

Z-SERIES™

DESIGNED TO FIT. FAST.



**ASHRAE 90.1
COMPLIANT**

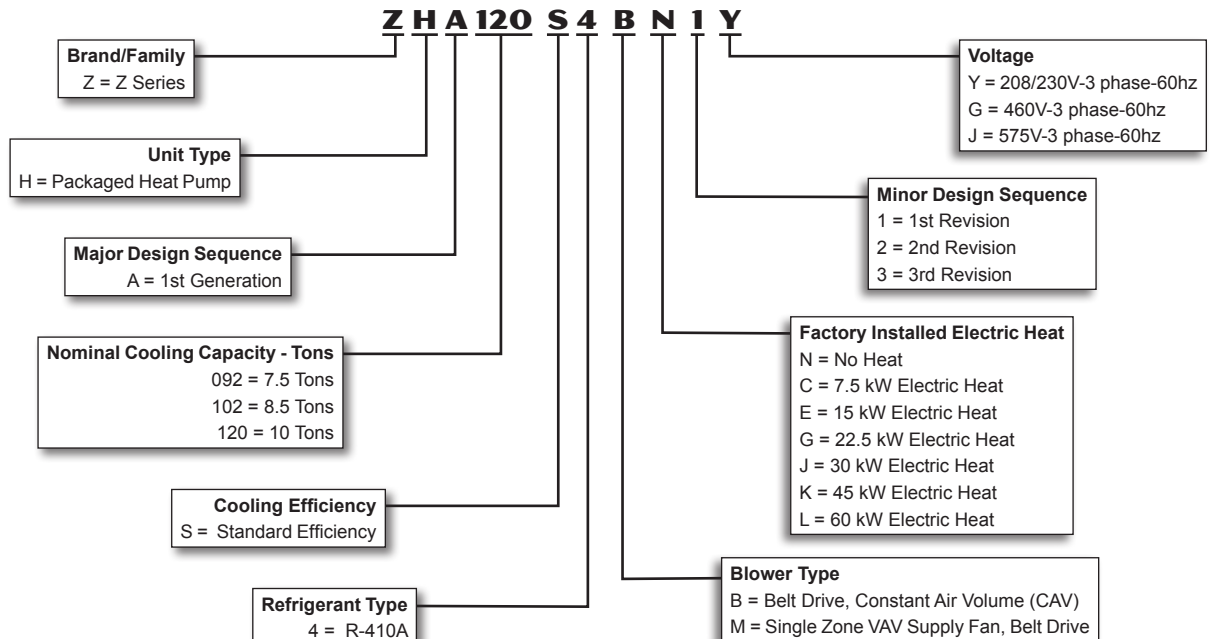
7.5 to 10 Tons

Net Cooling Capacity – 87,000 to 118,000 Btuh

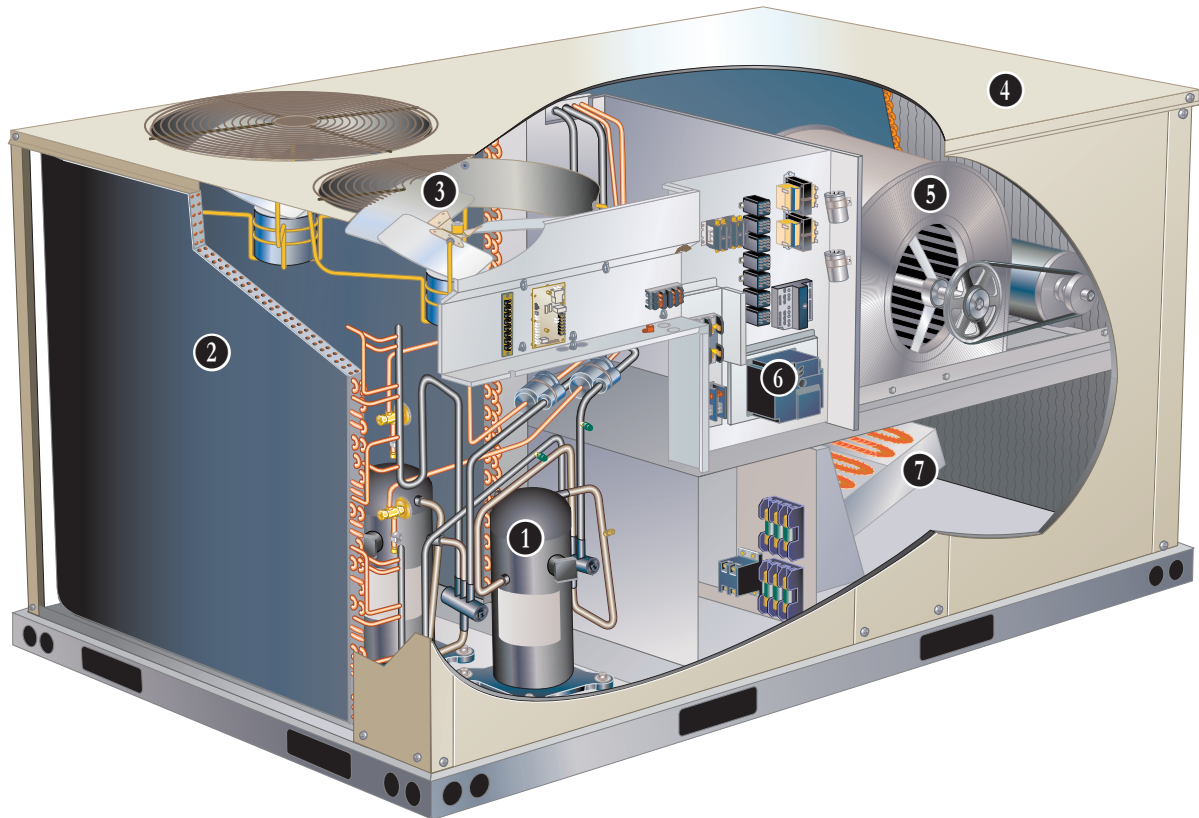
Net Heating Capacity - 89,000 to 116,000 Btuh

Optional Electric Heat - 7.5 to 60 kW

MODEL NUMBER IDENTIFICATION



FEATURES AND BENEFITS



Z-Series™ rooftop units from Allied Commercial are the new standard for 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
- **R-410A Refrigerant** - Environmentally friendly
- **Scroll Compressors** - Single speed scroll compressors are furnished on all models.
- **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) or Single Zone VAV Supply Fan Blower Option** - Allows constant or multi-staged 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

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APPROVALS

AHRI Certified to AHRI Standard 340/360-2007.

ETL Intertek listed.

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

All models are ASHRAE 90.1-2010 energy efficiency compliant and meet or exceed requirements of Section 6.8.

Models equipped with the Single Zone VAV Supply Fan option meet California Code of Regulations, Title 24 and ASHRAE 90.1-2010 Section 6.4.3.10 requirements for staged airflow.

ISO 9001 Registered Manufacturing Quality System.

WARRANTY

Limited five years on compressors.

Limited five years on 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 30°F to 125°F without any additional controls.

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

1 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.

Reversing Valve

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

Defrost Control

Provides a defrost cycle, if needed, every 30 or 60 or 90 minutes (adjustable) of compressor "on" time at outdoor coil temperature below 35°F. Pressure and temperature switches terminate defrost cycle.

High Pressure Switches

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

Coil Construction

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

Indoor Coil

Cross row circuiting with rifled 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.

3 Outdoor Coil Fans

PVC coated fan guard furnished.

FEATURES AND BENEFITS

COOLING SYSTEM (continued)

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

Cycles the outdoor fan while allowing compressor operation in the cooling cycle. This intermittent fan operation allows the system to operate without icing the indoor coil and losing capacity. Designed for use in ambient temperatures no lower than 0°F.

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 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 filter section, heating/blower section, and the compressor/controls 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

5 BLOWER

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

Select Constant Air Volume (CAV) or Single Zone VAV Supply Fan Supply Air Blower Option

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

CAV Operation

On units ordered with the Constant Air volume (CAV) option, the supply air blower will provide a constant volume of air.

Single Zone VAV Supply Fan Operation

Units ordered with the Single Zone VAV Supply Fan option utilize a Variable Frequency Drive (VFD) to stage the supply air blower airflow. The VFD alters the frequency and voltage of the power supply to the blower to control blower speed.

The supply air blower has two speeds:

1. Low speed for part-load cooling operation. Note - Low speed is 67% of high speed.
2. High speed for full load cooling and all heat modes.

Full speed blower operation is set by adjusting the motor pulley to deliver the desired air volume.

The ventilation speed is selectable between high and low speed.

NOTE - Part load airflow in cooling mode on Single Zone VAV Supply Fan units should not be set below 220 cfm/nominal full load ton to reduce the risk of evaporator coil freeze-up.

The VFD has an operational range of -40 to 125° F outdoor air ambient temperature.

Lower operating costs are obtained when the blower is operated on lower speeds.

Single Zone VAV Supply Fan Sequence of Operation

Blower operates in low speed for mechanical cooling mode (Y1), ventilation mode (G), or free cooling mode.

Blower operates in high speed for any other mode - mechanical cooling (Y1+Y2), free cooling + Y2 or heating (W1 and W1+W2).

Economizer damper minimum position is fully closed in unoccupied mode.

In occupied mode, the economizer damper minimum position is determined by the setting of the economizer control.

Note - Two-minimum fresh-air settings are only available on Single Zone VAV Supply Fan with the High Performance Economizer option.

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.

FEATURES AND BENEFITS

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.

Options/Accessories

Field Installed

7 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.

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 2 inch 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 2 inch 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 (CO₂) Sensors

Monitors CO₂ 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 (Not for Title 24)

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 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. ASHRAE 90.1-2010 compliant.

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.

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.

OPTIONS / ACCESSORIES

ECONOMIZER OPTIONS

(continued)

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.

Differential Enthalpy Control

(Not for Title 24)

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.

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 20 in. diameter with 5 blades (K1PWRE10B) WITH 1/3 hp 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: 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.

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 |
| COOLING SYSTEM | | | | | |
| Condensate Drain Trap | PVC - C1TRAP20AD2 | 76W26 | X | X | X |
| | Copper - C1TRAP10AD2 | 76W27 | X | X | X |
| Corrosion Protection | | Factory | O | O | O |
| Drain Pan Overflow Switch | Z1SNSR90A1 | 99W59 | X | X | X |
| Low Ambient Kit | Z1SNSR33B-1 | 10Z34 | X | X | X |
| Refrigerant Type | | R-410A | O | O | O |
| BLOWER - SUPPLY AIR | | | | | |
| Blower Option | CAV (Constant Air Volume) | Factory | O | O | O |
| | Single Zone VAV Supply Fan | Factory | O | O | O |
| Blower Motors | Belt Drive - 2 hp | Factory | O | O | O |
| | Belt Drive - 3 hp | Factory | O | O | O |
| | Belt Drive - 5 hp | Factory | O | O | O |
| Drive Kits See Blower Data Tables for selection | Kit #1 590-890 rpm | Factory | O | O | O |
| | Kit #2 800-1105 rpm | Factory | O | O | O |
| | Kit #3 795-1195 rpm | Factory | O | O | O |
| | Kit #4 730-970 rpm | Factory | O | O | O |
| | Kit #5 940-1200 rpm | Factory | O | O | O |
| | Kit #6 1015-1300 rpm | Factory | O | O | O |
| | Kit #10 900-1135 rpm | Factory | O | O | O |
| | Kit #11 1040-1315 rpm | Factory | O | O | O |
| | Kit #12 1125-1425 rpm | Factory | O | O | O |
| CABINET | | | | | |
| Combination Coil/Hail Guards | Z1GARD52B-1 | 12X21 | X | X | X |
| CONTROLS | | | | | |
| BACnet® | K0CTRL31B-1 | 96W15 | OX | OX | OX |
| BACnet® Thermostat with Display | K0SNSR01FF1 | 97W23 | X | X | X |
| BACnet® Thermostat without Display | K0SNSR00FF1 | 97W24 | X | X | X |
| Novar® 2051 | K0CTRL30B-1 | 96W12 | OX | OX | OX |
| Plenum Cable (75 ft.) | K0MISC00FF1 | 97W25 | 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 |
| INDOOR AIR QUALITY | | | | | |
| Air Filters | | | | | |
| High Efficiency Air Filters 20 x 24 x 2 in. (Order 4 per unit) | MERV 8 - Z1FLTR15B-1 | 14C35 | X | X | X |
| | MERV 13 - Z1FLTR40B-1 | 14C36 | X | X | X |
| Replacement Media Filter With Metal Mesh Frame (includes non-pleated filter media) | C1FLTR30B-1- | Y3063 | X | X | X |
| Indoor Air Quality (CO₂) Sensors | | | | | |
| Sensor - Wall-mount, off-white plastic cover with LCD display | C0SNSR50AE1L | 77N39 | X | X | X |
| Sensor - Wall-mount, off-white plastic cover, no display | C0SNSR52AE1L | 87N53 | X | X | X |
| Sensor - Black plastic case with LCD display, rated for plenum mounting | C0SNSR51AE1L | 87N52 | X | X | X |
| Sensor - Wall-mount, black plastic case, no display, rated for plenum mounting | C0MISC19AE1 | 87N54 | X | X | X |
| CO ₂ Sensor Duct Mounting Kit - for downflow applications | C0MISC19AE1- | 85L43 | X | X | X |
| Aspiration Box - for duct mounting non-plenum rated CO ₂ sensors (87N53 or 77N39) | C0MISC16AE1- | 90N43 | X | X | X |
| ELECTRICAL | | | | | |
| Voltage 60 hz | 208/230V - 3 phase | Factory | O | O | O |
| | 460V - 3 phase | Factory | O | O | O |
| | 575V - 3 phase | Factory | O | O | O |
| Bottom Power Entry Kit | Z1PEKT01B-1 | 11H66 | X | X | X |
| ELECTRIC HEAT | | | | | |
| 7.5 kW | 208/230V-3ph - Z1EH0075B-1Y | 10Y97 | X | X | |
| | 460V-3ph - Z1EH0075B-1G | 10Y98 | X | X | |
| | 575V-3ph - Z1EH0075B-1J | 10Y99 | X | X | |
| 15 kW | 208/230V-3ph - Z1EH0150B-1Y | 10Z01 | X | X | X |
| | 460V-3ph - Z1EH0150B-1G | 10Z03 | X | X | X |
| | 575V-3ph - Z1EH0150B-1J | 10Z04 | X | X | X |
| 22.5 kW | 208/230V-3ph - Z1EH0225B-1Y | 10Z05 | X | X | X |
| | 460V-3ph - Z1EH0225B-1G | 10Z06 | X | X | X |
| | 575V-3ph - Z1EH0225B-1J | 10Z07 | X | X | X |
| 30 kW | 208/230V-3ph - Z1EH0300B-1Y | 10Z08 | X | X | X |
| | 460V-3ph - Z1EH0300B-1G | 10Z09 | X | X | X |
| | 575V-3ph - Z1EH0300B-1J | 10Z10 | X | X | X |
| 45 kW | 208/230V-3ph - Z1EH0450B-1Y | 10Z11 | X | X | X |
| | 460V-3ph - Z1EH0450B-1G | 10Z12 | X | X | X |
| | 575V-3ph - Z1EH0450B-1J | 10Z13 | X | X | X |
| 60 kW | 208/230V-3ph - Z1EH0600B-1Y | 10Z14 | | | X |
| | 460V-3ph - Z1EH0600B-1G | 10Z15 | | | X |
| | 575V-3ph - Z1EH0600B-1J | 10Z16 | | | X |
| ELECTRIC HEAT ACCESSORIES | | | | | |
| Unit Fuse Block (required) - See Electrical/Electric Heat Tables for Selection | | | X | X | X |

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

O = Configure To Order (Factory Installed)

