

**PRODUCT SPECIFICATIONS**

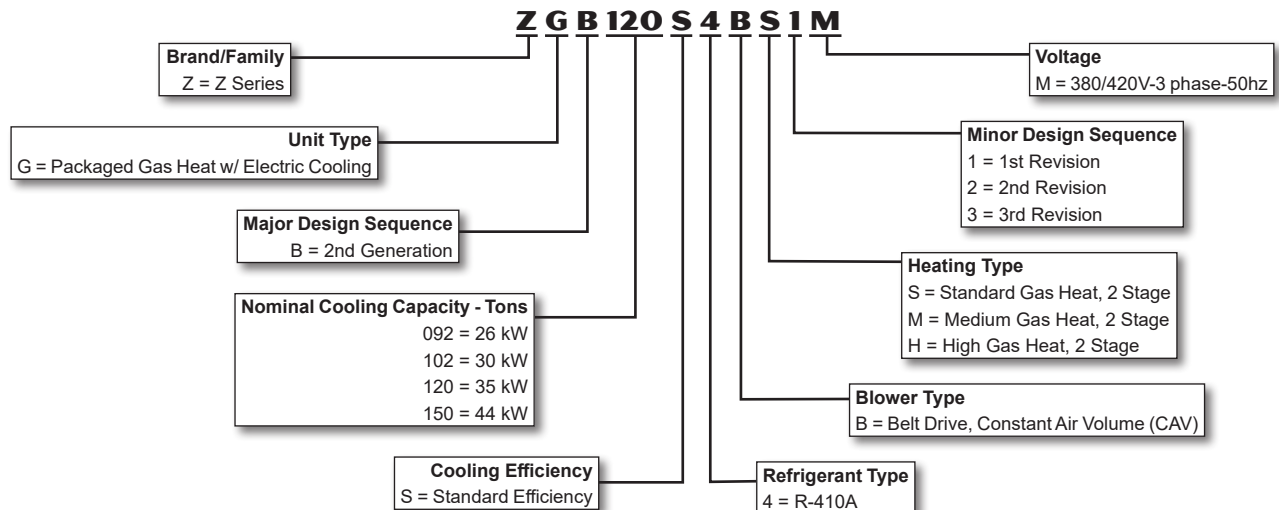
# Z-SERIES™

DESIGNED TO FIT. FAST.

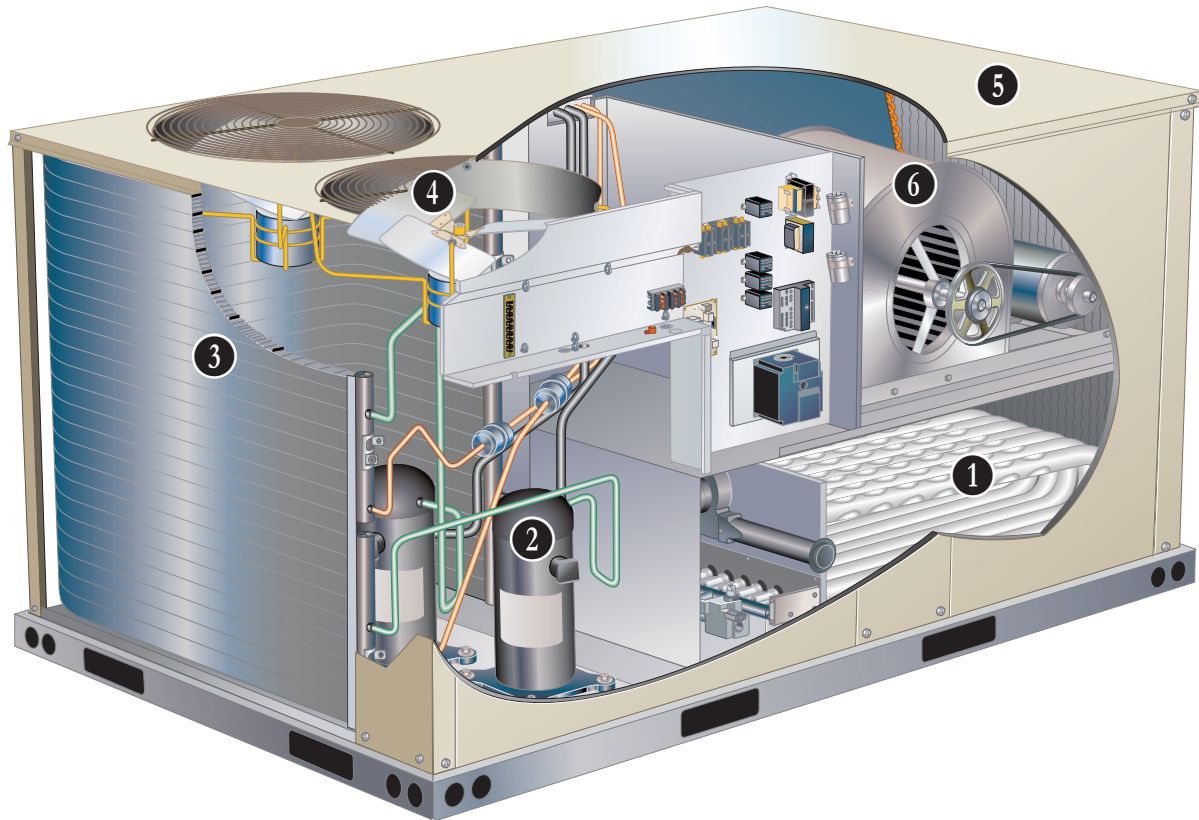


**26 to 44 kW (7.5 to 12.5 Tons)**  
**Net Cooling Capacity – 22.5 to 34.5 kW (76 800 to 117 800 Btuh)**  
**Gas Input Heat Capacity – 24.8 to 61.5 kW (84 000 to 210 000 Btuh)**

**MODEL NUMBER IDENTIFICATION**



## FEATURES AND BENEFITS



Z-Series™ rooftop units from Allied Commercial are the new standard for cost efficient reliable, efficient rooftop units built for long-lasting performance that can significantly improve indoor environments.

### Z-Series™ Rooftop Units Feature:

- **Quick and Easy Retrofit** - Fast installation for replacement of many existing rooftop units - fits high volume competitor's roof curbs.
- **Aluminized Steel Heat Exchanger With Inshot Burners** - Life cycle tested.
- **R-410A Refrigerant** - Environmentally friendly.
- **Scroll Compressors** - Single speed scroll compressors are furnished on all models.
- **Eco-last™ Coil System (092-120 Models)** - Smaller, lighter condenser coil.
- **High Pressure Switches** - Protect compressor.
- **Independent Outdoor Fan Motor Mounts** - Allows for easy and efficient service access without removing the top panel.
- **Constant Air Volume (CAV) Blower** - Allows constant air delivery.
- **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 Drain Pan** - Provides durability and improved serviceability and meets ASHRAE 62.1 requirements for drain pan slope.
- **MERV 8 or MERV 13 Filters** - Available as field installed option, provide an enhanced level of indoor air quality, and can help the building qualify for additional LEED credits.
- **Common Components** - Many maintenance items are standard throughout the entire product line, reducing the need to carry different parts to the job or maintain in inventory.

## FEATURES AND BENEFITS

### CONTENTS

Blower Data . . . . .	18
Dimensions - Accessories. . . . .	29
Dimensions - Unit . . . . .	28
Electrical Data. . . . .	24
Features And Benefits . . . . .	2
Model Number Identification . . . . .	1
Optional Conventional Temperature Control Systems . . . . .	26
Options / Accessories . . . . .	9
Outdoor Sound Data . . . . .	25
Ratings . . . . .	14
Specifications . . . . .	12
Specifications - Gas Heat. . . . .	13
Unit Clearances. . . . .	25
Weight Data. . . . .	27

### PERFORMANCE / QUALITY

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) Standard 340/360-2007 while operating at rated voltage and air volumes.

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

### HEATING SYSTEM

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

#### 1 Heat Exchanger

Tubular construction, aluminized steel, life cycle tested.

Optional Stainless Steel Heat Exchanger is required if mixed air temperature is below 7°C.

#### Electronic Pilot Ignition

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 Control

Factory installed, limit control with fixed temperature setting. Heat limit control protects 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 (24.8/33.4 kW)
- Medium Gas Heat, 2 Stage (34.3/46.7 kW)
- High Gas Heat, 2 Stage (45.7/61.5 kW)

### Options/Accessories

#### Factory Installed

**Stainless Steel Heat Exchanger**  
Required if mixed air temperature is below 7°C.

#### Field Installed

#### LPG/Propane Kits

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

### 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.

#### 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.

Kit contains vent transition, vent tee, drain cap and installation hardware.

*NOTE - Straight vent pipes (102 mm B-Vent) and caps are not furnished and must be field supplied. Refer to kit installation instructions for additional information.*

## FEATURES AND BENEFITS

### COOLING SYSTEM

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

System can operate from 4.4°C (10°C for 150 models) to 52°C without any additional controls.

#### R-410A Refrigerant

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

### 2 Scroll Compressors

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

Resiliently mounted on rubber grommets for quiet operation.

#### Refrigerant Metering Orifice

Accurately meters refrigerant in system.

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

#### Filter/Driers

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

#### High Pressure Switches

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

### 3 Eco-last™ Coil System (092-120 models only)

Condenser coil features lightweight, all aluminum brazed fin construction.

Constructed of three components:

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

Eco-last™ Coil System Features:

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

Face-split design.

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

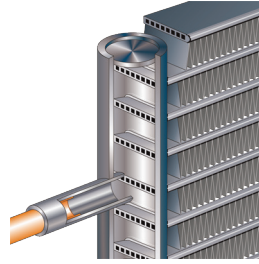
#### Conventional Fin/Tube Condenser Coils (150 models only)

Copper tube construction, enhanced rippled-edge aluminum fins, flared shoulder tubing connections, silver soldered construction.

#### Evaporator Coil

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

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



#### Condensate Drain Pan

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

Side drain connections.

#### Outdoor Coil Fan Motors

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

### 4 Outdoor Coil Fans

Polyvinyl Chloride (PVC) coated fan guard furnished.

#### Required Selections

##### Cooling Capacity

Specify nominal cooling capacity of the unit.

#### Options/Accessories

##### Field Installed

##### Condensate Drain Trap

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 (Includes Compressor Crankcase Heater)

Cycles the outdoor fans while allowing compressor operation in the cooling cycle. This intermittent fan operation allows the system to operate without icing the evaporator coil and losing capacity. Designed for use in ambient temperatures no lower than -18°C.

Low Ambient Kit also controls the compressor crankcase heaters.

Compressor crankcase heater is furnished with kit. Protects against refrigerant migration that can occur during low ambient operation.

## FEATURES AND BENEFITS

### **CONTROLS**

#### **Unit Control**

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

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

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

Provides screw terminal connections for thermostat or controller wiring.

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

#### **Smoke Detectors**

*NOTE - Smoke detectors are not available and must be field provided by installer.*

### **Options / Accessories**

#### **Commercial Control Systems**

##### **Thermostats**

Control system and thermostat options, see page 26.

### **CABINET**

#### **5 Construction**

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

Base rails have rigging holes.

Three sides of the base rail have forklift slots.

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

#### **Airflow Choice**

Units are shipped in downflow (vertical) configuration, can be field converted to horizontal airflow.

#### **Duct Flanges**

Provided for horizontal duct attachment.

#### **Power Entry**

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

Optional Bottom Power Entry Kit is available.

#### **Exterior Panels**

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

#### **Insulation**

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

#### **Access Panels**

Access panels are provided for the compressor, heating, controls, blower and air filter/economizer section. Recessed handles allow easy access for servicing.

### **Options/Accessories**

#### **Factory Installed**

##### **Corrosion Protection**

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

Indoor Corrosion Protection:

- Coated coil

Outdoor Corrosion Protection:

- Coated coil

#### **Field Installed**

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

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

## FEATURES AND BENEFITS

### 6 **BLOWER**

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

#### **Constant Air Volume Blower (CAV)**

Supply air blower provides a constant volume of air.

#### **Motor**

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

#### **Supply Air Blower**

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

Equipped with ball bearings and adjustable pulley (allows speed change).

Blower assembly slides out of unit for servicing.

#### **Required Selections**

Order blower motor horsepower and drive kit number required when base unit is ordered, see Drive Kit Specifications Table.

### **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.

#### **Required Selections**

#### **Voltage Choice**

Specify when ordering base unit.

#### **Field Installed**

##### **Bottom Power Entry Kit**

Kit reduces the number of penetrations in the roof.

Kit includes bulkhead connectors to provides power and control wiring routing through the roof curb.

### **INDOOR AIR QUALITY**

#### **Air Filters**

Disposable 51 mm filters furnished as standard.

#### **Options/Accessories**

##### **Field Installed**

##### **High Efficiency Air Filters**

Disposable MERV 8 or MERV 13 (Minimum Efficiency Reporting Value based on ASHRAE 52.2) efficiency 51 mm pleated filters.

##### **Replacement Filter Media Kit With Frame**

Replaces existing pleated filter media. Includes washable metal mesh screen and metal frame with clip for holding replaceable non-pleated filter.

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

Monitors CO<sub>2</sub> levels, reports to the economizer to adjust dampers as needed.

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

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

**ECONOMIZER OPTIONS**

**Factory or Field Installed**

*NOTE - Downflow Economizer is factory or field installed. Horizontal Economizer is field installed only.*

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

Downflow or Horizontal models with Barometric Relief Dampers and Hoods.

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

*NOTE - Outdoor Air and Barometric Relief Exhaust Hoods are included when economizer is factory installed and are furnished with economizer when ordered for field installation.*

Occupied/Unoccupied mode with field furnished setback thermostat.

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

Single temperature control is furnished with Economizer.

Outdoor air temperature sensor enables economizer if the outdoor temperature is less than the setpoint of the control.

**Standard Economizer Features**

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.

**Standard Economizer Control Module**

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



**Economizer Controls:**

- Damper Minimum Position - Can be set lower than traditional minimum air requirements resulting in cost savings.
- IAQ Sensor - Signals dampers to modulate and maintain 13°C when CO<sub>2</sub> is higher than the CO<sub>2</sub> setpoint.
- Demand Control Ventilation (DCV) LED - A steady green Demand Control Ventilation LED indicates the IAQ reading is higher than setpoint and requires more fresh air.
- Free Cool LED - A steady green LED indicates outdoor air is suitable for free cooling.

