PACKAGED GAS/ELECTRIC

KG

Landmark™ Rooftop Units

60 HZ

ENGINEERING DATA

Bulletin No. 210503
October 2010
Supersedes August 2010

ASHRAE 90.1 COMPLIANT

L Connection NETWORK

2 to 7.5 Tons
Net Cooling Capacity – 23,600 to 90,000 Btuh
Gas Input Heat Capacity – 65,000 to 150,000 Btuh

MODEL NUMBER IDENTIFICATION

K G A 060 S 4 B S 1 Y

Brand/Family
K = Landmark™ Product Line

Unit Type
G = Packaged Gas Heat w/ Electric Cooling

Major Design Sequence
A = 1st Generation
B = 2nd Generation

Nominal Cooling Capacity - Tons
024 = 2 Tons
030 = 2.5 Tons
036 = 3 Tons
048 = 4 Tons
060 = 5 Tons
072 = 6 Tons
090 = 7.5 Tons

Cooling Efficiency
S = Standard Efficiency

Refrigerant Type
4 = R-410A

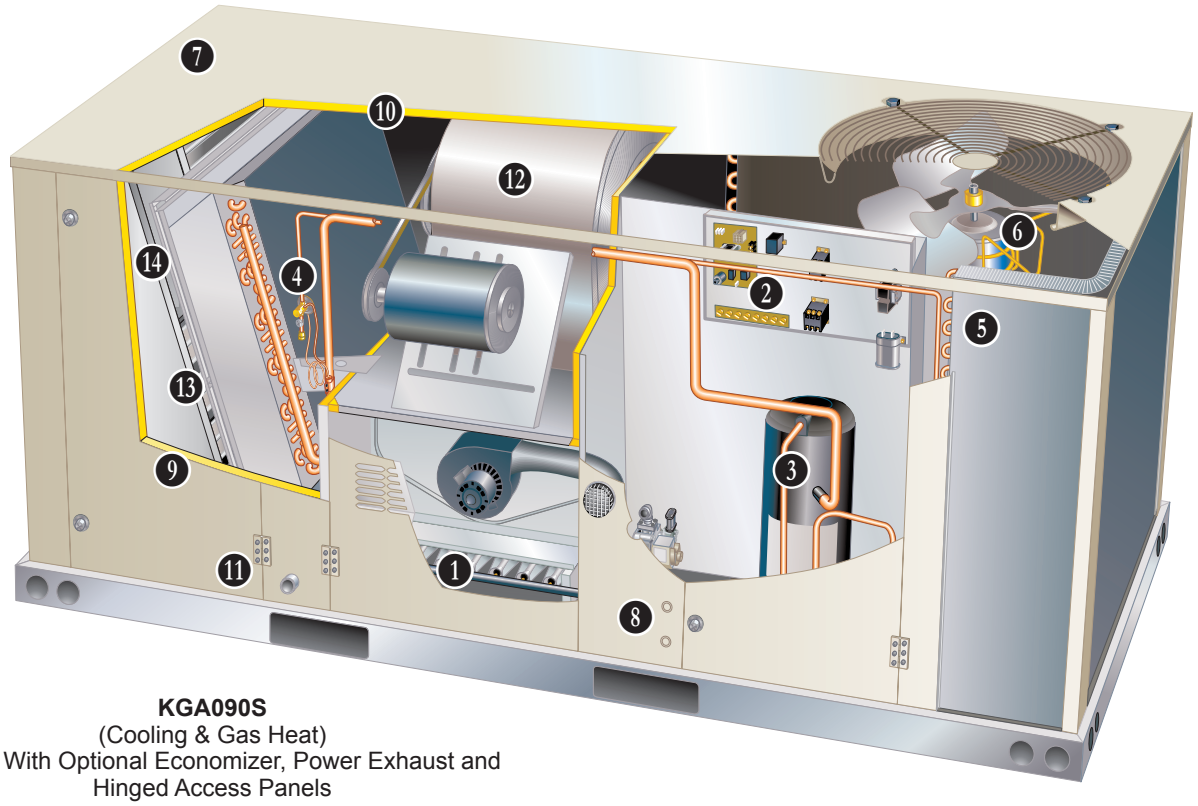
Blower Type
D = Direct Drive
B = Belt Drive

Heating Type
S = Standard Gas Heat, 1 stage
M = Medium Gas Heat, 1 stage
H = High Gas Heat, 2 Stage
T = High Gas Heat, 1 Stage
W = Standard Gas Heat, 1 Stage, Low NOx
Y = Medium Gas Heat, 1 Stage, Low NOx
X = High Gas Heat, 2 Stage, Low NOx
Z = High Gas Heat, 1 Stage, Low NOx

Minor Design Sequence
1 = 1st Revision
2 = 2nd Revision
3 = 3rd Revision

Voltage
P = 208/230V−1 phase-60hz
Y = 208/230V-3 phase-60hz
G = 460V-3 phase-60hz
J = 575V-3 phase-60hz

FEATURES AND BENEFITS



KGA090S
(Cooling & Gas Heat)
Shown With Optional 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 and outdoor environments. Landmark rooftop units feature:

- **R-410A Refrigerant** - Environmentally friendly
- **Scroll Compressors** - Single speed scroll compressors are furnished on all models.
- **High Pressure Switches** - Protect compressor.
- **Isolated Compressor Compartment** - Allows performance check during normal compressor operation without disrupting airflow.
- **Direct or Belt Drive Blower Motors -** Direct drive (024, 030, 036, 048 and 060 models). Belt drive motors (036, 048, 060, 072 and 090 models) to 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.

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APPROVALS

Units are ETL listed.

Units are Certified by AHRI.

Units are Certified by CSA.

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

2 thru 5 ton models are certified in accordance with the USE certification program, which is based on AHRI Standard 210/240-2008.

6 and 7.5 ton models are certified in accordance with the ULE certification program, which is based on AHRI Standard 340/360-2007.

All models are ASHRAE 90.1 compliant.

ISO 9001 Registered Manufacturing Quality System.

All Low NOx models meet the California Nitrogen Oxides (NOx) Standards that apply in the South Coast Air Quality Management District and the San Francisco Bay Area Air Quality Management District.

WARRANTY

Limited ten years aluminized heat exchanger, limited fifteen years optional stainless steel heat exchanger.
Limited five years on compressors.
Limited one year all other covered components.

HEATING SYSTEM

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

Heat Exchanger

Tubular construction, aluminized steel, life cycle tested.
Stainless Steel Heat Exchanger is required if mixed air temperature is below 45°F.

2 **Electronic Pilot Ignition**

Solid-state electronic spark igniter provides positive direct ignition of burners on each operating cycle. The system permits main gas valve to stay open only when the burners are proven to be lit. Should a loss of flame occur, the gas valve closes, shutting off the gas to the burners. Ignition module has LED to indicate status and aid in troubleshooting.
Watchguard circuit on module automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance service calls. Ignition control is factory installed in the controls section.

Limit Controls

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

Safety Switches

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

Low NO_x Models

All models are available in low NO_x versions.

REQUIRED SELECTIONS

Gas Input Choice - Order one:

Standard Gas Heat (1 Stage)
65,000 Btuh
(Not available for 090 models)

Medium Gas Heat (1 Stage)
105,000 Btuh

High Gas Heat (1 Stage)
150,000 Btuh

High Gas Heat (2 Stage)
105,000/150,000 Btuh

Standard or Low NOx

Specify standard gas heat or Low NOx option.

OPTIONS/ACCESSORIES

Factory Installed

Stainless Steel Heat Exchanger

Required if mixed air temperature is below 45°F.

Field Installed

Combustion Air Intake Extensions

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

HEATING SYSTEM (CONTINUED)

Low Temperature Vestibule Heater

Electric heater automatically controls minimum temperature in gas burner compartment when temperature is below -40°F. C.S.A. certified to allow operation of unit down to -60°F.

LPG/Propane Kits

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

Vertical Vent Extension Kit

Use to exhaust flue gases vertically above unit. Required when unit vent is too close to fresh air intakes per building codes. The vent kit also prevents ice formation on intake louvers.

COOLING SYSTEM

Designed to maximize sensible and latent cooling performance at design conditions.
System can operate from 30°F to 125°F without any additional controls.

R-410A Refrigerant

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

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

3 Compressor

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

Compressor Crankcase Heater (Furnished on 072-090 Models Only)

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

4 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.

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.

5 Coil Construction

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

Evaporator Coil

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

Condenser Coil

Two independent formed coils allow separation for cleaning.

Condensate Drain Pan

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

6 Outdoor Coil Fan Motor

Thermal overload protected, totally enclosed, permanently lubricated sleeve (024, 030, 036 and 048 models) or ball bearings (060, 072 and 090 models), shaft up, wire basket mount.

Outdoor Coil Fan

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 PVC.

Compressor Crankcase Heater (Optional for 024-060 Models Only)

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

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 0°F. A crankcase heater must be installed on the compressor.

CABINET

7 Construction

Heavy-gauge steel panels and full perimeter heavy-gauge galvanized steel base rail provides structural integrity for transportation, handling, and installation.
Base rails have rigging holes. Three sides of the base rail have 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.

8 Power/Gas Entry

Electrical and gas lines can be brought through the unit base or through horizontal access knock-outs. Optional Bottom Gas Entry Kit is available.

9 Exterior Panels

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

CABINET (CONTINUED)

⑩ 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 electro-deposited 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

⑪ 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

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.

Bottom Gas Entry Kit

Field installed piping kit to facilitate bottom gas entry.

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

Commercial Control Systems

L Connection® Network

Complete building automation control system for single or multi-zone applications. Options include local interface, software for local or remote communication, and hardware for networking other control functions. See L Connection Network Engineering Handbook Bulletin for details.

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 33.

⑫ 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) or sleeve bearings (direct drive).
Direct drive motors are offered on 024, 030, 036, 048 and 060 models.
Belt drive motors are offered on 036, 048, 060, 072 and 090 models and are available in several different sizes to maximize air performance.

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 direct drive or belt drive motor
For belt drive, specify motor horsepower and drive kit number when base unit is ordered.

REQUIRED SELECTIONS

Supply Air Blower

Order one, belt drive or direct drive (See Blower Data Table for specifications).
Order one drive kit, belt drive only, see Drive Kit Specifications Table.

FEATURES AND BENEFITS

INDOOR AIR QUALITY

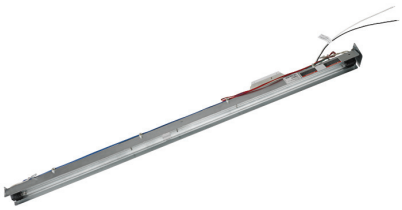
Air Filters

Disposable 2 inch 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_2) Sensor

Monitors CO_2 levels adjusts economizer dampers as needed for Demand Control Ventilation.

ELECTRICAL

REQUIRED SELECTIONS

Voltage Choice

Specify when ordering base unit.

OPTIONS/ACCESSORIES

Factory or Field Installed

Disconnect Switch (80 Amp)

Accessible from outside of unit, spring loaded weatherproof cover furnished. Main power to the unit is field connected to the disconnect which allows all power to be shut off for service. See Electrical tables for ordering information, page 29.

GFI Service Outlets (2)

115v ground fault circuit interrupter (GFCI) type.

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.

ECONOMIZER/OUTDOOR AIR/EXHAUST OPTIONS

Factory or Field Installed

13 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. Hood 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 or temperature 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.

14 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 with Outdoor Air Hood. Fan is 16 in. diameter with 4 fan blades (T1PWRE10A) or 20 in. diameter with 5 blades (T1PWRE10N). Both include a 3/4 hp motor.

NOTE - Not available for 024 and 030 models.

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 8, 14, 18, and 24 inch 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 - 090 models can be used on smaller 79-3/4 in. roof curbs (not full perimeter) with 15-3/4 in. overhang at condenser end of unit. See dimension drawing on page 41.

OPTIONS / ACCESSORIES

Item		Catalog No.	024	030	036	048	060	072	090
COOLING SYSTEM									
Condensate Drain Trap	PVC - C1TRAP20AD2	**76W26**	X	X	X	X	X	X	X
	Copper - C1TRAP10AD2	**76W27**	X	X	X	X	X	X	X
Compressor Crankcase Heater	208/230V-1 or 3 ph - K1CCHT02A-1P	**39W04**	X	X	X				
	208/230V-1 or 3 ph - T1CCHT01AN1P	95M07				X	X		
	460V-3ph - K1CCHT012A-1G	39W05			X				
	460V-3ph - T1CCHT01AN1G	95M08				X	X		
	575V-3ph - K1CCHT02A-1J	39W06			X				
	575V-3ph - T1CCHT01AN1J	95M09				X	X		
Drain Pan Overflow Switch	K1SNSR71AB1-	**74W42**	X	X	X	X	X	X	X
Low Ambient Kit	K1SNSR33AN1	**41W33**	X	X	X	X	X	X	X
Efficiency	Standard		O	O	O	O	O	O	O
Refrigerant Type	R-410A		O	O	O	O	O	O	O
HEATING SYSTEM									
Bottom Gas Piping Kit	T1GPKT01AN1	**19W50**	X	X	X	X	X	X	X
Low Temperature Vestibule Heater	208/230V-1 or 3 ph - T1CWKT01AN1Y	**19W53**	X	X	X	X	X	X	X
	460V-3ph - T1CWKT01AN1G	19W54			X	X	X	X	X
	575V-3ph - T1CWKT01AN1J	19W62			X	X	X	X	X
Combustion Air Intake Extensions	T1EXTN10AN1	**19W51**	X	X	X	X	X	X	X
Gas Heat Input	Standard One-Stage - 65 kBtuh input		O	O	O	O	O	O	
	Medium One-Stage - 105 kBtuh input				O	O	O	O	O
	High Two-Stage - 105/150 kBtuh input					O	O	O	O
	High One-Stage - 150 kBtuh input					O	O	O	O
LPG/Propane Conversion Kits	For one-stage models - C1PROP10AP1	**53W69**	X	X	X	X	X	X	X
	For two-stage models - C1PROP20AP1	**53W70**			X	X	X	X	X
Stainless Steel Heat Exchanger			O	O	O	O	O	O	O
Vertical Vent Extension	C1EXTN20FF1	31W62	X	X	X	X	X	X	X
BLOWER - SUPPLY AIR									
Motors	Direct Drive - 0.25 hp		O	O					
	Direct Drive - 0.5 hp				O	O			
	Direct Drive - 0.75 hp						O		
	Belt Drive - 1 hp Standard Efficiency								O
	Belt Drive - 1.5 hp Standard Efficiency				O	O	O	O	
	[1] Belt Drive - 2 hp Standard Efficiency				O	O	O	O	O
	Belt Drive - 3 hp Standard Efficiency								O
Drive Kits See Blower Data Tables for selection	Kit A01 - T1DRKT001-1 - 673-1010 rpm	Factory			O				
	Kit A02 - T1DRKT002-1 - 745-1117 rpm	Factory				O			
	Kit A03 - T1DRKT003-1 - 833-1250 rpm	Factory					O		
	Kit A04 - T1DRKT004-1 - 968-1340 rpm	Factory						O	
	Kit A05 - T1DRKT005-1 - 897-1346 rpm	Factory			O				
	Kit A06 - T1DRKT006-1 - 1071-1429 rpm	Factory				O			
	Kit A07 - T1DRKT007-1 - 1212-1548 rpm	Factory					O		
	Kit A08 - T1DRKT008-1 - 1193-1591 rpm	Factory						O	
	Kit AA01 - T1DRKT001AP1 - 522-784 rpm	Factory							O
	Kit AA02 - T1DRKT002AP1 - 632-875 rpm	Factory							O
	Kit AA03 - T1DRKT003AP1 - 798-1105 rpm	Factory							O
	Kit AA04 - T1DRKT004AP1 - 921-1228 rpm	Factory							O

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.
[1] 2 hp blower motor is not available for 208/230V-1ph applications.

OPTIONS / ACCESSORIES

Item		Catalog No.	024	030	036	048	060	072	090
CABINET									
Coil Guards	T1GARD20A-1	**17W87**	X	X	X	X	X		
	T1GARD20N-1	**17W88**						X	
	K1GARD20AP1	**53W21**							X
Corrosion Protection			O	O	O	O	O	O	O
Hail Guards	T1GARD10A-1	**17W89**	X	X	X	X	X		
	T1GARD10N-1	**17W90**						X	
	K1GARD10AP1	**53W22**							X
Hinged Access Panels			O	O	O	O	O	O	O
CONTROLS									
Smoke Detector - Supply or Return (Power board and one sensor)	C1SNSR44AP1	**53W78**	X	X	X	X	X	X	X
Smoke Detector - Supply and Return (Power board and two sensors)	C1SNSR43AP1	**53W79**	X	X	X	X	X	X	X
ELECTRICAL									
Voltage 60 hz	208/230V - 1 phase		O	O	O	O	O		
	208/230V - 3 phase				O	O	O	O	O
	460V - 3 phase				O	O	O	O	O
	575V - 3 phase				O	O	O	O	O
Disconnect	See Electric Data Tables for usage		OX	OX	OX	OX	OX	OX	OX
GFI Service Outlets	LTAGFIK10/15	74M70	OX	OX	OX	OX	OX	OX	OX
ECONOMIZER									
Economizer									
Economizer, Single Enthalpy Control Includes Outdoor Air Hood and Barometric Relief Dampers with Hood	T1ECON30A-1	**36W96**	OX	OX	OX	OX	OX		
	T1ECON30N-1	**36W97**						OX	OX
Horizontal Economizer Conversion Kit	T1HECK00AN1	**17W45**	X	X	X	X	X	X	X
Economizer Controls									
Differential Enthalpy Sensor	T1SNSR60AN1	**17W71**	X	X	X	X	X	X	X
Single Temperature Control	TASEK10/15	**76M37**	X	X	X	X	X	X	X
Differential Temperature Control	Order 2 - TASEK10/15	**76M37**	X	X	X	X	X	X	X
OUTDOOR AIR									
Outdoor Air Dampers									
Damper Section - Manual, Includes Outdoor Air Hood	T1DAMP11A-1	**16W88**	X	X	X	X	X		
	T1DAMP11N-1	**16W91**						X	X
Damper Motorized Kit - Order Manual Outdoor Air Damper Separately	T1DAMP21AN1	**16W92**	X	X	X	X	X	X	X
POWER EXHAUST FAN									
Standard Static	208/230V-1 or 3 ph - T1PWRE10A-1P	**17W39**			X	X	X		
	460V-3ph - T1PWRE10A-1G	**17W40**			X	X	X		
	575V-3ph - T1PWRE10A-1J	**17W41**			X	X	X		
	208/230V-1 or 3 ph - T1PWRE10N-1P	**17W42**						X	X
	460V-3ph - T1PWRE10N-1G	**17W43**						X	X
	575V-3ph - T1PWRE10N-1J	**17W44**						X	X

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

Item		Catalog No.	024	030	036	048	060	072	090
INDOOR AIR QUALITY									
Indoor Air Quality (Co_2) Sensors									
Sensor - Wall-mount, off-white plastic cover with LCD display	C0SNSR50AE1L	**77N39**	X	X	X	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting	C0SNSR53AE1L	**87N54**	X	X	X	X	X	X	X
CO_2 Sensor Duct Mounting Kit - for downflow applications	C0MISC19AE1-	**85L43**	X	X	X	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO2 sensor (**77N39**)	C0MISC16AE1-	**90N43**	X	X	X	X	X	X	X
UVC Germicidal Lamps									
[2] Healthy Climate® UVC Light Kit (208/230v-1ph)	E1UVCL10AN1-	**50W90**	X	X	X	X	X	X	X
CEILING DIFFUSERS									
Step-Down - Order one	RTD9-65-R	**27G87**	X	X	X	X	X		
	RTD11-95	**29G04**						X	X
	(Canada Only) RTD11-95S	**13K61**						X	X
Flush - Order one	FD9-65-R	**27G86**	X	X	X	X	X		
	FD11-95	**29G08**						X	X
	(Canada Only) FD11-95S	**13K56**						X	X
Transitions (Supply and Return) - Order one	T1TRAN10AN1	**17W53**	X	X	X	X	X		
	T1TRAN20N-1	**17W54**						X	X
ROOF CURBS - DOWNFLOW									
Cliplock									
8 in. height	T1CURB23AN1	**16W93**	X	X	X	X	X	X	[1] X
	K1CURB23AP1	**52W20**							X
14 in. height	T1CURB20AN1	**16W94**	X	X	X	X	X	X	[1] X
	K1CURB20AP1	**52W21**							X
18 in. height	T1CURB21AN1	**16W95**	X	X	X	X	X	X	[1] X
	K1CURB21AP1	**52W22**							X
24 in. height	T1CURB22AN1	**16W96**	X	X	X	X	X	X	[1] X
	K1CURB22AP1	**52W23**							X
Hinged									
8 in. height	T1CURB30AN1	**17W46**	X	X	X	X	X	X	[1] X
	K1CURB30AP1	**52W17**							X
18 in. height	T1CURB32AN1	**17W47**	X	X	X	X	X	X	[1] X
	K1CURB32AP1	**52W18**							X
24 in. height	T1CURB33AN1	**17W48**	X	X	X	X	X	X	[1] X
	K1CURB33AP1	**52W19**							X
Standard									
14 in. height	T1CURB10AN1	**13W27**	X	X	X	X	X	X	[1] X
	K1CURB10AP1	**52W24**							X
Adjustable Pitched Curb									
14 in. height	C1CURB55AT1	**43W27**	X	X	X	X	X	X	[2] 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.
[1] 090 models will fit smaller roof curbs with overhang. See dimension drawing.
[2] Lamps operate on 110-230V single-phase power supply. Step-down transformer may be ordered separately for 460V and 575V units. Alternately, 110V power supply may be used to directly power the UVC ballast(s).

