



**PRODUCT SPECIFICATIONS**

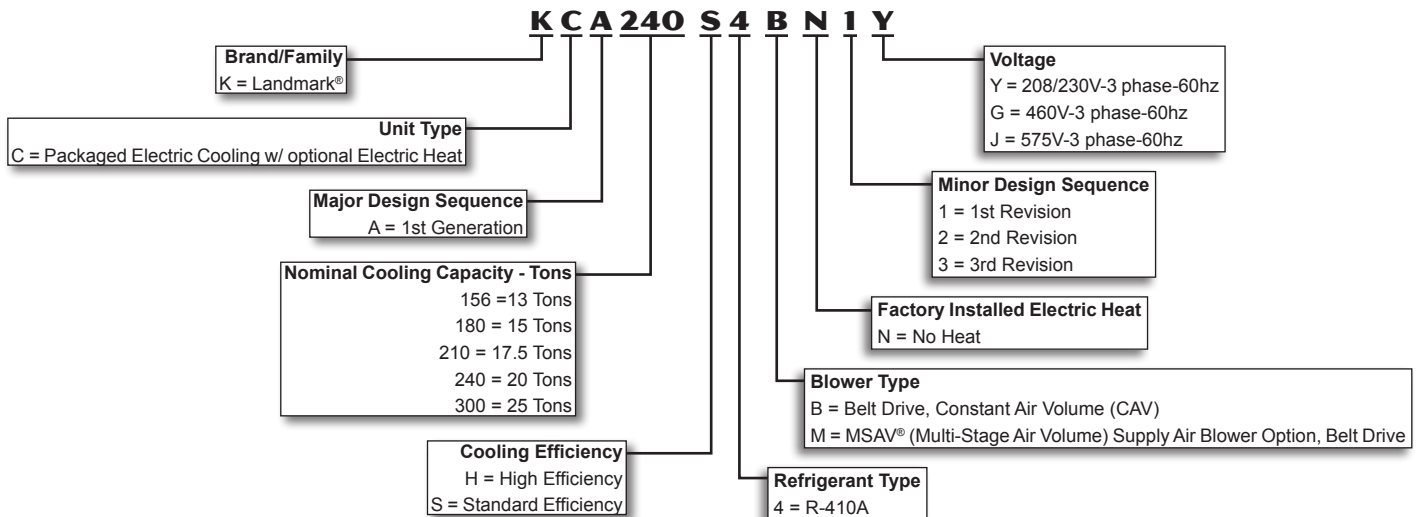
Bulletin No. 210553  
June 2017  
Supersedes May 2017



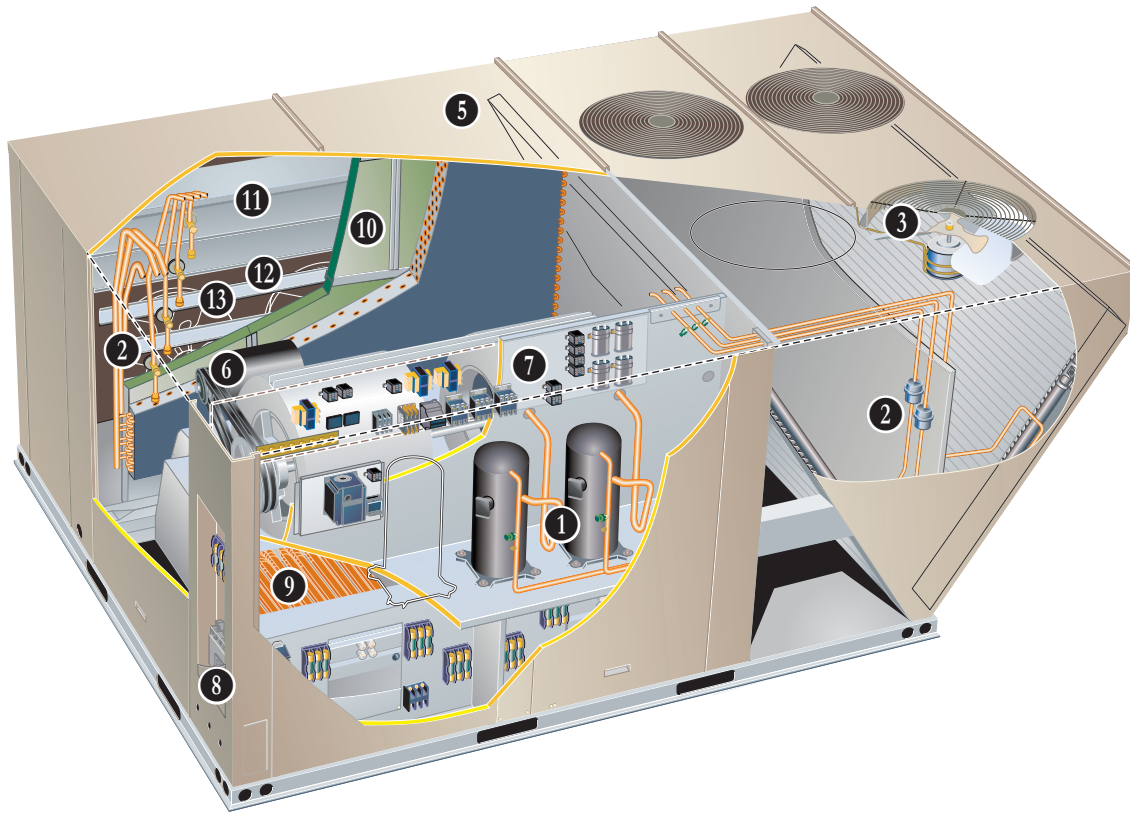
**ASHRAE 90.1  
COMPLIANT**

**13 to 25 Tons**  
**Net Cooling Capacity - 152,000 to 270,000 Btuh**  
**Optional Electric Heat - 15 to 90 kW**

**MODEL NUMBER IDENTIFICATION**



## FEATURES AND BENEFITS



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

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

## FEATURES AND BENEFITS

### CONTENTS

Blower Data . . . . .	27
Dimensions - Accessories. . . . .	45
Dimensions - Unit . . . . .	42
Electrical/Electric Heat Data . . . . .	30
Electric Heat Capacities. . . . .	39
Features And Benefits . . . . .	2
Model Number Identification . . . . .	1
Optional Conventional Temperature Control Systems . . . . .	40
Options / Accessories - High Efficiency Models Only . . . . .	12
Options / Accessories - Standard And High Efficiency Models . . . . .	9
Options / Accessories - Standard Efficiency Models Only . . . . .	12
Outdoor Sound Data . . . . .	39
Ratings . . . . .	18
Specifications - High Efficiency Models. . . . .	15
Specifications - Standard Efficiency Models . . . . .	13
Unit Clearances. . . . .	39
Weight Data. . . . .	41

### APPROVALS

ETL listed.

Efficiency rating CSA.

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

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

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

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

ISO 9001 Registered Manufacturing Quality System.

### WARRANTY

Limited five years on compressors.

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

Limited five years Optional High Performance Economizers.

Limited one year all other covered components.

### COOLING SYSTEM

Designed to maximize sensible and latent cooling performance at design conditions.

System can operate from 30°F to 125°F without any additional controls.

#### R-410A Refrigerant

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



#### 1 Scroll Compressors

Scroll compressors on all models for high performance, reliability and quiet operation.

Resiliently mounted on rubber grommets for quiet operation.

#### Compressor Crankcase Heaters

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

#### 2 Thermal Expansion Valves (High Efficiency Models)

Assures optimal performance throughout the application range.

Removable element head.

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

Accurately meters refrigerant in system.

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

#### 3 Filter/Driers

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

#### High Pressure Switches

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

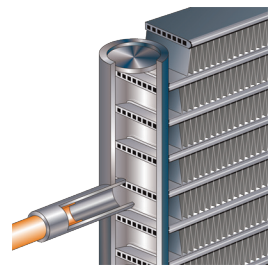
#### Freezestats

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

#### 4 Lennox' Environ™ Coil System

Condenser coil features lightweight, all aluminum brazed fin construction.

Constructed of three components:



a flat extrusion tube, fins in-between the flat extrusion tubes and two refrigerant manifolds.

Environ™ Coil System Features:

- Improved heat transfer performance due to high primary surface area (flat tubes) versus secondary surface (fins).
- Smaller internal volume (reduced refrigerant charge).
- High durability (all aluminum construction).
- Fewer brazed joints.
- Compact design (reduces unit weight).
- Easy maintenance/cleaning.

Face split design.

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

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

## FEATURES AND BENEFITS

### **COOLING SYSTEM**

#### **(continued)**

#### **Evaporator Coil**

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

#### **Condensate Drain Pan**

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

Side or bottom drain connections.

#### **5 Outdoor Coil Fan Motors**

Thermal overload protected, totally enclosed, permanently lubricated ball bearings, shaft up, wire basket mount.

#### **Outdoor Coil Fans**

PVC coated fan guard furnished.

### **Required Selections**

#### **Cooling Capacity**

Specify nominal cooling capacity of the unit.

### **Options/Accessories**

#### **Field Installed**

#### **Condensate Drain Trap**

Available in copper or PVC.

#### **Drain Pan Overflow Switch**

Monitors condensate level in drain pan, shuts down unit if drain becomes clogged.

#### **Low Ambient Control**

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

### **CABINET**

#### **6 Construction**

Heavy-gauge steel panels and full perimeter heavy-gauge galvanized steel base rail provides structural integrity for transportation, handling, and installation.

Base rails have rigging holes.

Three sides of the base rail have forklift slots.

Raised edges around duct and power entry openings in the bottom of the unit provide additional protection against water entering the building.

#### **Airflow Choice**

Units are available in downflow (vertical) or horizontal return air flow configuration.

Horizontal air flow requires Horizontal Roof Curb.

Horizontal Return Air Panel Kit is also required if converting a downflow configured unit to horizontal air flow.

#### **Power Entry**

Electrical lines can be brought through the unit base or through horizontal access knock-outs.

#### **Exterior Panels**

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

#### **Insulation**

All panels adjacent to conditioned air are fully insulated with non-hygroscopic fiberglass insulation.

Unit base is fully insulated. The insulation also serves as an air seal to the roof curb, eliminating the need to add a seal during installation.

#### **Access Panels**

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

### **Options/Accessories**

#### **Factory Installed**

#### **Corrosion Protection**

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

Indoor Corrosion Protection:

- Coated coil
- Painted blower housing
- Painted indoor base

Outdoor Corrosion Protection:

- Coated coil
- Painted outdoor base

#### **Hinged Access Panels**

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

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

#### **Field Installed**

#### **Combination Coil/Hail Guards**

Heavy gauge steel frame painted to match cabinet with expanded metal mesh to protect the outdoor coil from damage.

#### **Horizontal Return Air Panel Kit**

Required for horizontal applications with Horizontal Roof Curb, contains panel with return air opening for field replacement of existing unit panel and panel to cover bottom return air opening in unit, see dimension drawings.

## FEATURES AND BENEFITS

### 7 **BLOWER**

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

#### **Motor**

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

#### **Supply Air Blower**

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

Blower assembly slides out of unit for servicing.

#### **Required Selections**

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

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

The supply air blower has two speeds:

1. Low speed for part-load cooling operation. NOTE - Low speed is 66% of high speed.
2. High speed for full load cooling and all heat modes.

Full speed blower operation is set by adjusting the motor pulley to deliver the desired air volume.

The ventilation speed is selectable between high and low speed.

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

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

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

#### **MSAV® Sequence of Operation**

Ventilation speed is determined by the VENT SPEED switch setting on VFD control board (LO or HI).

Blower operates in low speed for mechanical cooling (Y1).

Blower operates in high speed for any other mode (free cooling, mechanical cooling Y1+Y2, and heating).

Economizer damper minimum position is fully closed in unoccupied mode.

In occupied mode, the economizer damper minimum position is determined by the setting of the two potentiometers on VFD control board.

- LO SPD MIN POS potentiometer sets the minimum position when blower is operating at low speed.
- HI SPD MIN POS potentiometer sets the minimum position when blower is operating at high speed.

#### **Ordering Information**

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

#### **Options/Accessories**

##### **Field Installed**

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

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

The VFD Manual Bypass Control is a manual bypass and is enabled by re-configuring the wiring on the unit.

### 8 **CONTROLS**

#### **Unit Control**

All control voltage is provided via a 24V (secondary) transformer with built-in circuit breaker protection.

**Heat/Cool Staging** - Capable of up to 2 heat / 2 cool staging with a third party DDC control system or thermostat.

#### **Low Voltage Terminal Block -**

Provides screw terminal connections for thermostat or controller wiring.

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

#### **Options/Accessories**

##### **Field Installed**

#### **Smoke Detector**

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

#### **Commercial Control Systems**

##### **L Connection® Network**

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

See L Connection Network Product Specifications Bulletin for details.

##### **Thermostats**

Control system and thermostat options see page 40.

Aftermarket unit controller options, see Options/Accessories table.

## FEATURES AND BENEFITS

### **ELECTRICAL**

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

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

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

#### **Electrical Plugs**

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

### **Required Selections**

#### **Voltage Choice**

Specify when ordering base unit.

### **Options/Accessories**

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

##### **9 Disconnect Switch**

Accessible from outside of unit, spring loaded weatherproof cover furnished.

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

115V ground fault circuit interrupter (GFCI) type, non-powered, field-wired.

#### **Field Installed**

##### **10 Electric Heat**

Helix wound nichrome elements, individual element limit controls, wiring harness. Unit fuse block is furnished as standard. See Options / Accessories tables for ordering information.

#### **GFI Weatherproof Cover**

Single-gang cover.

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

#### **Phase Monitor**

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

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

### **INDOOR AIR QUALITY**

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

Disposable 2 inch filters furnished as standard.

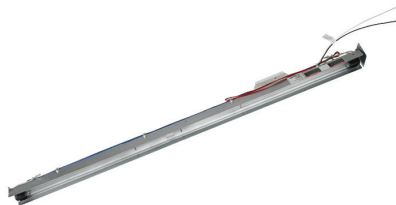
### **Options/Accessories**

#### **Field Installed**

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

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

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



Germicidal lamps emit ultra-violet (UV-C) energy, which has been proven to be effective in reducing microbes such as viruses, bacteria, yeasts, and molds. This process either destroys the organism or controls its ability to reproduce.

UV-C energy greatly reduces the growth and proliferation of mold and other bioaerosols (bacteria and viruses) on illuminated surfaces (particularly coil and drain pan).

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

All necessary hardware for installation is included.

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

Magnetic safety interlock terminates power when access panels are removed.

Approved by ETL.

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

Monitors CO<sub>2</sub> levels, reports to the Unit Controller which adjusts economizer dampers as needed.

**12 ECONOMIZER OPTIONS**

**Factory or Field Installed**

**Economizer**

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

Outdoor Air Hood with mist elimination filter is furnished. Mixed Air Sensor is furnished for field installation in the rooftop unit. Sensor is factory installed when Economizers are factory installed.

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

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

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

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



**Economizer Controls:**

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

Free Cooling runs when outdoor air temperature is lower than the set temperature on the economizer control.

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

**High Performance Economizer Features**

Approved for California Title 24 building standards.

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

ASHRAE 90.1-2010 compliant.

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

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

**High Performance Economizer Control Module**

Module provides inputs and outputs to control economizer based on parameter settings.







Module automatically detects sensors by polling to determine which sensors are installed in system.

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

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

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

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

- Select (enter)  button confirms parameter selection.

**Main Menu Structure:**

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

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

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

**Factory or Field Installed**

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

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

**Field Installed**

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

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.

### **EXHAUST OPTIONS**

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

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

Allow relief of excess air.

Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle.

Exhaust hood with bird screen is furnished.

#### **Field Installed**

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

For use when unit is configured for horizontal applications requiring an economizer.

Allows relief of excess air.

Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle.

Field installed in return air duct.

Exhaust hood with bird screen is furnished.

#### **14 Power Exhaust Fans**

Installs internal to unit for downflow applications only with economizer option. Provides exhaust air pressure relief.

Interlocked to run when supply air blower is operating, fans run when outdoor air dampers are 50% open (adjustable), motor is overload protected. Requires Economizer with Outdoor Air Hood and Downflow Barometric Relief Dampers. Dual fans are 20 in. diameter with 5 blades with (2) 1/3 hp motors.

### **OUTDOOR AIR OPTIONS**

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

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

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

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

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

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

### **ROOF CURBS**

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

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

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

Curb can also be fastened together with furnished hardware.

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

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

Fully adjustable pitch curbs (3/4 in. per foot in any direction) provide a level platform for rooftop units allowing flexible installations on roofs with uneven or sloped angles.

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

Hardware is furnished to connect upper curb with lower curb.

Available in 14 inch height.

### **Horizontal**

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

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

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

### **CEILING DIFFUSERS**

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

Diffuser face and grilles with white powder coat finish, insulated (UL listed duct liner), diffuser box with collars for duct connection, fixed blades (flush diffusers) and double deflection blades (step-down diffusers), provisions for suspending, internally sealed (prevents recirculation), removable return air grille, adapts to T-bar ceiling grids or plaster ceilings.

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

Used with diffusers, installs in roof curb, galvanized steel construction, flanges furnished for duct connection to diffusers, fully insulated.



## OPTIONS / ACCESSORIES - STANDARD AND HIGH EFFICIENCY MODELS

Item Description	Model Number	Catalog Number	Unit Model No.					
			156	180	210	240	300	
<b>COOLING SYSTEM</b>								
Condensate Drain Trap	PVC - C1TRAP20AD2	<b>76W26</b>	X	X	X	X	X	
	Copper - C1TRAP10AD2	<b>76W27</b>	X	X	X	X	X	
Corrosion Protection		Factory	O	O	O	O	O	
Drain Pan Overflow Switch	C1SNSR71FF1-	<b>10C24</b>	X	X	X	X	X	
Efficiency	Standard or High	Factory	O	O	O	O	O	
Refrigerant Type		R-410A	O	O	O	O	O	
<b>BLOWER - SUPPLY AIR</b>								
Blower Option	CAV (Constant Air Volume)	Factory	O	O	O	O	O	
	MSAV® (Multi-Stage Air Volume)	Factory	O	O	O	O	O	
Motors - Constant Air Volume (CAV)	Belt Drive (standard efficiency) - 2 hp	Factory	O					
	Belt Drive (standard efficiency) - 3 hp	Factory	O	O	O			
	Belt Drive (standard efficiency) - 5 hp	Factory	O	O	O	O	O	
	Belt Drive (standard efficiency) - 7.5 hp	Factory		O	O	O	O	
	Belt Drive (standard efficiency) - 10 hp	Factory				O	O	
Motors - MSAV® (Multi-Stage Air Volume)	Belt Drive (standard efficiency) - 2 hp	Factory	O					
	Belt Drive (standard efficiency) - 3 hp	Factory	O	O	O			
	Belt Drive (standard efficiency) - 5 hp	Factory	O	O	O	O	O	
	Belt Drive (standard efficiency) - 7.5 hp	Factory		O	O	O	O	
	Belt Drive (standard efficiency) - 10 hp	Factory				O	O	
VFD Manual Bypass Kit (for MSAV® equipped units)	2, 3, 5 hp (208/230V)	KVFDB11C-1	<b>90W52</b>	X	X	X	X	X
	2, 3, 5, 7.5, 10 hp (460V and 575V)							
	7.5, 10 hp (208/230V)	KVFDB10C-1	<b>90W51</b>		X	X	X	X
Drive Kits See Blower Data Tables for usage and selection	Kit #1 535-725 rpm	Factory	O	O	O			
	Kit #2 710-965 rpm	Factory	O	O	O			
	Kit #3 685-856 rpm	Factory	O	O	O	O	O	
	Kit #4 850-1045 rpm	Factory	O	O	O	O	O	
	Kit #5 945-1185 rpm	Factory	O	O	O	O	O	
	Kit #6 850-1045 rpm	Factory		O	O	O	O	
	Kit #7 945-1185 rpm	Factory		O	O	O	O	
	Kit #8 1045-1285 rpm	Factory		O	O	O	O	
	Kit #10 1045-1285 rpm	Factory				O	O	
	Kit #11 1135-1365 rpm	Factory				O	O	
	<b>CABINET</b>							
Hinged Access Panels		Factory	O	O	O	O	O	
<b>CONTROLS</b>								
Commercial Controls	L Connection® Building Automation System	- - -	X	X	X	X	X	
BACnet®	K0CTRL31C-1	<b>96W16</b>	OX	OX	OX	OX	OX	
BACnet® Thermostat with Display	K0SNSR01FF1	<b>97W23</b>	X	X	X	X	X	
BACnet® Thermostat without Display	K0SNSR00FF1	<b>97W24</b>	X	X	X	X	X	
Novar® 2051	K0CTRL30C-1	<b>96W13</b>	OX	OX	OX	OX	OX	
Plenum Cable (75 ft.)	K0MISC00FF1	<b>97W25</b>	X	X	X	X	X	
Smoke Detector - Supply or Return (Power board and one sensor)	C1SNSR44C-1	<b>83W40</b>	X	X	X	X	X	
Smoke Detector - Supply and Return (Power board and two sensors)	C1SNSR43C-1	<b>83W41</b>	X	X	X	X	X	

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 - STANDARD AND HIGH EFFICIENCY MODELS**

Item Description	Model Number	Catalog Number	Unit Model No.				
			156	180	210	240	300
<b>ELECTRICAL</b>							
Voltage 60 hz	208/230V - 3 phase	Factory	O	O	O	O	O
	460V - 3 phase	Factory	O	O	O	O	O
	575V - 3 phase	Factory	O	O	O	O	O
Disconnect Switch (see Electric Heat Tables for usage)	80 amp - C1DISC080C-1	<b>54W85</b>	OX	OX	OX	OX	OX
	150 amp - C1DISC150C-1	<b>54W86</b>	OX	OX	OX	OX	OX
	250 amp - C1DISC250C-1	<b>54W87</b>	OX	OX	OX	OX	OX
GFI Service Outlets	15 amp non-powered, field-wired (208/230V, 460V only) LTAGFIK10/15	<b>74M70</b>	X	OX	OX	OX	OX
	20 amp non-powered, field-wired (575V only) C1GFCI20FF1	<b>67E01</b>	X	X	X	X	X
Weatherproof Cover for GFI	C1GFCI99FF1	<b>10C89</b>	X	X	X	X	X
<sup>1</sup> Phase Monitor	C1PHZM01FF1-	<b>10C25</b>	X	X	X	X	X
<b><sup>2</sup> ELECTRIC HEAT</b>							
15 kW	208/230V-3ph - C1EH0150C-1Y	<b>53W84</b>	OX	OX	OX	OX	OX
	460V-3ph - C1EH0150C-1G	<b>53W86</b>	OX	OX	OX	OX	OX
	575V-3ph - C1EH0150C-1J	<b>53W87</b>	OX	OX	OX	OX	OX
30 kW	208/230V-3ph - C1EH0300C11Y	<b>53W88</b>	OX				
	460V-3ph - C1EH0300C11G	<b>53W90</b>	OX				
	575V-3ph - C1EH0300C11J	<b>53W91</b>	OX				
	208/230V-3ph - C1EH0300C21Y	<b>53W92</b>		OX	OX	OX	OX
	460V-3ph - C1EH0300C21G	<b>53W94</b>		OX	OX	OX	OX
	575V-3ph - C1EH0300C21J	<b>53W95</b>		OX	OX	OX	OX
45 kW	208/230V-3ph - C1EH0450C11Y	<b>53W96</b>	OX				
	460V-3ph - C1EH0450C11G	<b>53W98</b>	OX				
	575V-3ph - C1EH0450C11J	<b>53W99</b>	OX				
	208/230V-3ph - C1EH0450C21Y	<b>54W00</b>		OX	OX	OX	OX
	460V-3ph - C1EH0450C21G	<b>54W02</b>		OX	OX	OX	OX
	575V-3ph - C1EH0450C21J	<b>54W03</b>		OX	OX	OX	OX
60 kW	208/230V-3ph - C1EH0600C11Y	<b>54W04</b>	OX				
	460V-3ph - C1EH0600C11G	<b>54W06</b>	OX				
	575V-3ph - C1EH0600C11J	<b>54W07</b>	OX				
	208/230V-3ph - C1EH0600C21Y	<b>54W08</b>		OX	OX	OX	OX
	460V-3ph - C1EH0600C21G	<b>54W10</b>		OX	OX	OX	OX
	575V-3ph - C1EH0600C21J	<b>54W11</b>		OX	OX	OX	OX
90 kW	208/230V-3ph - C1EH0900C-1Y	<b>54W12</b>			OX	OX	OX
	460V-3ph - C1EH0900C-1G	<b>54W14</b>			OX	OX	OX
	575V-3ph - C1EH0900C-1J	<b>54W15</b>			OX	OX	OX

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

<sup>2</sup> NOTE - Factory installed electric heat is only available with high efficiency models.

