



PACKAGED HEAT PUMP

KHA

Landmark® Rooftop Units
Standard Efficiency - 50 HZ

PRODUCT SPECIFICATIONS

Bulletin No. 490167

April 2018

Supersedes July 2017

LANDMARK®

Performance Marked by Flexibility™



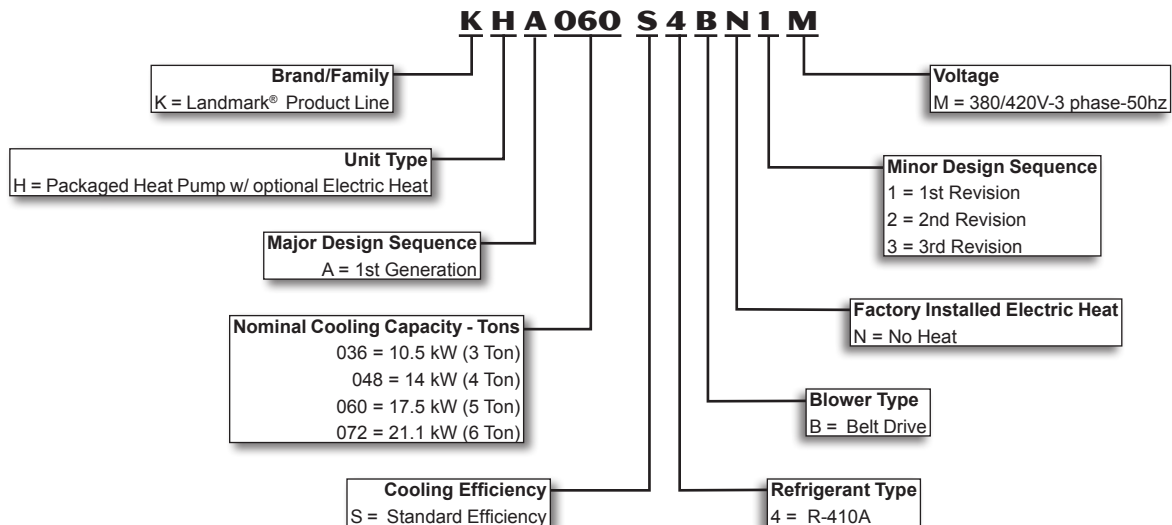
10.5 to 21 kW (3 to 6 Tons)

Net Cooling Capacity - 9.0 to 17.4 kW (30 600 to 59 300 Btuh)

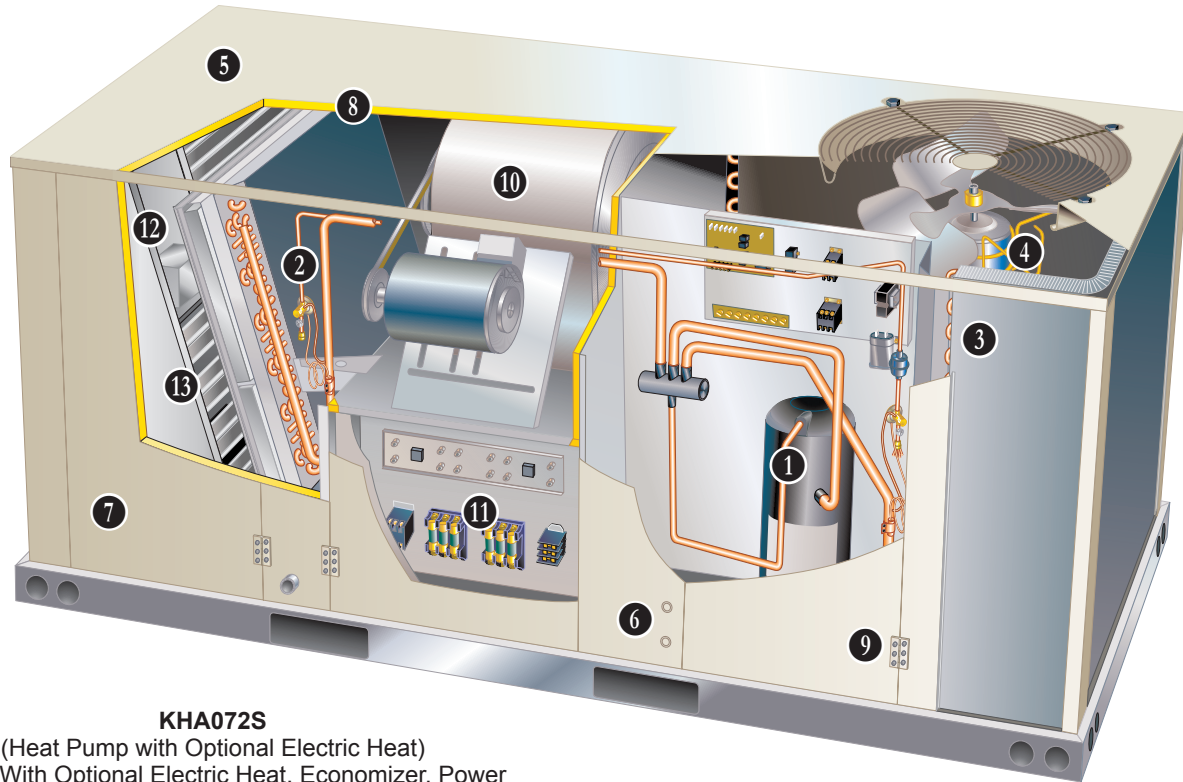
Net Heating Capacity - 9.6 to 18.4 kW (32 700 to 63 000 Btuh)

Optional Electric Heat - 5.7 to 23 kW

MODEL NUMBER IDENTIFICATION



FEATURES AND BENEFITS



KHA072S

(Heat Pump with Optional Electric Heat)
Shown With Optional Electric Heat, Economizer, Power
Exhaust and Hinged Access Panels

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

- **R-410A Refrigerant** - Environmentally friendly.
- **Scroll Compressors** - Single speed scroll compressors are furnished on all models.
- **High Pressure Switches** - Protects compressor.
- **Isolated Compressor Compartment** - Allows performance check during normal compressor operation without disrupting airflow.
- **Belt Drive Blower Motors** - Belt drive motors maximize air performance.
- **Independent Motor Mounts** - Allows for easy and efficient service access without removing the top panel.
- **Downflow or Horizontal Airflow** - Easy field conversion.
- **Two Fork Lift Slots on Three Sides** - Easy to pick up and transport units from almost any angle.
- **Corrosion-Resistant Removable, Reversible Drain Pan** - Provides application flexibility, durability and improved serviceability.
- **Thermostatic Expansion Valves** - Provide peak cooling performance across the entire application range.
- **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 - Belt Drive	16
Cooling / Heating Ratings	12
Dimensions - Accessories	31
Dimensions - Unit	30
Electrical / Electric Heat Data	26
Electric Heat Capacities	26
Features And Benefits	2
Model Number Identification	1
Optional Conventional Temperature Control Systems	28
Options / Accessories	8
Outdoor Sound Data	27
Specifications	11
Unit Clearances	27
Weight Data	29

TESTING

Components bonded for grounding to meet safety standards for servicing required by Underwriters Laboratories (UL) and the International Electrotechnical Commission (IEC).

10.5 through 17.5 kW models cooling performance is rated at test conditions included in Air-Conditioning, Heating and Refrigeration Institute (AHRI) Standard 210/240-2008 while operating at rated voltage and air volumes.

21.0 kW models cooling performance is rated at test conditions included in Air-Conditioning, Heating and Refrigeration Institute (AHRI) Standard 340/360-2007 while operating at rated voltage and air volumes.

International Organization for Standardization (ISO) 9001 Registered Manufacturing Quality System.

CE MARK OPTION

The CE mark has been added to our rooftop product line as a configure to order (CTO) option. This optional construction allows units to be sold into countries requiring CE marking for rooftop products.

CE marked units meet the requirements of the Machinery Directive 2006/42/EC, Low Voltage Directive 73/23/EEC, EMC Directive 89/336/EEC, and Gas Directive 90/396/EEC. Declaration of conformity certificates will be provided for each CE marked unit on demand.

Key features of this over and above standard product features are:

- Touch-proof electrical components meeting the requirements of EN 60529.
- Branch circuits over 0.5 kW load have overcurrent protection.
- Rotary style/finger safe disconnect switch with locking handle prevents disconnect door from being opened with the power on. Padlock can be applied to lock the disconnect switch in the OFF position.
- The factory wiring has been redesigned for separation of high and low voltage circuits.



COOLING SYSTEM

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

System can operate from -1°C to 52°C without any additional controls.

R-410A Refrigerant

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



Unit pre-charged with refrigerant. See Specification table.

1 Scroll Compressor

Scroll compressors for high performance, reliability and quiet operation.

Resiliently mounted on rubber grommets for quiet operation.

Compressor Crankcase Heater

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

2 Check/Thermal Expansion Valve

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

High Pressure Switch

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

Reversing Valves

4-way interchange reversing valve effects a rapid change in direction of refrigerant flow resulting in quick changeover from cooling to heating and vice versa.

Defrost Control

Provides a defrost cycle, if needed, every 30, 60, or 90 minutes (adjustable) of compressor on" time at outdoor coil temperature below 2°C. Temperature switch mounted on outdoor coil liquid line terminates defrost cycle.

FEATURES AND BENEFITS

COOLING SYSTEM

(continued)

Filter/Drier

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

Freezestat

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

3 Coil Construction

Copper tube construction, enhanced rippled-edge aluminum fins, flared shoulder tubing connections, silver soldered construction for improved heat transfer. Factory leak tested.

Indoor Coil

Cross row circuiting with rifled copper tubing optimizes both sensible and latent cooling capacity.

Condensate Drain Pan

Plastic pan, sloped to meet drainage requirements of American Society of Heating Refrigeration and Air Conditioning Engineers 62.1.

Side or bottom drain connections. Reversible to allow connection at back of unit.

4 Outdoor Coil Fan Motor

Thermal overload protected, totally enclosed, permanently lubricated sleeve (036 and 048 models) or ball bearings (060 and 072 models), shaft up, wire basket mount.

Outdoor Coil Fan

Polyvinyl chloride (PVC) coated fan guard furnished.

Required Selections

Cooling Capacity

Specify nominal cooling capacity of the unit.

Options / Accessories

Field Installed

Condensate Drain Trap

Field installed only.

Available in copper or polyvinyl chloride (PVC).

Drain Pan Overflow Switch

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

Low Ambient Kit

Cycles the outdoor fan 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 -18°C.

CABINET

5 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 fork 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 shipped in downflow (vertical) configuration, can be field converted to horizontal air flow configuration without the need of a kit.

6 Power Entry

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

7 Exterior Panels

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

8 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.

NOTE - KHA060/072 models include a filler panel for proper cabinet fit for optional accessories (Economizers, Power Exhaust, Outdoor Air Dampers and Barometric Relief Dampers).

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 base

Outdoor Corrosion Protection:

- Coated coil
- Painted base

9 Hinged Access Panels

Large access panels are hinged and have quarter-turn latches for quick and easy access to maintenance areas (economizer / filter, compressor / controls, heating / blower).

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.

FEATURES AND BENEFITS

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.

Thermostats

Control system and thermostat options, see page 27.

Aftermarket unit controller options, see Options/Accessories table.

10 BLOWER

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

Motor

Overload protected, equipped with ball bearings.

Belt drive motors are offered on all models.

Supply Air Blower

Forward curved blades, blower wheel is statically and dynamically balanced.

Motors have adjustable pulley for speed change.

Ordering Information

Specify drive kit number when base unit is ordered.

Required Selections

Supply Air Blower

Order one drive kit, see Drive Kit Specifications Table.

INDOOR AIR QUALITY

Air Filters

Disposable 51 mm filters furnished as standard.

Options / Accessories

Field Installed

Healthy Climate® UVC Germicidal Lamps



Helps eliminate mold and bacterial growth on the evaporator and drain pans. Improves indoor air quality and maintains efficiency of system by reducing fouling of evaporator coil.

Indoor Air Quality (CO₂) Sensor

Monitors CO₂ levels adjusts economizer dampers as needed for Demand Control Ventilation.

ELECTRICAL

Marked & Color-Coded Wiring

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

Electrical Plugs

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

Unit Sub-Fuse Blocks

Furnished as standard on all units.

Required Selections

Voltage Choice

Specify when ordering base unit.

Options / Accessories

Field Installed

11 Electric Heat

Electric Heat is CE marked.

Helix wound nichrome elements, individual element limit controls, wiring harness. Unit fuse block is furnished as standard.

ECONOMIZER OPTIONS

Factory or Field Installed

12 Economizer

(Standard and High Performance Common Features)

Outdoor Air Hood is furnished.

Factory installed Economizer can be ordered with two exhaust options:

- Barometric Relief Dampers and Exhaust Hood.
- No Exhaust.

Field installed Economizer includes Barometric Relief Dampers with Exhaust Hood.

Barometric Relief Dampers allow relief of excess air, aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle, bird screen furnished.

Occupied/Unoccupied mode with field furnished setback thermostat.

Demand Control Ventilation (DCV) ready using optional CO₂ sensors.

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

Single sensible sensor is furnished with Economizer and enables economizer operation if the outdoor temperature is less than the setpoint of the control.

Horizontal Economizer Conversion kit is available for field installation.

Standard Economizer Features

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

Standard Economizer Control Module

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



Economizer Controls:

- Damper Minimum Position - Can be set lower than traditional minimum air requirements resulting in cost savings.
- Indoor Air Quality (IAQ) Sensor - Signals dampers to modulate and maintain 13°C when CO₂ is higher than the CO₂ setpoint.
- Demand Control Ventilation (DCV) light-emitting diode (LED) - A steady green DCV LED indicates the IAQ reading is higher than setpoint and requires more fresh air.
- Free Cool LED - A steady green LED indicates outdoor air is suitable for free cooling.

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

NOTE: The Free Cooling default setting for outdoor air temperature sensor is 13°C.

High Performance Economizer Features

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

High Performance Economizer Control Module

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



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

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

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

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

- Menu Up/Exit (↑) button returns to the main menu.
- Arrow Up (▲) button moves to the previous or next parameter within the selected menu.
- Arrow Down (▼) button moves to the next parameter within the selected menu.
- Select (enter) (↵) button confirms parameter selection.

Main Menu Structure:

- STATUS (economizer and system operation status)
- SETPOINTS (settings for various setpoint parameters)
- SYSTEM SETUP (settings/information about the system)
- ADVANCED SETUP (freeze protection, CO₂ settings, stage 3 delay and additional calibration settings)
- CHECKOUT (damper positions)
- ALARMS (output signal that can be configured for remote alarm monitoring)

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

ECONOMIZER OPTIONS (continued)

Factory or Field Installed

Single Enthalpy Temperature Control

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

Field Installed

Differential Enthalpy Control

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

Horizontal Economizer Conversion Kit

Insulated panel covers the bottom return air opening on the unit base to convert downflow Economizer to horizontal airflow.

EXHAUST OPTION

Field Installed

13 Power Exhaust Fan

Installs internal to unit for downflow applications only with Economizer option. Provides exhaust air pressure relief. Interlocked to run when supply air blower is operating, fan runs when outdoor air dampers are 50% open (adjustable), motor is overload protected.

Fan is 406 mm diameter with 4 fan blades and a 0.25 kW motor.

NOTE - If Power Exhaust is field installed with a factory installed Economizer, the Economizer must be ordered with the "No Exhaust" option and the Barometric Relief Dampers with Exhaust Hood must also be ordered separately for field installation.

OUTDOOR AIR OPTIONS

Factory or Field Installed

Outdoor Air Dampers - Downflow or Horizontal

Single blade damper, 0 to 25% (fixed) outdoor air adjustable, installs in unit.

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

Manual model features a slide damper. Maximum mixed air temperature in cooling mode: 38°C.

Outdoor Air Hood is furnished.