SPECIFICATIONS - DIRECT DRIVE BLOWER — 2 - 2.5 TON

General Data	**Nominal Tonnage**	**2 Ton**	**2.5 Ton**
	Model No.	**KGA024S4D**	**KGA030S4D**
	Efficiency Type	**Standard**	**Standard**
Cooling Performance	Gross Cooling Capacity - Btuh	24,400	29,800
	[1] Net Cooling Capacity - Btuh	23,600	28,800
	AHRI Rated Air Flow - cfm	840	1000
	[2] Sound Rating Number (dB)	75	75
	Total Unit Power - kW	2.1	2.6
	[1] SEER (Btuh/Watt)	13	13
	[1] EER (Btuh/Watt)	11.4	11.2
Refrigerant	Type	R-410A	R-410A
	Charge Furnished	7 lbs. 0 oz.	7 lbs. 12 oz.
Gas Heating Options - See Page 12		**Standard (1 Stage)**	**Standard (1 Stage)**
Compressor Type (one per unit)		Scroll	Scroll
Outdoor Coil	Net face area - sq. ft.	15.6	15.6
	Tube diameter - in.	3/8	3/8
	Number of rows	1	1
	Fins per inch	20	20
Outdoor Coil Fan	Motor HP	1/4	1/4
	Motor rpm	825	825
	Total motor watts	250	250
	Diameter - in. / No. of blades	24 - 3	24 - 3
	Total air volume - cfm	3700	3700
Indoor Coil	Net face area - sq. ft.	7.8	7.8
	Tube diameter - in.	3/8	3/8
	Number of rows	3	3
	Fins per inch	14	14
	Drain Connection (no. and size) - in.	(1) 3/4 npt	(1) 3/4 npt
	Expansion device type	Balanced Port Thermostatic Expansion Valve, removeable power head	
Indoor Blower	Nominal Motor HP	.25	.25
	Wheel nominal diameter x width - in.	10 x 10	10 x 10
Filters	Type	Disposable	
	Number and size - in.	(4) 16 x 20 x 2	
Electrical Characteristics - 60 Hz		208/230V 1 phase	208/230V 1 phase

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

[1] Certified in accordance with the USE certification program, which is based on AHRI Standard 210/240; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

[2] Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270.

SPECIFICATIONS - DIRECT DRIVE BLOWER — 3 - 5 TON

General Data		3 Ton	4 Ton	5 Ton
	Model No.	**KGA036S4D**	**KGA048S4D**	**KGA060S4D**
	Efficiency Type	**Standard**	**Standard**	**Standard**
Cooling Performance	Gross Cooling Capacity - Btuh	37,500	50,000	61,800
	[1] Net Cooling Capacity - Btuh	36,000	48,000	59,000
	AHRI Rated Air Flow - cfm	1200	1600	1800
	[2] Sound Rating Number (dB)	75	75	82
	Total Unit Power - kW	3.4	4.4	5.3
	[1] SEER (Btuh/Watt)	13	13	13
	[1] EER (Btuh/Watt)	10.7	11	11.2
Refrigerant	Type	R-410A	R-410A	R-410A
	Charge Furnished	8 lbs. 5 oz.	8 lbs. 10 oz.	11 lbs. 0 oz.
Gas Heating Options - See page 14		**Standard or Medium (1 Stage)**	**Standard, Medium (1 Stage) or High (1 or 2 Stage)**	
Compressor Type (one per unit)		Scroll	Scroll	Scroll
Outdoor Coil	Net face area - sq. ft.	15.6	15.6	15.6
	Tube diameter - in.	3/8	3/8	3/8
	Number of rows	1	1.5	2
	Fins per inch	20	20	20
Outdoor Coil Fan	Motor HP	1/4	1/4	1/3
	Motor rpm	825	825	1075
	Total motor watts	250	250	370
	Diameter - in. / No. of blades	24 - 3	24 - 3	24 - 3
	Total air volume - cfm	3700	3500	4300
Indoor Coil	Net face area - sq. ft.	7.8	7.8	7.8
	Tube diameter - in.	3/8	3/8	3/8
	Number of rows	3	3	4
	Fins per inch	14	14	14
	Drain Connection (no. and size) - in.	(1) 3/4 npt	(1) 3/4 npt	(1) 3/4 npt
	Expansion device type	Balanced Port Thermostatic Expansion Valve, removeable power head		
Indoor Blower	Nominal Motor HP	.5	.5	.75
	Wheel nominal diameter x width - in.	10 x 10	10 x 10	11 x 10
Filters	Type	Disposable		
	Number and size - in.	(4) 16 x 20 x 2		
Electrical Characteristics - 60 Hz		208/230V 1 phase 208/230V, 460V & 575V 3 phase	208/230V 1 phase 208/230V, 460V & 575V 3 phase	208/230V 1 phase 208/230V, 460V & 575V 3 phase

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

[1] Certified in accordance with the USE certification program, which is based on AHRI Standard 210/240; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

[2] Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270.

SPECIFICATIONS - BELT DRIVE BLOWER — 3 - 7.5 TON

General Data	Nominal Tonnage	3 Ton	4 Ton	5 Ton	6 Ton	7.5 Ton
	Model No.	KGA036S4B	KGA048S4B	KGA060S4B	KGA072S4B	KGA090S4B
	Efficiency Type	Standard	Standard	Standard	Standard	Standard
Cooling Performance	Gross Cooling Capacity - Btuh	37,500	50,000	61,800	72,800	92,000
	Net Cooling Capacity - Btuh	[1] 36,000	[1] 48,000	[1] 59,000	[2] 70,000	[2] 90,000
	AHRI Rated Air Flow - cfm	1200	1600	1800	2100	2500
	[4] Sound Rating Number (dB)	75	75	82	82	79
	Total Unit Power - kW	3.4	4.4	5.3	6.3	8.2
	SEER (Btuh/Watt)	13.0	13.0	13.0	- - -	- - -
	[3] IEER (Btuh/Watt)	- - -	- - -	- - -	11.2	11.2
	EER (Btuh/Watt)	[1] 10.7	[1] 11	[1] 11.2	[2] 11.0	[2] 11.0
Refrigerant	Type	R-410A	R-410A	R-410A	R-410A	R-410A
	Charge Furnished	8 lbs. 5 oz.	8 lbs. 10 oz.	11 lbs. 0 oz.	14 lbs. 12 oz.	17 lbs. 0 oz.
Gas Heating Options - See page 14		Standard or Medium (1 Stage)	Standard, Medium (1 Stage) or High (1 or 2 Stage)			Medium (1 Stage) or High (1 or 2 Stage)
Compressor Type (one per unit)		Scroll	Scroll	Scroll	Scroll	Scroll
Outdoor Coil	Net face area - sq. ft.	15.6	15.6	15.6	19.3	28.0
	Tube diameter - in.	3/8	3/8	3/8	3/8	3/8
	Number of rows	1	1.5	2	2	2
	Fins / inch	20	20	20	20	20
Outdoor Coil Fan	Motor HP	1/4	1/4	1/3	1/3	1/3
	Motor rpm	825	825	1075	1075	1075
	Total motor watts	250	250	370	405	350
	Diameter - in. / No. of blades	24 - 3	24 - 3	24 - 3	24 - 3	24 - 3
	Total air volume - cfm	3700	3500	4300	4800	4900
Indoor Coil	Net face area - sq. ft.	7.8	7.8	7.8	9.7	9.7
	Tube diameter - in.	3/8	3/8	3/8	3/8	3/8
	Number of rows	3	3	4	4	4
	Fins per inch	14	14	14	14	14
	Drain Connection (no.and size) - in.	(1) 3/4 NPT	(1) 3/4 NPT	(1) 3/4 NPT	(1) 3/4 NPT	(1) 3/4 NPT
	Expansion device type	Balanced Port Thermostatic Expansion Valve, removeable power head				
[5] Indoor Blower & Drive Selection	Nominal Motor HP	1.5 hp, [6] 2 hp	1.5 hp, [6] 2 hp	1.5 hp, [6] 2 hp	1.5 hp, 2 hp	1 hp
	Maximum Usable Motor HP	1.7 hp, 2.3 hp	1.7 hp, 2.3 hp	1.7 hp, 2.3 hp	1.7 hp, 2.3 hp	1.15 hp
	Available Drive Kits	A01 673 - 1010 rpm A05 897 - 1346 rpm	A02 745 - 1117 rpm A06 1071 - 1429 rpm	A03 833 - 1250 rpm A07 1212 - 1548 rpm	A04 968 - 1340 rpm A08 1193 - 1591 rpm	AA01 522 - 784 rpm
	Nominal Motor HP	- - -	- - -	- - -	- - -	2 hp
	Maximum Usable Motor HP	- - -	- - -	- - -	- - -	2.3 hp
	Available Drive Kits	- - -	- - -	- - -	- - -	AA02 632 - 875 rpm AA03 798 - 1105 rpm
		- - -	- - -	- - -	- - -	3 hp
		- - -	- - -	- - -	- - -	3.45 hp
		- - -	- - -	- - -	- - -	AA04 921 - 1228 rpm
Wheel nominal diameter x width - in.		10 x 10	10 x 10	10 x 10	10 x 10	15 x 9
Filters	Type	Disposable			Disposable	
	Number and size - in.	(4) 16 x 20 x 2			(4) 20 x 20 x 2	
Electrical Characteristics - 60 Hz		208/230V 1 phase 208/230V, 460V & 575V 3 phase	208/230V, 1 phase 208/230V 460V & 575V 3 phase	208/230V 1 phase 208/230V, 460V & 575V 3 phase	208/230V, 460V & 575V 3 phase	208/230V, 460V & 575V 3 phase

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

[1] Certified in accordance with the USE certification program, which is based on AHRI Standard 210/240; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

[2] Certified in accordance with the ULE certification program, which is based on AHRI Standard 340/360; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

[3] Integrated Energy Efficiency Ratio certified and tested according to AHRI Standard 340/360.

[4] Sound Rating Number rated in accordance with test conditions included in AHRI Standard 270.

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

[6] 2 hp blower motor is not available for 208/230V-1ph applications.

SPECIFICATIONS - GAS HEAT

Model No.	KGA024, KGA030	KGA036, KGA048, KGA060, KGA072	KGA036, KGA048, KGA060, KGA072, KGA090	KGA048, KGA060, KGA072, KGA090	
Heat Input Type	**Standard (1 Stage)**	**Standard (1 Stage)**	**Medium (1 Stage)**	**High (1 Stage)**	**High (2 Stage)**
Input - Btuh First Stage	65,000	65,000	105,000	150,000	105,000
Second Stage	- - -	- - -	- - -	- - -	150,000
Output - Btuh First Stage	52,000	52,000	84000	120,000	85,500
Second Stage	- - -	- - -	- - -	- - -	120,000
Temperature Rise Range	35 - 65°F	20 - 50°F	30 - 75°F	40 - 85°F	40 - 85°F
[1] AFUE	80%	80%	80%	80%	80%
Thermal Efficiency	80%	80%	80%	80%	81.5%/80%
Gas Supply Connections	1/2 in. NPT				
Rec. Gas Supply Pressure - Natural / LPG	7 in. w.g. / 11 in. w.g.				

[1] Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and FTC labeling regulations.

HIGH ALTITUDE DERATE

NOTE - Units may be installed at altitudes up to 2000 ft. above sea level without any modifications.
At altitudes above 2000 ft. units must be derated to match information in the table shown.
At altitudes above 4500 ft. unit must be derated 2% for each 1000 ft. above sea level.

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

Heat Input Type	Altitude Feet	Gas Manifold Pressure in. w.g.		Input Rate (Btuh)
		Natural Gas	LPG/ Propane	
Standard (1 stage)	2001 - 4500	3.0	9.0	60,000
Medium (1 stage)	2001 - 4500	3.0	9.0	97,000
High (1 stage)	2001 - 4500	3.0	9.0	138,000
High (2 stage)	**2001 - 4500**	3.0/1.7	9.0/5.1	138,000/ 105,000

RATINGS

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

2 TON STANDARD EFFICIENCY KGA024S4 (1ST STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F
63°F	640	23.2	1.39	0.72	0.86	0.99	22.0	1.59	0.74	0.88	1.00	20.8	1.82	0.75	0.91	1.00	19.5	2.07	0.78	0.94	1.00
	800	24.2	1.39	0.78	0.94	1.00	23.0	1.59	0.80	0.97	1.00	21.8	1.82	0.82	0.99	1.00	20.5	2.08	0.85	1.00	1.00
	960	25.1	1.39	0.84	1.00	1.00	24.0	1.60	0.86	1.00	1.00	22.8	1.83	0.89	1.00	1.00	21.5	2.08	0.93	1.00	1.00
67°F	640	24.8	1.39	0.56	0.70	0.82	23.6	1.60	0.57	0.71	0.85	22.3	1.82	0.58	0.73	0.87	20.8	2.08	0.60	0.75	0.90
	800	25.8	1.39	0.60	0.75	0.90	24.4	1.60	0.61	0.77	0.93	23.0	1.83	0.63	0.80	0.96	21.5	2.09	0.64	0.83	1.00
	960	26.4	1.40	0.63	0.81	0.98	25.0	1.60	0.65	0.84	1.00	23.5	1.83	0.66	0.87	1.00	22.0	2.09	0.69	0.90	1.00
71°F	640	26.6	1.40	0.42	0.55	0.67	25.3	1.60	0.43	0.56	0.68	23.9	1.84	0.43	0.56	0.70	22.3	2.09	0.43	0.58	0.73
	800	27.5	1.40	0.44	0.59	0.73	26.1	1.61	0.44	0.60	0.75	24.6	1.84	0.45	0.61	0.78	23.0	2.10	0.45	0.63	0.80
	960	28.2	1.40	0.45	0.62	0.79	26.7	1.61	0.46	0.64	0.82	25.1	1.85	0.46	0.66	0.85	23.4	2.11	0.47	0.68	0.88

2.5 TON STANDARD EFFICIENCY KGA030S4 (1ST STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F
63°F	800	28.3	1.77	0.72	0.86	1.00	26.9	2.02	0.73	0.88	1.00	25.5	2.29	0.75	0.90	1.00	23.9	2.62	0.77	0.94	1.00
	1000	29.5	1.78	0.78	0.94	1.00	28.1	2.02	0.79	0.97	1.00	26.6	2.30	0.82	0.99	1.00	25.1	2.63	0.85	1.00	1.00
	1200	30.5	1.79	0.84	1.00	1.00	29.3	2.03	0.86	1.00	1.00	27.9	2.31	0.89	1.00	1.00	26.3	2.62	0.92	1.00	1.00
67°F	800	30.2	1.78	0.56	0.69	0.82	28.8	2.03	0.57	0.71	0.84	27.2	2.30	0.58	0.73	0.87	25.5	2.63	0.59	0.75	0.91
	1000	31.3	1.79	0.59	0.75	0.91	29.8	2.03	0.60	0.77	0.93	28.1	2.31	0.62	0.80	0.96	26.3	2.63	0.63	0.82	1.00
	1200	32.1	1.80	0.63	0.81	0.98	30.5	2.04	0.64	0.83	1.00	28.8	2.32	0.66	0.86	1.00	26.9	2.64	0.68	0.90	1.00
71°F	800	32.4	1.80	0.42	0.54	0.66	30.8	2.04	0.42	0.55	0.68	29.2	2.32	0.43	0.56	0.70	27.3	2.64	0.43	0.58	0.72
	1000	33.4	1.81	0.43	0.58	0.72	31.8	2.05	0.44	0.59	0.74	30.0	2.33	0.44	0.61	0.77	28.1	2.64	0.45	0.63	0.80
	1200	34.2	1.82	0.44	0.62	0.79	32.4	2.06	0.45	0.63	0.81	30.6	2.33	0.46	0.65	0.84	28.6	2.65	0.47	0.67	0.88

3 TON STANDARD EFFICIENCY KGA036S4 (1ST STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F
63°F	960	35.6	2.33	0.72	0.85	0.98	34.0	2.65	0.73	0.87	0.99	32.2	3.01	0.75	0.89	1.00	30.3	3.44	0.77	0.92	1.00
	1200	37.0	2.34	0.77	0.93	1.00	35.4	2.66	0.79	0.95	1.00	33.5	3.02	0.81	0.98	1.00	31.6	3.45	0.84	1.00	1.00
	1440	38.3	2.36	0.83	0.99	1.00	36.6	2.67	0.85	1.00	1.00	35.0	3.04	0.87	1.00	1.00	33.2	3.46	0.90	1.00	1.00
67°F	960	38.0	2.35	0.56	0.69	0.82	36.3	2.67	0.57	0.71	0.84	34.4	3.03	0.58	0.72	0.86	32.3	3.46	0.59	0.74	0.89
	1200	39.3	2.37	0.60	0.75	0.89	37.5	2.69	0.61	0.77	0.92	35.5	3.05	0.62	0.79	0.94	33.4	3.48	0.63	0.81	0.97
	1440	40.3	2.38	0.63	0.80	0.96	38.4	2.70	0.64	0.83	0.98	36.3	3.06	0.66	0.85	1.00	34.1	3.49	0.68	0.88	1.00
71°F	960	40.6	2.38	0.42	0.54	0.67	38.7	2.70	0.43	0.55	0.68	36.8	3.07	0.43	0.56	0.70	34.6	3.49	0.43	0.58	0.72
	1200	41.9	2.40	0.43	0.58	0.72	39.9	2.72	0.44	0.59	0.74	37.8	3.08	0.44	0.61	0.76	35.6	3.51	0.45	0.62	0.79
	1440	42.8	2.41	0.45	0.62	0.78	40.7	2.73	0.45	0.63	0.80	38.6	3.10	0.46	0.65	0.83	36.2	3.52	0.47	0.67	0.86

