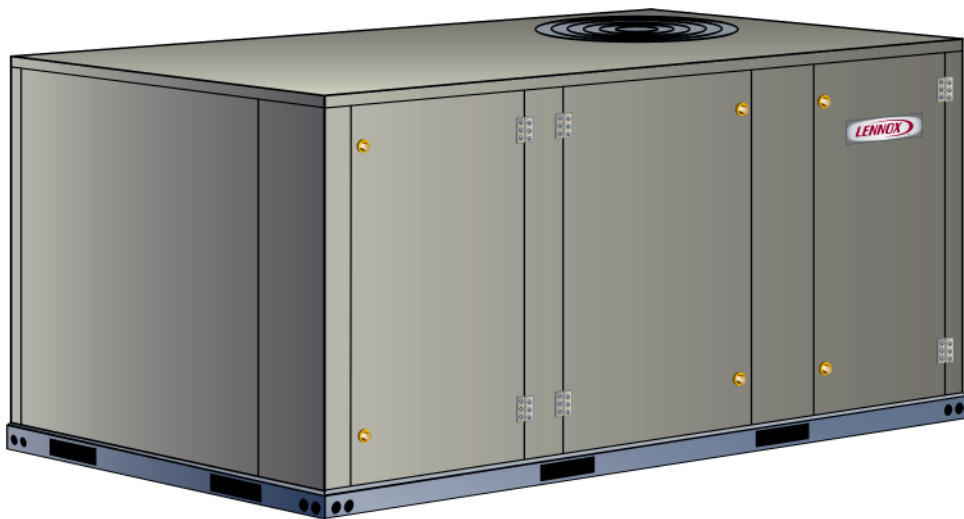




**PACKAGED HEAT PUMP**

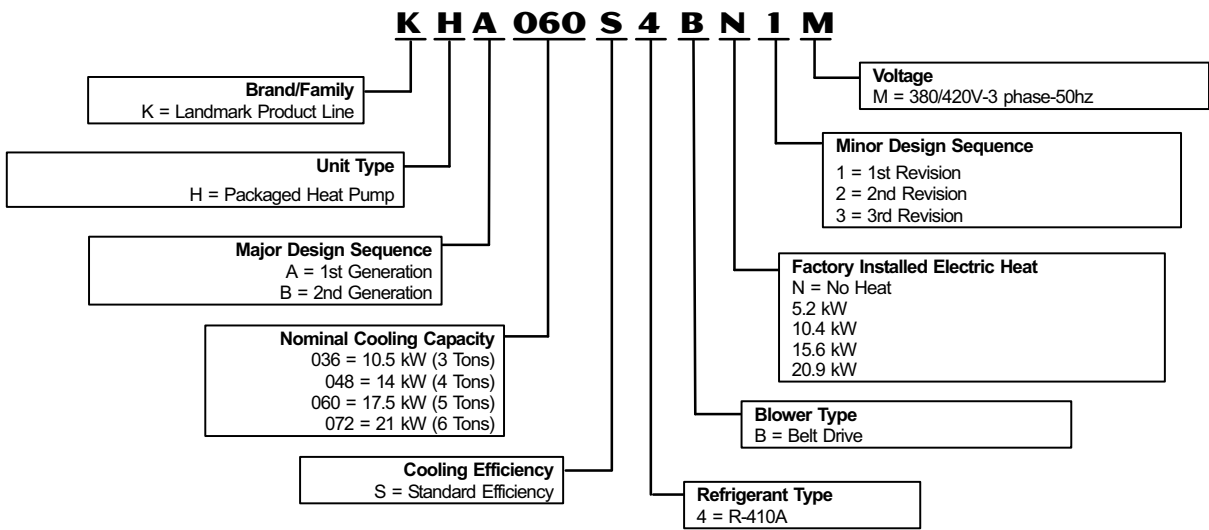
**KH**  
**LANDMARK™ ROOFTOP UNITS**  
**50 HZ**

Bulletin No. 490122  
 January 2010  
 Supersedes April 2008



**10.5 to 21 kW (3 to 6 Tons)**  
**Net Cooling Capacity - 9.3 to 18.2 (31 900 to 61 900 Btuh)**  
**Net Heating Capacity - 9.6 to 18.4 (32 700 to 63 000 Btuh)**  
**Optional Electric Heat - 5.2 to 20.9 kW**

**MODEL NUMBER IDENTIFICATION**



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## FEATURES AND BENEFITS

### TESTING

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

10.5 thru 17.6 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 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.

### CABINET

#### 1 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.

#### Air-Flow Choice

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

#### 2 Power Entry

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

#### 3 Exterior Panels

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

#### 4 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, ASTM 1153 Standard Specification for Methyl Isobutyl Ketone.

#### 5 Hinged Access Panels

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

#### Field Installed

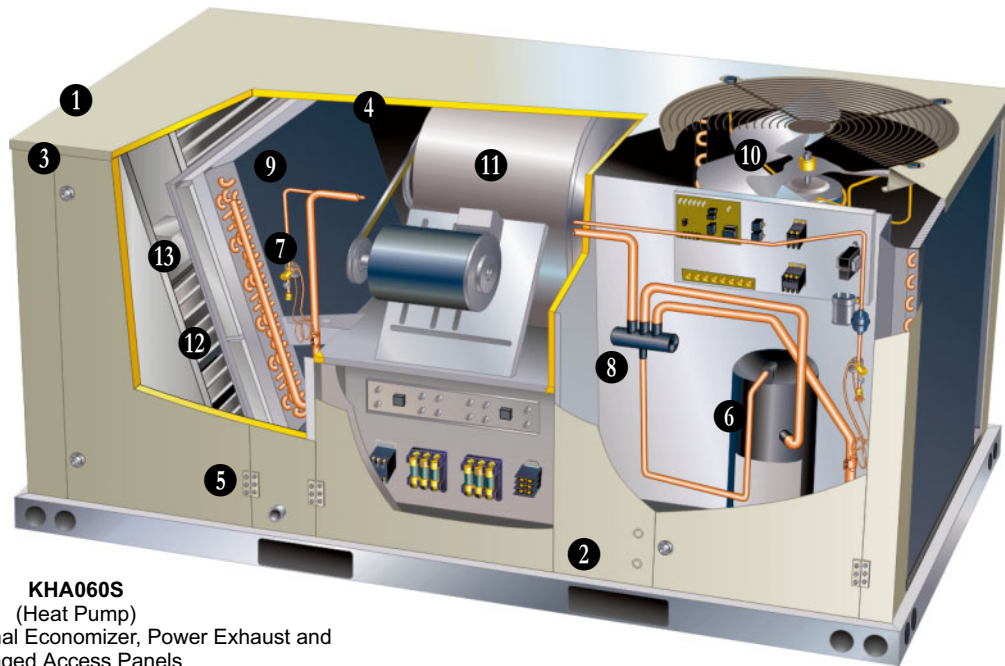
##### Coil Guards

Painted, galvanized steel wire guards to protect outdoor coil. Not used with Hail Guards.

##### Hail Guards

Constructed of heavy gauge steel, painted to match cabinet, helps protect outdoor coils from hail damage. Not used with Coil Guards.

## FEATURES AND BENEFITS



**KHA060S**  
(Heat Pump)

Shown With Optional Economizer, Power Exhaust and Hinged Access Panels

### **COOLING / HEATING SYSTEM**

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

System can operate in the cooling mode from -1°C to 52°C without any additional controls.

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

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



Unit is factory pre-charged with refrigerant. See Specifications Tables.

#### **6 Compressor**

Resiliently mounted on rubber grommets for quiet operation. Copeland Scroll™ compressors for high performance, reliability and quiet operation.

#### **Compressor Crankcase Heater**

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

#### **High Pressure Switch**

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

#### **7 Check/Thermal Expansion Valves**

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

#### **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.

#### **8 Defrost Control**

Provides a defrost cycle, if needed, every 30 or 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.

#### **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.

#### **9 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.

#### **Outdoor Coil**

Two independent formed coils allow separation for cleaning.

#### **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.

#### **10 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).

##### **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.

## 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

##### Dirty Filter Switch

Senses static pressure increase indicating dirty filter condition.

##### 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. Aftermarket unit controller options. See Page 23.

### 11 BLOWER

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

#### Motor

Equipped with ball bearings.

External overload protector.

Belt drive motors are offered on all models.

#### Supply Air Blower

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

All belt drive 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 Blower Data Table for specifications)

### 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 (CO<sub>2</sub>) Sensor

Monitors CO<sub>2</sub> levels adjusts economizer dampers as needed for Demand Control Ventilation.

### ELECTRICAL

#### OPTIONS/ACCESSORIES

##### Field Installed

##### Electric Heat

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

### SERVICEABILITY

Designed to streamline general maintenance and decrease troubleshooting time.

#### 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.

#### Blower Access

Supply air blower parts are located near the access door for easy servicing and adjustment.

#### Thermal Expansion Valves

Thermal expansion valves are located near the perimeter of the unit for easier access.

Removable element head allows change out of element and bulb without removing the TXV.

#### Coil Cleaning

Independently formed condenser coils allow separation for easier cleaning.

#### Compressor Compartment

Compressor is located near the perimeter of the unit for easier access. Compressor is isolated from the condenser air flow allowing system operation checks to be done without changing the air flow across the outdoor coils.

## OPTIONS / ACCESSORIES

### **ECONOMIZER/OUTDOOR AIR/EXHAUST OPTIONS**

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

#### **12 Economizer, Downflow**

Parallel 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, adjustable minimum damper position. Economizer includes barometric relief dampers.

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

Outdoor Air Hoods are included when economizer is factory installed and are furnished with economizer when ordered for field installation.

Choice of single (factory installed) or differential (optional) enthalpy economizer control is available.

Horizontal conversion kit available for field installation.

#### **Single Enthalpy Control**

Outdoor air enthalpy sensor enables economizer if the outdoor enthalpy is less than the setpoint of the board. Furnished with Economizer.

#### **Field Installed**

#### **Outdoor Air Damper - Manual**

Two sliding dampers provide 0 to 35% outdoor air, installs internal to unit. Includes Outdoor Air Hood.

#### **Outdoor Air Damper Motorized Kit**

Used to convert Manual Outdoor Air Dampers to motorized dampers. Kit includes linked mechanical dampers and spring return damper motor with plug-in connection.

#### **Differential Enthalpy Control**

An optional, return air, solid-state enthalpy sensor can be ordered extra for field installation. Allows the economizer control board to select between outdoor air or return air, whichever has lower enthalpy. Field installed.

#### **Economizer Temperature Control - Single**

An optional, solid-state temperature sensor can be ordered extra for field installation. Enables the economizer when the outdoor air temperature is below the configured setpoint.

#### **Economizer Temperature Control - Differential**

Order two single, temperature control kits. One is field installed in the return air section, the other in the outdoor air section. Allows the economizer control board to select between outdoor air or return air, whichever has lower temperature.

#### **Horizontal Conversion Kit**

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

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

Installs internal to unit for down-flow 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. Requires Economizer and Outdoor Air Hood (ordered separately). Fan is 406 mm diameter with 4 fan blades (T1PWRE10A) or 508 mm diameter with 5 blades (T1PWRE10N). Both include a 560 watt motor.

### **CEILING DIFFUSERS**

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

Aluminum grilles, large center grille, insulated diffuser box with flanges, hanging rings furnished, interior transition (even air flow), internally sealed (prevents recirculation), 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.

### **ROOF CURB**

#### **Roof Curb, Downflow**

Nailer strip furnished, mates to unit, US National Roofing Contractors Approved, shipped knocked down. Available in 203, 356, 457 and 610 mm heights.

Cliplock curbs use interlocking tabs to fasten together. No tools required.

Hinged curb corners fasten together with furnished hinge pins.

Standard roof curb corners fasten together with furnished hardware.

NOTE - 072 models can be used on smaller 2025 mm roof curbs (not full perimeter) with 400 mm overhang at condenser end of unit. See dimension drawing on page 31.