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

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

**High Performance Economizer Features**

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

**High Performance Economizer Control Module**

Module provides inputs and outputs to control economizer based on parameter settings. Module automatically detects sensors by polling to determine which sensors are installed in system.

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

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



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

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

**Main Menu Structure:**

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

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

**Field Installed**

**Single Enthalpy Temperature Control**

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

**Differential Enthalpy Control**

Order two Single Enthalpy 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 enthalpy.

## **OPTIONS / ACCESSORIES**

### **EXHAUST OPTIONS**

#### **Field Installed**

##### **Horizontal Low Profile Barometric Relief Dampers**

For use when unit is configured for horizontal applications in a reduced space requiring an economizer.

Allows relief of excess air.

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

Field installed in return air duct.

Exhaust hood with bird screen furnished.

##### **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. Requires Economizer with Outdoor Air Hood and Barometric Relief Dampers. Fan is 508 mm diameter with 5 blades (K1PWRE10B) with 0.25 kW motor.

### **OUTDOOR AIR OPTIONS**

#### **Field Installed**

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

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

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

Manual model features a slide damper.

Maximum mixed air temperature in cooling mode: 38°C.

### **ROOF CURBS**

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

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

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

Curb can also be fastened together with furnished hardware.

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

### **CEILING DIFFUSERS**

#### **Ceiling Diffusers (Flush or 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)**

*NOTE - Ceiling Diffuser Transitions are not furnished and must be field fabricated.*



## OPTIONS / ACCESSORIES

Item Description	Model Number	Catalog Number	Unit Model No			
			092	102	120	150
<b>COOLING SYSTEM</b>						
Condensate Drain Trap	Polyvinyl Chloride (PVC) - C1TRAP20AD2	<b>76W26</b>	X	X	X	X
	Copper - C1TRAP10AD2	<b>76W27</b>	X	X	X	X
Corrosion Protection		Factory	O	O	O	O
Drain Pan Overflow Switch	Z1SNSR90A1	<b>99W59</b>	X	X	X	X
Low Ambient Kit (Includes Compressor Crankcase Heater)	380/420V-3ph - Z1LOAM02B-1G	<b>10Z36</b>	X	X		
	380/420V-3ph - Z1LOAM12B-1G	<b>10Z51</b>			X	X
Refrigerant Type		R-410A	O	O	O	O
<b>HEATING SYSTEM</b>						
Combustion Air Intake Extensions	T1EXTN10AN1	<b>19W51</b>	X	X	X	X
Gas Heat Input	33.4 kW	Factory	O	O	O	O
	46.7 kW	Factory	O	O	O	O
	61.5 kW	Factory	O	O	O	O
LPG/Propane Conversion Kits	Standard Heat - C1PROP23BS1	<b>14N22</b>	X	X	X	X
	Medium Heat - Z1PROP24RS1	<b>14N27</b>	X	X	X	X
	High Heat - C1PROP21BS1	<b>14N25</b>	X	X	X	X
Stainless Steel Heat Exchanger		Factory	O	O	O	O
Vertical Vent Extension Kit	C1EXTN20FF1	<b>31W62</b>	X	X	X	X
<b>BLOWER - SUPPLY AIR</b>						
Blower Motors	Belt Drive - 1.5 kW	Factory	O	O	O	O
	Belt Drive - 2.2 kW	Factory	O	O	O	O
	Belt Drive - 3.7 kW	Factory	O	O	O	O
Drive Kits	Kit #1 490-740 rev/min	Factory	O	O	O	O
See Blower Data Tables for selection	Kit #2 665-920 rev/min	Factory	O	O	O	O
	Kit #3 660-995 rev/min	Factory	O	O	O	O
	Kit #7 610-810 rev/min	Factory	O	O	O	O
	Kit #8 780-1000 rev/min	Factory	O	O	O	O
	Kit #9 845-1085 rev/min	Factory	O	O	O	O
	Kit #10 750-945 rev/min	Factory	O	O	O	O
	Kit #11 865-1095 rev/min	Factory	O	O	O	O
	Kit #12 940-1190 rev/min	Factory	O	O	O	O
	<b>CABINET</b>					
Combination Coil/Hail Guards	Z1GARD52B-1	<b>96W15</b>	X	X	X	X

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

## OPTIONS / ACCESSORIES

Item Description	Model Number	Catalog Number	Unit Model No			
			092	102	120	150
<b>ELECTRICAL</b>						
Voltage 50 hz with neutral	380/420V - 3 phase	Factory	O	O	O	O
Bottom Power Entry Kit	Z1PEKT01B-1	<b>11H66</b>	X	X	X	X
<b>INDOOR AIR QUALITY</b>						
<b>Air Filters</b>						
High Efficiency Air Filters	MERV 8 - Z1FLTR15B-1	<b>11H62</b>	X	X	X	X
508 x 610 x 51 mm, Order 4 per unit	MERV 13 - Z1FLTR40B-1	<b>11H63</b>	X	X	X	X
Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media)	Z1FLTR30B-1-	<b>Y3063</b>	X	X	X	X
<b>Indoor Air Quality (CO<sub>2</sub>) Sensors</b>						
Sensor - Wall-mount, off-white plastic cover with LCD display	C0SNSR50AE1L	<b>77N39</b>	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting	C0MISC19AE1	<b>87N54</b>	X	X	X	X
CO <sub>2</sub> Sensor Duct Mounting Kit - for downflow applications	C0MISC19AE1-	<b>85L43</b>	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO <sub>2</sub> sensors ( <b>87N53</b> or <b>77N39</b> )	C0MISC16AE1-	<b>90N43</b>	X	X	X	X
<b>ECONOMIZER</b>						
<b>Standard Economizer</b>						
Standard Downflow Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods	Z1ECON30B-1	<b>10Z29</b>	OX	OX	OX	OX
Standard Horizontal Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods	Z1ECON16B-1	<b>11G98</b>	X	X	X	X
<b>Standard Economizer Controls</b>						
Single Enthalpy Control	C1SNSR64FF1	<b>53W64</b>	X	X	X	X
Differential Enthalpy Control (order 2)	C1SNSR64FF1	<b>53W64</b>	X	X	X	X
<b>High Performance Economizer</b>						
High Performance Downflow Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods	Z1ECON32B-2	<b>16X73</b>	OX	OX	OX	OX
High Horizontal Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods	Z1ECON33B-2	<b>16X74</b>	X	X	X	X
<b>High Performance Economizer Controls</b>						
Single Enthalpy Control	C1SNSR61FF1	<b>11G21</b>	X	X	X	X
Differential Enthalpy Control (order 2)	C1SNSR61FF1	<b>11G21</b>	X	X	X	X
<b>Horizontal Low Profile Barometric Relief Dampers With Exhaust Hood</b>						
Horizontal Low Profile Barometric Relief Dampers With Exhaust Hood	LAGEDH03/15	<b>53K04</b>	X	X	X	X
<b>OUTDOOR AIR</b>						
<b>Outdoor Air Dampers</b>						
Motorized Dampers with outdoor air hood	Z1DAMP20B-2	<b>14G36</b>	X	X	X	X
Manual Dampers with outdoor air hood	Z1DAMP10B-2	<b>14G37</b>	X	X	X	X

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

## OPTIONS / ACCESSORIES

Item Description	Model Number	Catalog Number	Unit Model No			
			092	102	120	150
<b>POWER EXHAUST</b>						
Standard Static (Downflow)	380/420V-3ph - Z1PWRE10B-1G	<b>10Z71</b>	X	X	X	X
Standard Static (Horizontal)	380/420V-3ph - Z1PWRE15A-1G	<b>28E01</b>	X	X	X	X
<b>ROOF CURBS</b>						
<b>Hybrid Roof Curbs, Downflow</b>						
203 mm height	Z1CURB40B-1	<b>10Z25</b>	X	X	X	X
356 mm height	Z1CURB41B-1	<b>10Z26</b>	X	X	X	X
457 mm height	Z1CURB42B-1	<b>10Z27</b>	X	X	X	X
610 mm height	Z1CURB43B-1	<b>10Z28</b>	X	X	X	X
<b>CEILING DIFFUSERS</b>						
Step-Down - Order one	RTD11-95S	<b>13K61</b>	X			
	RTD11-135S	<b>13K62</b>		X	X	
	RTD11-185S	<b>13K63</b>				X
Flush - Order one	FD11-95S	<b>13K56</b>	X			
	FD11-135S	<b>13K57</b>		X	X	
	FD11-185S	<b>13K58</b>				X

NOTE - Ceiling Diffuser Transitions are not furnished and must be field fabricated.

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

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

O = Configure To Order (Factory Installed)

X = Field Installed

## SPECIFICATIONS

General Data		Nominal kW (Tonnage)	26 (7.5)	30 (8.5)	35 (10)	44 (12.5)
		<b>Model Number</b>	<b>ZGB092S4B</b>	<b>ZGB102S4B</b>	<b>ZGB120S4B</b>	<b>ZGB150S4B</b>
		<b>Efficiency Type</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
		<b>Blower Type</b>	Constant Air Volume (CAV)	Constant Air Volume (CAV)	Constant Air Volume (CAV)	Constant Air Volume (CAV)
<b>Cooling Performance</b>	Gross Cooling Capacity - kW (Btuh)		23.2 (79 000)	25.9 (88 300)	30.3 (103 500)	36.0 (122 900)
	<sup>1</sup> Net Cooling Capacity - kW (Btuh)		22.5 (76 800)	25.1 (85 700)	29.3 (100 000)	34.5 (117 800)
	AHRI Rated Air Flow - L/s (cfm)		1320 (2800)	1535 (3250)	1465 (3100)	1746 (3700)
	Total Unit Power - kW		6.8	7.6	8.8	10.7
	<sup>1</sup> EER (Btuh/Watt) at 35°C (95°F)		11.3	11.2	11.3	11.0
	<sup>2</sup> EER (Btuh/Watt) at 46°C (115°F)		7.8	7.9	8.0	7.4
	<sup>1</sup> IEER (Btuh/Watt)		11.2	11.2	12.1	11.6
	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
	Refrigerant Charge Furnished	Circuit 1	2.0 kg (4 lbs. 7 oz.)	2.2 kg (4 lbs. 13 oz.)	2.8 kg (6 lbs 4 oz.)	5.6 kg (12 lbs 6 oz.)
		Circuit 2	1.4 kg (3 lbs. 1 oz.)	2.1 kg (4 lbs. 10 oz.)	2.5 kg (5 lbs 7 oz.)	6.1 kg (13 lbs 6 oz.)
<b>Gas Heating Options Available - See page 13</b>			Standard (2 stage), Medium (2 Stage), High (2 Stage)			
<b>Compressor Type (number)</b>			Scroll (2)			
<b>Outdoor Coils</b>	Net face area (total) - m <sup>2</sup> (sq. ft.)		1.94 (20.9)	1.94 (20.9)	2.6 (28.0)	2.58 (27.8)
	Tube diameter - mm (in.)		---	---	---	9.5 (3/8)
	Number of rows		1	1	1	3
	Fins per m (in.)		906 (23)	906 (23)	906 (23)	787 (20)
<b>Outdoor Coil Fans</b>	Motor - (No.) W (hp)		(2) 249 (1/3)	(2) 249 (1/3)	(2) 249 (1/3)	(2) 373 (1/2)
	Motor rev/min (rpm)		896	896	896	896
	Total Motor watts		617	617	583	734
	Diameter - (No.) mm (in.)		(2) 610 (24)	(2) 610 (24)	(2) 610 (24)	(2) 610 (24)
	Number of blades		3	3	3	3
	Total Air volume - L/s (cfm)		3460 (7333)	3460 (7333)	3540 (7500)	3775 (8000)
<b>Indoor Coils</b>	Net face area (total) - m <sup>2</sup> (sq. ft.)		1.19 (12.8)	1.19 (12.8)	1.26 (13.54)	1.26 (13.54)
	Tube diameter - mm (in.)		9.5 (3/8)	9.5 (3/8)	9.5 (3/8)	9.5 (3/8)
	Number of rows		2	3	4	4
	Fins per mm (in.)		551 (14)	551 (14)	551 (14)	551 (14)
	Drain connection - Number and size		(2) 1 in. NPT coupling			
	Expansion device type		Refrigerant Metering Orifice (RFC)			
<sup>3</sup> <b>Indoor Blower and Drive Selection</b>	Nominal motor output		1.5 kW, 2.2 kW, 3.7 kW (2 hp, 3 hp, 5 hp)			
	Maximum usable motor output		1.7 kW, 2.6 kW, 4.3 kW (2.3 hp, 3.45 hp, 5.75 hp)			
	Motor - Drive kit number		1.5 kW (2 hp) <b>Kit 1</b> 490-740 rev/min <b>Kit 2</b> 665-920 rev/min <b>Kit 3</b> 660-995 rev/min 2.2 kW (3 hp) <b>Kit 7</b> 610-810 rev/min <b>Kit 8</b> 780-1000 rev/min <b>Kit 9</b> 845-1085 rev/min 3.7 kW (5 hp) <b>Kit 10</b> 750-945 rev/min <b>Kit 11</b> 865-1095 rev/min <b>Kit 12</b> 940-1190 rev/min			
	Blower wheel nominal diameter x width - mm (in.)		(1) 381 x 381 (15 X 15)			
<b>Filters</b>	Type of filter		Disposable			
	Number and size - mm (in.)		(4) 508 x 610 x 51 (20 x 24 x 2)			
<b>Electrical characteristics</b>			380/420V - 50 hertz - 3 phase with neutral			

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

<sup>1</sup> Tested at conditions included in AHRI Standard 340/360; 35°C (95°F) outdoor air temperature and 27°C (80°F) dry bulb /19°C (67°F) wet bulb entering evaporator air; minimum external duct static pressure while operating at rated voltage and air volumes.

<sup>2</sup> Rated at 46°C (115°F) outdoor air temperature and 27°C (80°F) db/19°C (67°F) wb entering evaporator air (T3 Conditions).

<sup>3</sup> 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.