4 TON STANDARD EFFICIENCY KGA048S4 (1ST STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F
63°F	1280	47.9	3.05	0.71	0.85	0.98	45.6	3.47	0.72	0.87	1.00	43.2	3.94	0.74	0.90	1.00	40.6	4.48	0.76	0.93	1.00
	1600	49.7	3.07	0.76	0.93	1.00	47.3	3.49	0.78	0.95	1.00	44.9	3.96	0.80	0.98	1.00	42.4	4.50	0.83	1.00	1.00
	1920	51.3	3.08	0.82	0.99	1.00	49.1	3.51	0.84	1.00	1.00	46.7	3.98	0.87	1.00	1.00	44.2	4.53	0.90	1.00	1.00
67°F	1280	50.9	3.07	0.55	0.68	0.81	48.4	3.51	0.56	0.70	0.83	45.8	3.98	0.57	0.71	0.86	43.1	4.51	0.58	0.73	0.89
	1600	52.6	3.09	0.58	0.74	0.89	50.0	3.52	0.60	0.76	0.92	47.2	4.00	0.61	0.78	0.95	44.3	4.53	0.63	0.81	0.98
	1920	53.8	3.09	0.62	0.80	0.97	51.0	3.53	0.63	0.82	0.99	48.2	4.01	0.65	0.85	1.00	45.3	4.55	0.67	0.88	1.00
71°F	1280	54.3	3.09	0.41	0.54	0.66	51.6	3.54	0.42	0.55	0.67	48.8	4.02	0.42	0.56	0.69	45.9	4.56	0.43	0.57	0.71
	1600	56.0	3.11	0.43	0.57	0.71	53.1	3.55	0.43	0.58	0.73	50.2	4.04	0.44	0.60	0.76	47.1	4.58	0.44	0.61	0.79
	1920	57.0	3.11	0.44	0.61	0.77	54.1	3.57	0.44	0.62	0.80	51.0	4.05	0.45	0.64	0.83	47.8	4.59	0.46	0.66	0.86

RATINGS

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

5 TON STANDARD EFFICIENCY KGA060S4 (1ST STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F
63°F	1600	59.2	3.53	0.67	0.83	0.99	56.4	4.01	0.68	0.86	1.00	53.4	4.56	0.70	0.89	1.00	50.1	5.2	0.72	0.93	1.00
	2000	61.5	3.56	0.73	0.93	1.00	58.7	4.04	0.75	0.96	1.00	55.6	4.59	0.78	0.99	1.00	52.6	5.2	0.82	1.00	1.00
	2400	63.8	3.58	0.80	1.00	1.00	61.1	4.06	0.83	1.00	1.00	58.1	4.62	0.86	1.00	1.00	54.8	5.3	0.91	1.00	1.00
67°F	1600	63.0	3.58	0.52	0.65	0.78	59.9	4.05	0.53	0.66	0.81	56.6	4.60	0.54	0.68	0.85	53.1	5.2	0.55	0.70	0.89
	2000	65.0	3.60	0.55	0.70	0.89	61.8	4.08	0.57	0.72	0.93	58.3	4.63	0.58	0.75	0.96	54.5	5.3	0.60	0.79	1.00
	2400	66.4	3.62	0.59	0.77	0.98	63.1	4.10	0.60	0.80	1.00	59.5	4.65	0.62	0.84	1.00	55.7	5.3	0.64	0.88	1.00
71°F	1600	67.1	3.63	0.39	0.51	0.62	63.8	4.11	0.39	0.52	0.64	60.3	4.66	0.40	0.53	0.66	56.5	5.3	0.40	0.54	0.68
	2000	69.0	3.65	0.40	0.54	0.68	65.5	4.13	0.41	0.56	0.70	61.8	4.68	0.41	0.57	0.72	57.8	5.3	0.42	0.59	0.76
	2400	70.3	3.67	0.42	0.58	0.75	66.7	4.15	0.42	0.59	0.78	62.9	4.70	0.43	0.61	0.81	58.8	5.3	0.44	0.63	0.86

6 TON STANDARD EFFICIENCY KGA072S4 (1ST STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F
63°F	1920	68.9	4.60	0.65	0.81	0.99	65.8	5.12	0.67	0.84	1.00	62.4	5.71	0.68	0.87	1.00	58.7	6.39	0.70	0.91	1.00
	2400	71.8	4.61	0.71	0.92	1.00	68.7	5.13	0.73	0.95	1.00	65.3	5.73	0.76	0.98	1.00	61.8	6.40	0.79	1.00	1.00
	2880	74.6	4.62	0.78	1.00	1.00	71.7	5.14	0.81	1.00	1.00	68.5	5.73	0.84	1.00	1.00	65.0	6.41	0.88	1.00	1.00
67°F	1920	73.6	4.62	0.51	0.63	0.77	70.4	5.14	0.52	0.64	0.79	66.8	5.73	0.53	0.66	0.82	62.8	6.41	0.54	0.68	0.86
	2400	76.3	4.62	0.54	0.68	0.87	72.8	5.15	0.55	0.70	0.90	69.1	5.75	0.56	0.73	0.94	64.9	6.43	0.58	0.76	0.98
	2880	78.3	4.63	0.57	0.75	0.97	74.7	5.16	0.58	0.78	0.99	70.8	5.76	0.60	0.81	1.00	66.6	6.44	0.62	0.85	1.00
71°F	1920	79.0	4.63	0.38	0.49	0.61	75.5	5.16	0.39	0.50	0.62	71.7	5.76	0.39	0.51	0.63	67.6	6.44	0.39	0.52	0.65
	2400	81.6	4.64	0.39	0.53	0.66	77.9	5.17	0.40	0.54	0.68	74.0	5.77	0.40	0.55	0.70	69.6	6.45	0.41	0.56	0.73
	2880	83.4	4.65	0.41	0.56	0.72	79.6	5.18	0.41	0.57	0.75	75.5	5.78	0.42	0.59	0.78	71.0	6.47	0.42	0.61	0.82

7.5 TON STANDARD EFFICIENCY KGA090S4 (1ST STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) Dry Bulb		
	cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F
63°F	2400	90.1	6.17	0.69	0.83	0.98	86.0	6.82	0.70	0.85	1.00	81.8	7.58	0.71	0.88	1.00	77.0	8.42	0.73	0.91	1.00
	3000	94.3	6.26	0.73	0.92	1.00	90.0	6.92	0.76	0.94	1.00	85.3	7.66	0.78	0.98	1.00	80.4	8.51	0.81	1.00	1.00
	3600	97.5	6.33	0.80	0.99	1.00	93.2	6.99	0.82	1.00	1.00	88.9	7.75	0.85	1.00	1.00	84.4	8.61	0.88	1.00	1.00
67°F	2400	95.5	6.29	0.54	0.66	0.79	91.1	6.94	0.55	0.68	0.82	86.4	7.70	0.56	0.69	0.84	81.6	8.54	0.57	0.71	0.87
	3000	99.4	6.38	0.58	0.71	0.88	95.0	7.04	0.59	0.73	0.91	90.1	7.79	0.59	0.76	0.94	84.7	8.63	0.61	0.78	0.98
	3600	102.3	6.45	0.60	0.77	0.96	97.7	7.10	0.62	0.80	0.99	92.6	7.85	0.63	0.83	1.00	87.0	8.70	0.64	0.86	1.00
71°F	2400	100.6	6.41	0.42	0.53	0.64	96.1	7.06	0.42	0.54	0.65	91.1	7.81	0.42	0.54	0.67	86.4	8.68	0.42	0.56	0.69
	3000	105.0	6.51	0.43	0.56	0.69	100.2	7.17	0.43	0.57	0.71	95.0	7.91	0.43	0.58	0.73	89.6	8.77	0.44	0.60	0.76
	3600	108.0	6.58	0.44	0.59	0.75	103.0	7.24	0.45	0.61	0.77	97.6	7.98	0.45	0.62	0.80	91.9	8.83	0.46	0.64	0.83

BLOWER DATA - DIRECT DRIVE 2 - 2.5 TON

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 (larger gas heat section, economizer, wet coil, etc.) See page 27.
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See page 27.

External Static Pressure (in. w.g.)	Air Volume (cfm) at Various Blower Speeds					
	208 VOLTS			230 VOLTS		
	High	Medium	Low	High	Medium	Low
2 and 2.5 Ton Standard Efficiency (Downflow)						**KGA024S and KGA030S**
0.0	1211	949	852	1365	1097	916
0.1	1251	946	826	1422	1099	908
0.2	1241	952	794	1419	1112	893
0.3	1234	915	749	1419	1074	861
0.4	1213	880	702	1402	1038	824
0.5	1178	846	661	1366	1003	795
0.6	1118	790	585	1302	942	720
0.7	1054	751	518	1231	900	655
0.8	964	675	460	1130	815	600
0.9	882	626	368	1037	762	501
1.0	729	494	286	859	606	412
2 and 2.5 Ton Standard Efficiency (Horizontal)						**KGA024S and KGA030S**
0.0	1163	930	815	1312	1075	875
0.1	1173	912	783	1333	1060	861
0.2	1169	888	746	1337	1037	839
0.3	1152	858	704	1325	1007	809
0.4	1122	822	657	1297	969	772
0.5	1079	779	606	1252	923	728
0.6	1023	730	549	1191	870	676
0.7	953	674	488	1114	808	617
0.8	871	613	422	1020	739	550
0.9	775	545	350	911	662	476
1.0	666	470	274	785	578	395

BLOWER DATA - DIRECT DRIVE 3 - 4 TON

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 (larger gas heat section, economizer, wet coil, etc.) See page 27.
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See page 27.

External Static Pressure (in. w.g.)	Air Volume (cfm) at Various Blower Speeds								
	208 VOLTS			230 VOLTS			460/575 VOLTS		
	High	Medium	Low	High	Medium	Low	High	Medium	Low
3 and 4 Ton Standard Efficiency (Downflow)									**KGA036S and KGA048S**
0.0	1873	1561	1123	2094	1783	1321	2064	1727	1216
0.1	1993	1601	1148	2168	1797	1338	2105	1744	1229
0.2	1913	1601	1137	2098	1803	1308	2050	1694	1198
0.3	1858	1527	1078	2036	1725	1261	1987	1638	1167
0.4	1801	1496	1046	1973	1679	1219	1905	1598	1148
0.5	1763	1467	987	1910	1647	1177	1862	1559	1108
0.6	1709	1414	897	1830	1560	1080	1781	1509	1057
0.7	1617	1368	806	1727	1519	986	1698	1449	982
0.8	1472	1269	730	1604	1419	918	1614	1389	920
0.9	1359	1162	487	1478	1363	706	1488	1346	792
1.0	961	922	370	1093	1083	590	1167	1099	703
3 and 4 Ton Standard Efficiency (Horizontal)									**KGA036S and KGA048S**
0.0	1799	1530	1073	2012	1747	1263	2015	1756	1251
0.1	1868	1544	1088	2032	1733	1268	2071	1760	1279
0.2	1802	1494	1068	1976	1682	1228	2014	1700	1226
0.3	1735	1432	1014	1900	1618	1185	1937	1634	1187
0.4	1666	1397	980	1825	1568	1142	1878	1597	1174
0.5	1615	1350	904	1750	1516	1078	1801	1558	1124
0.6	1564	1305	842	1675	1440	1014	1743	1479	1060
0.7	1462	1228	758	1562	1364	928	1664	1415	982
0.8	1330	1151	670	1449	1287	842	1512	1335	865
0.9	1194	1011	464	1298	1185	671	1393	1297	733
1.0	878	878	355	998	1032	565	1060	1063	618

BLOWER DATA - DIRECT DRIVE 5 TON

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 (larger gas heat section, economizer, wet coil, etc.) See page 27.
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See page 27.

External Static Pressure (in. w.g.)	Air Volume (cfm) at Various Blower Speeds					
	208 VOLTS		230 VOLTS		460/575 VOLTS	
	High	Low	High	Low	High	Low
5 Ton Standard Efficiency (Downflow)						**KGA060S**
0.0	2200	1649	2411	1957	2241	1755
0.1	2256	1669	2417	2002	2221	1742
0.2	2202	1739	2396	1985	2193	1747
0.3	2170	1705	2328	1972	2144	1725
0.4	2158	1689	2293	1959	2104	1695
0.5	2130	1676	2279	1930	2086	1678
0.6	2056	1662	2158	1900	2008	1652
0.7	2032	1657	2089	1857	1975	1610
0.8	1963	1591	2077	1796	1941	1586
0.9	1887	1597	1876	1746	1855	1555
1.0	1695	1400	1746	1601	1778	1486
5 Ton Standard Efficiency (Horizontal)						**KGA060S**
0.0	2114	1615	2305	1880	2308	1890
0.1	2115	1610	2290	1876	2334	1906
0.2	2074	1622	2249	1870	2292	1890
0.3	2025	1599	2188	1841	2230	1859
0.4	1996	1577	2148	1812	2210	1846
0.5	1952	1542	2087	1768	2148	1817
0.6	1882	1534	2026	1739	2108	1786
0.7	1838	1488	1966	1680	2094	1743
0.8	1773	1443	1905	1622	1988	1682
0.9	1657	1389	1784	1534	1915	1679
1.0	1548	1335	1672	1462	1853	1506

BLOWER DATA - BELT DRIVE - KGA036

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, wet coil, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See page 27 for blower motors and drives and wet coil and options/accessory air resistance data.

DOWNFLOW

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Kit A01									
900	493	0.11	564	0.15	637	0.19	711	0.22	783	0.24	851	0.26	910	0.29	961	0.32
1000	517	0.14	588	0.18	660	0.22	733	0.24	804	0.26	868	0.29	924	0.32	974	0.35
1100	544	0.17	614	0.21	685	0.25	757	0.27	826	0.29	887	0.32	940	0.36	987	0.38
1200	574	0.2	643	0.24	712	0.28	782	0.31	849	0.33	906	0.36	956	0.39	1001	0.42
1300	613	0.23	679	0.28	745	0.31	811	0.34	873	0.36	926	0.40	973	0.43	1016	0.46
1400	662	0.26	722	0.30	781	0.34	841	0.37	897	0.41	944	0.44	989	0.48	1032	0.51
1500	710	0.29	763	0.33	816	0.38	869	0.41	919	0.45	963	0.49	1006	0.53	1049	0.56

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Kit A01		Kit A05													
900	1008	0.34	1056	0.36	1104	0.39	1149	0.41	1190	0.44	1229	0.46	1267	0.49	1305	0.52
1000	1020	0.37	1067	0.40	1115	0.42	1159	0.45	1200	0.48	1239	0.51	1277	0.54	1314	0.57
1100	1032	0.41	1078	0.43	1124	0.46	1168	0.49	1210	0.52	1249	0.55	1286	0.58	1323	0.62
1200	1045	0.45	1090	0.47	1135	0.50	1178	0.53	1220	0.57	1259	0.60	1296	0.64	1332	0.67
1300	1060	0.49	1104	0.51	1148	0.55	1190	0.58	1230	0.62	1269	0.65	1306	0.69	1342	0.72
1400	1075	0.53	1119	0.56	1162	0.60	1203	0.63	1242	0.67	1280	0.71	1317	0.75	1352	0.78
1500	1093	0.58	1136	0.61	1177	0.65	1217	0.69	1255	0.73	1292	0.77	1328	0.80	1364	0.84

HORIZONTAL

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished								Kit A01							
900	465	0.09	531	0.14	600	0.17	670	0.20	740	0.22	808	0.24	869	0.27	925	0.30
1000	483	0.12	549	0.16	617	0.20	687	0.22	756	0.24	822	0.26	881	0.29	935	0.33
1100	504	0.14	570	0.19	637	0.22	706	0.25	773	0.27	837	0.29	894	0.32	946	0.36
1200	527	0.17	592	0.22	658	0.25	726	0.28	792	0.30	854	0.32	908	0.36	957	0.39
1300	552	0.20	617	0.25	682	0.29	748	0.31	812	0.33	871	0.36	923	0.40	970	0.43
1400	580	0.24	644	0.28	708	0.32	773	0.35	834	0.37	890	0.40	938	0.44	984	0.48
1500	611	0.28	674	0.32	736	0.35	799	0.38	857	0.41	908	0.44	954	0.49	998	0.52

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Kit A01		Kit A05													
900	977	0.33	1028	0.36	1079	0.39	1127	0.42	1169	0.45	1208	0.48	1246	0.51	1282	0.54
1000	985	0.36	1036	0.39	1087	0.42	1135	0.45	1177	0.48	1216	0.52	1253	0.55	1290	0.58
1100	995	0.39	1044	0.42	1093	0.45	1140	0.49	1183	0.52	1223	0.56	1261	0.59	1297	0.62
1200	1005	0.43	1053	0.46	1100	0.49	1146	0.53	1190	0.56	1230	0.60	1268	0.63	1304	0.67
1300	1016	0.47	1063	0.50	1109	0.53	1154	0.57	1197	0.61	1237	0.64	1275	0.68	1311	0.72
1400	1029	0.51	1074	0.54	1120	0.58	1164	0.61	1205	0.65	1245	0.69	1282	0.73	1318	0.77
1500	1042	0.56	1087	0.59	1132	0.62	1174	0.66	1215	0.71	1253	0.75	1290	0.78	1326	0.82

BLOWER DATA - BELT DRIVE - KGA048

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, wet coil, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See page 27for blower motors and drives and wet coil and options/accessory air resistance data.