## OPTIONS / ACCESSORIES

Item	Catalog No.	036	048	060	072	
<b>COOLING SYSTEM</b>						
Condensate Drain Trap	Polyvinyl Chloride (PVC) - LTACDKP03/07	<b>37K69</b>	x	x	x	x
	Copper - LTACDKC03/07	<b>45K67</b>	x	x	x	x
Efficiency	Standard	○	○	○	○	
Low Ambient Kit	K1SNSR13A-1	<b>41W34</b>	x	x	x	x
Refrigerant Type	R-410A	○	○	○	○	
<b>BLOWER - SUPPLY AIR</b>						
Motors	Belt Drive - 1.5 kW Standard Efficiency	○	○	○	○	
Drive Kits See Blower Data Tables for selection	Kit A01 - T1DRKT001-1 - 561 - 842 rev/min	○				
	Kit A02 - T1DRKT002-1 - 621 - 931 rev/min		○			
	Kit A03 - T1DRKT003-1 - 694 - 1042 rev/min			○		
	Kit A08 - T1DRKT008-1 - 994-1326 rev/min				○	
	Kit A05 - T1DRKT005-1 - 748 - 1122 rev/min	○				
	Kit A06 - T1DRKT006-1 - 893 - 1191 rev/min		○			
	Kit A07 - T1DRKT007-1 - 1010 - 1290 rev/min			○		
	Kit A09 - K1DRKT009AP1 - 1193-1524 rev/min				○	
<b>CABINET</b>						
Coil Guards	T1GARD20A-1	<b>17W87</b>	x	x		
	T1GARD20N-1	<b>17W88</b>			x	
	K1GARD20AP1	<b>53W21</b>				x
Corrosion Protection		○	○	○	○	
Hail Guards	T1GARD10A-1	<b>17W89</b>	x	x		
	T1GARD10N-1	<b>17W90</b>			x	
	K1GARD10AP1	<b>53W22</b>				x
Hinged Access Panels		○	○	○	○	
<b>CONTROLS</b>						
Dirty Filter Switch	COSWCH00AE-1	<b>30K48</b>	x	x	x	x
Smoke Detector - Supply or Return (Power board and one sensor)	C1SNSR44AP1	<b>53W78</b>	x	x	x	x
Smoke Detector - Supply and Return (Power board and two sensors)	C1SNSR43AP1	<b>53W79</b>	x	x	x	x
<b>ELECTRICAL</b>						
Voltage - 50 hz with neutral	380/420V - 3 phase		○	○	○	○
<sup>1</sup> <b>ELECTRIC HEAT</b>						
5.2 kW	T1EH0075AN1G	<b>14W39</b>	x	x	x	x
10.4 kW	T1EH0150AN1G	<b>14W40</b>	x	x	x	x
15.6 kW	T1EH0225AN1G	<b>14W41</b>			x	x
20.9 kW	T1EH0300N-1G	<b>14W42</b>				x
<b>INDOOR AIR QUALITY</b>						
<b>Indoor Air Quality (CO<sub>2</sub>) Sensors</b>						
Sensor - white case CO <sub>2</sub> display	C0SNSR50AE1L	<b>77N39</b>	x	x	x	x
Sensor - duct-mount, black case, no display	C0SNSR53AE1L	<b>87N54</b>	x	x	x	x
CO <sub>2</sub> Sensor Duct Mounting Kit	C0MISC19AE1-	<b>85L43</b>	x	x	x	x
<b>UVC Germicidal Lamps</b>						
<sup>2</sup> Healthy Climate® UVC Light Kit (220v-1ph)	E1UVCL10AN1-	<b>50W90</b>	x	x	x	x

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

<sup>1</sup> Nominal kW at 400V-3ph-50hz. Electric heat model numbers are based on nominal kW for US applications.

<sup>2</sup> 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).

⊗ - Field Installed or Configure to Order (factory installed)

○ - Configure to Order (Factory Installed)

X - Field Installed.

## OPTIONS / ACCESSORIES

Item	Catalog No.	036	048	060	072
<b>ELECTRICAL</b>					
Disconnect	See Electrical/Electric Heat Tables for selection	x	x	x	x
<b>ECONOMIZER</b>					
<b>Economizer</b>					
Economizer, Single Enthalpy Control	T1ECON30A-1 <b>36W96</b>	⊗	⊗		
Includes Outdoor Air Hood and Barometric Relief Dampers	T1ECON30N-1 <b>36W97</b>			⊗	⊗
Horizontal Economizer Conversion Kit	T1HECK00AN1 <b>17W45</b>	x	x	x	x
<b>Economizer Controls</b>					
Differential Enthalpy Sensor	T1SNSR60AN1 <b>17W71</b>	x	x	x	x
Single Temperature Control	TASEK10/15 <b>76M37</b>	x	x	x	x
Differential Temperature Control	Order 2 - TASEK10/15 <b>76M37</b>	x	x	x	x
<b>OUTDOOR AIR</b>					
<b>Outdoor Air Dampers</b>					
Damper Section - Manual, Includes Outdoor Air Hood	T1DAMP11A-1 <b>16W88</b>	x	x		
	T1DAMP11N-1 <b>16W91</b>			x	x
Damper Motorized Kit - Order Manual Outdoor Air Damper Separately	T1DAMP21AN1 <b>16W92</b>	x	x	x	x
<b>POWER EXHAUST FANS</b>					
Standard Static 380/420V	T1PWRE10A-1G <b>17W40</b>	x	x		
	T1PWRE10N-1G <b>17W43</b>			x	x
<b>CEILING DIFFUSERS</b>					
Step-Down - Order one	RTD9-65 <b>27G87</b>	x	x	x	
	RTD11-95 <b>29G04</b>				x
Flush - Order one	FD9-65 <b>27G86</b>	x	x	x	
	FD11-95 <b>29G08</b>				x
Transitions (Supply and Return) - Order one	T1TRAN10AN1 <b>17W53</b>	x	x	x	
	T1TRAN20N-1 <b>17W54</b>				x
<b>ROOF CURBS - DOWNFLOW</b>					
<b>Cliplock 1000</b>					
203 mm (8 in.) height	T1CURB23AN1 <b>16W93</b>	x	x	x	<sup>1</sup> x
	K1CURB23AP1 <b>52W20</b>				x
356 mm (14 in.) height	T1CURB20AN1 <b>16W94</b>	x	x	x	<sup>1</sup> x
	K1CURB20AP1 <b>52W21</b>				x
457 mm (18 in.) height	T1CURB21AN1 <b>16W95</b>	x	x	x	<sup>1</sup> x
	K1CURB21AP1 <b>52W22</b>				x
610 mm (24 in.) height	T1CURB22AN1 <b>16W96</b>	x	x	x	<sup>1</sup> x
	K1CURB22AP1 <b>52W23</b>				x
<b>Hinged</b>					
203 mm (8 in.) height	T1CURB30AN1 <b>17W46</b>	x	x	x	<sup>1</sup> x
	K1CURB30AP1 <b>52W17</b>				x
457 mm (18 in.) height	T1CURB32AN1 <b>17W47</b>	x	x	x	<sup>1</sup> x
	K1CURB32AP1 <b>52W18</b>				x
610 mm (24 in.) height	T1CURB33AN1 <b>17W48</b>	x	x	x	<sup>1</sup> x
	K1CURB33AP1 <b>52W19</b>				x
<b>Standard</b>					
356 mm (14 in.) height	T1CURB10AN1 <b>13W27</b>	x	x	x	<sup>1</sup> x
	K1CURB10AP1 <b>52W24</b>				x

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

⊗ - Field Installed or Configure to Order (factory installed)

X - Field Installed.

<sup>1</sup> 072 models will fit smaller roof curbs with overhang. See dimension drawing.

**SPECIFICATIONS - BELT DRIVE BLOWER**
**10.5 - 21 kW (3 - 6 TON)**

General Data		Nominal Tonnage	10.5 kW (3 Ton)	14 kW (4 Ton)	17.5 kW (5 Ton)	21.1 kW (6 Ton)
		Model No.	KHA036S4B	KHA048S4B	KHA060S4B	KHA072S4B
		Efficiency Type	Standard	Standard	Standard	Standard
<b>Cooling Performance</b>	Gross Cooling Capacity - kW (Btuh)		9.8 (33 400)	13.0 (44 300)	16.3 (55 500)	18.8 (64 200)
	<sup>1</sup> Net Cooling Capacity - kW (Btuh)		9.3 (31 900)	12.4 (42 300)	15.5 (53 000)	18.1 (61 900)
	ARI Rated Air Flow - L/s (cfm)		545 (1160)	755 (1600)	935 (1985)	972 (2060)
	<sup>2</sup> Sound Rating Number (dB)		75	75	82	83
	Total Unit Power - kW		2.9	3.9	4.8	5.6
	<sup>1</sup> EER (Btuh/Watt)		10.9	10.7	11	11.0
<b>Refrigerant</b>	Type		R-410A	R-410A	R-410A	R-410A
	Charge Furnished		5.67 (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.)
<b>Heating Performance</b>	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
	COP		2.4	2.5	<sup>1</sup> 2.7	2.25
<b>Electric Heating Options</b>		See Electric Heat Table Page 21				
<b>Compressor Type (no.)</b>			Scroll (1)	Scroll (1)	Scroll (1)	Scroll (1)
<b>Outdoor Coil</b>	Net face area - m <sup>2</sup> (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
	Fine per meter (Fins / inch)		788 (20)	788 (20)	788 (20)	788 (20)
<b>Outdoor Coil Fan</b>	Motor W (HP)		186 (1/4)	186 (1/4)	248 (1/3)	373 (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)
<b>Indoor Coil</b>	Net face area - m <sup>2</sup> (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) 3/4 NPT			
	Expansion device type		Balanced Port Thermostatic Expansion Valve, removeable power head			
<sup>3</sup> <b>Indoor Blower &amp; Drive Selection</b>	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 - in. (mm)		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)	A08 (994-1326) A09 (1193 - 1524)
<b>Filters</b>	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)	
<b>Electrical Characteristics - 50 hz</b>			380/420V - 3 phase with neutral			

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

<sup>1</sup> Rating test conditions are those included in Air-Conditioning, Heating and Refrigeration Institute (AHRI) Standard 210/240 while operating at rated voltage and air volumes  
**Cooling Ratings** - 35°C (95°F) outdoor air temperature and 27°C (80°F) db/19°C (67°F) wb entering indoor coil air.

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

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

<sup>2</sup> Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270.

<sup>3</sup> 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.

### 10.6 kW (3 Ton) STANDARD EFFICIENCY - COOLING CAPACITY

KHA036S4

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			27°C (80°F)						35°C (95°F)						43°C (110°F)						52°C (125°F)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	.45	960	9.6	32.7	1.88	.74	.88	1.00	8.9	30.4	2.27	.76	.92	1.00	8.2	27.9	2.76	.79	.96	1.00	7.4	25.1	3.37	.84	1.00	1.00
	.56	1200	10.0	34.0	1.88	.80	.97	1.00	9.3	31.8	2.28	.83	1.00	1.00	8.6	29.4	2.77	.87	1.00	1.00	7.8	26.7	3.37	.93	1.00	1.00
	.68	1440	10.4	35.4	1.89	.86	1.00	1.00	9.7	33.2	2.29	.90	1.00	1.00	9.0	30.7	2.78	.94	1.00	1.00	8.1	27.8	3.38	1.00	1.00	1.00
19°C (67°F)	.45	960	10.2	34.9	1.89	.57	.71	.85	9.5	32.4	2.29	.58	.73	.88	8.7	29.7	2.77	.60	.76	.93	7.8	26.5	3.37	.63	.81	.98
	.56	1200	10.6	36.0	1.90	.61	.77	.94	9.8	33.4	2.30	.63	.80	.97	8.9	30.5	2.78	.65	.85	1.00	8.0	27.3	3.38	.68	.90	1.00
	.68	1440	10.8	36.8	1.91	.65	.84	1.00	10.0	34.2	2.31	.67	.87	1.00	9.2	31.3	2.79	.70	.92	1.00	8.2	27.9	3.38	.74	.98	1.00
22°C (71°F)	.45	960	10.9	37.2	1.91	.42	.55	.68	10.2	34.7	2.31	.43	.57	.71	9.3	31.7	2.79	.44	.59	.74	8.3	28.3	3.39	.45	.62	.79
	.56	1200	11.2	38.3	1.92	.44	.60	.75	10.4	35.6	2.32	.44	.61	.78	9.5	32.5	2.80	.46	.64	.82	8.5	29.0	3.40	.47	.68	.88
	.68	1440	11.5	39.1	1.93	.45	.64	.82	10.6	36.2	2.33	.46	.66	.85	9.7	33.1	2.81	.47	.69	.90	8.6	29.4	3.41	.49	.74	.96