## SPECIFICATIONS - GAS HEAT

Heat Input Type			Standard	Medium	High
Number of Gas Heat Stages			2	2	2
Gas Heating Performance	Input - kW (Btuh)	First Stage	24.8 (84 500)	34.3 (117 000)	45.7 (156 000)
		Second Stage	33.4 (114 000)	46.7 (159 500)	61.5 (210 000)
	Output - kW (Btuh)	Second Stage	26.7 (91 200)	36.9 (126 000)	49.2 (168 000)
	Temperature Rise Range - °C (°F)		8 - 25 (15 - 45)	17 - 33 (30-60)	22 - 39 (40 - 70)
	Thermal Efficiency		81%	81%	81%
	Gas Supply Connections		3/4 in. NPT	3/4 in. NPT	3/4 in. NPT
Recommended Gas Supply Pressure - kPa (in. w.g.)	Natural		1.7 (7)	1.7 (7)	1.7 (7)
	LPG/Propane		2.7 (11)	2.7 (11)	2.7 (11)

## HIGH ALTITUDE DERATE

Units may be installed at altitudes up to 610 m (2000 feet) above sea level without any modification.

At altitudes above 610 m (2000 feet), units must be derated to match gas manifold pressures shown in table below.

At altitudes above 1371.6 (4500 feet) unit must be derated 2% for each 305 m (1000 feet) above sea level.

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

Gas Heat Type	Altitude	Gas Manifold Pressure		Input Rate Natural Gas or LPG/Propane	
		Natural Gas	LPG/Propane Gas	First Stage	Second Stage
	m (ft.)	kPa (In. w.g.)	kPa (In. w.g.)	kW (Btuh)	kW (Btuh)
Standard	610-1372 (2001-4500)	0.62 (2.5)	1.82 (7.3)	24.8 (84 500)	31.7 (108 000)
Medium	610-1372 (2001-4500)	0.62 (2.5)	1.82 (7.3)	34.3 (117 000)	43.7 (149 000)
High	610-1372 (2001-4500)	0.62 (2.5)	1.82 (7.3)	45.7 (156 000)	58 (198 000)

# RATINGS

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

## 26 KW STANDARD EFFICIENCY ZGB092S4B (1ST STAGE) - CONSTANT AIR VOLUME

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)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)						
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb						
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C					
17.2°C	1135	16.6	2.27	0.68	0.81	0.95	15.9	2.53	0.69	0.83	0.97	15.1	2.83	0.70	0.84	0.99	14.2	3.19	0.71	0.87	1.00				
	1415	17.5	2.29	0.72	0.87	1.00	16.7	2.55	0.73	0.89	1.00	15.9	2.85	0.74	0.91	1.00	14.9	3.21	0.76	0.94	1.00				
	1700	18.2	2.30	0.76	0.93	1.00	17.4	2.56	0.77	0.95	1.00	16.5	2.86	0.78	0.98	1.00	15.5	3.22	0.80	1.00	1.00				
19.4°C	1135	17.4	2.28	0.55	0.66	0.78	16.6	2.55	0.55	0.67	0.79	15.8	2.85	0.55	0.68	0.81	14.9	3.20	0.56	0.69	0.83				
	1415	18.4	2.30	0.57	0.70	0.84	17.5	2.56	0.57	0.71	0.86	16.6	2.87	0.58	0.72	0.88	15.6	3.22	0.58	0.73	0.90				
	1700	19.0	2.32	0.59	0.74	0.90	18.1	2.58	0.59	0.75	0.92	17.1	2.88	0.60	0.76	0.94	16.1	3.23	0.61	0.78	0.97				
21.7°C	1135	18.2	2.30	0.42	0.53	0.64	17.4	2.56	0.42	0.54	0.65	16.5	2.86	0.42	0.54	0.66	15.6	3.22	0.42	0.55	0.67				
	1415	19.2	2.32	0.43	0.56	0.68	18.3	2.58	0.43	0.56	0.69	17.3	2.88	0.42	0.57	0.70	16.3	3.23	0.42	0.57	0.72				
	1700	19.9	2.34	0.45	0.58	0.71	19.0	2.59	0.44	0.59	0.73	17.9	2.89	0.45	0.59	0.74	16.8	3.25	0.45	0.60	0.76				

## 26 KW STANDARD EFFICIENCY ZGB092S4B (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																							
		26.7°C						35°C						43.3°C						46°C					
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)						
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb						
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C					
17.2°C	1135	23.0	4.47	0.71	0.86	0.99	20.8	5.36	0.73	0.90	1.00	18.4	6.46	0.76	0.95	1.00	17.1	6.66	0.79	1.00	1.00				
	1415	24.2	4.50	0.76	0.94	1.00	21.9	5.39	0.79	0.98	1.00	19.5	6.50	0.83	1.00	1.00	18.6	6.70	0.87	1.00	1.00				
	1700	25.1	4.51	0.81	0.99	1.00	22.8	5.41	0.85	1.00	1.00	20.5	6.53	0.91	1.00	1.00	19.8	6.73	0.95	1.00	1.00				
19.4°C	1135	24.3	4.50	0.56	0.69	0.82	22.0	5.39	0.57	0.71	0.86	19.6	6.50	0.57	0.74	0.91	18.3	6.69	0.60	0.80	0.94				
	1415	25.6	4.52	0.59	0.74	0.90	23.2	5.42	0.60	0.76	0.95	20.5	6.53	0.62	0.81	0.99	19.4	6.72	0.65	0.89	1.00				
	1700	26.5	4.54	0.62	0.79	0.97	24.0	5.44	0.63	0.82	1.00	21.1	6.55	0.65	0.88	1.00	20.2	6.74	0.70	0.96	1.00				
21.7°C	1135	25.5	4.52	0.42	0.55	0.67	23.2	5.42	0.41	0.56	0.69	20.7	6.54	0.40	0.57	0.71	20.1	6.73	0.35	0.54	0.66				
	1415	26.8	4.54	0.43	0.58	0.72	24.4	5.45	0.43	0.59	0.74	21.7	6.57	0.43	0.61	0.78	21.2	6.76	0.37	0.59	0.73				
	1700	27.8	4.56	0.44	0.61	0.76	25.3	5.47	0.44	0.63	0.80	22.4	6.60	0.45	0.65	0.86	22.0	6.78	0.39	0.64	0.79				

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C						50°C						51.7°C					
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)					
				Dry Bulb					Dry Bulb					Dry Bulb					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1135	16.4	6.97	0.80	1.00	1.00	15.6	7.31	0.81	1.00	1.00	15.9	7.84	0.81	1.00	1.00			
	1415	17.9	7.01	0.88	1.00	1.00	17.1	7.35	0.90	1.00	1.00	17.0	7.88	0.90	1.00	1.00			
	1700	19.0	7.04	0.96	1.00	1.00	18.2	7.38	0.98	1.00	1.00	17.8	7.92	0.97	1.00	1.00			
19.4°C	1135	17.5	7.00	0.60	0.81	0.95	16.6	7.33	0.60	0.83	0.97	16.8	7.88	0.59	0.78	0.98			
	1415	18.6	7.03	0.66	0.90	1.00	17.6	7.37	0.66	0.92	1.00	17.5	7.91	0.64	0.88	1.00			
	1700	19.3	7.05	0.71	0.98	1.00	18.4	7.39	0.72	0.99	1.00	18.0	7.94	0.69	0.96	1.00			
21.7°C	1135	19.2	7.05	0.33	0.54	0.67	18.3	7.38	0.32	0.54	0.68	17.8	7.92	0.40	0.59	0.76			
	1415	20.3	7.08	0.37	0.59	0.74	19.4	7.41	0.36	0.60	0.75	18.6	7.96	0.43	0.64	0.85			
	1700	21.1	7.10	0.38	0.64	0.81	20.1	7.44	0.37	0.65	0.82	19.2	7.99	0.46	0.69	0.94			

## RATINGS

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

### 30 KW STANDARD EFFICIENCY ZGB102S4B (1ST STAGE) - CONSTANT AIR VOLUME

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)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1285	17.3	2.23	0.70	0.84	0.96	16.6	2.56	0.71	0.86	0.97	15.8	2.90	0.72	0.87	0.97	15.0	3.29	0.73	0.89	0.97
	1605	18.1	2.25	0.73	0.90	0.96	17.3	2.57	0.74	0.91	0.96	16.5	2.92	0.76	0.93	0.96	15.7	3.31	0.76	0.95	0.96
	1925	18.6	2.25	0.76	0.94	0.96	17.9	2.58	0.77	0.95	0.96	17.1	2.93	0.79	0.95	0.96	16.2	3.32	0.80	0.94	0.95
19.4°C	1285	18.1	2.25	0.54	0.67	0.80	17.3	2.57	0.54	0.68	0.82	16.6	2.92	0.54	0.69	0.83	15.8	3.31	0.55	0.71	0.85
	1605	19.0	2.26	0.55	0.71	0.86	18.1	2.58	0.56	0.72	0.88	17.3	2.93	0.56	0.73	0.89	16.3	3.32	0.57	0.74	0.91
	1925	19.5	2.26	0.56	0.74	0.91	18.6	2.59	0.57	0.75	0.92	17.7	2.94	0.57	0.76	0.94	16.7	3.33	0.58	0.78	0.94
21.7°C	1285	18.8	2.25	0.38	0.52	0.64	18.1	2.58	0.39	0.53	0.65	17.2	2.93	0.38	0.53	0.66	16.4	3.32	0.39	0.53	0.68
	1605	19.6	2.26	0.39	0.53	0.68	18.8	2.59	0.39	0.54	0.69	17.8	2.94	0.38	0.55	0.7	16.9	3.33	0.39	0.55	0.72
	1925	20.1	2.27	0.38	0.55	0.71	19.2	2.59	0.38	0.55	0.72	18.2	2.95	0.38	0.56	0.74	17.2	3.33	0.37	0.57	0.75

### 30 KW STANDARD EFFICIENCY ZGB102S4B (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1285	25.4	5.08	0.78	0.91	0.98	23.4	6.11	0.80	0.94	0.99	21.3	7.33	0.84	0.97	0.98	18.9	8.82	0.88	0.98	0.98
	1605	26.6	5.11	0.83	0.96	0.98	24.6	6.15	0.86	0.97	0.98	22.5	7.38	0.89	0.98	0.98	20.0	8.87	0.94	0.98	0.98
	1925	27.7	5.14	0.87	0.98	0.98	25.7	6.18	0.90	0.98	0.98	23.5	7.42	0.94	0.97	0.98	20.9	8.90	0.96	0.97	0.98
19.4°C	1285	26.9	5.12	0.60	0.75	0.88	24.8	6.16	0.62	0.78	0.91	22.5	7.38	0.64	0.81	0.94	19.8	8.86	0.67	0.86	0.97
	1605	28.2	5.15	0.63	0.80	0.94	25.9	6.19	0.65	0.84	0.96	23.4	7.41	0.67	0.87	0.97	20.4	8.89	0.71	0.92	0.97
	1925	29.0	5.17	0.66	0.85	0.97	26.6	6.21	0.68	0.88	0.97	23.9	7.43	0.71	0.92	0.97	21.0	8.91	0.76	0.96	0.97
21.7°C	1285	28.4	5.16	0.44	0.58	0.72	26.2	6.20	0.44	0.60	0.75	23.8	7.43	0.45	0.62	0.78	21.0	8.91	0.46	0.65	0.84
	1605	29.7	5.18	0.45	0.61	0.77	27.4	6.23	0.45	0.63	0.81	24.7	7.46	0.46	0.66	0.85	21.7	8.94	0.47	0.70	0.90
	1925	30.7	5.20	0.45	0.65	0.83	28.2	6.26	0.46	0.67	0.86	25.4	7.48	0.47	0.70	0.90	22.2	8.95	0.49	0.74	0.95

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C					50°C					51.7°C							
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)					
				Dry Bulb					Dry Bulb					Dry Bulb					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1285	20.2	7.74	0.79	0.97	0.97	19.3	8.09	0.80	0.97	0.97	18.5	8.46	0.82	0.97	0.97			
	1605	22.0	7.79	0.88	0.96	0.97	21.2	8.14	0.90	0.96	0.97	20.2	8.50	0.91	0.96	0.97			
	1925	23.5	7.83	0.94	0.96	0.97	22.5	8.18	0.94	0.96	0.96	21.6	8.54	0.94	0.96	0.96			
19.4°C	1285	21.4	7.77	0.58	0.81	0.94	20.4	8.12	0.58	0.82	0.95	19.3	8.48	0.59	0.83	0.96			
	1605	22.5	7.81	0.64	0.90	0.96	21.5	8.15	0.65	0.91	0.96	20.4	8.51	0.65	0.93	0.96			
	1925	23.5	7.83	0.69	0.94	0.95	22.6	8.18	0.70	0.95	0.95	21.5	8.54	0.71	0.94	0.95			
21.7°C	1285	23.9	7.84	0.31	0.52	0.65	22.9	8.19	0.30	0.52	0.66	21.8	8.55	0.29	0.52	0.66			
	1605	25.1	7.87	0.33	0.57	0.72	24.0	8.22	0.32	0.57	0.73	22.9	8.58	0.31	0.58	0.74			
	1925	26.0	7.89	0.34	0.61	0.79	24.9	8.23	0.34	0.62	0.80	23.7	8.60	0.33	0.63	0.82			

# RATINGS

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

## 35 KW STANDARD EFFICIENCY ZGB120S4B (1ST STAGE) - CONSTANT AIR VOLUME

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)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1510	17.7	2.37	0.76	0.92	1.00	16.5	2.71	0.76	0.93	1.00	15.4	3.03	0.77	0.95	1.00	14.1	3.46	0.79	0.99	1.00
	1700	18.3	2.37	0.78	0.96	1.00	17.1	2.72	0.80	0.98	1.00	15.9	3.04	0.81	1.00	1.00	14.7	3.48	0.83	1.00	1.00
	1890	18.8	2.38	0.82	0.99	1.00	17.6	2.73	0.83	1.00	1.00	16.5	3.05	0.85	1.00	1.00	15.3	3.49	0.87	1.00	1.00
19.4°C	1510	18.9	2.38	0.61	0.76	0.85	17.7	2.73	0.61	0.77	0.88	16.5	3.06	0.61	0.78	0.89	15.1	3.49	0.61	0.80	0.92
	1700	19.5	2.39	0.63	0.79	0.90	18.2	2.74	0.64	0.81	0.91	17.1	3.06	0.64	0.82	0.94	15.6	3.49	0.64	0.84	0.97
	1890	20.0	2.39	0.66	0.82	0.94	18.7	2.74	0.66	0.84	0.96	17.5	3.07	0.66	0.86	0.98	15.9	3.50	0.66	0.88	1.00
21.7°C	1510	20.7	2.39	0.42	0.56	0.64	19.4	2.75	0.41	0.56	0.65	18.3	3.08	0.40	0.55	0.65	16.8	3.51	0.38	0.55	0.67
	1700	21.4	2.40	0.43	0.57	0.67	20.0	2.75	0.41	0.57	0.67	18.8	3.09	0.40	0.58	0.69	17.3	3.52	0.39	0.58	0.70
	1890	21.9	2.41	0.44	0.59	0.69	20.5	2.76	0.42	0.60	0.71	19.3	3.09	0.41	0.60	0.72	17.7	3.53	0.40	0.60	0.73

