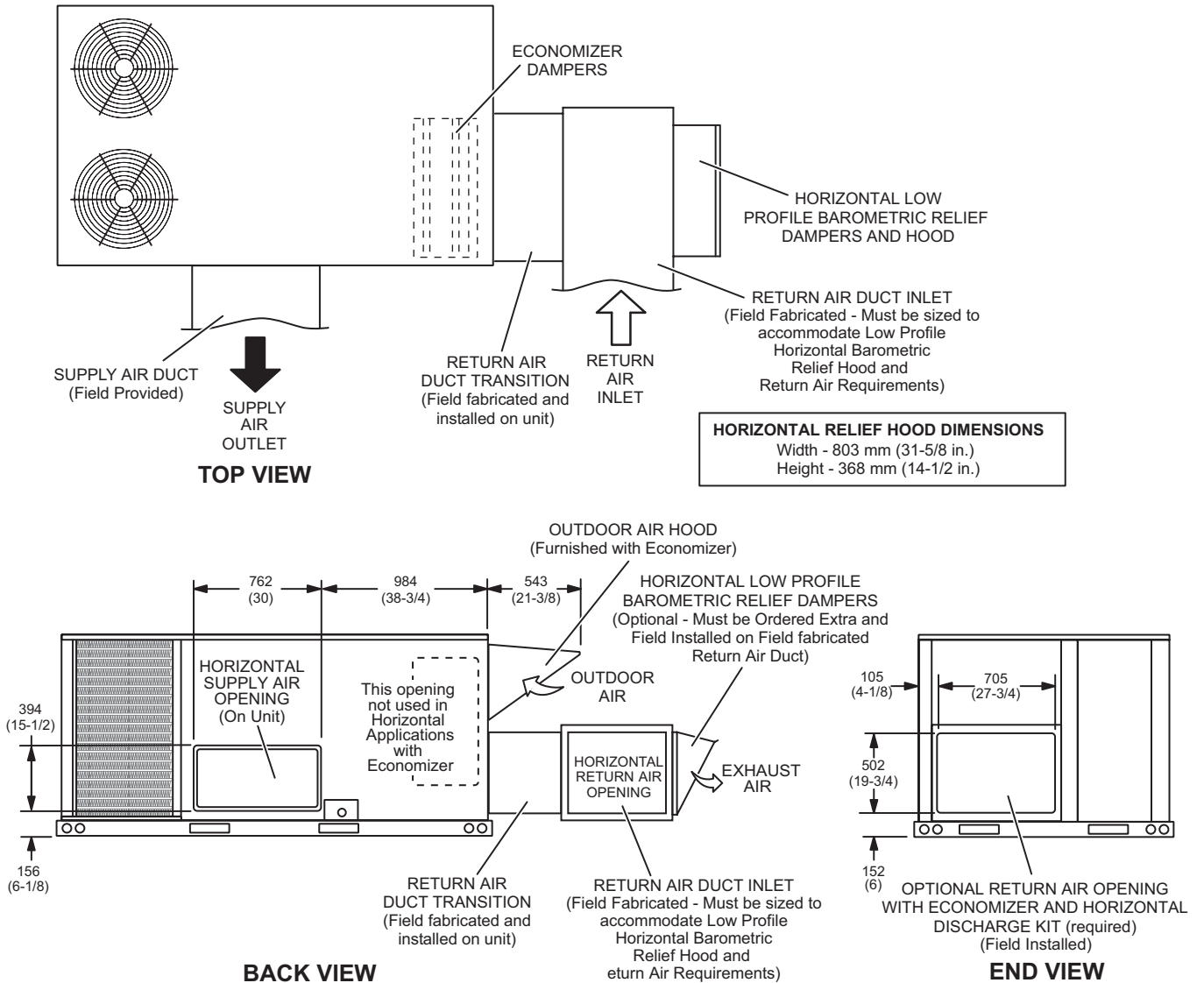


<sup>1</sup> NOTE - Opening size required in return air duct.