DOWNFLOW

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Kit A02									
1200	574	0.20	644	0.24	713	0.28	784	0.31	850	0.33	906	0.36	953	0.39	998	0.42
1300	608	0.24	677	0.28	744	0.31	813	0.34	874	0.37	925	0.40	969	0.43	1014	0.46
1400	645	0.28	712	0.31	778	0.35	842	0.38	898	0.41	944	0.44	986	0.48	1030	0.51
1500	684	0.31	749	0.35	811	0.38	871	0.42	921	0.45	963	0.49	1004	0.53	1048	0.56
1600	723	0.35	785	0.39	844	0.43	898	0.46	943	0.50	983	0.54	1024	0.58	1067	0.61
1700	761	0.40	819	0.44	875	0.48	924	0.52	965	0.56	1004	0.60	1045	0.63	1089	0.66
1800	798	0.45	853	0.49	905	0.54	950	0.58	990	0.62	1028	0.66	1069	0.69	1112	0.72
1900	834	0.51	885	0.55	934	0.60	977	0.64	1015	0.68	1054	0.72	1095	0.75	1137	0.79
2000	869	0.57	917	0.62	962	0.67	1004	0.71	1042	0.75	1081	0.78	1121	0.82	1162	0.86

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Kit A02				Kit A06											
1200	1043	0.44	1090	0.47	1135	0.50	1179	0.53	1220	0.57	1259	0.60	1297	0.64	1333	0.67
1300	1058	0.49	1104	0.51	1148	0.55	1190	0.58	1231	0.62	1269	0.65	1306	0.69	1342	0.72
1400	1074	0.53	1119	0.56	1162	0.59	1203	0.63	1242	0.67	1280	0.71	1317	0.74	1352	0.78
1500	1092	0.58	1136	0.61	1177	0.65	1217	0.69	1255	0.73	1292	0.76	1328	0.80	1364	0.84
1600	1112	0.63	1154	0.67	1193	0.71	1232	0.75	1269	0.79	1306	0.83	1341	0.87	1377	0.91
1700	1132	0.69	1173	0.73	1211	0.77	1248	0.81	1285	0.86	1321	0.90	1356	0.94	1391	0.98
1800	1154	0.76	1194	0.80	1230	0.85	1266	0.89	1302	0.93	1338	0.98	1373	1.02	1408	1.06
1900	1178	0.83	1215	0.88	1250	0.93	1286	0.98	1321	1.02	1356	1.06	1391	1.10	1426	1.14
2000	1201	0.91	1237	0.97	1271	1.02	1307	1.07	1342	1.11	1376	1.15	1411	1.19	1446	1.23

HORIZONTAL

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Kit A02									
1200	540	0.18	606	0.22	673	0.26	748	0.29	816	0.30	870	0.33	914	0.37	961	0.40
1300	568	0.21	634	0.26	699	0.29	771	0.32	835	0.34	886	0.37	929	0.41	975	0.44
1400	599	0.25	664	0.29	728	0.33	795	0.35	855	0.38	903	0.41	946	0.45	991	0.49
1500	632	0.29	696	0.33	758	0.36	821	0.39	877	0.42	922	0.46	963	0.50	1008	0.54
1600	667	0.33	729	0.36	789	0.40	848	0.43	898	0.46	941	0.51	982	0.55	1026	0.59
1700	702	0.36	761	0.40	819	0.44	873	0.48	920	0.52	960	0.56	1001	0.61	1044	0.64
1800	737	0.41	794	0.45	848	0.49	898	0.53	941	0.58	981	0.62	1021	0.66	1064	0.70
1900	771	0.46	825	0.50	877	0.54	923	0.59	964	0.64	1002	0.68	1043	0.72	1085	0.76
2000	805	0.51	857	0.56	905	0.61	948	0.66	987	0.71	1025	0.75	1065	0.79	1107	0.82

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Kit A02						Kit A06									
1200	1010	0.43	1061	0.46	1110	0.50	1156	0.53	1199	0.57	1239	0.61	1276	0.64	1312	0.68
1300	1024	0.47	1073	0.50	1120	0.54	1165	0.58	1207	0.62	1246	0.65	1284	0.69	1320	0.73
1400	1038	0.52	1086	0.55	1131	0.59	1175	0.62	1216	0.66	1255	0.70	1292	0.74	1328	0.78
1500	1054	0.57	1100	0.60	1144	0.64	1186	0.68	1226	0.72	1264	0.75	1301	0.79	1336	0.83
1600	1071	0.62	1116	0.65	1158	0.69	1198	0.73	1237	0.77	1274	0.81	1310	0.85	1345	0.89
1700	1089	0.67	1132	0.71	1172	0.75	1211	0.79	1249	0.83	1285	0.87	1321	0.91	1355	0.95
1800	1108	0.73	1149	0.77	1188	0.81	1225	0.85	1262	0.90	1298	0.94	1332	0.98	1366	1.01
1900	1128	0.79	1167	0.84	1204	0.88	1241	0.92	1276	0.97	1311	1.01	1345	1.05	1379	1.09
2000	1148	0.86	1186	0.91	1221	0.96	1257	1.00	1292	1.05	1326	1.09	1359	1.13	1393	1.17

BLOWER DATA - BELT DRIVE - KGA060

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, wet coil, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See page 27 for blower motors and drives and wet coil and options/accessory air resistance data.

DOWNFLOW

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished				Kit A03											
1600	745	0.36	805	0.40	862	0.44	913	0.48	956	0.52	996	0.55	1037	0.59	1081	0.62
1700	783	0.41	840	0.45	893	0.49	940	0.53	980	0.57	1019	0.61	1061	0.64	1104	0.67
1800	820	0.47	873	0.51	923	0.55	967	0.60	1006	0.63	1045	0.67	1086	0.70	1129	0.73
1900	856	0.52	906	0.57	953	0.62	994	0.66	1032	0.70	1071	0.73	1112	0.76	1154	0.80
2000	891	0.59	937	0.64	982	0.69	1022	0.73	1060	0.76	1099	0.80	1140	0.84	1180	0.88
2100	924	0.66	968	0.71	1011	0.75	1051	0.79	1089	0.83	1128	0.87	1167	0.92	1206	0.97
2200	956	0.74	999	0.78	1041	0.83	1080	0.87	1119	0.91	1157	0.96	1196	1.02	1233	1.08
2300	990	0.81	1032	0.86	1072	0.91	1111	0.95	1149	1.00	1187	1.06	1225	1.13	1261	1.19
2400	1025	0.90	1066	0.95	1105	1.00	1143	1.05	1181	1.11	1218	1.17	1255	1.24	1290	1.30

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Kit A03								Kit A07							
1600	1125	0.64	1167	0.68	1206	0.72	1244	0.76	1281	0.80	1317	0.84	1353	0.88	1388	0.92
1700	1147	0.70	1187	0.75	1224	0.79	1261	0.83	1298	0.87	1333	0.91	1369	0.95	1404	0.99
1800	1170	0.77	1208	0.82	1244	0.87	1280	0.91	1316	0.95	1351	0.99	1386	1.03	1422	1.07
1900	1194	0.85	1230	0.90	1265	0.95	1301	1.00	1336	1.04	1371	1.08	1406	1.12	1441	1.16
2000	1218	0.94	1253	1.00	1287	1.05	1323	1.09	1358	1.14	1392	1.17	1427	1.21	1463	1.25
2100	1243	1.03	1277	1.09	1311	1.15	1346	1.19	1381	1.23	1415	1.27	1450	1.31	1486	1.34
2200	1268	1.14	1302	1.20	1336	1.25	1371	1.29	1405	1.33	1439	1.37	1474	1.40	1511	1.44
2300	1295	1.25	1328	1.30	1362	1.35	1397	1.39	1431	1.43	1465	1.47	1500	1.50	1537	1.54
2400	1324	1.36	1356	1.41	1390	1.46	1424	1.50	1458	1.53	1492	1.57	1527	1.61	1563	1.64

HORIZONTAL

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Kit A03									
1600	690	0.33	751	0.37	810	0.40	865	0.44	912	0.48	955	0.52	997	0.56	1041	0.60
1700	725	0.38	784	0.41	839	0.45	891	0.49	935	0.53	975	0.58	1017	0.62	1060	0.65
1800	761	0.42	816	0.46	868	0.50	916	0.55	957	0.59	997	0.64	1038	0.68	1081	0.71
1900	795	0.48	848	0.52	897	0.56	942	0.61	981	0.66	1020	0.70	1060	0.74	1103	0.77
2000	830	0.53	879	0.58	926	0.63	968	0.68	1006	0.73	1044	0.77	1084	0.80	1126	0.84
2100	863	0.60	910	0.65	954	0.70	994	0.75	1032	0.80	1070	0.83	1110	0.87	1150	0.91
2200	895	0.67	939	0.73	982	0.78	1021	0.83	1058	0.87	1096	0.91	1135	0.95	1174	1.00
2300	926	0.75	969	0.81	1009	0.86	1048	0.90	1085	0.94	1122	0.99	1160	1.04	1197	1.09
2400	957	0.84	998	0.89	1038	0.94	1076	0.98	1112	1.03	1149	1.08	1185	1.14	1221	1.20

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Kit A03										Kit A07					
1600	1086	0.63	1129	0.66	1171	0.70	1211	0.74	1249	0.78	1286	0.82	1321	0.86	1356	0.90
1700	1104	0.68	1147	0.72	1186	0.76	1225	0.80	1262	0.84	1298	0.88	1333	0.92	1367	0.96
1800	1124	0.74	1165	0.79	1202	0.83	1240	0.87	1276	0.91	1311	0.95	1345	0.99	1380	1.03
1900	1145	0.81	1183	0.85	1220	0.90	1256	0.94	1291	0.99	1326	1.03	1360	1.07	1393	1.10
2000	1167	0.88	1203	0.93	1237	0.98	1273	1.03	1307	1.07	1341	1.11	1375	1.15	1408	1.18
2100	1188	0.96	1222	1.02	1256	1.07	1291	1.12	1324	1.16	1358	1.20	1391	1.23	1424	1.27
2200	1210	1.05	1243	1.11	1275	1.17	1309	1.21	1343	1.25	1376	1.29	1409	1.33	1442	1.36
2300	1232	1.16	1263	1.22	1295	1.27	1329	1.31	1362	1.35	1395	1.39	1428	1.42	1462	1.45
2400	1254	1.26	1284	1.32	1317	1.37	1350	1.41	1383	1.45	1415	1.48	1448	1.52	1483	1.55

BLOWER DATA - BELT DRIVE - DOWNFLOW - KGA072

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, wet coil, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See page 27 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished								Kit A04							
1900	857	0.41	892	0.45	927	0.50	962	0.55	999	0.60	1036	0.65	1074	0.69	1112	0.73
2000	879	0.47	913	0.52	948	0.56	984	0.61	1020	0.67	1058	0.72	1096	0.76	1134	0.80
2100	900	0.53	935	0.58	970	0.63	1007	0.69	1044	0.74	1081	0.79	1119	0.84	1157	0.88
2200	922	0.60	958	0.65	994	0.71	1031	0.76	1068	0.82	1106	0.87	1143	0.91	1180	0.95
2300	947	0.67	983	0.73	1020	0.79	1057	0.85	1094	0.90	1131	0.95	1168	1.00	1205	1.03
2400	974	0.76	1010	0.82	1047	0.88	1084	0.94	1120	0.99	1157	1.04	1193	1.08	1230	1.12
2500	1002	0.85	1039	0.91	1075	0.97	1112	1.03	1148	1.08	1184	1.13	1220	1.17	1257	1.21
2600	1032	0.95	1068	1.01	1105	1.07	1141	1.13	1177	1.17	1213	1.22	1248	1.26	1284	1.31
2700	1062	1.05	1099	1.11	1136	1.17	1172	1.22	1207	1.27	1242	1.32	1277	1.37	1312	1.43
2800	1094	1.16	1131	1.22	1167	1.27	1202	1.32	1237	1.38	1271	1.43	1305	1.49	1339	1.56
2900	1127	1.26	1163	1.32	1198	1.38	1233	1.44	1267	1.50	1300	1.56	1334	1.64	1367	1.71

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Kit A04												Kit A08			
1900	1150	0.77	1188	0.81	1227	0.85	1267	0.88	1303	0.92	1333	0.97	1360	1.02	1392	1.06
2000	1172	0.84	1210	0.88	1248	0.92	1286	0.96	1321	1.00	1350	1.05	1377	1.10	1409	1.14
2100	1195	0.91	1233	0.95	1269	1.00	1306	1.04	1339	1.09	1367	1.14	1395	1.19	1426	1.23
2200	1218	0.99	1255	1.03	1290	1.09	1324	1.14	1356	1.19	1385	1.24	1413	1.28	1444	1.32
2300	1242	1.07	1277	1.13	1310	1.20	1343	1.26	1374	1.30	1403	1.34	1432	1.38	1464	1.42
2400	1267	1.16	1300	1.23	1332	1.31	1364	1.37	1394	1.41	1423	1.45	1453	1.48	1484	1.53
2500	1292	1.26	1324	1.34	1355	1.42	1387	1.48	1417	1.52	1445	1.56	1475	1.59	1506	1.64
2600	1318	1.38	1350	1.46	1380	1.55	1411	1.60	1440	1.64	1469	1.68	1498	1.71	1529	1.76
2700	1345	1.51	1376	1.60	1406	1.68	1436	1.73	1465	1.77	1493	1.80	1523	1.84	1553	1.88
2800	1372	1.65	1403	1.74	1433	1.82	1462	1.86	1490	1.90	1519	1.93	1548	1.97	1578	2.01
2900	1399	1.80	1430	1.89	1460	1.96	1489	2.00	1516	2.03	1544	2.06	1573	2.10	1603	2.14

BLOWER DATA - BELT DRIVE - HORIZONTAL - KGA072

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, wet coil, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See page 27 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished										Kit A04					
1900	796	0.38	837	0.43	878	0.48	918	0.53	958	0.58	997	0.62	1036	0.67	1074	0.71
2000	833	0.43	870	0.48	907	0.54	943	0.59	980	0.64	1018	0.69	1055	0.73	1093	0.77
2100	864	0.50	897	0.55	931	0.60	966	0.65	1002	0.71	1038	0.76	1075	0.80	1113	0.83
2200	887	0.57	920	0.62	953	0.67	988	0.73	1024	0.78	1060	0.83	1097	0.87	1135	0.90
2300	909	0.64	942	0.70	976	0.75	1011	0.81	1046	0.86	1083	0.91	1120	0.95	1157	0.98
2400	931	0.72	965	0.78	999	0.83	1035	0.89	1071	0.94	1108	0.99	1144	1.03	1181	1.07
2500	955	0.80	989	0.86	1024	0.92	1061	0.98	1097	1.03	1133	1.08	1170	1.11	1205	1.15
2600	981	0.90	1016	0.96	1052	1.01	1088	1.07	1124	1.12	1160	1.16	1195	1.20	1230	1.25
2700	1009	0.99	1044	1.05	1080	1.11	1116	1.16	1152	1.21	1187	1.26	1221	1.30	1254	1.35
2800	1038	1.10	1073	1.16	1109	1.21	1145	1.26	1180	1.31	1214	1.36	1247	1.40	1279	1.46
2900	1068	1.20	1104	1.26	1139	1.31	1174	1.36	1208	1.41	1240	1.47	1273	1.52	1304	1.58

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Kit A04														Kit A08	
1900	1112	0.74	1151	0.77	1190	0.81	1228	0.84	1265	0.88	1301	0.92	1335	0.97	1367	1.01
2000	1131	0.80	1170	0.83	1208	0.87	1245	0.91	1281	0.96	1316	1.00	1349	1.04	1380	1.09
2100	1151	0.87	1189	0.90	1227	0.94	1263	0.99	1298	1.04	1331	1.08	1363	1.13	1394	1.17
2200	1173	0.94	1210	0.98	1246	1.02	1281	1.07	1315	1.12	1347	1.17	1379	1.22	1409	1.26
2300	1195	1.02	1231	1.06	1266	1.11	1300	1.16	1333	1.22	1364	1.27	1395	1.32	1424	1.36
2400	1217	1.10	1252	1.15	1286	1.20	1319	1.26	1351	1.32	1382	1.38	1411	1.43	1440	1.48
2500	1240	1.20	1274	1.25	1307	1.31	1339	1.37	1370	1.43	1400	1.49	1428	1.55	1457	1.59
2600	1264	1.30	1297	1.35	1329	1.42	1360	1.49	1389	1.55	1418	1.61	1446	1.67	1475	1.72
2700	1287	1.40	1319	1.47	1350	1.54	1380	1.61	1409	1.68	1437	1.74	1465	1.79	1493	1.84
2800	1311	1.52	1342	1.59	1373	1.66	1402	1.74	1430	1.8	1457	1.87	1485	1.92	1513	1.97
2900	1335	1.65	1366	1.72	1395	1.79	1424	1.87	1451	1.94	1478	2.00	1505	2.05	1533	2.09

BLOWER DATA - BELT DRIVE - KGA090 - 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, wet coil, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See page 27 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume cfm	External Static - in. w.g.																			
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Drive Kit AA01												Drive Kit AA02						AA03	
2400	621	0.71	652	0.76	684	0.81	716	0.86	746	0.92	776	0.97	805	1.02	830	1.08	855	1.14	879	1.19
2500	642	0.77	673	0.82	704	0.87	734	0.93	764	0.98	793	1.04	820	1.09	845	1.15	868	1.21	892	1.27
2600	665	0.82	694	0.88	724	0.93	753	0.99	782	1.05	810	1.11	835	1.17	859	1.23	883	1.29	907	1.34
2700	688	0.89	716	0.94	744	1.00	773	1.06	800	1.13	827	1.19	851	1.25	875	1.31	898	1.37	922	1.42
2800	710	0.95	738	1.02	765	1.08	792	1.15	818	1.21	844	1.28	868	1.34	891	1.40	914	1.45	938	1.51
2900	733	1.03	759	1.10	785	1.17	811	1.24	836	1.30	861	1.37	885	1.43	908	1.49	931	1.54	954	1.59
3000	754	1.12	779	1.19	805	1.26	830	1.33	855	1.40	879	1.46	902	1.52	925	1.58	948	1.63	970	1.69
3100	775	1.22	800	1.29	824	1.36	849	1.43	873	1.50	897	1.56	920	1.62	942	1.67	964	1.73	987	1.78
3200	796	1.32	820	1.39	844	1.47	868	1.53	892	1.60	915	1.66	937	1.72	959	1.77	981	1.83	1002	1.88
3300	816	1.43	840	1.50	863	1.57	887	1.64	910	1.70	933	1.76	955	1.82	976	1.88	997	1.93	1018	1.99
3400	837	1.54	860	1.61	883	1.68	906	1.75	929	1.81	951	1.87	972	1.93	993	1.98	1013	2.05	1033	2.11
3500	858	1.66	881	1.73	903	1.79	926	1.86	948	1.92	969	1.98	990	2.04	1009	2.10	1029	2.17	1048	2.24
3600	879	1.77	901	1.84	923	1.91	945	1.97	966	2.04	987	2.10	1006	2.16	1025	2.23	1044	2.30	1062	2.38

Air Volume cfm	External Static - in. w.g.																			
	0.90		1.00		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Drive Kit AA03																		AA04	
2400	904	1.25	929	1.29	956	1.34	982	1.39	1008	1.43	1032	1.49	1056	1.55	1078	1.62	1099	1.68	1121	1.75
2500	917	1.32	942	1.37	968	1.41	994	1.46	1020	1.51	1044	1.57	1066	1.64	1088	1.70	1108	1.77	1130	1.84
2600	931	1.39	957	1.44	982	1.49	1008	1.54	1032	1.60	1055	1.66	1077	1.73	1098	1.80	1118	1.87	1139	1.94
2700	946	1.47	971	1.52	996	1.57	1021	1.63	1045	1.69	1067	1.76	1088	1.83	1108	1.91	1127	1.98	1148	2.05
2800	962	1.56	986	1.61	1011	1.66	1034	1.72	1057	1.79	1079	1.86	1099	1.94	1118	2.02	1137	2.09	1158	2.16
2900	978	1.65	1001	1.70	1025	1.75	1048	1.82	1069	1.89	1090	1.98	1109	2.06	1128	2.14	1147	2.22	1167	2.28
3000	993	1.74	1016	1.79	1039	1.86	1061	1.93	1081	2.01	1101	2.10	1120	2.18	1138	2.27	1157	2.34	1177	2.41
3100	1009	1.84	1031	1.90	1052	1.97	1073	2.05	1093	2.13	1112	2.22	1130	2.31	1148	2.40	1167	2.47	1187	2.53
3200	1024	1.94	1045	2.01	1065	2.09	1085	2.17	1104	2.26	1123	2.36	1141	2.45	1159	2.53	1178	2.60	1198	2.66
3300	1038	2.06	1058	2.13	1078	2.22	1097	2.31	1116	2.40	1134	2.49	1152	2.58	1170	2.66	1189	2.73	1209	2.79
3400	1053	2.19	1072	2.27	1091	2.35	1109	2.45	1127	2.54	1145	2.63	1163	2.72	1181	2.79	1200	2.86	1220	2.92
3500	1067	2.32	1085	2.41	1103	2.50	1121	2.59	1138	2.69	1156	2.78	1174	2.85	1192	2.93	1212	2.99	1231	3.05
3600	1081	2.46	1098	2.55	1116	2.64	1133	2.74	1151	2.83	1168	2.91	1186	2.99	1205	3.06	1224	3.12	1243	3.17

BLOWER DATA - BELT DRIVE - KGA090 - 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, wet coil, etc.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See page 27 for blower motors and drives and wet coil and options/accessory air resistance data.

