

REZNOR[®]

Z.62 Series Ventilation Unit

COMMERCIAL / INDUSTRIAL

CAPACITIES

500 - 1,500 CFM

35 - 43 MBH (Heat Pump)

INSTALLATION

Floor Mount (Indoor)

Rooftop or Pad Mount (Outdoor)

FUEL

Electric (Heat Pump)

Visit ReznorHVAC.com for more
information.

C-Z-0514

(Version A)

BACKGROUND

Reznor was founded in 1888 to manufacture the “Reznor” reflector heater, which used a luminous flame gas burner developed by George Reznor. This technological breakthrough was an immediate success and hastened the expansion of gas heating in residential and commercial applications. Technological development and innovation have been the hallmark of Reznor products through the years. The development of the forced air gas unit heater, the modular Thermo-core® heat exchanger, and the high-efficiency, sealed-draft Venturion® unit heater have kept Reznor products at the forefront of technological advances in commercial and industrial gas heating. As a result of this pioneering role in the heating, makeup air, and ventilating equipment field, the products offered today are the most advanced in engineering design to satisfy a wide variety of applications.

FACILITIES

Reznor heaters were first manufactured and sold in Mercer, Pennsylvania (70 miles north of Pittsburgh) in 1888. Over the years, the company has grown and expanded. Today, with sales worldwide, Reznor products are being manufactured at facilities throughout North America and Europe.

PRODUCT SCOPE

Well-equipped engineering laboratories for both product development and testing can be found at many of the manufacturing sites. All domestic lab sites are agency approved.

Reznor Products include a complete line of heating, makeup air and ventilating systems, using gas, oil, hot water/steam, or electric heat sources. Reznor heater catalogs are designed to aid the engineer, architect or contractor in specifying the correct equipment for all standard and special applications. Complete data is presented on unit heaters, duct furnaces, infrared heaters, makeup air systems, pre-engineered custom-designed systems, and evaporative cooling modules. Consult your local Reznor Sales Representative for further assistance in specifying Reznor Equipment for your specific application.

SERVICES

Product service requirements are handled through contractors and/or distributors, with backup from local representatives and factory-based service team. Replacement parts inventories for both warranty and non-warranty requirements are maintained at service centers throughout the country and at the manufacturing facilities.

REZNOR®



Model ZQYRA
Hybrid IAQ Ventilator

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IMPORTANT: This guide is intended to provide specifications and technical information only.

This guide is not intended to be an instruction manual. When installing heating and ventilating equipment, you must check and conform to all local and national building codes. Improper installation of heating equipment could be dangerous. Consult manufacturer’s installation manual for instructions and important warnings.

All specifications subject to change without notice.



Patent Pending



DESCRIPTION

The hybrid Model ZQYRA unit is specifically designed to deliver demand ventilation air in commercial / industrial building applications such as schools, fitness centers, churches, retail outlets, offices, theatres and more. The unit uses its unique heat pump technology and enthalpy wheel combination to condition the fresh air by capturing energy from the exhaust air stream. This methodology results in significantly less energy usage for building ventilation. In addition, the unit's demand based ventilation control system with setup, test routines and fan speed control reduces the complexity normally associated with applying ventilation air systems to buildings.

STANDARD FEATURES

- Modulating direct expansion heat pump system
- Durable total enthalpy wheel (ARI Certified)
- Field convertible vertical or horizontal flanged supply/return air openings
- Outdoor intake & exhaust rain hoods
- MERV 8 filters for outside and return air streams
- Standard 2 year warranty
- Long lasting G90 painted exterior
- Full double wall insulated construction in supply air stream
- Bottom lifting lugs
- Simple user interface to setup and control unit
- Unit mounted display
- Corrosion-proof sloped drain pan
- System alarm and diagnostic functions
- Bottom insulation cover
- Indoor or outdoor installation

OPTIONAL FEATURES

- 208V - 230V/3 & 460v/3 power
- Electronically commutated motor (ECM) - 96% efficiency
- Factory installed isolation dampers
- Unit mounted, factory installed lockable disconnect switch
- Factory supplied remote mounted disconnect switch
- ElectroFin® coil coating
- 16" curb (factory supplied and field assembled)
- Factory or field installed 5kW and 10kW electric heat for extreme weather
- Demand based ventilation control options:
 - ♦ Carbon Dioxide Sensor
 - ♦ Volatile Organic Compound (VOC) sensor & switch
 - ♦ Wall Mounted infrared occupancy switch
 - ♦ Unit or wall mounted time schedule control
 - ♦ Remote mounted unit display
 - ♦ Wall switch, ON/OFF
- BacNet and Lon communication
- 5 and 10 years parts limited extended warranties

TECHNICAL DATA

Model ZQYRA	Size 8	Size 12
Airflow Range	500 - 1100 cfm	900 - 1500 cfm
Supply Fan	Centrifugal fans, backward curve fan - 96% efficient EC motor control, 1" ESP, Speed Control	
Exhaust Fan	Centrifugal fans, backward curve fan - 96% efficient EC motor control, 1" ESP, Speed Control	
	-	Double inlet forward curve blower, 1" E.S.P. w/ adjustable sheaves
DX System	Reverse Cycle Heat pump, R410, Modulating Digital Scroll	
	35 MBH (Nominal 2.8 Ton)	43 MBH (Nominal 3.5 Ton)
	2 ROW/12 FPI (Supply Coil)	3 ROW/16 FPI (Supply Coil)
Energy Recovery	30" Desiccant Wheel, 3" Channel	36" Desiccant Wheel, 3" Channel
	79.3% - 83.1% Effectiveness	77.6% - 83.1% Effectiveness
Filters	2" MERV 8 Filters, OA and Return Air sections	
Power*	208V, 230V & 480V, 3 phase, 60hz	
Unit Weight - lbs. (kg)	858 (389)	1,003 (455)

* Units Tested to AHRI 920 Ventilation Unit Standard and 210/240 Unitary Standard.

Supply/Exhaust Fan Selection and Performance

Standard Efficiency Blower Arrangement (A23)

The supply uses a centrifugal backward curve fan. The exhaust fan is a belt driven forward curve blower with a standard motor with adjustable sheaves. The supply fan uses an ECM with fan efficiency reaching 96%. The control system directly commands the supply fan RPM and allows easy adjustment through the unit mounted display.



Low Static CFM Fan Drive (AME4)

The belt driven forward curve exhaust fan low external static pressure option. Sheave adjustable RPM range of 1000 - 1300 RPM. For use with standard efficiency blower arrangement (A23) only.

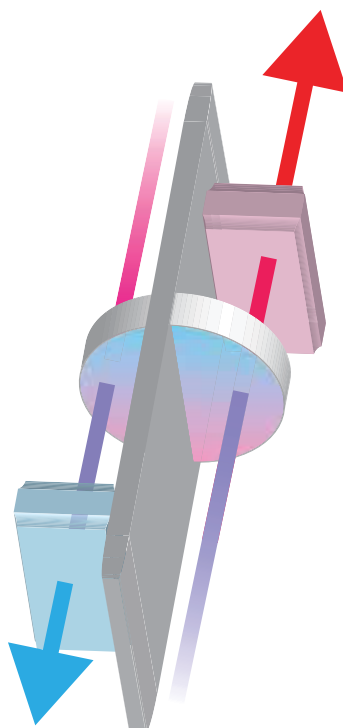
High Static CFM Fan Drive (AME5)

The belt driven forward curve exhaust fan high external static pressure option. Sheave adjustable RPM range of 1300 - 1600 RPM. For use with standard efficiency blower arrangement (A23) only.

High Efficiency & High Static Blower Arrangement (A24)

The supply and exhaust fans use centrifugal backward curve fans. Both fans use ECM with fan efficiency at 96%. The unit control system directly controls both fan RPMs and allows easy adjustment through the unit mounted display.

Model	Supply Air SCFM	Motorized Inlet Damper	Electric Heat	Outdoor Air Hood	External Static Pressure	Total
ZQYRA-8	500	0.01	0.02	0.01		
	600	0.03	0.03	0.01		
	700	0.04	0.03	0.01		
	800	0.06	0.04	0.02		
	900	0.07	0.04	0.02		
	1000	0.09	0.05	0.02		
	1100	0.10	0.05	0.02		
ZQYRA-12	900	0.07	0.05	0.02		
	1000	0.09	0.05	0.02		
	1100	0.10	0.06	0.02		
	1200	0.12	0.06	0.03		
	1300	0.13	0.07	0.03		
	1400	0.15	0.07	0.03		
	1500	0.17	0.07	0.03		



Model ZQYRA-8											
Fan RPM/kW per Total External Static Pressure (Option A24)											
SCFM	0.00	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00
Supply Air	500	764/0.03	983/0.06	1171/0.09	1343/0.13	1488/0.16	1620/0.21	1721/0.25	1836/0.29	1933/0.34	2041/0.38
	600	917/0.05	1110/0.08	1270/0.12	1421/0.16	1555/0.20	1694/0.25	1811/0.29	1916/0.34	2003/0.40	2099/0.46
	700	1070/0.08	1233/0.12	1389/0.16	1526/0.20	1658/0.25	1772/0.30	1880/0.35	1977/0.41	2084/0.46	2172/0.52
	800	1223/0.12	1365/0.16	1506/0.20	1631/0.26	1744/0.31	1874/0.36	1980/0.42	2073/0.48	2176/0.54	2259/0.59
	900	1376/0.17	1513/0.21	1638/0.26	1754/0.32	1852/0.38	1962/0.43	2065/0.49	2155/0.56	2253/0.62	2332/0.69
	1000	1529/0.23	1643/0.28	1761/0.33	1866/0.39	1966/0.45	2077/0.52	2159/0.59	2270/0.64	2343/0.71	2420/0.79
	1100	1682/0.30	1794/0.36	1892/0.42	2002/0.47	2088/0.54	2182/0.61	2285/0.69	2352/0.75	2447/0.83	2523/0.92
	1200	1835/0.39	1928/0.45	2032/0.51	2131/0.58	2220/0.65	2298/0.73	2381/0.79	2470/0.87	2541/0.95	NA
Return Air	1300	1987/0.50	2074/0.56	2168/0.64	2254/0.71	2346/0.78	2426/0.85	2511/0.92	NA	NA	NA
	500	879/0.15	1013/0.21	1145/0.27	1270/0.34	1382/0.40	1484/0.46	1580/0.53	1677/0.60	1757/0.67	1846/0.74
	600	1055/0.27	1167/0.33	1280/0.40	1388/0.48	1490/0.56	1588/0.62	1679/0.70	1758/0.78	1844/0.86	1924/0.96
	700	1231/0.42	1326/0.50	1425/0.58	1523/0.67	1611/0.76	1700/0.84	1789/0.92	1864/1.01	1947/1.12	2010/1.20
	800	1407/0.63	1490/0.71	1577/0.82	1659/0.90	1741/1.00	1822/1.11	1901/1.21	1975/1.29	2044/1.41	2118/1.51
	900	1583/0.90	1656/1.00	1728/1.10	1807/1.21	1884/1.31	1958/1.42	2029/1.54	2104/1.64	NA	NA
	1000	1759/1.23	1824/1.35	1895/1.45	1963/1.56	2026/1.69	NA	NA	NA	NA	NA
	1100	1934/1.64	NA	NA	NA	NA	NA	NA	NA	NA	NA

* Add component pressure drops and external static to determine fan speed (RPM) and fan power (kW)

Model ZQYRA-12											
Fan RPM/kW per Total External Static Pressure (Option A24)											
SCFM	0.00	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00
Supply Air	900	1172/0.10	1295/0.14	1436/0.18	1560/0.23	1665/0.27	1785/0.32	1888/0.38	1982/0.44	2065/0.50	2155/0.56
	1000	1303/0.13	1420/0.18	1540/0.22	1655/0.28	1761/0.33	1866/0.38	1966/0.43	2058/0.50	2138/0.55	2224/0.62
	1100	1433/0.18	1533/0.22	1647/0.28	1755/0.33	1849/0.39	1953/0.44	2053/0.50	2143/0.56	2222/0.63	2307/0.69
	1200	1563/0.23	1661/0.28	1750/0.34	1847/0.39	1957/0.45	2048/0.51	2131/0.58	2220/0.65	2298/0.71	2381/0.77
	1300	1693/0.30	1778/0.35	1871/0.41	1960/0.47	2059/0.53	2136/0.59	2236/0.67	2308/0.72	2385/0.81	2468/0.87
	1400	1824/0.37	1902/0.42	1988/0.49	2069/0.55	2155/0.63	2234/0.69	2318/0.76	2408/0.84	2486/0.90	2548/0.98
	1500	1954/0.45	2026/0.51	2103/0.58	2187/0.64	2262/0.72	2342/0.79	2428/0.87	2502/0.95	NA	NA
	1600	2084/0.55	2161/0.62	2229/0.69	2302/0.76	2364/0.83	2446/0.91	2516/0.98	NA	NA	NA
Return Air	900	1186/0.33	1274/0.42	1361/0.50	1441/0.59	1518/0.69	1597/0.79	1672/0.89	1745/0.99	1817/1.11	1878/1.22
	1000	1318/0.45	1397/0.55	1477/0.64	1550/0.74	1624/0.84	1693/0.95	1761/1.06	1834/1.17	1897/1.28	1965/1.40
	1100	1450/0.60	1522/0.71	1593/0.82	1664/0.92	1729/1.03	1793/1.14	1862/1.27	1921/1.38	1984/1.50	2043/1.63
	1200	1581/0.79	1645/0.89	1715/1.01	1778/1.12	1840/1.25	1900/1.37	1964/1.50	2016/1.62	2080/1.76	2139/1.89
	1300	1713/1.00	1771/1.12	1834/1.24	1895/1.36	1953/1.50	2008/1.63	2066/1.76	2119/1.91	2176/2.04	2227/2.18
	1400	1845/1.25	1902/1.37	1956/1.52	2014/1.64	2068/1.79	2125/1.92	2177/2.07	2225/2.20	2282/2.35	2325/2.51
	1500	1977/1.53	2025/1.67	2083/1.81	2137/1.95	2186/2.09	2238/2.25	2285/2.39	2333/2.54	2384/2.71	2436/2.85
	1600	2108/1.86	2154/2.01	2208/2.17	2257/2.32	2309/2.45	2355/2.63	2404/2.76	2445/2.94	NA	NA



Electric Heat

5 kW Electric Heat (PH1A)

The 5kW pre-heater is used for the total enthalpy wheel frost protection and unit extreme weather operation below 0°F entering air conditions. The open electric resistance heating element with insulated ceramic bushing is factory installed, with control contactor, auto high limit reset and necessary wiring to the unit control system.

10 kW Electric Heat (PH2A)

The 10kW pre-heater is used for enthalpy wheel frost protection and unit extreme weather operation below 0°F entering air conditions. The open element electric resistance heating elements with insulated ceramic bushing is factory installed, with control contactor, auto high limit reset and necessary wiring to the unit control system.

Optional Pre-Heater Selection Guide

Refer to the tables below and on the following page for electric heat frost protection for enthalpy wheel (based on outdoor and indoor air conditions).

Example 1: Specification conditions: 500 SCFM, -10°F Outside Air Temp., 70° Return Air Temp., 30% RH
Pre-Heater Option Section: PH1A is required

Example 2: Specifications conditions: 500 SCFM, 0°F Outside Air Temp., 70° Return Air Temp., 30% RH
Pre-Heater Option Section: None required

See highlighted sections below.