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 - STANDARD AND HIGH EFFICIENCY MODELS

Item Description	Model Number	Catalog Number	Unit Model No.				
			156	180	210	240	300
<b>INDOOR AIR QUALITY</b>							
<b>Air Filters</b>							
Healthy Climate® High Efficiency Air Filters 24 x 24 x 2 in. (Order 6 per unit)	MERV 8 - C1FLTR15C-1-	<b>54W67</b>	X	X	X	X	X
	MERV 13 - C1FLTR40C-1-	<b>52W40</b>	X	X	X	X	X
Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media)	C1FLTR30C-1-	<b>44N61</b>	X	X	X	X	X
<b>Indoor Air Quality (CO<sub>2</sub>) Sensors</b>							
Sensor - Wall-mount, off-white plastic cover with LCD display	C0SNSR50AE1L	<b>77N39</b>	X	X	X	X	X
Sensor - Wall-mount, off-white plastic cover, no display	C0SNSR52AE1L	<b>87N53</b>	X	X	X	X	X
Sensor - Black plastic case with LCD display, rated for plenum mounting	C0SNSR51AE1L	<b>87N52</b>	X	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting	C0MISC19AE1	<b>87N54</b>	X	X	X	X	X
CO <sub>2</sub> Sensor Duct Mounting Kit - for downflow applications	C0MISC19AE1-	<b>85L43</b>	X	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO <sub>2</sub> sensors ( <b>87N53</b> or <b>77N39</b> )	C0MISC16AE1-	<b>90N43</b>	X	X	X	X	X
<b>UVC Germicidal Light Kit</b>							
<sup>1</sup> Healthy Climate® UVC Light Kit (110/230V-1ph)	C1UVCL10C-1	<b>54W65</b>	X	X	X	X	X
<b>ECONOMIZER</b>							
<b>Standard Economizer With Outdoor Air Hood (Not for Title 24)</b>							
Standard Economizer Downflow or Horizontal Applications - Includes Outdoor Air Hood, order Downflow or Horizontal Barometric Relief Dampers separately	K1ECON20C-3	<b>13U48</b>	OX	OX	OX	OX	OX
<b>Standard Economizer Controls (Not for Title 24)</b>							
Single Enthalpy Control	C1SNSR64FF1	<b>53W64</b>	OX	OX	OX	OX	OX
Differential Enthalpy Control (order 2)	C1SNSR64FF1	<b>53W64</b>	X	X	X	X	X
<b>High Performance Economizer With Outdoor Air Hood (For Title 24) / AMCA Class 1A Certified</b>							
High Performance Economizer Downflow or Horizontal Applications - Includes Outdoor Air Hood, order Downflow or Horizontal Barometric Relief Dampers separately	K1ECON22C-1	<b>10U61</b>	OX	OX	OX	OX	OX
<b>High Performance Economizer Controls (Not for Title 24)</b>							
Single Enthalpy Control	C1SNSR60FF1	<b>10Z75</b>	OX	OX	OX	OX	OX
Differential Enthalpy Control (order 2)	C1SNSR60FF1	<b>10Z75</b>	X	X	X	X	X
<b>Barometric Relief Dampers With Exhaust Hood</b>							
Downflow Barometric Relief Dampers	C1DAMP50C	<b>54W78</b>	OX	OX	OX	OX	OX
Horizontal Barometric Relief Dampers	LAGEDH18/24	<b>16K99</b>	X	X	X	X	X
<b>OUTDOOR AIR</b>							
<b>Outdoor Air Dampers With Outdoor Air Hood</b>							
Motorized	C1DAMP20C-1	<b>13U04</b>	OX	OX	OX	OX	OX
Manual	C1DAMP10C-2	<b>13U05</b>	OX	OX	OX	OX	OX
<b>POWER EXHAUST (DOWNFLOW APPLICATIONS ONLY)</b>							
Standard Static	208/230V - C1PWRE11C-1Y	<b>75W90</b>	X	X	X	X	X
	460V - C1PWRE11C-1G	<b>75W91</b>	X	X	X	X	X
	575V - C1PWRE11C-1J	<b>75W92</b>	X	X	X	X	X

<sup>1</sup> Lamps operate on 110-230V single-phase power supply. Step-down transformer must be field supplied for field installation in 460V and 575V rooftop units (transformer is furnished for factory installed light kits). Alternately, a separate 110V power supply may be used to directly power the UVC ballast(s)

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

## OPTIONS / ACCESSORIES - STANDARD AND HIGH EFFICIENCY MODELS

Item Description	Model Number	Catalog Number	Unit Model No.				
			156	180	210	240	300
<b>ROOF CURBS</b>							
<b>Hybrid Roof Curbs, Downflow</b>							
8 in. height	C1CURB70C-1	11F58	X	X	X	X	X
14 in. height	C1CURB71C-1	11F59	X	X	X	X	X
18 in. height	C1CURB72C-1	11F60	X	X	X	X	X
24 in. height	C1CURB73C-1	11F61	X	X	X	X	X
<b>Adjustable Pitch Curb</b>							
14 in. height	L1CURB55C	43W26	X	X	X	X	X
<b>Standard Roof Curbs, Horizontal - Requires Horizontal Return Air Panel Kit</b>							
26 in. height - slab applications	C1CURB14C-1	11T89	X	X	X	X	
30 in. height - slab applications	C1CURB15C-1	11T90					X
37 in. height - rooftop applications	C1CURB16C-1	11T96	X	X	X	X	
41 in. height - rooftop applications	C1CURB17C-1	11T97					X
<b>Insulation Kit For Standard Horizontal Curbs</b>							
for C1CURB14C-1	C1INSU11C-1	73K32	X	X	X	X	
for C1CURB15C-1	C1INSU12C-1	73K33					X
for C1CURB16C-1	C1INSU13C-1	73K34	X	X	X	X	
for C1CURB17C-1	C1INSU14C-1	73K35					X
<b>Horizontal Return Air Panel Kit</b>							
Required for Horizontal Applications with Roof Curb	C1HRAP10C-1	87M00	X	X	X	X	X
<b>CEILING DIFFUSERS</b>							
Step-Down - Order one	RTD11-185S	13K63	X	X			
	RTD11-275S	13K64			X	X	X
Flush - Order one	FD11-185S	13K58	X	X			
	FD11-275S	13K59			X	X	X
Transitions (Supply and Return) - Order one	C1DIFF33C-1	12X68	X	X			
	C1DIFF34C-1	12X70			X	X	X

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

## OPTIONS / ACCESSORIES - STANDARD EFFICIENCY MODELS ONLY

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

## OPTIONS / ACCESSORIES - HIGH EFFICIENCY MODELS ONLY

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

## SPECIFICATIONS - STANDARD EFFICIENCY MODELS

General Data		Nominal Tonnage	15 Ton	15 Ton	17.5 Ton	17.5 Ton
		Model Number	KCA180S4B	KCA180S4M	KCA210S4B	KCA210S4M
		Efficiency Type	Standard	Standard	Standard	Standard
		Blower Type	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		182,000	182,000	204,000	204,000
	<sup>1</sup> Net Cooling Capacity - Btuh		176,000	176,000	198,000	198,000
	AHRI Rated Air Flow - cfm		5750	5750	6125	6125
	Total Unit Power - kW		16.0	16.0	18.0	18.0
	<sup>1</sup> EER (Btuh/Watt)		11.0	11.0	11.0	11.0
	<sup>2</sup> IEER (Btuh/Watt)		11.2	12.8	12.2	13.3
	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
	Refrigerant Charge Furnished	Circuit 1 Circuit 2 Circuit 3	7 lbs. 8 oz. 7 lbs. 8 oz. ---	7 lbs. 8 oz. 7 lbs. 8 oz. ---	5 lbs. 12 oz. 5 lbs. 8 oz. 5 lbs. 8 oz.	5 lbs. 12 oz. 5 lbs. 8 oz. 5 lbs. 8 oz.
<b>Electric Heat Available, see page 10</b>			15-30-45-60 kW		15-30-45-60-90 kW	
<b>Compressor Type (number)</b>			Scroll (2)	Scroll (2)	Scroll (3)	Scroll (3)
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.		41.4	41.4	41.4	41.4
	Number of rows		1	1	1	1
	Fins per inch		23	23	23	23
<b>Outdoor Coil Fans</b>	Motor - (No.) horsepower		(3) 1/3	(3) 1/3	(3) 1/3	(3) 1/3
	Motor rpm		1075	1075	1075	1075
	Total Motor watts		1100	1100	1100	1100
	Diameter - (No.) in.		(3) 24	(3) 24	(3) 24	(3) 24
	Number of blades		3	3	3	3
	Total Air volume - cfm		12,000	12,000	12,000	12,000
<b>Indoor Coils</b>	Net face area (total) - sq. ft.		18.6	18.6	21.4	21.4
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		3	3	3	3
	Fins per inch		14	14	14	14
	Drain connection - No. and size		(1) 1 in. FPT	(1) 1 in. FPT	(1) 1 in. FPT	(1) 1 in. FPT
Expansion device type			Refrigerant Metering Orifice (RFC)			
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output		3 hp, 5 hp, 7.5 hp			
	Maximum usable motor output (US Only)		3.45 hp, 5.75 hp, 8.62 hp			
	Motor - Drive kit number		<b>3 hp</b> Kit 1 535-725 rpm Kit 2 710-965 rpm <b>5 hp</b> Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm <b>7.5 hp</b> Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm			
Blower wheel nominal diameter x width - in.			(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15
<b>Filters</b>	Type of filter		Fiberglass, disposable			
	Number and size - in.		(6) 24 x 24 x 2			
<b>Electrical characteristics</b>			208/230V, 460V or 575V - 60 hertz - 3 phase			

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

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

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

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

NOTE – Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.

## SPECIFICATIONS - STANDARD EFFICIENCY MODELS

General Data		Nominal Tonnage	20 Ton	20 Ton	25 Ton	25 Ton
		Model Number	KCA240S4B	KCA240S4M	KCA300S4B	KCA300S4M
		Efficiency Type	Standard	Standard	Standard	Standard
		Blower Type	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		238,000	238,000	282,000	282,000
	<sup>1</sup> Net Cooling Capacity - Btuh		228,000	228,000	270,000	270,000
	AHRI Rated Air Flow - cfm		7700	7700	8750	8750
	Total Unit Power - kW		20.8	20.8	26.7	26.7
	<sup>1</sup> EER (Btuh/Watt)		11.0	11.0	10.1	10.1
	<sup>2</sup> IEER (Btuh/Watt)		11.2	13.2	10.1	12.1
	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
	Refrigerant Charge Furnished	Circuit 1	7 lbs. 4 oz.	7 lbs. 4 oz.	7 lbs. 4 oz.	7 lbs. 4 oz.
	Circuit 2	7 lbs. 4 oz.	7 lbs. 4 oz.	7 lbs. 4 oz.	7 lbs. 4 oz.	
	Circuit 3	6 lbs. 14 oz.	6 lbs. 14 oz.	6 lbs. 14 oz.	6 lbs. 14 oz.	
<b>Electric Heat Available, see page 10</b>			15-30-45-60-90 kW		15-30-45-60-90 kW	
<b>Compressor Type (number)</b>			Scroll (3)	Scroll (3)	Scroll (3)	Scroll (3)
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.		55.2	55.2	55.2	55.2
	Number of rows		1	1	1	1
	Fins per inch		23	23	23	23
<b>Outdoor Coil Fans</b>	Motor - (No.) horsepower		(4) 1/3	(4) 1/3	(4) 1/3	(4) 1/3
	Motor rpm		1075	1075	1075	1075
	Total Motor watts		1500	1500	1500	1500
	Diameter - (No.) in.		(4) 24	(4) 24	(4) 24	(4) 24
	Number of blades		3	3	3	3
	Total Air volume - cfm		16,000	16,000	16,000	16,000
<b>Indoor Coils</b>	Net face area (total) - sq. ft.		21.4	21.4	21.4	21.4
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		4	4	4	4
	Fins per inch		14	14	14	14
	Drain connection - No. and size		(1) 1 in. FPT	(1) 1 in. FPT	(1) 1 in. FPT	(1) 1 in. FPT
Expansion device type			Refrigerant Metering Orifice (RFC)			
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output		5 hp, 7.5 hp, 10 hp			
	Maximum usable motor output (US Only)		5.75 hp, 8.62 hp, 11.5 hp			
	Motor - Drive kit number		<p style="text-align: center;"><b>5 hp</b>  <b>Kit 3</b> 685-856 rpm  <b>Kit 4</b> 850-1045 rpm  <b>Kit 5</b> 945-1185 rpm  <b>7.5 hp</b>  <b>Kit 6</b> 850-1045 rpm  <b>Kit 7</b> 945-1185 rpm  <b>Kit 8</b> 1045-1285 rpm  <b>10 hp</b>  <b>Kit 7</b> 945-1185 rpm  <b>Kit 10</b> 1045-1285 rpm  <b>Kit 11</b> 1135-1365 rpm</p>			
Blower wheel nominal diameter x width - in.		(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	
<b>Filters</b>	Type of filter		Fiberglass, disposable			
	Number and size - in.		(6) 24 x 24 x 2			
<b>Electrical characteristics</b>			208/230V, 460V or 575V - 60 hertz - 3 phase			

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

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

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

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

NOTE - Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.

## SPECIFICATIONS - HIGH EFFICIENCY MODELS

General Data		Nominal Tonnage	13 Ton	13 Ton	15 Ton	15 Ton
		Model Number	KCA156H4B	KCA156H4M	KCA180H4B	KCA180H4M
		Efficiency Type	High	High	High	High
		Blower Type	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		156,000	156,000	176,000	176,000
	<sup>1</sup> Net Cooling Capacity - Btuh		152,000	152,000	172,000	172,000
	AHRI Rated Air Flow - cfm		5000	5000	5250	5250
	Total Unit Power - kW		12.7	12.7	14.3	14.3
	<sup>1</sup> EER (Btuh/Watt)		12.0	12.0	12.0	12.0
	<sup>2</sup> IEER (Btuh/Watt)		13.6	14.1	13.5	13.7
	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
	Refrigerant Charge Furnished	Circuit				
	1	5 lbs. 14 oz.	5 lbs. 14 oz.	6 lbs. 0 oz.	6 lbs. 0 oz.	
	2	5 lbs. 8 oz.	5 lbs. 8 oz.	5 lbs. 10 oz.	5 lbs. 10 oz.	
	3	5 lbs. 12 oz.	5 lbs. 12 oz.	5 lbs. 14 oz.	5 lbs. 14 oz.	
<b>Electric Heat Available, see page 10</b>			15-30-45-60 kW		15-30-45-60 kW	
<b>Compressor Type (number)</b>			Scroll (3)	Scroll (3)	Scroll (3)	Scroll (3)
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.		41.4	41.4	55.2	55.2
	Number of rows		1	1	1	1
	Fins per inch		23	23	23	23
<b>Outdoor Coil Fans</b>	Motor - (No.) horsepower		(3) 1/3	(3) 1/3	(4) 1/3	(4) 1/3
	Motor rpm		1075	1075	1075	1075
	Total Motor watts		1100	1100	1500	1500
	Diameter - (No.) in.		(3) 24	(3) 24	(4) 24	(4) 24
	Number of blades		3	3	3	3
	Total Air volume - cfm		12000	12000	16,000	16,000
<b>Indoor Coils</b>	Net face area (total) - sq. ft.		21.4	21.4	21.4	21.4
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		3	3	3	3
	Fins per inch		14	14	14	14
	Drain connection - No. and size		(1) 1 in. FPT	(1) 1 in. FPT	(1) 1 in. FPT	(1) 1 in. FPT
		Expansion device type	Balanced port TXV, removable head			
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output		2 hp, 3 hp, 5 hp		3 hp, 5 hp, 7.5 hp	
	Maximum usable motor output (US Only)		2.3 hp, 3.45 hp, 5.75 hp		3.45 hp, 5.75 hp, 8.62 hp	
	Motor - Drive kit number		<b>2 hp</b> Kit 1 535-725 rpm Kit 2 710-965 rpm <b>3 hp</b> Kit 1 535-725 rpm Kit 2 710-965 rpm <b>5 hp</b> Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm		<b>3 hp</b> Kit 1 535-725 rpm Kit 2 710-965 rpm <b>5 hp</b> Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm <b>7.5 hp</b> Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm	
	Blower wheel nominal diameter x width - in.		(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15
<b>Filters</b>	Type of filter		Fiberglass, disposable			
	Number and size - in.		(6) 24 x 24 x 2			
<b>Electrical characteristics</b>			208/230V, 460V or 575V - 60 hertz - 3 phase			

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

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

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

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

NOTE - Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.

## SPECIFICATIONS - HIGH EFFICIENCY MODELS

General Data		Nominal Tonnage	17.5 Ton	17.5 Ton	20 Ton	20 Ton
		Model Number	KCA210H4B	KCA210H4M	KCA240H4B	KCA240H4M
		Efficiency Type	High	High	High	High
		Blower Type	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)	Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		204,000	204,000	238,000	238,000
	<sup>1</sup> Net Cooling Capacity - Btuh		194,000	194,000	230,000	230,000
	AHRI Rated Air Flow - cfm		6125	6125	6400	6400
	Total Unit Power - kW		16.5	16.5	19.2	19.2
	<sup>1</sup> EER (Btuh/Watt)		12.0	12.0	12.0	12.0
	<sup>2</sup> IEER (Btuh/Watt)		13.0	14.0	13.2	14.5
	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
	Refrigerant Charge Furnished	Circuit 1	6 lbs. 12 oz.	6 lbs. 12 oz.	6 lbs. 4 oz.	6 lbs. 4 oz.
	Circuit 2	6 lbs. 14 oz.	6 lbs. 14 oz.	6 lbs. 2 oz.	6 lbs. 2 oz.	
	Circuit 3	6 lbs. 14 oz.	6 lbs. 14 oz.	5 lbs. 14 oz.	5 lbs. 14 oz.	
	Circuit 4	---	---	5 lbs. 6 oz.	5 lbs. 6 oz.	
<b>Electric Heat Available, see page 10</b>			15-30-45-60-90 kW		15-30-45-60-90 kW	
<b>Compressor Type (number)</b>			Scroll (3)	Scroll (3)	Scroll (4)	Scroll (4)
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.		55.2	55.2	55.2	55.2
	Number of rows		1	1	1	1
	Fins per inch		23	23	23	23
<b>Outdoor Coil Fans</b>	Motor - (No.) horsepower		(6) 1/3	(6) 1/3	(6) 1/3	(6) 1/3
	Motor rpm		1075	1075	1075	1075
	Total Motor watts		1950	1950	1950	1950
	Diameter - (No.) in.		(6) 24	(6) 24	(6) 24	(6) 24
	Number of blades		3	3	3	3
	Total Air volume - cfm		20,000	20,000	20,000	20000
<b>Indoor Coils</b>	Net face area (total) - sq. ft.		21.4	21.4	21.4	21.4
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		4	4	4	4
	Fins per inch		14	14	14	14
	Drain connection - No. and size		(1) 1 in. FPT	(1) 1 in. FPT	(1) 1 in. FPT	(1) 1 in. FPT
Expansion device type			Balanced port TXV, removable head			
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output		3 hp, 5 hp, 7.5 hp		5 hp, 7.5 hp, 10hp	
	Maximum usable motor output (US Only)		3.45 hp, 5.75 hp, 8.62 hp		5.75 hp, 8.62 hp, 11.5 hp	
	Motor - Drive kit number		<b>3 hp</b> Kit 1 535-725 rpm Kit 2 710-965 rpm <b>5 hp</b> Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm <b>7.5 hp</b> Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm		<b>5 hp</b> Kit 3 685-856 rpm Kit 4 850-1045 rpm Kit 5 945-1185 rpm <b>7.5 hp</b> Kit 6 850-1045 rpm Kit 7 945-1185 rpm Kit 8 1045-1285 rpm <b>10 hp</b> Kit 7 945-1185 rpm Kit 10 1045-1285 rpm Kit 11 1135-1365 rpm	
	Blower wheel nominal diameter x width - in.		(2) 15 x 15	(2) 15 x 15	(2) 15 x 15	(2) 15 x 15
<b>Filters</b>	Type of filter		Fiberglass, disposable			
	Number and size - in.		(6) 24 x 24 x 2			
<b>Electrical characteristics</b>			208/230V, 460V or 575V - 60 hertz - 3 phase			

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

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

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

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

NOTE – Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.



