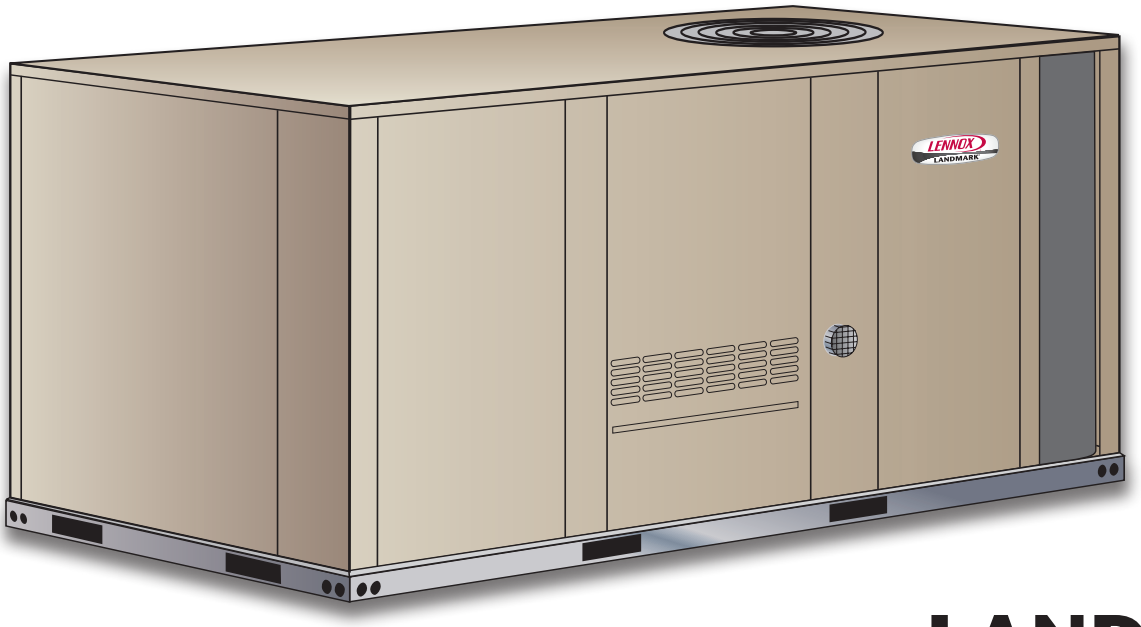
PACKAGED HEAT PUMP

KDB

Landmark® Rooftop Units
Dual-Fuel - High Efficiency - 50 Hz

Bulletin No. 490170
March 2021
Supersedes August 2019

COMMERCIAL
PRODUCT SPECIFICATIONS



LANDMARK®
Performance Marked by Flexibility™

10.5 to 17.5 kW (3 to 5 Tons)
Net Cooling Capacity - 8.8 to 14.9 kW (30 000 to 51 000 Btuh)
Net Heating Capacity - 8.8 to 14.6 kW (30 000 to 50 000 Btuh)
Gas Input Heat Capacity – 13.8 to 38.7 (47 000 to 132 000) Btuh

MODEL NUMBER IDENTIFICATION

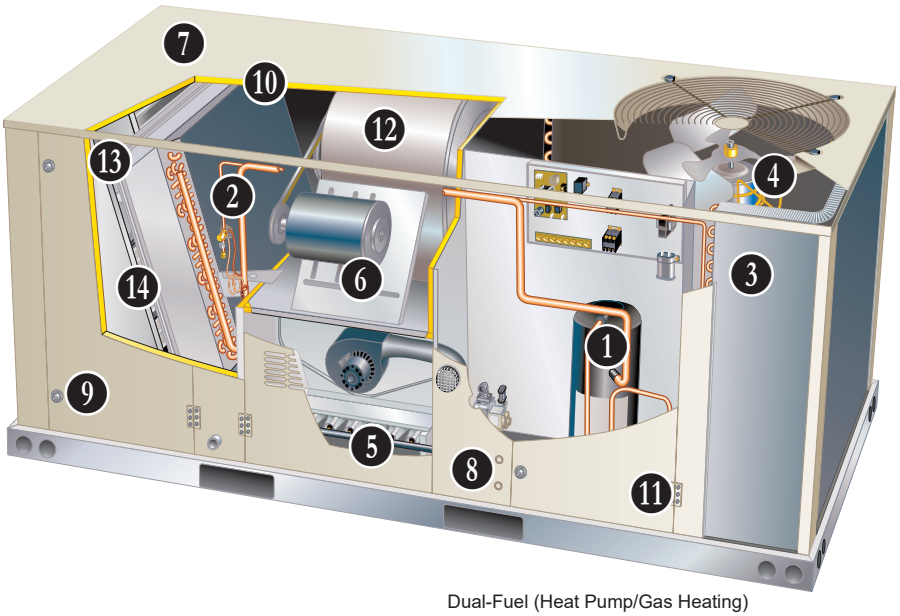
K D B 060 H 4 T H 1 M

- **Brand/Family**
  K = Landmark® Product Line
- **Unit Type**
  D = Packaged Dual-Fuel (Heat Pump/Gas Heating) Unit
- **Major Design Sequence**
  B = 2nd Generation
- **Nominal Cooling Capacity - Tons**
  036 = 10.6 kW (3 Ton)
  048 = 14 kW (4 Ton)
  060 = 17.6 kW (5 Ton)
- **Cooling Efficiency**
  H = High Efficiency
- **Refrigerant Type**
  4 = R-410A
- **Blower Type**
  T = Two Speed Belt Drive
- **Heating Type**
  B = Standard Gas Heat, 2 Stage
  U = Medium Gas Heat, 2 Stage
  H = High Gas Heat, 2 Stage
- **Minor Design Sequence**
  1 = 1st Revision
  2 = 2nd Revision
  3 = 3rd Revision
- **Voltage**
  M = 380/420V-3 phase-50Hz

FEATURE HIGHLIGHTS

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

1. Scroll Compressor
2. Check/Thermal Expansion Valve
3. Coil Construction
4. Outdoor Coil Fan Motor
5. Aluminized Steel Inshot Burners
6. Electronic Ignition
7. Construction
8. Power/Gas Entry
9. Exterior Panels
10. Insulation
11. Hinged Access Panels
12. Blower
13. Economizer
14. Power Exhaust Fan



Dual-Fuel (Heat Pump/Gas Heating) Shown With Economizer, Power Exhaust and Hinged Access Panels

CONTENTS

PERFORMANCE/QUALITY AND CE MARK OPTION

- Components bonded for grounding to meet safety standards for servicing required by Underwriters Laboratories (UL) and the International Electrotechnical Commission (IEC)
- Cooling performance is rated at test conditions included in Air-Conditioning, Heating and Refrigeration Institute (AHRI) Standards 210/240 (10.5 to 17.5 kW models) and 340/360 (21 kW models) while operating at rated voltage and air volumes
- International Organization for Standardization (ISO) 9001 Registered Manufacturing Quality System

FEATURES AND BENEFITS

DUAL-FUEL OPERATION

- In heating mode the unit operates the heat pump for 1st stage heating
- If 1st stage is not satisfied, the 2nd stage will activate gas heating (secondary heat source)
- Heat pump operation is automatically terminated on gas heat start-up
- Unit control automatically changes between heat pump heating and gas heat operation
- Blower starts up when gas heat exchanger is warm, and runs in high speed during (gas heat) operation
- If continuous blower operation is available on thermostat, change in blower speed automatically occurs during heat pump heat to gas heat changeover

COOLING/HEATING SYSTEM

- Designed to maximize sensible and latent cooling performance at design conditions
- System can operate from -1°C to 52°C without any additional controls

R-410A Refrigerant
- Non-chlorine based
- Ozone friendly

1 Two-Stage Scroll Compressor
- Two-stage scroll compressors for increased part load efficiency, high performance, reliability and quiet operation
- Resiliently mounted on rubber grommets for quiet operation

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

High Pressure Switch
- Protects the system from high pressure conditions

2 Check/Thermal Expansion Valve
- Ensures optimal performance throughout the application range
- Removable element head

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

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

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

3 Coil Construction
- Copper tube construction
- Enhanced rippled-edge aluminum fins
- Flared shoulder tubing connections
- Silver soldered construction
- Factory leak tested

Indoor Coil
- Cross row circuiting
- Rifled copper tubing optimizes both sensible and latent cooling capacity

Condensate Drain Pan
- Plastic pan, sloped to meet drainage requirements of American Society of Heating Refrigeration and Air Conditioning Engineers 62.1
- Side or bottom drain connections
- Reversible to allow connection at back of unit

4 Outdoor Coil Fan Motor
- All models have a variable speed (ECM) fan motor for energy efficient and quiet operation
- Standard efficiency models have a single speed PSC fan motor
- Thermal overload protected
- Totally enclosed
- Permanently lubricated sleeve bearing (standard efficiency)
- Permanently lubricated ball bearings (high efficiency)
- Shaft up
- Wire basket mount

Outdoor Coil Fan
- Polyvinyl chloride (PVC) coated fan guard furnished

Required Selections

Cooling Capacity
- Specify nominal cooling capacity

FEATURES AND BENEFITS

COOLING/HEATING SYSTEM (continued)

Options / Accessories

Field Installed

Condensate Drain Trap
- Available in copper or PVC

Drain Pan Overflow Switch
- Monitors condensate level in drain pan, shuts down unit if drain becomes clogged

Low Ambient Kit (-17.7°C)
- Cycles the outdoor fan while allowing compressor operation in the cooling cycle
- Includes field installed pressure switch on the liquid line to determine when to operate the outdoor fan
- This intermittent fan operation allows the system to operate without icing the evaporator coil and losing capacity
- If the liquid line pressure drops below 1.65 MPa outdoor fan operates at 25% normal fan speed
- If pressure drops below 1.24 MPa outdoor fan stops until pressure rises to 2.06 MPa, then fan operates at 25% normal fan speed unless main pressure switch has reset to 3.10 MPa to resume normal cooling operation and full fan speed operation

GAS HEATING SYSTEM

5
- 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

6 Electronic Ignition
- Electronic spark igniter provides positive direct ignition of burners on each operating cycle
- 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
- 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

Required Selections

Gas Input Choice - Order one:
- Standard Gas Heat (2 Stage) (13.8/18.1 kW)
- Medium Gas Heat (2 Stage) (20.8/27.8 kW)
- High Gas Heat (2 Stage) (29.0/38.7 kW)

Options / Accessories

Field Installed

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

Low Temperature Vestibule Heater
- Electric heater automatically controls minimum temperature in gas burner compartment when temperature is below -40°C
- Allows operation of unit down to -51°C

Propane Kits
- Conversion kit to field change over units from Natural Gas to 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
- Prevents ice formation on intake louvers

FEATURES AND BENEFITS

CABINET

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

Airflow Choice
- Units are shipped in downflow (vertical) return air 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

9 Exterior Panels
- Constructed of heavy-gauge, galvanized steel with a two-layer enamel paint finish

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

Access Panels
- Economizer/Filter section
- Heating/Blower section
- Compressor/Controls section

NOTE - All 048/060 models include a filler panel for proper cabinet fit for optional accessories (Economizers, Power Exhaust, Outdoor Air Dampers and Barometric Relief Dampers).

Options / Accessories

Factory Installed

Corrosion Protection
- Completely flexible immersed coating
- Electrodeposited dry film process
- AST ElectroFin E-Coat
- Meets Mil Spec MIL-P-53084, ASTM B117 Standard Method Salt Spray Testing
- Indoor Corrosion Protection:
  - Coated coil
  - Painted blower housing
  - Painted base
- Outdoor Corrosion Protection:
  - Coated coil
  - Painted outdoor base

11 Hinged Access Panels
- Economizer/Filter section
- Heating/Blower section
- Compressor/Controls section
- Panel seals and quarter-turn latching handles provide a tight air and water seal

Field Installed

Combination Coil/Hail Guards
- Heavy gauge steel frame
- Painted to match cabinet

Expanded metal mesh protects outdoor coil

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

Defrost Control
- Control furnished as standard
- Gives a demand defrost cycle whenever system heating performance falls below optimum levels
- The sensing element on coil determines when defrost cycle is required and when to terminate cycle
- Anti-short cycle (5 minutes) incorporated into the board
- Diagnostic LED's furnished as an aid in troubleshooting

NOTE - Gas heating operates during a defrost cycle.

Balance Point Thermostat
- Controls the changeover temperature between the heat pump heating operation and gas heat heating operation

Options / Accessories

Field Installed

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

Thermostats
- Control system and thermostat options, see page 27

FEATURES AND BENEFITS

BLOWER

12 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
- Two-speed belt drive motors (low static/high static) are available on all models in several different sizes to maximize air performance

Supply Air Blower
- Forward curved blades, blower wheel is statically and dynamically balanced
- Motors have adjustable pulley for speed change

Required Selections

Ordering Information
- Specify motor output and drive kit number when base unit is ordered
- See Drive Kit Specifications Table

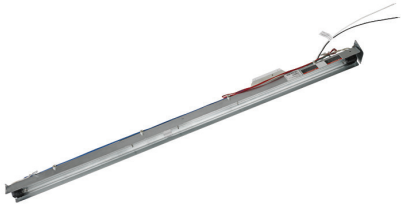
INDOOR AIR QUALITY

Air Filters
- Disposable 51 mm filters furnished as standard

Options / Accessories

Field Installed

Healthy Climate® UVC Germicidal Lamps



- Germicidal lamps emit ultra-violet (UV-C) energy, which has been proven to be effective in reducing microbes such as viruses, bacteria, yeasts, and molds
- This process either destroys the organism or controls its ability to reproduce
- UV-C energy greatly reduces the growth and proliferation of mold and other bioaerosols (bacteria and viruses) on illuminated surfaces (particularly coil and drain pan)
- Field installed in the blower/evaporator coil section
- Magnetic safety interlock terminates power when access panels are removed
- All necessary hardware for installation is included
- Lamps operate on 220V-1ph power supply

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

Indoor Air Quality (CO_2) Sensors
- Monitors CO_2 levels
- Reports to the Unit Controller which adjusts economizer dampers as needed

ELECTRICAL

Marked & Color-Coded Wiring
- All electrical wiring is color-coded and marked to identify which components it is connecting

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

OPTIONS / ACCESSORIES

ECONOMIZER

Factory or Field Installed

13 Economizer
(Standard and High Performance Common Features)

- Combination Outdoor Air Hood is furnished
- Factory installed Economizer can be ordered with two exhaust options:
  - Barometric Relief Dampers
  - No Exhaust
- Field installed Economizer includes Barometric Relief Dampers with Combination Hood
- Barometric Relief Dampers allow relief of excess air, dampers prevent blow back and outdoor air infiltration during off cycle, bird screen furnished

NOTE - Barometric Relief Dampers are required when Economizer is factory installed with field installed Power Exhaust Fan option. See Power Exhaust Fan section and Options/Accessories table.

- Occupied/Unoccupied mode with field furnished setback thermostat
- Demand Control Ventilation (DCV) ready using optional CO_2 sensors
- Mixed Air Sensor is furnished for field installation in the rooftop unit

NOTE - Sensor is factory installed when Economizers are factory installed.