### 10.6 kW (3 Ton) STANDARD EFFICIENCY - HEATING CAPACITY

KHA036S4

Indoor Coil Air Volume 21°C db (70°F db)		Air Temperature Entering Outdoor Coil														
		18°C (65°F)		7°C (45°F)		minus 4°C (25°F)		minus 15°C (5°F)		minus 28°C (minus 15°F)						
m³/s	cfm	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	
0.46	960	11.6	39.6	2.20	8.8	30.1	2.05	5.8	19.9	1.88	4.1	14.1	1.71	2.0	6.9	1.28
0.57	1200	11.8	40.4	2.07	9.1	30.9	1.92	6.1	20.7	1.76	4.4	14.9	1.58	2.3	7.7	1.15
0.68	1440	12.0	41.1	1.99	9.3	31.6	1.84	6.3	21.4	1.68	4.6	15.6	1.50	2.5	8.4	1.07

### 14.1 kW (4 Ton) STANDARD EFFICIENCY - COOLING CAPACITY

KHA048S4

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			27°C (80°F)						35°C (95°F)						43°C (110°F)						52°C (125°F)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	.60	1280	12.8	43.7	2.55	.72	.88	1.00	11.9	40.6	3.11	.75	.92	1.00	10.9	37.2	3.77	.78	.97	1.00	9.9	33.7	4.57	.83	1.00	1.00
	.75	1600	13.3	45.5	2.55	.78	.97	1.00	12.4	42.3	3.13	.82	1.00	1.00	11.5	39.2	3.78	.86	1.00	1.00	10.4	35.6	4.59	.92	1.00	1.00
	.90	1920	13.9	47.3	2.55	.85	1.00	1.00	12.9	44.1	3.14	.89	1.00	1.00	12.0	40.8	3.80	.94	1.00	1.00	10.8	36.9	4.61	.99	1.00	1.00
19°C (67°F)	.60	1280	13.6	46.5	2.55	.56	.70	.84	12.6	43.0	3.14	.57	.72	.88	11.5	39.3	3.79	.59	.75	.93	10.3	35.2	4.59	.62	.80	.99
	.75	1600	14.1	48.0	2.56	.60	.76	.93	13.0	44.3	3.15	.62	.79	.98	11.8	40.4	3.81	.64	.84	1.00	10.6	36.2	4.61	.68	.90	1.00
	.90	1920	14.3	48.9	2.56	.63	.83	1.00	13.2	45.2	3.16	.66	.87	1.00	12.1	41.3	3.82	.69	.92	1.00	10.8	37.0	4.62	.73	.98	1.00
22°C (71°F)	.60	1280	14.5	49.6	2.56	.41	.54	.67	13.5	45.9	3.16	.42	.56	.70	12.3	41.9	3.83	.43	.58	.73	11.0	37.5	4.63	.44	.61	.78
	.75	1600	14.9	51.0	2.56	.43	.58	.74	13.8	47.0	3.17	.44	.60	.77	12.6	42.9	3.84	.45	.63	.81	11.2	38.3	4.64	.46	.67	.88
	.90	1920	15.2	51.9	2.56	.44	.62	.80	14.0	47.8	3.18	.45	.65	.85	12.7	43.5	3.85	.47	.68	.90	11.4	38.8	4.65	.48	.73	.97

### 14.1 kW (4 Ton) STANDARD EFFICIENCY - HEATING CAPACITY

KHA048S4

Indoor Coil Air Volume 21°C db (70°F db)		Air Temperature Entering Outdoor Coil														
		18°C (65°F)		7°C (45°F)		minus 4°C (25°F)		minus 15°C (5°F)		minus 28°C (minus 15°F)						
m³/s	cfm	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	
0.61	1280	15.2	51.9	3.01	11.6	39.5	2.77	7.7	26.2	2.52	5.6	19.1	2.26	2.8	9.4	1.69
0.76	1600	15.5	52.9	2.84	11.9	40.5	2.60	8.0	27.2	2.35	5.9	20.1	2.09	3.0	10.4	1.53
0.91	1920	15.8	53.8	2.75	12.1	41.4	2.51	8.2	28.1	2.26	6.2	21.0	2.00	3.3	11.3	1.43

### 17.5 kW (5 Ton) STANDARD EFFICIENCY - COOLING CAPACITY

KHA060S4

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			27°C (80°F)						35°C (95°F)						43°C (110°F)						52°C (125°F)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	.75	1600	16.0	54.7	3.11	.73	.87	1.00	14.8	50.6	3.74	.75	.92	1.00	13.5	46.1	4.52	.78	.97	1.00	12.1	41.2	5.49	.84	1.00	1.00
	.94	2000	16.7	56.9	3.13	.79	.97	1.00	15.5	52.8	3.77	.82	1.00	1.00	14.2	48.6	4.55	.87	1.00	1.00	12.8	43.7	5.51	.94	1.00	1.00
	1.13	2400	17.4	59.3	3.15	.85	1.00	1.00	16.2	55.3	3.79	.90	1.00	1.00	14.9	50.8	4.57	.95	1.00	1.00	13.3	45.4	5.53	1.00	1.00	1.00
19°C (67°F)	.75	1600	17.1	58.2	3.15	.56	.70	.84	15.8	53.8	3.78	.58	.73	.88	14.3	48.9	4.55	.60	.76	.93	12.6	43.1	5.51	.63	.82	1.00
	.94	2000	17.6	60.1	3.17	.60	.76	.93	16.3	55.5	3.80	.62	.80	.98	14.7	50.3	4.58	.65	.85	1.00	13.0	44.4	5.53	.69	.92	1.00
	1.13	2400	18.0	61.5	3.19	.64	.83	1.00	16.6	56.7	3.82	.66	.88	1.00	15.1	51.5	4.59	.70	.93	1.00	13.3	45.5	5.55	.75	1.00	1.00
22°C (71°F)	.75	1600	18.2	62.2	3.19	.42	.55	.68	16.8	57.4	3.83	.42	.56	.70	15.3	52.1	4.60	.43	.59	.74	13.5	46.0	5.55	.44	.62	.79
	.94	2000	18.8	64.0	3.22	.43	.59	.74	17.3	59.0	3.85	.44	.61	.77	15.6	53.4	4.62	.45	.64	.82	13.8	47.0	5.57	.47	.68	.89
	1.13	2400	19.1	65.2	3.23	.45	.63	.81	17.6	60.0	3.87	.46	.66	.85	15.9	54.3	4.64	.47	.69	.91	14.0	47.7	5.59	.50	.74	.98

### 17.5 kW (5 Ton) STANDARD EFFICIENCY - HEATING CAPACITY

KHA060S4

Indoor Coil Air Volume 21°C db (70°F db)		Air Temperature Entering Outdoor Coil														
		18°C (65°F)		7°C (45°F)		minus 4°C (25°F)		minus 15°C (5°F)		minus 28°C (minus 15°F)						
m³/s	cfm	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	Total Heating Capacity	Comp. Motor kW Input	
0.76	1600	19.5	66.6	3.53	14.8	50.6	3.28	9.9	33.7	3.03	6.8	23.3	2.68	3.4	11.6	2.01
0.95	2000	19.8	67.7	3.33	15.2	51.7	3.08	10.2	34.8	2.83	7.2	24.4	2.48	3.7	12.7	1.81
1.14	2400	20.3	69.2	3.21	15.6	53.2	2.96	10.6	36.3	2.71	7.6	25.9	2.36	4.2	14.2	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.

### 21.1 kW (6 Ton) STANDARD EFFICIENCY - COOLING CAPACITY

KHA072S4

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																										
			27°C (80°F)						35°C (95°F)						43°C (110°F)						52°C (125°F)								
			Total Cooling Capacity		Comp. Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp. Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp. Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp. Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb					
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F			
17°C (63°F)	.90	1920	19.0	64.8	3.79	.73	.89	1.00	17.7	60.5	4.44	.75	.93	1.00	16.3	55.5	5.21	.78	.99	1.00	14.7	50.1	6.14	.84	1.00	1.00			
	1.13	2400	20.0	68.1	3.80	.78	.98	1.00	18.7	63.7	4.44	.82	1.00	1.00	17.3	59.1	5.22	.87	1.00	1.00	15.7	53.5	6.14	.95	1.00	1.00			
	1.36	2880	20.9	71.3	3.80	.85	1.00	1.00	19.6	67.0	4.45	.89	1.00	1.00	18.2	62.0	5.22	.95	1.00	1.00	16.4	55.9	6.15	1.00	1.00	1.00			
19°C (67°F)	.90	1920	20.1	68.7	3.80	.57	.70	.85	18.8	64.1	4.44	.58	.73	.89	17.2	58.7	5.21	.60	.76	.95	15.4	52.4	6.14	.63	.81	1.00			
	1.13	2400	21.0	71.7	3.80	.61	.76	.95	19.5	66.7	4.45	.62	.79	.99	17.9	61.0	5.22	.65	.84	1.00	15.9	54.4	6.14	.68	.92	1.00			
	1.36	2880	21.7	74.1	3.81	.64	.82	1.00	20.1	68.7	4.45	.66	.87	1.00	18.5	63.0	5.22	.69	.92	1.00	16.4	56.0	6.14	.73	1.00	1.00			
22°C (71°F)	.90	1920	21.3	72.7	3.80	.43	.56	.68	19.9	67.9	4.45	.43	.57	.70	18.3	62.3	5.22	.44	.59	.74	16.3	55.7	6.14	.45	.62	.78			
	1.13	2400	22.2	75.9	3.81	.44	.59	.74	20.7	70.8	4.45	.45	.61	.77	19.0	64.8	5.22	.46	.64	.81	16.9	57.8	6.15	.47	.67	.88			
	1.36	2880	22.9	78.3	3.82	.46	.63	.79	21.3	72.8	4.45	.47	.65	.84	19.5	66.6	5.22	.48	.68	.89	17.3	59.1	6.15	.50	.73	.98			

### 21.1 kW (6 Ton) STANDARD EFFICIENCY - HEATING CAPACITY

KHA072S4

Indoor Coil Air Volume 21°C db (70°F db)		Air Temperature Entering Outdoor Coil														
		18°C (65°F)			7°C (45°F)			minus 4°C (25°F)			minus 15°C (5°F)			minus 28°C (minus 15°F)		
		Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input
kW	kBtuh	kW	kBtuh		kW	kBtuh		kW	kBtuh		kW	kBtuh		kW	kBtuh	
0.91	1920	22.9	78.2	4.65	17.4	59.5	4.14	11.9	40.6	3.59	7.3	24.9	3.22	3.5	12.1	2.43
1.14	2400	23.5	80.2	4.42	18.1	61.6	3.91	12.5	42.7	3.37	7.9	26.9	3.00	4.1	14.1	2.21
1.36	2880	24.0	81.8	4.28	18.5	63.1	3.78	13.0	44.2	3.23	8.4	28.5	2.86	4.6	15.7	2.07

## BLOWER DATA - BELT DRIVE - KHA036 - 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 19 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	
		Field Furnished																								
		Kit A01																								
425	900	486	0.09	0.12	554	0.12	0.16	623	0.15	0.20	695	0.16	0.22	767	0.17	0.23	836	0.19	0.25	897	0.21	0.28	953	0.22	0.30	
472	1000	508	0.11	0.15	576	0.14	0.19	643	0.16	0.22	713	0.18	0.24	783	0.19	0.26	848	0.21	0.28	907	0.22	0.30	961	0.25	0.33	
519	1100	533	0.13	0.18	599	0.16	0.22	665	0.19	0.25	733	0.20	0.27	800	0.21	0.28	863	0.23	0.31	919	0.25	0.34	971	0.27	0.36	
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	676	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	
		External Static - Pa (in.w.g.)																								
		Field Furnished																								
		Kit A05																								
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	1269	0.37	0.49	1305	0.39	0.52	
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	1276	0.40	0.53	1311	0.42	0.56	
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	1282	0.43	0.58	1318	0.46	0.61	
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	

## 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 19 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	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW						
		Kit A01																							
		Field Furnished																							
425	900	485	0.08	0.11	554	0.10	0.14	627	0.12	0.16	703	0.13	0.18	780	0.16	0.21	841	0.17	0.23	888	0.20	0.27	935	0.22	0.30
472	1000	509	0.10	0.13	578	0.12	0.16	649	0.14	0.19	722	0.16	0.21	796	0.17	0.23	854	0.19	0.26	900	0.22	0.29	947	0.25	0.33
519	1100	537	0.12	0.16	605	0.14	0.19	674	0.16	0.21	744	0.18	0.24	813	0.19	0.26	868	0.22	0.29	913	0.25	0.33	959	0.27	0.36
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
		External Static - Pa (in.w.g.)																							
		Kit A05																							
		Field Furnished																							
Air Volume		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	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW						
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	1248	0.37	0.49	1280	0.38	0.51
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	1255	0.40	0.53	1287	0.42	0.56
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	1263	0.43	0.57	1295	0.45	0.6
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

## BLOWER DATA - BELT DRIVE - KHAO48 - 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 19 for blower motors and drives and wet coil and options/accessory air resistance data.