## SPECIFICATIONS - HIGH EFFICIENCY MODELS

General Data		25 Ton	25 Ton	
Nominal Tonnage		<b>25 Ton</b>		
Model Number		<b>KCA300H4B</b>	<b>KCA300H4M</b>	
Efficiency Type		<b>High</b>		
Blower Type		Constant Air Volume (CAV)	MSAV® (Multi-Stage Air Volume)	
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh	282,000	282,000	
	<sup>1</sup> Net Cooling Capacity - Btuh	270,000	270,000	
	AHRI Rated Air Flow - cfm	8400	8400	
	Total Unit Power - kW	25.7	25.7	
	<sup>1</sup> EER (Btuh/Watt)	10.5	10.5	
	<sup>2</sup> IEER (Btuh/Watt)	10.9	13.8	
	Refrigerant Type	R-410A	R-410A	
	Refrigerant Charge Furnished	Circuit 1 Circuit 2 Circuit 3 Circuit 4	6 lbs. 8 oz. 6 lbs. 6 oz. 6 lbs. 6 oz. 5 lbs. 14 oz.	6 lbs. 8 oz. 6 lbs. 6 oz. 6 lbs. 6 oz. 5 lbs. 14 oz.
	<b>Electric Heat Available, see page 10</b>		15-30-45-60-90 kW	
	<b>Compressor Type (number)</b>		Scroll (4)	
<b>Outdoor Coils</b>	Net face area (total) - sq. ft.	55.2		
	Number of rows	1		
	Fins per inch	23		
<b>Outdoor Coil Fans</b>	Motor - (No.) horsepower	(6) 1/3		
	Motor rpm	1075		
	Total Motor watts	1950		
	Diameter - (No.) in.	(6) 24		
	Number of blades	3		
	Total Air volume - cfm	20,000		
<b>Indoor Coils</b>	Net face area (total) - sq. ft.	21.4		
	Tube diameter - in.	3/8		
	Number of rows	4		
	Fins per inch	14		
	Drain connection - No. and size	(1) 1 in. FPT		
Expansion device type		Balanced port TXV, removable head		
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output	5 hp, 7.5 hp, 10 hp		
	Maximum usable motor output (US Only)	5.75 hp, 8.62 hp, 11.5 hp		
	Motor - Drive kit number	<b>5 hp</b> <b>Kit 3</b> 685-856 rpm <b>Kit 4</b> 850-1045 rpm <b>Kit 5</b> 945-1185 rpm <b>7.5 hp</b> <b>Kit 6</b> 850-1045 rpm <b>Kit 7</b> 945-1185 rpm <b>Kit 8</b> 1045-1285 rpm <b>10 hp</b> <b>Kit 7</b> 945-1185 rpm <b>Kit 10</b> 1045-1285 rpm <b>Kit 11</b> 1135-1365 rpm		
	Blower wheel nominal diameter x width - in.	(2) 15 x 15		
<b>Filters</b>	Type of filter	Fiberglass, disposable		
	Number and size - in.	(6) 24 x 24 x 2		
<b>Electrical characteristics</b>		208/230V, 460V or 575V - 60 hertz - 3 phase		

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

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

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

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

NOTE – Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.

## RATINGS

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

### 15 TON STANDARD EFFICIENCY KCA180S4 (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4800	94.6	4.92	0.69	0.8	0.9	90.1	5.41	0.69	0.8	0.91	85.4	5.97	0.69	0.81	0.92	80.1	6.6	0.69	0.82	0.93
	6000	100.7	4.97	0.72	0.84	0.95	95.7	5.47	0.73	0.85	0.97	90.7	6.02	0.73	0.86	0.98	85.2	6.67	0.73	0.88	0.99
	7200	105.3	5.04	0.75	0.88	1.00	100.1	5.53	0.76	0.89	1.00	94.5	6.07	0.76	0.91	1.00	88.7	6.72	0.77	0.92	1.00
67°F	4800	99.7	4.97	0.56	0.67	0.77	94.9	5.46	0.55	0.67	0.77	89.9	6.02	0.56	0.67	0.78	84.5	6.65	0.55	0.67	0.79
	6000	105.8	5.02	0.58	0.7	0.81	100.9	5.53	0.57	0.7	0.82	95.3	6.08	0.57	0.71	0.83	89.7	6.71	0.57	0.71	0.84
	7200	110.3	5.08	0.6	0.73	0.85	105.1	5.59	0.6	0.74	0.87	99.4	6.16	0.6	0.74	0.88	93.3	6.76	0.59	0.75	0.89
71°F	4800	104.9	5.02	0.44	0.54	0.64	100	5.51	0.43	0.54	0.64	94.8	6.08	0.42	0.54	0.65	88.8	6.71	0.4	0.53	0.65
	6000	110.4	5.08	0.44	0.56	0.68	105.3	5.57	0.43	0.56	0.68	99.8	6.15	0.43	0.56	0.69	94	6.78	0.42	0.56	0.69
	7200	115.4	5.14	0.45	0.58	0.71	109.9	5.65	0.45	0.59	0.72	103.7	6.2	0.45	0.59	0.73	97.4	6.83	0.45	0.58	0.73

### 15 TON STANDARD EFFICIENCY KCA180S4 (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4800	175.2	11.96	0.73	0.85	0.96	164	13.20	0.74	0.87	0.98	152.1	14.65	0.75	0.89	0.99	139.3	16.35	0.76	0.91	1.00
	6000	184.8	12.10	0.78	0.91	1.00	172.9	13.34	0.79	0.93	1.00	160.4	14.80	0.8	0.95	1.00	147.0	16.5	0.82	0.98	1.00
	7200	192.0	12.19	0.82	0.96	1.00	179.8	13.45	0.83	0.98	1.00	166.8	14.91	0.85	1.00	1.00	153.5	16.6	0.87	1.00	1.00
67°F	4800	186.3	12.11	0.58	0.71	0.83	174.7	13.36	0.57	0.71	0.84	162.5	14.83	0.57	0.73	0.86	149.2	16.54	0.57	0.74	0.88
	6000	196.4	12.27	0.60	0.76	0.89	184.1	13.52	0.60	0.77	0.90	170.9	14.96	0.61	0.78	0.92	157.0	16.69	0.61	0.8	0.95
	7200	203.6	12.35	0.64	0.80	0.94	190.7	13.61	0.64	0.82	0.96	176.9	15.09	0.65	0.83	0.98	162.1	16.77	0.66	0.85	1.00
71°F	4800	197.2	12.25	0.43	0.56	0.68	185.6	13.53	0.42	0.56	0.69	172.7	14.98	0.41	0.56	0.7	159.1	16.69	0.4	0.56	0.72
	6000	207.8	12.41	0.44	0.59	0.74	194.7	13.66	0.43	0.60	0.75	181.6	15.17	0.43	0.6	0.76	166.9	16.87	0.42	0.61	0.78
	7200	215.2	12.54	0.45	0.63	0.78	201.9	13.80	0.45	0.63	0.80	187.7	15.29	0.45	0.64	0.82	172.2	16.98	0.45	0.65	0.84

### 17.5 TON STANDARD EFFICIENCY KCA210S4 (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	5600	150.3	6.92	0.72	0.83	0.93	142.5	7.74	0.72	0.84	0.95	134	8.63	0.72	0.85	0.96	124.8	9.66	0.73	0.86	0.98
	7000	159.7	6.98	0.76	0.88	0.99	150.9	7.79	0.76	0.89	1.00	141.8	8.71	0.77	0.91	1.00	132.1	9.74	0.78	0.92	1.00
	8400	166.3	7.03	0.79	0.93	1.00	157.4	7.85	0.8	0.94	1.00	148	8.78	0.81	0.96	1.00	137.8	9.81	0.82	0.98	1.00
67°F	5600	159.9	6.98	0.58	0.69	0.8	151.7	7.82	0.57	0.69	0.81	142.5	8.71	0.57	0.7	0.82	132.9	9.74	0.57	0.71	0.83
	7000	169	7.05	0.6	0.73	0.85	160.2	7.89	0.6	0.74	0.86	150.5	8.8	0.6	0.75	0.88	140.3	9.83	0.6	0.76	0.9
	8400	176	7.11	0.62	0.77	0.9	166.6	7.95	0.62	0.78	0.91	156.4	8.86	0.63	0.79	0.93	145.7	9.9	0.63	0.81	0.95
71°F	5600	169.5	7.06	0.44	0.56	0.67	160.5	7.88	0.43	0.56	0.67	151.2	8.8	0.43	0.55	0.68	140.9	9.83	0.42	0.56	0.69
	7000	178.8	7.13	0.46	0.58	0.71	168.8	7.96	0.46	0.58	0.72	158.7	8.88	0.44	0.59	0.73	148.2	9.93	0.44	0.59	0.74
	8400	185.1	7.18	0.47	0.61	0.75	175.2	8.03	0.46	0.62	0.76	164.6	8.95	0.46	0.62	0.77	153.6	10	0.45	0.62	0.79

### 17.5 TON STANDARD EFFICIENCY KCA210S4 (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	5600	202.9	13.37	0.74	0.88	0.98	188.5	14.96	0.75	0.89	1.00	173.7	16.82	0.76	0.92	1.00	158.5	19.09	0.78	0.94	1.00
	7000	213.9	13.51	0.8	0.94	1.00	198.9	15.1	0.81	0.96	1.00	183.1	16.95	0.83	0.98	1.00	167.9	19.21	0.85	0.99	1.00
	8400	222.4	13.61	0.84	0.99	1.00	207	15.21	0.86	1.00	1.00	191.6	17.09	0.88	1.00	1.00	176.7	19.35	0.9	1.00	1.00
67°F	5600	216.5	13.53	0.58	0.72	0.85	201.5	15.13	0.58	0.73	0.86	186	16.99	0.58	0.74	0.88	169.9	19.23	0.58	0.76	0.91
	7000	227.9	13.68	0.61	0.78	0.91	211.8	15.28	0.62	0.79	0.93	195.4	17.15	0.62	0.81	0.96	178.3	19.38	0.63	0.83	0.98
	8400	235.8	13.78	0.65	0.82	0.96	219	15.39	0.65	0.84	0.98	201.7	17.25	0.66	0.86	1.00	184.6	19.49	0.67	0.89	1.00
71°F	5600	230	13.71	0.43	0.57	0.7	214.3	15.31	0.42	0.57	0.71	198	17.18	0.41	0.57	0.72	181.6	19.43	0.4	0.57	0.74
	7000	241.3	13.86	0.44	0.6	0.76	224.7	15.48	0.44	0.61	0.77	207.6	17.34	0.43	0.62	0.79	190.2	19.57	0.43	0.62	0.81
	8400	249.4	13.97	0.46	0.64	0.81	231.9	15.57	0.46	0.65	0.82	214.2	17.45	0.45	0.66	0.84	195.9	19.68	0.45	0.67	0.87

## RATINGS

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

### 20 TON STANDARD EFFICIENCY KCA240S4 (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	6400	167.3	7.75	0.69	0.81	0.93	158.1	8.56	0.7	0.82	0.95	148.7	9.46	0.7	0.84	0.97	138.3	10.47	0.71	0.85	0.99
	8000	177	7.77	0.73	0.87	1.00	167.4	8.6	0.74	0.89	1.00	157.3	9.5	0.75	0.91	1.00	146.5	10.52	0.76	0.93	1.00
	9600	184.4	7.8	0.78	0.93	1.00	174.7	8.64	0.79	0.95	1.00	164.1	9.54	0.8	0.97	1.00	152.4	10.56	0.81	0.99	1.00
67°F	6400	178.3	7.78	0.55	0.67	0.79	168.9	8.6	0.54	0.67	0.79	158.8	9.51	0.55	0.68	0.81	148.2	10.53	0.55	0.68	0.82
	8000	188.2	7.81	0.58	0.71	0.84	178.1	8.65	0.58	0.72	0.86	167.7	9.57	0.58	0.73	0.87	156.2	10.59	0.58	0.74	0.9
	9600	195.8	7.85	0.6	0.76	0.9	185.3	8.69	0.6	0.77	0.92	173.9	9.61	0.61	0.78	0.94	161.9	10.63	0.61	0.8	0.96
71°F	6400	189.4	7.82	0.43	0.54	0.65	179	8.64	0.42	0.54	0.65	168.5	9.57	0.41	0.54	0.66	157.5	10.6	0.4	0.54	0.66
	8000	199.2	7.86	0.44	0.57	0.69	188.1	8.7	0.43	0.57	0.7	176.8	9.62	0.43	0.57	0.71	165	10.65	0.42	0.57	0.72
	9600	206.1	7.9	0.45	0.59	0.73	194.7	8.74	0.45	0.59	0.75	182.9	9.67	0.44	0.6	0.76	170.6	10.7	0.43	0.61	0.78

### 20 TON STANDARD EFFICIENCY KCA240S4 (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	6400	229.2	14.28	0.72	0.87	1.00	213.1	15.83	0.73	0.89	1.00	196.7	17.56	0.74	0.91	1.00	179	19.54	0.76	0.95	1.00
	8000	241.7	14.36	0.78	0.95	1.00	225.1	15.91	0.8	0.97	1.00	207.9	17.66	0.82	0.99	1.00	190.3	19.63	0.84	1.00	1.00
	9600	251.8	14.43	0.84	1.00	1.00	235.3	15.99	0.85	1.00	1.00	219.3	17.75	0.88	1.00	1.00	201.7	19.72	0.91	1.00	1.00
67°F	6400	245.4	14.38	0.56	0.7	0.83	228.7	15.94	0.56	0.71	0.85	211.3	17.68	0.56	0.72	0.88	192.8	19.64	0.57	0.74	0.91
	8000	257.9	14.47	0.6	0.76	0.91	239.8	16.03	0.6	0.78	0.94	221.2	17.76	0.61	0.79	0.97	201.5	19.71	0.61	0.82	1.00
	9600	266.6	14.55	0.64	0.82	0.98	247.7	16.09	0.64	0.84	1.00	228.3	17.82	0.65	0.86	1.00	208.3	19.77	0.66	0.89	1.00
71°F	6400	262	14.51	0.41	0.55	0.68	243.9	16.05	0.41	0.55	0.69	226.3	17.8	0.4	0.55	0.7	207.1	19.77	0.39	0.56	0.72
	8000	274.6	14.61	0.43	0.59	0.74	255.5	16.16	0.43	0.59	0.76	236	17.89	0.42	0.6	0.77	215.9	19.84	0.41	0.61	0.8
	9600	283.2	14.67	0.45	0.63	0.8	263.5	16.23	0.44	0.64	0.82	242.7	17.94	0.44	0.65	0.84	222.4	19.89	0.43	0.66	0.87

### 25 TON STANDARD EFFICIENCY KCA300S4 (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	8000	209.9	10.37	0.73	0.85	0.95	198.2	11.44	0.73	0.86	0.96	185.5	12.61	0.74	0.87	0.98	172.5	13.94	0.74	0.88	1.00
	9500	218.9	10.51	0.77	0.89	0.99	206.7	11.57	0.77	0.9	1.00	193.5	12.75	0.78	0.92	1.00	179.9	14.08	0.79	0.94	1.00
	11000	226.1	10.61	0.79	0.93	1.00	213.7	11.68	0.8	0.94	1.00	200.2	12.85	0.81	0.96	1.00	185.9	14.19	0.83	0.98	1.00
67°F	8000	224.3	10.58	0.58	0.71	0.82	211.9	11.65	0.58	0.71	0.83	199.1	12.84	0.57	0.72	0.84	184.9	14.17	0.58	0.73	0.86
	9500	233.3	10.72	0.61	0.74	0.86	220.6	11.78	0.6	0.75	0.87	206.3	12.95	0.6	0.76	0.89	191.9	14.3	0.6	0.77	0.91
	11000	240.2	10.82	0.63	0.78	0.9	226.8	11.88	0.62	0.78	0.92	212.6	13.06	0.63	0.8	0.94	197.6	14.41	0.63	0.81	0.96
71°F	8000	238.5	10.79	0.45	0.57	0.69	225.8	11.87	0.44	0.57	0.69	211.9	13.05	0.43	0.56	0.7	197.7	14.4	0.42	0.57	0.7
	9500	247.7	10.93	0.46	0.59	0.72	234.4	12.02	0.45	0.59	0.73	219.8	13.2	0.44	0.59	0.74	204.4	14.53	0.43	0.59	0.75
	11000	254.8	11.05	0.46	0.62	0.76	240.8	12.12	0.45	0.61	0.77	225.7	13.29	0.45	0.62	0.78	209.9	14.64	0.45	0.63	0.79

### 25 TON STANDARD EFFICIENCY KCA300S4 (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	8000	281.2	18.97	0.75	0.89	1.00	259.9	20.95	0.76	0.91	1.00	238.3	23.23	0.78	0.93	1.00	216.5	25.92	0.79	0.95	1.00
	9500	292.1	19.15	0.8	0.94	1.00	270.8	21.15	0.81	0.96	1.00	248.5	23.44	0.83	0.98	1.00	226.3	26.12	0.85	1.00	1.00
	11000	302.3	19.32	0.83	0.98	1.00	280.1	21.31	0.85	1.00	1.00	258.5	23.63	0.87	1.00	1.00	237.2	26.35	0.9	1.00	1.00
67°F	8000	301.2	19.3	0.58	0.73	0.86	279.3	21.31	0.58	0.74	0.88	256.7	23.6	0.58	0.75	0.9	233.5	26.29	0.58	0.77	0.93
	9500	312.5	19.5	0.61	0.78	0.91	290	21.51	0.62	0.79	0.93	266.2	23.79	0.62	0.81	0.96	242	26.47	0.63	0.83	0.99
	11000	321.4	19.67	0.64	0.82	0.96	297.6	21.65	0.64	0.83	0.98	273.5	23.94	0.66	0.86	1.00	248.5	26.62	0.67	0.88	1.00
71°F	8000	321	19.65	0.43	0.57	0.71	298.1	21.65	0.42	0.57	0.72	275	23.96	0.41	0.58	0.73	250.9	26.67	0.4	0.58	0.75
	9500	332.8	19.86	0.45	0.6	0.75	309.2	21.89	0.44	0.61	0.77	284.6	24.17	0.43	0.61	0.79	259.8	26.86	0.42	0.62	0.81
	11000	341.7	20.03	0.46	0.63	0.8	317.2	22.03	0.45	0.64	0.82	292.5	24.33	0.45	0.65	0.84	266.6	27.01	0.44	0.66	0.87

# RATINGS

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

## 15 TON STANDARD EFFICIENCY KCA180S4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	3500	87	4.84	0.65	0.75	0.84	82.9	5.36	0.65	0.75	0.85	78.3	5.9	0.65	0.76	0.85	73.6	6.51	0.65	0.76	0.86
	4000	91	4.89	0.68	0.77	0.87	86.7	5.38	0.67	0.78	0.87	82	5.93	0.67	0.78	0.89	77.2	6.57	0.67	0.79	0.9
	4500	94.5	4.92	0.69	0.79	0.89	90	5.41	0.69	0.8	0.9	85.1	5.97	0.69	0.8	0.92	80	6.6	0.69	0.81	0.93
67°F	3500	92.5	4.89	0.54	0.64	0.72	87.9	5.39	0.54	0.63	0.72	83	5.95	0.53	0.63	0.73	78	6.57	0.52	0.63	0.73
	4000	96.2	4.93	0.55	0.65	0.74	91.5	5.44	0.54	0.65	0.75	86.6	5.98	0.54	0.65	0.75	81.5	6.6	0.53	0.65	0.76
	4500	99.6	4.97	0.56	0.67	0.76	94.8	5.46	0.55	0.67	0.77	89.8	6.02	0.55	0.67	0.77	84.4	6.65	0.54	0.67	0.78
71°F	3500	97.6	4.93	0.43	0.53	0.61	92.9	5.43	0.42	0.52	0.61	87.9	5.98	0.41	0.51	0.61	82.8	6.63	0.4	0.51	0.61
	4000	101.4	4.97	0.43	0.54	0.62	96.6	5.48	0.43	0.53	0.63	91.5	6.03	0.42	0.52	0.63	86.2	6.67	0.4	0.52	0.63
	4500	104.8	5.02	0.44	0.54	0.64	100	5.53	0.42	0.54	0.64	94.7	6.08	0.41	0.55	0.65	88.7	6.7	0.41	0.53	0.65

## 15 TON STANDARD EFFICIENCY KCA180S4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4800	175.2	11.96	0.73	0.85	0.96	164.0	13.20	0.74	0.87	0.98	152.1	14.65	0.75	0.89	0.99	139.3	16.35	0.76	0.91	1.00
	6000	184.8	12.1	0.78	0.91	1.00	172.9	13.34	0.79	0.93	1.00	160.4	14.8	0.8	0.95	1.00	147.0	16.5	0.82	0.98	1.00
	7200	192	12.19	0.82	0.96	1.00	179.8	13.45	0.83	0.98	1.00	166.8	14.91	0.85	1.00	1.00	153.5	16.6	0.87	1.00	1.00
67°F	4800	186.3	12.11	0.58	0.71	0.83	174.7	13.36	0.57	0.71	0.84	162.5	14.83	0.57	0.73	0.86	149.2	16.54	0.57	0.74	0.88
	6000	196.4	12.27	0.60	0.76	0.89	184.1	13.52	0.60	0.77	0.90	170.9	14.96	0.61	0.78	0.92	157.0	16.69	0.61	0.80	0.95
	7200	203.6	12.35	0.64	0.8	0.94	190.7	13.61	0.64	0.82	0.96	176.9	15.09	0.65	0.83	0.98	162.1	16.77	0.66	0.85	1.00
71°F	4800	197.2	12.25	0.43	0.56	0.68	185.6	13.53	0.42	0.56	0.69	172.7	14.98	0.41	0.56	0.70	159.1	16.69	0.40	0.56	0.72
	6000	207.8	12.41	0.44	0.59	0.74	194.7	13.66	0.43	0.60	0.75	181.6	15.17	0.43	0.6	0.76	166.9	16.87	0.42	0.61	0.78
	7200	215.2	12.54	0.45	0.63	0.78	201.9	13.80	0.45	0.63	0.80	187.7	15.29	0.45	0.64	0.82	172.2	16.98	0.45	0.65	0.84

## 17.5 TON STANDARD EFFICIENCY KCA210S4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4000	134.7	6.84	0.67	0.77	0.85	127.7	7.65	0.67	0.77	0.86	120.2	8.52	0.67	0.77	0.87	112.2	9.54	0.67	0.78	0.89
	4750	143.1	6.89	0.69	0.79	0.89	135.6	7.7	0.69	0.8	0.9	127.4	8.58	0.69	0.81	0.91	118.9	9.6	0.69	0.82	0.93
	5500	149.6	6.92	0.71	0.82	0.93	141.8	7.73	0.71	0.83	0.94	133.2	8.63	0.72	0.84	0.95	124.3	9.65	0.72	0.85	0.97
67°F	4000	143.8	6.88	0.54	0.64	0.73	136.6	7.69	0.54	0.64	0.74	128.9	8.59	0.53	0.64	0.74	120.3	9.6	0.53	0.64	0.75
	4750	152.4	6.93	0.56	0.67	0.76	144.8	7.76	0.55	0.67	0.77	136.1	8.65	0.55	0.67	0.78	127.1	9.68	0.54	0.67	0.79
	5500	159.3	6.98	0.57	0.69	0.79	150.9	7.81	0.57	0.69	0.8	141.9	8.71	0.57	0.69	0.81	132.4	9.74	0.56	0.7	0.82
71°F	4000	153.7	6.94	0.43	0.52	0.62	146	7.75	0.42	0.52	0.62	137.6	8.66	0.4	0.51	0.62	128.6	9.69	0.39	0.51	0.62
	4750	162.1	6.99	0.44	0.54	0.64	153.8	7.82	0.43	0.54	0.64	144.8	8.74	0.41	0.53	0.64	135.3	9.77	0.41	0.53	0.65
	5500	168.9	7.05	0.44	0.56	0.66	159.9	7.88	0.43	0.56	0.67	150.7	8.8	0.43	0.55	0.67	140.3	9.83	0.42	0.55	0.68