- Single sensible sensor is furnished with Economizer and enables economizer operation if the outdoor temperature is less than the setpoint of the control
- Horizontal Barometric Dampers are required for horizontal Economizer applications and must be ordered separately

Standard Economizer Control Module

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

Economizer Controls:

- Damper Minimum Position - Can be set lower than traditional minimum air requirements resulting in cost savings
- Indoor Air Quality (IAQ) Sensor - Signals dampers to modulate and maintain 13°C when CO_2 is higher than the CO_2 setpoint
- Demand Control Ventilation (DCV) light-emitting diode (LED) - A steady green DCV LED indicates the IAQ reading is higher than setpoint and requires more fresh air
- Free Cool LED - A steady green LED indicates outdoor air is suitable for free cooling
  - Free Cooling runs when outdoor air temperature is lower than the set temperature on the economizer control

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

High Performance Economizer Features

- Gear-driven action
- High torque 24-volt fully-modulating spring return damper motor
- Return air and outdoor air dampers
- Plug-in connections to unit
- Nylon bearings
- Enhanced thermoplastic vulcanizate (TPV) blade edge seals
- Flexible stainless steel jamb seals to minimize air leakage

High Performance Economizer Control Module

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

- Module automatically detects sensors by polling to determine which sensors are installed in system
- Module displays any alarm messages (fault detection and diagnostics) as an aid in troubleshooting
- Non-volatile memory retains parameter settings in case of power failure
- Keypad with four navigation buttons and LCD screen is furnished for setting economizer parameters
  - Menu Up/Exit ⏎ button returns to the main menu
  - Arrow Up ▲ button moves to the previous or next parameter within the selected menu
  - Arrow Down ▼ button moves to the next parameter within the selected menu
  - Select (enter) ↵ button confirms parameter selection

Main Menu Structure:

- STATUS (economizer and system operation status)
- SETPOINTS (settings for various setpoint parameters)
- SYSTEM SETUP (settings/information about the system)
- ADVANCED SETUP (freeze protection, CO_2 settings, stage 3 delay and additional calibration settings)
- CHECKOUT (damper positions)
- ALARMS (output signal that can be configured for remote alarm monitoring)

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

Factory or Field Installed

Single Enthalpy Temperature Control

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

Field Installed

Differential Enthalpy Control

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

OPTIONS / ACCESSORIES

ECONOMIZER (continued)

Horizontal Barometric Relief Dampers
- For use when unit is configured for horizontal applications with an economizer
- Allows relief of excess air
- Blade type dampers prevent blow back and outdoor air infiltration during off cycle
- Field installed in return air duct
- Exhaust hood with bird screen furnished
- Requires Horizontal Economizer Conversion Kit

Horizontal Economizer Conversion Kit
- Insulated panel covers the bottom return air opening on the unit base to convert downflow Economizer to horizontal airflow

EXHAUST

Field Installed

14 Power Exhaust Fan
- Installs internal to unit for downflow applications only with Economizer option
- Provides exhaust air pressure relief
- Interlocked to run when supply air blower is operating, fan runs when outdoor air dampers are 50% open (adjustable)
- Motor is overload protected
- Fan is 406 mm diameter with 4 fan blades and a 0.25 kW motor

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

OUTDOOR AIR

Factory or Field Installed

Outdoor Air Dampers - Downflow or Horizontal
- Single blade damper
- 0 to 25% (fixed) outdoor air adjustable
- Installs in unit
- Automatic model features fully modulating spring return damper motor with plug-in connection
- Manual model features a slide damper
- Maximum mixed air temperature in cooling mode: 38°C
- Outdoor Air Hood is furnished

ROOF CURBS
- Nailer strip furnished
- Mates to unit
- U.S. National Roofing Contractors Approved
- Shipped knocked down

Hybrid Roof Curbs
- Downflow
- Interlocking tabs to fasten corners together; no tools required
- Curb can also be fastened together with furnished hardware
- Available in 203, 356, 457, and 610 mm heights

Full Perimeter Curbs, Downflow (060 Model Only)
- Hybrid roof curbs can be assembled using interlocking tabs to fasten corners together; no tools required
- Can also be fastened together with furnished hardware
- Available in 203, 356, 457, and 610 mm heights

NOTE - 060 models can be used on smaller 2026 mm Hybrid Roof Curbs (not full perimeter) with 400 mm overhang at condenser end of unit. See dimension drawing on Page 32.

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

Adaptor Curbs (not shown)
- Curbs are regionally sourced
- Dimensions will vary based upon the source

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

CEILING DIFFUSERS

Field Installed

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

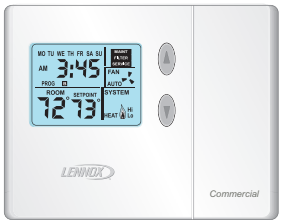
Transitions (Supply and Return)
- Used with diffusers
- Installs in roof curb
- Galvanized steel construction
- Flanges furnished for duct connection to diffusers
- Fully insulated

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

ComfortSense® 7500 Commercial 7-Day Programmable Thermostat

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

ComfortSense® 3000 Commercial 5-2 Day Programmable Thermostat



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

Description		Catalog No.
ComfortSense® 7500 Commercial 7-Day Programmable Thermostat		
CS7500 7-Day Thermostat		**17G74**
Sensors/ Accessories	[1] Remote non-adjustable wall-mount 20k	**47W36**
	[1] Remote non-adjustable wall-mount 10k	**47W37**
	Remote non-adjustable discharge air (duct mount)	**19L22**
	Outdoor temperature sensor	**X2658**
ComfortSense® 3000 5-2 Day Programmable		
CS3000 5-2 Day Thermostat		**11Y05**
Sensor/ Accessories	Remote non-adjustable wall mount 10k averaging	**47W37**
	Thermostat wall mounting plate	**X2659**
BACnet Controls	[2] 7-Day BACnet Thermostat	**Y8241**
	[3] BACnet Module (factory or field)	**16X70**
[4] BACnet Room Sensors	With Display	**97W23**
	Without Display	**97W24**
Universal Thermostat Guard with Lock (clear)		
	Inside Dimensions (H x W) 5 7/8 x 8 3/8 in.	**39P21**

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

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

[3] Not compatible with units equipped with Humiditrol® option.

[4] Only compatible with BACnet Module (16X70).

BACnet Compatible Thermostat With Reheat Function

- 7-Day Programmable
- BTL listed MS/TP ensures compatibility with any BACnet system
- Built-in control programs for conventional and heat pump applications
- Conventional systems up to 3-stage heat and 3-stage cool
- Heat pumps with 1 or 2 compressors and up to 2-stage auxiliary heat
- On-board temperature and humidity sensor
- Multiple configurable inputs and outputs enable advanced control strategies
- Set-up Wizard enables rapid system configuration
- No special tools required for installation or commissioning
- Seven-day (2, 4 or 6 event) occupancy scheduling per day
- Backlit 5-inch LCD touchscreen

OPTIONS / ACCESSORIES

Item	Model No.	Catalog No.	Unit Model Number KDB 036	KDB 048	KDB 060
COOLING/HEATING SYSTEM					
Condensate Drain Trap	Polyvinyl Chloride (PVC) - C1TRAP20AD2	**22H54**	X	X	X
	Copper - C1TRAP10AD2	**76W27**	X	X	X
Drain Pan Overflow Switch	K1SNSR71AB1-	**74W42**	X	X	X
Low Ambient Kit	K1SNSR34*A0	**15C84**	X	X	X
Efficiency		High	O	O	O
Refrigerant Type		R-410A	O	O	O
GAS HEATING SYSTEM					
Bottom Gas Piping Kit	T1GPKT01AN1	**19W50**	X	X	X
Low Temperature Vestibule Heater	T1CWKT01AN1G	**19W54**	X	X	X
Combustion Air Intake Extensions	T1EXTN10AN1	**19W51**	X	X	X
Gas Heat Input	Standard Two-Stage - 13.8/18.1 kW input	Factory	O	O	O
	Medium Two-Stage - 20.8/27.5 kW input	Factory	O	O	O
	High Two-Stage - 28.7/38.4 kW input	Factory	O	O	O
Propane Conversion Kits	For two-stage standard models - C1PROP28A11	**21Z24**	X	X	X
	For two-stage medium and high models - C1PROP20AP2	**21Z23**	X	X	X
Vertical Vent Extension	C1EXTN20FF1	**31W62**	X	X	X
BLOWER - SUPPLY AIR					
Motor	Belt Drive - 0.47 kW (2 Speed)	Factory	O	O	
	Belt Drive - 0.62 kW (2 Speed)	Factory	O		O
	Belt Drive - 1.24 kW (2 Speed)	Factory		O	O
Drive Kits See Blower Data Tables for selection	Kit A01 - T1DRKT001-1 - 374-842 rev/min	Factory	O		
	Kit A02 - T1DRKT002-1 - 414-931 rev/min	Factory		O	
	Kit A03 - T1DRKT003-1 - 463-1042 rev/min	Factory			O
	Kit A05 - T1DRKT005-1 - 498-1122 rev/min	Factory	O		
	Kit A06 - T1DRKT006-1 - 595-1191 rev/min	Factory		O	
	Kit A07 - T1DRKT007-1 - 673-1290 rev/min	Factory			O
CABINET					
Combination Coil/ Hail Guards	C1GARD51A-1	**13R98**	X		
	C1GARD51AT1	**13T17**		X	X
Corrosion Protection		Factory	O	O	O
Hinged Access Panels		Factory	O	O	O
CONTROLS					
NOTE - Also see Conventional Thermostat Control Systems on Page 9 for Additional Options.					
Smoke Detector - Supply or Return (Power board and one sensor)	C1SNSR44AP1	**21Z11**	X	X	X
Smoke Detector - Supply and Return (Power board and two sensors)	C1SNSR43AP1	**21Z12**	X	X	X

NOTE - The catalog and model numbers that appear here are for ordering field installed accessories only.
OX - Field Installed or Configure to Order (Factory installed)
O - Configure to Order (Factory Installed)
X - Field Installed.

OPTIONS / ACCESSORIES

Item	Model No.	Catalog No.	Unit Model Number KDB 036	KDB 048	KDB 060
ECONOMIZER					
Standard Economizer With Outdoor Air Hood (Sensible Control)					
Standard Economizer - Includes Barometric Relief Dampers and Exhaust Hood	K1ECON30A-3-	**14D90**	OX	OX	OX
Economizer - No Exhaust		Factory	O	O	O
Standard Economizer Controls					
Single Enthalpy Control	C1SNSR64FF1	**21Z09**	OX	OX	OX
Differential Enthalpy Control (order 2)	C1SNSR64FF1	**21Z09**	X	X	X
High Performance Economizer With Outdoor Air Hood (Sensible Control)					
High Performance Economizer - Includes Barometric Relief Dampers and Exhaust Hood	K1ECON32A-4	**20H49**	OX	OX	OX
High Performance Economizer - No Exhaust		Factory	O	O	O
High Performance Economizer Controls					
Single Enthalpy Control	C1SNSR60FF1	**10Z75**	OX	OX	OX
Differential Enthalpy Control (order 2)	C1SNSR60FF1	**10Z75**	X	X	X
Economizer Accessories					
Horizontal Economizer Conversion Kit	T1HECK00AN1	**17W45**	X	X	X
POWER EXHAUST FAN					
Standard Static *NOTE - Field installed Power Exhaust Fan requires "Barometric Relief Dampers for Power Exhaust Kit" for field installation. See below.*	380/420V-3ph - C1PWRE10A-1M	**21Z16**	X	X	X
BAROMETRIC RELIEF					
[1] Barometric Relief Dampers for Power Exhaust Kit	C1DAMP50A-3-	**21Z21**	X	X	X
[2] Horizontal Barometric Relief Dampers With Exhaust Hood	LAGEDH03/15-2	**19F01**	X	X	X
OUTDOOR AIR					
Outdoor Air Dampers - Includes Outdoor Air Hood					
Manual	C1DAMP11A-2	**15D18**	OX	OX	OX
Motorized	C1DAMP21A-1	**15D17**	OX	OX	OX
ELECTRICAL					
Voltage 50 Hz with neutral	380/420V - 3 phase		O	O	O

[1] Required when Economizer is factory installed with field installed Power Exhaust Fan option.
[2] Required when Economizer is configured for horizontal airflow.

NOTE - The catalog and model numbers that appear here are for ordering field installed accessories only.
OX - Field Installed or Configure to Order (Factory installed)
O - Configure to Order (Factory Installed)
X - Field Installed.

OPTIONS / ACCESSORIES

Item	Model No.	Catalog No.	Unit Model Number KDB 036	KDB 048	KDB 060
INDOOR AIR QUALITY					
Air Filters					
Healthy Climate® High Efficiency Air Filters Order 4 per unit	MERV 8 (406 x 508 x 51) - C1FLTR15A-1-	**54W20**	X		
	MERV 13 (406 x 508 x 51) - T1FLTR40A-1-	**52W37**	X		
	MERV 8 (508 x 508 x 51) - C1FLTR15D-1-	**54W21**		X	X
	MERV 13 (508 x 508 x 51) - C1FLTR40D-1-	**52W39**		X	X
Indoor Air Quality (CO_2) Sensors					
Sensor - Wall-mount, off-white plastic cover with LCD display	C0SNSR50AE1L	**77N39**	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting	C0SNSR53AE1L	**87N54**	X	X	X
CO_2 Sensor Duct Mounting Kit - for downflow applications	C0MISC19AE1-	**85L43**	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO_2 sensor (**77N39**)	C0MISC16AE1-	**90N43**	X	X	X
UVC Germicidal Lamps					
[1] Healthy Climate® UVC Light Kit (220V-1ph)	E1UVCL10AN1-	**21A92**	X	X	X
ROOF CURBS					
Hybrid Roof Curbs, Downflow					
203 mm height	C1CURB70A-1	**11F50**	X	X	[2] X
356 mm height	C1CURB71A-1	**11F51**	X	X	[2] X
457 mm height	C1CURB72A-1	**11F52**	X	X	[2] X
610 mm height	C1CURB73A-1	**11F53**	X	X	[2] X
Hybrid Roof Curbs, Full Perimeter, Downflow					
203 mm height	K1CURB70AP1	**11S47**			X
356 mm height	K1CURB71AP1	**11S48**			X
457 mm height	K1CURB72AP1	**11T01**			X
610 mm height	K1CURB73AP1	**11T06**			X
Adjustable Pitch Curb, Downflow					
356 mm height	C1CURB55AT1	**43W27**	X	X	[2] X
CEILING DIFFUSERS					
Step-Down - Order one	RTD9-65S	**13K60**	X	X	
	RTD11-95S	**13K61**			X
Flush - Order one	FD9-65S	**13K55**	X	X	
	FD11-95S	**13K56**			X
Transitions (Supply and Return) - Order one	T1TRAN10AN1	**17W53**	X	X	
	T1TRAN20N-1	**17W54**			X

[1] Lamps operate on 220V single-phase power supply. Step-down transformer must be field supplied for field installation for 380/420V primary to 220V secondary. Alternately, a separate 220V power supply may be used to directly power the UVC ballast(s).

[2] 060 models will fit smaller roof curbs with overhang. See dimension drawing.

NOTE - The catalog and model numbers that appear here are for ordering field installed accessories only.
OX - Field Installed or Configure to Order (Factory installed)
O - Configure to Order (Factory Installed)
X - Field Installed.