Supply Air CFM	Outdoor Condition	Return Temp	Indoor RH	208/3	230/3 460/3
500 to 700 SCFM	-10°F to 0°F	<= 70°F	<= 30%	PH1A	PH1A
			<= 40%	PH1A	PH1A
			<= 50%	PH2A	PH2A
		<= 75°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH1A
			<= 50%	PH2A	PH2A
	0°F to 10°F	<= 80°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH2A
			<= 50%	PH2A	PH2A
		<= 70°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH1A	PH1A
	10°F to 20°F	<= 75°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH1A	PH1A
		<= 80°F	<= 30%	PH1A	PH1A
			<= 40%	PH1A	PH1A
			<= 50%	PH2A	PH1A

Supply Air CFM	Outdoor Condition	Return Temp	Indoor RH	208/3	230/3 460/3
700 to 900 SCFM	-10°F to 0°F	<= 70°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH1A
			<= 50%	PH2A	PH2A
		<= 75°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH2A
			<= 50%	PH2A	PH2A
	0°F to 10°F	<= 80°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH2A
			<= 50%	PH2A	PH2A
		<= 70°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH1A	PH1A
	10°F to 20°F	<= 75°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH2A	PH1A
		<= 80°F	<= 30%	PH1A	PH1A
			<= 40%	PH1A	PH1A
			<= 50%	PH2A	PH2A

Legend:

NR = Preheater Not Required

PH1A = Use Option PH1A or PH2A

PH2A = Use Option PH2A

■ = Run Reznor Z-Series Calculator for Recommended Pre-Heat Option

Optional Pre-heater selection Guide (cont'd)

Legend:
 NR = Preheater Not Required
 PH1A = Use Option PH1A or PH2A
 PH2A = Use Option PH2A
 ■ = Run Reznor Z-Series Calculator for Recommended Pre-Heat Option

Supply Air CFM	Outdoor Condition	Return Temp	Indoor RH	208/3	230/3 460/3
900 to 1100 SCFM	-10°F to 0°F	<= 70°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH2A
			<= 50%	PH2A	PH2A
		<= 75°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH2A
			<= 50%	■	PH2A
		<= 80°F	<= 30%	PH2A	PH1A
			<= 40%	PH2A	PH2A
			<= 50%	■	PH2A
	0°F to 10°F	<= 70°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH2A	PH1A
		<= 75°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH2A	PH2A
		<= 80°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH1A
			<= 50%	PH2A	PH2A
	10°F to 20°F	<= 70°F	<= 30%	NR	NR
			<= 40%	NR	NR
			<= 50%	PH1A	PH1A
		<= 75°F	<= 30%	NR	NR
			<= 40%	NR	NR
			<= 50%	PH1A	PH1A
		<= 80°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH1A	PH1A

Supply Air CFM	Outdoor Condition	Return Temp	Indoor RH	208/3	230/3 460/3
1100 to 1300 SCFM	-10°F to 0°F	<= 70°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH2A
			<= 50%	■	PH2A
		<= 75°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH2A
			<= 50%	■	■
		<= 80°F	<= 30%	PH2A	PH2A
			<= 40%	■	PH2A
			<= 50%	■	■
	0°F to 10°F	<= 70°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH2A	PH2A
		<= 75°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH2A	PH2A
		<= 80°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH1A
			<= 50%	PH2A	PH2A
	10°F to 20°F	<= 70°F	<= 30%	NR	NR
			<= 40%	NR	NR
			<= 50%	PH1A	PH1A
		<= 75°F	<= 30%	NR	NR
			<= 40%	NR	NR
			<= 50%	PH1A	PH1A
		<= 80°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH1A	PH1A

Supply Air CFM	Outdoor Condition	Return Temp	Indoor RH	208/3	230/3 460/3
1300 to 1500 SCFM	-10°F to 0°F	<= 70°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH2A
			<= 50%	■	■
		<= 75°F	<= 30%	PH2A	PH1A
			<= 40%	■	PH2A
			<= 50%	■	■
		<= 80°F	<= 30%	PH2A	PH2A
			<= 40%	■	PH2A
			<= 50%	■	■
	0°F to 10°F	<= 70°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH2A	PH2A
		<= 75°F	<= 30%	NR	NR
			<= 40%	PH2A	PH1A
			<= 50%	PH2A	PH2A
		<= 80°F	<= 30%	PH1A	PH1A
			<= 40%	PH2A	PH2A
			<= 50%	■	PH2A
	10°F to 20°F	<= 70°F	<= 30%	NR	NR
			<= 40%	NR	NR
			<= 50%	PH1A	PH1A
		<= 75°F	<= 30%	NR	NR
			<= 40%	NR	NR
			<= 50%	PH1A	PH1A
		<= 80°F	<= 30%	NR	NR
			<= 40%	PH1A	PH1A
			<= 50%	PH2A	PH1A

MODEL ZQYRA HYBRID IAQ VENTILATOR General Options

Power

208/230V Power (AK20), 460V Power (AK7)

The unit has a field convertible 208 or 230V/3ph/60hz power selection. The unit can be field converted to use either voltage with a simple wiring jumper change per the unit wiring diagram.

Dampers

Isolation Dampers (AR2Y)

The intake and exhaust air isolation dampers feature an intake hood with a screen and a low leak isolation damper. The intake damper has a 24volt, two-position, spring return actuator directly interlocked with the unit's supply fan that opens whenever the supply fan is commanded to operate. When the supply fan is off, the actuator's spring drives the damper closed. The exhaust hood features a low leak gravity operated back draft damper. The exhaust damper starts to open at 0.03" w.c. and is fully opened at 0.10" w.c.

Coil Coatings

Coil Coating (AUB8)

The Electrofin E-Coat protects the unit's coils from corrosive environments. The coil's useful life is increased 3-5 times longer than the life of an uncoated coil in the same location. The factory dipped coils receive a thin layer of coating that provides better thermal conductivity than that of a fouled, oxidized coil.

Warranty

Extended Limited Warranty, All Parts

The standard warranty can be extended to a total of five (5) years (XW9) or ten (10) years (XW10).

Controls (See Illustrations at Right)

Manual ON/OFF Switch (CN5)

The wall mounted manual START/STOP key switch will start or stop the unit. The 2 wire, 24V switch with cover, mounts in a standard 2 x 4 electrical box.

Wall Mounted Time Clock (CN7A)

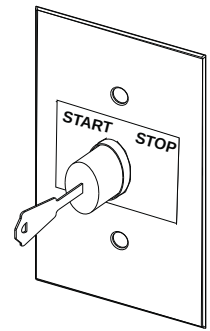
The compact wall mounted time clock will start or stop the unit. The 24 hour time clock schedule allows flexible weekday and weekend start/stop times with a convenient daylight savings update. A rechargeable battery maintains the clocks programming in a temporary power outage. The time clock with cover plate is designed to be mounted in a standard 2 x 4 electric box. The option requires 4 wires from the switch to the control system (2-wire, 120Vac power and 2-wire low voltage).

Space Mounted CO₂ Sensor (CN7B)

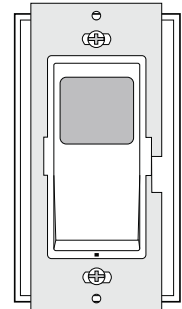
The CO₂ sensor with manual 3-position key switch (HAND/OFF/AUTO) override will start or stop the unit. The infrared beam technology provides reliable and accurate sensing of the CO₂ level (±50 ppm). The CO₂ sensor will activate the unit whenever the CO₂ rises above the factory default value of 1000 ppm. (0-2000 ppm range) The manual key switch will allow the unit to be directly commanded ON or OFF bypassing the sensor. This option requires 6 wires from the switch to the control system (2-wire, 24Vac power; 2-wire, 0-10 signal; 2-wire, dry contact).

Space Mounted VOC Sensor (CN7C)

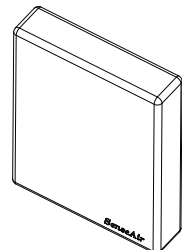
The VOC & CO sensor with manual HAND/OFF/AUTO override will start or stop the unit. The unit will start whenever the space environment VOC level exceeds the field adjustable setpoint. This option also provides a three position keyed manual switch that is wired to the digital input. The three position switch provides "auto," "manual on" and "manual off" modes. When the switch is in the auto mode, the sensor is powered, the digital start/stop input is open, and system monitors the VOC levels. When the switch is in manual on (HAND) mode, the contact is closed and the sensor is disabled. When the switch is in the manual off mode, the contact is open and the sensor is disabled. This option requires 6 wires from the switch to the control system (2-wire, 24Vac power; 2-wire, 0-10 signal; 2-wire, dry contact).



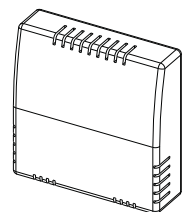
Manual ON/OFF Switch
(Option CN5)



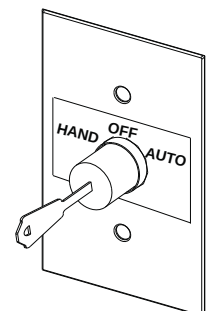
Wall Mount Time Clock
(Option CN7A)



Space Mounted CO₂ Sensor
(Option CN7B)



Space Mounted VOC Sensor
(Option CN7C)



HAND/OFF/AUTO Switch (used
with Options CN7B and CN7C)

Controls (cont'd)

Space Mounted Occupancy Switch (CN7D)

The occupancy switch with integral ON/OFF override will start the unit. The passive infrared sensor features an adjustable 5 to 30 minutes sensing window to prevent nuisance switching. The sensor requires 4 wires from the control panel to the wall switch (2-wire, 24Vac power; 2-wire dry contact).

Remote Mounted Unit Display (RB5)

The factory installed display allows complete access to unit test features, schedules, discharge air setpoints, fan control, alarms and other unit operational setpoints. The RB5 is a second remote mounted display allowing the same unit access. The 4 wire device can be mounted up to 500 feet away from the unit (2-wire 24Vac power; 2-wire communication).

Outside Air Dirty Filter Alarm (BE18)

The factory installed dirty filter alarm for the supply air will provide visual indication on the unit mounted and remote mounted displays. The display(s) will show "alarm condition" on the home page and "Dirty Filter" in the alarm description menu. The alarm activates when the differential pressure exceeds 0.5" w.c. (adjustable).

Unit Disconnect (BA6)

The factory installed disconnect switch. The red disconnect features a pull out hook allowing a technician to lock the unit.

Lon Communication (BHB7)

The Z.62e factory or field installed Lon communication card allows direct access to all unit function as shown in the table.

BacNet Communication (BHB8)

The Z.62e factory or field installed BacNet communication card allows direct access to all unit function as shown in the table.

NOTE: Reznor, LLC makes no claim on connectivity between this product and other systems. The installing contractor(s) is(are) responsible for supplying all necessary hardware, software and network diagnostics to complete the required connectivity.

Remote Disconnect (CP_ _)

The factory supplied, field installed disconnect switches come in a variety of sizes and options.

Field Installed Disconnects	USA Option Code	Canada Option Code
30 Amp, 240 Volt, Non-Fusible	CP5	■
30 Amp, 240 Volt, Fusible	CP6	■
30 Amp, 600 Volt, Non-Fusible	CP7	CP59
30 Amp, 600 Volt, Fusible	CP8	CP42
60 Amp, 240 Volt, Non-Fusible	CP30	■
60 Amp, 240 Volt, Fusible	CP17	■
60 Amp, 600 Volt, Non-Fusible	CP38	CP61
60 Amp, 600 Volt, Fusible	CP20	CP44



Space Mounted Occupancy
Switch (Option CN7D)



Remote Mounted Unit
Display (Option RB5)



Unit Disconnect Switch
(Option BA6)



Field Installed Disconnect Box
(Option CP_ _)

Controls (cont'd)

Name	Notes	Range	Default Setpoints
Inputs			
DwPtCngOvrLt	Wheel Dewpoint Changeover Limit	55 - 65	59
DatSpHiDwPt	Discharge Air Temperature Setpoint with High Dewpoint	55 - 65°F	58
DatSpLoDwPt	Discharge Air Temperature Setpoint with Low Dewpoint	55 - 75°F	70
HtCIDATCngOvr	Heating/Cooling Discharge Air Temperature Changeover Setpoint	55 - 80°F	65
DatHtgSpLoDwPt	Discharge Air Temperature Heating Setpoint with Low Dewpoint	55 - 75°F	70
DatClgSpLoDwPt	Discharge Air Temperature Cooling Setpoint with Low Dewpoint	55 - 75°F	60
OatLoSpLoDwPt	Outside Air Temperature Heating Setpoint with Low Dewpoint	55 - 80°F	65
OatHiSpLoDwPt	Outside Air Temperature Cooling Setpoint with Low Dewpoint	55 - 80°F	70
DatHiSpLoDwPt	Discharge Air Temperature High Setpoint with Low Dewpoint	55 - 75°F	58
DatLoSpLoDwPt	Discharge Air Temperature Low Setpoint with Low Dewpoint	55 - 75°F	70
BAS On/Off	Virtual Binary value to control On and Off mode. Used only when selected in schedule configuration		
Outputs			
Unit Mode	0 = Off, 1 = Starting, 2 = Running, 3 = Test, 4 = Cripple, 5 = SysRestart, 6 = SysShutdwn	-	-
Unit Command	1 = Local Sch OFF, 2 = St/St DI OFF, 3 = BAS OFF, 4 = VOC/CO2 OFF, 5 = TEST OFF, 6 = SAFETY DI OFF, 7 = ALARM OFF, 8 = Local Sch ON, 9 = St/St DI ON, 10 = BAS ON, 11 = VOC/CO2 ON, 12 = TEST ON		
SA/EA Runtime	Current runtime in Hours (0 - 9,999)	####	-
HP Runtime	Current runtime in Hours (0 - 9,999)	####	-
Wheel Runtime	Current runtime in Hours (0 - 9,999)	####	-
Binary Input Status	Bit 0 = SA Fan Status	-	-
	Bit 1 = EA Fan Status	-	-
	Bit 2 = Filter Status	-	-
	Bit 3 = Fan St/St Input	-	-
	Bit 4 = Safety Input	-	-
	Bit 5 = HP Alarm Input	-	-
	Bit 6 = Fan Alarm Input	-	-
Unit Command Status	Bit 7 = Alarm Ouput	-	-
	Bit 0 = Fan Command	-	-
	Bit 1 = Wheel Command	-	-
	Bit 2 = HP Command	-	-
	Bit 3 = HP Mode (1 = Heating, 0 = Cooling)	-	-
General Alarms	Bit 4 = PreHeat Command	-	-
	HP Modulation	Heatpump current capacity	0-100%
	OA Temp	Outside Air Temperature	Deg F
	ER Wheel Temp	Enthalpy wheel supply air temperature	Deg F
	ER Wheel Hum	Enthalpy wheel supply air relative humidity	0-100%
	ER Wheel Dewpoint	Enthalpy wheel supply air dewpoint temperature	Deg F
	Unit DA Temp	Unit supply air temperature	Deg F
	Active DA Temp Setpt	Active unit supply air temperature setpoint	Deg F
	VOC Level	Volital Organic Compound sensor current value	0-100%
	CO ₂ Level	Carbon Dioxide sensor current value	0-2000 ppm
	Bit 0 = Fan Runtime Alarm	Normal/Alarm	-
	Bit 1 = ER Wheel Runtime Alarm	Normal/Alarm	-
	Bit 2 = HP Runtime Alarm	Normal/Alarm	-
	Bit 3 = OAT Sensor Failure Alarm	Normal/Alarm	-
	Bit 4 = ER Wheel Temp Sensor Failure Alarm	Normal/Alarm	-
	Bit 5 = ER Wheel Hum Sensor Failure Alarm	Normal/Alarm	-
	Bit 6 = Unit DA Temp Sensor Failure Alarm	Normal/Alarm	-
	Bit 7 = Fan Controller General Alarm	Normal/Alarm	-
	Bit 8 = SA Fan Status Failure Alarm	Normal/Alarm	-
	Bit 9 = EA Fan Status Failure Alarm	Normal/Alarm	-
	Bit 10 = HP General Failure Alarm	Normal/Alarm	-
	Bit 11 = Safety Input Alarm	Normal/Alarm	-
	Bit 12 = Changeover Valve Failure Alarm	Normal/Alarm	-
	Bit 13 = Unit is in the Test Mode	Normal/Alarm	-

Controls (cont'd)