ROOF CURBS

Nailer strip furnished, mates to unit, U.S. 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 203, 356, 457, and 610 mm heights.

Full Perimeter Curbs, Downflow (072 Models Only)

Hybrid roof curbs can be assembled using interlocking tabs to fasten corners together. No tools required.

Hybrid roof curb can also be fastened together with furnished hardware.

Available in 203, 356, 457, and 610 mm heights.

NOTE - 072 models can be used on smaller 2026 mm Hybrid Roof Curbs (not full perimeter) with 400 mm overhang at condenser end of unit. See dimension drawing on page 35.

Adjustable Pitch Curb

Fully adjustable pitch curb provides a level platform for rooftop units allowing flexible installations on roofs with uneven or sloped angles.

Maximum slope is 19 mm per 300 mm in any direction.

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

Hardware is furnished to connect upper curb with lower curb.

Available in 356 mm height.

Adaptor Curbs (not shown)

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

CEILING DIFFUSERS

Ceiling Diffusers (Flush and 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

Item	Model No.	Catalog No.	Unit Model Number			
			KHA 036	KHA 048	KHA 060	KHA 072
CE MARK						
CE Marked Unit			O	O	O	O
COOLING SYSTEM						
Condensate Drain Trap	Polyvinyl Chloride (PVC) - C1TRAP20AD2	76W26	X	X	X	X
	Copper - C1TRAP10AD2	76W27	X	X	X	X
Drain Pan Overflow Switch	K1SNSR71AB1-	74W42	X	X	X	X
Low Ambient Kit	K1SNSR13A-2	14D96	X	X	X	X
Efficiency	Standard		O	O	O	O
Refrigerant Type	R-410A		O	O	O	O
BLOWER - SUPPLY AIR						
Motor	Belt Drive - 1.5 kW Standard Efficiency		O	O	O	O
Drive Kits	Kit A01 - T1DRKT001-1 - 561 - 842 rev/min		O			
See Blower Data Tables for selection	Kit A02 - T1DRKT002-1 - 621 - 931 rev/min			O		
	Kit A03 - T1DRKT003-1 - 694 - 1042 rev/min				O	
	Kit A04 - T1DRKT004-1 - 807 - 1117 rev/min					O
	Kit A05 - T1DRKT005-1 - 748 - 1122 rev/min		O			
	Kit A06 - T1DRKT006-1 - 893 - 1191 rev/min			O		
	Kit A07 - T1DRKT007-1 - 1010 - 1290 rev/min				O	
	Kit A08 - T1DRKT008-1 - 994 - 1326 rev/min					O
	Kit A09 - T1DRKT009-1 - 1193 - 1524 rev/min					O
CABINET						
Combination Coil/ Hail Guards	C1GARD51A-1	13R98	X	X		
	C1GARD51AT1	13T03			X	
	K1GARD50AP1	13T17				X
Corrosion Protection			O	O	O	O
Hinged Access Panels			O	O	O	O
CONTROLS						
BACnet®	K0CTRL31A-2	16X70	OX	OX	OX	OX
BACnet® Thermostat with Display	K0SNSR01FF1	97W23	X	X	X	X
BACnet® Thermostat without Display	K0SNSR00FF1	97W24	X	X	X	X
Novar® 2051	K0CTRL30A-1	96W11	OX	OX		
	K0CTRL30AP1	12B98			OX	OX
Plenum Cable - 23 m	K0MISC00FF1	97W25	X	X	X	X
Smoke Detector - Supply or Return (Power board and one sensor)	C1SNSR44AP1	53W78	X	X	X	X
Smoke Detector - Supply and Return (Power board and two sensors)	C1SNSR43AP1	53W79	X	X	X	X

NOTE - The catalog and model numbers that appear here are for ordering field installed accessories only.

OX - Field Installed or Configure to Order (Factory installed)

O - Configure to Order (Factory Installed)

X - Field Installed.

OPTIONS / ACCESSORIES

Item	Model No.	Catalog No.	Unit Model Number			
			KHA 036	KHA 048	KHA 060	KHA 072
ECONOMIZER						
Standard Economizer With Outdoor Air Hood (Sensible Control)						
Standard Economizer - Includes Barometric Relief Dampers and Exhaust Hood	K1ECON30A-3-	14D90	OX	OX	OX	OX
Economizer - No Exhaust		Factory	O	O	O	O
Standard Economizer Controls						
Single Enthalpy Control	C1SNSR64FF1	53W64	OX	OX	OX	OX
Differential Enthalpy Control (order 2)	C1SNSR64FF1	53W64	X	X	X	X
High Performance Economizer With Outdoor Air Hood (Sensible Control)						
High Performance Economizer - Includes Barometric Relief Dampers and Exhaust Hood	K1ECON32A-3	16X75	OX	OX	OX	OX
High Performance Economizer - No Exhaust		Factory	O	O	O	O
High Performance Economizer Controls						
Single Enthalpy Control	C1SNSR60FF1	10Z75	OX	OX	OX	OX
Differential Enthalpy Control (order 2)	C1SNSR60FF1	10Z75	X	X	X	X
Economizer Accessories						
Horizontal Economizer Conversion Kit	T1HECK00AN1	17W45	X	X	X	X
OUTDOOR AIR						
Outdoor Air Dampers - Includes Outdoor Air Hood						
Manual	C1DAMP11A-2	15D18	OX	OX	OX	OX
Motorized	C1DAMP21A-1	15D17	OX	OX	OX	OX
POWER EXHAUST FAN						
Standard Static NOTE - Order Barometric Relief Dampers with Exhaust Hood below if unit is ordered with factory installed Economizer with “No Exhaust” option	380/420V-3ph - C1PWRE10A-1M	79W93	X	X	X	X
¹ BAROMETRIC RELIEF						
Barometric Relief Dampers with Exhaust Hood	C1DAMP50A-1-	74W38	X	X	X	X
ELECTRICAL						
Voltage 50 hz with neutral (No neutral on CE marked models)	380/420V - 3 phase		O	O	O	O
² ELECTRIC HEAT						
5.7 kW	K1EH0057AN1M	67W92	X	X	X	X
11.5 kW	K1EH0115AN1M	67W93	X	X	X	X
17.2 kW	K1EH0172AN1M	67W94			X	X
23 kW	K1EH0230N-1M	67W95				X

¹ Required when Economizer is factory installed (no exhaust option) with field installed Power Exhaust Fan option.

² Nominal kW at 420V-3ph-50hz.

NOTE - The catalog and model numbers that appear here are for ordering field installed accessories only.

OX - Field Installed or Configure to Order (Factory installed)

O - Configure to Order (Factory Installed)

X - Field Installed.

OPTIONS / ACCESSORIES

Item	Model No.	Catalog No.	Unit Model Number			
			KHA 036	KHA 048	KHA 060	KHA 072
INDOOR AIR QUALITY						
Air Filters						
Healthy Climate® High Efficiency Air Filters Order 4 per unit	MERV 8 (406 x 508 x 51) - C1FLTR15A-1-	54W20	X	X		
	MERV 13 (406 x 508 x 51) - T1FLTR40A-1-	52W37	X	X		
	MERV 8 (508 x 508 x 51) - C1FLTR15D-1-	54W21			X	X
	MERV 13 (508 x 508 x 51) - C1FLTR40D-1-	52W39			X	X
Indoor Air Quality (CO ₂) Sensors						
Sensor - Wall-mount, off-white plastic cover with LCD display	C0SNSR50AE1L	77N39	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting	C0SNSR53AE1L	87N54	X	X	X	X
CO ₂ Sensor Duct Mounting Kit - for downflow applications	C0MISC19AE1-	85L43	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO ₂ sensor (77N39)	C0MISC16AE1-	90N43	X	X	X	X
UVC Germicidal Lamps						
¹ Healthy Climate® UVC Light Kit (220V-1ph)	E1UVCL10AN1-	50W90	X	X	X	X
ROOF CURBS						
Hybrid Roof Curbs, Downflow						
203 mm height	C1CURB70A-1	11F50	X	X	X	² X
356 mm height	C1CURB71A-1	11F51	X	X	X	² X
457 mm height	C1CURB72A-1	11F52	X	X	X	² X
610 mm height	C1CURB73A-1	11F53	X	X	X	² X
Hybrid Roof Curbs, Full Perimeter, Downflow						
203 mm height	K1CURB70AP1	11S47				X
356 mm height	K1CURB71AP1	11S48				X
457 mm height	K1CURB72AP1	11T01				X
610 mm height	K1CURB73AP1	11T06				X
Adjustable Pitch Curb, Downflow						
356 mm height	C1CURB55AT1	43W27	X	X	X	² X
CEILING DIFFUSERS						
Step-Down - Order one	RTD9-65S	13K60	X	X	X	
	RTD11-95S	13K61				X
Flush - Order one	FD9-65S	13K55	X	X	X	
	FD11-95S	13K56				X
Transitions (Supply and Return) - Order one	T1TRAN10AN1	17W53	X	X	X	
	T1TRAN20N-1	17W54				X

¹ Lamps operate on 110-230V single-phase power supply. Step-down transformer may be ordered separately for 380/420V primary to 220V secondary units. Alternately, 220V power supply may be used to directly power the UVC ballast(s).

² 072 models will fit smaller roof curbs with overhang. See dimension drawing.

NOTE - The catalog and model numbers that appear here are for ordering field installed accessories only.

OX - Field Installed or Configure to Order (Factory installed)

O - Configure to Order (Factory Installed)

X - Field Installed.

SPECIFICATIONS

General Data		Nominal Size	10.5 kW (3 Ton)	14 kW (4 Ton)	17.5 kW (5 Ton)	21 kW (6 Ton)
		Model No.	KHA036S4B	KHA048S4B	KHA060S4B	KHA072S4B
		Efficiency Type	Standard	Standard	Standard	Standard
		Blower Type	Single Speed Belt Drive	Single Speed Belt Drive	Single Speed Belt Drive	Single Speed Belt Drive
Cooling Performance	Gross Cooling Capacity - kW (Btuh)		9.4 (32 100)	12.4 (42 500)	15.5 (53 000)	18.1 (61 800)
	Net Cooling Capacity - kW (Btuh)		¹ 9.0 (30 600)	¹ 11.8 (40 200)	¹ 14.8 (50 500)	² 17.4 (59 300)
	AHRI Rated Air Flow - L/s (cfm)		545 (1160)	755 (1600)	935 (1985)	970 (2060)
	³ Sound Rating Number (dB)		75	75	82	83
	Total Unit Power - kW		2.9	3.9	4.8	5.6
	SEER (Btuh/Watt)		¹ 13.0	¹ 13.0	¹ 13.0	- - -
	EER (Btuh/Watt)		¹ 10.9	¹ 10.7	¹ 11	² 11.0
	IEER (Btuh/Watt)		- - -	- - -	- - -	² 12.1
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A
	Charge Furnished		5.67 kg (12 lbs. 8 oz.)	5.95 kg (13 lbs. 2 oz.)	7.26 kg (16 lbs 0 oz.)	9.30 kg (20 lbs. 8 oz.)
Heating Performance	Total High Heating Capacity - kW (Btuh)		9.6 (32 700)	12.6 (43 000)	16.0 (54 500)	18.4 (63 000)
	Total Unit Power - kW		2.6	3.5	4.2	5.8
	¹ COP		3.7	3.7	3.8	3.3
	Total Low Heating Capacity - kW (Btuh)		5.8 (19 700)	7.7 (26 400)	9.5 (32 400)	10.5 (36 000)
	Total Unit Power - kW		2.4	3.1	3.6	4.7
	¹ COP		2.4	2.5	2.7	2.25
Electric Heating Options			See Electric Heat, page 26			
Compressor Type (no.)			Scroll (1)	Scroll (1)	Scroll (1)	Scroll (1)
Outdoor Coil	Net face area - m ² (sq. ft.)		1.45 (15.6)	1.45 (15.6)	1.79 (19.27)	2.6 (28.00)
	Tube diameter - mm (in.)		9.5 (3/8)	9.5 (3/8)	9.5 (3/8)	9.5 (3/8)
	Number of rows		2	2	2	2
	Fins per meter (Fins / inch)		788 (20)	788 (20)	788 (20)	788 (20)
Outdoor Coil Fan	Motor W (HP)		187 (1/4)	187 (1/4)	249 (1/3)	374 (1/2)
	Motor rev/min		690	690	900	900
	Total motor watts		190	190	310	520
	Diameter - mm (in.) / No. of blades		610 (24) - 3	610 (24) - 3	610 (24) - 3	610 (24) - 4
	Total air volume - L/s (cfm)		1300 (2750)	1300 (2750)	1890 (4000)	2260 (4780)
Indoor Coil	Net face area - m ² (sq. ft.)		0.72 (7.78)	0.72 (7.78)	0.90 (9.7)	0.90 (9.7)
	Tube diameter - mm (in.)		9.5 (3/8)	9.5 (3/8)	9.5 (3/8)	9.5 (3/8)
	Number of rows		3	3	4	4
	Fins per meter (Fins / inch)		552 (14)	552 (14)	552 (14)	552 (14)
	Drain Connection (no. and size) - in.		(1) 1 NPT	(1) 1 NPT	(1) 1 NPT	(1) 1 NPT
	Expansion device type		Balanced Port Thermostatic Expansion Valve, removeable power head			
⁴ Indoor Blower & Drive Selection	Nominal Motor kW (HP)		1.5 (2)	1.5 (2)	1.5 (2)	1.5 (2)
	Maximum Usable Motor kW (HP)		1.7 (2.3)	1.7 (2.3)	1.7 (2.3)	1.7 (2.3)
	Wheel nom. diameter x width - mm (in.)		254 x 254 (10 x 10)			
	Drive Kit (rev/min range)		A01 - (561 - 842) A05 - (748 - 1122)	A02 - (621 - 931) A06 - (893 - 1191)	A03 - (694 - 1042) A07 - (1010 - 1290)	A04 - (807 - 1117) A08 - (994-1326) A09 - (1193 - 1524)
Filters	Type		Disposable			
	Number and size - mm (in.)		(4) 406 x 508 x 51 (16 x 20 x 2)		(4) 508 x 508 x 51 (20 x 20 x 2)	
Electrical Characteristics - 50 hz			380/420V - 50 hertz - 3 phase with neutral (No neutral on CE marked models)			

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

^{1,2} Rating test conditions are those included in Air-Conditioning, Heating and Refrigeration Institute (AHRI) Standard ¹210/240 or ²340/360 while operating at rated voltage and air volumes:

Cooling Ratings - 35°C (95°F) outdoor air temperature and 27°C (80°F) dry bulb/19°C (67°F) wet bulb entering indoor coil air.

High Temperature Heating Ratings - 8°C (47°F) dry bulb/6°C (43°F) wet bulb outdoor air temperature and 21°C (70°F) entering indoor coil air.

Low Temperature Heating Ratings - -8°C (17°F) dry bulb/-9°C (15°F) wet bulb outdoor air temperature and 21°C (70°F) entering indoor coil air.

³ Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270.