SPECIFICATIONS

General Data		Nominal Size	10.5 kW (3 Ton)	14 kW (4 Ton)	17.5 kW (5 Ton)
		Model No.	KDB036H4T	KDB048H4T	KDB060H4T
		Efficiency Type	High	High	High
		Blower Type	Two-Speed Belt Drive	Two-Speed Belt Drive	Two-Speed Belt Drive
Cooling Performance		Gross Cooling Capacity - kW (Btuh)	9.1 (31 000)	12.1 (41 400)	15.5 (53 000)
		[1] Net Cooling Capacity - kW (Btuh)	8.8 (30 000)	11.6 (39 500)	14.9 (51 000)
		AHRI Rated Air Flow - L/s (cfm)	565 (1200)	755 (1600)	850 (1800)
		[2] Sound Rating Number (dB)	75	77	77
		Total Unit Power - kW	2.5	3.3	4.2
		[1] SEER (Btuh/Watt)	15.0	15.0	15.0
		[1] EER (Btuh/Watt)	11.9	12.2	12.2
Refrigerant		Type	R-410A	R-410A	R-410A
		Charge Furnished	5.8 kg (12 lbs. 13 oz.)	6.4 kg (14 lbs. 0 oz.)	9.1 kg (20 lbs. 0 oz.)
Heating Performance		Total High Heating Capacity - kW (Btuh)	8.8 (30 000)	11.6 (39 500)	14.6 (50 000)
		Total Unit Power - kW	2.4	3.0	3.9
		[1] Coefficient of Performance (COP)	3.70	3.90	3.80
		Total Low Heating Capacity - kW (Btuh)	4.8 (16 300)	6.3 (21 600)	8.3 (28 200)
		Total Unit Power - kW	2.2	2.7	3.6
		Coefficient of Performance (COP)	2.20	2.32	2.30
Gas Heating Options - See Page 14			Standard (2 Stage) or Medium (2 Stage	Standard (2 Stage), Medium (2 Stage) or High (2 Stage)	
Compressor Type (one per unit)			Two-Stage Scroll	Two-Stage Scroll	Two-Stage Scroll
Outdoor Coil		Net face area - m^2 (sq. ft.)	1.4 (15.6)	1.8 (19.3)	2.6 (28.0)
		Tube diameter - mm (in.)	9.5 (3/8)	9.5 (3/8)	9.5 (3/8)
		Number of rows	2	2	2
		Fins per meter (Fins / inch)	787 (20)	787 (20)	(787) 20
Outdoor Coil Fan		Motor - W (HP)	(1) 249 (1/3)	(1) 249 (1/3)	(1) 249 (1/3)
		Motor rev/min (rpm)	775/650	850/700	930/785
		Total Motor Input - watts	190/120	250/140	280/200
		Diameter - mm (in.) / No. of blades	(1) 610 (24) - 3	(1) 610 (24) - 3	(1) 610 (24) - 3
		Total air volume - L/s (cfm)	1650/1400 (3500/2970)	1915/1570 (4060/3330)	1955/1595 (4140/3380)
Indoor Coil		Net face area - m^2 (sq. ft.)	0.7 (7.8)	0.9 (9.7)	0.9 (9.7)
		Tube diameter - mm (in.)	9.5 (3/8)	9.5 (3/8)	9.5 (3/8)
		Number of rows	3	3	4
		Fins per meter (Fins per inch)	551 (14)	551 (14)	551 (14)
		Drain Connection (no. and size) - mm (in.)	(1) 1 NPT	(1) 1 NPT	(1) 1 NPT
		Expansion device type	Balanced Port Thermostatic Expansion Valve, removable power head		
Indoor Blower & Drive Selection		Nominal Motor kW (hp)	0.47 (0.63)	0.47 (0.63)	0.62 (0.83)
		Maximum usable motor kW (hp)	0.54 (0.72)	0.54 (0.72)	0.71 (0.95)
		Drive Kit (rev/min range)	A01 (low 374-561) (high 546-842)	A02 (low 414 621) (high 621-931)	A03 (low 463-694) (high 694-1042)
		Nominal Motor kW (hp)	0.62 (0.83)	1.24 (1.66)	1.24 (1.66)
		Maximum usable motor kW (hp)	0.71 (0.95)	1.42 (1.91)	1.42 (1.91)
		Drive Kit (rev/min range)	A05 (low 498-748) (high 748-1122)	A06 (low 595-794) (high 893-1191)	A07 (low 673-860) (high 1010-1290)
		Wheel nom. diameter x width - mm (in.)	254 x 254 (10 x 10)		
Filters		Type	Disposable		
		Number and size - mm (in.)	(4) 406 x 508 x 51 (16 x 20 x 2)	(4) 508 x 508 x 51 (20 x 20 x 2)	
Electrical Characteristics - 50 Hz			380/420V-50 Hz-3 phase with neutral		

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

[1] Rating test conditions are those included in Air-Conditioning, Heating and Refrigeration Institute (AHRI) Standard while operating at rated voltage and air volumes:
Cooling Ratings - 35°C (95°F) outdoor air temperature and 27°C (80°F) dry bulb/19°C (67°F) wet bulb entering indoor coil air.
High Temperature Heating Ratings - 8°C (47°F) dry bulb/6°C (43°F) wet bulb outdoor air temperature and 21°C (70°F) entering indoor coil air.
Low Temperature Heating Ratings - –8°C (17°F) dry bulb/–9°C (15°F) wet bulb outdoor air temperature and 21°C (70°F) entering indoor coil air.

[2] Sound Rating Number (SRN) rated in accordance with test conditions included in ARI Standard 270-95.

SPECIFICATIONS - GAS HEAT

Model No.		036, 048, 060	036, 048, 060	048, 060
Heat Input Type		**Standard (2 Stage)**	**Medium (2 Stage)**	**High (2 Stage)**
Input kW (Btuh)	1st Stage	13.8 (47 000)	20.8 (71 000)	29.0 (99 000)
	2nd Stage	18.1 (62 000)	27.8 (95 000)	38.7 (132 000)
Output kW (Btuh)	1st Stage	11.1 (38 000)	16.7 (57 000)	23.2 (79 000)
	2nd Stage	14.6 (50 000)	22.3 (76 000)	31.1 (106 000)
Temperature Rise Range	1st stage	3 - 19°C (5 - 35°F)	11 - 28°C (20 - 50°F)	14 - 31°C (25 - 55°F)
	2nd Stage	6 - 22°C (10 - 40°F)	14 - 36°C (25 - 65°F)	22 - 39°C (40 - 70°F)
[1] Thermal Efficiency		80%	80%	80%
Gas Supply Connections		1/2 in. NPT		
Recommended Gas Supply Pressure - Natural/ LPG		1.7 kPa (7.0 in. w.c.) / 2.7 kPa (11.0 in. w.c.)		

[1] Thermal Efficiency at full input.

HIGH ALTITUDE DERATE

NOTE - Units may be installed at altitudes up to 610 m (2000 ft) above sea level without any modifications. At altitudes above 610 m (2000 ft.), units must be derated to match information in the table shown. At altitudes above 1372 m (4500 ft.), unit must be derated 2% for each 305 m (1000 ft.) above sea level.
NOTE - This is the only permissible derate for these units.

Heat Input Type	Altitude Feet		Gas Manifold Pressure				Input Rate	
			kPa		in. w.g.			
	Meters	Feet	Natural Gas	LPG/ Propane	Natural Gas	LPG/ Propane	kW	Btuh
Standard (2 stage)	610 - 1372	2001 - 4500	0.58 / 0.33	1.73 / 0.98	2.3 / 1.3	6.9 / 3.9	16.7 / 12.6	57 000 / 44 000
Medium (2 stage)	610 - 1372	2001 - 4500	0.58 / 0.33	1.73 / 0.98	2.3 / 1.3	6.9 / 3.9	25.8 / 19.3	88 000 / 66 000
High (2 stage)	610 - 1372	2001 - 4500	0.58 / 0.33	1.73 / 0.98	2.3 / 1.3	6.9 / 3.9	35.8 / 27.0	122 000 / 92 000

COOLING / HEATING RATINGS

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

10.5 KW - KDB036H4 - COOLING CAPACITY (1ST STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) 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		
	L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C
17.2°C	302	6.2	1.08	0.73	0.89	1	5.5	1.35	0.75	0.94	1	4.8	1.69	0.78	1	1	4.1	2.1	0.85	1	1
	378	6.6	1.07	0.79	0.99	1	5.9	1.34	0.83	1	1	5.3	1.68	0.88	1	1	4.5	2.09	0.97	1	1
	453	7	1.06	0.86	1	1	6.4	1.33	0.91	1	1	5.6	1.67	0.98	1	1	4.8	2.09	1	1	1
19.4°C	302	6.7	1.07	0.56	0.7	0.85	5.9	1.34	0.57	0.73	0.89	5.2	1.68	0.57	0.76	0.95	4.3	2.09	0.59	0.81	1
	378	7	1.06	0.6	0.77	0.95	6.3	1.33	0.61	0.8	1	5.5	1.68	0.63	0.85	1	4.6	2.09	0.66	0.94	1
	453	7.3	1.05	0.64	0.84	1	6.5	1.33	0.66	0.88	1	5.7	1.67	0.69	0.95	1	4.8	2.09	0.73	1	1
21.7°C	302	7.1	1.06	0.42	0.55	0.68	6.4	1.33	0.41	0.56	0.7	5.6	1.68	0.39	0.57	0.73	4.7	2.09	0.38	0.59	0.78
	378	7.5	1.05	0.43	0.59	0.75	6.8	1.32	0.43	0.6	0.77	5.9	1.67	0.42	0.62	0.82	5	2.09	0.42	0.66	0.9
	453	7.8	1.04	0.45	0.63	0.81	7	1.32	0.45	0.65	0.85	6.2	1.67	0.45	0.68	0.91	5.2	2.08	0.45	0.73	1

10.5 KW - KDB036H4 - COOLING CAPACITY (2ND STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) 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		
	L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C
17.2°C	453	9.1	1.65	0.74	0.91	1	8.1	1.96	0.76	0.95	1	7	2.36	0.79	1	1	6.7	2.50	0.81	1.00	1.00
	566	9.6	1.67	0.81	1	1	8.7	1.97	0.84	1	1	7.7	2.37	0.88	1	1	7.3	2.51	0.91	1.00	1.00
	680	10.2	1.68	0.87	1	1	9.2	1.98	0.92	1	1	8.1	2.37	0.98	1	1	7.7	2.52	0.99	1.00	1.00
19.4°C	453	9.7	1.67	0.57	0.72	0.87	8.7	1.97	0.57	0.74	0.91	7.6	2.36	0.57	0.77	0.96	7.2	2.51	0.58	0.79	0.99
	566	10.2	1.68	0.61	0.79	0.97	9.1	1.98	0.62	0.81	1	7.9	2.37	0.63	0.86	1	7.5	2.52	0.64	0.89	1.00
	680	10.6	1.69	0.65	0.85	1	9.5	1.99	0.66	0.9	1	8.2	2.38	0.69	0.96	1	7.8	2.52	0.71	0.98	1.00
21.7°C	453	10.4	1.68	0.42	0.56	0.7	9.3	1.98	0.4	0.56	0.72	8.1	2.37	0.39	0.57	0.74	7.7	2.52	0.38	0.58	0.77
	566	10.9	1.7	0.44	0.61	0.77	9.7	1.99	0.43	0.61	0.79	8.5	2.38	0.42	0.63	0.84	8.1	2.52	0.41	0.64	0.87
	680	11.2	1.71	0.46	0.65	0.83	10.1	2	0.45	0.66	0.87	8.8	2.38	0.44	0.69	0.93	8.4	2.52	0.45	0.71	0.96

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil														
		48°C					50°C					51.7°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) 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		
	L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C
17.2°C	455	6.4	2.62	0.83	1.00	1.00	6.2	2.75	0.84	1.00	1.00	5.9	2.85	0.84	1	1
	565	7.0	2.63	0.93	1.00	1.00	6.7	2.75	0.95	1.00	1.00	6.5	2.86	0.96	1	1
	680	7.4	2.63	1.00	1.00	1.00	7.2	2.75	1.00	1.00	1.00	6.9	2.86	1	1	1
19.4°C	455	6.8	2.63	0.58	0.80	1.00	6.5	2.75	0.59	0.82	1.00	6.2	2.86	0.58	0.82	1
	565	7.2	2.63	0.65	0.90	1.00	6.9	2.75	0.66	0.93	1.00	6.6	2.86	0.66	0.94	1
	680	7.5	2.63	0.72	0.99	1.00	7.2	2.76	0.73	1.00	1.00	6.9	2.86	0.73	1	1
21.7°C	455	7.4	2.63	0.38	0.58	0.78	7.1	2.76	0.37	0.58	0.79	6.8	2.87	0.36	0.58	0.79
	565	7.8	2.64	0.41	0.65	0.88	7.4	2.76	0.41	0.66	0.90	7.1	2.87	0.4	0.66	0.91
	680	8.0	2.64	0.44	0.72	0.98	7.6	2.76	0.44	0.73	0.99	7.3	2.87	0.44	0.73	1

10.5 KW - KDB036H4 - HEATING CAPACITY

Indoor Coil Air Volume 21°C Dry Bulb	Air Temperature Entering Outdoor Coil									
	18°C		7°C		-4°C		-15°C		-28°C	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
L/s	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
455	11.1	2.04	8.3	1.91	5.3	1.78	3.3	1.58	1.7	1.18
565	11.3	1.93	8.4	1.80	5.5	1.67	3.5	1.47	1.9	1.07
680	11.5	1.86	8.6	1.73	5.6	1.60	3.6	1.41	2.0	1.01

COOLING / HEATING RATINGS

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

14 KW - KDB048H4 - COOLING CAPACITY (1ST STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) 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		
	L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C
17.2°C	422	9.3	1.13	0.74	0.88	1	8.8	1.34	0.75	0.9	1	8.2	1.58	0.76	0.93	1	7.6	1.84	0.78	0.96	1
	529	9.8	1.11	0.8	0.96	1	9.3	1.33	0.81	0.98	1	8.8	1.56	0.82	1	1	8.2	1.83	0.85	1	1
	635	10.3	1.1	0.85	1	1	9.9	1.31	0.87	1	1	9.3	1.55	0.9	1	1	8.8	1.81	0.93	1	1
19.4°C	422	9.9	1.11	0.58	0.72	0.84	9.4	1.32	0.58	0.73	0.86	8.8	1.56	0.59	0.74	0.89	8.2	1.83	0.59	0.76	0.92
	529	10.5	1.09	0.62	0.77	0.93	9.9	1.31	0.62	0.79	0.95	9.3	1.55	0.63	0.8	0.98	8.6	1.82	0.64	0.83	1
	635	10.9	1.08	0.65	0.83	0.99	10.3	1.3	0.66	0.85	1	9.7	1.54	0.67	0.87	1	9	1.81	0.68	0.9	1
21.7°C	422	10.5	1.09	0.43	0.57	0.69	10	1.31	0.43	0.57	0.7	9.4	1.55	0.43	0.57	0.71	8.8	1.81	0.43	0.58	0.73
	529	11.1	1.07	0.45	0.61	0.75	10.6	1.29	0.44	0.61	0.77	9.9	1.53	0.45	0.62	0.78	9.2	1.8	0.44	0.63	0.81
	635	11.6	1.06	0.47	0.64	0.81	11	1.28	0.47	0.65	0.83	10.3	1.53	0.46	0.66	0.85	9.6	1.79	0.47	0.68	0.88

14 KW - KDB048H4 - COOLING CAPACITY (2ND STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) 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		
	L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C
17.2°C	604	12.2	2.12	0.75	0.91	1	10.8	2.54	0.77	0.95	1	9.4	3.07	0.8	1	1	9.0	3.27	0.82	1.00	1.00
	755	12.9	2.13	0.82	1	1	11.6	2.55	0.85	1	1	10.2	3.09	0.9	1	1	9.8	3.29	0.92	1.00	1.00
	906	13.6	2.14	0.88	1	1	12.3	2.56	0.93	1	1	10.8	3.1	0.99	1	1	10.3	3.30	1.00	1.00	1.00
19.4°C	604	13	2.13	0.58	0.73	0.88	11.6	2.55	0.58	0.75	0.92	10.1	3.08	0.59	0.78	0.97	9.6	3.28	0.59	0.80	0.99
	755	13.6	2.14	0.62	0.8	0.97	12.1	2.56	0.63	0.83	1	10.6	3.1	0.65	0.88	1	10.0	3.29	0.66	0.90	1.00
	906	14.1	2.14	0.66	0.87	1	12.5	2.56	0.68	0.91	1	10.9	3.1	0.71	0.97	1	10.4	3.30	0.72	0.99	1.00
21.7°C	604	13.7	2.14	0.42	0.57	0.71	12.3	2.56	0.41	0.57	0.73	10.8	3.1	0.4	0.58	0.76	10.2	3.30	0.39	0.59	0.78
	755	14.4	2.14	0.45	0.62	0.78	12.9	2.57	0.44	0.63	0.81	11.2	3.11	0.43	0.65	0.86	10.7	3.31	0.42	0.66	0.88
	906	14.9	2.15	0.46	0.66	0.85	13.3	2.58	0.46	0.68	0.89	11.6	3.12	0.46	0.71	0.95	11.0	3.32	0.45	0.72	0.98