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OPTIONS / ACCESSORIES

| Item Description | Model Number | Catalog Number | Unit Model No | | |
|---|-----------------------------|----------------|---------------|-----|-----|
| | | | 092 | 102 | 120 |
| ECONOMIZER | | | | | |
| Standard Economizer (Not for Title 24) | | | | | |
| Standard Downflow Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods | Z1ECON30B-1 | 10Z29 | OX | OX | OX |
| Standard Horizontal Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods | Z1ECON16B-1 | 11G98 | X | X | X |
| Standard Economizer Controls (Not for Title 24) | | | | | |
| Single Enthalpy Control | C1SNSR64FF1 | 53W64 | OX | OX | OX |
| Differential Enthalpy Control (order 2) | C1SNSR64FF1 | 53W64 | X | X | X |
| High Performance Economizer (Approved for California Title 24 Building Standards) | | | | | |
| High Performance Downflow Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods | Z1ECON32B-1 | 12B44 | OX | OX | OX |
| High Performance Horizontal Economizer with Single Temperature Control - With Barometric Relief Dampers and Air Hoods | Z1ECON33B-1 | 12B46 | X | X | X |
| High Performance Economizer Controls (Not for Title 24) | | | | | |
| Single Enthalpy Control | C1SNSR61FF1 | 11G21 | X | X | X |
| Differential Enthalpy Control (order 2) | C1SNSR61FF1 | 11G21 | X | X | X |
| Horizontal Low Profile Barometric Relief Dampers With Exhaust Hood | | | | | |
| Horizontal Low Profile Barometric Relief Dampers With Exhaust Hood | LAGEDH03/15 | 53K04 | X | X | X |
| OUTDOOR AIR | | | | | |
| Outdoor Air Dampers | | | | | |
| Motorized Dampers with outdoor air hood | Z1DAMP20B-2 | 14G36 | X | X | X |
| Manual Dampers with outdoor air hood | Z1DAMP10B-2 | 14G37 | X | X | X |
| POWER EXHAUST | | | | | |
| Standard Static (Downflow) | 208/230V-3ph - Z1PWRE10B-1Y | 10Z70 | X | X | X |
| | 460V-3ph - Z1PWRE10B-1G | 10Z71 | X | X | X |
| Standard Static (Horizontal) | 208/230V-3ph - Z1PWRE15A-1P | 24E01 | X | X | X |
| | 460V-3ph - Z1PWRE15A-1G | 28E01 | X | X | X |
| 575V Transformer Kit | 575V-3ph - Z1TRFM20A-1J | 59E02 | X | X | X |
| NOTE - Order 575V Transformer Kit with 208/230V Power Exhaust Fan for 575V applications. Order two kits for downflow models, order one kit for horizontal models. | | | | | |
| ROOF CURBS | | | | | |
| Hybrid Roof Curbs, Downflow | | | | | |
| 8 in. height | Z1CURB40B-1 | 10Z25 | X | X | X |
| 14 in. height | Z1CURB41B-1 | 10Z26 | X | X | X |
| 18 in. height | Z1CURB42B-1 | 10Z27 | X | X | X |
| 24 in. height | Z1CURB43B-1 | 10Z28 | X | X | X |
| CEILING DIFFUSERS | | | | | |
| Step-Down - Order one | RTD11-95 | 29G04 | X | | |
| | RTD11-135 | 29G05 | | X | X |
| Flush - Order one | FD11-95 | 29G08 | X | | |
| | FD11-135 | 29G09 | | X | 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

7.5 - 8.5 TON

| General Data | | Nominal Tonnage | 7.5 Ton | 7.5 Ton | 8.5 Ton | 8.5 Ton |
|---|--|-----------------|---|----------------------------|---------------------------|----------------------------|
| Model Number | | | ZHA092S4B | ZHA092S4M | ZHA102S4B | ZHA102S4M |
| Efficiency Type | | | Standard | Standard | Standard | Standard |
| Blower Type | | | Constant Air Volume (CAV) | Single Zone VAV Supply Fan | Constant Air Volume (CAV) | Single Zone VAV Supply Fan |
| Cooling Performance | Gross Cooling Capacity - Btuh | | 89,400 | 89,400 | 103,200 | 103,200 |
| | ¹ Net Cooling Capacity - Btuh | | 87,000 | 87,000 | 100,000 | 100,000 |
| | AHRI Rated Air Flow - cfm | | 2800 | 2800 | 3150 | 3150 |
| | Total Unit Power - kW | | 7.9 | 7.9 | 9.1 | 9.1 |
| | ¹ EER (Btuh/Watt) | | 11.0 | 11.0 | 11.0 | 11.0 |
| | ¹ IEER (Btuh/Watt) | | 12.2 | 12.5 | 12.2 | 12.5 |
| | Refrigerant Type | | R-410A | R-410A | R-410A | R-410A |
| | Refrigerant Charge Furnished | Circuit 1 | 11 lbs. 12 oz. | 11 lbs. 12 oz. | 11 lbs. 10 oz. | 11 lbs. 10 oz. |
| | Circuit 2 | 10 lbs. 8 oz. | 10 lbs. 8 oz. | 9 lbs. 14 oz. | 9 lbs. 14 oz. | |
| Heating Performance | ¹ Total High Heat Capacity - Btuh | | 89,000 | 89,000 | 100,000 | 100,000 |
| | Total Unit Power - kW | | 7.9 | 7.9 | 8.9 | 8.9 |
| | ¹ C.O.P. | | 3.3 | 3.3 | 3.3 | 3.3 |
| | ¹ Total Low Heat Capacity - Btuh | | 53,000 | 53,000 | 55,000 | 55,000 |
| | Total Unit Power (kW) | | 6.9 | 6.9 | 7.2 | 7.2 |
| | ¹ C.O.P. | | 2.25 | 2.25 | 2.25 | 2.25 |
| Electric Heat Available - See page 10 | | | 7.5, 15, 22.5, 30 & 45 kW | | | |
| Compressor Type (number) | | | Scroll (2) | Scroll (2) | Scroll (2) | Scroll (2) |
| Outdoor Coils | Net face area (total) - sq. ft. | | 26.2 | 26.2 | 26.2 | 26.2 |
| | Tube diameter - in. | | 3/8 | 3/8 | 3/8 | 3/8 |
| | Number of rows | | 2 | 2 | 2 | 2 |
| | Fins per inch | | 20 | 20 | 20 | 20 |
| | Expansion device type | | Balance port TXV, removable head | | | |
| Outdoor Coil Fans | Motor - (No.) hp | | (2) 1/3 | (2) 1/3 | (2) 1/3 | (2) 1/3 |
| | Motor rpm | | 1075 | 1075 | 1075 | 1075 |
| | Total Motor watts | | 650 | 650 | 650 | 650 |
| | Diameter - (No.) in. | | (2) 24 | (2) 24 | (2) 24 | (2) 24 |
| | Number of blades | | 3 | 3 | 3 | 3 |
| | Total Air volume - cfm | | 8800 | 8800 | 8800 | 8800 |
| Indoor Coils | Net face area (total) - sq. ft. | | 12.8 | 12.8 | 12.8 | 12.8 |
| | Tube diameter - in. | | 3/8 | 3/8 | 3/8 | 3/8 |
| | Number of rows | | 3 | 3 | 4 | 4 |
| | Fins per inch | | 14 | 14 | 14 | 14 |
| | Drain connection - Number and size | | (1) 1 in. NPT coupling | | | |
| | Expansion device type | | Refrigerant Metering Orifice (RFC) | | | |
| ² Indoor Blower and Drive Selection | Nominal motor output | | 2 hp, 3 hp, 5 hp | | | |
| | Maximum usable motor output (US Only) | | 2.3 hp, 3.45 hp, 5.75 hp | | | |
| | Motor - Drive kit number | | 2 hp Kit 1 590-890 rpm Kit 2 800-1105 rpm Kit 3 795-1195 rpm 3 hp Kit 4 730-970 rpm Kit 5 940-1200 rpm Kit 6 1015-1300 rpm 5 hp Kit 10 900-1135 rpm Kit 11 1040-1315 rpm Kit 12 1125-1425 rpm | | | |
| | Blower wheel nominal diameter x width - in. | | (1) 15 X 15 | (1) 15 X 15 | (1) 15 X 15 | (1) 15 X 15 |
| Filters | Type of filter | | Disposable | | | |
| | Number and size - in. | | (4) 20 x 24 x 2 | | | |
| Electrical characteristics | | | 208/230V, 460V or 575V - 60 hertz - 3 phase | | | |

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

¹ AHRI Certified to AHRI Standard 340/360:

Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.

High Temperature Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.

Low Temperature Heating Ratings - 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

² 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. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE - Units equipped with Single Zone VAV Supply Fan option are limited to a motor service factor of 1.0.

SPECIFICATIONS

10 TON

| General Data | | Nominal Tonnage | 10 Ton | 10 Ton |
|---|--|------------------------|---|----------------------------|
| | | Model Number | ZHA120S4B | ZHA120S4M |
| | | Efficiency Type | Standard | Standard |
| | | Blower Type | Constant Air Volume (CAV) | Single Zone VAV Supply Fan |
| Cooling Performance | Gross Cooling Capacity - Btuh | | 121,900 | 121,900 |
| | ¹ Net Cooling Capacity - Btuh | | 118,000 | 118,000 |
| | AHRI Rated Air Flow - cfm | | 3600 | 3600 |
| | Total Unit Power - kW | | 10.7 | 10.7 |
| | ¹ EER (Btuh/Watt) | | 11.0 | 11.0 |
| | ¹ IEER (Btuh/Watt) | | 11.3 | 12.5 |
| | Refrigerant Type | | R-410A | R-410A |
| Refrigerant Charge Furnished | Circuit 1 | | 16 lbs. 0 oz. | 16 lbs. 0 oz. |
| | Circuit 2 | | 14 lbs. 12 oz. | 14 lbs. 12 oz. |
| Heating Performance | ¹ Total High Heat Capacity - Btuh | | 116,000 | 116,000 |
| | Total Unit Power - kW | | 10.3 | 10.3 |
| | ¹ C.O.P. | | 3.3 | 3.3 |
| | ¹ Total Low Heat Capacity - Btuh | | 70,000 | 70,000 |
| | Total Unit Power (kW) | | 9.1 | 9.1 |
| | ¹ C.O.P. | | 2.25 | 2.25 |
| Electric Heat Available - See page 10 | | | 15, 22.5, 30, 45 and 60 KW | |
| Compressor Type (number) | | | Scroll (2) | Scroll (2) |
| Outdoor Coils | Net face area (total) - sq. ft. | | 26.2 | 26.2 |
| | Tube diameter - in. | | 3/8 | 3/8 |
| | Number of rows | | 3 | 3 |
| | Fins per inch | | 20 | 20 |
| | Expansion device type | | Balance port TXV, removable head | |
| Outdoor Coil Fans | Motor - (No.) hp | | (2) 1/2 | (2) 1/2 |
| | Motor rpm | | 1075 | 1075 |
| | Total Motor watts | | 960 | 960 |
| | Diameter - (No.) in. | | (2) 24 | (2) 24 |
| | Number of blades | | 3 | 3 |
| | Total Air volume - cfm | | 9000 | 9000 |
| Indoor Coils | Net face area (total) - sq. ft. | | 13.54 | 13.54 |
| | Tube diameter - in. | | 3/8 | 3/8 |
| | Number of rows | | 4 | 4 |
| | Fins per inch | | 14 | 14 |
| | Drain connection - Number and size | | (1) 1 in. NPT coupling | |
| | Expansion device type | | Refrigerant Metering Orifice (RFC) | |
| ² Indoor Blower and Drive Selection | Nominal motor output | | 2 hp, 3 hp, 5 hp | |
| | Maximum usable motor output (US Only) | | 2.3 hp, 3.45 hp, 5.75 hp | |
| | Motor - Drive kit number | | 2 hp Kit 1 590-890 rpm Kit 2 800-1105 rpm Kit 3 795-1195 rpm 3 hp Kit 4 730-970 rpm Kit 5 940-1200 rpm Kit 6 1015-1300 rpm 5 hp Kit 10 900-1135 rpm Kit 11 1040-1315 rpm Kit 12 1125-1425 rpm | |
| | Blower wheel nominal diameter x width - in. | | (1) 15 X 15 | (1) 15 X 15 |
| Filters | Type of filter | | Disposable | |
| | Number and size - in. | | (4) 20 x 24 x 2 | |
| Electrical characteristics | | | 208/230V, 460V or 575V - 60 hertz - 3 phase | |

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

¹ AHRI Certified to AHRI Standard 340/360:

Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.

High Temperature Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.

Low Temperature Heating Ratings - 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

² 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. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE - Units equipped with Single Zone VAV Supply Fan option are limited to a motor service factor of 1.0.

RATINGS

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

7.5 TON COOLING STANDARD EFFICIENCY ZHA092S4 (1ST STAGE) - CONSTANT AIR VOLUME

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|------------------|---|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|--|--|--|--|
| | | 65°F | | | | | | 75°F | | | | | | 85°F | | | | | | 95°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 | 2400 | 52.4 | 2.75 | 0.57 | 0.85 | 1 | 49.6 | 3.17 | 0.58 | 0.92 | 1 | 46.7 | 3.63 | 0.59 | 0.99 | 1 | 43.9 | 4.14 | 0.61 | 1 | 1 | | | | |
| | 3000 | 54.9 | 2.76 | 0.61 | 1 | 1 | 52.4 | 3.18 | 0.63 | 1 | 1 | 49.5 | 3.64 | 0.64 | 1 | 1 | 46.6 | 4.15 | 0.74 | 1 | 1 | | | | |
| | 3600 | 57.5 | 2.76 | 0.71 | 1 | 1 | 54.7 | 3.19 | 0.79 | 1 | 1 | 51.8 | 3.65 | 0.87 | 1 | 1 | 48.7 | 4.16 | 0.96 | 1 | 1 | | | | |
| 67°F | 2400 | 55.6 | 2.76 | 0.44 | 0.55 | 0.73 | 52.6 | 3.18 | 0.44 | 0.56 | 0.8 | 49.6 | 3.64 | 0.45 | 0.57 | 0.89 | 46.3 | 4.15 | 0.45 | 0.59 | 0.97 | | | | |
| | 3000 | 57.9 | 2.76 | 0.47 | 0.6 | 0.99 | 54.7 | 3.19 | 0.47 | 0.61 | 1 | 51.4 | 3.65 | 0.48 | 0.63 | 1 | 48.1 | 4.16 | 0.49 | 0.64 | 1 | | | | |
| | 3600 | 59.5 | 2.76 | 0.5 | 0.64 | 1 | 56.2 | 3.19 | 0.5 | 0.71 | 1 | 52.8 | 3.65 | 0.51 | 0.8 | 1 | 49.4 | 4.16 | 0.53 | 0.89 | 1 | | | | |
| 71°F | 2400 | 59 | 2.76 | 0.32 | 0.43 | 0.54 | 56 | 3.19 | 0.32 | 0.44 | 0.55 | 52.7 | 3.65 | 0.32 | 0.44 | 0.56 | 49.3 | 4.16 | 0.32 | 0.45 | 0.57 | | | | |
| | 3000 | 61.3 | 2.76 | 0.34 | 0.46 | 0.58 | 58.1 | 3.19 | 0.34 | 0.47 | 0.6 | 54.7 | 3.65 | 0.34 | 0.48 | 0.61 | 51.2 | 4.17 | 0.34 | 0.49 | 0.63 | | | | |
| | 3600 | 63.1 | 2.76 | 0.35 | 0.49 | 0.63 | 59.6 | 3.19 | 0.35 | 0.5 | 0.64 | 56.2 | 3.66 | 0.35 | 0.51 | 0.72 | 52.6 | 4.17 | 0.35 | 0.52 | 0.81 | | | | |

7.5 TON COOLING STANDARD EFFICIENCY ZHA092S4 (2ND STAGE) - CONSTANT AIR VOLUME

| 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 | 2400 | 84.6 | 5.72 | 0.71 | 0.85 | 0.95 | 79 | 6.54 | 0.72 | 0.87 | 0.96 | 73.1 | 7.45 | 0.73 | 0.89 | 0.98 | 66.7 | 8.45 | 0.75 | 0.91 | 0.99 | | | | |
| | 3000 | 89.8 | 5.74 | 0.76 | 0.91 | 0.99 | 84.2 | 6.57 | 0.78 | 0.93 | 1 | 78.1 | 7.48 | 0.8 | 0.94 | 1 | 71.6 | 8.49 | 0.83 | 0.96 | 1 | | | | |
| | 3600 | 94.4 | 5.76 | 0.82 | 0.95 | 1 | 88.4 | 6.59 | 0.84 | 0.96 | 1 | 82.1 | 7.51 | 0.86 | 0.98 | 1 | 75.4 | 8.51 | 0.89 | 1 | 1 | | | | |
| 67°F | 2400 | 90.4 | 5.74 | 0.56 | 0.69 | 0.82 | 84.6 | 6.56 | 0.56 | 0.7 | 0.84 | 78.4 | 7.49 | 0.56 | 0.71 | 0.86 | 71.7 | 8.49 | 0.56 | 0.73 | 0.89 | | | | |
| | 3000 | 95.6 | 5.77 | 0.59 | 0.74 | 0.89 | 89.4 | 6.59 | 0.59 | 0.76 | 0.91 | 82.9 | 7.52 | 0.6 | 0.77 | 0.92 | 75.6 | 8.52 | 0.61 | 0.8 | 0.94 | | | | |
| | 3600 | 99.4 | 5.79 | 0.62 | 0.79 | 0.93 | 93 | 6.61 | 0.63 | 0.81 | 0.94 | 86.1 | 7.53 | 0.64 | 0.84 | 0.96 | 78.6 | 8.54 | 0.65 | 0.87 | 0.98 | | | | |
| 71°F | 2400 | 96 | 5.77 | 0.42 | 0.54 | 0.66 | 90.2 | 6.6 | 0.41 | 0.54 | 0.67 | 84 | 7.52 | 0.4 | 0.55 | 0.69 | 77 | 8.53 | 0.4 | 0.55 | 0.7 | | | | |
| | 3000 | 101.7 | 5.79 | 0.43 | 0.58 | 0.72 | 95.5 | 6.62 | 0.43 | 0.58 | 0.73 | 88.7 | 7.54 | 0.42 | 0.59 | 0.75 | 81.2 | 8.54 | 0.42 | 0.6 | 0.78 | | | | |
| | 3600 | 105.7 | 5.8 | 0.45 | 0.61 | 0.77 | 99.2 | 6.63 | 0.44 | 0.62 | 0.79 | 92.2 | 7.55 | 0.44 | 0.63 | 0.81 | 84.4 | 8.56 | 0.44 | 0.64 | 0.84 | | | | |