⁴ Using total air volume and system static pressure requirements determine from blower performance tables rev/min and motor size required. Maximum usable size of motors furnished is shown. If motors of comparable size are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

COOLING / HEATING RATINGS

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

10.5 KW - KHA036S4 - COOLING CAPACITY

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																							
		26.7°C						35°C						43.3°C						46°C					
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			
				Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb			
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C					
17.2°C	455	9.4	1.76	0.74	0.9	1	8.4	2.13	0.76	0.94	1	7.4	2.57	0.79	0.99	1	7	2.74	0.81	1	1				
	565	10	1.77	0.8	0.99	1	9	2.14	0.83	1	1	8	2.59	0.88	1	1	7.7	2.75	0.9	1	1				
	680	10.5	1.78	0.87	1	1	9.6	2.15	0.91	1	1	8.5	2.6	0.97	1	1	8.1	2.76	0.99	1	1				
19.4°C	455	10	1.77	0.57	0.72	0.86	9	2.14	0.57	0.74	0.9	7.9	2.58	0.58	0.76	0.96	7.5	2.74	0.59	0.79	0.98				
	565	10.5	1.78	0.61	0.78	0.96	9.5	2.15	0.62	0.81	1	8.3	2.59	0.63	0.85	1	7.9	2.75	0.65	0.88	1				
	680	10.9	1.79	0.65	0.85	1	9.8	2.16	0.66	0.88	1	8.6	2.6	0.69	0.94	1	8.2	2.76	0.71	0.97	1				
21.7°C	455	10.6	1.78	0.42	0.56	0.7	9.6	2.15	0.41	0.57	0.72	8.5	2.6	0.39	0.57	0.74	8.1	2.76	0.39	0.58	0.77				
	565	11.2	1.79	0.44	0.6	0.76	10.1	2.16	0.43	0.62	0.79	8.9	2.61	0.42	0.63	0.83	8.5	2.77	0.43	0.65	0.86				
	680	11.5	1.8	0.46	0.65	0.83	10.4	2.17	0.46	0.66	0.86	9.1	2.62	0.45	0.69	0.92	8.7	2.78	0.46	0.71	0.95				
Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																							
		48°C						50°C						51.7°C											
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)									
				Dry Bulb						Dry Bulb						Dry Bulb									
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C					
17.2°C	455	6.8	2.87	0.81	1	1	6.5	3.01	0.83	1	1	6.3	3.13	0.84	1	1									
	565	7.4	2.88	0.92	1	1	7.1	3.02	0.94	1	1	6.9	3.14	0.95	1	1									
	680	7.8	2.9	1	1	1	7.5	3.03	1	1	1	7.3	3.16	1	1	1									
19.4°C	455	7.2	2.89	0.59	0.79	0.99	6.9	3.02	0.59	0.8	1	6.7	3.14	0.59	0.81	1									
	565	7.6	2.89	0.65	0.89	1	7.3	3.02	0.65	0.91	1	7	3.15	0.66	0.93	1									
	680	7.9	2.89	0.71	0.98	1	7.6	3.03	0.72	1	1	7.3	3.15	0.73	1	1									
21.7°C	455	7.8	2.89	0.38	0.58	0.76	7.5	3.03	0.38	0.59	0.78	7.2	3.15	0.38	0.59	0.79									
	565	8.1	2.9	0.42	0.64	0.87	7.8	3.04	0.42	0.65	0.88	7.5	3.16	0.42	0.66	0.9									
	680	8.4	2.91	0.45	0.71	0.96	8	3.04	0.45	0.72	0.98	7.8	3.17	0.45	0.73	0.99									

10.5 KW - KHA036S4 - HEATING CAPACITY

Indoor Coil Air Volume 21°C Dry Bulb	Air Temperature Entering Outdoor Coil									
	18°C		7°C		-4°C		-15°C		-28°C	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
	L/s	kW	kW	kW	kW	kW	kW	kW	kW	kW
453		11.6	2.20	8.8	2.05	5.8	1.88	4.1	1.71	2.0
566		11.8	2.07	9.1	1.92	6.1	1.76	4.4	1.58	2.3
680		12.0	1.99	9.3	1.84	6.3	1.68	4.6	1.5	2.5

COOLING / HEATING RATINGS

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

14 KW - KHA048S4 - COOLING CAPACITY

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																							
		26.7°C						35°C						43.3°C						46°C					
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			
				Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb			
				L/s	kW	kW	24°C			27°C	29°C	kW	kW			24°C	27°C	29°C	kW			kW	24°C	27°C	29°C
17.2°C	605	12.6	2.38	0.75	0.91	1	11	2.91	0.76	0.95	1	9.4	3.51	0.79	1	1	8.9	3.73	0.81	1	1				
	755	13.3	2.38	0.81	1	1	11.8	2.93	0.84	1	1	10.3	3.54	0.89	1	1	9.8	3.75	0.91	1	1				
	905	14.1	2.38	0.88	1	1	12.6	2.94	0.92	1	1	10.9	3.55	0.98	1	1	10.3	3.77	0.99	1	1				
19.4°C	605	13.5	2.38	0.57	0.72	0.88	11.8	2.93	0.56	0.74	0.91	10.1	3.53	0.56	0.77	0.97	9.5	3.75	0.57	0.79	0.99				
	755	14.2	2.38	0.61	0.79	0.97	12.5	2.94	0.62	0.82	1	10.6	3.55	0.63	0.86	1	10.1	3.76	0.64	0.89	1				
	905	14.7	2.38	0.65	0.86	1	13	2.95	0.67	0.9	1	11.1	3.56	0.69	0.96	1	10.4	3.78	0.70	0.98	1				
21.7°C	605	14.4	2.38	0.41	0.56	0.7	12.7	2.94	0.39	0.56	0.72	11	3.56	0.37	0.56	0.75	10.4	3.77	0.36	0.57	0.77				
	755	15.2	2.38	0.43	0.61	0.77	13.4	2.95	0.42	0.62	0.8	11.5	3.57	0.4	0.63	0.84	10.9	3.79	0.40	0.64	0.87				
	905	15.7	2.38	0.46	0.65	0.84	13.8	2.96	0.45	0.67	0.88	11.8	3.58	0.43	0.69	0.93	11.2	3.80	0.43	0.70	0.96				
Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																							
		48°C						50°C						51.7°C											
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)									
				Dry Bulb						Dry Bulb						Dry Bulb									
				L/s	kW	kW	24°C			27°C	29°C	kW	kW			24°C	27°C	29°C	kW	kW	24°C	27°C	29°C		
17.2°C	605	8.5	3.91	0.81	1	1	8.1	4.09	0.83	1	1	7.8	4.26	0.84	1	1									
	755	9.3	3.93	0.92	1	1	8.9	4.12	0.94	1	1	8.5	4.28	0.96	1	1									
	905	9.9	3.95	1	1	1	9.5	4.13	1	1	1	9.1	4.29	1	1	1									
19.4°C	605	9.1	3.92	0.56	0.79	1	8.6	4.11	0.56	0.80	1	8.2	4.27	0.56	0.82	1									
	755	9.6	3.94	0.64	0.90	1	9.1	4.12	0.64	0.92	1	8.7	4.28	0.64	0.94	1									
	905	10.0	3.95	0.70	0.99	1	9.5	4.13	0.71	1	1	9.1	4.29	0.72	1	1									
21.7°C	605	9.9	3.95	0.35	0.57	0.77	9.4	4.13	0.34	0.57	0.79	9	4.29	0.34	0.57	0.8									
	755	10.4	3.96	0.39	0.64	0.88	9.9	4.15	0.38	0.65	0.90	9.4	4.3	0.38	0.65	0.91									
	905	10.7	3.97	0.42	0.71	0.98	10.2	4.15	0.42	0.72	0.99	9.8	4.32	0.41	0.73	1									

14 KW - KHA048S4 - HEATING CAPACITY

Indoor Coil Air Volume 21°C Dry Bulb	Air Temperature Entering Outdoor Coil									
	18°C		7°C		-4°C		-15°C		-28°C	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
	L/s	kW	kW	kW	kW	kW	kW	kW	kW	kW
604	15.2	3.01	11.6	2.77	7.7	2.52	5.6	2.26	2.8	1.69
755	15.5	2.84	11.9	2.60	8.0	2.35	5.9	2.09	3.0	1.53
906	15.8	2.75	12.1	2.51	8.2	2.26	6.2	2.00	3.3	1.43

COOLING / HEATING 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 KW - KHA060S4 - COOLING CAPACITY

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	755	15.7	2.86	0.73	0.9	1	13.7	3.43	0.75	0.94	1	11.7	4.13	0.77	0.99	1	11.0	4.39	0.80	1	1
	945	16.6	2.88	0.8	0.98	1	14.7	3.46	0.83	1	1	12.8	4.17	0.87	1	1	12.1	4.42	0.90	1	1
	1135	17.6	2.91	0.86	1	1	15.7	3.49	0.9	1	1	13.6	4.19	0.96	1	1	12.9	4.44	0.98	1	1
19.4°C	755	16.8	2.89	0.56	0.71	0.86	14.8	3.46	0.56	0.73	0.9	12.7	4.16	0.55	0.76	0.95	11.9	4.41	0.56	0.77	0.98
	945	17.7	2.91	0.61	0.78	0.95	15.6	3.48	0.61	0.81	0.99	13.3	4.18	0.61	0.85	1	12.6	4.43	0.63	0.88	1
	1135	18.4	2.93	0.64	0.84	1	16.2	3.5	0.66	0.88	1	13.8	4.2	0.67	0.94	1	13.0	4.45	0.69	0.96	1
21.7°C	755	18.1	2.92	0.42	0.56	0.69	15.9	3.49	0.4	0.56	0.71	13.7	4.19	0.36	0.55	0.74	12.9	4.44	0.36	0.56	0.75
	945	19	2.94	0.43	0.6	0.76	16.7	3.51	0.42	0.61	0.79	14.4	4.21	0.4	0.62	0.83	13.6	4.46	0.40	0.63	0.86
	1135	19.6	2.96	0.46	0.65	0.82	17.3	3.54	0.45	0.65	0.86	14.8	4.23	0.43	0.68	0.92	14.0	4.47	0.42	0.69	0.94
Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		48°C					50°C					51.7°C									
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)							
				Dry Bulb					Dry Bulb					Dry Bulb							
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C						
17.2°C	755	10.5	4.59	0.80	1	1	10.0	4.81	0.81	1	1	9.6	5	0.82	1	1					
	945	11.5	4.63	0.91	1	1	11.0	4.84	0.93	1	1	10.6	5.03	0.95	1	1					
	1135	12.4	4.65	0.99	1	1	11.8	4.86	1	1	1	11.3	5.05	1	1	1					
19.4°C	755	11.3	4.61	0.55	0.78	0.99	10.7	4.83	0.55	0.79	1	10.2	5.01	0.55	0.8	1					
	945	12.0	4.64	0.63	0.89	1	11.3	4.85	0.63	0.91	1	10.8	5.03	0.64	0.93	1					
	1135	12.4	4.65	0.69	0.98	1	11.8	4.86	0.70	1	1	11.3	5.05	0.71	1	1					
21.7°C	755	12.3	4.64	0.34	0.56	0.76	11.7	4.86	0.34	0.56	0.77	11.2	5.04	0.33	0.56	0.78					
	945	12.9	4.67	0.38	0.63	0.87	12.3	4.87	0.38	0.64	0.89	11.7	5.06	0.37	0.64	0.91					
	1135	13.4	4.68	0.42	0.70	0.96	12.7	4.89	0.42	0.70	0.98	12.1	5.08	0.41	0.71	1					

17.5 KW - KHA060S4 - HEATING CAPACITY

Indoor Coil Air Volume 21°C Dry Bulb	Air Temperature Entering Outdoor Coil									
	18°C		7°C		-4°C		-15°C		-28°C	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
L/s	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
755	19.5	3.53	14.8	3.28	9.90	3.03	6.8	2.68	3.4	2.01
944	19.8	3.33	15.2	3.08	10.2	2.83	7.2	2.48	3.7	1.81
1133	20.3	3.21	15.6	2.96	10.6	2.71	7.6	2.36	4.2	1.69

COOLING / HEATING RATINGS

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

21 KW - KHA072S4 - COOLING CAPACITY

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																							
		26.7°C						35°C						43.3°C						46°C					
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			
				Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb			
				24°C	27°C	29°C	kW			kW	24°C	27°C	29°C			kW	kW	24°C	27°C			29°C	kW	kW	24°C
17.2°C	905	18.5	3.55	0.72	0.9	1	16.7	4.16	0.74	0.95	1	14.7	4.88	0.77	1	1	14.1	5.14	0.82	1	1				
	1135	19.5	3.56	0.78	1	1	17.8	4.16	0.81	1	1	15.9	4.88	0.87	1	1	15.3	5.15	0.92	1	1				
	1360	20.6	3.56	0.86	1	1	18.9	4.17	0.9	1	1	16.9	4.89	0.97	1	1	16.2	5.14	0.99	1	1				
19.4°C	905	19.8	3.56	0.55	0.7	0.85	17.9	4.16	0.56	0.72	0.9	15.8	4.89	0.57	0.75	0.97	15.0	5.15	0.59	0.80	0.99				
	1135	20.7	3.56	0.6	0.76	0.96	18.7	4.16	0.6	0.78	1	16.5	4.89	0.62	0.84	1	15.8	5.14	0.65	0.89	1				
	1360	21.4	3.57	0.63	0.83	1	19.4	4.16	0.64	0.88	1	17.1	4.89	0.67	0.94	1	16.4	5.14	0.71	0.97	1				
21.7°C	905	21.1	3.56	0.41	0.54	0.68	19.1	4.16	0.4	0.55	0.7	17	4.89	0.38	0.56	0.72	16.2	5.14	0.39	0.59	0.77				
	1135	22.1	3.57	0.43	0.59	0.74	20	4.17	0.42	0.6	0.77	17.7	4.89	0.41	0.61	0.81	17.0	5.14	0.42	0.64	0.87				
	1360	22.8	3.57	0.45	0.63	0.81	20.7	4.17	0.44	0.64	0.85	18.3	4.89	0.44	0.67	0.91	17.5	5.15	0.45	0.71	0.95				
Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																							
		48°C						50°C						51.7°C											
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)				Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)									
				Dry Bulb						Dry Bulb						Dry Bulb									
				24°C	27°C	29°C	kW			kW	24°C	27°C	29°C			kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C
17.2°C	905	13.6	5.35	0.84	1	1	13.1	5.57	0.85	1	1	12.7	5.76	0.83	1	1									
	1135	14.8	5.35	0.93	1	1	14.2	5.57	0.95	1	1	13.8	5.76	0.96	1	1									
	1360	15.7	5.35	1	1	1	15.2	5.57	1	1	1	14.7	5.76	1	1	1									
19.4°C	905	14.4	5.35	0.59	0.81	1	13.8	5.56	0.60	0.82	1	13.4	5.76	0.58	0.8	1									
	1135	15.2	5.35	0.66	0.91	1	14.6	5.56	0.67	0.92	1	14.1	5.76	0.65	0.92	1									
	1360	15.7	5.35	0.72	0.99	1	15.2	5.57	0.73	1	1	14.7	5.76	0.7	1	1									
21.7°C	905	15.6	5.35	0.39	0.59	0.78	15.0	5.56	0.38	0.59	0.80	14.5	5.76	0.37	0.57	0.77									
	1135	16.4	5.35	0.42	0.65	0.88	15.7	5.57	0.42	0.66	0.90	15.2	5.76	0.41	0.64	0.89									
	1360	16.8	5.35	0.45	0.72	0.97	16.2	5.57	0.45	0.73	0.98	15.6	5.76	0.44	0.7	0.99									

21 KW - KHA072S4 - HEATING CAPACITY

Indoor Coil Air Volume 21°C Dry Bulb	Air Temperature Entering Outdoor Coil									
	18°C		7°C		-4°C		-15°C		-28°C	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
	L/s	kW	kW	kW	kW	kW	kW	kW	kW	kW
906	22.9	4.65	17.4	4.14	11.9	3.59	7.3	3.22	3.5	2.43
1133	23.5	4.42	18.1	3.91	12.5	3.37	7.9	3.00	4.1	2.21
1359	24.0	4.28	18.5	3.78	13.0	3.23	8.4	2.86	4.6	2.07

BLOWER DATA - BELT DRIVE - KHAA036 - DOWNFLOW

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (heat section, economizer, etc.).