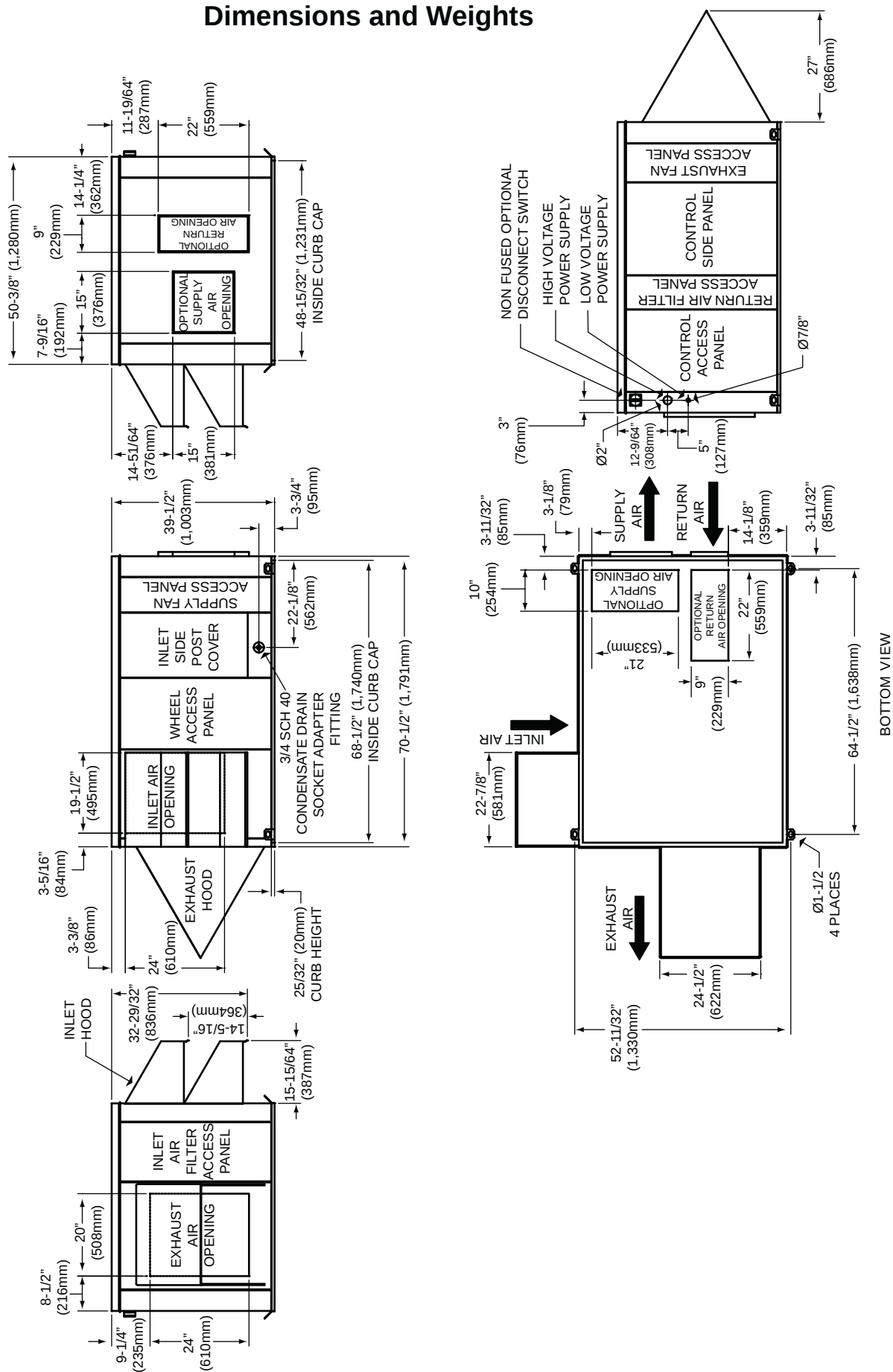
Inputs From Network to Controller			
Name	Description	Range	Default Setpoints
DwPtCngOvrLt	Wheel Dewpoint Changeover Limit	55 - 65°F	59
DatSpHiDwPt	Discharge Air Temperature Setpoint with High Dewpoint	55 - 65°F	58
DatSpLoDwPt	Discharge Air Temperature Setpoint with Low Dewpoint	55 - 75°F	70
HtClDATCngOvr	Heating/Cooling Discharge Air Temperature Changeover Setpoint	55 - 80°F	65
DatHtgSpLoDwPt	Discharge Air Temperature Heating Setpoint with Low Dewpoint	55 - 75°F	70
DatClgSpLoDwPt	Discharge Air Temperature Cooling Setpoint with Low Dewpoint	55 - 75°F	60
OatLoSpLoDwPt	Outside Air Temperature Heating Setpoint with Low Dewpoint	55 - 80°F	65
OatHiSpLoDwPt	Outside Air Temperature Cooling Setpoint with Low Dewpoint	55 - 80°F	70
DatHiSpLoDwPt	Discharge Air Temperature High Setpoint with Low Dewpoint	55 - 75°F	58
DatLoSpLoDwPt	Discharge Air Temperature Low Setpoint with Low Dewpoint	55 - 75°F	70
BAS On/Off	Virtual Binary value to control On and Off mode. Used only when selected in schedule configuration	ON/OFF	-
Outputs to Network			
Name	Description	Range	Default Setpoints
Unit Mode	0 = Off, 1 = Starting, 2 = Running, 3 = Test, 4 = Cripple, 5 = SysRestart, 6 = SysShutdwn	-	-
Unit Command	1 = Local Sch OFF, 2 = St/St DI OFF, 3 = BAS OFF, 4 = VOC/CO2 OFF, 5 = TEST OFF, 6 = SAFETY DI OFF, 7 = ALARM OFF, 8 = Local Sch ON, 9 = St/St DI ON, 10 = BAS ON, 11 = VOC/CO2 ON, 12 = TEST ON		
SA Fan Status	Differential pressure switch indicating fan operational status	ON/OFF	
EA Fan Status	Differential pressure switch indicating fan operational status	ON/OFF	
Filter Status	Differential pressure switch indicating filter fan operational status	ON/OFF	
SA/EA Runtime	Current runtime in Hours (0 - 99,999)	#####	-
HP Runtime	Current runtime in Hours (0 - 99,999)	#####	
Wheel Runtime	Current runtime in Hours (0 - 99,999)	#####	
Fan Command	The current controller command status for the point	ON/OFF	-
Wheel Command	The current controller command status for the point	ON/OFF	
HP Command	The current controller command status for the point	ON/OFF	
HP Mode	Heat pump mode of operation: 1 = Heating, 0 = Cooling	0/1	
HP Modulation	Heat pump current capacity commanded level	0 - 100 %	
OA Temp	Outside air temperature	-20°F to 160°F	-
ER Wheel Temp	Leaving air drybulb temperature from enthalpy wheel entering supply air coil	-20°F to 160°F	
ER Wheel Hum	Leaving air humidity from enthalpy wheel entering supply air coil	0 to 100%	
ER Wheel Dewpoint	Leaving air dewpoint temperature from enthalpy wheel entering supply air coil	-20°F to 160°F	
Unit DA Temp	Leaving air drybulb temperature from the unit after the supply fan	-20°F to 160°F	
Active DA Temp Setpt	The active leaving air drybulb temperature setpoint	55°F to 75°F	
VOC Level	Volitale organic component (VOC) current value	0 to 100%	
CO2 Level	Carbon Dioxide level current value	0 to 2000 ppm	
PreHeat Command	Electric heat controller command status	ON/OFF	
Fan St/St Input	Current Status of Fan Start/Stop Hardware Binary Input	Open/Closed	
Safety Input	Current Status of Safety Hardware Binary Input	Open/Closed	
HP Alarm Input	Current Status of HP Alarm Hardware Binary Input	Open/Closed	
Fan Alarm Input	Current Status of Fan Alarm Hardware Binary Input	Open/Closed	
Alarm Ouput	Current Status of Alarm Hardware Binary Ouput	Open/Closed	
Fan Runtime Alarm	Fan Runtime Alarm	Normal/Alarm	-
ER Wheel Runtime Alarm	ER Wheel Runtime Alarm	Normal/Alarm	-
HP Runtime Alarm	HP Runtime Alarm	Normal/Alarm	-
OAT Failure Alarm	OAT Sensor Failure Alarm	Normal/Alarm	-
ER Wheel Temp Failure Alarm	ER Wheel Temp Sensor Failure Alarm	Normal/Alarm	-
ER Wheel Hum Failure Alarm	ER Wheel Hum Sensor Failure Alarm	Normal/Alarm	-
Unit DAT Failure Alarm	Unit DA Temp Sensor Failure Alarm	Normal/Alarm	-
Fan General Failure Alarm	Fan Controller General Alarm	Normal/Alarm	-
SA Fan Status Failure	SA Fan Status Failure Alarm	Normal/Alarm	-
EA Fan Status Failure	EA Fan Status Failure Alarm	Normal/Alarm	-
Hp General Failure Alarm	HP General Failure Alarm	Normal/Alarm	-
Safety Input Alarm	Safety Input Alarm	Normal/Alarm	-
Changeover Valve Alarm	Changeover Valve Failure Alarm	Normal/Alarm	-
Unit in Test Mode	Unit is in the Test Mode	Normal/Alarm	-

MODEL ZQYRA

HYBRID IAQ VENTILATOR

Dimensions and Weights

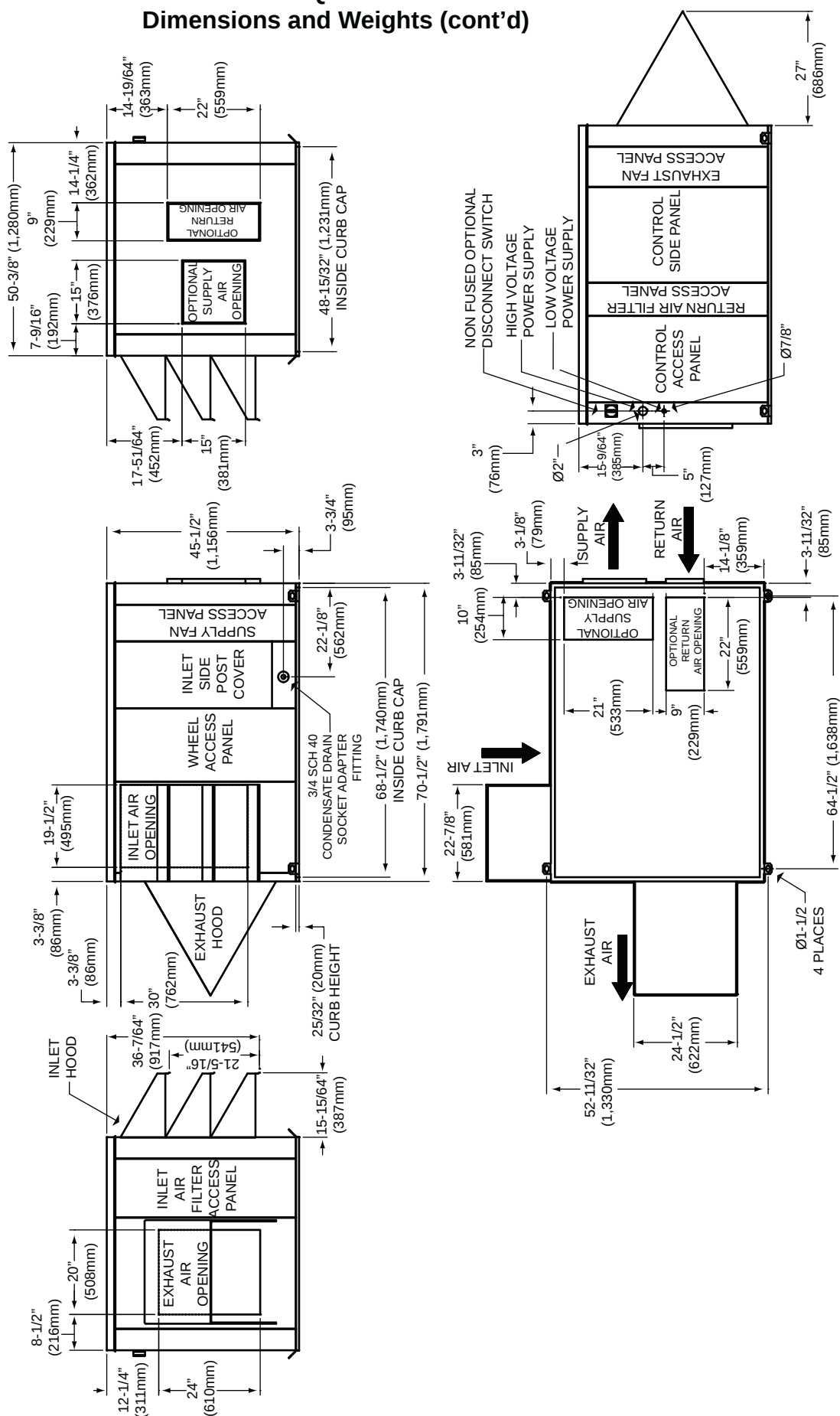
DIMENSIONS
Model ZQYRA 8
±1/8" (3mm)



MODEL ZQYRA

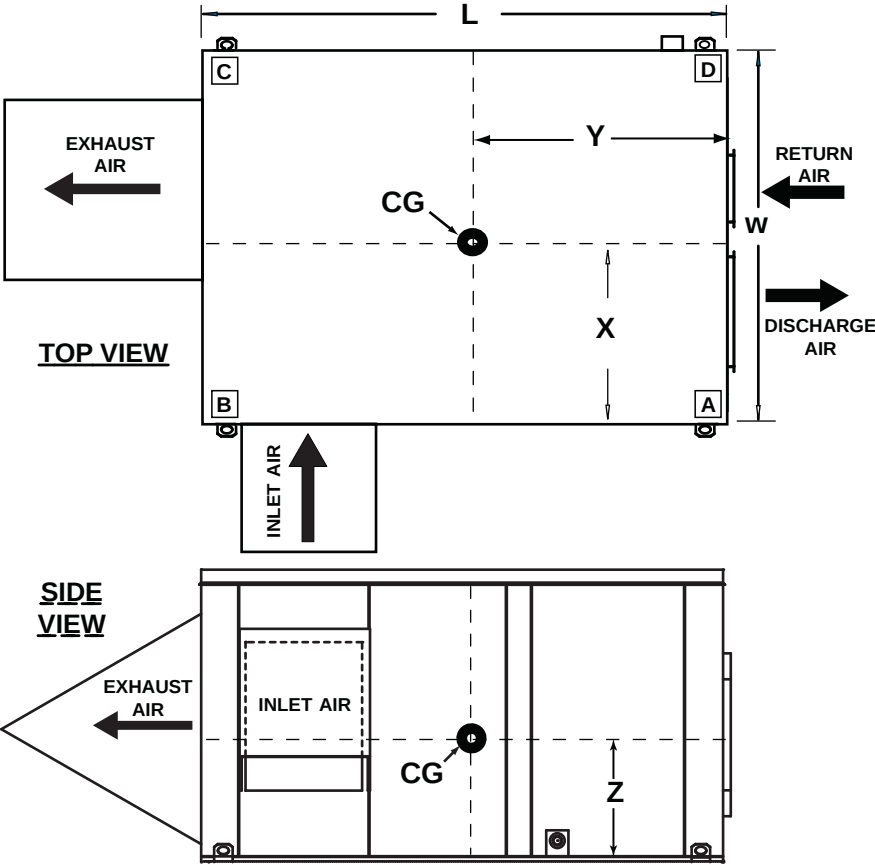
HYBRID IAQ VENTILATOR

Dimensions and Weights (cont'd)



MODEL ZQYRA HYBRID IAQ VENTILATOR Dimensions and Weights (cont'd)

CORNER WEIGHTS AND CENTER OF GRAVITY

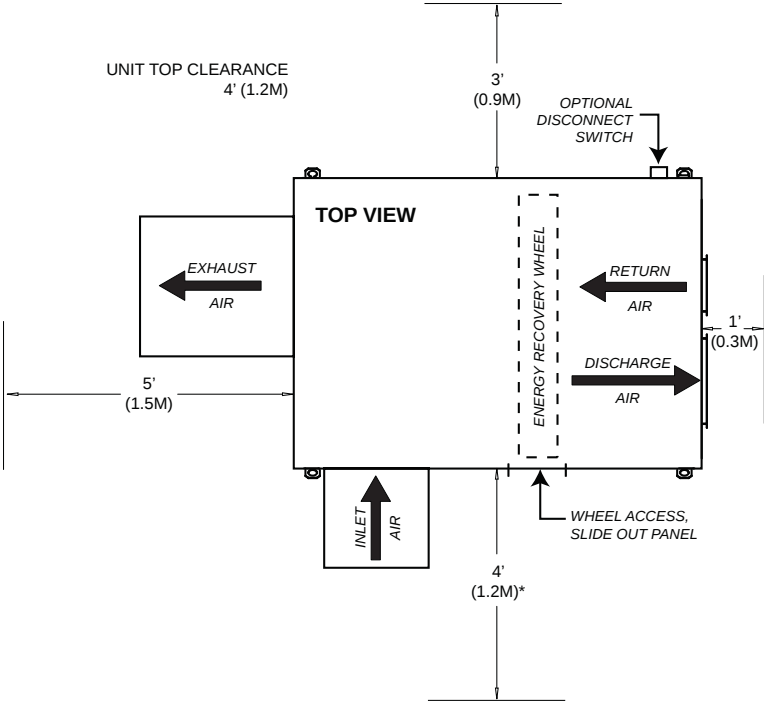


Approximate Corner Weights				
ZQYRA	Size 8		Size 12	
Corner	lbs	(kg)	lbs	(kg)
A	210	(95)	239	(108)
B	197	(89)	233	(106)
C	219	(99)	262	(119)
D	232	(105)	269	(122)
Total	858	(389)	1003	(455)

Overall Dimensions	
Length (L)	70-1/2" (1791mm)
Width (W)	50-3/8" (1278mm)

Center of Gravity Location				
Dimension	inches	(mm)	inches	(mm)
X	26-1/2	(673)	26-11/16	(678)
Y	34-3/16	(868)	34-13/16	(884)
Z	16	(407)	18-13/16	(479)

UNIT CLEARANCES



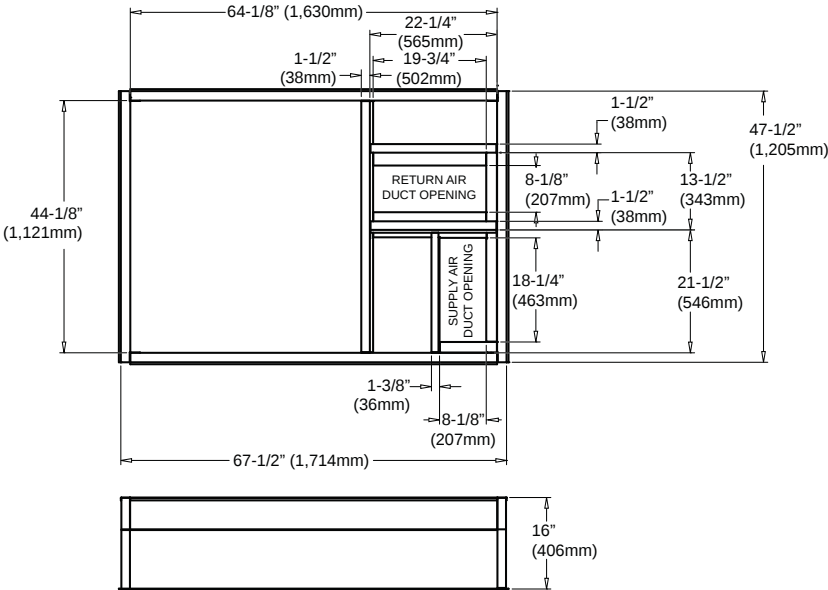
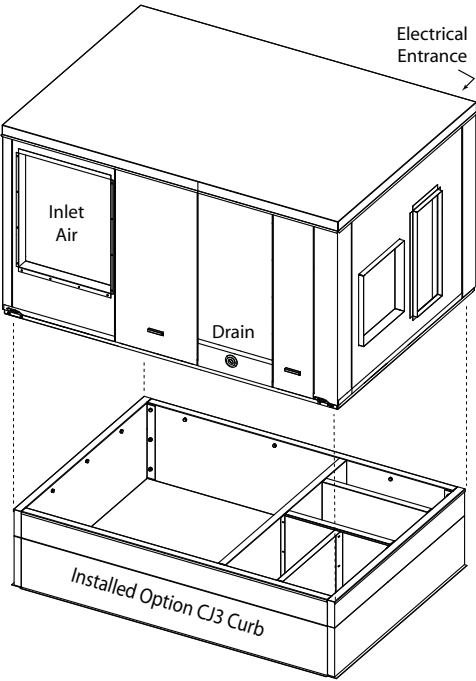
Roof Curb

ROOF CURB (Option CJ3C)

The Z.62e curb allows roof or pad mounting of the unit. The vertical discharge is flanged for duct connections. The curb does not affect the unit's field convertible horizontal discharge and return options.

