



ZCA
Raider® Rooftop Units
60 HZ

PRODUCT SPECIFICATIONS

Bulletin No. 210748
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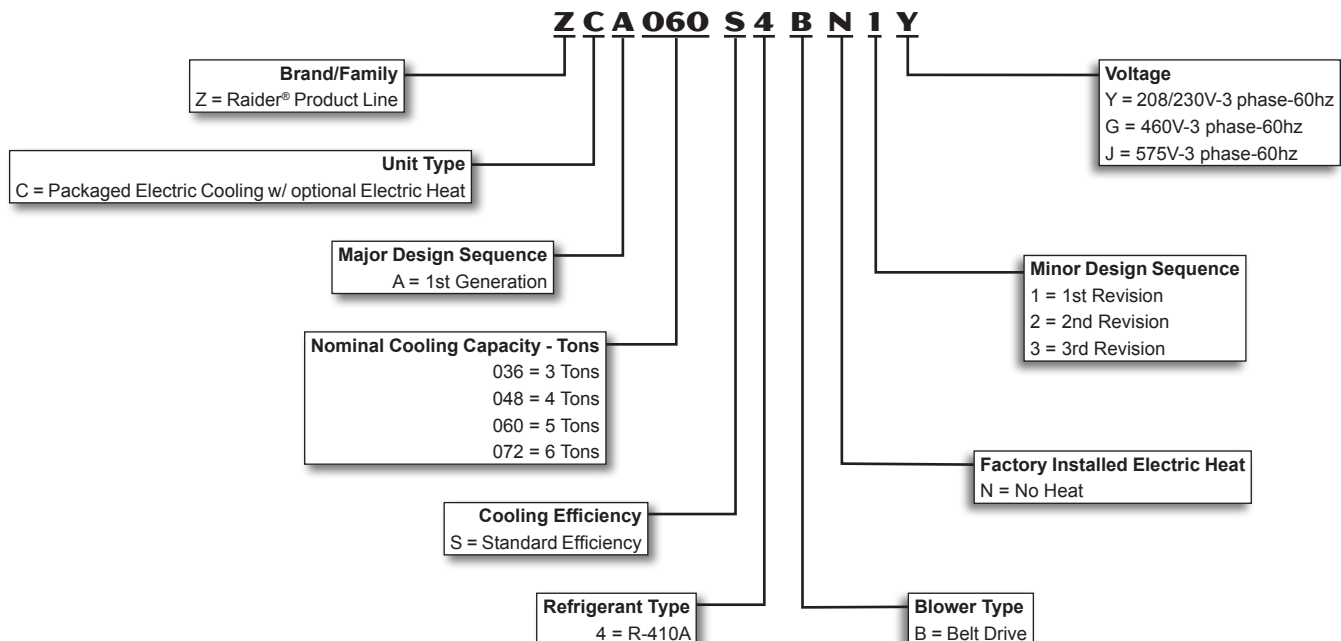
RAIDER®
Value Without Compromise™



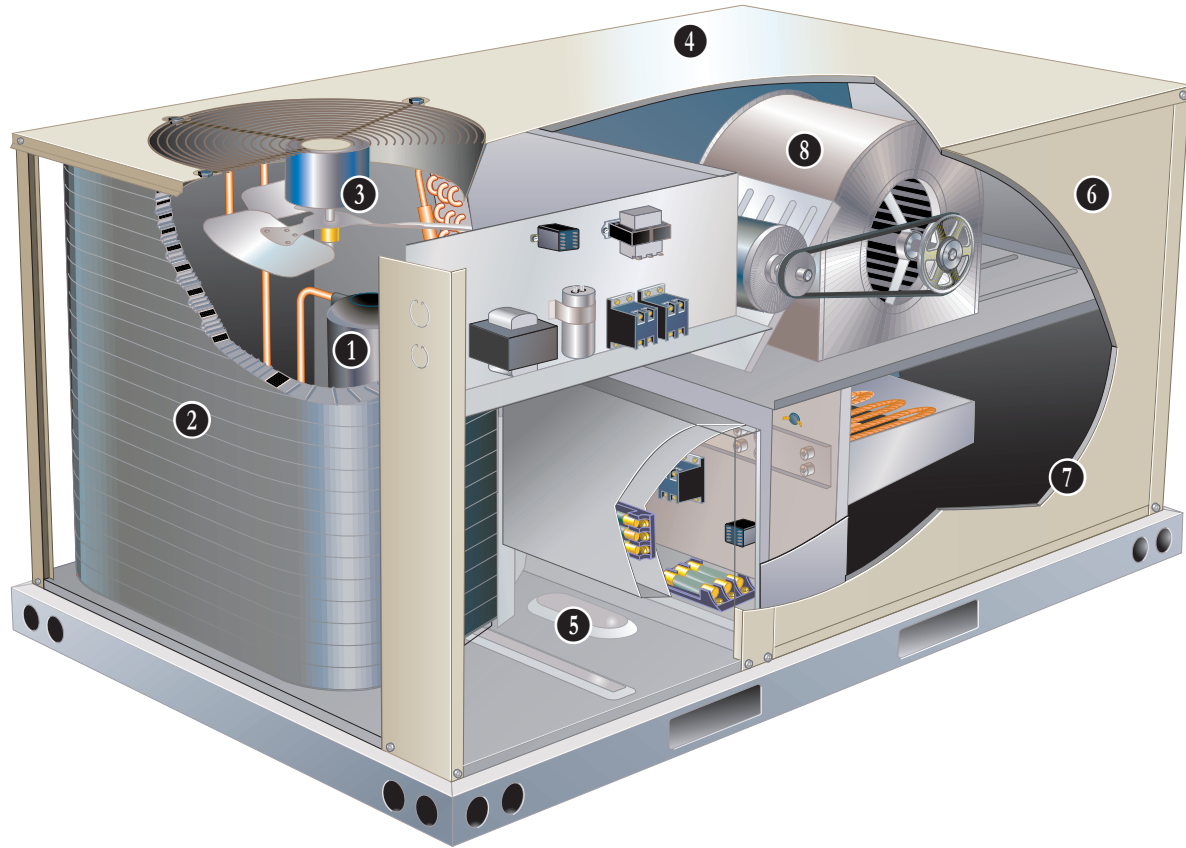
**ASHRAE 90.1
COMPLIANT**

3 to 6 Tons
Net Cooling Capacity – 34,600 to 68,000 Btuh
Optional Electric Heat - 5 to 30 kW

MODEL NUMBER IDENTIFICATION



FEATURES AND BENEFITS



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

- **Quick and Easy Retrofit** - Fast installation for replacement of many existing rooftop units - fits high volume competitor's roof curbs
- **R-410A Refrigerant** - Environmentally friendly
- **Single Speed Scroll Compressor** - Furnished on all models
- **Lennox' Environ™ Coil System** - Smaller, lighter condenser coil
- **High Pressure Switch** - Protects compressor
- **Belt Drive Blower Motor** - Maximizes air performance
- **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 application flexibility, durability, improved serviceability and meets ASHRAE 62.1 requirements for drain pan slope

FEATURES AND BENEFITS

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APPROVALS

AHRI Certified to AHRI Standard 210/240-2008 (3 - 5 ton models) and AHRI Standard 340/360-2007 (6 ton models).

CSA listed.

Units are Certified by CSA.

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

All models are ASHRAE 90.1 compliant.

ISO 9001 Registered Manufacturing Quality System.

WARRANTY

Limited five years on compressors.

Limited three years on the Lennox' Environ™ Coil System.

Limited five years optional High Performance Economizers.

Limited one year all other covered components.

COOLING SYSTEM

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

System can operate from 35°F to 125°F without any additional controls.

R-410A Refrigerant

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



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

1 Single Speed Scroll Compressor

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

Compressor Crankcase Heater

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

Refrigerant Metering Orifice

Accurately meters refrigerant in system. Refrigerant control is accomplished by exact sizing of refrigerant metering orifice.

High Pressure Switch

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

Automatic reset.

Filter/Drier

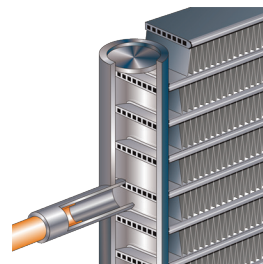
High capacity filter/drier protects the system from dirt and moisture.

2 Lennox Environ™ Coil System

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.



Environ™ 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.

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

Evaporator Coil

Copper tube construction, enhanced rippled-edge aluminum fins, flared shoulder tubing connections, silver soldered construction for improved heat transfer. Factory leak tested. Cross row circuiting with rifled tubing optimizes both sensible and latent cooling capacity.

Condensate Drain Pan

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

End drain connection.

FEATURES AND BENEFITS

COOLING SYSTEM **(continued)**

3 Outdoor Coil Fan Motor

Thermal overload protected, totally enclosed, permanently lubricated bearings, shaft down, fan guard mount.

Outdoor Coil Fan Guard

PVC coated fan guard furnished.

Required Selections

Cooling Capacity

Specify nominal cooling capacity of the unit.

Options/Accessories

Field Installed

Condensate Drain Trap

Field installed only.

Available in copper or PVC.

Drain Pan Overflow Switch

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

Low Ambient Kit

Cycles the outdoor fan while allowing compressor operation in the cooling cycle. This intermittent fan operation allows the system to operate without icing the evaporator coil and losing capacity. Designed for use in ambient temperatures no lower than 0°F. A crankcase heater must be installed on the compressor.

CABINET

4 Construction

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

Base rails have rigging holes. Three sides of the base rail have fork slots.

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

Airflow Choice

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

5 Power Entry

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

Optional Bottom Power Entry Kit is available.

6 Exterior Panels

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

7 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.

Options/Accessories

Factory Installed

Corrosion Protection

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

Indoor Corrosion Protection:

- Coated coil

Outdoor Corrosion Protection:

- Coated coil

Field Installed

Coil/Hail Guards

Constructed of heavy gauge steel, painted to match cabinet, helps protect outdoor coil from damage on all three sides of cabinet.

FEATURES AND BENEFITS

CONTROLS

Unit Control

All control voltage is provided via a 24V (secondary) transformer with inline fuse protection.

Heat/Cool Staging

Capable of up to 1 heat / 2 cool staging with a thermostat.

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

Field Installed

Commercial Control Systems

L Connection® Network

Complete building automation control system for single or multi-zone applications. Options include local interface, software for local or remote communication, and hardware for networking other control functions.

See L Connection® (Network Thermostat Controller version) Product Specifications Bulletin for details.

Thermostats

Control system and thermostat options, see page 26.

8 BLOWER

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

Motor

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

Supply Air Blower

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

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

Required Selections

Supply Air Blower

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

INDOOR AIR QUALITY

Air Filters

Disposable 2 inch filters furnished as standard.

Options/Accessories

Field Installed

Indoor Air Quality (CO₂) Sensor

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

ELECTRICAL

Marked & Color-Coded Wiring

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

Electrical Plugs

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

Required Selections

Voltage Choice

Specify when ordering base unit.

Field Installed

Electric Heat

Helix wound nichrome elements, individual element limit controls, wiring harness. See Options / Accessories tables for ordering information.

NOTE - Unit Fuse Block is required and must be ordered separately. See Electrical/Electric Heat tables for ordering information.

ECONOMIZER OPTIONS

Factory or Field Installed

Economizer (Downflow or Horizontal) (Standard and High Performance Common Features)

Outdoor Air Hood is furnished.

Economizer includes Barometric Relief Dampers with Exhaust Hood.

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

Single Sensible Temperature Control is furnished with the economizer

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

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

NOTE - Horizontal Economizer is field installed only.

Standard Economizer Features (Not for Title 24)

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

Standard Economizer Control Module

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



Economizer Controls:

- Damper Minimum Position
- Can be set lower than traditional minimum air requirements resulting in cost savings.
- IAQ Sensor - Signals dampers to modulate and maintain 55°F when CO₂ is higher than the CO₂ 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 55°F.

High Performance Economizer Features

Approved for California Title 24 building standards.

Low leakage dampers are Air Movement and Control Association International (AMCA) Class 1A Certified - Maximum 3 CFM per sq. ft. leakage at 1 in. w.g.

ASHRAE 90.1-2010 compliant.

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

NOTE - High Performance Economizers are not approved for use with enthalpy controls in Title 24 applications.

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)

NOTE - The Free Cooling setpoint for Title 24 applications must be set based on the Climate Zone where the system is installed. See Section 140.4 "Prescriptive Requirements for Space Conditioning Systems" of the California Energy Commission's 2013 Building Energy Efficiency Standards.