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 24 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume		External Static - Pa (in.w.g.)																	
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)		
L/s	cfm	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP
425	900	486	0.09	0.12	554	0.12	0.16	0.20	695	0.16	0.22	0.24	0.26	767	0.17	0.23	836	0.19	0.25
472	1000	508	0.11	0.15	576	0.14	0.19	0.22	713	0.18	0.24	0.27	0.28	783	0.19	0.26	848	0.21	0.28
519	1100	533	0.13	0.18	599	0.16	0.22	0.25	733	0.20	0.27	0.30	0.31	800	0.21	0.28	863	0.23	0.31
566	1200	560	0.16	0.21	625	0.19	0.25	0.28	755	0.22	0.30	0.32	0.34	820	0.24	0.32	879	0.25	0.34
613	1300	591	0.18	0.24	654	0.21	0.28	0.31	779	0.25	0.33	0.36	0.38	841	0.26	0.35	897	0.28	0.38
661	1400	631	0.19	0.26	690	0.22	0.30	0.34	807	0.27	0.36	0.39	0.42	864	0.29	0.39	916	0.31	0.42
708	1500	676	0.21	0.28	729	0.25	0.33	0.36	835	0.30	0.40	0.43	0.47	887	0.32	0.43	935	0.35	0.47

Air Volume		External Static - Pa (in.w.g.)																	
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)		
L/s	cfm	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP
425	900	1004	0.25	0.33	1055	0.26	0.35	1106	0.28	0.37	1152	0.30	0.40	1193	0.32	0.43	1232	0.34	0.46
472	1000	1011	0.27	0.36	1062	0.28	0.38	1111	0.31	0.41	1157	0.32	0.43	1199	0.35	0.47	1238	0.37	0.50
519	1100	1020	0.29	0.39	1070	0.31	0.41	1118	0.33	0.44	1163	0.35	0.47	1206	0.38	0.51	1245	0.40	0.54
566	1200	1031	0.32	0.43	1079	0.34	0.45	1127	0.36	0.48	1171	0.39	0.52	1213	0.41	0.55	1252	0.44	0.59
613	1300	1044	0.35	0.47	1091	0.37	0.49	1137	0.40	0.53	1181	0.42	0.56	1221	0.45	0.60	1259	0.48	0.64
661	1400	1058	0.38	0.51	1105	0.40	0.54	1150	0.43	0.57	1191	0.46	0.61	1231	0.48	0.65	1268	0.51	0.69
708	1500	1074	0.42	0.56	1120	0.44	0.59	1163	0.47	0.63	1203	0.50	0.67	1241	0.53	0.71	1277	0.56	0.75

Air Volume		375 (1.50)			400 (1.60)		
		Rev/min	kW	BHP	Rev/min	kW	BHP
425	900	1269	0.37	0.49	1305	0.39	0.52
472	1000	1276	0.40	0.53	1311	0.42	0.56
519	1100	1282	0.43	0.58	1318	0.46	0.61
566	1200	1289	0.46	0.62	1324	0.49	0.66
613	1300	1296	0.51	0.68	1330	0.53	0.71
661	1400	1303	0.54	0.73	1337	0.57	0.77
708	1500	1312	0.59	0.79	1345	0.61	0.82

BLOWER DATA - BELT DRIVE - KHA036 - HORIZONTAL

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:

- 1 - Any factory installed options air resistance (heat section, economizer, etc.).
- 2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 24 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume		External Static - Pa (in.w.g.)																	
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)		
L/s	cfm	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP
425	900	485	0.08	0.11	554	0.10	0.14	0.16	627	0.12	0.16	0.18	0.21	780	0.16	0.21	841	0.17	0.23
472	1000	509	0.10	0.13	578	0.12	0.16	0.19	649	0.14	0.19	0.21	0.23	796	0.17	0.23	854	0.19	0.26
519	1100	537	0.12	0.16	605	0.14	0.19	0.21	674	0.16	0.21	0.24	0.26	813	0.19	0.26	868	0.22	0.29
566	1200	567	0.14	0.19	633	0.16	0.22	0.24	700	0.18	0.24	0.27	0.30	833	0.22	0.30	884	0.25	0.33
613	1300	599	0.16	0.22	664	0.19	0.25	0.28	729	0.21	0.28	0.30	0.33	853	0.25	0.33	902	0.28	0.37
661	1400	634	0.19	0.26	697	0.22	0.29	0.31	758	0.23	0.31	0.34	0.38	875	0.28	0.38	921	0.31	0.42
708	1500	669	0.22	0.30	730	0.25	0.33	0.36	789	0.27	0.36	0.39	0.42	897	0.31	0.42	941	0.35	0.47

Air Volume		External Static - Pa (in.w.g.)																	
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)		
L/s	cfm	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP
425	900	986	0.24	0.32	1039	0.26	0.35	1090	0.28	0.37	1137	0.30	0.40	1177	0.32	0.43	1214	0.34	0.46
472	1000	997	0.26	0.35	1048	0.28	0.38	1098	0.31	0.41	1143	0.33	0.44	1184	0.35	0.47	1221	0.37	0.50
519	1100	1008	0.29	0.39	1059	0.31	0.41	1107	0.33	0.44	1150	0.35	0.47	1191	0.38	0.51	1228	0.40	0.54
566	1200	1022	0.32	0.43	1071	0.34	0.45	1117	0.36	0.48	1160	0.39	0.52	1200	0.41	0.55	1237	0.44	0.59
613	1300	1037	0.35	0.47	1085	0.37	0.50	1130	0.40	0.53	1171	0.43	0.57	1210	0.45	0.60	1246	0.48	0.64
661	1400	1054	0.39	0.52	1100	0.40	0.54	1144	0.43	0.58	1183	0.46	0.62	1221	0.49	0.66	1256	0.52	0.70
708	1500	1073	0.43	0.57	1117	0.45	0.60	1159	0.48	0.64	1197	0.50	0.67	1234	0.53	0.71	1268	0.56	0.75

Air Volume		375 (1.50)			400 (1.60)		
		Rev/min	kW	BHP	Rev/min	kW	BHP
425	900	1248	0.37	0.49	1280	0.38	0.51
472	1000	1255	0.40	0.53	1287	0.42	0.56
519	1100	1263	0.43	0.57	1295	0.45	0.6
566	1200	1271	0.46	0.62	1303	0.49	0.66
613	1300	1280	0.51	0.68	1312	0.53	0.71
661	1400	1290	0.54	0.73	1321	0.57	0.77
708	1500	1301	0.59	0.79	1332	0.62	0.83

BLOWER DATA - BELT DRIVE - KHA048 - DOWNFLOW

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (heat section, economizer, etc.).

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 24 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume		External Static - Pa (in.w.g.)																							
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)			175 (0.70)			200 (0.80)		
L/s	cfm	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP
566	1200	560	0.16	0.21	625	0.19	0.25	689	0.21	0.28	755	0.22	0.30	820	0.24	0.32	879	0.25	0.34	932	0.28	0.37	983	0.30	0.40
613	1300	591	0.18	0.24	654	0.21	0.28	716	0.23	0.31	779	0.25	0.33	841	0.26	0.35	897	0.28	0.38	948	0.31	0.41	996	0.33	0.44
661	1400	631	0.19	0.26	690	0.22	0.30	748	0.25	0.34	807	0.27	0.36	864	0.29	0.39	916	0.31	0.42	964	0.34	0.46	1011	0.37	0.49
708	1500	675	0.21	0.28	729	0.25	0.33	782	0.27	0.36	835	0.30	0.40	887	0.32	0.43	935	0.35	0.47	981	0.37	0.50	1028	0.40	0.54
755	1600	718	0.23	0.31	766	0.26	0.35	814	0.30	0.40	862	0.33	0.44	910	0.36	0.48	955	0.39	0.52	1000	0.41	0.55	1046	0.44	0.59
802	1700	756	0.25	0.34	799	0.29	0.39	843	0.33	0.44	887	0.37	0.49	932	0.40	0.53	976	0.43	0.57	1020	0.46	0.61	1066	0.48	0.64
849	1800	787	0.30	0.40	828	0.34	0.45	870	0.37	0.50	912	0.41	0.55	955	0.44	0.59	999	0.47	0.63	1043	0.50	0.67	1089	0.52	0.70
897	1900	815	0.34	0.46	855	0.38	0.51	897	0.43	0.57	939	0.46	0.62	981	0.49	0.66	1024	0.51	0.69	1068	0.54	0.73	1113	0.57	0.76
944	2000	843	0.40	0.53	884	0.44	0.59	925	0.48	0.64	968	0.51	0.68	1009	0.54	0.72	1052	0.57	0.76	1095	0.59	0.79	1138	0.62	0.83

External Static - Pa (in.w.g.)

Air Volume		External Static - Pa (in.w.g.)																							
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)			375 (1.50)			400 (1.60)		
L/s	cfm	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP
566	1200	1031	0.32	0.43	1079	0.34	0.45	1127	0.36	0.48	1171	0.39	0.52	1213	0.41	0.55	1252	0.44	0.59	1289	0.46	0.62	1324	0.49	0.66
613	1300	1044	0.35	0.47	1091	0.37	0.49	1137	0.40	0.53	1181	0.42	0.56	1221	0.45	0.60	1259	0.48	0.64	1296	0.51	0.68	1330	0.53	0.71
661	1400	1058	0.38	0.51	1105	0.40	0.54	1150	0.43	0.57	1191	0.46	0.61	1231	0.48	0.65	1268	0.51	0.69	1303	0.54	0.73	1337	0.57	0.77
708	1500	1074	0.42	0.56	1120	0.44	0.59	1163	0.47	0.63	1203	0.50	0.67	1241	0.53	0.71	1277	0.56	0.75	1312	0.59	0.79	1345	0.61	0.82
755	1600	1092	0.46	0.61	1137	0.48	0.65	1178	0.51	0.68	1216	0.54	0.72	1253	0.57	0.76	1288	0.60	0.80	1321	0.63	0.84	1354	0.66	0.88
802	1700	1112	0.50	0.67	1155	0.52	0.70	1193	0.56	0.75	1230	0.59	0.79	1265	0.62	0.83	1299	0.65	0.87	1332	0.68	0.91	1364	0.71	0.95
849	1800	1133	0.54	0.73	1174	0.57	0.77	1209	0.60	0.81	1244	0.63	0.85	1278	0.67	0.90	1311	0.70	0.94	1343	0.73	0.98	1375	0.76	1.02
897	1900	1156	0.60	0.80	1193	0.63	0.84	1226	0.66	0.89	1260	0.69	0.93	1293	0.72	0.97	1325	0.75	1.01	1356	0.79	1.06	1388	0.82	1.1
944	2000	1178	0.65	0.87	1213	0.69	0.92	1243	0.72	0.97	1275	0.76	1.02	1307	0.79	1.06	1339	0.82	1.10	1370	0.85	1.14	1402	0.88	1.18

BLOWER DATA - BELT DRIVE - KHA048 - HORIZONTAL

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (heat section, economizer, etc.).

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 24 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume		External Static - Pa (in.w.g.)																							
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)			175 (0.70)			200 (0.80)		
L/s	cfm	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP
566	1200	567	0.14	0.19	633	0.16	0.22	700	0.18	0.24	768	0.20	0.27	833	0.22	0.30	884	0.25	0.33	928	0.28	0.37	974	0.30	0.40
613	1300	599	0.16	0.22	664	0.19	0.25	729	0.21	0.28	793	0.22	0.30	853	0.25	0.33	902	0.28	0.37	945	0.31	0.41	990	0.33	0.44
661	1400	634	0.19	0.26	697	0.22	0.29	758	0.23	0.31	819	0.25	0.34	875	0.28	0.38	921	0.31	0.42	964	0.34	0.46	1008	0.37	0.49
708	1500	669	0.22	0.30	730	0.25	0.33	789	0.27	0.36	846	0.29	0.39	897	0.31	0.42	941	0.35	0.47	983	0.38	0.51	1028	0.40	0.54
755	1600	705	0.25	0.34	763	0.28	0.37	819	0.30	0.40	873	0.32	0.43	921	0.36	0.48	963	0.39	0.52	1004	0.42	0.56	1048	0.44	0.59
802	1700	741	0.28	0.38	796	0.31	0.41	850	0.34	0.45	900	0.37	0.49	945	0.40	0.53	985	0.43	0.58	1026	0.46	0.62	1070	0.48	0.65
849	1800	776	0.32	0.43	829	0.34	0.46	880	0.38	0.51	927	0.41	0.55	970	0.45	0.60	1009	0.48	0.64	1050	0.51	0.68	1093	0.53	0.71
897	1900	812	0.36	0.48	862	0.39	0.52	910	0.43	0.57	955	0.46	0.62	996	0.49	0.66	1035	0.53	0.71	1076	0.55	0.74	1118	0.58	0.78
944	2000	847	0.40	0.54	895	0.44	0.59	941	0.48	0.64	984	0.51	0.69	1023	0.55	0.74	1062	0.58	0.78	1103	0.60	0.81	1144	0.63	0.85

Air Volume		External Static - Pa (in.w.g.)																							
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)			375 (1.50)			400 (1.60)		
L/s	cfm	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP
566	1200	1022	0.32	0.43	1071	0.34	0.45	1117	0.36	0.48	1160	0.39	0.52	1200	0.41	0.55	1237	0.44	0.59	1271	0.46	0.62	1303	0.49	0.66
613	1300	1037	0.35	0.47	1085	0.37	0.50	1130	0.40	0.53	1171	0.43	0.57	1210	0.45	0.60	1246	0.48	0.64	1280	0.51	0.68	1312	0.53	0.71
661	1400	1054	0.39	0.52	1100	0.40	0.54	1144	0.43	0.58	1183	0.46	0.62	1221	0.49	0.66	1256	0.52	0.70	1290	0.54	0.73	1321	0.57	0.77
708	1500	1073	0.43	0.57	1117	0.45	0.60	1159	0.48	0.64	1197	0.50	0.67	1234	0.53	0.71	1268	0.56	0.75	1301	0.59	0.79	1332	0.62	0.83
755	1600	1093	0.46	0.62	1136	0.49	0.66	1175	0.52	0.70	1212	0.55	0.74	1247	0.58	0.78	1281	0.61	0.82	1313	0.64	0.86	1344	0.67	0.9
802	1700	1114	0.51	0.68	1155	0.54	0.72	1192	0.57	0.76	1227	0.60	0.80	1262	0.63	0.85	1295	0.66	0.89	1327	0.69	0.93	1358	0.72	0.97
849	1800	1136	0.56	0.75	1175	0.59	0.79	1210	0.62	0.83	1245	0.66	0.88	1278	0.69	0.92	1311	0.72	0.97	1342	0.75	1.01	1373	0.78	1.05
897	1900	1159	0.61	0.82	1197	0.64	0.86	1229	0.69	0.92	1263	0.72	0.97	1296	0.75	1.01	1328	0.79	1.06	1359	0.82	1.10	1390	0.85	1.14
944	2000	1183	0.67	0.90	1218	0.71	0.95	1249	0.75	1.01	1282	0.79	1.06	1314	0.83	1.11	1346	0.86	1.15	1377	0.90	1.20	1408	0.93	1.24

BLOWER DATA - BELT DRIVE - KHA060 - DOWNFLOW

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (heat section, economizer, etc.).