### DOWNFLOW

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				
		Kit A02																					
		Field Furnished																					
566	1200	560	0.16	0.21	625	0.19	0.25	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	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	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	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	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	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	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	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	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
		Kit A06																					
		Field Furnished																					
566	1200	1031	0.32	0.43	1079	0.34	0.45	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	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	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	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	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	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	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	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	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 19 for blower motors and drives and wet coil and options/accessory air resistance data.

### HORIZONTAL

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															
		Kit A02																																						
		Field Furnished																																						
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	1028	0.35	0.47	1070	0.38	0.51	1118	0.40	0.54	1164	0.42	0.56	1210	0.44	0.59
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	1038	0.35	0.47	1084	0.38	0.51	1132	0.40	0.54	1180	0.42	0.56	1228	0.44	0.59
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	1056	0.39	0.52	1104	0.42	0.56	1152	0.44	0.59	1200	0.47	0.62	1248	0.50	0.65
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	1076	0.42	0.56	1124	0.44	0.59	1172	0.47	0.62	1220	0.50	0.65	1268	0.53	0.71
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	1096	0.46	0.62	1144	0.48	0.65	1192	0.51	0.68	1238	0.54	0.73	1284	0.57	0.77
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	1118	0.51	0.68	1166	0.54	0.73	1214	0.57	0.77	1260	0.60	0.81	1306	0.63	0.85
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	1141	0.56	0.74	1189	0.60	0.81	1237	0.63	0.85	1284	0.66	0.88	1332	0.70	0.92
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	1166	0.62	0.81	1214	0.66	0.88	1260	0.70	0.92	1306	0.74	0.97	1352	0.78	1.05
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	1192	0.66	0.88	1240	0.70	0.92	1286	0.74	0.97	1332	0.78	1.05	1378	0.82	1.10

### 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	
		Kit A06																								
		Field Furnished																								
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 19 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						
		Kit A03																							
		Field Furnished																							
755	1600	665	0.22	0.30	716	0.25	0.34	0.38	819	0.31	0.41	879	0.33	0.44	937	0.34	0.46	985	0.37	0.49	1022	0.39	0.52		
802	1700	723	0.23	0.31	768	0.26	0.35	0.39	860	0.32	0.43	910	0.35	0.47	959	0.37	0.50	1001	0.40	0.54	1037	0.43	0.58		
849	1800	779	0.24	0.32	818	0.28	0.37	0.41	897	0.34	0.46	939	0.37	0.50	980	0.41	0.55	1018	0.44	0.59	1054	0.48	0.64		
897	1900	826	0.27	0.36	859	0.31	0.41	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	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	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	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	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	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		
		Kit A07																							
		Field Furnished																							
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	1290	0.59	0.79	1319	0.62	0.83
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	1299	0.63	0.84	1328	0.66	0.89
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	1310	0.68	0.91	1338	0.71	0.95
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	1.1
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

## 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 19 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	BHP	Rev/min	BHP	Rev/min	BHP	Rev/min	BHP	Rev/min	BHP	Rev/min	BHP	Rev/min	BHP	Rev/min	BHP								
Kit A03																									
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
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	BHP	Rev/min	BHP	Rev/min	BHP	Rev/min	BHP	Rev/min	BHP	Rev/min	BHP	Rev/min	BHP	Rev/min	BHP								
Kit A07																									
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 19 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						
<b>Kit A08</b>																									
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
<b>External Static - Pa (in. w.g.)</b>																									
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						
<b>Kit A08</b>																									
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
<b>Kit A09</b>																									
Field Furnished																									

## 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 19 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	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW										
<b>Kit A08</b>																													
897	1900	853	0.31	0.41	886	0.34	0.46	0.50	0.55	986	0.45	0.60	0.64	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	0.57	0.62	1009	0.50	0.67	0.71	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	0.65	0.70	1033	0.56	0.75	0.79	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	0.73	0.78	1058	0.62	0.83	0.88	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	0.82	0.87	1085	0.69	0.92	0.96	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	0.91	0.96	1113	0.75	1.00	1.05	1146	0.78	1.05	1180	0.81	1.09	1213	0.84	1.13							
1180	2500	1010	0.68	0.91	1042	0.72	0.96	1.00	1.05	1142	0.81	1.09	1.14	1175	0.85	1.14	1207	0.88	1.18	1239	0.92	1.23							
1227	2600	1040	0.75	1.01	1073	0.78	1.05	1.10	1.15	1171	0.89	1.19	1.23	1203	0.92	1.23	1235	0.95	1.28	1266	0.99	1.33							
1274	2700	1072	0.82	1.10	1104	0.86	1.15	1.17	1.20	1201	0.96	1.29	1.34	1232	1.00	1.34	1263	1.04	1.40	1293	1.09	1.46							
1321	2800	1105	0.90	1.21	1137	0.93	1.25	1.16	1.18	1231	1.04	1.40	1.46	1261	1.09	1.46	1291	1.13	1.52	1321	1.19	1.59							
1369	2900	1138	0.98	1.32	1169	1.02	1.37	1.20	1.20	1261	1.14	1.53	1.60	1291	1.19	1.60	1321	1.24	1.66	1350	1.29	1.73							
<b>External Static - Pa (in. w.g.)</b>																													
Air Volume		300 (1.20)												325 (1.30)				350 (1.40)				375 (1.50)				400 (1.60)			
		Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	Rev/min	BHP	kW	
<b>Kit A09</b>																													
897	1900	1126	0.57	0.77	1163	0.60	0.81	1.20	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	1.20	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	1.24	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	1.26	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	1.28	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	1.31	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				
1180	2500	1271	0.95	1.28	1303	0.99	1.33	1.33	1.04	1.39	1363	1.08	1.45	1391	1.13	1.52	1418	1.17	1.57	1446	1.21	1.62	1474	1.24	1.66				
1227	2600	1297	1.04	1.39	1328	1.08	1.45	1.35	1.13	1.52	1385	1.18	1.58	1412	1.22	1.64	1439	1.27	1.70	1467	1.30	1.74	1495	1.33	1.78				
1274	2700	1323	1.13	1.52	1353	1.18	1.58	1.38	1.23	1.65	1409	1.28	1.72	1435	1.32	1.77	1462	1.36	1.82	1490	1.39	1.86	1517	1.42	1.90				
1321	2800	1351	1.23	1.65	1380	1.28	1.72	1.40	1.33	1.78	1434	1.38	1.85	1460	1.42	1.90	1486	1.45	1.95	1513	1.48	1.99	1541	1.51	2.02				
1369	2900	1379	1.34	1.79	1407	1.39	1.86	1.43	1.43	1.92	1460	1.48	1.98	1485	1.52	2.04	1511	1.55	2.08	1538	1.58	2.12	1565	1.60	2.15				

## BLOWER DATA

### FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

Motor		rev/min Range							
Nominal	Maximum	Kit A01	Kit A02	Kit A03	Kit A05	Kit A06	Kit A07	Kit A08	Kit A09
1.5 kW (2 hp)	1.7 kW (2.3 hp)	561 - 842	621 - 931	694 - 1042	748 - 1122	893 - 1191	1010 - 1290	994 - 1326	1193 - 1524

\*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.

### POWER EXHAUST FANS PERFORMANCE

Return Air System Static Pressure		Air Volume Exhausted											
		T1PWRE10A						T1PWRE10N					
		Low		Medium		High		Low		Medium		High	
Pa	in. w.g.	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm
0	0	510	1085	515	1085	510	1080	1525	3235	1625	3445	1705	3615
25	0.1	410	865	415	875	415	880	1280	2710	1395	2960	1475	3130
50	0.2	315	670	320	675	320	675	855	1810	1185	2510	1275	2700
75	0.3	235	495	230	490	230	485	865	1835	9985	2085	1090	2310
100	0.4	160	335	155	335	160	340	665	1405	790	1675	915	1935
125	0.5	95	200	100	210	120	250	440	935	595	1260	740	1570
150	0.6	35	75	65	135	115	240	185	390	390	825	360	760

### OPTIONS / ACCESSORIES AIR RESISTANCE

Air Volume		Economizer		Wet Indoor Coil				Electric Heat	
				036-048		060-072			
L/s	cfm	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.
470	1000	10	0.04	5	0.02	2	0.01	7	0.03
565	1200	10	0.04	7	0.03	5	0.02	15	0.06
660	1400	10	0.04	10	0.04	7	0.03	22	0.09
755	1600	10	0.04	12	0.05	10	0.04	30	0.12
850	1800	12	0.05	15	0.06	12	0.05	37	0.15
945	2000	12	0.05	20	0.08	15	0.06	45	0.18
1040	2200	12	0.05	22	0.09	17	0.07	50	0.20
1130	2400	12	0.05	25	0.10	20	0.08	55	0.22
1225	2600	15	0.06	27	0.11	22	0.09	60	0.24
1320	2800	15	0.06	32	0.13	25	0.10	65	0.26
1415	3000	15	0.06	35	0.14	30	0.12	70	0.28

## BLOWER DATA

### CEILING DIFFUSERS AIR RESISTANCE

Air Volume		RTD9-65 Step-Down Diffuser						FD9-65 Flush Diffuser	RTD11-95 Step-Down Diffuser						FD11-95 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.
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
945	2000	182	0.73	124	0.50	90	0.36	90	0.36	37	0.15	32	0.13	27	0.11
1040	2200	236	0.95	157	0.63	109	0.44	109	0.44	45	0.18	37	0.15	30	0.12
1130	2400	---	---	---	---	---	---	---	---	52	0.21	45	0.18	37	0.15
1225	2600	---	---	---	---	---	---	---	---	60	0.24	52	0.21	45	0.18
1320	2800	---	---	---	---	---	---	---	---	67	0.27	60	0.24	52	0.21
1415	3000	---	---	---	---	---	---	---	---	80	0.32	72	0.29	62	0.25

### CEILING DIFFUSER AIR THROW DATA

Air Volume		<sup>1</sup> Effective Throw			
		RTD9-65		FD9-65	
Model No.		m	ft.	m	ft.
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.		RTD11-95		FD11-95	
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

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

**ELECTRICAL/ELECTRIC HEAT DATA**
**10.5 - 21.1 KW (3 - 6 TON)**

		<b>KHA036S</b> 380/420V-3ph	<b>KHA048S</b> 380/420V-3ph	<b>KHA060S</b> 380/420V-3ph	<b>KHA072S</b> 380/420V-3ph
<b>Voltage - 50hz</b>					
<b>Compressor</b>	Rated Load Amps	5.4	6.1	7.8	9.7
	Locked Rotor Amps	38	43	51.5	64
<b>Outdoor Fan Motor</b>	Full Load Amps	1.1	1.1	1.3	1.5
<b>Power Exhaust Fan</b>	W (Horsepower)	(1) 561 (0.75)	(1) 561 (0.75)	(1) 561 (0.75)	(1) 561 (0.75)
	Full Load Amps	2.2	2.2	2.2	2.2
<b>Indoor Blower Motor</b>	kW (Horsepower)	1.5 (2)	1.5 (2)	1.5 (2)	1.5 (2)
	Full Load Amps	3.5	3.5	3.5	3.5
<b>1 Maximum Overcurrent Protection</b>	Unit Only	15	15	20	25
	Unit with <b>5.2 kW</b>	25	25	30	30
	<sup>3</sup> electric heat no exhaust fan <b>10.4 kW</b>	35	35	35	40
	<b>15.6 kW</b>	---	---	45	50
	<b>20.9 kW</b>	---	---	---	60
<b>1 Maximum Overcurrent Protection</b>	Unit with exhaust fan	15	20	20	25
	Unit with <b>5.2 kW</b>	25	25	30	35
	<sup>3</sup> electric heat and exhaust fan <b>10.4 kW</b>	35	35	40	40
	<b>15.6 kW</b>	---	---	50	50
	<b>20.9 kW</b>	---	---	---	60
<b>2 Minimum Circuit Ampacity</b>	Unit Only	12	13	15	18
	Unit with <b>5.2 kW</b>	22	23	25	27
	<sup>3</sup> electric heat no exhaust fan <b>10.4 kW</b>	32	32	35	37
	<b>15.6 kW</b>	---	---	45	47
	<b>20.9 kW</b>	---	---	---	57
<b>2 Minimum Circuit Ampacity</b>	Unit with exhaust fan	14	15	17	20
	Unit with <b>5.2 kW</b>	24	25	27	30
	<sup>3</sup> electric heat and exhaust fan <b>10.4 kW</b>	34	35	37	40
	<b>15.6 kW</b>	---	---	47	49
	<b>20.9 kW</b>	---	---	---	59

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

<sup>1</sup> Heating, Air Conditioning, Refrigeration type breaker or fuse.