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

Field Installed

Single Enthalpy Temperature Control (Not for Title 24)

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

OPTIONS / ACCESSORIES

EXHAUST OPTIONS

Field Installed

Power Exhaust Fan - Downflow or Horizontal

Installs external to unit for applications 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 12 in. diameter with 5 fan blades. 1/2 hp motor.

OUTDOOR AIR OPTIONS

Field Installed

Outdoor Air Dampers - Downflow

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: 100°F.

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 8, 14, 18, and 24 inch heights.

Adaptor Curbs (not shown)

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

CEILING DIFFUSERS

Ceiling Diffusers (Flush and Step-Down)

Diffuser face and grilles with white powder coat finish, insulated (UL listed duct liner), diffuser box with collars for duct connection, fixed blades (flush diffusers) and double deflection blades (step-down diffusers), provisions for suspending, internally sealed (prevents recirculation), removable return air grille, adapts to T-bar ceiling grids or plaster ceilings.

Transitions (Supply and Return)

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

OPTIONS / ACCESSORIES

Item			Catalog No.	Unit Model No.			
				ZCA 036	ZCA 048	ZCA 060	ZCA 072
COOLING SYSTEM							
Condensate Drain Trap	PVC - C1TRAP20AD2	76W26	X	X	X	X	
	Copper - C1TRAP10AD2	76W27	X	X	X	X	
Drain Pan Overflow Switch	Z1SNSR90A1	99W59	X	X	X	X	
Low Ambient Kit	Z1SNSR33A-1	99W67	X	X	X	X	
BLOWER - SUPPLY AIR							
Motors	Belt Drive - 1 hp (208/230V, 460V, 575V-3ph) Standard Efficiency	Factory	O	O	O	O	
	Belt Drive - 1.5 hp (208/230V, 460V, 575V-3ph) Standard Efficiency	Factory	O	O	O	O	
	Belt Drive - 2 hp (208/230V, 460V, 575V-3ph) Standard Efficiency	Factory				O	
Drive Kits See Blower Data Tables for selection	Kit #ZA01 - 678-1035 rpm	Factory	O				
	Kit #ZA02 - 803-1226 rpm	Factory		O			
	Kit #ZA03 - 906-1383 rpm	Factory			O		
	Kit #ZA04 - 964-1471 rpm	Factory	O				
	¹ Kit #ZA05 -1098-1490 rpm	Factory		O			
	¹ Kit #ZA06 - 1262-1634 rpm	Factory			O		
	Kit #ZAA02 - 632-875 rpm	Factory				O	
	Kit #ZAA03 - 798-1105 rpm	Factory				O	
	² Kit #ZAA04 - 921-1226 rpm	Factory				O	
CABINET							
Coil/Hail Guards	Z1GARD52A-1	12X19	X	X	X		
	Z1GARD52AT1	12X20				X	
Corrosion Protection		Factory	O	O	O	O	
ELECTRICAL							
Voltage 60 hz	208/230V - 3 phase	Factory	O	O	O	O	
	460V - 3 phase	Factory	O	O	O	O	
	575V - 3 phase	Factory	O	O	O	O	
Bottom Power Entry Kit	Z1PEKT01A-1	98W08	X	X	X	X	

¹ 1.5 hp blower motor is required with the ZA05 and ZA06 drive kits.

² 2 hp blower motor is required with the ZAA04 drive kit.

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	Catalog No.	Unit Model No.				
		ZCA 036	ZCA 048	ZCA 060	ZCA 072	
ELECTRIC HEAT						
5 kW	208/230V-3ph - Z1EH0050AN1Y	99W01	X	X	X	
	460V-3ph - Z1EH0050AN1G	99W06	X	X	X	
	575V-3ph - Z1EH0050AN1J	99W11	X	X	X	
7.5 kW	208/230V-3ph - Z1EH0075AN1Y	99W02	X	X	X	X
	460V-3ph - Z1EH0075AN1G	99W07	X	X	X	X
	575V-3ph - Z1EH0075AN1J	99W12	X	X	X	X
10 kW	208/230V-3ph - Z1EH0100AN1Y	99W03	X	X	X	X
	460V-3ph - Z1EH0100AN1G	99W08	X	X	X	X
	575V-3ph - Z1EH0100AN1J	99W13	X	X	X	X
15 kW	208/230V-3ph - Z1EH0150AN1Y	99W04	X	X	X	X
	460V-3ph - Z1EH0150AN1G	99W09	X	X	X	X
	575V-3ph - Z1EH0150AN1J	99W14	X	X	X	X
22.5 kW	208/230V-3ph - Z1EH0225AN1Y	99W05		X	X	X
	460V-3ph - Z1EH0225AN1G	99W10		X	X	X
	575V-3ph - Z1EH0225AN1J	99W15		X	X	X
30 kW	208/230V-3ph - Z1EH0300AN1Y	13U01				X
	460V-3ph - Z1EH0300AN1G	13U02				X
	575V-3ph - Z1EH0300AN1J	13U03				X
ELECTRIC HEAT ACCESSORIES						
Unit Fuse Block (required) - See Electrical/Electric Heat Tables for Selection			X	X	X	X

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OPTIONS / ACCESSORIES

Item	Catalog No.	Unit Model No.				
		ZCA 036	ZCA 048	ZCA 060	ZCA 072	
ECONOMIZER						
Standard Economizer With Outdoor Air Hood (Not for Title 24)						
Standard Economizer (Downflow) Includes Barometric Relief Dampers and Exhaust Hood	Z1ECON30A-2	14D94	OX	OX	OX	OX
Standard Economizer (Horizontal) Includes Barometric Relief Dampers and Exhaust Hood	Z1ECON16A-2	14D92	X	X	X	X
Standard Economizer Controls (Not for Title 24)						
Single Enthalpy Control	C1SNSR64FF1	53W64	X	X	X	X
High Performance Economizer With Outdoor Air Hood (Approved for California Title 24 Building Standards / AMCA Class 1A Certified)						
High Performance Economizer (Downflow) Includes Barometric Relief Dampers and Exhaust Hood	Z1ECON32A-2	14D95	OX	OX	OX	OX
High Performance Economizer (Horizontal) Includes Barometric Relief Dampers and Exhaust Hood	Z1ECON33A-2	14D93	X	X	X	X
High Performance Economizer Controls (Not for Title 24)						
Single Enthalpy Control	C1SNSR61FF1	11G21	X	X	X	X
OUTDOOR AIR						
Outdoor Air Dampers With Outdoor Air Hood						
Motorized	Z1DAMP21A-2	15D19	X	X	X	X
Manual	Z1DAMP11A-2	15D20	X	X	X	X
POWER EXHAUST FAN						
Standard Static (Downflow)	208/230V-1 or 3ph - Z1PWRE10A-1P	21E01	X	X	X	X
	460V-3ph - Z1PWRE10A-1G	23E01	X	X	X	X
Standard Static (Horizontal)	208/230V-1 or 3ph - Z1PWRE15A-1P	24E01	X	X	X	X
	460V-3ph - Z1PWRE15A-1G	28E01	X	X	X	X
575V Transformer Kit	575V-3ph - Z1TRFM20A-1J	59E02	X	X	X	X
INDOOR AIR QUALITY						
Indoor Air Quality (Co ₂) Sensors						
Sensor - Wall-mount, off-white plastic cover with LCD display	C0SNSR50AE1L	77N39	X	X	X	X
Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting	C0SNSR53AE1L	87N54	X	X	X	X
CO ₂ Sensor Duct Mounting Kit - for downflow applications	C0MISC19AE1	85L43	X	X	X	X
Aspiration Box - for duct mounting non-plenum rated CO ₂ sensor (77N39)	C0MISC16AE1	90N43	X	X	X	X
ROOF CURBS						
Hybrid Roof Curbs, Downflow						
8 in. height	Z1CURB70A-1	11F76	X	X	X	X
14 in. height	Z1CURB71A-1	11F77	X	X	X	X
18 in. height	Z1CURB72A-1	11F78	X	X	X	X
24 in. height	Z1CURB73A-1	11F79	X	X	X	X
CEILING DIFFUSERS						
Step-Down - Order one	RTD9-65S	13K60	X	X	X	
	RTD11-95S	13K61				X
Flush - Order one	FD9-65S	13K55	X	X	X	
	FD11-95S	13K56				X

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

NOTE - Order 575V Transformer Kit with 208/230V Power Exhaust Fan for 575V applications.

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SPECIFICATIONS

General Data		Nominal Tonnage	3 Ton	4 Ton	5 Ton	6 Ton
Model No.			ZCA036S4B	ZCA048S4B	ZCA060S4B	ZCA072S4B
Efficiency Type			Standard	Standard	Standard	Standard
Blower Type			Single Speed Belt Drive	Single Speed Belt Drive	Single Speed Belt Drive	Single Speed Belt Drive
Cooling Performance	Gross Cooling Capacity - Btuh		36,100	47,000	58,900	69,700
	Net Cooling Capacity - Btuh		¹ 34,600	¹ 45,000	¹ 57,000	² 68,000
	AHRI Rated Air Flow - cfm		1200	1550	1650	2025
	³ Sound Rating Number (SRN) (dBA)		78	80	83	84
	Total Unit Power - kW		3.0	4.3	5.3	6.1
	SEER (Btuh/Watt)		¹ 13.00	¹ 13.00	¹ 13.00	---
	IEER (Btuh/Watt)		---	---	---	² 12.00
	EER (Btuh/Watt)		¹ 11.50	¹ 10.60	¹ 10.70	² 11.20
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A
	Charge Furnished		4 lbs. 1 oz.	4 lbs. 6 oz.	5 lbs. 6 oz.	7 lbs. 0 oz.
Electric Heat Available - page 24			5, 7.5, 10, 15 kW	5, 7.5, 10, 15, 22.5 kW		7.5, 10, 15, 22.5, 30 kW
Compressor Type (one per unit)			Scroll	Scroll	Scroll	Scroll
Outdoor Coil	Net face area - sq. ft.		12.8	12.8	15.2	19.9
	Number of rows		1	1	1	1
	Fins / inch		23	23	23	23
Outdoor Coil Fan	Motor HP		(1) 1/6 (PSC)	(1) 1/4 (PSC)	(1) 1/3 (PSC)	(1) 1/3 (PSC)
	Motor rpm		825	825	1075	1075
	Total motor watts		200	310	360	350
	Diameter (No.) - in.		(1) 22	(1) 22	(1) 22	(1) 22
	Number of blades		4	4	3	3
	Total air volume - cfm		2700	3300	3800	4270
Indoor Coil	Net face area - sq. ft.		8.4	8.4	8.4	10.8
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		2	2	3	3
	Fins per inch		14	14	14	14
	Drain Connection (no. and size) - in.		(1) 1 NPT	(1) 1 NPT	(1) 1 NPT	(1) 1 NPT
³ Indoor Blower & Drive Selection	Expansion device type		Fixed Orifice	Fixed Orifice	Fixed Orifice	Fixed Orifice
	Nominal Motor HP		1 hp, 1.5 hp	1 hp, 1.5 hp	1 hp, 1.5 hp	1 hp, 1.5 hp, 2 hp
	Maximum Usable Motor HP		1.15 hp, 1.7 hp	1.15 hp, 1.7 hp	1.15 hp, 1.7 hp	1.15 hp, 1.7 hp, 2.3 hp
	Available Drive Kits		Kit #ZA01 678-1035 rpm Kit #ZA04 964-1471 rpm	Kit #ZA02 803-1226 rpm ⁴ Kit #ZA05 1098-1490 rpm	Kit #ZA03 906-1383 rpm ⁴ Kit #ZA06 1262-1634 rpm	Kit #ZAA02 632-875 rpm Kit #ZAA03 798-1105 rpm ⁵ Kit #ZAA04 921-1228 rpm
Wheel nominal diameter x width - in.			10 x 10	10 x 10	10 x 10	15 x 9
Filters	Type		Disposable			
	Number and size - in.		(4) 14 x 20 x 2			(2) 16 x 20 x 2 (2) 20 x 20 x 2
Electrical Characteristics - 60 Hz			208/230V, 460V & 575V 3 phase	208/230V 460V & 575V 3 phase	208/230V 460V & 575V 3 phase	208/230V 460V & 575V 3 phase

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

¹, ² AHRI Certified to AHRI Standard ¹ 210/240 or ² 340/360: 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

³ Sound Rating Number (SRN) rated in accordance with test conditions included in ANSI/AHRI Standard 270-2008.

³ Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor hp required. Maximum usable hp of motors furnished are shown. In Canada, nominal motor hp is also maximum usable motor hp output. If motors of comparable hp are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

⁴ 1.5 hp motor is required with the ZA05 and ZA06 drive kits.

⁵ 2 hp blower motor is required with the ZAA04 drive kit.