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 24 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume		External Static - Pa (in.w.g.)																	
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)		
		Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP
L/s	cfm																		
755	1600	665	0.22	0.30	716	0.25	0.34	768	0.28	0.38	819	0.31	0.41	879	0.33	0.44	937	0.34	0.46
802	1700	723	0.23	0.31	768	0.26	0.35	814	0.29	0.39	860	0.32	0.43	910	0.35	0.47	959	0.37	0.50
849	1800	779	0.24	0.32	818	0.28	0.37	857	0.31	0.41	897	0.34	0.46	939	0.37	0.50	980	0.41	0.55
897	1900	826	0.27	0.36	859	0.31	0.41	894	0.34	0.45	928	0.37	0.50	964	0.42	0.56	1000	0.46	0.61
944	2000	857	0.31	0.42	889	0.35	0.47	920	0.39	0.52	952	0.43	0.57	986	0.46	0.62	1020	0.51	0.68
991	2100	878	0.37	0.49	909	0.40	0.54	940	0.44	0.59	973	0.48	0.64	1006	0.52	0.70	1041	0.56	0.75
1038	2200	897	0.41	0.55	929	0.46	0.61	961	0.49	0.66	994	0.54	0.72	1028	0.58	0.78	1063	0.62	0.83
1085	2300	918	0.46	0.62	950	0.51	0.68	983	0.55	0.74	1017	0.60	0.80	1052	0.64	0.86	1087	0.69	0.92
1133	2400	941	0.52	0.70	974	0.57	0.77	1008	0.62	0.83	1042	0.67	0.90	1077	0.72	0.96	1111	0.75	1.01
Air Volume		External Static - Pa (in.w.g.)																	
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)		
L/s	cfm	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP
755	1600	1059	0.43	0.57	1098	0.46	0.61	1138	0.48	0.65	1177	0.51	0.68	1218	0.53	0.71	1257	0.56	0.75
802	1700	1074	0.46	0.62	1113	0.49	0.66	1152	0.52	0.70	1190	0.55	0.74	1231	0.57	0.77	1268	0.60	0.80
849	1800	1091	0.51	0.68	1129	0.54	0.72	1167	0.57	0.76	1205	0.60	0.80	1244	0.62	0.83	1280	0.65	0.87
897	1900	1109	0.56	0.75	1146	0.59	0.79	1183	0.61	0.82	1221	0.64	0.86	1260	0.67	0.90	1294	0.70	0.94
944	2000	1128	0.61	0.82	1164	0.64	0.86	1201	0.66	0.89	1239	0.69	0.93	1276	0.72	0.97	1310	0.75	1.01
991	2100	1148	0.66	0.89	1185	0.69	0.93	1221	0.72	0.97	1258	0.75	1.01	1294	0.78	1.05	1325	0.81	1.09
1038	2200	1170	0.72	0.97	1206	0.75	1.01	1242	0.78	1.05	1277	0.81	1.09	1311	0.85	1.14	1341	0.88	1.18
1085	2300	1193	0.79	1.06	1228	0.81	1.09	1262	0.85	1.14	1295	0.89	1.19	1327	0.93	1.24	1355	0.96	1.29
1133	2400	1216	0.86	1.15	1250	0.89	1.19	1282	0.93	1.24	1313	0.97	1.30	1343	1.01	1.36	1371	1.04	1.40

BLOWER DATA - BELT DRIVE - KHA060 - HORIZONTAL

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (heat section, economizer, etc.).

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 24 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume		External Static - Pa (in.w.g.)												External Static - Pa (in.w.g.)											
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)			175 (0.70)			200 (0.80)		
L/s	cfm	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP
755	1600	712	0.22	0.29	758	0.24	0.32	807	0.27	0.36	855	0.29	0.39	906	0.32	0.43	955	0.34	0.46	997	0.37	0.50	1035	0.40	0.54
802	1700	766	0.24	0.32	808	0.27	0.36	850	0.30	0.40	892	0.33	0.44	936	0.35	0.47	978	0.38	0.51	1016	0.42	0.56	1052	0.45	0.60
849	1800	814	0.27	0.36	851	0.30	0.40	888	0.33	0.44	925	0.37	0.49	963	0.40	0.53	1000	0.43	0.57	1035	0.46	0.62	1071	0.49	0.66
897	1900	853	0.31	0.41	886	0.34	0.46	919	0.37	0.50	952	0.41	0.55	986	0.45	0.60	1021	0.48	0.64	1056	0.51	0.69	1091	0.54	0.73
944	2000	883	0.36	0.48	913	0.40	0.53	944	0.43	0.57	976	0.46	0.62	1009	0.50	0.67	1043	0.53	0.71	1078	0.57	0.76	1112	0.60	0.80
991	2100	906	0.42	0.56	936	0.45	0.60	967	0.48	0.65	999	0.52	0.70	1033	0.56	0.75	1067	0.59	0.79	1101	0.63	0.84	1135	0.66	0.88
1038	2200	930	0.48	0.64	960	0.51	0.68	991	0.54	0.73	1024	0.58	0.78	1058	0.62	0.83	1092	0.66	0.88	1126	0.69	0.92	1160	0.72	0.96
1085	2300	954	0.54	0.72	985	0.57	0.77	1017	0.61	0.82	1051	0.65	0.87	1085	0.69	0.92	1119	0.72	0.96	1152	0.75	1.00	1186	0.78	1.04
1133	2400	981	0.60	0.81	1013	0.64	0.86	1046	0.68	0.91	1079	0.72	0.96	1113	0.75	1.00	1146	0.78	1.05	1180	0.81	1.09	1213	0.84	1.13
Air Volume		External Static - Pa (in.w.g.)												External Static - Pa (in.w.g.)											
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)			375 (1.50)			400 (1.60)		
L/s	cfm	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP
755	1600	1071	0.43	0.58	1109	0.46	0.62	1147	0.49	0.66	1186	0.51	0.69	1225	0.54	0.72	1263	0.57	0.76	1299	0.60	0.80	1334	0.62	0.83
802	1700	1088	0.48	0.64	1126	0.51	0.68	1164	0.54	0.72	1202	0.56	0.75	1240	0.58	0.78	1276	0.61	0.82	1311	0.64	0.86	1345	0.67	0.9
849	1800	1107	0.52	0.70	1143	0.55	0.74	1181	0.58	0.78	1219	0.60	0.81	1256	0.63	0.85	1291	0.66	0.89	1324	0.69	0.93	1357	0.72	0.97
897	1900	1126	0.57	0.77	1163	0.60	0.81	1200	0.63	0.85	1237	0.66	0.88	1273	0.69	0.92	1306	0.72	0.96	1339	0.75	1.00	1371	0.78	1.04
944	2000	1148	0.63	0.84	1183	0.66	0.88	1220	0.69	0.92	1257	0.72	0.96	1291	0.75	1.00	1323	0.78	1.04	1354	0.81	1.08	1385	0.84	1.12
991	2100	1170	0.69	0.92	1206	0.72	0.96	1242	0.75	1.00	1277	0.78	1.04	1310	0.81	1.08	1340	0.84	1.13	1371	0.87	1.17	1401	0.90	1.21
1038	2200	1195	0.75	1.00	1230	0.78	1.04	1265	0.81	1.08	1299	0.84	1.13	1330	0.88	1.18	1359	0.92	1.23	1388	0.95	1.27	1418	0.98	1.31
1085	2300	1220	0.81	1.08	1254	0.84	1.13	1288	0.87	1.17	1320	0.92	1.23	1350	0.95	1.28	1378	1.00	1.34	1406	1.03	1.38	1435	1.06	1.42
1133	2400	1245	0.88	1.18	1278	0.91	1.22	1311	0.95	1.28	1341	0.99	1.33	1370	1.04	1.40	1397	1.08	1.45	1425	1.12	1.50	1454	1.15	1.54

BLOWER DATA - BELT DRIVE - KHA072 - DOWNFLOW

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (heat section, economizer, etc.).

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 24 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume		External Static - Pa (in. w.g.)																							
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)			175 (0.70)			200 (0.80)		
L/s	cfm	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP
897	1900	826	0.27	0.36	859	0.31	0.41	894	0.34	0.45	928	0.37	0.50	964	0.42	0.56	1000	0.46	0.61	1036	0.49	0.66	1072	0.52	0.70
944	2000	857	0.31	0.42	889	0.35	0.47	920	0.39	0.52	952	0.43	0.57	986	0.46	0.62	1020	0.51	0.68	1055	0.54	0.73	1091	0.57	0.77
991	2100	878	0.37	0.49	909	0.40	0.54	940	0.44	0.59	973	0.48	0.64	1006	0.52	0.70	1041	0.56	0.75	1076	0.60	0.80	1112	0.63	0.85
1038	2200	897	0.41	0.55	929	0.46	0.61	961	0.49	0.66	994	0.54	0.72	1028	0.58	0.78	1063	0.62	0.83	1099	0.66	0.89	1134	0.69	0.93
1085	2300	918	0.46	0.62	950	0.51	0.68	983	0.55	0.74	1017	0.60	0.80	1052	0.64	0.86	1087	0.69	0.92	1122	0.72	0.97	1157	0.76	1.02
1133	2400	941	0.52	0.70	974	0.57	0.77	1008	0.62	0.83	1042	0.67	0.90	1077	0.72	0.96	1111	0.75	1.01	1146	0.79	1.06	1181	0.83	1.11
1180	2500	966	0.59	0.79	1000	0.64	0.86	1034	0.69	0.93	1068	0.75	1.00	1103	0.79	1.06	1137	0.83	1.11	1171	0.87	1.16	1205	0.90	1.20
1227	2600	994	0.67	0.90	1028	0.72	0.97	1062	0.78	1.04	1096	0.82	1.10	1130	0.87	1.16	1164	0.90	1.21	1197	0.94	1.26	1231	0.97	1.30
1274	2700	1023	0.75	1.01	1057	0.81	1.08	1091	0.86	1.15	1125	0.91	1.22	1159	0.95	1.27	1192	0.98	1.32	1225	1.02	1.37	1258	1.05	1.41
1321	2800	1053	0.84	1.13	1088	0.90	1.21	1122	0.95	1.27	1155	0.99	1.33	1188	1.04	1.39	1221	1.07	1.43	1253	1.10	1.48	1286	1.14	1.53
1369	2900	1085	0.94	1.26	1119	0.99	1.33	1153	1.04	1.40	1186	1.08	1.45	1218	1.13	1.51	1250	1.16	1.55	1281	1.20	1.61	1313	1.24	1.66

Air Volume		External Static - Pa (in. w.g.)																							
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)			375 (1.50)			400 (1.60)		
L/s	cfm	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP	Rev/min	kW	BHP
897	1900	1109	0.56	0.75	1146	0.59	0.79	1183	0.61	0.82	1221	0.64	0.86	1260	0.67	0.90	1294	0.70	0.94	1323	0.73	0.98	1349	0.76	1.02
944	2000	1128	0.61	0.82	1164	0.64	0.86	1201	0.66	0.89	1239	0.69	0.93	1276	0.72	0.97	1310	0.75	1.01	1336	0.79	1.06	1362	0.82	1.10
991	2100	1148	0.66	0.89	1185	0.69	0.93	1221	0.72	0.97	1258	0.75	1.01	1294	0.78	1.05	1325	0.81	1.09	1351	0.85	1.14	1376	0.89	1.19
1038	2200	1170	0.72	0.97	1206	0.75	1.01	1242	0.78	1.05	1277	0.81	1.09	1311	0.85	1.14	1341	0.88	1.18	1365	0.92	1.23	1390	0.95	1.28
1085	2300	1193	0.79	1.06	1228	0.81	1.09	1262	0.85	1.14	1295	0.89	1.19	1327	0.93	1.24	1355	0.96	1.29	1380	0.99	1.33	1406	1.02	1.37
1133	2400	1216	0.86	1.15	1250	0.89	1.19	1282	0.93	1.24	1313	0.97	1.30	1343	1.01	1.36	1371	1.04	1.40	1396	1.07	1.44	1423	1.10	1.48
1180	2500	1240	0.93	1.24	1273	0.96	1.29	1302	1.01	1.36	1331	1.06	1.42	1360	1.10	1.48	1388	1.13	1.52	1414	1.16	1.55	1441	1.18	1.58
1227	2600	1265	1.00	1.34	1296	1.04	1.40	1324	1.10	1.47	1352	1.15	1.54	1381	1.19	1.60	1408	1.22	1.64	1434	1.25	1.67	1460	1.27	1.70
1274	2700	1291	1.09	1.46	1321	1.13	1.52	1347	1.19	1.60	1374	1.25	1.67	1403	1.28	1.72	1429	1.31	1.76	1455	1.34	1.79	1481	1.36	1.82
1321	2800	1317	1.18	1.58	1346	1.24	1.66	1372	1.30	1.74	1399	1.34	1.80	1426	1.38	1.85	1451	1.41	1.89	1477	1.43	1.92	1503	1.45	1.95
1369	2900	1343	1.28	1.72	1371	1.34	1.80	1397	1.40	1.88	1424	1.45	1.95	1450	1.48	1.99	1475	1.51	2.02	1500	1.53	2.05	1526	1.55	2.08

BLOWER DATA - BELT DRIVE - KHA072 - HORIZONTAL

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (heat section, economizer, etc.).

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).

See page 24 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume		External Static - Pa (in. w.g.)																	
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)		
		Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP
897	1900	853	0.31	0.41	886	0.34	0.46	919	0.37	0.50	952	0.41	0.55	986	0.45	0.60	1021	0.48	0.64
944	2000	883	0.36	0.48	913	0.40	0.53	944	0.43	0.57	976	0.46	0.62	1009	0.50	0.67	1043	0.53	0.71
991	2100	906	0.42	0.56	936	0.45	0.60	967	0.48	0.65	999	0.52	0.70	1033	0.56	0.75	1067	0.59	0.79
1038	2200	930	0.48	0.64	960	0.51	0.68	991	0.54	0.73	1024	0.58	0.78	1058	0.62	0.83	1092	0.66	0.88
1085	2300	954	0.54	0.72	985	0.57	0.77	1017	0.61	0.82	1051	0.65	0.87	1085	0.69	0.92	1119	0.72	0.96
1133	2400	981	0.60	0.81	1013	0.64	0.86	1046	0.68	0.91	1079	0.72	0.96	1113	0.75	1.00	1146	0.78	1.05
1180	2500	1010	0.68	0.91	1042	0.72	0.96	1075	0.75	1.00	1109	0.78	1.05	1142	0.81	1.09	1175	0.85	1.14
1227	2600	1040	0.75	1.01	1073	0.78	1.05	1106	0.82	1.10	1139	0.85	1.14	1171	0.89	1.19	1203	0.92	1.23
1274	2700	1072	0.82	1.10	1104	0.86	1.15	1137	0.90	1.20	1169	0.93	1.24	1201	0.96	1.29	1232	1.00	1.34
1321	2800	1105	0.90	1.21	1137	0.93	1.25	1168	0.97	1.30	1200	1.01	1.35	1231	1.04	1.40	1261	1.09	1.46
1369	2900	1138	0.98	1.32	1169	1.02	1.37	1200	1.06	1.42	1231	1.10	1.47	1261	1.14	1.53	1291	1.19	1.60
Air Volume		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)		
		Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP
897	1900	1126	0.57	0.77	1163	0.60	0.81	1200	0.63	0.85	1237	0.66	0.88	1273	0.69	0.92	1306	0.72	0.96
944	2000	1148	0.63	0.84	1183	0.66	0.88	1220	0.69	0.92	1257	0.72	0.96	1291	0.75	1.00	1323	0.78	1.04
991	2100	1170	0.69	0.92	1206	0.72	0.96	1242	0.75	1.00	1277	0.78	1.04	1310	0.81	1.08	1340	0.84	1.13
1038	2200	1195	0.75	1.00	1230	0.78	1.04	1265	0.81	1.08	1299	0.84	1.13	1330	0.88	1.18	1359	0.92	1.23
1085	2300	1220	0.81	1.08	1254	0.84	1.13	1288	0.87	1.17	1320	0.92	1.23	1350	0.95	1.28	1378	1.00	1.34
1133	2400	1245	0.88	1.18	1278	0.91	1.22	1311	0.95	1.28	1341	0.99	1.33	1370	1.04	1.40	1397	1.08	1.45
1180	2500	1271	0.95	1.28	1303	0.99	1.33	1334	1.04	1.39	1363	1.08	1.45	1391	1.13	1.52	1418	1.17	1.57
1227	2600	1297	1.04	1.39	1328	1.08	1.45	1357	1.13	1.52	1385	1.18	1.58	1412	1.22	1.64	1439	1.27	1.70
1274	2700	1323	1.13	1.52	1353	1.18	1.58	1382	1.23	1.65	1409	1.28	1.72	1435	1.32	1.77	1462	1.36	1.82
1321	2800	1351	1.23	1.65	1380	1.28	1.72	1407	1.33	1.78	1434	1.38	1.85	1460	1.42	1.90	1486	1.45	1.95
1369	2900	1379	1.34	1.79	1407	1.39	1.86	1434	1.43	1.92	1460	1.48	1.98	1485	1.52	2.04	1511	1.55	2.08
Air Volume		375 (1.50)			400 (1.60)			400 (1.60)			400 (1.60)			400 (1.60)			400 (1.60)		
		Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP	Rev/ min	kW	BHP
897	1900	1339	0.75	1.00	1371	0.78	1.04	1371	0.78	1.04	1371	0.78	1.04	1371	0.78	1.04	1371	0.78	1.04
944	2000	1354	0.81	1.08	1385	0.84	1.12	1385	0.84	1.12	1385	0.84	1.12	1385	0.84	1.12	1385	0.84	1.12
991	2100	1371	0.87	1.17	1401	0.90	1.21	1401	0.90	1.21	1401	0.90	1.21	1401	0.90	1.21	1401	0.90	1.21
1038	2200	1388	0.95	1.27	1418	0.98	1.31	1418	0.98	1.31	1418	0.98	1.31	1418	0.98	1.31	1418	0.98	1.31
1085	2300	1406	1.03	1.38	1435	1.06	1.42	1435	1.06	1.42	1435	1.06	1.42	1435	1.06	1.42	1435	1.06	1.42
1133	2400	1425	1.12	1.50	1454	1.15	1.54	1454	1.15	1.54	1454	1.15	1.54	1454	1.15	1.54	1454	1.15	1.54
1180	2500	1446	1.21	1.62	1474	1.24	1.66	1474	1.24	1.66	1474	1.24	1.66	1474	1.24	1.66	1474	1.24	1.66
1227	2600	1467	1.30	1.74	1495	1.33	1.78	1495	1.33	1.78	1495	1.33	1.78	1495	1.33	1.78	1495	1.33	1.78
1274	2700	1490	1.39	1.86	1517	1.42	1.90	1517	1.42	1.90	1517	1.42	1.90	1517	1.42	1.90	1517	1.42	1.90
1321	2800	1513	1.48	1.99	1541	1.51	2.02	1541	1.51	2.02	1541	1.51	2.02	1541	1.51	2.02	1541	1.51	2.02
1369	2900	1538	1.58	2.12	1565	1.60	2.15	1565	1.60	2.15	1565	1.60	2.15	1565	1.60	2.15	1565	1.60	2.15