**HORIZONTAL ECONOMIZER APPLICATION**

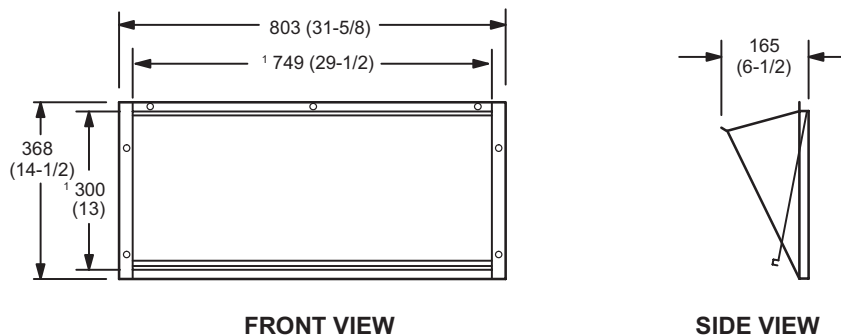
(with Optional Low Profile Horizontal Barometric Relief Dampers and Horizontal Discharge Kit - Required)



**NOTE** - Return Air Duct and Transition must be supported.

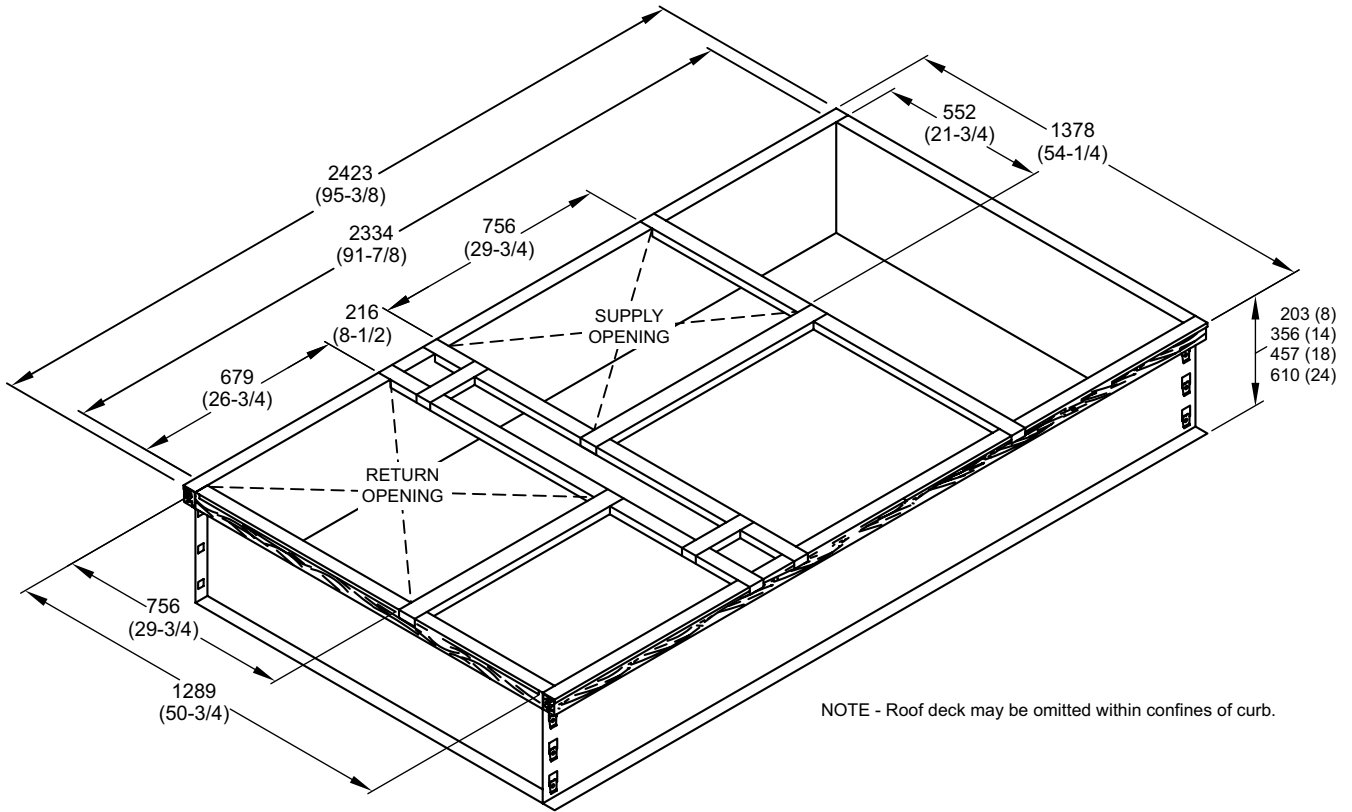