Air Volume cfm	External Static - in. w.g.																			
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Drive Kit AA01																Drive Kit AA02			
2400	572	0.75	602	0.78	633	0.81	664	0.85	695	0.88	725	0.92	755	0.97	784	1.01	811	1.06	836	1.11
2500	591	0.80	620	0.83	650	0.87	680	0.90	711	0.94	740	0.98	769	1.03	797	1.08	823	1.13	847	1.18
2600	610	0.86	639	0.89	668	0.92	697	0.96	727	1.00	755	1.05	783	1.09	810	1.14	835	1.20	859	1.25
2700	630	0.91	658	0.95	686	0.98	715	1.02	743	1.07	771	1.11	798	1.16	824	1.22	848	1.27	872	1.32
2800	650	0.97	677	1.01	705	1.05	732	1.09	760	1.14	787	1.19	813	1.24	838	1.30	861	1.35	885	1.40
2900	670	1.03	697	1.07	724	1.11	750	1.16	777	1.21	803	1.27	828	1.32	852	1.38	876	1.44	898	1.49
3000	691	1.09	717	1.14	743	1.18	769	1.24	794	1.29	819	1.35	844	1.42	868	1.47	890	1.53	913	1.58
3100	712	1.16	737	1.21	762	1.27	787	1.32	812	1.39	836	1.45	860	1.51	883	1.57	906	1.63	928	1.68
3200	732	1.24	756	1.30	781	1.36	805	1.42	829	1.48	853	1.55	876	1.61	899	1.67	921	1.73	943	1.78
3300	752	1.33	776	1.39	799	1.46	823	1.52	847	1.59	870	1.65	893	1.71	916	1.77	937	1.83	959	1.88
3400	772	1.43	795	1.50	818	1.56	842	1.63	865	1.69	888	1.76	910	1.82	932	1.88	953	1.93	974	1.99
3500	792	1.54	815	1.61	838	1.67	861	1.74	883	1.80	906	1.87	928	1.93	949	1.98	970	2.04	990	2.10
3600	812	1.65	834	1.72	857	1.79	880	1.85	902	1.92	924	1.98	945	2.04	966	2.10	986	2.16	1005	2.22

Air Volume cfm	External Static - in. w.g.																			
	0.90		1.00		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	AA02		Drive Kit AA03																	
2400	861	1.16	886	1.21	911	1.26	937	1.30	963	1.35	988	1.41	1012	1.47	1034	1.53	1055	1.59	1076	1.65
2500	872	1.23	896	1.27	921	1.32	947	1.37	972	1.43	997	1.48	1019	1.55	1041	1.61	1061	1.68	1081	1.74
2600	883	1.30	908	1.35	933	1.40	958	1.45	982	1.50	1006	1.57	1027	1.63	1048	1.70	1068	1.77	1087	1.83
2700	895	1.37	920	1.42	944	1.47	969	1.53	992	1.59	1015	1.65	1036	1.72	1056	1.79	1075	1.86	1094	1.92
2800	908	1.45	932	1.50	956	1.56	980	1.62	1003	1.68	1025	1.75	1045	1.82	1064	1.89	1083	1.96	1102	2.02
2900	922	1.54	945	1.59	969	1.65	992	1.71	1014	1.78	1035	1.85	1055	1.92	1074	2.00	1092	2.07	1111	2.13
3000	936	1.63	959	1.68	982	1.74	1004	1.81	1026	1.88	1046	1.96	1065	2.03	1084	2.11	1102	2.18	1120	2.25
3100	950	1.73	973	1.78	995	1.85	1017	1.91	1037	1.99	1057	2.07	1076	2.15	1094	2.23	1112	2.31	1130	2.38
3200	965	1.83	987	1.89	1008	1.95	1029	2.03	1049	2.11	1068	2.19	1087	2.28	1105	2.36	1123	2.44	1141	2.51
3300	980	1.94	1001	2.00	1022	2.07	1042	2.15	1061	2.23	1080	2.32	1098	2.41	1116	2.50	1134	2.58	1152	2.65
3400	995	2.05	1015	2.12	1035	2.19	1054	2.28	1073	2.37	1092	2.46	1110	2.55	1128	2.64	1145	2.72	1163	2.79
3500	1010	2.17	1029	2.24	1048	2.32	1067	2.41	1086	2.51	1104	2.60	1122	2.70	1139	2.78	1157	2.86	1174	2.93
3600	1024	2.30	1043	2.38	1062	2.46	1080	2.55	1098	2.65	1116	2.75	1133	2.84	1151	2.93	1168	3.01	1186	3.08
	AA03		Drive Kit AA04																	

BLOWER DATA

BELT DRIVE KIT SPECIFICATIONS

Model No.	Blower Motor Choice (HP)				Drive Kit No.	RPM Range
	Nominal	Maximum	Nominal	Maximum		
036	1.5	1.72	2	2.3	A01	673 - 1010 rpm
					A05	897 - 1346 rpm
048	1.5	1.72	2	2.3	A02	745 - 1117 rpm
					A06	1071 - 1429 rpm
060	1.5	1.72	2	2.3	A03	833 - 1250 rpm
					A07	1212 - 1548 rpm
072	1.5	1.72	2	2.3	A04	968 - 1340 rpm
					A08	1193 - 1591 rpm
090	1	1.15	- - -	- - -	AA01	522 - 784 rpm
	2	2.3	- - -	- - -	AA02	632 - 875 rpm
					AA03	798 - 1105 rpm
	3	3.45	- - -	- - -	AA04	921 - 1228 rpm

NOTE - Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor hp required. Maximum usable hp of motors furnished are shown. In Canada, nominal motor hp is also maximum usable motor hp. If motors of comparable hp 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 in. w.g.	Air Volume Exhausted - cfm											
	T1PWRE10A						T1PWRE10N					
	208V			230V, 460V and 575V			208V			230V, 460V and 575V		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
0	1290	1300	1320	1300	1305	1295	3545	3915	4230	3880	4135	4340
0.1	1045	1055	1055	1040	1050	1055	2880	3215	3580	3255	3550	3755
0.2	805	805	815	805	810	810	2290	2665	3055	2710	3010	3240
0.3	580	580	600	595	590	585	1735	2175	2605	2200	2500	2770
0.4	390	405	400	405	400	410	1165	1660	2175	1685	2010	2325
0.5	245	315	215	240	255	300	530	1045	1710	1120	1510	1885
0.6	155	340	35	90	165	290	- - -	250	1160	470	990	1420
0.7	145	515	- - -	- - -	140	400	- - -	- - -	470	- - -	430	915

OPTIONS / ACCESSORIES AIR RESISTANCE FOR 024-072 MODELS - in. w.g.

Air Volume cfm	Economizer	Gas Heat		Wet Indoor Coil		
		Medium Input	High Input	036-048	060	072
800	0.04	0.02	0.02	0.01	0.01	0.01
1000	0.04	0.02	0.02	0.02	0.02	0.01
1200	0.04	0.02	0.02	0.03	0.04	0.02
1400	0.04	0.02	0.03	0.04	0.05	0.03
1600	0.04	0.03	0.04	0.05	0.06	0.04
1800	0.05	0.03	0.05	0.06	0.07	0.05
2000	0.05	0.04	0.06	0.08	0.09	0.06
2200	0.05	0.04	0.07	0.09	0.10	0.07
2400	0.05	0.05	0.08	0.10	0.12	0.08
2600	0.06	0.05	0.09	0.11	0.13	0.09
2800	0.06	0.06	0.10	0.13	0.15	0.10
3000	0.06	0.07	0.11	0.14	0.16	0.12

OPTIONS / ACCESSORIES AIR RESISTANCE FOR 090 MODELS - in. w.g.

Air Volume cfm	Economizer	Gas Heat High Input	Wet Indoor Coil
2400	0.05	0.03	0.08
2600	0.06	0.04	0.09
2800	0.06	0.04	0.10
3000	0.06	0.04	0.11
3200	0.06	0.04	0.12
3400	0.06	0.05	0.14
3600	0.06	0.05	0.15

BLOWER DATA

CEILING DIFFUSERS AIR RESISTANCE (in. w.g.)

Air Volume cfm	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	
800	0.15	0.13	0.11	0.11	- - -	- - -	- - -	- - -
1000	0.19	0.16	0.14	0.14	- - -	- - -	- - -	- - -
1200	0.25	0.20	0.17	0.17	- - -	- - -	- - -	- - -
1400	0.33	0.26	0.20	0.20	- - -	- - -	- - -	- - -
1600	0.43	0.32	0.20	0.24	- - -	- - -	- - -	- - -
1800	0.56	0.40	0.30	0.30	0.13	0.11	0.09	0.09
2000	0.73	0.50	0.36	0.36	0.15	0.13	0.11	0.10
2200	0.95	0.63	0.44	0.44	0.18	0.15	0.12	0.12
2400	- - -	- - - -	- - -	- - -	0.21	0.18	0.15	0.14
2600	- - -	- - - -	- - -	- - -	0.24	0.21	0.18	0.17
2800	- - -	- - - -	- - -	- - -	0.27	0.24	0.21	0.20
3000	- - -	- - - -	- - -	- - -	0.32	0.29	0.25	0.25
3200	- - -	- - - -	- - -	- - -	0.41	0.37	0.32	0.31
3400	- - -	- - - -	- - -	- - -	0.50	0.45	0.39	0.37
3600	- - -	- - - -	- - -	- - -	0.61	0.54	0.48	0.44

CEILING DIFFUSER AIR THROW DATA

Air Volume - cfm	[1] Effective Throw - ft.	
Model No.	**RTD9-65**	**FD9-65**
800	10 - 17	14 - 18
1000	10 - 17	15 - 20
1200	11 - 18	16 - 22
1400	12 - 19	17 - 24
1600	12 - 20	18 - 25
1800	13 - 21	20 - 28
2000	14 - 23	21 - 29
2200	16 - 25	22 - 30
Model No.	**RTD11-95**	**FD11-95**
2600	24 - 29	19 - 24
2800	25 - 30	20 - 28
3000	27 - 33	21 - 29
3200	28 - 35	22 - 29
3400	30 - 37	22 - 30
3600	25 - 33	22 - 24

1 Effective throw based on terminal velocities of 75 ft. per minute.

ELECTRICAL DATA — 2 - 2.5 TON

DIRECT DRIVE BLOWER		KGA024S	KGA030S
[1] Voltage - 60hz		208/230V - 1 Ph	208/230V - 1 Ph
Compressor 1	Rated Load Amps	13.5	14.1
	Locked Rotor Amps	58.3	73
Outdoor Fan Motors (1)	Full Load Amps (total)	1.7	1.7
Service Outlet 115V GFI		15 Amps	15 Amps
Indoor Blower Motor	Horsepower	.25	.25
	Full Load Amps	1.8	1.8
[2] Maximum Overcurrent Protection	Unit Only	30	35
[3] Minimum Circuit Ampacity	Unit Only	21	22
ELECTRICAL ACCESSORIES			
Disconnect Kit	Standard Access	20W17	20W17
	Hinged Access	20W23	20W23

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

ELECTRICAL DATA — 3 TON

KGA036S

[1] Voltage - 60hz		208/230V - 1 Ph		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	16.7		10.4			5.8			3.8		
	Locked Rotor Amps	79		73			38			36.5		
Outdoor Fan Motors (1)	Full Load Amps (total)	1.7		1.7			1.1			0.7		
Power Exhaust (1) 0.75 HP	Full Load Amps (total)	5		5			2.2			1.5		
Service Outlet 115V GFI		15 Amps		15 Amps			15 Amps			15 Amps		
Indoor Blower Motor	Horsepower	.5	1.5	.5	1.5	2	.5	1.5	2	.5	1.5	2
	Full Load Amps	3.9	11	3.9	6.6	7.5	2	3	3.4	2	2.4	2.7
[2] Maximum Overcurrent Protection	Unit Only	40	50	25	30	30	15	15	15	15	15	15
	with (1) 0.75 HP Power Exhaust	45	50	30	35	35	15	15	15	15	15	15
[3] Minimum Circuit Ampacity	Unit Only	27	34	19	22	23	11	12	12	8	8	9
	with (1) 0.75 HP Power Exhaust	32	39	24	27	28	13	14	14	9	10	10
ELECTRICAL ACCESSORIES												
Disconnect Kit	Standard Access	20W17		20W17			20W17			20W17		
	Hinged Access	20W23		20W23			20W23			20W23		

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

ELECTRICAL DATA — 4 TON

KGA048S

[1] Voltage - 60hz		208/230V - 1 Ph		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	21.8		13.7			6.2			4.8		
	Locked Rotor Amps	117		83.1			41			33		
Outdoor Fan Motors (1)	Full Load Amps (total)	1.7		1.7			1.1			0.7		
Power Exhaust (1) 0.75 HP	Full Load Amps (total)	5		5			2.2			1.5		
Service Outlet 115V GFI		15 Amps		15 Amps			15 Amps			15 Amps		
Indoor Blower Motor	Horsepower	.5	1.5	.5	1.5	2	.5	1.5	2	.5	1.5	2
	Full Load Amps	3.9	11	3.9	6.6	7.5	2	3	3.4	2	2.4	2.7
[2] Maximum Overcurrent Protection	Unit Only	50	60	35	35	40	15	15	15	15	15	15
	with (1) 0.75 HP Power Exhaust	50	60	40	40	45	15	20	20	15	15	15
[3] Minimum Circuit Ampacity	Unit Only	33	40	23	26	27	11	12	13	9	10	10
	with (1) 0.75 HP Power Exhaust	38	45	28	31	32	14	15	15	11	11	11
ELECTRICAL ACCESSORIES												
Disconnect Kit	Standard Access	**20W17**		**20W17**			**20W17**			**20W17**		
	Hinged Access	**20W23**		**20W23**			**20W23**			**20W23**		

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

ELECTRICAL DATA — 5 TON

KGA060S

[1] Voltage - 60hz		208/230V - 1 Ph		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	22.1		13.5			8			5		
	Locked Rotor Amps	125		109			59			40		
Outdoor Fan Motors (1)	Full Load Amps (total)	2.4		2.4			1.3			1		
Power Exhaust (1) 0.75 HP	Full Load Amps (total)	5		5			2.2			1.5		
Service Outlet 115V GFI		15 Amps		15 Amps			15 Amps			15 Amps		
Indoor Blower Motor	Horsepower	.75	1.5	.75	1.5	2	.75	1.5	2	.75	1.5	2
	Full Load Amps	4.9	11	4.9	6.6	7.5	2.5	3	3.4	2.5	2.4	2.7
[2] Maximum Overcurrent Protection	Unit Only	50	60	35	35	40	20	20	20	15	15	15
	with (1) 0.75 HP Power Exhaust	60	60	40	40	45	20	20	20	15	15	15
[3] Minimum Circuit Ampacity	Unit Only	35	42	25	26	27	14	15	15	10	10	10
	with (1) 0.75 HP Power Exhaust	40	47	30	31	32	16	17	17	12	12	12
ELECTRICAL ACCESSORIES												
Disconnect Kit	Standard Access	**20W17**		**20W17**			**20W17**			**20W17**		
	Hinged Access	**20W23**		**20W23**			**20W23**			**20W23**		

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

ELECTRICAL DATA — 6 TON

KGA072S

[1] Voltage - 60hz		208/230V - 3 Ph		460V - 3 Ph		575V - 3 Ph	
Compressor 1	Rated Load Amps	19		9.7		7.4	
	Locked Rotor Amps	123		62		50	
Outdoor Fan Motors (1)	Full Load Amps (total)	2.4		1.3		1	
Power Exhaust (1) 0.75 HP	Full Load Amps (total)	5		2.2		1.5	
Service Outlet 115V GFI		15 Amps		15 Amps		15 Amps	
Indoor Blower Motor	Horsepower	1.5	2	1.5	2	1.5	2
	Full Load Amps	6.6	7.5	3	3.4	2.4	2.7
[2] Maximum Overcurrent Protection	Unit Only	50	50	25	25	20	20
	with (1) 0.75 HP Power Exhaust	50	50	25	25	20	20
[3] Minimum Circuit Ampacity	Unit Only	33	34	17	17	13	13
	with (1) 0.75 HP Power Exhaust	38	39	19	20	15	15

ELECTRICAL ACCESSORIES

Disconnect Kit	Standard Access	**20W20**	**20W20**	**20W20**
	Hinged Access	**20W26**	**20W26**	**20W26**

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

ELECTRICAL DATA — 7.5 TON

KGA090S

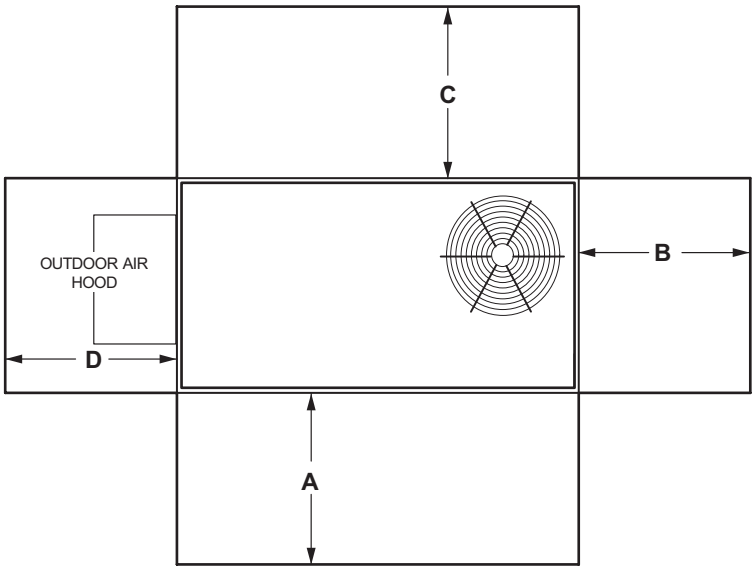
[1] Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor 1	Rated Load Amps	25			12.2			9		
	Locked Rotor Amps	164			100			78		
Outdoor Fan Motors (1)	Full Load Amps (total)	2.4			1.3			1		
Power Exhaust (1) 0.75 HP	Full Load Amps (total)	5			2.2			1.5		
Service Outlet 115V GFI		15 Amps			15 Amps			15 Amps		
Indoor Blower Motor	Horsepower	1	2	3	1	2	3	1	2	3
	Full Load Amps	4.6	7.5	10.6	2.1	3.4	4.8	1.7	2.7	3.9
[2] Maximum Overcurrent Protection	Unit Only	60	60	60	30	30	30	20	20	25
	with (1) 0.75 HP Power Exhaust	60	70	70	30	30	35	20	25	25
[3] Minimum Circuit Ampacity	Unit Only	39	42	45	19	20	22	14	15	17
	with (1) 0.75 HP Power Exhaust	44	47	50	21	23	24	16	17	18

ELECTRICAL ACCESSORIES

Disconnect Kit	Standard Access	**20W18**	**20W18**		**20W18**			**20W18**
	Hinged Access	**20W24**	**20W24**		**20W24**			**20W24**

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

UNIT CLEARANCES - INCHES (MM)



[1] Unit Clearance	A		B		C		D		Top Clearance
	in.	mm	in.	mm	in.	mm	in.	mm	
Service Clearance	48	1219	36	914	36	914	36	914	
Clearance to Combustibles	36	914	1	25	1	25	1	25	**Unobstructed**
Minimum Operation Clearance	36	914	36	914	36	914	36	914	

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

[1] **Service Clearance** - Required for removal of serviceable parts.
Clearance to Combustibles - Required clearance to combustible material.
Minimum Operation Clearance - Required clearance for proper unit operation.

