

HEAT CONTROLLER

ENGINEERING DESIGN GUIDE

HZ series
Two-Stage
Horizontal Vertical and Downflow
System Sizes 024-070



Table of Contents

What's New With The HZ series?.....	3	Physical Data.....	36
iGate™ Communicating Controls	4	Dimensions—Vertical Upflow	37–38
vFlow™ Internal Variable Water Flow Control	5	Dimensions—Vertical Downflow	39–40
How to Use this Catalog	6–7	Dimensions—Horizontal	41–42
Design Features	8–9	Electrical Data	43
Unit Model Key	10	Standard Electrical Wiring Diagrams.....	44–45
AHRI/ISO/ASHRAE 13256-1.....	11	ECM Control Features.....	46
Reference Calculations & Legend	12	Blower Performance Data	47
Full Load Correction Factors	13	Auxiliary Heat Ratings	48
Part Load Correction Factors	14	Auxiliary Heat Electrical Data	48
Performance Data Selection Notes	15	Accessories, Options, and Warranty	49
Performance Data	16–25	Revision History..... Back Cover	

What's New with Heat Controller's HZ series?

High Efficiency = Low Operating Cost

The HZ series with vFlow™ variable water flow technology breaks new ground in efficiency by approaching 30 EER part load cooling and 4.8 COP part load heating for ground loop applications. Leveraging the next generation Copeland scroll compressor, variable speed ECM motor, low-pressure-drop water-to-refrigerant heat exchanger and vFlow variable water flow technology, the HZ series has been optimized for maximum operating efficiency and the industry's lowest operating cost. The Hot-Water Generator further increases operating cost savings by pre-heating hot water for domestic use. Bottom-line, the HZ series delivers the industry's lowest operating cost.

iGate™—Communicating Controls

iGate™ technology represents the next generation in intelligent controls by using 2-way communication to provide a gateway into the system. The iGate™ control system allows the homeowner and dealers to monitor the performance of the unit, custom tailor its operation, and diagnose any issues, all from the communicating thermostat.



The iGate™ communications hub is the new DXM2 intelligent controller, which analyzes the status of sensors and smart components (also 2-way communicating) to determine how best to operate your system for optimal comfort, efficiency and long-term reliability. All of this information is passed to the iGate™ thermostat (or dealer diagnostic tool), where it can be displayed in plain English. And since communication is both ways, the iGate™ thermostat can also be used to configure and tailor the system without touching your unit.

Future accessories will enable iGate™ communication over the internet, allowing the homeowner (and dealer if the homeowner chooses) to access the system from a PC or smart phone.

vFlow™ Variable Water Flow

vFlow™ variable water flow technology is a major advance in geothermal system performance made possible through the iGate™ system. vFlow™ not only builds the major water circulation components right into the unit for a faster and cleaner installation, it also intelligently varies the water flow to minimize pump energy consumption and improve the reliability of the system.



The heart of vFlow™ is either a variable-speed pump (for ground loops) or modulating water valve (for groundwater) directly linked into the iGate™ system. Water flow is automatically varied based on changes in unit capacity level (stage) and source water temperature to maintain optimum system performance.

vFlow™ systems reduce water pumping power consumption by 60–80% compared to traditional external pumping modules, which can save over \$100 per year in an average 2,000 square foot home. In addition, vFlow™ protects the unit against extreme operating conditions, extending the life of the compressor and air coil. Since vFlow™ is built right inside the unit, it also saves on installation time and makes for a very clean and compact installation.

Microchannel Air Heat Exchanger

— The Next Generation in Air Coils



Heat Controller also utilizes the Microchannel air heat exchanger on the 024 to 048 sizes in the HZ series family. Microchannel aluminum heat exchangers offer higher heating efficiency and have been used for years in automotive applications.

ENERGY STAR® Most Efficient – Communicating AND Efficient

HZ series has been recognized as Most Efficient by ENERGY STAR for exceeding stringent efficiency requirements AND for meeting smart communication requirements. With these systems the customer is getting an EFFICIENT system and an INTELLIGENT system—buying a system can't get SMARTER than that!



**Most Efficient
2014**

www.energystar.gov

Easy to Install, Easy to Service— A Technician's Dream Machine

Installations are easier and quicker with HZ series units with (1) vFlow™ built-in water flow vs. bulky external flow controllers / water flow components (2) iGate™ system configuration (airflow, water ΔT , accessories) on the thermostat and (3) iGate™ Manual Operation from thermostat at start up to verify proper operation.

Service is even easier with (1) iGate™ Service Warning on the thermostat for homeowners to call the dealer with fault information (2) iGate™ Service Mode for dealers to see conditions (temperature, flow, input/output, configuration) at the time of fault, for better, quicker diagnosis (3) Easy Access to components with swing-out control board, easy-access panels, refrigerant/ water pressure Schrader ports at the front of the unit.

iGate™ Communicating Controls

iGate™ Information gateway to monitor, control and diagnose your system

The HZ series is equipped with industry-first, iGate™ – Information Gateway – a 2-way communicating system that allows users to interact with their geothermal system in plain English AND delivers improved reliability and efficiency by precisely controlling smart variable speed components. iGate™ makes the HZ series the easiest geothermal products to install and service.

Monitor/Configure – Installers can configure HZ series units from the thermostat, including: Air flow, loop ΔT , water-flow option configuration, unit configuration, accessory configuration, and demand reduction (optional, to limit unit operation during peak times). Users can look up the current system status: temperature sensor readings and operational status of the blower and pump.

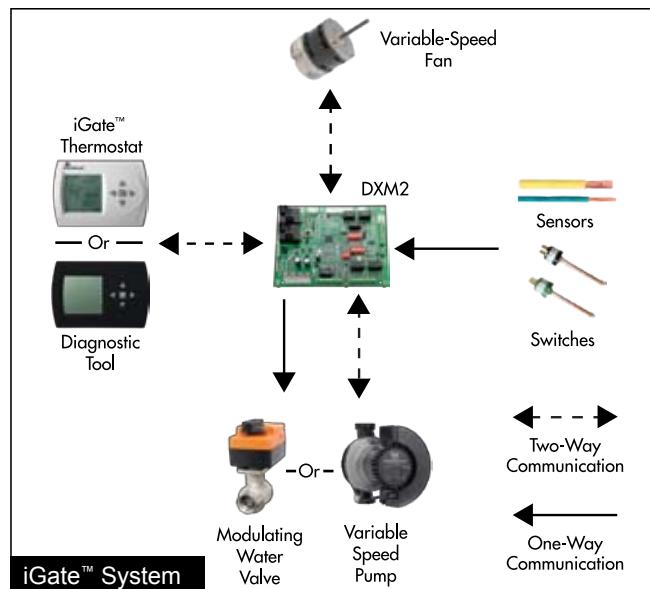
Precise Control - The new DXM2 board enables intelligent 2-way communication between the DXM2 board and smart components like the communicating thermostat, fan motor, and water pump. The DXM2 control can also directly control the modulating valve and accepts various feedback/input. The Intelligent DXM2 board uses information received from the smart components and sensors to precisely control operation of the variable-speed fan and variable-speed water pump (or modulating valve) to deliver higher efficiency, reliability and increased comfort.

Diagnostics – iGate™ takes diagnosing geothermal units to the next level of simplicity, by providing a dashboard of system and fault information, in plain English, on the iGate thermostat/ service tool.

iGate™ Service Warning warns the homeowner of a fault and displays dealer information (if programmed), fault descriptions, possible causes and current system status (temperature readings, fan RPM and water flow status) to provide to a dealer on the phone.

In iGate™ Service Mode, the service personnel can access fault descriptions, possible causes and most importantly, the conditions (temp, flow, i/o conditions, configuration) at the time of the fault and at the time of the call. Manual Operation mode allows the service personnel to manually command operation for any of the thermostat outputs, blower speed, as well as pump speed or valve position from the thermostat, to help troubleshoot specific components.

With the iGate™ communicating system, consumers and contractors have a gateway to system information never before available.



AIRFLOW SELECTION	
	CFM
HEAT STAGE 1	600
HEAT STAGE 2	750
AUXILIARY HEAT	850
EMERGENCY HEAT	850
COOL STAGE 1	525
COOL STAGE 2	700
COOL DEHUMID 1	425
COOL DEHUMID 2	550
CONTINUOUS FAN	350
HEAT OFF DELAY	60
COOL OFF DELAY	30

◀ PREVIOUS

NEXT ►

POSSIBLE FAULT CAUSES LOW WATER COIL TEMP

LOW WATER TEMP - HTG

LOW WATER FLOW - HTG

LOW REFRIG CHARGE - HTG

INCORRECT IT1 SETTING

BAD IT1 THERMISTOR

◀ PREVIOUS

FAULT TEMPERATURE CONDITIONS

LT1	LOW WATER TEMP
HEAT 1	11:11 AM 11/14
LT1 TEMP	28.1
LT2 TEMP	97.3
HOT WATER EWT	121.5
COMP DISCHARGE	157.7
LEAVING AIR	92.7
LEAVING WATER	34.9
ENTERING WATER	42.1
CONTROL VOLTAGE	26.4

◀ PREVIOUS

vFlow™ Internal Variable Water Flow Control

vFlow™ Internal Variable Water Flow

Industry-first, built-in vFlow™ replaces a traditionally inefficient, external component of the geothermal system (water circulation) with an ultra-high-efficient, variable speed, internal water flow system. This saves homeowners 70-80% on operating water circulator vs traditional single speed pump systems. It saves installers time and labor by avoiding installing bulky external flow centers or flow regulators. Multi-unit installations are also much simpler with vFlow™ systems, as the units automatically adjust water flow across the system.

vFlow™ is enabled by iGate™, which facilitates intelligent communication between the thermostat, DXM2 control, sensors and internal water pump/valve to make true variable water flow a reality.

vFlow™ is available for three applications:

- 1) Closed loop – individual unit pumping: vFlow™ Internal Flow Controller model "1" (standard head) or "2" (high head) ("2" in Position 11 of the unit model number) would be used. This includes variable speed pump, flushing ports, 3 way flushing valves and expansion tank. Copper water coil is standard with this option.
- 2) Closed loop – multi unit / central pumping: vFlow™ Internal Low Pressure Drop (high Cv) Motorized Modulating Valve ("5" in Position 11 of the unit model number) would be used. Copper water coil is standard with this option.
- 3) Open loop: vFlow™ Internal Motorized Modulating Valve ("6" in Position 11 of the unit model number) would be used. Cupro-Nickel water coil is standard with this option. Valves in open loop models have higher pressure drop than the valves in the closed loop (modulating valve) models for better flow control when used in systems with higher pressure water supply pumps, and are not recommended for closed loop applications.

vFlow™ delivers three main benefits:

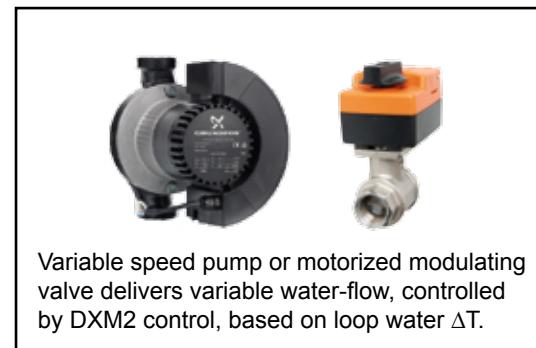
- 1) Easier and quicker unit installation as the flow control is built in to the unit.
- 2) Superior reliability by varying the water flow to deliver more stable operation.
- 3) Higher cost savings by varying the flow (and pump watt consumption) to match the unit's mode of operation.

Internal components

The HZ series can be installed more easily and compactly than its predecessors because water-flow components are internal to the unit. It also saves installing contractors labor and time by eliminating the need for an external flow regulator or a bulky external pumping module.

Variable flow

vFlow™ technology enables variable water flow through the unit, with the DXM2 control adjusting the pump speed to maintain an installer-set loop ΔT . By controlling the water flow, the system is able to operate at its optimal capacity and efficiency. vFlow™ provides a lower flow rate for part load where units typically operate 80% of the time and a higher, more normal flow rate for full load operation.



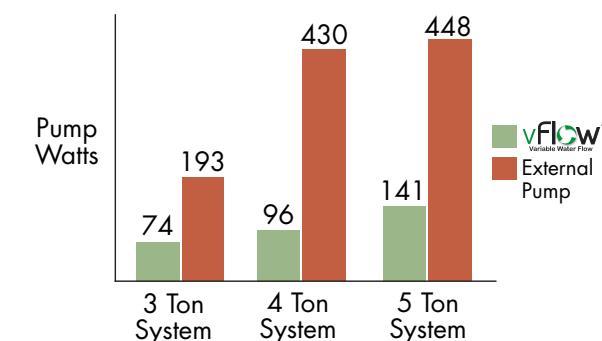
Variable speed pump or motorized modulating valve delivers variable water-flow, controlled by DXM2 control, based on loop water ΔT .

Energy Savings with water circulation control

Units with vFlow™ deliver higher operating cost savings by varying the water flow to match the unit's operation (ex: lower water flow when unit is in part load operation). Lowering the flow results in lower energy consumption by the water pump (=higher cost savings) in vFlow™ units (whether internal or external pump).

In closed loop applications, using vFlow™ with an internal variable-speed (ECM) flow controller, the ECM pump uses fewer watts than a fixed speed (PSC) pump, even at full load (see chart). The ECM pump excels in energy savings in part load, saving 70-80% watts compared to fixed speed pumps (see chart). The ECM pump can operate with independent flow rates for heating and cooling, further saving even more energy.

In open loop applications, when the motorized modulating valve slows down the water flow during part load operation, the external pump consumes fewer watts, thus saving more energy.



How to Use this Guide

As with any unit selection the first step is to perform a proper load calculation. Once the design cooling and heating loads are known the predominant load can be used to select the appropriate unit. In northern climates the heating load may be used to select the unit, whereas in southern climates the cooling load may be used. Likewise, the anticipated maximum EWT should be used for the cooling mode and the minimum anticipated EWT should be used when selecting for the heating mode. These EWTs may be the same temperature in the case of a ground water application.

Use the Full Load performance pages to select the unit size. Once the unit size is determined read the associated flow rate (gpm) for the needed capacity. Typically this is 1.5 – 2 gpm/nominal ton for ground water applications and 2.25 – 3 gpm/ton for ground loop applications.

For Closed Loop Applications

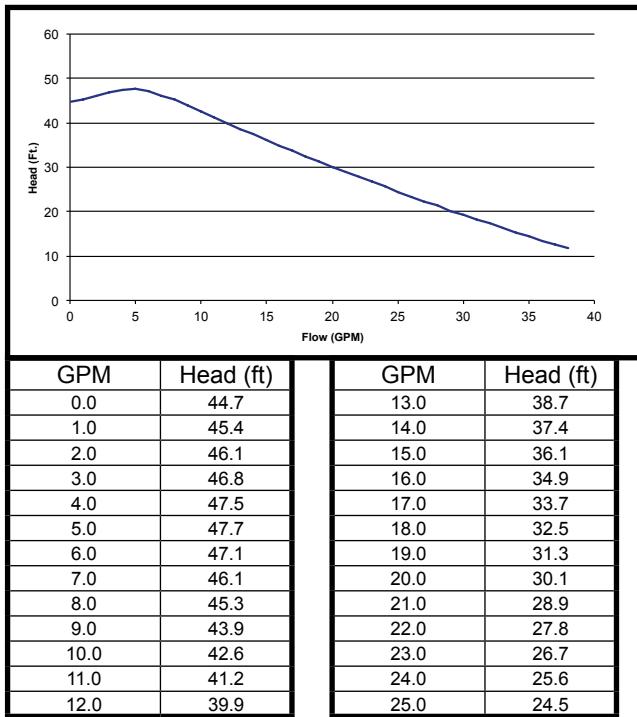
For closed loop systems where an internal circulating pump is desired, the HZ30 units can be ordered with an internal, variable speed loop circulator. This would typically be for a ground loop or secondary pumping application. This internal loop circulator is the variable speed Grundfos Magna 25-140 for all HZ units. The maximum possible pump curve is shown in the tables below. The pumps can also operate at any point below the curve as a “partial load” pumping condition. The designer/installer should use the information presented in this catalog to determine the available pump head for any external piping/accessories and ground loop (if applicable). This can be done in the following manner. The Grundfos UPM 25-85 is also available for HZ024 and 036.

- Determine the desired flow rate through the HZ30 from the performance pages (as described above). Read the associated pressure drop in feet of head for the worst case condition (lowest anticipated entering water temperature) at the required flow rate.
- Determine the maximum pump head from the pump curve associated with the required flow rate from step 1.
- Subtract the unit pressure drop (from step 1) from the maximum available pump head (from step 2).
- The remainder is the available pump head to overcome any external piping/accessories and the ground loop.

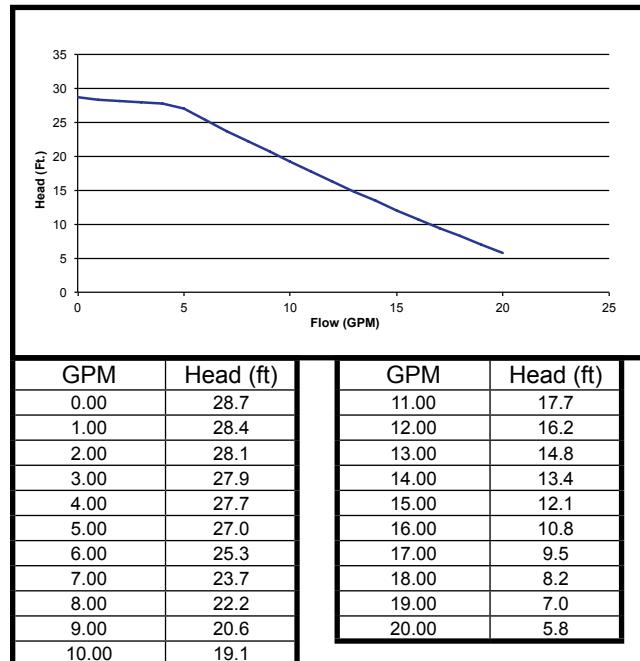
If the available pump head is equal to or greater than the calculated external piping and loop pressure drop, no other steps are required. If the available pump head is less than the calculated pressure drop of all external piping and the loop, then changes to the loop design should be considered.

Typically residential loops consist of $\frac{3}{4}$ " circuit piping and 1 $\frac{1}{4}$ " supply and return piping. If the available pump head is less than the calculated pressure drop of all external piping and the loop, it is recommended that larger pipe sizes be investigated such as 1" circuit piping and/or 1 $\frac{1}{2}$ " or 2" supply and return piping. This will significantly reduce system pressure drop with little change in Reynolds number. If this causes the Reynolds number to fall to an unacceptable level, try reducing the overall number of circuits. This will increase the flow rate through each circuit, increasing the Reynolds number.

Magna Geo 25-140 Pump Performance



UPM Geo 25-85 Standard Head Variable Pump Performance



How to Use this Catalog

Another solution might be to allow the system flow rate to be reduced. Typical geothermal flow rates are between 2.25 and 3 gpm/ton. As long as the system flow rate using the internal variable speed circulator is at or above 2.25 gpm/ton it is safe to operate the system. A quick review of the unit performance tables will show that this causes very little change in unit performance.

The HZ30 can also be ordered with an internal modulating water control valve for closed loop systems with multiple units and a central pump. In this case the modulating water valve will stop water flow through the unit when the unit is not operating and control the flow rate through the unit during operation, saving pumping energy in both cases.

When using an internal modulating water valve the central pump must be able to overcome the pressure drop of the valve in addition to the pressure drop of the unit. Because of this, internal modulating valves for closed loop systems are designed with a low pressure drop in mind. The minimum pressure drop for the internal closed loop valve is shown in the 'Modulating

Valves for Closed Loop Applications' table below. This pressure drop should be added to the unit pressure drop when determining system pressure drop for central pump selection.

For Open Loop Applications

The HZ30 can also be ordered with the internal modulating water control valve for open loop systems with an external well pump. In this case the modulating water valve will stop water flow through the unit when the unit is not operating and act as a flow control device to control the flow rate through the unit during operation.

When using an internal modulating water valve the external pump must be able to overcome the minimum pressure drop of the valve in addition to the pressure drop of the unit. The minimum pressure drop for the open loop internal valve is shown in the 'Modulating Valves for Open Loop Applications' table below. This pressure drop should be added to the unit pressure drop when determining overall equipment pressure drop.

Modulating Valves for Closed Loop Applications

HZ024		
Valve Cv = 4.7		
60°F Water		
GPM	Valve ΔP @ GPM (psi)	Valve ΔP @ GPM (ft hd)
2.0	0.181	0.4
3.0	0.407	0.9
4.0	0.724	1.7
5.0	1.132	2.6
6.0	1.630	3.8

HZ036		
Valve Cv = 7.4		
60°F Water		
GPM	Valve ΔP @ GPM (psi)	Valve ΔP @ GPM (ft hd)
3.0	0.2	0.4
4.0	0.3	0.7
5.0	0.5	1.1
6.0	0.7	1.5
7.0	0.9	2.1
8.0	1.2	2.7
9.0	1.5	3.4

HZ048		
Valve Cv = 10		
60°F Water		
GPM	Valve ΔP @ GPM (psi)	Valve ΔP @ GPM (ft hd)
4.0	0.2	0.4
5.0	0.3	0.6
6.0	0.4	0.8
7.0	0.5	1.1
8.0	0.6	1.5
9.0	0.8	1.9
10.0	1.0	2.3
11.0	1.2	2.8
12.0	1.4	3.3

HZ060 & 070		
Valve Cv = 19		
60°F Water		
GPM	Valve ΔP @ GPM (psi)	Valve ΔP @ GPM (ft hd)
6.0	0.1	0.2
7.0	0.1	0.3
8.0	0.2	0.4
9.0	0.2	0.5
10.0	0.3	0.6
11.0	0.3	0.8
12.0	0.4	0.9
13.0	0.5	1.1
14.0	0.5	1.3
15.0	0.6	1.4
16.0	0.7	1.6
17.0	0.8	1.8

Modulating Valves for Open Loop Applications

HZ024, 036 & 048		
Valve Cv = 4.7		
60°F Water		
GPM	Valve ΔP @ GPM (psi)	Valve ΔP @ GPM (ft hd)
2.0	0.2	0.4
3.0	0.4	0.9
4.0	0.7	1.7
5.0	1.1	2.6
6.0	1.6	3.8
7.0	2.2	5.1
8.0	2.9	6.7
9.0	3.7	8.5
10.0	4.5	10.5
11.0	5.5	12.7
12.0	6.5	15.1

HZ060 & 070		
Valve Cv = 7.4		
60°F Water		
GPM	Valve ΔP @ GPM (psi)	Valve ΔP @ GPM (ft hd)
6.0	0.7	1.5
7.0	0.9	2.1
8.0	1.2	2.7
9.0	1.5	3.4
10.0	1.8	4.2
11.0	2.2	5.1
12.0	2.6	6.1
13.0	3.1	7.1
14.0	3.6	8.3
15.0	4.1	9.5
16.0	4.7	10.8
17.0	5.3	12.2

HZ series Design Features

The HZ series has abundant features and ultra-high efficiency.

Application Flexibility

- Five Capacities 024, 036, 048, 060, and 070
- Entering water temperature operation range (20-120°F EWT) and flow rates as low as 1.5 gpm per ton
- Two-stage upflow, downflow, and horizontal right or left return
- Internal (upflow and downflow only) electric heat unit (optional) designed for easy field installation.
- Optional external (horizontal units) electric heat unit designed for easy field installation
- Exceeds the federal requirements for 30% tax credit on installation costs
- Field selectable low-temperature protection settings for GWHP or GLHP installations
- Standard pre-installed 2" filter frame with 2" high performance MERV 11 pleated air filter
- Integrated vFlow™ functionality for most geothermal applications

Operating Efficiencies

- Exceeds ASHRAE 90.1 and Energy Star Tier 3 efficiency levels
- Energy Star® Most Efficient
- EarthPure® HFC-410A zero ozone depletion refrigerant.
- Rugged and highly efficient next generation Copeland UltraTech™ 2-stage scroll compressors provide ultra-high efficiencies and unsurpassed comfort.
- Optional hot water generator with advanced control logic and internally mounted pump.
- Oversized coaxial tube water-to-refrigerant heat exchangers operate at low liquid pressure drop. Convoluted copper (and optional cupro-nickel) water tube functions efficiently at low-flow rates and provides low-temperature-damage resistance.
- Oversized tin plated, rifled tube/lanced aluminum fin, air to refrigerant heat exchangers provide high efficiency at low face velocity (060 and 070)
- Next generation all aluminum microchannel air coil (024, 036, 048) for high efficiency
- Large low RPM blowers with variable speed ECM fan motors provide quiet, efficient air movement with high static capability. Installer selectable ECM air flow provides the ultimate in comfort optimization.

Service & Installation Advantages

The HZ series incorporates features that are industry firsts, which make it extremely easy to install:

- Ease of installation:
 - 1) vFlow™ - with the industry exclusive features, these units are ready to install out of the box with no requirement for external pumps, expansion tanks, or valves for the ground loop removing a lot of the complexity of installation.
 - 2) Full digital controls that communicate with the thermostat which allows all unit configuration from the thermostat... the easiest installation setup for any level of installer. Far simpler than the use of dip-switches on the unit control board.
- HZ series only requires 4 wires between the communicating thermostat and the unit. Others require up to 9 or 14 wires for full functionality. This is achieved by leveraging the full power of the microprocessor on the control.
- Internal variable speed circulator includes an internal check valve for multiple unit/ shared loop installations.
- Optional SecureStart™ can expand the life of your unit by reducing start up current (just 30% of normal amps) and protect the compressor from potentially damaging low-voltage

sags.

- Standard cornerpost schreder ports provide access to source pressure drop across unit coaxial heat exchanger.
- The communicating DXM2 control board diagnostic and communicating thermostat features allow the home owner to tell the service technician what is wrong with the unit before the technician leaves the shop.
- The two-section swing-out and removable control box design provides wide-open service access to the compressor section. Multiple unit access panels allow technicians to access any side of the cabinet. Service friendly highly accessible high/low refrigerant pressure ports are located on a service bracket at the front of the unit. No other product / manufacturer in the geothermal segment offer this convenience.
- An innovative two-section electrical control box design that tucks the stationary line voltage components safely behind a swing-out low voltage control panel to provide clear service access through the front of the unit. The low voltage panel can even be quickly pulled off the hinges and removed. Harness connections make controller replacement a snap.
- ¾" MPT condensate connection directly from condensate drain pan eliminates internal plastic drain tubing that is subject to clogging and avoids the need for a fitting that reduces the drain opening size.
- Diagnostic display of system inputs, outputs, and configuration settings at thermostat or Configuration/Diagnostic tool.
- Diagnostic display of system temperatures at thermostat (ATC32U**):
 - Geo source in and out
 - Compressor discharge line
 - LT1 and LT2 Refrigerant Line Temperature Sensors
 - Leaving air
 - Entering potable hot water to HWG
- Immediate manual control of all DXM2 outputs is available at the thermostat (ATC32U**) or Configuration/Diagnostic tool (ACDU**) for rapid troubleshooting.
- Expansion tank eliminates "flat loop" callbacks by working to maintain steady loop pressure.
- Brass swivel geo and hot water connections for quick connection and elimination of wrenches or sealants during installation.
- Intelligent fault retry with history retention.
- Two configurable auxiliary relays for low voltage control of accessories.
- UPS (Unit Performance Sentinel) provides early warning of inefficient operation.
- Optional service disconnect switch located in the front panel for easy service access.

Factory Quality & Industry Certifications

All units are built and factory run tested on our Integrated Process Control Assembly System (IPCS). The IPCS is a unique state of the art manufacturing system that is designed to assure quality of the highest standards of any manufacturer in the water-source industry. Our IPCS system:

- Verifies that the correct components are being assembled.
- Automatically performs special leak tests on all joints
- Conducts pressure tests
- Performs highly detailed run test unparalleled in the HVAC industry
- Automatically disables packaging for a "failed" unit
- Creates computer database for future service analysis and diagnostics from run test results
- All refrigerant brazing is done in a nitrogen atmosphere
- All units are deep evacuated to less than 100 microns prior to refrigerant charging
- All joints are both helium and halogen leak tested to ensure annual leak rate of less than ¼ ounce

HZ series Design Features

- All units are run-tested to insure efficiency and reliability.
- AHRI/ASHRAE/ANSI/ISO 13256-1 certified.
- ETL listed.
- US EPA "Energy Star" Tier 3 compliant.
- ISO 9001:2000 certified manufacturing facility.

Advanced Controls

iGate™ communicating control provides advanced unit functionality and comprehensive configuration, monitoring and diagnostic capabilities through digital communication links with the variable-speed fan motor, variable-speed source pump (or modulating valve) and communicating thermostat or Configuration/Diagnostic tool.

- 7 temperature sensor inputs for system protection and control
- Anti-short cycle and over/under voltage protection
- High pressure, loss of charge, and condensate overflow protection
- LED fault and status indication at controller
- Service tool port for optional setup and diagnostics at unit

Factory Options and Accessories

- Hot water generator with internally mounted pump and advanced logic control
- SecureStart module can expand the life of the unit by reducing start up current and protecting the compressor from low-voltage conditions.

- 1** Exclusive iGate™ Two-Way Communicating Control to configure, monitor and diagnose AT THERMOSTAT
- 2** vFlow™ Internal Variable Water Flow System with Internal Flow Center or Internal Motorized Modulating Valve for optimized efficiency and reliability
- 3** Next generation Copeland™ Ultra-Tech™ Two-Stage Scroll Compressor with dual-level isolation for ultra-quiet and high-efficiency operation
- 4** Emerson UltraTech® Variable-Speed Communicating Fan Motor with soft start and constant CFM control
- 5** Tin-Plated Copper or all aluminum microchannel Air Coils to resist formicary corrosion
- 6** Foil-Faced Insulation in the blower section and fully insulated compressor section conform to ASHRAE 62 specifications
- 7** Two-inch high-efficiency MERV 11 Filter (standard) or EarthPure® Air Cleaner for high quality indoor air
- 8** Two-Section Swing-out Control Box design provides wide-open service access
- 9** Refrigerant Schrader Ports Located on bracket at the front access panel for easy service access
- 10** Water Schrader Ports located on corner post to easily read pressure drop across water heat exchanger for easy troubleshooting

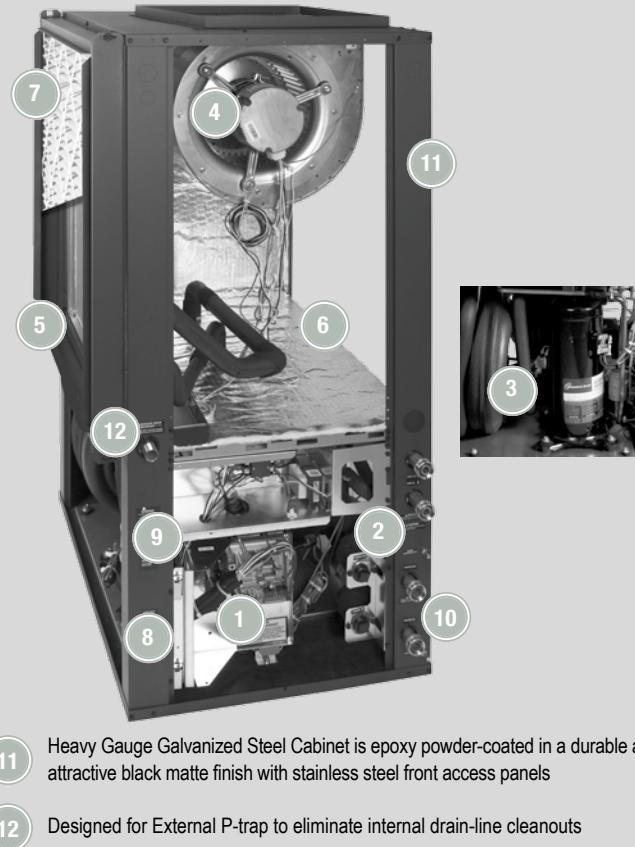
- Electrical Service Disconnect Switch located on the unit front panel for ease of service.

Field Installed Accessories

- iGate™ Communicating, Programmable Thermostat (ATC32U**)
- Auxiliary Electric Heater
- Earthpure® Polarized Media Electric Air Cleaner
- Configuration / Diagnostic Tool (ACDU**)
- Outdoor/Remote Temperature Sensor (AST008)
- Anti Scald Valve (AVAS4)
- Secure Start Compressor Soft Start Kit (13B0045N01)
- Unit Vibration Isolation Pad
- Unit Stand
- Secondary Drain Pan (Horizontal Units)

Warranty

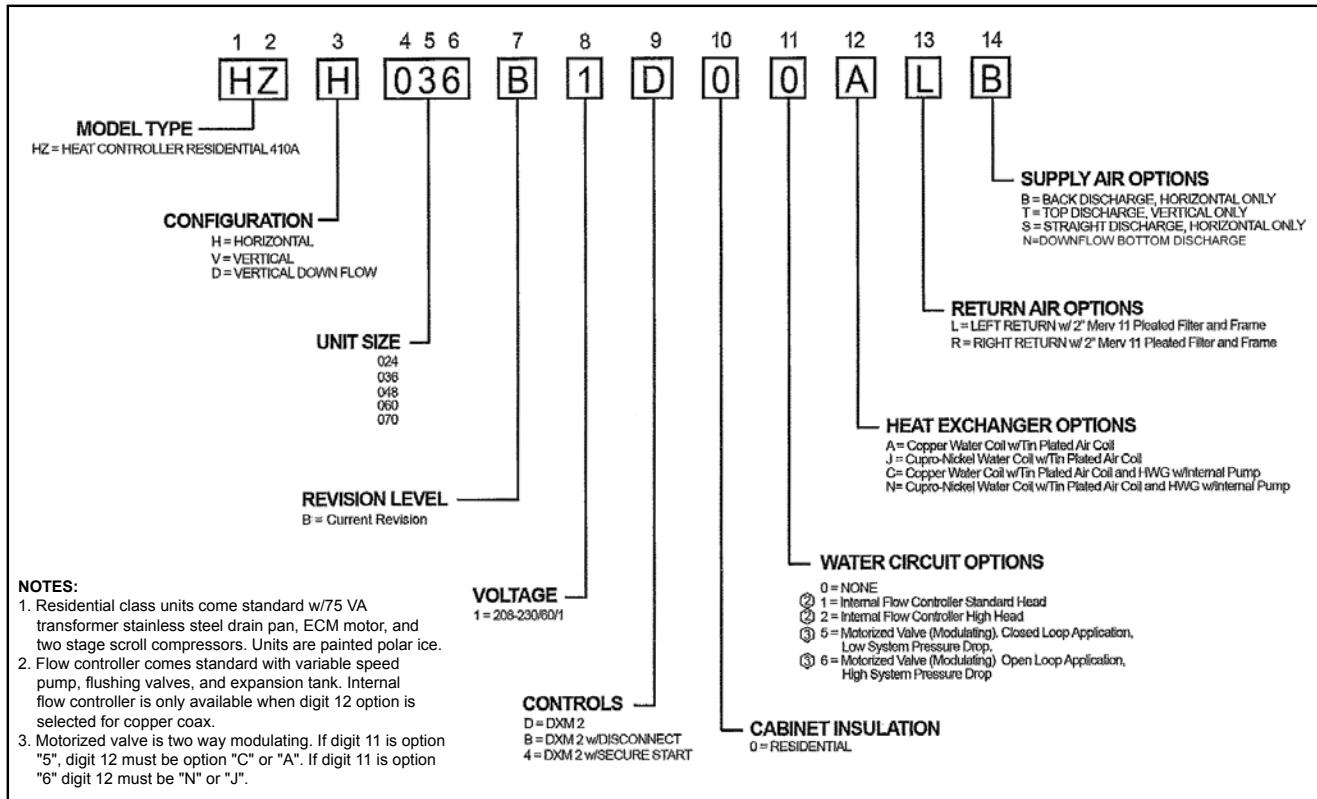
- Heat Controller residential class heat pumps are backed by a 12-year limited warranty on all unit parts, including the following accessories when installed with Heat Controller units: Flow Controllers, Thermostats & Electric Heaters.
- Heat Controller goes even further to back up its commitment to quality by including a service labor allowance for the first five years on unit parts and thermostats, auxiliary electric heaters and geothermal pumping modules.



11 Heavy Gauge Galvanized Steel Cabinet is epoxy powder-coated in a durable and attractive black matte finish with stainless steel front access panels

12 Designed for External P-trap to eliminate internal drain-line cleanouts

Unit Model Key



AHRI/ISO/ASHRAE 13256-1

ASHRAE/AHRI/ISO 13256-1

Model	Capacity Modulation	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
		Cooling 86°F		Heating 68°F		Cooling 59°F		Heating 50°F		Cooling Full Load 77°F		Heating Full Load 32°F	
		Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
HZ024	Part	19,200	19.8	23,600	7.0	22,000	34.1	19,000	5.8	20,800	28.0	16,800	5.0
	Full	25,000	17.4	31,400	6.0	28,500	26.4	25,800	5.3	26,000	19.9	20,200	4.1
HZ036	Part	27,400	20.1	32,600	6.5	30,700	34.4	27,300	5.5	29,700	29.6	23,800	4.8
	Full	37,700	17.9	45,700	5.8	42,100	26.1	37,900	5.2	39,000	20.3	29,700	4.4
HZ048	Part	36,300	18.8	42,200	6.1	41,800	32.9	34,800	5.0	39,100	27.4	29,800	4.4
	Full	48,600	16.8	56,700	5.1	55,000	25.3	46,800	4.6	49,600	19.3	36,400	4.0
HZ060	Part	46,300	18.7	54,700	6.0	53,100	32.4	44,000	5.0	51,200	26.7	38,100	4.4
	Full	61,500	16.2	77,400	5.4	71,500	24.4	63,200	4.8	66,200	18.8	48,700	3.9
HZ070	Part	53,000	16.8	64,600	5.2	60,800	28.6	53,200	4.5	58,100	23.2	46,000	3.9
	Full	68,300	15.1	85,300	4.8	77,700	22.5	71,400	4.4	71,700	16.9	55,800	3.7

Ground Loop Heat Pump ratings based on 15% methanol antifreeze solution
All ratings based upon operation at lower voltage of dual voltage rated models

About AHRI/ISO/ASHRAE 13256-1

AHRI/ASHRAE/ISO 13256-1 (Air-Conditioning and Refrigeration Institute/American Society of Heating, Refrigerating and Air Conditioning Engineers/International Standards Organization) is a certification standard for water-source heat pumps used in the following applications:

- WLHP (Water Loop Heat Pump – Boiler/Tower)
- GWHP (Ground Water Heat Pump – Open Loop)
- GLHP (Ground Loop Heat Pump – Geothermal)

The directory at <http://www.ahrinet.org/> is constantly being updated and immediately available on the Internet.

Water and air temperatures used in AHRI certification standards are shown below.