RATINGS

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

3 TON STANDARD EFFICIENCY ZCA036S4

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			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		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	960	33.5	2.11	.69	.84	.97	31.0	2.40	.69	.84	.99	27.8	2.71	.69	.86	1.00	23.6	3.04	.70	.90	1.00
	1200	36.0	2.11	.75	.91	1.00	33.4	2.41	.75	.92	1.00	30.0	2.73	.75	.95	1.00	25.5	3.05	.78	.99	1.00
	1440	38.0	2.12	.79	.97	1.00	35.2	2.42	.80	.98	1.00	31.8	2.74	.81	1.00	1.00	27.3	3.06	.85	1.00	1.00
67°F	960	36.0	2.11	.53	.67	.81	33.4	2.41	.52	.67	.81	30.1	2.73	.50	.67	.83	25.6	3.05	.49	.68	.87
	1200	38.6	2.12	.57	.73	.87	35.8	2.42	.56	.73	.89	32.2	2.74	.55	.74	.91	27.3	3.06	.55	.77	.96
	1440	40.5	2.13	.60	.77	.94	37.4	2.43	.60	.78	.95	33.6	2.74	.59	.80	.98	28.7	3.07	.60	.84	1.00
71°F	960	38.4	2.12	.38	.53	.65	35.6	2.42	.36	.52	.65	32.2	2.74	.34	.50	.65	27.5	3.06	.31	.49	.67
	1200	41.1	2.13	.41	.57	.71	38.1	2.43	.40	.56	.71	34.4	2.75	.37	.55	.72	29.4	3.07	.35	.55	.75
	1440	43.0	2.14	.43	.60	.76	39.9	2.44	.42	.59	.76	36.0	2.76	.40	.59	.78	30.6	3.08	.35	.60	.80

4 TON STANDARD EFFICIENCY ZCA048S4

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																							
		85°F						95°F						105°F						115°F					
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			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						
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F				
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F					
63°F	1280	46.0	3.09	.71	.85	.97	42.9	3.48	.71	.86	.99	39.5	3.93	.71	.87	1.00	34.3	4.48	.73	.91	1.00				
	1600	49.1	3.09	.76	.91	1.00	45.7	3.48	.77	.93	1.00	41.9	3.94	.78	.95	1.00	36.3	4.50	.81	.99	1.00				
	1920	51.5	3.09	.81	.97	1.00	47.8	3.49	.82	.99	1.00	43.9	3.96	.83	1.00	1.00	38.4	4.51	.87	1.00	1.00				
67°F	1280	49.2	3.09	.55	.69	.81	45.9	3.49	.54	.69	.83	42.3	3.94	.53	.69	.84	36.9	4.50	.53	.71	.88				
	1600	52.5	3.10	.58	.74	.88	48.9	3.49	.58	.75	.89	44.9	3.96	.58	.76	.92	38.9	4.52	.58	.79	.97				
	1920	55.0	3.10	.62	.79	.94	51.1	3.50	.61	.80	.96	46.8	3.98	.62	.81	.99	40.4	4.53	.63	.86	1.00				
71°F	1280	52.3	3.10	.41	.54	.67	48.8	3.49	.40	.54	.67	44.9	3.96	.38	.53	.68	39.2	4.52	.36	.53	.70				
	1600	55.8	3.11	.42	.58	.72	51.9	3.50	.42	.58	.73	47.6	3.97	.40	.57	.74	41.4	4.54	.38	.58	.77				
	1920	58.3	3.11	.44	.61	.77	54.2	3.51	.43	.61	.78	49.6	3.99	.42	.62	.80	42.9	4.55	.41	.64	.84				

5 TON STANDARD EFFICIENCY ZCA060S4

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			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		
				75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F			75°F	80°F	85°F
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	
63°F	1600	56.5	3.67	.73	.87	1.00	52.4	4.13	.74	.90	1.00	48.0	4.65	.76	.93	1.00	43.0	5.26	.78	.97	1.00
	2000	59.4	3.70	.78	.95	1.00	55.1	4.16	.80	.98	1.00	50.5	4.69	.83	1.00	1.00	45.9	5.31	.86	1.00	1.00
	2400	61.7	3.72	.84	1.00	1.00	57.7	4.19	.86	1.00	1.00	53.4	4.72	.89	1.00	1.00	48.5	5.36	.94	1.00	1.00
67°F	1600	60.3	3.71	.57	.70	.84	56.0	4.16	.57	.72	.86	51.4	4.70	.57	.73	.89	46.2	5.32	.58	.76	.94
	2000	63.3	3.73	.60	.76	.92	58.8	4.20	.61	.78	.95	53.8	4.74	.62	.81	.99	48.4	5.36	.63	.84	1.00
	2400	65.6	3.76	.64	.82	.99	60.8	4.22	.65	.84	1.00	55.7	4.76	.66	.87	1.00	49.7	5.38	.68	.92	1.00
71°F	1600	64.0	3.74	.42	.55	.68	59.5	4.20	.42	.56	.70	54.7	4.75	.41	.56	.71	49.3	5.37	.40	.57	.74
	2000	67.2	3.77	.44	.59	.74	62.4	4.24	.44	.60	.76	57.3	4.79	.43	.61	.78	51.7	5.42	.43	.63	.82
	2400	69.6	3.80	.45	.63	.80	64.7	4.27	.45	.64	.82	59.3	4.82	.45	.66	.85	53.2	5.45	.45	.68	.90

6 TON STANDARD EFFICIENCY ZCA072S4

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																			
		85°F					95°F					105°F					115°F				
		Total Cool Cap.	Comp. Motor Input	Sensible To Total Ratio (S/T)			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		
	cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F
63°F	2000	67.6	4.48	0.74	0.89	1.00	62.3	5.03	0.75	0.90	1.00	56.3	5.64	0.76	0.93	1.00	50.0	6.34	0.78	0.96	1.00
	2400	71.1	4.53	0.79	0.94	1.00	65.3	5.07	0.81	0.96	1.00	59.2	5.68	0.82	0.99	1.00	52.9	6.38	0.84	1.00	1.00
	2800	73.7	4.56	0.84	0.99	1.00	67.8	5.10	0.85	1.00	1.00	62.1	5.72	0.87	1.00	1.00	55.9	6.43	0.90	1.00	1.00
67°F	2000	72.5	4.54	0.57	0.72	0.86	66.8	5.09	0.57	0.73	0.87	60.6	5.70	0.57	0.75	0.90	53.9	6.40	0.57	0.76	0.93
	2400	75.8	4.58	0.61	0.78	0.91	69.7	5.13	0.61	0.79	0.94	63.3	5.74	0.61	0.80	0.96	56.2	6.44	0.61	0.83	1.00
	2800	78.2	4.61	0.64	0.82	0.96	72.1	5.16	0.64	0.83	0.99	65.3	5.78	0.64	0.85	1.00	58.1	6.46	0.65	0.88	1.00
71°F	2000	77.2	4.59	0.43	0.57	0.70	71.3	5.14	0.41	0.56	0.71	65.0	5.77	0.40	0.56	0.72	58.1	6.46	0.38	0.56	0.74
	2400	80.7	4.64	0.44	0.60	0.75	74.4	5.19	0.43	0.60	0.77	67.7	5.81	0.41	0.61	0.79	60.2	6.50	0.40	0.61	0.81
	2800	83.2	4.68	0.45	0.63	0.80	76.6	5.23	0.45	0.64	0.82	69.6	5.84	0.44	0.65	0.84	62.0	6.54	0.42	0.65	0.87

BLOWER DATA - BELT DRIVE - ZCA036**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.**

FOR ALL UNITS ADD:

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

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

See page 18 for blower motors and drives and wet coil and options/accessory air resistance data.

DOWNFLOW

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	555	0.16	621	0.17	691	0.19	763	0.20	832	0.22	897	0.24	956	0.26	1010	0.29
1000	577	0.18	644	0.19	715	0.21	786	0.23	855	0.24	919	0.27	976	0.29	1028	0.32
1100	601	0.20	670	0.22	741	0.23	812	0.25	879	0.28	941	0.30	996	0.33	1047	0.37
1200	629	0.22	698	0.24	770	0.26	840	0.28	905	0.31	965	0.34	1018	0.38	1066	0.41
1300	659	0.25	729	0.27	800	0.30	869	0.32	932	0.35	989	0.39	1040	0.43	1087	0.47
1400	692	0.28	763	0.31	833	0.34	899	0.37	960	0.40	1014	0.44	1063	0.48	1108	0.52
1500	728	0.32	798	0.35	866	0.38	930	0.41	987	0.45	1039	0.50	1086	0.54	1130	0.58

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	1060	0.31	1108	0.34	1154	0.37	1197	0.40	1239	0.44	1279	0.47	1319	0.51	1359	0.55
1000	1077	0.35	1123	0.38	1168	0.42	1211	0.45	1252	0.49	1291	0.52	1330	0.56	1370	0.60
1100	1094	0.40	1139	0.43	1183	0.46	1225	0.50	1266	0.54	1305	0.58	1343	0.62	1382	0.66
1200	1112	0.45	1156	0.48	1199	0.52	1241	0.55	1281	0.59	1319	0.64	1357	0.68	1394	0.72
1300	1131	0.50	1174	0.54	1216	0.57	1257	0.61	1296	0.66	1334	0.70	1371	0.74	1408	0.78
1400	1151	0.56	1193	0.60	1234	0.64	1274	0.68	1313	0.72	1351	0.77	1387	0.81	1423	0.86
1500	1172	0.62	1213	0.66	1253	0.71	1293	0.75	1331	0.79	1368	0.84	1404	0.89	1440	0.93

HORIZONTAL

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	572	0.14	641	0.16	712	0.19	785	0.22	860	0.24	931	0.27	991	0.29	1039	0.32
1000	602	0.16	671	0.19	742	0.22	815	0.24	887	0.27	954	0.30	1010	0.33	1055	0.36
1100	636	0.19	706	0.22	776	0.25	847	0.28	916	0.31	977	0.34	1028	0.37	1070	0.41
1200	674	0.23	744	0.26	813	0.29	881	0.32	944	0.35	999	0.38	1045	0.42	1087	0.45
1300	716	0.26	784	0.29	851	0.33	914	0.36	971	0.40	1020	0.43	1064	0.47	1106	0.50
1400	759	0.30	824	0.34	888	0.37	946	0.41	998	0.45	1043	0.49	1086	0.52	1129	0.55
1500	803	0.35	865	0.39	925	0.43	979	0.47	1027	0.52	1070	0.55	1113	0.58	1156	0.61

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	1085	0.35	1135	0.38	1183	0.40	1227	0.42	1268	0.45	1305	0.49	1342	0.53	1379	0.57
1000	1099	0.39	1148	0.42	1195	0.44	1239	0.47	1279	0.50	1316	0.54	1352	0.58	1389	0.62
1100	1114	0.44	1163	0.46	1210	0.49	1253	0.52	1292	0.55	1329	0.59	1364	0.64	1401	0.68
1200	1131	0.48	1180	0.51	1226	0.54	1269	0.57	1308	0.61	1343	0.66	1378	0.70	1414	0.75
1300	1151	0.53	1199	0.56	1245	0.59	1287	0.63	1324	0.68	1359	0.72	1394	0.77	1429	0.82
1400	1175	0.58	1222	0.62	1266	0.66	1306	0.70	1342	0.75	1376	0.80	1410	0.85	1446	0.89
1500	1201	0.65	1246	0.68	1289	0.73	1327	0.78	1362	0.83	1395	0.88	1429	0.93	1464	0.98

BLOWER DATA - ZCA048

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

FOR ALL UNITS ADD:

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

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

See page 18 for blower motors and drives and wet coil and options/accessory air resistance data.