DIMENSIONS

±1/8" (3mm)



Description	Width		Length	
	in.	(mm)	in.	(mm)
Roof opening (if fully open under curb)	44 1/8	(1,121)	64 1/8	(1,630)
Supply air duct opening	8 1/8	(207)	18 1/4	(463)
Return air duct opening	8 1/8	(207)	19 3/4	(502)

- Notes:
- 1) IT IS SUGGESTED THAT WHEN CUTTING DUCT OPENINGS IN ROOF, CUT OPENINGS 1" LARGER THAN DUCT SIZE OPENING TO ALLOW CLEARANCE FOR INSTALLATION.
 - 2) ROOF CURB INCLUDES INTEGRAL DUCT CONNECTIONS AT THE BASE FOR ATTACHING VERTICAL SUPPLY AND RETURN DUCTWORK.
 - 3) HARDWARE TO ASSEMBLE THE ROOF CURB IS SUPPLIED.
 - 4) HARDWARE AND FLASHING REQUIRED FOR INSTALLING ROOF CURB TO BUILDING MUST BE FIELD SUPPLIED.

Curb weight	lbs	168
	(kg)	(76)

MODEL ZQYRA HYBRID IAQ VENTILATOR Sequence of Operation

Supply and Exhaust Fan Start/Stop Control

The supply and exhaust fans shall run whenever the hard-wired digital input to the unit controller is closed or if the internal time schedule commands the unit to run. The factory supplied hard-wired switches are:

- Manual START/STOP Switch – Option CN5
- Wall Mounted Time Clock – Option CN7A
- CO₂ Sensor with Manual 3-Position Key Switch HAND/OFF/AUTO override – Option CN7B
- Indoor Air Quality (VOC) & CO with Manual HAND/OFF/AUTO switch – Option CN7C
- Occupancy Motion Sensor with Manual ON/OFF Override – Option CN7D

The fans will run continuously in the ON mode. The unit can also be directly commanded ON via BacNet or Lon communication from a remote BMS. The unit's control system monitors the fans and will display an alarm if the fans fail to operate.

Unit Mode of Operation

The unit will operate in one of 6 modes:

- Off** If the hard-wire digital inputs are open or, the internal time clock commands the unit off, or the remote BMS signal commands the unit off, the unit shall not run.
- Starting** System is starting. The unit will remain in a starting mode for 30 seconds after a start command is issued or the controller power has been temporarily interrupted.
- Cooling** The unit will switch to cooling mode whenever the outdoor air temperature is above 65°F and the supply air temperature is more than 5°F higher than its setpoint.
- In the cooling mode, the enthalpy wheel will run continuously. The heat pump will be energized for cooling and will operate to maintain the supply air temperature setpoint.
- If the leaving air dewpoint from the enthalpy wheel is less than 58°F, the unit's supply air temperature setpoint will be 70°F (adjustable). If the leaving air dewpoint from the enthalpy wheel is greater than 58°F, the supply air setpoint will be 58°F (adjustable).
- Heating** The unit will switch to heating mode whenever the outdoor air temperature is less than 65°F and the supply air temperature is more than 5°F lower than its setpoint.
- In the heating mode, the enthalpy wheel will run continuously. The heat pump will be energized for heating and will operate to maintain the supply air temperature setpoint.

Optional Preheat Control

The unit controller will monitor the outside air temperature and if the temperature is below 0°F (adjustable), the system shall enable the optional preheat coil. The optional preheat coil shall remain enabled until the outside air temperature is above the outside air enable temperature by 5°F (adjustable). If this option is not installed, the unit shall hide all data associated with the preheat coil.

If the leaving air dewpoint from the enthalpy wheel is less than 58°F, the unit's supply air temperature setpoint will be 70°F (adjustable). If the leaving air dewpoint from the enthalpy wheel is greater than 58°F, the unit will switch to cooling mode.

Economizer Whenever the outdoor air temperature is within 5°F of the supply air temperature setpoint, the unit will switch to the economizer mode. The unit will turn off the wheel and the heat pump. The unit will switch to heating or cooling mode when the OAT is out of the setpoint range or the leaving air dewpoint is above 58°F.

- Test** Manual test mode is active. Unit only runs based on manual commands from the unit display. The user will be allowed to directly command the following components:
- Supply Fan ON/OFF
 - Supply Fan Speed
 - Exhaust Fan ON/OFF
 - Exhaust Fan Speed
 - Heat Pump Mode – Cooling or Heating
 - Compressor ON/OFF
 - Compressor Capacity
 - Enthalpy Wheel ON/OFF
 - Preheat Electric Heat ON/OFF

Wheel Defrost Control

The controller will monitor the wheel discharge air temperature and if the temperature is below 32°F (adjust-

** 4 foot (1.2M) clearance required to slide out wheel for service and cleaning.*

able) for more than 10 minutes (adjustable), the system shall enable a defrost control algorithm which will run the wheel for 5 minutes on (adjustable) and then 10 minutes off. This will continue for 2 hours.

Automatic Test Mode Control

The automatic test mode will demonstrate unit operation. When this mode is started, the unit will start the fans. After an (adjustable) 2 minute interval, the unit will then start the enthalpy wheel, and then start the heat pump in **cooling mode** and ramp the capacity from 10% to 50%. The unit will then restart the heat pump system in **heating mode** and ramp the capacity from 10% to 50%. Upon completion of the sequence, the unit will return to the manual test mode operation

Safeties, Alarms, and Lockouts

System Restart: Any time a critical alarm occurs, the system will initiate the restart sequence. During the restart sequence the unit status shows **SysRestart**. Also, on the main screen on the unit interface module under the unit mode, the remaining time before unit startup will be shown.

The restart sequence is as follows: The unit shuts down for **60 minutes**. After the restart timer has expired, the system restarts in normal mode. Resetting the alarm through the interface module or power cycling the unit will clear the system restart mode. The alarm(s) that caused the system shutdown will be logged in the alarm screen under the **return to normal** section.

System Shutdown: The shutdown sequence allows the system to go through the restart sequence a fixed number of times over a 24 hour period. If the unit restarts more than three times the unit controller locks the system out. The unit status will show **SysShutdown**. Once the unit is in this mode the unit must be manually restarted.

Display Text	Alarm Code	Alarm Description
Supply Fan Fail	12	Unit is commanded ON, Fan Status shows OFF. (Critical)
Exhaust Fan Fail	13	Unit is commanded ON, Fan Status shows OFF. (Critical)
Unit Shutdown	3	Unit has cycled thru automatic restarts and System has shutdown unit. Unit requires manual reset.
SA Fan Runtime	81	Supply air fan (blower) has passed runtime alarm setpoint.
Heat pump Runtime	84	Compressor has passed runtime alarm setpoint.
Filter Dirty	69	Filter is dirty.
Freeze Protect	18	System freeze protection is active.
OA Temp Bad	39	Outside air temperature sensor not reading correctly.
DA Temp Bad	24	Discharge air temperature sensor not reading correctly. (Critical)
Wheel Dat Bad	25	Wheel discharge air temperature sensor not reading correctly.
Wheel DA Hum Bad	26	Wheel discharge air humidity sensor not reading correctly.
4-Way Valve Failure	15	Heat pump is not running in requested mode. (Critical)
Heat Pump Failure	17	Heat pump is in alarm condition. (Critical)

MCA & MOP

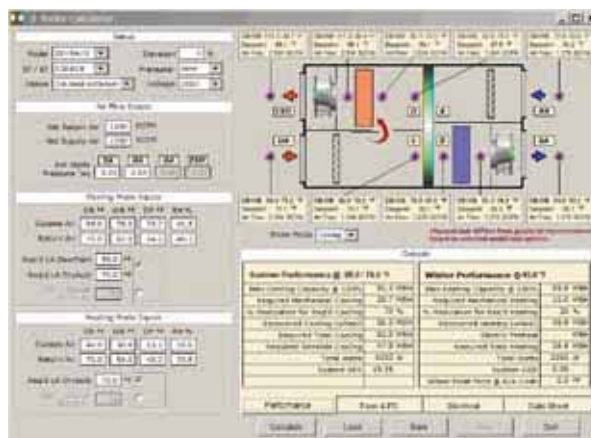
Size	Voltage Option Code	Supply Fan	Exhaust Fan	Compressor			Energy Wheel FLA	Control Transformer		Supplement Electric Heat (Heat Pump Off)		Comp VS EH Largest FLA	Wheel Defrost Preheat (Electric Heat)			Unit w/o Preheat Electric Heat			Unit with Preheat Electric Heat		
		FLA	FLA	MCC	LRA	RLA		VA	FLA	kW	FLA		Option	kW	FLA	FLA	MCA	MOP	FLA	MCA	MOP
8	AK20	3.0	5.2	18.2	88.0	11.7	0.7	150.0	0.7	5	11.5	11.7	PH1A	5	11.5	21.3	24.2	35	32.8	38.6	45
													PH2A	10	23.1				44.3	53.0	70
	AK7	1.7	2.6	9.6	44.0	6.2	0.35	150.0	0.3	5	5.8	6.2	PH1A	5	5.8	11.1	12.7	15	16.9	19.9	20
													PH2A	10	11.5				22.7	27.1	35
12	AK20	3.0	9.7	25.1	110.0	16.1	0.6	150.0	0.7	10	23.1	23.1	PH1A	5	11.5	37.1	45.3	60	48.6	56.8	70
													PH2A	10	23.1				60.1	68.3	80
	AK7	1.7	4.6	12.1	52.0	7.8	0.35	150.0	0.3	10	11.5	11.5	PH1A	5	5.8	18.5	22.5	30	24.3	37.2	35
													PH2A	10	11.5				30.0	34.1	40

Note: For 208-230/3/60 V, Control Transformer FLA is calculates using the worst case, 208 V.
Note: For 208-230/3/60 V, Electric Heat FLA is calculates using the worst case.

Online Selection Calculator

The Reznor selection calculator software program can be found on www.RezSpec.com. The software is free, but requires registration on the Reznor website. Registration is free. We don't sell your information to any third parties. And we don't send you a lot of spam.

Once you have registered, select the "Support/Specify" tab, then select the "Software" sub-tab. In the grey box on the left side of the page, you'll see a link to RezPro™ Toolbox Software. With this program you'll get the selection software for a variety of Reznor HVAC equipment.



Use free selection calculator for unit performance and scheduling of product.

NOTE:
For 208-230/3/60 V control transformer FLA is calculated using the worst case, 208V.
For 208-230-3-60 V electric heat FLA is calculated using the worst case, 230V.

Program Output: Schedule Format

Unit Tag	Model #	Electric Preheat	Supply Air SCFM	Supply ESP	Summer Design			Winter Design			Power			
					Outside Air DB/WB	Supply Air DB/WB	Supply Air Dew Point	Outside Air DB/WB	Supply Air DB/WB	Supply Air RH %	Voltage	FLA	MCA	MOP
Corridor Ventilation	ZQYRA-12	None	1400	0.65"	98.0 / 78.0 °F	68 / 61 °F	57 °F	0 / -1 °F	75 / 54 °F	22.0%	460/3	18.7	23	25
			Return Air SCFM	Return ESP	Return Air DB/WB	Return Air Dew Point	Return Air RH%	Return Air DB/WB	Return Air Dew Point	Return Air RH%				
			1400	0.65"	75 / 62 °F	54 °F	48.3 %	70 / 54 °F	40 °F	34.0%				

Notes:

- Optional electric heat, motorized damper, coil coating & unit mounted disconnect
- Optional CO₂, VOC, time clock, occupancy or manual control options
- Optional Lon or BacNet Communication

Furnish and install Model ZQYRA- (8) or (12) hybrid heat pump unit for treatment of ventilation air per plans and specifications. Unit(s) shall be completely factory assembled, tested, internally wired, fully charged with Refrigerant R410A, and shipped in one piece. Unit(s) shall consist of insulated weather-tight casing with field installed outdoor intake hood, field installed exhaust air hood, direct digital compressor, coils, supply fan, exhaust fan, motors and drives, total enthalpy wheel and unit controls.

HEAT PUMP

Heat pump systems shall be designed to provide capacity control from 10-100% in both heating and cooling mode. Hot gas bypass or unit staging options shall not be allowed as a means for capacity control. The heat pump shall not require reverse cycle system defrost of any type for outdoor air temperatures above 0°F. The heat pump shall be configured to utilize waste heat energy from the building exhaust for conditioning of the entering outdoor air stream. Hermetic compressors shall include a scroll design with internal pressure relief and motor temperature winding protection. Units shall be equipped with reversal rotation protection. The system coils shall have an SHR less than 0.75 insuring proper dehumidification of the outdoor air stream. All Coils shall be leak tested and charged at the factory for immediate operation upon installation and check-out of the unit. Refrigeration control shall include thermal expansion valves, external equalizers and distributors, check valves, system reversing valves and all other necessary components to insure proper operation. Refrigeration protection shall include low and high pressure switches, refrigerant circuit frost protection, liquid line filters/dryers and service gage ports. The supply air coil shall have a corrosion proof drain pan with 1/8" slope for proper draining of the condensate. The unit shall allow proper condensate trapping external of the unit. The drain pan shall be completely accessible for cleaning. The unit shall have 2" filter racks with MERV 8 filters in each air stream before the wheel and coils. The unit shall have direct access to each filter section for inspection and changing of the filters. The unit control system shall monitor critical heat pump system parameters and shut off the system whenever an alarm occurs: The system shall indicate the following failures: high discharge temperature, excessive compressor current, locked rotor, demand signal loss, discharge thermistor fault, welded contactor, low supply voltage. The refrigerant system shall have an adjustable 5 minute minimum ON and minimum OFF timer circuit protection. The refrigerant circuit shall have an anti-cycle time in addition to the minimum ON/OFF timer that prevents the compressors from cycling on the minimum timer circuit. The unit shall be fully operational from -10°F thru 115°F ambient conditions.

ENTHALPY WHEEL

The system shall utilize a total enthalpy wheel to capture waste heat energy from the building exhaust air stream for conditioning of the entering outdoor air stream. The energy recovery component shall incorporate a rotary wheel in an insulated cassette frame complete with seals, drive motor and drive belt. The wheel shall not allow more than 5% crossover between the supply and exhaust air stream. The total energy recovery wheel shall be coated with silica gel desiccant permanently bonded without the use of binders or adhesives, which may degrade desiccant performance. The substrate shall be lightweight polymer and shall not degrade nor require additional coatings for application in marine or coastal environments. Coated segments shall be washable with detergent or alkaline coil cleaner and water. Desiccant shall not dissolve nor deliquesce in the presence of water or high humidity. The wheel shall be wound continuously with one flat and one structured layer in an ideal parallel plate geometry providing laminar flow and minimum pressure drop-to-efficiency ratios. The layers shall be effectively captured in stainless steel wheel frames or aluminum and stainless steel segment frames that provide a rigid and self-supporting matrix. The wheels shall be provided with removable energy transfer matrix. Wheel frame construction shall be a welded hub, spoke and rim assembly of stainless, plated and/or coated steel and shall be self-supporting without matrix segments in place. Segments shall be removable without the use of tools to facilitate maintenance and cleaning. Wheel bearings shall be selected to provide an L-10 life in excess of 400,000 hours. Rim shall be continuous rolled stainless steel and the wheel shall be connected to the shaft by means of taper locks. All diameter and perimeter seals shall be provided as part of the cassette assembly and shall be factory set. Drive belts of stretch urethane shall be provided for wheel rim drive without the need for external tensioners or adjustment. The energy recovery cassette shall be an Underwriters Laboratories Recognized Component for electrical and fire safety. The wheel drive motor shall be an Underwriters Laboratory recognized component and shall be mounted in the cassette frame and supplied with a service connector or junction box.

BLOWERS

The unit supply fan shall consist of centrifugal backward curve fan with 96% efficiency electronically commutated motor (ECM). The motor RPM shall be directly set by the package unit control system. The balancing contractor shall have direct access to set the motor RPM through the unit mounted control system display. [The unit exhaust fan shall consist of a centrifugal backward curve fan with either 90% efficiency alternating current control motor or 96% efficiency electronic control motor. [The exhaust fan shall consist of a forward curve blower with a standard 86% efficient open drip proof 3hp motor. The fan assembly shall have an adjustable drive to allow adjustment of the exhaust air CFM.] Each supply and exhaust fan shall have a differential pressure switch to indicate fan air flow status to the units control system. The unit supply and return air shall be field convertible for vertical to horizontal discharge with flanged duct connections. The unit shall allow horizontal discharge with the need for curb or other mount. (The unit shall have a 16" knock down, insulated roof curb).