Test Condition Comparison Table

	WLHP	GWHP	GLHP
Cooling Entering Air Temperature - DB/WB °F [°C] Entering Water Temperature - °F [°C] Fluid Flow Rate	80.6/66.2 [27/19] 86 [30] *	80.6/66.2 [27/19] 59 [15] *	80.6/66.2 [27/19] 77 [25] *
Heating Entering Air Temperature - DB/WB °F [°C] Entering Water Temperature - °F [°C] Fluid Flow Rate	68 [20] 68 [20] *	68 [20] 50 [10] *	68 [20] 32 [0] *

*Flow rate is specified by the manufacturer

Data certified by AHRI include heating/cooling capacities, EER (Energy Efficiency Ratio – Btuh per Watt) and COP (Btuh per Btuh) at the various conditions shown above. Pump power correction is calculated to adjust efficiencies for pumping Watts. Fan power is corrected to zero external static pressure using the equation below. The nominal airflow is rated at a specific external static pressure.

- Fan Power Correction = $(\text{cfm} \times 0.472) \times (\text{esp} \times 249)/300$

Capacities and efficiencies are calculated using the following equations:

- ISO Cooling Capacity = Cooling Capacity (Btuh) + [Fan Power Correction (Watts) x 3.412]
- ISO EER Efficiency (Btuh/W) = $\text{ISO Cooling Capacity (Btuh)}/[\text{Power Input (Watts)} - \text{Fan Power Correction (Watts)} + \text{Pump Power Correction (Watts)}]$
- ISO Heating Capacity = Heating Capacity (Btuh) – [Fan Power Correction (Watts) x 3.412]
- ISO COP Efficiency (Btuh/Btuh) = $\text{ISO Heating Capacity (Btuh)} \times 3.412/[\text{Power Input (Watts)} - \text{Fan Power Correction (Watts)} + \text{Pump Power Correction (Watts)}]$

Reference Calculations & Legend

Heating

$$LWT = EWT - \frac{HE}{GPM \times 500}$$

$$LAT = EAT + \frac{HC}{CFM \times 1.08}$$

Cooling

$$LWT = EWT + \frac{HR}{GPM \times 500}$$

$$LAT (DB) = EAT (DB) - \frac{SC}{CFM \times 1.08}$$

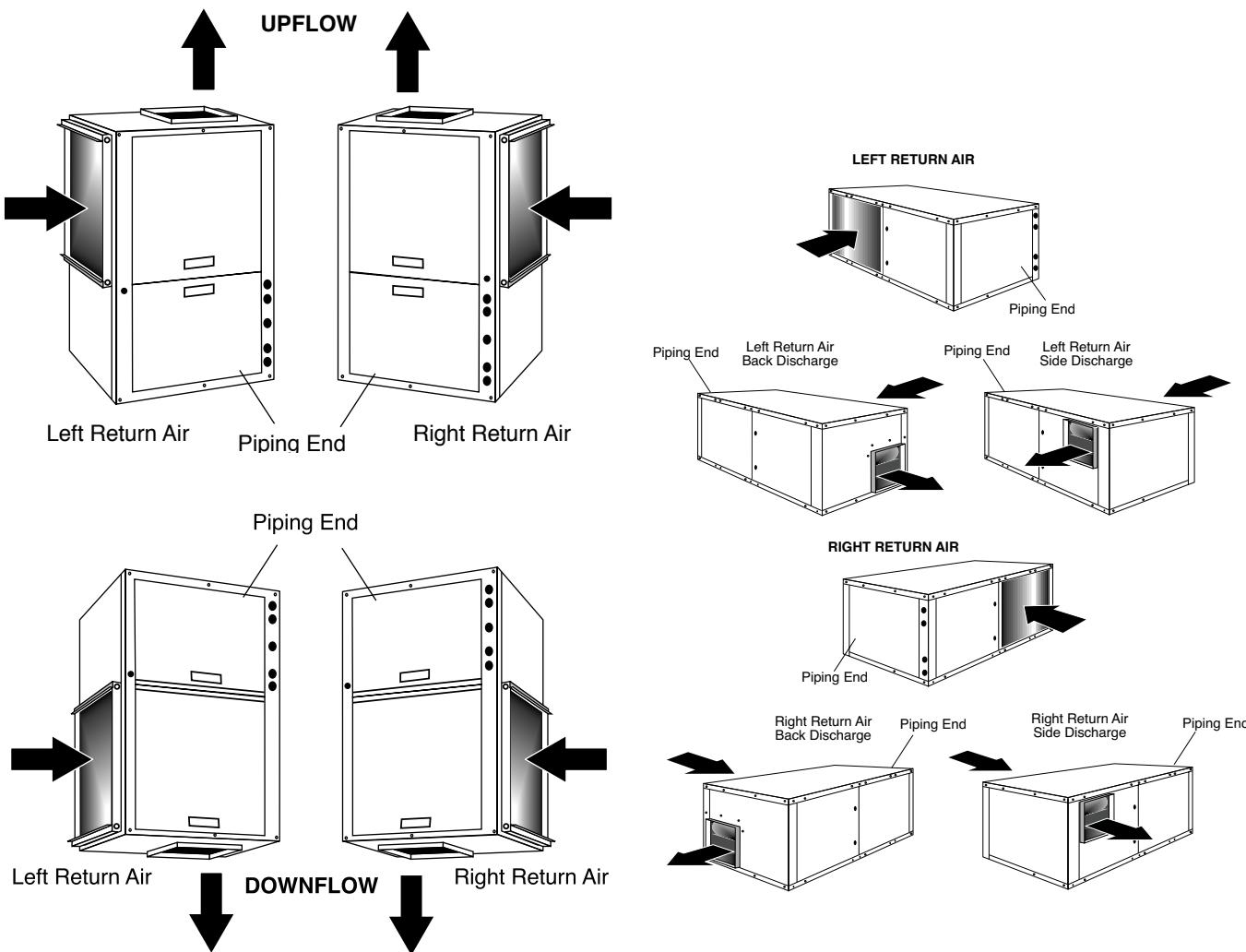
$$LC = TC - SC$$

$$S/T = \frac{SC}{TC}$$

Hot Water Generator capacities (HWC) are based on potable water flow rate of 0.4 gpm per nominal equipment ton and 90°F entering potable water temperature.

CFM = airflow, cubic feet/minute
 EWT = entering water temperature, °F
 GPM = water flow in US gallons/minute
 EAT = entering air temperature, Fahrenheit (dry bulb/wet bulb)
 HC = air heating capacity, Mbtuh
 TC = total cooling capacity, Mbtuh
 SC = sensible cooling capacity, Mbtuh
 KW = total power unit input, KiloWatts
 HR = total heat of rejection, Mbtuh

HE = total heat of extraction, Mbtuh
 HWC = Hot Water Generator (desuperheater) capacity, Mbtuh
 WPD = Water coil pressure drop (psi & ft hd)
 EER = Energy Efficiency Ratio = BTU output/Watt input
 COP = Coefficient of Performance = BTU output/BTU input
 LWT = leaving water temperature, °F
 LAT = leaving air temperature, °F
 LC = latent cooling capacity, Mbtuh
 S/T = sensible to total cooling ratio



Full Load Correction Factors

Air Flow Correction Table

Airflow	Cooling				Heating			
	% of Rated	Total Capacity	Sensible Capacity	Power	Heat of Rejection	Heating Capacity	Power	Heat of Extraction
60%	0.925	0.788	0.913	0.922	0.946	1.153	0.896	
69%	0.946	0.829	0.926	0.942	0.959	1.107	0.924	
75%	0.960	0.861	0.937	0.955	0.969	1.078	0.942	
81%	0.972	0.895	0.950	0.968	0.977	1.053	0.959	
88%	0.983	0.930	0.965	0.979	0.985	1.032	0.974	
94%	0.992	0.965	0.982	0.990	0.993	1.014	0.988	
100%	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
106%	1.007	1.033	1.020	1.009	1.006	0.989	1.011	
113%	1.012	1.064	1.042	1.018	1.012	0.982	1.019	
119%	1.016	1.092	1.066	1.025	1.018	0.979	1.027	
125%	1.018	1.116	1.091	1.032	1.022	0.977	1.033	
130%	1.019	1.132	1.112	1.037	1.026	0.975	1.038	

Entering Air Correction Table

Heating			
Entering Air DB°F	Heating Capacity	Power	Heat of Extraction
40	1.052	0.779	1.120
45	1.043	0.808	1.102
50	1.035	0.841	1.084
55	1.027	0.877	1.065
60	1.019	0.915	1.045
65	1.010	0.957	1.023
68	1.004	0.982	1.010
70	1.000	1.000	1.000
75	0.989	1.045	0.974
80	0.976	1.093	0.946

* = Sensible capacity equals total capacity
AHRI/ISO/ASHRAE 13256-1 uses entering air conditions of Cooling - 80.6°F DB/66.2°F WB,
and Heating - 68°F DB/59°F WB entering air temperature

Entering Air WB°F	Total Capacity	Sensible Cooling Capacity Multiplier - Entering DB °F										Power	Heat of Rejection
		60	65	70	75	80	80.6	85	90	95	100		
		*	*	*	*	*	*	*	*	*	*		
45	0.832	*	*	*	*	*	*	*	*	*	*	0.946	0.853
50	0.850	1.004	1.174	*	*	*	*	*	*	*	*	0.953	0.870
55	0.880	0.694	0.902	1.115	*	*	*	*	*	*	*	0.964	0.896
60	0.922		0.646	0.875	1.103	1.329	*	*	*	*	*	0.977	0.932
65	0.975			0.639	0.869	1.096	1.123	1.320	*	*	*	0.993	0.979
66.2	0.990			0.582	0.812	1.039	1.066	1.262	*	*	*	0.997	0.991
67	1.000			0.545	0.774	1.000	1.027	1.223	1.444	*	*	1.000	1.000
70	1.040				0.630	0.853	0.880	1.075	1.297	*	*	1.011	1.035
75	1.117					0.601	0.627	0.821	1.046	1.275	1.510	1.033	1.101

Part Load Correction Factors

Air Flow Correction Table

Airflow	Cooling				Heating			
	% of Rated	Total Capacity	Sensible Capacity	Power	Heat of Rejection	Heating Capacity	Power	Heat of Extraction
60%	0.920	0.781	0.959	0.927	0.946	1.241	0.881	
69%	0.942	0.832	0.964	0.946	0.960	1.163	0.915	
75%	0.956	0.867	0.696	0.959	0.969	1.115	0.937	
81%	0.969	0.901	0.975	0.970	0.978	1.076	0.956	
88%	0.981	0.934	0.982	0.981	0.986	1.043	0.973	
94%	0.991	0.967	0.990	0.991	0.993	1.018	0.988	
100%	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
106%	1.007	1.033	1.011	1.008	1.006	0.990	1.010	
113%	1.013	1.065	1.023	1.015	1.012	0.986	1.017	
119%	1.018	1.098	1.036	1.021	1.017	0.983	1.024	
125%	1.021	1.131	1.051	1.026	1.021	0.981	1.030	
130%	1.023	1.159	1.063	1.030	1.024	0.979	1.034	

Entering Air Correction Table

Heating			
Entering Air DB°F	Heating Capacity	Power	Heat of Extraction
40	1.084	0.732	1.161
45	1.073	0.764	1.140
50	1.060	0.802	1.117
55	1.046	0.846	1.090
60	1.031	0.893	1.061
65	1.016	0.945	1.031
68	1.006	0.978	1.013
70	1.000	1.000	1.000
75	0.984	1.058	0.968
80	0.968	1.117	0.936

* = Sensible capacity equals total capacity
AHRI/ISO/ASHRAE 13256-1 uses entering air conditions of Cooling - 80.6°F DB/66.2°F WB,
and Heating - 68°F DB/59°F WB entering air temperature

Entering Air WB°F	Total Capacity	Sensible Cooling Capacity Multiplier - Entering DB °F										Power	Heat of Rejection
		60	65	70	75	80	80.6	85	90	95	100		
		*	*	*	*	*	*	*	*	*	*		
45	0.876	*	*	*	*	*	*	*	*	*	*	0.981	0.895
50	0.883	1.002	1.099	*	*	*	*	*	*	*	*	0.985	0.901
55	0.903	0.706	0.871	1.060	*	*	*	*	*	*	*	0.989	0.918
60	0.935		0.617	0.844	1.079	*	*	*	*	*	*	0.993	0.945
65	0.979			0.595	0.849	1.098	1.128	*	*	*	*	0.998	0.982
66.2	0.991			0.531	0.789	1.040	1.070	1.284	*	*	*	0.999	0.993
67	1.000			0.486	0.747	1.000	1.030	1.245	*	*	*	1.000	1.000
70	1.035				0.583	0.842	0.873	1.090	1.327	*	*	1.003	1.030
75	1.105					0.552	0.584	0.811	1.057	1.290	*	1.008	1.088

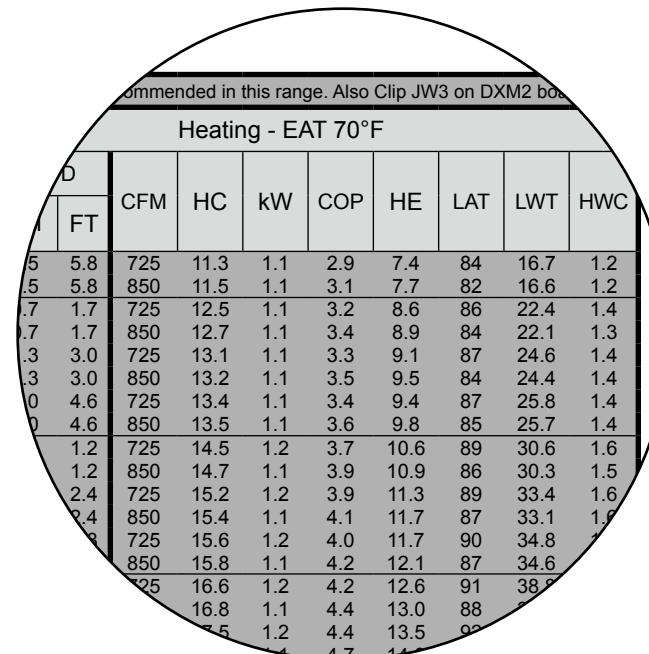
Performance Data Selection Notes - vFlow™ Models

Operation in Shaded Area: Closed Loop Application

For operation in the shaded area, appropriate levels of a proper antifreeze should be used in systems with leaving water temperatures of 40°F or below and the JW3 jumper should be clipped. This is due to the potential of the refrigerant temperature being as low as 32°F [0°C] with 40°F [4.4°C] LWT, which may lead to a nuisance cutout due to the activation of the Low Temperature Protection. JW3 should never be clipped for systems without antifreeze.

Open Loop Application:

For operation in shaded area (below 40°F LWT) in open loop applications, ΔT (on DXM2) should be set such that the LWT ($=EWT - \Delta T$) doesn't drop below 40°F. JW3 should NEVER be clipped for systems without antifreeze.



Performance Data Selection Notes - Models without vFlow™

For operation in the shaded area when water is used in lieu of an antifreeze solution, the LWT (Leaving Water Temperature) must be calculated. Flow must be maintained to a level such that the LWT is maintained above 40°F [4.4°C] when the JW3 jumper is not clipped (see example below). Otherwise, appropriate levels of a proper antifreeze solution should be used in systems with leaving water temperatures of 40°F [4.4°C] or below and the JW3 jumper should be clipped. This is due to the potential of the refrigerant temperature being as low as 32°F [0°C] with 40°F [4.4°C] LWT, which may lead to a nuisance cutout due to the activation of the Low Temperature Protection. JW3 should never be clipped for standard range equipment or systems without antifreeze.

Example:

At 50°F EWT (Entering Water Temperature) and 1.5 gpm/ton, a 3 ton unit has a HE of 22,500 Btuh. To calculate LWT, rearrange the formula for HE as follows:

HE = TD x GPM x 500, where HE = Heat of Extraction (Btuh); TD = temperature difference (EWT - LWT) and GPM = U.S. Gallons per Minute.

$$TD = HE / (GPM \times 500)$$

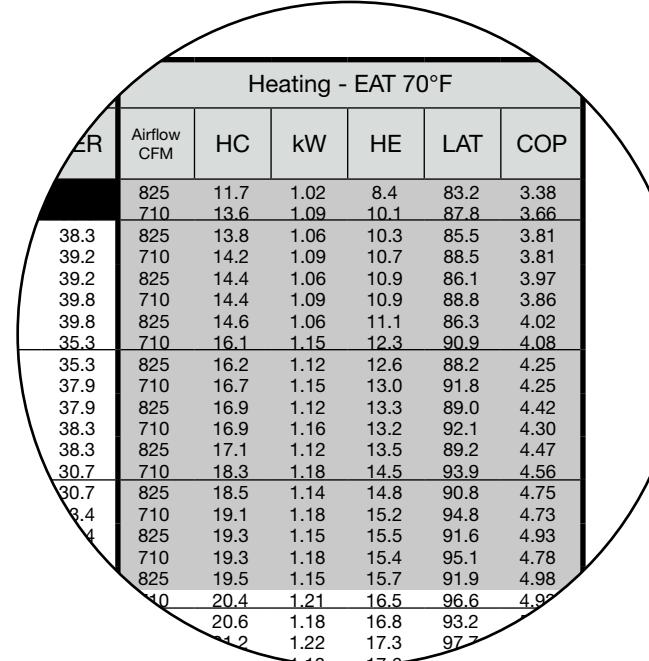
$$TD = 22,500 / (4.5 \times 500)$$

$$TD = 10^{\circ}\text{F}$$

$$LWT = EWT - TD$$

$$LWT = 50 - 10 = 40^{\circ}\text{F}$$

In this example, as long as the EWT does not fall below 50°F, the system will operate as designed. For EWTs below 50°F, higher flow rates will be required (open loop systems, for example, require at least 2 gpm/ton when EWT is below 50°F).



Performance Data —

HZ series Model 024 - Part Load, with vFlow™

Performance capacities shown in thousands of Btu/h

Antifreeze use recommended in this range. Also Clip JW3 on DXM2 board.

EWT °F	Cooling - EAT 80/67 °F										Heating - EAT 70°F											
	GPM	WPD		CFM	TC	SC	kW	EER	HR	LWT	HWC	GPM	WPD		CFM	HC	kW	COP	HE	LAT	LWT	HWC
		PSI	FT										PSI	FT								
20	1.0	0.2	0.3	660	22.6	14.9	0.74	30.7	25.1	70.0	1.0	4.5	1.2	2.9	750	11.5	1.25	2.7	7.4	84.2	16.7	1.2
	1.0	0.2	0.4	750	23.0	16.0	0.75	30.7	25.6	70.0	1.0	4.5	1.2	2.9	850	11.7	1.20	2.9	7.6	82.7	16.6	1.2
30	1.3	0.2	0.4	660	22.6	14.9	0.74	30.7	25.1	70.0	1.0	2.3	0.5	1.1	750	13.0	1.23	3.1	8.9	86.0	22.2	1.3
	1.3	0.2	0.4	750	23.0	16.0	0.75	30.7	25.6	70.0	1.0	2.3	0.5	1.1	850	13.2	1.18	3.3	9.2	84.4	22.0	1.3
	1.3	0.2	0.4	660	22.6	14.9	0.74	30.7	25.1	70.0	1.0	3.4	0.8	1.8	750	13.6	1.22	3.3	9.5	86.8	24.4	1.3
	1.3	0.2	0.4	750	23.0	16.0	0.75	30.7	25.6	70.0	1.0	3.4	0.8	1.8	850	13.8	1.17	3.5	9.8	85.0	24.2	1.4
	1.3	0.2	0.4	660	22.6	14.9	0.74	30.7	25.1	70.0	1.0	4.5	1.1	2.6	750	13.9	1.21	3.4	9.9	87.2	25.6	1.4
	1.3	0.2	0.4	750	23.0	16.0	0.75	30.7	25.6	70.0	1.0	4.5	1.1	2.6	850	14.1	1.16	3.6	10.2	85.4	25.5	1.4
40	1.7	0.3	0.6	660	22.6	14.9	0.74	30.7	25.1	70.0	1.0	2.3	0.4	1.0	750	15.2	1.20	3.7	11.2	88.8	30.3	1.5
	1.7	0.3	0.6	750	23.0	16.0	0.75	30.7	25.6	70.0	1.0	2.3	0.4	1.0	850	15.4	1.15	3.9	11.5	86.8	30.0	1.5
	1.7	0.3	0.6	660	22.6	14.9	0.74	30.7	25.1	70.0	1.0	3.4	0.7	1.7	750	16.0	1.19	3.9	12.0	89.7	33.0	1.5
	1.7	0.3	0.6	750	23.0	16.0	0.75	30.7	25.6	70.0	1.0	3.4	0.7	1.7	850	16.2	1.14	4.2	12.3	87.6	32.8	1.6
	1.7	0.3	0.6	660	22.6	14.9	0.74	30.7	25.1	70.0	1.0	4.5	1.1	2.5	750	16.4	1.18	4.1	12.4	90.2	34.5	1.6
	1.7	0.3	0.6	750	23.0	16.0	0.75	30.7	25.6	70.0	1.0	4.5	1.1	2.5	850	16.6	1.13	4.3	12.8	88.1	34.3	1.6
50	2.3	0.4	1.0	660	22.4	14.9	0.76	29.7	25.0	71.7	1.1	2.3	0.4	1.0	750	17.4	1.17	4.4	13.4	91.5	38.3	1.7
	2.3	0.4	1.0	750	22.9	15.9	0.77	29.7	25.5	72.2	1.1	2.3	0.4	1.0	850	17.7	1.12	4.6	13.8	89.2	38.0	1.7
	2.5	0.5	1.1	660	22.6	14.9	0.74	30.7	25.1	70.0	1.0	3.4	0.7	1.6	750	18.3	1.16	4.6	14.4	92.6	41.5	1.7
	2.6	0.5	1.1	750	23.0	16.0	0.75	30.7	25.6	70.0	1.0	3.4	0.7	1.6	850	18.6	1.11	4.9	14.8	90.3	41.3	1.8
	2.5	0.5	1.1	660	22.6	14.9	0.74	30.7	25.1	70.0	1.0	4.5	1.0	2.3	750	18.9	1.16	4.8	14.9	93.3	43.4	1.8
	2.6	0.5	1.1	750	23.0	16.0	0.75	30.7	25.6	70.0	1.0	4.5	1.0	2.3	850	19.1	1.11	5.1	15.4	90.8	43.2	1.8
60	2.3	0.4	1.0	660	21.5	14.5	0.86	24.8	24.4	81.2	1.4	2.3	0.4	1.0	750	19.6	1.15	5.0	15.7	94.3	46.3	1.8
	2.3	0.4	1.0	750	21.9	15.5	0.88	24.9	24.9	81.6	1.5	2.3	0.4	1.0	850	19.9	1.10	5.3	16.2	91.7	45.9	1.9
	3.4	0.7	1.6	660	22.2	14.8	0.79	28.2	24.9	74.6	1.2	3.4	0.7	1.6	750	20.8	1.14	5.3	16.9	95.6	50.1	1.9
	3.4	0.7	1.6	750	22.6	15.8	0.80	28.3	25.3	74.9	1.2	3.4	0.7	1.6	850	21.1	1.09	5.7	17.3	92.9	49.8	1.9
	4.5	1.0	2.3	660	22.5	14.9	0.75	30.1	25.0	71.1	1.0	4.5	1.0	2.3	750	21.4	1.14	5.5	17.5	96.4	52.2	2.0
	4.5	1.0	2.3	750	22.9	15.9	0.76	30.2	25.5	71.3	1.1	4.5	1.0	2.3	850	21.7	1.09	5.8	18.0	93.6	52.0	2.0
70	2.3	0.4	1.0	660	20.3	14.0	0.98	20.6	23.6	90.5	2.0	2.3	0.4	1.0	750	21.9	1.14	5.7	18.0	97.1	54.3	2.0
	2.3	0.4	1.0	750	20.7	15.0	1.00	20.7	24.1	90.9	2.0	2.3	0.4	1.0	850	22.3	1.09	6.0	18.5	94.2	53.9	2.0
	3.4	0.7	1.6	660	21.1	14.4	0.89	23.6	24.2	84.2	1.6	3.4	0.7	1.6	750	23.2	1.14	6.0	19.3	98.7	58.6	2.1
	3.4	0.7	1.6	750	21.5	15.4	0.91	23.7	24.6	84.5	1.6	3.4	0.7	1.6	850	23.6	1.09	6.3	19.9	95.7	58.3	2.1
	4.5	1.0	2.2	660	21.5	14.5	0.85	25.2	24.4	80.9	1.4	4.5	1.0	2.2	750	24.0	1.14	6.2	20.1	99.6	61.1	2.1
	4.5	1.0	2.2	750	21.9	15.6	0.87	25.2	24.9	81.1	1.4	4.5	1.0	2.2	850	24.3	1.09	6.5	20.6	96.5	60.8	2.2
80	2.3	0.4	1.0	660	18.9	13.4	1.12	16.9	22.7	99.8	2.6	2.3	0.4	1.0	750	24.3	1.14	6.3	20.4	100.0	62.3	2.1
	2.3	0.4	1.0	750	19.3	14.3	1.14	16.9	23.2	100.1	2.6	2.3	0.4	1.0	850	24.6	1.09	6.6	20.9	96.8	61.8	2.2
	3.4	0.7	1.5	660	19.8	13.8	1.02	19.4	23.3	93.7	2.2	2.8	0.5	1.2	750	25.2	1.14	6.5	21.3	101.1	65.0	2.2
	3.4	0.7	1.5	750	20.2	14.8	1.04	19.4	23.8	94.0	2.2	2.9	0.6	1.3	850	25.6	1.09	6.9	21.9	97.9	65.0	2.2
	4.5	0.9	2.2	660	20.3	14.0	0.98	20.7	23.6	90.5	1.9	2.8	0.5	1.2	750	25.2	1.14	6.5	21.3	101.1	65.0	2.2
	4.5	0.9	2.2	750	20.7	15.0	1.00	20.7	24.1	90.7	2.0	2.9	0.6	1.3	850	25.6	1.09	6.9	21.9	97.9	65.0	2.2
90	2.3	0.4	1.0	660	17.5	12.7	1.28	13.7	21.8	109.0	3.4	1.7	0.3	0.6	750	25.2	1.14	6.5	21.3	101.1	65.0	2.2
	2.3	0.4	1.0	750	17.8	13.6	1.30	13.7	22.2	109.3	3.4	1.7	0.3	0.7	850	25.6	1.09	6.9	21.9	97.9	65.0	2.2
	3.4	0.7	1.5	660	18.4	13.1	1.17	15.7	22.4	103.2	2.9	1.7	0.3	0.6	750	25.2	1.14	6.5	21.3	101.1	65.0	2.2
	3.4	0.7	1.5	750	18.7	14.1	1.19	15.8	22.8	103.4	2.9	1.7	0.3	0.7	850	25.6	1.09	6.9	21.9	97.9	65.0	2.2
	4.5	0.9	2.2	660	18.9	13.4	1.12	16.9	22.7	100.1	2.6	1.7	0.3	0.6	750	25.2	1.14	6.5	21.3	101.1	65.0	2.2
	4.5	0.9	2.2	750	19.2	14.3	1.14	16.9	23.1	100.3	2.7	1.7	0.3	0.7	850	25.6	1.09	6.9	21.9	97.9	65.0	2.2
100	2.3	0.4	1.0	660	16.0	12.1	1.45	11.0	21.0	118.2	4.3	1.2	0.1	0.3	750	25.2	1.14	6.5	21.3	101.1	65.0	2.2
	2.3	0.4	1.0	750	16.3	13.0	1.48	11.0	21.4	118.6	4.3	1.2	0.1	0.3	850	25.6	1.09	6.9	21.9	97.9	65.0	2.2
	3.4	0.7	1.5	660	16.9	12.5	1.34	12.7	21.5	112.6	3.7	1.2	0.1	0.3	750	25.2	1.14	6.5	21.3	101.1	65.0	2.2
	3.4	0.7	1.5	750	17.2	13.4	1.36	12.7	21.9	112.9	3.8	1.2	0.1	0.3	850	25.6	1.09	6.9				

Performance Data —

HZ series Model 024 - Full Load, with vFlow™

Performance capacities shown in thousands of Btuh

Antifreeze use recommended in this range. Also Clip JW3 on DXM2 board.

EWT °F	Cooling - EAT 80/67 °F										Heating - EAT 70°F											
	GPM	WPD		CFM	TC	SC	kW	EER	HR	LWT	HWC	GPM	WPD		CFM	HC	kW	COP	HE	LAT	LWT	HWC
		PSI	FT										PSI	FT								
20	1.3	0.3	0.6	750	29.3	18.1	1.16	33.2	25.3	70.0	1.4	6.0	1.9	4.4	840	16.5	1.73	2.8	10.7	88.2	16.4	1.5
	1.4	0.3	0.6	850	29.8	19.5	1.20	33.9	24.9	70.0	1.4	6.0	1.9	4.4	950	16.8	1.68	2.9	11.0	86.3	16.3	1.5
30	1.7	0.3	0.7	750	29.3	18.1	1.16	33.2	25.3	70.0	1.4	3.0	0.7	1.6	840	18.2	1.69	3.2	12.6	90.1	21.6	1.7
	1.7	0.3	0.7	850	29.8	19.5	1.20	33.9	24.9	70.0	1.4	3.0	0.7	1.6	950	18.5	1.64	3.3	12.9	88.0	21.4	1.8
	1.7	0.3	0.7	750	29.3	18.1	1.16	33.2	25.3	70.0	1.4	4.5	1.1	2.6	840	19.1	1.68	3.3	13.4	91.0	24.0	1.8
	1.7	0.3	0.7	850	29.8	19.5	1.20	33.9	24.9	70.0	1.4	4.5	1.1	2.6	950	19.4	1.63	3.5	13.8	88.9	23.9	1.9
	1.7	0.3	0.7	750	29.3	18.1	1.16	33.2	25.3	70.0	1.4	6.0	1.8	4.0	840	19.5	1.67	3.4	13.9	91.5	25.4	1.9
	1.7	0.3	0.7	850	29.8	19.5	1.20	33.9	24.9	70.0	1.4	6.0	1.8	4.0	950	19.8	1.62	3.6	14.3	89.3	25.2	1.9
40	2.2	0.4	1.0	750	29.3	18.1	1.16	33.2	25.3	70.0	1.4	3.0	0.6	1.5	840	21.0	1.66	3.7	15.4	93.1	29.7	2.1
	2.3	0.4	1.0	850	29.8	19.5	1.20	33.9	24.9	70.0	1.4	3.0	0.6	1.5	950	21.3	1.61	3.9	15.8	90.8	29.5	2.1
	2.2	0.4	1.0	750	29.3	18.1	1.16	33.2	25.3	70.0	1.4	4.5	1.1	2.5	840	22.0	1.65	3.9	16.5	94.3	32.7	2.2
	2.3	0.4	1.0	850	29.8	19.5	1.20	33.9	24.9	70.0	1.4	4.5	1.1	2.5	950	22.4	1.60	4.1	16.9	91.8	32.5	2.3
	2.2	0.4	1.0	750	29.3	18.1	1.16	33.2	25.3	70.0	1.4	6.0	1.6	3.8	840	22.6	1.64	4.0	17.1	94.9	34.3	2.3
	2.3	0.4	1.0	850	29.8	19.5	1.20	33.9	24.9	70.0	1.4	6.0	1.6	3.8	950	23.0	1.59	4.2	17.5	92.4	34.2	2.3
50	3.0	0.6	1.4	750	29.1	18.0	1.19	33.1	24.5	72.0	1.4	3.0	0.6	1.4	840	23.8	1.64	4.2	18.2	96.2	37.8	2.4
	3.0	0.6	1.4	850	29.6	19.4	1.23	33.8	24.0	72.5	1.5	3.0	0.6	1.4	950	24.1	1.59	4.5	18.7	93.5	37.5	2.5
	3.3	0.7	1.6	750	29.3	18.1	1.16	33.2	25.3	70.0	1.4	4.5	1.0	2.3	840	25.1	1.64	4.5	19.5	97.6	41.3	2.6
	3.4	0.7	1.6	850	29.8	19.5	1.20	33.9	24.9	70.0	1.4	4.5	1.0	2.3	950	25.4	1.59	4.7	20.0	94.8	41.1	2.6
	3.3	0.7	1.6	750	29.3	18.1	1.16	33.2	25.3	70.0	1.4	6.0	1.6	3.6	840	25.8	1.64	4.6	20.2	98.4	43.3	2.7
	3.4	0.7	1.6	850	29.8	19.5	1.20	33.9	24.9	70.0	1.4	6.0	1.6	3.6	950	26.2	1.59	4.8	20.7	95.5	43.1	2.7
60	3.0	0.6	1.3	750	27.9	17.6	1.30	32.3	21.4	81.5	1.9	3.0	0.6	1.3	840	26.7	1.64	4.8	21.1	99.4	45.9	2.8
	3.0	0.6	1.3	850	28.4	18.9	1.35	33.0	21.0	82.0	1.9	3.0	0.6	1.3	950	27.1	1.59	5.0	21.6	96.4	45.6	2.8
	4.5	1.0	2.3	750	28.8	17.9	1.22	32.9	23.7	74.6	1.5	4.5	1.0	2.3	840	28.2	1.65	5.0	22.5	101.0	50.0	2.9
	4.5	1.0	2.3	850	29.3	19.3	1.26	33.6	23.3	74.9	1.6	4.5	1.0	2.3	950	28.6	1.60	5.2	23.1	97.9	49.7	3.0
	6.0	1.5	3.5	750	29.2	18.1	1.18	33.1	24.8	71.0	1.4	6.0	1.5	3.5	840	29.0	1.66	5.1	23.3	102.0	52.2	3.0
	6.0	1.5	3.5	850	29.7	19.4	1.22	33.8	24.3	71.3	1.4	6.0	1.5	3.5	950	29.4	1.61	5.4	24.0	98.7	52.0	3.1
70	3.0	0.6	1.3	750	26.4	17.0	1.43	31.3	18.5	90.9	2.4	3.0	0.6	1.3	840	29.6	1.66	5.2	23.9	102.6	54.1	3.1
	3.0	0.6	1.3	850	26.9	18.3	1.48	32.0	18.2	91.3	2.4	3.0	0.6	1.3	950	30.1	1.61	5.5	24.6	99.3	53.6	3.2
	4.5	1.0	2.2	750	27.5	17.5	1.33	32.0	20.7	84.2	2.0	4.5	1.0	2.2	840	31.4	1.69	5.4	25.6	104.6	58.6	3.3
	4.5	1.0	2.2	850	28.0	18.8	1.38	32.7	20.3	84.5	2.1	4.5	1.0	2.2	950	31.8	1.64	5.7	26.2	101.0	58.3	3.3
	6.0	1.5	3.4	750	28.0	17.7	1.28	32.4	21.8	80.8	1.8	6.0	1.5	3.4	840	32.3	1.71	5.5	26.5	105.7	61.2	3.4
	6.0	1.5	3.4	850	28.5	19.0	1.33	33.1	21.4	81.0	1.9	6.0	1.5	3.4	950	32.8	1.66	5.8	27.2	102.0	60.9	3.4
80	3.0	0.6	1.3	750	24.8	16.3	1.58	30.2	15.7	100.1	3.0	3.0	0.6	1.3	840	32.6	1.71	5.6	26.7	106.0	62.2	3.4
	3.0	0.6	1.3	850	25.2	17.5	1.64	30.8	15.4	100.5	3.0	3.0	0.6	1.3	950	33.1	1.66	5.8	27.5	102.3	61.7	3.5
	4.5	0.9	2.2	750	26.0	16.8	1.48	31.0	17.6	93.8	2.6	3.7	0.7	1.7	840	33.9	1.74	5.7	27.9	107.4	65.0	3.5
	4.5	0.9	2.2	850	26.4	18.1	1.53	31.6	17.3	94.1	2.6	3.8	0.8	1.8	950	34.4	1.69	6.0	28.7	103.6	65.0	3.6
	6.0	1.4	3.3	750	26.2	16.9	1.45	31.1	18.1	90.4	2.4	3.7	0.7	1.7	840	33.9	1.74	5.7	27.9	107.4	65.0	3.5
	6.0	1.4	3.3	850	26.7	18.2	1.50	31.8	17.8	92.7	2.4	3.8	0.8	1.8	950	34.4	1.69	6.0	28.7	103.6	65.0	3.6
90	3.0	0.6	1.3	750	23.1	15.5	1.75	29.0	13.2	109.4	3.7	2.2	0.4	0.9	840	33.9	1.74	5.7	27.9	107.4	65.0	3.5
	3.0	0.6	1.3	850	23.5	16.7	1.81	29.7	13.0	109.8	3.7	2.3	0.4	1.0	950	34.4	1.69	6.0	28.7	103.6	65.0	3.6
	4.5	0.9	2.2	750	24.3	16.1	1.63	29.8	14.9	103.2	3.2	2.2	0.4	0.9	840	33.9	1.74	5.7	27.9	107.4	65.0	3.5
	4.5	0.9	2.2	850	24.7	17.3	1.69	30.4	14.6	103.5	3.3	2.3	0.4	1.0	950	34.4	1.69	6.0	28.7	103.6	65.0	3.6
	6.0	1.4	3.2	750	24.9	16.3	1.57	30.2	15.8	100.1	3.0	2.2	0.4	0.9	840	33.9	1.74	5.7	27.9	107.4	65.0	3.5
	6.0	1.4	3.2	850	25.3	17.5	1.63	30.9	15.5	100.3	3.0	2.3	0.4	1.0	950	34.4	1.69	6.0	28.7	103.6	65.0	3.6
100	3.0	0.6	1.3	750	21.3	14.8	1.95	28.0	10.9	118.7	4.4	1.6	0.2	0.6	840	33.9	1.74	5.7	27.9	107.4	65.0	3.5
	3.0	0.6	1.3	850	21.7	15.9	2.02	28.6	10.7	119.1	4.5	1.6	0.3	0.6	950	34.4	1.69	6.0	28.7	103.6	65.0	3.6
	4.5	0.9	2.1	750	22.5	15.3	1.81	28.7	12.4	112.7	3.9	1.6	0.2	0.6	840	33.9	1.74	5.7	27.9	107.4	65.0	3.5
	4.5	0.9	2.1	850	22.9	16.4	1.88	29.3	12.2	113.0	4.0	1.6	0.3	0.6								

Performance Data —

HZ series Model 036 - Part Load, with vFlow™

Performance capacities shown in thousands of Btu/h

Antifreeze use recommended in this range. Also Clip JW3 on DXM2 board.