BLOWER DATA

BELT DRIVE KIT SPECIFICATIONS

Model No.	Motor kW (HP)		No. of Speeds	Drive Kits and Rev/Min Range								
	Nominal	Max		A01	A02	A03	A04	A05	A06	A07	A08	A09
036	1.5 (2)	1.7 (2.3)	1	561-842	---	---	---	748 -1122	---	---	---	---
048	1.5 (2)	1.7 (2.3)	1	---	621 - 931	---	---	---	893 - 1191	---	---	---
060	1.5 (2)	1.7 (2.3)	1	---	---	694 - 1042	---	---	---	1010 - 1290	---	---
072	1.5 (2)	1.7 (2.3)	1	---	---	---	807 - 1117	---	---	---	994 - 1326	1193 - 1524

NOTE - Using total air volume and system static pressure requirements determine from blower performance tables rev/min and motor kW required. Maximum usable kW of motors furnished are shown. If motors of comparable kW are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

OPTIONS / ACCESSORIES AIR RESISTANCE

Air Volume		Wet Indoor Coil				Economizer		Electric Heat		Filters			
		036-048		060-072						MERV 8		MERV 13	
L/s	cfm	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.
375	800	2	0.01	2	0.01	10	0.04	2	0.01	7	0.04	12	0.05
470	1000	5	0.02	2	0.01	10	0.04	7	0.03	7	0.04	17	0.07
565	1200	5	0.02	2	0.01	10	0.04	15	0.06	7	0.04	17	0.07
660	1400	7	0.03	5	0.02	10	0.04	22	0.09	7	0.04	17	0.07
755	1600	10	0.04	7	0.03	10	0.04	30	0.12	7	0.04	17	0.07
850	1800	12	0.05	7	0.04	12	0.05	37	0.15	12	0.05	17	0.07
945	2000	15	0.06	12	0.05	12	0.05	45	0.18	12	0.05	20	0.08
1040	2200	20	0.08	15	0.06	12	0.05	50	0.20	12	0.05	20	0.08
1130	2400	22	0.09	17	0.07	12	0.05	55	0.22	12	0.05	20	0.08
1225	2600	25	0.10	20	0.08	15	0.06	60	0.24	12	0.05	20	0.08
1320	2800	27	0.11	22	0.09	15	0.06	65	0.26	12	0.05	20	0.08
1415	3000	30	0.13	25	0.10	15	0.06	70	0.28	12	0.05	20	0.08

POWER EXHAUST FAN PERFORMANCE

Return Air System Static Pressure		Air Volume Exhausted	
Pa	in. w.g.	L/s	cfm
0	0.00	944	2000
12	0.05	939	1990
25	0.10	908	1924
37	0.15	854	1810
50	0.20	785	1664
62	0.25	711	1507
75	0.30	637	1350
87	0.35	571	1210

BLOWER DATA

CEILING DIFFUSERS AIR RESISTANCE

Air Volume		RTD9-65S Step-Down Diffuser						FD9-65S Flush Diffuser		RTD11-95S Step-Down Diffuser						FD11-95S Flush Diffuser	
		2 Ends Open		1 Side & 2 Ends Open		All Ends & Sides Open				2 Ends Open		1 Side & 2 Ends Open		All Ends & Sides Open			
L/s	cfm	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.
375	800	37	0.15	32	0.13	27	0.11	27	0.11	---	---	---	---	---	---	---	---
470	1000	47	0.19	40	0.16	35	0.14	35	0.14	---	---	---	---	---	---	---	---
565	1200	62	0.25	50	0.20	42	0.17	42	0.17	---	---	---	---	---	---	---	---
660	1400	82	0.33	65	0.26	50	0.20	50	0.20	---	---	---	---	---	---	---	---
755	1600	107	0.43	80	0.32	50	0.20	50	0.24	---	---	---	---	---	---	---	---
850	1800	139	0.56	99	0.40	75	0.30	75	0.30	32	0.13	27	0.11	22	0.09	22	0.09
945	2000	182	0.73	124	0.50	90	0.36	90	0.36	37	0.15	32	0.13	27	0.11	25	0.10
1040	2200	236	0.95	157	0.63	109	0.44	109	0.44	45	0.18	37	0.15	30	0.12	30	0.12
1130	2400	---	---	---	---	---	---	---	---	52	0.21	45	0.18	37	0.15	35	0.14
1225	2600	---	---	---	---	---	---	---	---	60	0.24	52	0.21	45	0.18	42	0.17
1320	2800	---	---	---	---	---	---	---	---	67	0.27	60	0.24	52	0.21	50	0.20
1415	3000	---	---	---	---	---	---	---	---	80	0.32	72	0.29	62	0.25	62	0.25

CEILING DIFFUSER AIR THROW DATA

Air Volume		¹ Effective Throw			
Model No.		RTD9-65S		FD9-65S	
L/s	cfm	m	ft.	m	ft.
375	800	3 - 5	10 - 17	4 - 5	14 - 18
470	1000	3 - 5	10 - 17	5 - 6	15 - 20
565	1200	3 - 5	11 - 18	5 - 7	16 - 22
660	1400	4 - 6	12 - 19	5 - 7	17 - 24
755	1600	4 - 6	12 - 20	5 - 8	18 - 25
850	1800	4 - 6	13 - 21	6 - 9	20 - 28
945	2000	4 - 7	14 - 23	6 - 9	21 - 29
1040	2200	5 - 8	16 - 25	7 - 9	22 - 30
Model No.		RTD11-95S		FD11-95S	
1225	2600	7 - 9	24 - 29	6 - 7	19 - 24
1320	2800	8 - 9	25 - 30	6 - 9	20 - 28
1415	3000	8 - 10	27 - 33	6 - 9	21 - 29

¹ Effective throw based on terminal velocities of 23 m per minute (75 ft. per minute).

ELECTRICAL / ELECTRIC HEAT DATA

Model No.		KHA036S4	KHA048S4	KHA060S4	KHA072S4
¹ Voltage - 50hz with Neutral		380/420V - 3 Ph	380/420V - 3 Ph	380/420V - 3 Ph	380/420V - 3 Ph
Compressor	Rated Load Amps	5.4	6.1	7.8	9.7
	Locked Rotor Amps	38	43	51.5	64
Outdoor Fan Motor	Full Load Amps	1.1	1.1	1.3	1.5
Power Exhaust (1) 0.25 kW	Full Load Amps	1.3	1.3	1.3	1.3
Indoor Blower Motor	kW	1.5	1.5	1.5	1.5
	Full Load Amps	3.6	3.6	3.6	3.6
² Maximum Overcurrent Protection	Unit Only	15	15	20	25
	With (1) 0.25 kW Power Exhaust	15	15	20	25
³ Minimum Circuit Ampacity	Unit Only	12	13	15	18
	With (1) 0.25 kW Power Exhaust	13	14	16	19

ELECTRIC HEAT DATA

Electric Heat Voltage				420V	420V	420V	420V
² Maximum Overcurrent Protection	Unit+ ⁴ Electric Heat	5.7 kW		25	25	30	30
		11.5 kW		35	35	35	40
		17.2 kW		---	---	45	50
		23 kW		---	---	---	60
³ Minimum Circuit Ampacity	Unit+ ⁴ Electric Heat	5.7 kW		22	23	25	28
		11.5 kW		32	33	35	37
		17.2 kW		---	---	45	47
		23 kW		---	---	---	57
² Maximum Overcurrent Protection	Unit+ ⁴ Electric Heat and (1) 0.25 kW Power Exhaust	5.7 kW		25	25	30	35
		11.5 kW		35	35	40	40
		17.2 kW		---	---	50	50
		23 kW		---	---	---	60
³ Minimum Circuit Ampacity	Unit+ ⁴ Electric Heat and (1) 0.25 kW Power Exhaust	5.7 kW		23	24	26	29
		11.5 kW		33	34	36	39
		17.2 kW		---	---	46	49
		23 kW		---	---	---	58

¹ Extremes of operating range are plus and minus 10% of line voltage.

² Heating, Air Conditioning, Refrigeration type breaker or fuse.

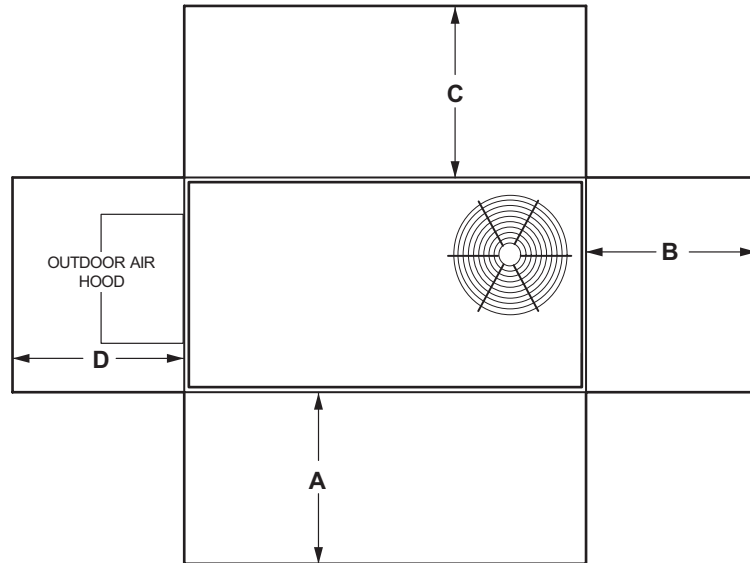
³ Refer to local electrical code to determine wire, fuse and disconnect size requirements.

⁴ Nominal kW based on 420V-3ph-50hz.

ELECTRIC HEAT CAPACITIES

Input Voltage	5.7 kW			11.5 kW			17.2 kW			23 kW		
	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output
380	1	4.7	16 100	1	9.4	32 100	1	14.1	48 200	1	18.8	64 200
400	1	5.2	17 800	1	10.4	35 500	1	15.6	53 300	1	20.9	71 400
420	1	5.7	19 500	1	11.5	39 300	1	17.2	58 800	1	23.0	78 500

UNIT CLEARANCES - MM (INCHES)



¹ Unit Clearance	A		B		C		D		Top Clearance
	mm	in.	mm	in.	mm	in.	mm	in.	
Service Clearance	914	36	914	36	914	36	914	36	Unobstructed
Minimum Operation Clearance	914	36	914	36	914	36	914	36	

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

¹ Service Clearance - Required for removal of serviceable parts.

Minimum Operation Clearance - Required clearance for proper unit operation.

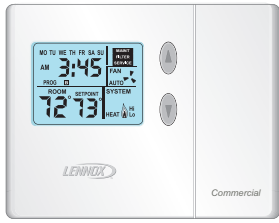
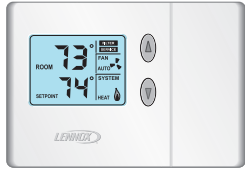
OUTDOOR SOUND DATA

¹ Unit Model No.	Octave Band Linear Sound Power Levels dBA, re 10 ⁻¹² Watts - Center Frequency - Hz							¹ Sound Rating Number (SRN) (dBA)
	125	250	500	1000	2000	4000	8000	
KHA036 and 048	63	66	70	71	68	62	53	75
KHA060	67	72	77	76	73	68	61	82
KHA072	67	75	78	78	75	68	59	83

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

¹ Sound Rating Number according to ARI Standard 270-95 (includes pure tone penalty). "SRN" is the overall A-Weighted Sound Power Level, (LWA), dBA (100 Hz to 10,000 Hz).

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Item	Model No.	Catalog No.
COMFORTSENSE® 7500 COMMERCIAL 7-DAY PROGRAMMABLE THERMOSTAT  • Four-Stage Heating / Two-Stage Cooling Universal Multi-Stage • Intuitive Touchscreen Interface • Remote Indoor Temperature Sensing with Averaging • Outside or Discharge Air Temperature Display • Full Seven-Day Programming • Four Time Periods Per Day • Occupancy Scheduling with Economizer Relay Control • Away Mode • Holiday Scheduling • Smooth Setback Recovery (SSR) • Performance Reports • Notifications/Reminders • Dehumidification/Humiditrol® Control for Split Systems and Rooftop Units • Economizer Relay Control • Backlit Display • Wallplate Furnished	C0STAT06FF1L	13H15
Optional Accessories		
¹ Remote non-adjustable wall mount 20k temperature sensor	C0SNZN01AE2-	47W36
¹ Remote non-adjustable wall mount 10k temperature sensor	C0SNZN73AE1-	47W37
Remote non-adjustable discharge air (duct mount) temperature sensor	C0SNDC00AE1-	19L22
Outdoor temperature sensor	C0SNSR03AE1-	X2658
Locking cover (clear)	C0MISC15AE1-	39P21
¹ 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		
COMFORTSENSE® 3000 COMMERCIAL 5-2 DAY PROGRAMMABLE THERMOSTAT  • Two-Stage Heating / Two-Stage Cooling Conventional Systems • Intuitive Interface • 5-2 Day Programming • Program Hold • Remote Indoor Temperature Sensing • Smooth Setback Recovery (SSR) • Economizer Relay Control • Maintenance/Filter/Service Reminders • Backlit Display • Wallplate Furnished • Simple Up and Down Temperature Control.	C0STAT05FF1L	11Y05
Optional Accessories		
Remote non-adjustable wall mount 10k averaging temperature sensor	C0SNZN73AE1-	47W37
Optional wall mounting plate	C0MISC17AE1-	X2659
DIGITAL NON-PROGRAMMABLE THERMOSTAT  • One-Stage Heating / Cooling Conventional Systems • Intuitive Interface • Automatic Changeover • Backlit Display • Simple Up and Down Temperature Control.	C0STAT12AE1L	51M32
Optional Accessories		
Outdoor temperature sensor	C0SNSR04AE1-	X2658
Optional wall mounting plate	C0MISC17AE1-	X2659

WEIGHT DATA

Model Number	Net				Shipping			
	Base		Max.		Base		Max.	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.
KHA036S	243	535	293	647	270	595	325	716
KHA048S	253	557	303	669	280	617	335	738
KHA060S	303	667	349	770	330	727	382	842
KHA072S	340	750	391	862	367	810	422	931

Base Unit - The unit with NO OPTIONS.