DOWNFLOW

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	629	0.22	698	0.24	770	0.26	840	0.28	905	0.31	965	0.34	1018	0.38	1066	0.41
1300	659	0.25	729	0.27	800	0.30	869	0.32	932	0.35	989	0.39	1040	0.43	1087	0.47
1400	692	0.28	763	0.31	833	0.34	899	0.37	960	0.40	1014	0.44	1063	0.48	1108	0.52
1500	728	0.32	798	0.35	866	0.38	930	0.41	987	0.45	1039	0.50	1086	0.54	1130	0.58
1600	766	0.37	835	0.40	900	0.43	960	0.47	1015	0.51	1065	0.55	1110	0.60	1152	0.65
1700	806	0.42	871	0.45	934	0.48	991	0.52	1043	0.56	1091	0.61	1134	0.66	1176	0.71
1800	845	0.47	908	0.50	967	0.54	1021	0.58	1071	0.63	1117	0.68	1159	0.73	1200	0.78
1900	884	0.53	944	0.56	1000	0.60	1051	0.64	1099	0.69	1143	0.75	1185	0.80	1225	0.86
2000	923	0.59	979	0.63	1032	0.67	1082	0.72	1128	0.77	1171	0.83	1211	0.89	1251	0.95

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1112	0.45	1156	0.48	1199	0.52	1241	0.55	1281	0.59	1319	0.64	1357	0.68	1394	0.72
1300	1131	0.50	1174	0.54	1216	0.57	1257	0.61	1296	0.66	1334	0.70	1371	0.74	1408	0.78
1400	1151	0.56	1193	0.60	1234	0.64	1274	0.68	1313	0.72	1351	0.77	1387	0.81	1423	0.86
1500	1172	0.62	1213	0.66	1253	0.71	1293	0.75	1331	0.79	1368	0.84	1404	0.89	1440	0.93
1600	1193	0.69	1234	0.73	1273	0.78	1313	0.82	1350	0.87	1387	0.92	1422	0.97	1457	1.01
1700	1216	0.76	1255	0.81	1295	0.86	1333	0.90	1370	0.95	1406	1.00	1441	1.05	1475	1.10
1800	1239	0.84	1279	0.89	1317	0.94	1355	0.99	1391	1.04	1426	1.09	1461	1.14	1494	1.19
1900	1264	0.92	1303	0.98	1341	1.03	1378	1.08	1413	1.14	1448	1.19	1481	1.24	1514	1.29
2000	1290	1.01	1328	1.07	1366	1.13	1402	1.19	1436	1.24	1470	1.29	1503	1.35	1535	1.40

HORIZONTAL

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	674	0.23	744	0.26	813	0.29	881	0.32	944	0.35	999	0.38	1045	0.42	1087	0.45
1300	716	0.26	784	0.29	851	0.33	914	0.36	971	0.40	1020	0.43	1064	0.47	1106	0.50
1400	759	0.30	824	0.34	888	0.37	946	0.41	998	0.45	1043	0.49	1086	0.52	1129	0.55
1500	803	0.35	865	0.39	925	0.43	979	0.47	1027	0.52	1070	0.55	1113	0.58	1156	0.61
1600	847	0.40	905	0.45	961	0.50	1013	0.54	1058	0.58	1100	0.62	1142	0.65	1185	0.68
1700	890	0.47	944	0.52	997	0.57	1047	0.62	1091	0.66	1132	0.69	1173	0.72	1216	0.76
1800	930	0.54	982	0.60	1033	0.65	1081	0.70	1124	0.74	1165	0.77	1206	0.80	1248	0.84
1900	970	0.62	1020	0.68	1069	0.73	1116	0.78	1158	0.81	1199	0.85	1239	0.89	1280	0.93
2000	1009	0.71	1058	0.76	1106	0.81	1151	0.86	1193	0.9	1233	0.94	1273	0.98	1312	1.04

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1131	0.48	1180	0.51	1226	0.54	1269	0.57	1308	0.61	1343	0.66	1378	0.70	1414	0.75
1300	1151	0.53	1199	0.56	1245	0.59	1287	0.63	1324	0.68	1359	0.72	1394	0.77	1429	0.82
1400	1175	0.58	1222	0.62	1266	0.66	1306	0.70	1342	0.75	1376	0.80	1410	0.85	1446	0.89
1500	1201	0.65	1246	0.68	1289	0.73	1327	0.78	1362	0.83	1395	0.88	1429	0.93	1464	0.98
1600	1229	0.72	1273	0.76	1313	0.81	1350	0.86	1384	0.92	1416	0.97	1450	1.02	1485	1.07
1700	1258	0.80	1300	0.85	1338	0.90	1374	0.96	1407	1.02	1440	1.07	1473	1.12	1508	1.17
1800	1289	0.89	1328	0.94	1365	1.00	1399	1.06	1432	1.13	1465	1.18	1498	1.23	1532	1.28
1900	1319	0.99	1357	1.05	1392	1.11	1426	1.18	1459	1.24	1491	1.30	1524	1.35	1558	1.39
2000	1350	1.10	1387	1.16	1421	1.23	1454	1.30	1486	1.36	1518	1.42	1551	1.47	1584	1.51

BLOWER DATA - BELT DRIVE - ZCA060**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT ONLY WITH DRY INDOOR COIL AND AIR FILTERS IN PLACE.**

FOR ALL UNITS ADD:

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

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

See page 18 for blower motors and drives and wet coil and options/accessory air resistance data.

DOWNFLOW

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1600	787	0.38	854	0.41	918	0.44	976	0.48	1030	0.52	1078	0.56	1123	0.61	1164	0.66
1700	827	0.43	892	0.46	952	0.49	1007	0.53	1058	0.58	1105	0.63	1148	0.68	1189	0.73
1800	868	0.48	929	0.52	986	0.55	1038	0.59	1087	0.64	1132	0.69	1174	0.75	1214	0.80
1900	907	0.54	966	0.58	1019	0.62	1069	0.66	1116	0.71	1160	0.77	1200	0.82	1240	0.88
2000	946	0.60	1001	0.65	1053	0.69	1101	0.74	1146	0.79	1188	0.85	1228	0.91	1267	0.98
2100	984	0.68	1037	0.72	1086	0.77	1132	0.83	1176	0.89	1217	0.95	1256	1.01	1295	1.08
2200	1021	0.75	1072	0.81	1120	0.86	1165	0.92	1207	0.99	1247	1.05	1286	1.12	1324	1.19
2300	1059	0.84	1108	0.90	1154	0.96	1197	1.03	1239	1.10	1278	1.17	1316	1.24	1354	1.32
2400	1097	0.95	1144	1.01	1188	1.08	1231	1.15	1271	1.22	1310	1.30	1348	1.38	1385	1.45

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1600	1205	0.70	1245	0.75	1284	0.79	1323	0.84	1361	0.88	1397	0.93	1432	0.98	1467	1.03
1700	1228	0.78	1268	0.82	1307	0.87	1345	0.92	1382	0.97	1417	1.02	1452	1.07	1486	1.11
1800	1253	0.85	1292	0.91	1331	0.96	1368	1.01	1404	1.06	1439	1.11	1473	1.16	1506	1.21
1900	1279	0.94	1317	1.00	1355	1.05	1392	1.10	1427	1.16	1461	1.21	1494	1.26	1527	1.31
2000	1305	1.04	1343	1.10	1380	1.15	1416	1.21	1450	1.26	1484	1.32	1516	1.37	1549	1.42
2100	1333	1.14	1370	1.21	1407	1.26	1442	1.32	1475	1.38	1508	1.43	1540	1.48	1572	1.53
2200	1361	1.26	1398	1.32	1434	1.38	1468	1.44	1501	1.50	1533	1.55	1564	1.61	1596	1.66
2300	1391	1.39	1427	1.45	1462	1.51	1495	1.57	1527	1.63	1559	1.68	1590	1.73	1622	1.78
2400	1421	1.52	1456	1.59	1490	1.65	1523	1.71	1555	1.76	1586	1.82	1617	1.87	1649	1.92

HORIZONTAL

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1600	864	0.42	921	0.46	976	0.51	1027	0.56	1072	0.60	1113	0.63	1155	0.66	1198	0.69
1700	907	0.48	961	0.53	1013	0.58	1061	0.63	1105	0.67	1146	0.70	1187	0.73	1230	0.77
1800	948	0.56	999	0.61	1049	0.66	1096	0.71	1139	0.75	1180	0.78	1221	0.82	1262	0.86
1900	987	0.64	1037	0.69	1086	0.74	1132	0.79	1174	0.83	1214	0.86	1255	0.90	1295	0.95
2000	1028	0.73	1076	0.78	1123	0.83	1168	0.87	1210	0.91	1250	0.96	1289	1.00	1328	1.06
2100	1071	0.81	1117	0.86	1163	0.91	1206	0.96	1247	1.01	1286	1.06	1324	1.12	1362	1.18
2200	1116	0.91	1160	0.96	1204	1.01	1245	1.07	1285	1.12	1323	1.18	1360	1.25	1396	1.31
2300	1161	1.02	1204	1.07	1245	1.13	1285	1.19	1323	1.25	1360	1.32	1396	1.38	1432	1.45
2400	1207	1.14	1248	1.20	1288	1.26	1326	1.32	1362	1.39	1398	1.46	1433	1.53	1468	1.60

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1600	1242	0.73	1284	0.77	1324	0.82	1360	0.88	1394	0.93	1426	0.99	1460	1.04	1495	1.08
1700	1272	0.81	1312	0.86	1350	0.92	1385	0.98	1418	1.04	1451	1.09	1485	1.14	1519	1.19
1800	1302	0.90	1341	0.96	1377	1.02	1411	1.08	1444	1.15	1477	1.20	1510	1.25	1544	1.30
1900	1334	1.01	1371	1.07	1406	1.13	1439	1.20	1471	1.26	1504	1.32	1537	1.37	1571	1.41
2000	1365	1.12	1401	1.19	1435	1.25	1468	1.32	1500	1.38	1532	1.44	1565	1.49	1598	1.53
2100	1398	1.25	1433	1.31	1466	1.38	1497	1.45	1529	1.51	1561	1.56	1594	1.61	1626	1.65
2200	1431	1.38	1465	1.45	1497	1.52	1528	1.58	1560	1.64	1591	1.69	1623	1.73	1656	1.77
2300	1466	1.52	1498	1.59	1529	1.66	1560	1.72	1591	1.77	1623	1.82	1654	1.86	1686	1.90
2400	1500	1.67	1532	1.74	1563	1.80	1593	1.86	1624	1.91	1655	1.96	1686	2.00	1718	2.04

BLOWER DATA - ZCA072

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

FOR ALL UNITS ADD:

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

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

See page 18 for blower motors and drives and wet coil and options/accessory air resistance data.

DOWNFLOW

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1900	578	0.44	610	0.49	643	0.54	678	0.60	714	0.65	749	0.70	785	0.76	819	0.82
2000	600	0.50	632	0.56	665	0.61	699	0.66	734	0.71	769	0.77	803	0.83	837	0.90
2100	623	0.57	655	0.62	688	0.68	721	0.73	755	0.79	789	0.84	822	0.91	854	0.98
2200	647	0.65	678	0.70	711	0.75	743	0.81	776	0.86	809	0.93	841	1.00	872	1.06
2300	671	0.73	702	0.78	734	0.83	766	0.89	798	0.95	829	1.02	860	1.09	890	1.16
2400	696	0.81	726	0.87	757	0.92	788	0.98	819	1.04	850	1.11	880	1.19	909	1.26
2500	720	0.90	750	0.95	780	1.01	811	1.07	841	1.14	871	1.22	900	1.30	929	1.37
2600	745	0.99	774	1.05	804	1.11	834	1.17	864	1.25	893	1.33	921	1.41	949	1.49
2700	770	1.09	799	1.15	828	1.21	858	1.28	887	1.36	916	1.44	943	1.53	969	1.61
2800	795	1.19	824	1.25	853	1.33	882	1.40	911	1.48	939	1.56	965	1.65	990	1.73
2900	820	1.30	849	1.37	878	1.45	907	1.53	935	1.61	962	1.70	988	1.78	1012	1.86

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1900	853	0.88	885	0.94	915	0.99	944	1.05	971	1.11	996	1.17	1021	1.23	1045	1.29
2000	869	0.96	899	1.01	929	1.07	957	1.13	984	1.19	1009	1.25	1033	1.31	1058	1.38
2100	885	1.04	915	1.10	944	1.15	971	1.22	997	1.28	1022	1.34	1046	1.40	1070	1.46
2200	902	1.13	931	1.19	959	1.24	986	1.31	1012	1.37	1036	1.43	1060	1.50	1084	1.56
2300	920	1.23	948	1.29	975	1.35	1001	1.41	1027	1.47	1051	1.53	1075	1.60	1098	1.66
2400	938	1.33	965	1.39	992	1.45	1017	1.52	1042	1.58	1066	1.64	1090	1.70	1113	1.77
2500	956	1.44	983	1.51	1009	1.57	1034	1.63	1059	1.69	1082	1.75	1105	1.82	1128	1.88
2600	975	1.56	1001	1.63	1026	1.69	1051	1.75	1075	1.81	1098	1.87	1121	1.93	1143	2.00
2700	995	1.68	1020	1.75	1044	1.81	1069	1.87	1092	1.93	1114	1.99	1136	2.06	1158	2.13
2800	1015	1.81	1039	1.87	1063	1.94	1086	2.00	1109	2.06	1131	2.12	1152	2.19	1174	2.26
2900	1035	1.94	1058	2.00	1081	2.07	1104	2.13	1126	2.19	1147	2.26	1168	2.33	1189	2.40