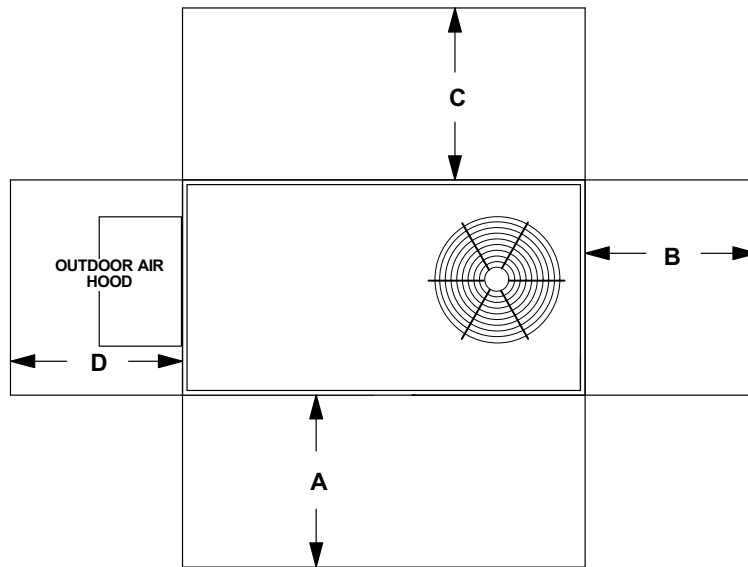
<sup>2</sup> Refer to local electrical codes to determine wire, fuse and disconnect size requirements.

<sup>3</sup> Nominal kW based on 400V-3ph-50hz.

**ELECTRIC HEAT CAPACITIES**

Input Voltage	5.2 kW			10.4 kW			15.6 kW			20.9 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)



<sup>1</sup> 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.

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

Minimum Operation Clearance - Required clearance for proper unit operation.

## OUTDOOR SOUND DATA

<sup>1</sup> Unit Model No.	Operating Mode	Octave Band Sound Power Levels dBA, re 10 <sup>-12</sup> Watts Center Frequency - HZ							Sound Rating Number (dB)
		125	250	500	1000	2000	4000	8000	
036 and 048	Cooling	63	66	70	71	68	62	53	75
	Heating	63	66	71	70	68	62	54	75
060	Cooling	67	72	77	76	73	68	61	82
	Heating	70	72	77	76	73	69	60	82
072	Cooling	67	75	78	78	75	68	59	83
	Heating	69	77	79	80	76	69	61	84

Note The octave power sound data does not include tonal correction.

<sup>1</sup> Tested according to AHRI Standard 270-2008 test conditions and ANSI Standard S1.32-1981.

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS - FIELD INSTALLED

### COMMERCIAL TOUCHSCREEN THERMOSTAT



Intuitive Touchscreen Interface - **Two Stage Heating / Two Stage Cooling Conventional or Heat Pump** - Seven Day Programmable - Four Time Periods/Day - Economizer Output - Title 24 Compliant - ENERGY STAR® Qualified - Backlit Display - Automatic Changeover

C0STAT02AE1L

#### Sensors For Touchscreen Thermostat

1 Remote non-adjustable wall mount 20k temperature sensor . . . . .	C0SNZN01AE1-
1 Remote non-adjustable wall mount 10k averaging temperature sensor . . . . .	C0SNZN73AE1-
1 Remote non-adjustable duct mount temperature sensor . . . . .	C0SNDC00AE1-
Outdoor temperature sensor . . . . .	C0SNSR03AE1-

#### Accessories For Touchscreen Thermostat

Locking cover (clear) . . . . .	C0MISC15AE1-
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<sup>1</sup> Remote sensors for C0STAT02AE1L can be applied in the following combinations: (1) C0SNZN01AE1-, (2) C0SNZN73AE1-, (2) C0SNZN01AE1- and (1) C0SNZN73AE1-, (4) C0SNZN01AE1-, (3) C0SNZN01AE1- and (2) C0SNZN73AE1.

### DIGITAL NON-PROGRAMMABLE THERMOSTATS



Intuitive Interface - Automatic Changeover - Simple Up and Down Temperature Control

<b>Two-stage heating / cooling</b> conventional systems . . . . .	C0STAT10AE1L
---	--------------

#### Sensor For Digital Non-Programmable Thermostats Above

Remote wall mounted temperature sensor . . . . .	C0SNZN00AE1-
--	--------------



Intuitive Interface - Automatic Changeover - Backlit Display - Simple Up and Down Temperature Control

<b>One-stage heating / cooling</b> conventional systems . . . . .	C0STAT12AE1L
---	--------------

#### Sensor For Digital Non-Programmable Thermostats Above

Outdoor temperature sensor . . . . .	C0SNSR04AE1-
--------------------------------------	--------------

#### Accessories For Digital Non-Programmable Thermostats Above

Optional wall mounting plate . . . . .	C0MISC17AE1-
--	--------------

## WEIGHT DATA

Model Number	Net				Shipping			
	Base		Maximum		Base		Maximum	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.
036	243	535	293	647	270	595	325	716
048	253	557	303	669	280	617	335	738
060	303	667	349	770	330	727	382	842
072	340	750	391	862	367	810	422	931

Base Unit - The unit with NO OPTIONS.

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

## OPTIONS / ACCESSORIES

		Shipping Weights	
		kg	lbs.
<b>ECONOMIZER / OUTDOOR AIR</b>			
<b>Economizer</b>			
Economizer, Includes Outdoor Air Hood and Barometric Relief Dampers with Hood	T1ECON30A-1	56	123
	T1ECON30N-1	64	142
<b>ELECTRIC HEAT</b>			
Electric Heat	5.2 kW - T1EH0075AN1	14	31
	10.4 kW - T1EH0150AN1	14	31
	15.6 kW - T1EH0225AN1	16	35
	20.9 kW - T1EH0300N-1	16	35
<b>OUTDOOR AIR</b>			
<b>Outdoor Air Dampers</b>			
Outdoor Air Damper Motorized Kit	T1DAMP11A-1	12	25
	T1DAMP11N-1	14	29
Damper Section Manual	T1DAMP21AN1	9	18
<b>POWER EXHAUST FANS</b>			
Standard Static	T1PWRE10A-1	17	35
	T1PWER10N-1	19	39
<b>ROOF CURBS - DOWNFLOW</b>			
<b>Cliplock 1000</b>			
203 mm (8 in.) height	T1CURB23AN1	35	78
	K1CURB23AP1	38	83
356 mm (14 in.) height	T1CURB20AN1	44	96
	K1CURB20AP1	46	101
457 mm (18 in.) height	T1CURB21AN1	49	108
	K1CURB21AP1	51	113
610 mm (24 in.) height	T1CURB22AN1	57	126
	K1CURB22AP1	59	131
<b>Hinged</b>			
203 mm (8 in.) height	T1CURB30AN1	35	78
	K1CURB30AP1	38	83
457 mm (18 in.) height	T1CURB32AN1	49	108
	K1CURB32AP1	51	113
610 mm (24 in.) height	T1CURB33AN1	57	126
	K1CURB33AP1	59	131
<b>Standard</b>			
356 mm (14 in.) height	T1CURB10AN1	44	96
	K1CURB10AP1	46	101
<b>CEILING DIFFUSERS</b>			
Step-Down	RTD9-65	30	67
Flush	FD9-65	17	37
Transitions (Supply and Return)	T1TRAN10AN1	10	22
	T1TRAN20N-1	10	21

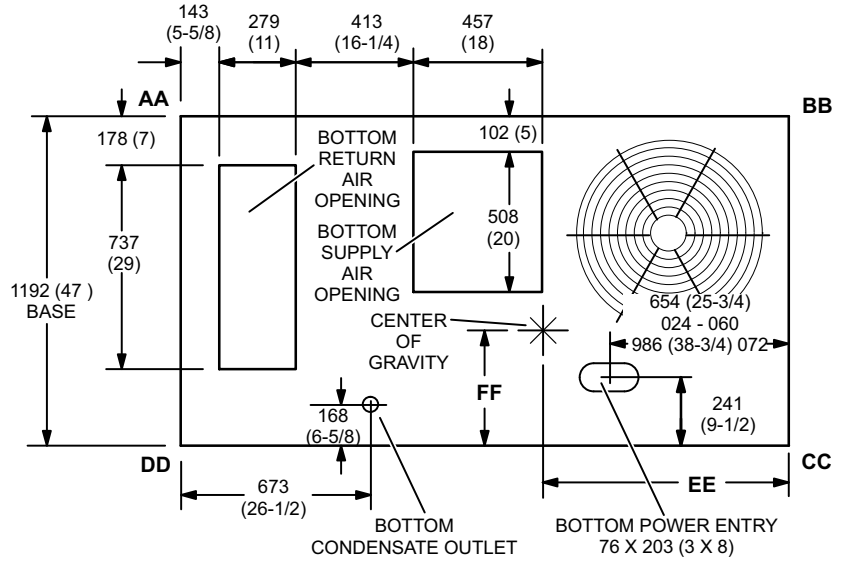


## DIMENSIONS - MM (INCHES)

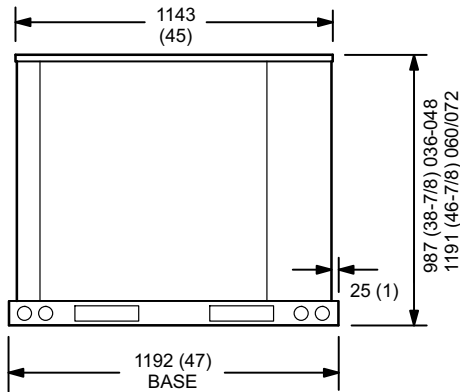
Model No.	CORNER WEIGHTS								CENTER OF GRAVITY															
	AA		BB		CC		DD		EE		FF		FF											
	Base	Max.	Base	Max.	Base	Max.	Base	Max.	Base	Max.	Base	Max.	Base	Max.										
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	mm	in.	mm	in.	mm	in.	mm	in.						
036	42	93	53	116	51	112	60	132	82	181	96	212	68	149	85	187	978	38-1/2	1016	40	457	18	457	18
048	44	96	55	120	53	117	62	136	86	188	100	219	71	155	88	194	978	38-1/2	1016	40	457	18	457	18
060	52	115	63	138	64	140	71	157	103	226	115	252	84	166	101	223	978	38-1/2	1016	40	457	18	457	18
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 NO INTERNAL OPTIONS.

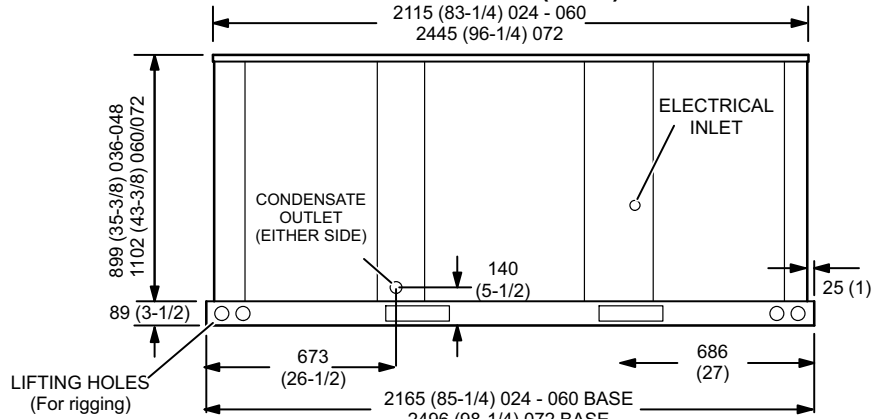
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit or high static power exhaust.