EWT °F	Cooling - EAT 80/67 °F										Heating - EAT 70°F													
	GPM		WPD		CFM	TC	SC	kW	EER	HR	LWT	HWC	GPM		WPD		CFM	HC	kW	COP	HE	LAT	LWT	HWC
	PSI	FT	PSI	FT																				
20	1.5	0.4	1.0		880	32.8	20.8	1.01	32.5	36.3	70.0	1.2	6.0	2.5	5.7		880	16.9	1.65	3.0	11.5	87.8	16.2	1.7
30	1.5	0.4	1.0		1000	33.5	22.2	1.03	32.5	37.0	70.0	1.2	6.0	2.5	5.7		1000	17.2	1.58	3.2	11.8	85.9	16.1	1.7
	1.8	0.5	1.1		880	32.8	20.8	1.01	32.5	36.3	70.0	1.2	3.0	0.9	2.1		880	18.9	1.65	3.4	13.4	89.8	21.1	1.8
	1.8	0.5	1.1		1000	33.5	22.2	1.03	32.5	37.0	70.0	1.2	3.0	0.9	2.1		1000	19.1	1.58	3.5	13.7	87.7	20.8	1.8
	1.8	0.5	1.1		880	32.8	20.8	1.01	32.5	36.3	70.0	1.2	4.5	1.5	3.5		880	19.9	1.64	3.6	14.4	90.9	23.6	1.9
	1.8	0.5	1.1		1000	33.5	22.2	1.03	32.5	37.0	70.0	1.2	4.5	1.5	3.5		1000	20.2	1.57	3.8	14.8	88.7	23.4	1.9
	1.8	0.5	1.1		880	32.8	20.8	1.01	32.5	36.3	70.0	1.2	6.0	2.2	5.1		880	20.4	1.64	3.7	14.9	91.5	25.0	2.0
40	2.4	0.6	1.4		880	32.8	20.8	1.01	32.5	36.3	70.0	1.2	3.0	0.8	1.9		880	21.9	1.64	3.9	16.4	93.1	29.1	2.1
	2.5	0.6	1.5		1000	33.5	22.2	1.03	32.5	37.0	70.0	1.2	3.0	0.8	1.9		1000	22.2	1.57	4.2	16.9	90.6	28.8	2.1
	2.4	0.6	1.4		880	32.8	20.8	1.01	32.5	36.3	70.0	1.2	4.5	1.4	3.2		880	23.1	1.64	4.1	17.6	94.3	32.2	2.2
	2.5	0.6	1.5		1000	33.5	22.2	1.03	32.5	37.0	70.0	1.2	4.5	1.4	3.2		1000	23.5	1.57	4.4	18.1	91.7	32.0	2.2
	2.4	0.6	1.4		880	32.8	20.8	1.01	32.5	36.3	70.0	1.2	6.0	2.0	4.7		880	23.8	1.64	4.3	18.3	95.1	33.9	2.3
	2.5	0.6	1.5		1000	33.5	22.2	1.03	32.5	37.0	70.0	1.2	6.0	2.0	4.7		1000	24.1	1.57	4.5	18.8	92.4	33.7	2.3
50	3.0	0.8	1.8		880	32.3	20.7	1.08	29.9	36.0	74.0	1.4	3.0	0.8	1.8		880	24.9	1.64	4.5	19.4	96.2	37.1	2.4
	3.0	0.8	1.8		1000	33.0	22.2	1.10	30.0	36.7	74.5	1.4	3.0	0.8	1.8		1000	25.3	1.57	4.7	19.9	93.4	36.7	2.4
	3.6	1.0	2.3		880	32.8	20.8	1.01	32.5	36.3	70.0	1.2	4.5	1.3	3.0		880	26.3	1.64	4.7	20.7	97.7	40.8	2.5
	3.7	1.0	2.4		1000	33.5	22.2	1.03	32.5	37.0	70.0	1.2	4.5	1.3	3.0		1000	26.7	1.57	5.0	21.3	94.7	40.5	2.5
	3.6	1.0	2.3		880	32.8	20.8	1.01	32.5	36.3	70.0	1.2	6.0	1.9	4.4		880	27.1	1.64	4.8	21.5	98.5	42.8	2.6
	3.7	1.0	2.4		1000	33.5	22.2	1.03	32.5	37.0	70.0	1.2	6.0	1.9	4.4		1000	27.5	1.57	5.1	22.1	95.4	42.6	2.6
60	3.0	0.8	1.8		880	30.8	20.2	1.24	24.9	35.0	83.3	2.0	3.0	0.8	1.8		880	27.9	1.65	5.0	22.3	99.3	45.2	2.6
	3.0	0.8	1.8		1000	31.4	21.6	1.26	24.9	35.7	83.8	2.0	3.0	0.8	1.8		1000	28.3	1.58	5.2	22.9	96.2	44.7	2.6
	4.5	1.3	2.9		880	32.1	20.6	1.11	28.9	35.9	75.9	1.5	4.5	1.3	2.9		880	29.5	1.65	5.2	23.8	101.0	49.4	2.7
	4.5	1.3	2.9		1000	32.7	22.1	1.13	29.0	36.6	76.3	1.5	4.5	1.3	2.9		1000	29.9	1.58	5.5	24.5	97.7	49.1	2.8
	6.0	1.8	4.2		880	32.6	20.8	1.05	31.0	36.2	72.1	1.3	6.0	1.8	4.2		880	30.4	1.65	5.4	24.7	102.0	51.8	2.7
	6.0	1.8	4.2		1000	33.2	22.2	1.07	31.1	36.9	72.3	1.3	6.0	1.8	4.2		1000	30.8	1.58	5.7	25.4	98.5	51.5	2.8
70	3.0	0.8	1.8		880	28.8	19.4	1.41	20.4	33.6	92.4	2.6	3.0	0.8	1.8		880	30.8	1.66	5.4	25.2	102.4	53.2	2.8
	3.0	0.8	1.8		1000	29.4	20.7	1.44	20.4	34.3	92.8	2.7	3.0	0.8	1.8		1000	31.3	1.59	5.8	25.9	99.0	52.8	2.9
	4.5	1.2	2.9		880	30.4	20.0	1.28	23.8	34.7	85.4	2.1	4.5	1.2	2.9		880	32.7	1.67	5.7	27.0	104.4	58.0	2.9
	4.5	1.2	2.9		1000	31.0	21.4	1.30	23.8	35.4	85.7	2.1	4.5	1.2	2.9		1000	33.2	1.60	6.1	27.7	100.7	57.7	3.0
	6.0	1.8	4.1		880	31.1	20.3	1.21	25.8	35.2	81.7	1.9	6.0	1.8	4.1		880	33.7	1.67	5.9	28.0	105.5	60.7	3.0
	6.0	1.8	4.1		1000	31.7	21.7	1.23	25.8	35.9	82.0	1.9	6.0	1.8	4.1		1000	34.2	1.60	6.3	28.7	101.7	60.4	3.1
80	3.0	0.8	1.9		880	26.6	18.4	1.61	16.5	32.1	101.4	3.6	3.0	0.8	1.9		880	33.9	1.67	5.9	28.1	105.6	61.3	3.0
	3.0	0.8	1.9		1000	27.1	19.7	1.64	16.5	32.7	101.8	3.7	3.0	0.8	1.9		1000	34.3	1.60	6.3	28.9	101.8	60.8	3.1
	4.5	1.2	2.9		880	28.3	19.1	1.46	19.3	33.2	94.8	2.9	4.0	1.1	2.5		880	35.5	1.69	6.2	29.7	107.4	65.0	3.1
	4.5	1.2	2.9		1000	28.8	20.5	1.49	19.3	33.9	95.1	3.0	4.1	1.1	2.6		1000	36.0	1.62	6.5	30.5	103.4	65.0	3.2
	6.0	1.7	4.0		880	29.1	19.5	1.38	21.0	33.8	91.3	2.6	4.0	1.1	2.5		880	35.5	1.69	6.2	29.7	107.4	65.0	3.1
	6.0	1.7	4.0		1000	29.7	20.9	1.41	21.0	34.5	91.5	2.6	4.1	1.1	2.6		1000	36.0	1.62	6.5	30.5	103.4	65.0	3.2
90	3.0	0.8	1.9		880	24.4	17.4	1.84	13.3	30.7	110.4	4.7	2.4	0.7	1.5		880	35.5	1.69	6.2	29.7	107.4	65.0	3.1
	3.0	0.8	1.9		1000	24.9	18.7	1.87	13.3	31.3	110.8	4.8	2.4	0.7	1.6		1000	36.0	1.62	6.5	30.5	103.4	65.0	3.2
	4.5	1.2	2.9		880	26.0	18.1	1.67	15.6	31.7	104.1	3.9	2.4	0.7	1.5		880	35.5	1.69	6.2	29.7	107.4	65.0	3.1
	4.5	1.2	2.9		1000	26.5	19.4	1.70	15.6	32.3	104.3	4.0	2.4	0.7	1.6		1000	36.0	1.62	6.5	30.5	103.4	65.0	3.2
	6.0	1.7	4.0		880	26.8	18.5	1.59	16.9	32.2	100.7	3.5	2.4	0.7	1.5		880	35.5	1.69	6.2	29.7	107.4	65.0	3.1
	6.0	1.7	4.0		1000	27.3	19.8	1.62	16.9	32.9	101.0	3.6	2.4	0.7	1.6		1000	36.0	1.62	6.5	30.5	103.4	65.0	3.2
100	3.0	0.8	1.9		880	22.5	16.6	2.09	10.7	29.6	119.7	6.1	1.7	0.5	1.2		880	35.5	1.69	6.2	29.7	107.4	65.0	3.1
	3.0	0.8	1.9		1000	22.9	17.8	2.13	10.7	30.1	120.1	6.2	1.7	0.5	1.2		1000	36.0	1.62	6.5	30.5	103.4	65.0	3.2
	4.5	1.2	2.8		880	23.8	17.1	1.91	12.5	30.3	113.5	5.1	1.7	0.5	1.2</td									

Performance Data —

HZ series Model 036 - Full Load, with vFlow™

Performance capacities shown in thousands of Btu/h

Antifreeze use recommended in this range. Also Clip JW3 on DXM2 board.

EWT °F	Cooling - EAT 80/67 °F										Heating - EAT 70°F											
	GPM	WPD		CFM	TC	SC	kW	EER	HR	LWT	HWC	GPM	WPD		CFM	HC	kW	COP	HE	LAT	LWT	HWC
		PSI	FT										PSI	FT								
20	2.0	0.6	1.5	1100	44.2	26.6	1.70	26.0	49.9	70.0	1.8	9.0	4.3	9.9	1100	25.2	2.23	3.3	17.8	91.2	16.1	2.0
	2.0	0.7	1.5	1250	45.0	28.6	1.76	25.6	51.0	70.0	1.8	9.0	4.3	9.9	1250	25.6	2.16	3.5	18.2	89.0	15.9	2.1
30	2.5	0.7	1.7	1100	44.2	26.6	1.70	26.0	49.9	70.0	1.8	4.5	1.5	3.5	1100	27.7	2.25	3.6	20.1	93.3	21.0	2.3
	2.5	0.7	1.7	1250	45.0	28.6	1.76	25.6	51.0	70.0	1.8	4.5	1.5	3.5	1250	28.1	2.18	3.8	20.7	90.8	20.8	2.4
	2.5	0.7	1.7	1100	44.2	26.6	1.70	26.0	49.9	70.0	1.8	6.8	2.6	6.1	1100	29.0	2.26	3.8	21.4	94.4	23.7	2.5
	2.5	0.7	1.7	1250	45.0	28.6	1.76	25.6	51.0	70.0	1.8	6.8	2.6	6.1	1250	29.5	2.19	3.9	22.0	91.8	23.5	2.5
	2.5	0.7	1.7	1100	44.2	26.6	1.70	26.0	49.9	70.0	1.8	9.0	3.9	9.1	1100	29.7	2.26	3.9	22.1	95.0	25.1	2.6
	2.5	0.7	1.7	1250	45.0	28.6	1.76	25.6	51.0	70.0	1.8	9.0	3.9	9.1	1250	30.2	2.19	4.0	22.7	92.4	25.0	2.6
40	3.3	0.9	2.2	1100	44.2	26.6	1.70	26.0	49.9	70.0	1.8	4.5	1.4	3.2	1100	31.8	2.28	4.1	24.0	96.7	29.3	2.8
	3.4	1.0	2.2	1250	45.0	28.6	1.76	25.6	51.0	70.0	1.8	4.5	1.4	3.2	1250	32.2	2.21	4.3	24.7	93.9	29.0	2.9
	3.3	0.9	2.2	1100	44.2	26.6	1.70	26.0	49.9	70.0	1.8	6.8	2.4	5.6	1100	33.3	2.30	4.2	25.5	98.1	32.5	3.0
	3.4	1.0	2.2	1250	45.0	28.6	1.76	25.6	51.0	70.0	1.8	6.8	2.4	5.6	1250	33.8	2.23	4.4	26.2	95.1	32.3	3.1
	3.3	0.9	2.2	1100	44.2	26.6	1.70	26.0	49.9	70.0	1.8	9.0	3.6	8.4	1100	34.2	2.31	4.3	26.3	98.8	34.1	3.1
	3.4	1.0	2.2	1250	45.0	28.6	1.76	25.6	51.0	70.0	1.8	9.0	3.6	8.4	1250	34.7	2.24	4.5	27.1	95.7	34.0	3.2
50	4.5	1.3	3.0	1100	43.9	26.6	1.74	25.3	49.7	72.1	2.0	4.5	1.3	3.0	1100	35.8	2.33	4.5	27.9	100.1	37.6	3.3
	4.5	1.3	3.0	1250	44.6	28.6	1.80	24.8	50.8	72.6	2.0	4.5	1.3	3.0	1250	36.3	2.26	4.7	28.6	96.9	37.3	3.4
	5.0	1.5	3.4	1100	44.2	26.6	1.70	26.0	49.9	70.0	1.8	6.8	2.3	5.2	1100	37.6	2.36	4.7	29.6	101.6	41.3	3.5
	5.1	1.5	3.5	1250	45.0	28.6	1.76	25.6	51.0	70.0	1.8	6.8	2.3	5.2	1250	38.2	2.29	4.9	30.3	98.3	41.1	3.6
	5.0	1.5	3.4	1100	44.2	26.6	1.70	26.0	49.9	70.0	1.8	9.0	3.4	7.9	1100	38.6	2.38	4.7	30.5	102.5	43.2	3.6
	5.1	1.5	3.5	1250	45.0	28.6	1.76	25.6	51.0	70.0	1.8	9.0	3.4	7.9	1250	39.2	2.31	5.0	31.3	99.0	43.0	3.7
60	4.5	1.3	2.9	1100	42.3	26.1	1.90	22.3	48.7	81.7	2.6	4.5	1.3	2.9	1100	39.8	2.40	4.9	31.6	103.5	45.9	3.7
	4.5	1.3	2.9	1250	43.0	28.1	1.97	21.9	49.8	82.1	2.7	4.5	1.3	2.9	1250	40.4	2.33	5.1	32.5	99.9	45.6	3.8
	6.8	2.1	4.9	1100	43.5	26.5	1.78	24.5	49.5	74.6	2.1	6.8	2.2	5.0	1100	41.9	2.45	5.0	33.5	105.2	50.1	4.0
	6.8	2.1	4.9	1250	44.3	28.5	1.84	24.1	50.6	75.0	2.2	6.8	2.2	5.0	1250	42.5	2.37	5.3	34.4	101.5	49.9	4.1
	9.0	3.3	7.5	1100	44.0	26.6	1.72	25.6	49.8	71.1	1.9	9.0	3.3	7.5	1100	43.0	2.47	5.1	34.6	106.2	52.3	4.1
	9.0	3.3	7.5	1250	44.8	28.6	1.78	25.2	50.9	71.3	1.9	9.0	3.3	7.5	1250	43.7	2.39	5.4	35.5	102.3	52.1	4.2
70	4.5	1.2	2.9	1100	40.4	25.4	2.07	19.5	47.4	91.1	3.4	4.5	1.2	2.9	1100	43.9	2.49	5.2	35.4	106.9	54.3	4.2
	4.5	1.2	2.9	1250	41.1	27.4	2.15	19.1	48.4	91.5	3.5	4.5	1.2	2.9	1250	44.5	2.41	5.4	36.3	103.0	53.9	4.3
	6.8	2.1	4.8	1100	41.8	26.0	1.95	21.5	48.4	84.2	2.8	6.8	2.1	4.8	1100	46.2	2.55	5.3	37.5	108.9	59.0	4.5
	6.8	2.1	4.8	1250	42.6	27.9	2.02	21.1	49.4	84.6	2.9	6.8	2.1	4.8	1250	46.9	2.47	5.6	38.5	104.8	58.7	4.6
	9.0	3.1	7.2	1100	42.5	26.2	1.88	22.6	48.8	80.9	2.5	9.0	3.1	7.2	1100	47.6	2.58	5.4	38.7	110.0	61.4	4.6
	9.0	3.1	7.2	1250	43.2	28.2	1.95	22.2	49.9	81.1	2.6	9.0	3.1	7.2	1250	48.3	2.50	5.7	39.8	105.8	61.2	4.7
80	4.5	1.2	2.9	1100	38.2	24.6	2.29	16.7	45.9	100.4	4.3	4.5	1.2	2.9	1100	48.0	2.59	5.4	39.2	110.4	62.6	4.6
	4.5	1.2	2.9	1250	38.8	26.4	2.37	16.4	46.9	100.9	4.4	4.5	1.2	2.9	1250	48.8	2.51	5.7	40.2	106.1	62.1	4.7
	6.8	2.0	4.7	1100	39.8	25.2	2.13	18.6	47.0	93.8	3.6	5.4	1.5	3.5	1100	49.5	2.63	5.5	40.5	111.7	65.0	4.8
	6.8	2.0	4.7	1250	40.5	27.1	2.21	18.3	48.0	94.2	3.7	5.5	1.6	3.6	1250	50.3	2.55	5.8	41.6	107.3	65.0	4.9
	9.0	3.1	7.1	1100	40.5	25.5	2.07	19.6	47.5	90.6	3.3	5.4	1.5	3.5	1100	49.5	2.63	5.5	40.5	111.7	65.0	4.8
	9.0	3.1	7.1	1250	41.2	27.4	2.14	19.3	48.5	90.8	3.4	5.5	1.6	3.6	1250	50.3	2.55	5.8	41.6	107.3	65.0	4.9
90	4.5	1.2	2.9	1100	35.8	23.6	2.54	14.1	44.4	109.7	5.3	3.2	0.9	2.0	1100	49.5	2.63	5.5	40.5	111.7	65.0	4.8
	4.5	1.2	2.9	1250	36.4	25.4	2.63	13.8	45.4	110.2	5.5	3.3	0.9	2.1	1250	50.3	2.55	5.8	41.6	107.3	65.0	4.9
	6.8	2.0	4.6	1100	37.4	24.3	2.36	15.8	45.5	103.4	4.6	3.2	0.9	2.0	1100	49.5	2.63	5.5	40.5	111.7	65.0	4.8
	6.8	2.0	4.6	1250	38.1	26.1	2.45	15.5	46.4	103.8	4.7	3.3	0.9	2.1	1250	50.3	2.55	5.8	41.6	107.3	65.0	4.9
	9.0	3.0	6.9	1100	38.3	24.6	2.28	16.8	46.0	100.2	4.3	3.2	0.9	2.0	1100	49.5	2.63	5.5	40.5	111.7	65.0	4.8
	9.0	3.0	6.9	1250	38.9	26.5	2.36	16.5	47.0	100.4	4.3	3.3	0.9	2.1	1250	50.3	2.55	5.8	41.6	107.3	65.0	4.9
100	4.5	1.2	2.8	1100	33.3	22.5	2.83	11.8	43.0	119.1	6.5	2.3	0.7	1.5	1100	49.5	2.63	5.5	40.5	111.7	65.0	4.8
	4.5	1.2	2.8	1250	33.9	24.2	2.93	11.6	43.9	119.5	6.7	2.4	0.7	1.5	1250	50.3	2.55	5.8	41.6	107.3	65.0	4.9
	6.8	2.0	4.5	1100	35.0	23.2	2.62	13.3	43.9	112.9	5.7	2.3	0.7	1.5	1100	49.5	2.63	5.5	40.5	111.7	65.0	4.8
	6.8	2.0																				

Performance Data —

HZ series Model 048 - Part Load, with vFlow™

Performance capacities shown in thousands of Btuh

Antifreeze use recommended in this range. Also Clip JW3 on DXM2 board.

EWT °F	Cooling - EAT 80/67 °F									Heating - EAT 70°F												
	GPM	WPD		CFM	TC	SC	kW	EER	HR	LWT	HWC	GPM	WPD		CFM	HC	kW	COP	HE	LAT	LWT	HWC
		PSI	FT										PSI	FT								
20	1.8	0.1	0.1	1190	41.3	27.9	1.42	29.0	46.2	70.0	1.5	9.0	2.3	5.4	1190	22.8	2.38	2.8	14.9	87.7	16.7	2.5
	1.9	0.1	0.1	1350	42.1	29.9	1.45	29.0	47.1	70.0	1.5	9.0	2.3	5.4	1350	23.1	2.28	3.0	15.3	85.8	16.6	2.5
30	2.3	0.1	0.1	1190	41.3	27.9	1.42	29.0	46.2	70.0	1.5	4.5	0.2	0.6	1190	25.0	2.35	3.1	17.2	89.4	22.4	2.6
	2.4	0.1	0.1	1350	42.1	29.9	1.45	29.0	47.1	70.0	1.5	4.5	0.2	0.6	1350	25.3	2.25	3.3	17.6	87.4	22.2	2.6
	2.3	0.1	0.1	1190	41.3	27.9	1.42	29.0	46.2	70.0	1.5	6.8	1.2	2.8	1190	25.9	2.34	3.3	18.1	90.2	24.7	2.6
	2.4	0.1	0.1	1350	42.1	29.9	1.45	29.0	47.1	70.0	1.5	6.8	1.2	2.8	1350	26.3	2.24	3.4	18.6	88.0	24.5	2.6
	2.3	0.1	0.1	1190	41.3	27.9	1.42	29.0	46.2	70.0	1.5	9.0	2.1	4.9	1190	26.5	2.34	3.3	18.7	90.6	25.9	2.6
	2.4	0.1	0.1	1350	42.1	29.9	1.45	29.0	47.1	70.0	1.5	9.0	2.1	4.9	1350	26.8	2.24	3.5	19.2	88.4	25.7	2.6
40	3.1	0.1	0.1	1190	41.3	27.9	1.42	29.0	46.2	70.0	1.5	4.5	0.2	0.4	1190	28.5	2.33	3.6	20.8	92.2	30.8	2.6
	3.1	0.1	0.1	1350	42.1	29.9	1.45	29.0	47.1	70.0	1.5	4.5	0.2	0.4	1350	28.9	2.23	3.8	21.3	89.8	30.5	2.7
	3.1	0.1	0.1	1190	41.3	27.9	1.42	29.0	46.2	70.0	1.5	6.8	1.1	2.5	1190	29.8	2.33	3.8	22.0	93.2	33.5	2.6
	3.1	0.1	0.1	1350	42.1	29.9	1.45	29.0	47.1	70.0	1.5	6.8	1.1	2.5	1350	30.2	2.23	4.0	22.6	90.7	33.3	2.7
	3.1	0.1	0.1	1190	41.3	27.9	1.42	29.0	46.2	70.0	1.5	9.0	2.0	4.6	1190	30.5	2.32	3.9	22.7	93.7	35.0	2.6
	3.1	0.1	0.1	1350	42.1	29.9	1.45	29.0	47.1	70.0	1.5	9.0	2.0	4.6	1350	30.9	2.22	4.1	23.3	91.2	34.8	2.7
50	4.5	0.1	0.3	1190	41.2	28.0	1.44	28.6	46.1	70.5	1.5	4.5	0.1	0.3	1190	32.3	2.32	4.1	24.5	95.2	39.1	2.7
	4.5	0.1	0.3	1350	42.0	30.0	1.47	28.6	47.0	70.9	1.5	4.5	0.1	0.3	1350	32.8	2.22	4.3	25.2	92.5	38.8	2.8
	4.6	0.2	0.4	1190	41.3	27.9	1.42	29.0	46.2	70.0	1.5	6.8	1.0	2.4	1190	33.9	2.33	4.3	26.1	96.4	42.3	2.8
	4.7	0.2	0.5	1350	42.1	29.9	1.45	29.0	47.1	70.0	1.5	6.8	1.0	2.4	1350	34.4	2.23	4.5	26.8	93.6	42.1	2.9
	4.6	0.2	0.4	1190	41.3	27.9	1.42	29.0	46.2	70.0	1.5	9.0	1.9	4.3	1190	34.8	2.3	4.4	26.9	97.1	44.0	2.8
	4.7	0.2	0.5	1350	42.1	29.9	1.45	29.0	47.1	70.0	1.5	9.0	1.9	4.3	1350	35.3	2.23	4.6	27.7	94.2	43.9	2.9
60	4.5	0.1	0.2	1190	39.8	27.8	1.66	24.0	45.5	80.2	2.1	4.5	0.1	0.2	1190	36.3	2.33	4.6	28.4	98.3	47.4	2.9
	4.5	0.1	0.2	1350	40.6	29.8	1.69	24.0	46.4	80.6	2.1	4.5	0.1	0.2	1350	36.8	2.23	4.8	29.2	95.3	47.0	3.0
	6.8	1.0	2.2	1190	40.9	28.0	1.50	27.2	46.0	73.5	1.7	6.8	1.0	2.2	1190	38.2	2.34	4.8	30.3	99.7	51.1	3.0
	6.8	1.0	2.2	1350	41.7	30.0	1.53	27.2	46.9	73.9	1.7	6.8	1.0	2.2	1350	38.7	2.24	5.1	31.1	96.6	50.9	3.1
	9.0	1.8	4.2	1190	41.3	28.0	1.43	28.8	46.2	70.3	1.5	9.0	1.8	4.2	1190	39.2	2.35	4.9	31.3	100.5	53.1	3.0
	9.0	1.8	4.2	1350	42.1	29.9	1.46	28.8	47.0	70.5	1.5	9.0	1.8	4.2	1350	39.8	2.25	5.2	32.1	97.3	52.9	3.1
70	4.5	0.1	0.2	1190	37.9	27.1	1.91	19.9	44.4	89.7	2.7	4.5	0.1	0.2	1190	40.4	2.35	5.0	32.4	101.4	55.6	3.1
	4.5	0.1	0.2	1350	38.6	29.0	1.94	19.9	45.2	90.1	2.8	4.5	0.1	0.2	1350	41.0	2.25	5.3	33.3	98.1	55.2	3.2
	6.8	0.9	2.1	1190	39.3	27.7	1.73	22.7	45.2	83.3	2.3	6.8	0.9	2.2	1190	42.6	2.36	5.3	34.5	103.1	59.8	3.2
	6.8	0.9	2.1	1350	40.0	29.6	1.76	22.7	46.1	83.6	2.3	6.8	0.9	2.2	1350	43.2	2.26	5.6	35.5	99.6	59.6	3.3
	9.0	1.8	4.0	1190	39.9	27.9	1.65	24.2	45.5	80.1	2.1	9.0	1.8	4.0	1190	43.8	2.37	5.4	35.7	104.1	62.1	3.3
	9.0	1.8	4.0	1350	40.7	29.8	1.68	24.2	46.4	80.3	2.1	9.0	1.8	4.0	1350	44.4	2.27	5.7	36.7	100.5	61.9	3.4
80	4.5	0.1	0.3	1190	35.5	26.0	2.18	16.3	42.9	99.1	3.7	4.5	0.1	0.3	1190	44.6	2.37	5.5	36.4	104.7	63.8	3.3
	4.5	0.1	0.3	1350	36.2	27.8	2.22	16.3	43.7	99.4	3.8	4.5	0.1	0.3	1350	45.2	2.27	5.8	37.4	101.0	63.4	3.4
	6.8	0.9	2.1	1190	37.1	26.7	1.99	18.6	43.9	92.9	3.0	5.0	0.1	0.2	1190	45.4	2.38	5.6	37.2	105.3	65.0	3.4
	6.8	0.9	2.1	1350	37.8	28.6	2.03	18.6	44.7	93.3	3.1	5.1	0.3	0.8	1350	46.0	2.28	5.9	38.3	101.6	65.0	3.5
	9.0	1.7	3.9	1190	37.9	27.1	1.91	19.9	44.4	89.9	3.3	5.0	0.3	0.7	1190	45.4	2.38	5.6	37.2	105.3	65.0	3.6
	9.0	1.7	3.9	1350	38.6	29.0	1.94	19.9	45.2	90.0	3.4	5.1	0.3	0.8	1350	46.0	2.28	5.9	38.3	101.6	65.0	3.7
90	4.5	0.1	0.3	1190	32.9	24.7	2.49	13.2	41.4	108.4	4.8	3.0	0.1	0.1	1190	45.4	2.38	5.6	37.2	105.3	65.0	3.4
	4.5	0.1	0.3	1350	33.5	26.5	2.54	13.2	42.2	108.7	4.9	3.1	0.1	0.1	1350	46.0	2.28	5.9	38.3	101.6	65.0	3.5
	6.8	0.9	2.1	1190	34.6	25.5	2.29	15.1	42.4	102.5	4.0	3.0	0.1	0.1	1190	45.4	2.38	5.6	37.2	105.3	65.0	3.4
	6.8	0.9	2.1	1350	35.2	27.3	2.33	15.1	43.2	102.8	4.1	3.1	0.1	0.1	1350	46.0	2.28	5.9	38.3	101.6	65.0	3.5
	9.0	1.7	3.9	1190	35.4	25.9	2.19	16.2	42.9	99.5	3.7	3.0	0.1	0.1	1190	45.4	2.38	5.6	37.2	105.3	65.0	3.4
	9.0	1.7	3.9	1350	36.1	27.8	2.23	16.2	43.7	99.7	3.8	3.1	0.1	0.1	1350	46.0	2.28	5.9	38.3	101.6	65.0	3.5
100	4.5	0.1	0.3	1190	30.2	23.5	2.84	10.6	39.9	117.7	6.1	2.1	0.1	0.1	1190	45.4	2.38	5.6	37.2	105.3	65.0	3.4
	4.5	0.1	0.3	1350	30.8	25.2	2.89	10.7	40.7	118.1	6.2	2.2	0.1	0.1	1350	46.0	2.28	5.9	38.3	101.6	65.0	3.5
	6.8	0.9	2.1	1190	31.9	24.3	2.62	12.2	40.8	112.0	5.3	2.1	0.1	0.1	1190	45.4	2.38	5.6	37.2	105.3	65.0	3.4
	6.8	0.9	2.1	1350	32.5	26.0	2.67	12.2	41.													

Performance Data —

HZ series Model 048 - Full Load, with vFlow™

Performance capacities shown in thousands of Btu/h

Antifreeze use recommended in this range. Also Clip JW3 on DXM2 board.

EWT °F	Cooling - EAT 80/67 °F									Heating - EAT 70°F												
	GPM	WPD		CFM	TC	SC	kW	EER	HR	LWT	HWC	GPM	WPD		CFM	HC	kW	COP	HE	LAT	LWT	HWC
		PSI	FT										PSI	FT								
20	2.5	0.1	0.2	1360	54.0	33.1	2.26	23.9	61.6	70.0	2.3	12.0	4.1	9.4	1450	31.4	3.17	2.9	20.9	90.1	16.5	3.3
30	2.5	0.1	0.2	1550	54.9	35.6	2.34	23.5	62.9	70.0	2.3	12.0	4.1	9.4	1650	31.9	3.07	3.0	21.4	87.9	16.4	3.3
	3.1	0.1	0.2	1360	54.0	33.1	2.26	23.9	61.6	70.0	2.3	6.0	0.9	2.1	1450	34.7	3.16	3.2	24.2	92.2	21.9	3.4
	3.1	0.1	0.2	1550	54.9	35.6	2.34	23.5	62.9	70.0	2.3	6.0	0.9	2.1	1650	35.3	3.06	3.4	24.8	89.8	21.7	3.5
	3.1	0.1	0.2	1360	54.0	33.1	2.26	23.9	61.6	70.0	2.3	9.0	2.1	4.9	1450	36.2	3.16	3.4	25.7	93.1	24.3	3.5
	3.1	0.1	0.2	1550	54.9	35.6	2.34	23.5	62.9	70.0	2.3	9.0	2.1	4.9	1650	36.8	3.06	3.5	26.3	90.6	24.1	3.5
	3.1	0.1	0.2	1360	54.0	33.1	2.26	23.9	61.6	70.0	2.3	12.0	3.8	8.8	1450	37.1	3.16	3.4	26.5	93.7	25.6	3.5
40	4.1	0.2	0.5	1360	54.0	33.1	2.26	23.9	61.6	70.0	2.3	6.0	0.8	1.8	1450	39.9	3.18	3.7	29.2	95.5	30.3	3.6
	4.2	0.2	0.5	1550	54.9	35.6	2.34	23.5	62.9	70.0	2.3	6.0	0.8	1.8	1650	40.5	3.08	3.9	30.0	92.7	30.0	3.7
	4.1	0.2	0.5	1360	54.0	33.1	2.26	23.9	61.6	70.0	2.3	9.0	2.0	4.6	1450	41.7	3.21	3.8	30.9	96.6	33.1	3.7
	4.2	0.2	0.5	1550	54.9	35.6	2.34	23.5	62.9	70.0	2.3	9.0	2.0	4.6	1650	42.3	3.11	4.0	31.7	93.8	32.9	3.8
	4.1	0.2	0.5	1360	54.0	33.1	2.26	23.9	61.6	70.0	2.3	12.0	3.6	8.4	1450	42.7	3.22	3.9	31.8	97.3	34.7	3.8
	4.2	0.2	0.5	1550	54.9	35.6	2.34	23.5	62.9	70.0	2.3	12.0	3.6	8.4	1650	43.3	3.12	4.1	32.7	94.3	34.6	3.9
50	6.0	0.7	1.7	1360	54.0	33.2	2.29	23.6	61.7	70.6	2.3	6.0	0.7	1.7	1450	45.0	3.26	4.0	34.0	98.8	38.7	3.9
	6.0	0.7	1.7	1550	54.9	35.7	2.37	23.2	63.0	71.0	2.3	6.0	0.7	1.7	1650	45.7	3.16	4.2	34.9	95.7	38.4	4.0
	6.2	0.8	1.8	1360	54.0	33.1	2.26	23.9	61.6	70.0	2.3	9.0	1.9	4.3	1450	47.2	3.30	4.2	36.0	100.1	42.0	4.1
	6.3	0.8	1.9	1550	54.9	35.6	2.34	23.5	62.9	70.0	2.3	9.0	1.9	4.3	1650	47.9	3.20	4.4	37.0	96.9	41.8	4.1
	6.2	0.8	1.8	1360	54.0	33.1	2.26	23.9	61.6	70.0	2.3	12.0	3.5	8.0	1450	48.3	3.33	4.2	37.1	100.9	43.8	4.1
	6.3	0.8	1.9	1550	54.9	35.6	2.34	23.5	62.9	70.0	2.3	12.0	3.5	8.0	1650	49.1	3.23	4.5	38.1	97.5	43.7	4.2
60	6.0	0.7	1.6	1360	53.1	33.6	2.52	21.1	61.6	80.5	2.9	6.0	0.7	1.6	1450	50.2	3.37	4.4	38.8	102.1	47.1	4.3
	6.0	0.7	1.6	1550	54.0	36.1	2.61	20.7	62.9	81.0	2.9	6.0	0.7	1.6	1650	51.0	3.27	4.6	39.8	98.6	46.7	4.4
	9.0	1.8	4.2	1360	53.9	33.4	2.35	22.9	61.8	73.7	2.4	9.0	1.8	4.2	1450	52.7	3.44	4.5	41.0	103.6	50.9	4.4
	9.0	1.8	4.2	1550	54.8	36.0	2.44	22.5	63.1	74.0	2.5	9.0	1.8	4.2	1650	53.5	3.33	4.7	42.1	100.0	50.6	4.5
	12.0	3.4	7.8	1360	54.0	33.1	2.27	23.8	61.6	70.3	2.3	12.0	3.4	7.8	1450	54.0	3.48	4.5	42.2	104.5	53.0	4.5
	12.0	3.4	7.8	1550	54.9	35.6	2.35	23.4	63.0	70.5	2.3	12.0	3.4	7.8	1650	54.8	3.37	4.8	43.3	100.8	52.8	4.6
70	6.0	0.7	1.5	1360	51.0	33.0	2.78	18.3	60.4	90.1	3.6	6.0	0.7	1.5	1450	55.5	3.52	4.6	43.5	105.4	55.5	4.6
	6.0	0.7	1.5	1550	51.9	35.5	2.88	18.0	61.7	90.6	3.7	6.0	0.7	1.5	1650	56.3	3.41	4.8	44.7	101.6	55.1	4.7
	9.0	1.8	4.0	1360	52.6	33.5	2.60	20.2	61.3	83.6	3.1	9.0	1.8	4.0	1450	58.2	3.60	4.7	46.0	107.2	59.8	4.9
	9.0	1.8	4.0	1550	53.5	36.0	2.69	19.9	62.7	83.9	3.1	9.0	1.8	4.0	1650	59.1	3.49	5.0	47.2	103.2	59.5	5.0
	12.0	3.3	7.6	1360	53.2	33.6	2.51	21.2	61.6	80.3	2.8	12.0	3.3	7.6	1450	59.7	3.64	4.8	47.3	108.1	62.1	5.0
	12.0	3.3	7.6	1550	54.1	36.1	2.60	20.8	63.0	80.5	2.9	12.0	3.3	7.6	1650	60.6	3.53	5.0	48.6	104.0	61.9	5.1
80	6.0	0.7	1.5	1360	48.1	31.8	3.07	15.7	58.6	99.5	4.5	6.0	0.7	1.5	1450	60.7	3.67	4.8	48.2	108.8	63.9	5.1
	6.0	0.7	1.5	1550	49.0	34.2	3.18	15.4	59.8	99.9	4.6	6.0	0.7	1.5	1650	61.6	3.56	5.1	49.5	104.6	63.5	5.2
	9.0	1.7	4.0	1360	50.1	32.7	2.87	17.5	59.9	93.3	3.8	6.5	0.8	1.9	1450	61.6	3.70	4.9	49.0	109.4	65.0	5.2
	9.0	1.7	4.0	1550	51.0	35.1	2.97	17.2	61.1	93.6	3.9	6.7	0.9	2.1	1650	62.6	3.59	5.1	50.3	105.1	65.0	5.3
	12.0	3.2	7.5	1360	51.1	33.0	2.77	18.4	60.4	90.1	3.6	6.5	0.8	1.9	1450	61.6	3.70	4.9	49.0	109.4	65.0	5.2
	12.0	3.2	7.5	1550	51.9	35.5	2.87	18.1	61.7	90.3	3.6	6.7	0.9	2.1	1650	62.6	3.59	5.1	50.3	105.1	65.0	5.3
90	6.0	0.7	1.5	1360	44.9	30.2	3.40	13.2	56.5	108.8	4.8	3.9	0.1	0.2	1450	61.6	3.70	4.9	49.0	109.4	65.0	5.2
	6.0	0.7	1.5	1550	45.7	32.5	3.52	13.0	57.7	109.2	4.9	4.0	0.1	0.2	1650	62.6	3.59	5.1	50.3	105.1	65.0	5.3
	9.0	1.7	3.9	1360	47.1	31.3	3.17	14.8	57.9	102.9	4.5	3.9	0.1	0.2	1450	61.6	3.70	4.9	49.0	109.4	65.0	5.2
	9.0	1.7	3.9	1550	47.9	33.6	3.29	14.6	59.1	103.1	4.6	4.0	0.1	0.2	1650	62.6	3.59	5.1	50.3	105.1	65.0	5.3
	12.0	3.2	7.4	1360	48.1	31.8	3.07	15.7	58.5	99.8	5.6	3.9	0.1	0.2	1450	61.6	3.70	4.9	49.0	109.4	65.0	5.2
	12.0	3.2	7.4	1550	49.0	34.2	3.18	15.4	59.8	100.0	5.7	4.0	0.1	0.2	1650	62.6	3.59	5.1	50.3	105.1	65.0	5.3
100	6.0	0.6	1.5	1360	41.7	28.6	3.77	11.1	54.6	118.2	5.9	2.8	0.1	0.2	1450	61.6	3.70	4.9	49.0	109.4	65.0	5.2
	6.0	0.6	1.5	1550	42.5	30.8	3.91	10.9	55.8	118.6	6.0	2.9	0.1	0.2	1650	62.6	3.59	5.1	50.3	105.1	65.0	5.3
	9.0	1.7	3.8	1360	43.7	29.6	3.52	12.4	55.8	112.4	5.6	2.8	0.1	0.2	1450	61.6	3.70	4.9	49.0	109.4	65.0	5.2
	9.0	1.7	3.8	1550	44.5	31.8	3.65	12.2	57.0	112.7	5.7	2.9	0.1	0.2	1650	62.6	3.59	5.1	50.3	105.1	65.0	5.3
	12.0	3.2	7.3	1360	44.8																	

Performance Data —

HZ series Model 060 - Part Load, with vFlow™

Performance capacities shown in thousands of Btu/h

Antifreeze use recommended in this range. Also Clip JW3 on DXM2 board.