HORIZONTAL

Air Volume cfm	External Static - in. w.g.															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1900	581	0.44	618	0.49	655	0.54	692	0.59	729	0.64	765	0.69	800	0.75	833	0.80
2000	602	0.50	639	0.55	676	0.61	713	0.66	749	0.71	784	0.76	818	0.82	850	0.88
2100	625	0.57	661	0.62	698	0.67	735	0.73	770	0.78	804	0.84	837	0.90	868	0.96
2200	648	0.64	685	0.69	721	0.75	757	0.80	791	0.86	824	0.92	856	0.98	886	1.05
2300	673	0.71	709	0.77	745	0.83	780	0.88	813	0.94	845	1.01	876	1.08	905	1.15
2400	699	0.79	734	0.85	769	0.91	803	0.97	835	1.04	866	1.11	896	1.18	924	1.25
2500	725	0.88	759	0.94	793	1.00	826	1.07	857	1.14	887	1.21	916	1.28	944	1.36
2600	752	0.97	785	1.04	818	1.10	850	1.17	880	1.25	909	1.32	937	1.40	964	1.48
2700	779	1.07	811	1.14	843	1.21	873	1.29	902	1.37	931	1.44	958	1.52	984	1.60
2800	805	1.18	837	1.26	868	1.33	897	1.41	925	1.49	952	1.57	979	1.66	1004	1.74
2900	832	1.30	863	1.38	892	1.46	921	1.54	948	1.63	974	1.71	1000	1.80	1024	1.88

Air Volume cfm	External Static - in. w.g.															
	0.90		1.00		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1900	864	0.87	895	0.93	924	0.99	953	1.06	980	1.12	1007	1.18	1032	1.25	1056	1.31
2000	881	0.95	911	1.01	940	1.08	967	1.14	994	1.21	1020	1.27	1044	1.34	1068	1.40
2100	898	1.03	927	1.10	955	1.17	982	1.23	1008	1.30	1033	1.37	1057	1.43	1080	1.50
2200	916	1.12	944	1.19	971	1.26	998	1.33	1023	1.40	1047	1.47	1071	1.54	1093	1.60
2300	934	1.22	961	1.29	988	1.36	1014	1.43	1038	1.50	1062	1.58	1085	1.65	1107	1.71
2400	952	1.32	979	1.40	1005	1.47	1030	1.54	1054	1.62	1077	1.69	1099	1.76	1121	1.83
2500	971	1.43	997	1.51	1022	1.59	1046	1.66	1069	1.74	1092	1.81	1114	1.88	1135	1.95
2600	990	1.55	1015	1.63	1039	1.71	1063	1.79	1086	1.86	1108	1.94	1129	2.01	1150	2.07
2700	1009	1.68	1034	1.76	1057	1.84	1080	1.92	1102	1.99	1124	2.07	1145	2.14	1166	2.21
2800	1028	1.82	1052	1.9	1075	1.98	1097	2.06	1119	2.13	1140	2.21	1161	2.28	1182	2.34
2900	1048	1.96	1071	2.04	1093	2.12	1115	2.20	1136	2.28	1157	2.35	1177	2.42	1198	2.48

BLOWER DATA

BELT DRIVE KIT SPECIFICATIONS - ZCA036-060

Model No.	Motor HP		No. of Speeds	Drive Kits and RPM Range					
	Nominal	Maximum		ZA01	ZA02	ZA03	ZA04	¹ ZA05	¹ ZA06
ZCA036	1	1.15	1	678 - 1035	---	---	964 - 1471	---	---
	1.5	1.7	1	678 - 1035	---	---	964 - 1471	---	---
ZCA048	1	1.15	1	---	803 - 1226	---	---	---	---
	1.5	1.7	1	---	803 - 1226	---	---	1098 - 1490	---
ZCA060	1	1.15	1	---	---	906 - 1383	---	---	---
	1.5	1.7	1	---	---	906 - 1383	---	---	1262 - 1634

BELT DRIVE KIT SPECIFICATIONS - ZCA072

Model No.	Motor HP		No. of Speeds	Drive Kits and RPM Range		
	Nominal	Maximum		ZAA02	ZAA03	² ZAA04
ZCA072	1	1.15	1	632 - 875	---	---
	1.5	1.7	1	---	798 - 1105	---
	2	2.3	1	---	---	921 - 1228

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

¹ 1.5 hp blower motor is required with the ZA05 and ZA06 drive kits.

² 2 hp blower motor is required with the ZAA04 drive kit.

POWER EXHAUST FAN PERFORMANCE

Return Air System Static Pressure - in. w.g.	Air Volume Exhausted cfm
0.00	1865
0.05	1785
0.10	1710
0.15	1630
0.20	1545
0.25	1450
0.30	1350
0.35	1240

BLOWER DATA

OPTIONS / ACCESSORIES AIR RESISTANCE - in. w.g.

Air Volume cfm	Wet Indoor Coil			Electric Heat	Economizer	
	ZCA036, ZCA048	ZCA060	ZCA072		Downflow	Horizontal
900	0.01	---	---	0.05	0.03	0.04
1000	0.01	---	---	0.06	0.03	0.05
1100	0.02	---	---	0.08	0.04	0.05
1200	0.02	---	---	0.09	0.05	0.06
1300	0.02	---	---	0.12	0.05	0.07
1400	0.03	---	---	0.17	0.06	0.08
1500	0.03	---	---	0.22	0.07	0.08
1600	0.03	0.04	0.03	0.26	0.08	0.09
1700	0.04	0.05	0.03	0.30	0.09	0.10
1800	0.04	0.05	0.03	0.33	0.10	0.11
1900	0.04	0.06	0.04	0.33	0.11	0.12
2000	0.05	0.06	0.04	0.31	0.12	0.13
2100	---	0.07	0.05	0.27	0.13	0.14
2200	---	0.08	0.05	0.29	0.14	0.15
2300	---	0.08	0.05	0.31	0.15	0.16
2400	---	0.09	0.06	0.32	0.16	0.18
2500	---	---	0.06	0.34	0.18	0.19
2600	---	---	0.07	0.38	0.19	0.20
2700	---	---	0.07	0.42	0.20	0.21
2800	---	---	0.07	0.45	0.22	0.23
2900	---	---	0.08	0.49	0.23	0.24

BLOWER DATA

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

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

CEILING DIFFUSER AIR THROW DATA

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

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

ELECTRICAL/ELECTRIC HEAT DATA

3 TON

ZCA036S4

¹ Voltage - 60hz		208/230V - 3 Ph		460V - 3 Ph		575V - 3 Ph	
Compressor	Rated Load Amps	8.7		4		3.6	
	Locked Rotor Amps	70		31		27	
Outdoor Fan Motor	Full Load Amps	1		0.6		0.45	
Power Exhaust (1) 0.5 HP	Full Load Amps	1.5		0.6		0.6	
Indoor Blower Motor	Horsepower	1	1.5	1	1.5	1	1.5
	Full Load Amps	4.6	6.6	2.1	3	1.7	2.4
² Maximum Overcurrent Protection	Unit Only	25	25	15	15	15	15
	With (1) 0.5 HP Power Exhaust	25	25	15	15	15	15
³ Minimum Circuit Ampacity	Unit Only	17	19	8	9	7	8
	With (1) 0.5 HP Power Exhaust	18	20	9	10	8	8

ELECTRIC HEAT DATA

Electric Heat Voltage			208V	240V	208V	240V	480V	480V	600V	600V
² Maximum Overcurrent Protection	Unit+ Electric Heat	5 kW	25	25	25	25	15	15	15	15
		7.5 kW	30	30	30	35	15	20	15	15
		10 kW	35	40	35	40	20	20	15	20
		15 kW	45	60	50	60	30	30	25	25
³ Minimum Circuit Ampacity	Unit+ Electric Heat	5 kW	19	21	22	24	11	12	9	10
		7.5 kW	26	29	28	31	14	16	12	13
		10 kW	32	36	35	39	18	19	15	16
		15 kW	45	51	48	54	26	27	21	22
² Maximum Overcurrent Protection	Unit+ Electric Heat and (1) 0.5 HP Power Exhaust	5 kW	25	25	25	30	15	15	15	15
		7.5 kW	30	35	30	35	15	20	15	15
		10 kW	35	40	40	45	20	20	15	20
		15 kW	50	60	50	60	30	30	25	25
³ Minimum Circuit Ampacity	Unit+ Electric Heat and (1) 0.5 HP Power Exhaust	5 kW	21	23	24	26	11	13	9	10
		7.5 kW	28	31	30	33	15	16	12	13
		10 kW	34	38	37	41	19	20	15	16
		15 kW	47	53	50	56	26	28	21	22

ELECTRIC HEAT ACCESSORIES

Unit Fuse Block	Unit Only	10A27	10A27	10A27	10A27	10A29	10A29	10A29	10A29
	Unit + Power Exhaust	10A27	10A27	10A27	10A27	10A29	10A29	10A29	10A29

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

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

² HACR type breaker or fuse.

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

ELECTRICAL/ELECTRIC HEAT DATA**4 TON****ZCA048S4**

¹ Voltage - 60hz		208/230V - 3 Ph		460V - 3 Ph		575V - 3 Ph	
Compressor	Rated Load Amps	11		5.5		4.7	
	Locked Rotor Amps	86		37		34	
Outdoor Fan Motor	Full Load Amps	1.7		0.9		0.7	
Power Exhaust (1) 0.5 HP	Full Load Amps	1.5		0.6		0.6	
Indoor Blower Motor	Horsepower	1	1.5	1	1.5	1	1.5
	Full Load Amps	4.6	6.6	2.1	3	1.7	2.4
² Maximum Overcurrent Protection	Unit Only	30	30	15	15	15	15
	With (1) 0.5 HP Power Exhaust	30	30	15	15	15	15
³ Minimum Circuit Ampacity	Unit Only	21	23	10	11	9	9
	With (1) 0.5 HP Power Exhaust	22	24	11	12	9	10

ELECTRIC HEAT DATA

Electric Heat Voltage			208V	240V	208V	240V	480V	480V	600V	600V
² Maximum Overcurrent Protection	Unit+ Electric Heat	5 kW	30	30	30	30	15	15	15	15
		7.5 kW	30	30	30	35	15	20	15	15
		10 kW	35	40	35	40	20	20	15	20
		15 kW	45	60	50	60	30	30	25	25
		22.5 kW	70	80	70	80	40	40	30	35
³ Minimum Circuit Ampacity	Unit+ Electric Heat	5 kW	21	21	23	24	11	12	9	10
		7.5 kW	26	29	28	31	14	16	12	13
		10 kW	32	36	35	39	18	19	15	16
		15 kW	45	51	48	54	26	27	21	22
		22.5 kW	65	74	67	76	37	38	30	31
² Maximum Overcurrent Protection	Unit+ Electric Heat and (1) 0.5 HP Power Exhaust	5 kW	30	30	30	30	15	15	15	15
		7.5 kW	30	35	30	35	15	20	15	15
		10 kW	35	40	40	45	20	20	15	20
		15 kW	50	60	50	60	30	30	25	25
		22.5 kW	70	80	70	80	40	40	30	35
³ Minimum Circuit Ampacity	Unit+ Electric Heat and (1) 0.5 HP Power Exhaust	5 kW	22	23	24	26	11	13	9	10
		7.5 kW	28	31	30	33	15	16	12	13
		10 kW	34	38	37	41	19	20	15	16
		15 kW	47	53	50	56	26	28	21	22
		22.5 kW	67	76	69	78	38	39	30	31

ELECTRIC HEAT ACCESSORIES

Unit Fuse Block	Unit Only	10A27	10A27	10A27	10A27	10A29	10A29	10A29	10A29
	Unit + Power Exhaust	10A27	10A27	10A27	10A27	10A29	10A29	10A29	10A29

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

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

ELECTRICAL/ELECTRIC HEAT DATA

5 TON

ZCA060S4

¹ Voltage - 60hz		208/230V - 3 Ph		460V - 3 Ph		575V - 3 Ph	
Compressor	Rated Load Amps	13.5		8		5	
	Locked Rotor Amps	109		59		40	
Outdoor Fan Motor	Full Load Amps	1.7		1		0.9	
Power Exhaust (1) 0.5 HP	Full Load Amps	1.5		0.6		0.6	
Indoor Blower Motor	Horsepower	1	1.5	1	1.5	1	1.5
	Full Load Amps	4.6	6.6	2.1	3	1.7	2.4
² Maximum Overcurrent Protection	Unit Only	35	35	20	20	15	15
	With (1) 0.5 HP Power Exhaust	35	40	20	20	15	15
³ Minimum Circuit Ampacity	Unit Only	24	26	14	14	9	10
	With (1) 0.5 HP Power Exhaust	25	27	14	15	10	11