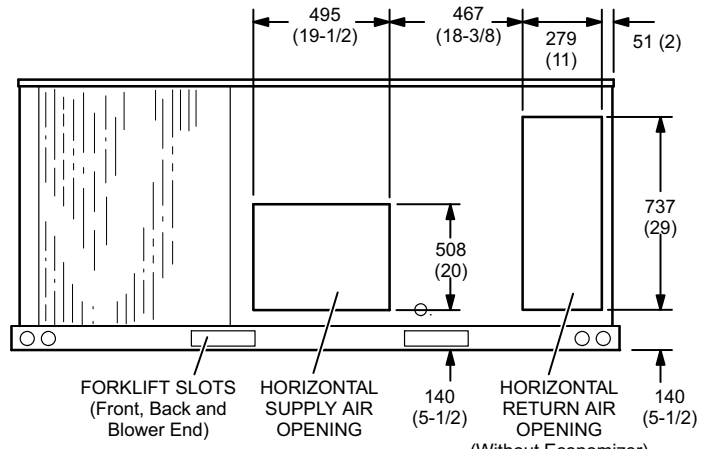
**TOP VIEW (Base)**



**END VIEW**



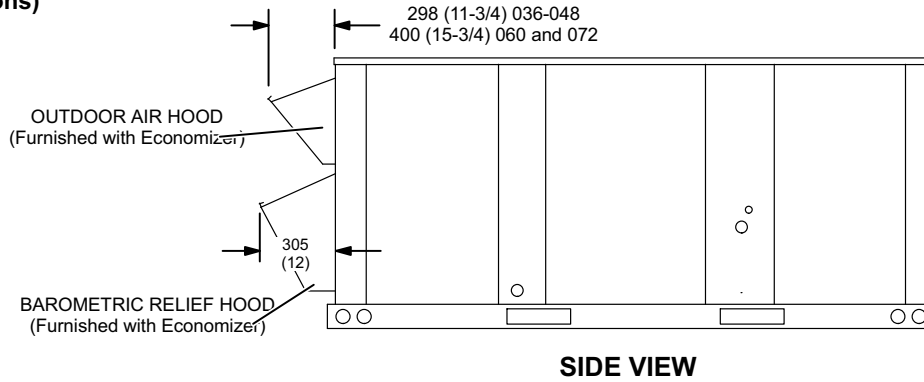
**SIDE VIEW**



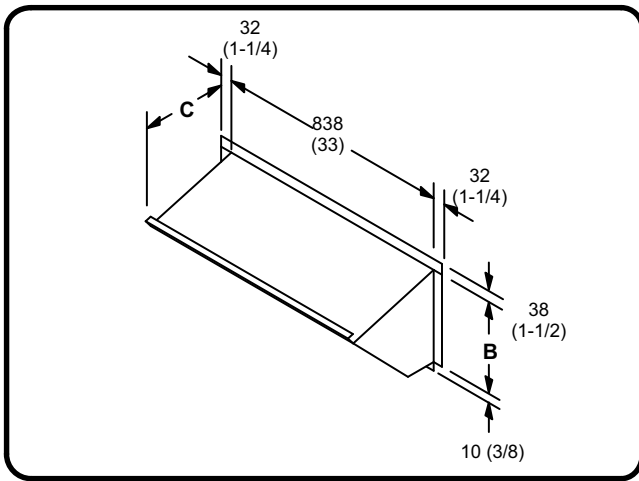
**BACK VIEW**

## ACCESSORY DIMENSIONS - MM (INCHES)

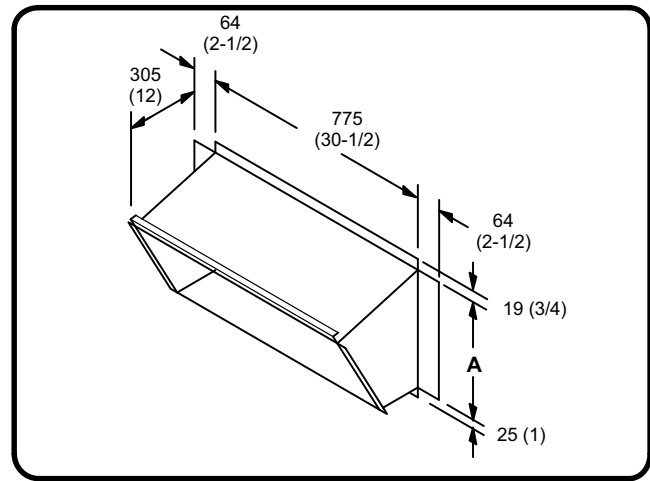
### OUTDOOR AIR HOOD DETAIL FOR OPTIONAL ECONOMIZER AND BAROMETRIC RELIEF DAMPERS (Downflow Applications)



### OUTDOOR AIR HOOD FOR ECONOMIZER (Furnished)

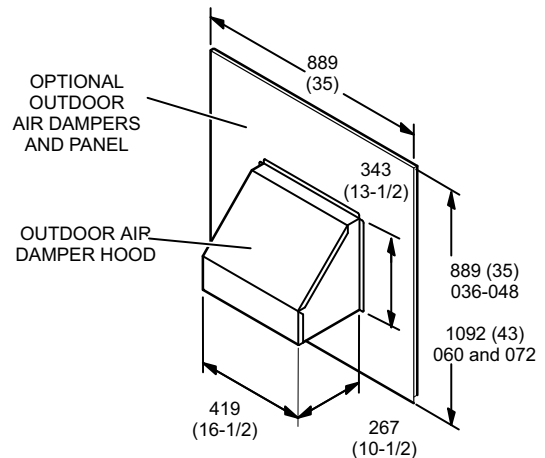
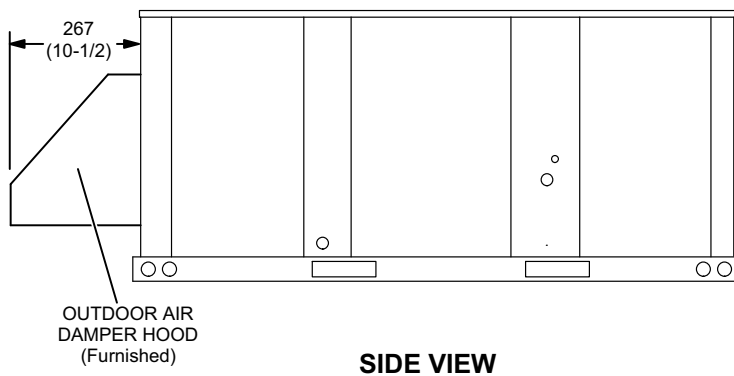


### BAROMETRIC RELIEF HOOD FOR ECONOMIZER (Furnished)



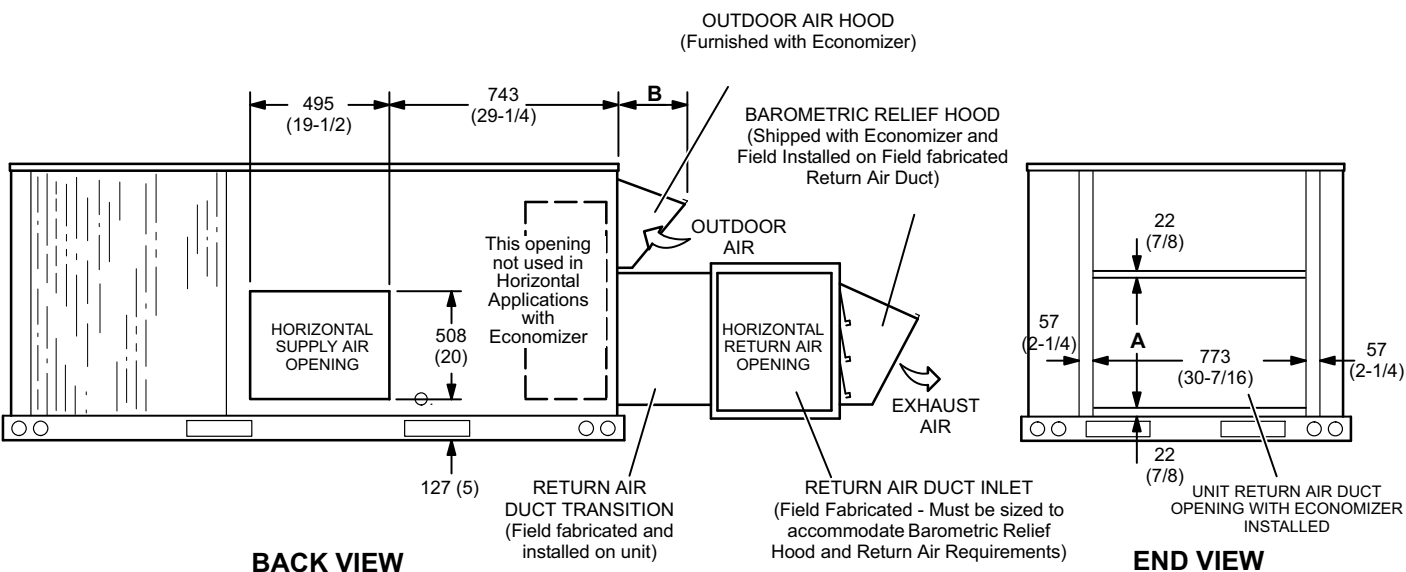
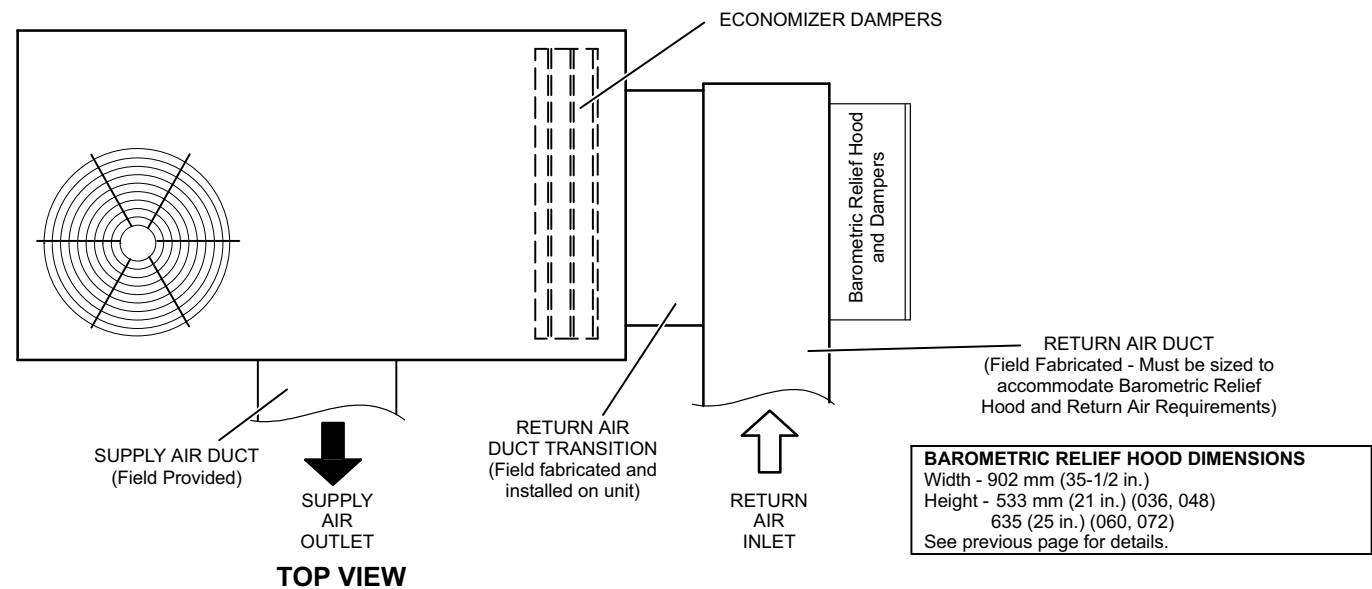
Model No.	A		B		C	
	mm	in.	mm	in.	mm	in.
036, 048	489	19-1/4	330	13	298	11-3/4
060, 072	591	23-1/4	432	17	400	15-3/4