EWT °F	Cooling - EAT 80/67 °F										Heating - EAT 70°F													
	GPM		WPD		CFM	TC	SC	kW	EER	HR	LWT	HWC	GPM		WPD		CFM	HC	kW	COP	HE	LAT	LWT	HWC
	PSI	FT	PSI	FT																				
20	2.4	0.1	0.1	1360	53.8	37.2	1.80	29.8	59.9	70.0	1.8	12.0	5.2	11.9	1450	28.2	2.87	2.9	18.7	88.0	16.9	3.1		
30	2.4	0.1	0.1	1550	54.8	39.9	1.84	29.9	61.1	70.0	1.8	12.0	5.2	11.9	1650	28.6	2.75	3.1	19.3	86.1	16.8	3.1		
	3.0	0.1	0.1	1360	53.8	37.2	1.80	29.8	59.9	70.0	1.8	6.0	0.9	2.1	1450	31.7	2.88	3.2	22.1	90.2	22.6	3.1		
	3.1	0.1	0.1	1550	54.8	39.9	1.84	29.9	61.1	70.0	1.8	6.0	0.9	2.1	1650	32.2	2.76	3.4	22.7	88.0	22.4	3.2		
	3.0	0.1	0.1	1360	53.8	37.2	1.80	29.8	59.9	70.0	1.8	9.0	2.5	5.7	1450	33.1	2.89	3.4	23.5	91.1	24.8	3.2		
	3.1	0.1	0.1	1550	54.8	39.9	1.84	29.9	61.1	70.0	1.8	9.0	2.5	5.7	1650	33.6	2.77	3.6	24.1	88.8	24.6	3.2		
	3.0	0.1	0.1	1360	53.8	37.2	1.80	29.8	59.9	70.0	1.8	12.0	4.1	9.6	1450	33.9	2.89	3.4	24.2	91.6	26.0	3.2		
40	3.1	0.1	0.1	1550	54.8	39.9	1.84	29.9	61.1	70.0	1.8	12.0	4.1	9.6	1650	34.4	2.77	3.6	24.9	89.3	25.8	3.2		
	4.0	0.1	0.1	1360	53.8	37.2	1.80	29.8	59.9	70.0	1.8	6.0	0.5	1.1	1450	37.0	2.91	3.7	27.3	93.6	30.9	3.2		
	4.1	0.1	0.2	1550	54.8	39.9	1.84	29.9	61.1	70.0	1.8	6.0	0.5	1.1	1650	37.6	2.79	3.9	28.0	91.1	30.7	3.3		
	4.0	0.1	0.2	1360	53.8	37.2	1.80	29.8	59.9	70.0	1.8	9.0	1.9	4.3	1450	38.8	2.92	3.9	29.0	94.8	33.6	3.3		
	4.1	0.1	0.2	1550	54.8	39.9	1.84	29.9	61.1	70.0	1.8	9.0	1.9	4.3	1650	39.4	2.80	4.1	29.8	92.1	33.4	3.4		
	4.0	0.1	0.2	1360	53.8	37.2	1.80	29.8	59.9	70.0	1.8	12.0	3.4	7.9	1450	39.8	2.93	4.0	30.0	95.4	35.0	3.3		
50	4.1	0.1	0.2	1550	54.8	39.9	1.84	29.9	61.1	70.0	1.8	12.0	3.4	7.9	1650	40.4	2.81	4.2	30.8	92.7	34.9	3.4		
	6.0	0.2	0.6	1360	53.7	37.2	1.81	29.6	59.9	70.0	1.8	6.0	0.2	0.6	1450	42.5	2.95	4.2	32.6	97.1	39.1	3.4		
	6.0	0.2	0.6	1550	54.8	39.8	1.85	29.7	61.1	70.4	1.8	6.0	0.2	0.6	1650	43.1	2.82	4.5	33.5	94.2	38.8	3.5		
	6.0	0.2	0.5	1360	53.8	37.2	1.80	29.8	59.9	70.0	1.8	9.0	1.5	3.5	1450	44.7	2.96	4.4	34.7	98.5	42.3	3.5		
	6.1	0.3	0.7	1550	54.8	39.9	1.84	29.9	61.1	70.0	1.8	9.0	1.5	3.5	1650	45.3	2.84	4.7	35.7	95.4	42.1	3.5		
	6.0	0.2	0.5	1360	53.8	37.2	1.80	29.8	59.9	70.0	1.8	12.0	3.0	6.9	1450	45.9	2.97	4.5	35.9	99.3	44.0	3.5		
60	6.1	0.3	0.7	1550	54.8	39.9	1.84	29.9	61.1	70.0	1.8	12.0	3.0	6.9	1650	46.6	2.85	4.8	36.9	96.1	43.9	3.6		
	6.0	0.2	0.4	1360	51.4	36.3	2.07	24.8	58.5	79.5	2.4	6.0	0.2	0.4	1450	48.1	2.99	4.7	37.9	100.7	47.4	3.6		
	6.0	0.2	0.4	1550	52.4	38.9	2.11	24.8	59.6	79.9	2.5	6.0	0.2	0.4	1650	48.8	2.86	5.0	39.0	97.4	47.0	3.7		
	9.0	1.4	3.1	1360	53.0	36.9	1.89	28.0	59.5	73.2	2.0	9.0	1.4	3.1	1450	50.6	3.01	4.9	40.4	102.3	51.0	3.7		
	9.0	1.4	3.1	1550	54.1	39.5	1.93	28.1	60.6	73.5	2.0	9.0	1.4	3.1	1650	51.4	2.89	5.2	41.5	98.8	50.8	3.8		
	12.0	2.7	6.3	1360	53.8	37.2	1.81	29.7	59.9	70.0	1.8	12.0	2.7	6.3	1450	52.1	3.02	5.0	41.7	103.2	53.0	3.8		
70	12.0	2.7	6.3	1550	54.8	39.9	1.84	29.8	61.1	70.2	1.8	12.0	2.7	6.3	1650	52.8	2.90	5.3	42.9	99.6	52.8	3.8		
	6.0	0.2	0.4	1360	48.6	35.4	2.38	20.4	56.7	88.9	3.3	6.0	0.2	0.4	1450	53.6	3.04	5.2	43.3	104.2	55.6	3.8		
	6.0	0.2	0.4	1550	49.6	37.9	2.42	20.4	57.8	89.3	3.3	6.0	0.2	0.4	1650	54.4	2.91	5.5	44.5	100.5	55.2	3.9		
	9.0	1.3	3.0	1360	50.5	36.0	2.17	23.2	57.9	82.9	2.7	9.0	1.3	3.0	1450	56.5	3.07	5.4	46.0	106.1	59.8	4.0		
	9.0	1.3	3.0	1550	51.5	38.6	2.21	23.3	59.0	83.1	2.7	9.0	1.3	3.0	1650	57.3	2.94	5.7	47.3	102.2	59.5	4.1		
	12.0	2.6	6.0	1360	51.4	36.3	2.07	24.8	58.5	79.7	2.4	12.0	2.6	6.0	1450	58.1	3.08	5.5	47.5	107.1	62.1	4.1		
80	12.0	2.6	6.0	1550	52.4	38.9	2.11	24.8	59.6	79.9	2.5	12.0	2.6	6.0	1650	58.9	2.96	5.8	48.8	103.1	61.9	4.2		
	6.0	0.2	0.6	1360	45.6	34.3	2.73	16.7	54.9	98.3	4.3	6.0	0.3	0.6	1450	59.1	3.10	5.6	48.5	107.7	63.8	4.1		
	6.0	0.2	0.6	1550	46.5	36.7	2.78	16.7	56.0	98.7	4.4	6.0	0.3	0.6	1650	59.9	2.97	5.9	49.8	103.6	63.4	4.2		
	9.0	1.3	3.1	1360	47.5	35.0	2.50	19.0	56.1	92.5	3.6	6.6	0.5	1.1	1450	60.2	3.11	5.7	49.5	108.4	65.0	4.2		
	9.0	1.3	3.1	1550	48.5	37.5	2.55	19.0	57.2	92.7	3.7	6.8	0.5	1.2	1650	61.0	2.98	6.0	50.8	104.2	65.0	4.3		
	12.0	2.6	5.9	1360	48.5	35.3	2.39	20.3	56.7	89.4	3.3	6.6	0.5	1.1	1450	60.2	3.11	5.7	49.5	108.4	65.0	4.2		
90	12.0	2.6	5.9	1550	49.5	37.8	2.44	20.3	57.8	89.6	3.4	6.8	0.5	1.2	1650	61.0	2.98	6.0	50.8	104.2	65.0	4.3		
	6.0	0.3	0.7	1360	42.4	33.0	3.13	13.6	53.1	107.7	5.5	4.0	0.2	0.5	1450	60.2	3.11	5.7	49.5	108.4	65.0	4.2		
	6.0	0.3	0.7	1550	43.3	35.3	3.18	13.6	54.1	108.0	5.6	4.1	0.2	0.5	1650	61.0	2.98	6.0	50.8	104.2	65.0	4.3		
	9.0	1.4	3.2	1360	44.4	33.8	2.88	15.4	54.2	102.0	4.7	4.0	0.2	0.5	1450	60.2	3.11	5.7	49.5	108.4	65.0	4.2		
	9.0	1.4	3.2	1550	45.2	36.2	2.93	15.4	55.2	102.3	4.8	4.1	0.2	0.5	1650	61.0	2.98	6.0	50.8	104.2	65.0	4.3		
	12.0	2.6	6.0	1360	45.4	34.2	2.76	16.4	54.8	99.1	4.4	4.0	0.2	0.5	1450	60.2	3.11	5.7	49.5	108.4	65.0	4.2		
100	12.0	2.6	6.0	1550	46.2	36.6	2.81	16.5	55.8	99.3	4.4	4.1	0.2	0.5	1650	61.0	2.98	6.0	50.8	104.2	65.0	4.3		
	6.0	0.3	0.8	1360	39.4	31.6	3.55	11.1	51.5	117.2	6.9	2.8	0.1	0.2	1450	60.2	3.11	5.7	49.5	108.4	65.0	4.2		
	6.0	0.3	0.8	1550	40.2	33.9	3.62	11.1	52.5	117.5	7.0	2.9	0.1	0.2	1650	61.0	2.98	6.0	50.8	104.2	65.0	4.3		
	9.0	1.4	3.2	1360	41.2	32.5	3.30	12.5	52.4	111.7	6.0	2.8	0.1	0.2	1450	60.2	3.11	5.7	49.5	108.4	65.0	4.2		
	9.0	1.																						

Performance Data —

HZ series Model 060 - Full Load, with vFlow™

Performance capacities shown in thousands of Btuh

Antifreeze use recommended in this range. Also Clip JW3 on DXM2 board.

EWT °F	Cooling - EAT 80/67 °F										Heating - EAT 70°F											
	GPM	WPD		CFM	TC	SC	kW	EER	HR	LWT	HWC	GPM	WPD		CFM	HC	kW	COP	HE	LAT	LWT	HWC
		PSI	FT										PSI	FT								
20	3.3	0.2	0.4	1630	73.0	48.1	3.02	24.2	83.2	70.0	2.7	15.0	7.3	16.8	1800	42.8	3.89	3.2	29.8	92.0	16.0	3.8
30	3.4	0.2	0.2	1850	74.3	51.7	3.13	23.7	85.0	70.0	2.8	15.0	7.3	16.8	2050	43.4	3.77	3.4	30.6	89.6	15.9	3.8
	4.2	0.1	0.2	1630	73.0	48.1	3.02	24.2	83.2	70.0	2.7	7.5	1.7	3.9	1800	46.9	3.95	3.5	33.6	94.1	21.0	3.9
	4.2	0.1	0.2	1850	74.3	51.7	3.13	23.7	85.0	70.0	2.8	7.5	1.7	3.9	2050	47.6	3.82	3.6	34.5	91.5	20.8	4.0
	4.2	0.1	0.1	1630	73.0	48.1	3.02	24.2	83.2	70.0	2.7	11.3	3.7	8.6	1800	49.1	3.98	3.6	35.8	95.3	23.6	4.0
	4.2	0.1	0.2	1850	74.3	51.7	3.13	23.7	85.0	70.0	2.8	11.3	3.7	8.6	2050	49.9	3.86	3.8	36.7	92.5	23.5	4.1
	4.2	0.1	0.2	1630	73.0	48.1	3.02	24.2	83.2	70.0	2.7	15.0	6.1	14.1	1800	50.4	4.00	3.7	36.9	95.9	25.1	4.0
40	5.5	0.3	0.6	1630	73.0	48.1	3.02	24.2	83.2	70.0	2.7	7.5	1.2	2.7	1800	53.9	4.06	3.9	40.2	97.7	29.3	4.2
	5.7	0.3	0.2	1850	74.3	51.7	3.13	23.7	85.0	70.0	2.8	7.5	1.2	2.7	2050	54.7	3.94	4.1	41.3	94.7	29.0	4.2
	5.5	0.3	0.6	1630	73.0	48.1	3.02	24.2	83.2	70.0	2.7	11.3	3.0	7.0	1800	56.7	4.12	4.0	42.8	99.2	32.4	4.3
	5.7	0.3	0.8	1850	74.3	51.7	3.13	23.7	85.0	70.0	2.8	11.3	3.0	7.0	2050	57.6	3.99	4.2	44.0	96.0	32.2	4.4
	5.5	0.3	0.6	1630	73.0	48.1	3.02	24.2	83.2	70.0	2.7	15.0	5.3	12.2	1800	58.3	4.15	4.1	44.3	100.0	34.1	4.3
	5.7	0.3	0.8	1850	74.3	51.7	3.13	23.7	85.0	70.0	2.8	15.0	5.3	12.2	2050	59.2	4.02	4.3	45.5	96.7	33.9	4.4
50	7.5	0.9	2.0	1630	72.4	47.8	3.08	23.5	82.8	72.1	2.8	7.5	0.9	2.0	1800	61.1	4.21	4.3	46.9	101.5	37.5	4.5
	7.5	0.9	2.0	1850	73.6	51.4	3.20	23.0	84.5	72.5	2.9	7.5	0.9	2.0	2050	62.1	4.08	4.5	48.2	98.0	37.2	4.6
	8.3	1.2	2.8	1630	73.0	48.1	3.02	24.2	83.2	70.0	2.7	11.3	2.6	6.0	1800	64.5	4.28	4.4	50.0	103.2	41.1	4.6
	8.5	1.3	3.0	1850	74.3	51.7	3.13	23.7	85.0	70.0	2.8	11.3	2.6	6.0	2050	65.5	4.15	4.6	51.3	99.6	40.9	4.7
	8.3	1.2	2.8	1630	73.0	48.1	3.02	24.2	83.2	70.0	2.7	15.0	4.7	10.8	1800	66.3	4.32	4.5	51.7	104.1	43.1	4.7
	8.5	1.3	3.0	1850	74.3	51.7	3.13	23.7	85.0	70.0	2.8	15.0	4.7	10.8	2050	67.3	4.19	4.7	53.0	100.4	42.9	4.8
60	7.5	0.7	1.7	1630	69.5	46.7	3.35	20.7	80.9	81.6	3.5	7.5	0.7	1.7	1800	68.5	4.37	4.6	53.6	105.2	45.7	4.9
	7.5	0.7	1.7	1850	70.7	50.3	3.47	20.4	82.6	82.0	3.6	7.5	0.7	1.7	2050	69.5	4.24	4.8	55.1	101.4	45.3	5.0
	11.3	2.4	5.4	1630	71.7	47.6	3.15	22.8	82.3	74.6	3.0	11.3	2.4	5.4	1800	72.3	4.46	4.7	57.1	107.2	49.8	5.1
	11.3	2.4	5.4	1850	73.0	51.1	3.26	22.4	84.1	75.0	3.1	11.3	2.4	5.4	2050	73.4	4.33	5.0	58.6	103.2	49.6	5.2
	15.0	4.3	10.0	1630	72.7	48.0	3.05	23.8	83.0	71.1	2.8	15.0	4.3	10.0	1800	74.4	4.52	4.8	59.0	108.3	52.1	5.2
	15.0	4.3	10.0	1850	74.0	51.6	3.16	23.4	84.8	71.3	2.8	15.0	4.3	10.0	2050	75.5	4.38	5.1	60.6	104.1	51.9	5.3
70	7.5	0.7	1.7	1630	66.1	45.5	3.67	18.0	78.6	91.0	4.4	7.5	0.7	1.7	1800	75.8	4.55	4.9	60.3	109.0	53.9	5.3
	7.5	0.7	1.7	1850	67.3	48.9	3.81	17.7	80.3	91.4	4.5	7.5	0.7	1.7	2050	77.0	4.41	5.1	61.9	104.8	53.5	5.4
	11.3	2.3	5.2	1630	68.6	46.4	3.43	20.0	80.3	84.2	3.8	11.3	2.3	5.2	1800	80.1	4.67	5.0	64.2	111.2	58.6	5.6
	11.3	2.3	5.2	1850	69.8	49.9	3.56	19.6	82.0	84.6	3.8	11.3	2.3	5.2	2050	81.3	4.52	5.3	65.9	106.7	58.3	5.7
	15.0	4.1	9.5	1630	69.9	46.9	3.32	21.0	81.1	80.8	3.5	15.0	4.1	9.5	1800	82.4	4.73	5.1	66.3	112.4	61.2	5.7
	15.0	4.1	9.5	1850	71.1	50.4	3.44	20.6	82.8	81.0	3.5	15.0	4.1	9.5	2050	83.7	4.59	5.3	68.0	107.8	60.9	5.8
80	7.5	0.8	1.8	1630	62.5	44.1	4.05	15.4	76.2	100.3	5.5	7.5	0.8	1.8	1800	83.1	4.75	5.1	66.9	112.8	62.2	5.8
	7.5	0.8	1.8	1850	63.5	47.5	4.19	15.1	77.8	100.8	5.6	7.5	0.8	1.8	2050	84.4	4.61	5.4	68.7	108.1	61.7	5.9
	11.3	2.2	5.2	1630	65.1	45.1	3.78	17.2	77.9	93.8	4.7	9.3	1.4	3.3	1800	86.0	4.84	5.2	69.5	114.3	65.0	6.0
	11.3	2.2	5.2	1850	66.2	48.5	3.91	16.9	79.6	94.1	4.8	9.5	1.5	3.6	2050	87.3	4.69	5.5	71.3	109.4	65.0	6.1
	15.0	4.1	9.4	1630	66.4	45.6	3.65	18.2	78.7	90.5	4.3	9.3	1.4	3.3	1800	86.0	4.84	5.2	69.5	114.3	65.0	6.0
	15.0	4.1	9.4	1850	67.5	49.0	3.78	17.9	80.4	90.7	4.4	9.5	1.5	3.6	2050	87.3	4.69	5.5	71.3	109.4	65.0	6.1
90	7.5	0.8	2.0	1630	58.7	42.6	4.49	13.1	74.0	109.7	6.7	5.6	0.2	0.4	1800	86.0	4.84	5.2	69.5	114.3	65.0	6.0
	7.5	0.8	2.0	1850	59.8	45.8	4.65	12.9	75.6	110.2	6.8	5.7	0.2	0.5	2050	87.3	4.69	5.5	71.3	109.4	65.0	6.1
	11.3	2.3	5.2	1630	61.3	43.7	4.18	14.7	75.5	103.4	5.8	5.6	0.2	0.4	1800	86.0	4.84	5.2	69.5	114.3	65.0	6.0
	11.3	2.3	5.2	1850	62.3	47.0	4.33	14.4	77.1	103.7	5.9	5.7	0.2	0.5	2050	87.3	4.69	5.5	71.3	109.4	65.0	6.1
	15.0	4.0	9.3	1630	62.6	44.2	4.03	15.5	76.3	100.2	5.4	5.6	0.2	0.4	1800	86.0	4.84	5.2	69.5	114.3	65.0	6.0
	15.0	4.0	9.3	1850	63.7	47.5	4.18	15.2	77.9	100.4	5.5	5.7	0.2	0.5	2050	87.3	4.69	5.5	71.3	109.4	65.0	6.1
100	7.5	0.9	2.0	1630	55.2	41.1	5.00	11.0	72.3	119.3	8.1	4.0	0.1	0.2	1800	86.0	4.84	5.2	69.5	114.3	65.0	6.0
	7.5	0.9	2.0	1850	56.2	44.2	5.18	10.8	73.9	119.7	8.3	4.1	0.1	0.2	2050	87.3	4.69	5.5	71.3	109.4	65.0	6.1
	11.3	2.3	5.2	1630	57.5	42.1	4.65	12.4	73.4	113.0	7.1	4.0	0.1	0.2	1800	86.0	4.84	5.2	69.5	114.3	65.0	6.0
	11.3	2.3	5.2	1850	58.5	45.3	4.82	12.1	75.0	113.3	7.3	4.1	0.1	0.2	2050	87.3	4.69	5.5	71.3	109.4		

Performance Data —

HZ series Model 070 - Part Load, with vFlow™

Performance capacities shown in thousands of Btuh

Antifreeze use recommended in this range. Also Clip JW3 on DXM2 board.

EWT °F	Cooling - EAT 80/67 °F									Heating - EAT 70°F												
	GPM	WPD		CFM	TC	SC	kW	EER	HR	LWT	HWC	GPM	WPD		CFM	HC	kW	COP	HE	LAT	LWT	HWC
		PSI	FT										PSI	FT								
20	2.8	0.1	0.2	1360	61.8	39.2	2.27	27.2	69.5	70.0	2.6	14.0	6.5	15.1	1450	32.9	3.66	2.6	20.9	91.0	17.0	4.1
30	2.8	0.1	0.2	1550	63.0	42.0	2.31	27.2	70.9	70.0	2.7	14.0	6.5	15.1	1650	33.4	3.51	2.8	21.4	88.7	16.9	4.1
	3.5	0.1	0.2	1360	61.8	39.2	2.27	27.2	69.5	70.0	2.6	7.0	1.4	3.3	1450	37.2	3.72	2.9	24.8	93.7	22.9	4.2
	3.5	0.1	0.2	1550	63.0	42.0	2.31	27.2	70.9	70.0	2.7	7.0	1.4	3.3	1650	37.7	3.57	3.1	25.5	91.1	22.7	4.3
	3.5	0.1	0.2	1360	61.8	39.2	2.27	27.2	69.5	70.0	2.6	10.5	3.3	7.6	1450	38.7	3.75	3.0	26.3	94.7	25.0	4.2
	3.5	0.1	0.2	1550	63.0	42.0	2.31	27.2	70.9	70.0	2.7	10.5	3.3	7.6	1650	39.3	3.59	3.2	27.0	92.0	24.9	4.3
	3.5	0.1	0.2	1360	61.8	39.2	2.27	27.2	69.5	70.0	2.6	14.0	5.4	12.5	1450	39.6	3.76	3.1	27.1	95.3	26.1	4.2
40	3.5	0.1	0.2	1550	63.0	42.0	2.31	27.2	70.9	70.0	2.7	14.0	5.4	12.5	1650	40.1	3.60	3.3	27.8	92.5	26.0	4.3
	4.6	0.1	0.2	1360	61.8	39.2	2.27	27.2	69.5	70.0	2.6	7.0	0.9	2.2	1450	43.3	3.81	3.3	30.6	97.6	31.3	4.4
	4.7	0.2	0.4	1550	63.0	42.0	2.31	27.2	70.9	70.0	2.7	7.0	0.9	2.2	1650	43.9	3.65	3.5	31.4	94.6	31.0	4.5
	4.6	0.2	0.4	1360	61.8	39.2	2.27	27.2	69.5	70.0	2.6	10.5	2.6	6.1	1450	45.2	3.84	3.5	32.4	98.9	33.8	4.4
	4.7	0.2	0.4	1550	63.0	42.0	2.31	27.2	70.9	70.0	2.7	10.5	2.6	6.1	1650	45.8	3.68	3.7	33.3	95.7	33.7	4.5
	4.6	0.2	0.4	1360	61.8	39.2	2.27	27.2	69.5	70.0	2.6	14.0	4.6	10.7	1450	46.3	3.85	3.5	33.4	99.5	35.2	4.4
50	4.7	0.2	0.4	1550	63.0	42.0	2.31	27.2	70.9	70.0	2.7	14.0	4.6	10.7	1650	46.9	3.69	3.7	34.3	96.3	35.1	4.5
	7.0	0.7	1.5	1360	61.7	39.2	2.28	27.1	69.5	69.9	2.6	7.0	0.7	1.5	1450	49.4	3.90	3.7	36.3	101.5	39.6	4.7
	7.0	0.7	1.5	1550	62.9	41.9	2.32	27.1	70.8	70.2	2.7	7.0	0.7	1.5	1650	50.1	3.74	3.9	37.4	98.1	39.3	4.8
	7.0	0.6	1.5	1360	61.8	39.2	2.27	27.2	69.5	70.0	2.6	10.5	2.2	5.1	1450	51.7	3.93	3.9	38.5	103.0	42.7	4.8
	7.1	0.7	1.6	1550	63.0	42.0	2.31	27.2	70.9	70.0	2.7	10.5	2.2	5.1	1650	52.5	3.77	4.1	39.6	99.4	42.5	4.9
	7.0	0.6	1.5	1360	61.8	39.2	2.27	27.2	69.5	70.0	2.6	14.0	4.1	9.4	1450	53.0	3.95	3.9	39.7	103.8	44.3	4.8
60	7.1	0.7	1.6	1550	63.0	42.0	2.31	27.2	70.9	70.0	2.7	14.0	4.1	9.4	1650	53.8	3.78	4.2	40.8	100.2	44.2	4.9
	7.0	0.5	1.3	1360	59.1	38.1	2.60	22.7	68.0	79.4	3.2	7.0	0.5	1.3	1450	55.6	3.98	4.1	42.2	105.5	48.0	5.1
	7.0	0.5	1.3	1550	60.2	40.8	2.65	22.7	69.3	79.8	3.2	7.0	0.5	1.3	1650	56.4	3.82	4.3	43.3	101.6	47.6	5.2
	10.5	2.0	4.6	1360	60.9	38.8	2.38	25.6	69.0	73.1	2.8	10.5	2.0	4.6	1450	58.3	4.02	4.2	44.7	107.2	51.5	5.2
	10.5	2.0	4.6	1550	62.1	41.6	2.42	25.6	70.4	73.4	2.9	10.5	2.0	4.6	1650	59.1	3.86	4.5	46.0	103.2	51.2	5.3
	14.0	3.8	8.7	1360	61.8	39.2	2.28	27.1	69.5	69.9	2.7	14.0	3.8	8.7	1450	59.8	4.04	4.3	46.1	108.2	53.4	5.3
70	14.0	3.8	8.7	1550	63.0	42.0	2.32	27.2	70.9	70.1	2.7	14.0	3.8	8.7	1650	60.6	3.88	4.6	47.4	104.0	53.2	5.4
	7.0	0.5	1.3	1360	56.0	36.9	2.98	18.8	66.2	88.9	4.2	7.0	0.5	1.3	1450	61.8	4.07	4.4	48.0	109.4	56.3	5.5
	7.0	0.5	1.3	1550	57.1	39.5	3.04	18.8	67.5	89.3	4.3	7.0	0.5	1.3	1650	62.6	3.90	4.7	49.3	105.1	55.9	5.6
	10.5	1.9	4.5	1360	58.1	37.7	2.73	21.3	67.4	82.8	3.6	10.5	1.9	4.5	1450	64.8	4.12	4.6	50.9	111.4	60.3	5.7
	10.5	1.9	4.5	1550	59.2	40.3	2.78	21.3	68.7	83.1	3.7	10.5	1.9	4.5	1650	65.8	3.95	4.9	52.3	106.9	60.0	5.8
	14.0	3.6	8.3	1360	59.1	38.1	2.61	22.7	67.9	79.7	3.4	14.0	3.6	8.3	1450	66.5	4.14	4.7	52.5	112.5	62.5	5.8
80	14.0	3.6	8.3	1550	60.2	40.7	2.65	22.7	69.3	79.9	3.5	14.0	3.6	8.3	1650	67.5	3.97	5.0	53.9	107.9	62.3	5.9
	7.0	0.6	1.4	1360	52.7	35.6	3.42	15.4	64.3	98.4	5.7	7.0	0.6	1.4	1450	68.0	4.17	4.8	53.8	113.4	64.6	6.0
	7.0	0.6	1.4	1550	53.7	38.1	3.48	15.4	65.6	98.7	5.8	7.0	0.6	1.4	1650	68.9	3.99	5.1	55.3	108.7	64.2	6.1
	10.5	1.9	4.5	1360	54.8	36.4	3.13	17.5	65.5	92.5	4.9	7.2	0.7	1.6	1450	68.5	4.17	4.8	54.3	113.8	65.0	6.0
	10.5	1.9	4.5	1550	55.9	39.0	3.19	17.5	66.8	92.7	5.0	7.4	0.8	1.8	1650	69.5	4.00	5.1	55.8	109.0	65.0	6.1
	14.0	3.5	8.1	1360	55.9	36.8	3.00	18.7	66.1	89.4	4.5	7.2	0.7	1.6	1450	68.5	4.17	4.8	54.3	113.8	65.0	6.0
90	14.0	3.5	8.1	1550	57.0	39.4	3.05	18.7	67.4	89.6	4.6	7.4	0.8	1.8	1650	69.5	4.00	5.1	55.8	109.0	65.0	6.1
	7.0	0.7	1.5	1360	49.1	34.2	3.91	12.6	62.5	107.8	7.5	4.3	0.3	0.6	1450	68.5	4.17	4.8	54.3	113.8	65.0	6.0
	7.0	0.7	1.5	1550	50.1	36.6	3.98	12.6	63.7	108.2	7.6	4.5	0.3	0.6	1650	69.5	4.00	5.1	55.8	109.0	65.0	6.1
	10.5	2.0	4.5	1360	51.3	35.0	3.60	14.3	63.6	102.1	6.5	4.3	0.3	0.6	1450	68.5	4.17	4.8	54.3	113.8	65.0	6.0
	10.5	2.0	4.5	1550	52.3	37.5	3.67	14.3	64.8	102.3	6.7	4.5	0.3	0.6	1650	69.5	4.00	5.1	55.8	109.0	65.0	6.1
	14.0	3.5	8.1	1360	52.4	35.5	3.45	15.2	64.2	99.2	6.1	4.3	0.3	0.6	1450	68.5	4.17	4.8	54.3	113.8	65.0	6.0
100	14.0	3.5	8.1	1550	53.5	38.0	3.51	15.2	65.4	99.3	6.2	4.5	0.3	0.6	1650	69.5	4.00	5.1	55.8	109.0	65.0	6.1
	7.0	0.7	1.6	1360	45.5	32.9	4.45	10.2	60.7	117.4	9.7	3.1	0.2	0.4	1450	68.5	4.17	4.8	54.3	113.8	65.0	6.0
	7.0	0.7	1.6	1550	46.4	35.2	4.54	10.2	61.9	117.7	9.9	3.2	0.2	0.4	1650	69.5	4.00	5.1	55.8	109.0	65.0	6.1
	10.5	2.0	4.5	1360	47.7	33.7	4.12	11.6	61.7	111.8	8.6	3.1	0.2	0.4	1450	68.5	4.17	4.8	54.3	113.8	65.0	6.0
	10.5	2.0	4.5																			

Performance Data —

Tranquility® 30 Model 070 - Full Load, with vFlow™

Performance capacities shown in thousands of Btu/h

Antifreeze use recommended in this range. Also Clip JW3 on DXM2 board.