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 **(14W81)**
Sensors For Touchscreen Thermostat	
[1] Remote non-adjustable wall mount 20k temperature sensor	C0SNZN01AE2- **(47W36)**
[1] Remote non-adjustable wall mount 10k averaging temperature sensor	C0SNZN73AE1- **(47W37)**
[1] Remote non-adjustable duct mount temperature sensor	C0SNDC00AE1- **(19L22)**
Outdoor temperature sensor	C0SNSR03AE1- **(X4148)**
Accessories For Touchscreen Thermostat	
Locking cover (clear)	C0MISC15AE1- **(39P21)**

[1] 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	
Two-stage heating / cooling conventional systems	C0STAT10AE1L **(13K98)**
Sensor For Digital Non-Programmable Thermostats Above	
Remote wall mounted temperature sensor	C0SNZN00AE1- **(26K57)**

Intuitive Interface - Automatic Changeover - Backlit Display - Simple Up and Down Temperature Control	
One-stage heating / cooling conventional systems	C0STAT12AE1L **(51M32)**
Sensor For Digital Non-Programmable Thermostats Above	
Outdoor temperature sensor	C0SNSR04AE1- **(X2658)**
Accessories For Digital Non-Programmable Thermostats Above	
Optional wall mounting plate	C0MISC17AE1- **(X2659)**

OUTDOOR SOUND DATA

[1] Unit Model No.	Octave Band Sound Power Levels dBA, re 10-[12] Watts - Center Frequency - HZ							Sound Rating Number (dB)
	125	250	500	1000	2000	4000	8000	
024, 030, 036 and 048	63	66	70	71	68	62	53	75
060 and 072	67	72	77	76	73	68	61	82
090	66	71	73	74	70	65	57	79

NOTE - The octave sound power data shown does not include tonal correction.
[1] Tested according to AHRI Standard 270–95 test conditions.

WEIGHT DATA

Model Number	Net				Shipping			
	Base		Max.		Base		Max.	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
024S	531	241	631	286	591	268	700	318
030S	533	242	633	287	593	269	702	318
036S	534	242	634	288	594	269	703	319
048S	571	259	682	309	631	286	751	341
060S	601	273	712	323	661	300	781	354
072S	700	318	798	362	760	345	870	395
090S	805	365	905	411	865	392	975	442

Base Unit - The unit with standard heat exchanger NO OPTIONS.
Max. Unit - The unit with ALL OPTIONS Installed. (High Input Heat Exchanger, Economizer, etc.)

OPTIONS / ACCESSORIES

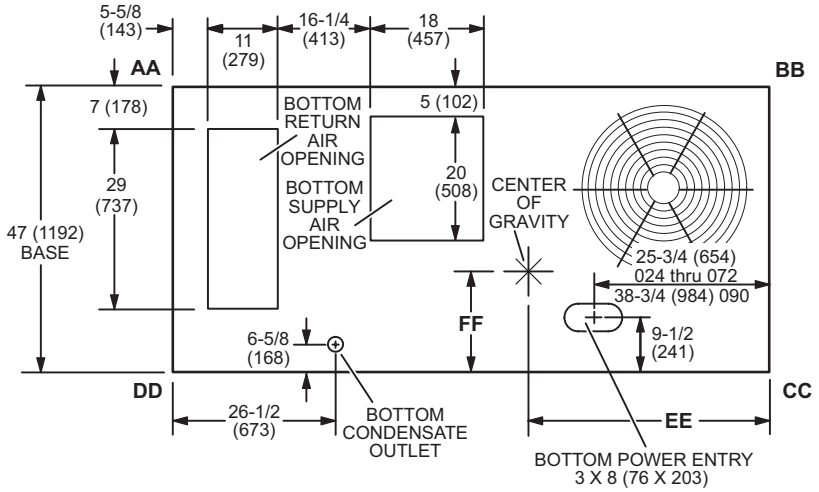
		Shipping Weights	
		lbs.	kg
ECONOMIZER / OUTDOOR AIR			
Economizer			
Economizer, Includes Outdoor Air Hood and Barometric Relief Dampers with Hood	T1ECON30A-1	123	56
	T1ECON30N-1	142	65
OUTDOOR AIR			
Outdoor Air Dampers			
Outdoor Air Damper Motorized Kit	T1DAMP11A-1	25	12
	T1DAMP11N-1	29	14
Damper Section Manual	T1DAMP21AN1	18	9
Power Exhaust			
Standard Static	T1PWRE10A-1	35	17
	T1PWRE10N-1	39	19
GAS HEAT			
	Medium Input	8	4
	High Input	19	9
ROOF CURBS - DOWNFLOW			
Cliplock			
8 in. height	T1CURB23AN1	78	35
	K1CURB23AP1	83	38
14 in. height	T1CURB20AN1	96	44
	K1CURB20AP1	101	46
18 in. height	T1CURB21AN1	108	49
	K1CURB21AP1	113	51
24 in. height	T1CURB22AN1	126	57
	K1CURB22AP1	131	59
Hinged			
8 in. height	T1CURB30AN1	78	35
	K1CURB30AP1	83	38
18 in. height	T1CURB32AN1	108	49
	K1CURB32AP1	113	51
24 in. height	T1CURB33AN1	126	57
	K1CURB33AP1	131	59
Standard			
14 in. height	T1CURB10AN1	96	44
	K1CURB10AP1	101	46
CEILING DIFFUSERS			
Step-Down	RTD9-65	67	30
	RTD11-95	88	40
Flush	FD9-65	37	17
	FD11-95	75	34
Transitions (Supply and Return)	T1TRAN10AN1	22	10
	T1TRAN20N-1	21	10

DIMENSIONS - INCHES (MM)

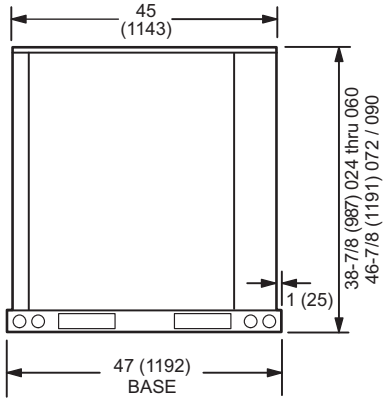
Model No.	CORNER WEIGHTS																CENTER OF GRAVITY							
	AA				BB				CC				DD				EE				FF			
	Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm	in.	mm	in.	mm
024	92	42	113	52	112	51	128	58	180	82	207	94	148	67	183	83	38-1/2	978	40	1016	18	457	18	457
030	92	42	114	52	112	51	129	58	180	82	207	94	149	68	183	83	38-1/2	978	40	1016	18	457	18	457
036	92	42	114	52	112	51	129	59	181	82	208	94	149	68	184	83	38-1/2	978	40	1016	18	457	18	457
048	99	45	123	56	120	55	139	63	193	88	223	102	159	72	197	90	38-1/2	978	40	1016	18	457	18	457
060	104	47	128	58	126	57	145	66	203	92	233	106	167	76	206	94	38-1/2	978	40	1016	18	457	18	457
072	121	55	143	65	147	67	162	74	237	108	261	119	195	89	231	105	38-1/2	978	40	1016	18	457	18	457
090	168	76	195	88	183	83	212	96	227	103	263	119	203	95	241	109	47	1194	47	1194	21	533	21	533

Base Unit - The unit with NO INTERNAL OPTIONS.

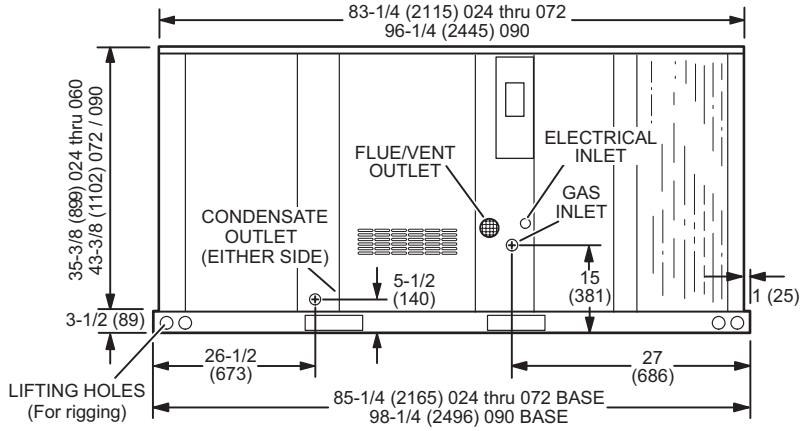
Max. Unit - The unit with ALL INTERNAL OPTIONS Installed. (Economizer, Standard Static Power Exhaust Fans, Controls, etc.). Does not include accessories external to unit or high static power exhaust.



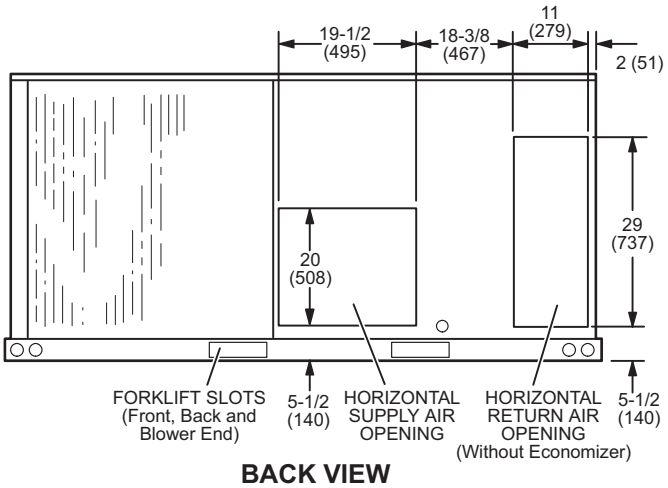
TOP VIEW (Base)



END VIEW



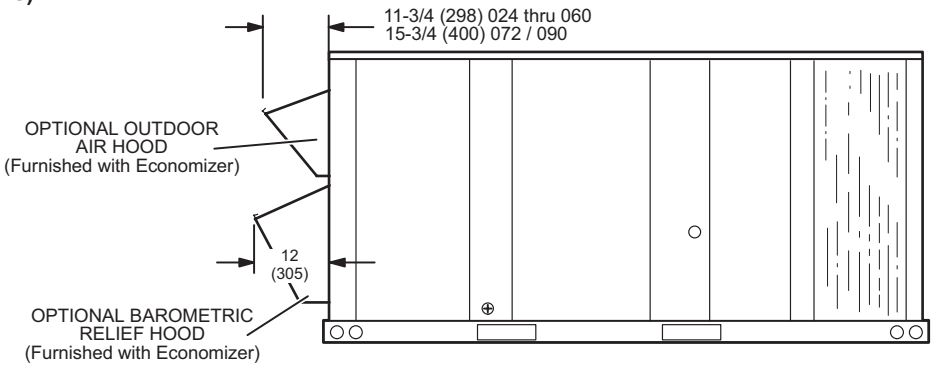
SIDE VIEW



BACK VIEW

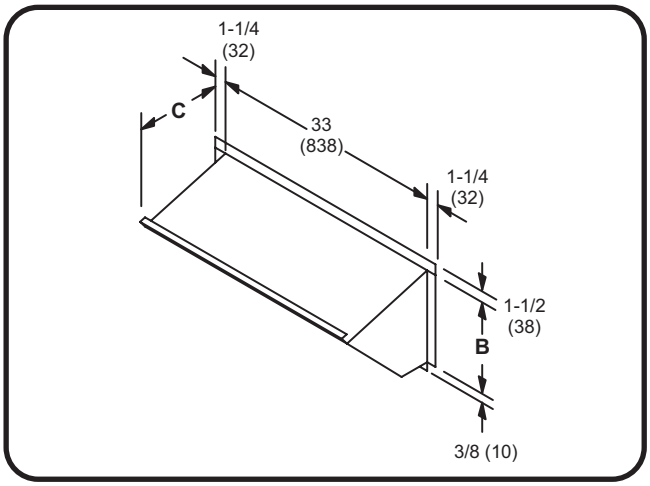
ACCESSORY DIMENSIONS - INCHES (MM)

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

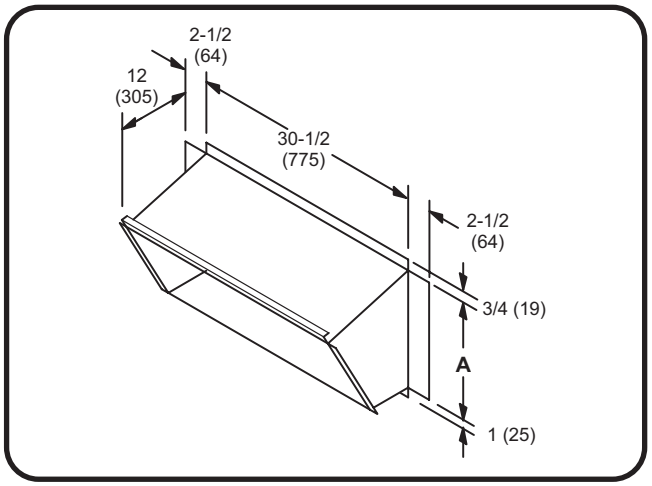


SIDE VIEW

OUTDOOR AIR HOOD FOR ECONOMIZER (Furnished)

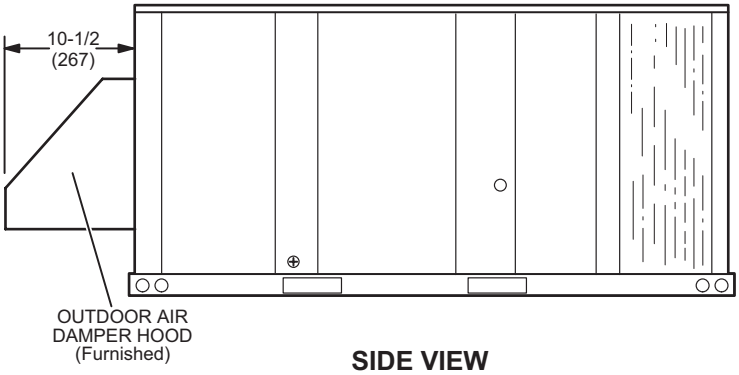


BAROMETRIC RELIEF HOOD FOR ECONOMIZER (Furnished)

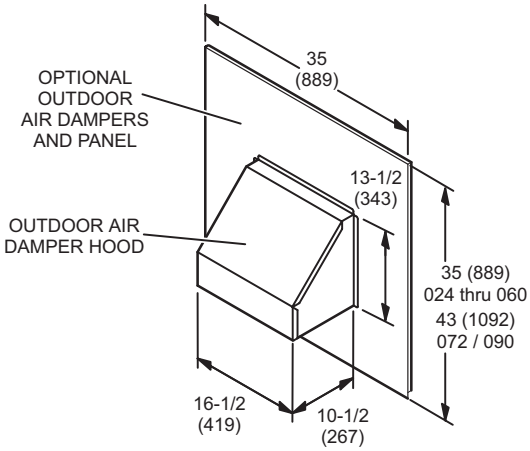


Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
024, 030, 036, 048, 060	19-1/4	489	13	330	11-3/4	298
072, 090	23-1/4	591	17	432	15-3/4	400

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

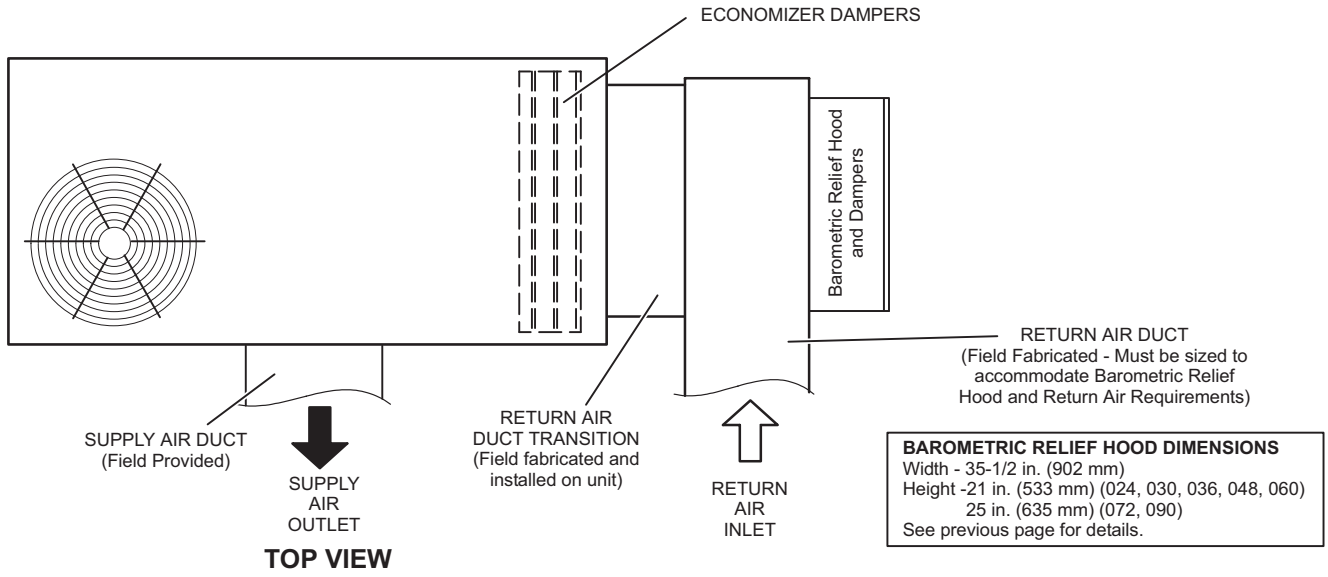


SIDE VIEW

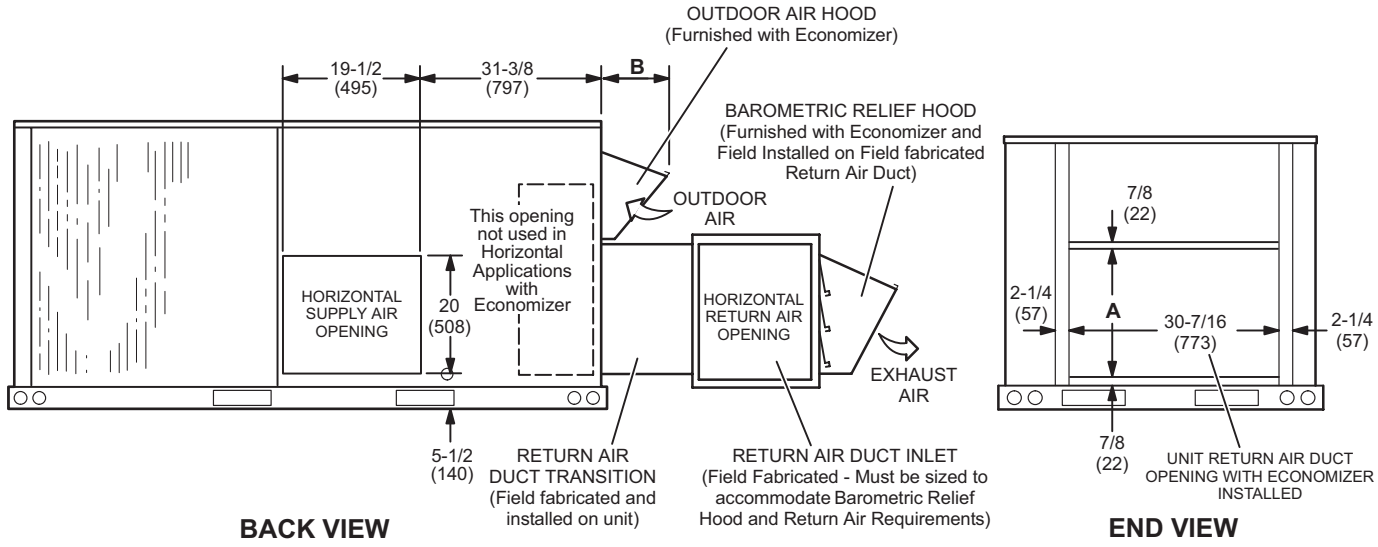


ACCESSORY DIMENSIONS - INCHES (MM)