ELECTRIC HEAT DATA

Electric Heat Voltage			208V	240V	208V	240V	480V	480V	600V	600V
² Maximum Overcurrent Protection	Unit+ Electric Heat	5 kW	35	35	35	35	20	20	15	15
		7.5 kW	35	35	35	35	20	20	15	15
		10 kW	35	40	35	40	20	20	15	20
		15 kW	45	60	50	60	30	30	25	25
		22.5 kW	70	80	70	80	40	40	30	35
³ Minimum Circuit Ampacity	Unit+ Electric Heat	5 kW	24	24	26	26	14	14	9	10
		7.5 kW	26	29	28	31	14	16	12	13
		10 kW	32	36	35	39	18	19	15	16
		15 kW	45	51	48	54	26	27	21	22
		22.5 kW	65	74	67	76	37	38	30	31
² Maximum Overcurrent Protection	Unit+ Electric Heat and (1) 0.5 HP Power Exhaust	5 kW	35	35	40	40	20	20	15	15
		7.5 kW	35	35	40	40	20	20	15	15
		10 kW	35	40	40	45	20	20	15	20
		15 kW	50	60	50	60	30	30	25	25
		22.5 kW	70	80	70	80	40	40	30	35
³ Minimum Circuit Ampacity	Unit+ Electric Heat and (1) 0.5 HP Power Exhaust	5 kW	25	25	27	27	14	15	10	11
		7.5 kW	28	31	30	33	15	16	12	13
		10 kW	34	38	37	41	19	20	15	16
		15 kW	47	53	50	56	26	28	21	22
		22.5 kW	67	76	69	78	38	39	30	31

ELECTRIC HEAT ACCESSORIES

Unit Fuse Block	Unit Only	10A28	10A28	10A28	10A28	10A29	10A29	10A29	10A29
	Unit + Power Exhaust	10A28	10A28	10A28	10A28	10A29	10A29	10A29	10A29

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

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

² HACR type breaker or fuse.

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

ELECTRICAL/ELECTRIC HEAT DATA
6 TON
ZCA072S4

¹ Voltage - 60hz		208/230V - 3 Ph			460V - 3 Ph			575V - 3 Ph		
Compressor	Rated Load Amps	19.6			8.2			6.6		
	Locked Rotor Amps	136			66.1			55.3		
Outdoor Fan Motors	Full Load Amps	1.7			1			0.9		
Power Exhaust (1) 0.5 HP	Full Load Amps	1.5			0.6			0.6		
Indoor Blower Motor	Horsepower	1	1.5	2	0.6	1.5	2	0.6	1.5	2
	Full Load Amps	4.6	6.6	7.5	2.1	3	3.4	1.7	2.4	2.7
² Maximum Overcurrent Protection	Unit Only	50	50	50	20	20	20	15	15	15
	with (1) 0.5 HP Power Exhaust	50	50	50	20	20	20	15	15	15
³ Minimum Circuit Ampacity	Unit Only	31	33	34	14	15	15	11	12	12
	with (1) 0.5 HP Power Exhaust	33	35	36	14	15	16	12	13	13

ELECTRIC HEAT DATA

Electric Heat Voltage		208V	240V	208V	240V	208V	240V	480V	480V	480V	600V	600V	600V
² Maximum Overcurrent Protection	Unit + Electric Heat 7.5 kW	50	50	50	50	50	50	20	20	20	15	15	15
	10 kW	50	50	50	50	50	50	20	20	20	15	20	20
	15 kW	50	60	50	60	50	60	30	30	30	25	25	25
	22.5 kW	70	80	70	80	70	80	40	40	40	30	35	35
	30 kW	90	100	90	100	90	100	50	50	50	40	40	40
³ Minimum Circuit Ampacity	Unit + Electric Heat 7.5 kW	31	31	33	33	34	34	14	16	16	12	13	13
	10 kW	32	36	35	39	36	40	18	19	20	15	16	16
	15 kW	45	51	48	54	49	55	26	27	27	21	22	22
	22.5 kW	65	74	67	76	69	78	37	38	39	30	31	31
	30 kW	84	96	87	99	88	100	48	49	50	39	40	40
² Maximum Overcurrent Protection	Unit+ Electric Heat and (1) 0.5 HP Power Exhaust 7.5 kW	50	50	50	50	50	50	20	20	20	15	15	15
	10 kW	50	50	50	50	50	50	20	20	25	15	20	20
	15 kW	50	60	50	60	60	60	30	30	30	25	25	25
	22.5 kW	70	80	70	80	70	80	40	40	40	30	35	35
	30 kW	90	100	90	110	90	110	50	50	60	40	40	45
³ Minimum Circuit Ampacity	Unit+ Electric Heat and (1) 0.5 HP Power Exhaust 7.5 kW	33	33	35	35	36	36	15	16	17	12	13	14
	10 kW	34	38	37	41	38	42	19	20	21	15	16	17
	15 kW	47	53	50	56	51	57	26	28	28	21	22	23
	22.5 kW	67	76	69	78	70	79	38	39	39	30	31	32
	30 kW	86	98	89	101	90	102	49	50	51	39	40	41

ELECTRICAL ACCESSORIES

Unit Fuse Block	Unit Only	10A28	10A28	10A28	10A29	10A29
	Unit + Power Exhaust	10A28	10A28	10A28	10A29	10A29

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

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

² HACR type breaker or fuse.

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

ELECTRIC HEAT CAPACITIES

Input Voltage	5 kW			7.5 kW			10 kW		
	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output
208	1	3.8	12,800	1	5.6	19,200	1	7.5	25,600
220	1	4.2	14,300	1	6.3	21,500	1	8.4	28,700
230	1	4.6	15,700	1	6.9	23,500	1	9.2	31,400
240	1	5.0	17,100	1	7.5	25,600	1	10.0	34,200
440	1	4.2	14,300	1	6.3	21,500	1	8.4	28,700
460	1	4.6	15,700	1	6.9	23,500	1	9.2	31,400
480	1	5.0	17,100	1	7.5	25,600	1	10.0	34,200
550	1	4.2	14,300	1	6.3	21,500	1	8.4	28,700
575	1	4.6	15,700	1	6.9	23,500	1	9.2	31,400
600	1	5.0	17,100	1	7.5	25,600	1	10.0	34,200
Input Voltage	15 kW			22.5 kW			30 kW		
	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output
208	1	11.2	38,400	1	16.9	57,700	1	22.5	76,800
220	1	12.6	43,000	1	18.9	64,500	1	25.2	86,000
230	1	13.8	47,000	1	20.7	70,700	1	27.5	93,900
240	1	15.0	51,200	1	22.5	76,800	1	30.0	102,400
440	1	12.6	43,000	1	18.9	64,500	1	25.2	86,000
460	1	13.8	47,000	1	20.7	70,700	1	27.5	93,900
480	1	15.0	51,200	1	22.5	76,800	1	30.0	102,400
550	1	12.6	43,000	1	18.9	64,500	1	25.2	86,000
575	1	13.8	47,000	1	20.7	70,700	1	27.5	93,900
600	1	15.0	51,200	1	22.5	76,800	1	30.0	102,400

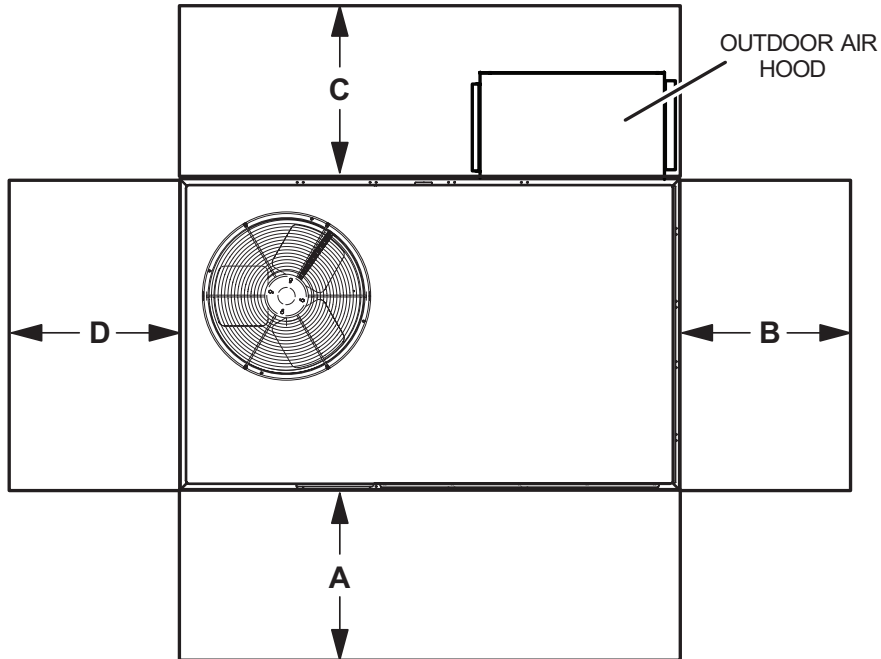
OUTDOOR SOUND DATA

Unit Model No.	Octave Band Linear Sound Power Levels dB, re 10 ⁻¹² Watts - Center Frequency - Hz							¹ Sound Rating Number (SRN) (dBA)
	125	250	500	1000	2000	4000	8000	
ZCA036	66	70	73	72	70	67	60	78
ZCA048	68	71	75	74	71	68	63	80
ZCA060	73	74	78	77	73	69	63	83
ZCA072	73	76	80	78	73	68	66	84

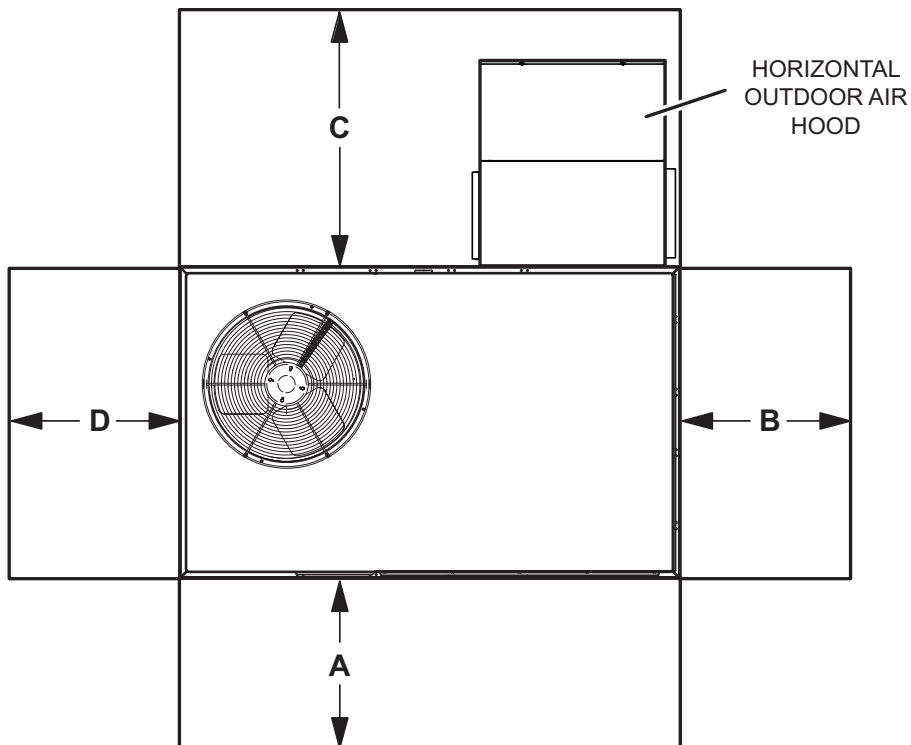
¹ Sound Rating Number according to ANSI/AHRI Standard 270-2008. "SRN" is the overall A-Weighted Sound Power Level, (LWA), dB (100 Hz to 10,000 Hz).

UNIT CLEARANCES - INCHES (MM)

UNIT WITH DOWNFLOW ECONOMIZER



UNIT WITH HORIZONTAL ECONOMIZER



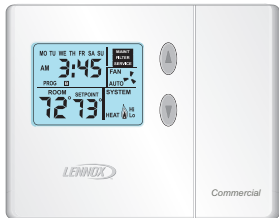
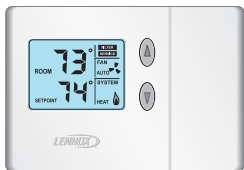
¹ Unit Clearance	A		B		C Downflow		C Horizontal		D		Top Clearance
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	
Service Clearance	36	914	36	914	36	914	60	1524	36	914	Unobstructed
Minimum Operation Clearance	36	914	36	914	36	914	60	1524	36	914	

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

¹ Service Clearance - Required for removal of serviceable parts.