EWT °F	Cooling - EAT 80/67 °F									Heating - EAT 70°F												
	GPM	WPD		CFM	TC	SC	kW	EER	HR	LWT	HWC	GPM	WPD		CFM	HC	kW	COP	HE	LAT	LWT	HWC
		PSI	FT										PSI	FT								
20	3.7	0.3	0.6	1630	79.6	49.1	3.49	22.8	91.3	70.0	4.4	17.0	8.9	20.6	1800	46.6	4.66	2.9	31.1	94.0	16.3	4.9
30	3.7	0.3	0.6	1850	81.0	52.8	3.61	22.4	93.3	70.0	4.5	17.0	8.9	20.6	2050	47.3	4.52	3.1	31.9	91.4	16.2	5.0
	4.6	0.2	0.5	1630	79.6	49.1	3.49	22.8	91.3	70.0	4.4	8.5	2.2	5.1	1800	51.6	4.77	3.2	35.6	96.5	21.6	5.1
	4.7	0.3	0.6	1850	81.0	52.8	3.61	22.4	93.3	70.0	4.5	8.5	2.2	5.1	2050	52.4	4.63	3.3	36.6	93.7	21.4	5.2
	4.6	0.2	0.5	1630	79.6	49.1	3.49	22.8	91.3	70.0	4.4	12.8	4.6	10.6	1800	54.0	4.83	3.3	37.8	97.8	24.1	5.3
	4.7	0.3	0.6	1850	81.0	52.8	3.61	22.4	93.3	70.0	4.5	12.8	4.6	10.6	2050	54.8	4.68	3.4	38.8	94.8	23.9	5.4
	4.6	0.3	0.5	1630	79.6	49.1	3.49	22.8	91.3	70.0	4.4	17.0	7.6	17.6	1800	55.3	4.86	3.3	39.0	98.4	25.4	5.3
40	4.7	0.3	0.6	1850	81.0	52.8	3.61	22.4	93.3	70.0	4.5	17.0	7.6	17.6	2050	56.1	4.71	3.5	40.1	95.3	25.3	5.5
	6.1	0.5	1.2	1630	79.6	49.1	3.49	22.8	91.3	70.0	4.4	8.5	1.6	3.8	1800	59.4	4.96	3.5	42.7	100.5	29.9	5.6
	6.2	0.6	1.3	1850	81.0	52.8	3.61	22.4	93.3	70.0	4.5	8.5	1.6	3.8	2050	60.3	4.80	3.7	43.9	97.2	29.7	5.7
	6.1	0.5	1.2	1630	79.6	49.1	3.49	22.8	91.3	70.0	4.4	12.8	3.9	8.9	1800	62.1	5.02	3.6	45.3	102.0	32.9	5.8
	6.2	0.6	1.3	1850	81.0	52.8	3.61	22.4	93.3	70.0	4.5	12.8	3.9	8.9	2050	63.1	4.87	3.8	46.5	98.5	32.7	5.9
	6.1	0.5	1.2	1630	79.6	49.1	3.49	22.8	91.3	70.0	4.4	17.0	6.7	15.5	1800	63.6	5.06	3.7	46.6	102.7	34.5	5.9
50	6.2	0.6	1.3	1850	81.0	52.8	3.61	22.4	93.3	70.0	4.5	17.0	6.7	15.5	2050	64.6	4.90	3.9	47.9	99.2	34.4	6.1
	8.5	1.3	3.0	1630	79.1	49.0	3.54	22.3	91.0	71.4	4.5	8.5	1.3	3.0	1800	66.9	5.14	3.8	49.6	104.4	38.3	6.2
	8.5	1.3	3.0	1850	80.5	52.6	3.67	21.9	93.0	71.9	4.6	8.5	1.3	3.0	2050	67.9	4.99	4.0	50.9	100.7	38.0	6.3
	9.1	1.6	3.7	1630	79.6	49.1	3.49	22.8	91.3	70.0	4.4	12.8	3.4	7.8	1800	70.1	5.23	3.9	52.5	106.1	41.8	6.5
	9.3	1.7	3.9	1850	81.0	52.8	3.61	22.4	93.3	70.0	4.5	12.8	3.4	7.8	2050	71.2	5.07	4.1	53.9	102.1	41.5	6.6
	9.1	1.6	3.7	1630	79.6	49.1	3.49	22.8	91.3	70.0	4.4	17.0	6.0	13.9	1800	71.8	5.27	4.0	54.0	106.9	43.6	6.6
60	9.3	1.7	3.9	1850	81.0	52.8	3.61	22.4	93.3	70.0	4.5	17.0	6.0	13.9	2050	72.9	5.11	4.2	55.5	102.9	43.5	6.8
	8.5	1.2	2.7	1630	76.1	47.8	3.87	19.6	89.2	81.0	5.4	8.5	1.2	2.7	1800	74.4	5.34	4.1	56.4	108.3	46.7	6.9
	8.5	1.2	2.7	1850	77.4	51.4	4.01	19.3	91.1	81.4	5.6	8.5	1.2	2.7	2050	75.5	5.18	4.3	57.9	104.1	46.4	7.1
	12.8	3.1	7.1	1630	78.3	48.7	3.63	21.6	90.6	74.2	4.7	12.8	3.1	7.1	1800	78.0	5.44	4.2	59.6	110.1	50.7	7.3
	12.8	3.1	7.1	1850	79.7	52.3	3.76	21.2	92.5	74.5	4.8	12.8	3.1	7.1	2050	79.2	5.28	4.4	61.2	105.8	50.4	7.4
	17.0	5.6	13.0	1630	79.3	49.1	3.52	22.6	91.2	70.7	4.4	17.0	5.6	13.0	1800	80.0	5.50	4.3	61.4	111.1	52.8	7.5
70	17.0	5.6	13.0	1850	80.7	52.7	3.64	22.2	93.1	71.0	4.5	17.0	5.6	13.0	2050	81.2	5.33	4.5	63.0	106.7	52.6	7.7
	8.5	1.1	2.6	1630	72.4	46.3	4.26	17.0	86.9	90.4	6.7	8.5	1.1	2.6	1800	81.9	5.56	4.3	63.1	112.1	55.2	7.7
	8.5	1.1	2.6	1850	73.7	49.8	4.42	16.7	88.7	90.9	6.8	8.5	1.1	2.6	2050	83.2	5.38	4.5	64.8	107.6	54.8	7.9
	12.8	3.0	6.8	1630	75.0	47.4	3.98	18.9	88.5	83.8	5.8	12.8	3.0	6.8	1800	86.0	5.68	4.4	66.7	114.2	59.5	8.2
	12.8	3.0	6.8	1850	76.3	50.9	4.12	18.5	90.4	84.2	5.9	12.8	3.0	6.8	2050	87.3	5.50	4.6	68.5	109.4	59.3	8.4
	17.0	5.4	12.4	1630	76.3	47.9	3.85	19.8	89.3	80.5	5.4	17.0	5.4	12.4	1800	88.2	5.75	4.5	68.7	115.4	61.9	8.5
80	17.0	5.4	12.4	1850	77.6	51.5	3.99	19.5	91.2	80.7	5.5	17.0	5.4	12.4	2050	89.5	5.57	4.7	70.5	110.4	61.7	8.7
	8.5	1.2	2.7	1630	68.4	44.7	4.72	14.5	84.4	99.9	8.2	8.5	1.2	2.7	1800	89.5	5.79	4.5	69.9	116.0	63.6	8.7
	8.5	1.2	2.7	1850	69.5	48.1	4.89	14.2	86.2	100.3	8.4	8.5	1.2	2.7	2050	90.9	5.61	4.7	71.7	111.0	63.1	8.8
	12.8	2.9	6.7	1630	71.2	45.8	4.40	16.2	86.1	93.5	7.1	9.5	1.5	3.6	1800	91.2	5.84	4.6	71.4	116.9	65.0	9.0
	12.8	2.9	6.7	1850	72.4	49.3	4.56	15.9	88.0	93.8	7.3	9.8	1.6	3.8	2050	92.6	5.66	4.8	73.3	111.8	65.0	9.2
	17.0	5.2	12.1	1630	72.6	46.4	4.24	17.1	87.0	90.2	6.6	9.5	1.5	3.6	1800	91.2	5.84	4.6	71.4	116.9	65.0	9.0
90	17.0	5.2	12.1	1850	73.8	49.9	4.40	16.8	88.8	90.5	6.7	9.8	1.6	3.8	2050	92.6	5.66	4.8	73.3	111.8	65.0	9.2
	8.5	1.2	2.8	1630	64.1	43.0	5.26	12.2	82.0	109.3	10.0	5.7	0.2	0.5	1800	91.2	5.84	4.6	71.4	116.9	65.0	9.0
	8.5	1.2	2.8	1850	65.2	46.2	5.45	12.0	83.8	109.7	10.3	5.9	0.3	0.6	2050	92.6	5.66	4.8	73.3	111.8	65.0	9.2
	12.8	2.9	6.7	1630	67.0	44.1	4.89	13.7	83.6	103.1	8.8	5.7	0.2	0.5	1800	91.2	5.84	4.6	71.4	116.9	65.0	9.0
	12.8	2.9	6.7	1850	68.1	47.4	5.07	13.4	85.4	103.4	9.0	5.9	0.3	0.6	2050	92.6	5.66	4.8	73.3	111.8	65.0	9.2
	17.0	5.2	12.0	1630	68.4	44.7	4.71	14.5	84.5	99.9	8.2	5.7	0.2	0.5	1800	91.2	5.84	4.6	71.4	116.9	65.0	9.0
100	17.0	5.2	12.0	1850	69.6	48.1	4.88	14.2	86.3	100.1	8.4	5.9	0.3	0.6	2050	92.6	5.66	4.8	73.3	111.8	65.0	9.2
	8.5	1.2	2.8	1630	59.8	41.2	5.88	10.2	79.9	118.8	12.2	4.1	0.1	0.2	1800	91.2	5.84	4.6	71.4	116.9	65.0	9.0
	8.5	1.2	2.8	1850	60.9	44.3	6.09	10.0	81.6	119.2	12.5	4.2	0.1	0.2	2050	92.6	5.66	4.8	73.3	111.8	65.0	9.2
	12.8	2.9	6.7	1630	62.6	42.3	5.46	11.5	81.3	112.7	10.8	4.1	0.1	0.2	1800	91.2	5.84	4.6	71.4	116.9	65.0	

Performance Data – HZ H/V/D 024 (Part Load), No vFlow™

850 CFM Nominal (Rated) Airflow Heating, 750 CFM Nominal (Rated) Airflow Cooling

Performance capacities shown in thousands of Btu/h

EWT °F	GPM	WPD		COOLING - EAT 80/67 °F							HEATING - 70°F						
		PSI	FT	CFM	TC	SC	kW	HR	EER	HWC	CFM	HC	kW	HE	LAT	COP	HWC
20	4.5	1.2	2.9								750	11.5	1.25	7.4	84.2	2.7	1.2
	4.5	1.2	2.9								850	11.7	1.20	7.6	82.7	2.9	1.2
30	2.3	0.5	1.1	660	23.1	14.6	0.60	25.2	38.8	0.7	750	13.0	1.23	8.9	86.0	3.1	1.3
	2.3	0.5	1.1	750	23.6	15.6	0.61	25.6	38.8	0.7	850	13.2	1.18	9.2	84.4	3.3	1.3
	3.4	0.8	1.8	660	22.8	14.0	0.55	24.7	41.1	0.7	750	13.6	1.22	9.5	86.8	3.3	1.3
	3.4	0.8	1.8	750	23.2	14.9	0.56	25.2	41.2	0.7	850	13.8	1.17	9.8	85.0	3.5	1.4
	4.5	1.1	2.6	660	22.5	13.5	0.54	24.3	41.9	0.7	750	13.9	1.22	9.9	87.2	3.4	1.4
	4.5	1.1	2.6	750	22.9	14.5	0.55	24.8	41.9	0.7	850	14.1	1.16	10.2	85.4	3.6	1.4
40	2.3	0.4	1.0	660	23.0	14.9	0.67	25.3	34.4	0.8	750	15.2	1.20	11.2	88.8	3.7	1.5
	2.3	0.4	1.0	750	23.5	16.0	0.68	25.8	34.4	0.8	850	15.4	1.15	11.5	86.8	3.9	1.5
	3.4	0.7	1.7	660	23.2	14.7	0.61	25.2	37.7	0.7	750	16.0	1.19	12.0	89.7	3.9	1.5
	3.4	0.7	1.7	750	23.6	15.8	0.63	25.7	37.7	0.7	850	16.2	1.14	12.3	87.6	4.2	1.6
	4.5	1.1	2.5	660	23.1	14.5	0.59	25.1	39.1	0.7	750	16.4	1.18	12.4	90.2	4.1	1.6
	4.5	1.1	2.5	750	23.5	15.5	0.60	25.6	39.2	0.7	850	16.6	1.13	12.8	88.1	4.3	1.6
50	2.3	0.4	1.0	660	22.4	14.9	0.76	25.0	29.6	1.1	750	17.4	1.17	13.4	91.5	4.4	1.7
	2.3	0.4	1.0	750	22.9	15.9	0.77	25.5	29.6	1.1	850	17.7	1.12	13.8	89.2	4.6	1.7
	3.4	0.7	1.6	660	22.9	15.0	0.69	25.3	33.1	0.9	750	18.3	1.16	14.4	92.6	4.6	1.7
	3.4	0.7	1.6	750	23.3	16.0	0.70	25.7	33.1	0.9	850	18.6	1.11	14.8	90.3	4.9	1.8
	4.5	1.0	2.3	660	23.1	14.9	0.66	25.3	34.9	0.8	750	18.9	1.16	14.9	93.3	4.8	1.8
	4.5	1.0	2.3	750	23.5	16.0	0.67	25.8	34.9	0.8	850	19.1	1.11	15.4	90.8	5.1	1.8
60	2.3	0.4	1.0	660	21.5	14.5	0.86	24.4	24.9	1.5	750	19.6	1.15	15.7	94.3	5.0	1.8
	2.3	0.4	1.0	750	21.9	15.5	0.88	24.9	24.9	1.5	850	19.9	1.10	16.2	91.7	5.3	1.9
	3.4	0.7	1.6	660	22.2	14.8	0.79	24.9	28.2	1.2	750	20.8	1.14	16.9	95.6	5.3	1.9
	3.4	0.7	1.6	750	22.6	15.8	0.80	25.3	28.3	1.2	850	21.1	1.09	17.3	92.9	5.6	1.9
	4.5	1.0	2.3	660	22.5	14.9	0.75	25.0	30.0	1.1	750	21.4	1.14	17.5	96.4	5.5	2.0
	4.5	1.0	2.3	750	22.9	15.9	0.76	25.5	30.0	1.1	850	21.7	1.09	18.0	93.6	5.8	2.0
70	2.3	0.4	1.0	660	20.3	14.0	0.98	23.6	20.7	2.0	750	21.9	1.14	18.0	97.1	5.7	2.0
	2.3	0.4	1.0	750	20.7	15.0	1.00	24.1	20.7	2.0	850	22.2	1.09	18.5	94.2	6.0	2.0
	3.4	0.7	1.6	660	21.1	14.4	0.90	24.2	23.6	1.6	750	23.2	1.13	19.3	98.7	6.0	2.1
	3.4	0.7	1.6	750	21.5	15.4	0.91	24.6	23.6	1.6	850	23.6	1.09	19.9	95.7	6.4	2.1
	4.5	1.0	2.2	660	21.5	14.5	0.85	24.4	25.2	1.4	750	24.0	1.13	20.1	99.6	6.2	2.2
	4.5	1.0	2.2	750	21.9	15.6	0.87	24.9	25.2	1.4	850	24.3	1.09	20.6	96.5	6.6	2.2
80	2.3	0.4	1.0	660	18.9	13.4	1.12	22.7	16.9	2.6	750	24.3	1.13	20.4	100.0	6.3	2.2
	2.3	0.4	1.0	750	19.3	14.3	1.14	23.2	16.9	2.6	850	24.6	1.09	20.9	96.8	6.6	2.2
	3.4	0.7	1.5	660	19.8	13.8	1.02	23.3	19.4	2.2	750	25.8	1.14	21.8	101.9	6.6	2.3
	3.4	0.7	1.5	750	20.2	14.8	1.04	23.8	19.4	2.2	850	26.2	1.09	22.4	98.5	7.0	2.3
	4.5	0.9	2.2	660	20.3	14.0	0.98	23.6	20.7	1.9	750	26.7	1.14	22.7	102.9	6.8	2.3
	4.5	0.9	2.2	750	20.7	15.0	1.00	24.1	20.8	2.0	850	27.1	1.10	23.3	99.5	7.2	2.3
85	2.3	0.4	1.0	660	18.2	13.0	1.2	22.3	15.3	3.0	750	25.5	1.14	21.5	101.5	6.6	2.2
	2.3	0.4	1.0	750	18.5	14.0	1.22	22.7	15.3	3.0	850	25.9	1.1	22.1	98.2	6.9	2.3
	3.4	0.7	1.5	660	19.1	13.5	1.10	22.9	17.5	2.5	750	27.1	1.1	23.1	103.5	6.9	2.3
	3.4	0.7	1.5	750	19.5	14.4	1.12	23.3	17.5	2.6	850	27.5	1.1	23.8	100.0	7.3	2.4
	4.5	0.9	2.1	660	19.6	13.7	1.05	23.2	18.8	2.3	750	28.1	1.2	24.0	104.7	7.1	2.4
	4.5	0.9	2.1	750	20.0	14.6	1.07	23.6	18.8	2.3	850	28.5	1.1	24.7	101.0	7.5	2.4
90	2.3	0.4	1.0	660	17.5	12.7	1.27	21.8	13.7	3.4	750	26.7	1.14	22.7	103.0	6.8	2.3
	2.3	0.4	1.0	750	17.8	13.6	1.30	22.2	13.7	3.4	850	27.1	1.10	23.3	99.5	7.2	2.3
	3.4	0.7	1.5	660	18.4	13.1	1.17	22.4	15.7	2.9	750	28.5	1.16	24.4	105.1	7.2	2.4
	3.4	0.7	1.5	750	18.7	14.1	1.19	22.8	15.7	2.9	850	28.9	1.11	25.1	101.4	7.6	2.4
	4.5	0.9	2.2	660	18.9	13.4	1.12	22.7	16.8	2.6	750	29.5	1.17	25.4	106.4	7.4	2.5
	4.5	0.9	2.2	750	19.2	14.3	1.14	23.1	16.9	2.7	850	29.9	1.12	26.1	102.6	7.8	2.5
100	2.3	0.4	1.0	660	16.0	12.1	1.45	21.0	11.0	4.3							
	2.3	0.4	1.0	750	16.3	13.0	1.48	21.4	11.1	4.3							
	3.4	0.7	1.5	660	16.9	12.5	1.34	21.5	12.6	3.7							
	3.4	0.7	1.5	750	17.2	13.4	1.36	21.9	12.6	3.8							
	4.5	0.9	2.1	660	17.4	12.7	1.28	21.8	13.5	3.4							
	4.5	0.9	2.1	750	17.7	13.6	1.31	22.2	13.6	3.5							
110	2.3	0.4	0.9	660	14.6	11.6	1.65	20.3	8.9	5.3							
	2.3	0.4	0.9	750	14.9	12.4	1.68	20.6	8.9	5.4							
	3.4	0.7	1.5	660	15.4	11.9	1.53	20.6	10.1	4.7							
	3.4	0.7	1.5	750	15.7	12.7	1.56	21.0	10.1	4.8							
	4.5	0.9	2.1	660	15.9	12.1	1.47	20.9	10.8	4.3							
	4.5	0.9	2.1	750	16.2	12.9	1.49	21.3	10.8	4.4							
120	2.3	0.4	0.9	660	13.4	11.3	1.87	19.8	7.2	6.5							
	2.3	0.4	0.9	750	13.7	12.1	1.91	20.2	7.2	6.6							
	3.4	0.6	1.4	660	14.1	11.5	1.74	20.0	8.1	5.8							
	3.4	0.6	1.4	750	14.4	12.3	1.77	20.4	8.1	5.9							
	4.5	0.9	2.0	660	14.5	11.6	1.67	20.2	8.6	5.4							
	4.5	0.9	2.0	750	14.7	12.4	1.71	20.6	8.6	5.5							

Performance Data – HZ H/V/D 024 (Full Load), No vFlow™

950 CFM Nominal (Rated) Airflow Heating, 850 CFM Nominal (Rated) Airflow Cooling

Performance capacities shown in thousands of Btuh

EWT °F	GPM	WPD		COOLING - EAT 80/67 °F							HEATING - 70°F						
		PSI	FT	CFM	TC	SC	kW	HR	EER	HWC	CFM	HC	kW	HE	LAT	COP	HWC
20	6.0	1.9	4.4								840	16.5	1.73	10.7	88.2	2.8	1.5
	6.0	1.9	4.4								950	16.8	1.68	11.0	86.3	2.9	1.5
	3.0	0.7	1.6	750	30.1	18.1	0.99	33.4	30.3	0.8	840	18.2	1.70	12.6	90.1	3.1	1.7
	3.0	0.7	1.6	850	30.6	19.4	1.03	34.1	29.7	0.8	950	18.5	1.64	12.9	88.0	3.3	1.8
	4.5	1.1	2.6	750	29.8	17.6	0.93	32.8	32.1	0.7	840	19.1	1.68	13.4	91.0	3.3	1.8
	4.5	1.1	2.6	850	30.3	18.9	0.96	33.6	31.5	0.7	950	19.4	1.63	13.8	88.9	3.5	1.9
	6.0	1.8	4.0	750	29.4	17.3	0.90	32.4	32.8	0.7	840	19.5	1.68	13.9	91.5	3.4	1.9
	6.0	1.8	4.0	850	29.9	18.6	0.93	33.1	32.2	0.7	950	19.8	1.62	14.3	89.3	3.6	1.9
	3.0	0.6	1.5	750	29.8	18.2	1.08	33.5	27.5	1.1	840	21.0	1.66	15.4	93.1	3.7	2.1
	3.0	0.6	1.5	850	30.4	19.6	1.12	34.2	27.0	1.1	950	21.3	1.61	15.8	90.8	3.9	2.1
40	4.5	1.1	2.5	750	30.1	18.1	1.01	33.5	29.6	0.9	840	22.0	1.65	16.5	94.3	3.9	2.2
	4.5	1.1	2.5	850	30.6	19.5	1.05	34.2	29.1	0.9	950	22.4	1.60	16.9	91.8	4.1	2.3
	6.0	1.6	3.8	750	30.0	18.0	0.98	33.3	30.6	0.8	840	22.6	1.64	17.1	94.9	4.0	2.3
	6.0	1.6	3.8	850	30.6	19.3	1.02	34.0	30.1	0.8	950	23.0	1.59	17.5	92.4	4.2	2.3
	3.0	0.6	1.4	750	29.1	18.0	1.19	33.1	24.5	1.5	840	23.8	1.64	18.2	96.2	4.3	2.4
	3.0	0.6	1.4	850	29.6	19.4	1.23	33.8	24.1	1.5	950	24.1	1.59	18.7	93.5	4.5	2.5
50	4.5	1.0	2.3	750	29.7	18.2	1.11	33.4	26.8	1.2	840	25.1	1.64	19.5	97.6	4.5	2.6
	4.5	1.0	2.3	850	30.2	19.6	1.15	34.1	26.3	1.2	950	25.4	1.59	20.0	94.8	4.7	2.6
	6.0	1.6	3.6	750	29.9	18.2	1.07	33.5	27.9	1.1	840	25.8	1.64	20.2	98.4	4.6	2.7
	6.0	1.6	3.6	850	30.4	19.6	1.11	34.2	27.4	1.1	950	26.2	1.59	20.7	95.5	4.8	2.7
	3.0	0.6	1.3	750	27.9	17.6	1.30	32.3	21.5	1.9	840	26.7	1.64	21.1	99.4	4.8	2.8
	3.0	0.6	1.3	850	28.4	18.9	1.35	33.0	21.1	1.9	950	27.1	1.59	21.6	96.4	5.0	2.8
60	4.5	1.0	2.3	750	28.8	17.9	1.21	32.9	23.7	1.6	840	28.2	1.65	22.5	101.0	5.0	2.9
	4.5	1.0	2.3	850	29.3	19.3	1.26	33.6	23.3	1.6	950	28.6	1.60	23.1	97.9	5.2	3.0
	6.0	1.5	3.5	750	29.2	18.1	1.17	33.1	24.9	1.4	840	29.0	1.66	23.3	102.0	5.1	3.0
	6.0	1.5	3.5	850	29.7	19.4	1.22	33.8	24.4	1.4	950	29.4	1.61	24.0	98.7	5.4	3.1
	3.0	0.6	1.3	750	26.4	17.0	1.43	31.3	18.5	2.3	840	29.6	1.67	23.9	102.6	5.2	3.1
	3.0	0.6	1.3	850	26.9	18.3	1.48	32.0	18.2	2.4	950	30.1	1.61	24.6	99.3	5.5	3.2
70	4.5	1.0	2.2	750	27.5	17.5	1.33	32.0	20.6	2.1	840	31.4	1.69	25.6	104.6	5.4	3.2
	4.5	1.0	2.2	850	28.0	18.8	1.38	32.7	20.3	2.1	950	31.8	1.64	26.2	101.0	5.7	3.3
	6.0	1.5	3.4	750	28.0	17.7	1.29	32.4	21.8	1.9	840	32.3	1.71	26.5	105.7	5.5	3.3
	6.0	1.5	3.4	850	28.5	19.0	1.33	33.1	21.4	1.9	950	32.8	1.66	27.2	102.0	5.8	3.4
	3.0	0.6	1.3	750	24.8	16.3	1.58	30.2	15.7	2.9	840	32.6	1.72	26.7	106.0	5.6	3.4
	3.0	0.6	1.3	850	25.2	17.5	1.64	30.8	15.4	3.0	950	33.1	1.66	27.5	102.3	5.8	3.5
80	4.5	0.9	2.2	750	26.0	16.8	1.47	31.0	17.6	2.5	840	34.7	1.77	28.6	108.2	5.8	3.6
	4.5	0.9	2.2	850	26.4	18.1	1.53	31.6	17.3	2.6	950	35.2	1.71	29.4	104.3	6.0	3.7
	6.0	1.4	3.3	750	26.5	17.0	1.42	31.4	18.7	2.3	840	35.8	1.80	29.6	109.5	5.8	3.7
	6.0	1.4	3.3	850	27.0	18.3	1.47	32.0	18.3	2.4	950	36.3	1.74	30.4	105.4	6.1	3.8
	3.0	0.6	1.3	750	23.9	15.9	1.7	29.6	14.4	3.3	840	34.2	1.76	28.2	107.7	5.7	3.6
	3.0	0.6	1.3	850	24.4	17.1	1.73	30.2	14.2	3.4	950	34.7	1.7	28.9	103.8	6.0	3.7
85	4.5	0.9	2.2	750	25.1	16.4	1.55	30.4	16.3	2.9	840	36.4	1.8	30.1	110.1	5.9	3.8
	4.5	0.9	2.2	850	25.5	17.7	1.61	31.0	16.0	2.9	950	36.9	1.8	30.9	106.0	6.1	3.9
	6.0	1.4	3.3	750	25.7	16.7	1.50	30.8	17.2	2.7	840	37.6	1.9	31.2	111.4	5.9	3.9
	6.0	1.4	3.3	850	26.1	17.9	1.55	31.4	16.9	2.7	950	38.2	1.8	32.0	107.2	6.2	4.0
	3.0	0.6	1.3	750	23.1	15.5	1.75	29.0	13.2	3.7	840	35.8	1.80	29.6	109.4	5.8	3.7
	3.0	0.6	1.3	850	23.5	16.7	1.81	29.7	12.9	3.7	950	36.3	1.74	30.4	105.4	6.1	3.8
90	4.5	0.9	2.2	750	24.3	16.1	1.63	29.8	14.9	3.2	840	38.1	1.87	31.6	112.0	6.0	3.9
	4.5	0.9	2.2	850	24.7	17.3	1.69	30.4	14.6	3.3	950	38.7	1.81	32.5	107.7	6.2	4.0
	6.0	1.4	3.2	750	24.9	16.3	1.57	30.2	15.8	3.0	840	39.4	1.92	32.8	113.4	6.0	4.0
	6.0	1.4	3.2	850	25.3	17.5	1.63	30.9	15.5	3.0	950	40.0	1.86	33.6	109.0	6.3	4.1
	3.0	0.6	1.3	750	21.3	14.8	1.95	28.0	10.9	4.4							
	3.0	0.6	1.3	850	21.7	15.9	2.02	28.6	10.7	4.5							
100	4.5	0.9	2.1	750	22.5	15.3	1.82	28.7	12.4	3.9							
	4.5	0.9	2.1	850	22.9	16.4	1.88	29.3	12.1	4.0							
	6.0	1.4	3.2	750	23.1	15.5	1.75	29.0	13.2	3.7							
	6.0	1.4	3.2	850	23.5	16.7	1.82	29.7	12.9	3.7							
	3.0	0.6	1.3	750	19.7	14.2	2.18	27.1	9.0	5.3							
	3.0	0.6	1.3	850	20.0	15.2	2.26	27.7	8.8	5.4							
110	4.5	0.9	2.1	750	20.7	14.6	2.03	27.7	10.2	4.7							
	4.5	0.9	2.1	850	21.1	15.7	2.11	28.2	10.0	4.8							
	6.0	1.4	3.1	750	21.3	14.8	1.96	28.0	10.8	4.4							
	6.0	1.4	3.1	850	21.6	15.9	2.03	28.6	10.6	4.5							
	3.0	0.5	1.2	750	18.2	13.7	2.46	26.6	7.4	6.2							
	3.0	0.5	1.2	850	18.5	14.7	2.55	27.2	7.3	6.4							
120	4.5	0.9	2.0	750	19.1	14.0	2.28	26.9	8.3	5.6							
	4.5	0.9	2.0	850	19.4	15.0	2.37	27.5	8.2	5.8							
	6.0	1.3	3.1	750	19.5	14.1	2.20	27.1	8.9	5.3							
	6.0	1.3	3.1	850	19.9	15.2	2.28	27.7	8.7	5.5					</td		

Performance Data – HZ H/V/D 036 (Part Load), No vFlow™

1000 CFM Nominal (Rated) Airflow Heating, 1000 CFM Nominal (Rated) Airflow Cooling

Performance capacities shown in thousands of Btu/h

EWT °F	GPM	WPD		COOLING - EAT 80/67 °F							HEATING - 70°F						
		PSI	FT	CFM	TC	SC	kW	HR	EER	HWC	CFM	HC	kW	HE	LAT	COP	HWC
20	6.0	2.5	5.7								880	16.9	1.65	11.5	87.8	3.0	1.6
30	6.0	2.5	5.7								1000	17.2	1.58	11.8	85.9	3.2	1.7
	3.0	0.9	2.1	880	32.7	19.9	0.82	35.5	39.6	0.9	880	18.9	1.65	13.4	89.8	3.4	1.8
	3.0	0.9	2.1	1000	33.3	21.3	0.84	36.2	39.7	0.9	1000	19.1	1.58	13.7	87.7	3.5	1.8
	4.5	1.5	3.5	880	31.0	18.3	0.74	33.5	42.1	1.0	880	19.9	1.64	14.4	90.9	3.6	1.9
	4.5	1.5	3.5	1000	31.6	19.6	0.75	34.1	42.1	1.0	1000	20.2	1.57	14.8	88.7	3.8	1.9
	6.0	2.2	5.1	880	29.6	17.3	0.71	32.1	41.9	1.1	880	20.4	1.64	14.9	91.5	3.7	1.9
40	6.0	2.2	5.1	1000	30.2	18.5	0.72	32.7	42.0	1.1	1000	20.7	1.57	15.4	89.2	3.9	2.0
	3.0	0.8	1.9	880	33.1	20.7	0.94	36.4	35.2	0.9	880	21.9	1.64	16.4	93.1	3.9	2.1
	3.0	0.8	1.9	1000	33.8	22.2	0.96	37.1	35.2	0.9	1000	22.2	1.57	16.9	90.6	4.2	2.1
	4.5	1.4	3.2	880	32.9	20.1	0.84	35.8	39.0	0.8	880	23.1	1.64	17.6	94.3	4.1	2.2
	4.5	1.4	3.2	1000	33.6	21.5	0.86	36.5	39.0	0.8	1000	23.5	1.57	18.1	91.7	4.4	2.2
	6.0	2.0	4.7	880	32.4	19.6	0.80	35.1	40.7	0.8	880	23.8	1.64	18.3	95.1	4.3	2.2
50	6.0	2.0	4.7	1000	33.0	20.9	0.81	35.8	40.8	0.9	1000	24.1	1.57	18.8	92.4	4.5	2.3
	3.0	0.8	1.8	880	32.3	20.7	1.08	36.0	29.9	1.1	880	24.9	1.64	19.4	96.2	4.5	2.3
	3.0	0.8	1.8	1000	33.0	22.2	1.10	36.7	30.0	1.1	1000	25.3	1.57	19.9	93.4	4.7	2.4
	4.5	1.3	3.0	880	33.1	20.7	0.96	36.4	34.4	0.9	880	26.3	1.64	20.7	97.7	4.7	2.5
	4.5	1.3	3.0	1000	33.7	22.2	0.98	37.1	34.4	0.9	1000	26.7	1.57	21.3	94.7	5.0	2.5
	6.0	1.9	4.4	880	33.2	20.6	0.91	36.3	36.3	0.9	880	27.1	1.64	21.5	98.5	4.8	2.5
60	6.0	1.9	4.4	1000	33.8	22.0	0.93	37.0	36.4	0.9	1000	27.5	1.57	22.1	95.4	5.1	2.6
	3.0	0.8	1.8	880	30.8	20.2	1.24	35.0	24.9	1.5	880	27.9	1.65	22.3	99.3	5.0	2.6
	3.0	0.8	1.8	1000	31.4	21.6	1.26	35.7	24.9	1.5	1000	28.3	1.58	22.9	96.2	5.2	2.6
	4.5	1.3	2.9	880	32.1	20.6	1.11	35.9	28.9	1.2	880	29.5	1.65	23.8	101.0	5.2	2.7
	4.5	1.3	2.9	1000	32.7	22.1	1.13	36.6	29.0	1.3	1000	29.9	1.58	24.5	97.7	5.5	2.8
	6.0	1.8	4.2	880	32.6	20.8	1.05	36.2	31.0	1.1	880	30.4	1.65	24.7	102.0	5.4	2.8
70	6.0	1.8	4.2	1000	33.2	22.2	1.07	36.9	31.1	1.2	1000	30.8	1.58	25.4	98.5	5.7	2.8
	3.0	1.2	2.7	880	28.8	19.4	1.41	33.6	20.4	2.1	880	30.8	1.66	25.2	102.4	5.4	2.8
	3.0	1.2	2.7	1000	29.4	20.7	1.44	34.3	20.4	2.2	1000	31.3	1.59	25.9	99.0	5.8	2.9
	4.5	1.9	4.4	880	30.4	20.0	1.28	34.7	23.8	1.8	880	32.7	1.67	27.0	104.4	5.7	2.9
	4.5	1.9	4.4	1000	31.0	21.4	1.30	35.4	23.8	1.8	1000	33.2	1.60	27.7	100.7	6.1	3.0
	6.0	2.9	6.6	880	31.1	20.3	1.21	35.2	25.8	1.6	880	33.7	1.67	28.0	105.5	5.9	3.0
80	6.0	2.9	6.6	1000	31.7	21.7	1.23	35.9	25.8	1.6	1000	34.2	1.60	28.7	101.7	6.3	3.1
	3.0	1.2	2.7	880	26.6	18.4	1.61	32.1	16.5	3.0	880	33.9	1.67	28.1	105.6	5.9	3.0
	3.0	1.2	2.7	1000	27.1	19.7	1.64	32.7	16.5	3.0	1000	34.3	1.60	28.9	101.8	6.3	3.1
	4.5	1.9	4.3	880	28.3	19.1	1.46	33.2	19.3	2.5	880	36.0	1.69	30.2	107.9	6.2	3.2
	4.5	1.9	4.3	1000	28.8	20.5	1.49	33.9	19.3	2.6	1000	36.5	1.62	31.0	103.8	6.6	3.2
	6.0	2.8	6.5	880	29.1	19.5	1.38	33.8	21.0	2.3	880	37.2	1.70	31.3	109.2	6.4	3.3
85	6.0	2.8	6.5	1000	29.7	20.9	1.41	34.5	21.0	2.3	1000	37.8	1.63	32.2	105.0	6.8	3.3
	3.0	1.2	2.7	880	25.5	17.9	1.7	31.4	14.9	3.5	880	35.4	1.68	29.6	107.3	6.2	3.1
	3.0	1.2	2.7	1000	26.0	19.2	1.76	32.0	14.9	3.6	1000	35.9	1.6	30.4	103.3	6.5	3.2
	4.5	1.9	4.3	880	27.1	18.6	1.57	32.4	17.4	3.0	880	37.8	1.7	31.8	109.7	6.5	3.3
	4.5	1.9	4.3	1000	27.6	19.9	1.60	33.1	17.5	3.0	1000	38.3	1.6	32.7	105.5	6.9	3.4
	6.0	2.8	6.4	880	28.0	19.0	1.49	33.0	18.9	2.7	880	39.1	1.7	33.1	111.1	6.7	3.4
90	6.0	2.8	6.4	1000	28.5	20.3	1.52	33.7	19.0	2.8	1000	39.7	1.7	34.0	106.7	7.0	3.4
	3.0	1.2	2.7	880	24.4	17.4	1.84	30.7	13.3	4.0	880	37.0	1.70	31.1	108.9	6.4	3.3
	3.0	1.2	2.7	1000	24.9	18.7	1.87	31.3	13.3	4.1	1000	37.5	1.63	32.0	104.7	6.7	3.3
	4.5	1.9	4.3	880	26.0	18.1	1.67	31.7	15.6	3.4	880	39.5	1.72	33.5	111.6	6.7	3.4
	4.5	1.9	4.3	1000	26.5	19.4	1.70	32.3	15.6	3.5	1000	40.1	1.65	34.4	107.1	7.1	3.5
	6.0	2.8	6.3	880	26.8	18.5	1.59	32.2	16.9	3.2	880	41.0	1.74	34.9	113.1	6.9	3.5
100	6.0	2.8	6.3	1000	27.3	19.8	1.62	32.9	16.9	3.2	1000	41.5	1.67	35.8	108.5	7.3	3.6
	3.0	1.2	2.7	880	22.5	16.6	2.09	29.6	10.7	5.2							
	3.0	1.2	2.7	1000	22.9	17.8	2.13	30.1	10.7	5.3							
	4.5	1.8	4.2	880	23.8	17.1	1.91	30.3	12.5	4.6							
	4.5	1.8	4.2	1000	24.2	18.4	1.94	30.9	12.5	4.7							
	6.0	2.7	6.3	880	24.5	17.5	1.83	30.7	13.4	4.3							
110	6.0	2.7	6.3	1000	25.0	18.7	1.86	31.3	13.4	4.4							
	3.0	1.1	2.6	880	21.0	16.3	2.39	29.1	8.8	6.7							
	3.0	1.1	2.6	1000	21.4	17.4	2.43	29.7	8.8	6.8							
	4.5	1.8	4.2	880	21.9	16.4	2.19	29.3	10.0	5.9							
	4.5	1.8	4.2	1000	22.3	17.6	2.23	29.9	10.0	6.1							
	6.0	2.7	6.2	880	22.5	16.6	2.09	29.6	10.7	5.6							
120	6.0	2.7	6.2	1000	22.9	17.8	2.13	30.2	10.7	5.7							
	3.0	1.1	2.5	880	20.4	16.8	2.75	29.8	7.4	8.4							
	3.0	1.1	2.5	1000	20.8	17.9	2.80	30.4	7.4	8.6							
	4.5	1.7	4.0	880	20.7	16.3	2.50	29.2	8.3	7.6							
	4.5	1.7	4.0	1000	21.1	17.5	2.55	29.8	8.3	7.7							
	6.0	2.6	6.0	880	21.0	16.3	2.40	29.1	8.8	7.2							
	6.0	2.6	6.0	1000	21.4	17.4											