## 17.5 TON STANDARD EFFICIENCY KCA210S4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	5600	202.9	13.37	0.74	0.88	0.98	188.5	14.96	0.75	0.89	1.00	173.7	16.82	0.76	0.92	1.00	158.5	19.09	0.78	0.94	1.00
	7000	213.9	13.51	0.8	0.94	1.00	198.9	15.10	0.81	0.96	1.00	183.1	16.95	0.83	0.98	1.00	167.9	19.21	0.85	0.99	1.00
	8400	222.4	13.61	0.84	0.99	1.00	207.0	15.21	0.86	1.00	1.00	191.6	17.09	0.88	1.00	1.00	176.7	19.35	0.9	1.00	1.00
67°F	5600	216.5	13.53	0.58	0.72	0.85	201.5	15.13	0.58	0.73	0.86	186.0	16.99	0.58	0.74	0.88	169.9	19.23	0.58	0.76	0.91
	7000	227.9	13.68	0.61	0.78	0.91	211.8	15.28	0.62	0.79	0.93	195.4	17.15	0.62	0.81	0.96	178.3	19.38	0.63	0.83	0.98
	8400	235.8	13.78	0.65	0.82	0.96	219.0	15.39	0.65	0.84	0.98	201.7	17.25	0.66	0.86	1.00	184.6	19.49	0.67	0.89	1.00
71°F	5600	230.0	13.71	0.43	0.57	0.70	214.3	15.31	0.42	0.57	0.71	198.0	17.18	0.41	0.57	0.72	181.6	19.43	0.40	0.57	0.74
	7000	241.3	13.86	0.44	0.6	0.76	224.7	15.48	0.44	0.61	0.77	207.6	17.34	0.43	0.62	0.79	190.2	19.57	0.43	0.62	0.81
	8400	249.4	13.97	0.46	0.64	0.81	231.9	15.57	0.46	0.65	0.82	214.2	17.45	0.45	0.66	0.84	195.9	19.68	0.45	0.67	0.87

# RATINGS

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

## 20 TON STANDARD EFFICIENCY KCA240S4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4500	150.3	7.71	0.64	0.75	0.84	142.4	8.51	0.64	0.75	0.85	133.8	9.39	0.64	0.75	0.87	125	10.4	0.64	0.76	0.88
	5500	161	7.74	0.67	0.79	0.9	152.4	8.54	0.67	0.79	0.91	143	9.43	0.67	0.8	0.92	133.3	10.44	0.68	0.81	0.94
	6500	169	7.75	0.7	0.82	0.94	159.8	8.56	0.71	0.84	0.96	149.9	9.46	0.7	0.85	0.98	139.7	10.48	0.71	0.86	0.99
67°F	4500	161.1	7.73	0.53	0.62	0.71	152.8	8.54	0.52	0.62	0.72	144	9.43	0.51	0.62	0.72	134.5	10.44	0.5	0.62	0.73
	5500	171.9	7.76	0.54	0.65	0.75	162.8	8.58	0.54	0.65	0.76	153.3	9.49	0.53	0.65	0.77	142.9	10.49	0.53	0.66	0.78
	6500	179.8	7.79	0.56	0.67	0.79	170.4	8.62	0.55	0.68	0.8	160.2	9.52	0.55	0.68	0.81	149.4	10.54	0.55	0.69	0.83
71°F	4500	172.7	7.76	0.42	0.51	0.6	164	8.58	0.4	0.5	0.6	154.3	9.48	0.39	0.5	0.59	144.2	10.51	0.38	0.49	0.59
	5500	183.1	7.8	0.42	0.53	0.63	173.4	8.63	0.41	0.52	0.63	163.2	9.53	0.41	0.52	0.63	152.3	10.55	0.39	0.51	0.63
	6500	191	7.83	0.43	0.54	0.65	180.4	8.66	0.42	0.54	0.66	169.9	9.57	0.41	0.54	0.67	158.6	10.6	0.41	0.54	0.67

## 20 TON STANDARD EFFICIENCY KCA240S4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	6400	229.2	14.28	0.72	0.87	1.00	213.1	15.83	0.73	0.89	1.00	196.7	17.56	0.74	0.91	1.00	179.0	19.54	0.76	0.95	0.99
	8000	241.7	14.36	0.78	0.95	1.00	225.1	15.91	0.80	0.97	1.00	207.9	17.66	0.82	0.99	1.00	190.3	19.63	0.84	1.00	1.00
	9600	251.8	14.43	0.84	1.00	1.00	235.3	15.99	0.85	1.00	1.00	219.3	17.75	0.88	1.00	1.00	201.7	19.72	0.91	1.00	1.00
67°F	6400	245.4	14.38	0.56	0.70	0.83	228.7	15.94	0.56	0.71	0.85	211.3	17.68	0.56	0.72	0.88	192.8	19.64	0.57	0.74	0.82
	8000	257.9	14.47	0.60	0.76	0.91	239.8	16.03	0.60	0.78	0.94	221.2	17.76	0.61	0.79	0.97	201.5	19.71	0.61	0.82	0.90
	9600	266.6	14.55	0.64	0.82	0.98	247.7	16.09	0.64	0.84	1.00	228.3	17.82	0.65	0.86	1.00	208.3	19.77	0.66	0.89	0.96
71°F	6400	262.0	14.51	0.41	0.55	0.68	243.9	16.05	0.41	0.55	0.69	226.3	17.8	0.4	0.55	0.70	207.1	19.77	0.39	0.56	0.66
	8000	274.6	14.61	0.43	0.59	0.74	255.5	16.16	0.43	0.59	0.76	236.0	17.89	0.42	0.6	0.77	215.9	19.84	0.41	0.61	0.72
	9600	283.2	14.67	0.45	0.63	0.80	263.5	16.23	0.44	0.64	0.82	242.7	17.94	0.44	0.65	0.84	222.4	19.89	0.43	0.66	0.78

## 25 TON STANDARD EFFICIENCY KCA300S4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	5750	191.1	10.16	0.68	0.78	0.87	180.6	11.22	0.68	0.78	0.88	169.1	12.4	0.68	0.79	0.89	156.8	13.74	0.68	0.8	0.91
	6750	201.2	10.28	0.7	0.81	0.91	189.8	11.36	0.7	0.82	0.92	177.6	12.54	0.71	0.83	0.94	164.5	13.86	0.71	0.84	0.96
	7750	209	10.4	0.72	0.84	0.95	197.2	11.46	0.73	0.85	0.96	184.4	12.65	0.73	0.86	0.98	171.1	13.98	0.74	0.88	1.00
67°F	5750	204.7	10.33	0.55	0.65	0.75	193.8	11.41	0.54	0.65	0.75	181.8	12.6	0.54	0.65	0.76	169.3	13.95	0.53	0.66	0.77
	6750	215.1	10.49	0.56	0.68	0.78	203.5	11.56	0.56	0.68	0.79	190.7	12.76	0.56	0.68	0.8	177.2	14.09	0.55	0.69	0.81
	7750	223.3	10.61	0.58	0.7	0.81	211.1	11.68	0.58	0.71	0.82	197.7	12.86	0.57	0.71	0.83	183.6	14.21	0.57	0.72	0.85
71°F	5750	218.4	10.53	0.43	0.53	0.63	207	11.61	0.42	0.53	0.63	194.6	12.81	0.41	0.52	0.63	181.3	14.16	0.4	0.52	0.63
	6750	229.2	10.7	0.44	0.55	0.66	217	11.77	0.43	0.55	0.66	203.7	12.97	0.42	0.54	0.66	189.7	14.33	0.41	0.54	0.67
	7750	237.4	10.83	0.45	0.57	0.68	224.8	11.91	0.44	0.56	0.69	211.1	13.1	0.43	0.56	0.69	196.5	14.45	0.42	0.56	0.7

## 25 TON STANDARD EFFICIENCY KCA300S4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	8000	281.2	18.97	0.75	0.89	1.00	259.9	20.95	0.76	0.91	1.00	238.3	23.23	0.78	0.93	1.00	216.5	25.92	0.79	0.95	1.00
	9500	292.1	19.15	0.8	0.94	1.00	270.8	21.15	0.81	0.96	1.00	248.5	23.44	0.83	0.98	1.00	226.3	26.12	0.85	1.00	1.00
	11000	302.3	19.32	0.83	0.98	1.00	280.1	21.31	0.85	1.00	1.00	258.5	23.63	0.87	1.00	1.00	237.2	26.35	0.9	1.00	1.00
67°F	8000	301.2	19.3	0.58	0.73	0.86	279.3	21.31	0.58	0.74	0.88	256.7	23.6	0.58	0.75	0.9	233.5	26.29	0.58	0.77	0.93
	9500	312.5	19.5	0.61	0.78	0.91	290	21.51	0.62	0.79	0.93	266.2	23.79	0.62	0.81	0.96	242	26.47	0.63	0.83	0.99
	11000	321.4	19.67	0.64	0.82	0.96	297.6	21.65	0.64	0.83	0.98	273.5	23.94	0.66	0.86	1.00	248.5	26.62	0.67	0.88	1.00
71°F	8000	321	19.65	0.43	0.57	0.71	298.1	21.65	0.42	0.57	0.72	275	23.96	0.41	0.58	0.73	250.9	26.67	0.4	0.58	0.75
	9500	332.8	19.86	0.45	0.6	0.75	309.2	21.89	0.44	0.61	0.77	284.6	24.17	0.43	0.61	0.79	259.8	26.86	0.42	0.62	0.81
	11000	341.7	20.03	0.46	0.63	0.8	317.2	22.03	0.45	0.64	0.82	292.5	24.33	0.45	0.65	0.84	266.6	27.01	0.44	0.66	0.87

# RATINGS

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

## 13 TON HIGH EFFICIENCY KCA156H4 (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4160	110.6	4.68	0.67	0.80	0.93	103.7	5.30	0.68	0.81	0.95	96.4	5.97	0.68	0.82	0.97	88.8	6.74	0.68	0.84	0.99
	5200	117.9	4.73	0.72	0.87	0.99	110.4	5.34	0.72	0.88	1.00	102.7	6.01	0.73	0.90	1.00	94.7	6.78	0.74	0.93	1.00
	6240	123.1	4.77	0.76	0.93	1.00	115.4	5.38	0.77	0.95	1.00	107.5	6.05	0.79	0.97	1.00	99.3	6.81	0.80	0.99	1.00
67°F	4160	118.4	4.73	0.54	0.65	0.77	111.2	5.34	0.53	0.65	0.78	103.8	6.02	0.52	0.66	0.79	96.0	6.79	0.52	0.66	0.80
	5200	126.0	4.79	0.57	0.70	0.83	118.4	5.39	0.56	0.70	0.85	110.5	6.07	0.56	0.71	0.86	102.2	6.83	0.56	0.72	0.89
	6240	131.7	4.83	0.59	0.74	0.90	123.6	5.43	0.59	0.75	0.91	115.4	6.11	0.59	0.76	0.94	106.7	6.87	0.59	0.78	0.96
71°F	4160	126.1	4.78	0.42	0.53	0.63	118.8	5.39	0.40	0.52	0.63	111.2	6.07	0.39	0.52	0.63	103.1	6.84	0.37	0.51	0.64
	5200	134.1	4.84	0.43	0.55	0.67	126.1	5.45	0.41	0.55	0.68	118.0	6.13	0.4	0.55	0.69	109.6	6.89	0.39	0.55	0.70
	6240	140.0	4.88	0.44	0.58	0.72	131.7	5.49	0.42	0.58	0.73	123.3	6.17	0.42	0.59	0.74	114.3	6.93	0.40	0.59	0.76

## 13 TON HIGH EFFICIENCY KCA156H4 (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4160	148.1	9.05	0.70	0.85	0.99	136.5	10.20	0.71	0.87	1.00	124.5	11.51	0.72	0.9	1.00	112.1	13.01	0.73	0.93	1.00
	5200	157.1	9.11	0.76	0.94	1.00	145.1	10.26	0.77	0.96	1.00	132.6	11.57	0.79	0.99	1.00	120.5	13.08	0.81	1.00	1.00
	6240	164.5	9.17	0.82	0.99	1.00	152.7	10.32	0.83	1.00	1.00	141.1	11.64	0.86	1.00	1.00	129.1	13.15	0.89	1.00	1.00
67°F	4160	159.3	9.13	0.54	0.68	0.82	147.4	10.28	0.54	0.69	0.84	135.3	11.59	0.53	0.70	0.86	122.4	13.09	0.53	0.71	0.89
	5200	169.0	9.20	0.58	0.74	0.90	156.5	10.35	0.58	0.75	0.92	143.4	11.66	0.58	0.77	0.95	129.8	13.16	0.58	0.79	0.98
	6240	175.9	9.25	0.61	0.80	0.97	162.7	10.40	0.62	0.81	0.99	149.1	11.71	0.62	0.83	1.00	135.2	13.2	0.63	0.86	1.00
71°F	4160	170.4	9.21	0.40	0.53	0.66	158.1	10.36	0.38	0.53	0.66	145.8	11.68	0.37	0.53	0.67	132.6	13.18	0.35	0.52	0.69
	5200	180.5	9.29	0.41	0.57	0.72	167.6	10.44	0.41	0.57	0.73	154.2	11.75	0.39	0.57	0.74	140.5	13.25	0.37	0.58	0.76
	6240	187.9	9.35	0.43	0.61	0.77	174.4	10.50	0.42	0.61	0.79	160.4	11.81	0.41	0.61	0.81	146.2	13.31	0.40	0.62	0.84

## 15 TON HIGH EFFICIENCY KCA180H4 (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4800	127.8	5.04	0.70	0.82	0.93	120.4	5.79	0.7	0.82	0.94	112.8	6.62	0.70	0.83	0.96	104.8	7.53	0.70	0.85	0.98
	6000	136.3	5.05	0.74	0.87	0.99	128.3	5.81	0.75	0.88	1.00	120.1	6.64	0.75	0.90	1.00	111.6	7.56	0.76	0.92	1.00
	7200	142.4	5.05	0.78	0.92	1.00	134.1	5.82	0.79	0.94	1.00	125.4	6.66	0.80	0.96	1.00	116.7	7.58	0.81	0.98	1.00
67°F	4800	136.5	5.05	0.56	0.68	0.79	129.0	5.81	0.55	0.68	0.79	121.1	6.65	0.55	0.68	0.80	112.8	7.56	0.54	0.68	0.81
	6000	145.4	5.06	0.59	0.72	0.84	137.2	5.83	0.58	0.72	0.85	128.8	6.67	0.58	0.73	0.86	120.1	7.60	0.58	0.74	0.88
	7200	151.9	5.06	0.61	0.76	0.89	143.3	5.84	0.61	0.77	0.91	134.5	6.69	0.61	0.78	0.93	125.3	7.62	0.61	0.79	0.95
71°F	4800	145.1	5.06	0.44	0.55	0.65	137.2	5.83	0.42	0.54	0.65	129.2	6.67	0.41	0.54	0.66	120.6	7.60	0.40	0.53	0.66
	6000	154.3	5.07	0.45	0.57	0.70	145.9	5.85	0.43	0.57	0.70	137.2	6.70	0.42	0.57	0.71	128.1	7.63	0.41	0.57	0.71
	7200	161.0	5.08	0.46	0.6	0.74	152.3	5.86	0.44	0.6	0.74	143.1	6.72	0.44	0.6	0.76	133.6	7.66	0.43	0.61	0.77

## 15 TON HIGH EFFICIENCY KCA180H4 (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4800	172.5	9.96	0.71	0.85	0.99	160.1	11.32	0.71	0.87	1.00	146.8	12.83	0.72	0.90	1.00	132.7	14.51	0.74	0.93	1.00
	6000	182.6	9.99	0.77	0.93	1.00	169.5	11.37	0.78	0.95	1.00	155.7	12.89	0.79	0.98	1.00	141.3	14.57	0.81	1.00	1.00
	7200	190.3	10.02	0.82	0.99	1.00	177.3	11.41	0.83	1.00	1.00	164.3	12.94	0.86	1.00	1.00	150.5	14.64	0.89	1.00	1.00
67°F	4800	185.0	10.00	0.55	0.69	0.82	172.1	11.38	0.55	0.69	0.84	158.6	12.90	0.54	0.70	0.86	144.0	14.59	0.54	0.72	0.89
	6000	195.8	10.04	0.58	0.74	0.90	182.1	11.43	0.58	0.76	0.92	167.5	12.96	0.59	0.77	0.95	152.2	14.65	0.59	0.79	0.98
	7200	203.7	10.07	0.62	0.8	0.97	189.3	11.46	0.62	0.81	0.99	173.9	13.00	0.63	0.84	1.00	157.8	14.69	0.63	0.86	1.00
71°F	4800	197.2	10.04	0.41	0.54	0.67	183.9	11.43	0.39	0.54	0.67	169.9	12.97	0.38	0.53	0.68	155.0	14.67	0.36	0.53	0.69
	6000	208.4	10.09	0.42	0.58	0.72	194.2	11.48	0.41	0.58	0.73	179.4	13.03	0.4	0.58	0.75	163.3	14.73	0.38	0.59	0.77
	7200	216.6	10.12	0.43	0.61	0.78	201.8	11.52	0.42	0.62	0.79	186.2	13.07	0.42	0.62	0.81	169.7	14.78	0.41	0.63	0.84

# RATINGS

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

## 17.5 TON HIGH EFFICIENCY KCA210H4 (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	5600	142.9	5.49	0.71	0.85	0.97	134.4	6.23	0.72	0.86	0.99	125.5	7.05	0.72	0.88	1.00	116.4	7.97	0.74	0.9	1.00
	7000	151.1	5.54	0.76	0.92	1.00	142.3	6.29	0.77	0.94	1.00	133	7.11	0.79	0.96	1.00	123.5	8.03	0.80	0.98	1.00
	8400	157.9	5.58	0.82	0.98	1.00	148.7	6.34	0.83	1.00	1.00	139.3	7.16	0.84	1.00	1.00	130.5	8.08	0.87	1.00	1.00
67°F	5600	153.6	5.55	0.56	0.69	0.81	144.5	6.30	0.56	0.69	0.83	135.3	7.13	0.56	0.70	0.84	125.7	8.04	0.56	0.71	0.86
	7000	161.9	5.61	0.60	0.74	0.88	152.1	6.36	0.6	0.75	0.90	142.5	7.19	0.60	0.77	0.92	132.2	8.10	0.61	0.78	0.95
	8400	167.9	5.65	0.63	0.79	0.95	157.9	6.41	0.63	0.81	0.97	147.6	7.23	0.63	0.82	0.99	137.0	8.14	0.63	0.84	1.00
71°F	5600	164.4	5.63	0.43	0.55	0.67	154.9	6.38	0.42	0.55	0.67	145.2	7.21	0.41	0.54	0.68	135.3	8.13	0.4	0.55	0.69
	7000	172.9	5.69	0.45	0.59	0.72	162.9	6.45	0.44	0.59	0.73	152.6	7.27	0.43	0.59	0.74	142.1	8.19	0.42	0.60	0.76
	8400	179.1	5.74	0.45	0.62	0.77	168.6	6.49	0.46	0.63	0.79	157.8	7.32	0.45	0.63	0.8	146.5	8.24	0.44	0.64	0.82

## 17.5 TON HIGH EFFICIENCY KCA210H4 (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	5600	197.5	11.26	0.71	0.86	0.99	183.2	12.71	0.73	0.89	1.00	168.8	14.37	0.74	0.91	1.00	153.6	16.25	0.75	0.94	1.00
	7000	209.3	11.34	0.78	0.95	1.00	194.5	12.8	0.79	0.97	1.00	179.6	14.45	0.81	0.99	1.00	164.6	16.33	0.83	1.00	1.00
	8400	219.3	11.42	0.83	0.99	1.00	205.2	12.89	0.85	1.00	1.00	190.5	14.55	0.88	1.00	1.00	175.2	16.42	0.91	1.00	1.00
67°F	5600	212.6	11.36	0.55	0.69	0.83	198.1	12.83	0.55	0.70	0.85	182.6	14.48	0.55	0.71	0.87	166.4	16.34	0.55	0.73	0.90
	7000	224.4	11.46	0.59	0.76	0.91	208.9	12.92	0.60	0.77	0.94	192.3	14.56	0.60	0.79	0.96	175.2	16.41	0.60	0.81	0.98
	8400	232.7	11.52	0.62	0.81	0.98	216.2	12.98	0.63	0.83	0.99	199.3	14.62	0.64	0.85	1.00	181.7	16.47	0.64	0.88	1.00
71°F	5600	228.4	11.49	0.41	0.54	0.67	212.9	12.95	0.40	0.54	0.68	197.0	14.60	0.39	0.55	0.69	180.1	16.46	0.38	0.55	0.71
	7000	240.3	11.59	0.42	0.59	0.73	223.9	13.05	0.42	0.59	0.75	206.9	14.69	0.41	0.59	0.76	189.0	16.54	0.40	0.60	0.78
	8400	248.5	11.66	0.44	0.62	0.79	231.5	13.12	0.44	0.63	0.81	214.0	14.75	0.43	0.64	0.83	195.1	16.60	0.42	0.64	0.86

## 20 TON HIGH EFFICIENCY KCA240H4 (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	6400	130.1	5.15	0.69	0.81	0.94	123.5	5.86	0.69	0.83	0.96	116.6	6.64	0.70	0.84	0.98	109.3	7.52	0.71	0.86	0.99
	8000	137.5	5.20	0.73	0.88	0.99	130.5	5.91	0.74	0.90	1.00	123.1	6.69	0.75	0.92	1.00	115.6	7.57	0.77	0.94	1.00
	9600	143.4	5.25	0.78	0.94	1.00	136.1	5.96	0.79	0.96	1.00	128.4	6.74	0.81	0.98	1.00	120.6	7.62	0.83	0.99	1.00
67°F	6400	139.2	5.22	0.55	0.66	0.78	132.2	5.93	0.55	0.67	0.79	124.7	6.71	0.55	0.68	0.81	117.0	7.58	0.55	0.69	0.83
	8000	146.6	5.27	0.57	0.71	0.85	139.1	5.99	0.58	0.72	0.86	131.3	6.77	0.58	0.73	0.88	123.0	7.64	0.58	0.75	0.91
	9600	152.1	5.31	0.60	0.76	0.91	144.2	6.03	0.61	0.77	0.93	135.9	6.81	0.62	0.79	0.96	127.2	7.68	0.62	0.81	0.98
71°F	6400	148.1	5.28	0.42	0.53	0.64	140.8	6.00	0.42	0.53	0.65	133.2	6.79	0.41	0.54	0.65	125.1	7.66	0.41	0.53	0.66
	8000	155.9	5.34	0.43	0.56	0.69	148.1	6.06	0.43	0.56	0.69	139.8	6.85	0.42	0.57	0.71	131.2	7.73	0.42	0.58	0.73
	9600	161.6	5.39	0.44	0.59	0.73	153.2	6.11	0.44	0.60	0.75	144.7	6.90	0.44	0.61	0.76	135.7	7.77	0.44	0.62	0.78