## 35 KW STANDARD EFFICIENCY ZGB120S4B (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	1510	31.8	5.69	0.77	0.94	1.00	28.1	6.85	0.79	0.98	1.00	24.4	8.20	0.82	1.00	1.00	23.2	8.68	0.82	1.00	1.00
	1700	32.9	5.72	0.81	0.99	1.00	29.3	6.87	0.83	1.00	1.00	25.7	8.23	0.86	1.00	1.00	24.5	8.72	0.88	1.00	1.00
	1890	34.1	5.73	0.84	1.00	1.00	30.6	6.90	0.87	1.00	1.00	26.8	8.26	0.91	1.00	1.00	25.7	8.74	0.93	1.00	1.00
19.4°C	1510	34.1	5.74	0.61	0.77	0.88	30.2	6.90	0.61	0.80	0.92	26.1	8.24	0.61	0.83	0.97	24.7	8.72	0.61	0.84	0.98
	1700	35.1	5.75	0.64	0.81	0.93	31.2	6.91	0.64	0.84	0.97	26.9	8.26	0.64	0.87	1.00	25.5	8.74	0.64	0.89	1.00
	1890	36.1	5.76	0.66	0.85	0.97	31.9	6.92	0.66	0.88	1.00	27.5	8.27	0.67	0.93	1.00	26.1	8.75	0.68	0.94	1.00
21.7°C	1510	37.7	5.78	0.40	0.55	0.65	33.6	6.95	0.38	0.55	0.66	29.3	8.30	0.36	0.55	0.68	27.9	8.79	0.34	0.55	0.68
	1700	38.7	5.79	0.41	0.58	0.68	34.6	6.96	0.39	0.58	0.70	30.2	8.32	0.37	0.58	0.72	28.6	8.79	0.36	0.58	0.72
	1890	39.7	5.80	0.42	0.60	0.71	35.5	6.97	0.40	0.60	0.73	30.9	8.33	0.38	0.61	0.75	29.4	8.81	0.37	0.61	0.76

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																	
		48°C					50°C					51.7°C							
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)					
				Dry Bulb					Dry Bulb					Dry Bulb					
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C				
17.2°C	1510	22.3	9.05	0.83	1.00	1.00	21.3	9.45	0.85	1.00	1.00	20.6	9.81	0.86	1.00	1.00			
	1700	23.6	9.10	0.89	1.00	1.00	22.6	9.49	0.91	1.00	1.00	21.8	9.84	0.93	1.00	1.00			
	1890	24.6	9.11	0.95	1.00	1.00	23.6	9.51	0.97	1.00	1.00	22.7	9.86	0.98	1.00	1.00			
19.4°C	1510	23.6	9.09	0.61	0.85	1.00	22.5	9.49	0.61	0.86	1.00	21.5	9.83	0.62	0.87	1.00			
	1700	24.4	9.11	0.65	0.91	1.00	23.3	9.50	0.65	0.92	1.00	22.3	9.85	0.65	0.94	1.00			
	1890	25.1	9.13	0.68	0.96	1.00	23.9	9.52	0.69	0.98	1.00	22.9	9.87	0.70	0.99	1.00			
21.7°C	1510	26.8	9.16	0.33	0.55	0.69	25.6	9.56	0.32	0.55	0.69	24.6	9.90	0.31	0.55	0.70			
	1700	27.5	9.17	0.35	0.58	0.73	26.3	9.57	0.34	0.58	0.74	25.4	9.92	0.34	0.59	0.75			
	1890	28.2	9.18	0.37	0.61	0.78	27.0	9.58	0.36	0.61	0.78	26.0	9.92	0.35	0.62	0.80			



# RATINGS

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

## 44 KW STANDARD EFFICIENCY ZGB150S4B (1ST STAGE) - CONSTANT AIR VOLUME

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)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	2075	22.9	3.12	0.72	0.89	0.99	21.6	3.48	0.72	0.90	1.00	20.3	3.81	0.73	0.92	1.00	18.8	4.25	0.74	0.95	1.00
	2265	23.4	3.12	0.74	0.92	1.00	22.0	3.48	0.75	0.94	1.00	20.8	3.80	0.76	0.96	1.00	19.3	4.24	0.77	0.98	1.00
	2455	23.9	3.11	0.76	0.95	1.00	22.5	3.47	0.77	0.97	1.00	21.3	3.80	0.78	0.99	1.00	19.8	4.24	0.80	1.00	1.00
19.4°C	2075	24.3	3.11	0.57	0.72	0.82	22.9	3.48	0.56	0.73	0.84	21.7	3.80	0.57	0.74	0.85	20.1	4.23	0.57	0.75	0.87
	2265	24.9	3.11	0.58	0.74	0.85	23.4	3.47	0.58	0.76	0.87	22.2	3.80	0.58	0.76	0.89	20.6	4.23	0.59	0.78	0.91
	2455	25.3	3.10	0.60	0.77	0.88	23.9	3.47	0.60	0.78	0.90	22.6	3.79	0.60	0.79	0.92	21.0	4.24	0.59	0.81	0.95
21.7°C	2075	26.5	3.11	0.38	0.52	0.60	25.1	3.48	0.37	0.52	0.61	23.8	3.79	0.36	0.51	0.60	22.2	4.22	0.35	0.51	0.62
	2265	27.0	3.09	0.39	0.53	0.62	25.6	3.46	0.38	0.52	0.63	24.3	3.79	0.37	0.53	0.63	22.7	4.21	0.36	0.52	0.64
	2455	27.5	3.09	0.39	0.54	0.64	25.9	3.46	0.38	0.54	0.65	24.7	3.78	0.37	0.54	0.65	23.0	4.22	0.37	0.54	0.66

## 44 KW STANDARD EFFICIENCY ZGB150S4B (2ND STAGE) - CONSTANT AIR VOLUME

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		26.7°C					35°C					43.3°C					46°C				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	
17.2°C	2075	44.9	8.91	0.74	0.93	1.00	39.8	10.46	0.76	0.97	1.00	34.7	12.33	0.80	1.00	1.00	29.5	14.62	0.87	1.00	1.00
	2265	45.8	8.95	0.76	0.96	1.00	40.8	10.50	0.79	1.00	1.00	35.8	12.40	0.84	1.00	1.00	30.6	14.69	0.91	1.00	1.00
	2455	46.7	8.99	0.79	0.99	1.00	41.9	10.55	0.83	1.00	1.00	36.8	12.44	0.88	1.00	1.00	31.4	14.74	0.96	1.00	1.00
19.4°C	2075	47.6	9.03	0.58	0.74	0.86	42.4	10.58	0.58	0.77	0.90	36.7	12.45	0.59	0.82	0.96	30.7	14.69	0.62	0.89	1.00
	2265	48.6	9.07	0.59	0.77	0.90	43.2	10.62	0.60	0.81	0.94	37.4	12.48	0.61	0.86	1.00	31.2	14.73	0.64	0.93	1.00
	2455	49.4	9.11	0.61	0.80	0.93	44.0	10.66	0.62	0.84	0.98	38.1	12.51	0.64	0.90	1.00	31.8	14.75	0.67	0.98	1.00
21.7°C	2075	51.9	9.22	0.37	0.52	0.62	46.5	10.79	0.36	0.52	0.63	40.5	12.65	0.34	0.53	0.66	34.1	14.89	0.32	0.55	0.70
	2265	52.8	9.26	0.37	0.53	0.64	47.2	10.83	0.36	0.54	0.66	41.2	12.68	0.35	0.55	0.69	34.6	14.91	0.33	0.57	0.74
	2455	53.6	9.31	0.38	0.55	0.66	47.9	10.86	0.37	0.56	0.69	41.7	12.71	0.36	0.58	0.73	35.1	14.93	0.34	0.60	0.78

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																		
		48°C					50°C					51.7°C								
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)						
				Dry Bulb					Dry Bulb					Dry Bulb						
L/s	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C	kW	kW	24°C	27°C	29°C					
17.2°C	2075	33.1	13.02	0.82	1.00	1.00	31.9	13.56	0.83	1.00	1.00	30.6	14.13	0.85	1.00	1.00				
	2265	34.2	13.08	0.86	1.00	1.00	32.9	13.62	0.88	1.00	1.00	31.6	14.18	0.89	1.00	1.00				
	2455	35.2	13.13	0.90	1.00	1.00	33.9	13.67	0.92	1.00	1.00	32.5	14.24	0.94	1.00	1.00				
19.4°C	2075	34.8	13.11	0.60	0.84	0.99	33.4	13.64	0.60	0.85	1.00	31.9	14.20	0.61	0.87	1.00				
	2265	35.5	13.15	0.62	0.88	1.00	34.1	13.68	0.63	0.90	1.00	32.6	14.25	0.64	0.92	1.00				
	2455	36.1	13.19	0.65	0.92	1.00	34.6	13.72	0.66	0.94	1.00	33.1	14.27	0.66	0.96	1.00				
21.7°C	2075	38.5	13.32	0.33	0.54	0.67	36.9	13.84	0.33	0.54	0.68	35.4	14.40	0.32	0.54	0.69				
	2265	39.1	13.35	0.34	0.56	0.71	37.6	13.88	0.34	0.56	0.72	36.0	14.43	0.33	0.57	0.73				
	2455	39.6	13.38	0.35	0.58	0.74	38.1	13.91	0.35	0.59	0.75	36.5	14.46	0.34	0.60	0.77				

## BLOWER DATA

### 092 STANDARD EFFICIENCY BELT DRIVE BLOWER – BASE UNIT

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY (NO HEAT SECTION) WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE. FOR ALL UNITS ADD:**

1 – Wet indoor coil air resistance of selected unit.

2 – Any factory installed options air resistance (heat section, economizer, etc.)

3 – Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from blower table blower motor output required.

See page 22 for blower motors and drives.

See page 22 for wet coil and option/accessory air resistance data.

**MAXIMUM STATIC PRESSURE WITH GAS HEAT - 500 Pa (2.0 in. w.g.)**

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																				
		50 (0.20)			100 (0.40)			150 (0.60)			200 (0.80)			250 (1.00)			300 (1.20)			350 (1.40)		
L/s	cfm	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP
825	1750	498	0.06	0.08	565	0.19	0.25	633	0.37	0.5	701	0.53	0.71	768	0.65	0.87	830	0.74	0.99	890	0.81	1.08
945	2000	512	0.09	0.12	578	0.28	0.37	645	0.45	0.6	713	0.60	0.81	780	0.72	0.97	842	0.82	1.1	901	0.89	1.19
1060	2250	527	0.18	0.24	592	0.37	0.49	659	0.54	0.72	727	0.69	0.92	793	0.81	1.08	855	0.90	1.21	913	0.98	1.32
1180	2500	543	0.28	0.37	608	0.46	0.61	675	0.63	0.84	743	0.78	1.04	809	0.90	1.21	869	1.01	1.35	926	1.08	1.45
1300	2750	560	0.38	0.51	625	0.56	0.75	693	0.73	0.98	761	0.88	1.18	826	1.01	1.35	885	1.11	1.49	939	1.19	1.6
1415	3000	579	0.49	0.66	645	0.67	0.9	713	0.84	1.13	781	1.00	1.34	844	1.13	1.51	901	1.23	1.65	954	1.32	1.77
1535	3250	600	0.61	0.82	666	0.79	1.06	735	0.97	1.3	803	1.13	1.51	864	1.26	1.69	918	1.36	1.82	969	1.45	1.95
1650	3500	622	0.73	0.98	690	0.93	1.24	760	1.11	1.49	826	1.27	1.7	883	1.40	1.87	936	1.50	2.01	985	1.61	2.16
1770	3750	646	0.87	1.17	716	1.08	1.45	786	1.27	1.7	849	1.42	1.91	903	1.54	2.07	953	1.65	2.21	1002	1.78	2.38
1890	4000	674	1.03	1.38	746	1.25	1.68	814	1.44	1.93	872	1.58	2.12	923	1.70	2.28	971	1.81	2.43	1019	1.97	2.64
2005	4250	705	1.22	1.63	777	1.45	1.94	841	1.62	2.17	894	1.75	2.34	943	1.87	2.5	990	2.01	2.69	1038	2.19	2.93

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																	
		400 (1.60)			450 (1.80)			500 (2.00)			550 (2.20)			600 (2.40)			650 (2.60)		
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
825	1750	946	0.87	1.16	998	0.95	1.27	1049	1.05	1.41	1098	1.18	1.58	---	---	---	---	---	---
945	2000	955	0.95	1.28	1007	1.04	1.4	1057	1.16	1.56	1105	1.30	1.74	1153	1.45	1.94	1201	1.61	2.16
1060	2250	966	1.06	1.42	1017	1.16	1.55	1066	1.28	1.72	1114	1.43	1.92	1162	1.59	2.13	1210	1.75	2.35
1180	2500	978	1.17	1.57	1028	1.28	1.72	1076	1.42	1.9	1124	1.57	2.11	1171	1.74	2.33	1221	1.92	2.57
1300	2750	990	1.29	1.73	1039	1.42	1.9	1087	1.57	2.1	1135	1.73	2.32	1183	1.90	2.55	1232	2.09	2.8
1415	3000	1004	1.43	1.92	1052	1.57	2.11	1100	1.73	2.32	1147	1.91	2.56	1195	2.09	2.8	1245	2.28	3.05
1535	3250	1018	1.58	2.12	1066	1.75	2.34	1113	1.92	2.57	1161	2.10	2.81	1209	2.28	3.06	1259	2.47	3.31
1650	3500	1033	1.75	2.35	1081	1.93	2.59	1128	2.12	2.84	1176	2.31	3.09	1224	2.49	3.34	1275	2.69	3.6
1770	3750	1049	1.95	2.61	1097	2.14	2.87	1144	2.33	3.12	1192	2.52	3.38	1241	2.72	3.64	1292	2.92	3.91
1890	4000	1067	2.16	2.9	1114	2.36	3.17	1161	2.56	3.43	1209	2.75	3.69	1259	2.95	3.96	1311	3.16	4.24
2005	4250	1085	2.39	3.21	1132	2.60	3.49	1179	2.80	3.76	1228	3.01	4.03	1279	3.22	4.31	1332	3.43	4.6

## BLOWER DATA

### 102 STANDARD EFFICIENCY BELT DRIVE BLOWER – BASE UNIT

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY (NO HEAT SECTION) WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE. FOR ALL UNITS ADD:**

- 1 – Wet indoor coil air resistance of selected unit.
- 2 – Any factory installed options air resistance (heat section, economizer, etc.)
- 3 – Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from blower table blower motor output required.