Performance Data – HZ H/V/D 036 (Full Load), No vFlow™

1250 CFM Nominal (Rated) Airflow Heating, 1250 CFM Nominal (Rated) Airflow Cooling

Performance capacities shown in thousands of Btuh

EWT °F	GPM	WPD		COOLING - EAT 80/67 °F						HEATING - 70°F							
		PSI	FT	CFM	TC	SC	kW	HR	EER	HWC	CFM	HC	KW	HE	LAT	COP	HWC
20	9.0	3.9	9.0								1100	25.2	2.23	17.8	91.2	3.3	2.0
	9.0	3.9	9.0								1250	25.6	2.16	18.2	89.0	3.5	2.1
30	4.5	0.7	1.6	1100	45.4	26.4	1.46	50.2	31.0	1.1	1100	27.7	2.25	20.1	93.3	3.6	2.3
	4.5	0.7	1.6	1250	46.1	28.4	1.52	51.3	30.4	1.1	1250	28.1	2.18	20.7	90.8	3.8	2.4
	6.8	2.1	4.9	1100	45.1	25.9	1.36	49.6	33.2	0.9	1100	29.0	2.26	21.4	94.4	3.8	2.5
	6.8	2.1	4.9	1250	45.9	27.8	1.41	50.7	32.6	0.9	1250	29.5	2.19	22.0	91.8	3.9	2.5
	9.0	3.5	8.1	1100	44.8	25.5	1.31	49.2	34.2	0.8	1100	29.7	2.26	22.1	95.0	3.9	2.6
40	9.0	3.5	8.1	1250	45.6	27.4	1.36	50.2	33.6	0.8	1250	30.2	2.19	22.7	92.4	4.0	2.6
	4.5	0.6	1.4	1100	44.9	26.7	1.60	50.3	28.1	1.4	1100	31.8	2.29	24.0	96.7	4.1	2.8
	4.5	0.6	1.4	1250	45.7	28.7	1.66	51.4	27.6	1.5	1250	32.2	2.21	24.7	93.9	4.3	2.9
	6.8	2.0	4.6	1100	45.3	26.5	1.50	50.3	30.3	1.1	1100	33.3	2.30	25.5	98.1	4.2	3.0
	6.8	2.0	4.6	1250	46.1	28.5	1.55	51.4	29.8	1.2	1250	33.8	2.23	26.2	95.1	4.4	3.1
50	9.0	3.2	7.4	1100	45.4	26.3	1.44	50.2	31.4	1.0	1100	34.2	2.31	26.3	98.8	4.3	3.1
	9.0	3.2	7.4	1250	46.1	28.3	1.50	51.2	30.8	1.0	1250	34.7	2.24	27.1	95.7	4.5	3.2
	4.5	0.5	1.2	1100	43.9	26.6	1.74	49.7	25.2	2.0	1100	35.8	2.34	27.9	100.1	4.5	3.3
	4.5	0.5	1.2	1250	44.6	28.6	1.80	50.8	24.7	2.0	1250	36.3	2.26	28.6	96.9	4.7	3.4
	6.8	1.7	3.9	1100	44.7	26.7	1.63	50.2	27.4	1.5	1100	37.6	2.36	29.6	101.6	4.7	3.5
60	6.8	1.7	3.9	1250	45.5	28.7	1.69	51.3	26.9	1.6	1250	38.2	2.29	30.3	98.3	4.9	3.6
	9.0	2.8	6.5	1100	45.0	26.7	1.58	50.3	28.5	1.4	1100	38.6	2.38	30.5	102.5	4.8	3.6
	9.0	2.8	6.5	1250	45.8	28.7	1.64	51.4	28.0	1.4	1250	39.2	2.31	31.3	99.0	5.0	3.7
	4.5	1.3	2.9	1100	42.3	26.1	1.90	48.7	22.3	2.6	1100	39.8	2.40	31.6	103.5	4.9	3.7
	4.5	1.3	2.9	1250	43.0	28.1	1.97	49.8	21.9	2.7	1250	40.4	2.33	32.5	99.9	5.1	3.8
70	6.8	2.1	4.9	1100	43.5	26.5	1.78	49.5	24.5	2.1	1100	41.9	2.44	33.5	105.2	5.0	4.0
	6.8	2.1	4.9	1250	44.3	28.5	1.84	50.6	24.0	2.2	1250	42.5	2.37	34.4	101.5	5.3	4.1
	9.0	3.3	7.5	1100	44.0	26.6	1.72	49.8	25.6	1.9	1100	43.0	2.47	34.6	106.2	5.1	4.1
	9.0	3.3	7.5	1250	44.8	28.6	1.78	50.9	25.1	1.9	1250	43.7	2.39	35.5	102.3	5.4	4.2
	4.5	1.2	2.9	1100	40.4	25.4	2.08	47.4	19.4	3.4	1100	43.9	2.49	35.4	106.9	5.2	4.2
80	4.5	1.2	2.9	1250	41.1	27.4	2.15	48.4	19.1	3.5	1250	44.5	2.41	36.3	103.0	5.4	4.3
	6.8	2.1	4.8	1100	41.8	26.0	1.94	48.4	21.5	2.8	1100	46.2	2.54	37.5	108.9	5.3	4.5
	6.8	2.1	4.8	1250	42.6	27.9	2.02	49.4	21.1	2.9	1250	46.9	2.47	38.5	104.8	5.6	4.6
	9.0	3.1	7.2	1100	42.5	26.2	1.88	48.8	22.6	2.5	1100	47.6	2.58	38.7	110.0	5.4	4.6
	9.0	3.1	7.2	1250	43.2	28.2	1.95	49.9	22.2	2.6	1250	48.3	2.50	39.7	105.8	5.7	4.7
85	4.5	1.2	2.9	1100	38.2	24.6	2.29	45.9	16.7	4.3	1100	48.0	2.59	39.2	110.4	5.4	4.6
	4.5	1.2	2.9	1250	38.8	26.4	2.37	46.9	16.4	4.4	1250	48.8	2.51	40.2	106.1	5.7	4.7
	6.8	2.0	4.7	1100	39.8	25.2	2.14	47.0	18.6	3.6	1100	50.8	2.67	41.6	112.7	5.6	4.9
	6.8	2.0	4.7	1250	40.5	27.1	2.21	48.0	18.3	3.7	1250	51.5	2.59	42.7	108.2	5.8	5.0
	9.0	3.1	7.1	1100	40.5	25.5	2.06	47.5	19.6	3.9	1100	52.3	2.72	42.9	114.0	5.6	5.1
90	9.0	3.1	7.1	1250	41.2	27.4	2.14	48.5	19.3	4.0	1250	53.1	2.64	44.1	109.3	5.9	5.2
	4.5	1.2	2.9	1100	37.0	24.1	2.4	45.2	15.4	4.8	1100	50.2	2.66	41.1	112.3	5.5	4.8
	4.5	1.2	2.9	1250	37.6	25.9	2.50	46.2	15.1	4.9	1250	51.0	2.6	42.2	107.8	5.8	5.0
	6.8	2.0	4.6	1100	38.6	24.7	2.25	46.2	17.2	4.1	1100	53.1	2.8	43.7	114.7	5.7	5.1
	6.8	2.0	4.6	1250	39.3	26.6	2.33	47.2	16.9	4.2	1250	53.9	2.7	44.8	110.0	5.9	5.3
100	9.0	3.0	7.0	1100	39.4	25.1	2.17	46.8	18.2	4.1	1100	54.8	2.8	45.1	116.1	5.7	5.3
	9.0	3.0	7.0	1250	40.1	27.0	2.25	47.8	17.9	4.2	1250	55.6	2.7	46.3	111.2	6.0	5.4
	4.5	1.2	2.9	1100	35.8	23.6	2.54	44.4	14.1	5.3	1100	52.4	2.73	43.0	114.1	5.6	5.1
	4.5	1.2	2.9	1250	36.4	25.4	2.63	45.4	13.9	5.5	1250	53.2	2.64	44.2	109.4	5.9	5.2
	6.8	2.0	4.6	1100	37.4	24.3	2.36	45.5	15.9	4.6	1100	55.5	2.84	45.7	116.7	5.7	5.4
110	6.8	2.0	4.6	1250	38.1	26.1	2.45	46.4	15.6	4.7	1250	56.3	2.75	47.0	111.7	6.0	5.5
	9.0	3.0	6.9	1100	38.3	24.6	2.28	46.0	16.8	4.3	1100	57.3	2.90	47.3	118.2	5.8	5.5
	9.0	3.0	6.9	1250	38.9	26.5	2.36	47.0	16.5	4.3	1250	58.1	2.81	48.5	113.1	6.1	5.6
	4.5	1.2	2.8	1100	33.3	22.5	2.83	43.0	11.8	6.5							
	4.5	1.2	2.8	1250	33.9	24.2	2.93	43.9	11.6	6.7							
120	6.8	2.0	4.5	1100	35.0	23.2	2.63	43.9	13.3	5.7							
	6.8	2.0	4.5	1250	35.6	25.0	2.72	44.9	13.1	5.9							
	9.0	3.0	6.8	1100	35.8	23.6	2.53	44.4	14.1	5.3							
	9.0	3.0	6.8	1250	36.4	25.4	2.63	45.4	13.9	5.5							
	4.5	1.2	2.8	1100	30.9	21.4	3.18	41.7	9.7	7.9							
110	4.5	1.2	2.8	1250	31.4	23.0	3.29	42.6	9.5	8.0							
	6.8	1.9	4.5	1100	32.4	22.1	2.95	42.5	11.0	7.0							
	6.8	1.9	4.5	1250	33.0	23.8	3.05	43.4	10.8	7.1							
	9.0	2.9	6.7	1100	33.3	22.5	2.84	42.9	11.7	6.6							
	9.0	2.9	6.7	1250	33.8	24.2	2.94	43.9	11.5	6.7							
120	4.5	1.1	2.6	1100	28.5	20.3	3.59	40.8	7.9	9.4							
	4.5	1.1	2.6	1250	29.0	21.9	3.72	41.7	7.8	9.6							
	6.8	1.9	4.3	1100	29.9	21.0	3.32	41.3	9.0	8.4							
	6.8	1.9	4.3	1250	30.5	22.6	3.44	42.2	8.8	8.6							
	9.0	2.9	6.6	1100	30.7	21.3	3.20	41.7	9.6	8.0							

Performance Data – HZ H/V/D 048 (Part Load), No vFlow™

1350 CFM Nominal (Rated) Airflow Heating, 1350 CFM Nominal (Rated) Airflow Cooling

Performance capacities shown in thousands of Btu/h

Performance capacities shown in thousands of Btu/h																	
EWT °F	GPM	WPD		COOLING - EAT 80/67 °F					HEATING - 70°F								
		PSI	FT	CFM	TC	SC	KW	HR	EER	HWC	CFM	HC	KW	HE	LAT	COP	HWC
20	9.0	3.9	9.0								1190	22.8	2.37	14.9	87.7	2.8	2.5
30	9.0	3.9	9.0								1350	23.1	2.28	15.3	85.8	3.0	2.5
	4.5	0.7	1.6	1190	40.9	25.0	1.11	44.7	37.0	1.0	1190	25.0	2.35	17.2	89.4	3.1	2.5
	4.5	0.7	1.6	1350	41.7	26.7	1.13	45.6	37.0	1.0	1350	25.3	2.25	17.6	87.4	3.3	2.6
	6.8	2.1	4.9	1190	39.5	22.6	1.02	43.0	38.6	1.0	1190	25.9	2.34	18.1	90.2	3.2	2.5
	6.8	2.1	4.9	1350	40.3	24.2	1.04	43.8	38.6	1.1	1350	26.3	2.24	18.6	88.0	3.4	2.6
	9.0	3.5	8.1	1190	38.5	21.2	0.99	41.9	38.9	1.1	1190	26.5	2.33	18.7	90.6	3.3	2.6
40	9.0	3.5	8.1	1350	39.3	22.7	1.01	42.7	38.9	1.1	1350	26.8	2.24	19.2	88.4	3.5	2.6
	4.5	0.6	1.4	1190	41.7	27.1	1.26	46.0	33.1	1.1	1190	28.5	2.32	20.8	92.2	3.6	2.6
	4.5	0.6	1.4	1350	42.5	29.1	1.28	46.9	33.1	1.2	1350	28.9	2.23	21.3	89.8	3.8	2.7
	6.8	2.0	4.6	1190	41.3	25.8	1.15	45.3	35.9	1.0	1190	29.8	2.32	22.0	93.2	3.8	2.7
	6.8	2.0	4.6	1350	42.1	27.6	1.17	46.2	35.9	1.0	1350	30.2	2.23	22.6	90.7	4.0	2.7
	9.0	3.2	7.4	1190	40.9	24.9	1.11	44.7	37.0	1.0	1190	30.5	2.32	22.7	93.7	3.9	2.7
50	9.0	3.2	7.4	1350	41.7	26.7	1.13	45.6	37.0	1.0	1350	30.9	2.22	23.3	91.2	4.1	2.7
	4.5	0.5	1.2	1190	41.2	28.0	1.45	46.1	28.5	1.5	1190	32.3	2.32	24.5	95.2	4.1	2.7
	4.5	0.5	1.2	1350	42.0	30.0	1.47	47.0	28.6	1.5	1350	32.8	2.22	25.2	92.5	4.3	2.8
	6.8	1.7	3.9	1190	41.7	27.5	1.31	46.1	31.7	1.2	1190	33.9	2.32	26.1	96.4	4.3	2.8
	6.8	1.7	3.9	1350	42.5	29.5	1.34	47.0	31.7	1.2	1350	34.4	2.23	26.8	93.6	4.5	2.9
	9.0	2.8	6.5	1190	41.7	27.1	1.25	46.0	33.2	1.1	1190	34.8	2.32	26.9	97.1	4.4	2.8
60	9.0	2.8	6.5	1350	42.5	29.0	1.28	46.9	33.3	1.1	1350	35.3	2.23	27.7	94.2	4.6	2.9
	4.5	0.3	0.7	1190	39.8	27.8	1.66	45.5	24.0	2.0	1190	36.3	2.33	28.4	98.3	4.6	2.9
	4.5	0.3	0.7	1350	40.6	29.8	1.69	46.4	24.1	2.1	1350	36.8	2.23	29.2	95.3	4.8	3.0
	6.8	1.5	3.5	1190	40.9	28.0	1.51	46.0	27.1	1.6	1190	38.2	2.34	30.3	99.7	4.8	3.0
	6.8	1.5	3.5	1350	41.7	30.0	1.53	46.9	27.2	1.7	1350	38.7	2.24	31.1	96.6	5.1	3.1
	9.0	2.6	6.0	1190	41.3	28.0	1.44	46.2	28.7	1.5	1190	39.2	2.34	31.3	100.5	4.9	3.0
70	9.0	2.6	6.0	1350	42.1	29.9	1.46	47.0	28.8	1.5	1350	39.8	2.25	32.1	97.3	5.2	3.1
	4.5	0.5	1.1	1190	37.9	27.1	1.90	44.4	19.9	2.5	1190	40.4	2.35	32.4	101.4	5.0	3.1
	4.5	0.5	1.1	1350	38.6	29.0	1.94	45.2	19.9	2.5	1350	41.0	2.25	33.3	98.1	5.3	3.2
	6.8	1.5	3.4	1190	39.3	27.7	1.73	45.2	22.7	2.1	1190	42.6	2.36	34.5	103.1	5.3	3.2
	6.8	1.5	3.4	1350	40.0	29.6	1.76	46.1	22.7	2.1	1350	43.2	2.26	35.5	99.6	5.6	3.3
	9.0	2.7	6.2	1190	39.9	27.9	1.65	45.5	24.2	1.9	1190	43.8	2.37	35.7	104.1	5.4	3.3
80	9.0	2.7	6.2	1350	40.7	29.8	1.68	46.4	24.2	1.9	1350	44.4	2.27	36.7	100.5	5.7	3.4
	4.5	0.5	1.1	1190	35.5	26.0	2.18	42.9	16.3	3.3	1190	44.6	2.37	36.4	104.7	5.5	3.3
	4.5	0.5	1.1	1350	36.2	27.8	2.22	43.7	16.3	3.4	1350	45.2	2.27	37.4	101.0	5.8	3.4
	6.8	1.4	3.3	1190	37.1	26.7	1.99	43.9	18.6	2.8	1190	47.0	2.38	38.8	106.6	5.8	3.5
	6.8	1.4	3.3	1350	37.8	28.6	2.03	44.7	18.6	2.9	1350	47.7	2.29	39.9	102.7	6.1	3.6
	9.0	2.6	6.1	1190	37.9	27.1	1.90	44.4	19.9	2.6	1190	48.3	2.39	40.1	107.6	5.9	3.8
85	9.0	2.6	6.1	1350	38.6	29.0	1.94	45.2	19.9	2.7	1350	49.0	2.29	41.2	103.6	6.3	3.9
	4.5	0.5	1.1	1190	34.2	25.4	2.3	42.1	14.7	3.8	1190	46.6	2.38	38.4	106.3	5.7	3.5
	4.5	0.5	1.1	1350	34.8	27.1	2.38	43.0	14.8	3.9	1350	47.3	2.3	39.5	102.4	6.1	3.5
	6.8	1.4	3.3	1190	35.8	26.1	2.14	43.1	16.9	3.3	1190	49.2	2.4	40.9	108.3	6.0	3.7
	6.8	1.4	3.3	1350	36.5	28.0	2.18	44.0	16.9	3.4	1350	49.9	2.3	42.0	104.2	6.4	3.7
	9.0	2.6	6.1	1190	36.6	26.5	2.04	43.6	18.1	3.1	1190	50.6	2.4	42.3	109.4	6.2	3.9
90	9.0	2.6	6.1	1350	37.4	28.4	2.08	44.5	18.1	3.1	1350	51.3	2.3	43.4	105.2	6.5	3.9
	4.5	0.5	1.1	1190	32.9	24.7	2.49	41.4	13.2	4.4	1190	48.7	2.39	40.4	107.9	6.0	3.6
	4.5	0.5	1.1	1350	33.5	26.5	2.54	42.2	13.2	4.4	1350	49.4	2.30	41.5	103.9	6.3	3.7
	6.8	1.4	3.3	1190	34.6	25.5	2.29	42.4	15.1	3.8	1190	51.4	2.41	43.0	110.0	6.3	3.8
	6.8	1.4	3.3	1350	35.2	27.3	2.33	43.2	15.1	3.9	1350	52.1	2.31	44.2	105.7	6.6	3.9
	9.0	2.6	6.0	1190	35.4	25.9	2.19	42.9	16.2	3.5	1190	52.8	2.41	44.4	111.1	6.4	3.9
100	9.0	2.6	6.0	1350	36.1	27.8	2.23	43.7	16.2	3.6	1350	53.6	2.31	45.7	106.7	6.8	4.0
	4.5	0.5	1.1	1190	30.2	23.5	2.84	39.9	10.6	5.6							
	4.5	0.5	1.1	1350	30.8	25.2	2.89	40.7	10.6	5.7							
	6.8	1.4	3.2	1190	31.9	24.3	2.62	40.8	12.2	5.0							
	6.8	1.4	3.2	1350	32.5	26.0	2.67	41.6	12.2	5.1							
	9.0	2.6	5.9	1190	32.7	24.6	2.51	41.3	13.0	4.7							
110	9.0	2.6	5.9	1350	33.3	26.4	2.56	42.1	13.0	4.7							
	4.5	0.5	1.0	1190	27.7	22.6	3.24	38.7	8.5	7.1							
	4.5	0.5	1.0	1350	28.2	24.2	3.30	39.5	8.6	7.2							
	6.8	1.3	3.1	1190	29.2	23.1	3.00	39.4	9.7	6.3							
	6.8	1.3	3.1	1350	29.7	24.7	3.05	40.1	9.7	6.5							
	9.0	2.5	5.8	1190	30.0	23.4	2.88	39.8	10.4	6.0							
120	9.0	2.5	5.8	1350	30.5	25.1	2.93	40.5	10.4	6.1							
	4.5	0.4	0.9	1190	25.4	22.0	3.69	38.0	6.9	8.7							
	4.5	0.4	0.9	1350	25.9	23.6	3.75	38.7	6.9	8.9							
	6.8	1.3	3.0	1190	26.7	22.3	3.42	38.3	7.8	7.9							
	6.8	1.3	3.0	1350	27.2	23.9	3.48	39.1	7.8	8.1							
	9.0	2.4	5.6	1190	27.4	22.5	3.29	38.6	8.3	7.5							
130	9.0	2.4	5.6	1350	27.9	24.1	3.35	39.3	8.3	7.7							
	4.5	0.4	0.9	1190	25.4	22.0	3.69	38.0	6.9	8.7							
	4.5	0.4	0.9	1350	25.9	23.6	3.75	38.7	6.9	8.9							
	6.8	1.3	3.0	1190	26.7	22.3	3.42	38.3	7.8	7.9							
	6.8	1.3	3.0	1350	27.2	23.9	3.48	39.1	7.8	8.1							
	9.0	2.4	5.6	1190	27.4	22.5	3.29	38.6	8.3	7.5							

Interpolation is permissible, extrapolation is not. All performance data is based on the lower voltage of dual voltage units.

Performance stated is at the rated power supply, performance may vary as the power supply varies from the rated.

Table is with entering air of 80°F DB and 67°F WB in cooling, and 70°F DB in heating. AHRI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.

AHRI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating

Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
See performance correction tables for operating conditions other than those listed above. See

See performance correction tables for operating conditions other than those listed above. See performance data selection notes for operation in the shaded areas.

Operation below 40°F EWT is based on a 15% methanol antifreeze solution.
Operation below 60°F EWT requires optional extended range insulated water

circuits to avoid condensation within the unit cabinet.

Performance Data – HZ H/V/D 048 (Full Load), No vFlow™

1650 CFM Nominal (Rated) Airflow Heating, 1550 CFM Nominal (Rated) Airflow Cooling

Performance capacities shown in thousands of Btuh

EWT °F	GPM	WPD		COOLING - EAT 80/67 °F							HEATING - 70°F						
		PSI	FT	CFM	TC	SC	kW	HR	EER	HWC	CFM	HC	KW	HE	LAT	COP	HWC
20	12.0	3.9	9.0								1450	31.4	3.17	20.9	90.1	2.9	3.3
	12.0	3.9	9.0								1650	31.9	3.07	21.4	87.9	3.0	3.3
30	6.0	0.7	1.6	1364	48.8	27.0	1.80	54.8	27.0	1.8	1450	34.7	3.16	24.2	92.2	3.2	3.4
	6.0	0.7	1.6	1550	49.6	29.1	1.87	56.0	26.6	1.8	1650	35.3	3.06	24.8	89.8	3.4	3.5
	9.0	2.1	4.9	1364	44.1	23.2	1.64	49.7	26.8	1.8	1450	36.2	3.16	25.7	93.1	3.4	3.5
	9.0	2.1	4.9	1550	44.9	25.0	1.70	50.7	26.3	1.9	1650	36.8	3.06	26.3	90.6	3.5	3.5
	12.0	3.5	8.1	1364	41.5	21.3	1.57	46.8	26.4	1.9	1450	37.1	3.16	26.5	93.7	3.4	3.5
	12.0	3.5	8.1	1550	42.2	22.9	1.63	47.8	25.9	1.9	1650	37.6	3.06	27.2	91.1	3.6	3.6
40	6.0	0.6	1.4	1364	53.0	31.2	2.05	59.8	25.8	1.9	1450	39.9	3.18	29.2	95.5	3.7	3.6
	6.0	0.6	1.4	1550	53.9	33.6	2.12	61.1	25.4	2.0	1650	40.5	3.08	30.0	92.7	3.8	3.7
	9.0	2.0	4.6	1364	50.7	28.8	1.89	57.1	26.8	1.8	1450	41.7	3.20	30.9	96.6	3.8	3.7
	9.0	2.0	4.6	1550	51.6	31.0	1.96	58.3	26.3	1.8	1650	42.3	3.11	31.7	93.8	4.0	3.8
	12.0	3.2	7.4	1364	49.1	27.4	1.82	55.2	27.0	1.8	1450	42.7	3.22	31.8	97.3	3.9	3.8
	12.0	3.2	7.4	1550	50.0	29.4	1.88	56.4	26.5	1.8	1650	43.3	3.12	32.7	94.3	4.1	3.9
50	6.0	0.5	1.2	1364	54.0	33.2	2.28	61.7	23.7	2.3	1450	45.0	3.26	34.0	98.8	4.0	3.9
	6.0	0.5	1.2	1550	54.9	35.7	2.37	63.0	23.2	2.3	1650	45.7	3.16	34.9	95.7	4.2	4.0
	9.0	1.7	3.9	1364	53.5	32.0	2.12	60.7	25.2	2.0	1450	47.2	3.30	36.0	100.1	4.2	4.1
	9.0	1.7	3.9	1550	54.5	34.5	2.20	62.0	24.8	2.1	1650	47.9	3.20	37.0	96.9	4.4	4.1
	12.0	2.8	6.5	1364	52.9	31.2	2.05	59.8	25.9	1.9	1450	48.3	3.33	37.1	100.9	4.3	4.1
	12.0	2.8	6.5	1550	53.8	33.5	2.12	61.1	25.4	2.0	1650	49.1	3.23	38.1	97.5	4.5	4.2
60	6.0	0.7	1.6	1364	53.1	33.6	2.52	61.6	21.1	2.9	1450	50.2	3.38	38.8	102.1	4.4	4.3
	6.0	0.7	1.6	1550	54.0	36.1	2.61	62.9	20.7	2.9	1650	51.0	3.27	39.8	98.6	4.6	4.4
	9.0	1.8	4.2	1364	53.9	33.4	2.35	61.8	22.9	2.4	1450	52.7	3.44	41.0	103.6	4.5	4.4
	9.0	1.8	4.2	1550	54.8	36.0	2.44	63.1	22.5	2.5	1650	53.5	3.33	42.1	100.0	4.7	4.5
	12.0	3.4	7.8	1364	54.0	33.1	2.27	61.6	23.8	2.3	1450	54.0	3.48	42.2	104.5	4.6	4.5
	12.0	3.4	7.8	1550	54.9	35.6	2.35	63.0	23.3	2.3	1650	54.8	3.37	43.3	100.8	4.8	4.6
70	6.0	0.7	1.5	1364	51.0	33.0	2.78	60.4	18.4	3.6	1450	55.5	3.52	43.5	105.4	4.6	4.6
	6.0	0.7	1.5	1550	51.9	35.5	2.88	61.7	18.0	3.7	1650	56.3	3.41	44.7	101.6	4.8	4.7
	9.0	1.8	4.0	1364	52.6	33.5	2.60	61.3	20.2	3.1	1450	58.2	3.60	46.0	107.2	4.7	4.9
	9.0	1.8	4.0	1550	53.5	36.0	2.69	62.7	19.9	3.1	1650	59.1	3.49	47.2	103.2	5.0	5.0
	12.0	3.3	7.6	1364	53.2	33.6	2.51	61.6	21.2	2.8	1450	59.7	3.65	47.3	108.1	4.8	5.0
	12.0	3.3	7.6	1550	54.1	36.1	2.60	63.0	20.8	2.9	1650	60.6	3.53	48.6	104.0	5.0	5.1
80	6.0	0.7	1.5	1364	48.1	31.8	3.07	58.6	15.7	4.5	1450	60.7	3.68	48.2	108.8	4.8	5.1
	6.0	0.7	1.5	1550	49.0	34.2	3.18	59.8	15.4	4.6	1650	61.6	3.56	49.5	104.6	5.1	5.2
	9.0	1.7	4.0	1364	50.1	32.7	2.87	59.9	17.5	3.8	1450	63.8	3.77	50.9	110.7	5.0	5.4
	9.0	1.7	4.0	1550	51.0	35.1	2.97	61.1	17.2	3.9	1650	64.8	3.65	52.3	106.3	5.2	5.5
	12.0	3.2	7.5	1364	51.1	33.0	2.77	60.4	18.4	3.6	1450	65.5	3.82	52.4	111.8	5.0	5.9
	12.0	3.2	7.5	1550	51.9	35.5	2.87	61.7	18.1	3.6	1650	66.5	3.70	53.8	107.3	5.3	6.0
85	6.0	0.7	1.5	1364	46.5	31.0	3.2	57.5	14.5	5.0	1450	63.4	3.76	50.6	110.5	4.9	5.3
	6.0	0.7	1.5	1550	47.3	33.3	3.35	58.8	14.2	5.1	1650	64.3	3.6	51.9	106.1	5.2	5.4
	9.0	1.7	3.9	1364	48.6	32.0	3.02	58.9	16.2	4.3	1450	66.6	3.8	53.5	112.5	5.1	5.6
	9.0	1.7	3.9	1550	49.4	34.4	3.13	60.1	15.9	4.4	1650	67.6	3.7	54.9	108.0	5.3	5.8
	12.0	3.2	7.4	1364	49.6	32.4	2.92	59.5	17.1	4.0	1450	68.4	3.9	55.1	113.7	5.1	6.0
	12.0	3.2	7.4	1550	50.5	34.8	3.02	60.8	16.8	4.1	1650	69.4	3.8	56.5	109.0	5.4	6.1
90	6.0	0.7	1.5	1364	44.9	30.2	3.39	56.5	13.2	5.5	1450	66.0	3.83	52.9	112.2	5.0	5.6
	6.0	0.7	1.5	1550	45.7	32.5	3.52	57.7	13.0	5.6	1650	67.0	3.72	54.3	107.6	5.3	5.7
	9.0	1.7	3.9	1364	47.1	31.3	3.17	57.9	14.8	4.8	1450	69.4	3.93	56.0	114.3	5.2	5.9
	9.0	1.7	3.9	1550	47.9	33.6	3.29	59.1	14.6	4.9	1650	70.5	3.81	57.5	109.6	5.4	6.0
	12.0	3.2	7.4	1364	48.1	31.8	3.07	58.5	15.7	4.5	1450	71.3	3.98	57.7	115.5	5.3	6.1
	12.0	3.2	7.4	1550	49.0	34.2	3.18	59.8	15.4	4.6	1650	72.4	3.86	59.2	110.6	5.5	6.2
100	6.0	0.6	1.5	1364	41.7	28.6	3.78	54.6	11.1	6.8							
	6.0	0.6	1.5	1550	42.5	30.8	3.91	55.8	10.8	6.9							
	9.0	1.7	3.8	1364	43.7	29.6	3.53	55.8	12.4	6.0							
	9.0	1.7	3.8	1550	44.5	31.8	3.65	57.0	12.2	6.1							
	12.0	3.2	7.3	1364	44.8	30.1	3.41	56.4	13.2	5.6							
	12.0	3.2	7.3	1550	45.6	32.4	3.53	57.6	12.9	5.7							
110	6.0	0.6	1.4	1364	38.9	27.3	4.23	53.4	9.2	8.2							
	6.0	0.6	1.4	1550	39.5	29.3	4.38	54.5	9.0	8.4							
	9.0	1.6	3.7	1364	40.6	28.0	3.94	54.0	10.3	7.3							
	9.0	1.6	3.7	1550	41.3	30.2	4.09	55.2	10.1	7.4							
	12.0	3.1	7.2	1364	41.5	28.5	3.81	54.5	10.9	6.9							
	12.0	3.1	7.2	1550	42.2	30.6	3.94	55.7	10.7	7.0							
120	6.0	0.6	1.3	1364	36.8	26.6	4.78	53.2	7.7	9.9							
	6.0	0.6	1.3	1550	37.4	28.6	4.96	54.3	7.6	10.1							
	9.0	1.6	3.6	1364	37.9	26.9	4.44	53.1	8.5	8.8							
	9.0	1.6	3.6	1550	38.6	28.9	4.60	54.3	8.4	9.0							
	12.0	3.0	7.0	1364	38.6	27.2	4.28	53.3	9.0								

Performance Data – HZ H/V/D 060 (Part Load), No vFlow™

1650 CFM Nominal (Rated) Airflow Heating, 1500 CFM Nominal (Rated) Airflow Cooling

Performance capacities shown in thousands of Btuh

EWT °F	GPM	WPD		COOLING - EAT 80/67 °F							HEATING - 70°F						
		PSI	FT	CFM	TC	SC	KW	HR	EER	HWC	CFM	HC	KW	HE	LAT	COP	HWC
20	12.0	5.2	11.9								1450	28.2	2.87	18.7	88.0	2.9	3.1
	12.0	5.2	11.9								1650	28.6	2.75	19.3	86.1	3.1	3.1
30	6.0	0.9	2.1	1320	56.0	38.9	1.47	61.1	38.0	1.0	1450	31.7	2.88	22.1	90.2	3.2	3.1
	6.0	0.9	2.1	1500	57.1	41.6	1.50	62.2	38.1	1.1	1650	32.2	2.76	22.7	88.0	3.4	3.2
	9.0	2.5	5.7	1320	55.8	39.5	1.42	60.6	39.2	1.0	1450	33.1	2.89	23.5	91.1	3.4	3.2
	9.0	2.5	5.7	1500	56.9	42.3	1.45	61.8	39.2	1.0	1650	33.6	2.77	24.1	88.8	3.6	3.2
	12.0	4.2	9.6	1320	55.4	39.8	1.41	60.2	39.2	1.0	1450	33.9	2.89	24.2	91.6	3.4	3.2
	12.0	4.2	9.6	1500	56.5	42.6	1.44	61.4	39.2	1.0	1650	34.4	2.77	24.9	89.3	3.6	3.2
40	6.0	0.5	1.1	1320	55.3	38.0	1.61	60.8	34.4	1.3	1450	37.0	2.91	27.3	93.6	3.7	3.2
	6.0	0.5	1.1	1500	56.4	40.7	1.64	62.0	34.4	1.3	1650	37.6	2.79	28.0	91.1	3.9	3.3
	9.0	1.9	4.4	1320	55.9	38.6	1.51	61.1	37.0	1.1	1450	38.8	2.92	29.0	94.8	3.9	3.3
	9.0	1.9	4.4	1500	57.0	41.3	1.54	62.3	37.0	1.1	1650	39.4	2.80	29.8	92.1	4.1	3.4
	12.0	3.4	7.9	1320	56.0	38.9	1.47	61.0	38.0	1.0	1450	39.8	2.93	30.0	95.4	4.0	3.3
	12.0	3.4	7.9	1500	57.1	41.7	1.50	62.2	38.1	1.1	1650	40.4	2.81	30.8	92.7	4.2	3.4
50	6.0	0.2	0.6	1320	53.7	37.2	1.82	59.9	29.6	1.8	1450	42.5	2.94	32.6	97.1	4.2	3.4
	6.0	0.2	0.6	1500	54.8	39.8	1.85	61.1	29.6	1.8	1650	43.1	2.82	33.5	94.2	4.5	3.5
	9.0	1.5	3.5	1320	54.9	37.8	1.67	60.6	32.9	1.4	1450	44.7	2.96	34.7	98.5	4.4	3.5
	9.0	1.5	3.5	1500	56.0	40.4	1.70	61.8	32.9	1.5	1650	45.3	2.84	35.7	95.4	4.7	3.5
	12.0	3.0	6.9	1320	55.4	38.1	1.60	60.9	34.6	1.3	1450	45.9	2.97	35.9	99.3	4.5	3.5
	12.0	3.0	6.9	1500	56.5	40.8	1.63	62.0	34.6	1.3	1650	46.6	2.85	36.9	96.1	4.8	3.6
60	6.0	0.2	0.4	1320	51.4	36.3	2.07	58.5	24.8	2.4	1450	48.1	2.98	37.9	100.7	4.7	3.6
	6.0	0.2	0.4	1500	52.4	38.9	2.11	59.6	24.8	2.5	1650	48.8	2.86	39.0	97.4	5.0	3.7
	9.0	1.4	3.2	1320	53.0	36.9	1.90	59.5	28.0	2.0	1450	50.6	3.01	40.4	102.3	4.9	3.7
	9.0	1.4	3.2	1500	54.1	39.5	1.93	60.6	28.0	2.0	1650	51.4	2.89	41.5	98.8	5.2	3.8
	12.0	2.7	6.3	1320	53.8	37.2	1.81	59.9	29.8	1.8	1450	52.1	3.02	41.7	103.2	5.0	3.8
	12.0	2.7	6.3	1500	54.8	39.9	1.84	61.1	29.8	1.8	1650	52.8	2.90	42.9	99.6	5.3	3.8
70	6.0	0.2	0.4	1320	48.6	35.4	2.38	56.7	20.5	3.3	1450	53.6	3.04	43.3	104.2	5.2	3.8
	6.0	0.2	0.4	1500	49.6	37.9	2.42	57.8	20.5	3.3	1650	54.4	2.91	44.5	100.5	5.5	3.9
	9.0	1.3	3.0	1320	50.5	36.0	2.17	57.9	23.3	2.7	1450	56.5	3.07	46.0	106.1	5.4	4.0
	9.0	1.3	3.0	1500	51.5	38.6	2.21	59.0	23.3	2.7	1650	57.3	2.94	47.3	102.2	5.7	4.1
	12.0	2.6	6.0	1320	51.4	36.3	2.07	58.5	24.8	2.4	1450	58.1	3.09	47.5	107.1	5.5	4.1
	12.0	2.6	6.0	1500	52.4	38.9	2.11	59.6	24.8	2.5	1650	58.9	2.96	48.8	103.1	5.8	4.2
80	6.0	0.3	0.6	1320	45.6	34.3	2.73	54.9	16.7	4.3	1450	59.1	3.10	48.5	107.7	5.6	4.1
	6.0	0.3	0.6	1500	46.5	36.7	2.78	56.0	16.7	4.4	1650	59.9	2.97	49.8	103.6	5.9	4.2
	9.0	1.3	3.1	1320	47.5	35.0	2.50	56.1	19.0	3.6	1450	62.2	3.13	51.5	109.7	5.8	4.3
	9.0	1.3	3.1	1500	48.5	37.5	2.55	57.2	19.0	3.7	1650	63.1	3.00	52.9	105.4	6.2	4.4
	12.0	2.6	5.9	1320	48.5	35.3	2.40	56.7	20.2	3.3	1450	63.9	3.16	53.0	110.8	5.9	4.4
	12.0	2.6	5.9	1500	49.5	37.8	2.44	57.8	20.3	3.4	1650	64.8	3.03	54.5	106.4	6.3	4.5
85	6.0	0.3	0.7	1320	44.0	33.6	2.9	54.0	15.1	4.9	1450	61.8	3.13	51.0	109.4	5.8	4.3
	6.0	0.3	0.7	1500	44.9	36.0	2.98	55.0	15.2	5.0	1650	62.6	3.0	52.4	105.1	6.1	4.4
	9.0	1.4	3.2	1320	46.0	34.4	2.69	55.1	17.2	4.2	1450	65.0	3.2	54.0	111.5	6.0	4.5
	9.0	1.4	3.2	1500	46.8	36.8	2.74	56.2	17.2	4.2	1650	65.9	3.0	55.5	107.0	6.4	4.6
	12.0	2.6	5.9	1320	46.9	34.8	2.58	55.7	18.3	3.8	1450	66.7	3.2	55.6	112.6	6.1	4.6
	12.0	2.6	5.9	1500	47.9	37.2	2.63	56.8	18.4	3.9	1650	67.6	3.1	57.2	108.0	6.5	4.7
90	6.0	0.3	0.7	1320	42.4	33.0	3.12	53.1	13.6	5.5	1450	64.4	3.16	53.5	111.1	6.0	4.5
	6.0	0.3	0.7	1500	43.3	35.3	3.18	54.1	13.6	5.6	1650	65.3	3.03	55.0	106.7	6.3	4.6
	9.0	1.4	3.2	1320	44.4	33.8	2.88	54.2	15.4	4.7	1450	67.7	3.21	56.6	113.2	6.2	4.7
	9.0	1.4	3.2	1500	45.2	36.2	2.93	55.2	15.4	4.8	1650	68.7	3.08	58.2	108.5	6.5	4.8
	12.0	2.6	6.0	1320	45.4	34.2	2.76	54.8	16.4	4.4	1450	69.4	3.24	58.2	114.3	6.3	4.9
	12.0	2.6	6.0	1500	46.2	36.6	2.81	55.8	16.5	4.4	1650	70.4	3.11	59.8	109.5	6.6	4.9
100	6.0	0.3	0.8	1320	39.4	31.6	3.55	51.5	11.1	6.9							
	6.0	0.3	0.8	1500	40.2	33.9	3.62	52.5	11.1	7.0							
	9.0	1.4	3.2	1320	41.2	32.4	3.30	52.4	12.5	6.0							
	9.0	1.4	3.2	1500	42.0	34.7	3.36	53.4	12.5	6.1							
	12.0	2.6	6.0	1320	42.1	32.9	3.17	52.9	13.3	5.6							
	12.0	2.6	6.0	1500	43.0	35.2	3.23	54.0	13.3	5.7							
110	6.0	0.3	0.6	1320	36.7	30.2	4.02	50.4	9.1	8.5							
	6.0	0.3	0.6	1500	37.4	32.4	4.09	51.3	9.1	8.7							
	9.0	1.3	3.1	1320	38.2	31.0	3.74	51.0	10.2	7.5							
	9.0	1.3	3.1	1500	38.9	33.2	3.81	52.0	10.2	7.7							
	12.0	2.5	5.8	1320	39.0	31.4	3.61	51.4	10.8	7.1							
	12.0	2.5	5.8	1500	39.8	33.7	3.68	52.3	10.8	7.2							
120	6.0	0.0	0.0	1320	34.4	28.9	4.51	49.8	7.6	10.3							
	6.0	0.0	0.0	1500	35.1	31.0	4.59	50.8	7.6	10.5							
	9.0	1.1	2.6	1320	35.6	29.6	4.22	50.0	8.4	9.3							
	9.0	1.1	2.6	1500	36.3	31.7	4.30	51.0	8.4	9.4							
	12.0	2.4	5.4	1320	36.3	30.0	4.09	50.2	8.9</td								