**HORIZONTAL LOW PROFILE BAROMETRIC RELIEF DAMPERS**

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



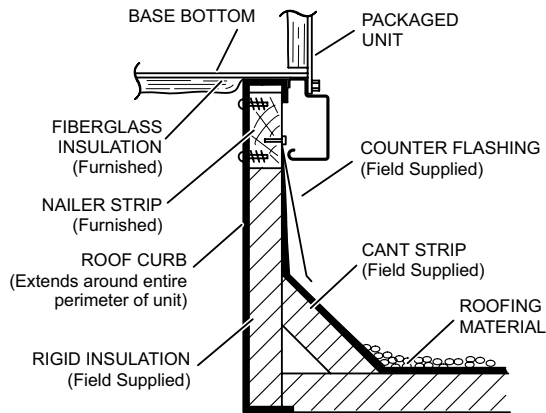
<sup>1</sup> NOTE - Opening size required in return air duct.

**HYBRID ROOF CURBS - DOUBLE DUCT OPENING**

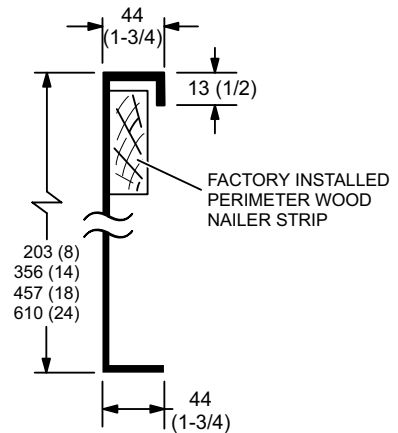


NOTE - Roof deck may be omitted within confines of curb.