ADDITIONAL HEAT

Manufacturer to provide factory or field installed electric resistance heat for the unit located in the outdoor air stream. Unit shall include field-replaceable heat sections. Unit shall include an electric resistance heating section using open element with insulated ceramic bushing, contactors, auto reset high temperature limit switch and other necessary safety devices.

CABINET

Outer casing shall be fabricated from G90 galvanized steel substrate with 60 gloss painted finish coat. Structural members shall be 18 gauge with access doors for the following sections: intake air filters, exhaust air filters, supply and exhaust fans, evaporator and condenser coils, drain pan, compressor, power connections, and unit controls. Roof panels shall be 20 gauge with double-wall 1" insulation liner. The cabinet design shall prevent condensation forming on the outside of the unit casing in operation. Access panel doors shall be fully-gasketed. Access panel door to the supply fan shall be of double-wall construction. Cabinet and mounting base shall be arranged for both indoor and outdoor installation [and (roof curb shall be furnished for rooftop mounting) (bottom insulation cover shall be provided for pad or rail mounting)]. The unit control panel section shall be laid out to provide separation of high and low voltage components per UL standards. For ease of service, all electrical components shall be clearly identified with 1/2" diameter self adhesive labels to match the unit specific wiring diagram.

CONTROLS

The unit shall have a fully integrated control system that directly controls the heat pump, enthalpy wheel and fans to condition the entering air stream. The unit shall have a factory mounted display (with an optional remote display) that indicates all unit status, parameters and alarms. The displays shall allow complete access to unit setpoints and mode. The control system shall allow normal operations, manual test mode, automatic test mode and alarm mode operation. The air balancing contractor shall have access to the control system to set the unit CFM by adjusting the fan motor RPM. The control system shall allow users to change the discharge air setpoints, allow unit time scheduling and reviewing of alarm conditions. The operation of the unit shall be based upon a field selected control option(s) to include (wall mounted CO₂ sensor, wall mounted VOC sensor, remote mounted manual On/Off key switch, wall mounted infrared occupancy sensor, wall mounted time clock, or unit mounted time schedule). The unit shall have BacNet or Lon allowing interface to an external building automation system.

CERTIFICATIONS

The unit shall be tested to ARI standard 210/240 and 920p. The unit shall be design certified by a nationally recognized testing lab.

The enthalpy wheel cassette shall be listed in the ARI Certified Products Directory and bear the ARI Certified Product Seal.

WARRANTY

Manufacturer must have at least 20 years experience in manufacturing ventilation air equipment.

The unit shall carry a two (2) [five (5), ten (10)] year limited warranty on all parts and components.



REZNOR® PRODUCT LIMITED WARRANTY

Reznor, LLC warrants to the original owner-user that this Reznor product will be free from defects in material or workmanship. This warranty is limited to twelve (12) months from the date of original installation, whether or not actual use begins on that date, or eighteen (18) months from date of shipment by Reznor, LLC, whichever occurs first.

EXTENDED WARRANTY

Model ZQYRA - Extended one (1) year warranty on all parts and components (in addition to the standard one year warranty for a total of two years).

ADDITIONAL OPTIONAL EXTENDED WARRANTY

Additional extended warranties may be **purchased**. Warranties include:

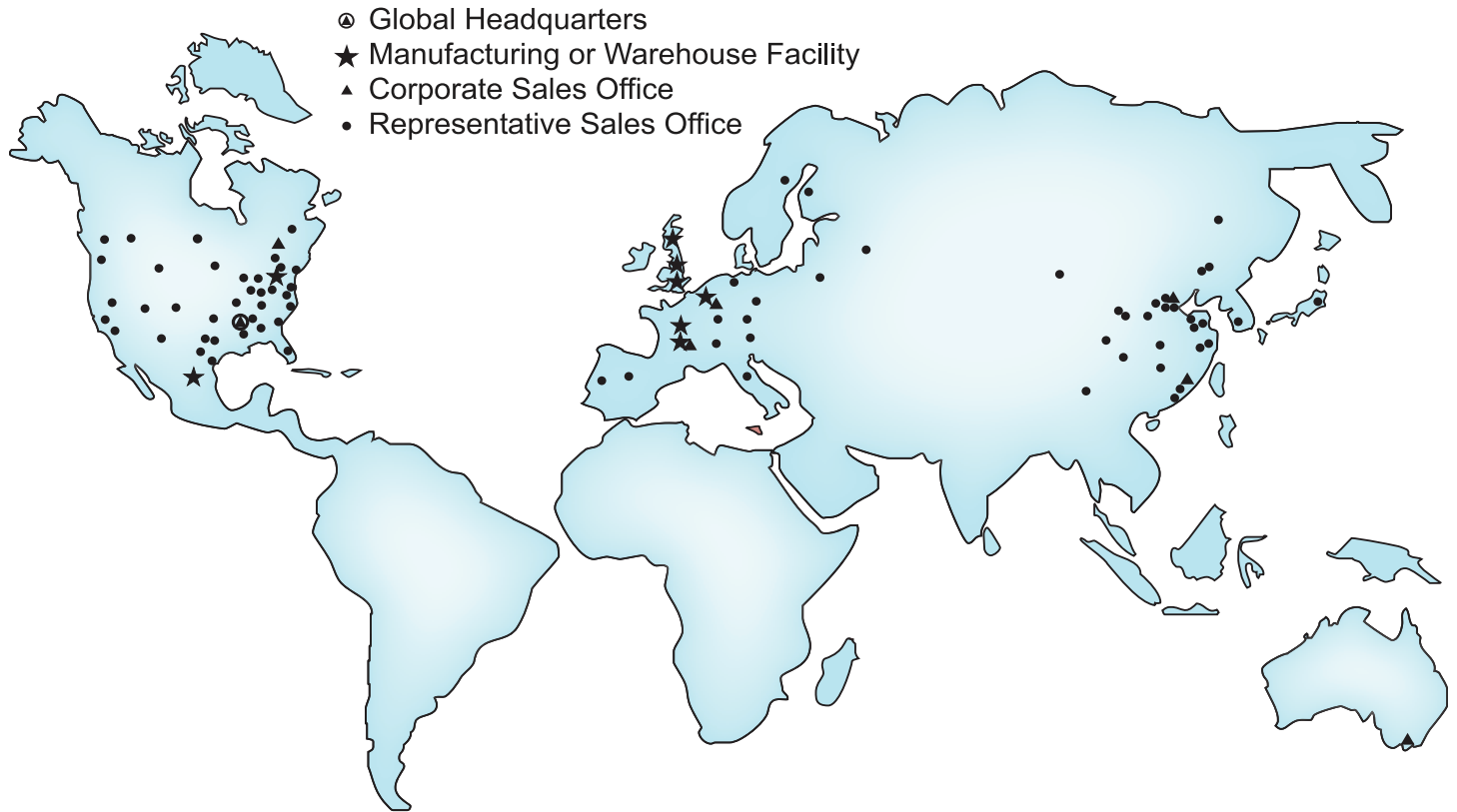
- **5 year** - Extended three (3) year non-prorated warranty for a total of 5 years (XW9)
- **10 year** - Extended eight (8) year non-prorated warranty for a total of 10 years (XW10)

LIMITATIONS AND EXCLUSIONS

Reznor, LLC obligations under this warranty and the sole remedy for its breach are limited to repair, at its manufacturing facility, of any part or parts of its Reznor products which prove to be defective; or, in its sole discretion, replacement of such products. All returns of defective parts or products must include the product model number and serial number, and must be made through an authorized Reznor distributor or arranged through Reznor Customer Service. Authorized returns must be shipped prepaid. Repaired or replacement parts will be shipped by Reznor, LLC F.O.B. shipping point.

1. The warranty provided herein does not cover charges for labor or other costs incurred in the troubleshooting, repair, removal, installation, service or handling of parts or complete products.
2. All claims under the warranty provided herein must be made within ninety (90) days from the date of discovery of the defect. Failure to notify Reznor, LLC of a warranted defect within ninety (90) days of its discovery voids Reznor, LLC obligations hereunder.
3. The warranty provided herein shall be void and of no effect in the event that (a) the product has been operated outside its designed output capacity (heating, cooling, airflow); (b) the product has been subjected to misuse, neglect, accident, improper or inadequate maintenance, corrosive environments, environments containing airborne contaminants (silicone, aluminum oxide, etc.), or excessive thermal shock; (c) unauthorized modifications are made to the product; (d) the product is not installed or operated in compliance with the manufacturer's printed instructions; (e) the product is not installed and operated in compliance with applicable building, mechanical, plumbing and electrical codes; or (f) the serial number of the product has been altered, defaced or removed.
4. The warranty provided herein is for repair or replacement only. Reznor, LLC shall not be liable for any loss, cost, damage, or expense of any kind arising out of a breach of the warranty. Further, Reznor, LLC shall not be liable for any incidental, consequential, exemplary, special, or punitive damages, nor for any loss of revenue, profit or use, arising out of a breach of this warranty or in connection with the sale, maintenance, use, operation or repair of any Reznor product. In no event will Reznor, LLC be liable for any amount greater than the purchase price of a defective product. The disclaimers of liability included in this paragraph 4 shall remain in effect and shall continue to be enforceable in the event that any remedy herein shall fail of its essential purpose.
5. THIS WARRANTY IS THE SOLE AND EXCLUSIVE WARRANTY FOR REZNOR PRODUCTS, AND IS IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES. REZNOR, LLC SPECIFICALLY DISCLAIMS ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. No person or entity is authorized to bind Reznor, LLC to any other warranty, obligation or liability for any Reznor product. Installation, operation or use of the Reznor product for which this warranty is issued shall constitute acceptance of the terms hereof.

Reznor® is your global source for heating, ventilating and air conditioning equipment.



REZNOR®

**For more information on Reznor HVAC Equipment,
contact your local Reznor Representative by calling
800-695-1901.**

**Or, find us on the internet at
ReznorHVAC.com**

Performance tables provided on special request only.
Check with your Reznor Representative before specifying your equipment.

REZNOR®

MODEL ZQYRA HYBRID IAQ VENTILATOR Performance Tables

Cooling Mode

Statement of Unit Performance

Cooling/heating air flow is between 200 FPM and 500 FPM over the main evaporator coils. Unit performance values represent the general performance of our typical unit at a given design condition. With all DX, and electric systems the values are to be construed as having an expected mechanical tolerance of 10%-15% of stated values. Due to mechanical limitations of the equipment, unknown variables and uncontrollable environmental influences such as actual airflow, pressure differences, refrigerant charge, air delivery (duct & registers), coil factors and other unstated variables, the actual unit values will be different from the stated values. The control system seeks to stage or modulate the equipment to a steady state condition over an extended period of time within the tolerance of the mechanical equipment. The control system setpoints should not be construed as the tolerance or guaranteed performance of the mechanical system.

Unit Leaving Air Conditions 100% Capacity, Model ZQYRA-8																	
Supply Air SCFM	Outdoor Air dB/wB	RA Conditions (72°F dB / 60°F wB)					RA Conditions (75°F dB / 62°F wB)					RA Conditions (80°F dB / 67°F wB)					
		dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	
500	85	68	54.3	50.1	29871	18417	8.5	56.0	51.6	27787	17429	7.9	59.7	55.4	22116	15212	6.1
		70	54.5	50.5	33486	18314	9.6	56.1	51.9	31506	17367	8.9	60.1	56.0	25347	14922	7.0
		72	55.1	51.3	36783	17951	10.5	56.8	52.8	34568	16934	9.8	60.7	56.8	28482	14562	7.8
		74	55.5	51.9	40514	17699	11.6	57.4	53.6	38017	16581	10.7	61.2	57.4	32065	14286	8.8
	95	72	56.6	51.9	35648	23075	9.1	58.2	53.4	33426	22057	8.4	62.1	57.3	27404	19733	6.8
		74	57.1	52.7	39140	22727	10.0	58.7	54.1	37082	21798	9.4	62.5	57.9	31125	19498	7.7
		76	57.7	53.5	42752	22357	10.9	59.5	55.0	40446	21327	10.2	63.1	58.7	34607	19133	8.5
		78	58.4	54.4	46456	21938	11.8	60.2	55.9	44104	20889	11.0	63.9	59.6	38066	18675	9.4
	98	70	56.4	51.4	31998	24986	7.9	58.1	52.9	29802	23966	7.3	62.0	56.8	23823	21609	5.7
		72	57.0	52.1	35282	24616	8.7	58.7	53.7	32998	23564	8.1	62.6	57.6	26961	21231	6.5
		74	57.6	52.9	38718	24267	9.5	59.3	54.4	36434	23239	8.9	63.1	58.2	30428	20925	7.3
		76	58.2	53.7	42404	23901	10.4	59.7	55.0	40332	22977	9.6	63.7	59.0	33940	20556	8.1
	105	78	58.8	54.4	46264	23538	11.3	60.6	56.1	43721	22433	10.5	64.3	59.8	37661	20196	9.0
		80	59.5	55.4	50162	23116	12.3	61.3	57.0	47633	22027	11.4	65.0	60.6	41601	19835	9.9
		68	56.8	51.0	28135	28943	6.4	58.6	52.7	25747	27848	5.8	62.6	56.7	19668	25431	4.4
		70	57.4	51.8	31194	28584	7.1	59.1	53.4	28931	27526	6.6	63.1	57.3	22784	25140	5.0
		72	58.0	52.6	34448	28210	7.9	59.7	54.1	32154	27164	7.3	63.6	58.0	26077	24828	5.8
		74	58.8	53.5	37697	27753	8.6	60.4	54.9	35552	26792	8.0	64.2	58.7	29565	24513	6.5
		76	59.2	54.1	41538	27495	9.5	61.3	55.9	38776	26256	8.6	64.8	59.4	33057	24147	7.3
		78	59.9	55.0	45231	27068	10.3	61.7	56.6	42667	25962	9.4	65.4	60.2	36751	23776	8.1
	80	60.9	56.2	48689	26453	10.8	62.3	57.3	46852	25647	10.5	66.0	61.0	40714	23415	8.9	
600	85	68	55.9	51.3	33309	20692	9.7	57.7	53.0	30500	19417	8.8	61.6	56.8	23515	16675	6.6
		70	56.5	52.1	36951	20291	10.7	58.4	53.8	33987	18924	9.7	62.0	57.4	27318	16377	7.7
		72	57.2	53.0	40657	19804	11.8	59.0	54.6	37776	18497	10.8	62.6	58.3	30877	15902	8.7
		74	57.6	53.7	44920	19461	13.0	59.4	55.2	42133	18219	12.0	63.1	59.0	35037	15557	9.8
	95	72	58.4	53.4	39670	26023	10.3	60.2	54.9	36916	24775	9.5	64.0	58.8	29661	22025	7.5
		74	59.0	54.2	43746	25607	11.4	60.6	55.5	41248	24473	10.6	64.5	59.4	33792	21682	8.5
		76	59.6	55.0	47963	25145	12.4	61.3	56.5	45243	23967	11.6	65.0	60.1	38226	21366	9.7
		78	60.3	55.9	52313	24674	13.5	61.9	57.2	49781	23550	12.8	65.7	61.0	42295	20845	10.7
	98	70	58.3	52.9	35345	28213	8.9	60.1	54.4	32635	26966	8.1	63.9	58.2	25537	24263	6.3
		72	58.8	53.5	39446	27893	10.0	60.6	55.1	36499	26597	9.1	64.4	58.9	29441	23908	7.2
		74	59.4	54.3	43477	27472	10.9	61.1	55.8	40743	26254	10.2	65.0	59.6	33315	23500	8.2
		76	60.1	55.2	47557	26981	11.9	61.8	56.7	44789	25766	11.2	65.6	60.4	37482	23076	9.2
	105	78	60.6	55.9	52122	26574	13.0	62.3	57.4	49315	25357	12.3	66.1	61.2	41812	22654	10.2
		80	61.3	56.8	56772	26094	14.2	63.0	58.3	53884	24891	13.4	66.8	62.0	46464	22219	11.3
		68	58.4	52.5	30955	33101	7.3	60.2	54.0	28213	31846	6.5	64.3	57.9	21028	28912	4.8
		70	59.2	53.2	34550	32554	8.1	61.0	54.8	31807	31285	7.3	64.8	58.5	24685	28563	5.6
		72	59.9	54.0	38289	32075	8.9	61.6	55.5	35647	30892	8.3	65.4	59.3	28357	28132	6.5
		74	60.5	54.8	42368	31667	9.8	62.1	56.3	39659	30474	9.2	65.9	60.0	32448	27790	7.4
		76	61.0	55.5	46689	31261	10.8	62.8	57.0	43896	30041	10.1	66.5	60.8	36530	27347	8.3
		78	61.6	56.4	51108	30832	11.9	63.3	57.8	48417	29628	11.1	67.1	61.5	40920	26923	9.3
	80	62.2	57.1	55955	30423	13.0	64.0	58.7	52948	29150	12.2	67.7	62.3	45567	26516	10.3	

EER calculated at 0.1" w.c. external static pressure.