Performance Data – HZ H/V/D 060 (Full Load), No vFlow™

2050 CFM Nominal (Rated) Airflow Heating, 1850 CFM Nominal (Rated) Airflow Cooling

Performance capacities shown in thousands of Btuh

EWT °F	GPM	WPD		COOLING - EAT 80/67 °F							HEATING - 70°F						
		PSI	FT	CFM	TC	SC	kW	HR	EER	HWC	CFM	HC	kW	HE	LAT	COP	HWC
20	15.0	7.3	16.8								1800	42.8	3.89	29.8	92.0	3.2	3.8
	15.0	7.3	16.8								2050	43.5	3.77	30.6	89.6	3.4	3.8
30	7.5	1.7	3.9	1630	75.3	49.7	2.68	84.3	28.1	1.9	1800	46.9	3.94	33.6	94.1	3.5	3.9
	7.5	1.7	3.9	1850	76.6	53.4	2.78	86.1	27.5	2.0	2050	47.6	3.82	34.5	91.5	3.7	4.0
	11.3	3.7	8.6	1630	74.9	50.3	2.58	83.5	29.1	1.8	1800	49.1	3.98	35.8	95.3	3.6	4.0
	11.3	3.7	8.6	1850	76.2	54.0	2.67	85.3	28.5	1.8	2050	49.9	3.86	36.7	92.5	3.8	4.1
	15.0	6.1	14.1	1630	74.2	50.5	2.53	82.7	29.4	1.8	1800	50.4	4.00	36.9	95.9	3.7	4.0
40	15.0	6.1	14.1	1850	75.5	54.3	2.62	84.5	28.8	1.8	2050	51.2	3.88	37.9	93.1	3.9	4.1
	7.5	1.2	2.7	1630	74.4	48.8	2.87	84.0	26.0	2.3	1800	53.9	4.07	40.2	97.7	3.9	4.2
	7.5	1.2	2.7	1850	75.7	52.5	2.97	85.8	25.5	2.3	2050	54.7	3.94	41.3	94.7	4.1	4.2
	11.3	3.0	7.0	1630	75.2	49.5	2.72	84.3	27.6	2.0	1800	56.7	4.12	42.8	99.2	4.0	4.3
	11.3	3.0	7.0	1850	76.5	53.2	2.82	86.1	27.1	2.1	2050	57.6	3.99	44.0	96.0	4.2	4.4
50	15.0	5.3	12.2	1630	75.3	49.8	2.66	84.2	28.3	1.9	1800	58.3	4.15	44.3	100.0	4.1	4.3
	15.0	5.3	12.2	1850	76.6	53.6	2.76	86.0	27.7	1.9	2050	59.2	4.02	45.5	96.7	4.3	4.4
	7.5	0.9	2.0	1630	72.4	47.8	3.09	82.8	23.4	2.8	1800	61.1	4.21	46.9	101.5	4.3	4.5
	7.5	0.9	2.0	1850	73.6	51.4	3.20	84.5	23.0	2.9	2050	62.1	4.08	48.2	98.0	4.5	4.6
	11.3	2.6	6.0	1630	74.0	48.6	2.91	83.8	25.4	2.4	1800	64.5	4.28	50.0	103.2	4.4	4.6
60	11.3	2.6	6.0	1850	75.3	52.2	3.02	85.6	24.9	2.5	2050	65.5	4.15	51.3	99.6	4.6	4.7
	15.0	4.7	10.8	1630	74.6	48.9	2.84	84.1	26.3	2.2	1800	66.3	4.32	51.7	104.1	4.5	4.7
	15.0	4.7	10.8	1850	75.9	52.6	2.94	85.9	25.8	2.3	2050	67.3	4.19	53.0	100.4	4.7	4.8
	7.5	0.8	1.7	1630	69.5	46.7	3.35	80.9	20.8	3.5	1800	68.5	4.38	53.6	105.2	4.6	4.9
	7.5	0.8	1.7	1850	70.7	50.3	3.47	82.6	20.4	3.6	2050	69.5	4.24	55.1	101.4	4.8	5.0
70	11.3	2.4	5.4	1630	71.7	47.6	3.15	82.3	22.8	3.0	1800	72.3	4.47	57.1	107.2	4.7	5.1
	11.3	2.4	5.4	1850	73.0	51.1	3.26	84.1	22.4	3.1	2050	73.4	4.33	58.6	103.2	5.0	5.2
	15.0	4.3	10.0	1630	72.7	48.0	3.05	83.0	23.8	2.8	1800	74.4	4.52	59.0	108.3	4.8	5.2
	15.0	4.3	10.0	1850	74.0	51.6	3.16	84.8	23.4	2.8	2050	75.5	4.38	60.6	104.1	5.1	5.3
	7.5	0.7	1.7	1630	66.1	45.5	3.68	78.6	18.0	4.4	1800	75.8	4.55	60.3	109.0	4.9	5.3
80	7.5	0.7	1.7	1850	67.3	48.9	3.81	80.3	17.7	4.5	2050	77.0	4.41	61.9	104.8	5.1	5.4
	11.3	2.3	5.2	1630	68.6	46.4	3.44	80.3	20.0	3.8	1800	80.1	4.66	64.2	111.2	5.0	5.6
	11.3	2.3	5.2	1850	69.8	49.9	3.56	82.0	19.6	3.8	2050	81.3	4.52	65.9	106.7	5.3	5.7
	15.0	4.1	9.6	1630	69.9	46.9	3.32	81.1	21.0	3.5	1800	82.4	4.74	66.3	112.4	5.1	5.7
	15.0	4.1	9.6	1850	71.1	50.4	3.44	82.8	20.7	3.5	2050	83.7	4.59	68.0	107.8	5.3	5.8
85	7.5	0.8	1.8	1630	62.5	44.1	4.04	76.2	15.4	5.5	1800	83.1	4.76	66.9	112.8	5.1	5.8
	7.5	0.8	1.8	1850	63.5	47.5	4.19	77.8	15.2	5.6	2050	84.4	4.61	68.7	108.1	5.4	5.9
	11.3	2.2	5.2	1630	65.1	45.1	3.77	77.9	17.2	4.7	1800	87.8	4.89	71.1	115.2	5.3	6.1
	11.3	2.2	5.2	1850	66.2	48.5	3.91	79.6	16.9	4.8	2050	89.1	4.74	73.0	110.3	5.5	6.2
	15.0	4.1	9.4	1630	66.4	45.6	3.65	78.7	18.2	4.3	1800	90.3	4.96	73.3	116.5	5.3	6.7
90	15.0	4.1	9.4	1850	67.5	49.0	3.78	80.4	17.9	4.4	2050	91.7	4.81	75.3	111.4	5.6	6.9
	7.5	0.6	1.3	1630	60.6	43.4	4.3	75.1	14.3	6.1	1800	86.7	4.86	70.1	114.6	5.2	6.0
	7.5	0.6	1.3	1850	61.6	46.7	4.42	76.7	14.0	6.2	2050	88.0	4.7	72.0	109.8	5.5	6.2
	11.3	1.8	4.2	1630	63.2	44.4	3.98	76.7	16.0	5.3	1800	91.5	5.0	74.4	117.1	5.4	6.4
	11.3	1.8	4.2	1850	64.3	47.7	4.12	78.3	15.7	5.4	2050	92.9	4.9	76.3	112.0	5.6	6.5
90	15.0	3.3	7.7	1630	64.5	44.9	3.84	77.5	16.9	4.9	1800	94.1	5.1	76.7	118.4	5.4	6.8
	15.0	3.3	7.7	1850	65.6	48.3	3.98	79.2	16.6	5.0	2050	95.5	4.9	78.7	113.1	5.7	7.0
	7.5	0.3	0.7	1630	58.7	42.6	4.49	74.0	13.1	6.7	1800	90.3	4.96	73.3	116.4	5.3	6.3
	7.5	0.3	0.7	1850	59.8	45.8	4.65	75.6	12.8	6.8	2050	91.7	4.81	75.2	111.4	5.6	6.4
	11.3	1.4	3.2	1630	61.3	43.7	4.18	75.5	14.7	5.8	1800	95.2	5.12	77.7	119.0	5.5	6.7
100	11.3	1.4	3.2	1850	62.3	47.0	4.33	77.1	14.4	6.0	2050	96.7	4.96	79.7	113.7	5.7	6.9
	15.0	2.6	6.0	1630	62.6	44.2	4.03	76.3	15.5	5.4	1800	97.9	5.21	80.0	120.3	5.5	7.0
	15.0	2.6	6.0	1850	63.7	47.5	4.18	77.9	15.2	5.5	2050	99.4	5.05	82.1	114.9	5.8	7.1
	7.5	0.3	0.8	1630	55.2	41.1	5.00	72.3	11.0	8.1							
	7.5	0.3	0.8	1850	56.2	44.2	5.18	73.9	10.8	8.3							
110	11.3	1.4	3.2	1630	57.5	42.1	4.65	73.4	12.4	7.2							
	11.3	1.4	3.2	1850	58.5	45.3	4.82	75.0	12.1	7.3							
	15.0	2.5	5.8	1630	55.2	41.1	5.01	72.3	11.0	8.2							
	15.0	2.5	5.8	1850	56.1	44.2	5.19	73.8	10.8	8.3							
	7.5	0.0	0.0	1630	50.0	38.5	6.30	71.6	7.9	11.7							
120	7.5	0.0	0.0	1850	50.8	41.4	6.53	73.1	7.8	11.9							
	11.3	1.1	2.6	1630	51.3	39.2	5.83	71.3	8.8	10.4							
	11.3	1.1	2.6	1850	52.2	42.1	6.04	72.8	8.6	10.6							
	15.0	2.4	5.4	1630	52.1	39.6	5.62	71.3	9.3	9.8							
	15.0	2.4	5.4	1850	53.0	42.6	5.82	72.9	9.1	10.0							

Interpolation is permissible, extrapolation is not. All performance data is based on the lower voltage of dual voltage units.

Performance stated is at the rated power supply, performance may vary as the power supply varies from the rated.

Table is with entering air of 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
AHRI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.

Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
See performance correction tables for operating conditions other than those listed above. See performance data selection notes for operation in the shaded areas.

Operation below 40°F EWT is based on a 15% methanol antifreeze solution.

Operation below 60°F EWT requires optional extended range insulated water and refrigerant circuits to avoid condensation within the unit cabinet.

Performance Data – HZ H/V/D 070 (Part Load), No vFlow™

1650 CFM Nominal (Rated) Airflow Heating, 1550 CFM Nominal (Rated) Airflow Cooling Performance capacities shown in thousands of Btuh

EWT °F	GPM	WPD		COOLING - EAT 80/67 °F							HEATING - 70°F						
		PSI	FT	CFM	TC	SC	KW	HR	EER	HWC	CFM	HC	KW	HE	LAT	COP	HWC
20	14.0	6.5	15.1								1450	32.9	3.66	20.9	91.0	2.6	4.1
	14.0	6.5	15.1								1650	33.4	3.51	21.4	88.7	2.8	4.1
30	7.0	1.4	3.3	1360	65.1	40.9	1.82	71.3	35.8	2.2	1450	37.2	3.72	24.8	93.7	2.9	4.2
	7.0	1.4	3.3	1550	66.4	43.8	1.85	72.7	35.9	2.2	1650	37.7	3.57	25.5	91.1	3.1	4.3
	10.5	3.3	7.6	1360	65.5	41.3	1.72	71.3	38.1	2.2	1450	38.7	3.74	26.3	94.7	3.0	4.2
	10.5	3.3	7.6	1550	66.7	44.2	1.75	72.7	38.1	2.2	1650	39.3	3.59	27.0	92.0	3.2	4.3
	14.0	5.4	12.5	1360	65.5	41.4	1.68	71.2	39.0	2.2	1450	39.6	3.75	27.1	95.3	3.1	4.2
	14.0	5.4	12.5	1550	66.7	44.4	1.71	72.6	39.0	2.3	1650	40.1	3.60	27.8	92.5	3.3	4.3
40	7.0	0.9	2.2	1360	63.8	40.1	2.01	70.7	31.7	2.3	1450	43.3	3.81	30.6	97.6	3.3	4.4
	7.0	0.9	2.2	1550	65.0	43.0	2.05	72.0	31.7	2.4	1650	43.9	3.65	31.4	94.6	3.5	4.5
	10.5	2.6	6.1	1360	64.8	40.7	1.88	71.2	34.5	2.2	1450	45.2	3.84	32.4	98.9	3.5	4.4
	10.5	2.6	6.1	1550	66.0	43.6	1.91	72.5	34.6	2.2	1650	45.8	3.68	33.3	95.7	3.7	4.5
	14.0	4.6	10.7	1360	65.1	40.9	1.81	71.3	36.0	2.2	1450	46.3	3.85	33.4	99.5	3.5	4.4
	14.0	4.6	10.7	1550	66.4	43.8	1.84	72.7	36.1	2.2	1650	46.9	3.69	34.3	96.3	3.7	4.5
50	7.0	0.7	1.5	1360	61.7	39.2	2.28	69.5	27.1	2.6	1450	49.4	3.90	36.3	101.5	3.7	4.7
	7.0	0.7	1.5	1550	62.9	41.9	2.32	70.8	27.1	2.7	1650	50.1	3.74	37.4	98.1	3.9	4.8
	10.5	2.2	5.1	1360	63.2	39.8	2.09	70.3	30.2	2.4	1450	51.7	3.93	38.5	103.0	3.9	4.8
	10.5	2.2	5.1	1550	64.4	42.7	2.13	71.7	30.3	2.5	1650	52.5	3.77	39.6	99.4	4.1	4.9
	14.0	4.1	9.4	1360	63.8	40.2	2.01	70.7	31.7	2.4	1450	53.0	3.94	39.7	103.8	3.9	4.8
	14.0	4.1	9.4	1550	65.1	43.0	2.05	72.1	31.7	2.5	1650	53.8	3.78	40.8	100.2	4.2	4.9
60	7.0	0.5	1.3	1360	59.1	38.1	2.60	68.0	22.7	3.2	1450	55.6	3.98	42.2	105.5	4.1	5.1
	7.0	0.5	1.3	1550	60.2	40.8	2.65	69.3	22.7	3.2	1650	56.4	3.82	43.3	101.6	4.3	5.2
	10.5	2.0	4.6	1360	60.9	38.8	2.38	69.0	25.6	2.8	1450	58.3	4.03	44.7	107.2	4.2	5.2
	10.5	2.0	4.6	1550	62.1	41.6	2.42	70.4	25.7	2.9	1650	59.1	3.86	46.0	103.2	4.5	5.3
	14.0	3.8	8.7	1360	61.8	39.2	2.28	69.5	27.1	2.7	1450	59.8	4.05	46.1	108.2	4.3	5.3
	14.0	3.8	8.7	1550	63.0	42.0	2.32	70.9	27.1	2.7	1650	60.6	3.88	47.4	104.0	4.6	5.4
70	7.0	0.5	1.3	1360	56.0	36.9	2.99	66.2	18.8	4.2	1450	61.8	4.07	48.0	109.4	4.4	5.5
	7.0	0.5	1.3	1550	57.1	39.5	3.04	67.5	18.8	4.3	1650	62.6	3.90	49.3	105.1	4.7	5.6
	10.5	1.9	4.5	1360	58.1	37.7	2.73	67.4	21.3	3.6	1450	64.8	4.12	50.9	111.4	4.6	5.7
	10.5	1.9	4.5	1550	59.2	40.3	2.78	68.7	21.3	3.7	1650	65.8	3.95	52.3	106.9	4.9	5.8
	14.0	3.6	8.3	1360	59.1	38.1	2.60	67.9	22.7	3.4	1450	66.5	4.14	52.5	112.5	4.7	5.8
	14.0	3.6	8.3	1550	60.2	40.7	2.65	69.3	22.7	3.5	1650	67.5	3.97	53.9	107.9	5.0	5.9
80	7.0	0.6	1.4	1360	52.7	35.6	3.42	64.3	15.4	5.7	1450	68.0	4.16	53.8	113.4	4.8	6.0
	7.0	0.6	1.4	1550	53.7	38.1	3.48	65.6	15.4	5.8	1650	68.9	3.99	55.3	108.7	5.1	6.1
	10.5	1.9	4.5	1360	54.8	36.4	3.13	65.5	17.5	4.9	1450	71.4	4.22	57.0	115.6	5.0	6.2
	10.5	1.9	4.5	1550	55.9	39.0	3.19	66.8	17.5	5.0	1650	72.4	4.05	58.6	110.6	5.2	6.3
	14.0	3.5	8.1	1360	55.9	36.8	3.00	66.1	18.7	4.5	1450	73.3	4.26	58.8	116.8	5.0	6.4
	14.0	3.5	8.1	1550	57.0	39.4	3.05	67.4	18.7	4.6	1650	74.3	4.08	60.4	111.7	5.3	6.5
85	7.0	0.6	1.5	1360	50.9	34.9	3.7	63.4	14.0	6.6	1450	71.1	4.21	56.7	115.4	4.9	6.2
	7.0	0.6	1.5	1550	51.9	37.4	3.73	64.6	14.0	6.7	1650	72.1	4.0	58.3	110.4	5.2	6.4
	10.5	1.9	4.5	1360	53.1	35.7	3.37	64.6	15.9	5.7	1450	74.7	4.3	60.1	117.7	5.1	6.5
	10.5	1.9	4.5	1550	54.1	38.2	3.43	65.8	15.9	5.8	1650	75.8	4.1	61.8	112.5	5.4	6.6
	14.0	3.5	8.1	1360	54.2	36.1	3.22	65.2	16.9	5.3	1450	76.7	4.3	61.9	119.0	5.2	6.7
	14.0	3.5	8.1	1550	55.2	38.7	3.28	66.4	17.0	5.4	1650	77.8	4.1	63.7	113.6	5.5	6.8
90	7.0	0.7	1.5	1360	49.1	34.2	3.91	62.5	12.6	7.5	1450	74.1	4.27	59.6	117.3	5.1	6.5
	7.0	0.7	1.5	1550	50.1	36.6	3.98	63.7	12.6	7.6	1650	75.2	4.09	61.2	112.2	5.4	6.6
	10.5	2.0	4.5	1360	51.3	35.0	3.60	63.6	14.2	6.5	1450	78.0	4.33	63.2	119.8	5.3	6.8
	10.5	2.0	4.5	1550	52.3	37.5	3.67	64.8	14.3	6.7	1650	79.1	4.15	64.9	114.4	5.6	7.0
	14.0	3.5	8.1	1360	52.4	35.5	3.45	64.2	15.2	6.1	1450	80.1	4.37	65.1	121.1	5.4	7.0
	14.0	3.5	8.1	1550	53.5	38.0	3.51	65.4	15.2	6.2	1650	81.2	4.19	66.9	115.6	5.7	7.1
100	7.0	0.7	1.6	1360	45.5	32.9	4.46	60.7	10.2	9.7							
	7.0	0.7	1.6	1550	46.4	35.2	4.54	61.9	10.2	9.9							
	10.5	2.0	4.5	1360	47.7	33.7	4.12	61.7	11.6	8.6							
	10.5	2.0	4.5	1550	48.6	36.0	4.20	62.9	11.6	8.8							
	14.0	3.5	8.1	1360	48.8	34.1	3.96	62.3	12.3	8.1							
	14.0	3.5	8.1	1550	49.7	36.5	4.03	63.5	12.3	8.2							
110	7.0	0.6	1.4	1360	42.0	31.5	5.06	59.3	8.3	12.4							
	7.0	0.6	1.4	1550	42.9	33.8	5.15	60.4	8.3	12.6							
	10.5	1.9	4.4	1360	44.1	32.3	4.69	60.1	9.4	11.1							
	10.5	1.9	4.4	1550	44.9	34.6	4.78	61.2	9.4	11.3							
	14.0	3.5	8.0	1360	45.1	32.7	4.53	60.5	10.0	10.5							
	14.0	3.5	8.0	1550	46.0	35.0	4.61	61.7	10.0	10.7							
120	7.0	0.4	0.9	1360	38.7	30.3	5.72	58.2	6.8	15.4							
	7.0	0.4	0.9	1550	39.5	32.5	5.82	59.4	6.8	15.7							
	10.5	1.7	3.9	1360	40.6	31.0	5.33	58.8	7.6	14.0							
	10.5	1.7	3.9	1550	41.4	33.2	5.43	59.9	7.6	14.3							
	14.0	3.3	7.6	1360	41.6	31.3	5.15</td										

Performance Data – HZ H/V/D 070 (Full Load), No vFlow™

2050 CFM Nominal (Rated) Airflow Heating, 1850 CFM Nominal (Rated) Airflow Cooling										Performance capacities shown in thousands of Btu/h							
EWT °F	GPM	WPD		COOLING - EAT 80/67 °F						HEATING - 70°F							
		PSI	FT	CFM	TC	SC	KW	HR	EER	HWC	CFM	HC	kW	HE	LAT	COP	HWC
20	17.0	8.9	20.6								1800	46.6	4.66	31.1	94.0	2.9	4.0
	17.0	8.9	20.6								2050	47.3	4.52	31.9	91.4	3.1	4.1
30	8.5	2.2	5.1	1630	82.4	50.1	3.04	92.6	27.1	2.2	1800	51.6	4.78	35.6	96.5	3.2	4.2
	8.5	2.2	5.1	1850	83.8	53.9	3.15	94.6	26.6	2.2	2050	52.4	4.63	36.6	93.7	3.3	4.3
	12.8	4.6	10.6	1630	82.3	50.0	2.90	92.0	28.4	2.2	1800	54.0	4.83	37.8	97.8	3.3	4.1
	12.8	4.6	10.6	1850	83.7	53.8	3.00	93.9	27.9	2.2	2050	54.8	4.68	38.8	94.8	3.4	4.2
	17.0	7.6	17.6	1630	81.9	49.8	2.84	91.4	28.9	2.2	1800	55.3	4.86	39.0	98.4	3.3	4.1
	17.0	7.6	17.6	1850	83.3	53.5	2.94	93.3	28.3	2.3	2050	56.1	4.71	40.1	95.3	3.5	4.2
40	8.5	1.6	3.8	1630	81.3	49.8	3.27	92.3	24.9	2.4	1800	59.4	4.95	42.7	100.5	3.5	4.3
	8.5	1.6	3.8	1850	82.7	53.5	3.39	94.3	24.4	2.4	2050	60.3	4.80	43.9	97.2	3.7	4.4
	12.8	3.9	8.9	1630	82.2	50.1	3.10	92.6	26.5	2.2	1800	62.1	5.03	45.3	102.0	3.6	4.4
	12.8	3.9	8.9	1850	83.6	53.9	3.21	94.6	26.1	2.2	2050	63.1	4.87	46.5	98.5	3.8	4.5
	17.0	6.7	15.5	1630	82.4	50.1	3.02	92.5	27.3	2.2	1800	63.6	5.06	46.6	102.7	3.7	4.4
	17.0	6.7	15.5	1850	83.8	53.9	3.13	94.5	26.8	2.2	2050	64.6	4.90	47.9	99.2	3.9	4.5
50	8.5	1.3	3.0	1630	79.1	49.0	3.54	91.0	22.3	2.7	1800	66.9	5.15	49.6	104.4	3.8	4.6
	8.5	1.3	3.0	1850	80.5	52.6	3.67	93.0	21.9	2.8	2050	67.9	4.99	50.9	100.7	4.0	4.7
	12.8	3.4	7.8	1630	80.8	49.6	3.34	92.0	24.2	2.4	1800	70.1	5.23	52.5	106.1	3.9	4.7
	12.8	3.4	7.8	1850	82.2	53.3	3.46	94.0	23.8	2.5	2050	71.2	5.07	53.9	102.1	4.1	4.8
	17.0	6.0	13.9	1630	81.5	49.8	3.24	92.4	25.1	2.5	1800	71.8	5.27	54.0	106.9	4.0	4.8
	17.0	6.0	13.9	1850	82.9	53.6	3.36	94.3	24.7	2.5	2050	72.9	5.11	55.5	102.9	4.2	4.9
60	8.5	1.2	2.7	1630	76.1	47.8	3.87	89.2	19.7	3.3	1800	74.4	5.35	56.4	108.3	4.1	5.0
	8.5	1.2	2.7	1850	77.4	51.4	4.01	91.1	19.3	3.3	2050	75.5	5.18	57.9	104.1	4.3	5.1
	12.8	3.1	7.1	1630	78.3	48.7	3.63	90.6	21.6	2.9	1800	78.0	5.45	59.6	110.1	4.2	5.1
	12.8	3.1	7.1	1850	79.7	52.3	3.76	92.5	21.2	2.9	2050	79.2	5.28	61.2	105.8	4.4	5.2
	17.0	5.6	13.0	1630	79.3	49.1	3.51	91.2	22.6	2.7	1800	80.0	5.50	61.4	111.1	4.3	5.2
	17.0	5.6	13.0	1850	80.7	52.7	3.64	93.1	22.2	2.8	2050	81.2	5.33	63.0	106.7	4.5	5.3
70	8.5	1.1	2.6	1630	72.4	46.3	4.27	86.9	17.0	4.4	1800	81.9	5.55	63.1	112.1	4.3	5.4
	8.5	1.1	2.6	1850	73.7	49.8	4.42	88.7	16.7	4.5	2050	83.2	5.38	64.8	107.6	4.5	5.5
	12.8	3.0	6.8	1630	75.0	47.4	3.98	88.5	18.9	3.7	1800	86.0	5.68	66.7	114.2	4.4	5.6
	12.8	3.0	6.8	1850	76.3	50.9	4.12	90.4	18.5	3.8	2050	87.3	5.50	68.5	109.4	4.7	5.7
	17.0	5.4	12.4	1630	76.3	47.9	3.85	89.3	19.8	3.5	1800	88.2	5.75	68.7	115.4	4.5	5.7
	17.0	5.4	12.4	1850	77.6	51.5	3.99	91.2	19.5	3.5	2050	89.5	5.57	70.5	110.4	4.7	5.8
80	8.5	1.2	2.7	1630	68.4	44.7	4.72	84.4	14.5	5.9	1800	89.5	5.79	69.9	116.0	4.5	5.9
	8.5	1.2	2.7	1850	69.5	48.1	4.89	86.2	14.2	6.0	2050	90.9	5.61	71.7	111.0	4.7	6.0
	12.8	2.9	6.7	1630	71.2	45.8	4.40	86.1	16.2	5.0	1800	94.1	5.93	73.9	118.4	4.6	6.1
	12.8	2.9	6.7	1850	72.4	49.3	4.56	88.0	15.9	5.1	2050	95.5	5.75	75.9	113.2	4.9	6.3
	17.0	5.2	12.1	1630	72.6	46.4	4.25	87.0	17.1	4.6	1800	96.7	6.02	76.2	119.7	4.7	6.3
	17.0	5.2	12.1	1850	73.8	49.9	4.40	88.8	16.8	4.7	2050	98.1	5.83	78.2	114.3	4.9	6.4
85	8.5	1.2	2.7	1630	66.2	43.8	5.0	83.2	13.3	6.8	1800	93.4	5.91	73.3	118.0	4.6	6.1
	8.5	1.2	2.7	1850	67.4	47.1	5.17	85.0	13.1	6.9	2050	94.8	5.7	75.3	112.8	4.8	6.3
	12.8	2.9	6.7	1630	69.1	45.0	4.65	84.9	14.9	5.8	1800	98.3	6.1	77.7	120.6	4.7	6.4
	12.8	2.9	6.7	1850	70.3	48.4	4.82	86.7	14.7	6.0	2050	99.8	5.9	79.7	115.1	5.0	6.6
	17.0	5.2	12.1	1630	70.5	45.6	4.48	85.7	15.8	5.4	1800	101.1	6.2	80.1	122.0	4.8	6.6
	17.0	5.2	12.1	1850	71.7	49.0	4.64	87.6	15.5	5.5	2050	102.6	6.0	82.2	116.4	5.0	6.8
90	8.5	1.2	2.8	1630	64.1	43.0	5.26	82.0	12.2	7.7	1800	97.3	6.04	76.8	120.0	4.7	6.4
	8.5	1.2	2.8	1850	65.2	46.2	5.45	83.8	12.0	7.9	2050	98.8	5.85	78.8	114.6	4.9	6.5
	12.8	2.9	6.7	1630	67.0	44.1	4.89	83.6	13.7	6.7	1800	102.6	6.22	81.4	122.8	4.8	6.7
	12.8	2.9	6.7	1850	68.1	47.4	5.07	85.4	13.4	6.8	2050	104.1	6.03	83.6	117.0	5.1	6.9
	17.0	5.2	12.0	1630	68.4	44.7	4.71	84.5	14.5	6.2	1800	105.5	6.32	84.0	124.3	4.9	6.9
	17.0	5.2	12.0	1850	69.6	48.1	4.88	86.3	14.3	6.3	2050	107.1	6.12	86.2	118.4	5.1	7.1
100	8.5	1.2	2.8	1630	59.8	41.2	5.88	79.9	10.2	10.0							
	8.5	1.2	2.8	1850	60.9	44.3	6.09	81.6	10.0	10.2							
	12.8	2.9	6.7	1630	62.6	42.3	5.46	81.3	11.5	8.8							
	12.8	2.9	6.7	1850	63.7	45.5	5.66	83.0	11.3	9.0							
	17.0	5.2	12.0	1630	64.0	42.9	5.27	82.0	12.2	8.2							
	17.0	5.2	12.0	1850	65.1	46.2	5.46	83.8	11.9	8.4							
110	8.5	1.1	2.6	1630	55.7	39.5	6.61	78.3	8.4	12.7							
	8.5	1.1	2.6	1850	56.7	42.5	6.85	80.0	8.3	13.0							
	12.8	2.9	6.6	1630	58.3	40.6	6.14	79.3	9.5	11.3							
	12.8	2.9	6.6	1850	59.3	43.6	6.36	81.0	9.3	11.5							
	17.0	5.1	11.8	1630	59.6	41.1	5.91	79.9	10.1	10.6							
	17.0	5.1	11.8	1850	60.7	44.2	6.14	81.6	9.9	10.8							
120	8.5	0.9	2.1	1630	52.0	38.1	7.45	77.6	7.0	15.9							
	8.5	0.9	2.1	1850	52.9	41.0	7.72	79.2	6.8	16.2							
	12.8	2.7	6.2	1630	54.2	39.0	6.91	77.9	7.9	14.3							
	12.8	2.7	6.2	1850	55.2	41.9	7.16	79.6	7.7	14.6							
	17.0	5.0	11.5	1630	55.5	39.4	6.66	78.3	8.3	13.5							
	17.0	5.0	11.5	1850	56.4	42.4	6.90	80.0	8.2	13.8							

Interpolation is permissible, extrapolation is not. All performance data is based on the lower voltage of dual voltage units.

Table is with entering air of 80°F DB and 67°F WB in cooling, and 70°F DB in heating.

Table is with entering air of 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
AHRI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.

Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
See performance correction tables for operating conditions other than those listed above. See

See performance correction tables for operating conditions other than the performance data selection notes for operation in the shaded areas.

Operation below 40°F EWT is based on a 15% methanol antifreeze solution.

Operation below 60°F EWT requires optional extended range insulated water circuits to avoid condensation within the unit cabinet.

circuits to avoid condensation within the unit cabinet.

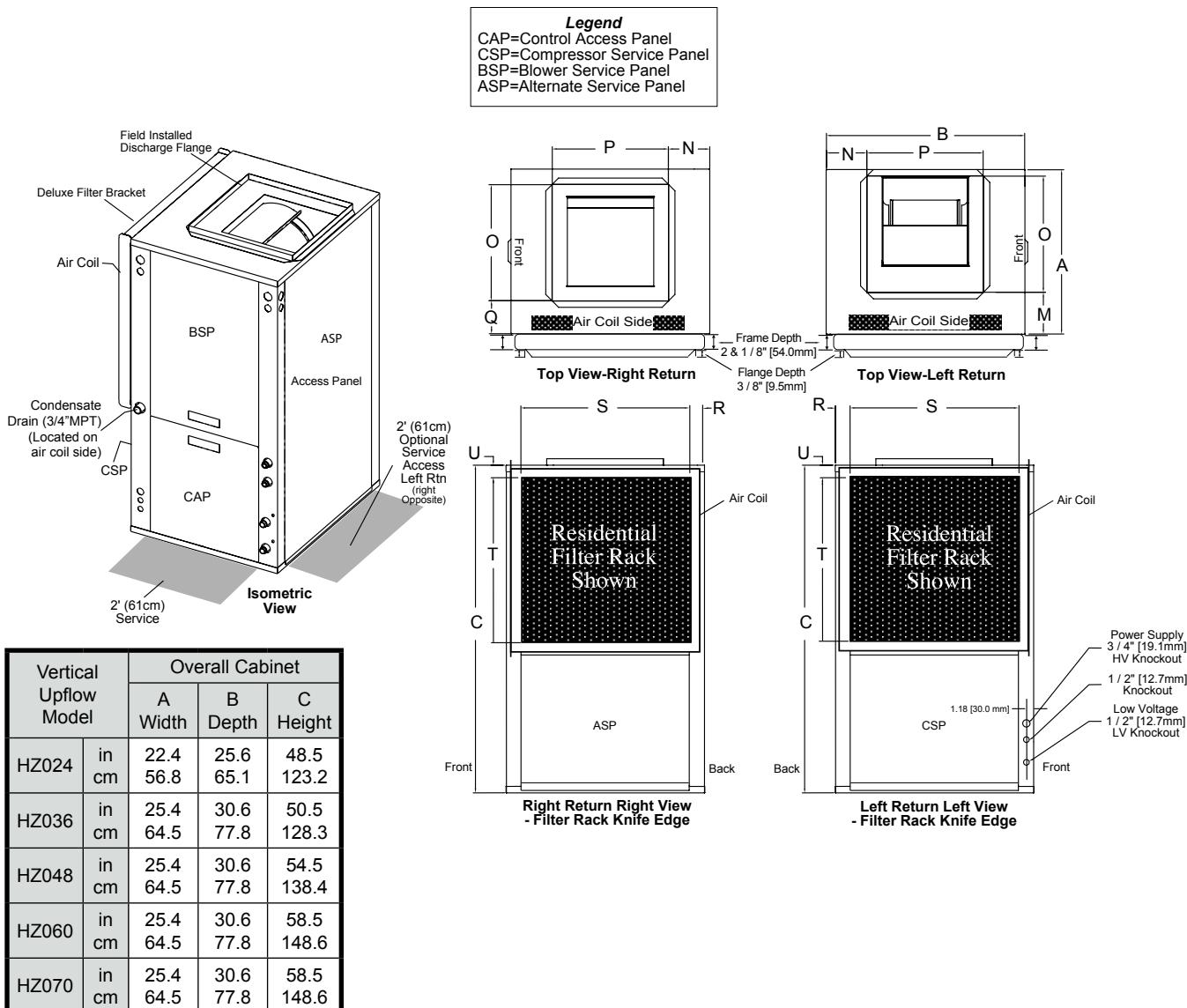
Physical Data

Model	024	036	048	060	070
Compressor (1 Each)	Copeland UltraTech Two-Stage Scroll				
Factory Charge HFC-410a, oz [kg]	44 [1.25]	52 [1.47]	69 [1.96]	142 [4.03]	140 [3.97]
ECM Motor & Blower					
Fan Motor, hp [W]	1/2 [373]	1/2 [373]	1 [746]	1 [746]	1 [746]
Blower Wheel Size (Dia x W), in [mm]	9 x 7 [229 x 178]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 10 [279 x 254]
Water Connection Size					
Swivel - Residential Class	1"	1"	1"	1"	1"
HWG Water Connection Size					
Swivel - Residential Class	1"	1"	1"	1"	1"
Vertical Upflow					
Air Coil Dimensions (H x W), in [mm]	28 x 20 [711 x 542]	28 x 25 [711 x 635]	32 x 25 [813 x 635]	36 x 25 [914 x 635]	36 x 25 [914 x 635]
Standard Filter - 2" [51mm] Pleated MERV11 Throwaway, in [mm]	28 x 24 [712 x 610]	28 x 29.5 [712 x 749]	32 x 29.5 [813 x 749]	36 x 29.5 [914 x 749]	36 x 29.5 [914 x 749]
Weight - Operating, lbs [kg]	298 [135]	359 [163]	448 [203]	475 [215]	475 [215]
Weight - Packaged, lbs [kg]	308 [140]	369 [167]	458 [208]	485 [220]	485 [220]
Horizontal					
Air Coil Dimensions (H x W), in [mm]	18 x 31 [457 x 787]	20 x 35 [508 x 889]	20 x 40 [508 x 1018]	20 x 45 [508 x 1143]	20 x 45 [508 x 1143]
Standard Filter - 2" [51mm] Pleated MERV11 Throwaway, in [mm]	2 - 18 x 18 [457 x 457]	1 - 12 x 20 [305 x 508] 1 - 20 x 25 [508 x 635]	1 - 18 x 20 [457 x 508] 1 - 20 x 24 [508 x 610]	2 - 20 x 24 [508 x 610]	2 - 20 x 24 [508 x 610]
Weight - Operating, lbs [kg]	298 [135]	359 [163]	448 [203]	475 [215]	475 [215]
Weight - Packaged, lbs [kg]	308 [140]	369 [167]	458 [208]	485 [220]	485 [220]

All units have grommet compressor mountings, TXV expansion devices, and 1/2" [12.7mm] & 3/4" [19.1mm] electrical knockouts.