7.5 TON HEATING STANDARD EFFICIENCY ZHA092S4 - CONSTANT AIR VOLUME

| Indoor Coil Air Volume 70°F Dry Bulb cfm | Air Temperature Entering Outdoor Coil | | | | | | | | | |
|--|---------------------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|
| | 65°F | | 45°F | | 25°F | | 5°F | | -15°F | |
| | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input |
| | | | | | | | | | | |
| 2400 | 119.7 | 7.82 | 90.9 | 7.27 | 61.7 | 6.72 | 37.4 | 5.98 | 18.9 | 4.51 |
| 3000 | 121.6 | 7.26 | 92.8 | 6.71 | 63.6 | 6.16 | 39.3 | 5.41 | 20.8 | 3.95 |
| 3600 | 123 | 6.92 | 94.2 | 6.37 | 65 | 5.82 | 40.7 | 5.08 | 22.2 | 3.61 |

RATINGS

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

8.5 TON COOLING STANDARD EFFICIENCY ZHA102S4 (1ST STAGE) - CONSTANT AIR VOLUME

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|------------------|---|-------------------|-------------------------------|------|------|-----------------|-------------------|-------------------------------|------|------|-----------------|-------------------|-------------------------------|------|------|-----------------|-------------------|-------------------------------|------|------|------|--|--|--|
| | | 65°F | | | | | | 75°F | | | | | | 85°F | | | | | | 95°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 | 2720 | 59.4 | 2.7 | 0.63 | 1 | 1 | 56.5 | 3.12 | 0.65 | 1 | 1 | 53.5 | 3.57 | 0.66 | 1 | 1 | 50.3 | 4.07 | 0.68 | 1 | 1 | | | | |
| | 3400 | 63.2 | 2.7 | 0.69 | 1 | 1 | 60 | 3.12 | 0.71 | 1 | 1 | 56.8 | 3.58 | 0.72 | 1 | 1 | 53.5 | 4.08 | 0.92 | 1 | 1 | | | | |
| | 4080 | 66 | 2.7 | 0.83 | 1 | 1 | 62.8 | 3.12 | 0.99 | 1 | 1 | 59.4 | 3.58 | 1 | 1 | 1 | 55.8 | 4.08 | 1 | 1 | 1 | | | | |
| 67°F | 2720 | 62.7 | 2.7 | 0.48 | 0.62 | 0.83 | 59.4 | 3.12 | 0.49 | 0.63 | 1 | 55.7 | 3.58 | 0.5 | 0.65 | 1 | 52 | 4.07 | 0.5 | 0.66 | 1 | | | | |
| | 3400 | 65 | 2.7 | 0.52 | 0.67 | 1 | 61.4 | 3.12 | 0.53 | 0.69 | 1 | 57.8 | 3.58 | 0.54 | 0.71 | 1 | 53.9 | 4.08 | 0.55 | 0.73 | 1 | | | | |
| | 4080 | 66.9 | 2.7 | 0.56 | 0.72 | 1 | 63.2 | 3.12 | 0.57 | 0.87 | 1 | 59.4 | 3.58 | 0.58 | 1 | 1 | 55.8 | 4.08 | 0.6 | 1 | 1 | | | | |
| 71°F | 2720 | 66.9 | 2.7 | 0.35 | 0.48 | 0.6 | 63.5 | 3.12 | 0.35 | 0.48 | 0.61 | 59.8 | 3.58 | 0.35 | 0.49 | 0.63 | 55.9 | 4.08 | 0.35 | 0.5 | 0.65 | | | | |
| | 3400 | 69.2 | 2.69 | 0.37 | 0.52 | 0.66 | 65.7 | 3.11 | 0.37 | 0.53 | 0.67 | 61.7 | 3.58 | 0.37 | 0.54 | 0.69 | 57.7 | 4.08 | 0.37 | 0.55 | 0.71 | | | | |
| | 4080 | 71.1 | 2.69 | 0.38 | 0.55 | 0.71 | 67.1 | 3.11 | 0.39 | 0.56 | 0.72 | 63.1 | 3.57 | 0.39 | 0.58 | 0.91 | 58.9 | 4.08 | 0.39 | 0.6 | 1 | | | | |

8.5 TON COOLING STANDARD EFFICIENCY ZHA102S4 (2ND STAGE) - CONSTANT AIR VOLUME

| 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 | 2720 | 99.6 | 6.85 | 0.68 | 0.83 | 0.97 | 92 | 7.8 | 0.68 | 0.86 | 0.99 | 83.9 | 8.85 | 0.69 | 0.89 | 1 | 75.3 | 10.04 | 0.71 | 0.93 | 1 | | | | |
| | 3400 | 106 | 6.89 | 0.73 | 0.92 | 1 | 97.9 | 7.83 | 0.75 | 0.95 | 1 | 89.8 | 8.9 | 0.77 | 0.97 | 1 | 81.3 | 10.1 | 0.81 | 0.99 | 1 | | | | |
| | 4080 | 111.4 | 6.91 | 0.8 | 0.98 | 1 | 103.5 | 7.87 | 0.82 | 0.99 | 1 | 95.2 | 8.94 | 0.86 | 1 | 1 | 86.7 | 10.13 | 0.9 | 1 | 1 | | | | |
| 67°F | 2720 | 107.6 | 6.89 | 0.52 | 0.66 | 0.79 | 99.5 | 7.84 | 0.52 | 0.66 | 0.82 | 91.4 | 8.91 | 0.52 | 0.67 | 0.84 | 82.2 | 10.1 | 0.52 | 0.69 | 0.88 | | | | |
| | 3400 | 113.7 | 6.92 | 0.56 | 0.71 | 0.89 | 105.2 | 7.88 | 0.56 | 0.73 | 0.92 | 96.3 | 8.94 | 0.57 | 0.74 | 0.94 | 86.7 | 10.13 | 0.57 | 0.78 | 0.97 | | | | |
| | 4080 | 118.2 | 6.94 | 0.6 | 0.77 | 0.96 | 109.4 | 7.89 | 0.6 | 0.8 | 0.97 | 100.1 | 8.97 | 0.61 | 0.83 | 0.99 | 90 | 10.15 | 0.62 | 0.87 | 1 | | | | |
| 71°F | 2720 | 115.5 | 6.93 | 0.39 | 0.51 | 0.63 | 107.4 | 7.89 | 0.38 | 0.51 | 0.64 | 98.9 | 8.96 | 0.37 | 0.51 | 0.65 | 89.3 | 10.15 | 0.35 | 0.51 | 0.67 | | | | |
| | 3400 | 122.1 | 6.95 | 0.41 | 0.55 | 0.69 | 113.3 | 7.91 | 0.4 | 0.55 | 0.7 | 104 | 8.98 | 0.39 | 0.56 | 0.72 | 94.1 | 10.18 | 0.38 | 0.57 | 0.75 | | | | |
| | 4080 | 126.5 | 6.96 | 0.42 | 0.58 | 0.75 | 117.6 | 7.93 | 0.41 | 0.59 | 0.77 | 108 | 9.01 | 0.41 | 0.6 | 0.8 | 97.5 | 10.2 | 0.4 | 0.62 | 0.85 | | | | |

8.5 TON HEATING STANDARD EFFICIENCY ZHA102S4 - CONSTANT AIR VOLUME

| Indoor Coil Air Volume 70°F Dry Bulb cfm | Air Temperature Entering Outdoor Coil | | | | | | | | | |
|--|---------------------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|
| | 65°F | | 45°F | | 25°F | | 5°F | | -15°F | |
| | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input |
| | kBtuh | kW | kBtuh | kW | kBtuh | kW | kBtuh | kW | kBtuh | kW |
| 2720 | 127.2 | 7.97 | 95.8 | 7.33 | 63.7 | 6.67 | 38.8 | 5.97 | 19.6 | 4.5 |
| 3400 | 129.4 | 7.45 | 98 | 6.81 | 65.9 | 6.15 | 41 | 5.44 | 21.7 | 3.98 |
| 4080 | 131.1 | 7.12 | 99.7 | 6.48 | 67.6 | 5.82 | 42.7 | 5.11 | 23.4 | 3.65 |

RATINGS

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

10 TON COOLING STANDARD EFFICIENCY ZHA120S4 (1ST STAGE) - CONSTANT AIR VOLUME

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|------------------|---|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|--|--|--|--|
| | | 65°F | | | | | | 75°F | | | | | | 85°F | | | | | | 95°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 | 3200 | 67.1 | 2.84 | 1 | 0.93 | 0.94 | 62.9 | 3.22 | 1 | 0.93 | 0.93 | 58.6 | 3.65 | 1 | 0.92 | 0.93 | 54 | 4.12 | 1 | 0.92 | 0.92 | | | | |
| | 4000 | 71 | 2.88 | 1 | 0.92 | 0.93 | 66.6 | 3.26 | 1 | 0.91 | 0.92 | 61.9 | 3.68 | 1 | 0.91 | 0.91 | 57.3 | 4.16 | 0.91 | 0.91 | 0.91 | | | | |
| | 4800 | 73.9 | 2.91 | 0.91 | 0.91 | 0.91 | 69.2 | 3.29 | 0.91 | 0.91 | 0.91 | 64.5 | 3.71 | 0.91 | 0.91 | 0.91 | 59.6 | 4.19 | 0.91 | 0.91 | 0.91 | | | | |
| 67°F | 3200 | 69.8 | 2.87 | 1 | 1 | 0.96 | 65.1 | 3.24 | 1 | 1 | 0.93 | 60.1 | 3.66 | 1 | 1 | 0.93 | 55.1 | 4.13 | 1 | 1 | 0.92 | | | | |
| | 4000 | 72.3 | 2.89 | 1 | 1 | 0.93 | 67.3 | 3.27 | 1 | 1 | 0.92 | 62.3 | 3.69 | 1 | 1 | 0.91 | 57.3 | 4.16 | 1 | 0.91 | 0.91 | | | | |
| | 4800 | 74.1 | 2.9 | 1 | 1 | 0.91 | 69.3 | 3.29 | 1 | 0.95 | 0.91 | 64.6 | 3.72 | 1 | 0.91 | 0.91 | 59.5 | 4.19 | 1 | 0.91 | 0.91 | | | | |
| 71°F | 3200 | 74.3 | 2.91 | 1 | 1 | 1 | 69.3 | 3.29 | 1 | 1 | 1 | 64.2 | 3.71 | 1 | 1 | 1 | 58.9 | 4.18 | 1 | 1 | 1 | | | | |
| | 4000 | 76.4 | 2.94 | 1 | 1 | 1 | 71.4 | 3.32 | 1 | 1 | 1 | 66.1 | 3.73 | 1 | 1 | 1 | 60.5 | 4.2 | 1 | 1 | 0.93 | | | | |
| | 4800 | 77.9 | 2.95 | 1 | 1 | 1 | 72.7 | 3.33 | 1 | 1 | 1 | 67.4 | 3.75 | 1 | 1 | 0.92 | 61.7 | 4.22 | 1 | 1 | 0.91 | | | | |

10 TON COOLING STANDARD EFFICIENCY ZHA120S4 (2ND STAGE) - CONSTANT AIR VOLUME

| 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 | 3200 | 118 | 7.62 | 0.68 | 0.84 | 0.99 | 108.4 | 8.63 | 0.69 | 0.86 | 1 | 98.3 | 9.77 | 0.7 | 0.89 | 1 | 87.3 | 11.08 | 0.72 | 0.94 | 1 | | | | |
| | 4000 | 125.3 | 7.68 | 0.75 | 0.93 | 1 | 115.3 | 8.69 | 0.76 | 0.96 | 1 | 104.8 | 9.83 | 0.79 | 0.99 | 1 | 94.1 | 11.14 | 0.81 | 1 | 1 | | | | |
| | 4800 | 131.2 | 7.74 | 0.81 | 1 | 1 | 121.4 | 8.75 | 0.83 | 1 | 1 | 111.7 | 9.9 | 0.86 | 1 | 1 | 101.1 | 11.23 | 0.9 | 1 | 1 | | | | |
| 67°F | 3200 | 127.3 | 7.71 | 0.53 | 0.66 | 0.81 | 117.4 | 8.71 | 0.53 | 0.67 | 0.83 | 106.7 | 9.86 | 0.52 | 0.69 | 0.85 | 95.4 | 11.16 | 0.52 | 0.7 | 0.89 | | | | |
| | 4000 | 134.4 | 7.77 | 0.57 | 0.72 | 0.89 | 123.9 | 8.78 | 0.57 | 0.74 | 0.92 | 112.6 | 9.91 | 0.57 | 0.76 | 0.96 | 100.5 | 11.21 | 0.57 | 0.79 | 1 | | | | |
| | 4800 | 139.7 | 7.82 | 0.6 | 0.79 | 0.97 | 128.4 | 8.82 | 0.61 | 0.81 | 1 | 116.9 | 9.96 | 0.62 | 0.84 | 1 | 104.4 | 11.25 | 0.63 | 0.88 | 1 | | | | |
| 71°F | 3200 | 136.7 | 7.79 | 0.39 | 0.52 | 0.64 | 126.4 | 8.8 | 0.38 | 0.52 | 0.65 | 115.4 | 9.94 | 0.36 | 0.52 | 0.66 | 103.7 | 11.24 | 0.34 | 0.52 | 0.68 | | | | |
| | 4000 | 143.9 | 7.86 | 0.41 | 0.56 | 0.7 | 133.1 | 8.86 | 0.4 | 0.56 | 0.72 | 121.5 | 10.01 | 0.39 | 0.57 | 0.74 | 109 | 11.29 | 0.37 | 0.58 | 0.77 | | | | |
| | 4800 | 149.1 | 7.92 | 0.43 | 0.6 | 0.77 | 137.8 | 8.92 | 0.42 | 0.6 | 0.79 | 125.4 | 10.05 | 0.41 | 0.61 | 0.82 | 112.4 | 11.35 | 0.4 | 0.63 | 0.86 | | | | |

10 TON HEATING STANDARD EFFICIENCY ZH120S4 - CONSTANT AIR VOLUME

| Indoor Coil Air Volume 70°F Dry Bulb cfm | Air Temperature Entering Outdoor Coil | | | | | | | | | |
|--|---------------------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|
| | 65°F | | 45°F | | 25°F | | 5°F | | -15°F | |
| | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input |
| | kBtuh | kW | kBtuh | kW | kBtuh | kW | kBtuh | kW | kBtuh | kW |
| 3200 | 145.4 | 9.22 | 112.8 | 8.29 | 79.6 | 7.31 | 51.1 | 6.44 | 25.3 | 4.9 |
| 4000 | 147.9 | 8.64 | 115.2 | 7.7 | 82.1 | 6.73 | 53.6 | 5.85 | 27.8 | 4.31 |
| 4800 | 149.8 | 8.28 | 117.1 | 7.34 | 84 | 6.37 | 55.5 | 5.49 | 29.7 | 3.95 |