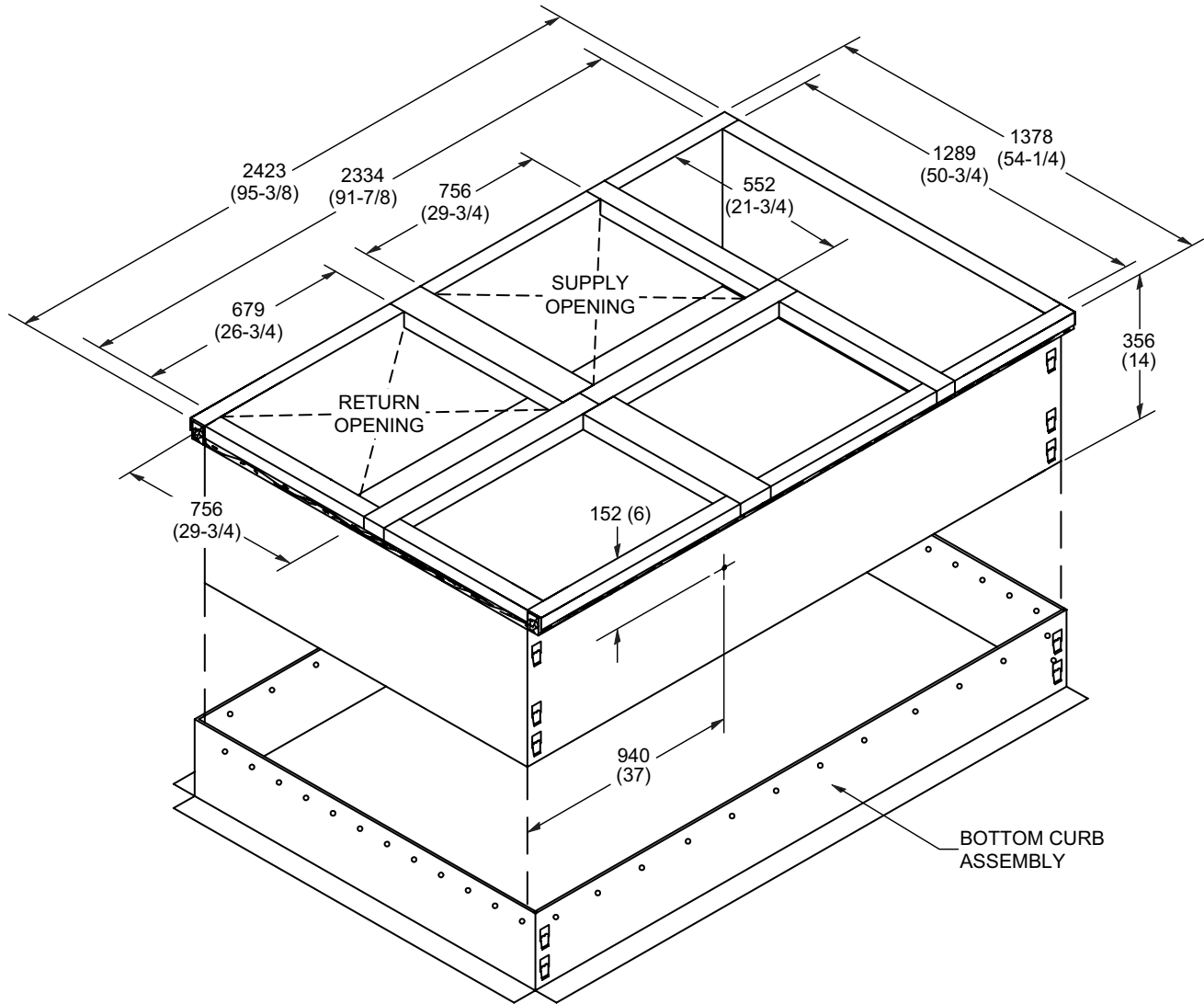
**TYPICAL FLASHING DETAIL FOR ROOF CURB**



**DETAIL ROOF CURB**

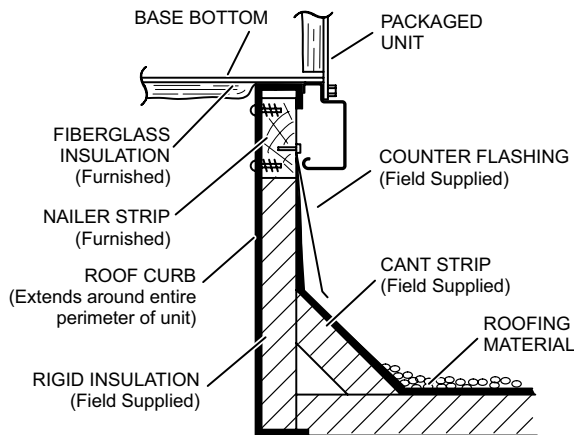


**ADJUSTABLE PITCH CURBS - DOUBLE DUCT OPENING**

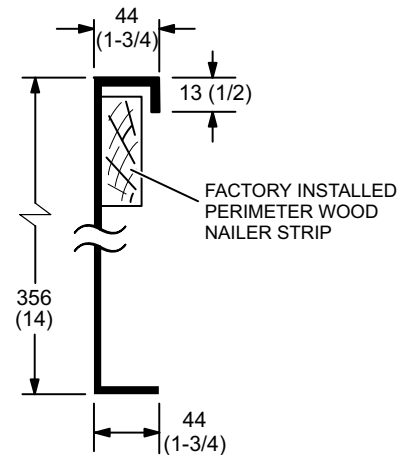


NOTE - Maximum slope pitch is 19 mm per 305 mm (3/4 in. per 1 foot) in any one direction.