See page 22 for blower motors and drives.

See page 22 for wet coil and option/accessory air resistance data.

**MAXIMUM STATIC PRESSURE WITH GAS HEAT - 500 Pa (2.0 in. w.g.)**

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																				
		50 (0.20)			100 (0.40)			150 (0.60)			200 (0.80)			250 (1.00)			300 (1.20)			350 (1.40)		
L/s	cfm	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP
825	1750	494	0.08	0.11	562	0.25	0.34	632	0.42	0.56	702	0.55	0.74	771	0.63	0.85	838	0.72	0.96	902	0.80	1.07
945	2000	514	0.19	0.26	581	0.37	0.49	650	0.52	0.7	719	0.65	0.87	786	0.73	0.98	852	0.81	1.09	915	0.90	1.2
1060	2250	533	0.31	0.41	599	0.46	0.62	667	0.61	0.82	735	0.74	0.99	802	0.82	1.1	866	0.90	1.21	928	0.99	1.33
1180	2500	553	0.41	0.55	619	0.57	0.76	685	0.71	0.95	753	0.82	1.1	818	0.91	1.22	881	1.00	1.34	942	1.10	1.47
1300	2750	573	0.52	0.7	638	0.67	0.9	705	0.81	1.08	771	0.91	1.22	835	1.01	1.35	897	1.11	1.49	957	1.22	1.63
1415	3000	594	0.63	0.85	659	0.78	1.05	725	0.91	1.22	791	1.01	1.36	853	1.12	1.5	915	1.23	1.65	973	1.35	1.81
1535	3250	617	0.75	1.01	682	0.90	1.2	747	1.02	1.37	812	1.13	1.52	873	1.25	1.67	934	1.37	1.83	990	1.50	2.01
1650	3500	640	0.87	1.17	706	1.01	1.36	771	1.14	1.53	834	1.27	1.7	895	1.39	1.86	954	1.51	2.03	1008	1.66	2.23
1770	3750	665	1.00	1.34	731	1.15	1.54	796	1.28	1.72	857	1.41	1.89	917	1.54	2.07	975	1.69	2.26	1027	1.85	2.48
1890	4000	692	1.15	1.54	758	1.31	1.75	822	1.44	1.93	882	1.57	2.11	940	1.72	2.3	996	1.87	2.51	1047	2.06	2.76
2005	4250	722	1.31	1.76	787	1.47	1.97	849	1.60	2.15	908	1.75	2.35	965	1.91	2.56	1018	2.08	2.79	1067	2.28	3.06

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																	
		400 (1.60)			450 (1.80)			500 (2.00)			550 (2.20)			600 (2.40)			650 (2.60)		
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
825	1750	961	0.89	1.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
945	2000	972	0.98	1.32	1026	1.10	1.47	1076	1.23	1.65	---	---	---	---	---	---	---	---	---
1060	2250	984	1.09	1.46	1037	1.22	1.63	1085	1.35	1.81	1132	1.50	2.01	1178	1.65	2.21	1226	1.81	2.43
1180	2500	997	1.21	1.62	1048	1.34	1.8	1096	1.48	1.99	1142	1.64	2.2	1188	1.80	2.41	1237	1.97	2.64
1300	2750	1011	1.34	1.8	1061	1.48	1.99	1108	1.63	2.19	1154	1.80	2.41	1200	1.96	2.63	1249	2.14	2.87
1415	3000	1026	1.48	1.99	1075	1.64	2.2	1121	1.81	2.42	1167	1.97	2.64	1213	2.14	2.87	1262	2.33	3.12
1535	3250	1042	1.65	2.21	1089	1.81	2.43	1135	1.98	2.66	1181	2.16	2.9	1228	2.33	3.13	1277	2.52	3.38
1650	3500	1058	1.84	2.46	1105	2.01	2.69	1150	2.19	2.93	1196	2.36	3.17	1243	2.54	3.41	1293	2.72	3.65
1770	3750	1076	2.03	2.72	1121	2.22	2.97	1166	2.40	3.22	1212	2.58	3.46	1261	2.77	3.71	1311	2.95	3.96
1890	4000	1094	2.25	3.02	1139	2.44	3.27	1184	2.63	3.52	1230	2.81	3.77	1280	3.01	4.03	1330	3.20	4.29
2005	4250	1113	2.48	3.33	1157	2.68	3.59	1202	2.87	3.85	1250	3.07	4.11	1300	3.27	4.38	1352	3.47	4.65

## BLOWER DATA

### 120 STANDARD EFFICIENCY BELT DRIVE BLOWER – BASE UNIT

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY (NO HEAT SECTION) WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE. FOR ALL UNITS ADD:**

- 1 – Wet indoor coil air resistance of selected unit.
- 2 – Any factory installed options air resistance (heat section, economizer, etc.)
- 3 – Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from blower table blower motor output required.

See page 22 for blower motors and drives.

See page 22 for wet coil and option/accessory air resistance data.

**MAXIMUM STATIC PRESSURE WITH GAS HEAT - 500 Pa (2.0 in. w.g.)**

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																				
		50 (0.20)			100 (0.40)			150 (0.60)			200 (0.80)			250 (1.00)			300 (1.20)			350 (1.40)		
L/s	cfm	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP
945	2000	535	0.21	0.28	596	0.37	0.49	660	0.51	0.69	724	0.65	0.87	788	0.75	1	851	0.83	1.11	913	0.92	1.23
1060	2250	552	0.32	0.43	613	0.47	0.63	675	0.60	0.81	738	0.73	0.98	802	0.83	1.11	864	0.91	1.22	925	1.01	1.36
1180	2500	570	0.43	0.57	630	0.57	0.76	692	0.70	0.94	754	0.82	1.1	817	0.91	1.22	879	1.01	1.35	939	1.13	1.51
1300	2750	589	0.54	0.72	648	0.68	0.91	709	0.81	1.08	772	0.91	1.22	833	1.01	1.36	894	1.12	1.5	954	1.25	1.67
1415	3000	608	0.65	0.87	668	0.78	1.05	729	0.91	1.22	791	1.02	1.37	852	1.13	1.51	912	1.25	1.67	970	1.38	1.85
1535	3250	629	0.77	1.03	688	0.90	1.21	749	1.02	1.37	811	1.13	1.52	871	1.25	1.68	930	1.39	1.86	987	1.54	2.06
1650	3500	651	0.90	1.2	710	1.03	1.38	772	1.15	1.54	833	1.27	1.7	892	1.40	1.88	950	1.54	2.07	1004	1.70	2.28
1770	3750	674	1.01	1.36	734	1.16	1.56	796	1.29	1.73	856	1.42	1.9	914	1.57	2.1	970	1.72	2.3	1023	1.89	2.53
1890	4000	699	1.16	1.55	761	1.31	1.76	822	1.45	1.94	880	1.58	2.12	936	1.74	2.33	991	1.91	2.56	1042	2.10	2.81
2005	4250	726	1.32	1.77	789	1.48	1.98	849	1.61	2.16	904	1.77	2.37	959	1.93	2.59	1012	2.12	2.84	1062	2.32	3.11
2125	4500	756	1.50	2.01	818	1.66	2.22	875	1.80	2.41	929	1.96	2.63	983	2.15	2.88	1034	2.35	3.15	1082	2.57	3.44
2240	4750	788	1.69	2.27	848	1.84	2.47	902	2.00	2.68	955	2.18	2.92	1006	2.39	3.2	1056	2.61	3.5	1104	2.83	3.79
2360	5000	822	1.89	2.54	878	2.05	2.75	929	2.22	2.98	980	2.42	3.25	1031	2.66	3.56	1079	2.89	3.87	1126	3.10	4.16

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																	
		400 (1.60)			450 (1.80)			500 (2.00)			550 (2.20)			600 (2.40)			650 (2.60)		
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
945	2000	971	1.02	1.37	1025	1.13	1.52	1076	1.26	1.69	1124	1.39	1.86	---	---	---	---	---	---
1060	2250	982	1.13	1.51	1036	1.25	1.68	1085	1.38	1.85	1133	1.52	2.04	1180	1.66	2.23	1228	1.82	2.44
1180	2500	995	1.25	1.67	1047	1.38	1.85	1096	1.52	2.04	1143	1.66	2.23	1190	1.81	2.43	1239	1.98	2.65
1300	2750	1009	1.38	1.85	1059	1.52	2.04	1108	1.67	2.24	1154	1.82	2.44	1202	1.98	2.65	1251	2.14	2.87
1415	3000	1023	1.53	2.05	1073	1.68	2.25	1120	1.84	2.46	1167	1.99	2.67	1215	2.16	2.89	1265	2.32	3.11
1535	3250	1039	1.69	2.27	1088	1.86	2.49	1134	2.01	2.7	1181	2.18	2.92	1229	2.34	3.14	1279	2.51	3.37
1650	3500	1055	1.87	2.51	1103	2.04	2.74	1150	2.21	2.96	1196	2.38	3.19	1245	2.55	3.42	1295	2.72	3.65
1770	3750	1072	2.07	2.78	1120	2.25	3.02	1166	2.42	3.25	1213	2.59	3.47	1262	2.77	3.71	1313	2.95	3.95
1890	4000	1090	2.29	3.07	1137	2.47	3.31	1183	2.65	3.55	1231	2.82	3.78	1281	3.01	4.03	1333	3.19	4.28
2005	4250	1109	2.52	3.38	1156	2.71	3.63	1202	2.89	3.87	1251	3.07	4.11	1302	3.26	4.37	1354	3.45	4.63
2125	4500	1129	2.77	3.71	1175	2.95	3.96	1222	3.14	4.21	1271	3.33	4.46	1323	3.52	4.72	1376	3.73	5
2240	4750	1150	3.03	4.06	1196	3.22	4.32	1243	3.41	4.57	1293	3.60	4.83	1345	3.80	5.09	1399	4.01	5.37
2360	5000	1172	3.31	4.44	1218	3.51	4.7	1266	3.69	4.95	1315	3.88	5.2	1367	4.08	5.47	1421	4.28	5.74

## BLOWER DATA

### 150 STANDARD EFFICIENCY BELT DRIVE BLOWER – BASE UNIT

BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY (NO HEAT SECTION) WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE. FOR ALL UNITS ADD:

- 1 – Wet indoor coil air resistance of selected unit.
- 2 – Any factory installed options air resistance (heat section, economizer, etc.)
- 3 – Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from blower table blower motor output required.

See page 22 for blower motors and drives.

See page 22 for wet coil and option/accessory air resistance data.

MAXIMUM STATIC PRESSURE WITH GAS HEAT - 500 Pa (2.0 in. w.g.)

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																				
		50 (0.20)			100 (0.40)			150 (0.60)			200 (0.80)			250 (1.00)			300 (1.20)			350 (1.40)		
L/s	cfm	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP	rev/min	kW	BHP
945	2000	542	0.32	0.43	602	0.45	0.6	664	0.56	0.75	732	0.66	0.89	802	0.76	1.02	869	0.86	1.15	927	0.95	1.27
1060	2250	560	0.41	0.55	619	0.53	0.71	681	0.64	0.86	748	0.75	1.00	817	0.85	1.14	882	0.95	1.27	939	1.05	1.41
1180	2500	579	0.51	0.68	637	0.62	0.83	699	0.73	0.98	766	0.84	1.12	834	0.94	1.26	897	1.05	1.41	953	1.17	1.57
1300	2750	599	0.60	0.81	657	0.72	0.97	719	0.83	1.11	785	0.93	1.25	851	1.05	1.41	913	1.17	1.57	968	1.30	1.74
1415	3000	620	0.71	0.95	678	0.83	1.11	741	0.93	1.25	806	1.04	1.40	870	1.18	1.58	930	1.31	1.75	985	1.45	1.94
1535	3250	643	0.82	1.1	701	0.94	1.26	764	1.05	1.41	828	1.17	1.57	891	1.31	1.76	950	1.45	1.95	1003	1.61	2.16
1650	3500	667	0.94	1.26	726	1.07	1.43	788	1.18	1.58	851	1.32	1.77	913	1.47	1.97	970	1.62	2.17	1023	1.80	2.41
1770	3750	693	1.07	1.44	752	1.20	1.61	813	1.33	1.78	876	1.48	1.98	936	1.64	2.20	992	1.81	2.43	1043	2.00	2.68
1890	4000	720	1.23	1.65	779	1.36	1.82	840	1.49	2.00	902	1.66	2.22	961	1.84	2.46	1015	2.02	2.71	1064	2.22	2.98
2005	4250	748	1.39	1.86	807	1.52	2.04	868	1.67	2.24	929	1.85	2.48	986	2.05	2.75	1038	2.25	3.02	1086	2.46	3.30
2125	4500	778	1.56	2.09	837	1.70	2.28	898	1.87	2.51	957	2.07	2.78	1012	2.29	3.07	1062	2.51	3.37	1108	2.72	3.65
2240	4750	809	1.75	2.34	868	1.91	2.56	929	2.10	2.82	986	2.33	3.12	1038	2.56	3.43	1087	2.79	3.74	1132	3.01	4.03
2360	5000	841	1.95	2.62	901	2.14	2.87	960	2.36	3.17	1015	2.61	3.50	1065	2.86	3.83	1112	3.09	4.14	1157	3.30	4.43
2475	5250	875	2.19	2.93	935	2.41	3.23	992	2.66	3.56	1044	2.92	3.91	1092	3.18	4.26	1138	3.41	4.57	1182	3.62	4.85
2595	5500	911	2.46	3.3	969	2.71	3.63	1024	2.98	4.00	1074	3.26	4.37	1120	3.51	4.71	1165	3.74	5.02	1208	3.95	5.29
2715	5750	948	2.77	3.71	1004	3.04	4.08	1056	3.34	4.48	1104	3.62	4.85	1148	3.87	5.19	1192	4.10	5.49	1235	4.28	5.74
2830	6000	985	3.12	4.18	1039	3.42	4.59	1088	3.73	5.00	1134	4.01	5.37	1177	4.24	5.69	---	---	---	---	---	---
2950	6250	1022	3.51	4.7	1073	3.83	5.14	1120	4.13	5.54	---	---	---	---	---	---	---	---	---	---	---	---