RATINGS

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

7.5 TON COOLING STANDARD EFFICIENCY ZHA092S4 (1ST STAGE) - SINGLE ZONE VAV SUPPLY FAN SUPPLY AIR BLOWER

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | |
|-------------------------------|------------------|---|-------------------|--|------|------|-----------------|-------------------|--|------|------|-----------------|-------------------|--|------|------|-----------------|-------------------|--|------|------|
| | | 65°F | | | | | 75°F | | | | | 85°F | | | | | 95°F | | | | |
| | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | | | | 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 |
| 63°F | 1680 | 47.6 | 2.68 | 0.57 | 0.73 | 0.96 | 45 | 3.09 | 0.58 | 0.76 | 0.99 | 42.3 | 3.54 | 0.58 | 0.8 | 1 | 39.5 | 4.03 | 0.59 | 0.83 | 1 |
| | 2100 | 50 | 2.69 | 0.61 | 0.86 | 1 | 47.3 | 3.11 | 0.62 | 0.89 | 1 | 44.5 | 3.56 | 0.63 | 0.93 | 1 | 41.5 | 4.05 | 0.66 | 0.97 | 1 |
| | 2520 | 51.9 | 2.7 | 0.67 | 0.96 | 1 | 49.2 | 3.12 | 0.69 | 0.99 | 1 | 46.4 | 3.57 | 0.73 | 1 | 1 | 43.6 | 4.07 | 0.77 | 1 | 1 |
| 67°F | 1680 | 50.5 | 2.7 | 0.45 | 0.55 | 0.68 | 48 | 3.11 | 0.45 | 0.56 | 0.7 | 45.1 | 3.56 | 0.45 | 0.57 | 0.73 | 42.2 | 4.06 | 0.46 | 0.58 | 0.77 |
| | 2100 | 53.2 | 2.71 | 0.48 | 0.59 | 0.8 | 50.4 | 3.12 | 0.48 | 0.6 | 0.83 | 47.5 | 3.58 | 0.48 | 0.61 | 0.87 | 44.3 | 4.07 | 0.49 | 0.63 | 0.92 |
| | 2520 | 55.1 | 2.71 | 0.5 | 0.63 | 0.91 | 52.2 | 3.12 | 0.5 | 0.66 | 0.94 | 49.1 | 3.59 | 0.51 | 0.69 | 0.97 | 45.8 | 4.08 | 0.52 | 0.73 | 1 |
| 71°F | 1680 | 53.6 | 2.71 | 0.35 | 0.44 | 0.53 | 50.8 | 3.12 | 0.34 | 0.44 | 0.54 | 48 | 3.58 | 0.34 | 0.44 | 0.55 | 45.1 | 4.08 | 0.33 | 0.45 | 0.56 |
| | 2100 | 56.4 | 2.71 | 0.36 | 0.47 | 0.57 | 53.4 | 3.13 | 0.35 | 0.47 | 0.58 | 50.4 | 3.59 | 0.35 | 0.47 | 0.59 | 47.2 | 4.09 | 0.35 | 0.48 | 0.61 |
| | 2520 | 58.4 | 2.71 | 0.37 | 0.49 | 0.61 | 55.4 | 3.13 | 0.36 | 0.5 | 0.62 | 52.1 | 3.59 | 0.36 | 0.5 | 0.65 | 48.8 | 4.09 | 0.36 | 0.51 | 0.69 |

7.5 TON COOLING STANDARD EFFICIENCY ZHA092S4 (2ND STAGE) - SINGLE ZONE VAV SUPPLY FAN SUPPLY AIR BLOWER

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | |
|-------------------------------|------------------|---|-------------------|--|------|------|-----------------|-------------------|--|------|------|-----------------|-------------------|--|------|------|-----------------|-------------------|--|------|------|
| | | 85°F | | | | | 95°F | | | | | 105°F | | | | | 115°F | | | | |
| | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | | | | 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 |
| 63°F | 2400 | 84.6 | 5.72 | 0.71 | 0.85 | 0.95 | 79 | 6.54 | 0.72 | 0.87 | 0.96 | 73.1 | 7.45 | 0.73 | 0.89 | 0.98 | 66.7 | 8.45 | 0.75 | 0.91 | 0.99 |
| | 3000 | 89.8 | 5.74 | 0.76 | 0.91 | 0.99 | 84.2 | 6.57 | 0.78 | 0.93 | 1 | 78.1 | 7.48 | 0.8 | 0.94 | 1 | 71.6 | 8.49 | 0.83 | 0.96 | 1 |
| | 3600 | 94.4 | 5.76 | 0.82 | 0.95 | 1 | 88.4 | 6.59 | 0.84 | 0.96 | 1 | 82.1 | 7.51 | 0.86 | 0.98 | 1 | 75.4 | 8.51 | 0.89 | 1 | 1 |
| 67°F | 2400 | 90.4 | 5.74 | 0.56 | 0.69 | 0.82 | 84.6 | 6.56 | 0.56 | 0.7 | 0.84 | 78.4 | 7.49 | 0.56 | 0.71 | 0.86 | 71.7 | 8.49 | 0.56 | 0.73 | 0.89 |
| | 3000 | 95.6 | 5.77 | 0.59 | 0.74 | 0.89 | 89.4 | 6.59 | 0.59 | 0.76 | 0.91 | 82.9 | 7.52 | 0.6 | 0.77 | 0.92 | 75.6 | 8.52 | 0.61 | 0.8 | 0.94 |
| | 3600 | 99.4 | 5.79 | 0.62 | 0.79 | 0.93 | 93 | 6.61 | 0.63 | 0.81 | 0.94 | 86.1 | 7.53 | 0.64 | 0.84 | 0.96 | 78.6 | 8.54 | 0.65 | 0.87 | 0.98 |
| 71°F | 2400 | 96 | 5.77 | 0.42 | 0.54 | 0.66 | 90.2 | 6.6 | 0.41 | 0.54 | 0.67 | 84 | 7.52 | 0.4 | 0.55 | 0.69 | 77 | 8.53 | 0.4 | 0.55 | 0.7 |
| | 3000 | 101.7 | 5.79 | 0.43 | 0.58 | 0.72 | 95.5 | 6.62 | 0.43 | 0.58 | 0.73 | 88.7 | 7.54 | 0.42 | 0.59 | 0.75 | 81.2 | 8.54 | 0.42 | 0.6 | 0.78 |
| | 3600 | 105.7 | 5.8 | 0.45 | 0.61 | 0.77 | 99.2 | 6.63 | 0.44 | 0.62 | 0.79 | 92.2 | 7.55 | 0.44 | 0.63 | 0.81 | 84.4 | 8.56 | 0.44 | 0.64 | 0.84 |

7.5 TON HEATING STANDARD EFFICIENCY ZHA092S4 - SINGLE ZONE VAV SUPPLY FAN SUPPLY AIR BLOWER

| Indoor Coil Air Volume 70°F Dry Bulb cfm | Air Temperature Entering Outdoor Coil | | | | | | | | | |
|--|---------------------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|
| | 65°F | | 45°F | | 25°F | | 5°F | | -15°F | |
| | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input |
| | kBtuh | kW | kBtuh | kW | kBtuh | kW | kBtuh | kW | kBtuh | kW |
| 2400 | 119.7 | 7.82 | 90.9 | 7.27 | 61.7 | 6.72 | 37.4 | 5.98 | 18.9 | 4.51 |
| 3000 | 121.6 | 7.26 | 92.8 | 6.71 | 63.6 | 6.16 | 39.3 | 5.41 | 20.8 | 3.95 |
| 3600 | 123 | 6.92 | 94.2 | 6.37 | 65 | 5.82 | 40.7 | 5.08 | 22.2 | 3.61 |

RATINGS

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

8.5 TON COOLING STANDARD EFFICIENCY ZHA102S4 (1ST STAGE) - SINGLE ZONE VAV SUPPLY FAN SUPPLY AIR BLOWER

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | |
|-------------------------------|------------------|---|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|-------|-----------------|-------------------|-------------------------------|------|------|
| | | 65°F | | | | | 75°F | | | | | 85°F | | | | | 95°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 | 1920 | 56.1 | 2.69 | 0.6 | 0.79 | 1 | 53.1 | 3.1 | 0.61 | 0.83 | 1 | 49.9 | 3.55 | 0.62 | 0.87 | 1 | 46.6 | 4.04 | 0.64 | 0.93 | 1 |
| | 2400 | 59 | 2.69 | 0.65 | 0.95 | 1 | 55.9 | 3.11 | 0.67 | 0.99 | 1 | 52.7 | 3.57 | 0.69 | 1 | 1 | 49.7 | 4.06 | 0.73 | 1 | 1 |
| | 2880 | 61.7 | 2.7 | 0.73 | 1 | 1 | 58.8 | 3.12 | 0.77 | 1 | 1 | 55.7 | 3.57 | 0.81 | 1 | 1 | 52.4 | 4.07 | 0.87 | 1 | 1 |
| 67°F | 1920 | 60 | 2.7 | 0.47 | 0.59 | 0.72 | 56.9 | 3.11 | 0.47 | 0.59 | 0.75 | 53.5 | 3.57 | 0.48 | 0.61 | 0.8 | 49.9 | 4.06 | 0.48 | 0.62 | 0.85 |
| | 2400 | 62.7 | 2.7 | 0.5 | 0.63 | 0.88 | 59.4 | 3.12 | 0.51 | 0.65 | 0.93 | 55.9 | 3.58 | 0.51 | 0.66 | 0.97 | 52.1 | 4.07 | 0.52 | 0.68 | 1 |
| | 2880 | 64.8 | 2.7 | 0.53 | 0.69 | 1 | 61.3 | 3.12 | 0.54 | 0.72 | 1 | 57.6 | 3.58 | 0.55 | 0.77 | 1 | 53.8 | 4.08 | 0.56 | 0.82 | 1 |
| 71°F | 1920 | 64 | 2.7 | 0.35 | 0.46 | 0.57 | 60.7 | 3.12 | 0.35 | 0.47 | 0.58 | 57.3 | 3.58 | 0.35 | 0.47 | 0.59 | 53.6 | 4.07 | 0.34 | 0.47 | 0.6 |
| | 2400 | 67 | 2.7 | 0.37 | 0.49 | 0.62 | 63.5 | 3.12 | 0.37 | 0.5 | 0.62 | 59.9 | 3.58 | 0.37 | 0.51 | 0.64 | 56 | 4.08 | 0.36 | 0.51 | 0.66 |
| | 2880 | 69.2 | 2.7 | 0.38 | 0.53 | 0.66 | 65.5 | 3.12 | 0.38 | 0.53 | 0.68 | 61.6 | 3.58 | 0.38 | 0.54 | 0.72 | 57.7 | 4.08 | 0.38 | 0.55 | 0.77 |

8.5 TON COOLING STANDARD EFFICIENCY ZHA102S4 (2ND STAGE) - SINGLE ZONE VAV SUPPLY FAN SUPPLY AIR BLOWER

| 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 | 2720 | 99.6 | 6.85 | 0.68 | 0.83 | 0.97 | 92 | 7.8 | 0.68 | 0.86 | 0.99 | 83.9 | 8.85 | 0.69 | 0.89 | 1 | 75.3 | 10.04 | 0.71 | 0.93 | 1 |
| | 3400 | 106 | 6.89 | 0.73 | 0.92 | 1 | 97.9 | 7.83 | 0.75 | 0.95 | 1 | 89.8 | 8.9 | 0.77 | 0.97 | 1 | 81.3 | 10.1 | 0.81 | 0.99 | 1 |
| | 4080 | 111.4 | 6.91 | 0.8 | 0.98 | 1 | 103.5 | 7.87 | 0.82 | 0.99 | 1 | 95.2 | 8.94 | 0.86 | 1 | 1 | 86.7 | 10.13 | 0.9 | 1 | 1 |
| 67°F | 2720 | 107.6 | 6.89 | 0.52 | 0.66 | 0.79 | 99.5 | 7.84 | 0.52 | 0.66 | 0.82 | 91.4 | 8.91 | 0.52 | 0.67 | 0.84 | 82.2 | 10.1 | 0.52 | 0.69 | 0.88 |
| | 3400 | 113.7 | 6.92 | 0.56 | 0.71 | 0.89 | 105.2 | 7.88 | 0.56 | 0.73 | 0.92 | 96.3 | 8.94 | 0.57 | 0.74 | 0.94 | 86.7 | 10.13 | 0.57 | 0.78 | 0.97 |
| | 4080 | 118.2 | 6.94 | 0.6 | 0.77 | 0.96 | 109.4 | 7.89 | 0.6 | 0.8 | 0.97 | 100.1 | 8.97 | 0.61 | 0.83 | 0.99 | 90 | 10.15 | 0.62 | 0.87 | 1 |
| 71°F | 2720 | 115.5 | 6.93 | 0.39 | 0.51 | 0.63 | 107.4 | 7.89 | 0.38 | 0.51 | 0.64 | 98.9 | 8.96 | 0.37 | 0.51 | 0.65 | 89.3 | 10.15 | 0.35 | 0.51 | 0.67 |
| | 3400 | 122.1 | 6.95 | 0.41 | 0.55 | 0.69 | 113.3 | 7.91 | 0.4 | 0.55 | 0.7 | 104 | 8.98 | 0.39 | 0.56 | 0.72 | 94.1 | 10.18 | 0.38 | 0.57 | 0.75 |
| | 4080 | 126.5 | 6.96 | 0.42 | 0.58 | 0.75 | 117.6 | 7.93 | 0.41 | 0.59 | 0.77 | 108 | 9.01 | 0.41 | 0.6 | 0.8 | 97.5 | 10.2 | 0.4 | 0.62 | 0.85 |

8.5 TON HEATING STANDARD EFFICIENCY ZHA102S4 - SINGLE ZONE VAV SUPPLY FAN SUPPLY AIR BLOWER

| Indoor Coil Air Volume 70°F Dry Bulb cfm | Air Temperature Entering Outdoor Coil | | | | | | | | | |
|--|---------------------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|
| | 65°F | | 45°F | | 25°F | | 5°F | | -15°F | |
| | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input |
| | | | | | | | | | | |
| 2720 | 127.2 | 7.97 | 95.8 | 7.33 | 63.7 | 6.67 | 38.8 | 5.97 | 19.6 | 4.5 |
| 3400 | 129.4 | 7.45 | 98 | 6.81 | 65.9 | 6.15 | 41 | 5.44 | 21.7 | 3.98 |
| 4080 | 131.1 | 7.12 | 99.7 | 6.48 | 67.6 | 5.82 | 42.7 | 5.11 | 23.4 | 3.65 |

RATINGS

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

10 TON COOLING STANDARD EFFICIENCY ZHA120S4 (1ST STAGE) - SINGLE ZONE VAV SUPPLY FAN SUPPLY AIR BLOWER

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | |
|-------------------------------|------------------|---|-------------------|--|------|------|-----------------|-------------------|--|------|------|-----------------|-------------------|--|------|------|-----------------|-------------------|--|------|------|
| | | 65°F | | | | | 75°F | | | | | 85°F | | | | | 95°F | | | | |
| | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | | | | 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 |
| 63°F | 2240 | 61.6 | 2.77 | 0.62 | 0.82 | 1 | 57.3 | 3.14 | 0.62 | 0.87 | 1 | 52.9 | 3.56 | 0.64 | 0.94 | 1 | 48.4 | 4.03 | 0.65 | 1 | 1 |
| | 2800 | 64.8 | 2.8 | 0.67 | 1 | 1 | 60.8 | 3.18 | 0.68 | 1 | 1 | 56.5 | 3.6 | 0.7 | 1 | 1 | 52.2 | 4.07 | 0.75 | 1 | 1 |
| | 3360 | 68.2 | 2.83 | 0.75 | 1 | 1 | 63.9 | 3.21 | 0.8 | 1 | 1 | 59.5 | 3.63 | 0.87 | 1 | 1 | 54.9 | 4.1 | 0.95 | 1 | 1 |
| 67°F | 2240 | 65.8 | 2.81 | 0.48 | 0.6 | 0.74 | 61.3 | 3.19 | 0.48 | 0.61 | 0.8 | 56.7 | 3.6 | 0.48 | 0.62 | 0.86 | 51.8 | 4.07 | 0.48 | 0.63 | 0.94 |
| | 2800 | 68.4 | 2.83 | 0.51 | 0.65 | 0.96 | 63.8 | 3.21 | 0.52 | 0.67 | 1 | 58.9 | 3.63 | 0.52 | 0.69 | 1 | 53.9 | 4.09 | 0.53 | 0.71 | 1 |
| | 3360 | 70.4 | 2.86 | 0.55 | 0.71 | 1 | 65.7 | 3.23 | 0.55 | 0.76 | 1 | 60.8 | 3.65 | 0.56 | 0.82 | 1 | 55.6 | 4.11 | 0.57 | 0.91 | 1 |
| 71°F | 2240 | 70.1 | 2.85 | 0.36 | 0.47 | 0.58 | 65.5 | 3.23 | 0.35 | 0.47 | 0.59 | 60.8 | 3.65 | 0.34 | 0.47 | 0.6 | 55.7 | 4.11 | 0.33 | 0.48 | 0.62 |
| | 2800 | 72.9 | 2.88 | 0.37 | 0.51 | 0.64 | 68.2 | 3.26 | 0.37 | 0.51 | 0.65 | 63.2 | 3.68 | 0.36 | 0.52 | 0.67 | 57.9 | 4.14 | 0.35 | 0.53 | 0.69 |
| | 3360 | 74.8 | 2.9 | 0.39 | 0.54 | 0.69 | 70 | 3.28 | 0.38 | 0.55 | 0.71 | 64.8 | 3.69 | 0.38 | 0.56 | 0.78 | 59.5 | 4.16 | 0.37 | 0.57 | 0.86 |