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

OPTIONS / ACCESSORIES

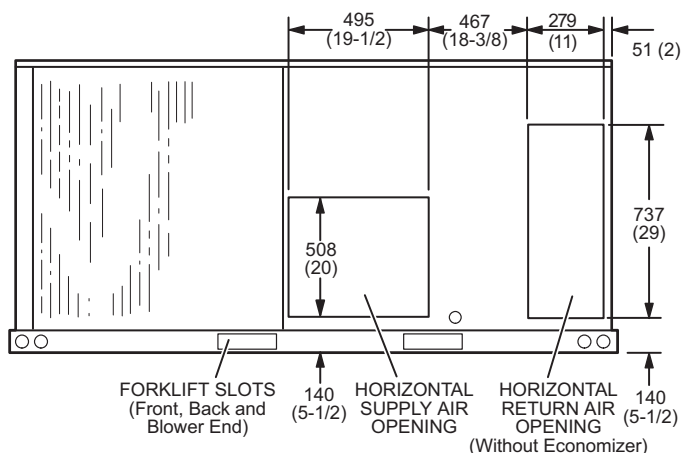
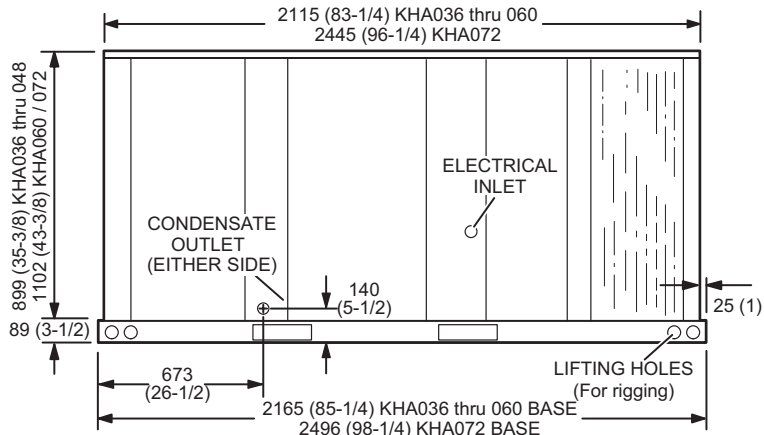
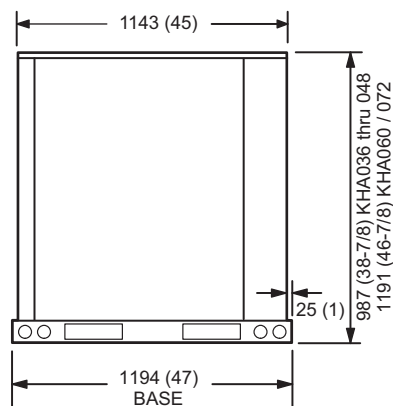
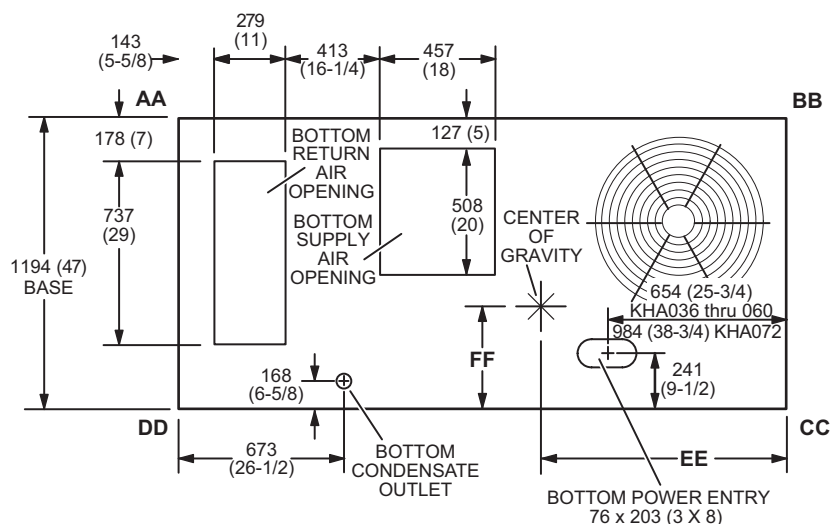
		Shipping Weights	
		kg	lbs.
ECONOMIZER			
Economizer			
Economizer, Includes Outdoor Air Hood and Barometric Relief Dampers with Hood		59	131
OUTDOOR AIR			
Outdoor Air Dampers			
Motorized		18	40
Manual		14	30
POWER EXHAUST			
Standard Static		16	35
ELECTRIC HEAT			
5.7 kW		14	31
11.5 kW		14	31
17.2 kW		16	35
23 kW		16	35
ROOF CURBS			
Hybrid Roof Curbs, Downflow			
203 mm height		23	50
356 mm height		32	70
457 mm height		36	80
610 mm height		45	100
Hybrid Curbs, Full Perimeter, Downflow			
203 mm height		26	57
356 mm height		27	60
457 mm height		41	91
610 mm height		52	114
Adjustable Pitch Curb, Downflow			
356 mm height		51	113
CEILING DIFFUSERS			
Step-Down	RTD9-65S	36	80
	RTD11-95S	54	118
Flush	FD9-65S	36	80
	FD11-95S	54	118
Transitions (Supply and Return)	T1TRAN10AN1	10	22
	T1TRAN20N-1	10	21

DIMENSIONS - UNIT - MM (INCHES)

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.	Base	Max.	Base	Max.	Base	Max.
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	mm	in.	mm	in.	mm	in.	mm	in.
036	42	93	53	116	51	112	60	132	82	181	96	212	68	149	85	187	978	38-1/2
048	44	96	55	120	53	117	62	136	86	188	100	219	71	155	88	194	978	38-1/2
060	52	115	63	138	64	140	71	157	103	226	115	252	84	166	101	223	978	38-1/2
072	73	160	84	185	82	180	94	208	106	233	122	269	94	207	109	239	1174	46-1/4
																	1174	46-1/4
																	521	20-1/2
																	521	20-1/2

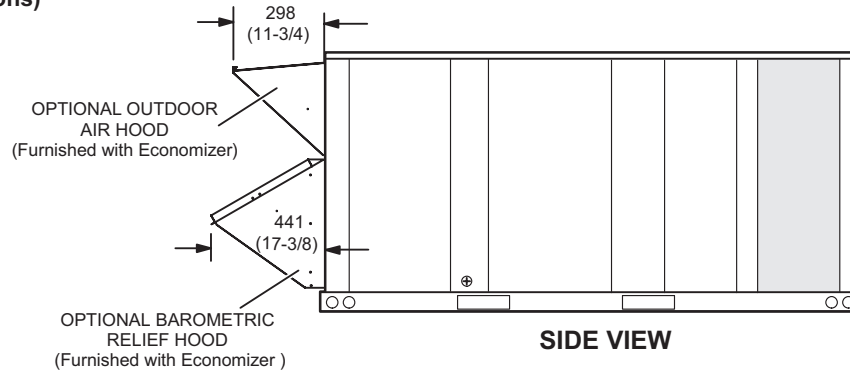
Base Unit - The unit with standard heat exchanger NO OPTIONS.

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

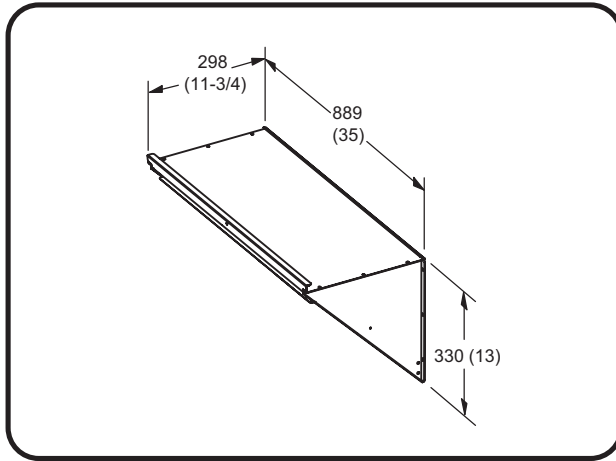


DIMENSIONS - ACCESSORIES - MM (INCHES)

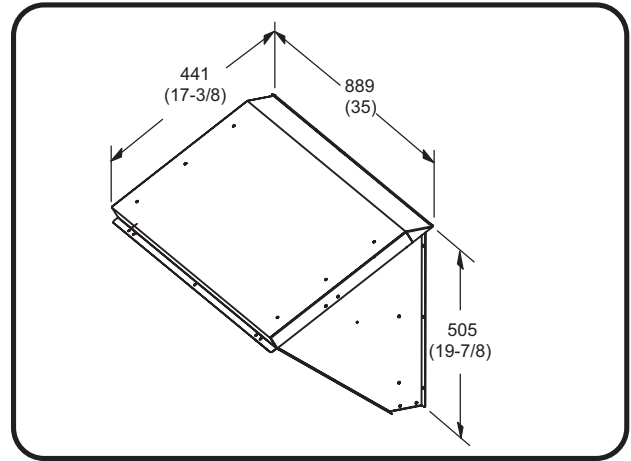
OUTDOOR AIR HOOD DETAIL FOR OPTIONAL ECONOMIZER AND BAROMETRIC RELIEF DAMPERS (Downflow Applications)



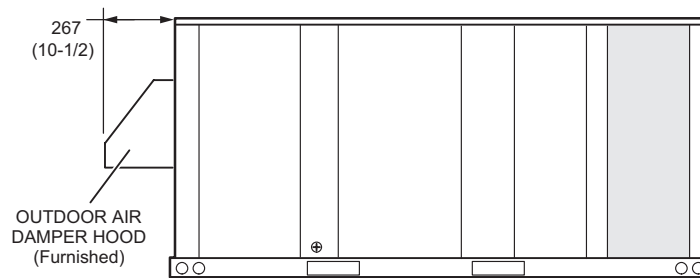
OUTDOOR AIR HOOD FOR ECONOMIZER (Furnished)



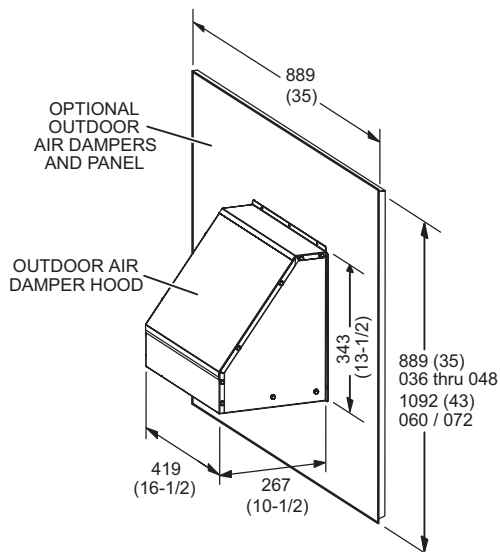
BAROMETRIC RELIEF HOOD FOR ECONOMIZER (Furnished)



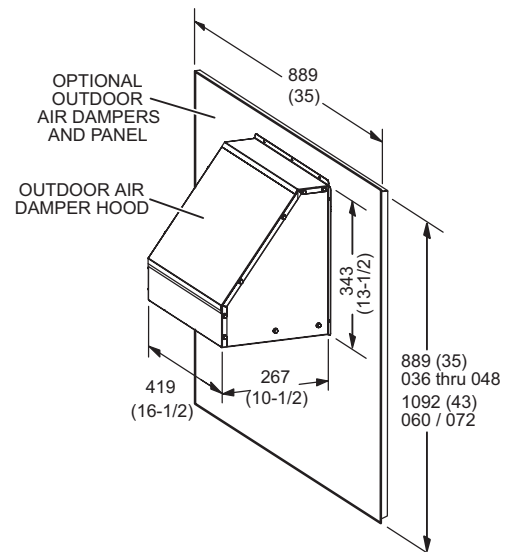
OUTDOOR AIR DAMPER HOOD DETAIL (Downflow or Horizontal Applications)



MANUAL OUTDOOR AIR HOOD

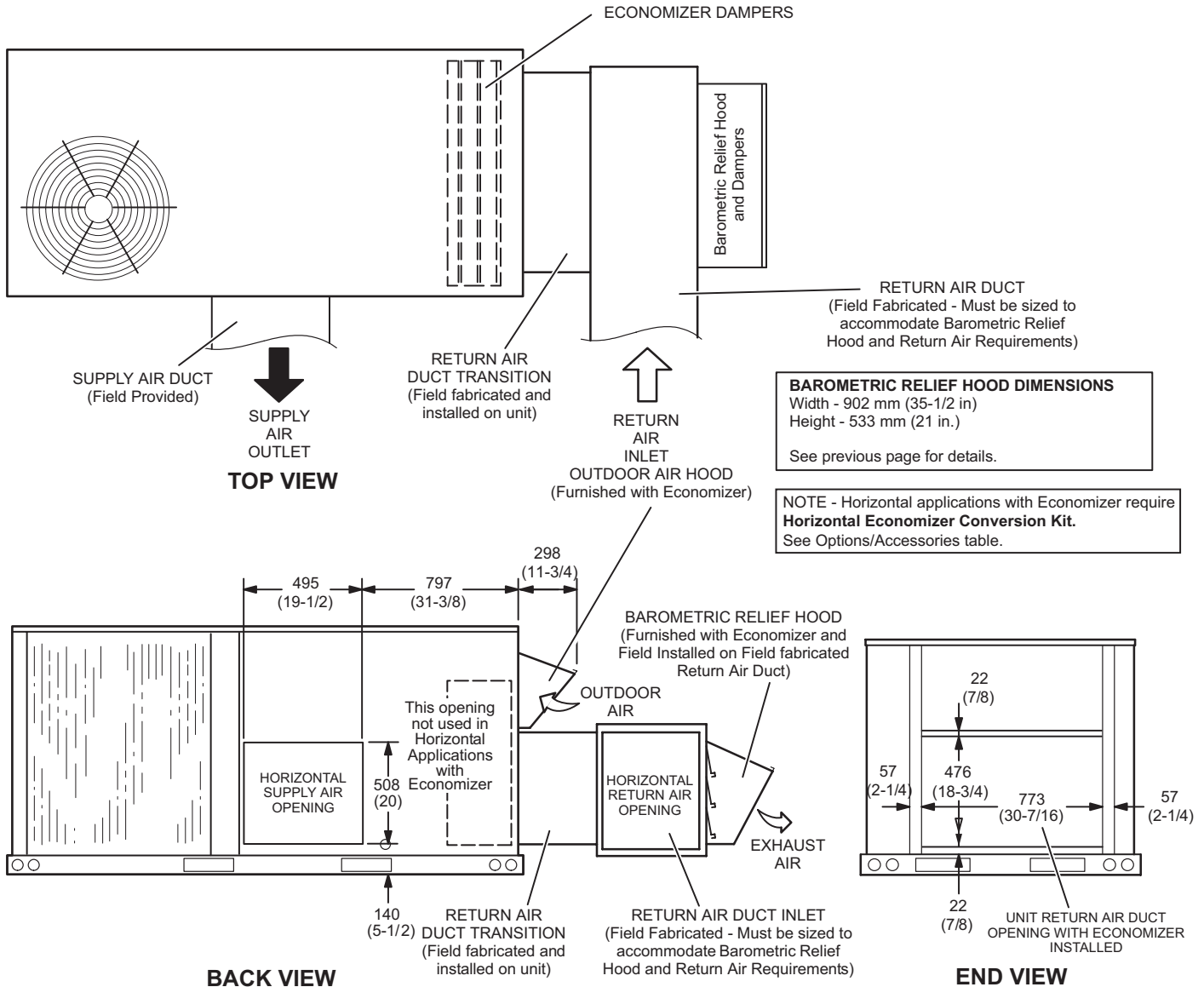


MOTORIZED OUTDOOR AIR HOOD



DIMENSIONS - ACCESSORES - MM (INCHES)