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



TOP VIEW



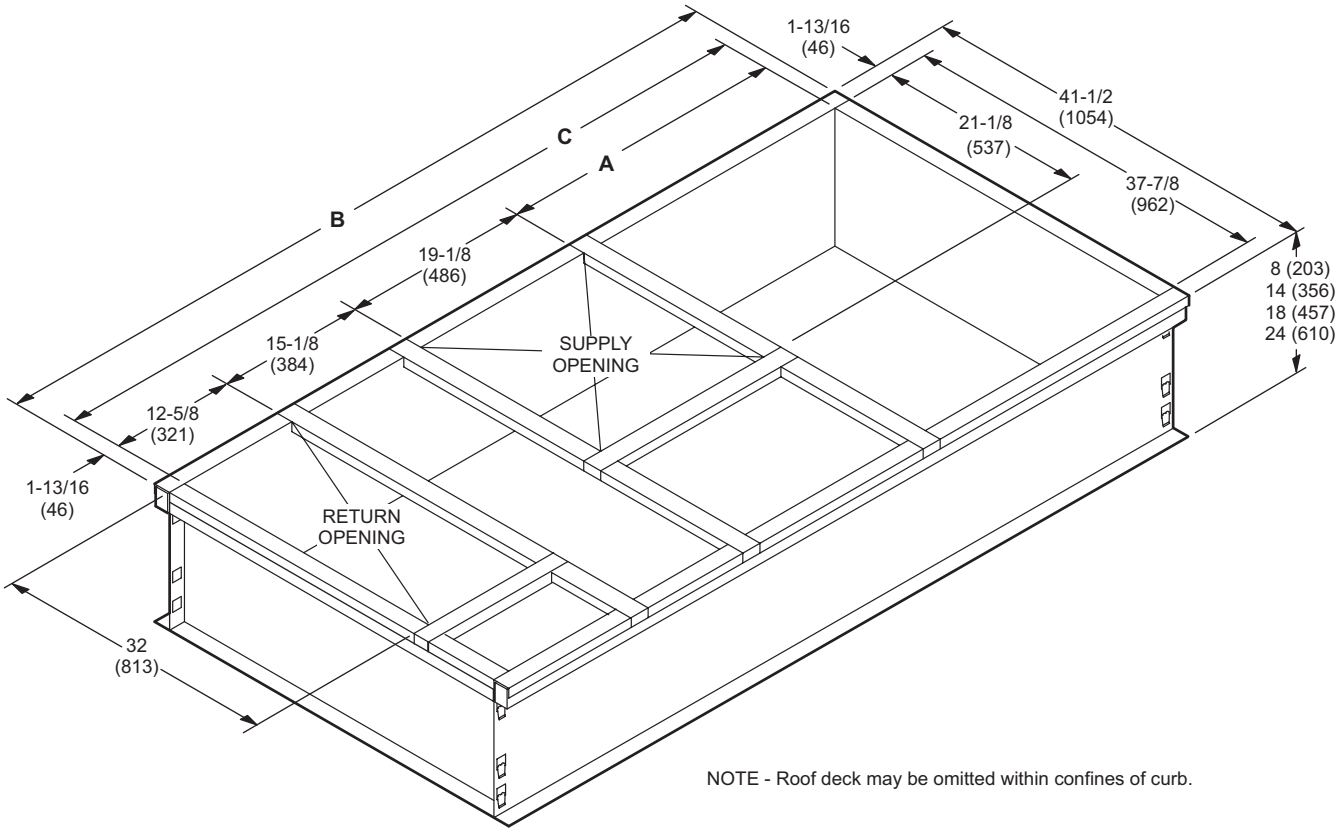
BACK VIEW **END VIEW**

NOTE - Return Air Duct and Transition must be supported.

Model No.	A		B	
	in.	mm	in.	mm
024, 030, 036, 048, 060	18-3/4	476	11-3/4	298
072, 090	22-1/2	572	15-3/4	400

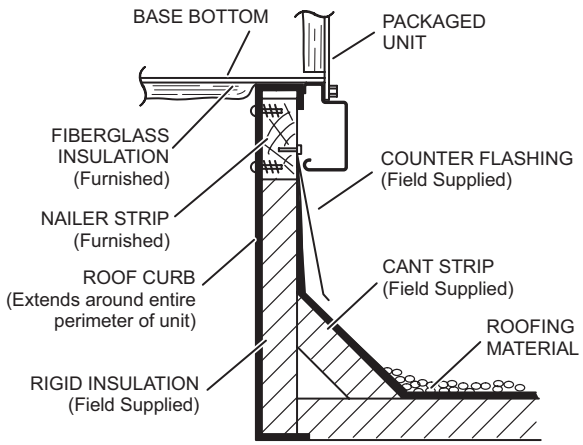
ACCESSORY DIMENSIONS - INCHES (MM)

CLIPLOCK 1000 ROOF CURBS - DOUBLE DUCT OPENING

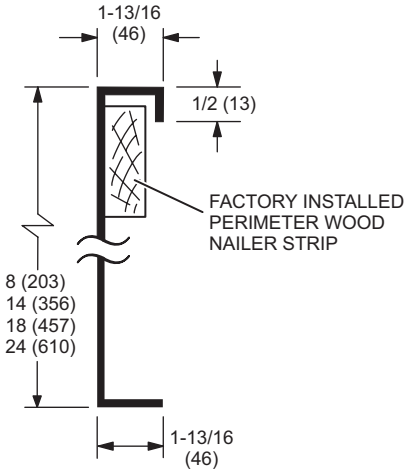


NOTE - Roof deck may be omitted within confines of curb.

TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB

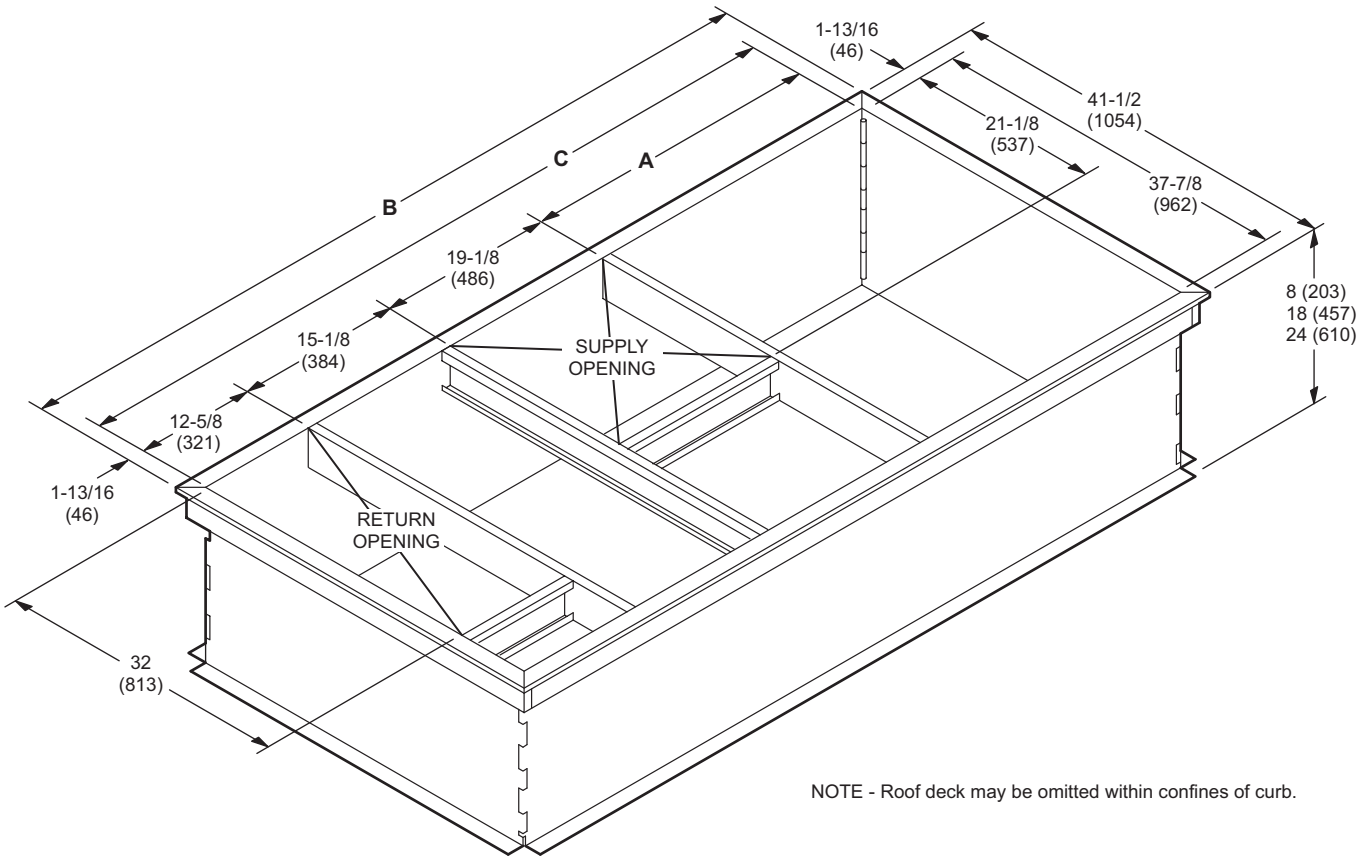


Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
024, 030, 036, 048, 060, 072, [1] 090	29-1/4	743	79-3/4	2026	76-1/8	1934
090	42-1/4	1073	92-3/4	2356	89-1/8	2264

[1] 090 models can be used on smaller 79-3/4 in. (2026 mm) roof curbs (not full perimeter) with 15-3/4 in. (400 mm) overhang at condenser end of unit. See dimension drawing on page 41.

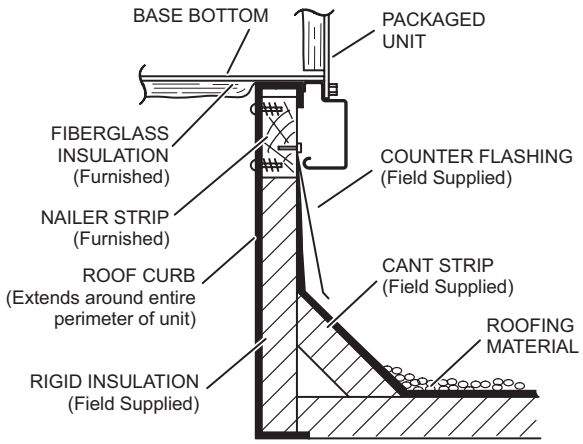
ACCESSORY DIMENSIONS - INCHES (MM)

HINGED ROOF CURBS - DOUBLE DUCT OPENING

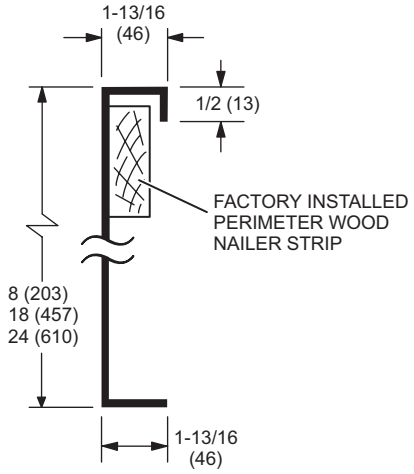


NOTE - Roof deck may be omitted within confines of curb.

TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB

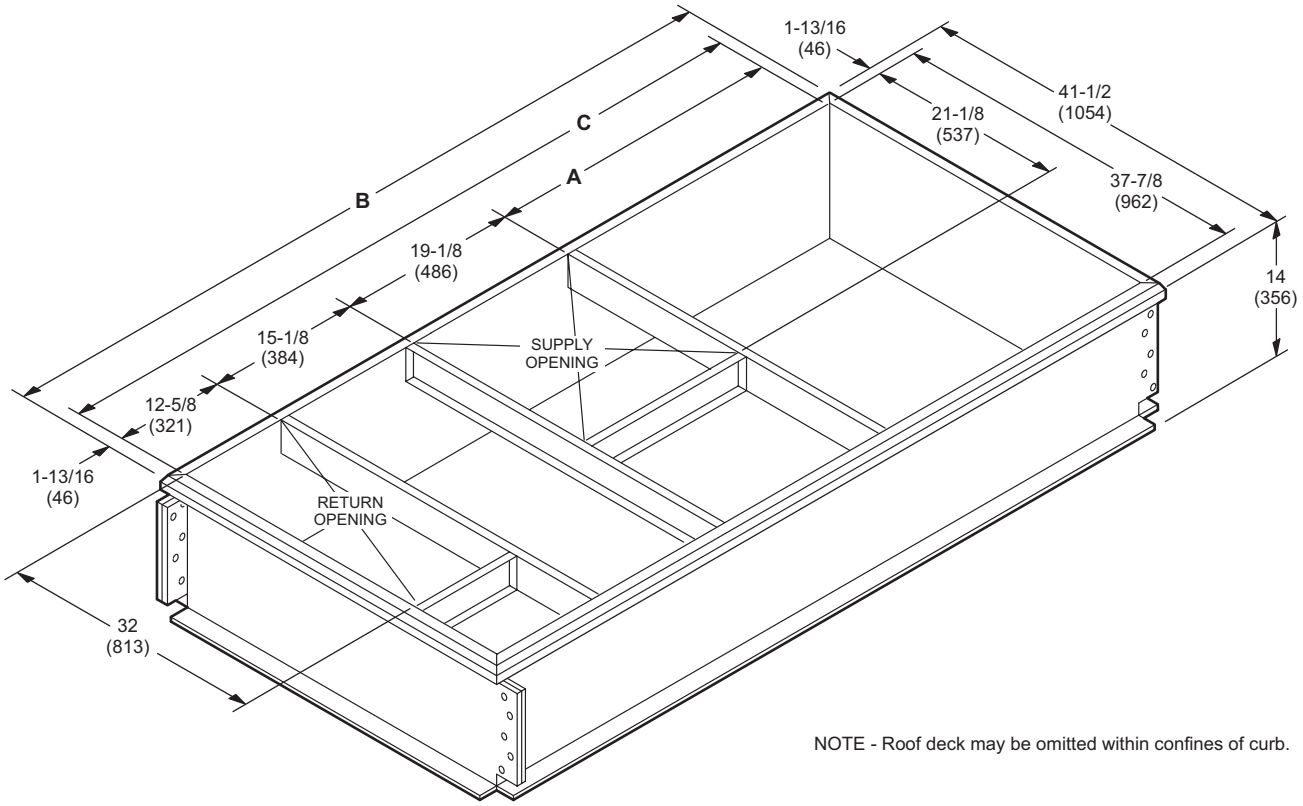


Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
024, 030, 036, 048, 060, 072, [1] 090	29-1/4	743	79-3/4	2026	76-1/8	1934
090	42-1/4	1073	92-3/4	2356	89-1/8	2264

[1] 090 models can be used on smaller 79-3/4 in. (2026 mm) roof curbs (not full perimeter) with 15-3/4 in. (400 mm) overhang at condenser end of unit. See dimension drawing on page 41.

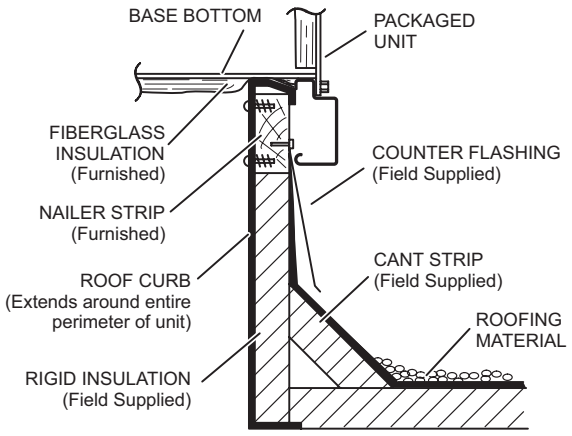
ACCESSORY DIMENSIONS - INCHES (MM)

STANDARD ROOF CURBS - DOUBLE DUCT OPENING

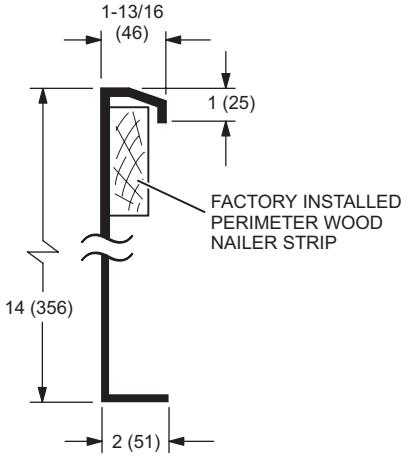


NOTE - Roof deck may be omitted within confines of curb.

TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB

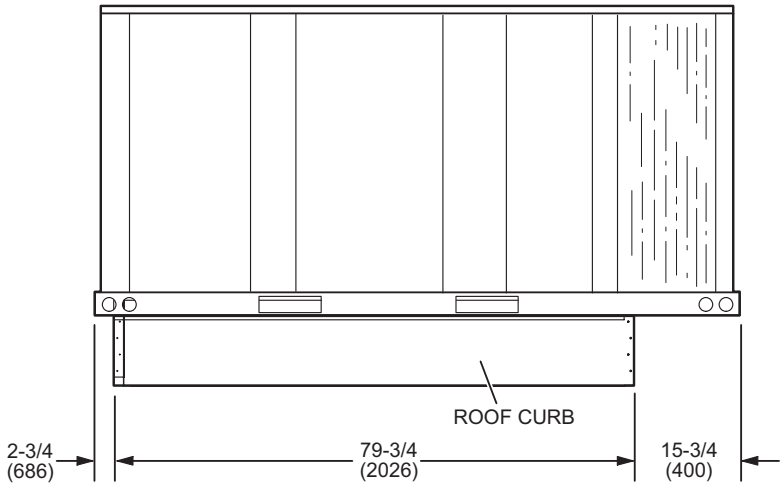


Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
024, 030, 036, 048, 060, 072, [1] 090	29-1/4	743	79-3/4	2026	76-1/8	1934
090	42-1/4	1073	92-3/4	2356	89-1/8	2264

[1] 090 models can be used on smaller 79-3/4 in. (2026 mm) roof curbs (not full perimeter) with 15-3/4 in. (400 mm) overhang at condenser end of unit. See dimension drawing on page 41.