10 TON COOLING STANDARD EFFICIENCY ZHA120S4 (2ND STAGE) - SINGLE ZONE VAV SUPPLY FAN SUPPLY AIR BLOWER

| Entering Wet Bulb Temperature | Total Air Volume | Outdoor Air Temperature Entering Outdoor Coil | | | | | | | | | | | | | | | | | | | |
|-------------------------------|------------------|---|-------------------|--|------|------|-----------------|-------------------|--|------|------|-----------------|-------------------|--|------|------|-----------------|-------------------|--|------|------|
| | | 85°F | | | | | 95°F | | | | | 105°F | | | | | 115°F | | | | |
| | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | | Total Cool Cap. | Comp. Motor Input | Sensible To Total Ratio (S/T) Dry Bulb | | |
| | | | | 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 |
| 63°F | 3200 | 118 | 7.62 | 0.68 | 0.84 | 0.99 | 108.4 | 8.63 | 0.69 | 0.86 | 1 | 98.3 | 9.77 | 0.7 | 0.89 | 1 | 87.3 | 11.08 | 0.72 | 0.94 | 1 |
| | 4000 | 125.3 | 7.68 | 0.75 | 0.93 | 1 | 115.3 | 8.69 | 0.76 | 0.96 | 1 | 104.8 | 9.83 | 0.79 | 0.99 | 1 | 94.1 | 11.14 | 0.81 | 1 | 1 |
| | 4800 | 131.2 | 7.74 | 0.81 | 1 | 1 | 121.4 | 8.75 | 0.83 | 1 | 1 | 111.7 | 9.9 | 0.86 | 1 | 1 | 101.1 | 11.23 | 0.9 | 1 | 1 |
| 67°F | 3200 | 127.3 | 7.71 | 0.53 | 0.66 | 0.81 | 117.4 | 8.71 | 0.53 | 0.67 | 0.83 | 106.7 | 9.86 | 0.52 | 0.69 | 0.85 | 95.4 | 11.16 | 0.52 | 0.7 | 0.89 |
| | 4000 | 134.4 | 7.77 | 0.57 | 0.72 | 0.89 | 123.9 | 8.78 | 0.57 | 0.74 | 0.92 | 112.6 | 9.91 | 0.57 | 0.76 | 0.96 | 100.5 | 11.21 | 0.57 | 0.79 | 1 |
| | 4800 | 139.7 | 7.82 | 0.6 | 0.79 | 0.97 | 128.4 | 8.82 | 0.61 | 0.81 | 1 | 116.9 | 9.96 | 0.62 | 0.84 | 1 | 104.4 | 11.25 | 0.63 | 0.88 | 1 |
| 71°F | 3200 | 136.7 | 7.79 | 0.39 | 0.52 | 0.64 | 126.4 | 8.8 | 0.38 | 0.52 | 0.65 | 115.4 | 9.94 | 0.36 | 0.52 | 0.66 | 103.7 | 11.24 | 0.34 | 0.52 | 0.68 |
| | 4000 | 143.9 | 7.86 | 0.41 | 0.56 | 0.7 | 133.1 | 8.86 | 0.4 | 0.56 | 0.72 | 121.5 | 10.01 | 0.39 | 0.57 | 0.74 | 109 | 11.29 | 0.37 | 0.58 | 0.77 |
| | 4800 | 149.1 | 7.92 | 0.43 | 0.6 | 0.77 | 137.8 | 8.92 | 0.42 | 0.6 | 0.79 | 125.4 | 10.05 | 0.41 | 0.61 | 0.82 | 112.4 | 11.35 | 0.4 | 0.63 | 0.86 |

10 TON HEATING STANDARD EFFICIENCY ZHA120S4 - SINGLE ZONE VAV SUPPLY FAN SUPPLY AIR BLOWER

| Indoor Coil Air Volume 70°F Dry Bulb cfm | Air Temperature Entering Outdoor Coil | | | | | | | | | |
|--|---------------------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|------------------------|-------------------|
| | 65°F | | 45°F | | 25°F | | 5°F | | -15°F | |
| | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input | Total Heating Capacity | Comp. Motor Input |
| | kBtuh | kW | kBtuh | kW | kBtuh | kW | kBtuh | kW | kBtuh | kW |
| 3200 | 145.4 | 9.22 | 112.8 | 8.29 | 79.6 | 7.31 | 51.1 | 6.44 | 25.3 | 4.9 |
| 4000 | 147.9 | 8.64 | 115.2 | 7.7 | 82.1 | 6.73 | 53.6 | 5.85 | 27.8 | 4.31 |
| 4800 | 149.8 | 8.28 | 117.1 | 7.34 | 84 | 6.37 | 55.5 | 5.49 | 29.7 | 3.95 |

BLOWER DATA

092S 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.

MINIMUM AIR VOLUME REQUIRED FOR USE WITH OPTIONAL ELECTRIC HEAT (Maximum Static Pressure - 2.0 in. w.g.):

7.5 kW, 15 kW, 22.5 kW - 2065 cfm

30 kW - 2250 cfm

45 kW - 3000 cfm

| Total Air Volume cfm | Total Static Pressure – in. w.g. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------------------------------|------|-----|------|-----|------|-----|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|
| | 0.2 | | 0.4 | | 0.6 | | 0.8 | | 1.0 | | 1.2 | | 1.4 | | 1.6 | | 1.8 | | 2.0 | | 2.2 | | 2.4 | | 2.6 | | | |
| | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 1750 | 494 | 0.11 | 562 | 0.34 | 632 | 0.56 | 702 | 0.74 | 771 | 0.85 | 838 | 0.96 | 902 | 1.07 | 961 | 1.19 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2000 | 514 | 0.26 | 581 | 0.49 | 650 | 0.70 | 719 | 0.87 | 786 | 0.98 | 852 | 1.09 | 915 | 1.20 | 972 | 1.32 | 1026 | 1.47 | 1076 | 1.65 | --- | --- | --- | --- | --- | --- | --- | --- |
| 2250 | 533 | 0.41 | 599 | 0.62 | 667 | 0.82 | 735 | 0.99 | 802 | 1.10 | 866 | 1.21 | 928 | 1.33 | 984 | 1.46 | 1037 | 1.63 | 1085 | 1.81 | 1132 | 2.01 | 1178 | 2.21 | 1226 | 2.43 | --- | --- |
| 2500 | 553 | 0.55 | 619 | 0.76 | 685 | 0.95 | 753 | 1.10 | 818 | 1.22 | 881 | 1.34 | 942 | 1.47 | 997 | 1.62 | 1048 | 1.80 | 1096 | 1.99 | 1142 | 2.20 | 1188 | 2.41 | 1237 | 2.64 | --- | --- |
| 2750 | 573 | 0.70 | 638 | 0.90 | 705 | 1.08 | 771 | 1.22 | 835 | 1.35 | 897 | 1.49 | 957 | 1.63 | 1011 | 1.80 | 1061 | 1.99 | 1108 | 2.19 | 1154 | 2.41 | 1200 | 2.63 | 1249 | 2.87 | --- | --- |
| 3000 | 594 | 0.85 | 659 | 1.05 | 725 | 1.22 | 791 | 1.36 | 853 | 1.50 | 915 | 1.65 | 973 | 1.81 | 1026 | 1.99 | 1075 | 2.20 | 1121 | 2.42 | 1167 | 2.64 | 1213 | 2.87 | 1262 | 3.12 | --- | --- |
| 3250 | 617 | 1.01 | 682 | 1.20 | 747 | 1.37 | 812 | 1.52 | 873 | 1.67 | 934 | 1.83 | 990 | 2.01 | 1042 | 2.21 | 1089 | 2.43 | 1135 | 2.66 | 1181 | 2.90 | 1228 | 3.13 | 1277 | 3.38 | --- | --- |
| 3500 | 640 | 1.17 | 706 | 1.36 | 771 | 1.53 | 834 | 1.70 | 895 | 1.86 | 954 | 2.03 | 1008 | 2.23 | 1058 | 2.46 | 1105 | 2.69 | 1150 | 2.93 | 1196 | 3.17 | 1243 | 3.41 | 1293 | 3.65 | --- | --- |
| 3750 | 665 | 1.34 | 731 | 1.54 | 796 | 1.72 | 857 | 1.89 | 917 | 2.07 | 975 | 2.26 | 1027 | 2.48 | 1076 | 2.72 | 1121 | 2.97 | 1166 | 3.22 | 1212 | 3.46 | 1261 | 3.71 | 1311 | 3.96 | --- | --- |
| 4000 | 692 | 1.54 | 758 | 1.75 | 822 | 1.93 | 882 | 2.11 | 940 | 2.30 | 996 | 2.51 | 1047 | 2.76 | 1094 | 3.02 | 1139 | 3.27 | 1184 | 3.52 | 1230 | 3.77 | 1280 | 4.03 | 1330 | 4.29 | --- | --- |
| 4250 | 722 | 1.76 | 787 | 1.97 | 849 | 2.15 | 908 | 2.35 | 965 | 2.56 | 1018 | 2.79 | 1067 | 3.06 | 1113 | 3.33 | 1157 | 3.59 | 1202 | 3.85 | 1250 | 4.11 | 1300 | 4.38 | 1352 | 4.65 | --- | --- |

BLOWER DATA

102 AND 120S 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.

MINIMUM AIR VOLUME REQUIRED FOR USE WITH OPTIONAL ELECTRIC HEAT (Maximum Static Pressure - 2.0 in. w.g.)

15 kW, 22.5 kW- 2065 cfm

30 kW - 2250 cfm

45 kW - 3000 cfm

60 kW - 4000 cfm

| Total Air Volume cfm | Total Static Pressure – in. w.g. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|
| | 0.2 | | 0.4 | | 0.6 | | 0.8 | | 1.0 | | 1.2 | | 1.4 | | 1.6 | | 1.8 | | 2 | | 2.2 | | 2.4 | | 2.6 | | | |
| | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP | RPM | BHP |
| 2000 | 542 | 0.43 | 602 | 0.60 | 664 | 0.75 | 732 | 0.89 | 802 | 1.02 | 869 | 1.15 | 927 | 1.27 | 979 | 1.41 | 1029 | 1.57 | 1079 | 1.75 | 1129 | 1.95 | 1179 | 2.15 | 1230 | 2.37 | | |
| 2250 | 560 | 0.55 | 619 | 0.71 | 681 | 0.86 | 748 | 1.00 | 817 | 1.14 | 882 | 1.27 | 939 | 1.41 | 991 | 1.57 | 1041 | 1.74 | 1090 | 1.93 | 1140 | 2.13 | 1190 | 2.35 | 1241 | 2.57 | | |
| 2500 | 579 | 0.68 | 637 | 0.83 | 699 | 0.98 | 766 | 1.12 | 834 | 1.26 | 897 | 1.41 | 953 | 1.57 | 1005 | 1.74 | 1054 | 1.92 | 1103 | 2.12 | 1152 | 2.33 | 1202 | 2.55 | 1254 | 2.79 | | |
| 2750 | 599 | 0.81 | 657 | 0.97 | 719 | 1.11 | 785 | 1.25 | 851 | 1.41 | 913 | 1.57 | 968 | 1.74 | 1020 | 1.93 | 1068 | 2.13 | 1116 | 2.34 | 1165 | 2.56 | 1215 | 2.78 | 1268 | 3.01 | | |
| 3000 | 620 | 0.95 | 678 | 1.11 | 741 | 1.25 | 806 | 1.40 | 870 | 1.58 | 930 | 1.75 | 985 | 1.94 | 1036 | 2.14 | 1084 | 2.36 | 1131 | 2.58 | 1180 | 2.80 | 1230 | 3.02 | 1283 | 3.26 | | |
| 3250 | 643 | 1.10 | 701 | 1.26 | 764 | 1.41 | 828 | 1.57 | 891 | 1.76 | 950 | 1.95 | 1003 | 2.16 | 1053 | 2.38 | 1100 | 2.61 | 1148 | 2.83 | 1196 | 3.06 | 1246 | 3.29 | 1299 | 3.52 | | |
| 3500 | 667 | 1.26 | 726 | 1.43 | 788 | 1.58 | 851 | 1.77 | 913 | 1.97 | 970 | 2.17 | 1023 | 2.41 | 1071 | 2.65 | 1118 | 2.88 | 1165 | 3.11 | 1213 | 3.33 | 1264 | 3.57 | 1317 | 3.81 | | |
| 3750 | 693 | 1.44 | 752 | 1.61 | 813 | 1.78 | 876 | 1.98 | 936 | 2.20 | 992 | 2.43 | 1043 | 2.68 | 1091 | 2.93 | 1137 | 3.17 | 1183 | 3.40 | 1232 | 3.64 | 1284 | 3.88 | 1338 | 4.13 | | |
| 4000 | 720 | 1.65 | 779 | 1.82 | 840 | 2.00 | 902 | 2.22 | 961 | 2.46 | 1015 | 2.71 | 1064 | 2.98 | 1111 | 3.24 | 1156 | 3.48 | 1203 | 3.72 | 1253 | 3.96 | 1305 | 4.22 | 1359 | 4.48 | | |
| 4250 | 748 | 1.86 | 807 | 2.04 | 868 | 2.24 | 929 | 2.48 | 986 | 2.75 | 1038 | 3.02 | 1086 | 3.30 | 1132 | 3.57 | 1177 | 3.81 | 1224 | 4.05 | 1274 | 4.31 | 1327 | 4.57 | 1382 | 4.85 | | |
| 4500 | 778 | 2.09 | 837 | 2.28 | 898 | 2.51 | 957 | 2.78 | 1012 | 3.07 | 1062 | 3.37 | 1108 | 3.65 | 1154 | 3.92 | 1199 | 4.17 | 1247 | 4.41 | 1297 | 4.67 | 1350 | 4.94 | 1405 | 5.22 | | |
| 4750 | 809 | 2.34 | 868 | 2.56 | 929 | 2.82 | 986 | 3.12 | 1038 | 3.43 | 1087 | 3.74 | 1132 | 4.03 | 1177 | 4.29 | 1223 | 4.54 | 1270 | 4.79 | 1321 | 5.04 | 1374 | 5.31 | 1428 | 5.58 | | |
| 5000 | 841 | 2.62 | 901 | 2.87 | 960 | 3.17 | 1015 | 3.50 | 1065 | 3.83 | 1112 | 4.14 | 1157 | 4.43 | 1201 | 4.69 | 1247 | 4.94 | 1295 | 5.18 | 1345 | 5.42 | 1398 | 5.68 | --- | --- | | |
| 5250 | 875 | 2.93 | 935 | 3.23 | 992 | 3.56 | 1044 | 3.91 | 1092 | 4.26 | 1138 | 4.57 | 1182 | 4.85 | 1226 | 5.10 | 1272 | 5.34 | 1320 | 5.57 | --- | --- | --- | --- | --- | --- | | |
| 5500 | 911 | 3.30 | 969 | 3.63 | 1024 | 4.00 | 1074 | 4.37 | 1120 | 4.71 | 1165 | 5.02 | 1208 | 5.29 | 1253 | 5.53 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |
| 5750 | 948 | 3.71 | 1004 | 4.08 | 1056 | 4.48 | 1104 | 4.85 | 1148 | 5.19 | 1192 | 5.49 | 1235 | 5.74 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |
| 6000 | 985 | 4.18 | 1039 | 4.59 | 1088 | 5.00 | 1134 | 5.37 | 1177 | 5.69 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |
| 6250 | 1022 | 4.70 | 1073 | 5.14 | 1120 | 5.54 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |

BLOWER DATA

FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS

| Nominal hp | Maximum hp | Drive Kit Number | RPM Range |
|------------|------------|------------------|-------------|
| 2 | 2.3 | 1 | 590 - 890 |
| 2 | 2.3 | 2 | 800 - 1105 |
| 2 | 2.3 | 3 | 795 - 1195 |
| 3 | 3.45 | 4 | 730 - 970 |
| 3 | 3.45 | 5 | 940 - 1200 |
| 3 | 3.45 | 6 | 1015 - 1300 |
| 5 | 5.75 | 10 | 900 - 1135 |
| 5 | 5.75 | 11 | 1040 - 1315 |
| 5 | 5.75 | 12 | 1125 - 1425 |

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. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

NOTE – Units equipped with Single Zone VAV Supply Fan option are limited to a motor service factor of 1.0.