MODEL ZQYRA
HYBRID IAQ VENTILATOR
Performance Tables (cont'd)

Cooling Mode

Unit Leaving Air Conditions 100% Capacity, Model ZQYRA-8																	
Supply Air SCFM	Outdoor Air dB/wB	RA Conditions (72°F dB / 60°F wB)					RA Conditions (75°F dB / 62°F wB)					RA Conditions (80°F dB / 67°F wB)					
		dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	
700	85	68	57.6	52.8	35679	22508	10.3	59.3	54.3	32597	21094	9.3	63.0	57.9	24737	18072	6.9
		70	57.9	53.3	40354	22237	11.6	59.6	54.8	37311	20845	10.7	63.8	58.9	28332	17463	7.9
		72	58.5	54.0	44840	21782	12.9	60.2	55.5	41730	20392	11.9	63.9	59.2	33542	17375	9.4
		74	59.1	54.8	49554	21325	14.2	60.7	56.3	46442	19960	13.2	64.5	60.0	38009	16833	10.6
	95	72	59.8	54.5	43645	28915	11.4	61.5	56.0	40508	27523	10.5	65.4	59.8	31982	24331	8.1
		74	60.4	55.2	48350	28464	12.5	62.1	56.7	45146	27052	11.6	65.9	60.5	36718	23951	9.3
		76	61.0	56.0	53285	27978	13.8	62.8	57.6	49692	26444	12.8	66.5	61.2	41481	23466	10.5
		78	61.6	56.9	58316	27469	15.1	63.3	58.4	54978	26033	14.1	67.0	62.0	46509	22999	11.7
	98	70	59.5	53.8	39053	31607	9.9	61.4	55.4	35634	30066	8.9	65.3	59.2	27283	26913	6.7
		72	60.2	54.6	43212	31041	10.9	62.0	56.2	40036	29613	10.0	65.7	59.8	31783	26530	7.8
		74	61.0	55.6	47529	30427	11.9	62.5	56.9	44642	29141	11.1	66.3	60.6	36214	26037	8.9
		76	61.4	56.2	52877	30099	13.3	63.3	57.8	49213	28536	12.3	66.9	61.4	41011	25586	10.0
	105	78	61.9	56.9	58183	29702	14.6	63.7	58.4	54726	28194	13.6	67.4	62.1	46044	25132	11.3
		80	62.7	57.9	63199	29045	15.8	64.2	59.1	60401	27803	15.0	68.0	62.9	51393	24634	12.5
		68	59.9	53.5	33724	37049	7.9	61.6	54.9	30707	35663	7.2	65.6	58.8	22180	32423	5.1
		70	60.5	54.2	37895	36592	8.9	62.2	55.7	34796	35188	8.1	66.2	59.5	26400	31891	6.0
		72	61.2	55.0	42351	36010	9.9	62.9	56.5	39165	34567	9.1	66.6	60.1	30971	31553	7.1
		74	61.8	55.7	47026	35540	11.0	63.5	57.2	43778	34111	10.2	67.4	61.0	34996	30903	8.0
		76	62.3	56.5	51970	35069	12.2	64.1	58.0	48651	33650	11.3	67.8	61.7	40090	30542	9.1
		78	63.0	57.3	56992	34556	13.3	64.7	58.8	53619	33101	12.4	68.4	62.4	45091	30061	10.3
	80	63.6	58.2	62323	34024	14.5	65.3	59.6	59092	32626	13.7	69.0	63.2	50455	29609	11.5	
800	85	68	58.5	53.4	38945	24702	11.0	60.3	55.0	35407	23046	9.9	64.1	58.7	26060	19517	7.2
		70	59.1	54.2	43702	24190	12.4	60.8	55.7	40094	22563	11.2	64.6	59.5	30552	19004	8.4
		72	59.6	55.0	48700	23681	13.7	61.4	56.5	45051	22048	12.6	65.1	60.2	35638	18563	9.8
		74	60.1	55.7	54043	23182	15.2	61.9	57.2	50369	21573	14.0	65.4	60.7	41269	18302	11.3
	95	72	60.8	55.3	47637	31859	12.2	62.5	56.6	44362	30352	11.2	66.4	60.5	34415	26676	8.6
		74	61.5	56.1	52829	31281	13.5	63.1	57.5	49371	29730	12.5	67.0	61.3	39474	26139	9.8
		76	62.0	56.8	58419	30777	14.9	63.9	58.5	54234	28967	13.7	67.4	61.9	45134	25706	11.2
		78	62.6	57.7	64086	30182	16.3	64.3	59.1	60530	28641	15.3	68.2	63.0	50074	24964	12.4
	98	70	60.6	54.6	42386	34839	10.6	62.3	56.0	38872	33261	9.6	66.3	59.9	29129	29592	7.1
		72	61.2	55.4	47351	34297	11.8	63.0	56.9	43683	32645	10.7	66.8	60.7	33929	29055	8.2
		74	61.8	56.1	52591	33748	13.0	63.6	57.6	48886	32121	12.0	67.3	61.3	39268	28628	9.5
		76	62.4	57.0	57992	33196	14.3	64.2	58.5	54180	31541	13.3	67.9	62.1	44667	28116	10.8
	105	78	63.1	57.8	63610	32577	15.7	64.8	59.2	60024	30994	14.7	68.4	62.8	50325	27567	12.1
		80	63.7	58.7	69633	31980	17.1	65.4	60.1	65969	30419	16.1	69.0	63.7	56110	27004	13.5
		68	60.9	54.1	36794	41116	8.6	62.7	55.6	33258	39490	7.7	66.4	59.4	23856	35962	5.4
		70	61.5	54.9	41441	40582	9.6	63.2	56.4	37856	38961	8.7	67.0	60.1	28246	35402	6.4
		72	62.0	55.6	46443	40092	10.8	63.8	57.1	42784	38460	9.8	67.8	60.9	33040	34734	7.5
		74	62.8	56.5	51479	39364	11.9	64.5	57.9	48004	37799	11.0	68.2	61.5	38378	34287	8.7
		76	63.4	57.2	57052	38828	13.2	65.1	58.7	53256	37195	12.2	68.8	62.3	43729	33767	9.9
		78	64.0	58.1	62705	38226	14.4	65.7	59.5	59164	36694	13.5	69.4	63.2	49114	33182	11.1
	80	64.6	58.9	68734	37639	15.8	66.3	60.3	65071	36087	14.9	70.0	63.9	55152	32646	12.4	

EER calculated at 0.1" w.c. external static pressure.



MODEL ZQYRA
HYBRID IAQ VENTILATOR
Performance Tables (cont'd)

Cooling Mode

Unit Leaving Air Conditions 100% Capacity, Model ZQYRA-8																		
Supply Air SCFM	Outdoor Air dB/wB	RA Conditions (72°F dB / 60°F wB)						RA Conditions (75°F dB / 62°F wB)					RA Conditions (80°F dB / 67°F wB)					
		dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER		
900	85	68	59.3	54.0	42100	26803	11.5	61.1	55.5	38075	24964	10.3	64.9	59.3	27542	21011	7.3	
		70	59.9	54.8	47300	26227	12.9	61.6	56.3	43267	24404	11.7	65.4	60.1	32564	20457	8.7	
		72	60.4	55.6	52899	25676	14.4	62.1	57.0	48850	23847	13.2	65.9	60.7	38242	19972	10.2	
		74	61.0	56.4	58571	25029	15.9	62.7	57.8	54762	23313	14.8	66.4	61.5	43966	19443	11.7	
	95	72	61.7	55.8	51746	34767	12.8	63.6	57.5	47243	32761	11.6	66.9	60.8	37637	29347	9.1	
		74	62.2	56.6	57600	34250	14.3	63.8	58.0	53835	32561	13.3	67.7	61.7	42709	28517	10.4	
		76	62.8	57.4	63636	33602	15.7	64.6	58.9	59384	31737	14.6	68.2	62.5	48692	27930	11.8	
		78	63.5	58.3	69914	32904	17.3	65.3	59.9	65488	31014	16.0	68.8	63.3	55062	27375	13.3	
	98	70	61.5	55.2	45696	38039	11.1	63.3	56.7	41640	36225	10.0	66.9	60.3	31242	32390	7.4	
		72	62.1	56.0	51121	37417	12.4	63.9	57.5	47069	35620	11.3	67.6	61.1	36539	31744	8.6	
		74	62.6	56.7	57167	36909	13.8	64.4	58.2	52978	35037	12.7	68.3	62.0	41647	30970	9.8	
		76	63.3	57.6	63172	36248	15.2	64.9	59.0	59208	34486	14.1	68.8	62.8	47750	30444	11.2	
	105	78	63.8	58.4	69459	35624	16.7	65.6	59.8	65431	33848	15.6	69.2	63.4	54516	30016	12.8	
		80	64.5	59.3	76200	34978	18.3	66.1	60.7	72093	33243	17.2	69.7	64.1	61319	29473	14.4	
		68	61.7	54.6	39777	45126	9.1	63.3	55.9	36292	43469	8.2	67.4	59.9	25041	39254	5.6	
		70	62.3	55.4	44843	44491	10.2	64.1	56.9	40820	42667	9.2	67.8	60.6	30297	38773	6.7	
	1000	85	72	62.9	56.2	50399	43913	11.4	64.6	57.7	46300	42090	10.4	68.4	61.3	35609	38180	7.9
			74	63.5	56.9	56336	43249	12.7	65.2	58.4	52080	41537	11.7	69.0	62.1	41299	37530	9.1
			76	64.1	57.8	62255	42617	14.0	65.8	59.2	58298	40859	13.1	69.6	62.8	47245	36929	10.4
			78	64.8	58.6	68583	41980	15.4	66.5	60.0	64548	40201	14.4	70.1	63.6	53599	36375	11.8
	1000	85	80	65.4	59.5	75266	41303	16.9	67.1	60.9	71182	39555	15.9	70.9	64.6	59517	35536	13.1
68			60.0	54.5	45033	28859	11.8	61.7	56.0	40628	26847	10.5	65.5	59.8	28895	22508	7.4	
70			60.5	55.3	50848	28264	13.2	62.3	56.8	46371	26240	12.0	65.9	60.4	34813	21997	8.9	
72			61.0	56.0	57062	27704	14.8	62.7	57.5	52524	25677	13.6	66.4	61.2	40721	21406	10.4	
95		74	61.6	56.9	63316	27040	16.5	63.3	58.3	59028	25088	15.2	67.0	61.9	47019	20819	11.9	
		72	62.3	56.3	55866	37691	13.3	64.0	57.8	51309	35705	12.2	67.7	61.3	39898	31509	9.3	
		74	62.9	57.1	62079	37056	14.8	64.4	58.4	58186	35317	13.8	67.9	61.8	46871	31255	10.9	
		76	63.3	57.8	69350	36624	16.5	65.2	59.4	64220	34389	15.2	68.8	62.9	52361	30175	12.2	
98		78	64.1	58.9	75635	35683	18.0	65.8	60.3	71111	33701	16.8	69.4	63.7	59412	29585	13.8	
		70	62.1	55.6	49506	41395	11.5	63.8	57.1	45010	39419	10.4	67.6	60.7	33461	35112	7.6	
		72	62.7	56.4	55388	40686	12.9	64.4	57.8	51178	38785	11.8	67.8	61.2	40069	34832	9.1	
		74	63.1	57.1	62194	40280	14.4	65.0	58.7	57201	38097	13.2	68.6	62.2	45594	33870	10.4	
105		76	63.8	58.0	68500	39398	15.9	65.5	59.4	64140	37489	14.8	69.2	62.9	52252	33265	11.9	
		78	64.4	58.9	75467	38702	17.5	66.3	60.4	70521	36573	16.2	69.8	63.8	58889	32549	13.3	
		80	65.3	60.0	82066	37763	18.9	66.7	61.1	78366	36121	18.0	70.3	64.5	66364	31934	15.0	
		68	62.5	55.0	43013	49071	9.5	64.2	56.4	38618	47030	8.4	67.7	60.0	27398	43045	5.9	
1000		98	70	62.8	55.6	48990	48649	10.8	64.5	57.1	44636	46663	9.7	68.4	60.8	32608	42194	7.0
			72	63.6	56.6	54536	47761	11.9	65.2	58.0	50333	45887	10.9	69.1	61.7	38027	41393	8.2
			74	64.1	57.3	61023	47219	13.3	65.8	58.8	56372	45174	12.2	69.5	62.3	44711	40947	9.6
			76	64.7	58.2	67592	46437	14.7	66.5	59.6	63192	44460	13.7	70.1	63.1	51324	40249	11.0
1000		105	78	65.4	59.0	74581	45721	16.2	67.1	60.4	70100	43752	15.2	70.7	64.0	57974	39549	12.4
	80		66.3	60.2	81056	44693	17.6	67.9	61.5	76484	42771	16.5	71.5	65.0	64467	38648	13.7	

EER calculated at 0.1" w.c. external static pressure.



MODEL ZQYRA
HYBRID IAQ VENTILATOR
Performance Tables (cont'd)

Cooling Mode

Unit Leaving Air Conditions 100% Capacity, Model ZQYRA-8																	
Supply Air SCFM	Outdoor Air dB/wB	RA Conditions (72°F dB / 60°F wB)					RA Conditions (75°F dB / 62°F wB)					RA Conditions (80°F dB / 67°F wB)					
		dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	
1100	85	68	60.3	54.8	49301	31675	12.2	62.1	56.3	44212	29301	10.8	65.9	60.0	31177	24474	7.5
		70	61.0	55.7	55216	30774	13.6	62.7	57.1	50581	28583	12.3	66.4	60.7	37745	23907	9.1
		72	61.5	56.4	62141	30168	15.2	63.3	57.9	57031	27863	13.9	66.8	61.4	44333	23273	10.6
		74	62.0	57.3	69072	29443	16.9	63.7	58.6	64291	27262	15.6	67.2	62.0	51936	22845	12.4
	95	72	62.8	56.7	60885	41225	13.8	64.5	58.0	56167	39049	12.6	68.2	61.6	43097	34330	9.6
		74	63.4	57.5	67781	40482	15.3	65.1	58.9	62985	38324	14.1	68.4	62.2	50866	34096	11.3
		76	63.8	58.2	75517	39981	17.0	65.5	59.6	70751	37875	15.9	69.0	63.0	58033	33286	12.8
		78	64.6	59.2	82815	38988	18.6	66.3	60.6	77820	36813	17.4	69.8	64.0	64826	32304	14.3
	98	70	62.6	55.9	53936	45389	12.0	64.3	57.4	48924	43145	10.8	68.0	60.9	36381	38455	7.9
		72	63.2	56.7	60446	44619	13.3	64.9	58.1	55722	42462	12.2	68.1	61.3	44328	38373	9.6
		74	63.9	57.6	67140	43701	14.8	65.3	58.8	63025	41985	13.8	69.2	62.5	49462	36966	10.7
		76	64.2	58.2	75453	43383	16.6	66.2	59.8	69672	40830	15.2	69.7	63.2	56899	36328	12.3
		78	65.0	59.3	82321	42332	18.1	66.7	60.7	77298	40140	16.9	70.3	64.1	64248	35547	13.8
		80	65.6	60.2	90517	41514	19.9	67.3	61.5	85444	39361	18.6	70.8	64.8	72571	34913	15.6
	105	68	63.0	55.2	47223	53789	9.9	64.8	56.6	42319	51480	8.8	68.4	60.3	29290	46957	6.0
		70	63.6	56.0	53193	53084	11.1	65.1	57.3	49022	51151	10.2	69.1	61.2	35056	45979	7.2
		72	63.9	56.7	60371	52688	12.6	65.8	58.3	54913	50209	11.4	69.6	61.9	41577	45325	8.5
		74	64.7	57.6	66820	51721	13.9	66.4	59.1	61641	49473	12.8	70.0	62.6	48632	44843	9.9
		76	65.2	58.5	74081	51016	15.4	67.0	60.0	68786	48718	14.2	70.6	63.4	55936	44068	11.4
		78	65.9	59.4	81455	50096	16.9	67.8	60.9	75949	47739	15.6	71.2	64.2	63355	43373	12.9
		80	66.5	60.3	89672	49346	18.6	68.2	61.7	84569	47186	17.4	71.8	65.1	71238	42596	14.4

EER calculated at 0.1" w.c. external static pressure.