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil														
		48°C					50°C					51.7°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) 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		
	L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C
17.2°C	605	8.7	3.43	0.83	1.00	1.00	8.4	3.60	0.84	1.00	1.00	8.1	3.75	0.85	1	1
	755	9.4	3.45	0.94	1.00	1.00	9.1	3.62	0.96	1.00	1.00	8.7	3.78	0.97	1	1
	905	10.0	3.46	1.00	1.00	1.00	9.6	3.64	1.00	1.00	1.00	9.3	3.79	1	1	1
19.4°C	605	9.1	3.44	0.60	0.81	1.00	8.8	3.61	0.60	0.82	1.00	8.4	3.77	0.59	0.83	1
	755	9.6	3.46	0.66	0.92	1.00	9.2	3.62	0.67	0.94	1.00	8.9	3.78	0.67	0.95	1
	905	10.0	3.47	0.73	1.00	1.00	9.6	3.64	0.74	1.00	1.00	9.3	3.79	0.75	1	1
21.7°C	605	9.8	3.45	0.39	0.59	0.79	9.4	3.62	0.38	0.60	0.80	9.1	3.78	0.37	0.6	0.81
	755	10.2	3.46	0.42	0.66	0.90	9.8	3.64	0.42	0.67	0.92	9.5	3.8	0.41	0.67	0.93
	905	10.6	3.48	0.46	0.73	0.99	10.2	3.65	0.46	0.75	1.00	9.8	3.81	0.45	0.75	1

14 KW - KDB048H4 - HEATING CAPACITY

Indoor Coil Air Volume 21°C Dry Bulb	Air Temperature Entering Outdoor Coil									
	18°C		7°C		-4°C		-15°C		-28°C	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
L/s	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
605	14.5	2.51	10.8	2.35	6.9	2.19	4.4	1.94	2.2	1.45
755	14.8	2.38	11.1	2.22	7.2	2.07	4.7	1.81	2.5	1.32
905	15.0	2.30	11.3	2.14	7.4	1.99	4.9	1.73	2.7	1.24

COOLING / HEATING RATINGS

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

17.5 KW - KDB060H4 - COOLING CAPACITY (1ST STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		18.3°C					23.9°C					29.4°C					35°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) 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		
	L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C
17.2°C	510	12	1.46	0.73	0.87	1	11.5	1.7	0.74	0.89	1	11	1.99	0.76	0.91	1	10.4	2.31	0.78	0.95	1
	637	12.6	1.44	0.78	0.95	1	12.2	1.69	0.79	0.97	1	11.6	1.98	0.82	1	1	11.1	2.29	0.85	1	1
	765	13.2	1.42	0.83	1	1	12.8	1.67	0.85	1	1	12.3	1.96	0.88	1	1	11.7	2.28	0.92	1	1
19.4°C	510	12.7	1.43	0.57	0.7	0.83	12.3	1.68	0.58	0.71	0.85	11.8	1.97	0.6	0.73	0.87	11.1	2.3	0.61	0.75	0.9
	637	13.4	1.42	0.61	0.76	0.91	12.9	1.67	0.62	0.77	0.93	12.3	1.96	0.62	0.79	0.96	11.6	2.28	0.65	0.82	0.99
	765	13.8	1.4	0.64	0.81	0.98	13.3	1.66	0.65	0.83	1	12.7	1.95	0.66	0.85	1	12	2.27	0.68	0.89	1
21.7°C	510	13.5	1.41	0.43	0.56	0.67	13.1	1.67	0.44	0.56	0.69	12.5	1.95	0.44	0.58	0.7	11.9	2.28	0.45	0.59	0.73
	637	14.2	1.39	0.45	0.59	0.73	13.7	1.65	0.45	0.6	0.75	13.1	1.94	0.46	0.61	0.76	12.4	2.26	0.47	0.63	0.79
	765	14.7	1.38	0.46	0.62	0.78	14.1	1.64	0.47	0.64	0.8	13.5	1.93	0.47	0.65	0.83	12.7	2.25	0.48	0.67	0.86

17.5 KW - KDB060H4 - COOLING CAPACITY (2ND STAGE)

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) 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		
	L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C
17.2°C	755	15.7	2.7	0.74	0.91	1	14.1	3.2	0.76	0.95	1	12.3	3.82	0.79	1	1	11.8	4.05	0.81	1.00	1.00
	944	16.6	2.73	0.81	1	1	15.1	3.22	0.84	1	1	13.5	3.86	0.88	1	1	12.9	4.09	0.92	1.00	1.00
	1133	17.7	2.75	0.88	1	1	16.1	3.25	0.92	1	1	14.3	3.88	0.98	1	1	13.7	4.11	1.00	1.00	1.00
19.4°C	755	16.9	2.73	0.57	0.72	0.87	15.2	3.23	0.57	0.73	0.91	13.3	3.85	0.58	0.76	0.96	12.7	4.08	0.58	0.79	0.98
	944	17.8	2.76	0.61	0.79	0.97	15.9	3.25	0.61	0.81	1	14	3.87	0.63	0.85	1	13.3	4.10	0.65	0.89	1.00
	1133	18.4	2.77	0.65	0.85	1	16.5	3.26	0.66	0.89	1	14.5	3.89	0.68	0.95	1	13.8	4.11	0.70	0.98	1.00
21.7°C	755	18.1	2.76	0.41	0.56	0.69	16.4	3.26	0.4	0.56	0.71	14.4	3.88	0.39	0.57	0.74	13.8	4.11	0.39	0.58	0.76
	944	19	2.79	0.44	0.6	0.76	17.1	3.28	0.43	0.61	0.79	15.1	3.91	0.42	0.63	0.83	14.4	4.13	0.42	0.64	0.85
	1133	19.6	2.81	0.46	0.65	0.83	17.7	3.29	0.45	0.66	0.87	15.6	3.92	0.44	0.68	0.92	14.9	4.14	0.44	0.70	0.95

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil														
		48°C					50°C					51.7°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T) 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		
	L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C
17.2°C	755	11.3	4.23	0.82	1.00	1.00	10.9	4.43	0.83	1.00	1.00	10.6	4.6	0.84	1	1
	945	12.4	4.27	0.93	1.00	1.00	12.0	4.46	0.94	1.00	1.00	11.5	4.63	0.96	1	1
	1135	13.2	4.30	1.00	1.00	1.00	12.7	4.49	1.00	1.00	1.00	12.3	4.66	1	1	1
19.4°C	755	12.2	4.26	0.58	0.80	1.00	11.6	4.45	0.58	0.81	1.00	11.2	4.63	0.58	0.8	1
	945	12.8	4.28	0.65	0.90	1.00	12.2	4.47	0.66	0.92	1.00	11.8	4.63	0.66	0.93	1
	1135	13.3	4.29	0.72	0.99	1.00	12.7	4.49	0.73	1.00	1.00	12.3	4.66	0.72	1	1
21.7°C	755	13.2	4.29	0.38	0.58	0.77	12.7	4.49	0.38	0.58	0.79	12.3	4.65	0.37	0.58	0.78
	945	13.9	4.31	0.41	0.65	0.87	13.3	4.50	0.41	0.65	0.89	12.8	4.67	0.41	0.65	0.9
	1135	14.3	4.32	0.44	0.71	0.97	13.8	4.52	0.45	0.72	0.99	13.2	4.69	0.45	0.72	1

17.5 KW - KDB060H4 - HEATING CAPACITY

Indoor Coil Air Volume 21°C Dry Bulb	Air Temperature Entering Outdoor Coil									
	18°C		7°C		-4°C		-15°C		-28°C	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
L/s	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
755	18.6	3.16	14.1	3.00	9.5	2.84	5.8	2.58	2.9	1.91
945	18.9	2.98	14.4	2.83	9.8	2.67	6.1	2.40	3.2	1.74
1135	19.1	2.88	14.6	2.72	10.0	2.56	6.3	2.30	3.5	1.63

BLOWER DATA

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.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See Page 24 for blower motors and drives and for wet coil and options/accessory air resistance data.

DOWNFLOW

Air Volume		External Static - Pa (in. w.g.)																							
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)			175 (0.70)			200 (0.80)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
330	700	447	0.07	0.09	517	0.09	0.12	589	0.11	0.15	663	0.13	0.17	739	0.14	0.19	815	0.15	0.2	883	0.17	0.23	938	0.19	0.25
378	800	465	0.07	0.1	534	0.10	0.14	605	0.13	0.17	678	0.14	0.19	753	0.16	0.21	825	0.17	0.23	890	0.19	0.25	946	0.20	0.27
425	900	486	0.09	0.12	554	0.12	0.16	623	0.15	0.2	695	0.16	0.22	767	0.17	0.23	836	0.19	0.25	897	0.21	0.28	953	0.22	0.3
472	1000	508	0.11	0.15	576	0.14	0.19	643	0.16	0.22	713	0.18	0.24	783	0.19	0.26	848	0.21	0.28	907	0.22	0.3	961	0.25	0.33
519	1100	533	0.13	0.18	599	0.16	0.22	665	0.19	0.25	733	0.20	0.27	800	0.21	0.28	863	0.23	0.31	919	0.25	0.34	971	0.27	0.36
566	1200	560	0.16	0.21	625	0.19	0.25	689	0.21	0.28	755	0.22	0.3	820	0.24	0.32	879	0.25	0.34	932	0.28	0.37	983	0.30	0.4
613	1300	591	0.18	0.24	654	0.21	0.28	716	0.23	0.31	779	0.25	0.33	841	0.26	0.35	897	0.28	0.38	948	0.31	0.41	996	0.33	0.44
661	1400	631	0.19	0.26	690	0.22	0.3	748	0.25	0.34	807	0.27	0.36	864	0.29	0.39	916	0.31	0.42	964	0.34	0.46	1011	0.37	0.49
708	1500	676	0.21	0.28	729	0.25	0.33	782	0.27	0.36	835	0.30	0.4	887	0.32	0.43	935	0.35	0.47	981	0.37	0.5	1028	0.40	0.54

Air Volume		External Static - Pa (in. w.g.)																							
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)			375 (1.50)			400 (1.60)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
330	700	988	0.20	0.27	1039	0.22	0.29	1088	0.23	0.31	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
378	800	996	0.22	0.3	1047	0.24	0.32	1098	0.25	0.34	1144	0.27	0.36	1185	0.29	0.39	1224	0.31	0.42	- - -	- - -	- - -	- - -	- - -	- - -
425	900	1004	0.25	0.33	1055	0.26	0.35	1106	0.28	0.37	1152	0.30	0.4	1193	0.32	0.43	1232	0.34	0.46	1269	0.37	0.49	1305	0.39	0.52
472	1000	1011	0.27	0.36	1062	0.28	0.38	1111	0.31	0.41	1157	0.32	0.43	1199	0.35	0.47	1238	0.37	0.5	1276	0.40	0.53	1311	0.42	0.56
519	1100	1020	0.29	0.39	1070	0.31	0.41	1118	0.33	0.44	1163	0.35	0.47	1206	0.38	0.51	1245	0.40	0.54	1282	0.43	0.58	1318	0.46	0.61
566	1200	1031	0.32	0.43	1079	0.34	0.45	1127	0.36	0.48	1171	0.39	0.52	1213	0.41	0.55	1252	0.44	0.59	1289	0.46	0.62	1324	0.49	0.66
613	1300	1044	0.35	0.47	1091	0.37	0.49	1137	0.40	0.53	1181	0.42	0.56	1221	0.45	0.6	1259	0.48	0.64	1296	0.51	0.68	1330	0.53	0.71
661	1400	1058	0.38	0.51	1105	0.40	0.54	1150	0.43	0.57	1191	0.46	0.61	1231	0.48	0.65	1268	0.51	0.69	1303	0.54	0.73	1337	0.57	0.77
708	1500	1074	0.42	0.56	1120	0.44	0.59	1163	0.47	0.63	1203	0.50	0.67	1241	0.53	0.71	1277	0.56	0.75	1312	0.59	0.79	1345	0.61	0.82

BLOWER DATA

BELT DRIVE | 3 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.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See Page 24 for blower motors and drives and for wet coil and options/accessory air resistance data.

HORIZONTAL

Air Volume		External Static - Pa (in. w.g.)																							
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)			175 (0.70)			200 (0.80)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
330	700	445	0.06	0.08	516	0.08	0.11	591	0.10	0.13	670	0.11	0.15	753	0.12	0.16	820	0.14	0.19	870	0.16	0.22	918	0.18	0.24
378	800	463	0.07	0.09	534	0.09	0.12	608	0.10	0.14	685	0.12	0.16	766	0.13	0.18	830	0.16	0.21	878	0.18	0.24	926	0.20	0.27
425	900	485	0.08	0.11	554	0.10	0.14	627	0.12	0.16	703	0.13	0.18	780	0.16	0.21	841	0.17	0.23	888	0.20	0.27	935	0.22	0.3
472	1000	509	0.10	0.13	578	0.12	0.16	649	0.14	0.19	722	0.16	0.21	796	0.17	0.23	854	0.19	0.26	900	0.22	0.29	947	0.25	0.33
519	1100	537	0.12	0.16	605	0.14	0.19	674	0.16	0.21	744	0.18	0.24	813	0.19	0.26	868	0.22	0.29	913	0.25	0.33	959	0.27	0.36
566	1200	567	0.14	0.19	633	0.16	0.22	700	0.18	0.24	768	0.20	0.27	833	0.22	0.3	884	0.25	0.33	928	0.28	0.37	974	0.30	0.4
613	1300	599	0.16	0.22	664	0.19	0.25	729	0.21	0.28	793	0.22	0.3	853	0.25	0.33	902	0.28	0.37	945	0.31	0.41	990	0.33	0.44
661	1400	634	0.19	0.26	697	0.22	0.29	758	0.23	0.31	819	0.25	0.34	875	0.28	0.38	921	0.31	0.42	964	0.34	0.46	1008	0.37	0.49
708	1500	669	0.22	0.3	730	0.25	0.33	789	0.27	0.36	846	0.29	0.39	897	0.31	0.42	941	0.35	0.47	983	0.38	0.51	1028	0.40	0.54
Air Volume		External Static - Pa (in. w.g.)																							
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)			375 (1.50)			400 (1.60)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
330	700	969	0.20	0.27	1021	0.22	0.29	1071	0.24	0.32	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
378	800	977	0.22	0.29	1030	0.24	0.32	1082	0.25	0.34	1128	0.28	0.37	1169	0.30	0.4	1205	0.31	0.42	- - -	- - -	- - -	- - -	- - -	- - -
425	900	986	0.24	0.32	1039	0.26	0.35	1090	0.28	0.37	1137	0.30	0.4	1177	0.32	0.43	1214	0.34	0.46	1248	0.37	0.49	1280	0.38	0.51
472	1000	997	0.26	0.35	1048	0.28	0.38	1098	0.31	0.41	114	0.33	0.44	1184	0.35	0.47	1221	0.37	0.5	1255	0.40	0.53	1287	0.42	0.56
519	1100	1008	0.29	0.39	1059	0.31	0.41	1107	0.33	0.44	1150	0.35	0.47	1191	0.38	0.51	1228	0.40	0.54	1263	0.43	0.57	1295	0.45	0.6
566	1200	1022	0.32	0.43	1071	0.34	0.45	1117	0.36	0.48	1160	0.39	0.52	1200	0.41	0.55	1237	0.44	0.59	1271	0.46	0.62	1303	0.49	0.66
613	1300	1037	0.35	0.47	1058	0.37	0.5	1130	0.40	0.53	1171	0.43	0.57	1210	0.45	0.6	1246	0.48	0.64	1280	0.51	0.68	1312	0.53	0.71
661	1400	1054	0.39	0.52	1100	0.40	0.54	1144	0.43	0.58	1183	0.46	0.62	1221	0.49	0.66	1256	0.52	0.7	1290	0.54	0.73	1321	0.57	0.77
708	1500	1073	0.43	0.57	1117	0.45	0.6	1159	0.48	0.64	1197	0.50	0.67	1234	0.53	0.71	1268	0.56	0.75	1301	0.59	0.79	1332	0.62	0.83

BLOWER DATA

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.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See Page 24 for blower motors and drives and for wet coil and options/accessory air resistance data.