POWER EXHAUST FAN PERFORMANCE

| Return Air System Static Pressure in. w.g. | Air Volume Exhausted cfm |
|---|-----------------------------|
| 0 | 3575 |
| 0.05 | 3405 |
| 0.10 | 3550 |
| 0.15 | 3245 |
| 0.20 | 3115 |
| 0.25 | 3020 |
| 0.30 | 2900 |
| 0.35 | 2785 |

FACTORY INSTALLED OPTIONS/FIELD INSTALLED ACCESSORY AIR RESISTANCE - in. w.g.

| Air Volume cfm | Wet Indoor Coil | | Electric Heat | Economizer | Filters | |
|----------------|-----------------|----------|---------------|------------|---------|---------|
| | 092 | 102, 120 | | | MERV 8 | MERV 13 |
| 1750 | 0.03 | 0.04 | 0.03 | 0.03 | 0.01 | 0.03 |
| 2000 | 0.04 | 0.05 | 0.03 | 0.05 | 0.01 | 0.03 |
| 2250 | 0.05 | 0.06 | 0.04 | 0.06 | 0.01 | 0.04 |
| 2500 | 0.05 | 0.07 | 0.04 | 0.08 | 0.01 | 0.05 |
| 2750 | 0.06 | 0.08 | 0.05 | 0.09 | 0.02 | 0.05 |
| 3000 | 0.07 | 0.09 | 0.06 | 0.11 | 0.02 | 0.06 |
| 3250 | 0.08 | 0.10 | 0.06 | 0.13 | 0.02 | 0.06 |
| 3500 | 0.09 | 0.11 | 0.09 | 0.15 | 0.03 | 0.07 |
| 3750 | 0.10 | 0.13 | 0.09 | 0.17 | 0.03 | 0.08 |
| 4000 | 0.11 | 0.14 | 0.09 | 0.19 | 0.04 | 0.08 |
| 4250 | 0.13 | 0.15 | 0.13 | 0.21 | 0.04 | 0.09 |
| 4500 | 0.14 | 0.17 | 0.14 | 0.24 | 0.04 | 0.09 |
| 4750 | 0.15 | 0.18 | 0.17 | 0.26 | 0.05 | 0.10 |
| 5000 | 0.16 | 0.20 | 0.20 | 0.29 | 0.06 | 0.10 |
| 5250 | 0.17 | 0.22 | 0.22 | 0.32 | 0.06 | 0.11 |
| 5500 | 0.19 | 0.23 | 0.25 | 0.34 | 0.07 | 0.12 |
| 5750 | 0.20 | 0.25 | 0.31 | 0.37 | 0.07 | 0.12 |
| 6000 | 0.22 | 0.27 | 0.33 | 0.40 | 0.08 | 0.13 |

BLOWER DATA

CEILING DIFFUSERS AIR RESISTANCE - in. w.g.

| Unit Size | RTD11 Step-Down Diffuser | | | FD11 Flush Diffuser | |
|------------------|--------------------------|-------------|---------------------|---------------------|-----------------------|
| | Air Volume cfm | 2 Ends Open | 1 Side, 2 Ends Open | | All Ends & Sides Open |
| 092 Models | 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 |
| | 3800 | 0.73 | 0.63 | 0.57 | 0.51 |
| 102 & 120 Models | 3600 | 0.36 | 0.28 | 0.23 | 0.15 |
| | 3800 | 0.40 | 0.32 | 0.26 | 0.18 |
| | 4000 | 0.44 | 0.36 | 0.29 | 0.21 |
| | 4200 | 0.49 | 0.40 | 0.33 | 0.24 |
| | 4400 | 0.54 | 0.44 | 0.37 | 0.27 |
| | 4600 | 0.60 | 0.49 | 0.42 | 0.31 |
| | 4800 | 0.65 | 0.53 | 0.46 | 0.35 |
| | 5000 | 0.69 | 0.58 | 0.50 | 0.39 |
| | 5200 | 0.75 | 0.62 | 0.54 | 0.43 |

CEILING DIFFUSER AIR THROW DATA

| Model No. | Air Volume | ¹ Effective Throw Range | |
|-----------------|------------|------------------------------------|------------|
| | | RTD11 Step-Down | FD11 Flush |
| | cfm | ft. | ft. |
| 092 Models | 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 |
| 102, 120 Models | 3600 | 25 - 33 | 22 - 29 |
| | 3800 | 27 - 35 | 22 - 30 |
| | 4000 | 29 - 37 | 24 - 33 |
| | 4200 | 32 - 40 | 26 - 35 |
| | 4400 | 34 - 42 | 28 - 37 |

¹ Throw is the horizontal or vertical distance an air stream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 50 ft. per minute. Four sides open.

ELECTRICAL/ELECTRIC HEAT DATA

7.5 TON

7.5 TON STANDARD EFFICIENCY

ZHA092S4

| ¹ Voltage - 60hz | | 208/230V - 3 Ph | | | 460V - 3 Ph | | | 575V - 3 Ph | | |
|---|-------------------------------|-----------------|------|------|-------------|-----|-----|-------------|-----|-----|
| Compressor 1 | Rated Load Amps | 13.5 | | | 8 | | | 5 | | |
| | Locked Rotor Amps | 109 | | | 59 | | | 40 | | |
| Compressor 2 | Rated Load Amps | 8.7 | | | 4 | | | 3.6 | | |
| | Locked Rotor Amps | 70 | | | 31 | | | 27 | | |
| Outdoor Fan Motors (2) | Full Load Amps | 2.4 | | | 1.3 | | | 1.0 | | |
| | (total) | (4.8) | | | (2.6) | | | (2.0) | | |
| Power Exhaust (2) 0.5 HP | Full Load Amps | 1.5 | | | 0.6 | | | 0.6 | | |
| | (total) | (3.0) | | | (1.2) | | | (1.2) | | |
| Indoor Blower Motor | Horsepower | 2 | 3 | 5 | 2 | 3 | 5 | 2 | 3 | 5 |
| | Full Load Amps | 7.5 | 10.6 | 16.7 | 3.4 | 4.8 | 7.6 | 2.7 | 3.9 | 6.1 |
| ² Maximum Overcurrent Protection | Unit Only | 50 | 50 | 60 | 25 | 25 | 30 | 15 | 20 | 20 |
| | With (2) 0.5 HP Power Exhaust | 50 | 50 | 60 | 25 | 30 | 30 | 20 | 20 | 25 |
| ³ Minimum Circuit Ampacity | Unit Only | 38 | 41 | 48 | 20 | 22 | 25 | 15 | 16 | 19 |
| | With (2) 0.5 HP Power Exhaust | 41 | 44 | 51 | 22 | 23 | 26 | 16 | 17 | 20 |

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 | ⁴ 60 | 70 | 70 | 70 | 80 | 80 | 35 | 35 | 40 | 25 | 25 | 30 |
| | | 15 kW | ⁴ 80 | 90 | 90 | 90 | ⁴ 90 | 100 | 45 | 45 | 50 | 35 | 35 | 40 |
| | | 22.5 kW | ⁴ 100 | 110 | ⁴ 100 | 110 | ⁴ 110 | 125 | 60 | 60 | 60 | 45 | 45 | 50 |
| | | 30 kW | ⁴ 125 | 150 | ⁴ 125 | 150 | 150 | 150 | 70 | 70 | 70 | 60 | 60 | 60 |
| | | 45 kW | 175 | 175 | ⁴ 175 | 200 | ⁴ 175 | 200 | 90 | 90 | 100 | 70 | 70 | 80 |
| ³ Minimum Circuit Ampacity | Unit+ Electric Heat | 7.5 kW | 58 | 61 | 61 | 64 | 68 | 71 | 32 | 33 | 36 | 24 | 25 | 28 |
| | | 15 kW | 77 | 83 | 81 | 87 | 87 | 93 | 43 | 44 | 47 | 33 | 34 | 37 |
| | | 22.5 kW | 97 | 106 | 100 | 109 | 107 | 116 | 54 | 56 | 59 | 42 | 43 | 46 |
| | | 30 kW | 117 | 129 | 120 | 132 | 127 | 139 | 66 | 67 | 70 | 51 | 52 | 55 |
| | | 45 kW | 156 | 174 | 159 | 177 | 166 | 184 | 88 | 90 | 92 | 69 | 70 | 73 |
| ² Maximum Overcurrent Protection | Unit+ Electric Heat and (2) 0.5 HP Power Exhaust | 7.5 kW | 70 | 70 | 70 | 70 | 80 | 80 | 35 | 35 | 40 | 25 | 30 | 30 |
| | | 15 kW | ⁴ 80 | 90 | 90 | 90 | ⁴ 90 | 100 | 45 | 50 | 50 | 35 | 35 | 40 |
| | | 22.5 kW | ⁴ 100 | 110 | ⁴ 110 | 125 | ⁴ 110 | 125 | 60 | 60 | 60 | 45 | 45 | 50 |
| | | 30 kW | ⁴ 125 | 150 | ⁴ 125 | 150 | 150 | 150 | 70 | 70 | 80 | 60 | 60 | 60 |
| | | 45 kW | ⁴ 175 | 200 | ⁴ 175 | 200 | ⁴ 175 | 200 | 90 | 100 | 100 | 70 | 80 | 80 |
| ³ Minimum Circuit Ampacity | Unit+ Electric Heat and (2) 0.5 HP Power Exhaust | 7.5 kW | 61 | 64 | 64 | 67 | 71 | 74 | 33 | 34 | 37 | 25 | 26 | 29 |
| | | 15 kW | 80 | 86 | 84 | 90 | 90 | 96 | 44 | 46 | 48 | 34 | 35 | 38 |
| | | 22.5 kW | 100 | 109 | 103 | 112 | 110 | 119 | 56 | 57 | 60 | 43 | 45 | 47 |
| | | 30 kW | 120 | 132 | 123 | 135 | 130 | 142 | 67 | 68 | 71 | 52 | 54 | 56 |
| | | 45 kW | 159 | 177 | 162 | 180 | 169 | 187 | 89 | 91 | 94 | 70 | 72 | 74 |

ELECTRIC HEAT ACCESSORIES

| | | | | | | | | | | | | | |
|-----------------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Unit Fuse Block | Unit Only | 11M12 | 11M12 | 11M12 | 11M12 | 11M12 | 11M12 | 11M10 | 11M10 | 11M10 | 11M09 | 11M09 | 11M09 |
| | Unit + Power Exhaust | 11M12 | 11M12 | 11M12 | 11M12 | 11M13 | 11M13 | 11M10 | 11M10 | 11M11 | 11M09 | 11M09 | 11M10 |

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.

⁴ Factory installed circuit breaker not available.

ELECTRICAL/ELECTRIC HEAT DATA

8.5 TON

8.5 TON STANDARD EFFICIENCY

ZHA102S4

| ¹ Voltage - 60hz | | 208/230V - 3 Ph | | | 460V - 3 Ph | | | 575V - 3 Ph | | |
|---|-------------------------------|-----------------|------|------|-------------|-----|-----|-------------|-----|-----|
| Compressor 1 | Rated Load Amps | 13.5 | | | 8 | | | 5 | | |
| | Locked Rotor Amps | 109 | | | 59 | | | 40 | | |
| Compressor 2 | Rated Load Amps | 11 | | | 5.5 | | | 4.7 | | |
| | Locked Rotor Amps | 86 | | | 37 | | | 34 | | |
| Outdoor Fan Motors (2) | Full Load Amps | 2.4 | | | 1.3 | | | 1.0 | | |
| | (total) | (4.8) | | | (2.6) | | | (2.0) | | |
| Power Exhaust (2) 0.5 HP | Full Load Amps | 1.5 | | | 0.6 | | | 0.6 | | |
| | (total) | (3.0) | | | (1.2) | | | (1.2) | | |
| Indoor Blower Motor | Horsepower | 2 | 3 | 5 | 2 | 3 | 5 | 2 | 3 | 5 |
| | Full Load Amps | 7.5 | 10.5 | 16.7 | 3.4 | 4.8 | 7.6 | 2.7 | 3.9 | 6.1 |
| ² Maximum Overcurrent Protection | Unit Only | 50 | 50 | 60 | 25 | 30 | 30 | 20 | 20 | 25 |
| | With (2) 0.5 HP Power Exhaust | 50 | 50 | 60 | 30 | 30 | 30 | 20 | 20 | 25 |
| ³ Minimum Circuit Ampacity | Unit Only | 41 | 44 | 51 | 22 | 23 | 26 | 16 | 17 | 20 |
| | With (2) 0.5 HP Power Exhaust | 44 | 47 | 54 | 23 | 25 | 27 | 17 | 19 | 21 |

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 | ⁴ 60 | 70 | 70 | 70 | 80 | 80 | 35 | 35 | 40 | 25 | 30 | 30 |
| | | 15 kW | ⁴ 80 | 90 | 90 | 90 | ⁴ 90 | 100 | 45 | 50 | 50 | 35 | 35 | 40 |
| | | 22.5 kW | ⁴ 100 | 110 | ⁴ 110 | 125 | ⁴ 110 | 125 | 60 | 60 | 60 | 45 | 45 | 50 |
| | | 30 kW | ⁴ 125 | 150 | ⁴ 125 | 150 | 150 | 150 | 70 | 70 | 80 | 60 | 60 | 60 |
| | | 45 kW | ⁴ 175 | 200 | ⁴ 175 | 200 | ⁴ 175 | 200 | 90 | 100 | 100 | 70 | 80 | 80 |
| ³ Minimum Circuit Ampacity | Unit+ Electric Heat | 7.5 kW | 60 | 63 | 63 | 66 | 70 | 73 | 33 | 35 | 37 | 25 | 26 | 29 |
| | | 15 kW | 80 | 86 | 83 | 89 | 90 | 96 | 45 | 46 | 49 | 34 | 35 | 38 |
| | | 22.5 kW | 99 | 108 | 102 | 111 | 109 | 118 | 56 | 57 | 60 | 43 | 44 | 47 |
| | | 30 kW | 119 | 131 | 122 | 134 | 129 | 141 | 67 | 69 | 71 | 52 | 53 | 56 |
| | | 45 kW | 158 | 176 | 161 | 179 | 168 | 186 | 90 | 91 | 94 | 70 | 71 | 74 |
| ² Maximum Overcurrent Protection | Unit+ Electric Heat and (2) 0.5 HP Power Exhaust | 7.5 kW | 70 | 70 | 70 | 70 | 80 | 80 | 35 | 40 | 40 | 30 | 30 | 30 |
| | | 15 kW | 90 | 90 | ⁴ 90 | 100 | 100 | 100 | 50 | 50 | 50 | 35 | 40 | 40 |
| | | 22.5 kW | ⁴ 110 | 125 | ⁴ 110 | 125 | 125 | 125 | 60 | 60 | 70 | 45 | 50 | 50 |
| | | 30 kW | ⁴ 125 | 150 | ⁴ 125 | 150 | 150 | 150 | 70 | 70 | 80 | 60 | 60 | 60 |
| | | 45 kW | ⁴ 175 | 200 | ⁴ 175 | 200 | ⁴ 175 | 200 | 100 | 100 | 100 | 80 | 80 | 80 |
| ³ Minimum Circuit Ampacity | Unit+ Electric Heat and (2) 0.5 HP Power Exhaust | 7.5 kW | 63 | 66 | 66 | 69 | 73 | 76 | 34 | 36 | 39 | 26 | 28 | 30 |
| | | 15 kW | 83 | 89 | 86 | 92 | 93 | 99 | 46 | 47 | 50 | 35 | 37 | 39 |
| | | 22.5 kW | 102 | 111 | 105 | 114 | 112 | 121 | 57 | 58 | 61 | 44 | 46 | 48 |
| | | 30 kW | 122 | 134 | 125 | 137 | 132 | 144 | 68 | 70 | 73 | 53 | 55 | 57 |
| | | 45 kW | 161 | 179 | 164 | 182 | 171 | 189 | 91 | 92 | 95 | 71 | 73 | 75 |

ELECTRIC HEAT ACCESSORIES

| | | | | | | | | | | | | | |
|-----------------|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Unit Fuse Block | Unit Only | 11M12 | 11M12 | 11M12 | 11M12 | 11M12 | 11M12 | 11M10 | 11M10 | 11M10 | 11M09 | 11M09 | 11M10 |
| | Unit + Power Exhaust | 11M12 | 11M12 | 11M12 | 11M12 | 11M13 | 11M13 | 11M10 | 11M10 | 11M11 | 11M09 | 11M10 | 11M10 |