Unit Maximum Working Water Pressure	
Options	Max Pressure PSIG (kPa)
Base Unit	500 (3,447)
Unit with Internal Flow Controller	300 (2,068)
Unit with Internal Modulating Water Valve	145 (999)

Dimensions — Vertical Upflow HZ series



Vertical Upflow Model		Discharge Connection Duct Flange Installed (+/- 0.20 in, +/- 5.1mm)					Return Connection Standard Deluxe Filter Rack (+/- 0.20 in, +/- 5.1mm)				
		M Left Return	N	O Supply Width	P Supply Depth	Q Right Return	R	S Return Depth	T Return Height	U	
024	in cm	7.8 18.3	5.8 14.8	14.0 35.6	14.0 35.6	4.9 12.4	1.7 4.3	22.2 56.4	26.2 66.5	1.7 4.3	
036	in cm	6.4 16.1	6.3 16.0	18.0 45.7	18.0 45.7	5.3 13.5	1.7 4.3	27.2 69.1	26.2 66.5	1.7 4.3	
048	in cm	6.4 16.1	6.3 16.0	18.0 45.7	18.0 45.7	5.3 13.5	1.7 4.3	27.2 69.1	30.2 76.7	1.7 4.3	
060	in cm	6.4 16.1	6.3 16.0	18.0 45.7	18.0 45.7	5.3 13.5	1.7 4.3	27.2 69.1	34.2 86.9	1.7 4.3	
070	in cm	6.4 16.1	6.3 16.0	18.0 45.7	18.0 45.7	5.3 13.5	1.7 4.3	27.2 69.1	34.2 86.9	1.7 4.3	

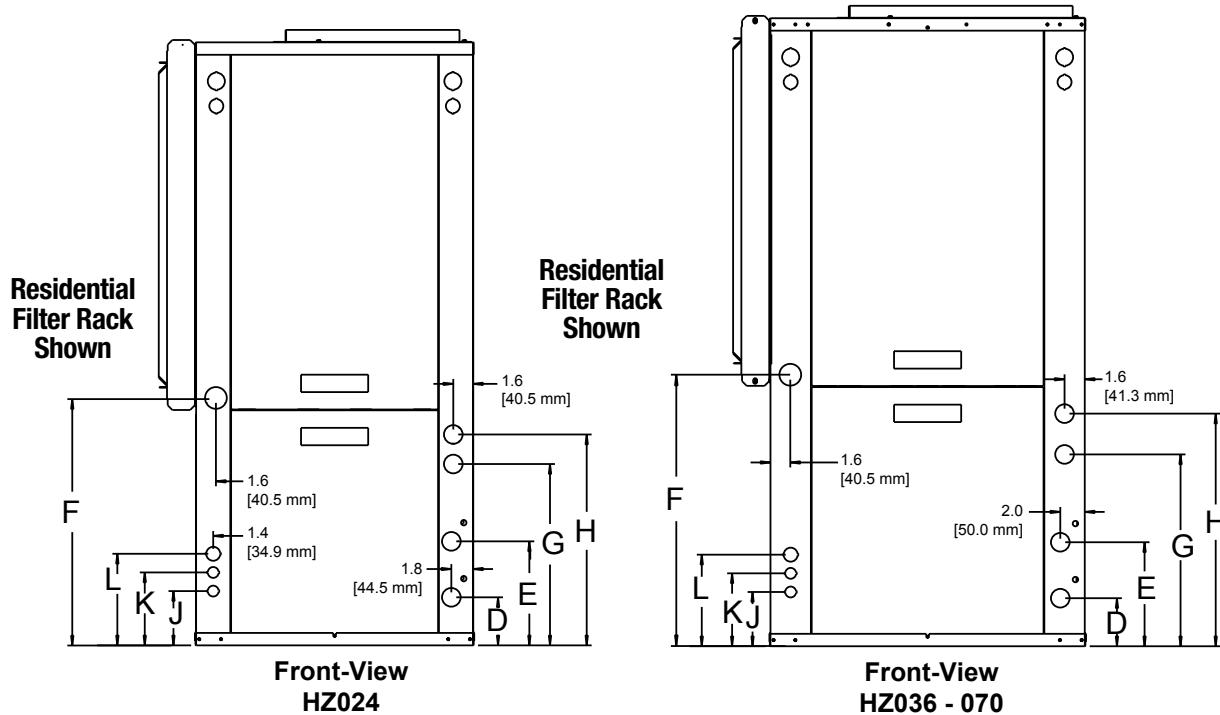
Dimensions — Vertical Upflow HZ series

Vertical Upflow Model		Water Connections							
		D	E	F	G	H	Loop Water FPT	HWG FPT	Cond. Drain
		Loop In	Loop Out	Condensate	HWG In	HWG Out			
024	in cm	3.9 9.9	8.4 21.3	19.9 50.5	14.6 37.1	17.0 43.2	1" Swivel	1" Swivel	3/4" MPT
036	in cm	3.9 9.9	8.4 21.3	21.8 55.4	15.4 39.1	18.7 47.5	1" Swivel	1" Swivel	3/4" MPT
048	in cm	3.9 9.9	8.4 21.3	21.8 55.4	15.4 39.1	18.7 47.5	1" Swivel	1" Swivel	3/4" MPT
060	in cm	3.9 9.9	8.4 21.3	21.8 55.4	15.4 39.1	18.7 47.5	1" Swivel	1" Swivel	3/4" MPT
070	in cm	3.9 9.9	8.4 21.3	21.8 55.4	15.4 39.1	18.7 47.5	1" Swivel	1" Swivel	3/4" MPT

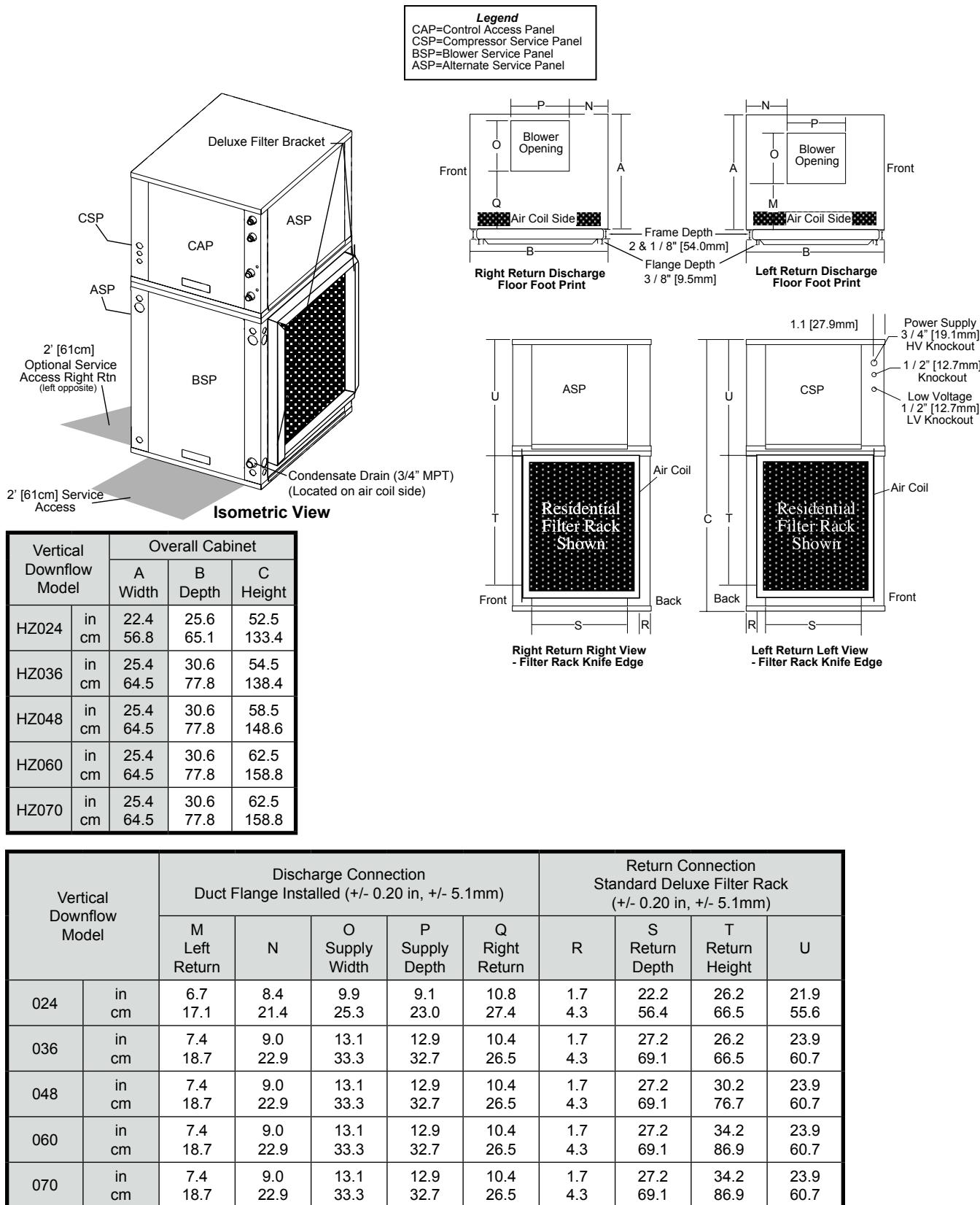
Vertical Upflow Model		Electrical Knockouts		
		J 1/2"	K 1/2"	L 3/4"
		Low Voltage	External Pump	Power Supply
024 - 070	in cm	4.4 11.2	5.9 15.0	7.4 18.8

Condensate connection is 3/4" MPT and is located on the air coil side of the front of the unit.

Unit shipped with deluxe duct collar/filter rack extending from unit 3" [7.6cm] and is suitable for duct connection.
Discharge flange is field installed.



Dimensions — Vertical Downflow HZ series



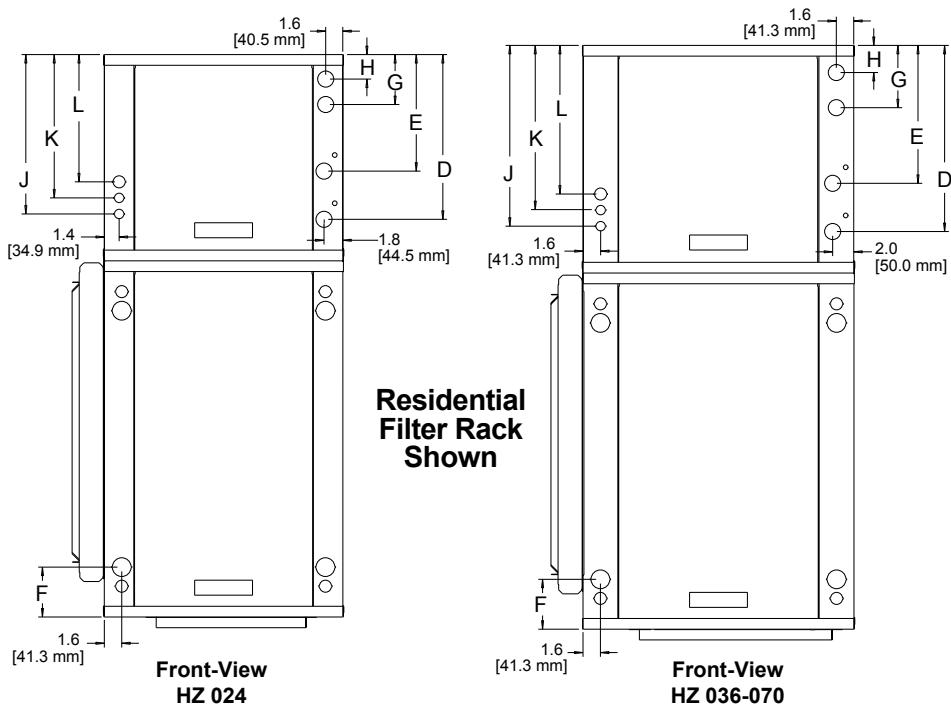
Dimensions — Vertical Downflow HZ series

Vertical Downflow Model		Water Connections							
		D	E	F	G	H	Loop Water FPT	HWG FPT	Cond. Drain
		In	Out	Condensate	HWG In	HWG Out			
024	in cm	15.4 39.1	10.9 27.7	4.7 11.9	4.7 11.9	2.3 5.8	1" Swivel	1" Swivel	3/4" MPT
036	in cm	17.4 44.2	12.9 32.8	4.7 11.9	5.8 14.7	2.5 6.4	1" Swivel	1" Swivel	3/4" MPT
048	in cm	17.4 44.2	12.9 32.8	4.7 11.9	5.8 14.7	2.5 6.4	1" Swivel	1" Swivel	3/4" MPT
060	in cm	17.4 44.2	12.9 32.8	4.7 11.9	5.8 14.7	2.5 6.4	1" Swivel	1" Swivel	3/4" MPT
070	in cm	17.4 44.2	12.9 32.8	4.7 11.9	5.8 14.7	2.5 6.4	1" Swivel	1" Swivel	3/4" MPT

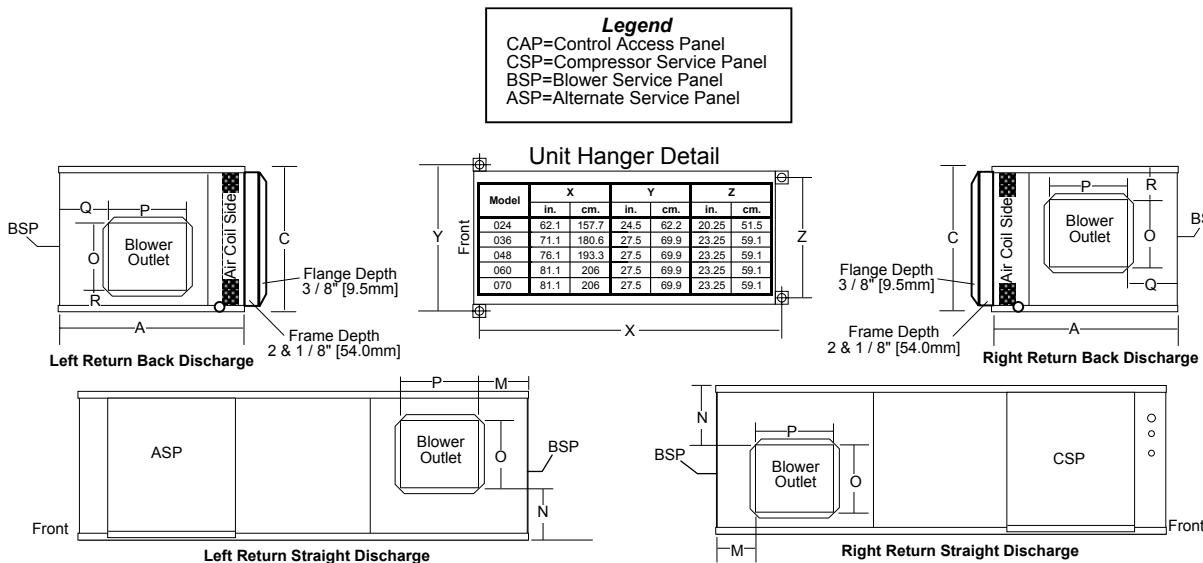
Vertical Upflow Model		Electrical Knockouts		
		J 1/2"	K 1/2"	L 3/4"
		Low Voltage	External Pump	Power Supply
024	in cm	14.9 37.8	13.4 34.0	11.9 30.2
036 - 048	in cm	16.9 42.9	15.3 38.9	13.9 35.3

Condensate connection is 3/4" MPT and is located on the air coil side of the front of the unit.

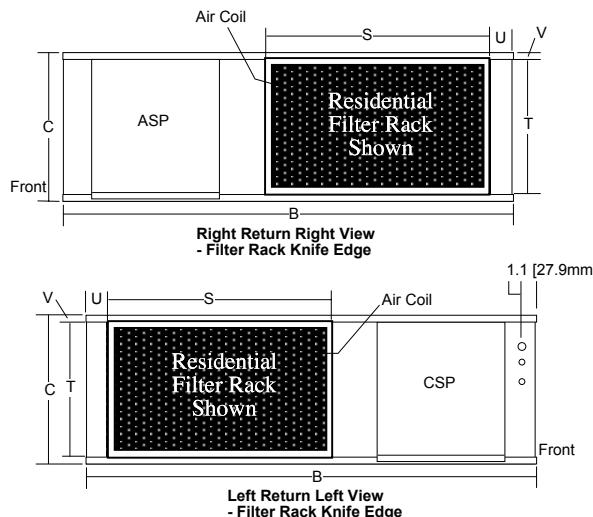
Unit shipped with deluxe duct collar/filter rack extending from unit 3" [7.6cm] and is suitable for duct connection. Downflow unit does not have discharge flange, and is rated for zero clearance installation.



Dimensions — Horizontal HZ series



Horizontal Model	Overall Cabinet			
	A Width	B Depth	C Height	
HZ024	in cm	22.4 56.8	62.2 158.0	19.3 48.9
HZ036	in cm	25.4 64.5	71.2 180.8	21.3 54.0
HZ048	in cm	25.4 64.5	76.2 193.5	21.3 54.0
HZ060	in cm	25.4 64.5	81.2 206.2	21.3 54.0
HZ070	in cm	25.4 64.5	81.2 206.2	21.3 54.0

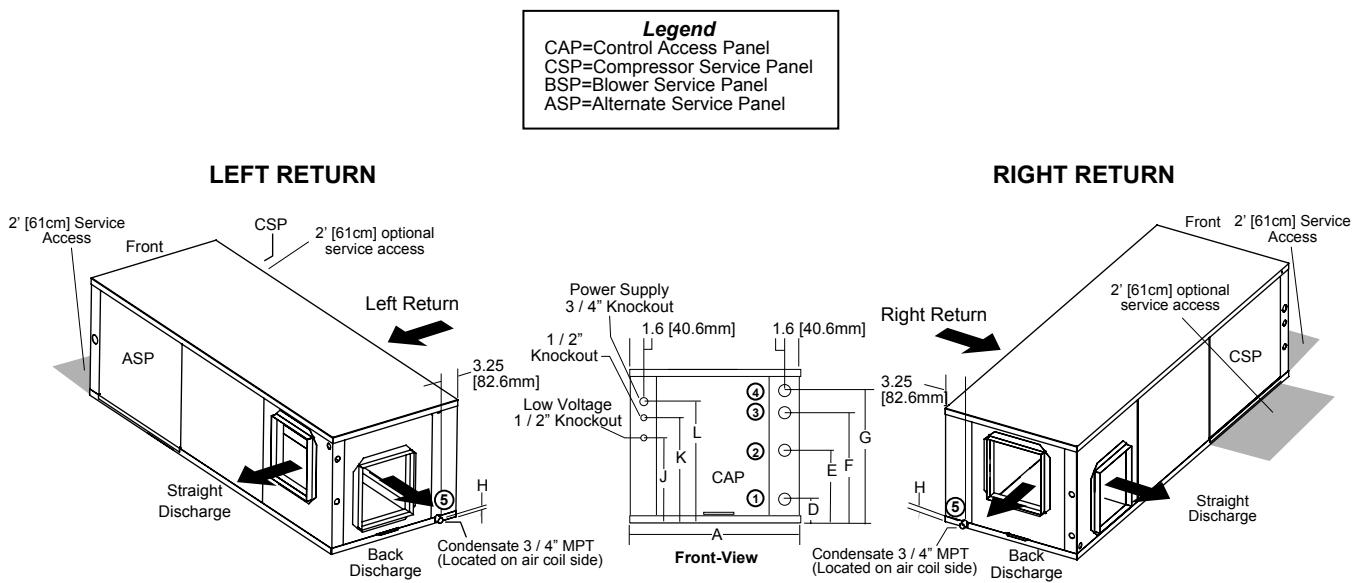


Horizontal Model		1Discharge Connection Duct Flange Installed (+/- 0.20 in, +/- 5.1mm)						Return Connection Standard Deluxe Filter Rack (+/- 0.20 in, +/- 5.1mm)			
		M	N	O Supply Height	P Supply Width	Q	R	S Return Width	T Return Height	U	V
024	in cm	3.6 9.3	2.0 5.1	12.5 31.8	15.5 39.4	3.6 9.2	2.0 5.2	33.8 85.8	16.2 41.0	2.3 5.8	1.7 4.3
036	in cm	*3.1 7.9	1.2 3.1	19.0 48.3	17.5 44.5	*3.1 7.9	1.0 2.6	34.8 88.3	18.2 46.1	3.1 7.8	1.7 4.3
048	in cm	3.1 7.9	1.2 3.1	19.0 48.3	17.5 44.5	3.1 7.9	1.0 2.6	39.8 101.0	18.2 46.1	3.1 7.8	1.7 4.3
060	in cm	3.1 7.9	1.2 3.1	19.0 48.3	17.5 44.5	3.1 7.9	1.0 2.6	44.8 113.7	18.2 46.1	3.1 7.8	1.7 4.3
070	in cm	3.1 7.9	1.2 3.1	19.0 48.3	17.5 44.5	3.1 7.9	1.0 2.6	44.8 113.7	18.2 46.1	3.1 7.8	1.7 4.3

*For units with modulating reheat option this dimension is 2.9" (7.4 cm).

1Discharge connection will change when using the accessory auxiliary electric heat package. Refer to the heater IOM for details.

Dimensions — Horizontal HZ series



Horizontal Model		Water Connections							
		D	E	F	G	H	Loop Water FPT	HWG FPT	Cond. Drain
In	Out	HWG IN	HWG Out	Condensate					
024	in cm	3.9 9.9	8.4 21.3	19.9 50.5	14.6 37.1	0.6 1.5	1" Swivel	1" Swivel	3/4" MPT
036	in cm	3.9 9.9	8.4 21.3	21.8 55.4	15.4 39.1	0.6 1.5	1" Swivel	1" Swivel	3/4" MPT
048	in cm	3.9 9.9	8.4 21.3	21.8 55.4	15.4 39.1	0.6 1.5	1" Swivel	1" Swivel	3/4" MPT
060	in cm	3.9 9.9	8.4 21.3	21.8 55.4	15.4 39.1	0.6 1.5	1" Swivel	1" Swivel	3/4" MPT
070	in cm	3.9 9.9	8.4 21.3	21.8 55.4	15.4 39.1	0.6 1.5	1" Swivel	1" Swivel	3/4" MPT

Horizontal Model		Electrical Knockouts							
		J 1/2"	K 1/2"	L 3/4"					
Low Voltage	External Pump	Power Supply							
024 - 070	in cm	4.4 11.2	5.9 15.0	7.4 18.8					

Condensate is 3/4" MPT.

Unit shipped with deluxe duct collar/filter rack extending from unit 3" [7.6cm] and is suitable for duct connection. Discharge flange and hanger brackets are factory installed.

Electrical Data

With Internal Flow Controller - Magna

Model	Compressor			HWG Pump FLA	Loop Pump FLA	Fan Motor FLA	Total Unit FLA	Min Circuit Amps	Max/ Fuse HACR
	RLA	LRA	Qty						
024	11.7	58.3	1	0.5	1.7	3.9	17.8	20.7	30
036	15.3	83.0	1	0.5	1.7	3.9	21.4	25.2	40
048	21.2	104.0	1	0.5	1.7	6.9	30.3	35.6	50
060	27.1	152.9	1	0.5	1.7	6.9	36.2	42.9	70
070	29.7	179.2	1	0.5	1.7	6.9	38.8	46.2	70

Rated Voltage of 208-230/60/1
HACR circuit breaker in USA only

Min/Max Voltage of 197/254
All fuses Class RK-5

With Internal Flow Controller - UPM

Model	Compressor			HWG Pump FLA	Loop Pump FLA	Fan Motor FLA	Total Unit FLA	Min Circuit Amps	Max/ Fuse HACR
	RLA	LRA	Qty						
024	11.7	58.3	1	0.5	0.7	3.9	16.8	19.7	30
036	15.3	83.0	1	0.5	0.7	3.9	20.4	24.2	35

Rated Voltage of 208-230/60/1
HACR circuit breaker in USA only

Min/Max Voltage of 197/254
All fuses Class RK-5

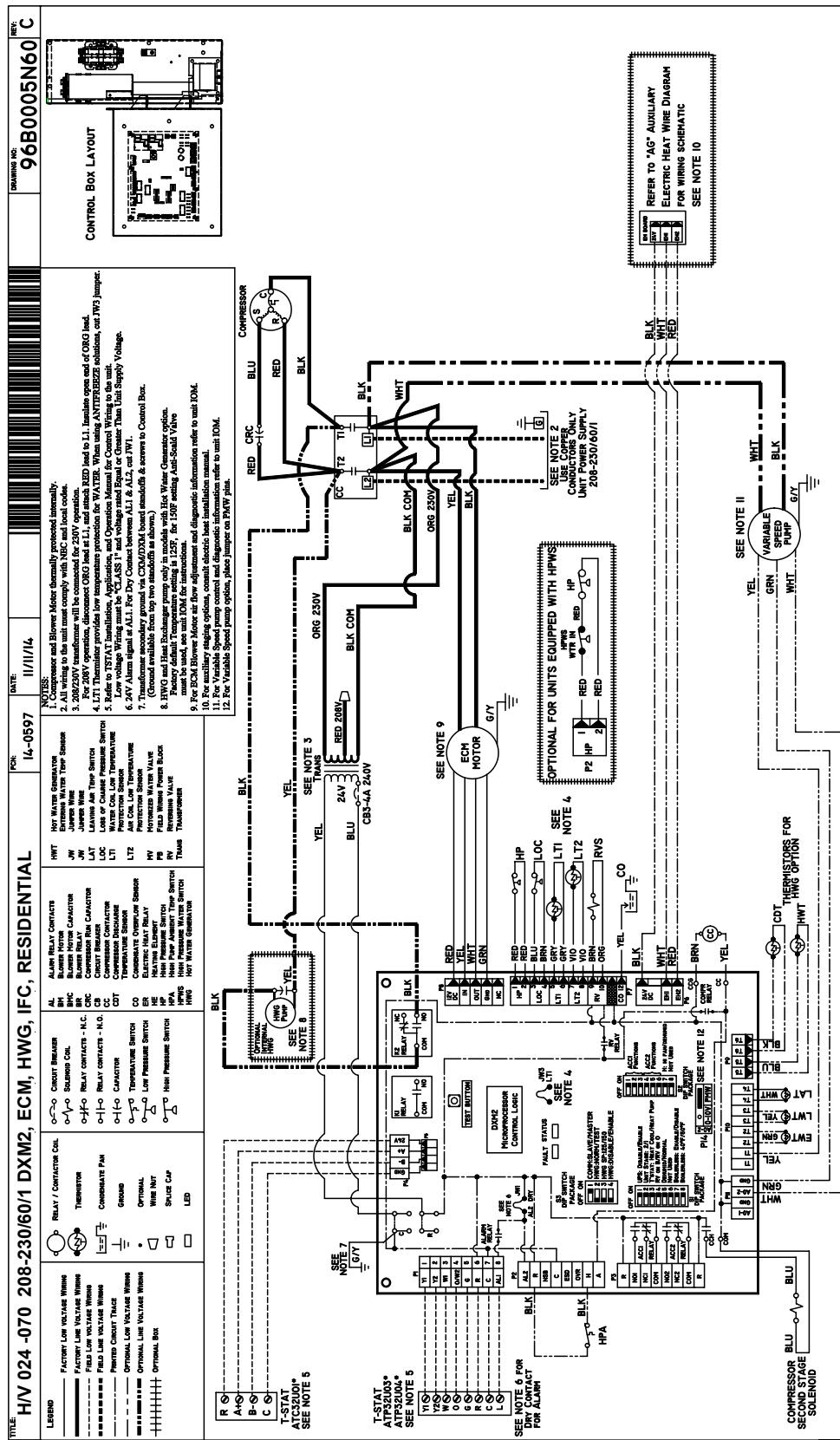
Without Flow Controller

Model	Compressor			HWG Pump FLA	Fan Motor FLA	Total Unit FLA	Min Circuit Amps	Max/ Fuse HACR
	RLA	LRA	Qty					
024	11.7	58.3	1	0.5	3.9	16.1	19.0	30
036	15.3	83.0	1	0.5	3.9	19.7	23.5	35
048	21.2	104.0	1	0.5	6.9	28.6	33.9	50
060	27.1	152.9	1	0.5	6.9	34.5	41.2	60
070	29.7	179.2	1	0.5	6.9	37.1	44.5	70

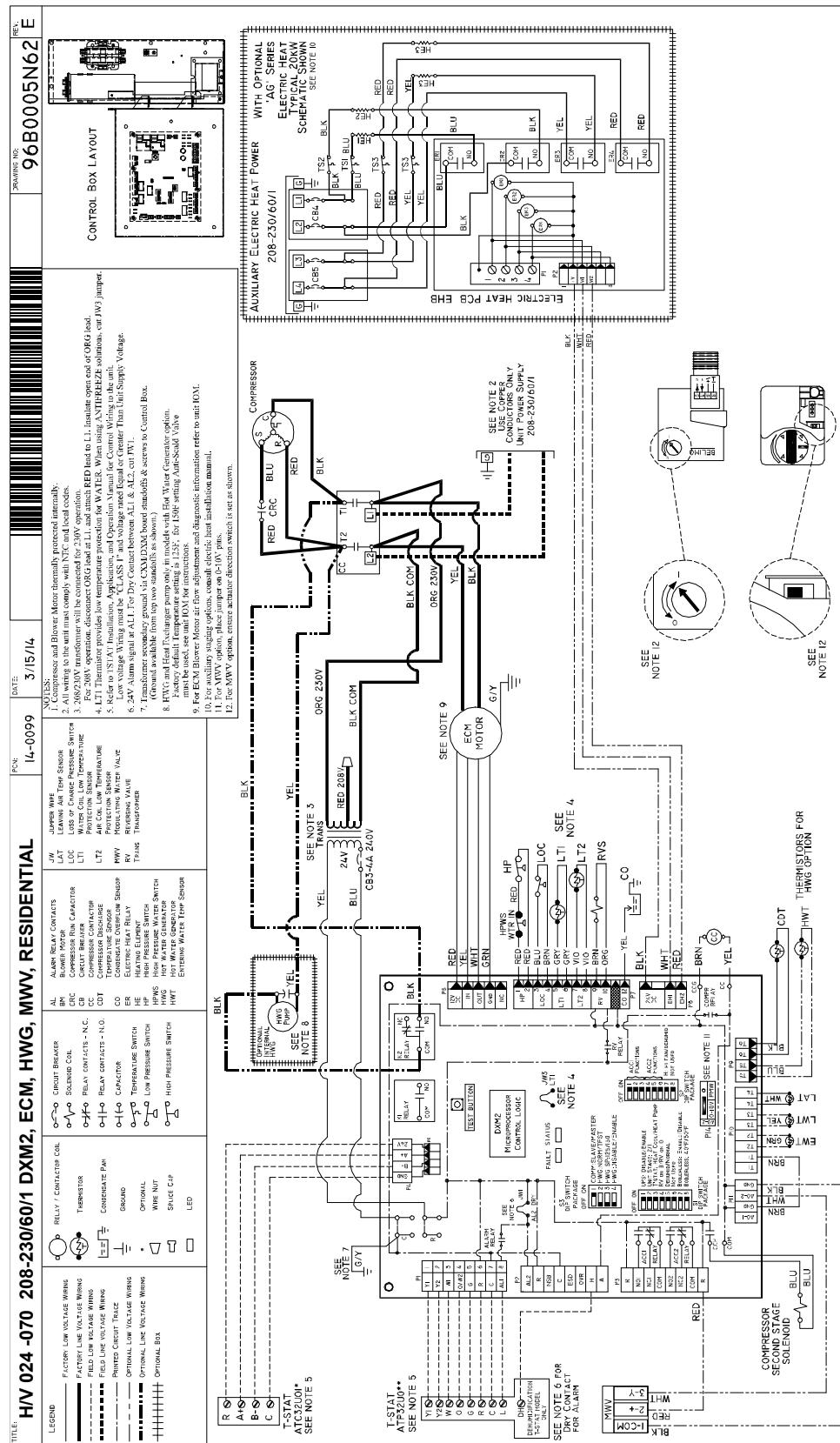
Rated Voltage of 208-230/60/1
HACR circuit breaker in USA only

Min/Max Voltage of 197/254
All fuses Class RK-5

HZ series Internal Flow Controller Electrical Wiring Diagram - 96B0005N60



HZ series Modulating Water Valve Electrical Wiring Diagram - 96B0005N62



ECM Blower Control

The ECM fan is controlled directly by the DXM2 control board that converts thermostat inputs and CFM settings to signals used by the ECM motor controller. To take full advantage of the ECM motor features, a communicating multi-stage thermostat should be used (ATC32U**).

The DXM2 control maintains a selectable operating airflow [CFM] for each heat pump operating mode. For each operating mode there are maximum and minimum airflow limits. See the ECM Blower Performance tables for the maximum, minimum, and default operating airflows.

Airflow levels are selected using the configuration menus of a communicating thermostat (ATC32U**) or diagnostic tool (ACDU**). The configuration menus allow the installer to independently select and adjust the operating airflow for each of the operating modes. Air flow can be selected in 25 CFM increments within the minimum and maximum limits shown in the ECM Blower Performance Table. The blower operating modes include:

- First Stage Cooling (Y1 & O)
- Second Stage Cooling (Y1, Y2, & O)
- First Stage Cooling in Dehumidification Mode (Y1, O, & Dehumid)
- Second Stage Cooling in Dehumidification Mode (Y1, Y2, O, & Dehumid)
- First Stage Heating (Y1)
- Second Stage Heating (Y1 & Y2)
- Third Stage (Auxiliary) Heating (Y1, Y2, & W)
- Emergency Heating (W with no Y1 or Y2)
- Fan (G with no Y1, Y2, or W)

It is highly recommended that ATC32U** or ACDU** be used to set dehumidification mode electronically. Dehumidification can NOT be selected when using a non-communicating thermostat with a vFlow™ unit with Internal Flow Controller (pump). For dehumidification settings on other units using the non-communicating stat, refer to DXM2 AOM (part #97B0003N15).

The ECM motor includes “soft start” and “ramp down” features. The soft start feature is a gentle increase of motor rpm at blower start up. This creates a much quieter blower start cycle.

The ramp down feature allows the blower to slowly decrease rpm to a full stop at the end of each blower cycle. This creates a much quieter end to each blower cycle and adds overall unit efficiency.

The ramp down feature is eliminated during an ESD (Emergency Shut Down) situation. When the DXM2 ESD input is activated, the blower and all other control outputs are immediately de-activated.

The ramp down feature (also known as the heating or cooling “Off Delay”) is field selectable by the installer. The allowable range is 0 to 255 seconds.

Airflow Configuration Screen on Communicating Thermostat

Blower Performance Data

Airflow in CFM with wet coil and clean air filter

Model	Max ESP (in. wg)	Fan Motor (hp)	Range	Cooling Mode		Dehumid Mode		Heating Mode		Fan Only Mode	Aux/ Emerg Mode
				Stg 2	Stg 1	Stg 2	Stg 1	Stg 2	Stg 1		
024	1.0	1/2	Default	700	525	550	425	750	600	350	850
			Maximum	1000	800	800	600	1000	850	1000	1000
			Minimum	600	450	550	400	600	450	300	700
036	0.9	1/2	Default	1050	800	850	650	1100	850	550	1350
			Maximum	1500	1100	1200	900	1500	1100	1500	1500
			Minimum	900	600	825	550	900	600	450	1350
048	1.0	1	Default	1400	1050	1100	850	1500	1150	700	1500
			Maximum	2000	1500	1600	1200	2000	1500	2000	2000
			Minimum	1200	900	1100	825	1200	900	600	1350
060	0.7	1	Default	1750	1300	1400	1050	1875	1450	875	1875
			Maximum	2300	1900	2000	1500	2300	1900	2300	2300
			Minimum	1500	1100	1375	1000	1500	1100	750	1500
070	0.7	1	Default	1900	1450	1650	1250	2000	1650	950	2000
			Maximum	2300	2200	2000	1800	2300	2200	2300	2300
			Minimum	1800	1350	1650	1250	1800	1350	900	1800

Airflow is controlled within 5% up to the Max ESP shown with wet coil

Auxiliary Electric Heat

Auxiliary Heat Ratings

Auxiliary Electric Heat Model	HZ Models			kW Rating		Btuh Rating		Minimum CFM Required
	024- 030	036	048- 070	240V	208V	240V	208V	
HGM4AAG				3.8	2.9	13000	9900	500
HGM5AAG				4.8	3.6	16300	12300	500
HGM8AAG				7.6	5.7	25900	19400	650
HGM10AAG				9.6	7.2	32700	24600	650
HGM12AAG				11.4	8.6	38900	29200	750
HGL10AAG				9.6	7.2	32700	24600	1300
HGL15AAG				14.4	10.8	49100	36900	1350
HGL20AAG				19.2	14.4	65500	49200	1350

Black area denotes compatibility

Note: Horizontal units rated for zero clearance unit and 1" clearance for the first three feet of duct,

Vertical units rated for zero clearance for both unit and duct.

* Can be used on corresponding HZ model

Auxiliary Heat Electrical Data

Auxiliary Electric Heat Model	Supply Circuit	Heater Amps		Minimum Circuit Amps		Maximum Fuse	
		240V	208V	240V	208V	240V	208V
HGM4AAG	Single	15.8	14.0	19.8	17.1	20	20
HGM5AAG	Single	20.0	17.3	25.0	21.6	25	25
HGM8AAG	Single	31.7	27.5	39.6	34.4	40	35
HGM10AAG	Single	40.0	34.7	50.0	43.4	50	45
HGL10AAG	Single	40.0	34.7	50.0	43.4	50	45
HGL15AAG	Single	60.0	52.0	75.0	65.0	80	70
	Dual - L1/L2	40.0	34.7	50.0	43.4	50	45
	Dual - L3/L4	20.0	17.3	25.0	21.6	25	25
HGL20AAG	Single	80.0	69.3	100.0	86.6	100	90
	Dual - L1/L2	40.0	34.7	50.0	43.4	50	45
	Dual - L3/L4	40.0	34.7	50.0	43.4	50	45

All heaters rated single phase 208-240V 60Hz

All models 15kW or larger feature internal circuit breakers

All Fuses UL Class K general purpose

Accessories & Warranty

Accessories & Options

vFlow™ Internal Variable Speed

Water-flow Control

Heat Controller takes ease and speed of installation of geothermal heating and cooling systems to the next level with vFlow™ variable water flow control. vFlow™ integrates water-flow control inside the unit AND matches the flow to the unit's operating requirements. Compared to conventional units that can just turn the water-flow on or off, HZ series varies the water-flow, which results in lower operating cost and longer system life. New 2-way communicating control (and communicating Pump / modulating valve) make vFlow™ a reality and are only available on Heat Controller Tranquility® systems.

Hot Water Generator

The optional Hot Water Generator includes an insulated double wall vented heat reclaiming heat exchanger suitable for potable water. The heat exchanger coil and hot water circulating pump are factory mounted internal to the unit. The microprocessor Hot Water Generator control uses sensors to monitor the entering potable water temperature and the compressor discharge line temperature and allows the Hot Water Generator to operate any time conditions permit. The Hot Water Generator includes a pump sampling mode to sense the hot water storage temperature while the Hot Water Generator is inactive.

SecureStart™ Module can expand the life of the unit by reducing start up current and protecting the compressor from low-voltage conditions.

Electrical Service Disconnect Switch located on the unit front panel for ease of service.

Thermostat (field installed)

The ATC32U** communicating thermostat is a programmable multi-stage auto-changeover electronic digital thermostat. The ATC offers up to 3 heating and 2 cooling stages with precise temperature control. The ATC is capable of controlling heating and cooling stages using a differential or proportional integral control algorithm. Multiple system temperatures and data can be displayed. The ATC is an integral component in system configuration and diagnostics.

Auxiliary Heater (field installed)

An optional, internal, field-installed electric heater provides supplemental and/or emergency heat capability when used with the three stage heating thermostat. (Heater is externally mounted on horizontal units).

Hose Connection Kit (field installed)

An accessory hose kit includes 10' of 150psi 1" rubber hose with brass fittings equipped with service pressure/temperature ports for connection between the unit and Flow Controller.

Warranty Information

Heat Controller residential class heat pumps are backed by a 12-year limited warranty on all unit parts, including the following accessories when installed with Heat Controller units: Flow Controllers, Thermostats & Electric Heaters.

Heat Controller goes even further to back up its commitment to quality by including a service labor allowance for the first five years on unit parts and thermostats, auxiliary electric heaters and geothermal pumping modules.

See Heat Controller's 2015 Limited Express Residential Warranty for specific coverage and limitation.

Notes

Notes

Revision History

Date	Page #	Description
23 Oct., 14	26-35	Performance Data Updated
02 Oct., 14	All	Updated for No vFlow™ Option
28 July, 14	16-25	Updated Water Pressure Drop Data
14 July, 14	All	Updated to Rev. B
10 Aug., 12	27, 29, 32	'Located on Air Coil Side' Note Added to Drawing
8 May, 12	All	First Published

Due to ongoing product improvements, specifications and dimensions are subject to change and correction without notice or incurring obligations. Determining the application and suitability for use of any product is the responsibility of the installer. Additionally, the installer is responsible for verifying dimensional data on the actual product prior to beginning any installation preparations.

Incentive and rebate programs have precise requirements as to product performance and certification. All products meet applicable regulations in effect on date of manufacture; however, certifications are not necessarily granted for the life of a product. Therefore, it is the responsibility of the applicant to determine whether a specific model qualifies for these incentive/rebate programs.

HEAT CONTROLLER

1900 Wellworth Ave., Jackson MI 49203 • Ph. 517-787-2100 • www.heatcontroller.com

A  Company