DOWNFLOW

Air Volume		External Static - Pa (in. w.g.)																							
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)			175 (0.70)			200 (0.80)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
425	900	466	0.07	0.1	525	0.10	0.14	586	0.13	0.17	646	0.15	0.2	729	0.15	0.2	821	0.14	0.19	899	0.15	0.2	953	0.17	0.23
472	1000	484	0.09	0.12	543	0.12	0.16	603	0.14	0.19	664	0.16	0.22	745	0.17	0.23	834	0.17	0.23	908	0.18	0.24	959	0.19	0.26
519	1100	505	0.11	0.15	563	0.13	0.18	622	0.16	0.22	682	0.19	0.25	762	0.19	0.26	847	0.19	0.26	917	0.20	0.27	966	0.22	0.3
566	1200	527	0.13	0.18	584	0.16	0.21	643	0.19	0.25	702	0.21	0.28	779	0.22	0.3	860	0.22	0.3	927	0.23	0.31	973	0.25	0.34
613	1300	550	0.16	0.21	607	0.19	0.25	664	0.22	0.29	722	0.24	0.32	797	0.25	0.33	875	0.25	0.34	937	0.26	0.35	981	0.28	0.38
661	1400	574	0.19	0.25	630	0.22	0.29	687	0.24	0.32	744	0.26	0.35	817	0.28	0.37	890	0.28	0.38	949	0.29	0.39	991	0.31	0.42
708	1500	603	0.21	0.28	659	0.24	0.32	714	0.27	0.36	770	0.29	0.39	839	0.31	0.41	907	0.31	0.42	962	0.33	0.44	1002	0.35	0.47
755	1600	651	0.22	0.29	703	0.25	0.33	754	0.28	0.37	806	0.31	0.41	867	0.32	0.43	927	0.34	0.45	976	0.36	0.48	1014	0.38	0.51
802	1700	708	0.22	0.3	754	0.25	0.34	800	0.28	0.38	846	0.31	0.42	898	0.34	0.46	949	0.37	0.49	992	0.40	0.53	1028	0.43	0.57
849	1800	764	0.23	0.31	804	0.27	0.36	844	0.30	0.4	884	0.34	0.45	927	0.37	0.49	970	0.40	0.54	1008	0.43	0.58	1044	0.47	0.63
897	1900	812	0.25	0.34	847	0.29	0.39	881	0.33	0.44	916	0.37	0.49	953	0.40	0.54	990	0.44	0.59	1025	0.48	0.64	1061	0.51	0.69
944	2000	857	0.31	0.42	889	0.35	0.47	920	0.39	0.52	952	0.43	0.57	986	0.46	0.62	1020	0.51	0.68	1055	0.54	0.73	1091	0.57	0.77

Air Volume		External Static - Pa (in. w.g.)																							
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)			375 (1.50)			400 (1.60)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
425	900	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
472	1000	996	0.23	0.31	1034	0.26	0.35	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
519	1100	1001	0.25	0.34	1040	0.28	0.38	1083	0.31	0.42	1128	0.34	0.46	1176	0.37	0.49	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
566	1200	1008	0.28	0.38	1047	0.31	0.42	1089	0.34	0.46	1133	0.37	0.49	1180	0.40	0.53	1224	0.42	0.56	1261	0.45	0.6	- - -	- - -	- - -
613	1300	1017	0.31	0.42	1055	0.34	0.46	1097	0.37	0.5	1139	0.40	0.53	1184	0.43	0.57	1228	0.45	0.6	1264	0.47	0.63	1295	0.50	0.67
661	1400	1026	0.34	0.46	1065	0.37	0.5	1106	0.40	0.54	1147	0.43	0.57	1191	0.46	0.61	1233	0.48	0.64	1269	0.51	0.68	1300	0.53	0.71
708	1500	1038	0.38	0.51	1076	0.41	0.55	1117	0.44	0.59	1157	0.46	0.62	1199	0.48	0.65	1240	0.51	0.69	1275	0.54	0.72	1305	0.57	0.76
755	1600	1050	0.42	0.56	1089	0.45	0.6	1129	0.48	0.64	1168	0.50	0.67	1209	0.53	0.71	1249	0.55	0.74	1282	0.58	0.78	1312	0.61	0.82
802	1700	1065	0.46	0.61	1103	0.48	0.65	1142	0.51	0.69	1181	0.54	0.73	1221	0.57	0.76	1259	0.60	0.8	1292	0.62	0.83	1320	0.66	0.88
849	1800	1081	0.50	0.67	1118	0.53	0.71	1156	0.56	0.75	1194	0.59	0.79	1234	0.61	0.82	1271	0.64	0.86	1302	0.67	0.9	1330	0.70	0.94
897	1900	1098	0.54	0.73	1135	0.57	0.77	1172	0.60	0.81	1209	0.63	0.85	1248	0.66	0.88	1284	0.69	0.92	1314	0.72	0.97	1341	0.75	1.01
944	2000	1128	0.61	0.82	1164	0.64	0.86	1201	0.66	0.89	1239	0.69	0.93	1276	0.72	0.97	1310	0.75	1.01	1336	0.79	1.06	1362	0.82	1.1

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.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See Page 24 for blower motors and drives and for wet coil and options/accessory air resistance data.

HORIZONTAL

Air Volume		External Static - Pa (in. w.g.)																							
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)			175 (0.70)			200 (0.80)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
425	900	464	0.07	0.1	514	0.10	0.13	576	0.11	0.15	644	0.13	0.17	728	0.13	0.18	817	0.14	0.19	893	0.16	0.21	951	0.18	0.24
472	1000	482	0.09	0.12	533	0.11	0.15	595	0.13	0.17	662	0.14	0.19	744	0.16	0.21	829	0.16	0.22	902	0.18	0.24	957	0.20	0.27
519	1100	504	0.10	0.14	556	0.13	0.17	617	0.15	0.2	683	0.16	0.22	762	0.18	0.24	843	0.19	0.25	912	0.21	0.28	965	0.23	0.31
566	1200	528	0.13	0.17	581	0.15	0.2	641	0.17	0.23	706	0.19	0.25	782	0.20	0.27	859	0.22	0.29	924	0.23	0.31	974	0.25	0.34
613	1300	556	0.16	0.21	609	0.18	0.24	669	0.19	0.26	731	0.22	0.29	804	0.23	0.31	877	0.25	0.33	938	0.26	0.35	985	0.28	0.38
661	1400	592	0.18	0.24	645	0.20	0.27	702	0.22	0.3	763	0.24	0.32	830	0.26	0.35	898	0.28	0.37	953	0.29	0.39	997	0.32	0.43
708	1500	641	0.19	0.26	692	0.22	0.29	746	0.25	0.33	801	0.27	0.36	862	0.28	0.38	921	0.31	0.41	970	0.33	0.44	1011	0.36	0.48
755	1600	696	0.21	0.28	743	0.24	0.32	792	0.26	0.35	842	0.29	0.39	894	0.31	0.42	945	0.34	0.45	988	0.37	0.49	1027	0.40	0.53
802	1700	750	0.23	0.31	792	0.26	0.35	836	0.29	0.39	880	0.32	0.43	924	0.35	0.47	968	0.38	0.51	1007	0.41	0.55	1043	0.44	0.59
849	1800	799	0.26	0.35	837	0.29	0.39	875	0.32	0.43	913	0.36	0.48	952	0.39	0.52	990	0.42	0.56	1026	0.46	0.61	1061	0.48	0.65
897	1900	840	0.30	0.4	873	0.34	0.45	907	0.37	0.49	941	0.40	0.54	976	0.43	0.58	1011	0.47	0.63	1045	0.50	0.67	1080	0.54	0.72
944	2000	883	0.36	0.48	913	0.40	0.53	944	0.43	0.57	976	0.46	0.62	1009	0.50	0.67	1043	0.53	0.71	1078	0.57	0.76	1112	0.60	0.8

Air Volume		External Static - Pa (in. w.g.)																							
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)			375 (1.50)			400 (1.60)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
425	900	995	0.21	0.28	1034	0.23	0.31	1077	0.26	0.35	1121	0.28	0.38	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
472	1000	999	0.23	0.31	1038	0.25	0.34	1081	0.28	0.38	1124	0.31	0.41	1168	0.33	0.44	1211	0.35	0.47	- - -	- - -	- - -	- - -	- - -	- - -
519	1100	1006	0.25	0.34	1044	0.28	0.38	1086	0.31	0.41	1129	0.33	0.44	1171	0.35	0.47	1213	0.37	0.5	1253	0.40	0.53	1293	0.42	0.56
566	1200	1014	0.28	0.38	1052	0.31	0.42	1093	0.34	0.45	1135	0.36	0.48	1176	0.38	0.51	1217	0.40	0.54	1257	0.43	0.58	1296	0.46	0.61
613	1300	1023	0.31	0.42	1061	0.34	0.46	1102	0.37	0.5	1143	0.40	0.53	1184	0.42	0.56	1224	0.44	0.59	1263	0.46	0.62	1302	0.49	0.66
661	1400	1035	0.35	0.47	1073	0.38	0.51	1112	0.40	0.54	1153	0.43	0.57	1193	0.46	0.61	1232	0.48	0.64	1271	0.50	0.67	1309	0.53	0.71
708	1500	1048	0.39	0.52	1086	0.42	0.56	1125	0.44	0.59	1164	0.47	0.63	1204	0.49	0.66	1243	0.51	0.69	1280	0.54	0.73	1317	0.57	0.77
755	1600	1063	0.43	0.57	1100	0.46	0.61	1139	0.48	0.65	1178	0.51	0.68	1216	0.53	0.71	1254	0.56	0.75	1291	0.59	0.79	1326	0.62	0.83
802	1700	1079	0.47	0.63	1116	0.50	0.67	1154	0.53	0.71	1192	0.55	0.74	1230	0.58	0.78	1267	0.60	0.81	1302	0.63	0.85	1337	0.66	0.89
849	1800	1097	0.51	0.69	1133	0.54	0.73	1171	0.57	0.77	1209	0.60	0.8	1246	0.63	0.84	1281	0.66	0.88	1315	0.69	0.92	1349	0.72	0.96
897	1900	1116	0.57	0.76	1152	0.60	0.8	1189	0.63	0.84	1226	0.65	0.87	1262	0.68	0.91	1296	0.71	0.95	1329	0.74	0.99	1361	0.77	1.03
944	2000	1148	0.63	0.84	1183	0.66	0.88	1220	0.69	0.92	1257	0.72	0.96	1291	0.75	1	1323	0.78	1.04	1354	0.81	1.08	1385	0.84	1.12

BLOWER DATA

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.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See Page 24 for blower motors and drives and for wet coil and options/accessory air resistance data.

DOWNFLOW

Air Volume		External Static - Pa (in. w.g.)																							
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)			175 (0.70)			200 (0.80)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
519	1100	512	0.11	0.15	571	0.14	0.19	630	0.17	0.23	690	0.19	0.26	770	0.19	0.26	854	0.19	0.26	922	0.20	0.27	970	0.22	0.3
566	1200	535	0.13	0.18	593	0.16	0.22	651	0.19	0.26	710	0.22	0.3	788	0.22	0.3	868	0.22	0.3	933	0.23	0.31	978	0.25	0.34
613	1300	559	0.16	0.22	616	0.19	0.26	674	0.22	0.29	732	0.25	0.34	807	0.25	0.34	883	0.25	0.34	944	0.26	0.35	987	0.28	0.38
661	1400	584	0.19	0.26	641	0.22	0.29	698	0.25	0.33	755	0.28	0.37	827	0.28	0.37	899	0.28	0.38	956	0.30	0.4	997	0.32	0.43
708	1500	615	0.22	0.29	671	0.25	0.33	726	0.27	0.36	782	0.31	0.41	850	0.31	0.41	917	0.31	0.42	970	0.33	0.44	1009	0.35	0.47
755	1600	665	0.22	0.3	716	0.25	0.34	768	0.28	0.38	819	0.33	0.44	879	0.33	0.44	937	0.34	0.46	985	0.37	0.49	1022	0.39	0.52
802	1700	723	0.23	0.31	768	0.26	0.35	814	0.29	0.39	860	0.35	0.47	910	0.35	0.47	959	0.37	0.5	1001	0.40	0.54	1037	0.43	0.58
849	1800	779	0.24	0.32	818	0.28	0.37	857	0.31	0.41	897	0.37	0.5	939	0.37	0.5	980	0.41	0.55	1018	0.44	0.59	1054	0.48	0.64
897	1900	826	0.27	0.36	859	0.31	0.41	894	0.34	0.45	928	0.42	0.56	964	0.42	0.56	1000	0.46	0.61	1036	0.49	0.66	1072	0.52	0.7
944	2000	857	0.31	0.42	889	0.35	0.47	920	0.39	0.52	952	0.46	0.62	986	0.46	0.62	1020	0.51	0.68	1055	0.54	0.73	1091	0.57	0.77
991	2100	878	0.37	0.49	909	0.40	0.54	940	0.44	0.59	973	0.52	0.7	1006	0.52	0.7	1041	0.56	0.75	1076	0.60	0.8	1112	0.63	0.85
1038	2200	897	0.41	0.55	929	0.46	0.61	961	0.49	0.66	994	0.58	0.78	1028	0.58	0.78	1063	0.62	0.83	1099	0.66	0.89	1134	0.69	0.93
1085	2300	918	0.46	0.62	950	0.51	0.68	983	0.55	0.74	1017	0.64	0.86	1052	0.64	0.86	1087	0.69	0.92	1122	0.72	0.97	1157	0.76	1.02
1133	2400	941	0.52	0.7	974	0.57	0.77	1008	0.62	0.83	1042	0.72	0.96	1077	0.72	0.96	1111	0.75	1.01	1146	0.79	1.06	1181	0.83	1.11

Air Volume		External Static - Pa (in. w.g.)																							
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)			375 (1.50)			400 (1.60)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
519	1100	1006	0.26	0.35	1045	0.29	0.39	1089	0.32	0.43	1134	0.34	0.46	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
566	1200	1013	0.28	0.38	1053	0.31	0.42	1095	0.34	0.46	1139	0.37	0.5	1186	0.40	0.53	1230	0.43	0.57	1266	0.45	0.6	- - -	- - -	- - -
613	1300	1022	0.31	0.42	1062	0.34	0.46	1104	0.37	0.5	1146	0.40	0.54	1192	0.43	0.57	1234	0.45	0.6	1269	0.48	0.64	1301	0.51	0.68
661	1400	1033	0.35	0.47	1072	0.38	0.51	1114	0.41	0.55	1155	0.43	0.58	1199	0.46	0.61	1240	0.48	0.65	1275	0.51	0.68	1305	0.54	0.72
708	1500	1045	0.39	0.52	1085	0.42	0.56	1125	0.45	0.6	1165	0.47	0.63	1208	0.49	0.66	1248	0.51	0.69	1281	0.54	0.73	1311	0.57	0.77
755	1600	1059	0.43	0.57	1098	0.46	0.61	1138	0.48	0.65	1177	0.51	0.68	1218	0.53	0.71	1257	0.56	0.75	1290	0.59	0.79	1319	0.62	0.83
802	1700	1074	0.46	0.62	1113	0.49	0.66	1152	0.52	0.7	1190	0.55	0.74	1231	0.57	0.77	1268	0.60	0.8	1299	0.63	0.84	1328	0.66	0.89
849	1800	1091	0.51	0.68	1129	0.54	0.72	1167	0.57	0.76	1205	0.60	0.8	1244	0.62	0.83	1280	0.65	0.87	1310	0.68	0.91	1338	0.71	0.95
897	1900	1109	0.56	0.75	1146	0.59	0.79	1183	0.61	0.82	1221	0.64	0.86	1260	0.67	0.9	1294	0.70	0.94	1323	0.73	0.98	1349	0.76	1.02
944	2000	1128	0.61	0.82	1164	0.64	0.86	1201	0.66	0.89	1239	0.69	0.93	1276	0.72	0.97	1310	0.75	1.01	1336	0.79	1.06	1362	0.82	1.1
991	2100	1148	0.66	0.89	1185	0.69	0.93	1221	0.72	0.97	1258	0.75	1.01	1294	0.78	1.05	1325	0.81	1.09	1351	0.85	1.14	1376	0.89	1.19
1038	2200	1170	0.72	0.97	1206	0.75	1.01	1242	0.78	1.05	1277	0.81	1.09	1311	0.85	1.14	1341	0.88	1.18	1365	0.92	1.23	1390	0.95	1.28
1085	2300	1193	0.79	1.06	1228	0.81	1.09	1262	0.85	1.14	1295	0.89	1.19	1327	0.93	1.24	1355	0.96	1.29	1380	0.99	1.33	1406	1.02	1.37
1133	2400	1216	0.86	1.15	1250	0.89	1.19	1282	0.93	1.24	1313	0.97	1.3	1343	1.01	1.36	1371	1.04	1.4	1396	1.07	1.44	1423	1.10	1.48

BLOWER DATA

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.).
2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.).
See Page 24 for blower motors and drives and for wet coil and options/accessory air resistance data.