Unit Leaving Air Conditions 100% Capacity, Model ZQYRA-12																	
Supply Air SCFM	Outdoor Air dB/wB		RA Conditions (72°F dB / 60°F wB)					RA Conditions (75°F dB / 62°F wB)					RA Conditions (80°F dB / 67°F wB)				
			dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER
900	85	68	53.9	51.2	50392	33227	13.3	55.6	52.7	46525	31488	12.2	59.5	56.7	35756	27278	9.2
		70	54.5	51.9	56188	32660	14.8	56.2	53.5	51956	30812	13.6	60.0	57.3	41325	26702	10.7
		72	55.1	52.6	62035	31968	16.4	56.7	54.1	58041	30236	15.2	60.6	58.0	47168	26134	12.1
		74	55.8	53.5	68073	31219	17.9	57.4	54.9	64129	29530	16.7	61.2	58.8	53174	25435	13.6
	95	72	56.2	53.2	60132	41470	14.5	57.9	54.8	56001	39679	13.4	61.6	58.5	45436	35685	10.7
		74	56.9	54.0	66273	40776	15.9	58.5	55.5	62087	39014	14.8	62.3	59.3	51319	35002	12.1
		76	57.6	54.8	72653	40050	17.4	59.2	56.3	68532	38324	16.3	62.8	59.9	57877	34391	13.6
		78	58.3	55.6	79289	39286	18.9	59.8	57.0	75364	37629	17.9	63.6	60.8	64198	33585	15.0
	98	70	55.8	52.6	53915	45116	12.7	57.6	54.2	49499	43209	11.5	61.4	58.0	38850	39128	8.9
		72	56.5	53.3	59729	44418	14.1	58.1	54.9	55580	42624	12.9	62.1	58.8	44405	38365	10.2
		74	57.2	54.1	65808	43678	15.5	58.8	55.6	61621	41901	14.3	62.7	59.5	50517	37748	11.6
		76	57.9	55.0	71975	42847	16.8	59.6	56.5	67800	41104	15.7	63.3	60.2	56780	37059	13.0
		78	58.6	55.7	78860	42189	18.3	60.2	57.3	74574	40398	17.3	64.0	61.0	63459	36406	14.4
	105	80	59.3	56.6	85899	41422	20.0	60.9	58.1	81474	39633	18.8	64.6	61.8	70433	35707	16.0
		68	56.0	52.2	47126	52392	10.5	57.7	53.8	42965	50580	9.5	61.7	57.8	31917	46341	6.9
		70	56.6	52.9	52636	51764	11.7	58.3	54.5	48464	49931	10.6	62.2	58.4	37369	45728	8.1
		72	57.2	53.7	58397	51083	12.9	58.9	55.2	54232	49282	11.9	62.9	59.2	42869	45040	9.2
		74	58.0	54.5	64309	50298	14.2	59.6	56.0	60263	48577	13.2	63.5	59.9	49017	44426	10.5
		76	58.7	55.4	70494	49526	15.4	60.3	56.9	66336	47787	14.4	64.1	60.7	55197	43741	11.8
		78	59.4	56.1	77433	48816	17.0	61.0	57.7	73106	47099	15.9	64.8	61.4	61790	42996	13.2
		80	60.1	57.0	84385	48024	18.5	61.8	58.5	79938	46229	17.4	65.5	62.2	68780	42283	14.7

EER calculated at 0.1" w.c. external static pressure.



MODEL ZQYRA
HYBRID IAQ VENTILATOR
Performance Tables (cont'd)

Cooling Mode

Unit Leaving Air Conditions 100% Capacity, Model ZQYRA-12																		
Supply Air SCFM	Outdoor Air dB/wB		RA Conditions (72°F dB / 60°F wB)					RA Conditions (75°F dB / 62°F wB)					RA Conditions (80°F dB / 67°F wB)					
			dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	
1000	85	68	55.1	52.1	53027	35307	13.7	56.7	53.6	48693	33377	12.5	60.6	57.6	36675	28749	9.2	
		70	55.7	52.9	59074	34554	15.2	57.4	54.4	54637	32627	14.0	61.2	58.2	42767	28107	10.8	
		72	56.2	53.5	65824	33941	16.9	57.9	55.0	61366	31996	15.7	61.8	59.0	48906	27365	12.3	
		74	56.9	54.3	72664	33207	18.7	58.5	55.8	68160	31281	17.4	62.2	59.5	56261	26932	14.1	
	95	72	57.3	54.1	63774	44454	15.1	59.0	55.6	59323	42553	13.9	62.7	59.3	47489	38108	10.9	
		74	58.0	54.8	70563	43685	16.7	59.6	56.3	65960	41770	15.4	63.5	60.2	53617	37213	12.4	
		76	58.6	55.6	77748	42948	18.3	60.3	57.1	73037	40990	17.0	64.0	60.8	60887	36582	14.0	
		78	59.3	56.5	84979	42102	19.9	61.0	58.0	80171	40136	18.7	64.7	61.6	68136	35822	15.7	
	98	70	57.0	53.4	56959	48417	13.2	58.7	55.0	52302	46423	12.0	62.5	58.8	40237	41864	9.1	
		72	57.6	54.2	63392	47684	14.6	59.3	55.8	58588	45670	13.4	63.2	59.6	46356	41101	10.4	
		74	58.2	54.9	70133	46952	16.1	59.9	56.5	65177	44930	14.8	63.7	60.2	53196	40453	11.9	
		76	59.0	55.8	77010	46055	17.6	60.6	57.3	72301	44109	16.4	64.4	61.0	60093	39679	13.5	
	105	78	59.6	56.5	84547	45298	19.3	61.3	58.1	79731	43321	18.1	65.0	61.8	67334	38932	15.0	
		80	60.4	57.4	92250	44444	21.1	62.0	58.9	87328	42479	19.8	65.6	62.5	75051	38196	16.8	
		68	57.2	53.1	49492	56460	10.8	58.8	54.6	45062	54480	9.7	62.7	58.5	32821	49878	7.0	
		70	57.7	53.7	55776	55831	12.1	59.5	55.4	50910	53732	11.0	63.3	59.2	38870	49261	8.3	
	1100	85	72	58.4	54.5	62050	55046	13.4	60.0	56.0	57559	53124	12.4	63.9	59.9	44928	48495	9.5
			74	59.0	55.3	68786	54322	14.9	60.7	56.8	64087	52339	13.8	64.5	60.6	51672	47839	10.9
			76	59.7	56.2	75511	53459	16.3	61.4	57.7	70765	51482	15.2	65.1	61.4	58488	47085	12.3
			78	60.4	56.9	83062	52703	17.9	62.0	58.4	78220	50722	16.7	65.7	62.1	65729	46340	13.8
		95	80	61.1	57.8	90692	51778	19.5	62.8	59.3	85775	49859	18.3	66.4	62.9	73456	45540	15.5
			68	56.2	53.0	55888	37543	13.9	57.9	54.6	50694	35318	12.6	61.7	58.4	37564	30309	9.2
			70	56.8	53.7	62539	36768	15.6	58.5	55.2	57622	34607	14.3	62.3	59.1	44270	29612	10.8
			72	57.4	54.5	69565	35922	17.3	59.1	56.0	64499	33751	15.9	62.9	59.8	51030	28808	12.4
98		74	58.0	55.2	77115	35153	19.1	59.7	56.8	71915	32950	17.7	63.4	60.5	58630	28118	14.2	
		72	58.4	54.8	67953	47766	15.6	60.0	56.3	63019	45674	14.3	63.8	60.1	49346	40640	11.1	
		74	59.0	55.6	75348	46882	17.2	60.6	57.1	70156	44785	15.9	64.5	60.9	56414	39740	12.6	
		76	59.7	56.5	82816	45953	18.9	61.3	57.9	77932	43907	17.6	65.1	61.7	63964	38938	14.3	
105		78	60.4	57.2	91137	45117	20.7	62.1	58.8	85770	42940	19.4	65.7	62.4	71990	38133	16.1	
		70	58.1	54.3	60176	52006	13.5	59.7	55.7	55296	49917	12.3	63.6	59.6	41851	44897	9.2	
		72	58.7	55.0	67242	51211	15.0	60.4	56.5	62095	49023	13.8	64.2	60.3	48587	44098	10.6	
		74	59.3	55.8	74560	50432	16.6	61.0	57.3	69358	48254	15.3	64.7	61.0	56027	43380	12.2	
105		76	60.0	56.5	82468	49518	18.3	61.6	58.1	77182	47394	17.0	65.4	61.7	63579	42497	13.9	
		78	60.7	57.4	90367	48588	20.1	62.3	58.8	85337	46475	18.8	66.0	62.5	71570	41691	15.6	
		80	61.4	58.3	98842	47659	21.9	63.0	59.7	93737	45604	20.6	66.6	63.2	80151	40912	17.4	
		68	58.3	53.8	52357	60927	11.1	59.9	55.3	47476	58765	10.0	63.8	59.2	33799	53723	7.0	
105		70	58.9	54.6	58859	60120	12.4	60.5	56.1	53856	57941	11.3	64.3	59.9	40367	52999	8.4	
		72	59.5	55.3	65862	59343	13.9	61.1	56.8	60753	57191	12.7	64.9	60.6	47024	52203	9.7	
		74	60.1	56.1	73153	58490	15.4	61.8	57.6	67946	56330	14.2	65.5	61.3	54501	51507	11.2	
		76	60.7	56.9	80930	57695	17.0	62.4	58.4	75665	55515	15.8	66.1	62.0	61976	50706	12.7	
105	78	61.4	57.7	88865	56766	18.6	63.1	59.2	83451	54591	17.4	66.7	62.8	69955	49879	14.4		
	80	62.2	58.6	97264	55822	20.3	63.7	60.0	92146	53766	19.2	67.5	63.7	77985	48928	16.0		

EER calculated at 0.1" w.c. external static pressure.



MODEL ZQYRA
HYBRID IAQ VENTILATOR
Performance Tables (cont'd)

Cooling Mode

Unit Leaving Air Conditions 100% Capacity, Model ZQYRA-12																	
Supply Air SCFM	Outdoor Air dB/wB	RA Conditions (72°F dB / 60°F wB)						RA Conditions (75°F dB / 62°F wB)					RA Conditions (80°F dB / 67°F wB)				
		dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	
1200	85	68	57.1	53.6	58480	39630	14.0	58.8	55.2	52742	37194	12.5	62.6	59.0	38416	31761	9.0
		70	57.7	54.4	65725	38748	15.7	59.3	55.9	60219	36403	14.3	63.1	59.7	45667	30998	10.7
		72	58.3	55.1	73450	37889	17.5	60.0	56.7	67769	35495	16.1	63.8	60.4	53013	30136	12.4
		74	58.9	55.9	81482	36986	19.4	60.6	57.4	75830	34639	18.0	64.3	61.1	61365	29421	14.3
	95	72	59.3	55.6	71278	50580	15.7	61.0	57.1	65760	48258	14.4	64.5	60.6	52044	43324	11.3
		74	59.9	56.3	79551	49816	17.5	61.5	57.7	74022	47562	16.2	65.3	61.5	59059	42147	12.7
		76	60.6	57.1	87880	48824	19.3	62.2	58.6	82063	46446	17.9	65.9	62.2	67246	41212	14.5
		78	61.3	57.9	96477	47790	21.2	62.9	59.3	91013	45571	19.8	66.6	63.0	75927	40336	16.3
	98	70	59.0	54.9	63348	55346	13.7	60.6	56.4	57901	53008	12.4	64.3	60.1	43468	47831	9.2
		72	59.5	55.6	71116	54545	15.3	61.1	57.0	65714	52326	14.1	65.0	60.9	50548	46763	10.7
		74	60.2	56.4	78942	53657	17.0	61.8	57.9	73272	51267	15.7	65.6	61.6	58183	45904	12.3
		76	60.9	57.2	87130	52614	18.7	62.5	58.6	81744	50372	17.5	66.2	62.3	66874	45133	14.1
	105	78	61.5	58.0	96094	51703	20.6	63.1	59.4	90603	49545	19.3	66.9	63.2	75069	44106	15.8
		80	62.3	58.9	105267	50691	22.5	63.9	60.4	99294	48354	21.1	67.5	63.9	84342	43253	17.7
		68	59.1	54.3	55140	65026	11.3	60.8	55.9	49473	62638	10.1	64.7	59.7	34708	57215	7.0
		70	59.7	55.1	62085	64190	12.7	61.4	56.6	56586	61778	11.5	65.2	60.5	41411	56384	8.3
		72	60.3	55.9	69627	63343	14.2	62.0	57.4	64057	60995	13.0	65.8	61.1	49088	55644	9.8
		74	61.0	56.6	77563	62454	15.8	62.6	58.1	71861	60089	14.5	66.4	61.9	56728	54775	11.3
		76	61.7	57.5	85591	61454	17.4	63.2	58.9	80229	59224	16.2	67.0	62.7	64821	53922	12.9
		78	62.3	58.3	94563	60594	19.2	63.9	59.8	88741	58261	17.9	67.6	63.4	73472	53031	14.6
		80	63.0	59.1	103705	59601	21.0	64.6	60.6	97726	57276	19.6	68.2	64.2	82669	52181	16.4
1300	85	68	57.9	54.3	60866	41601	13.9	59.6	55.8	54870	38980	12.4	63.4	59.6	39271	33177	8.8
		70	58.6	55.0	68503	40557	15.6	60.2	56.5	62526	38035	14.1	63.9	60.3	46764	32331	10.4
		72	59.2	55.8	76750	39629	17.4	60.8	57.3	70696	37104	15.9	64.5	60.9	55140	31496	12.3
		74	59.8	56.6	85508	38710	19.4	61.4	58.0	79391	36190	17.9	65.1	61.7	63540	30569	14.2
	95	72	60.2	56.2	74736	53428	15.8	61.8	57.7	68653	50874	14.4	65.3	61.1	53776	45634	11.2
		74	60.8	56.9	83411	52492	17.6	62.3	58.3	77667	50187	16.3	65.9	61.9	62147	44707	12.9
		76	61.4	57.7	92476	51574	19.5	63.1	59.2	86231	48988	18.0	66.7	62.8	70075	43361	14.5
		78	62.1	58.5	101856	50445	21.4	63.8	60.0	95418	47905	19.9	67.3	63.6	79461	42474	16.4
	98	70	59.9	55.5	66226	58514	13.7	61.5	56.9	60234	55983	12.4	65.2	60.7	44301	50242	9.0
		72	60.4	56.2	74481	57658	15.4	62.1	57.7	68329	55103	14.0	65.6	61.3	52954	49707	10.7
		74	61.0	57.0	82897	56710	17.1	62.5	58.3	77277	54382	15.8	66.4	62.1	60879	48519	12.3
		76	61.7	57.8	91820	55640	18.9	63.3	59.2	85904	53247	17.6	67.0	62.9	69758	47604	14.1
	105	78	62.4	58.7	101054	54560	20.8	64.0	60.1	95160	52153	19.4	67.7	63.7	78568	46519	15.8
		80	63.2	59.5	110906	53431	22.7	64.7	60.9	104839	51063	21.3	68.3	64.5	88540	45592	17.8
		68	60.1	54.9	57479	68844	11.3	61.8	56.4	51600	66264	10.1	65.3	60.1	35931	60907	6.9
		70	60.6	55.6	65228	68132	12.8	62.2	57.1	59371	65612	11.6	66.0	60.9	42952	59776	8.3
		72	61.2	56.4	73116	67169	14.3	62.9	57.9	67045	64610	13.1	66.6	61.7	50690	58894	9.8
		74	61.9	57.3	81204	66104	15.9	63.5	58.7	75502	63710	14.7	67.1	62.3	59446	58121	11.4
		76	62.5	58.1	90303	65179	17.6	64.1	59.5	84034	62672	16.3	67.7	63.1	68165	57175	13.1
		78	63.2	58.9	99532	64118	19.4	64.8	60.4	93146	61641	18.0	68.4	64.0	76966	56124	14.7
		80	63.9	59.8	109339	63078	21.2	65.5	61.3	102825	60560	19.9	69.0	64.7	86881	55203	16.6

EER calculated at 0.1" w.c. external static pressure.



MODEL ZQYRA
HYBRID IAQ VENTILATOR
Performance Tables (cont'd)