## 20 TON HIGH EFFICIENCY KCA240H4 (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	6400	236.6	13.31	0.73	0.88	1.00	221.6	15.06	0.74	0.91	1.00	205.8	17.06	0.76	0.94	1.00	189.2	19.35	0.78	0.97	1.00
	8000	249.2	13.43	0.79	0.97	1.00	233.7	15.17	0.80	0.98	1.00	217.5	17.17	0.83	0.99	1.00	201.1	19.47	0.86	1.00	1.00
	9600	260.1	13.53	0.85	1.00	1.00	244.7	15.28	0.87	1.00	1.00	228.9	17.29	0.90	1.00	1.00	212.1	19.59	0.94	1.00	1.00
67°F	6400	252.7	13.46	0.56	0.71	0.85	236.8	15.20	0.57	0.72	0.87	220.0	17.20	0.57	0.73	0.90	202.2	19.48	0.58	0.76	0.93
	8000	264.4	13.57	0.60	0.77	0.93	247.3	15.31	0.61	0.78	0.96	229.6	17.30	0.62	0.81	0.98	210.9	19.57	0.63	0.84	0.99
	9600	272.8	13.66	0.64	0.83	0.99	255.3	15.39	0.64	0.85	1.00	236.8	17.38	0.65	0.88	1.00	217.9	19.65	0.67	0.92	1.00
71°F	6400	269.2	13.62	0.41	0.55	0.68	252.6	15.37	0.41	0.56	0.70	235.2	17.36	0.41	0.56	0.71	216.6	19.64	0.40	0.57	0.73
	8000	281.5	13.75	0.43	0.59	0.74	263.7	15.49	0.43	0.60	0.76	245.0	17.48	0.43	0.61	0.78	225.2	19.74	0.42	0.62	0.81
	9600	289.9	13.83	0.45	0.63	0.81	271.3	15.57	0.45	0.64	0.83	252.0	17.55	0.45	0.65	0.86	231.3	19.81	0.44	0.67	0.89

# RATINGS

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

## 25 TON HIGH EFFICIENCY KCA300H4 (1ST STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	8000	151.1	6.82	0.69	0.81	0.93	144.0	7.68	0.70	0.82	0.95	136.5	8.64	0.70	0.84	0.96	128.5	9.72	0.71	0.86	0.98
	9500	157.6	6.88	0.72	0.86	0.98	150.1	7.74	0.73	0.87	0.99	142.3	8.70	0.74	0.89	0.99	134.0	9.79	0.75	0.91	1.00
	11000	163.2	6.94	0.75	0.90	1.00	155.2	7.80	0.76	0.92	1.00	147.3	8.76	0.78	0.94	1.00	138.7	9.85	0.80	0.96	1.00
67°F	8000	161.2	6.92	0.55	0.67	0.78	153.7	7.78	0.55	0.67	0.79	145.9	8.74	0.56	0.68	0.80	137.3	9.83	0.56	0.69	0.82
	9500	168.0	6.99	0.57	0.70	0.82	160.0	7.85	0.58	0.71	0.84	151.7	8.81	0.57	0.72	0.86	142.7	9.90	0.58	0.73	0.88
	11000	173.4	7.05	0.59	0.73	0.87	164.9	7.91	0.59	0.74	0.89	156.0	8.87	0.6	0.75	0.91	146.8	9.96	0.61	0.77	0.93
71°F	8000	171.3	7.02	0.43	0.54	0.64	163.6	7.89	0.42	0.54	0.65	155.3	8.86	0.42	0.54	0.66	146.4	9.95	0.42	0.54	0.67
	9500	178.3	7.10	0.44	0.55	0.67	170.0	7.97	0.43	0.56	0.68	161.3	8.94	0.43	0.57	0.69	151.9	10.03	0.43	0.57	0.71
	11000	183.8	7.16	0.44	0.58	0.71	175.1	8.03	0.44	0.58	0.71	165.9	8.99	0.44	0.59	0.73	156.2	10.09	0.44	0.60	0.75

## 25 TON HIGH EFFICIENCY KCA300H4 (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	8000	277.0	17.49	0.74	0.89	1.00	260.5	19.68	0.75	0.91	1.00	243.6	22.20	0.77	0.93	1.00	225.6	25.14	0.79	0.97	1.00
	9500	288.0	17.62	0.78	0.94	1.00	270.9	19.81	0.80	0.97	1.00	253.2	22.34	0.82	0.99	1.00	235.0	25.27	0.85	1.00	1.00
	11000	296.4	17.74	0.82	0.99	1.00	280.0	19.94	0.84	1.00	1.00	262.2	22.47	0.87	1.00	1.00	244.7	25.43	0.90	1.00	1.00
67°F	8000	295.2	17.72	0.57	0.71	0.85	278.0	19.91	0.58	0.73	0.87	259.8	22.44	0.59	0.74	0.90	240.0	25.36	0.60	0.76	0.93
	9500	305.8	17.86	0.60	0.76	0.91	287.4	20.05	0.61	0.77	0.94	268.4	22.57	0.62	0.80	0.97	247.8	25.49	0.63	0.82	0.99
	11000	313.6	17.96	0.62	0.80	0.97	294.7	20.16	0.64	0.82	0.99	274.7	22.67	0.65	0.85	1.00	253.4	25.57	0.66	0.88	1.00
71°F	8000	313.8	17.97	0.43	0.56	0.69	295.5	20.16	0.42	0.57	0.70	276.5	22.70	0.42	0.57	0.72	256.1	25.62	0.42	0.59	0.74
	9500	324.4	18.11	0.44	0.59	0.73	305.4	20.31	0.44	0.6	0.75	285.3	22.84	0.44	0.61	0.77	264.1	25.76	0.44	0.62	0.80
	11000	332.6	18.24	0.45	0.62	0.78	313.0	20.43	0.45	0.63	0.80	292.1	22.95	0.45	0.64	0.83	269.8	25.85	0.45	0.66	0.85

## 13 TON HIGH EFFICIENCY KCA156H4 (1ST STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		65°F					75°F					85°F					95°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	3000	101.3	4.50	0.67	0.77	0.86	95.0	5.11	0.67	0.77	0.87	88.4	5.78	0.66	0.78	0.88	81.4	6.53	0.66	0.78	0.90
	3500	107.4	4.53	0.69	0.8	0.9	100.7	5.14	0.69	0.80	0.91	93.7	5.81	0.69	0.81	0.93	86.4	6.56	0.69	0.82	0.94
	4000	112.3	4.56	0.71	0.83	0.94	105.3	5.16	0.71	0.83	0.95	98.0	5.83	0.71	0.85	0.97	90.4	6.58	0.72	0.86	0.99
67°F	3000	108.8	4.54	0.54	0.65	0.74	102.3	5.15	0.53	0.64	0.74	95.5	5.81	0.52	0.64	0.74	88.3	6.57	0.51	0.64	0.75
	3500	115.1	4.57	0.56	0.67	0.77	108.2	5.18	0.55	0.67	0.77	101.0	5.84	0.54	0.67	0.78	93.5	6.59	0.53	0.67	0.79
	4000	120.3	4.60	0.57	0.69	0.80	113.1	5.21	0.57	0.69	0.80	105.5	5.87	0.56	0.69	0.81	97.7	6.62	0.55	0.70	0.83
71°F	3000	116.1	4.57	0.43	0.53	0.62	109.4	5.18	0.41	0.52	0.62	102.4	5.85	0.4	0.51	0.61	95.1	6.60	0.38	0.50	0.61
	3500	122.7	4.61	0.44	0.54	0.65	115.6	5.22	0.42	0.54	0.65	108.2	5.88	0.41	0.53	0.64	100.5	6.63	0.39	0.52	0.65
	4000	128.1	4.64	0.44	0.56	0.67	120.7	5.25	0.43	0.55	0.67	113.0	5.91	0.42	0.55	0.67	104.9	6.66	0.40	0.54	0.68

## 13 TON HIGH EFFICIENCY KCA156H4 (2ND STAGE) - MSAV® (Multi-Stage Air Volume) SUPPLY AIR BLOWER

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	4160	148.1	9.05	0.70	0.85	0.99	136.5	10.20	0.71	0.87	1.00	124.5	11.51	0.72	0.9	1.00	112.1	13.01	0.73	0.93	1.00
	5200	157.1	9.11	0.76	0.94	1.00	145.1	10.26	0.77	0.96	1.00	132.6	11.57	0.79	0.99	1.00	120.5	13.08	0.81	1.00	1.00
	6240	164.5	9.17	0.82	0.99	1.00	152.7	10.32	0.83	1.00	1.00	141.1	11.64	0.86	1.00	1.00	129.1	13.15	0.89	1.00	1.00
67°F	4160	159.3	9.13	0.54	0.68	0.82	147.4	10.28	0.54	0.69	0.84	135.3	11.59	0.53	0.70	0.86	122.4	13.09	0.53	0.71	0.89
	5200	169.0	9.20	0.58	0.74	0.90	156.5	10.35	0.58	0.75	0.92	143.4	11.66	0.58	0.77	0.95	129.8	13.16	0.58	0.79	0.98
	6240	175.9	9.25	0.61	0.80	0.97	162.7	10.40	0.62	0.81	0.99	149.1	11.71	0.62	0.83	1.00	135.2	13.20	0.63	0.86	1.00
71°F	4160	170.4	9.21	0.40	0.53	0.66	158.1	10.36	0.38	0.53	0.66	145.8	11.68	0.37	0.53	0.67	132.6	13.18	0.35	0.52	0.69
	5200	180.5	9.29	0.41	0.57	0.72	167.6	10.44	0.41	0.57	0.73	154.2	11.75	0.39	0.57	0.74	140.5	13.25	0.37	0.58	0.76
	6240	187.9	9.35	0.43	0.61	0.77	174.4	10.50	0.42	0.61	0.79	160.4	11.81	0.41	0.61	0.81	146.2	13.31	0.40	0.62	0.84









## BLOWER DATA

### FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

Motor Efficiency	Nominal hp	Maximum hp	Drive Kit Number	RPM Range
Standard or High	2	2.30	1	535 - 725
Standard or High	2	2.30	2	710 - 965
Standard	3	3.45	1	535 - 725
Standard	3	3.45	2	710 - 965
Standard	5	5.75	3	685 - 856
Standard	5	5.75	4	850 - 1045
Standard	5	5.75	5	945 - 1185
Standard	7.5	8.63	6	850 - 1045
Standard	7.5	8.63	7	945 - 1185
Standard	7.5	8.63	8	1045 - 1285
Standard	10	11.50	7	945 - 1185
Standard	10	11.50	10	1045 - 1285
Standard	10	11.50	11	1135 - 1365

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

NOTE - Units equipped with MSAV® (Multi-Stage Air Volume) option are limited to a motor service factor of 1.0.

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

Air Volume cfm	Wet Indoor Coil			Electric Heat	Economizer	Filters		Horizontal Roof Curb	
	180S	156H 180H 210S	210H 240H 240S 300H 300S			MERV 8	MERV 13	156H 180H 180S 210H 210S 240H 240S	300H 300S
2750	0.01	0.01	0.02	---	---	0.01	0.03	0.03	---
3000	0.01	0.01	0.02	---	---	0.01	0.03	0.04	---
3250	0.02	0.01	0.03	---	---	0.01	0.04	0.04	0.01
3500	0.02	0.01	0.03	---	---	0.01	0.04	0.05	0.01
3750	0.02	0.01	0.03	---	---	0.01	0.04	0.05	0.01
4000	0.02	0.02	0.04	---	---	0.01	0.04	0.06	0.02
4250	0.02	0.02	0.04	---	---	0.01	0.05	0.07	0.02
4500	0.02	0.02	0.05	---	---	0.01	0.05	0.07	0.02
4750	0.02	0.02	0.05	---	---	0.02	0.05	0.08	0.03
5000	0.03	0.02	0.05	---	---	0.02	0.06	0.08	0.03
5250	0.03	0.02	0.06	---	---	0.02	0.06	0.09	0.04
5500	0.03	0.02	0.07	---	---	0.02	0.06	0.10	0.04
5750	0.03	0.03	0.07	---	---	0.02	0.07	0.11	0.05
6000	0.04	0.03	0.08	0.01	---	0.03	0.07	0.11	0.06
6250	0.04	0.03	0.08	0.01	0.01	0.03	0.07	0.12	0.07
6500	0.04	0.03	0.09	0.01	0.02	0.03	0.08	0.13	0.08
6750	0.05	0.04	0.10	0.01	0.03	0.03	0.08	0.14	0.08
7000	0.05	0.04	0.10	0.01	0.04	0.04	0.08	0.15	0.09
7250	0.06	0.04	0.11	0.01	0.05	0.04	0.09	0.16	0.10
7500	0.06	0.05	0.12	0.01	0.06	0.04	0.09	0.17	0.11
8000	0.07	0.05	0.13	0.02	0.09	0.05	0.10	0.19	0.13
8500	0.08	0.06	0.15	0.02	0.11	0.05	0.10	0.21	0.15
9000	0.09	0.07	0.16	0.04	0.14	0.06	0.11	0.24	0.17
9500	0.10	0.08	0.18	0.05	0.16	0.07	0.12	0.26	0.19
10,000	0.11	0.08	0.20	0.06	0.19	0.07	0.12	0.29	0.21
10,500	0.12	0.09	0.22	0.09	0.22	0.08	0.13	0.31	0.24
11,000	0.14	0.11	0.24	0.11	0.25	0.09	0.14	0.34	0.27

## BLOWER DATA

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

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

### CEILING DIFFUSER AIR THROW DATA

Model No.	Air Volume cfm	<sup>1</sup> Effective Throw Range - ft.		Model No.	Air Volume cfm	<sup>1</sup> Effective Throw Range - ft.	
		RTD11-185S Step-Down	FD11-185S Flush			RTD11-275 Step-Down	FD11-275 Flush
156 180	5600	39 - 49	28 - 37	210 240 300	7200	33 - 38	26 - 35
	5800	42 - 51	29 - 38		7400	35 - 40	28 - 37
	6000	44 - 54	40 - 50		7600	36 - 41	29 - 38
	6200	45 - 55	42 - 51		7800	38 - 43	40 - 50
	6400	46 - 55	43 - 52		8000	39 - 44	42 - 51
	6600	47 - 56	45 - 56		8200	41 - 46	43 - 52
					8400	43 - 49	44 - 54
					8600	44 - 50	46 - 57
					8800	47 - 55	48 - 59

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

### POWER EXHAUST FAN PERFORMANCE

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

**ELECTRICAL/ELECTRIC HEAT DATA**

**15 TON**

**15 TON STANDARD EFFICIENCY**

**KCA180S4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Compressor 2	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Outdoor Fan Motors (3)	Full Load Amps (total)	2.4 (7.2)			1.3 (3.9)			1 (3)		
	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (2)		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	90	100	110	45	50	50	35	35	40
	With (2) 0.33 HP Power Exhaust	100	100	110	50	50	50	35	40	40
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	75	81	88	37	39	43	28	30	33
	With (2) 0.33 HP Power Exhaust	79	85	93	39	42	45	30	32	35

**ELECTRIC HEAT DATA**

Electric Heat Voltage			208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat	15 kW	90	90	100	100	110	110	45	50	50	35	35	40
		30 kW	100	110	100	125	110	125	60	60	60	45	45	50
		45 kW	150	150	150	175	150	175	80	80	90	60	70	70
		60 kW	150	175	150	175	175	175	80	90	90	70	70	70
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat	15 kW	75	75	81	81	88	88	37	39	43	28	30	33
		30 kW	92	104	100	112	109	121	52	55	59	41	44	48
		45 kW	131	149	139	157	148	166	74	78	82	60	62	66
		60 kW	139	158	146	166	156	175	79	82	86	63	66	69
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	100	100	100	100	110	110	50	50	50	35	40	40
		30 kW	100	110	110	125	125	150	60	60	70	45	50	50
		45 kW	150	175	150	175	175	175	80	90	90	70	70	70
		60 kW	150	175	175	175	175	200	90	90	90	70	70	80
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	79	79	85	85	93	93	39	42	45	30	32	35
		30 kW	98	110	106	118	115	127	55	58	63	44	47	50
		45 kW	137	155	145	163	154	172	77	81	85	62	65	68
		60 kW	145	164	152	172	162	181	82	85	90	66	68	72

**ELECTRICAL ACCESSORIES**

Disconnect	Unit Only	54W85	54W85	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 15 kW	54W85	54W85	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 45 kW	54W86	54W86	54W86	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 15 kW		54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 30 kW		54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 45 kW		54W86	54W86	54W86	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 60 kW		54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85

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

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

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

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

**ELECTRICAL/ELECTRIC HEAT DATA**

**17.5 TON**

**17.5 TON STANDARD EFFICIENCY**

**KCA210S4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 2	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 3	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Outdoor Fan Motors (3)	Full Load Amps	2.4			1.3			1		
	(total)	(7.2)			(3.9)			(3)		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	(total)	(4.8)			(2.6)			(2)		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	100	100	110	40	45	50	30	35	40
	With (2) 0.33 HP Power Exhaust	100	110	125	45	45	50	35	35	45
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	82	88	97	36	39	43	29	31	35
	With (2) 0.33 HP Power Exhaust	87	93	102	38	41	45	31	33	37

**ELECTRIC HEAT DATA**

Electric Heat Voltage			208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat	15 kW	100	100	100	110	110	40	45	50	30	35	40	
		30 kW	100	110	100	125	110	125	60	60	60	45	45	50
		45 kW	150	150	150	175	150	175	80	80	90	60	70	70
		60 kW	150	175	150	175	175	175	80	90	90	70	70	70
		90 kW	225	250	225	250	225	250	125	125	125	100	100	100
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat	15 kW	82	82	88	88	97	97	36	39	43	29	31	35
		30 kW	92	104	100	112	109	121	52	55	59	41	44	48
		45 kW	131	149	139	157	148	166	74	78	82	60	62	66
		60 kW	139	158	146	166	156	175	79	82	86	63	66	69
		90 kW	201	230	209	238	218	247	115	118	123	92	95	98
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	100	100	110	110	125	125	45	45	50	35	35	45
		30 kW	100	110	110	125	125	150	60	60	70	45	50	50
		45 kW	150	175	150	175	175	175	80	90	90	70	70	70
		60 kW	150	175	175	175	175	200	90	90	90	70	70	80
		90 kW	225	250	225	250	225	300	125	125	150	100	100	110
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	87	87	93	93	102	102	38	41	45	31	33	37
		30 kW	98	110	106	118	115	127	55	58	63	44	47	50
		45 kW	137	155	145	163	154	172	77	81	85	62	65	68
		60 kW	145	164	152	172	162	181	82	85	90	66	68	72
		90 kW	207	236	215	244	224	253	118	122	126	94	97	101

**ELECTRICAL ACCESSORIES**

Disconnect	Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 15 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 45 kW	54W86	54W86	54W86	54W86	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
	Unit + Electric Heat 90 kW	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86
	Unit + Power Exhaust + Elec. Heat 15 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 45 kW	54W86	54W86	54W86	54W86	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85	
Unit + Power Exhaust + Elec. Heat 90 kW	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86	

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

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

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

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

<sup>4</sup> Disconnect must be field furnished.

**ELECTRICAL/ELECTRIC HEAT DATA**

**20 TON**

**20 TON STANDARD EFFICIENCY**

**KCA240S4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Compressor 2	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Compressor 3	Rated Load Amps	22.4			10.6			7.7		
	Locked Rotor Amps	149			75			54		
Outdoor Fan Motors (4)	Full Load Amps (total)	2.4 (9.6)			1.3 (5.2)			1 (4)		
	Power Exhaust (2) 0.33 HP (total)	2.4 (4.8)			1.3 (2.6)			1 (2)		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	110	125	125	50	60	60	40	45	50
	With (2) 0.33 HP Power Exhaust	125	125	150	60	60	70	40	45	50
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	100	108	116	48	51	55	36	39	41
	With (2) 0.33 HP Power Exhaust	104	112	121	50	54	58	38	41	43

**ELECTRIC HEAT DATA**

Electric Heat Voltage		208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V	
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat	<b>15 kW</b>	110	110	125	125	125	50	60	60	40	45	50	
	and (2) 0.33 HP Power Exhaust	<b>30 kW</b>	110	125	125	125	125	150	60	60	70	45	50	50
		<b>45 kW</b>	150	175	150	175	175	175	80	90	90	70	70	70
		<b>60 kW</b>	150	175	175	175	175	200	90	90	90	70	70	80
		<b>90 kW</b>	225	250	225	250	250	300	125	125	150	100	100	110
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat	<b>15 kW</b>	100	100	108	108	116	48	51	55	36	39	41	
	and (2) 0.33 HP Power Exhaust	<b>30 kW</b>	100	112	109	121	117	129	55	59	63	44	48	50
		<b>45 kW</b>	139	157	148	166	156	174	78	82	86	62	66	68
		<b>60 kW</b>	146	166	156	175	164	183	82	86	90	66	69	72
		<b>90 kW</b>	209	238	218	247	227	256	118	123	126	95	98	101
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat	<b>15 kW</b>	125	125	125	150	150	60	60	70	40	45	50	
	and (2) 0.33 HP Power Exhaust	<b>30 kW</b>	125	125	125	150	150	150	60	70	70	50	50	60
		<b>45 kW</b>	150	175	175	175	175	200	90	90	90	70	70	80
		<b>60 kW</b>	175	175	175	200	175	200	90	90	100	70	80	80
		<b>90 kW</b>	225	250	225	300	250	300	125	150	150	100	110	110
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat	<b>15 kW</b>	104	104	112	112	121	50	54	58	38	41	43	
	and (2) 0.33 HP Power Exhaust	<b>30 kW</b>	106	118	115	127	123	135	58	63	66	47	50	53
		<b>45 kW</b>	145	163	154	172	162	180	81	85	89	65	68	71
		<b>60 kW</b>	152	172	162	181	170	189	85	90	93	68	72	74
		<b>90 kW</b>	215	244	224	253	233	262	122	126	130	97	101	103

**ELECTRICAL ACCESSORIES**

Disconnect	Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
	Unit + Power Exhaust	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
	Unit + Electric Heat 15 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
	Unit + Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	
	Unit + Electric Heat 45 kW	54W86	54W86	54W86	54W87	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85	
	Unit + Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W86	54W85	54W85	54W85
	Unit + Electric Heat 90 kW	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86	54W86
	Unit + Power Exhaust + Elec. Heat 15 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 45 kW	54W86	54W86	54W87	54W87	54W87	54W87	54W87	54W85	54W85	54W86	54W85	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85	54W86	
Unit + Power Exhaust + Elec. Heat 90 kW	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86	54W86	

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

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

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

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

<sup>4</sup> Disconnect must be field furnished.