### OUTDOOR AIR DAMPER HOOD DETAIL FOR OPTIONAL MANUAL OR MOTORIZED OUTDOOR AIR DAMPERS (Downflow or Horizontal Applications)



# ACCESSORY DIMENSIONS - MM (INCHES)

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

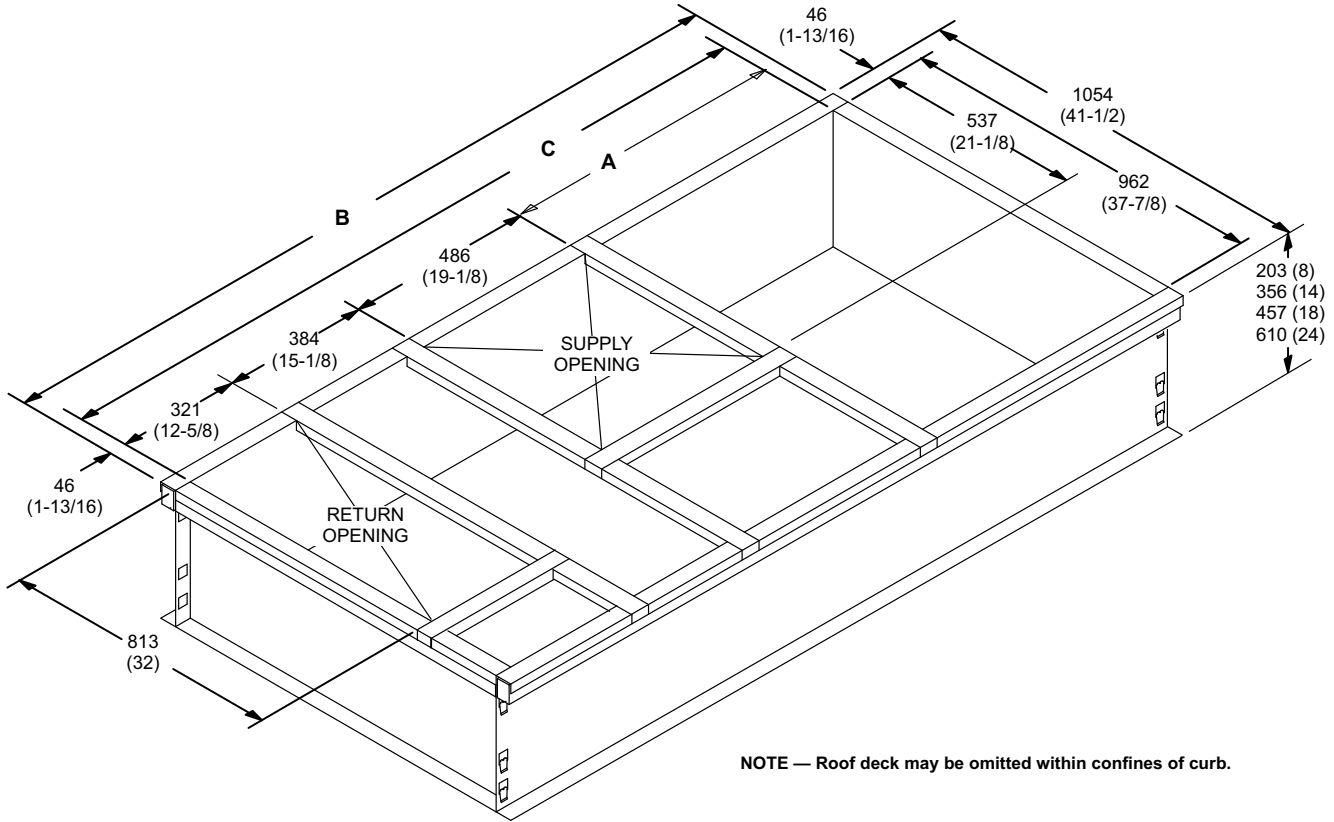


**NOTE** - Return Air Duct and Transition must be supported.

Model No.	A		B	
	mm	in.	mm	in.
036, 048	476	18-3/4	298	11-3/4
060, 072	572	22-1/2	400	15-3/4

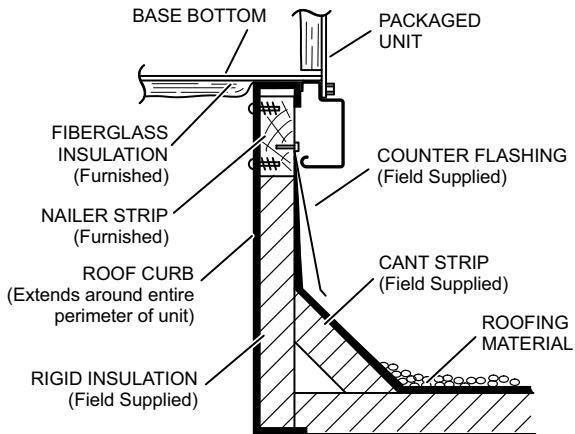
# ACCESSORY DIMENSIONS - MM (INCHES)

## CLIPLOCK 1000 ROOF CURBS - DOUBLE DUCT OPENING

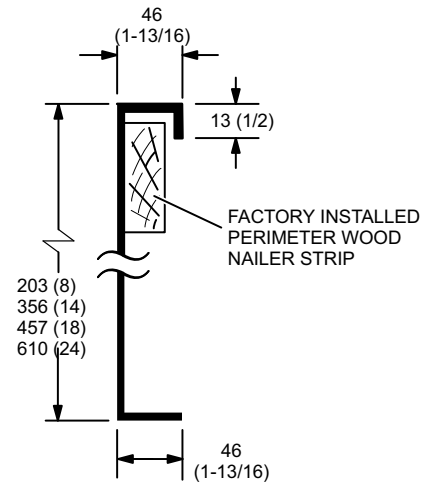


NOTE — Roof deck may be omitted within confines of curb.

### TYPICAL FLASHING DETAIL FOR ROOF CURB



### DETAIL ROOF CURB

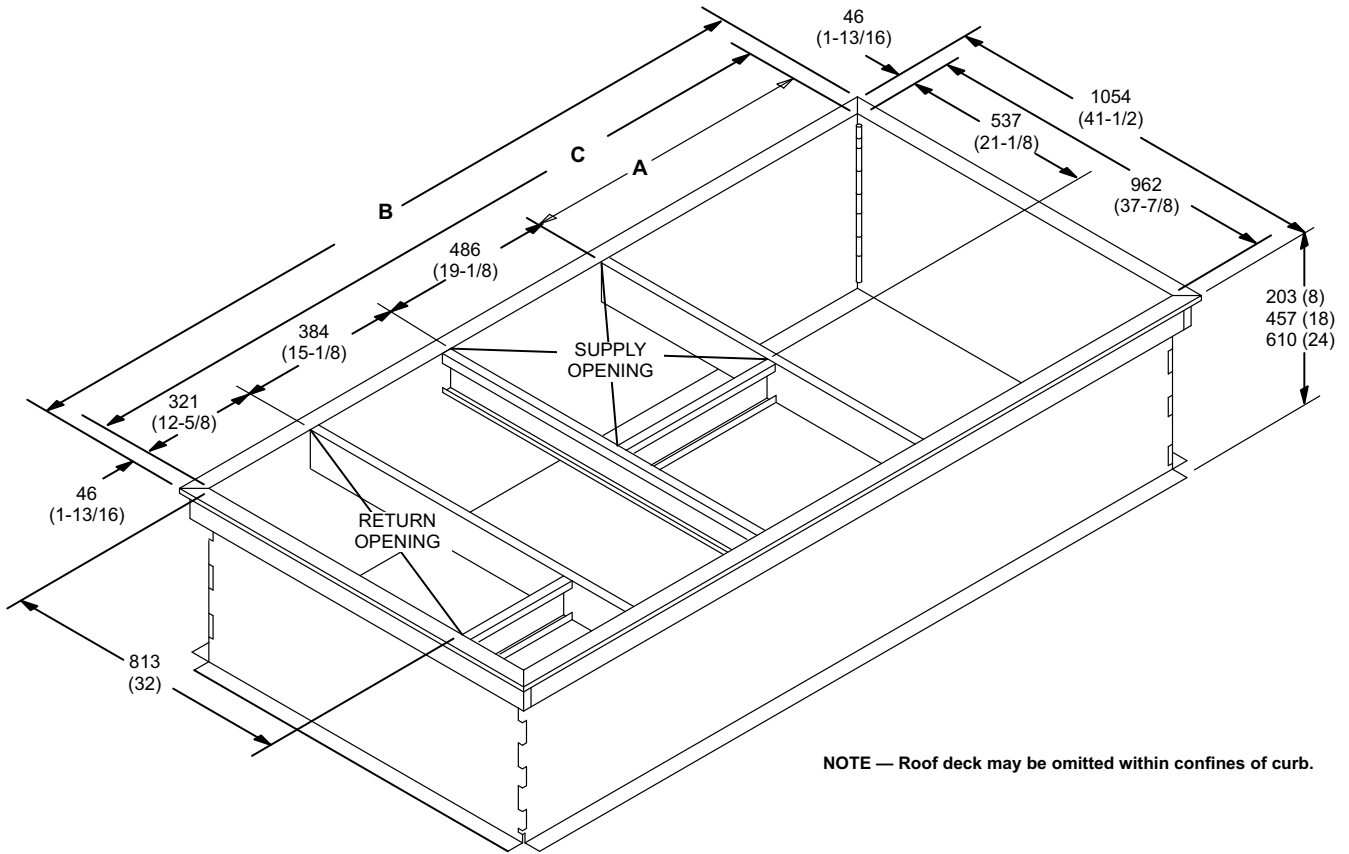


Model No.	A		B		C	
	mm	in.	mm	in.	mm	in.
024, 030, 036, 048, 060, <sup>1</sup> 072	743	29-1/4	2026	79-3/4	1934	76-1/8
072	1073	42-1/4	2356	92-3/4	2264	89-1/8

<sup>1</sup> 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 31.

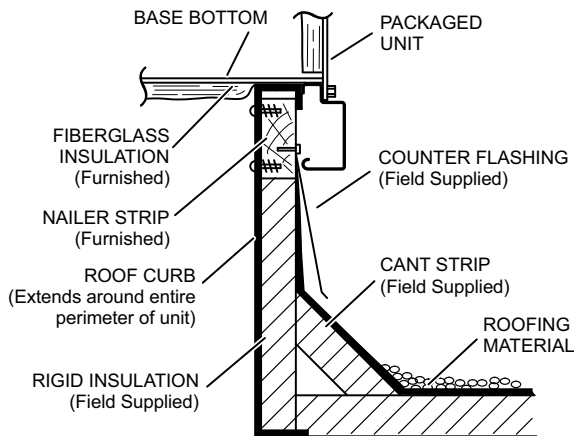
# ACCESSORY DIMENSIONS - MM (INCHES)

## HINGED ROOF CURBS - DOUBLE DUCT OPENING

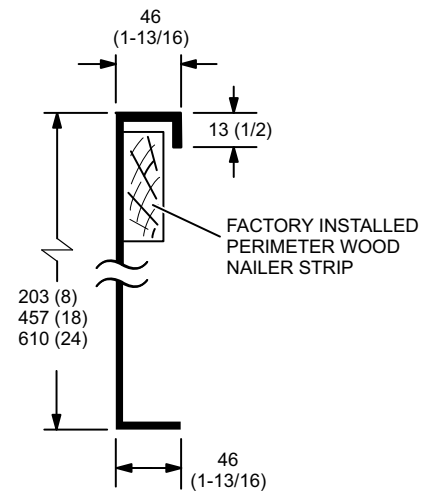


NOTE — Roof deck may be omitted within confines of curb.