**TYPICAL FLASHING DETAIL FOR ROOF CURB**

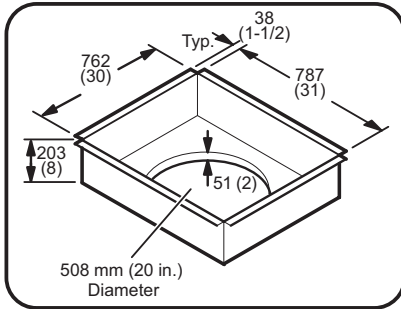


**DETAIL ROOF CURB**

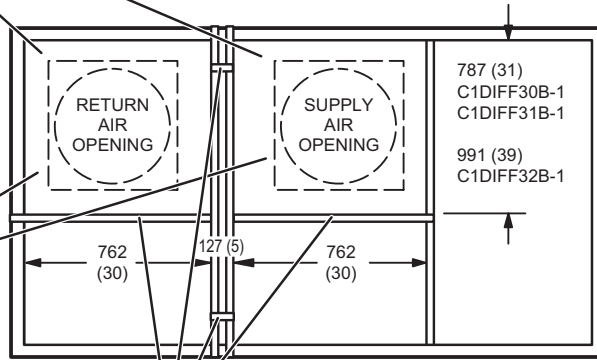
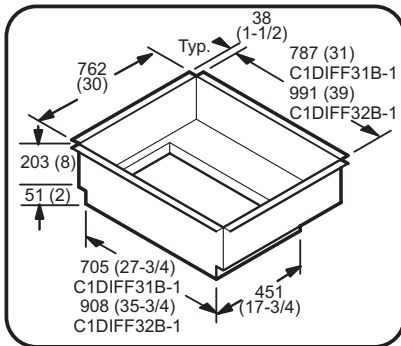


**ROOF CURBS WITH SUPPLY & RETURN AIR TRANSITIONS FOR CEILING DIFFUSERS**

**C1DIFF30B-1 ROUND TRANSITIONS**  
(for 092 models)



**C1DIFF31B-1 & C1DIFF32B-1 RECTANGULAR TRANSITIONS**  
(for 102 thru 150 models)

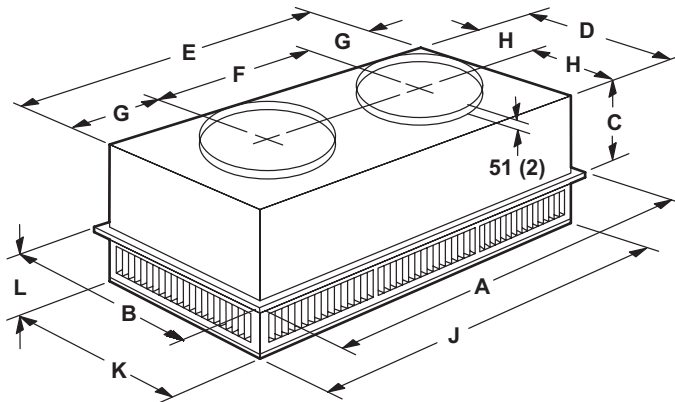


**TOP VIEW**

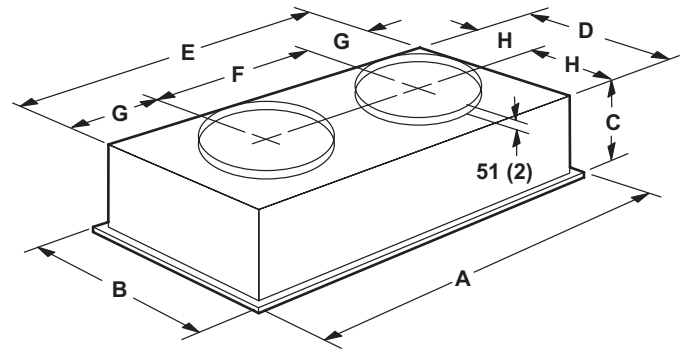
NOTE - These four supports are furnished with the transitions to replace supports furnished with curb for proper transition spacing.

**COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS**

**STEP-DOWN CEILING DIFFUSER**



**FLUSH CEILING DIFFUSER**

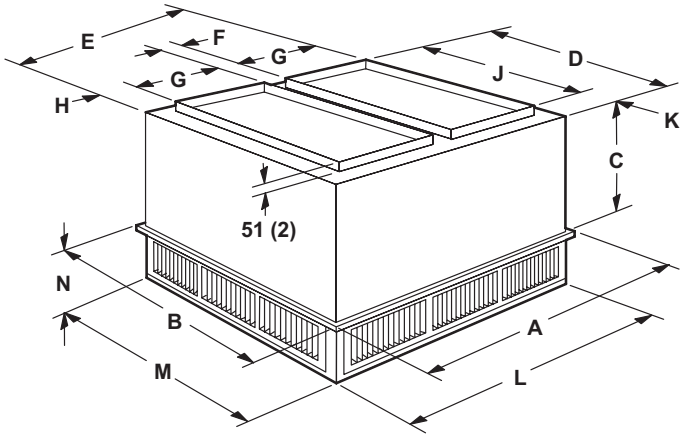


Model Number		RTD11-95S
A	mm	1159
	in.	47-5/8
B	mm	752
	in.	29-5/8
C	mm	365
	in.	14-3/8
D	mm	699
	in.	27-1/2
E	mm	1158
	in.	45-1/2
F	mm	572
	in.	22-1/2
G	mm	292
	in.	11-1/2
H	mm	349
	in.	13-3/4
J	mm	1156
	in.	45-1/2
K	mm	699
	in.	27-1/2
L	mm	206
	in.	8-1/8
Duct Size	mm	508 round
	in.	20 round

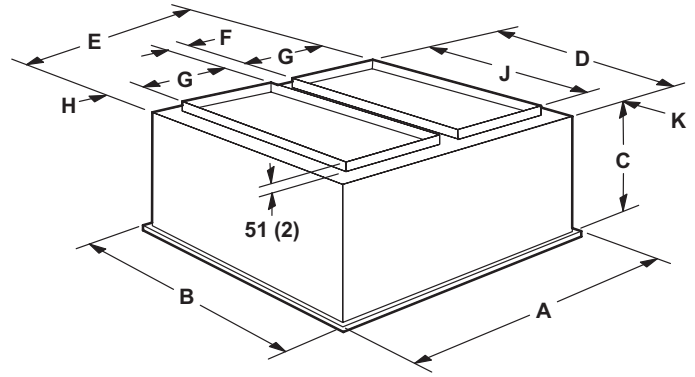
Model Number		FD11-95S
A	mm	1159
	in.	47-5/8
B	mm	752
	in.	29-5/8
C	mm	422
	in.	16-5/8
D	mm	686
	in.	27
E	mm	1143
	in.	45
F	mm	22-1/2
	in.	572
G	mm	286
	in.	11-1/4
H	mm	343
	in.	13-1/2
Duct Size	mm	508 round
	in.	20 round

**COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS**

**STEP-DOWN CEILING DIFFUSER**



**FLUSH CEILING DIFFUSER**



Model Number		RTD11-135S	RTD11-185S
A	mm	1210	1210
	in.	47-5/8	47-5/8
B	mm	905	1210
	in.	35-5/8	47-5/8
C	mm	524	625
	in.	20-5/8	24-5/8
D	mm	851	1156
	in.	33-1/2	45-1/2
E	mm	1156	1156
	in.	45-1/2	45-1/2
F	mm	114	114
	in.	4-1/2	4-1/2
G	mm	457	457
	in.	18	18
H	mm	64	64
	in.	2-1/2	2-1/2
J	mm	711	914
	in.	28	36
K	mm	70	121
	in.	2-3/4	4-3/4
L	mm	1156	1156
	in.	45-1/2	45-1/2
M	mm	851	1156
	in.	33-1/2	45-1/2
N	mm	232	257
	in.	9-1/8	10-1/8
Duct Size	mm	457 x 711	457 x 914
	in.	18 x 28	18 x 36

Model Number		FD11-135S	FD11-185S
A	mm	1210	1210
	in.	47-5/8	47-5/8
B	mm	905	1210
	in.	35-5/8	47-5/8
C	mm	591	743
	in.	23-1/4	29-1/4
D	mm	838	1143
	in.	33	45
E	mm	1143	1143
	in.	45	45
F	mm	112	112
	in.	4-1/2	4-1/2
G	mm	457	457
	in.	18	18
H	mm	57	57
	in.	2-1/4	2-1/4
J	mm	711	914
	in.	28	36
K	mm	64	114
	in.	2-1/2	4-1/2
Duct Size	mm	457 x 711	457 x 914
	in.	18 x 28	18 x 36



## REVISIONS

Sections	Description of Change
Options/Accessories	<b>Catalog numbers revised for:</b> Economizers Single Enthalpy



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