Air Volume		TOTAL STATIC PRESSURE - Pa (Inches Water Gauge)																		
		400 (1.60)			450 (1.80)			500 (2.00)			550 (2.20)			600 (2.40)			650 (2.60)			
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	
945	2000	979	1.05	1.41	1029	1.17	1.57	1079	1.31	1.75	1129	1.45	1.95	1179	1.60	2.15	1230	1.77	2.37	
1060	2250	991	1.17	1.57	1041	1.30	1.74	1090	1.44	1.93	1140	1.59	2.13	1190	1.75	2.35	1241	1.92	2.57	
1180	2500	1005	1.30	1.74	1054	1.43	1.92	1103	1.58	2.12	1152	1.74	2.33	1202	1.90	2.55	1254	2.08	2.79	
1300	2750	1020	1.44	1.93	1068	1.59	2.13	1116	1.75	2.34	1165	1.91	2.56	1215	2.07	2.78	1268	2.25	3.01	
1415	3000	1036	1.60	2.14	1084	1.76	2.36	1131	1.92	2.58	1180	2.09	2.80	1230	2.25	3.02	1283	2.43	3.26	
1535	3250	1053	1.78	2.38	1100	1.95	2.61	1148	2.11	2.83	1196	2.28	3.06	1246	2.45	3.29	1299	2.63	3.52	
1650	3500	1071	1.98	2.65	1118	2.15	2.88	1165	2.32	3.11	1213	2.48	3.33	1264	2.66	3.57	1317	2.84	3.81	
1770	3750	1091	2.19	2.93	1137	2.36	3.17	1183	2.54	3.40	1232	2.72	3.64	1284	2.89	3.88	1338	3.08	4.13	
1890	4000	1111	2.42	3.24	1156	2.60	3.48	1203	2.78	3.72	1253	2.95	3.96	1305	3.15	4.22	1359	3.34	4.48	
2005	4250	1132	2.66	3.57	1177	2.84	3.81	1224	3.02	4.05	1274	3.22	4.31	1327	3.41	4.57	1382	3.62	4.85	
2125	4500	1154	2.92	3.92	1199	3.11	4.17	1247	3.29	4.41	1297	3.48	4.67	1350	3.69	4.94	1405	3.89	5.22	
2240	4750	1177	3.20	4.29	1223	3.39	4.54	1270	3.57	4.79	1321	3.76	5.04	1374	3.96	5.31	1428	4.16	5.58	
2360	5000	1201	3.50	4.69	1247	3.69	4.94	1295	3.86	5.18	1345	4.04	5.42	1398	4.24	5.68	---	---	---	
2475	5250	1226	3.80	5.10	1272	3.98	5.34	1320	4.16	5.57	---	---	---	---	---	---	---	---	---	
2595	5500	1253	4.13	5.53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2715	5750	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2830	6000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2950	6250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

## BLOWER DATA

### FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

Nominal kW		Maximum		Drive Kit Number	Rev/Min Range
kW	hp	kW	hp		
1.5	2	1.7	2.3	1	490 - 740
1.5	2	1.7	2.3	2	665 - 920
1.5	2	1.7	2.3	3	660 - 995
2.2	3	2.6	3.45	7	610 - 810
2.2	3	2.6	3.45	8	780 - 1000
2.2	3	2.6	3.45	9	845 - 1085
3.7	5	4.3	5.75	10	750 - 945
3.7	5	4.3	5.75	11	865 - 1095
3.7	5	4.3	5.75	12	940 - 1190

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

### POWER EXHAUST FAN PERFORMANCE

Return Air System Static Pressure		Air Volume Exhausted	
Pa	in. w.g.	L/s	cfm
0	0	1687	3575
12	0.05	1607	3405
25	0.10	1675	3550
37	0.15	1531	3245
50	0.20	1470	3115
62	0.25	1425	3020
75	0.30	1369	2900
87	0.35	1314	2785

### FACTORY INSTALLED OPTIONS/FIELD INSTALLED ACCESSORY AIR RESISTANCE

Air Volume		Wet Indoor Coil						Gas Heat Exchanger						Economizer		Filters	
		092		102, 120		150		Standard Heat		Medium Heat		High Heat		Pa	in. w.g.	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.		
825	1750	5	0.02	7	0.03	10	0.04	15	0.06	5	0.02	5	0.02	7	0.03	0.01	0.03
945	2000	5	0.02	10	0.04	12	0.05	17	0.07	12	0.05	15	0.06	12	0.05	0.01	0.03
1060	2250	7	0.03	12	0.05	15	0.06	17	0.07	17	0.07	20	0.08	15	0.06	0.01	0.04
1180	2500	7	0.03	12	0.05	17	0.07	22	0.09	25	0.10	27	0.11	20	0.08	0.01	0.05
1300	2750	10	0.04	15	0.06	20	0.08	22	0.09	27	0.11	30	0.12	22	0.09	0.02	0.05
1415	3000	12	0.05	17	0.07	22	0.09	27	0.11	30	0.12	32	0.13	27	0.11	0.02	0.06
1535	3250	12	0.05	20	0.08	25	0.10	30	0.12	37	0.15	40	0.16	32	0.13	0.02	0.06
1650	3500	15	0.06	22	0.09	27	0.11	30	0.12	40	0.16	42	0.17	37	0.15	0.03	0.07
1770	3750	17	0.07	25	0.10	32	0.13	35	0.14	47	0.19	50	0.20	42	0.17	0.03	0.08
1890	4000	17	0.07	27	0.11	35	0.14	35	0.14	52	0.21	55	0.22	47	0.19	0.04	0.08
2005	4250	20	0.08	32	0.13	37	0.15	35	0.14	60	0.24	70	0.28	52	0.21	0.04	0.09
2125	4500	22	0.09	35	0.14	42	0.17	37	0.15	65	0.26	80	0.32	60	0.24	0.04	0.09
2240	4750	25	0.10	37	0.15	45	0.18	40	0.16	72	0.29	92	0.37	65	0.26	0.05	0.10
2360	5000	25	0.10	40	0.16	50	0.20	40	0.16	85	0.34	107	0.43	72	0.29	0.06	0.10
2475	5250	27	0.11	42	0.17	55	0.22	40	0.16	92	0.37	117	0.47	80	0.32	0.06	0.11
2595	5500	30	0.12	47	0.19	57	0.23	45	0.18	109	0.44	134	0.54	85	0.34	0.07	0.12
2715	5750	32	0.13	50	0.20	62	0.25	47	0.19	122	0.49	147	0.59	92	0.37	0.07	0.12
2830	6000	35	0.14	55	0.22	67	0.27	50	0.20	134	0.54	159	0.64	99	0.40	0.08	0.13

## BLOWER DATA

### CEILING DIFFUSERS AIR RESISTANCE

Unit Size	RTD11 Step-Down Diffuser								FD11 Flush Diffuser	
	Air Volume		2 Ends Open		1 Side, 2 Ends Open		All Ends & Sides Open			
	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.
092 Models	1133	2400	52	0.21	45	0.18	37	0.15	35	0.14
	1227	2600	60	0.24	52	0.21	45	0.18	42	0.17
	1321	2800	67	0.27	60	0.24	52	0.21	50	0.20
	1416	3000	80	0.32	72	0.29	62	0.25	62	0.25
	1510	3200	102	0.41	92	0.37	80	0.32	77	0.31
	1604	3400	124	0.50	112	0.45	97	0.39	92	0.37
	1699	3600	152	0.61	134	0.54	119	0.48	109	0.44
	1793	3800	182	0.73	157	0.63	142	0.57	127	0.51
102 & 120 Models	1699	3600	90	0.36	70	0.28	57	0.23	37	0.15
	1793	3800	99	0.40	80	0.32	65	0.26	45	0.18
	1888	4000	109	0.44	90	0.36	72	0.29	52	0.21
	1982	4200	122	0.49	99	0.40	82	0.33	60	0.24
	2076	4400	134	0.54	109	0.44	92	0.37	67	0.27
	2171	4600	149	0.60	122	0.49	104	0.42	77	0.31
	2265	4800	162	0.65	132	0.53	114	0.46	87	0.35
	2360	5000	172	0.69	144	0.58	124	0.50	97	0.39
150 Models	2454	5200	186	0.75	154	0.62	134	0.54	107	0.43
	1982	4200	55	0.22	47	0.19	40	0.16	25	0.10
	2076	4400	70	0.28	60	0.24	50	0.20	30	0.12
	2171	4600	85	0.34	72	0.29	60	0.24	37	0.15
	2265	4800	99	0.40	85	0.34	72	0.29	47	0.19
	2360	5000	114	0.46	97	0.39	85	0.34	57	0.23
	2454	5200	129	0.52	109	0.44	97	0.39	67	0.27
	2548	5400	144	0.58	122	0.49	107	0.43	77	0.31
	2643	5600	159	0.64	134	0.54	117	0.47	87	0.35
2737	5800	174	0.70	147	0.59	127	0.51	97	0.39	

### CEILING DIFFUSER AIR THROW DATA

Model No.	Air Volume		1 Effective Throw Range			
			RTD11 Step-Down		FD11 Flush	
	L/s	cfm	m	ft.	m	ft.
092 Models	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
	1510	3200	9 - 11	28 - 35	7 - 9	22 - 29
	1605	3400	9 - 11	30 - 37	7 - 9	22 - 30
102, 120 Models	1700	3600	8 - 10	25 - 33	7 - 9	22 - 29
	1795	3800	8 - 11	27 - 35	7 - 9	22 - 30
	1890	4000	9 - 11	29 - 37	7 - 10	24 - 33
	1980	4200	10 - 12	32 - 40	8 - 11	26 - 35
	2075	4400	10 - 13	34 - 42	9 - 11	28 - 37
150 Models	2645	5600	12 - 15	39 - 49	9 - 11	28 - 37
	2735	5800	13 - 16	42 - 51	9 - 12	29 - 38
	2830	6000	13 - 17	44 - 54	12 - 15	40 - 50
	2925	6200	14 - 17	45 - 55	13 - 16	42 - 51
	3020	6400	14 - 17	46 - 55	13 - 16	43 - 52
	3115	6600	14 - 17	47 - 56	14 - 17	45 - 56

<sup>1</sup> Throw is the horizontal or vertical distance an air stream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 15 m (50 ft.) per minute. Four sides open.

## ELECTRICAL DATA

		ZGB092S4B			ZGB102S4B		
<sup>1</sup> Voltage - 50hz 3 Phase with neutral		380/420V			380/420V		
Compressor 1	Rated Load Amps	8			8		
	Locked Rotor Amps	59			59		
Compressor 2	Rated Load Amps	4			5.5		
	Locked Rotor Amps	31			37		
Outdoor Fan Motors (2)	Full Load Amps	1.3			1.3		
	(total)	(2.6)			(2.6)		
Power Exhaust (2) 0.33 kW (0.5 hp)	Full Load Amps	1.7			1.7		
	(total)	(3.4)			(3.4)		
Indoor Blower Motor	kW (hp)	1.5 (2)	2.2 (3)	3.7 (5)	1.5 (2)	2.2 (3)	3.7 (5)
	Full Load Amps	3.6	5.3	8.2	3.6	5.3	8.2
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	25	25	30	25	30	30
	With (2) 0.33 kW (0.5 hp) Power Exhaust	30	30	35	30	30	35
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	21	22	25	22	24	27
	With (2) 0.33 kW (0.5 hp) Power Exhaust	24	26	29	26	27	30

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

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

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

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

## ELECTRICAL DATA

		ZGB120S4B			ZGB150S4B		
<sup>1</sup> Voltage - 50hz 3 Phase with neutral		380/420V - 3 Ph			380/420V - 3 Ph		
Compressor 1	Rated Load Amps	8			8		
	Locked Rotor Amps	59			67.1		
Compressor 2	Rated Load Amps	8			10.6		
	Locked Rotor Amps	59			74		
Outdoor Fan Motors (2)	Full Load Amps	1.3			1.5		
	(total)	(2.6)			(3)		
Power Exhaust (2) 0.33 kW (0.5 hp)	Full Load Amps	1.7			1.7		
	(total)	(3.4)			(3.4)		
Indoor Blower Motor	kW (hp)	1.5 (2)	2.2 (3)	3.7 (5)	1.5 (2)	2.2 (3)	3.7 (5)
	Full Load Amps	3.6	5.3	8.2	3.6	5.3	8.2
<sup>2</sup> Maximum Overcurrent Protection	Unit Only	30	30	35	35	40	40
	With (2) 0.33 kW (0.5 hp) Power Exhaust	35	35	40	40	40	45
<sup>3</sup> Minimum Circuit Ampacity	Unit Only	25	26	29	28	30	33
	With (2) 0.33 kW (0.5 hp) Power Exhaust	28	30	33	32	33	36

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

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

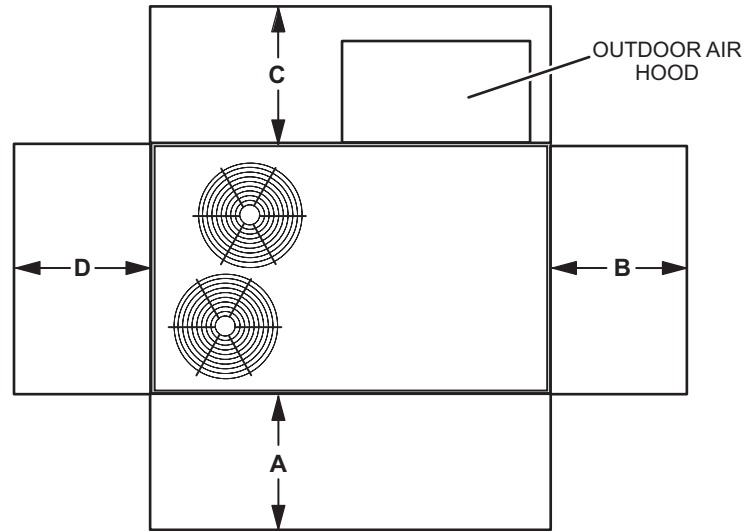
<sup>2</sup> HACR type breaker or fuse.