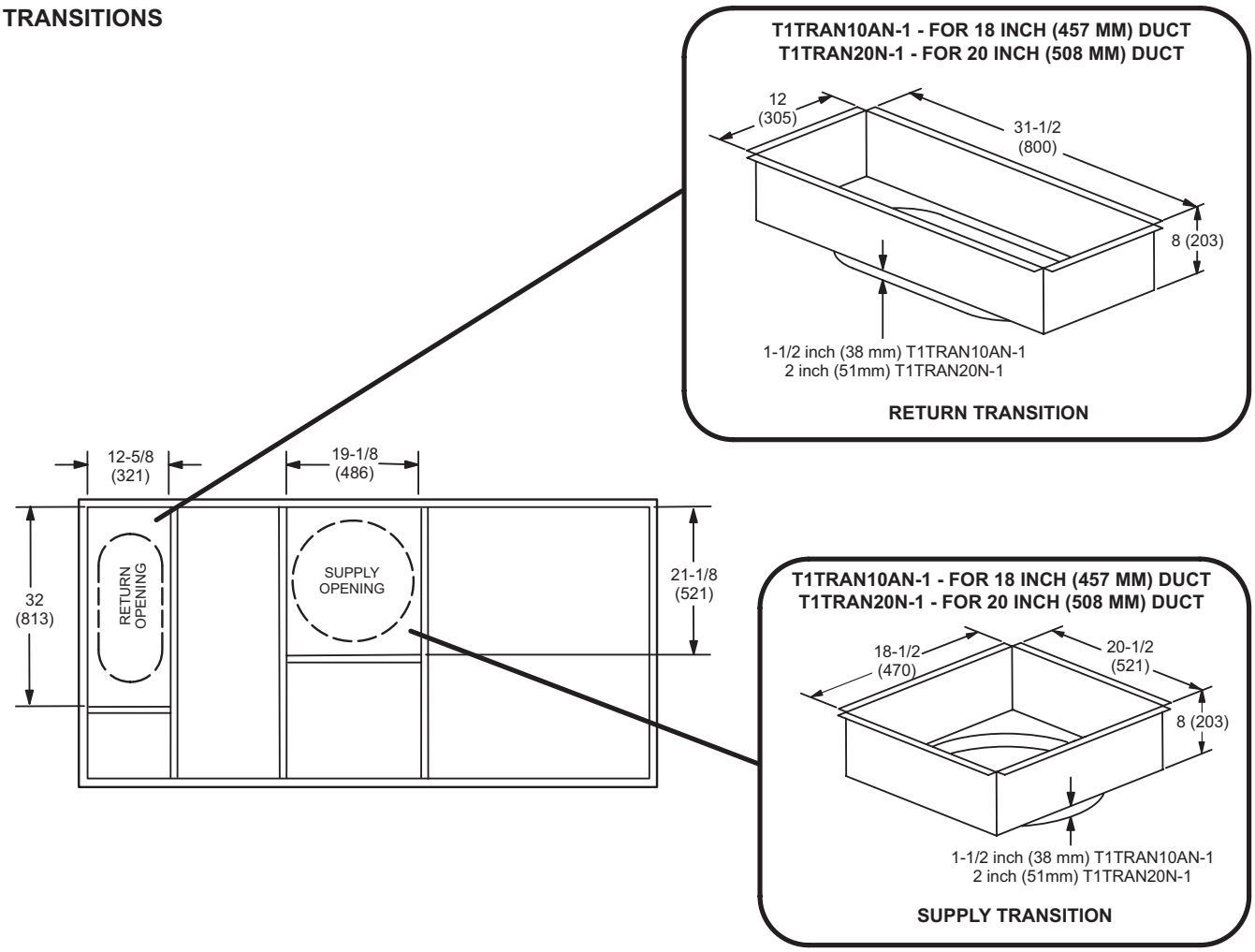
ACCESSORY DIMENSIONS - INCHES (MM)

090 MODELS - SHOWING OVERHANG ON SMALLER 79-3/4 INCH LENGTH ROOF CURBS (Not Full Perimeter)



SIDE VIEW

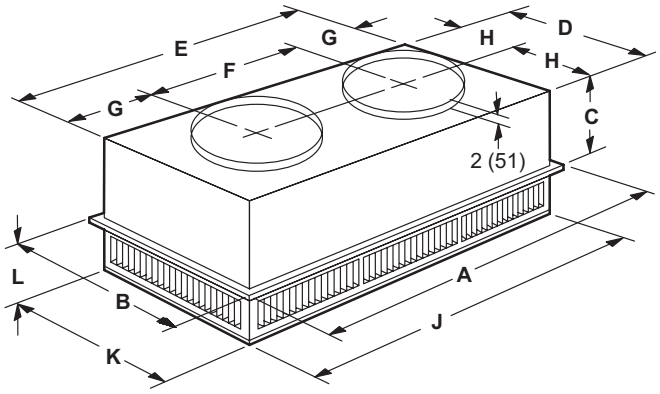
TRANSITIONS



ACCESSORY DIMENSIONS - INCHES (MM)

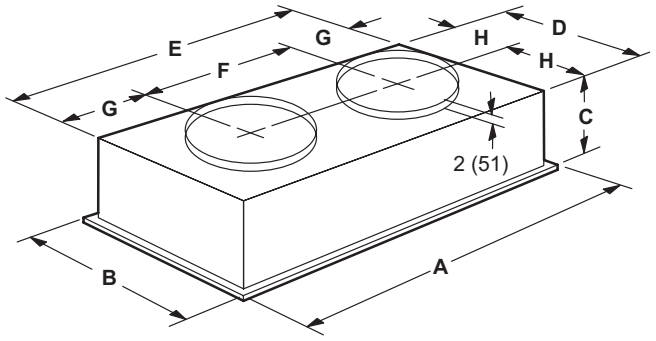
COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

STEP-DOWN CEILING DIFFUSER



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

FLUSH CEILING DIFFUSER



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

This specification is for ***[Lennox Industries Landmark™]*** rooftop units. Revise specification section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

Optional text and text that requires a decision are indicated by **bold brackets [ ]** and proprietary information is indicated by ***bold italic brackets[ ]***; delete text that is not needed in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

SECTION 237433
UNITARY AIR CONDITIONING EQUIPMENT

PART 1 GENERAL

PART 1.01 SUMMARY

A. Section Includes: Packaged rooftop units and commercial packaged, gas/electric, electric/electric and electric/heat pumps.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI *MasterFormat* and specifier's practice.

B. Related Sections:

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section. Retain only those reference standards to be used within the text of this Section. Add and delete as required for specific project.

PART 1.02 REFERENCES

A. Agency Listings:
   1. Intertek (ETL).
   2. Canadian Standards Association (CSA).

B. Safety Standards:
   1. Underwriters Laboratories (UL).
   2. Underwriters Laboratories of Canada (ULC).
   3. National Electric Code (NEC).
   4. Canadian Electric Code (CEC).

C. Air-Conditioning, Heating and Refrigeration Institute (AHRI):
   1. AHRI 340/360 Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment.
   2. AHRI 370 Sound Rating of Large Outdoor Refrigerating and Air Conditioning Equipment.
   3. AHRI 210/240 Performance Rating of Unitary Air Conditioning and Air-Source Heat Pump Equipment.

D. American Society for Testing and Materials (ASTM):
   1. ASTM B117 – Standard Practice for Operating Salt Spray.
   2. ASTM 1153 – Standard Method for Methyl Isobutyl Ketone.

E. ISO 9001, Quality Management Systems.

F. Meet Military Specification MIL-P-53084

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

PART 1.03 SYSTEM DESCRIPTION

A. Performance Requirements:

Specifier Note: Article below should be restricted to Landmark™ (KH), heat pumps packaged roof top units only.

1. [2, 2.5, 3, 4, 5 and 6 ton capacity.]

Specifier Note: Article below should be restricted to Landmark™ (KG) gas/electric packaged roof top units or Landmark™ (KC) electric/electric packaged roof top units.

2. [2, 2.5, 3, 4, 5, 6 and 7.5 ton capacity.]

3. Electrical Characteristics:
   a. 60 Hz

Specifier Note 208/230 volt 1 phase is the only voltage and phase available for the 2 and 2.5 ton models. 208/230 volt 1 phase is an optional voltage and phase for the 3, 4 and 5 ton models. All other voltages are available on 3-7.5 ton Landmark™ RTU's.

b. [208/230 v – 1 Phase] [208/230 v – 3 Phase] [460 v – 3 Phase] [575 v – 3 Phase]

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

PART 1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.

B. Product Data: Submit product data for specified products.

C. Shop Drawings:

1. Submit shop drawings in accordance with Section 01330 - Submittal Procedures.
2. Indicate:
   a. Equipment, piping and connections, together with valves, strainers, control assemblies, thermostatic controls, auxiliaries and hardware, and recommended ancillaries which are mounted, wired and piped ready for final connection to building system, its size and recommended bypass connections.
   b. Piping, valves and fittings shipped loose showing final location in assembly.
   c. Control equipment shipped loose, showing final location in assembly.
   d. Dimensions, internal and external construction details, recommended method of installation with proposed structural steel support, mounting curb details, sizes and location of mounting bolt holes; include mass distribution drawings showing point loads.
   e. Detailed composite wiring diagrams for control systems showing factory installed wiring and equipment on packaged equipment or required for controlling devices or ancillaries, accessories and controllers.
   f. Fan performance curves.
   g. Details of vibration isolation.
   h. Estimate of sound levels to be expected across individual octave bands in dB.
   i. Type of refrigerant used.
   j. Plan view, front view end view, back view and curb detail with dimensions.

D. Quality Assurance:

1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
2. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
3. Manufacturer's Instructions: Manufacturer's installation instructions.

Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article herein. Retain or delete as applicable.

E. Manufacturer's Field Reports: Manufacturer's field reports specified.

F. Closeout Submittals: Submit following:

1. Warranty: Warranty documents specified.
2. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance. Include names and addresses of spare part suppliers.
3. Provide brief description of unit, with details of function, operation, control and component service.
4. Provide equipment inspection report and equipment operation test report.
5. Commissioning Report: Submit commissioning reports, report forms and schematics in accordance with Section 01810 - Commissioning.

PART 1.05 QUALITY ASSURANCE

A. Qualifications:

1. Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

PART 1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirements.

B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Packing, Shipping, Handling and Delivery:

1. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
2. Ship, handle and unload units according to manufacturer's instructions.

D. Storage and Protection:
   1. Store materials protected from exposure to harmful weather conditions.
   2. Factory shipping covers to remain in place until installation.

PART 1.07 PROJECT CONDITIONS

A. Installation Location: **[Confirm design conditions and temperature.].**

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty).

PART 1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

Specifier Note: "Aluminized Heat Exchanger" and "Stainless steel Heat Exchanger" limited warranty is only available on Landmark™ (KG) Gas/Electric models. "Compressor" and "Other System Components" are covered on all Landmark™ units.

C. Warranty: Commencing on Date of Installation.
   1. Compressors: 5 years (limited).
   2. Other Covered System Components: 1 year (limited).
   3. [Aluminized Heat Exchangers: 10 years (limited).] [Stainless Steel Heat Exchangers: 15 years (limited).]

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

PART 2.01 ROOFTOP UNITS

A. Manufacturer: ***Lennox Industries Inc***.
   1. Contact: ***2100 Lake Park Blvd., Richardson, TX 75080; Telephone: (800) 453-6669; website: www.lennox.com.***

B. Proprietary Products/Systems: ***Lennox Landmark™*** Packaged Rooftop Units, including the following equipment:
   1. Cabinet:
      a. Heavy gauge steel panels.
      b. Pre-painted steel panels.
      c. Heavy Gauge galvanized steel base rail.
      d. Rigging holes on all four corners.
      e. Forklift slots (on three sides, not directly below condenser coil) on base rail.
      f. Raised or flanged edges around duct and power entry openings.

Specifier Note: "Downflow" is the standard configuration that all Landmark™ units are shipped as.

Specifier Note: "Horizontal Flow" is an option for all Landmark™ models. Landmark™ KH, KG and KC models of tonnages 2, 2.5, 3, 4, 5 and 6 can be converted, in the field, to horizontal flow without the need of a conversion kit. If applied horizontally with an economizer, a conversion kit is required.

      g. [Downflow] [Horizontal] Air Flow configuration

Specifier Note: add the "and gas lines" only if using a Landmark™ (KG) gas/electric model.

      h. Electrical lines **[and gas lines]** can be brought through the base of the unit or through horizontal knockouts.
      i. Insulation:
         1) All panels adjacent to conditioned air are fully insulated with non-hygroscopic fiberglass insulation.
         2) Unit base is fully insulated.
         3) Unit base insulation also serves as a roof curb seal.
      j. Access Panels:
         1) Provided for economizer/filter section.
         2) Provided for heating/blower section.
      k. Condensate Drain Pan.

Specifier Note: "Factory Installed Options" are options that can be selected for the Landmark™ roof top units. The "Factory Installed Options" are installed at the Lennox manufacturing facility.

l. [Factory Installed Options:]

1) [Corrosion Protection, meets standards:

a) Military Specification MIL-P-53084.

b) ASTM B117

c) ASTM 1153]

2) [Hinged Access panels]

3) [GFI Service Outlets (field wired)]

4) [Disconnect Switch (up to 80 amps for KG model]

Specifier Note: "Field Installed Accessories" are options that can be selected for the Landmark™ roof top units. The "Field Installed Accessories" are shipped separately and installed in the field.

m. [Field Installed Accessories:]

Specifier Note: Of the selections below, [Coil Guards] [Hail Guards], only one can be selected.

1) [Coil Guards] [Hail Guards].

2) [Disconnect Switch (up to 80 amps for KG model, up to 150 amps for KC and KH models)]

3) [Condensate drain trap]

2. Cooling System:
   a. Refrigerant type: R-410A.
   b. Capable of operating from 30 - 125 degrees F (-1 - 52 degrees C) without installation of additional controls.
   c. Compressors:
      1) Scroll Type.
      2) Resiliently mounted on rubber mounts for vibration isolation.
      3) Overload Protected
      4) Internal excessive current and temperature protection.
      5) Isolated from condenser fan air stream.
      6) Refrigerant cooled.
   d. TXV
   e. High pressure switch
   f. Freezestat
   g. High capacity filter driers

Specifier Note: Include following 2 articles for Landmark™ (KH) packaged heat pumps models.

   h. Reversing Valves: Four-way interchange reversing valve.
   i. Defrost Control.
   j. Efficiency: Standard.
   k. [Low ambient kit: Field installed]

Specifier Note: Crankcase heater is available to be field installed on all units except the Landmark™ model KH on tonnages 2-6, as well as 6 and 7.5 ton KG/KC models where it is standard.

   l. [Crankcase heater: field installed]

3. Coil Construction:
   a. Condensing/evaporator coil general construction:
      1) Aluminum Rippled and Lanced fins.
      2) Copper tube construction.
      3) Aluminum fins mechanically bonded to copper tubes.
      4) All coils are high pressure leak tested at manufacturing facility.
   b. Evaporator Coils:
      1) With balanced port thermal expansion valves, freeze protection on each compressor circuit, pressure and leak tested to 500 psi, and maximum 14 fins per inch.
      2) Each compressor circuit on coil divided across face of coil and active through full depth of coil.
      3) [With flexible immersed coating electrodeposited by dry film process].
   c. Condenser Coils:
      1) [With flexible immersed coating electrodeposited by dry film process] on corrosion hardened units only.

4. Wiring:
   a. Color coded and continuously marked to identify point-to-point component connections.
   b. Not in contact with hot-gas refrigerant lines or sharp metal edges.

Specifier Note: Landmark™ units with Gas Heating Systems are KG models.

5. Gas Heating System:
   a. Induced draft
   b. Natural gas fired system with direct spark ignition
   c. Electronic flame sensors
   d. Flame rollout switches
   e. High heat limit switches
   f. Induced draft failure switch and capable of operating to altitude of 2000 feet (610 m) with no derate to manifold pressure.
   g. Service access for controls, burners and heat exchanger.
   h. Heat Exchanger:
      1) Tubular Design
      2) [Aluminized steel] [Stainless steel].
   i. Gas piping system tight and free of leaks when pressurized to maximum supply pressure.
   j. Gas Valve: Two-stage, redundant type gas heat valve with manual shutoff.
   k. Gas Valve: Single-stage.
   l. Gas Burners: Aluminized steel inshot-type gas burners.
   m. Direct spark pilot ignition.
   n. Fan and Limit Controls.
   o. Safety Switches.
   p. [Low NOx]

Specifier Note: "Field Installed Accessories" are options that can be selected for the Landmark™ KG Gas/Electric models. The "Field Installed Accessories" are shipped separately and installed in the field.

   q. [Field Installed Accessories:]
      1) [Combustion Air Intake Extensions].
      2) [Vertical Vent Extension Kit].
      3) [LPG/Propane Kit].
      4) [Low Temperature Vestibule Heater].

Specifier Note: The "Electric Heating System" is an option for Landmark™ (KH), heat pump, and Landmark™ (KC), electric/electric models only. The "Electric Heating System" is only available for field installation.

6. Electric Heating System:
   a. Electrical resistance heater.
   b. [Field] installed.
   c. [Field] installed Fuse Block.
   d. Reset thermal limit protection.
   e. Single point power supply.
   f. Heater Element:
      1) Nickel chromium wire.
      2) Individually fused.
   g. Electric heater slides out of unit for service.
7. Heating Controls:

Specifier Note: 2 stages of heating control are only available on Landmark™ (KG) gas/electric models of tonnages 4-6, on two stage units.

a. Support 2 stages of heating control from thermostat or DDC.
b. With delay time of 30 seconds between low and high heat stages.

8. Supply Air Fan Motor and Drives:
   a. Permanently lubricated ball bearings (for belt drive motors).
   b. Thermal overload protected motors with automatic reset.
   c. Adjustable sheaves on belt drive motors for blower speed adjustment.
   d. Optional low and high static motor/drive combinations and optional drive kits.
9. Supply Air Fan:
   a. Double inlet type, G90 (Z275) galvanized steel with forward curved blades.
   b. Statically and dynamically balanced.
   c. Continuous or automatic control for occupied periods.
10. Supply Air Filters:
   a. Disposable 2 inch.
11. Condenser Fan Motor:

Specifier Note: Landmark™ 2-4 ton models have sleeve bearings.

   a. Direct drive with permanently lubricated ball bearings.
   b. Watertight with thermal overload protection and automatic reset.
   c. Motor mount isolated from fan safety guard.

12. Condenser Fans:
   a. Corrosion resistant propeller type with vertical discharge and finger safety guard.
13. Unit Control System (2 through 7.5 tons): Terminal strip is standard with up to 2 stage heat/2 stage cool thermostat inputs along with supply fan and occupied mode (for the economizer option). Self contained 24 volt control circuit is protected by an integral manual reset circuit breaker.
   a. [Control Options:]
      1) [Single Enthalpy Control] : [Field] [Factory]
      2) [Differential Enthalpy Control : Field]
      3) [CO_2 Sensor: Field Mounted]

14. [Accessories:]

a. [Economizer]: [Field] [Factory]

Specifier Note: Motorized outdoor air damper is only available in a field mounted version for the Landmark™ models of tonnages 2, 2.5, 3, 4, 5 and 6.

b. [Motorized Outdoor Air Damper: Field Mounted]

Specifier Note: Manual outdoor air damper is only available in a field mounted version for the Landmark™ models of tonnages 2, 2.5, 3, 4, 5 and 6.

c. [Manual Outdoor Air Damper: Field Mounted]

Specifier Note: Barometric relief damper is included with factory or field installed economizer on 2-7.5 ton models.

d. Barometric relief damper

Specifier Note: Power Exhaust Fans only available for the Landmark™ models of tonnages 3, 4, 5, 6 and7.5.

e. [Power exhaust fan: Field Mounted]
f. [Smoke detectors: Field]
g. [Roof curb: Field]
h. [Outdoor air hood: Field]
i. [Barometric relief damper hood: Field]

Specifier Note: Edit article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

PART 2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

PART 3 EXECUTION

PART 3.01 MANUFACTURER'S INSTRUCTIONS

Specifier Note: Revise article below to suit project requirements and specifier's practice.

A. Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions and manufacturer's SPEC-DATA® sheets.

PART 3.02 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions

PART 3.03 INSTALLATION

A. Install **[Packaged rooftop units] [And] [Commercial packaged, gas/electric, electric/electric and electric/heat pumps]** in accordance with manufacturer's instructions **[On roof curbs provided by manufacturer] [As indicated]**.

END OF SECTION

REVISIONS

Section	Description
Options/Accessories	New Drain Trap Kits added.

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.