**ELECTRICAL/ELECTRIC HEAT DATA****25 TON****25 TON STANDARD EFFICIENCY****KCA300S4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Compressor 2	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Compressor 3	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Outdoor Fan	Full Load Amps	2.4			1.3			1		
Motors (4)	(total)	(9.6)			(5.2)			(4)		
Power Exhaust	Full Load Amps	2.4			1.3			1		
(2) 0.33 HP	(total)	(4.8)			(2.6)			(2)		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	125	125	150	60	60	70	45	50	50
	With (2) 0.33 HP Power Exhaust	125	125	150	60	70	70	50	50	50
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	108	116	124	53	56	60	40	43	45
	With (2) 0.33 HP Power Exhaust	113	120	128	56	59	62	42	45	47

**ELECTRIC HEAT DATA**

Electric Heat Voltage			208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat	15 kW	125	125	125	125	150	150	60	60	70	45	50	50
		30 kW	125	125	125	125	150	150	60	60	70	45	50	50
		45 kW	150	175	150	175	175	175	80	90	90	70	70	70
		60 kW	150	175	175	175	175	200	90	90	90	70	70	80
		90 kW	225	250	225	250	250	300	125	125	150	100	100	110
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat	15 kW	108	108	116	116	124	124	53	56	60	40	43	45
		30 kW	108	112	116	121	124	129	55	59	63	44	48	50
		45 kW	139	157	148	166	156	174	78	82	86	62	66	68
		60 kW	146	166	156	175	164	183	82	86	90	66	69	72
		90 kW	209	238	218	247	227	256	118	123	126	95	98	101
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	125	125	125	125	150	150	60	70	70	50	50	50
		30 kW	125	125	125	150	150	150	60	70	70	50	50	60
		45 kW	150	175	175	175	175	200	90	90	90	70	70	80
		60 kW	175	175	175	200	175	200	90	90	100	70	80	80
		90 kW	225	250	225	300	250	300	125	150	150	100	110	110
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	113	113	120	120	128	128	56	59	62	42	45	47
		30 kW	113	118	120	127	128	135	58	63	66	47	50	53
		45 kW	145	163	154	172	162	180	81	85	89	65	68	71
		60 kW	152	172	162	181	170	189	85	90	93	68	72	74
		90 kW	215	244	224	253	233	262	122	126	130	97	101	103

**ELECTRICAL ACCESSORIES**

Disconnect	Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 15 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 45 kW	54W86	54W86	54W87	54W87	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
	Unit + Electric Heat 90 kW	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86
	Unit + Power Exhaust + Elec. Heat 15 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 45 kW	54W86	54W86	54W87	54W87	54W87	54W87	54W87	54W85	54W85	54W86	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W86	
Unit + Power Exhaust + Elec. Heat 90 kW	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86	

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

<sup>1</sup> Extremes of operating range are plus and minus 10% of line voltage.<sup>2</sup> HACR type breaker or fuse.<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.<sup>4</sup> Disconnect must be field furnished.

**ELECTRICAL/ELECTRIC HEAT DATA**

**13 TON**

**13 TON HIGH EFFICIENCY**

**KCA156H4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	11.9			6.7			5.4		
	Locked Rotor Amps	109			59			40		
Compressor 2	Rated Load Amps	11.9			6.7			5.4		
	Locked Rotor Amps	109			59			40		
Compressor 3	Rated Load Amps	11.9			6.7			5.4		
	Locked Rotor Amps	109			59			40		
Outdoor Fan Motors (3)	Full Load Amps	2.4			1.3			1		
	(total)	(7.2)			(3.9)			(3)		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	(total)	(4.8)			(2.6)			(2)		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	2	3	5	2	3	5	2	3	5
	Full Load Amps	7.5	10.6	16.7	3	5	8	3	4	6
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	60	60	80	35	35	40	25	25	30
	With (2) 0.33 HP Power Exhaust	70	70	80	35	35	40	30	30	30
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	54	57	64	30	31	34	24	25	27
	With (2) 0.33 HP Power Exhaust	59	62	69	32	34	37	26	27	29

**ELECTRIC HEAT DATA**

Electric Heat Voltage			208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat	15 kW	60	60	60	60	80	80	35	35	40	25	25	30
		30 kW	90	100	100	110	100	125	50	60	60	40	45	45
		45 kW	150	150	150	150	150	175	80	80	80	60	60	70
		60 kW	150	175	150	175	150	175	80	80	90	70	70	70
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat	15 kW	54	55	57	59	64	66	30	31	34	24	25	27
		30 kW	88	100	92	104	100	112	50	52	55	40	41	44
		45 kW	127	145	131	149	139	157	72	74	78	58	60	62
		60 kW	135	154	139	158	146	166	77	79	82	62	63	66
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	70	70	70	70	80	80	35	35	40	30	30	30
		30 kW	100	110	100	110	110	125	60	60	60	45	45	50
		45 kW	150	175	150	175	150	175	80	80	90	70	70	70
		60 kW	150	175	150	175	175	175	80	90	90	70	70	70
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	59	61	62	65	69	72	32	34	37	26	27	29
		30 kW	94	106	98	110	106	118	53	55	58	42	44	47
		45 kW	133	151	137	155	145	163	76	77	81	61	62	65
		60 kW	141	160	145	164	152	172	80	82	85	64	66	68

**ELECTRICAL ACCESSORIES**

Disconnect	Unit Only	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust	54W85	54W85	54W85	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 45 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 15 kW		54W85	54W85	54W85	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 30 kW		54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 45 kW		54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 60 kW		54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85

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

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

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

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

**ELECTRICAL/ELECTRIC HEAT DATA****15 TON****15 TON HIGH EFFICIENCY****KCA180H4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Compressor 2	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Compressor 3	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Outdoor Fan Motors (4)	Full Load Amps	2.4			1.3			1		
	(total)	(9.6)			(5.2)			(4)		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	(total)	(4.8)			(2.6)			(2)		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	70	80	100	40	45	50	25	30	35
	With (2) 0.33 HP Power Exhaust	80	90	100	45	45	50	30	30	40
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	65	71	81	36	39	43	25	27	31
	With (2) 0.33 HP Power Exhaust	69	76	86	39	42	46	27	29	33

**ELECTRIC HEAT DATA**

Electric Heat Voltage			208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat	15 kW	70	70	80	80	100	100	40	45	50	25	30	35
		30 kW	100	110	100	125	110	125	60	60	60	45	45	50
		45 kW	150	150	150	175	150	175	80	80	90	60	70	70
		60 kW	150	175	150	175	175	175	80	90	90	70	70	70
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat	15 kW	65	65	71	71	81	81	36	39	43	25	27	31
		30 kW	92	104	100	112	109	121	52	55	59	41	44	48
		45 kW	131	149	139	157	148	166	74	78	82	60	62	66
		60 kW	139	158	146	166	156	175	79	82	86	63	66	69
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	80	80	90	90	100	100	45	45	50	30	30	40
		30 kW	100	110	110	125	125	150	60	60	70	45	50	50
		45 kW	150	175	150	175	175	175	80	90	90	70	70	70
		60 kW	150	175	175	175	175	200	90	90	90	70	70	80
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	69	69	76	76	86	86	39	42	46	27	29	33
		30 kW	98	110	106	118	115	127	55	58	63	44	47	50
		45 kW	137	155	145	163	154	172	77	81	85	62	65	68
		60 kW	145	164	152	172	162	181	82	85	90	66	68	72

**ELECTRICAL ACCESSORIES**

Disconnect	Unit Only	54W85	54W85	54W85	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust	54W85	54W85	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 15 kW	54W85	54W85	54W85	54W85	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 45 kW	54W86	54W86	54W86	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 15 kW	54W85	54W85	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 45 kW	54W86	54W86	54W86	54W86	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85	54W85

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

<sup>1</sup> Extremes of operating range are plus and minus 10% of line voltage.<sup>2</sup> HACR type breaker or fuse.<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

**ELECTRICAL/ELECTRIC HEAT DATA**

**17.5 TON**

**17.5 TON HIGH EFFICIENCY**

**KCA210H4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	15.6			7.8			5.8		
	Locked Rotor Amps	110			52			38.9		
Compressor 2	Rated Load Amps	15.6			7.8			5.8		
	Locked Rotor Amps	110			52			38.9		
Compressor 3	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Outdoor Fan Motors (6)	Full Load Amps (total)	2.4 (14.4)			1.3 (7.8)			1 (6)		
Power Exhaust (2) 0.33 HP	Full Load Amps (total)	2.4 (4.8)			1.3 (2.6)			1 (2)		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	3	5	7.5	3	5	7.5	3	5	7.5
	Full Load Amps	10.6	16.7	24.2	5	8	11	3.9	6.1	9
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	100	100	110	45	45	50	35	35	40
	With (2) 0.33 HP Power Exhaust	100	110	110	45	50	50	35	40	45
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	81	87	96	39	42	46	30	32	36
	With (2) 0.33 HP Power Exhaust	86	92	101	42	44	48	32	34	38

**ELECTRIC HEAT DATA**

Electric Heat Voltage		208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat 15 kW	100	100	100	100	110	110	45	45	50	35	35	40
	30 kW	100	110	100	125	110	125	60	60	60	45	45	50
	45 kW	150	150	150	175	150	175	80	80	90	60	70	70
	60 kW	150	175	150	175	175	175	80	90	90	70	70	70
	90 kW	225	250	225	250	225	250	125	125	125	100	100	100
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat 15 kW	81	81	87	87	96	96	39	42	46	30	32	36
	30 kW	92	104	100	112	109	121	52	55	59	41	44	48
	45 kW	131	149	139	157	148	166	74	78	82	60	62	66
	60 kW	139	158	146	166	156	175	79	82	86	63	66	69
	90 kW	201	230	209	238	218	247	115	118	123	92	95	98
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust 15 kW	100	100	110	110	110	110	45	50	50	35	40	45
	30 kW	100	110	110	125	125	150	60	60	70	45	50	50
	45 kW	150	175	150	175	175	175	80	90	90	70	70	70
	60 kW	150	175	175	175	175	200	90	90	90	70	70	80
	90 kW	225	250	225	250	225	300	125	125	150	100	100	110
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust 15 kW	86	86	92	92	101	101	42	44	48	32	34	38
	30 kW	98	110	106	118	115	127	55	58	63	44	47	50
	45 kW	137	155	145	163	154	172	77	81	85	62	65	68
	60 kW	145	164	152	172	162	181	82	85	90	66	68	72
	90 kW	207	236	215	244	224	253	118	122	126	94	97	101

**ELECTRICAL ACCESSORIES**

Disconnect	Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 15 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 45 kW	54W86	54W86	54W86	54W86	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
	Unit + Electric Heat 90 kW	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86
	Unit + Power Exhaust + Elec. Heat 15 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 45 kW	54W86	54W86	54W86	54W86	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 90 kW	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86	

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

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

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

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

<sup>4</sup> Disconnect must be field furnished.

**ELECTRICAL/ELECTRIC HEAT DATA**

**20 TON**

**20 TON HIGH EFFICIENCY**

**KCA240H4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Compressor 2	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Compressor 3	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Compressor 4	Rated Load Amps	13.5			8			5		
	Locked Rotor Amps	109			59			40		
Outdoor Fan Motors (6)	Full Load Amps	2.4			1.3			1		
	(total)	(14.4)			(7.8)			(6)		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	(total)	(4.8)			(2.6)			(2)		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	8	11	14	6	9	11
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	100	110	125	50	60	70	35	45	50
	With (2) 0.33 HP Power Exhaust	110	125	125	60	60	70	40	45	50
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	90	99	107	50	54	58	34	38	40
	With (2) 0.33 HP Power Exhaust	95	104	112	53	57	60	36	40	42

**ELECTRIC HEAT DATA**

Electric Heat Voltage			208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat	15 kW	100	100	110	110	125	125	50	60	70	35	45	50
		30 kW	100	125	110	125	125	150	60	60	70	45	50	50
		45 kW	150	175	150	175	175	175	80	90	90	70	70	70
		60 kW	150	175	175	175	175	200	90	90	90	70	70	80
		90 kW	225	250	225	250	250	300	125	125	150	100	100	110
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat	15 kW	90	90	99	99	107	107	50	54	58	34	38	40
		30 kW	100	112	109	121	117	129	55	59	63	44	48	50
		45 kW	139	157	148	166	156	174	78	82	86	62	66	68
		60 kW	146	166	156	175	164	183	82	86	90	66	69	72
		90 kW	209	238	218	247	227	256	118	123	126	95	98	101
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	110	110	125	125	125	125	60	60	70	40	45	50
		30 kW	110	125	125	150	125	150	60	70	70	50	50	60
		45 kW	150	175	175	175	175	200	90	90	90	70	70	80
		60 kW	175	175	175	200	175	200	90	90	100	70	80	80
		90 kW	225	250	225	300	250	300	125	150	150	100	110	110
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat and (2) 0.33 HP Power Exhaust	15 kW	95	95	104	104	112	112	53	57	60	36	40	42
		30 kW	106	118	115	127	123	135	58	63	66	47	50	53
		45 kW	145	163	154	172	162	180	81	85	89	65	68	71
		60 kW	152	172	162	181	170	189	85	90	93	68	72	74
		90 kW	215	244	224	253	233	262	122	126	130	97	101	103

**ELECTRICAL ACCESSORIES**

Disconnect	Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 15 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 45 kW	54W86	54W86	54W87	54W87	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Electric Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
	Unit + Electric Heat 90 kW	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86
	Unit + Power Exhaust + Elec. Heat 15 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 30 kW	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 45 kW	54W86	54W86	54W87	54W87	54W87	54W87	54W87	54W85	54W85	54W86	54W85	54W85	54W85
	Unit + Power Exhaust + Elec. Heat 60 kW	54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W86
	Unit + Power Exhaust + Elec. Heat 90 kW	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86

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

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

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

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

<sup>4</sup> Disconnect must be field furnished.

**ELECTRICAL/ELECTRIC HEAT DATA**

**25 TON**

**25 TON HIGH EFFICIENCY**

**KCA300H4**

<sup>1</sup> Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 2	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 3	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Compressor 4	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Outdoor Fan Motors (6)	Full Load Amps	2.4			1.3			1		
	(total)	(14.4)			(7.8)			(6)		
Power Exhaust (2) 0.33 HP	Full Load Amps	2.4			1.3			1		
	(total)	(4.8)			(2.6)			(2)		
Service Outlet 115V GFI (amps)		15			15			20		
Indoor Blower Motor	Horsepower	5	7.5	10	5	7.5	10	5	7.5	10
	Full Load Amps	16.7	24.2	30.8	8	11	14	6	9	11
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	125	125	150	60	60	70	45	50	50
	With (2) 0.33 HP Power Exhaust	125	150	150	60	60	70	45	50	50
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	115	124	132	51	55	59	41	44	47
	With (2) 0.33 HP Power Exhaust	120	128	137	53	57	61	43	46	49

**ELECTRIC HEAT DATA**

Electric Heat Voltage		208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V	
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat	15 kW	125	125	125	125	150	150	60	60	70	45	50	50
	and (2) 0.33 HP Power Exhaust	30 kW	125	125	125	125	150	150	60	60	70	45	50	50
		45 kW	150	175	150	175	175	175	80	90	90	70	70	70
		60 kW	150	175	175	175	175	200	90	90	90	70	70	80
		90 kW	225	250	225	250	250	300	125	125	150	100	100	110
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat	15 kW	115	115	124	124	132	132	51	55	59	41	44	47
	and (2) 0.33 HP Power Exhaust	30 kW	115	115	124	124	132	132	55	59	63	44	48	50
		45 kW	139	157	148	166	156	174	78	82	86	62	66	68
		60 kW	146	166	156	175	164	183	82	86	90	66	69	72
		90 kW	209	238	218	247	227	256	118	123	126	95	98	101
<sup>2</sup> Maximum Overcurrent Protection	Unit+ Electric Heat	15 kW	125	125	150	150	150	150	60	60	70	45	50	50
	and (2) 0.33 HP Power Exhaust	30 kW	125	125	150	150	150	150	60	70	70	50	50	60
		45 kW	150	175	175	175	175	200	90	90	90	70	70	80
		60 kW	175	175	175	200	175	200	90	90	100	70	80	80
		90 kW	225	250	225	300	250	300	125	150	150	100	110	110
<sup>3</sup> Minimum Circuit Ampacity	Unit+ Electric Heat	15 kW	120	120	128	128	137	137	53	57	61	43	46	49
	and (2) 0.33 HP Power Exhaust	30 kW	120	120	128	128	137	137	58	63	66	47	50	53
		45 kW	145	163	154	172	162	180	81	85	89	65	68	71
		60 kW	152	172	162	181	170	189	85	90	93	68	72	74
		90 kW	215	244	224	253	233	262	122	126	130	97	101	103

**ELECTRICAL ACCESSORIES**

Disconnect	Unit Only	54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Power Exhaust		54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Electric Heat 15 kW		54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Electric Heat 30 kW		54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Electric Heat 45 kW		54W86	54W86	54W87	54W87	54W87	54W87	54W87	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Electric Heat 60 kW		54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W85
Unit + Electric Heat 90 kW		<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86
Unit + Power Exhaust + Elec. Heat 15 kW		54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 30 kW		54W86	54W86	54W86	54W86	54W86	54W86	54W86	54W85	54W85	54W85	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 45 kW		54W86	54W86	54W87	54W87	54W87	54W87	54W87	54W85	54W85	54W86	54W85	54W85	54W85
Unit + Power Exhaust + Elec. Heat 60 kW		54W87	54W87	54W87	54W87	54W87	54W87	54W87	54W86	54W86	54W86	54W85	54W85	54W86
Unit + Power Exhaust + Elec. Heat 90 kW		<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	<sup>4</sup> N/A	54W86	54W86	54W86	54W86	54W86	54W86

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

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

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

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

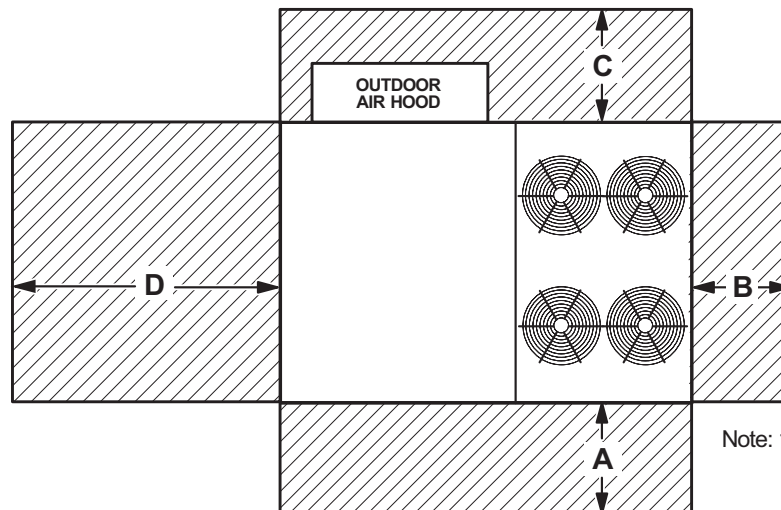
<sup>4</sup> Disconnect must be field furnished.

## ELECTRIC HEAT CAPACITIES

Volts Input	15 kW			30 kW			45 kW			60 kW			90 kW		
	kW Input	Btuh Output	No. of Stages	kW Input	Btuh Output	No. of Stages	kW Input	Btuh Output	No. of Stages	kW Input	Btuh Output	No. of Stages	kW Input	Btuh Output	No. of Stages
208	11.3	38,600	1	22.5	76,800	1	33.8	115,300	2	45.0	153,600	2	67.6	230,700	2
220	12.6	43,000	1	25.2	86,000	1	37.8	129,000	2	50.4	172,000	2	75.6	258,000	2
230	13.8	47,100	1	27.5	93,900	1	41.3	141,000	2	55.1	188,000	2	82.7	282,200	2
240	15.0	51,200	1	30.0	102,400	1	45.0	153,600	2	60.0	204,800	2	90.0	307,100	2
440	12.6	43,000	1	25.2	86,000	1	37.8	129,000	2	50.4	172,000	2	75.6	258,000	2
460	13.8	47,100	1	27.5	93,900	1	41.3	141,000	2	55.1	188,000	2	82.7	282,200	2
480	15.0	51,200	1	30.0	102,400	1	45.0	153,600	2	60.0	204,800	2	90.0	307,100	2
550	12.6	43,000	1	25.2	86,000	1	37.8	129,000	2	50.4	172,000	2	75.6	258,000	2
575	13.8	47,100	1	27.5	93,900	1	41.3	141,000	2	55.1	188,000	2	82.7	282,200	2
600	15.0	51,200	1	30.0	102,400	1	45.0	153,600	2	60.0	204,800	2	90.0	307,100	2

## UNIT CLEARANCES - INCHES (MM)

### Unit With Economizer



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

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

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

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

Minimum Operation Clearance - Required clearance for proper unit operation.