HORIZONTAL

Air Volume		External Static - Pa (in. w.g.)																							
		25 (0.10)			50 (0.20)			75 (0.30)			100 (0.40)			125 (0.50)			150 (0.60)			175 (0.70)			200 (0.80)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
519	1100	509	0.11	0.15	562	0.13	0.18	624	0.15	0.2	691	0.16	0.22	771	0.18	0.24	852	0.19	0.25	919	0.21	0.28	970	0.23	0.31
566	1200	535	0.13	0.18	589	0.16	0.21	650	0.17	0.23	715	0.19	0.25	792	0.20	0.27	869	0.22	0.29	932	0.24	0.32	980	0.26	0.35
613	1300	564	0.16	0.21	618	0.18	0.24	678	0.20	0.27	741	0.22	0.29	815	0.23	0.31	887	0.25	0.33	946	0.27	0.36	991	0.29	0.39
661	1400	604	0.18	0.24	657	0.20	0.27	715	0.22	0.3	775	0.25	0.33	842	0.26	0.35	908	0.28	0.37	962	0.30	0.4	1004	0.32	0.43
708	1500	656	0.19	0.26	706	0.22	0.3	760	0.25	0.33	814	0.27	0.36	874	0.29	0.39	931	0.31	0.41	979	0.34	0.45	1019	0.36	0.48
755	1600	712	0.22	0.29	758	0.24	0.32	807	0.27	0.36	855	0.29	0.39	906	0.32	0.43	955	0.34	0.46	997	0.37	0.5	1035	0.40	0.54
802	1700	766	0.24	0.32	808	0.27	0.36	850	0.30	0.4	892	0.33	0.44	936	0.35	0.47	978	0.38	0.51	1016	0.42	0.56	1052	0.45	0.6
849	1800	814	0.27	0.36	851	0.30	0.4	888	0.33	0.44	925	0.37	0.49	963	0.40	0.53	1000	0.43	0.57	1035	0.46	0.62	1071	0.49	0.66
897	1900	853	0.31	0.41	886	0.34	0.46	919	0.37	0.5	952	0.41	0.55	986	0.45	0.6	1021	0.48	0.64	1056	0.51	0.69	1091	0.54	0.73
944	2000	883	0.36	0.48	913	0.40	0.53	944	0.43	0.57	976	0.46	0.62	1009	0.50	0.67	1043	0.53	0.71	1078	0.57	0.76	1112	0.60	0.8
991	2100	906	0.42	0.56	936	0.45	0.6	967	0.48	0.65	999	0.52	0.7	1033	0.56	0.75	1067	0.59	0.79	1101	0.63	0.84	1135	0.66	0.88
1038	2200	930	0.48	0.64	960	0.51	0.68	991	0.54	0.73	1024	0.58	0.78	1058	0.62	0.83	1092	0.66	0.88	1126	0.69	0.92	1160	0.72	0.96
1085	2300	954	0.54	0.72	985	0.57	0.77	1017	0.61	0.82	1051	0.65	0.87	1085	0.69	0.92	1119	0.72	0.96	1152	0.75	1	1186	0.78	1.04
1133	2400	981	0.60	0.81	1013	0.64	0.86	1046	0.68	0.91	1079	0.72	0.96	1113	0.75	1	1180	0.78	1.05	1180	0.81	1.09	1213	0.84	1.13

Air Volume		External Static - Pa (in. w.g.)																							
		225 (0.90)			250 (1.00)			275 (1.10)			300 (1.20)			325 (1.30)			350 (1.40)			375 (1.50)			400 (1.60)		
L/s	cfm	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP	Rev/ Min	kW	BHP
519	1100	1010	26.11	35	1049	0.28	0.38	1091	0.31	0.42	1134	0.34	0.45	1176	0.58	0.78	1218	0.38	0.51	1258	0.40	0.54	1297	0.43	0.57
566	1200	1019	0.28	0.38	1058	0.31	0.42	1099	0.34	0.46	1141	0.37	0.49	1182	0.39	0.52	1223	0.41	0.55	1263	0.43	0.58	1302	0.46	0.61
613	1300	1030	0.32	0.43	1068	0.35	0.47	1108	0.37	0.5	1149	0.40	0.53	1190	0.42	0.56	1230	0.44	0.59	1270	0.47	0.63	1308	0.49	0.66
661	1400	1042	0.35	0.47	1080	0.38	0.51	1120	0.41	0.55	1160	0.43	0.58	1200	0.46	0.61	1240	0.48	0.65	1278	0.51	0.68	1315	0.54	0.72
708	1500	1056	0.40	0.53	1094	0.43	0.57	1133	0.45	0.6	1172	0.47	0.63	1212	0.50	0.67	250	0.52	0.7	1288	0.55	0.74	1324	0.57	0.77
755	1600	1071	0.43	0.58	1109	0.46	0.62	1147	0.49	0.66	1186	0.51	0.69	1225	0.54	0.72	1263	0.57	0.76	1299	0.60	0.8	1334	0.62	0.83
802	1700	1088	0.48	0.64	1126	0.51	0.68	1164	0.54	0.72	1202	0.56	0.75	1240	0.58	0.78	1276	0.61	0.82	1311	0.64	0.86	1345	0.67	0.9
849	1800	1107	0.52	0.7	1143	0.55	0.74	1181	0.58	0.78	1219	0.60	0.81	1256	0.63	0.85	1290	0.66	0.89	1324	0.69	0.93	1357	0.72	0.97
897	1900	1126	0.57	0.77	1163	0.60	0.81	1200	0.63	0.85	1237	0.66	0.88	1273	0.69	0.92	1306	0.72	0.96	1339	0.75	1	1371	0.78	1.04
944	2000	1148	0.63	0.84	1183	0.66	0.88	1220	0.69	0.92	1257	0.72	0.96	1291	0.75	1	1323	0.78	1.04	1354	0.81	1.08	1385	0.84	1.12
991	2100	1170	0.69	0.92	1206	0.72	0.96	1242	0.75	1	1277	0.78	1.04	1310	0.81	1.08	1340	0.84	1.13	1370	0.87	1.17	1401	0.90	1.21
1038	2200	1195	0.75	1	1230	0.78	1.04	1265	0.81	1.08	1299	0.84	1.13	1330	0.88	1.18	1359	0.92	1.23	1388	0.95	1.27	1418	0.98	1.31
1085	2300	1220	0.81	1.08	1254	0.84	1.13	1288	0.87	1.17	1320	0.92	1.23	1350	0.95	1.28	1378	1.00	1.34	1406	1.03	1.38	1435	1.06	1.42
1133	2400	1245	0.88	1.18	1278	0.91	1.22	1311	0.95	1.28	1341	0.99	1.33	1370	1.04	1.4	1397	1.08	1.45	1425	1.12	1.5	1454	1.15	1.54

BLOWER DATA

BELT DRIVE KIT SPECIFICATIONS

Model No.	Motor kW		Motor HP		No. of Speeds	Drive Kits and rev/min Range					
	Nom.	Max.	Nom.	Max.		A01	A02	A03	A05	A06	A07
036	0.47	0.54	0.63	0.72	2	low 374-561 high 561-842	- - -	- - -	- - -	- - -	- - -
	0.62	0.71	0.83	0.95	2	- - -	- - -	- - -	low 498-748 high 748-1122	- - -	- - -
048	0.47	0.54	0.63	0.72	2	- - -	low 414-621 high 621-931	- - -	- - -	- - -	- - -
	1.24	1.42	1.66	1.91	2	- - -	- - -	- - -	- - -	low 595-794 high 893-1191	- - -
060	0.62	0.71	0.83	0.95	2	- - -	- - -	low 463-694 high 694-1042	- - -	- - -	- - -
	1.24	1.42	1.66	1.91	2	- - -	- - -	- - -	- - -	- - -	low 673-860 high 1010-1290

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

OPTIONS / ACCESSORIES AIR RESISTANCE

Air Volume cfm		Wet Indoor Coil				Gas Heat				Economizer		Filters			
		036, 048		060		Medium Input		High Input				MERV 8		MERV 13	
L/s	cfm	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.
375	800	2	0.01	2	0.01	5	0.02	5	0.02	10	0.04	10	0.04	12	0.05
470	1000	5	0.02	2	0.01	5	0.02	5	0.02	10	0.04	10	0.04	17	0.07
565	1200	5	0.02	2	0.01	5	0.02	5	0.02	10	0.04	10	0.04	17	0.07
660	1400	7	0.03	5	0.02	5	0.02	7	0.03	10	0.04	10	0.04	17	0.07
755	1600	10	0.04	7	0.03	7	0.03	10	0.04	10	0.04	10	0.04	17	0.07
850	1800	12	0.05	10	0.04	7	0.03	12	0.05	12	0.05	12	0.05	17	0.07
945	2000	15	0.06	12	0.05	10	0.04	15	0.06	12	0.05	12	0.05	20	0.08
1040	2200	20	0.08	15	0.06	10	0.04	17	0.07	12	0.05	12	0.05	20	0.08
1130	2400	22	0.09	17	0.07	12	0.05	20	0.08	12	0.05	12	0.05	20	0.08
1225	2600	25	0.1	20	0.08	12	0.05	22	0.09	15	0.06	12	0.05	20	0.08
1320	2800	27	0.11	22	0.09	15	0.06	25	0.1	15	0.06	12	0.05	20	0.08
1415	3000	32	0.13	25	0.1	17	0.07	27	0.11	15	0.06	12	0.05	20	0.08

POWER EXHAUST FAN PERFORMANCE

Return Air System Static Pressure		Air Volume Exhausted	
Pa	in. w.g.	L/s	cfm
0	0	944	2000
12	0.05	939	1990
25	0.1	908	1924
37	0.15	854	1810
50	0.2	785	1664
62	0.25	711	1507
75	0.3	637	1350
87	0.35	571	1210

BLOWER DATA

CEILING DIFFUSERS AIR RESISTANCE

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

CEILING DIFFUSER AIR THROW DATA

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

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

ELECTRICAL DATA

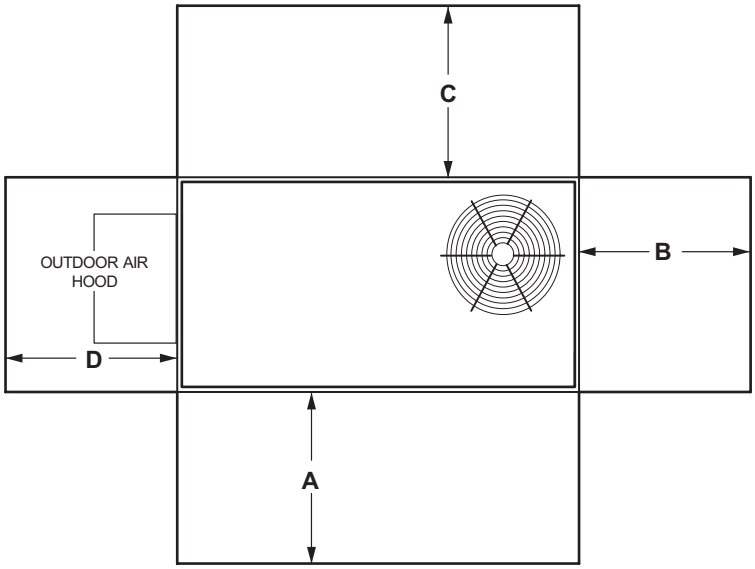
Model No.		KDB036H4		KDB048H4		KDB060H4	
[1] Voltage - 50Hz with Neutral		380/420V - 3 Ph		380/420V - 3 Ph		380/420V - 3 Ph	
Compressor	Rated Load Amps	5.7		6.4		7.2	
	Locked Rotor Amps	38		41		52	
Outdoor Fan Motor	Full Load Amps	2.8		2.8		2.8	
Power Exhaust (1) 0.25 kW	Full Load Amps	1.3		1.3		1.3	
Indoor Blower Motor	kW	0.47	062	0.47	1.2	0.62	1.2
	Full Load Amps	1.4	1.9	1.4	2.6	1.9	2.6
[2] Maximum Overcurrent Protection	Unit Only	15	15	15	15	20	20
	With (1) 0.25 kW Power Exhaust	15	15	15	20	20	20
[3] Minimum Circuit Ampacity	Unit Only	12	12	13	14	14	15
	With (1) 0.25 kW Power Exhaust	13	14	14	15	15	16

[2] Extremes of operating range are plus and minus 10% of line voltage.

[2] Heating, Air Conditioning, Refrigeration (HACR) type breaker or fuse.

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

UNIT CLEARANCES



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

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

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

OUTDOOR SOUND DATA

[1] Unit Model No.	Octave Band Sound Power Levels dBA, re 10^{-12} Watts - Center Frequency - Hz							[1] Sound Rating Number (dBA)
	125	250	500	1000	2000	4000	8000	
KDB036	62.1	66.2	70.8	69.4	64	57.4	51.1	75
KDB048	66.8	67.8	72.6	72.1	68	63.1	52.9	77
KDB060	65.7	67.9	70.4	72.2	68.5	63.4	55.5	77

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

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

WEIGHT DATA — UNIT

Model Number	Net				Shipping			
	Base		Max.		Base		Max.	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.
KDB036	270	595	327	722	288	635	346	762
KDB048	304	670	366	808	322	710	385	848
KDB060	342	756	406	894	370	816	433	954

Base Unit - The unit with NO OPTIONS.
Max. Unit - The unit with ALL OPTIONS Installed (Economizer, etc.)

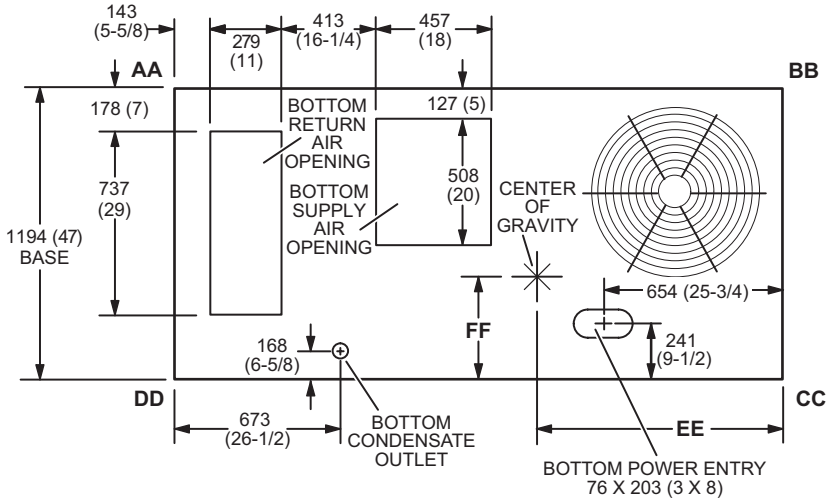
WEIGHT DATA — OPTIONS / ACCESSORIES

		Shipping Weights	
		kg	lbs.
ECONOMIZER / OUTDOOR AIR / EXHAUST			
Economizer			
Economizer - Includes Barometric Relief Dampers and Exhaust Hood		59	131
Outdoor Air Dampers			
Motorized		18	40
Manual		14	30
Power Exhaust			
Standard Static		16	35
GAS HEAT			
Medium Heat (adder over standard heat)		4	8
High Heat (adder over standard heat)		9	19
ROOF CURBS			
Hybrid Roof Curbs, Downflow			
203 mm height		23	50
356 mm height		32	70
457 mm height		36	80
610 mm height		45	100
Hybrid Curbs, Full Perimeter, Downflow			
203 mm height		26	57
356 mm height		27	60
457 mm height		41	91
610 mm height		52	114
Adjustable Pitch Curb, Downflow			
356 mm height		51	113
CEILING DIFFUSERS			
Step-Down	RTD9-65S	36	80
	RTD11-95S	54	118
Flush	FD9-65S	36	80
	FD11-95S	54	118
Transitions (Supply and Return)	T1TRAN10AN1	10	22
	T1TRAN20N-1	10	21