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

10 TON

10 TON STANDARD EFFICIENCY

ZHA120S4

| ¹ Voltage - 60hz | | 208/230V - 3 Ph | | | 460V - 3 Ph | | | 575V - 3 Ph | | |
|---|-------------------------------|-----------------|------|------|-------------|-----|-----|-------------|-----|-----|
| Compressor 1 | Rated Load Amps | 15.6 | | | 7.8 | | | 5.8 | | |
| | Locked Rotor Amps | 110 | | | 52 | | | 38.9 | | |
| Compressor 2 | Rated Load Amps | 15.6 | | | 7.8 | | | 5.8 | | |
| | Locked Rotor Amps | 110 | | | 52 | | | 38.9 | | |
| Outdoor Fan Motors (2) | Full Load Amps | 3.0 | | | 1.5 | | | 1.2 | | |
| | (total) | (6.0) | | | (3.0) | | | (2.4) | | |
| Power Exhaust (2) 0.5 HP | Full Load Amps | 1.5 | | | 0.6 | | | 0.6 | | |
| | (total) | (3.0) | | | (1.2) | | | (1.2) | | |
| Indoor Blower Motor | Horsepower | 2 | 3 | 5 | 2 | 3 | 5 | 2 | 3 | 5 |
| | Full Load Amps | 7.5 | 10.6 | 16.7 | 3.4 | 4.8 | 7.6 | 2.7 | 3.9 | 6.1 |
| ² Maximum Overcurrent Protection | Unit Only | 60 | 60 | 70 | 30 | 30 | 35 | 20 | 25 | 25 |
| | With (2) 0.5 HP Power Exhaust | 60 | 70 | 70 | 30 | 30 | 35 | 25 | 25 | 25 |
| ³ Minimum Circuit Ampacity | Unit Only | 49 | 52 | 59 | 24 | 26 | 29 | 19 | 20 | 22 |
| | With (2) 0.5 HP Power Exhaust | 52 | 55 | 62 | 26 | 27 | 30 | 20 | 21 | 23 |

ELECTRIC HEAT DATA

| Electric Heat Voltage | | | 208V | 240V | 208V | 240V | 208V | 240V | 480V | 480V | 480V | 600V | 600V | 600V |
|---|-------------|--|------------------|------|------------------|------|------------------|------|------|------|------|------|------|------|
| ² Maximum Overcurrent Protection | Unit+ 15 kW | Electric Heat | ⁴ 90 | 100 | 100 | 100 | ⁴ 100 | 110 | 50 | 50 | 60 | 40 | 40 | 40 |
| | 22.5 kW | | ⁴ 110 | 125 | 125 | 125 | ⁴ 125 | 150 | 60 | 60 | 70 | 50 | 50 | 50 |
| | 30 kW | | 150 | 150 | 150 | 150 | 150 | 150 | 70 | 80 | 80 | 60 | 60 | 60 |
| | 45 kW | | ⁴ 175 | 200 | ⁴ 175 | 200 | 200 | 200 | 100 | 100 | 100 | 80 | 80 | 80 |
| | 60 kW | | ⁴ 175 | 200 | 200 | 200 | ⁴ 200 | 225 | 100 | 100 | 110 | 80 | 80 | 80 |
| ³ Minimum Circuit Ampacity | Unit+ 15 kW | Electric Heat | 88 | 94 | 91 | 97 | 98 | 104 | 47 | 48 | 51 | 37 | 38 | 40 |
| | 22.5 kW | | 108 | 117 | 111 | 120 | 117 | 126 | 58 | 60 | 62 | 46 | 47 | 49 |
| | 30 kW | | 127 | 139 | 130 | 142 | 137 | 149 | 70 | 71 | 74 | 55 | 56 | 58 |
| | 45 kW | | 166 | 184 | 169 | 188 | 176 | 194 | 92 | 94 | 96 | 73 | 74 | 76 |
| | 60 kW | | 174 | 193 | 177 | 197 | 184 | 203 | 97 | 98 | 101 | 76 | 78 | 80 |
| ² Maximum Overcurrent Protection | Unit+ 15 kW | Electric Heat and (2) 0.5 HP Power Exhaust | 100 | 100 | 100 | 100 | 110 | 110 | 50 | 50 | 60 | 40 | 40 | 45 |
| | 22.5 kW | | 125 | 125 | 125 | 125 | ⁴ 125 | 150 | 60 | 70 | 70 | 50 | 50 | 50 |
| | 30 kW | | 150 | 150 | 150 | 150 | ⁴ 150 | 175 | 80 | 80 | 80 | 60 | 60 | 60 |
| | 45 kW | | ⁴ 175 | 200 | ⁴ 175 | 200 | 200 | 200 | 100 | 100 | 100 | 80 | 80 | 80 |
| | 60 kW | | 200 | 200 | 200 | 200 | ⁴ 200 | 225 | 100 | 100 | 110 | 80 | 80 | 90 |
| ³ Minimum Circuit Ampacity | Unit+ 15 kW | Electric Heat and (2) 0.5 HP Power Exhaust | 91 | 97 | 94 | 100 | 101 | 107 | 48 | 50 | 52 | 38 | 39 | 41 |
| | 22.5 kW | | 111 | 120 | 114 | 123 | 120 | 129 | 59 | 61 | 64 | 47 | 48 | 50 |
| | 30 kW | | 130 | 142 | 133 | 145 | 140 | 152 | 71 | 72 | 75 | 56 | 57 | 59 |
| | 45 kW | | 169 | 187 | 172 | 191 | 179 | 197 | 93 | 95 | 98 | 74 | 75 | 77 |
| | 60 kW | | 177 | 196 | 180 | 200 | 187 | 206 | 98 | 99 | 102 | 78 | 79 | 81 |

ELECTRIC HEAT ACCESSORIES

| | | | | | | | | | | | | | |
|-----------------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Unit Fuse Block | Unit Only | 11M12 | 11M12 | 11M12 | 11M12 | 11M12 | 11M12 | 11M10 | 11M10 | 11M11 | 11M09 | 11M09 | 11M10 |
| | Unit + Power Exhaust | 11M12 | 11M12 | 11M12 | 11M12 | 11M13 | 11M13 | 11M11 | 11M11 | 11M11 | 11M09 | 11M10 | 11M10 |

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.

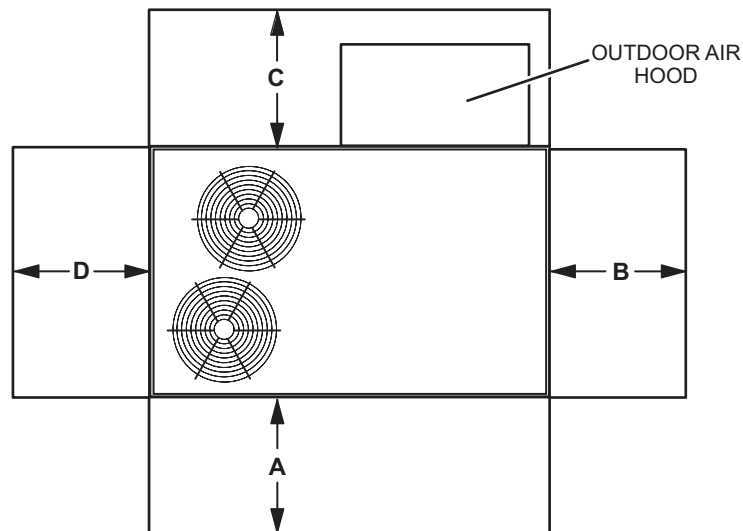
³ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRIC HEAT CAPACITIES

| Volts Input | 7.5 kW | | | 15 kW | | | 22.5 kW | | | 30 kW | | | 45 kW | | | 60 kW | | |
|-------------|----------|-------------|---------------|----------|-------------|---------------|----------|-------------|---------------|----------|-------------|---------------|----------|-------------|---------------|----------|-------------|---------------|
| | kW Input | Btuh Output | No. of Stages | kW Input | Btuh Output | No. of Stages | kW Input | Btuh Output | No. of Stages | kW Input | Btuh Output | No. of Stages | kW Input | Btuh Output | No. of Stages | kW Input | Btuh Output | No. of Stages |
| 208 | 5.6 | 19,100 | 1 | 11.3 | 38,600 | 1 | 16.9 | 57,700 | 1 | 22.5 | 76,800 | 1 | 33.8 | 115,300 | 1 | 45.0 | 153,600 | 1 |
| 220 | 6.3 | 21,500 | 1 | 12.6 | 43,000 | 1 | 18.9 | 64,500 | 1 | 25.2 | 86,000 | 1 | 37.8 | 129,000 | 1 | 50.4 | 172,000 | 1 |
| 230 | 6.9 | 23,600 | 1 | 13.8 | 47,100 | 1 | 20.7 | 70,700 | 1 | 27.5 | 93,900 | 1 | 41.3 | 141,000 | 1 | 55.1 | 188,000 | 1 |
| 240 | 7.5 | 25,600 | 1 | 15.0 | 51,200 | 1 | 22.5 | 76,800 | 1 | 30.0 | 102,400 | 1 | 45.0 | 153,600 | 1 | 60.0 | 204,800 | 1 |
| 440 | 6.9 | 21,500 | 1 | 12.6 | 43,000 | 1 | 18.9 | 64,500 | 1 | 25.2 | 86,000 | 1 | 37.8 | 129,000 | 1 | 50.4 | 172,000 | 1 |
| 460 | 6.9 | 23,600 | 1 | 13.8 | 47,100 | 1 | 20.7 | 70,700 | 1 | 27.5 | 93,900 | 1 | 41.3 | 141,000 | 1 | 55.1 | 188,000 | 1 |
| 480 | 7.5 | 25,600 | 1 | 15.0 | 51,200 | 1 | 22.5 | 76,800 | 1 | 30.0 | 102,400 | 1 | 45.0 | 153,600 | 1 | 60.0 | 204,800 | 1 |
| 550 | 6.3 | 21,500 | 1 | 12.6 | 43,000 | 1 | 18.9 | 64,500 | 1 | 25.2 | 86,000 | 1 | 37.8 | 129,000 | 1 | 50.4 | 172,000 | 1 |
| 575 | 6.9 | 23,600 | 1 | 13.8 | 47,100 | 1 | 20.7 | 70,700 | 1 | 27.5 | 93,900 | 1 | 41.3 | 141,000 | 1 | 55.1 | 188,000 | 1 |
| 600 | 7.5 | 25,600 | 1 | 15.0 | 51,200 | 1 | 22.5 | 76,800 | 2 | 30.0 | 102,400 | 2 | 45.0 | 153,600 | 2 | 60.0 | 204,800 | 1 |

UNIT CLEARANCES - INCHES (MM)

UNIT WITH ECONOMIZER



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

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

¹ Service Clearance - Required for removal of serviceable parts.

Minimum Operation Clearance - Required clearance for proper unit operation.

OUTDOOR SOUND DATA

| Unit Model Number | 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 | |
| 092, 102 | 76 | 79 | 84 | 83 | 79 | 73 | 66 | 88 |
| 120 | 77 | 80 | 85 | 84 | 79 | 74 | 66 | 88 |

¹ 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).

WEIGHT DATA

| Model Number | Net | | Shipping | |
|----------------|------|-----|----------|-----|
| | lbs. | kg | lbs. | kg |
| 092S Base Unit | 1036 | 470 | 1121 | 508 |
| 092S Max. Unit | 1193 | 541 | 1278 | 580 |
| 102S Base Unit | 1068 | 484 | 1153 | 523 |
| 102S Max. Unit | 1225 | 556 | 1310 | 594 |
| 120S Base Unit | 1126 | 511 | 1211 | 549 |
| 120S Max. Unit | 1290 | 585 | 1375 | 624 |

OPTIONS / ACCESSORIES

| Model Number | Shipping Weight | |
|--|-----------------|----|
| | lbs. | kg |
| CABINET | | |
| Coil/Hail Guard | 50 | 23 |
| CEILING DIFFUSERS | | |
| Step-Down | | |
| RTD11-95 | 88 | 40 |
| RTD11-135 | 205 | 93 |
| Flush | | |
| FD11-95 | 75 | 34 |
| FD11-135 | 174 | 79 |
| ECONOMIZER / OUTDOOR AIR / EXHAUST | | |
| Economizer | | |
| Downflow with Barometric Relief Dampers and Hoods | 90 | 41 |
| Horizontal with Barometric Relief Dampers and Hoods | 95 | 43 |
| Horizontal Low Profile Barometric Relief Dampers with Hood | 8 | 4 |
| Outdoor Air Dampers | | |
| Outdoor Air Damper Section with Hood - Automatic | 44 | 20 |
| Outdoor Air Damper Section with Hood - Manual | 27 | 12 |
| Power Exhaust | | |
| Downflow | 60 | 27 |
| Horizontal | 41 | 19 |
| ELECTRIC HEAT | | |
| 7.5 kW | 90 | 41 |
| 15 kW | 90 | 41 |
| 22.5 kW | 90 | 41 |
| 30 kW | 90 | 41 |
| 45 kW | 90 | 41 |
| 60 kW | 90 | 41 |
| SINGLE ZONE VAV SUPPLY FAN SUPPLY AIR BLOWER OPTION | | |
| Variable Frequency Drive (VFD) and associated components | 10 | 5 |
| ROOF CURBS | | |
| Hybrid Roof Curbs, Downflow | | |
| 8 in. height | 79 | 36 |
| 14 in. height | 104 | 47 |
| 18 in. height | 120 | 54 |
| 24 in. height | 145 | 66 |
| PACKAGING | | |
| LTL Packaging (less than truck load) | 105 | 48 |

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 |
| 092S | 276 | 125 | 315 | 143 | 226 | 103 | 276 | 125 | 240 | 109 | 281 | 127 | 294 | 133 | 321 | 146 | 46.25 | 1174 | 47.25 | 1200 | 27 | 686 | 28 | 711 |
| 102S | 285 | 129 | 324 | 147 | 233 | 106 | 283 | 128 | 248 | 112 | 289 | 131 | 303 | 137 | 330 | 150 | 46.25 | 1174 | 47.25 | 1200 | 27 | 686 | 285 | 711 |
| 120S | 283 | 128 | 322 | 146 | 228 | 103 | 277 | 126 | 274 | 124 | 320 | 145 | 341 | 155 | 372 | 169 | 43.25 | 1099 | 43.25 | 1099 | 26.75 | 679 | 27.75 | 705 |

Base Unit - The unit with NO OPTIONS.

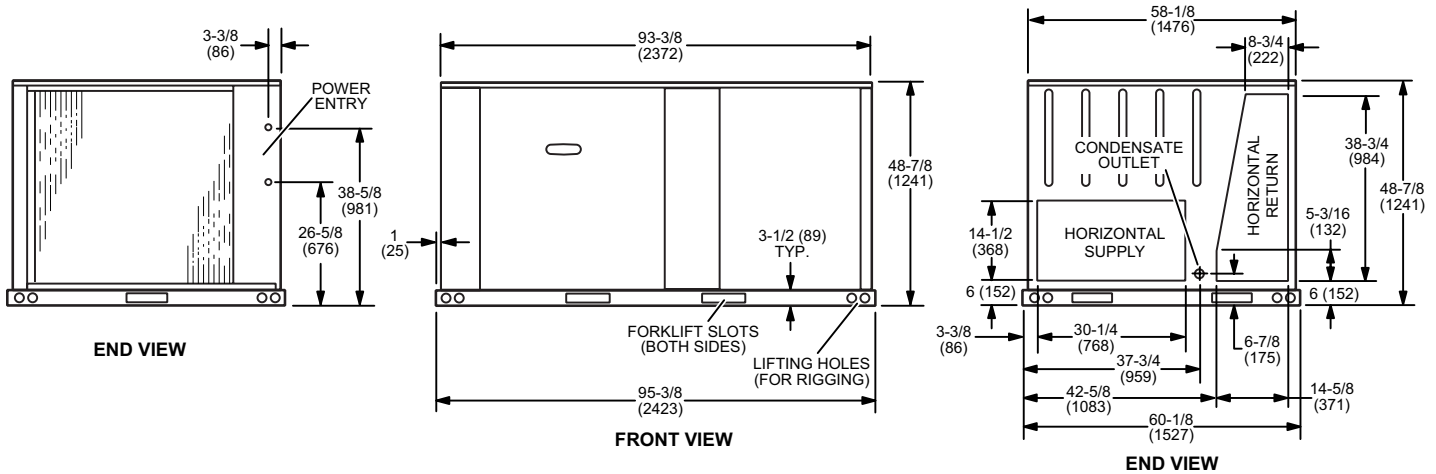
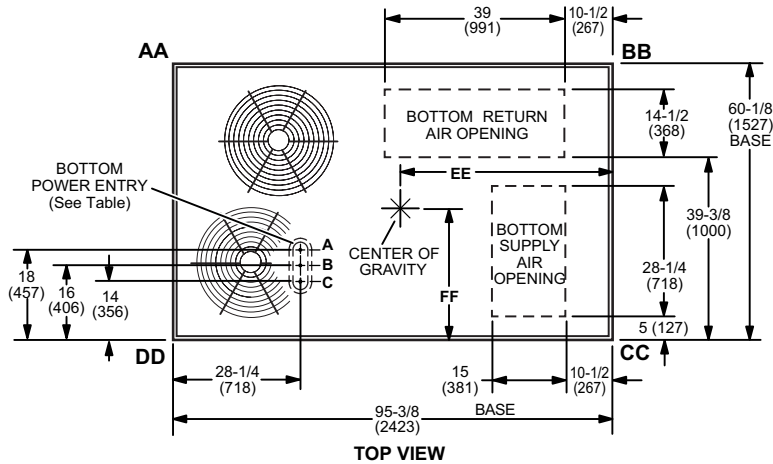
Max. Unit - The unit with ALL OPTIONS Installed. (Economizer, etc.)