Cooling Mode

Unit Leaving Air Conditions 100% Capacity, Model ZQYRA-12																		
Supply Air SCFM	Outdoor Air dB/wB		RA Conditions (72°F dB / 60°F wB)					RA Conditions (75°F dB / 62°F wB)					RA Conditions (80°F dB / 67°F wB)					
			dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	dB	wB	Total BTU	Sens BTU	EER	
1400	85	68	58.6	54.8	63404	43538	13.7	60.3	56.3	57043	40811	12.3	63.9	60.0	40272	34722	8.6	
		70	59.2	55.5	71704	42544	15.5	60.8	57.0	65238	39833	14.0	64.6	60.7	48220	33677	10.2	
		72	59.8	56.3	80558	41559	17.3	61.5	57.8	74009	38837	15.8	65.1	61.4	57181	32823	12.1	
		74	60.5	57.1	89521	40417	19.2	62.1	58.5	83340	37834	17.8	65.7	62.1	66221	31840	14.0	
	95	72	60.8	56.6	78545	56356	15.8	62.5	58.1	71993	53606	14.4	66.2	61.7	55014	47582	10.9	
		74	61.4	57.3	87821	55357	17.6	63.1	58.8	81142	52638	16.2	66.5	62.3	64909	47070	12.8	
		76	62.0	58.1	97653	54478	19.5	63.6	59.6	90949	51802	18.1	67.3	63.2	73352	45639	14.4	
		78	62.8	59.1	107152	53075	21.4	64.3	60.4	100772	50558	20.0	68.0	64.0	83429	44600	16.4	
	98	70	60.5	55.9	69487	61829	13.7	62.2	57.3	63032	59074	12.4	65.9	61.1	45815	52928	8.9	
		72	61.1	56.7	77820	60789	15.3	62.7	58.1	71761	58187	14.1	66.2	61.6	55138	52413	10.7	
		74	61.7	57.4	87408	59940	17.2	63.2	58.7	81292	57476	15.9	67.0	62.5	63591	51162	12.3	
		76	62.4	58.3	96443	58640	18.9	64.0	59.7	90165	56031	17.6	67.7	63.4	72493	49978	14.0	
		78	63.1	59.2	106356	57502	20.8	64.7	60.6	99947	54933	19.5	68.3	64.1	82491	49001	15.9	
		80	63.8	60.0	116914	56371	22.8	65.4	61.4	110399	53779	21.4	68.9	64.8	93268	48043	17.9	
		105	68	60.9	55.2	60303	72744	11.4	62.7	56.8	53443	69799	10.0	66.0	60.4	37027	64357	6.9
			70	61.3	56.0	68649	72110	12.9	62.9	57.4	62337	69405	11.7	66.7	61.3	44508	63137	8.2
	72		61.9	56.8	76826	71115	14.4	63.6	58.3	70466	68328	13.1	67.3	62.0	52833	62256	9.8	
	74		62.5	57.7	85730	70032	16.0	64.2	59.2	79026	67265	14.7	67.8	62.8	61632	61285	11.3	
		76	63.2	58.5	94965	68907	17.7	64.8	59.9	88637	66285	16.5	68.4	63.6	70990	60350	13.0	
		78	63.9	59.4	104913	67834	19.6	65.4	60.8	98438	65240	18.2	69.0	64.3	80961	59334	14.8	
		80	64.5	60.2	115456	66714	21.4	66.1	61.6	108827	64112	20.1	69.7	65.2	91056	58230	16.6	
1500	85	68	59.3	55.3	65620	45413	13.4	60.9	56.7	58813	42507	11.9	64.6	60.5	40697	35947	8.2	
		70	59.9	56.0	74499	44358	15.2	61.4	57.4	68058	41584	13.8	65.1	61.1	49721	35069	10.0	
		72	60.5	56.7	83967	43324	17.1	62.0	58.1	77410	40559	15.6	65.6	61.7	59326	34165	11.9	
		74	61.0	57.5	94018	42292	19.1	62.7	59.0	86852	39376	17.5	66.2	62.5	68990	33135	13.8	
	95	72	61.5	57.1	81913	59118	15.6	63.1	58.4	75379	56356	14.3	66.7	62.0	57174	49956	10.7	
		74	62.1	57.8	91843	58128	17.5	63.7	59.2	85113	55281	16.1	67.0	62.6	67785	49409	12.7	
		76	62.8	58.7	101793	56900	19.3	64.1	59.9	95794	54535	18.1	67.9	63.5	76774	47873	14.3	
		78	63.3	59.4	113092	55994	21.4	65.0	60.9	105574	52966	19.9	68.4	64.3	87551	46910	16.3	
	98	70	61.2	56.3	72296	64943	13.5	62.9	57.8	65372	61977	12.2	66.5	61.4	47370	55627	8.7	
		72	61.8	57.1	81667	63930	15.3	63.5	58.5	74643	60946	13.9	67.1	62.2	56351	54600	10.4	
		74	62.4	57.9	90995	62762	16.9	63.8	59.2	85027	60337	15.8	67.3	62.7	66872	54111	12.3	
		76	62.9	58.6	102130	62028	19.0	64.7	60.1	94299	58813	17.5	68.2	63.7	75947	52534	13.9	
		78	63.6	59.4	112620	60752	20.9	65.3	60.9	105289	57800	19.4	68.8	64.4	86608	51507	15.8	
		80	64.4	60.4	123468	59372	22.8	65.9	61.7	116469	56587	21.5	69.5	65.3	97425	50369	17.8	
	105	68	61.7	55.7	62657	76370	11.3	63.4	57.1	55897	73354	10.0	66.9	60.9	37368	67211	6.6	
		70	62.1	56.4	71266	75665	12.8	63.6	57.8	64854	72987	11.5	67.1	61.4	47085	66967	8.3	
		72	62.5	57.1	80912	75039	14.5	64.1	58.6	74035	72141	13.2	67.8	62.3	55044	65568	9.7	
		74	63.2	58.1	89715	73722	16.0	64.8	59.5	83078	70899	14.7	68.4	63.1	64433	64571	11.3	
		76	63.8	58.8	100205	72784	17.8	65.5	60.3	92842	69800	16.4	69.0	63.8	74443	63605	13.0	
		78	64.4	59.7	110705	71575	19.6	66.1	61.2	103253	68647	18.2	69.6	64.6	85103	62550	14.8	
		80	65.2	60.7	121444	70283	21.5	66.7	62.0	114360	67514	20.1	70.2	65.4	95859	61382	16.6	

EER calculated at 0.1" w.c. external static pressure.

MODEL ZQYRA

HYBRID IAQ VENTILATOR

Performance Tables (cont'd)

Heating Mode

Performance tables for heating mode show various percentages of modulated capacity. Unit controls sequence limits discharge temperatures to 75°F (neutral) condition. The heat pump is sized to handle the full range of environmental conditions and airflows. The tables below will show relative power usage to achieve the sequence set point limit.

Unit Leaving Air Conditions Model ZQYRA-8 Return Air Conditions (70°F dB / 55.8°F wB)																			
Sply Air SCFM	Outdr dB	30% Modulated Capacity			40% Modulated Capacity			50% Modulated Capacity			60% Modulated Capacity			70% Modulated Capacity			80% Modulated Capacity		
		dB	Total BTU	COP	dB	Total BTU	COP	dB	Total BTU	COP	dB	Total BTU	COP	dB	Total BTU	COP	dB	Total BTU	COP
500	-10*	66.3	58,309	2.8	69.6	60277	2.8	72.7	62,181	2.7	75.9	64,127	2.6	■	■	■	■	■	■
	0*	70.4	54,125	2.6	73.9	56253	2.5	■	■	■	■	■	■	■	■	■	■	■	■
	10	66.2	45,456	8.7	69.8	46360	6.9	73.1	49,613	6.6	■	■	■	■	■	■	■	■	■
	20	70.7	41,349	7.5	74.4	43609	6.5	■	■	■	■	■	■	■	■	■	■	■	■
	30	75.0	36,724	6.3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
600	-10*	63.4	66,922	3.2	66.0	68796	3.2	68.6	70,684	3.1	71.1	70,424	2.9	73.7	74,316	3.0	■	■	■
	0*	67.2	61,772	2.9	70.1	63865	2.9	71.8	67,090	3.0	75.6	65,791	2.7	■	■	■	■	■	■
	10	64.3	52,436	9.8	67.3	58280	8.8	70.1	56,577	7.6	72.8	58,568	6.8	75.6	60,536	6.1	■	■	■
	20	68.4	47,353	8.4	71.6	49632	7.5	75.1	52,127	6.4	■	■	■	■	■	■	■	■	■
	30	72.5	41,672	7.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
700	-10*	61.3	76,426	3.6	63.5	78302	3.6	65.7	80,135	3.5	67.8	81,883	3.4	72.8	79,950	3.0	72.0	85,434	3.3
	0*	64.9	70,236	3.3	67.4	72347	3.2	68.7	80,050	3.4	72.5	86,843	3.5	74.4	78,220	3.0	■	■	■
	10	63.0	60,085	10.7	65.5	65150	9.6	68.0	66,990	8.5	70.2	66,206	7.7	72.6	68,199	6.9	74.9	70,101	6.2
	20	66.9	53,961	9.2	69.6	56279	8.3	72.2	58,475	7.4	74.8	60,604	6.7	■	■	■	■	■	■
	30	70.7	47,143	7.7	73.7	49676	6.9	■	■	■	■	■	■	■	■	■	■	■	■
800	-10*	59.8	85,283	4.0	64.2	91815	4.0	64.9	84,060	3.9	65.5	90,691	3.8	67.3	89,740	3.6	69.1	94,155	3.6
	0*	63.3	78,141	3.6	65.5	80231	3.6	66.7	82,590	3.8	72.2	82,275	3.7	74.0	81,615	3.4	75.0	86,773	3.3
	10	62.0	67,185	11.2	64.2	69301	10.2	69.3	71,339	8.8	70.8	68,446	7.4	70.4	75,264	7.5	72.4	77,179	6.9
	20	65.7	60,050	9.7	68.2	62420	8.8	70.4	64,585	8.0	72.7	66,703	7.3	74.9	68,840	6.6	■	■	■
	30	69.4	52,176	8.1	72.1	54744	7.4	74.5	57,121	6.7	■	■	■	■	■	■	■	■	■
900	-10*	58.7	94,047	4.3	60.5	95926	4.2	62.1	94,764	4.1	63.8	99,497	4.1	65.5	101,254	4.0	67.0	102,902	3.9
	0*	62.1	85,996	3.9	64.0	88082	3.8	70.8	83,119	3.9	71.4	88,934	3.7	69.6	93,979	3.6	71.3	95,829	3.5
	10	61.2	74,208	11.5	63.2	76350	10.5	65.1	78,410	9.6	67.0	80,408	8.7	68.8	82,351	8.0	70.6	84,272	7.3
	20	64.9	66,227	9.9	67.1	68605	9.1	69.2	70,835	8.3	71.2	72,977	7.6	73.2	75,063	7.0	75.1	77,137	6.4
	30	68.6	57,411	8.3	71.0	59961	7.6	73.2	62,391	7.0	75.4	64,711	6.4	■	■	■	■	■	■
1000	-10*	9.7	94,670	4.2	60.7	84960	4.1	60.2	102,322	4.3	61.7	104,072	4.2	63.1	105,746	4.2	65.0	107,420	4.0
	0*	60.6	92,955	4.1	62.3	95009	4.0	65.3	94,331	4.1	66.8	96,126	3.9	67.9	98,271	3.8	69.0	101,193	3.7
	10	60.1	80,426	11.4	62.0	82574	10.6	63.8	84,748	9.9	65.4	86,699	9.0	67.0	88,607	8.3	68.7	90,552	7.6
	20	63.8	71,574	9.8	65.8	73958	9.1	67.7	76,235	8.5	69.6	78,398	7.9	71.3	80,441	7.3	73.1	82,530	6.8
	30	67.4	61,826	8.2	69.6	64415	7.6	71.7	66,862	7.1	73.7	69,230	6.6	75.6	71,487	6.1	■	■	■
1100	-10*	58.1	107,230	4.4	59.7	91560	4.4	59.2	110,676	4.7	60.5	112,442	3.8	61.8	114,127	4.3	63.2	115,865	4.2
	0*	59.9	100,859	4.3	61.5	102940	4.3	62.1	105,508	4.4	64.6	106,988	4.1	66.1	108,913	4.0	67.4	107,148	3.8
	10	59.8	87,484	11.3	61.4	89576	10.6	63.0	91,654	9.9	64.5	93,647	9.1	66.1	95,686	8.4	67.5	97,582	7.8
	20	63.4	77,715	9.7	65.2	80150	9.1	67.0	82,436	8.5	68.7	84,609	8.0	70.3	86,731	7.5	71.9	88,764	7.0
	30	67.0	67,077	8.1	69.0	69702	7.6	70.9	72,166	7.2	72.7	74,527	6.7	74.5	76,764	6.3	-	-	-

* Output selection include 5 kW electric heat for frost control.

■ Indicates the output is beyond control limits.



MODEL ZQYRA HYBRID IAQ VENTILATOR Performance Tables (cont'd)

Heating Mode

Unit Leaving Air Conditions Model ZQYRA-12 Return Air Conditions (70°F dB / 55.8°F wB)																			
Sply Air SCFM	Outdr dB	30% Modulated Capacity			40% Modulated Capacity			50% Modulated Capacity			60% Modulated Capacity			70% Modulated Capacity			80% Modulated Capacity		
		dB	Total BTU	COP	dB	Total BTU	COP	dB	Total BTU	COP	dB	Total BTU	COP	dB	Total BTU	COP	dB	Total BTU	COP
900	-10*	62.0	81831	13.2	65.0	83623	12.1	67.0	86422	11.3	68.9	97335	11.9	70.0	92865	9.8	71.0	96521	9.3
	0*	64.0	79336	12.8	66.3	81946	11.9	68.6	84419	11.0	70.0	95805	11.7	72.9	89159	9.4	75.0	91410	8.8
	10	67.9	71370	11.0	70.6	74353	10.3	73.1	77067	9.5	75.5	79675	8.9	■	■	■	■	■	■
	20	71.6	62442	9.2	74.6	65704	8.6	■	■	■	■	■	■	■	■	■	■	■	■
	30	74.7	51193	7.3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1000	-10*	60.4	90668	13.7	64.5	121988	16.1	68.3	126797	14.1	68.9	136941	13.8	70.0	131194	12.5	70.7	132506	12.6
	0*	66.8	118170	14.6	66.8	118170	14.6	69.0	125511	14.0	70.1	135552	13.7	71.0	142329	12.2	71.7	143752	12.3
	10	62.6	85909	13.0	64.8	88593	12.1	66.9	91103	11.4	70.3	98391	11.2	73.0	103311	8.8	72.7	98198	9.2
	20	66.5	77063	11.2	68.9	80055	10.5	71.3	82876	9.8	73.5	85541	9.2	75.5	88074	8.7	■	■	■
	30	70.2	67130	9.4	72.9	70487	8.8	75.5	73584	8.3	■	■	■	■	■	■	■	■	■
1100	-10*	63.2	132010	16.2	63.2	132010	16.2	66.8	136847	14.5	67.5	147795	14.2	69.5	150751	13.9	70.2	152258	14.0
	0*	65.9	126601	15.5	68.0	122692	15.0	70.2	127470	12.8	70.8	137668	12.5	72.9	140421	12.3	73.7	141825	12.4
	10	61.9	93217	13.0	63.9	95882	12.3	65.8	98444	11.7	67.7	100906	11.0	69.7	102924	10.7	70.4	103953	10.8
	20	65.6	83337	11.2	67.9	86443	10.6	70.1	89255	10.0	72.1	91956	9.5	74.0	94537	9.0	75.9	97011	8.5
	30	69.2	72299	9.4	71.8	75707	8.9	74.1	78857	8.4	■	■	■	■	■	■	■	■	■
1200	-10*	60.7	129919	15.6	62.3	132349	14.7	60.0	114687	14.0	65.5	136874	13.3	67.0	139009	12.7	68.3	141011	12.1
	0*	62.7	96987	12.4	65.0	126913	14.1	65.0	105865	12.9	68.0	131399	13.0	70.0	135341	13.4	70.7	136694	13.5
	10	61.2	100372	13.0	63.1	103146	12.3	64.9	105711	11.7	66.6	108170	11.1	68.6	111415	11.4	69.2	112529	11.5
	20	64.8	89491	11.2	67.0	92625	10.6	69.0	95486	10.1	70.9	98236	9.6	72.7	100847	9.1	74.4	103376	8.7
	30	68.3	77330	9.3	70.7	80784	8.9	72.9	84015	8.5	75.0	86952	8.1	■	■	■	■	■	■
1300	-10*	59.7	138911	15.1	61.2	141365	14.5	62.7	143644	13.9	64.1	145880	13.3	65.5	148019	12.7	66.8	150047	12.2
	0*	63.0	146570	14.3	66.0	131170	13.5	67.0	134425	13.0	68.0	141146	13.0	69.4	143969	13.3	70.1	145409	13.4
	10	60.6	107571	12.7	62.4	110368	12.2	64.1	113077	11.6	65.7	115454	11.2	67.2	117886	10.6	67.9	119065	10.7
	20	64.2	95688	10.9	64.0	98798	10.5	68.0	101728	10.1	69.8	104515	9.6	71.5	107181	9.2	73.2	109728	8.7
	30	67.6	82377	9.2	69.8	85853	8.8	71.9	89137	8.4	73.9	92213	8.1	75.7	95044	7.7	■	■	■
1400	-10*	58.8	147872	14.8	60.3	150317	14.2	61.6	152613	13.6	63.0	154801	13.1	64.3	156984	12.6	65.5	159020	12.1
	0*	62.1	115407	14.0	63.0	143803	13.6	65.0	144701	12.9	67.0	151705	12.7	67.7	153222	12.8	68.3	154754	12.9
	10	60.0	114553	12.4	61.7	117361	12.0	63.3	120015	11.5	68.0	126016	11.3	66.2	124999	10.6	67.7	127421	10.0
	20	63.5	101650	10.7	65.4	104813	10.3	67.2	107852	9.9	68.8	110622	9.5	70.5	113319	9.1	72.0	115915	8.8
	30	66.9	87430	8.9	69.0	90976	8.6	71.0	94261	8.3	72.9	97377	8.0	74.6	100279	7.7	■	■	■
1500	-10*	57.9	156539	13.0	59.3	158957	12.6	60.6	161319	12.2	61.8	163500	11.8	63.0	165682	11.5	58.6	144930	11.1
	0*	61.4	147667	12.3	62.0	151932	12.0	64.0	152699	11.5	65.0	160333	11.6	65.7	161937	11.7	66.3	163556	11.8
	10	59.5	121499	12.0	61.0	124201	11.6	62.5	126890	11.2	63.9	129476	10.8	65.3	131956	10.4	66.6	134360	10.1
	20	62.9	107627	10.4	64.7	110862	10.0	66.4	113844	9.7	68.0	116713	9.3	69.5	119442	9.0	71.0	122046	8.7
	30	66.3	92283	8.6	68.3	95840	8.4	70.1	99192	8.2	71.9	102354	7.9	73.5	105279	7.6	75.1	108143	7.3

* Output selection include 10 kW electric heat for frost control.

■ Indicates the output is beyond control limits.

Statement of Unit Performance

Cooling/heating air flow is between 200 FPM and 500 FPM over the main evaporator coils. Unit performance values represent the general performance of our typical unit at a given design condition. With all DX, and electric systems the values are to be construed as having an expected mechanical tolerance of 10%-15% of stated values. Due to mechanical limitations of the equipment, unknown variables and uncontrollable environmental influences such as actual airflow, pressure differences, refrigerant charge, air delivery (duct & registers), coil factors and other unstated variables, the actual unit values will be different from the stated values. The control system seeks to stage or modulate the equipment to a steady state condition over an extended period of time within the tolerance of the mechanical equipment. The control system setpoints should not be construed as the tolerance or guaranteed performance of the mechanical system.