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



## UNIT CLEARANCES

### UNIT WITH ECONOMIZER



1 Unit Clearance	A		B		C		D		Top Clearance
	mm	in.	mm	in.	mm	in.	mm	in.	
<b>Service Clearance</b>	1524	60	914	36	914	36	1524	60	Unobstructed
<b>Clearance to Combustibles</b>	914	36	25	1	25	1	25	1	
<b>Minimum Operation Clearance</b>	914	36	914	36	914	36	914	36	

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

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

Clearance to Combustibles - Required for clearance to combustible material.


Minimum Operation Clearance - Required clearance for proper unit operation.

## OUTDOOR SOUND DATA

Unit Model Number	Octave Band Linear Sound Power Levels dB, re 10 <sup>-12</sup> Watts - Center Frequency - Hz							1 Sound Rating Number (SRN) (dBA)
	125	250	500	1000	2000	4000	8000	
092, 102 and 120	72	74	79	80	76	70	63	84
150	76	81	87	86	80	77	76	91

<sup>1</sup> Sound Rating Number according to ARI Standard 270-2008. "SRN" is the overall A-Weighted Sound Power Level, (LWA), dB (100 Hz to 10,000 Hz).

## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Item		Model No.	Catalog No.
<b>7-DAY PROGRAMMABLE THERMOSTAT - BACNET COMPATIBLE WITH REHEAT FUNCTION</b>			
 <ul style="list-style-type: none"> <li>• For units with or without <sup>1</sup> Humiditrol®</li> <li>• BTL listed MS/TP ensures compatibility with any BACnet system</li> <li>• Built-in control programs for conventional and heat pump applications</li> <li>• Conventional systems up to 3-stage heat and 3-stage cool</li> <li>• Heat pumps with 1 or 2 compressors and up to 2-stage auxiliary heat</li> <li>• On-board temperature and humidity sensor</li> <li>• Multiple configurable inputs and outputs enable advanced control strategies</li> <li>• Set-up Wizard enables rapid system configuration</li> <li>• No special tools required for installation or commissioning</li> <li>• Seven-day (2, 4 or 6 event) occupancy scheduling per day</li> <li>• Backlit 5-inch LCD touchscreen</li> </ul>		---	Y8241
<small><sup>1</sup> 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 desired.</small>			
<b>BACnet Controls (no reheat capability)</b>	BACnet® Module (factory or field installed)	K0CTRL31B-2	<b>16X71</b>
	BACnet® Room Sensor with Display (field installed)	K0SNSR01FF1	<b>97W23</b>
	BACnet® Room Sensor without Display (field installed)	K0SNSR00FF1	<b>97W24</b>
<b>Optional Accessories</b>	Plenum Cable (RJ45/CAT5 75 ft.)	K0MISC00FF1	<b>97W25</b>

**THIS PAGE INTENTIONALLY LEFT BLANK**

**WEIGHT DATA**

Model Number	Net		Shipping	
	kg	lbs.	kg	lbs.
092 Base Unit	409	902	448	987
092 Max. Unit	478	1053	516	1138
102 Base Unit	418	922	457	1007
102 Max. Unit	487	1073	525	1158
120 Base Unit	436	962	475	1047
120 Max. Unit	505	1113	543	1198
150 Base Unit	477	1052	516	1137
150 Max. Unit	546	1203	584	1288

**OPTIONS / ACCESSORIES**

Model Number	Shipping Weight	
	kg	lbs.
<b>CABINET</b>		
Coil/Hail Guard	23	50
<b>CEILING DIFFUSERS</b>		
<b>Step-Down</b>		
RTD11-95S	118	54
RTD11-135S	135	61
RTD11-185S	168	76
<b>Flush</b>		
FD11-95S	118	54
FD11-135S	135	61
FD11-185S	168	76
<b>ECONOMIZER / OUTDOOR AIR / EXHAUST</b>		
<b>Economizer</b>		
Downflow with Barometric Relief Dampers and Hoods	41	90
Horizontal with Barometric Relief Dampers and Hoods	43	95
Horizontal Low Profile Barometric Relief Dampers with Hood	4	8
<b>Outdoor Air Dampers</b>		
Outdoor Air Damper Section with Hood - Automatic	26	58
Outdoor Air Damper Section with Hood - Manual	23	50
<b>Power Exhaust</b>		
Downflow	27	60
Horizontal	19	41
<b>GAS HEAT EXCHANGER (NET WEIGHT)</b>		
Medium Heat (adder over standard heat)	4	9
High Heat (adder over standard heat)	15	32
<b>ROOF CURBS</b>		
<b>Hybrid Roof Curbs, Downflow</b>		
203 mm height	36	79
356 mm height	47	104
457 mm height	54	120
610 mm height	66	145
<b>PACKAGING</b>		
LTL Packaging (less than truck load)	48	105

# 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.
092	117	258	136	299	87	191	107	236	87	192	104	229	118	260	131	289	1207	47.5	1232	48.5	648	25.5	673	26.5
102	120	264	138	305	88	195	109	241	89	197	106	233	121	266	134	295	1207	47.5	1232	48.5	648	25.5	673	26.5
120	125	275	143	316	92	204	113	250	93	205	110	242	126	278	139	306	1207	47.5	1232	48.5	648	25.5	673	26.5
150	137	301	155	341	101	223	123	270	102	224	118	261	138	304	150	330	1207	47.5	1232	48.5	648	25.5	673	26.5

Base Unit - The unit with NO OPTIONS.

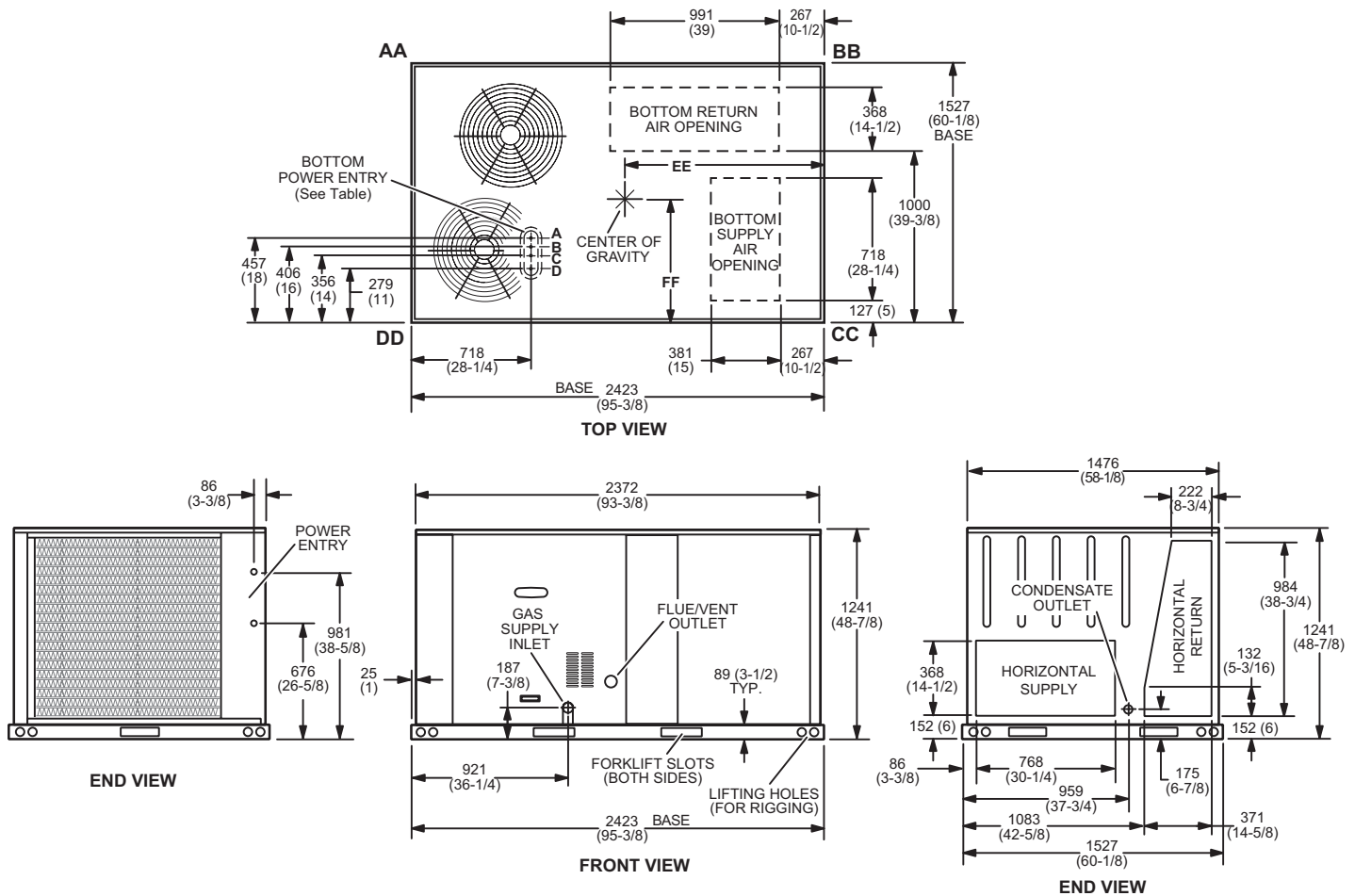
Max. Unit - The unit with ALL OPTIONS Installed. (Economizer, etc.)

## BOTTOM POWER ENTRY

Holes required for Optional Bottom Power Entry Kit

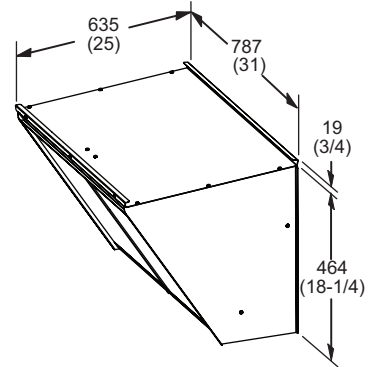
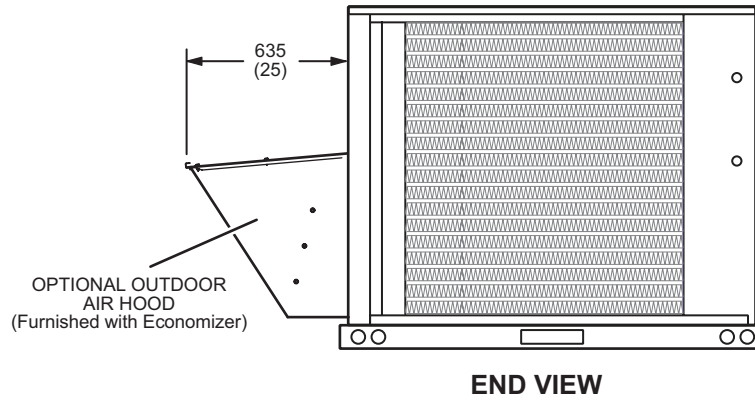
	Threaded Conduit Fittings (Provided in Kit)	Wire Use	Hole Diameter Required in Unit Base (Max.)
<b>A</b>	<sup>1</sup> 1/2 in.	ACC	23 (7/8)
<b>B</b>	1/2 in.	24V	23 (7/8)
<b>C</b>	1-1/4 in.	POWER	44 (1-3/4)
<b>D</b>	3/4 in.	AUX	44 (1-3/4)

<sup>1</sup> Field provided.

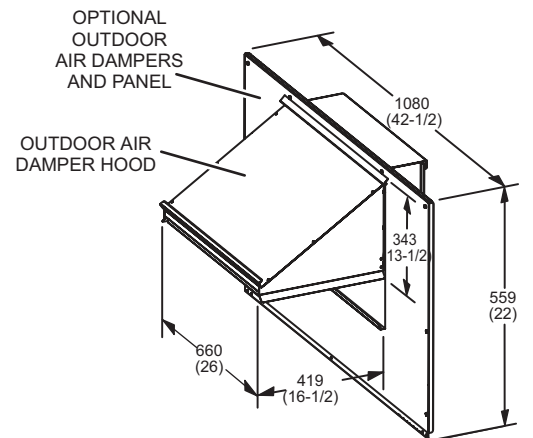
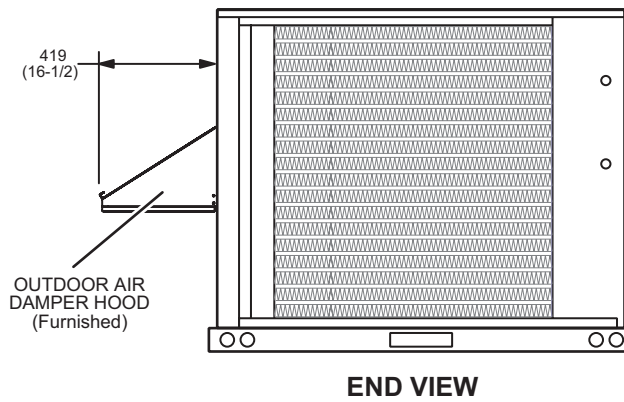


## DIMENSIONS - ACCESSORIES

### OUTDOOR AIR HOOD DETAIL FOR OPTIONAL DOWNFLOW ECONOMIZER (Downflow Applications)

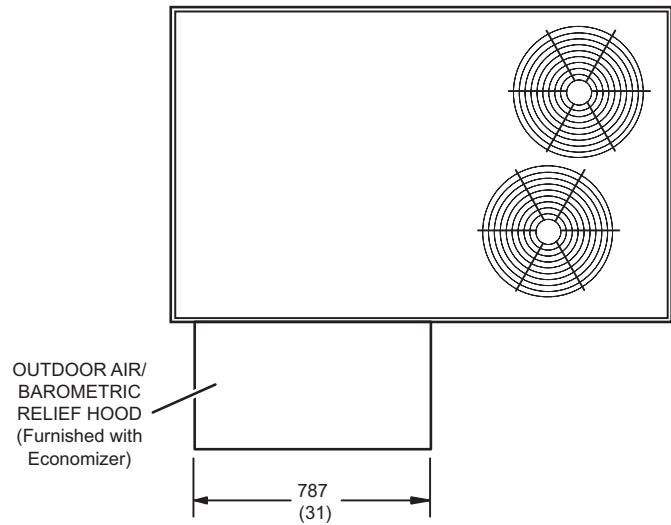


### OUTDOOR AIR DAMPER HOOD DETAIL FOR OPTIONAL MANUAL OR MOTORIZED OUTDOOR AIR DAMPERS (Downflow or Horizontal Applications)