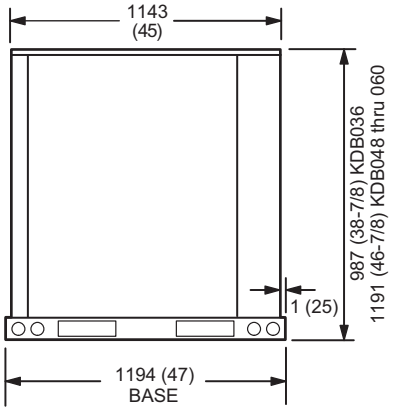
DIMENSIONS — UNIT

Model No.	CORNER WEIGHTS																CENTER OF GRAVITY							
	AA				BB				CC				DD				EE				FF			
	Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	mm	in.	mm	in.	mm	in.	mm	in.
036	56	124	76	167	70	154	78	171	79	175	88	195	64	141	86	189	965	38	1067	42	559	22	559	22
048	64	140	84	186	79	174	87	192	90	198	99	218	72	159	96	212	965	38	1067	42	559	22	559	22
060	73	162	98	217	87	192	91	201	99	218	104	229	83	184	112	247	1143	45	1295	51	559	22	559	22

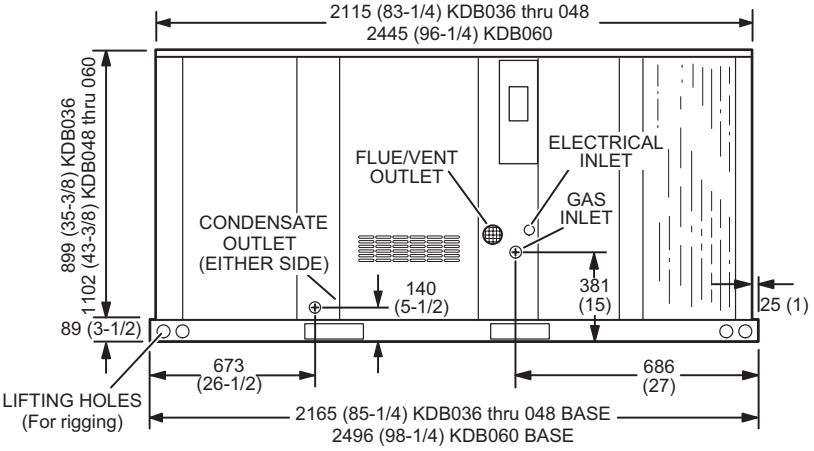
Base Unit - The unit with standard heat exchanger NO OPTIONS.
Max. Unit - The unit with ALL OPTIONS Installed (Economizer, etc.).



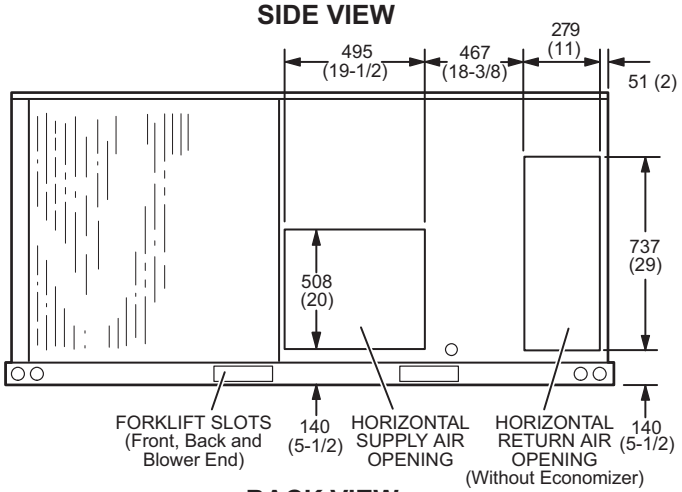
TOP VIEW (Base)



END VIEW

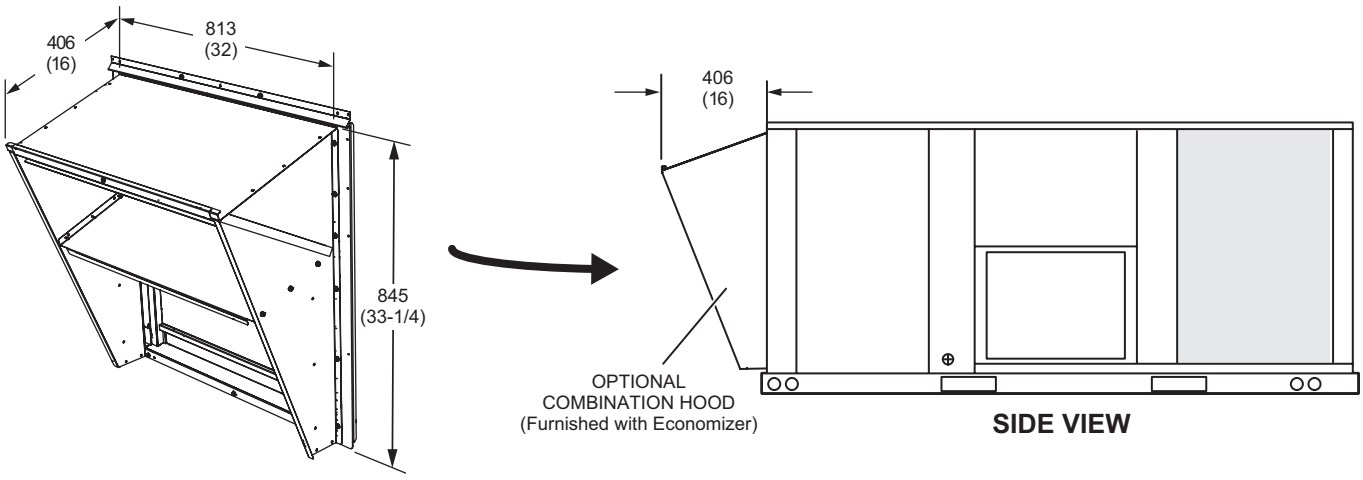


SIDE VIEW



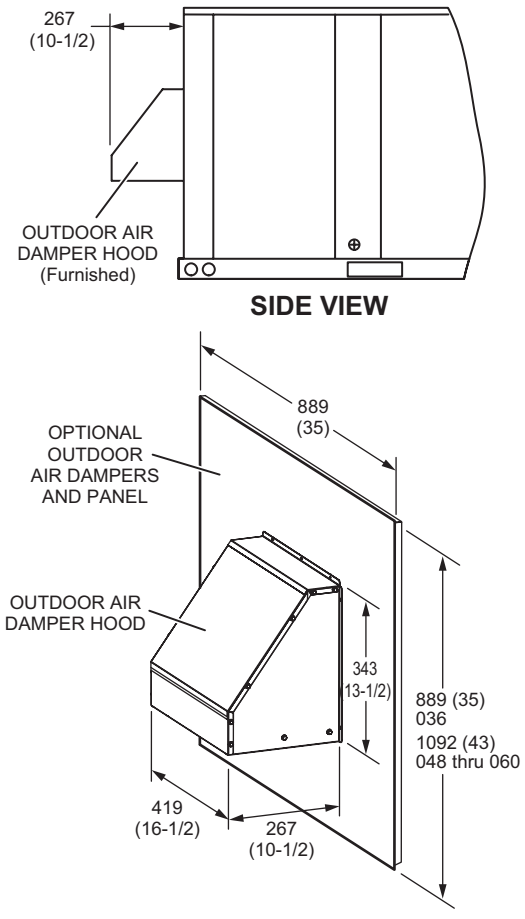
BACK VIEW

COMBINATION OUTDOOR AIR HOOD DETAIL FOR OPTIONAL ECONOMIZER AND BAROMETRIC RELIEF DAMPERS
(Furnished With Economizer for Downflow Applications)

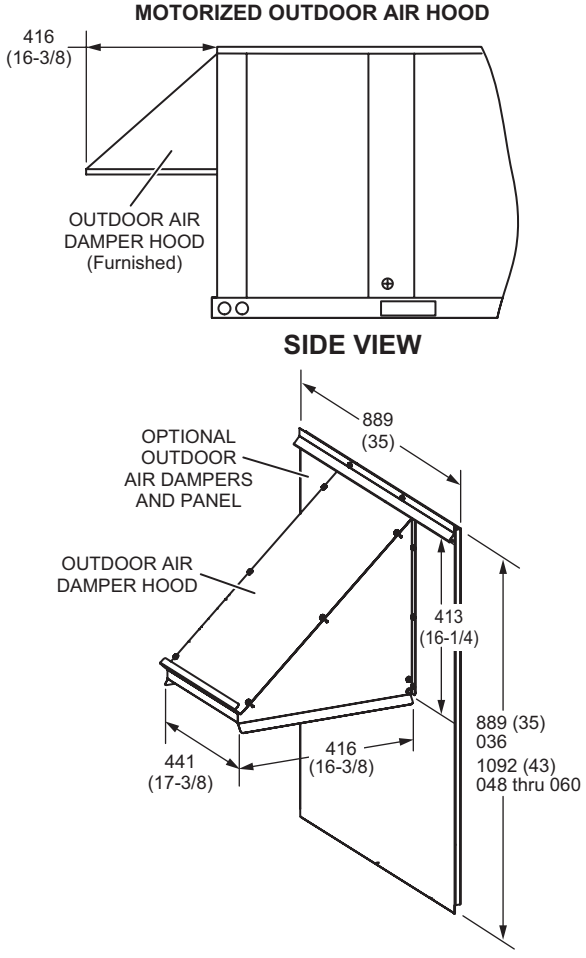


OUTDOOR AIR DAMPER HOOD DETAIL (Downflow or Horizontal Applications)

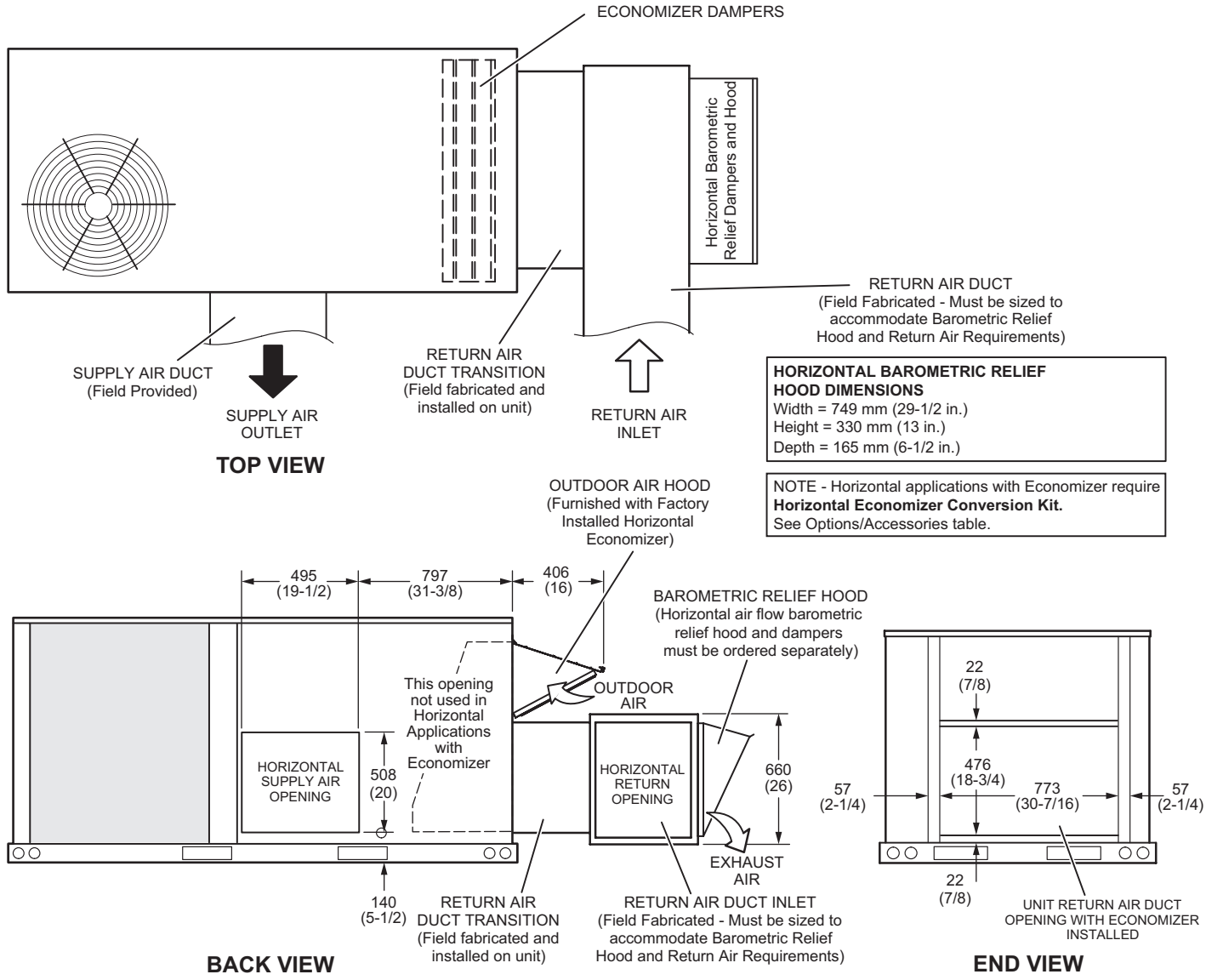
MANUAL OUTDOOR AIR HOOD



MOTORIZED OUTDOOR AIR HOOD

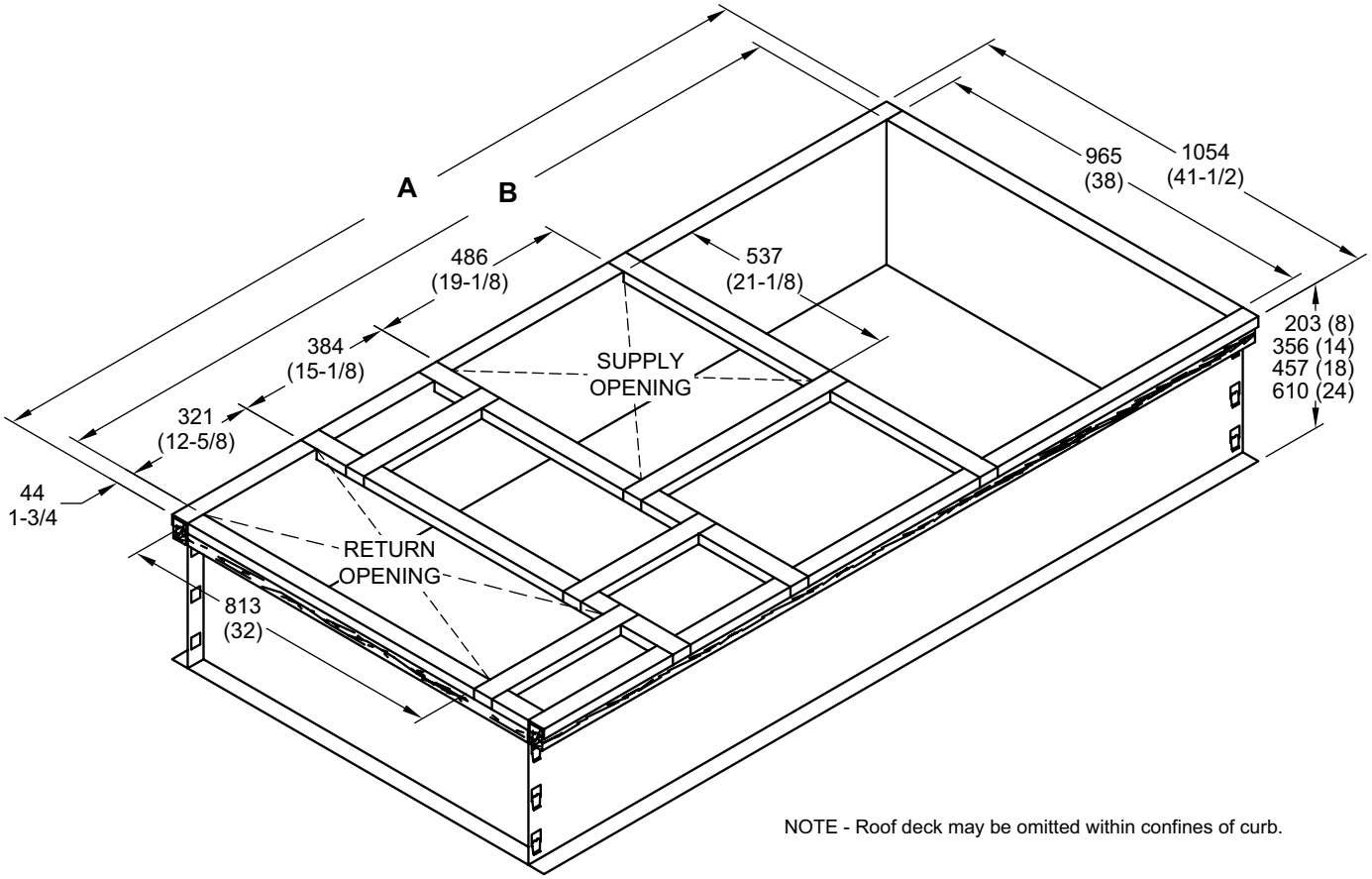


OUTDOOR AIR HOOD DETAIL WITH OPTIONAL ECONOMIZER AND OPTIONAL BAROMETRIC RELIEF DAMPERS WITH HOOD (Horizontal Application)