### TYPICAL FLASHING DETAIL FOR ROOF CURB



### DETAIL ROOF CURB

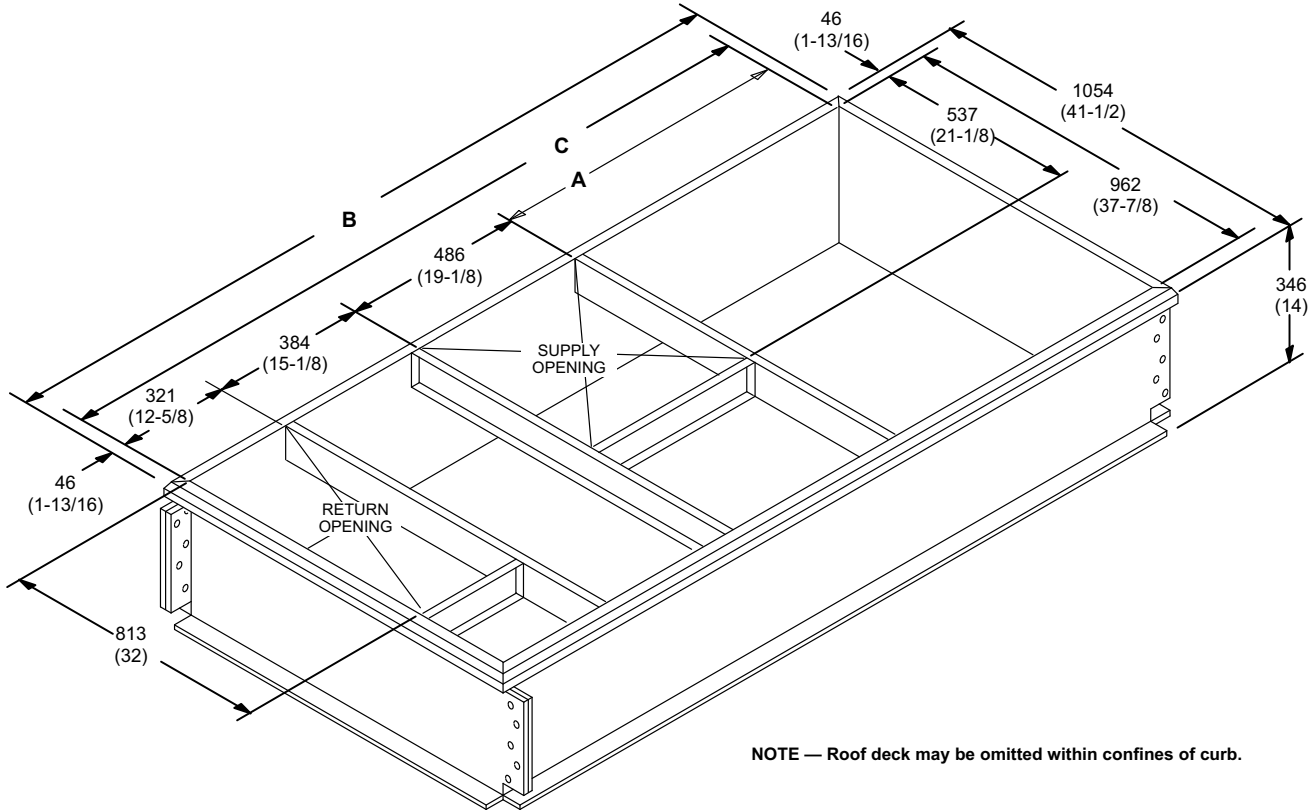


Model No.	A		B		C	
	mm	in.	mm	in.	mm	in.
<b>024, 030, 036, 048, 060, <sup>1</sup> 072</b>	743	29-1/4	2026	79-3/4	1934	76-1/8
<b>072</b>	1073	42-1/4	2356	92-3/4	2264	89-1/8

<sup>1</sup> 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 31.

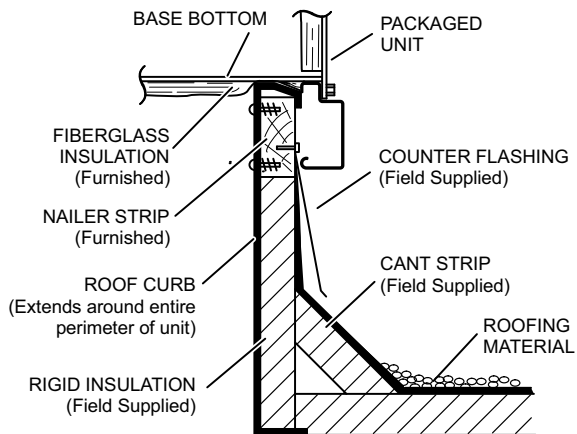
# ACCESSORY DIMENSIONS - MM (INCHES)

## STANDARD ROOF CURBS - DOUBLE DUCT OPENING

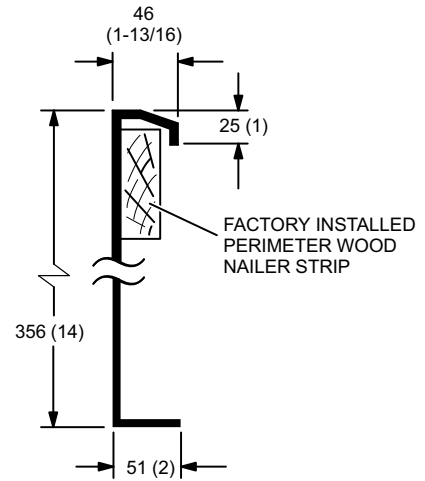


NOTE — Roof deck may be omitted within confines of curb.

### TYPICAL FLASHING DETAIL FOR ROOF CURB



### DETAIL ROOF CURB

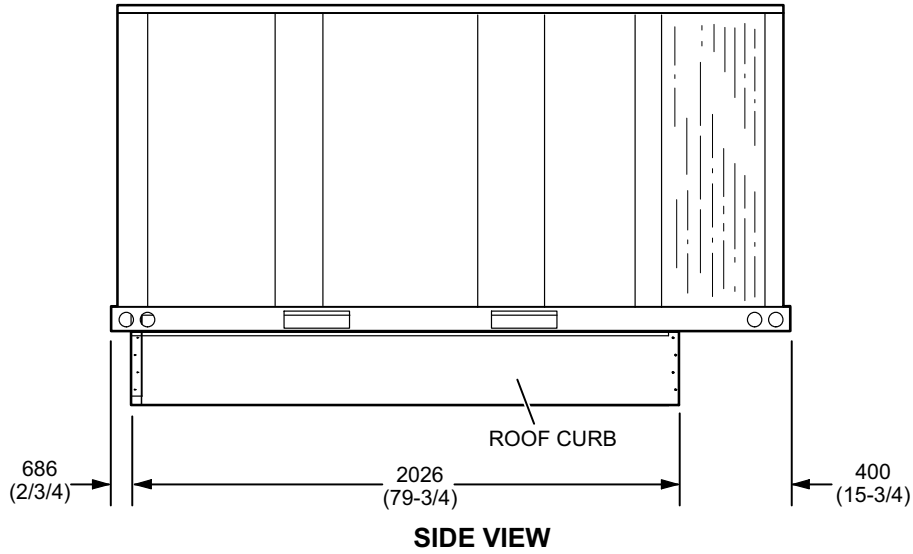


Model No.	A		B		C	
	mm	in.	mm	in.	mm	in.
024, 030, 036, 048, 060, <sup>1</sup> 072	743	29-1/4	2026	79-3/4	1934	76-1/8
072	1073	42-1/4	2356	92-3/4	2264	89-1/8

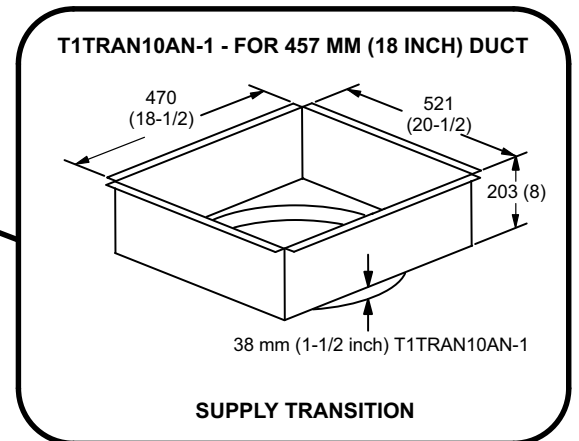
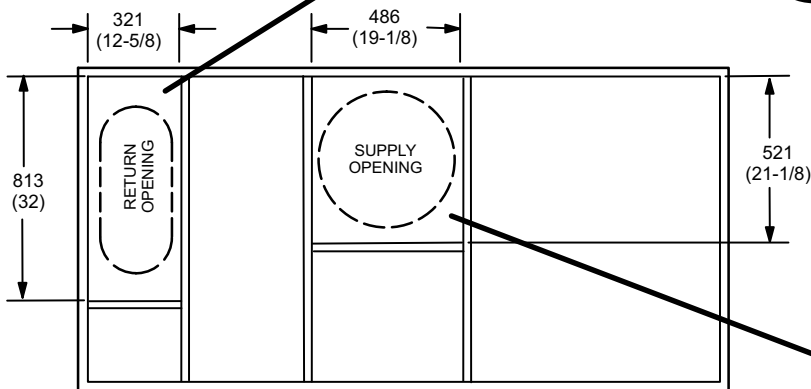
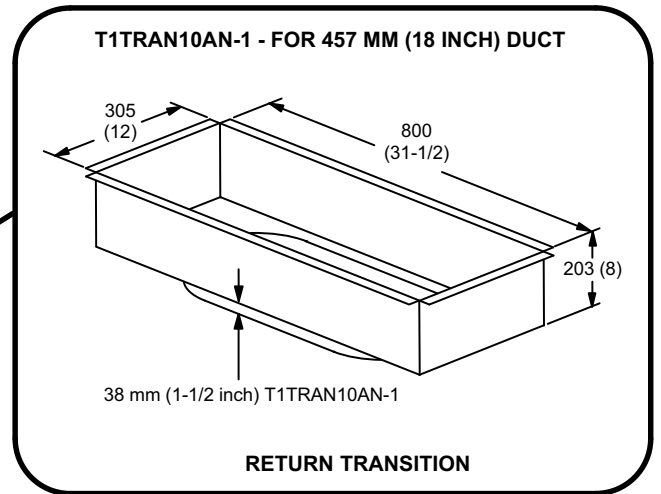
<sup>1</sup> 072 models can be used on smaller 2026 mm (79-3/4 in.) roof curbs (not full perimeter) with 400 mm (15-3/4 in.) overhang at condenser end of unit. See dimension drawing on page 31.

**ACCESSORY DIMENSIONS - INCHES (MM)**

**072 MODELS - SHOWING OVERHANG ON SMALLER 2026 MM (79-3/4 INCH) LENGTH ROOF CURBS  
(Not Full Perimeter)**



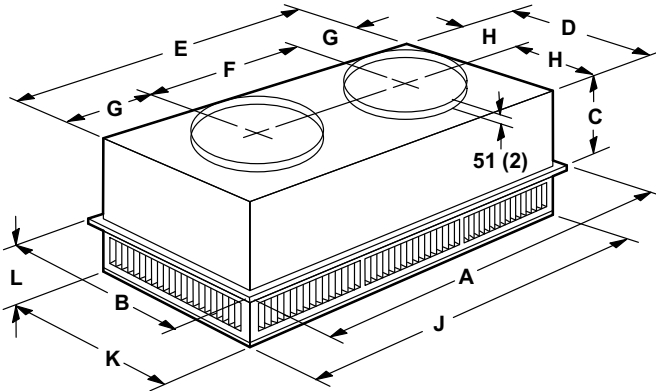
**TRANSITIONS**



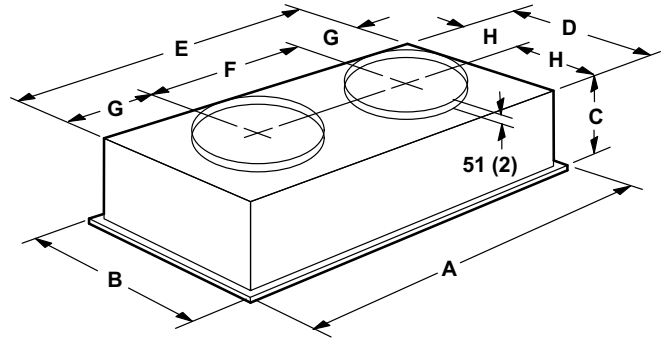
## ACCESSORY DIMENSIONS - MM (INCHES)

### COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

#### STEP-DOWN CEILING DIFFUSER



#### FLUSH CEILING DIFFUSER



Model Number		RTD9-65	RTD11-95
A	mm	1159	1159
	in.	47-5/8	47-5/8
B	in.	23-5/8	29-5/8
	mm	600	752
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		FD9-65	FD11-95
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











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