Minimum Operation Clearance - Required clearance for proper unit operation.

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS

Item	Model No.	Catalog No.
COMFORTSENSE® 7500 COMMERCIAL 7-DAY PROGRAMMABLE THERMOSTAT		
 • Four-Stage Heating / Two-Stage Cooling Universal Multi-Stage • Intuitive Touchscreen Interface • Remote Indoor Temperature Sensing with Averaging • Outside or Discharge Air Temperature Display • Full Seven-Day Programming • Four Time Periods Per Day • Occupancy Scheduling with Economizer Relay Control • Away Mode • Holiday Scheduling • Smooth Setback Recovery (SSR) • Performance Reports • Notifications/Reminders • Dehumidification/Humiditrol® Control for Split Systems and Rooftop Units • Economizer Relay Control • Backlit Display • Wallplate Furnished	C0STAT06FF1L	13H15
Optional Accessories		
¹ Remote non-adjustable wall mount 20k temperature sensor	C0SNZN01AE2-	47W36
¹ Remote non-adjustable wall mount 10k temperature sensor	C0SNZN73AE1-	47W37
Remote non-adjustable discharge air (duct mount) temperature sensor	C0SNDC00AE1-	19L22
Outdoor temperature sensor	C0SNSR03AE1-	X2658
Locking cover (clear)	C0MISC15AE1-	39P21
¹ Remote sensors can be applied in any of the following combinations: One Sensor - (1) 47W36 Two Sensors - (2) 47W37 Three Sensors - (2) 47W36 and (1) 47W37 Four Sensors - (4) 47W36 Five Sensors - (3) 47W36 and (2) 47W37		
COMFORTSENSE® 3000 COMMERCIAL 5-2 DAY PROGRAMMABLE THERMOSTAT		
 • Two-Stage Heating / Two-Stage Cooling Conventional Systems • Intuitive Interface • 5-2 Day Programming • Program Hold • Remote Indoor Temperature Sensing • Smooth Setback Recovery (SSR) • Economizer Relay Control • Maintenance/Filter/Service Reminders • Backlit Display • Wallplate Furnished • Simple Up and Down Temperature Control.	C0STAT05FF1L	11Y05
Optional Accessories		
Remote non-adjustable wall mount 10k averaging temperature sensor	C0SNZN73AE1-	47W37
Optional wall mounting plate	C0MISC17AE1-	X2659
DIGITAL NON-PROGRAMMABLE THERMOSTAT		
 • One-Stage Heating / Cooling Conventional Systems • Intuitive Interface • Automatic Changeover • Backlit Display • Simple Up and Down Temperature Control.	C0STAT12AE1L	51M32
Optional Accessories		
Outdoor temperature sensor	C0SNSR04AE1-	X2658
Optional wall mounting plate	C0MISC17AE1-	X2659

WEIGHT DATA

Model Number	Net				Shipping			
	Base		Max.		Base		Max.	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
ZCA036S	451	205	502	228	456	207	507	230
ZCA048S	465	211	516	234	470	213	521	236
ZCA060S	497	225	550	249	502	228	555	252
ZCA072S	568	258	621	282	573	260	626	284

Base Unit - The unit with NO OPTIONS.

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

OPTIONS / ACCESSORIES

				Shipping Weights	
				lbs.	kg
ECONOMIZER					
Economizer, Includes Outdoor Air Hood and Barometric Relief Dampers with Hood	Downflow			75	34
	Horizontal			102	46
OUTDOOR AIR					
Outdoor Air Dampers					
Motorized				39	18
Manual				29	13
POWER EXHAUST					
Standard Static	Downflow			54	24
	Horizontal			41	19
ELECTRIC HEAT					
5 kW				25	11
7.5 kW				26	12
10 kW				27	12
15 kW				27	12
22.5 kW				29	13
30 kW				30	14
ROOF CURBS					
Hybrid Roof Curbs, Downflow					
8 in. height		Z1CURB70A-1		63	29
14 in. height		Z1CURB71A-1		83	38
18 in. height		Z1CURB72A-1		93	42
24 in. height		Z1CURB73A-1		113	51
CEILING DIFFUSERS					
Step-Down	RTD9-65S			80	36
	RTD11-95S			118	54
Flush	FD9-65S			80	36
	FD11-95S			118	54

DIMENSIONS - UNIT - INCHES (MM)

Model No.	CORNER WEIGHTS																CENTER OF GRAVITY							
	AA				BB				CC				DD				EE				FF			
	Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.		Base		Max.	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm	in.	mm	in.	mm
036	116	53	132	60	107	49	135	61	109	50	119	54	118	54	116	53	39.5	1003	37.5	953	23.25	591	25	635
048	120	54	135	61	110	50	139	63	113	51	122	55	122	55	119	54	39.5	1003	37.5	953	23.25	591	25	635
060	128	58	144	65	118	54	148	67	121	55	130	59	131	59	127	58	39.5	1003	37.5	953	23.25	591	25	635
072	136	62	149	68	136	62	149	68	148	67	162	73	148	67	162	73	38	965	36	914	22.5	572	24	610

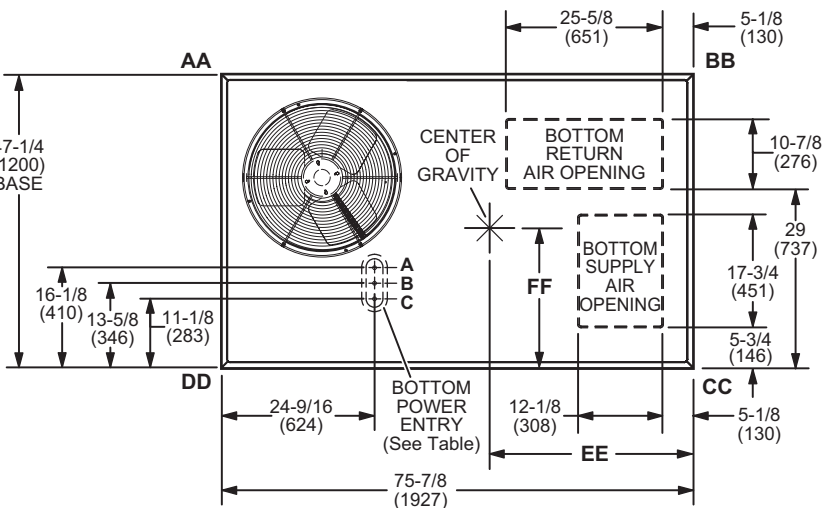
Base Unit - The unit with NO OPTIONS.

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

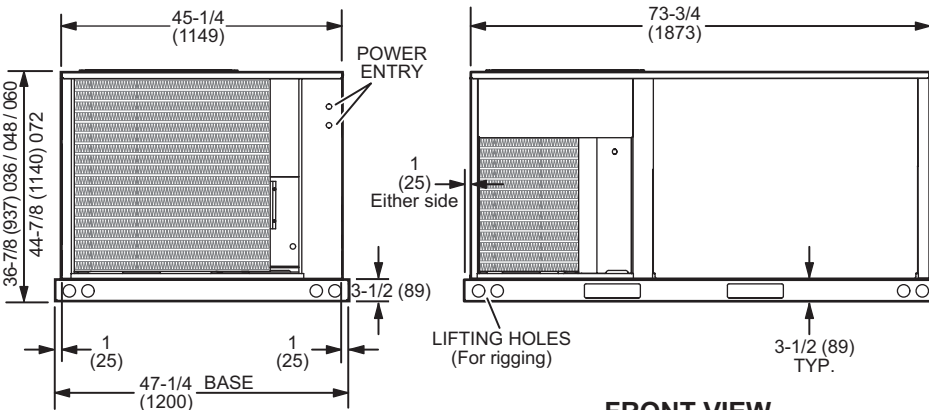
BOTTOM POWER ENTRY

Holes required for Optional Bottom Power Entry Kit

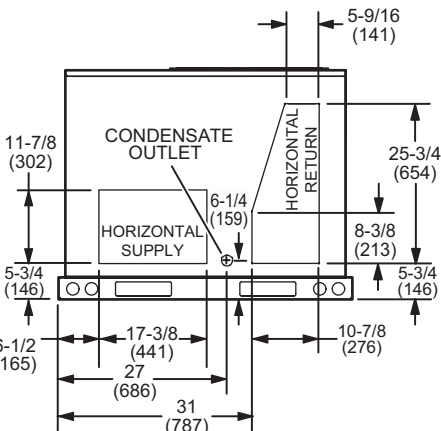
	Threaded Conduit Fittings (Provided in Kit)	Wire Use	Hole Diameter Required in Unit Base (Max.)
A	1/2	ACC	7/8 (23)
B	1/2	24V	7/8 (23)
C	3/4	POWER	1-1/8 (29)



TOP VIEW (Base)



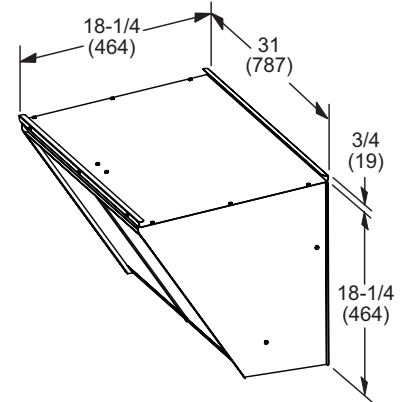
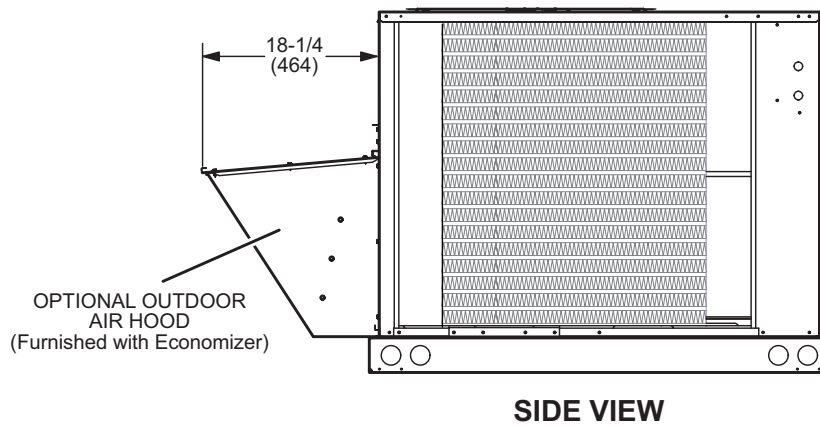
FRONT VIEW



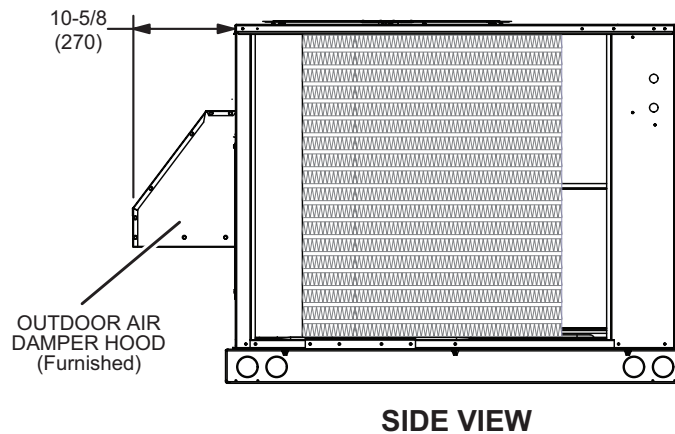
END VIEW

DIMENSIONS - ACCESSORIES - INCHES (MM)

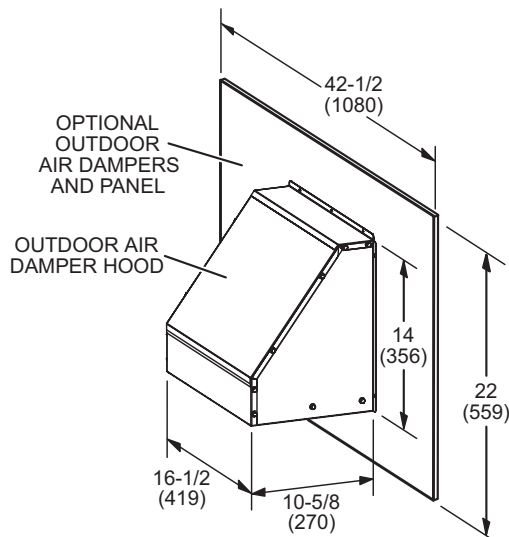
OUTDOOR AIR HOOD DETAIL FOR OPTIONAL ECONOMIZER (Downflow Applications)