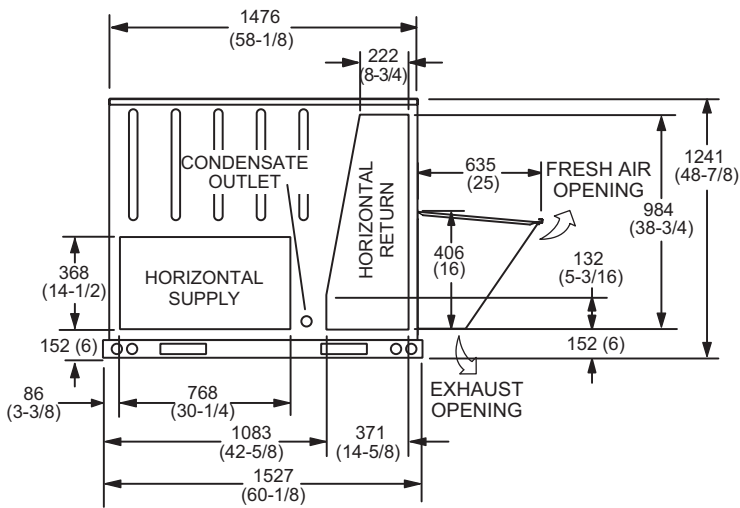


## DIMENSIONS - ACCESSORIES

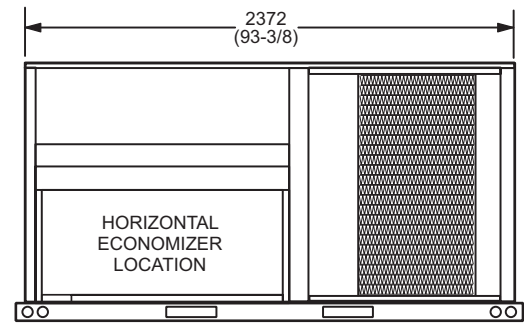
### OUTDOOR AIR HOOD DETAIL WITH OPTIONAL HORIZONTAL ECONOMIZER AND BAROMETRIC RELIEF DAMPERS (Horizontal Applications)



**TOP VIEW**



**END VIEW**

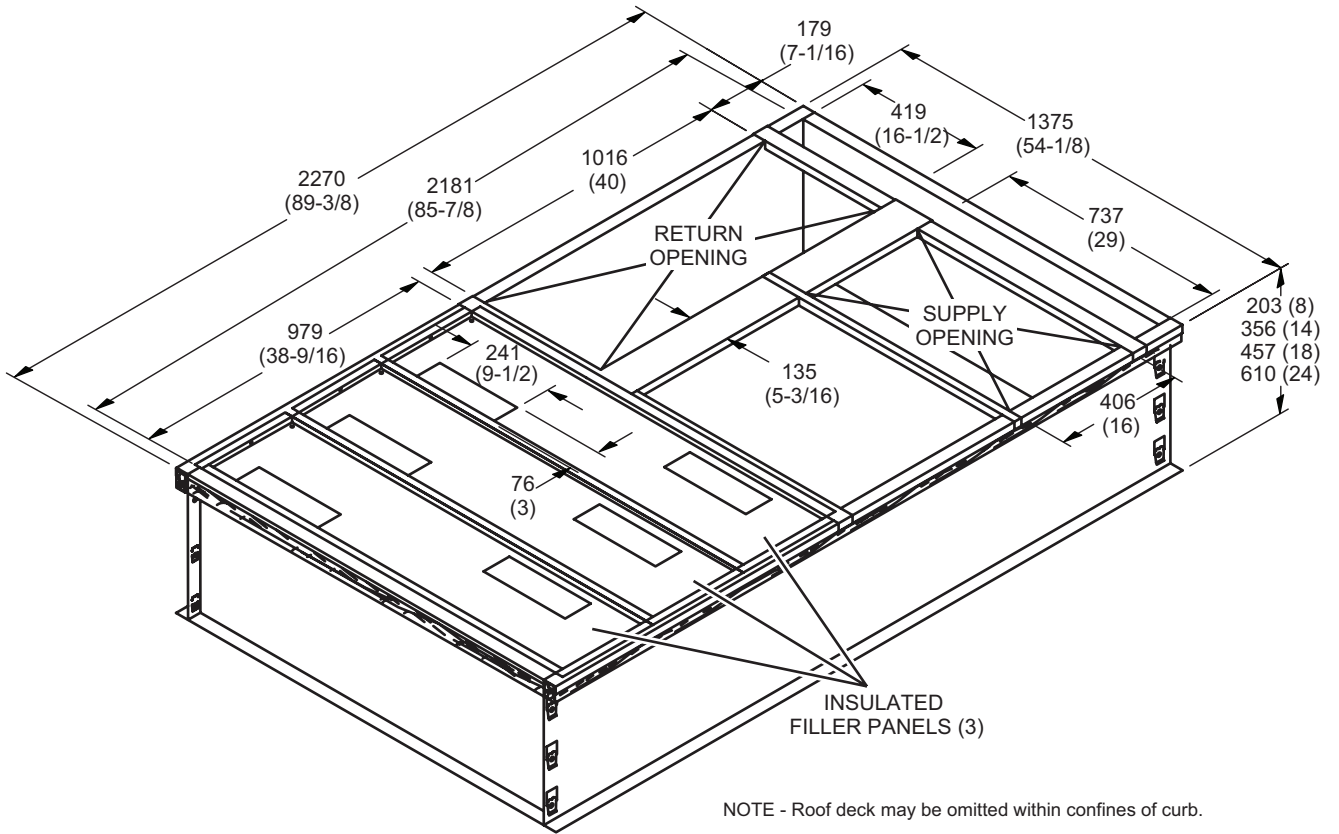


**BACK VIEW**

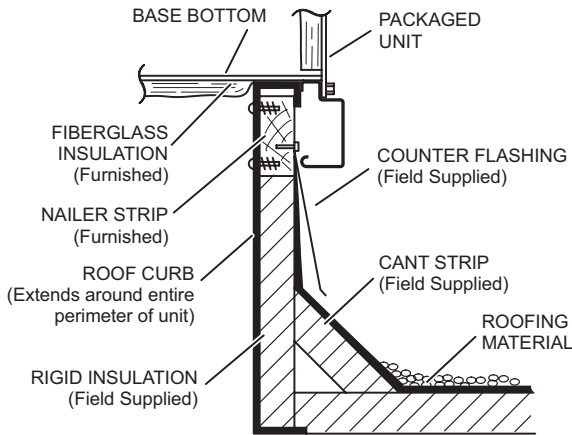
Note - Supply and Return Air Ducts must be supported.

# DIMENSIONS - ACCESSORIES

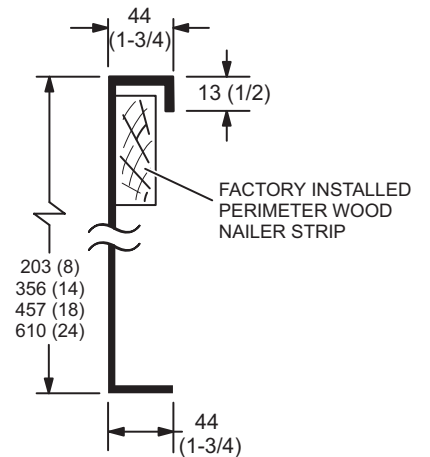
## HYBRID CURBS - DOUBLE DUCT OPENING



### TYPICAL FLASHING DETAIL FOR ROOF CURB



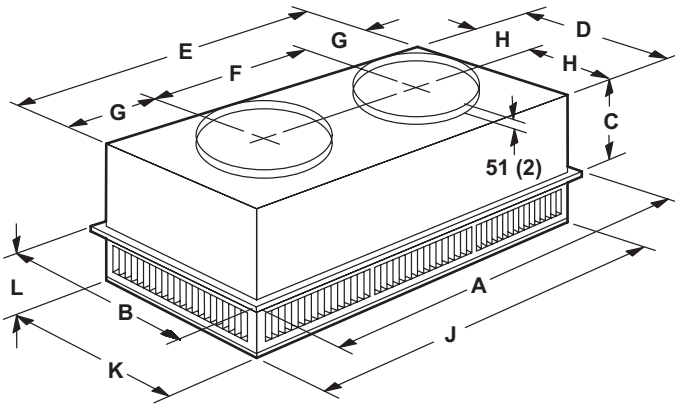
### DETAIL ROOF CURB



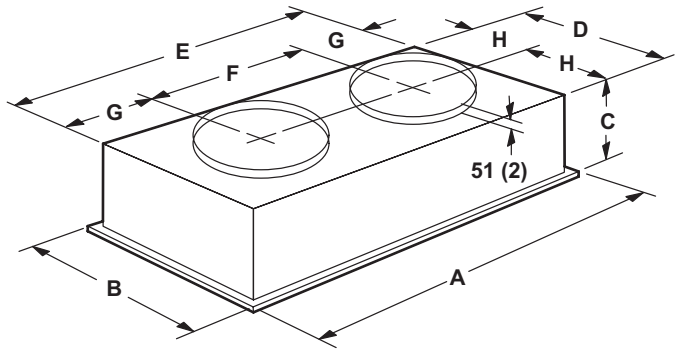
## DIMENSIONS - ACCESSORIES

### COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

#### STEP-DOWN CEILING DIFFUSER



#### FLUSH CEILING DIFFUSER



Model Number		RTD11-95S
A	mm	1159
	in.	47-5/8
B	mm	752
	in.	29-5/8
C	mm	365
	in.	14-3/8
D	mm	699
	in.	27-1/2
E	mm	1158
	in.	45-1/2
F	mm	572
	in.	22-1/2
G	mm	292
	in.	11-1/2
H	mm	349
	in.	13-3/4
J	mm	1156
	in.	45-1/2
K	mm	699
	in.	27-1/2
L	mm	206
	in.	8-1/8
Duct Size	mm	508 round
	in.	20 round

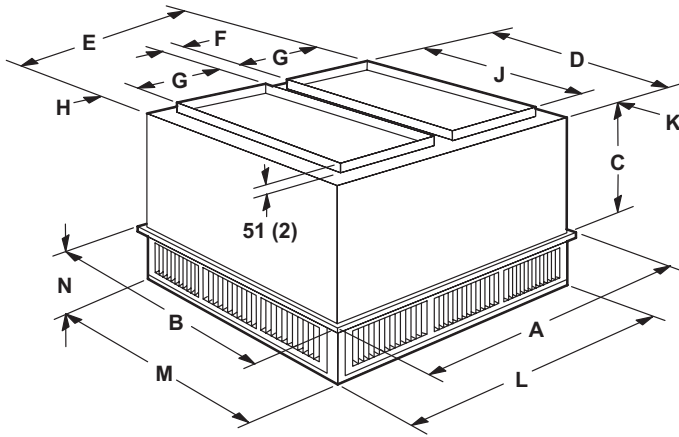
Model Number		FD11-95S
A	mm	1159
	in.	47-5/8
B	mm	752
	in.	29-5/8
C	mm	422
	in.	16-5/8
D	mm	686
	in.	27
E	mm	1143
	in.	45
F	mm	572
	in.	22-1/2
G	mm	286
	in.	11-1/4
H	mm	343
	in.	13-1/2
Duct Size	mm	508 round
	in.	20 round



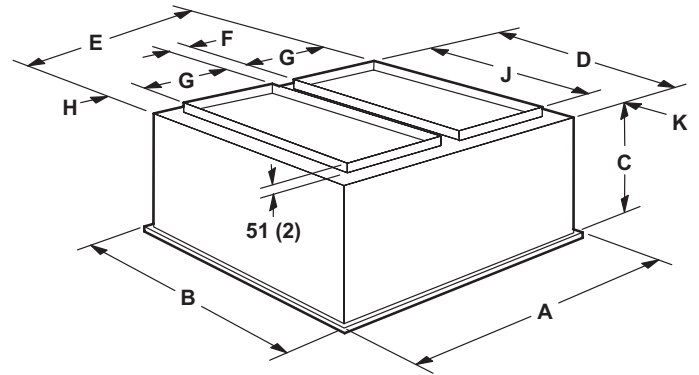
## DIMENSIONS - ACCESSORIES

### COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

#### STEP-DOWN CEILING DIFFUSER



#### FLUSH CEILING DIFFUSER



Model Number		RTD11-135S	RTD11-185S
A	mm	1210	1210
	in.	47-5/8	47-5/8
B	mm	905	1210
	in.	35-5/8	47-5/8
C	mm	524	625
	in.	20-5/8	24-5/8
D	mm	851	1156
	in.	33-1/2	45-1/2
E	mm	45-1/2	45-1/2
	in.	1156	1156
F	mm	114	114
	in.	4-1/2	4-1/2
G	mm	457	457
	in.	18	18
H	mm	64	64
	in.	2-1/2	2-1/2
J	mm	711	914
	in.	28	36
K	mm	70	121
	in.	2-3/4	4-3/4
L	mm	1156	1156
	in.	45-1/2	45-1/2
M	mm	851	1156
	in.	33-1/2	45-1/2
N	mm	232	257
	in.	9-1/8	10-1/8
Duct Size	mm	457 x 711	457 x 914
	in.	18 x 28	18 x 36

Model Number		FD11-135S	FD11-185S
A	mm	1210	1210
	in.	47-5/8	47-5/8
B	mm	905	1210
	in.	35-5/8	47-5/8
C	mm	591	743
	in.	23-1/4	29-1/4
D	mm	838	1143
	in.	33	45
E	mm	1143	1143
	in.	45	45
F	mm	114	114
	in.	4-1/2	4-1/2
G	mm	457	457
	in.	18	18
H	mm	57	57
	in.	2-1/4	2-1/4
J	mm	711	914
	in.	28	36
K	mm	64	114
	in.	2-1/2	4-1/2
Duct Size	mm	457 x 711	457 x 914
	in.	18 x 28	18 x 36





## REVISIONS

Section	Description
Options/Accessories	Updated Outdoor Air Damper catalog and model numbers.
Optional Conventional Temperature Control Systems	Added BACnet Thermostat, Controls and optional accessories.



Visit us at [www.allied-commercial.com](http://www.allied-commercial.com)

For the latest technical information, visit us at [www.allied-commercial.com](http://www.allied-commercial.com)

Contact us at 1-800-448-5872

NOTE - Due to Allied Commercial 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.

©2019 Allied Air Enterprises LLC, a Lennox International Inc. Company