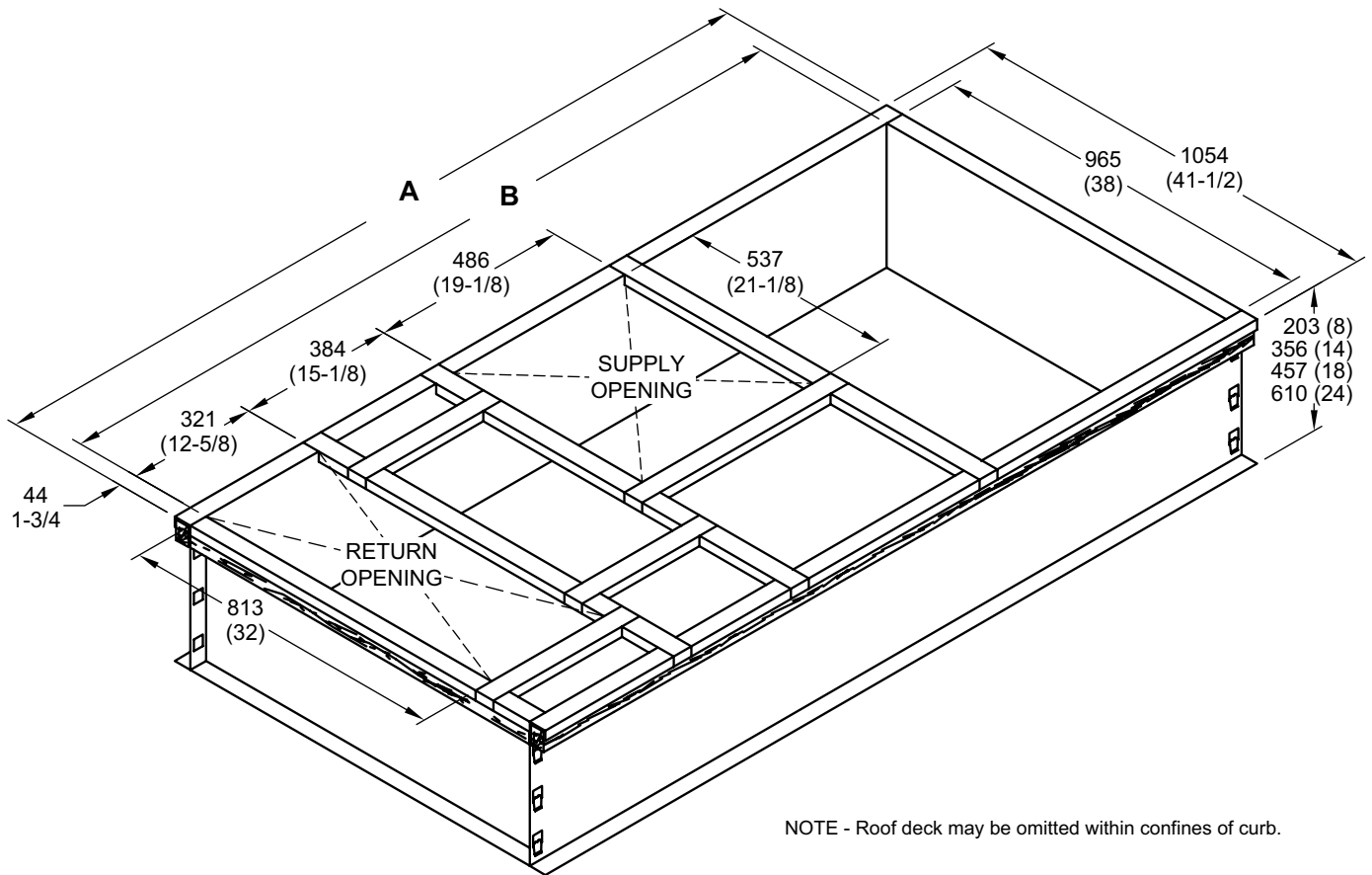
OUTDOOR AIR HOOD DETAIL WITH OPTIONAL ECONOMIZER AND BAROMETRIC RELIEF DAMPERS (Horizontal Applications)



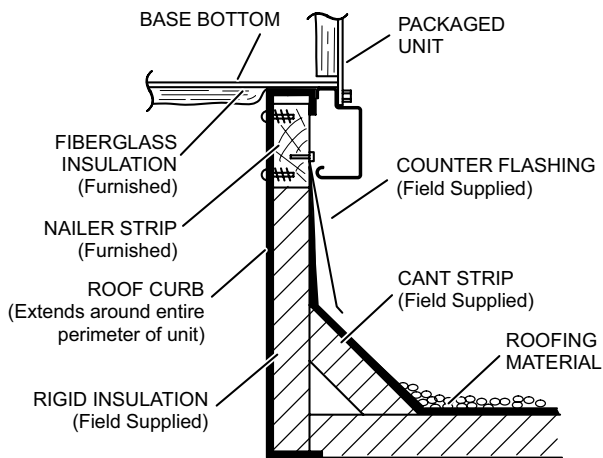
NOTE - Return Air Duct and Transition must be supported.

DIMENSIONS - ACCESSORIES - MM (INCHES)

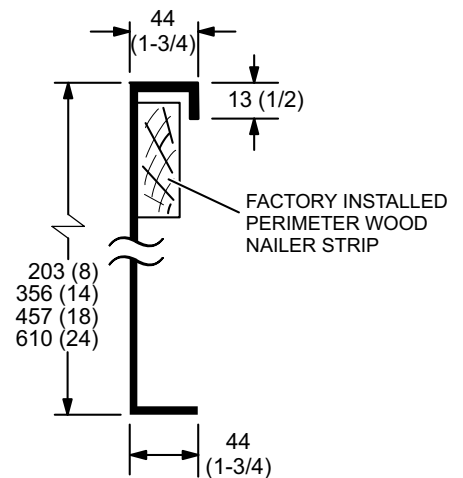
HYBRID ROOF CURBS - DOUBLE DUCT OPENING - STANDARD AND FULL PERIMETER



TYPICAL FLASHING DETAIL FOR ROOF CURB



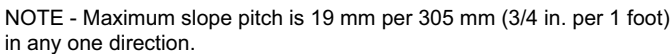
DETAIL ROOF CURB



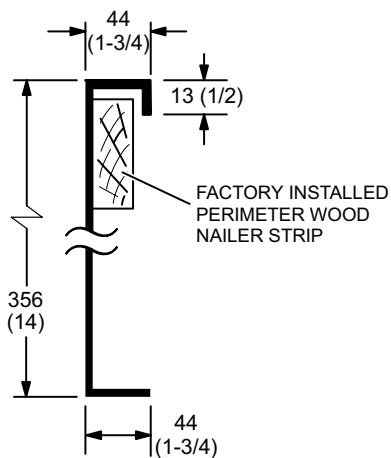
Model No.	A		B	
	mm	in.	mm	in.
036, 048, 060, ¹ 072	2026	79-3/4	1937	76-1/4
072	2356	92-3/4	2267	89-1/4

¹ 072 models can be used on smaller 2026 mm (79-3/4 in.) roof curbs (not full perimeter) with 400 mm (15-3/4 in.) overhang at condenser end of unit. See dimension drawing on page 35.

ADJUSTABLE PITCH CURBS - DOUBLE DUCT OPENING

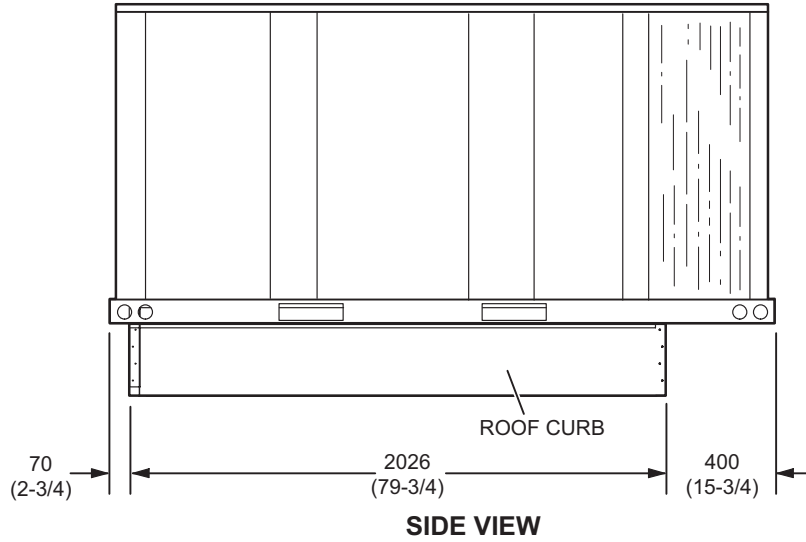


DETAIL ROOF CURB

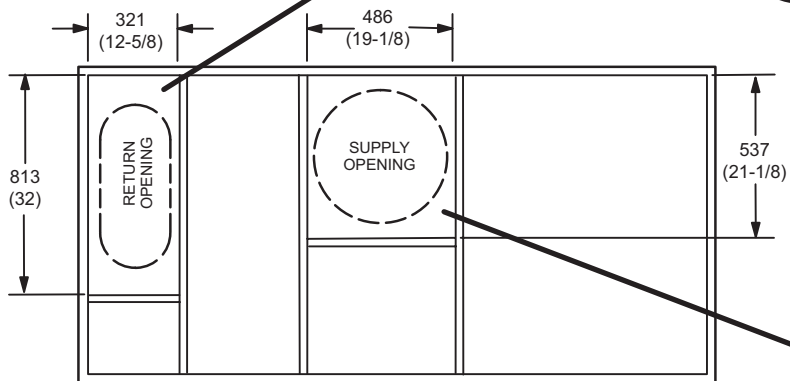


DIMENSIONS - ACCESSORIES - MM (INCHES)

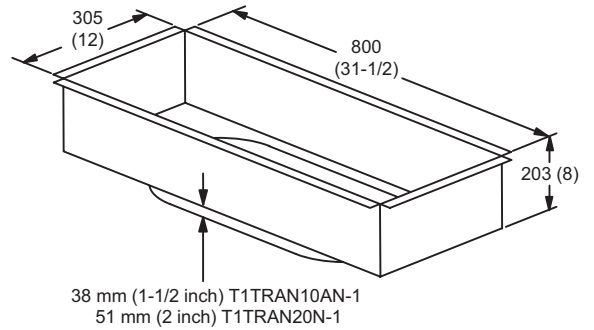
072 MODELS - SHOWING OVERHANG ON SMALLER 2026 MM LENGTH ROOF CURBS
(Not Full Perimeter)



TRANSITIONS

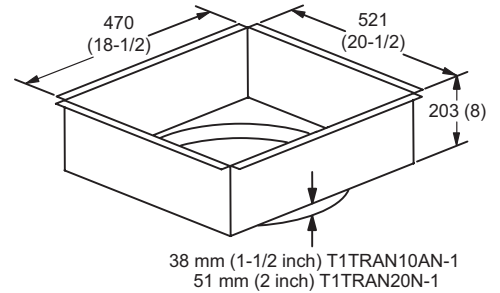


T1TRAN10AN-1 - FOR 457 mm (18 inch) DUCT
T1TRAN20N-1 - FOR 508 mm (20 inch) DUCT



RETURN TRANSITION

T1TRAN10AN-1 - FOR 457 mm (18 inch) DUCT
T1TRAN20N-1 - FOR 508 mm (20 inch) DUCT

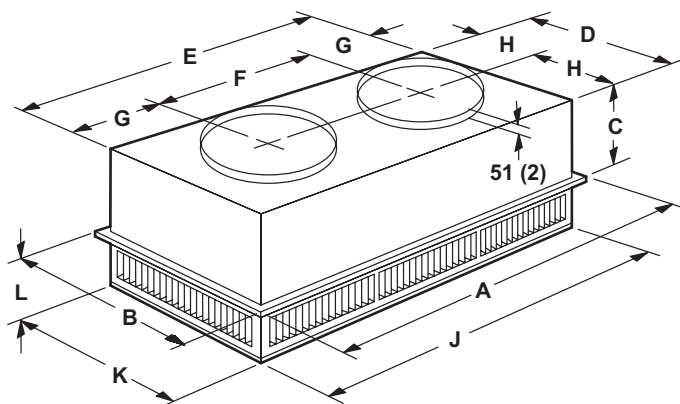


SUPPLY TRANSITION

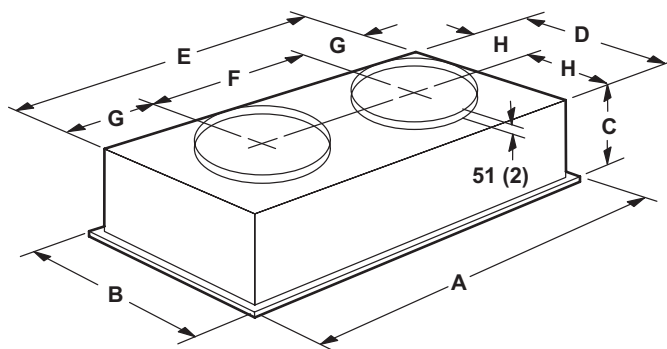
DIMENSIONS - ACCESSORIES - MM (INCHES)

COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

STEP-DOWN CEILING DIFFUSER



FLUSH CEILING DIFFUSER



Model Number		RTD9-65S	RTD11-95S
A	mm	1159	1159
	in.	47-5/8	47-5/8
B	mm	600	752
	in.	23-5/8	29-5/8
C	mm	289	365
	in.	11-3/8	14-3/8
D	mm	546	699
	in.	21-1/2	27-1/2
E	mm	1156	1158
	in.	45-1/2	45-1/2
F	mm	572	572
	in.	22-1/2	22-1/2
G	mm	292	292
	in.	11-1/2	11-1/2
H	mm	273	349
	in.	10-3/4	13-3/4
J	mm	1156	1156
	in.	45-1/2	45-1/2
K	mm	546	699
	in.	21-1/2	27-1/2
L	mm	181	206
	in.	7-1/8	8-1/8
Duct Size	mm	457 round	508 round
	in.	18 round	20 round

Model Number		FD9-65S	FD11-95S
A	mm	1159	1159
	in.	47-5/8	47-5/8
B	mm	600	752
	in.	23-5/8	29-5/8
C	mm	343	422
	in.	13-1/2	16-5/8
D	mm	533	686
	in.	21	27
E	mm	1143	1143
	in.	45	45
F	mm	572	572
	in.	22-1/2	22-1/2
G	mm	286	286
	in.	11-1/4	11-1/4
H	mm	267	343
	in.	10-1/2	13-1/2
Duct Size	mm	457 round	508 round
	in.	18 round	20 round

REVISIONS

Sections	Description of Change
Options/Accessories	Updated Economizer model and catalog numbers. Updated BACnet model and catalog number.



Visit us at www.lennox.com

For the latest technical information, 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.

©2018 Lennox Industries, Inc.