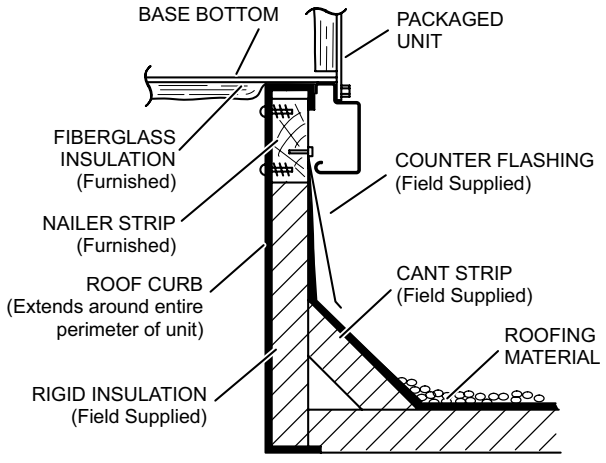
NOTE - Return Air Duct and Transition must be supported

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

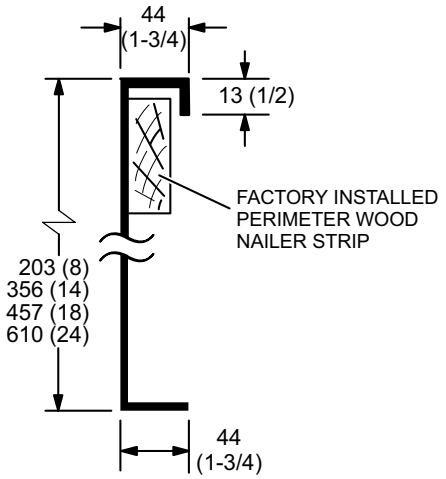


NOTE - Roof deck may be omitted within confines of curb.

TYPICAL FLASHING DETAIL FOR ROOF CURB



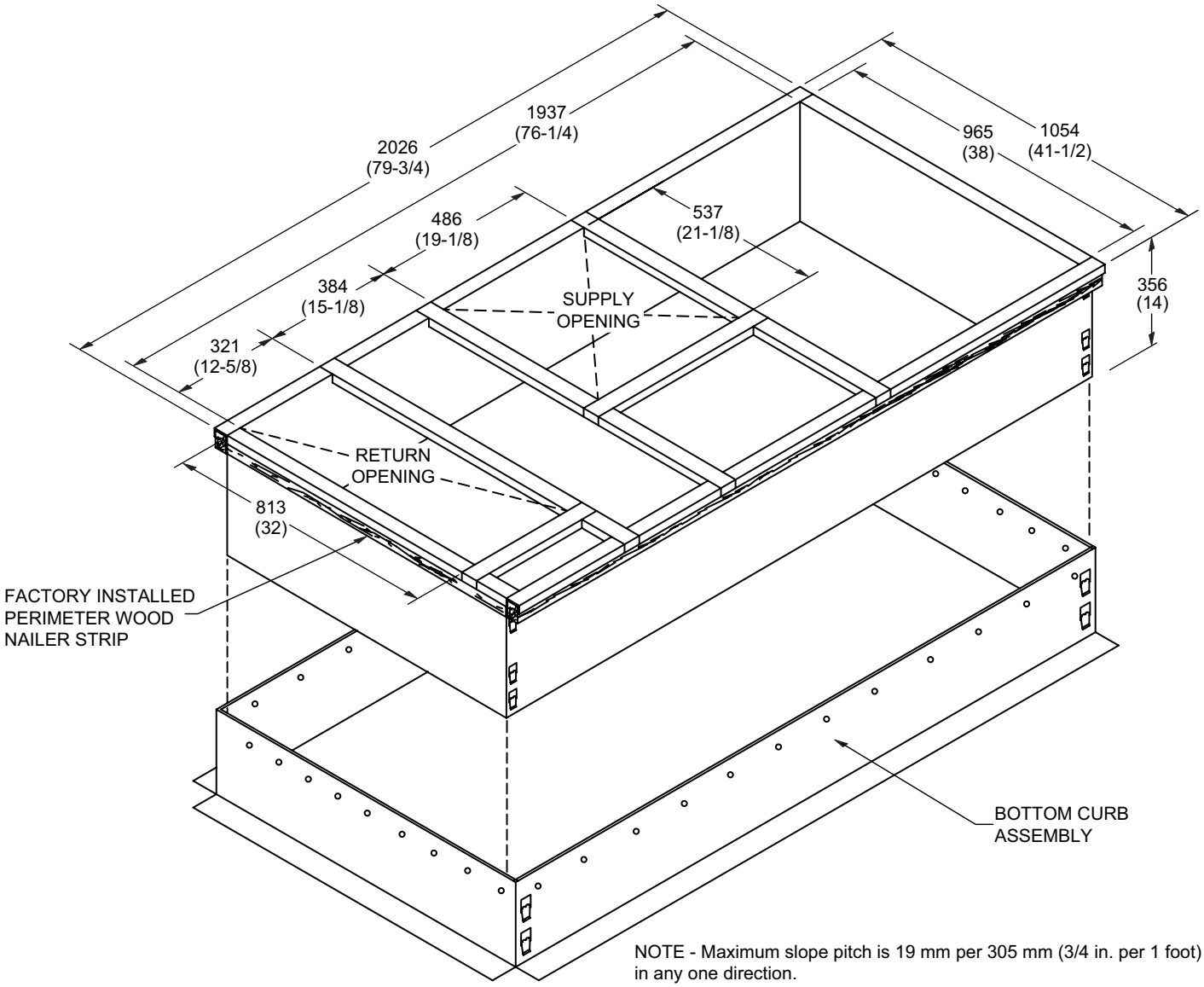
DETAIL ROOF CURB



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

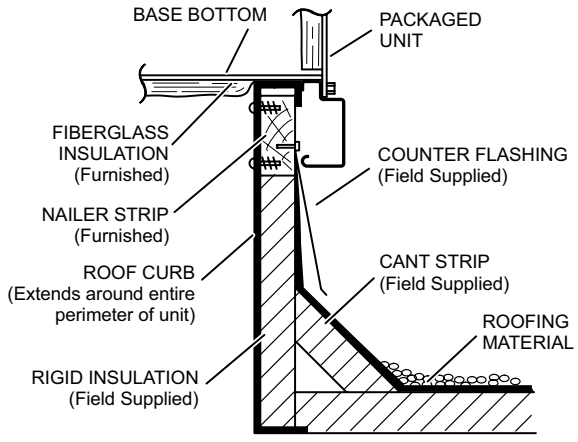
[1] 060 models can be used on smaller 2026 mm (79-3/4 in.) roof curbs (not full perimeter) with 400 mm (15-3/4 in.) overhang at condenser end of unit. See dimension drawing on Page 34.

ADJUSTABLE PITCH CURBS - DOUBLE DUCT OPENING

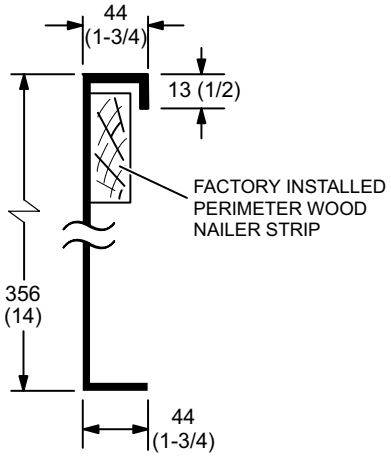


NOTE - Maximum slope pitch is 19 mm per 305 mm (3/4 in. per 1 foot) in any one direction.

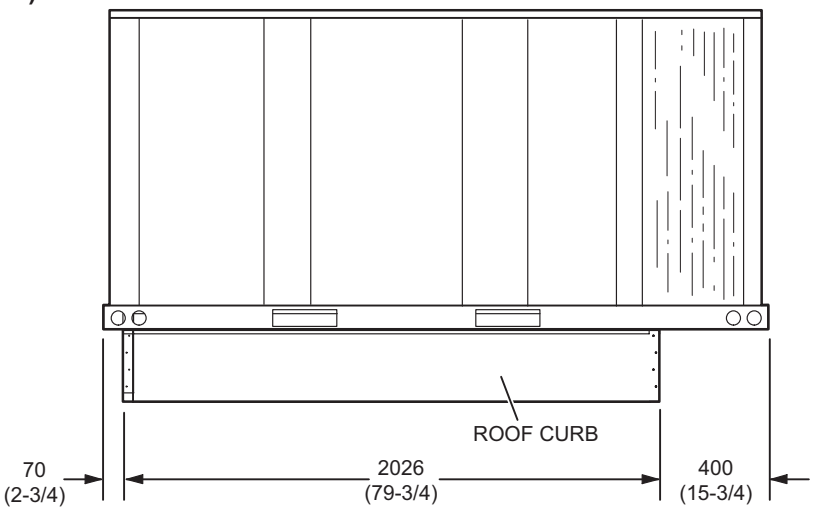
TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB

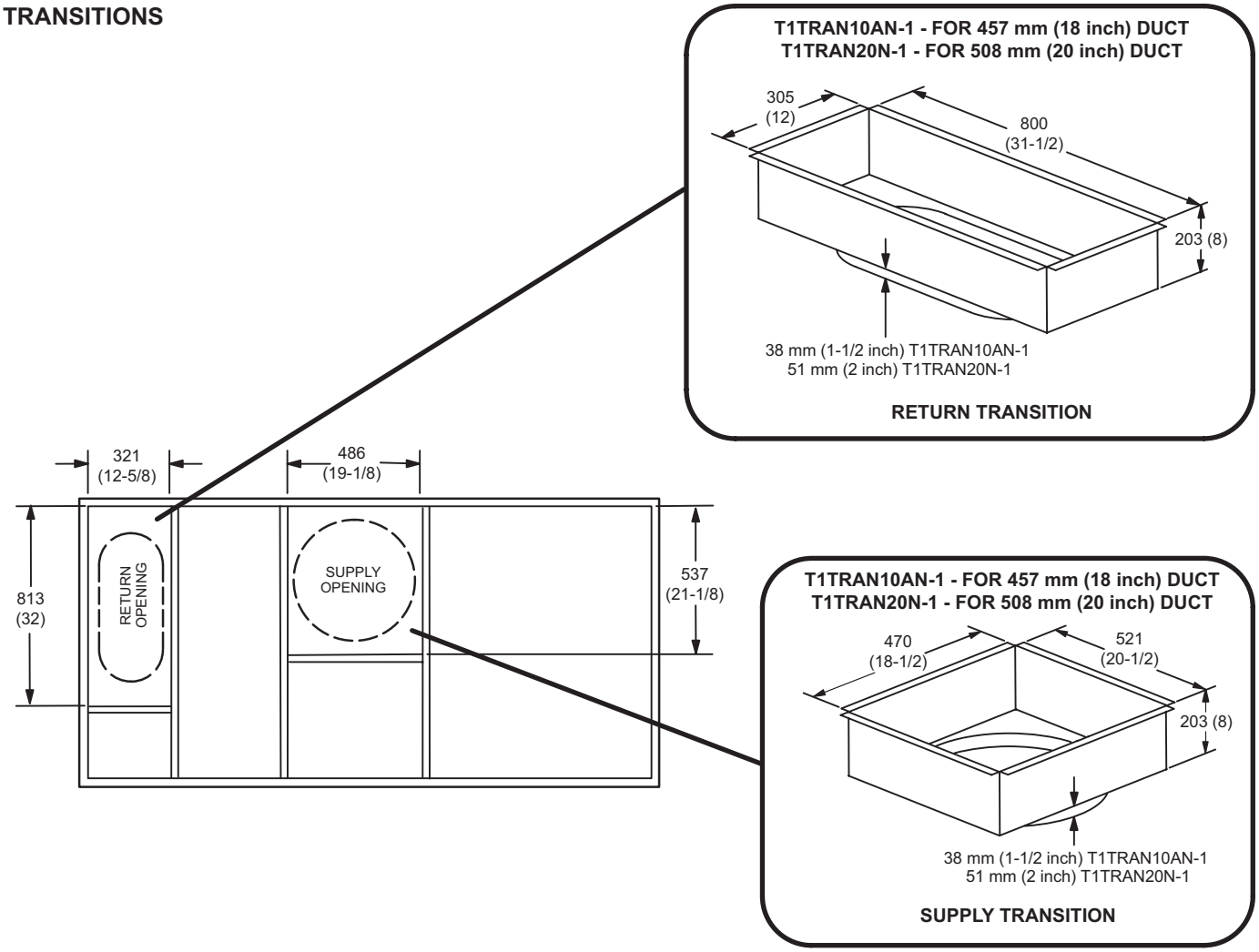


060 MODELS - SHOWING OVERHANG ON SMALLER 2026 MM LENGTH ROOF CURBS (Not Full Perimeter)



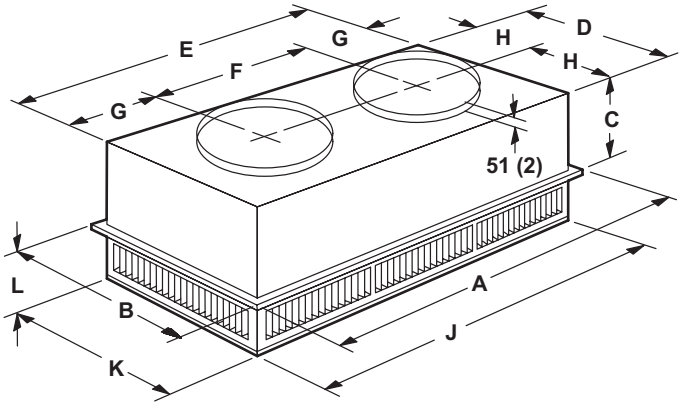
SIDE VIEW

TRANSITIONS



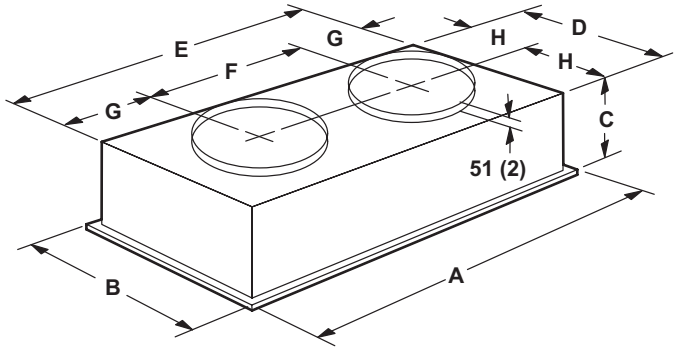
COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

STEP-DOWN CEILING DIFFUSER



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

FLUSH CEILING DIFFUSER



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

REVISIONS

Sections	Description of Change
Options/Accessories	**Catalog numbers revised for:** Cold Weather Kits Disconnects Economizers Gravity Exhaust Dampers LPG Kits Power Exhaust Single Enthalpy Smoke Detectors

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