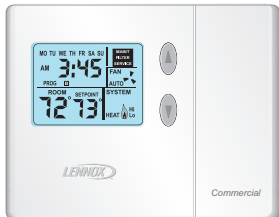
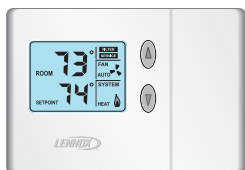
## OUTDOOR SOUND DATA

Unit Model Number	Octave Band Linear Sound Power Levels dB, re 10 <sup>-12</sup> Watts - Center Frequency - Hz							<sup>1</sup> Sound Rating Number (SRN) (dBA)
	125	250	500	1000	2000	4000	8000	
156H, 180S, 210S	71	78	81	81	76	71	63	86
180H, 240S, 300S	80	83	87	88	84	80	71	93
210H, 240H, 300H	79	84	88	89	85	82	73	94

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

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

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Item	Model No.	Catalog No.
<p><b>COMFORTSENSE® 7500 COMMERCIAL 7-DAY PROGRAMMABLE THERMOSTAT</b></p>  <ul style="list-style-type: none"> <li>• Four-Stage Heating / Two-Stage Cooling Universal Multi-Stage</li> <li>• Intuitive Touchscreen Interface</li> <li>• Remote Indoor Temperature Sensing with Averaging</li> <li>• Outside or Discharge Air Temperature Display</li> <li>• Full Seven-Day Programming</li> <li>• Four Time Periods Per Day</li> <li>• Occupancy Scheduling with Economizer Relay Control</li> <li>• Away Mode</li> <li>• Holiday Scheduling</li> <li>• Smooth Setback Recovery (SSR)</li> <li>• Performance Reports</li> <li>• Notifications/Reminders</li> <li>• Dehumidification/Humiditrol® Control for Split Systems and Rooftop Units</li> <li>• Economizer Relay Control</li> <li>• Backlit Display</li> <li>• Wallplate Furnished</li> </ul>	C0STAT06FF1L	<b>13H15</b>
<b>Optional Accessories</b>		
<sup>1</sup> Remote non-adjustable wall mount 20k temperature sensor	C0SNZN01AE2-	<b>47W36</b>
<sup>1</sup> Remote non-adjustable wall mount 10k temperature sensor	C0SNZN73AE1-	<b>47W37</b>
Remote non-adjustable discharge air (duct mount) temperature sensor	C0SNDC00AE1-	<b>19L22</b>
Outdoor temperature sensor	C0SNSR03AE1-	<b>X2658</b>
Locking cover (clear)	C0MISC15AE1-	<b>39P21</b>
<sup>1</sup> Remote sensors can be applied in any of the following combinations: One Sensor - (1) 47W36 Two Sensors - (2) 47W37 Three Sensors - (2) 47W36 and (1) 47W37 Four Sensors - (4) 47W36 Five Sensors - (3) 47W36 and (2) 47W37		
<p><b>COMFORTSENSE® 3000 COMMERCIAL 5-2 DAY PROGRAMMABLE THERMOSTAT</b></p>  <ul style="list-style-type: none"> <li>• Two-Stage Heating / Two-Stage Cooling Conventional Systems</li> <li>• Intuitive Interface</li> <li>• 5-2 Day Programming</li> <li>• Program Hold</li> <li>• Remote Indoor Temperature Sensing</li> <li>• Smooth Setback Recovery (SSR)</li> <li>• Economizer Relay Control</li> <li>• Maintenance/Filter/Service Reminders</li> <li>• Backlit Display</li> <li>• Wallplate Furnished</li> <li>• Simple Up and Down Temperature Control.</li> </ul>	C0STAT05FF1L	<b>11Y05</b>
<b>Optional Accessories</b>		
Remote non-adjustable wall mount 10k averaging temperature sensor	C0SNZN73AE1-	<b>47W37</b>
Optional wall mounting plate	C0MISC17AE1-	<b>X2659</b>
<p><b>DIGITAL NON-PROGRAMMABLE THERMOSTAT</b></p>  <ul style="list-style-type: none"> <li>• One-Stage Heating / Cooling Conventional Systems</li> <li>• Intuitive Interface</li> <li>• Automatic Changeover</li> <li>• Backlit Display</li> <li>• Simple Up and Down Temperature Control.</li> </ul>	C0STAT12AE1L	<b>51M32</b>
<b>Optional Accessories</b>		
Outdoor temperature sensor	C0SNSR04AE1-	<b>X2658</b>
Optional wall mounting plate	C0MISC17AE1-	<b>X2659</b>



## WEIGHT DATA

Model Number	Net		Shipping		Model Number	Net		Shipping	
	lbs.	kg	lbs.	kg		lbs.	kg	lbs.	kg
156H Base Unit	1785	810	1985	900	180S Base Unit	1640	744	1840	835
156H Max. Unit	2065	937	2265	1027	180S Max. Unit	1960	889	2160	980
180H Base Unit	1965	891	2165	982	210S Base Unit	1785	810	1985	900
180H Max. Unit	2245	1018	2445	1109	210S Max. Unit	2115	959	2315	1050
210H Base Unit	2090	948	2290	1039	240S Base Unit	2030	921	2230	1012
210H Max. Unit	2380	1080	2580	1170	240S Max. Unit	2360	1070	2560	1161
240H Base Unit	2175	987	2375	1077	300S Base Unit	2030	921	2230	1012
240H Max. Unit	2465	1118	2665	1209	300S Max. Unit	2360	1070	2560	1161
300H Base Unit	2280	1034	2480	1125					
300H Max. Unit	2570	1116	2770	1256					

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

## OPTIONS / ACCESSORIES

Description	Shipping Weight		
	lbs.	kg	
<b>ECONOMIZER / OUTDOOR AIR / EXHAUST</b>			
<b>Economizer</b>			
Economizer Dampers	102	46	
Barometric Relief Dampers (downflow)	30	14	
Barometric Relief Dampers (horizontal)	20	9	
Outdoor Air Damper Hood (downflow)	65	29	
<b>Outdoor Air Dampers</b>			
Outdoor Air Damper Section (downflow) - Automatic (including Hood)	18	39	
Outdoor Air Damper Section (downflow) - Manual (including Hood)	10	22	
<b>Power Exhaust</b>	62	28	
<b>ELECTRIC HEAT</b>			
15 kW	59	27	
30 kW	59	27	
45 kW	76	34	
60 kW	76	34	
90 kW	84	38	
<b>MSAV® (MULTI-STAGE AIR VOLUME) SUPPLY AIR BLOWER OPTION</b>			
Variable Frequency Drive (VFD) and associated components	10	5	
<b>ROOF CURBS</b>			
<b>Hybrid Roof Curbs, Downflow</b>			
8 in. height	75	34	
14 in. height	105	48	
18 in. height	125	57	
24 in. height	155	70	
<b>Adjustable Pitch Curb, Downflow</b>			
14 in. height	262	119	
<b>Horizontal Roof Curbs, Standard</b>			
26 in. height	470	213	
37 in. height	505	229	
30 in. height	575	261	
41 in. height	610	277	
<b>CEILING DIFFUSERS</b>			
Step-Down	RTD11-185S	168	76
	RTD11-275S	238	108
Flush	FD11-185S	168	76
	FD11-275S	238	108
Transitions	C1DIFF33C-1	80	36
	C1DIFF34C-1	75	34
<b>PACKAGING</b>			
LTL Packaging (less than truck load)	310	141	

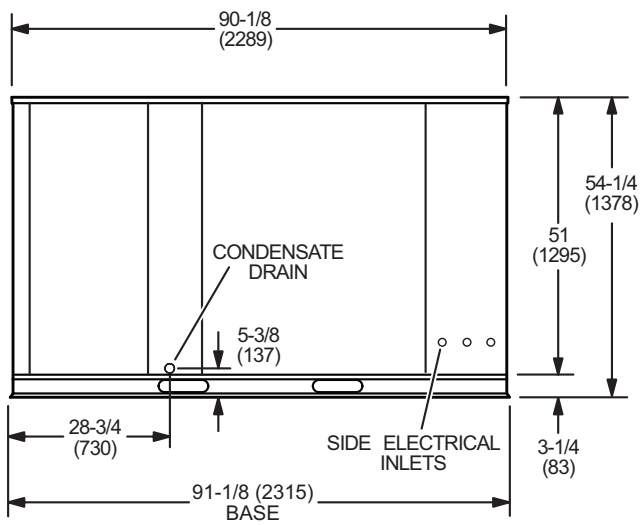
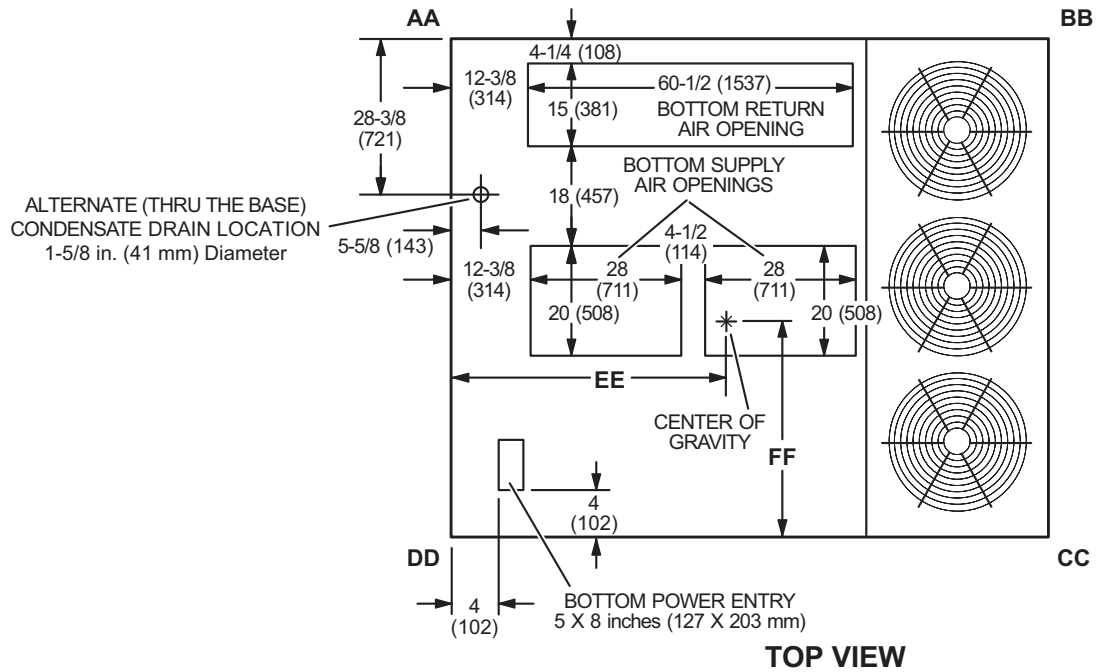
**DIMENSIONS - UNIT - INCHES (MM)**

**KCA156H, KCA180S, KCA210S**

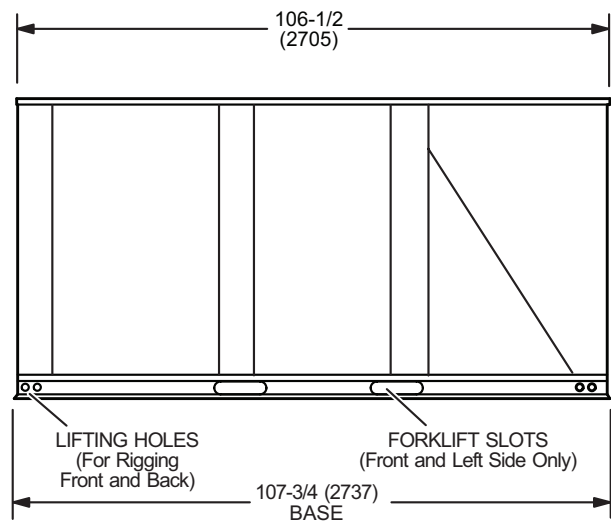
Model No.	CORNER WEIGHTS												CENTER OF GRAVITY											
	AA				BB				CC				DD				EE				FF			
	Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
156H	428	195	538	244	346	157	429	195	456	207	489	222	554	252	609	277	48 1/2	1232	48	1219	39 1/2	1003	42 3/4	1086
180S	425	193	547	249	361	164	439	200	461	210	503	229	543	247	626	284	49 1/2	1257	48	1219	40	1016	42 1/2	1080
210S	450	204	573	261	379	172	456	207	506	230	545	248	601	273	685	312	49 1/4	1251	47 3/4	1213	39	991	41 1/2	1054

Base Unit - The unit with NO INTERNAL OPTIONS.

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



**END VIEW**



**SIDE VIEW**

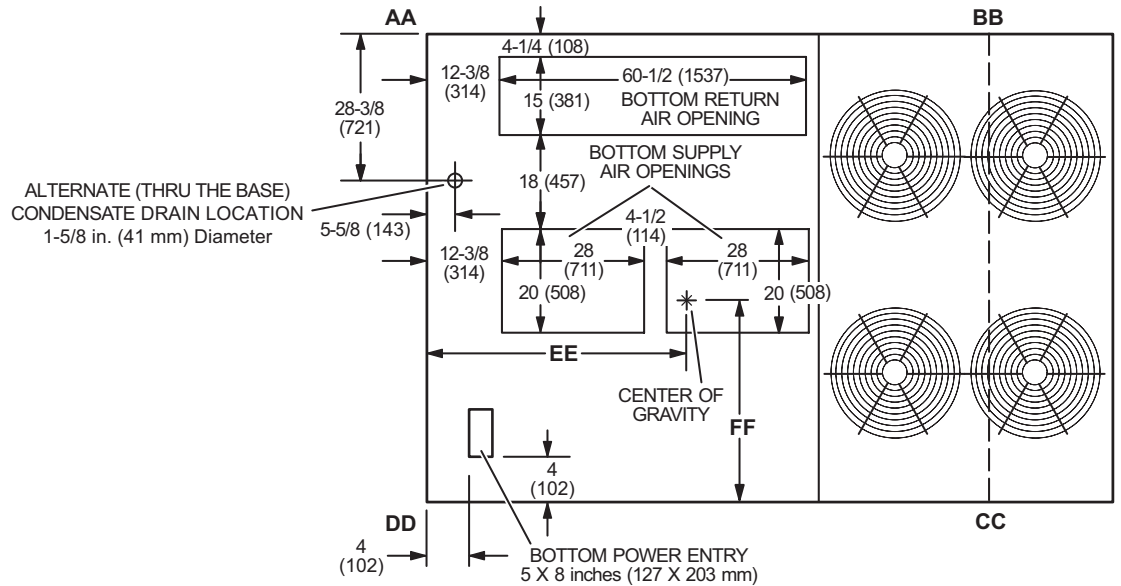
**DIMENSIONS - UNIT - INCHES (MM)**

**KCA180H, KCA240S, KCA300S**

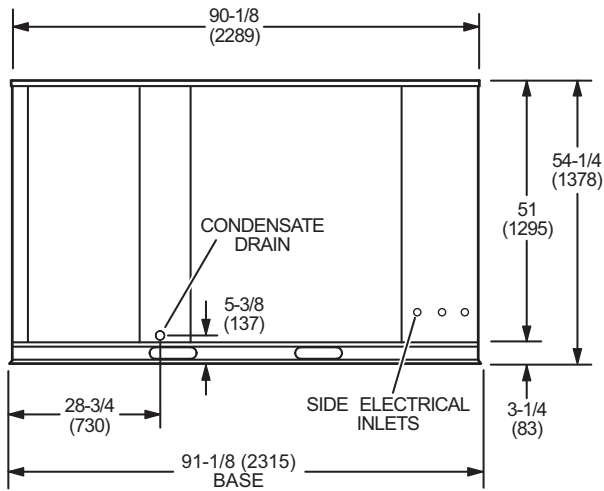
Model No.	CORNER WEIGHTS												CENTER OF GRAVITY											
	AA				BB				CC				DD				EE				FF			
	Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm	in.	mm	in.	mm
180H	441	201	545	248	403	183	485	221	543	247	577	262	577	262	638	290	52	1321	51	1295	39 1/4	997	42	1067
240S	413	188	526	239	411	187	491	223	601	273	648	295	604	275	695	316	53 3/4	1365	52	1321	37	940	39 1/4	997
300S	413	188	526	239	411	187	491	223	601	273	648	295	604	275	695	316	53 3/4	1365	52	1321	37	940	39 1/4	997

Base Unit - The unit with NO INTERNAL OPTIONS.

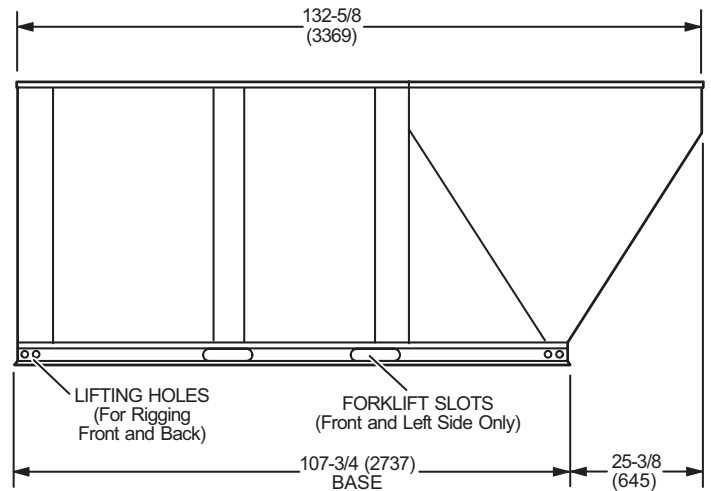
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit.



**TOP VIEW**



**END VIEW**



**SIDE VIEW**

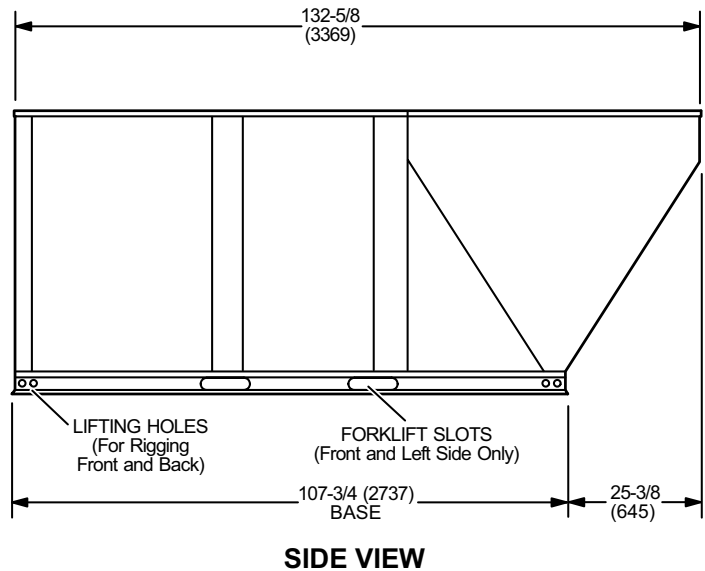
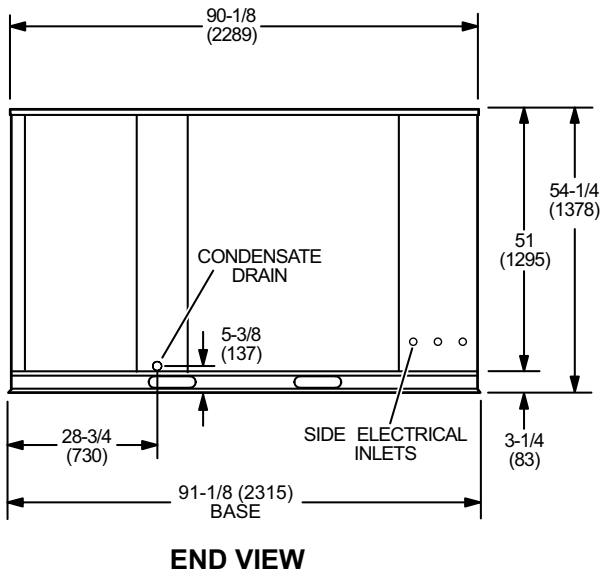
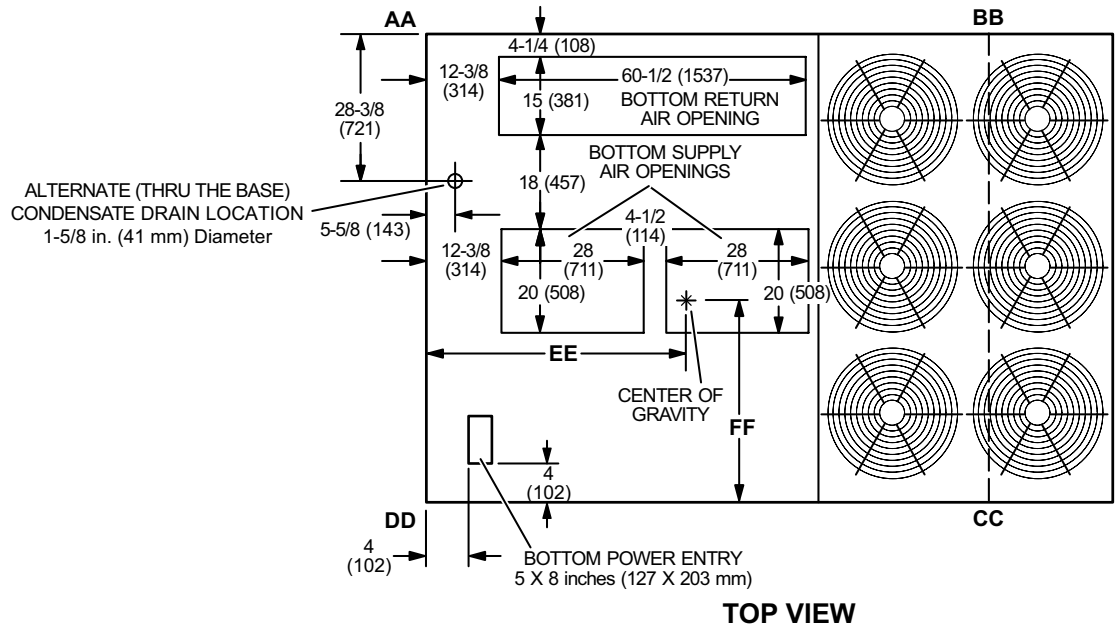
**DIMENSIONS - UNIT - INCHES (MM)**

**KCA210H, KCA240H, KCA300H**

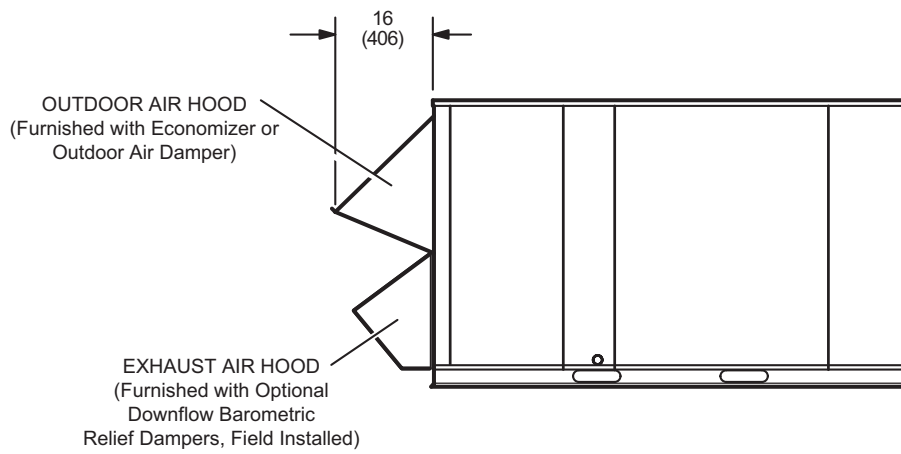
Model No.	CORNER WEIGHTS																CENTER OF GRAVITY							
	AA				BB				CC				DD				EE				FF			
	Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
210H	452	205	557	253	448	204	536	244	600	273	635	288	590	268	652	296	54	1372	53	1346	39 1/4	997	42	1067
240H	462	210	568	258	461	210	550	250	634	288	668	304	617	281	679	308	54 1/2	1384	53 1/2	1359	38 3/4	984	41 1/2	1054
300H	468	213	574	261	484	220	572	260	681	310	714	325	647	294	710	323	55	1397	54	1372	38	965	40 3/4	1035

Base Unit - The unit with NO INTERNAL OPTIONS.