BOTTOM POWER ENTRY

Holes required for Optional Bottom Power Entry Kit

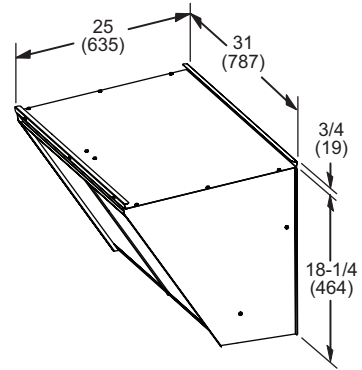
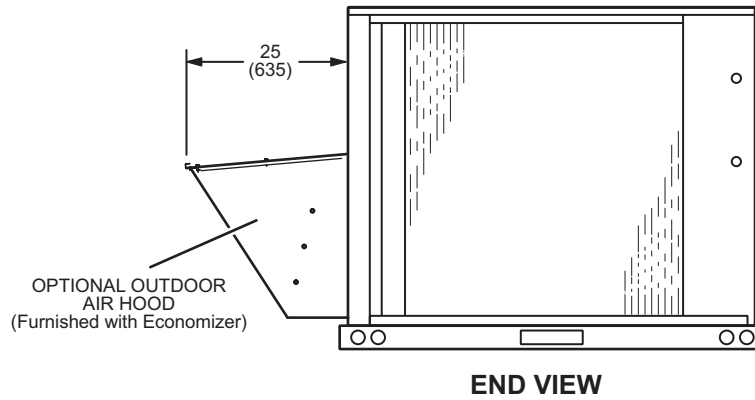
| | Threaded Conduit Fittings (Provided in Kit) | Wire Use | Hole Diameter Required in Unit Base (Max.) |
|----------|---|----------|--|
| A | ¹ 1/2 | ACC | 7/8 (23) |
| B | 1/2 | 24V | 7/8 (23) |
| C | 1-1/4 | POWER | 1-3/4 (44) |

¹ Field provided.

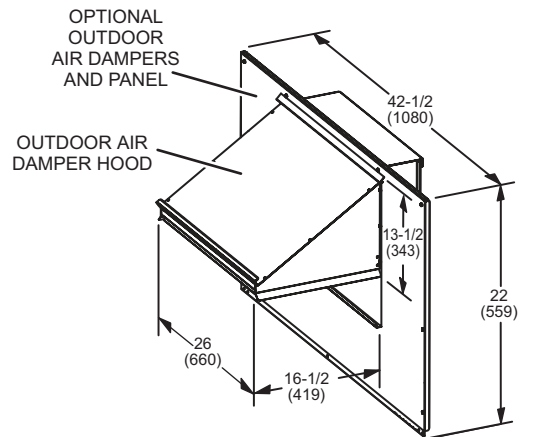
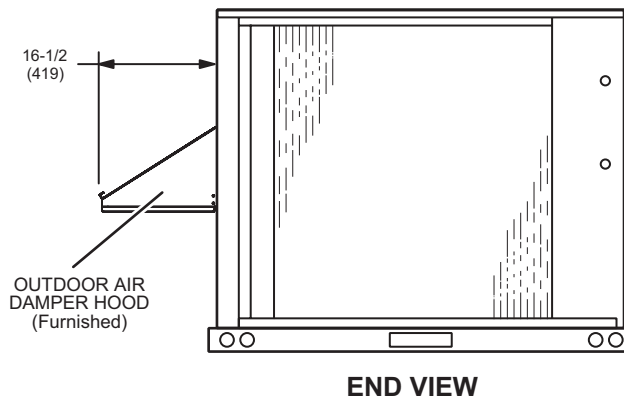


DIMENSIONS - ACCESSORIES - INCHES (MM)

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

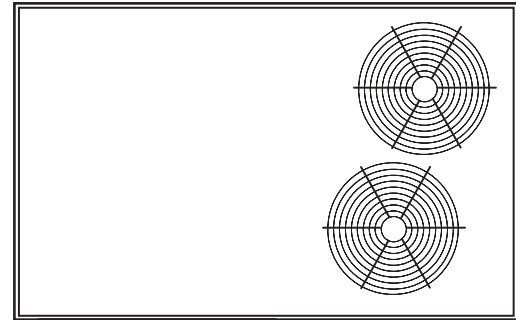


**OUTDOOR AIR DAMPER HOOD DETAIL FOR OPTIONAL MANUAL OR MOTORIZED OUTDOOR AIR DAMPERS
(Downflow or Horizontal Applications)**



DIMENSIONS - ACCESSORIES - INCHES (MM)

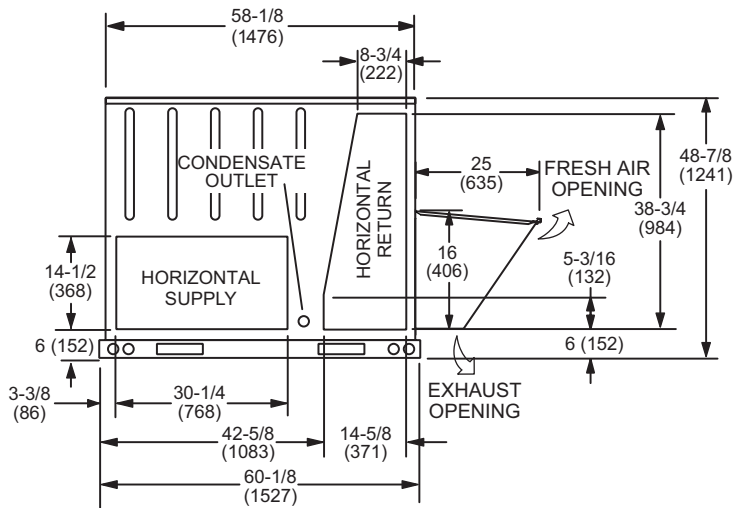
**OUTDOOR AIR HOOD DETAIL WITH OPTIONAL HORIZONTAL ECONOMIZER AND BAROMETRIC RELIEF DAMPERS
(Horizontal Applications)**



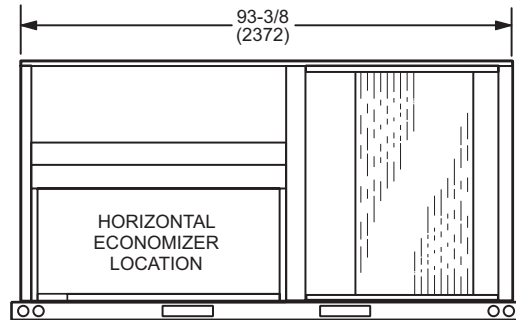
OUTDOOR AIR/
BAROMETRIC
RELIEF HOOD
(Furnished with
Economizer)

31
(787)

TOP VIEW



END VIEW

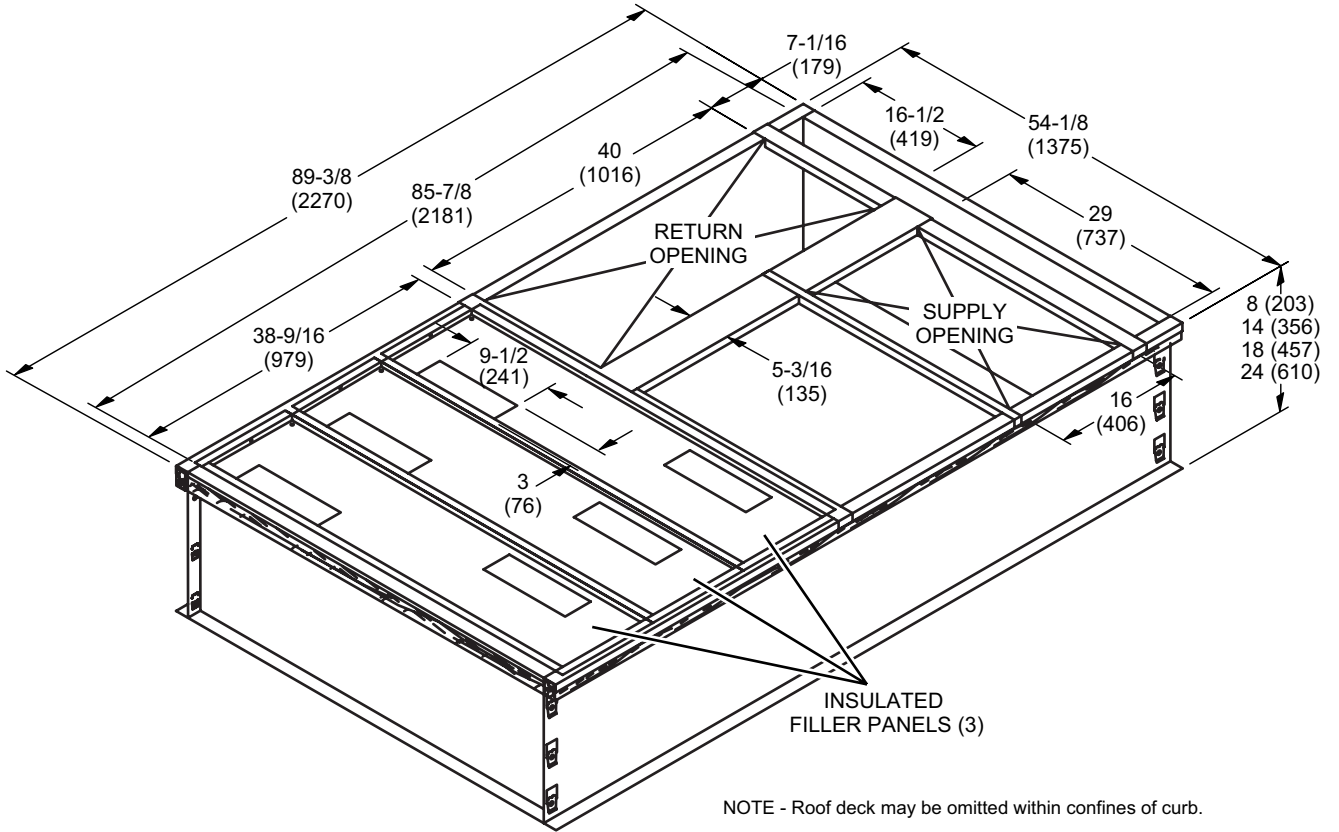


BACK VIEW

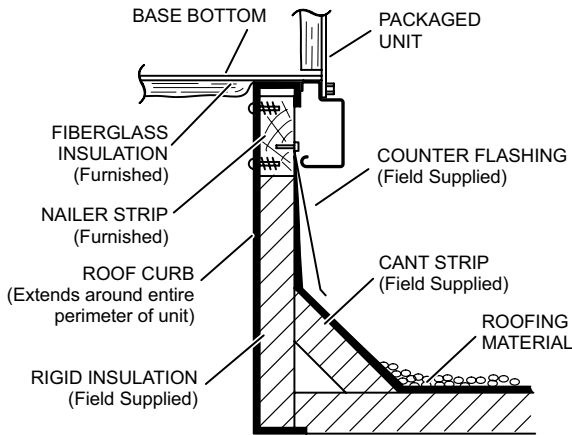
Note - Supply and Return Air Ducts must be supported.

DIMENSIONS - ACCESSORIES - INCHES (MM)

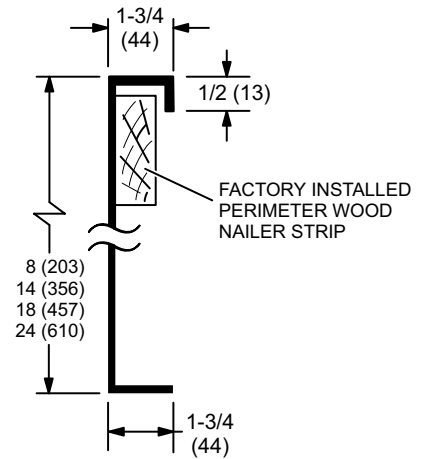
HYBRID CURBS - DOUBLE DUCT OPENING



TYPICAL FLASHING DETAIL FOR ROOF CURB



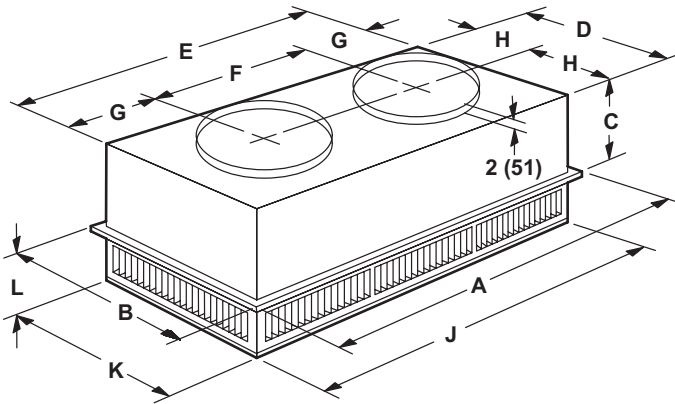
DETAIL ROOF CURB



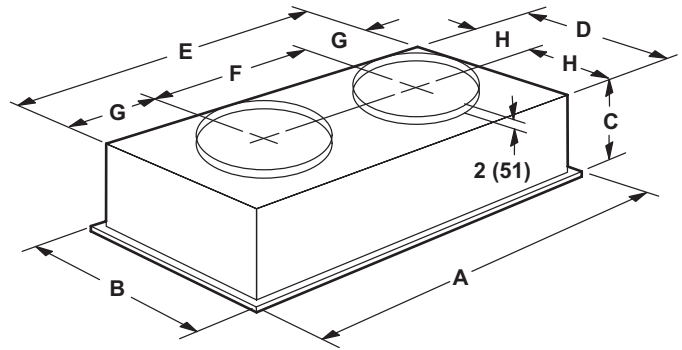
DIMENSIONS - ACCESSORIES - INCHES (MM)

COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

STEP-DOWN CEILING DIFFUSER



FLUSH CEILING DIFFUSER



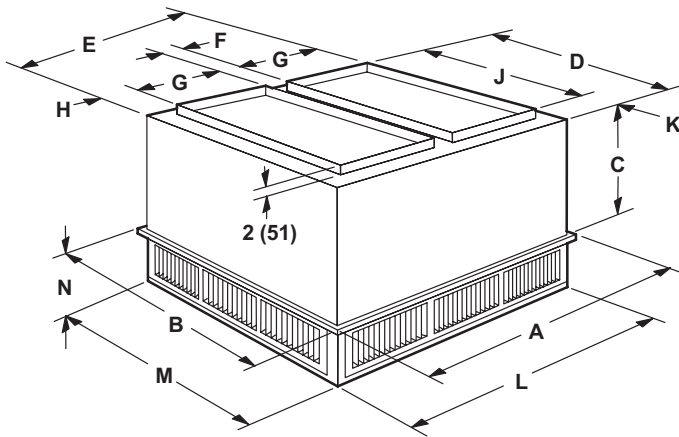
| Model Number | | RTD11-95 |
|--------------|-----|-----------|
| A | in. | 47-5/8 |
| | mm | 1159 |
| B | in. | 29-5/8 |
| | mm | 752 |
| C | in. | 14-3/8 |
| | mm | 365 |
| D | in. | 27-1/2 |
| | mm | 699 |
| E | in. | 45-1/2 |
| | mm | 1158 |
| F | in. | 22-1/2 |
| | mm | 572 |
| G | in. | 11-1/2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

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

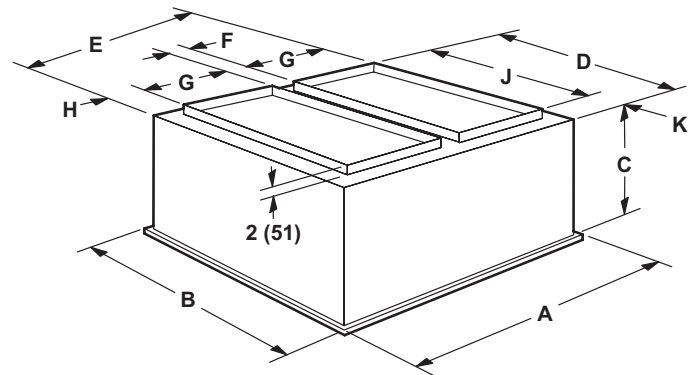
DIMENSIONS - ACCESSORIES - INCHES (MM)

COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

STEP-DOWN CEILING DIFFUSER



FLUSH CEILING DIFFUSER



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

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

REVISIONS

| Section | Description |
|---------------------|---|
| Options/Accessories | Updated model and catalog numbers for both Motorized and Manual Options for Outdoor Air Dampers With Outdoor Air Hood. Shipping weights updated for Outdoor Air Dampers With Outdoor Air Hood. |



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