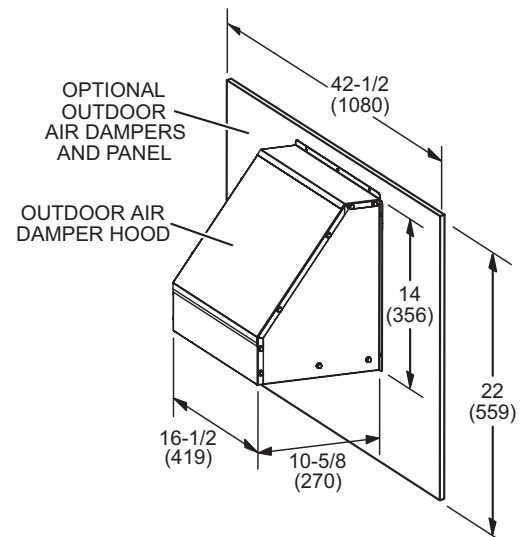
OUTDOOR AIR DAMPER HOOD DETAIL (Downflow or Horizontal Applications)



MANUAL OUTDOOR AIR HOOD

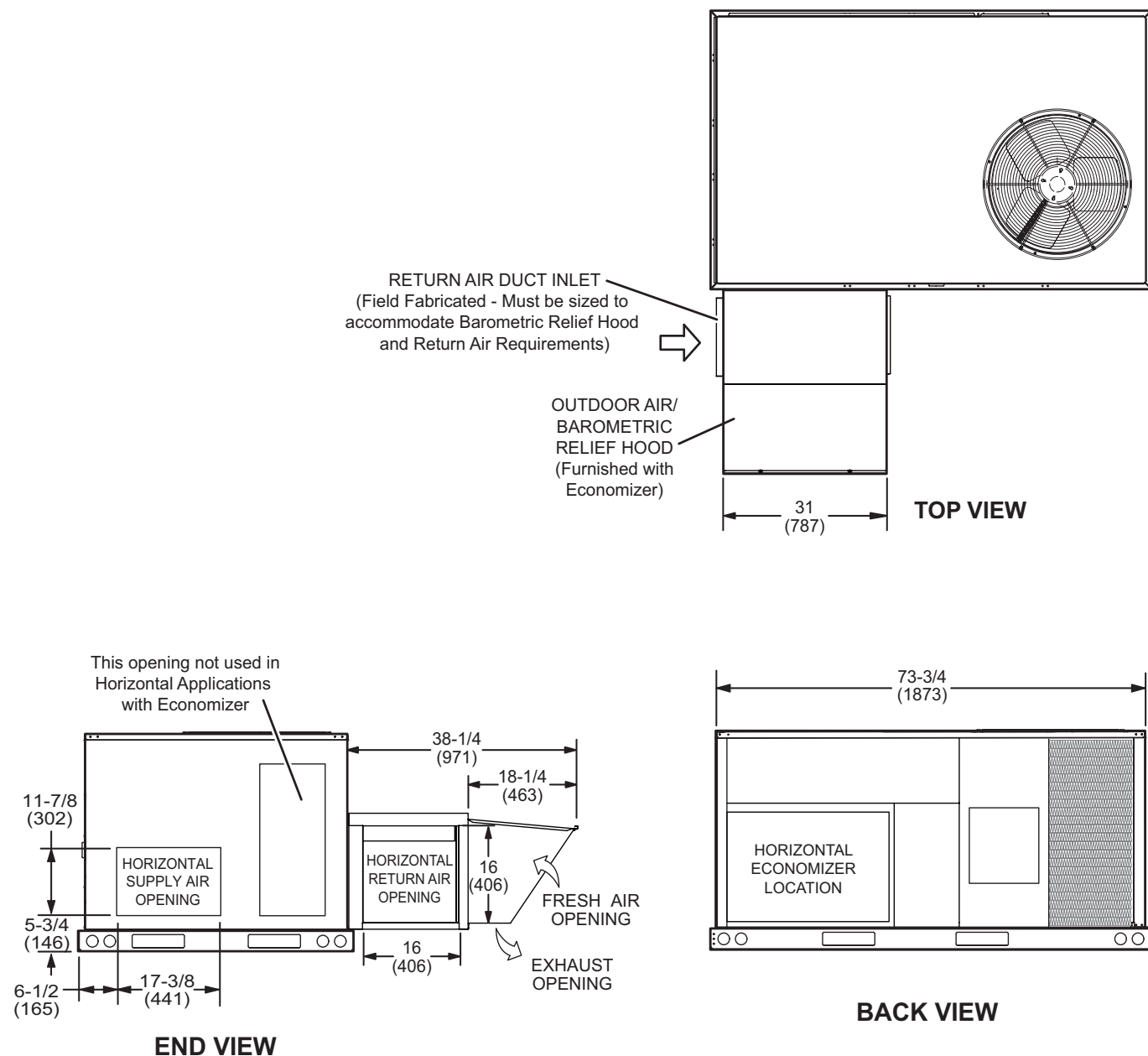


MOTORIZED OUTDOOR AIR HOOD



DIMENSIONS - ACCESSORIES - INCHES (MM)

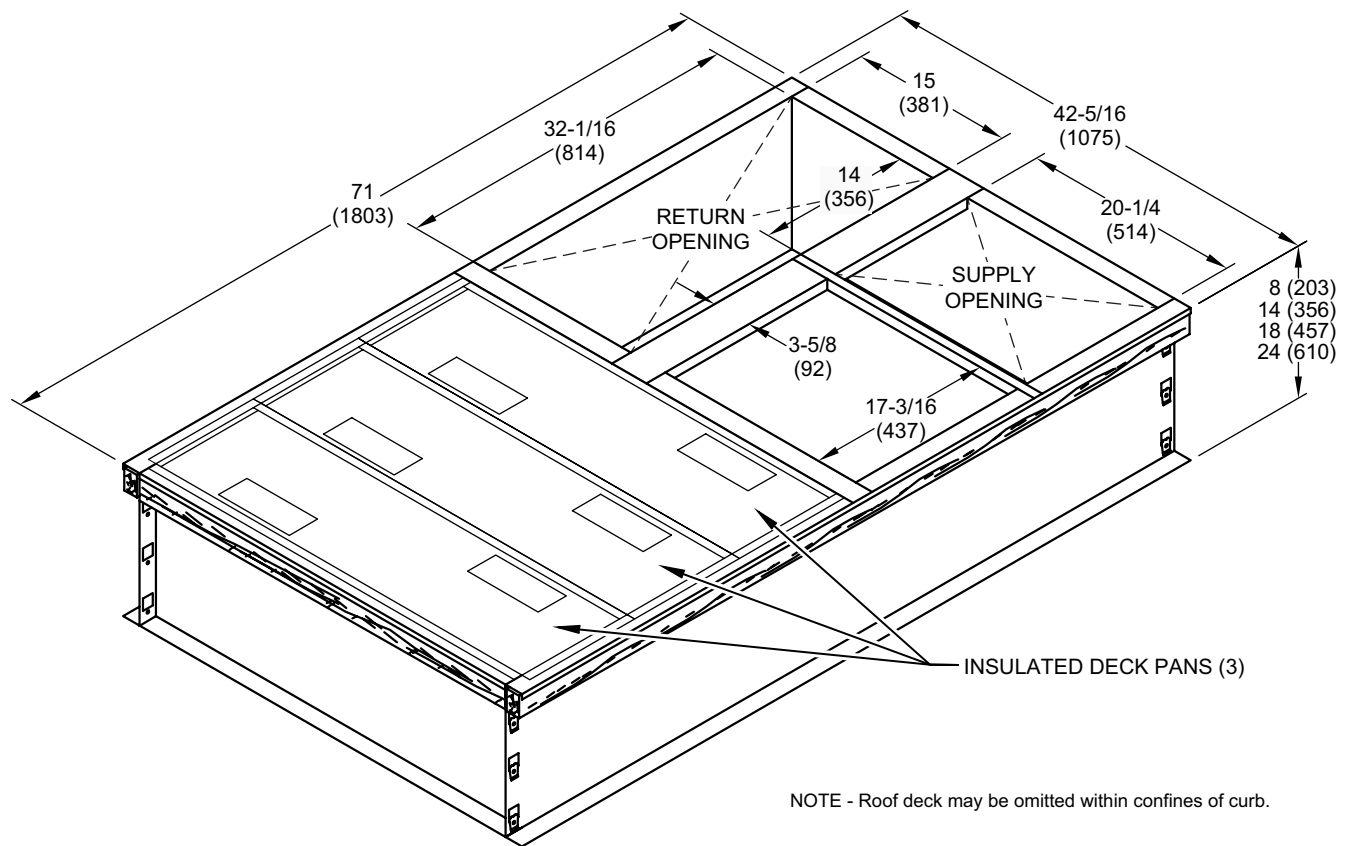
OUTDOOR AIR HOOD DETAIL WITH OPTIONAL ECONOMIZER AND BAROMETRIC RELIEF DAMPERS (Horizontal Applications)



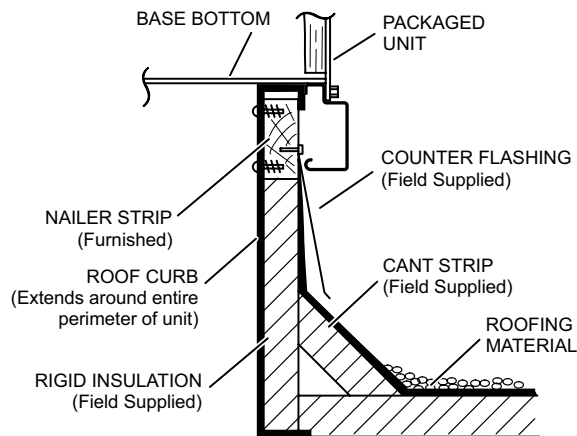
Note - Return Air Duct and Transition must be supported.

DIMENSIONS - ACCESSORIES - INCHES (MM)

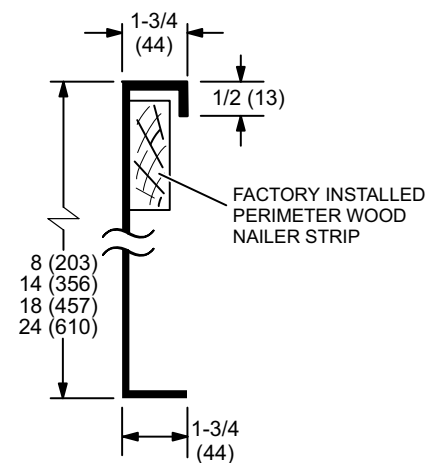
HYBRID ROOF CURBS - DOUBLE DUCT OPENING



TYPICAL FLASHING DETAIL FOR ROOF CURB



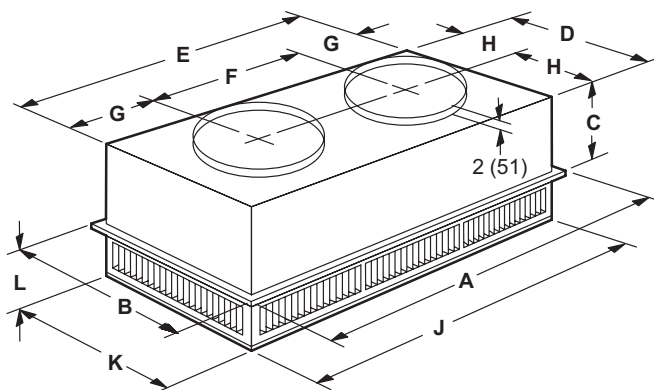
DETAIL ROOF CURB



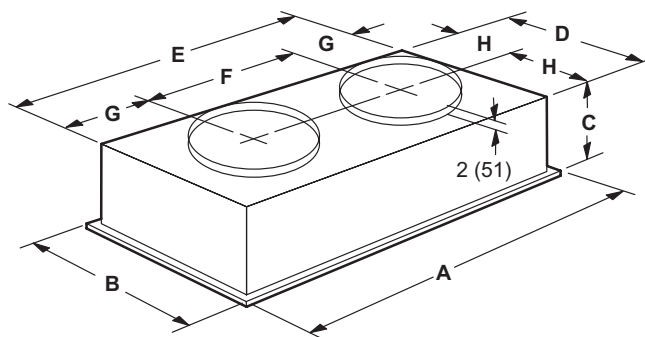
DIMENSIONS - ACCESSORIES - INCHES (MM)

COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

STEP-DOWN CEILING DIFFUSER

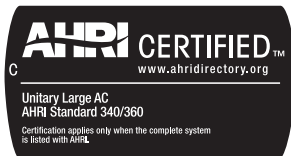


FLUSH CEILING DIFFUSER



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

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



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