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

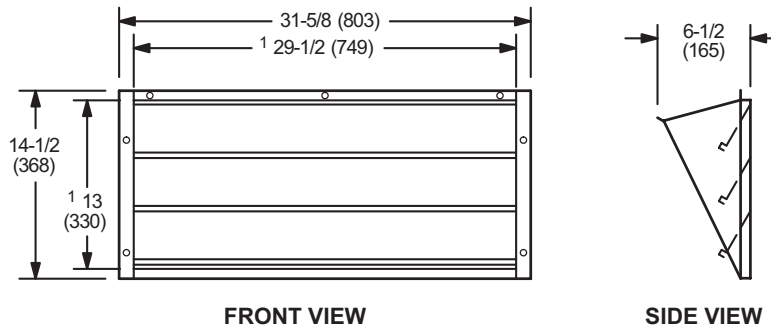


**OUTDOOR AIR HOOD DETAIL**



**OPTIONAL HORIZONTAL BAROMETRIC RELIEF DAMPERS WITH HOOD**

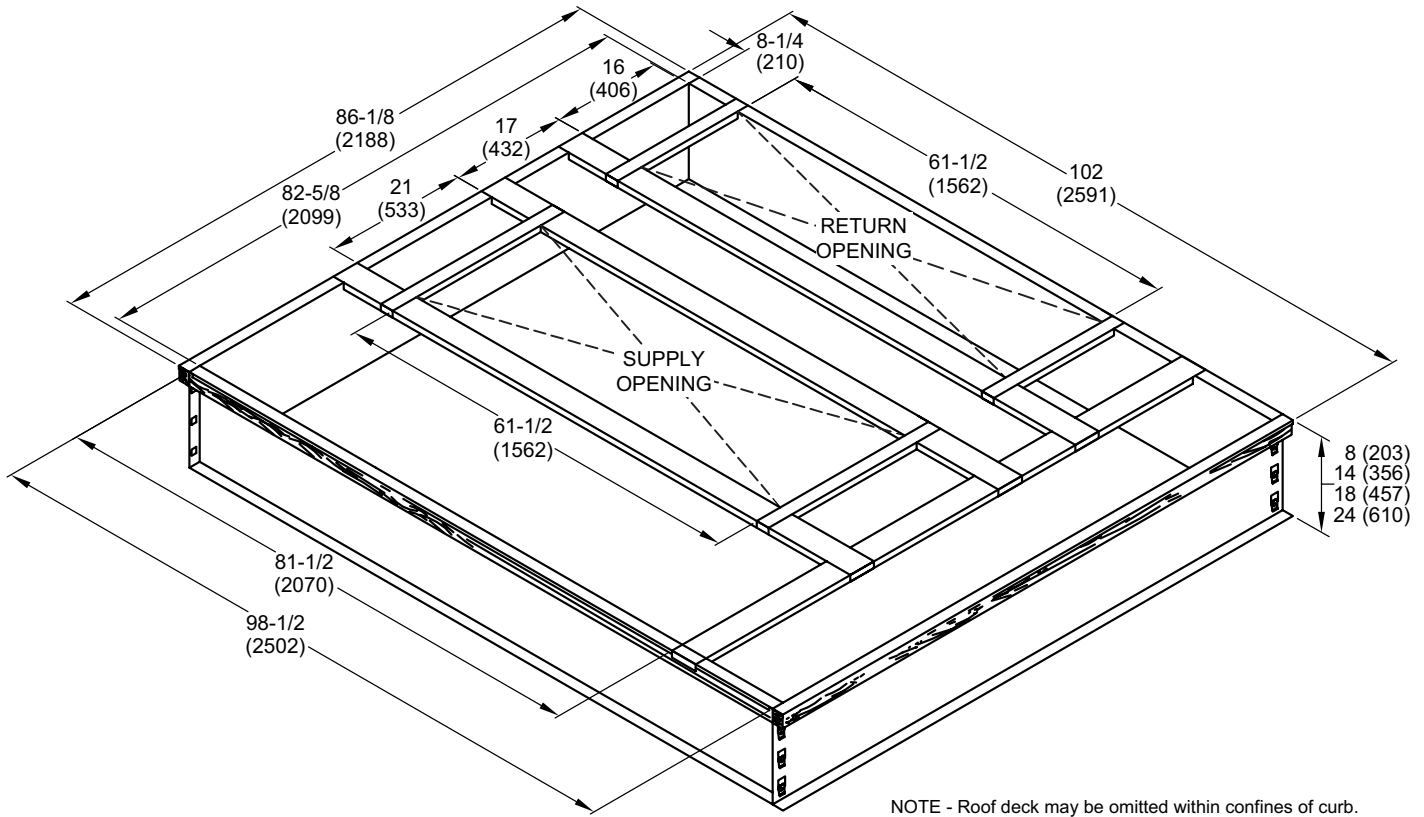
(Field installed in horizontal return air duct adjacent to unit)



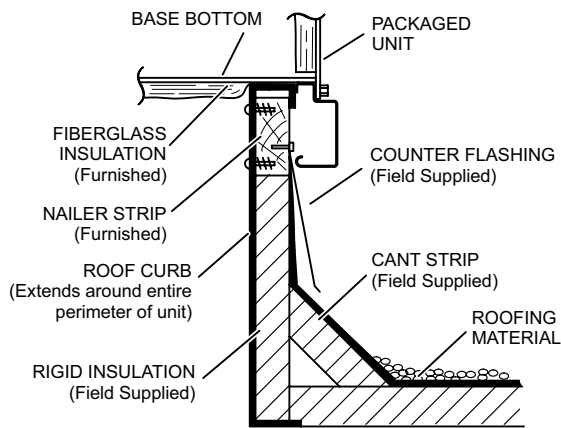
NOTE - Two furnished per order no.  
<sup>1</sup> NOTE - Opening size required in return air duct.

# DIMENSIONS - ACCESSORIES - INCHES (MM)

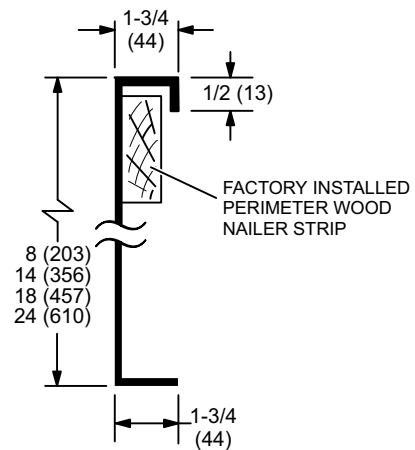
## HYBRID ROOF CURBS - DOUBLE DUCT OPENING



**TYPICAL FLASHING DETAIL FOR ROOF CURB**

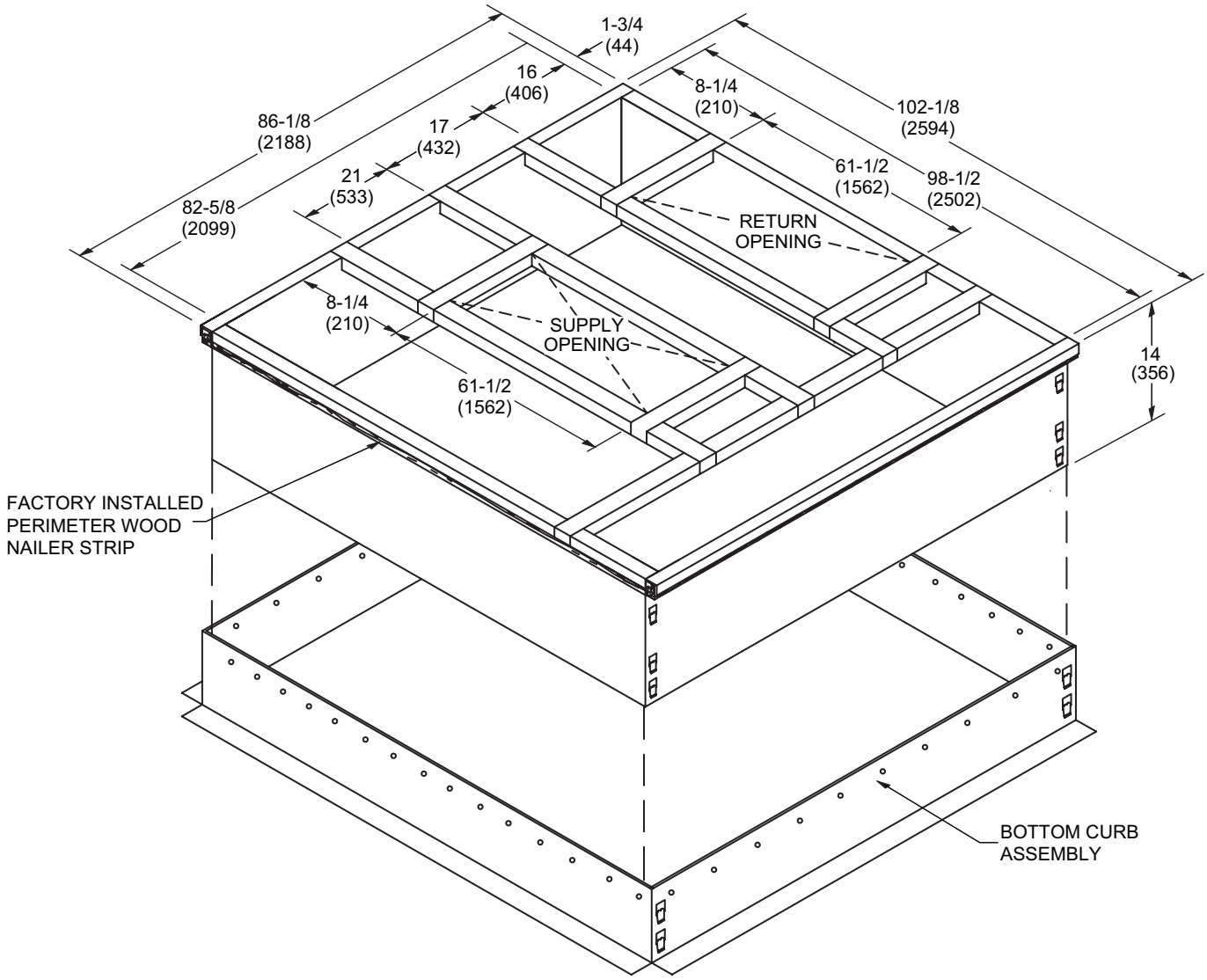


**DETAIL ROOF CURB**



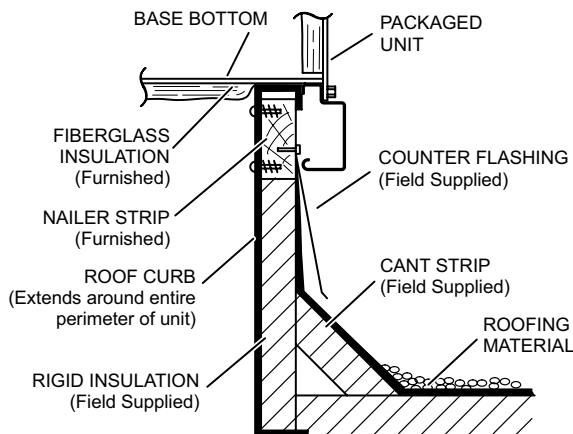
**DIMENSIONS - ACCESSORIES - INCHES (MM)**

**ADJUSTABLE PITCH CURB - DOUBLE DUCT OPENING**

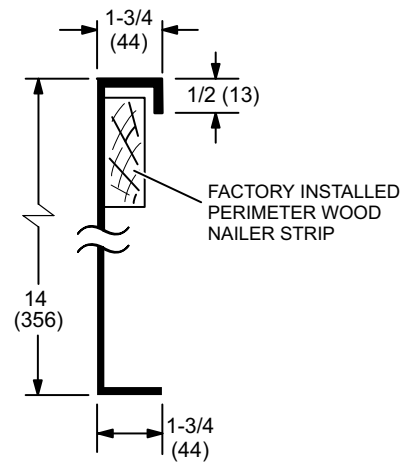


NOTE - Maximum slope pitch is 3/4 in. per 1 foot (19 mm per 305 mm) in any one direction.

**TYPICAL FLASHING DETAIL FOR ROOF CURB**

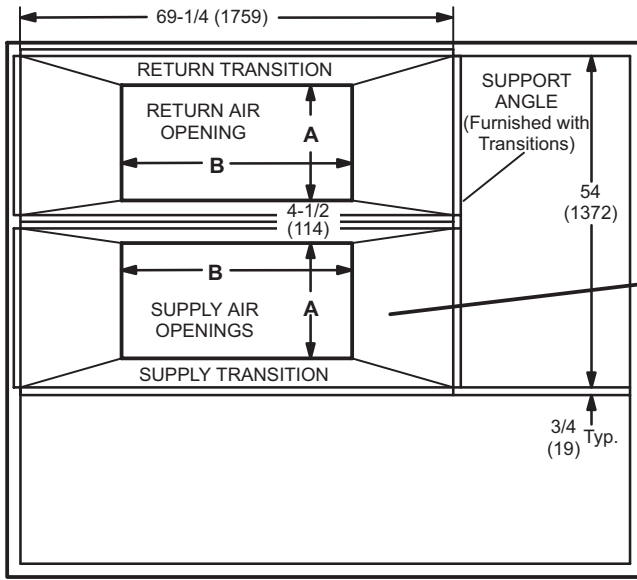


**DETAIL ROOF CURB**

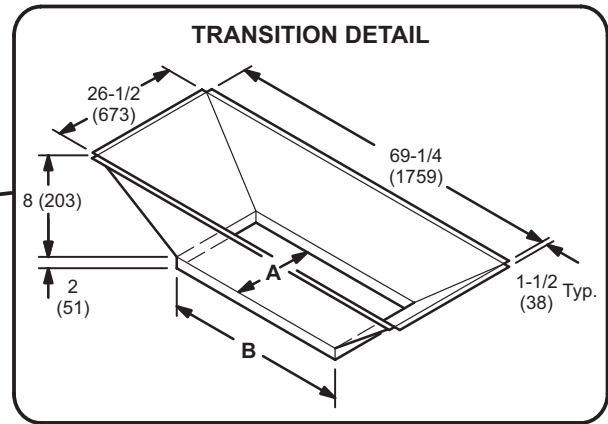


## DIMENSIONS - ACCESSORIES - INCHES (MM)

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



TOP VIEW



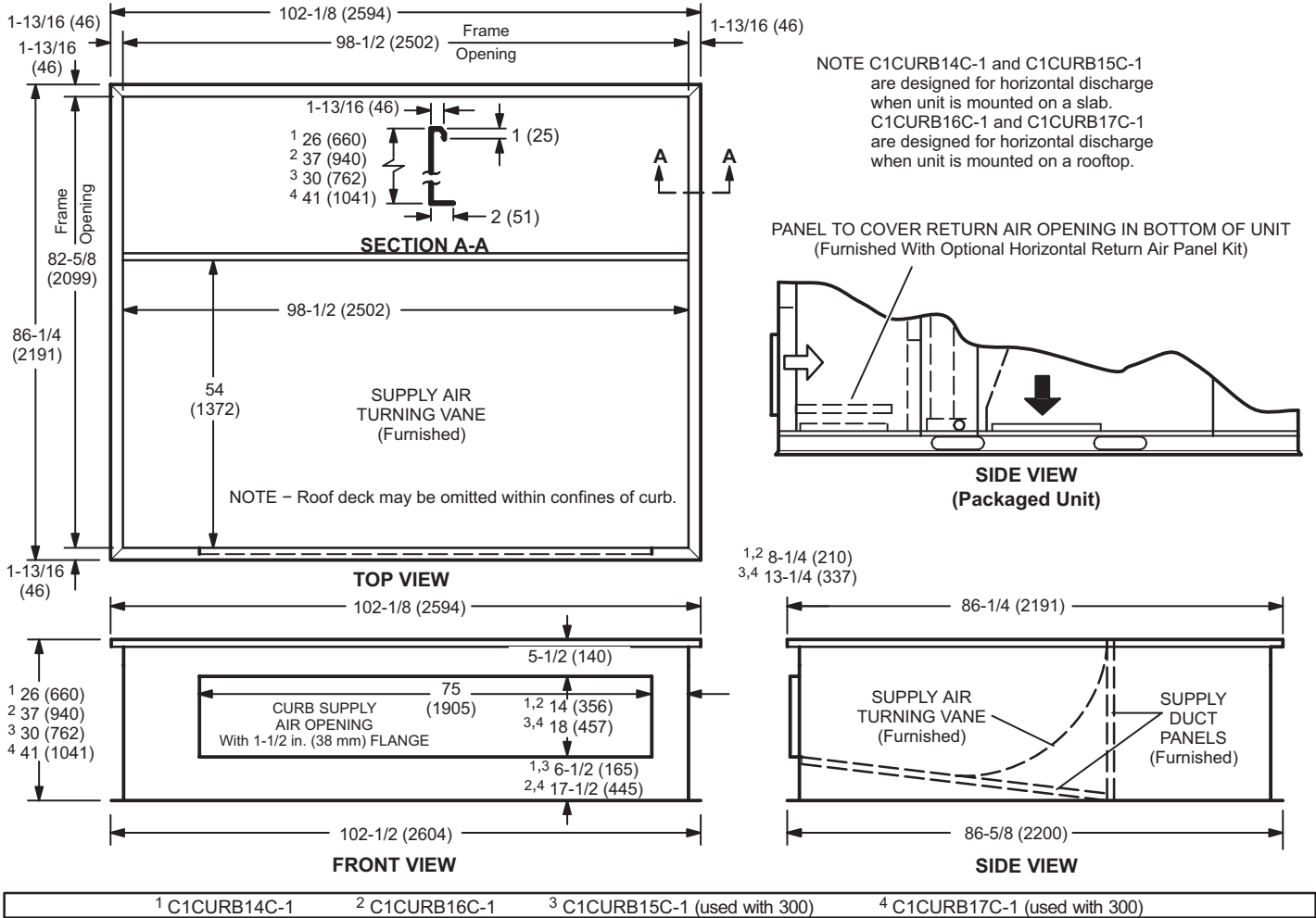
TRANSITION OPENING SIZES

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

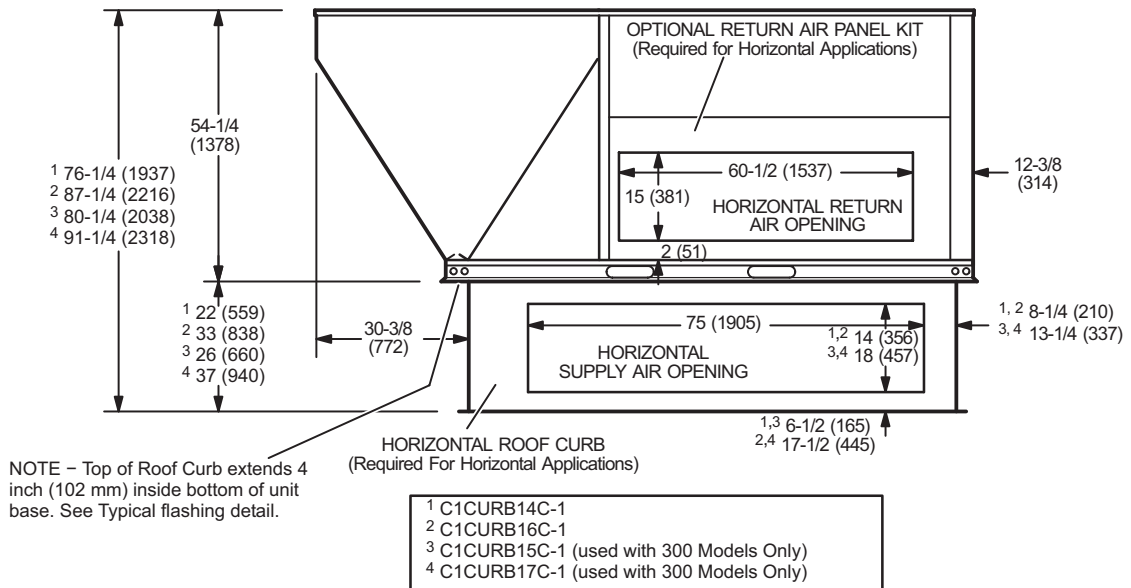


# DIMENSIONS - ACCESSORIES - INCHES (MM)

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



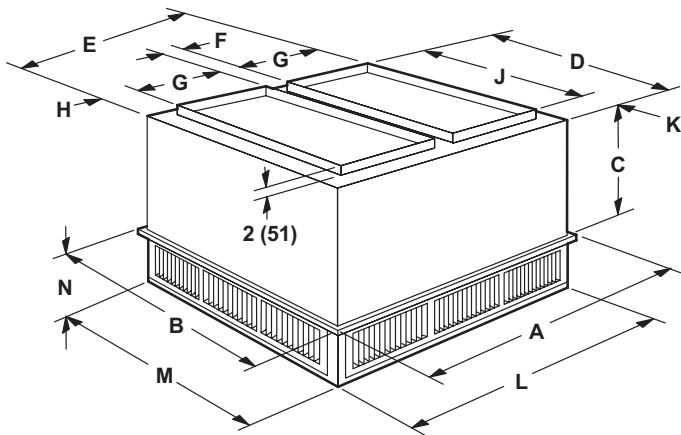
## HORIZONTAL SUPPLY AND RETURN AIR OPENINGS WITH HORIZONTAL ROOF CURB



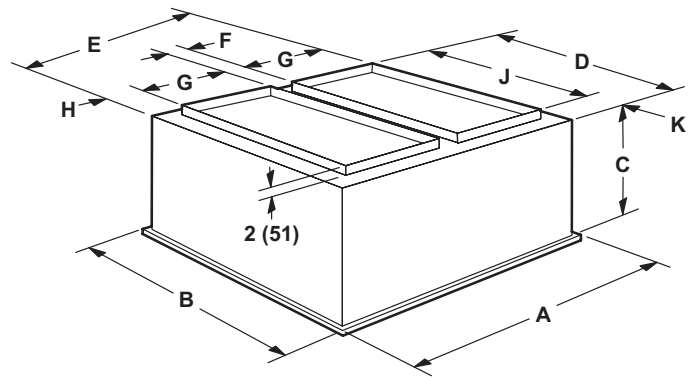
## DIMENSIONS - ACCESSORIES - INCHES (MM)

### COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

#### STEP-DOWN CEILING DIFFUSER



#### FLUSH CEILING DIFFUSER



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

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



## REVISIONS

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



Visit us at [www.lennox.com](http://www.lennox.com)

For the latest technical information, [www.lennoxcommercial.com](http://www.lennoxcommercial.com)

Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

©2017 Lennox Industries, Inc.